



**中认信通**

CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



# SAR TEST REPORT

**Applicant: Quanzhou Rongyaokesi Electronic Technology Co., LTD**

**Address:** No. 68, Jinpu, Pudang Village, Xiamei Town, Nan 'an City, Quanzhou City, Fujian Province, China

**FCC ID: 2BQVD-TK-158**

**Product Name: 4G LTE POC RADIO**

**Standard(s): 47 CFR Part 2(2.1093)**

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

**Report Number: 2503V33560E-20**

**Date Of Issue: 2025/8/27**

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**SAR TEST RESULTSSUMMARY**

| Operation Frequency Bands             | Highest Reported 1g SAR (W/kg) |                    | Limits (W/kg) |
|---------------------------------------|--------------------------------|--------------------|---------------|
|                                       | Face Up SAR (Gap 25mm)         | Body SAR (Gap 0mm) |               |
| LTE Band 2                            | 0.26                           | 0.24               | 1.6           |
| LTE Band 5                            | 0.20                           | 0.52               |               |
| LTE Band 7                            | 0.36                           | 0.50               |               |
| LTE Band 66&4                         | 0.33                           | 1.19               |               |
| Maximum Simultaneous Transmission SAR |                                |                    |               |
| Items                                 | Face Up SAR (Gap 25mm)         | Body SAR (Gap 0mm) | Limits        |
| Sum SAR(W/kg)                         | /                              | /                  | 1.6           |
| SPLSR                                 | NA                             | NA                 | 0.04          |
| EUT Received Date:                    | 2025/7/28                      |                    |               |
| Tested Date:                          | 2025/7/29~2025/8/1             |                    |               |
| Tested Result:                        | Pass                           |                    |               |

**Test Facility**

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

**Declarations**

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Each test item follows the test standard(s) without deviation.

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DOCUMENT REVISION HISTORY

| Revision Number | Report Number  | Description of Revision | Date of Revision |
|-----------------|----------------|-------------------------|------------------|
| 1.0             | 2503V33560E-20 | Original Report         | 2025/8/27        |

## 1. GENERAL INFORMATION

### 1.1 Product Description for device under Test (EUT)

|                               |                                                                                                                                                                |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EUT Name:</b>              | 4G LTE POC RADIO                                                                                                                                               |
| <b>EUT Model:</b>             | TK-158                                                                                                                                                         |
| <b>Device Type:</b>           | Portable                                                                                                                                                       |
| <b>Exposure Category:</b>     | Population / Uncontrolled                                                                                                                                      |
| <b>Antenna Type(s):</b>       | External Antenna                                                                                                                                               |
| <b>Body-Worn Accessories:</b> | Belt Clip                                                                                                                                                      |
| <b>Proximity Sensor:</b>      | None                                                                                                                                                           |
| <b>Carrier Aggregation:</b>   | None                                                                                                                                                           |
| <b>Operation modes:</b>       | FDD-LTE                                                                                                                                                        |
| <b>Frequency Band:</b>        | LTE Band 2: 1850-1910 MHz(TX)<br>LTE Band 4: 1710-1755MHz(TX)<br>LTE Band 5: 824-849 MHz(TX)<br>LTE Band 7: 2500-2570 MHz(TX)<br>LTE Band 66: 1710-1780MHz(TX) |
| <b>Dimensions (L*W*H):</b>    | Host machine: 88 mm (L) * 55 mm (W) * 32 mm (H)<br>Antenna: 45 mm (L) * 14 mm (D)                                                                              |
| <b>Rated Input Voltage:</b>   | DC3.7V from Rechargeable Battery                                                                                                                               |
| <b>Sample Number:</b>         | 37IO-1                                                                                                                                                         |
| <b>Normal Operation:</b>      | Face Up and Body                                                                                                                                               |

## **1.2 Test Specification, Methods and Procedures**

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528-2013, the following FCC Published RF exposure KDB procedures:

KDB 447498 D01 General RF Exposure Guidance v06  
KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04  
KDB 865664 D02 RF Exposure Reporting v01r02  
KDB 941225 D05 SAR for LTE Devices v02r05

TCB Workshop April 2019: RF Exposure Procedures

### 1.3 SAR Limits

#### FCC Limit

| EXPOSURE LIMITS                                                  | SAR (W/kg)                                                     |                                                        |
|------------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------|
|                                                                  | (General Population /<br>Uncontrolled Exposure<br>Environment) | (Occupational /<br>Controlled Exposure<br>Environment) |
| Spatial Average<br>(averaged over the whole body)                | 0.08                                                           | 0.4                                                    |
| Spatial Peak<br>(averaged over any 1 g of tissue)                | <b>1.60</b>                                                    | 8.0                                                    |
| Spatial Peak<br>(hands/wrists/feet/ankles<br>averaged over 10 g) | 4.0                                                            | 20.0                                                   |

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that maybe incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg for 1g Body (Face Up) SAR applied to the EUT.

## 1.4 FACILITIES

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

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

|                                               |                                    |
|-----------------------------------------------|------------------------------------|
| <input checked="" type="checkbox"/> SAR Lab 1 | <input type="checkbox"/> SAR Lab 2 |
|-----------------------------------------------|------------------------------------|

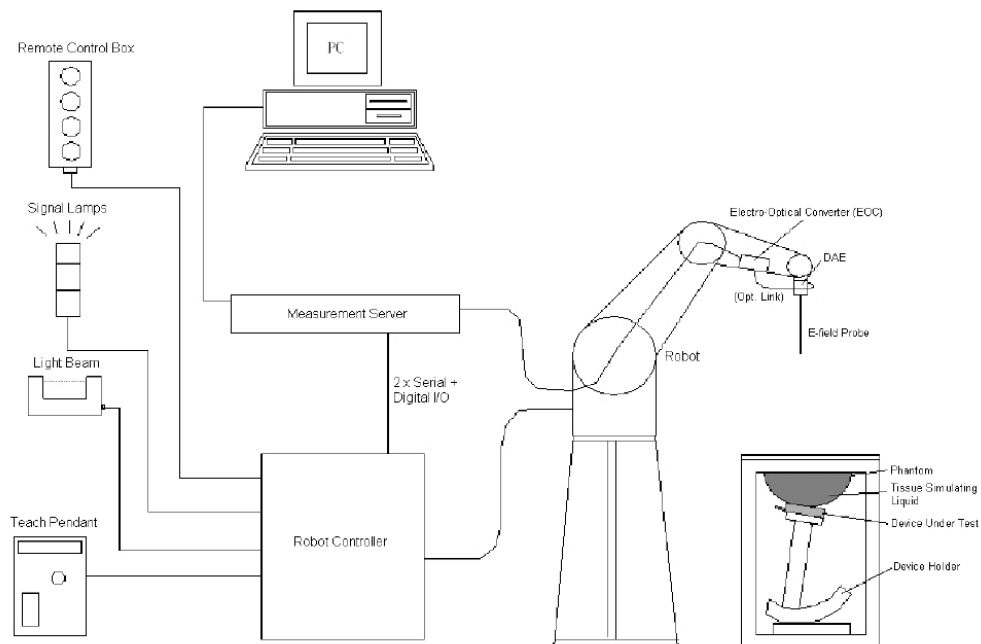
## 2. SAR MEASUREMENTSYSTEM

These measurements were performed with the automated near-field scanning system DASY5 from Schmid & Partner Engineering AG (SPEAG) which is the Fifth generation of the system shown in the figure hereinafter:



### DASY5 System Description

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal application, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win7 professional operating system and the DASY52 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

### **DASY5 Measurement Server**

The DASY5 measurement server is based on a PC/104 CPU board with a 400MHz Intel ULV Celeron, 128MB chip-disk and 128MB RAM. The necessary circuits for communication with the DAE4 (or DAE3) electronics box, as well as the 16 bit AD-converter system for optical detection and digital I/O interface are contained on the DASY5 I/O board, which is directly connected to the PC/104 bus of the CPU board.



The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized point out, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

### **Data Acquisition Electronics**

The data acquisition electronics (DAE4) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

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

The input impedance of both the DAE4 as well as of the DAE3 box is 200MΩ; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

**ES3DV3 E-Field Probes**

|                      |                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Frequency</b>     | 10 MHz - 4 GHz<br>Linearity: $\pm 0.2$ dB (30 MHz to 4 GHz)                                                                            |
| <b>Directivity</b>   | $\pm 0.2$ dB in TSL (rotation around probe axis)<br>$\pm 0.3$ dB in TSL (rotation normal to probe axis)                                |
| <b>Dynamic Range</b> | 5 $\mu$ W/g to $> 100$ mW/g<br>Linearity: $\pm 0.2$ dB (noise: typically $< 1$ $\mu$ W/g)                                              |
| <b>Dimensions</b>    | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 3.9 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 2.0 mm |
| <b>Application</b>   | General dosimetry up to 4 GHz<br>Dosimetry in strong gradient fields<br>Compliance tests of mobile phones                              |
| <b>Compatibility</b> | DASY3, DASY4, DASY52, DASY6, DASY8 SAR, EASY6, EASY4/MRI                                                                               |

**Calibration Frequency Points for ES3DV3 E-Field Probes SN: 3157 Calibrated: 2024/11/22**

| Calibration Frequency Point(MHz) | Frequency Range(MHz) |      | Conversion Factor |      |      |
|----------------------------------|----------------------|------|-------------------|------|------|
|                                  | From                 | To   | X                 | Y    | Z    |
| 750 Head                         | 650                  | 850  | 6.45              | 6.45 | 6.45 |
| 900 Head                         | 850                  | 1000 | 6.2               | 6.2  | 6.2  |
| 1750 Head                        | 1650                 | 1850 | 5.41              | 5.41 | 5.41 |
| 1900 Head                        | 1850                 | 2000 | 5.15              | 5.15 | 5.15 |
| 2300 Head                        | 2200                 | 2400 | 4.95              | 4.95 | 4.95 |
| 2450 Head                        | 2400                 | 2550 | 4.75              | 4.75 | 4.75 |
| 2600 Head                        | 2550                 | 2700 | 4.55              | 4.55 | 4.55 |

### **SAM Twin Phantom**

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6 mm). The phantom has three measurement areas:

- \_ Left Head
- \_ Right Head
- \_ Flat phantom

The phantom table for the DASY systems based on the robots have the size of 100 x 50 x 85 cm (L x W x H). For easy dislocation these tables have fork lift cut outs at the bottom.

The bottom plate contains three pairs of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. Only one device holder is necessary if two phantoms are used (e.g., for different liquids)



A white cover is provided to cover the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. Free space scans of devices on top of this phantom cover are possible. Three reference marks are provided on the phantom counter. These reference marks are used to teach the absolute phantom position relative to the robot.

### **Robots**

The DASY5 system uses the high precision industrial robot. The robot offers the same features important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchrony motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

The above mentioned robots are controlled by the Staubli CS8c robot controllers. All information regarding the use and maintenance of the robot arm and the robot controller is contained on the CDs delivered along with the robot. Paper manuals are available upon request direct from Staubli.

## SAR Scan Procedures

### Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 1.4 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

### Step 2: Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 15mm<sup>2</sup> step integral, with 1.5mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

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

|                                                                                                        | $\leq 3$ GHz                                                                                                                                                                                                                                                           | $> 3$ GHz                                               |
|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface | 5 mm $\pm$ 1 mm                                                                                                                                                                                                                                                        | $\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm $\pm$ 0.5 mm |
| Maximum probe angle from probe axis to phantom surface normal at the measurement location              | 30° $\pm$ 1°                                                                                                                                                                                                                                                           | 20° $\pm$ 1°                                            |
| 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. |                                                         |

### Step 3: Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the DASY5 software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m<sup>3</sup> is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 5mm, with the side length of the 10g cube is 21.5mm.

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

|                                                                                                                                                                                                                                                                                                                                                           |                                           |                                                                                             | $\leq 3 \text{ GHz}$                                                                | $> 3 \text{ GHz}$                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$                                                                                                                                                                                                                                                                    |                                           |                                                                                             | $\leq 2 \text{ GHz}: \leq 8 \text{ mm}$<br>$2 - 3 \text{ GHz}: \leq 5 \text{ mm}^*$ | $3 - 4 \text{ GHz}: \leq 5 \text{ mm}^*$<br>$4 - 6 \text{ GHz}: \leq 4 \text{ mm}^*$                                          |
| Maximum zoom scan spatial resolution, normal to phantom surface                                                                                                                                                                                                                                                                                           | uniform grid: $\Delta z_{\text{Zoom}}(n)$ |                                                                                             | $\leq 5 \text{ mm}$                                                                 | $3 - 4 \text{ GHz}: \leq 4 \text{ mm}$<br>$4 - 5 \text{ GHz}: \leq 3 \text{ mm}$<br>$5 - 6 \text{ GHz}: \leq 2 \text{ mm}$    |
|                                                                                                                                                                                                                                                                                                                                                           | graded grid                               | $\Delta z_{\text{Zoom}}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface | $\leq 4 \text{ mm}$                                                                 | $3 - 4 \text{ GHz}: \leq 3 \text{ mm}$<br>$4 - 5 \text{ GHz}: \leq 2.5 \text{ mm}$<br>$5 - 6 \text{ GHz}: \leq 2 \text{ mm}$  |
|                                                                                                                                                                                                                                                                                                                                                           |                                           | $\Delta z_{\text{Zoom}}(n>1)$ : between subsequent points                                   | $\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1) \text{ mm}$                             |                                                                                                                               |
| Minimum zoom scan volume                                                                                                                                                                                                                                                                                                                                  | x, y, z                                   |                                                                                             | $\geq 30 \text{ mm}$                                                                | $3 - 4 \text{ GHz}: \geq 28 \text{ mm}$<br>$4 - 5 \text{ GHz}: \geq 25 \text{ mm}$<br>$5 - 6 \text{ GHz}: \geq 22 \text{ mm}$ |
| Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.                                                                                                                                                                                                                     |                                           |                                                                                             |                                                                                     |                                                                                                                               |
| * When zoom scan is required and the <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB Publication 447498 is $\leq 1.4 \text{ W/kg}$ , $\leq 8 \text{ mm}$ , $\leq 7 \text{ mm}$ and $\leq 5 \text{ mm}$ zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. |                                           |                                                                                             |                                                                                     |                                                                                                                               |

### Step 4: Power Drift Measurement

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

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 7 x 7 x 7 (5mmx5mmx5mm) providing a volume of 30 mm in the X & Y & Z axis.

## Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE 1528-2013

### Recommended Tissue Dielectric Parameters for Head liquid

**Table 3—Target dielectric properties of head tissue-equivalent material in the 300 MHz to 6000 MHz frequency range**

| Frequency (MHz) | Relative permittivity ( $\epsilon_r$ ) | Conductivity ( $\sigma$ ) (S/m) |
|-----------------|----------------------------------------|---------------------------------|
| 300             | 45.3                                   | 0.87                            |
| 450             | 43.5                                   | 0.87                            |
| 750             | 41.9                                   | 0.89                            |
| 835             | 41.5                                   | 0.90                            |
| 900             | 41.5                                   | 0.97                            |
| 1450            | 40.5                                   | 1.20                            |
| 1500            | 40.4                                   | 1.23                            |
| 1640            | 40.2                                   | 1.31                            |
| 1750            | 40.1                                   | 1.37                            |
| 1800            | 40.0                                   | 1.40                            |
| 1900            | 40.0                                   | 1.40                            |
| 2000            | 40.0                                   | 1.40                            |
| 2100            | 39.8                                   | 1.49                            |
| 2300            | 39.5                                   | 1.67                            |
| 2450            | 39.2                                   | 1.80                            |
| 2600            | 39.0                                   | 1.96                            |
| 3000            | 38.5                                   | 2.40                            |
| 3500            | 37.9                                   | 2.91                            |
| 4000            | 37.4                                   | 3.43                            |
| 4500            | 36.8                                   | 3.94                            |
| 5000            | 36.2                                   | 4.45                            |
| 5200            | 36.0                                   | 4.66                            |
| 5400            | 35.8                                   | 4.86                            |
| 5600            | 35.5                                   | 5.07                            |
| 5800            | 35.3                                   | 5.27                            |
| 6000            | 35.1                                   | 5.48                            |

NOTE—For convenience, permittivity and conductivity values at some frequencies that are not part of the original data from Drossos et al. [B60] or the extension to 5800 MHz are provided (i.e., the values shown in italics). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6000 MHz that were linearly extrapolated from the values at 3000 MHz and 5800 MHz.

### 3. EQUIPMENT LIST AND CALIBRATION

#### 3.1 Equipments List & Calibration Information

| Equipment                                  | Model           | S/N           | Calibration Date | Calibration Due Date |
|--------------------------------------------|-----------------|---------------|------------------|----------------------|
| DASY5 Test Software                        | DASY52.10       | N/A           | NCR              | NCR                  |
| DASY5 Measurement Server                   | DASY5 4.5.12    | 1567          | NCR              | NCR                  |
| Data Acquisition Electronics               | DAE4            | 1354          | 2024/12/3        | 2025/12/2            |
| E-Field Probe                              | ES3DV3          | 3157          | 2024/11/22       | 2025/11/21           |
| Mounting Device                            | MD4HHTV5        | BJPCTC0152    | NCR              | NCR                  |
| Twin SAM                                   | Twin SAM V5.0   | 1412          | NCR              | NCR                  |
| Dipole, 750 MHz                            | D750V3          | 1230          | 2023/3/24        | 2026/3/23            |
| Dipole, 1750 MHz                           | D1750V2         | 1200          | 2023/3/27        | 2026/3/26            |
| Dipole, 1900 MHz                           | D1900V2         | 5d251         | 2023/3/27        | 2026/3/26            |
| Dipole, 2450 MHz                           | D2450V2         | 1102          | 2023/3/27        | 2026/3/26            |
| Simulated Tissue Liquid Head(500-9500 MHz) | HBBL600-10000V6 | 220420-2      | Each Time        | /                    |
| Network Analyzer                           | 8753B           | 2828A00170    | 2024/10/17       | 2025/10/16           |
| Dielectric assessment kit                  | 1319            | SM DAK 040 CA | NCR              | NCR                  |
| MXG Vector Signal Generator                | N5182B          | MY51350142    | 2025/1/9         | 2026/1/8             |
| Power Meter                                | ML2495A         | 1106009       | 2024/8/29        | 2025/8/28            |
| USB Power Sensor                           | U2001H          | MY50000432    | 2025/3/31        | 2026/3/30            |
| Power Amplifier                            | ZHL-5W-202-S+   | 416402204     | NCR              | NCR                  |
| Power Amplifier                            | ZVE-6W-83+      | 637202210     | NCR              | NCR                  |
| Directional Coupler                        | 441493          | 520Z          | NCR              | NCR                  |
| Attenuator                                 | 20dB, 100W      | LN749         | NCR              | NCR                  |
| Attenuator                                 | 6dB, 150W       | 2754          | NCR              | NCR                  |
| Thermometer                                | DTM3000         | 3892          | 2025/3/31        | 2026/3/30            |
| Thermo-hygrometer                          | HTC-1           | NA            | 2025/3/31        | 2026/3/30            |
| Radio Communication Analyzer               | MT8820C         | 620118        | 2024/10/10       | 2025/10/9            |

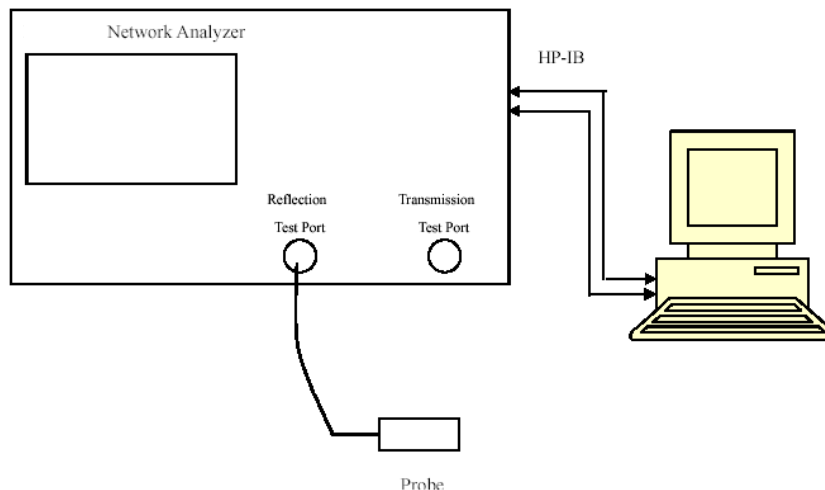
**The Dipole calibration methods and procedures used were as detailed in:**

FCC KDB Publication Number: “KDB865664 D01 SAR Measurement 100 MHz to 6 GHz”

1. The return-loss does not deviate more than 20% from the previous measurement and meets the required 20 dB minimum return-loss requirement.
2. The measurement of real or imaginary parts of impedance does not deviate more than 5Ω from the previous measurement.

## 4. SAR MEASUREMENT SYSTEM VERIFICATION

### 4.1 Liquid Verification



Liquid Verification Setup Block Diagram

### Liquid Verification Results

| Frequency (MHz) | Liquid Type                  | Liquid Parameter |                | Target Value |                | Delta (%)          |                | Tolerance (%) |
|-----------------|------------------------------|------------------|----------------|--------------|----------------|--------------------|----------------|---------------|
|                 |                              | $\epsilon_r$     | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) | $\Delta\epsilon_r$ | $\Delta\sigma$ |               |
| 750             | Simulated Tissue Liquid Head | 42.793           | 0.893          | 41.9         | 0.89           | 2.13               | 0.34           | $\pm 5$       |
| 829             | Simulated Tissue Liquid Head | 42.467           | 0.918          | 41.53        | 0.9            | 2.26               | 2              | $\pm 5$       |
| 836.5           | Simulated Tissue Liquid Head | 42.357           | 0.923          | 41.5         | 0.9            | 2.07               | 2.56           | $\pm 5$       |
| 844             | Simulated Tissue Liquid Head | 42.322           | 0.927          | 41.5         | 0.91           | 1.98               | 1.87           | $\pm 5$       |

\*Liquid Verification above was performed on 2025/7/29.

| Frequency (MHz) | Liquid Type                  | Liquid Parameter |                | Target Value |                | Delta (%)          |                | Tolerance (%) |
|-----------------|------------------------------|------------------|----------------|--------------|----------------|--------------------|----------------|---------------|
|                 |                              | $\epsilon_r$     | $\sigma$ (S/m) | $\epsilon_r$ | $\sigma$ (S/m) | $\Delta\epsilon_r$ | $\Delta\sigma$ |               |
| 1720            | Simulated Tissue Liquid Head | 40.937           | 1.355          | 40.13        | 1.35           | 2.01               | 0.37           | $\pm 5$       |
| 1745            | Simulated Tissue Liquid Head | 40.915           | 1.369          | 40.1         | 1.37           | 2.03               | -0.07          | $\pm 5$       |
| 1750            | Simulated Tissue Liquid Head | 40.804           | 1.373          | 40.1         | 1.37           | 1.76               | 0.22           | $\pm 5$       |
| 1770            | Simulated Tissue Liquid Head | 40.588           | 1.396          | 40.06        | 1.38           | 1.32               | 1.16           | $\pm 5$       |

\*Liquid Verification above was performed on 2025/7/30.

| Frequency<br>(MHz) | Liquid Type                  | Liquid<br>Parameter |                   | Target Value |                   | Delta<br>(%)       |                         | Tolerance<br>(%) |
|--------------------|------------------------------|---------------------|-------------------|--------------|-------------------|--------------------|-------------------------|------------------|
|                    |                              | $\epsilon_r$        | $\sigma$<br>(S/m) | $\epsilon_r$ | $\sigma$<br>(S/m) | $\Delta\epsilon_r$ | $\Delta\sigma$<br>(S/m) |                  |
| 1860               | Simulated Tissue Liquid Head | 40.411              | 1.422             | 40           | 1.4               | 1.03               | 1.57                    | $\pm 5$          |
| 1880               | Simulated Tissue Liquid Head | 40.247              | 1.428             | 40           | 1.4               | 0.62               | 2                       | $\pm 5$          |
| 1900               | Simulated Tissue Liquid Head | 40.104              | 1.434             | 40           | 1.4               | 0.26               | 2.43                    | $\pm 5$          |

\*Liquid Verification above was performed on 2025/7/31.

| Frequency<br>(MHz) | Liquid Type                  | Liquid<br>Parameter |                   | Target Value |                   | Delta<br>(%)       |                         | Tolerance<br>(%) |
|--------------------|------------------------------|---------------------|-------------------|--------------|-------------------|--------------------|-------------------------|------------------|
|                    |                              | $\epsilon_r$        | $\sigma$<br>(S/m) | $\epsilon_r$ | $\sigma$<br>(S/m) | $\Delta\epsilon_r$ | $\Delta\sigma$<br>(S/m) |                  |
| 2450               | Simulated Tissue Liquid Head | 39.851              | 1.798             | 39.2         | 1.8               | 1.66               | -0.11                   | $\pm 5$          |
| 2510               | Simulated Tissue Liquid Head | 39.527              | 1.823             | 39.12        | 1.86              | 1.04               | -1.99                   | $\pm 5$          |
| 2535               | Simulated Tissue Liquid Head | 39.255              | 1.865             | 39.09        | 1.89              | 0.42               | -1.32                   | $\pm 5$          |

\*Liquid Verification above was performed on 2025/8/1.

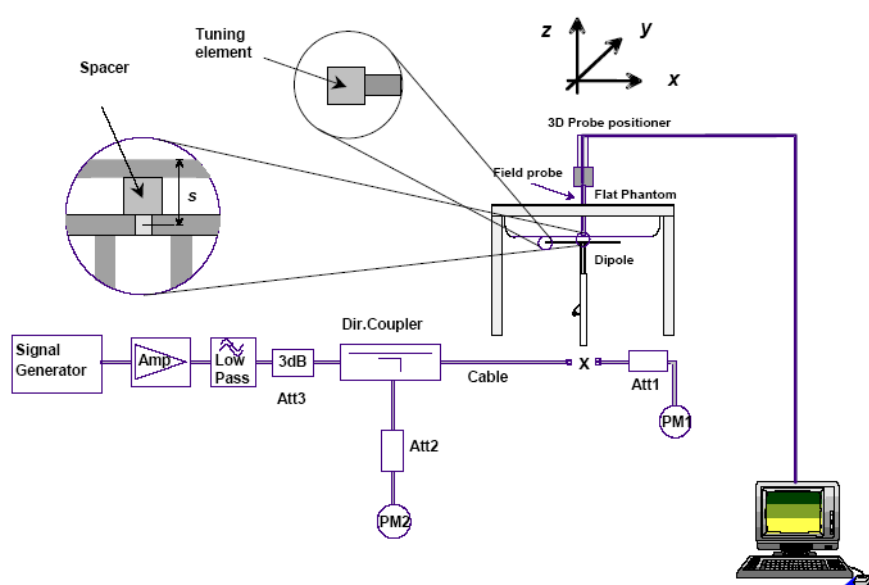
## 4.2 System Accuracy Verification

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of  $\pm 10\%$ . The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

The spacing distances in the **System Verification Setup Block Diagram** is given by the following:

- $s = 15 \text{ mm} \pm 0,2 \text{ mm}$  for  $300 \text{ MHz} \leq f \leq 1\,000 \text{ MHz}$ ;
- $s = 10 \text{ mm} \pm 0,2 \text{ mm}$  for  $1\,000 \text{ MHz} < f \leq 3\,000 \text{ MHz}$ ;
- $s = 10 \text{ mm} \pm 0,2 \text{ mm}$  for  $3\,000 \text{ MHz} < f \leq 6\,000 \text{ MHz}$ .

### System Verification Setup Block Diagram



### System Accuracy Check Results

| Date      | Frequency Band | Liquid Type                  | Input Power (mW) | Measured SAR (W/kg) |       | Normalized to 1W (W/kg) | Target Value (W/kg) | Delta (%) | Tolerance (%) |
|-----------|----------------|------------------------------|------------------|---------------------|-------|-------------------------|---------------------|-----------|---------------|
| 2025/7/29 | 750            | Simulated Tissue Liquid Head | 100              | 1g                  | 0.851 | 8.51                    | 8.49                | 0.24      | $\pm 10$      |
| 2025/7/30 | 1750           | Simulated Tissue Liquid Head | 100              | 1g                  | 3.78  | 37.8                    | 35.8                | 5.59      | $\pm 10$      |
| 2025/7/31 | 1900           | Simulated Tissue Liquid Head | 100              | 1g                  | 4.14  | 41.4                    | 38.9                | 6.43      | $\pm 10$      |
| 2025/8/1  | 2450           | Simulated Tissue Liquid Head | 100              | 1g                  | 5.24  | 52.4                    | 50.9                | 2.95      | $\pm 10$      |

\*The SAR values above are normalized to 1 Watt forward power.

### 4.3 SAR SYSTEM VALIDATION DATA

#### System Performance 750 MHz Head

**DUT: D750V3; Type: 750 MHz; Serial: 1230**

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

Medium parameters used:  $f = 750$  MHz;  $\sigma = 0.893$  S/m;  $\epsilon_r = 42.793$ ;  $\rho = 1000$  kg/m<sup>3</sup>;

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(6.45, 6.45, 6.45) @750 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

**Area Scan (5x11x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.11 W/kg

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

Reference Value = 31.91 V/m; Power Drift = 0.03 dB

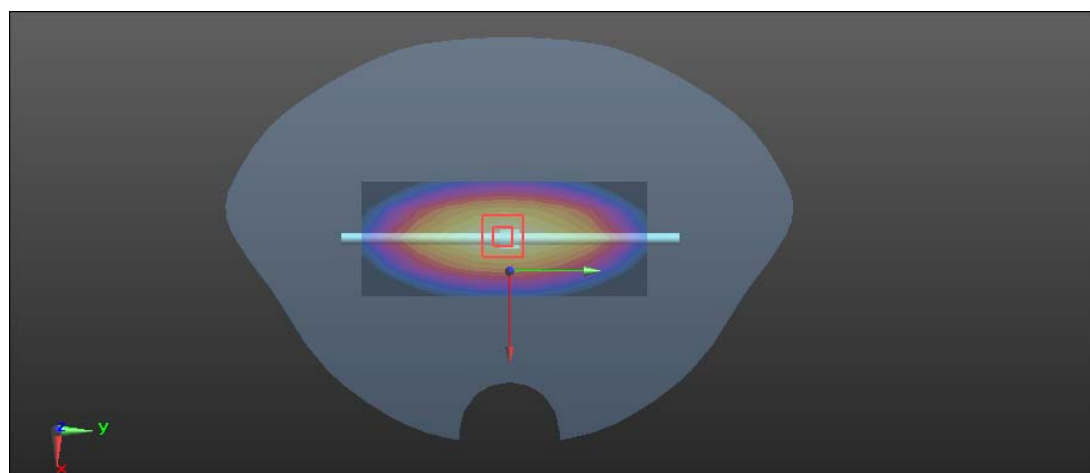
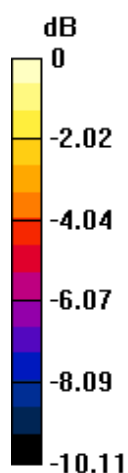
Peak SAR (extrapolated) = 1.25 W/kg

**SAR(1 g) = 0.851 W/kg; SAR(10 g) = 0.565 W/kg**

Smallest distance from peaks to all points 3 dB below = 17.9 mm

Ratio of SAR at M2 to SAR at M1 = 68.1%

Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.12 W/kg = 0.49 dBW/kg

**System Performance 1750 MHz Head****DUT: D1750V2; Type: 1750 MHz; Serial: 1200**

Communication System: CW (0); Frequency: 1750 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.373$  S/m;  $\epsilon_r = 40.804$ ;  $\rho = 1000$  kg/m<sup>3</sup>;  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.41, 5.41, 5.41) @1750 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

**Area Scan (5x6x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 5.77 W/kg

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

Reference Value = 53.33 V/m; Power Drift = 0.07 dB

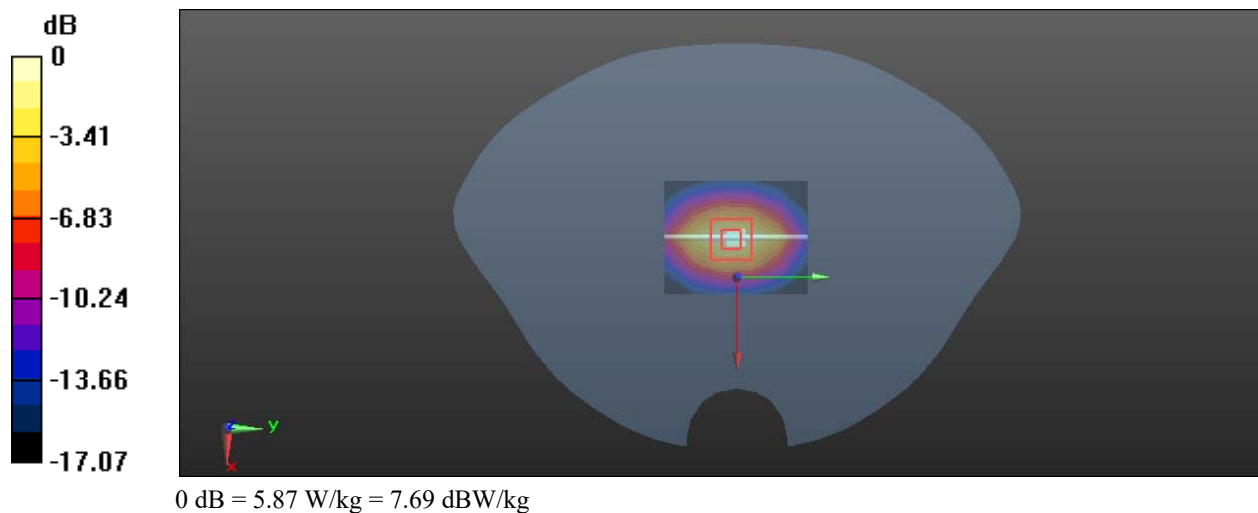
Peak SAR (extrapolated) = 7.05 W/kg

**SAR(1 g) = 3.78 W/kg; SAR(10 g) = 2.01 W/kg**

Smallest distance from peaks to all points 3 dB below = 11.2 mm

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

Maximum value of SAR (measured) = 5.87 W/kg



**System Performance 1900 MHz Head****DUT: D1900V2; Type: 1900 MHz; Serial: 5d251**

Communication System: CW (0); Frequency: 1900 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.434$  S/m;  $\epsilon_r = 40.104$ ;  $\rho = 1000$  kg/m<sup>3</sup>;  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.15, 5.15, 5.15) @1900 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

**Area Scan (5x6x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 6.10 W/kg

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

Reference Value = 55.62 V/m; Power Drift = 0.04 dB

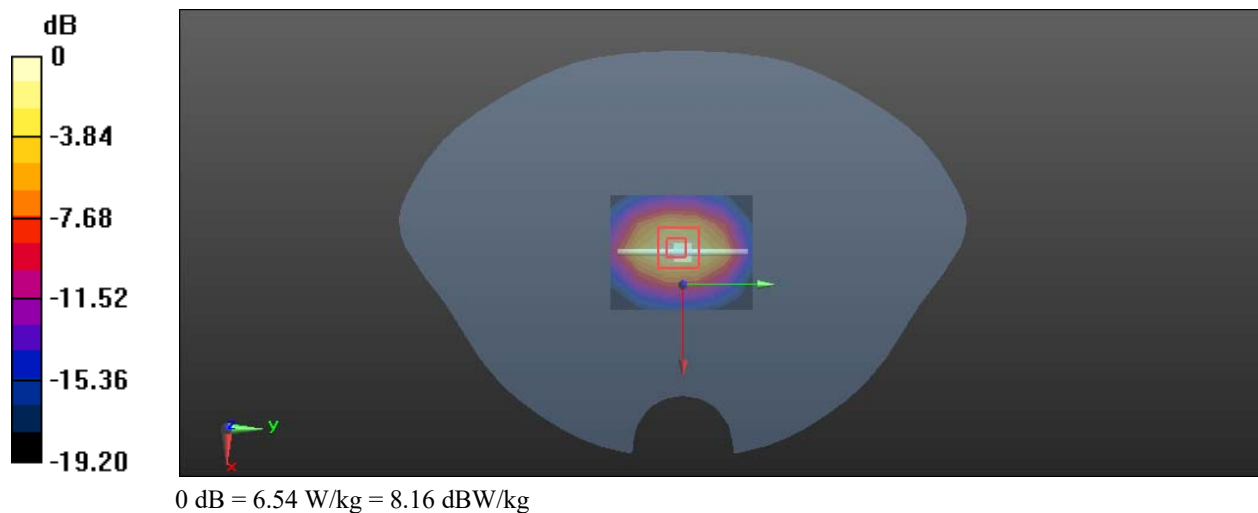
Peak SAR (extrapolated) = 8.01 W/kg

**SAR(1 g) = 4.14 W/kg; SAR(10 g) = 2.11 W/kg**

Smallest distance from peaks to all points 3 dB below = 10.1 mm

Ratio of SAR at M2 to SAR at M1 = 51%

Maximum value of SAR (measured) = 6.54 W/kg



**System Performance 2450 MHz Head****DUT: D2450V2; Type: 2450 MHz; Serial: 1102**

Communication System: CW (0); Frequency: 2450 MHz; Duty Cycle: 1:1  
Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.798$  S/m;  $\epsilon_r = 39.851$ ;  $\rho = 1000$  kg/m<sup>3</sup>;  
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(4.75, 4.75, 4.75) @2450 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

**Area Scan (6x7x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 7.00 W/kg

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

Reference Value = 57.09 V/m; Power Drift = 0.02 dB

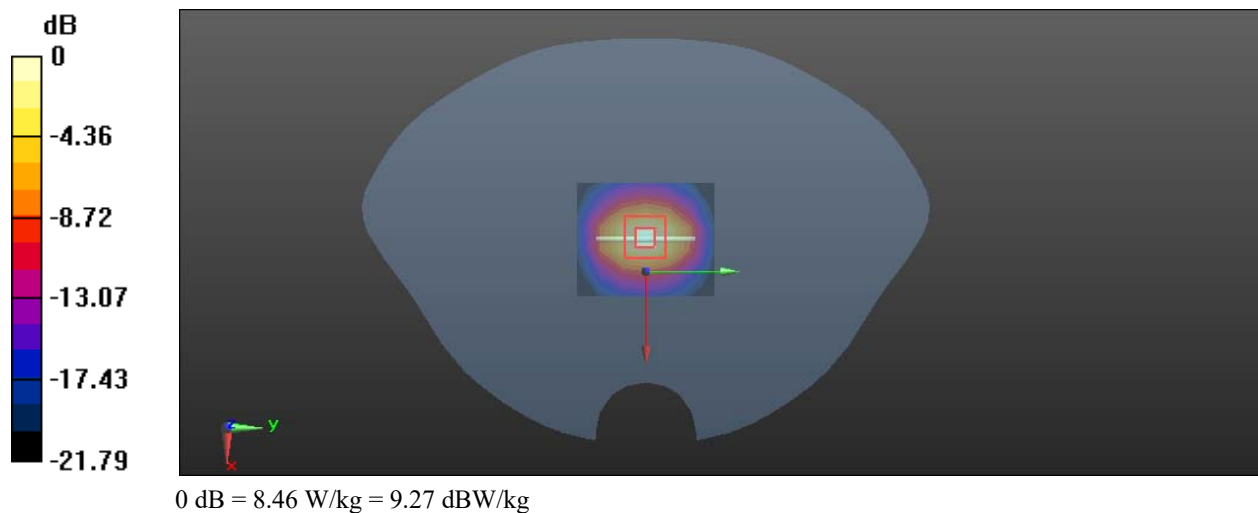
Peak SAR (extrapolated) = 10.5 W/kg

**SAR(1 g) = 5.24 W/kg; SAR(10 g) = 2.49 W/kg**

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

Ratio of SAR at M2 to SAR at M1 = 50.1%

Maximum value of SAR (measured) = 8.46 W/kg



## 5. EUT TEST STRATEGY AND METHODOLOGY

### 5.1 Test positions for Front-of-face configurations

Passive body-worn and audio accessories generally do not apply to the head SAR of PTT radios. Head SAR is measured with the front surface of the radio positioned at 2.5 cm parallel to a flat phantom. A phantom shell thickness of 2 mm is required. When the front of the radio has a contour or non-uniform surface with a variation of 1.0 cm or more, the average distance of such variations is used to establish the 2.5 cm test separation from the phantom.

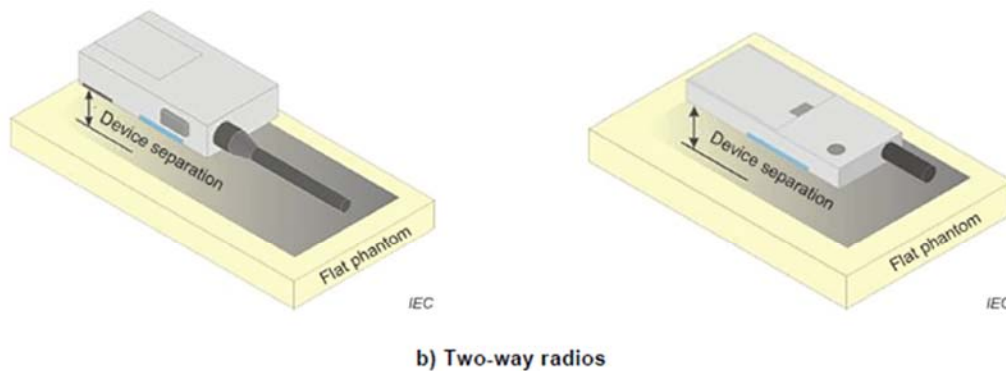


Figure 10 – Test positions for front-of-face devices

## 5.2 Test positions for body-worn and other configurations

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. If the user instructions provided by the manufacturer specify an intended use with an appropriate accessory at a certain separation distance to the body, the device shall be positioned as intended at the distance to the outer surface of the phantom that corresponds to the specified distance (Figure 5). When evaluating device SAR without a specific carry accessory, the separation distance shall not exceed 25 mm. The surface of the device pointing towards the flat phantom should be parallel to the surface of the phantom.

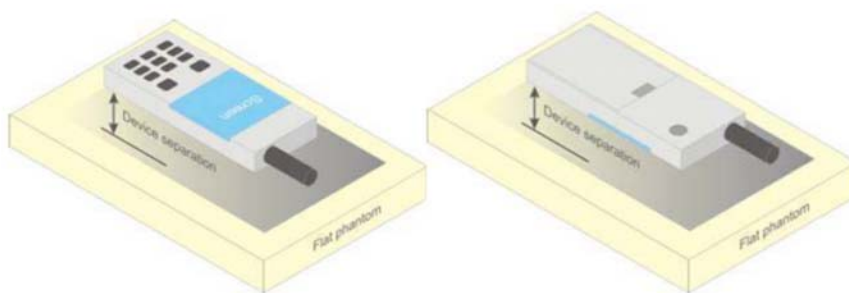


Figure 5 – Test positions for body-worn devices

## 5.3 Test Distance for SAR Evaluation

In this case the DUT(Device Under Test) is set directly against the phantom, the test distance is 0mm for Body Back mode; for Face Up mode the distance is 25mm.

## 5.4 SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or radiating structures of the EUT, the horizontal grid spacing was 15 mm x 15 mm, and the SAR distribution was determined by integrated grid of 1.5mm x 1.5mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum Measured value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the "Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were Measured to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

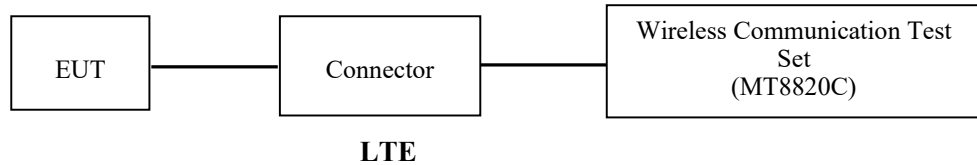
Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

## 6. CONDUCTED OUTPUT POWER MEASUREMENT

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### 6.1 Test Procedure

The RF output of the transmitter was connected to the input of the Wireless Communication Test Set through Connector.



## 6.2 Description of Test Configuration

### EUT Operation Condition:

|                                 |                                                               |
|---------------------------------|---------------------------------------------------------------|
| <b>EUT Operation Mode:</b>      | The system was configured for testing in each operation mode. |
| <b>Equipment Modifications:</b> | No                                                            |
| <b>EUT Exercise Software:</b>   | No                                                            |

The maximum power was configured per 3GPP Standard for each operation modes as below setting:

### LTE (FDD):

The following tests were conducted according to the test requirements in 3GPP TS36.101

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

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

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

| Modulation | Channel bandwidth / Transmission bandwidth (RB) |         |       |        |        |        | MPR (dB) |
|------------|-------------------------------------------------|---------|-------|--------|--------|--------|----------|
|            | 1.4 MHz                                         | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |          |
| QPSK       | > 5                                             | > 4     | > 8   | > 12   | > 16   | > 18   | ≤ 1      |
| 16 QAM     | ≤ 5                                             | ≤ 4     | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | ≤ 1      |
| 64 QAM     | > 5                                             | > 4     | > 8   | > 12   | > 16   | > 18   | ≤ 2      |

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

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

| Network Signalling value | Requirements (sub-clause) | E-UTRA Band              | Channel bandwidth (MHz) | Resources Blocks ( $N_{RB}$ ) | A-MPR (dB)    |
|--------------------------|---------------------------|--------------------------|-------------------------|-------------------------------|---------------|
| NS_01                    | 6.6.2.1.1                 | Table 5.5-1              | 1.4, 3, 5, 10, 15, 20   | Table 5.6-1                   | NA            |
| NS_03                    | 6.6.2.2.1                 | 2, 4, 10, 23, 25, 35, 36 | 3                       | > 5                           | ≤ 1           |
|                          |                           |                          | 5                       | > 6                           | ≤ 1           |
|                          |                           |                          | 10                      | > 6                           | ≤ 1           |
|                          |                           |                          | 15                      | > 8                           | ≤ 1           |
|                          |                           |                          | 20                      | > 10                          | ≤ 1           |
| NS_04                    | 6.6.2.2.2                 | 41                       | 5                       | > 6                           | ≤ 1           |
|                          |                           |                          | 10, 15, 20              | See Table 6.2.4-4             |               |
| NS_05                    | 6.6.3.3.1                 | 1                        | 10, 15, 20              | ≥ 50                          | ≤ 1           |
| NS_06                    | 6.6.2.2.3                 | 12, 13, 14, 17           | 1.4, 3, 5, 10           | Table 5.6-1                   | n/a           |
| NS_07                    | 6.6.2.2.3<br>6.6.3.3.2    | 13                       | 10                      | Table 6.2.4-2                 | Table 6.2.4-2 |
| NS_08                    | 6.6.3.3.3                 | 19                       | 10, 15                  | > 44                          | ≤ 3           |
| NS_09                    | 6.6.3.3.4                 | 21                       | 10, 15                  | > 40                          | ≤ 1           |
|                          |                           |                          |                         | > 55                          | ≤ 2           |
| NS_10                    |                           | 20                       | 15, 20                  | Table 6.2.4-3                 | Table 6.2.4-3 |
| NS_11                    | 6.6.2.2.1                 | 23 <sup>1</sup>          | 1.4, 3, 5, 10           | Table 6.2.4-5                 | Table 6.2.4-5 |
| ..                       |                           |                          |                         |                               |               |
| NS_32                    | -                         | -                        | -                       | -                             | -             |

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

### 6.3 Maximum Target Output Power

| Max Target Power(dBm) |         |        |      |
|-----------------------|---------|--------|------|
| Mode/Band             | Channel |        |      |
|                       | Low     | Middle | High |
| LTE Band 2            | 24.7    | 24.7   | 24.7 |
| LTE Band 4            | 24.8    | 24.8   | 24.8 |
| LTE Band 5            | 23.9    | 23.9   | 23.9 |
| LTE Band 7            | 24.2    | 24.2   | 24.2 |
| LTE Band 66           | 25.4    | 25.4   | 25.4 |

Note: The Maximum Target Power for LTE bands corresponds to their maximum power in QPSK modes with maximum bandwidth.

**6.4 Test Results:****LTE Band 2:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 1.4M           | QPSK            | RB1#0                      | 24.53             | 23.98                | 23.9               |
|                |                 | RB1#3                      | 24.52             | 23.93                | 23.23              |
|                |                 | RB1#5                      | <b>24.62</b>      | 23.97                | 23.21              |
|                |                 | RB3#0                      | 24.39             | 24.13                | 23.33              |
|                |                 | RB3#3                      | 24.4              | 24.2                 | 23.23              |
|                |                 | RB6#0                      | 23.31             | 23.1                 | 22.72              |
|                | 16-QAM          | RB1#0                      | 23.85             | 22.97                | 22.92              |
|                |                 | RB1#3                      | 23.84             | 23                   | 22.14              |
|                |                 | RB1#5                      | 23.96             | 23.1                 | 22.24              |
|                |                 | RB3#0                      | 23.72             | 23.36                | 22.84              |
|                |                 | RB3#3                      | 23.66             | 23.27                | 22.5               |
|                |                 | RB6#0                      | 22.25             | 22.4                 | 22.19              |
| 3M             | QPSK            | RB1#0                      | 24.34             | 23.91                | 23.65              |
|                |                 | RB1#8                      | 24.37             | 23.92                | 23.09              |
|                |                 | RB1#14                     | 24.13             | 23.74                | 23.18              |
|                |                 | RB6#0                      | 23.22             | 23.06                | 23.04              |
|                |                 | RB6#9                      | 23.33             | 23.03                | 22.92              |
|                |                 | RB15#0                     | 23.18             | 22.97                | 23.07              |
|                | 16-QAM          | RB1#0                      | 23.54             | 22.84                | 22.76              |
|                |                 | RB1#8                      | 23.82             | 22.86                | 22.92              |
|                |                 | RB1#14                     | 23.66             | 22.81                | 22.12              |
|                |                 | RB6#0                      | 22.49             | 22.15                | 22.03              |
|                |                 | RB6#9                      | 22.46             | 22.02                | 22.12              |
|                |                 | RB15#0                     | 22.31             | 22.15                | 22.03              |
| 5M             | QPSK            | RB1#0                      | 23.61             | 23.99                | 23.89              |
|                |                 | RB1#13                     | 23.23             | 23.98                | 23.89              |
|                |                 | RB1#24                     | 23.16             | 23.86                | 23.31              |
|                |                 | RB15#0                     | 23                | 23.07                | 22.9               |
|                |                 | RB15#10                    | 23.07             | 23.19                | 22.86              |
|                |                 | RB25#0                     | 22.96             | 22.98                | 22.89              |
|                | 16-QAM          | RB1#0                      | 22.78             | 23.22                | 22.92              |
|                |                 | RB1#13                     | 22.78             | 23.04                | 22.95              |
|                |                 | RB1#24                     | 22.21             | 23.21                | 22.41              |
|                |                 | RB15#0                     | 21.94             | 22.23                | 21.92              |
|                |                 | RB15#10                    | 22.07             | 22.01                | 22.13              |
|                |                 | RB25#0                     | 22.03             | 21.98                | 21.95              |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 10M            | QPSK            | RB1#0                      | 24.1              | 23.86                | 23.76              |
|                |                 | RB1#25                     | 24.16             | 24.29                | 23.88              |
|                |                 | RB1#49                     | 23.91             | 24.22                | 23.36              |
|                |                 | RB25#0                     | 22.91             | 23.17                | 22.92              |
|                |                 | RB25#25                    | 22.84             | 23.13                | 22.86              |
|                |                 | RB50#0                     | 22.8              | 22.94                | 22.77              |
|                | 16-QAM          | RB1#0                      | 23.44             | 23.11                | 23.12              |
|                |                 | RB1#25                     | 23.33             | 23.07                | 23.23              |
|                |                 | RB1#49                     | 23.37             | 23.23                | 22.59              |
|                |                 | RB15#0                     | 22.03             | 21.93                | 21.49              |
|                |                 | RB15#25                    | 22.05             | 21.97                | 21.82              |
|                |                 | RB25#0                     | 23.22             | 23.23                | 22.95              |
| 15M            | QPSK            | RB1#0                      | 24.35             | 24.19                | 24.1               |
|                |                 | RB1#38                     | 24.48             | 24.27                | 23.74              |
|                |                 | RB1#74                     | 24.07             | 24.37                | 23.48              |
|                |                 | RB36#0                     | 23.44             | 23.15                | 22.71              |
|                |                 | RB36#39                    | 23.16             | 23.38                | 22.81              |
|                |                 | RB75#0                     | 23.19             | 23.1                 | 22.78              |
|                | 16-QAM          | RB1#0                      | 23.67             | 23.05                | 23.33              |
|                |                 | RB1#38                     | 23.84             | 23.27                | 23.08              |
|                |                 | RB1#74                     | 23.46             | 23.61                | 22.72              |
|                |                 | RB15#0                     | 23.45             | 22.86                | 22.87              |
|                |                 | RB15#39                    | 23.04             | 23.57                | 23.12              |
|                |                 | RB25#0                     | 22.48             | 22.45                | 22.18              |
| 20M            | QPSK            | RB1#0                      | 24.26             | 24.22                | 24.09              |
|                |                 | RB1#50                     | 24.09             | 23.94                | 23.95              |
|                |                 | RB1#99                     | 23.87             | 24.08                | 23.65              |
|                |                 | RB50#0                     | 23.42             | 23.57                | 23.28              |
|                |                 | RB50#50                    | 23.35             | 23.26                | 22.92              |
|                |                 | RB100#0                    | 23.14             | 22.88                | 22.75              |
|                | 16-QAM          | RB1#0                      | 23.41             | 23                   | 23.48              |
|                |                 | RB1#50                     | 23.49             | 23.37                | 23.34              |
|                |                 | RB1#99                     | 22.98             | 23.21                | 22.65              |
|                |                 | RB15#0                     | 23.41             | 22.64                | 22.98              |
|                |                 | RB15#50                    | 22.71             | 23.04                | 23.05              |
|                |                 | RB25#0                     | 22.32             | 22.23                | 22.14              |

**LTE Band 4:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 1.4M           | QPSK            | RB1#0                      | 24.38             | 24.17                | 23.56              |
|                |                 | RB1#3                      | 24.28             | 24.24                | 23.52              |
|                |                 | RB1#5                      | 24.33             | 24.07                | 23.48              |
|                |                 | RB3#0                      | 24.22             | 24.03                | 23.61              |
|                |                 | RB3#3                      | 24.15             | 24.05                | 23.6               |
|                |                 | RB6#0                      | 23.23             | 23.31                | 22.81              |
|                | 16-QAM          | RB1#0                      | 23.53             | 23.03                | 22.58              |
|                |                 | RB1#3                      | 23.53             | 23.18                | 22.59              |
|                |                 | RB1#5                      | 23.57             | 23.14                | 22.48              |
|                |                 | RB3#0                      | 23.6              | 23.48                | 22.85              |
|                |                 | RB3#3                      | 23.49             | 23.44                | 22.95              |
|                |                 | RB6#0                      | 22.2              | 22.56                | 21.93              |
| 3M             | QPSK            | RB1#0                      | 24.3              | 24.15                | 23.36              |
|                |                 | RB1#8                      | 24.16             | 24.14                | 23.37              |
|                |                 | RB1#14                     | 24.27             | 24.13                | 23.35              |
|                |                 | RB6#0                      | 23.2              | 23.14                | 23.05              |
|                |                 | RB6#9                      | 23.07             | 23.36                | 22.94              |
|                |                 | RB15#0                     | 23.14             | 23.3                 | 22.84              |
|                | 16-QAM          | RB1#0                      | 23.41             | 22.99                | 22.37              |
|                |                 | RB1#8                      | 23.53             | 23.08                | 22.48              |
|                |                 | RB1#14                     | 23.59             | 23.07                | 22.32              |
|                |                 | RB6#0                      | 22.34             | 22.32                | 21.5               |
|                |                 | RB6#9                      | 22.42             | 22.39                | 21.59              |
|                |                 | RB15#0                     | 22.18             | 22.22                | 21.6               |
| 5M             | QPSK            | RB1#0                      | 24.37             | 24.06                | 23.71              |
|                |                 | RB1#13                     | 24.26             | 24.2                 | 23.5               |
|                |                 | RB1#24                     | 24.21             | 24.23                | 23.53              |
|                |                 | RB15#0                     | 23.25             | 23.15                | 23.25              |
|                |                 | RB15#10                    | 23.13             | 23.25                | 22.98              |
|                |                 | RB25#0                     | 23.15             | 23.17                | 22.84              |
|                | 16-QAM          | RB1#0                      | 23.99             | 23.33                | 22.74              |
|                |                 | RB1#13                     | 23.84             | 23.38                | 22.7               |
|                |                 | RB1#24                     | 23.97             | 23.35                | 22.66              |
|                |                 | RB15#0                     | 22.44             | 22.35                | 21.59              |
|                |                 | RB15#10                    | 22.33             | 22.47                | 21.62              |
|                |                 | RB25#0                     | 22.24             | 22.39                | 21.62              |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 10M            | QPSK            | RB1#0                      | 24.5              | 23.74                | 23.51              |
|                |                 | RB1#25                     | 24.21             | 23.98                | 23.28              |
|                |                 | RB1#49                     | 24.18             | 23.98                | 23.25              |
|                |                 | RB25#0                     | 22.96             | 22.94                | 22.94              |
|                |                 | RB25#25                    | 23.15             | 23.12                | 22.91              |
|                |                 | RB50#0                     | 22.93             | 22.88                | 22.85              |
|                | 16-QAM          | RB1#0                      | 23.49             | 22.64                | 22.52              |
|                |                 | RB1#25                     | 23.37             | 23.03                | 22.47              |
|                |                 | RB1#49                     | 23.49             | 22.96                | 22.31              |
|                |                 | RB15#0                     | 22.16             | 22.01                | 21.47              |
|                |                 | RB15#25                    | 22                | 22.23                | 21.5               |
|                |                 | RB25#0                     | 23.55             | 23.59                | 23.08              |
| 15M            | QPSK            | RB1#0                      | <b>24.68</b>      | 23.97                | 24.15              |
|                |                 | RB1#38                     | 24.29             | 24.36                | 23.71              |
|                |                 | RB1#74                     | 24.24             | 24.32                | 23.5               |
|                |                 | RB36#0                     | 23.22             | 23.03                | 22.98              |
|                |                 | RB36#39                    | 23.14             | 23.32                | 22.88              |
|                |                 | RB75#0                     | 23                | 23.18                | 22.87              |
|                | 16-QAM          | RB1#0                      | 23.7              | 23.19                | 23.2               |
|                |                 | RB1#38                     | 23.59             | 23.45                | 22.69              |
|                |                 | RB1#74                     | 23.56             | 23.44                | 22.6               |
|                |                 | RB15#0                     | 23.55             | 23.49                | 23.29              |
|                |                 | RB15#39                    | 23.47             | 23.7                 | 22.79              |
|                |                 | RB25#0                     | 22.68             | 22.75                | 22.44              |
| 20M            | QPSK            | RB1#0                      | 24.2              | 23.82                | 24.12              |
|                |                 | RB1#50                     | 24.07             | 24.31                | 23.83              |
|                |                 | RB1#99                     | 24.04             | 23.87                | 23.39              |
|                |                 | RB50#0                     | 23.13             | 23.02                | 22.93              |
|                |                 | RB50#50                    | 23.2              | 23.39                | 22.92              |
|                |                 | RB100#0                    | 23.14             | 23.29                | 22.88              |
|                | 16-QAM          | RB1#0                      | 23.66             | 23.43                | 23.9               |
|                |                 | RB1#50                     | 23.58             | 23.59                | 23.51              |
|                |                 | RB1#99                     | 23.46             | 23.33                | 23.14              |
|                |                 | RB15#0                     | 23.48             | 23.21                | 23.63              |
|                |                 | RB15#50                    | 23.38             | 23.32                | 22.85              |
|                |                 | RB25#0                     | 22.71             | 22.74                | 22.44              |

**LTE Band 5:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 1.4M           | QPSK            | RB1#0                      | 23.39             | 23.45                | 23.04              |
|                |                 | RB1#3                      | 23.22             | 23.38                | 22.90              |
|                |                 | RB1#5                      | 23.32             | 23.58                | 22.93              |
|                |                 | RB3#0                      | 23.49             | 23.52                | 22.88              |
|                |                 | RB3#3                      | 23.38             | 23.41                | 22.75              |
|                |                 | RB6#0                      | 22.47             | 22.44                | 21.91              |
|                | 16-QAM          | RB1#0                      | 22.30             | 22.25                | 22.32              |
|                |                 | RB1#3                      | 22.41             | 22.46                | 22.34              |
|                |                 | RB1#5                      | 22.40             | 22.57                | 22.24              |
|                |                 | RB3#0                      | 22.63             | 22.75                | 22.19              |
|                |                 | RB3#3                      | 22.69             | 22.71                | 22.17              |
|                |                 | RB6#0                      | 21.94             | 21.84                | 21.05              |
| 3M             | QPSK            | RB1#0                      | 23.52             | 23.33                | 23.07              |
|                |                 | RB1#8                      | 23.58             | 23.42                | 22.91              |
|                |                 | RB1#14                     | 23.66             | 23.43                | 22.83              |
|                |                 | RB6#0                      | 22.79             | 22.57                | 22.03              |
|                |                 | RB6#9                      | 22.74             | 22.57                | 22.02              |
|                |                 | RB15#0                     | 22.34             | 22.46                | 21.95              |
|                | 16-QAM          | RB1#0                      | 23.08             | 22.31                | 21.99              |
|                |                 | RB1#8                      | 23.20             | 22.35                | 21.90              |
|                |                 | RB1#14                     | 22.85             | 22.42                | 21.88              |
|                |                 | RB6#0                      | 22.02             | 21.66                | 21.31              |
|                |                 | RB6#9                      | 21.88             | 21.84                | 21.36              |
|                |                 | RB15#0                     | 21.78             | 21.76                | 21.39              |
| 5M             | QPSK            | RB1#0                      | <b>23.83</b>      | 23.55                | 23.47              |
|                |                 | RB1#13                     | 23.56             | 23.56                | 23.17              |
|                |                 | RB1#24                     | 23.46             | 23.69                | 22.99              |
|                |                 | RB15#0                     | 22.63             | 22.53                | 22.16              |
|                |                 | RB15#10                    | 22.73             | 22.74                | 22.27              |
|                |                 | RB25#0                     | 22.44             | 22.71                | 22.20              |
|                | 16-QAM          | RB1#0                      | 22.96             | 22.63                | 23.12              |
|                |                 | RB1#13                     | 22.68             | 22.83                | 22.75              |
|                |                 | RB1#24                     | 22.71             | 22.73                | 22.66              |
|                |                 | RB15#0                     | 21.96             | 21.81                | 21.47              |
|                |                 | RB15#10                    | 21.76             | 21.89                | 21.36              |
|                |                 | RB25#0                     | 21.76             | 21.84                | 21.49              |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 10M            | QPSK            | RB1#0                      | 23.55             | 23.57                | 23.72              |
|                |                 | RB1#25                     | 23.37             | 23.58                | 23.76              |
|                |                 | RB1#49                     | 23.62             | 23.74                | 23.79              |
|                |                 | RB25#0                     | 22.77             | 22.86                | 22.73              |
|                |                 | RB25#25                    | 22.93             | 23.23                | 22.85              |
|                |                 | RB50#0                     | 22.49             | 22.66                | 22.42              |
|                | 16-QAM          | RB1#0                      | 22.61             | 22.48                | 23.08              |
|                |                 | RB1#25                     | 22.35             | 22.52                | 22.85              |
|                |                 | RB1#49                     | 22.38             | 22.78                | 22.59              |
|                |                 | RB15#0                     | 21.60             | 21.69                | 21.64              |
|                |                 | RB15#25                    | 21.64             | 21.71                | 21.46              |
|                |                 | RB25#0                     | 22.74             | 22.87                | 22.69              |

**LTE Band 7:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 5M             | QPSK            | RB1#0                      | 23.83             | 24.08                | 23.65              |
|                |                 | RB1#13                     | 23.59             | 23.82                | 23.37              |
|                |                 | RB1#24                     | 23.48             | 23.64                | 23.26              |
|                |                 | RB15#0                     | 22.87             | 23.01                | 22.63              |
|                |                 | RB15#10                    | 22.94             | 23.04                | 22.76              |
|                |                 | RB25#0                     | 22.79             | 23.02                | 22.63              |
|                | 16-QAM          | RB1#0                      | 23.57             | 23.29                | 22.81              |
|                |                 | RB1#13                     | 23.59             | 23.05                | 22.66              |
|                |                 | RB1#24                     | 23.46             | 23.01                | 22.52              |
|                |                 | RB15#0                     | 22.01             | 22.19                | 21.86              |
|                |                 | RB15#10                    | 22.01             | 22.29                | 22                 |
|                |                 | RB25#0                     | 21.88             | 22.22                | 21.91              |
| 10M            | QPSK            | RB1#0                      | 23.9              | 23.82                | 23.4               |
|                |                 | RB1#25                     | 23.66             | 23.64                | 23.45              |
|                |                 | RB1#49                     | 23.64             | 23.23                | 23.12              |
|                |                 | RB25#0                     | 22.57             | 22.96                | 22.71              |
|                |                 | RB25#25                    | 22.6              | 22.92                | 22.56              |
|                |                 | RB50#0                     | 22.38             | 22.8                 | 22.63              |
|                | 16-QAM          | RB1#0                      | 23.36             | 22.96                | 22.7               |
|                |                 | RB1#25                     | 22.85             | 22.84                | 22.61              |
|                |                 | RB1#49                     | 23.2              | 22.52                | 22.32              |
|                |                 | RB15#0                     | 21.82             | 22.08                | 21.85              |
|                |                 | RB15#25                    | 21.81             | 22.04                | 21.94              |
|                |                 | RB25#0                     | 23.16             | 23.49                | 23.16              |
| 15M            | QPSK            | RB1#0                      | 23.94             | <b>24.13</b>         | 23.69              |
|                |                 | RB1#38                     | 23.57             | 23.7                 | 23.69              |
|                |                 | RB1#74                     | 23.94             | 23.41                | 23.51              |
|                |                 | RB36#0                     | 22.76             | 23.1                 | 22.89              |
|                |                 | RB36#39                    | 22.75             | 23.08                | 22.92              |
|                |                 | RB75#0                     | 22.71             | 23.12                | 22.68              |
|                | 16-QAM          | RB1#0                      | 23.09             | 23.3                 | 23.2               |
|                |                 | RB1#38                     | 22.83             | 23.15                | 23.33              |
|                |                 | RB1#74                     | 23.21             | 22.72                | 22.92              |
|                |                 | RB15#0                     | 23.39             | 23.48                | 22.83              |
|                |                 | RB15#39                    | 23.24             | 23.61                | 23.02              |
|                |                 | RB25#0                     | 22.23             | 22.87                | 22.21              |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 20M            | QPSK            | RB1#0                      | 23.96             | 24.01                | 23.66              |
|                |                 | RB1#50                     | 23.55             | 23.66                | 23.56              |
|                |                 | RB1#99                     | 23.88             | 23.09                | 23.05              |
|                |                 | RB50#0                     | 22.65             | 23.11                | 22.71              |
|                |                 | RB50#50                    | 22.81             | 23.24                | 22.92              |
|                |                 | RB100#0                    | 22.56             | 22.97                | 22.66              |
|                | 16-QAM          | RB1#0                      | 23.1              | 23.74                | 23.1               |
|                |                 | RB1#50                     | 23.05             | 23.32                | 23.56              |
|                |                 | RB1#99                     | 23.49             | 22.81                | 22.94              |
|                |                 | RB15#0                     | 23.35             | 23.24                | 22.69              |
|                |                 | RB15#50                    | 23.24             | 23.66                | 22.92              |
|                |                 | RB25#0                     | 22.2              | 22.7                 | 22.27              |

**LTE Band 66:**

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 1.4M           | QPSK            | RB1#0                      | 25.03             | 23.99                | 24.49              |
|                |                 | RB1#3                      | 24.93             | 23.94                | 24.36              |
|                |                 | RB1#5                      | 24.98             | 24.01                | 24.15              |
|                |                 | RB3#0                      | 24.98             | 23.97                | 23.73              |
|                |                 | RB3#3                      | 24.97             | 24.07                | 23.59              |
|                |                 | RB6#0                      | 23.93             | 23.47                | 23.43              |
|                | 16-QAM          | RB1#0                      | 23.89             | 22.93                | 22.21              |
|                |                 | RB1#3                      | 23.87             | 22.94                | 22.25              |
|                |                 | RB1#5                      | 23.93             | 23.07                | 22.18              |
|                |                 | RB3#0                      | 24.13             | 23.23                | 22.64              |
|                |                 | RB3#3                      | 24.28             | 23.32                | 22.50              |
|                |                 | RB6#0                      | 24.13             | 23.36                | 22.47              |
| 3M             | QPSK            | RB1#0                      | 24.65             | 24.01                | 23.86              |
|                |                 | RB1#8                      | 24.79             | 23.99                | 23.59              |
|                |                 | RB1#14                     | 24.53             | 23.98                | 23.44              |
|                |                 | RB6#0                      | 23.86             | 23.88                | 23.50              |
|                |                 | RB6#9                      | 23.84             | 23.78                | 23.54              |
|                |                 | RB15#0                     | 23.79             | 23.41                | 23.66              |
|                | 16-QAM          | RB1#0                      | 23.75             | 23.25                | 22.82              |
|                |                 | RB1#8                      | 23.72             | 23.09                | 23.00              |
|                |                 | RB1#14                     | 23.55             | 23.22                | 22.59              |
|                |                 | RB6#0                      | 22.81             | 22.30                | 21.59              |
|                |                 | RB6#9                      | 22.76             | 22.49                | 21.60              |
|                |                 | RB15#0                     | 22.74             | 22.44                | 21.61              |
| 5M             | QPSK            | RB1#0                      | 24.79             | 24.16                | 23.68              |
|                |                 | RB1#13                     | 24.76             | 24.13                | 24.49              |
|                |                 | RB1#24                     | 24.77             | 24.29                | 24.28              |
|                |                 | RB15#0                     | 23.78             | 23.66                | 23.46              |
|                |                 | RB15#10                    | 23.82             | 23.59                | 23.58              |
|                |                 | RB25#0                     | 23.65             | 23.41                | 23.58              |
|                | 16-QAM          | RB1#0                      | 24.01             | 23.37                | 23.35              |
|                |                 | RB1#13                     | 23.71             | 23.32                | 23.28              |
|                |                 | RB1#24                     | 23.92             | 23.28                | 22.93              |
|                |                 | RB15#0                     | 22.80             | 22.45                | 21.51              |
|                |                 | RB15#10                    | 22.68             | 22.31                | 21.63              |
|                |                 | RB25#0                     | 22.76             | 22.40                | 21.64              |

| Test Bandwidth | Test Modulation | Resource Block & RB offset | Low Channel (dBm) | Middle Channel (dBm) | High Channel (dBm) |
|----------------|-----------------|----------------------------|-------------------|----------------------|--------------------|
| 10M            | QPSK            | RB1#0                      | 24.80             | 24.14                | 24.50              |
|                |                 | RB1#25                     | 24.51             | 23.92                | 24.57              |
|                |                 | RB1#49                     | 24.54             | 24.08                | 24.65              |
|                |                 | RB25#0                     | 23.50             | 23.67                | 23.57              |
|                |                 | RB25#25                    | 23.43             | 23.53                | 23.64              |
|                |                 | RB50#0                     | 23.44             | 23.49                | 23.46              |
|                | 16-QAM          | RB1#0                      | 23.61             | 23.23                | 22.72              |
|                |                 | RB1#25                     | 23.42             | 23.06                | 22.74              |
|                |                 | RB1#49                     | 23.53             | 23.13                | 22.97              |
|                |                 | RB15#0                     | 22.42             | 22.18                | 21.29              |
|                |                 | RB15#25                    | 22.60             | 22.30                | 21.37              |
|                |                 | RB25#0                     | 23.78             | 23.39                | 22.72              |
| 15M            | QPSK            | RB1#0                      | <b>25.34</b>      | 24.49                | 23.90              |
|                |                 | RB1#38                     | 24.95             | 24.36                | 23.46              |
|                |                 | RB1#74                     | 25.12             | 24.49                | 23.87              |
|                |                 | RB36#0                     | 23.83             | 23.61                | 23.77              |
|                |                 | RB36#39                    | 23.52             | 23.49                | 23.68              |
|                |                 | RB75#0                     | 23.60             | 23.48                | 23.51              |
|                | 16-QAM          | RB1#0                      | 24.51             | 23.57                | 22.72              |
|                |                 | RB1#38                     | 24.09             | 23.39                | 22.55              |
|                |                 | RB1#74                     | 24.33             | 23.45                | 22.61              |
|                |                 | RB15#0                     | 23.96             | 23.98                | 23.08              |
|                |                 | RB15#39                    | 24.01             | 23.70                | 22.85              |
|                |                 | RB25#0                     | 23.80             | 23.43                | 22.59              |
| 20M            | QPSK            | RB1#0                      | 24.99             | 25.18                | 25.31              |
|                |                 | RB1#50                     | 24.69             | 24.75                | 24.84              |
|                |                 | RB1#99                     | 24.78             | 24.83                | 24.93              |
|                |                 | RB50#0                     | 24.02             | 24.13                | 24.05              |
|                |                 | RB50#50                    | 23.84             | 23.96                | 23.87              |
|                |                 | RB100#0                    | 23.57             | 23.45                | 23.44              |
|                | 16-QAM          | RB1#0                      | 24.16             | 23.80                | 23.54              |
|                |                 | RB1#50                     | 24.06             | 23.50                | 23.09              |
|                |                 | RB1#99                     | 24.09             | 23.43                | 23.14              |
|                |                 | RB15#0                     | 24.13             | 23.84                | 23.27              |
|                |                 | RB15#50                    | 23.94             | 23.69                | 23.10              |
|                |                 | RB25#0                     | 23.77             | 23.24                | 22.71              |

## 7. Standalone SAR test exclusion considerations

### Antennas Location:



8. SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

8.1 SAR Test Data

Environmental Conditions

|                    |            |            |            |            |
|--------------------|------------|------------|------------|------------|
| Temperature:       | 21.9-22.8℃ | 22.2-23.1℃ | 22.4-23.2℃ | 21.5-22.9℃ |
| Relative Humidity: | 42%        | 44%        | 43%        | 45 %       |
| ATM Pressure:      | 99.9kPa    | 99.2kPa    | 99.6kPa    | 99.8kPa    |
| Test Date:         | 2025/07/29 | 2025/07/30 | 2025/07/31 | 2025/08/01 |

Testing was performed by Wen Chen, Aixlee Li, Ken Zong.

**LTE Band 2:**

| EUT Position                   | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) |           |            |      |
|--------------------------------|-----------------|-----------------|-----------|------------------------|------------------------|---------------|-----------|------------|------|
|                                |                 |                 |           |                        |                        | Scaled Factor | Meas. SAR | Scaled SAR | Plot |
| Face Up (25mm)                 | 1860            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1880            | 20              | 1RB       | 24.22                  | 24.7                   | 1.117         | 0.232     | 0.26       | 1#   |
|                                | 1900            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1880            | 20              | 50%RB     | 23.57                  | 24.7                   | 1.297         | 0.194     | 0.25       | /    |
| Body Back With Belt Clip (0mm) | 1860            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1880            | 20              | 1RB       | 24.22                  | 24.7                   | 1.117         | 0.214     | 0.24       | 2#   |
|                                | 1900            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1880            | 20              | 50%RB     | 23.57                  | 24.7                   | 1.297         | 0.188     | 0.24       | /    |

*The data above was performed on 2025/07/31.*

**LTE Band 5:**

| EUT Position                   | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) |           |            |      |
|--------------------------------|-----------------|-----------------|-----------|------------------------|------------------------|---------------|-----------|------------|------|
|                                |                 |                 |           |                        |                        | Scaled Factor | Meas. SAR | Scaled SAR | Plot |
| Face Up (25mm)                 | 829             | 10              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 836.5           | 10              | 1RB       | 23.74                  | 23.9                   | 1.038         | 0.195     | 0.20       | 3#   |
|                                | 844             | 10              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 836.5           | 10              | 50%RB     | 23.23                  | 23.9                   | 1.167         | 0.17      | 0.20       | /    |
| Body Back With Belt Clip (0mm) | 829             | 10              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 836.5           | 10              | 1RB       | 23.74                  | 23.9                   | 1.038         | 0.503     | 0.52       | 4#   |
|                                | 844             | 10              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 836.5           | 10              | 50%RB     | 23.23                  | 23.9                   | 1.167         | 0.449     | 0.52       | /    |

*The data above was performed on 2025/07/29.*

**LTE Band 7:**

| EUT Position                   | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) |           |            |      |
|--------------------------------|-----------------|-----------------|-----------|------------------------|------------------------|---------------|-----------|------------|------|
|                                |                 |                 |           |                        |                        | Scaled Factor | Meas. SAR | Scaled SAR | Plot |
| Face Up (25mm)                 | 2510            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 2535            | 20              | 1RB       | 24.01                  | 24.2                   | 1.045         | 0.343     | 0.36       | 5#   |
|                                | 2560            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 2535            | 20              | 50%RB     | 23.24                  | 24.2                   | 1.247         | 0.285     | 0.36       | /    |
| Body Back With Belt Clip (0mm) | 2510            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 2535            | 20              | 1RB       | 24.01                  | 24.2                   | 1.045         | 0.478     | 0.50       | 6#   |
|                                | 2560            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 2535            | 20              | 50%RB     | 23.24                  | 24.2                   | 1.247         | 0.388     | 0.48       | /    |

*The data above was performed on 2025/08/01.*

**LTE Band 66&4:**

| EUT Position                   | Frequency (MHz) | Bandwidth (MHz) | Test Mode | Max. Meas. Power (dBm) | Max. Rated Power (dBm) | 1g SAR (W/kg) |           |            |      |
|--------------------------------|-----------------|-----------------|-----------|------------------------|------------------------|---------------|-----------|------------|------|
|                                |                 |                 |           |                        |                        | Scaled Factor | Meas. SAR | Scaled SAR | Plot |
| Face Up (25mm)                 | 1720            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1745            | 20              | 1RB       | 25.18                  | 25.4                   | 1.052         | 0.314     | 0.33       | 7#   |
|                                | 1770            | 20              | 1RB       | /                      | /                      | /             | /         | /          | /    |
|                                | 1745            | 20              | 50%RB     | 24.13                  | 25.4                   | 1.34          | 0.229     | 0.31       | /    |
| Body Back With Belt Clip (0mm) | 1720            | 20              | 1RB       | 24.99                  | 25.4                   | 1.099         | 1.06      | 1.16       | /    |
|                                | 1745            | 20              | 1RB       | 25.18                  | 25.4                   | 1.052         | 1.13      | 1.19       | /    |
|                                | 1770            | 20              | 1RB       | 25.31                  | 25.4                   | 1.021         | 1.17      | 1.19       | 8#   |
|                                | 1720            | 20              | 50%RB     | 24.02                  | 25.4                   | 1.374         | 0.841     | 1.16       | /    |
|                                | 1745            | 20              | 50%RB     | 24.13                  | 25.4                   | 1.34          | 0.823     | 1.1        | /    |
|                                | 1770            | 20              | 50%RB     | 24.05                  | 25.4                   | 1.365         | 0.857     | 1.17       | /    |
|                                | 1745            | 20              | 100%RB    | 23.45                  | 25.4                   | 1.567         | 0.748     | 1.17       | /    |

*The data above was performed on 2025/07/30.*

*Note: The LTE Band4 is a subset of LTE Band 66, with the same modulation type, and the rated output power of LTE band 4 is not greater than LTE band 66, so LTE band 4 does not need to be tested.*

**Note:**

1. When the 1-g SAR is  $\leq 0.8\text{W/Kg}$ , testing for other channels are optional.
2. SAR for LTE band exposure configurations is measured according to the procedures of KDB 941225 D05 SAR for LTE Devices v02r05.
3. KDB 941225 D05-SAR for higher order modulation is required only when the highest maximum output power for the configuration in the higher order modulation is  $> 0.5\text{ dB}$  higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is  $> 1.45\text{ W/kg}$
4. KDB 941225 D05-For QPSK with 100% RB allocation, when the reported SAR measured for the Highest output power channel is  $< 1.45\text{ W/kg}$ , tests for the remaining required test channels are optional.
5. KDB 941225 D05- For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are  $\leq 0.8\text{ W/kg}$ .
6. KDB 941225 D05- 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 offset the upper edge, middle and lower edge of each required test channel.
7. KDB 941225 D05- other channel bandwidths SAR test is required when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is  $> 0.5\text{ dB}$  higher than the equivalent

channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is  $> 1.45 \text{ W/kg}$ .

## 9. Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results

- 1) Repeated measurement is not required when the original highest measured SAR is  $< 0.80$  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  $> 1.20$ .

*Note: The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.*

### The Highest Measured SAR Configuration in Each Frequency Band

#### Head(Face Up)

| SAR probe calibration point | Frequency Band | Freq.(MHz) | EUT Position | Meas. SAR (W/kg) |          | Largest to Smallest SAR Ratio |
|-----------------------------|----------------|------------|--------------|------------------|----------|-------------------------------|
|                             |                |            |              | Original         | Repeated |                               |
| /                           | /              | /          | /            | /                | /        | /                             |

#### Body

| SAR probe calibration point | Frequency Band | Freq.(MHz) | EUT Position             | Meas. SAR (W/kg) |          | Largest to Smallest SAR Ratio |
|-----------------------------|----------------|------------|--------------------------|------------------|----------|-------------------------------|
|                             |                |            |                          | Original         | Repeated |                               |
| 1750 MHz                    | LTE Band 66&4  | 1770       | Body Back With Belt Clip | 1.17             | 1.15     | 1.02                          |

#### Note:

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not  $> 1.20$ .
2. The measured SAR results **do not** have to be scaled to the maximum tune-up tolerance to determine if repeated measurements are required.
3. 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.

## 10. DUT HOLDER PERTURBATIONS

In accordance with TCB workshop October 2016:

- 1) SAR perturbation due to test device holders, depending on antenna locations, buttons locations on phones or device, form factor (e.g. dongles etc.), the measured SAR could be influenced by the relative positions of the test device and its holder
- 2) SAR measurement standards have included protocols to evaluate this with a flat phantom, with and without the device holder
- 3) When the highest reported SAR of an antenna is  $> 1.2$  W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands in the same exact device and holder positions used for head and body SAR measurements; i.e. same device/button locations in the holder

Per IEEE 1528: 2013/Annex E/E.4.1.1:Device holder perturbation tolerance for a specific test device: Type B

When it is unknown if a device holder perturbs the fields of a test device, the SAR uncertainty shall be assessed with a flat phantom (see Clause 5) by comparing the SAR with and without the device holder according to the following tests:

The SAR tolerance for device holder disturbance is computed using Equation (E.21) and entered in the corresponding row of the appropriate uncertainty table with an assumed rectangular probability distribution and  $\nu_i = \infty$  degrees of freedom:

$$SAR_{\text{tolerance}}[\%] = 100 \times \left( \frac{SAR_{w/\text{holder}} - SAR_{w/o \text{ holder}}}{SAR_{w/o \text{ holder}}} \right) \quad (\text{E.21})$$

### The Highest Measured SAR Configuration among all applicable Frequency Band

| Frequency Band | Freq.(MHz) | EUT Position | Meas. SAR (W/kg) |                | The Device holder perturbation uncertainty |
|----------------|------------|--------------|------------------|----------------|--------------------------------------------|
|                |            |              | With holder      | Without holder |                                            |
| /              | /          | /            | /                | /              | /                                          |

## **11. SAR SIMULTANEOUS TRANSMISSION DESCRIPTION**

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### **11.1 Simultaneous Transmission:**

*Note: There is no multiple transmitters for the product, so simultaneous transmission need not to evaluate.*

## 12. SAR Plots

**Plot 1#: LTE Band 2 1RB Mid \_ Face Up**

**DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.428$  S/m;  $\epsilon_r = 40.247$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.15, 5.15, 5.15) @ 1880 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.262 W/kg

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

Reference Value = 8.656 V/m; Power Drift = -0.18 dB

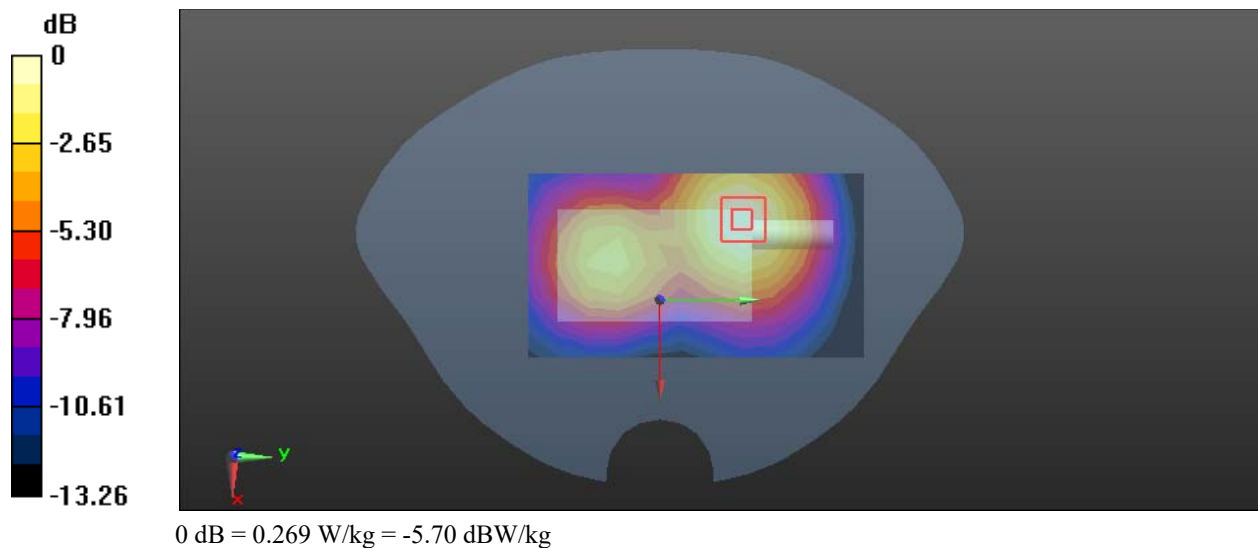
Peak SAR (extrapolated) = 0.342 W/kg

**SAR(1 g) = 0.232 W/kg; SAR(10 g) = 0.151 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (> 16 mm)

Ratio of SAR at M2 to SAR at M1 = 67.1%

Maximum value of SAR (measured) = 0.269 W/kg



**Plot 2#: LTE Band 2 1RB\_ Body Back With Belt Clip****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1880 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.428$  S/m;  $\epsilon_r = 40.247$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.15, 5.15, 5.15) @ 1880 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.248 W/kg

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

Reference Value = 12.27 V/m; Power Drift = 0.01 dB

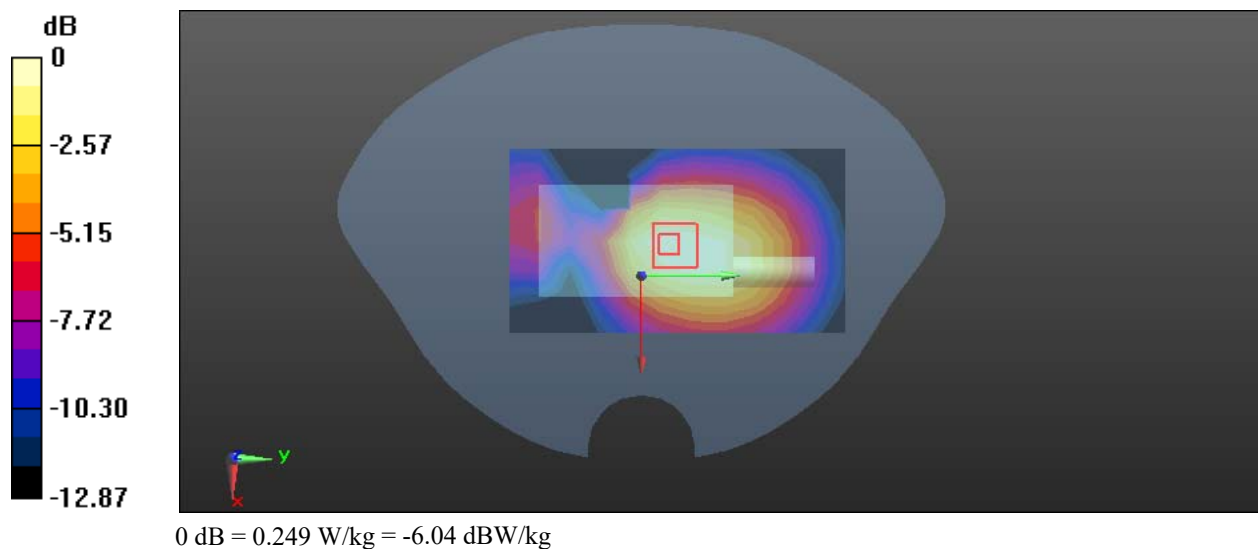
Peak SAR (extrapolated) = 0.306 W/kg

**SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.142 W/kg**

Smallest distance from peaks to all points 3 dB below = 21.6 mm

Ratio of SAR at M2 to SAR at M1 = 68.7%

Maximum value of SAR (measured) = 0.249 W/kg



**Plot 3#: LTE Band 5 1RB Mid \_ Face Up****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

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

Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.923$  S/m;  $\epsilon_r = 42.357$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(6.45, 6.45, 6.45) @ 836.5 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.214 W/kg

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

Reference Value = 14.98 V/m; Power Drift = 0.11 dB

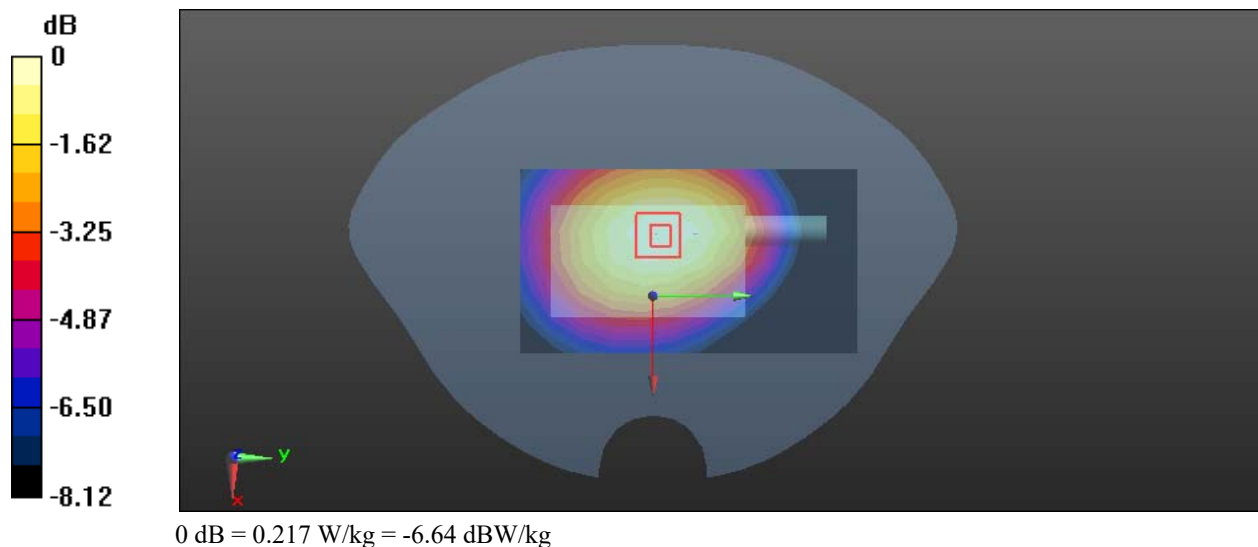
Peak SAR (extrapolated) = 0.259 W/kg

**SAR(1 g) = 0.195 W/kg; SAR(10 g) = 0.145 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (&gt; 16 mm)

Ratio of SAR at M2 to SAR at M1 = 75%

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



**Plot 4#: LTE Band 5 1RB Mid \_ Body Back With Belt Clip****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

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

Medium parameters used:  $f = 836.5$  MHz;  $\sigma = 0.923$  S/m;  $\epsilon_r = 42.357$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(6.45, 6.45, 6.45) @ 836.5 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.551 W/kg

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

Reference Value = 24.13 V/m; Power Drift = 0.18 dB

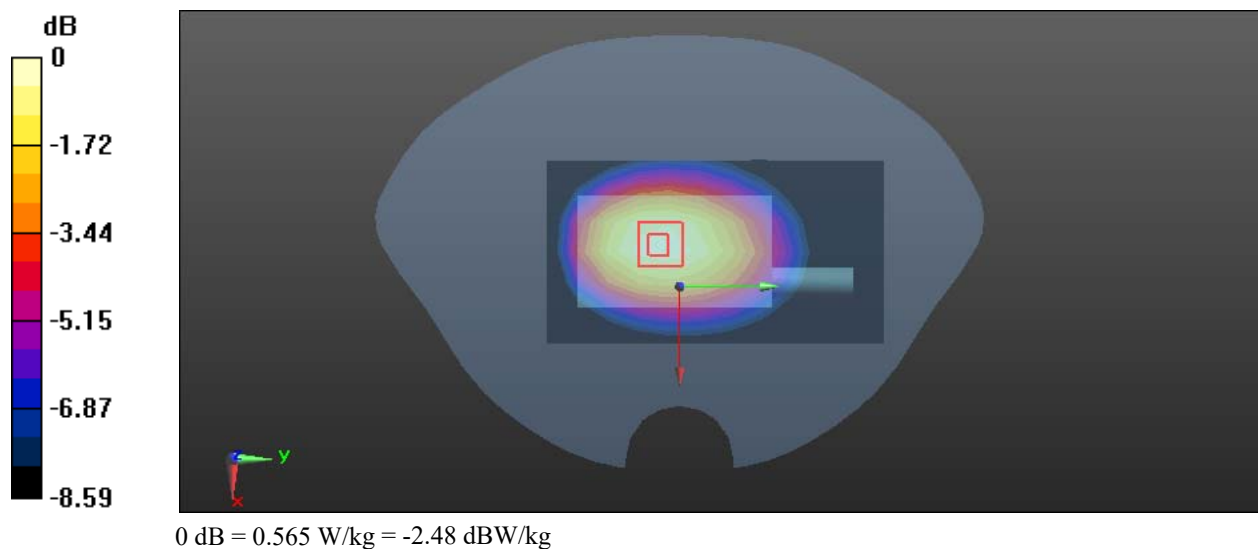
Peak SAR (extrapolated) = 0.686 W/kg

**SAR(1 g) = 0.503 W/kg; SAR(10 g) = 0.362 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (&gt; 16 mm)

Ratio of SAR at M2 to SAR at M1 = 73.7%

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



**Plot 5#: LTE Band 7 1RB Mid \_ Face Up****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 2535 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 2535$  MHz;  $\sigma = 1.865$  S/m;  $\epsilon_r = 39.255$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(4.75, 4.75, 4.75) @ 2535 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (9x15x1):** Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.408 W/kg

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

Reference Value = 10.42 V/m; Power Drift = -0.17 dB

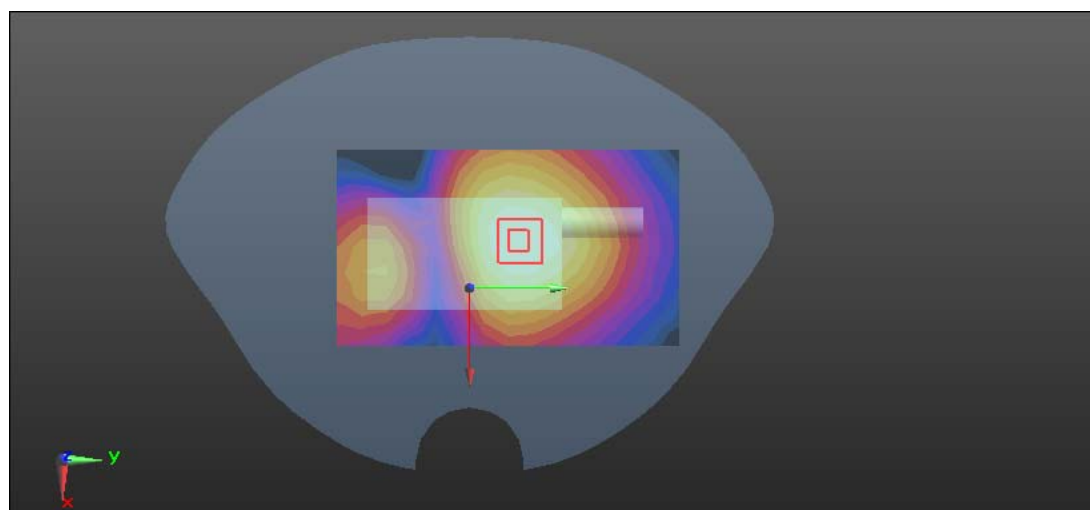
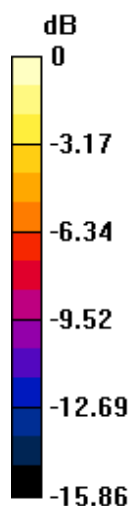
Peak SAR (extrapolated) = 0.545 W/kg

**SAR(1 g) = 0.343 W/kg; SAR(10 g) = 0.213 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (&gt; 15 mm)

Ratio of SAR at M2 to SAR at M1 = 61.8%

Maximum value of SAR (measured) = 0.404 W/kg



0 dB = 0.404 W/kg = -3.94 dBW/kg



**Plot 7#: LTE Band 66 1RB Mid \_ Face Up****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1745 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1745$  MHz;  $\sigma = 1.369$  S/m;  $\epsilon_r = 40.915$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.41, 5.41, 5.41) @ 1745 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.348 W/kg

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

Reference Value = 12.32 V/m; Power Drift = 0.04 dB

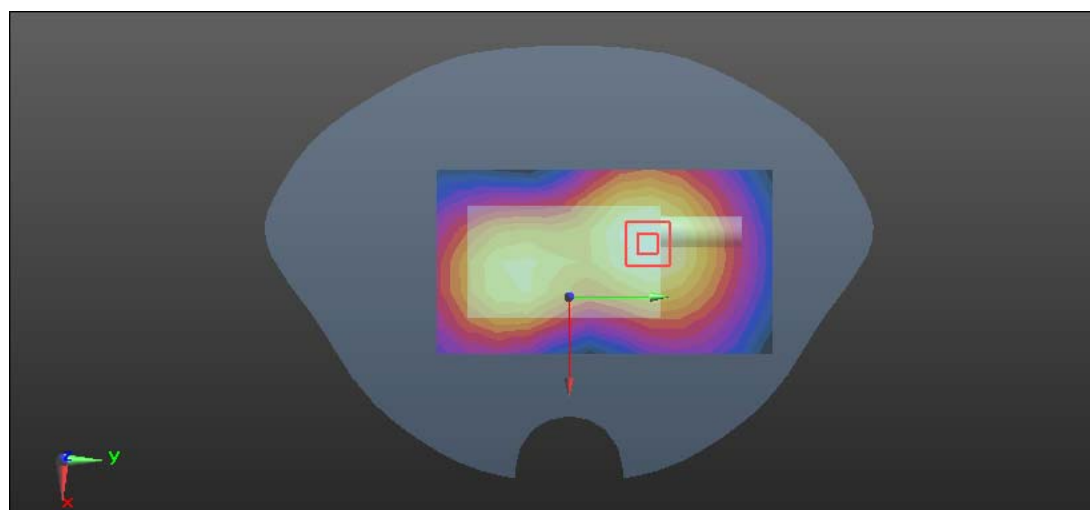
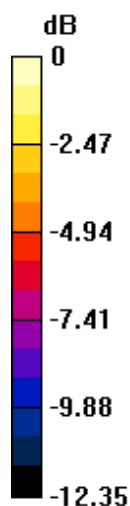
Peak SAR (extrapolated) = 0.458 W/kg

**SAR(1 g) = 0.314 W/kg; SAR(10 g) = 0.207 W/kg**

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid (&gt; 16 mm)

Ratio of SAR at M2 to SAR at M1 = 67.3%

Maximum value of SAR (measured) = 0.364 W/kg



0 dB = 0.364 W/kg = -4.39 dBW/kg

**Plot 8#: LTE Band 66 1RB High\_ Body Back With Belt Clip****DUT: 4G LTE POC RADIO; Type: TK-158; Serial: 37IO-1**

Communication System: UID 0, Generic FDD-LTE (0); Frequency: 1770 MHz; Duty Cycle: 1:1

Medium parameters used:  $f = 1770$  MHz;  $\sigma = 1.396$  S/m;  $\epsilon_r = 40.588$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3157; ConvF(5.41, 5.41, 5.41) @ 1770 MHz; Calibrated: 2024/11/22
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1354; Calibrated: 2024/12/3
- Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (7x12x1):** Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 17.85 V/m; Power Drift = 0.09 dB

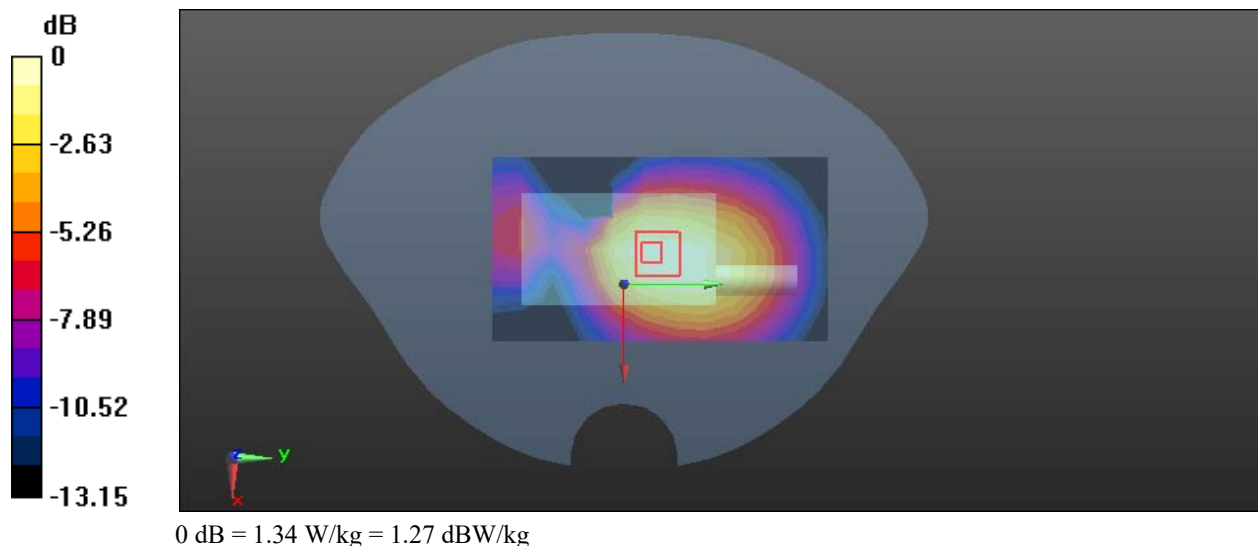
Peak SAR (extrapolated) = 1.62 W/kg

**SAR(1 g) = 1.17 W/kg; SAR(10 g) = 0.777 W/kg**

Smallest distance from peaks to all points 3 dB below = 20.5 mm

Ratio of SAR at M2 to SAR at M1 = 71.7%

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



## APPENDIX A MEASUREMENT UNCERTAINTY

The uncertainty budget has been determined for the measurement system and is given in the following Table.

### Measurement uncertainty evaluation for IEEE1528-2013 SAR test

| Source of uncertainty                                | Tolerance/<br>uncertainty<br>$\pm$ % | Probability<br>distribution | Divisor    | ci<br>(1 g) | ci<br>(10 g) | Standard<br>uncertainty<br>$\pm$ %, (1 g) | Standard<br>uncertainty<br>$\pm$ %, (10 g) |
|------------------------------------------------------|--------------------------------------|-----------------------------|------------|-------------|--------------|-------------------------------------------|--------------------------------------------|
| <b>Measurement system</b>                            |                                      |                             |            |             |              |                                           |                                            |
| Probe calibration                                    | 6.55                                 | N                           | 1          | 1           | 1            | 6.3                                       | 6.3                                        |
| Axial Isotropy                                       | 4.7                                  | R                           | $\sqrt{3}$ | 1           | 1            | 2.7                                       | 2.7                                        |
| Hemispherical Isotropy                               | 9.6                                  | R                           | $\sqrt{3}$ | 0           | 0            | 0.0                                       | 0.0                                        |
| Boundary effect                                      | 1.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.6                                       | 0.6                                        |
| Linearity                                            | 4.7                                  | R                           | $\sqrt{3}$ | 1           | 1            | 2.7                                       | 2.7                                        |
| Detection limits                                     | 1.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.6                                       | 0.6                                        |
| Readout electronics                                  | 0.3                                  | N                           | 1          | 1           | 1            | 0.3                                       | 0.3                                        |
| Response time                                        | 0.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.0                                       | 0.0                                        |
| Integration time                                     | 0.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.0                                       | 0.0                                        |
| RF ambient conditions – noise                        | 1.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.6                                       | 0.6                                        |
| RF ambient conditions– reflections                   | 1.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.6                                       | 0.6                                        |
| Probe positioner mech. Restrictions                  | 0.8                                  | R                           | $\sqrt{3}$ | 1           | 1            | 0.5                                       | 0.5                                        |
| Probe positioning with respect to phantom shell      | 6.7                                  | R                           | $\sqrt{3}$ | 1           | 1            | 3.9                                       | 3.9                                        |
| Post-processing                                      | 2.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 1.2                                       | 1.2                                        |
| <b>Test sample related</b>                           |                                      |                             |            |             |              |                                           |                                            |
| Test sample positioning                              | 2.8                                  | N                           | 1          | 1           | 1            | 2.8                                       | 2.8                                        |
| Device holder uncertainty                            | 4.5                                  | N                           | 1          | 1           | 1            | 4.5                                       | 4.5                                        |
| Drift of output power                                | 5.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 2.9                                       | 2.9                                        |
| <b>Phantom and set-up</b>                            |                                      |                             |            |             |              |                                           |                                            |
| Phantom uncertainty (shape and thickness tolerances) | 4.0                                  | R                           | $\sqrt{3}$ | 1           | 1            | 2.3                                       | 2.3                                        |
| Liquid conductivity target)                          | 5.0                                  | R                           | $\sqrt{3}$ | 0.64        | 0.43         | 1.8                                       | 1.2                                        |
| Liquid conductivity meas.)                           | 2.5                                  | N                           | 1          | 0.64        | 0.43         | 1.6                                       | 1.1                                        |
| Liquid permittivity target)                          | 5.0                                  | R                           | $\sqrt{3}$ | 0.6         | 0.49         | 1.7                                       | 1.4                                        |
| Liquid permittivity meas.)                           | 2.5                                  | N                           | 1          | 0.6         | 0.49         | 1.5                                       | 1.2                                        |
| Combined standard uncertainty                        |                                      | RSS                         |            |             |              | 12.2                                      | 12.0                                       |
| Expanded uncertainty 95 % confidence interval)       |                                      |                             |            |             |              | 24.1                                      | 23.7                                       |

## APPENDIX B EUT TEST POSITION PHOTOS

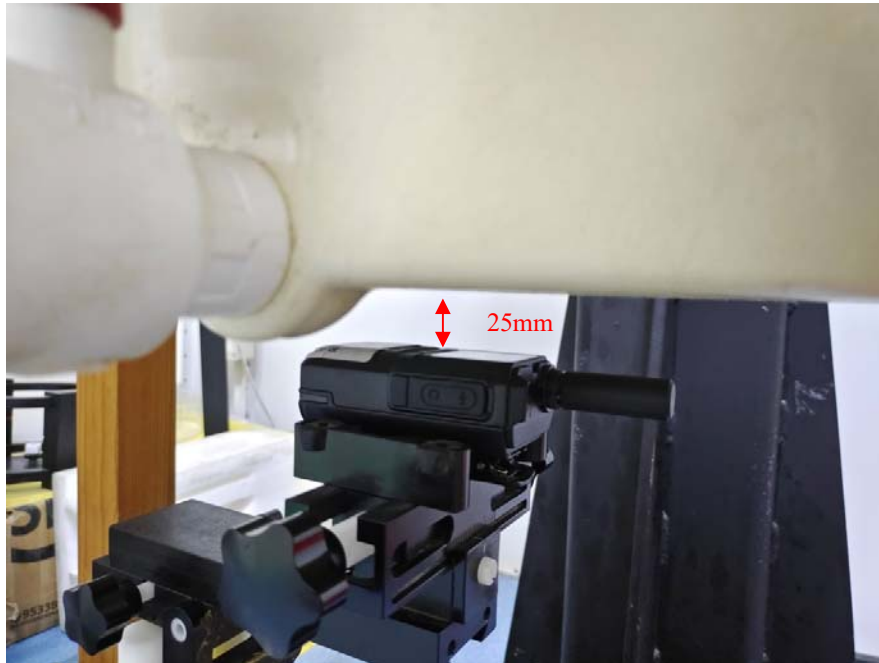
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**Liquid depth  $\geq 15\text{cm}$**

Phantom: Twin SAM; Type: Twin SAM V5.0; Serial: TP:1412



**Face Up Setup Photo(25mm)**



**Body Back With Belt Clip Setup Photo (0mm)**



## **APPENDIX C CALIBRATION CERTIFICATES**

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**Please Refer to the Attachment.**

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