# FCC SAR Test Report

| | | |
|---|---|---|
| **Report No.** | : | **PSU-QSU2504140116SA01** |
| **Applicant** | : | **TCL Communication Ltd.** |
| **Address** | : | **5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong** |
| **Manufacturer** | : | **TCL Communication Ltd.** |
| **Address** | : | **5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong** |
| **Product** | : | **TCL LINKPORT IK511** |
| **FCC ID** | : | **2ACCJSCD004** |
| **Brand** | : | **TCL** |
| **Model No.** | : | **IK511US** |
| **Standards** | : | **FCC 47 CFR Part 2 (2.1093) / IEEE C95.1:1992 / IEEE 1528:2013<br>KDB 865664 D01 v01r04 / KDB 865664 D02 v01r02 / KDB 447498 D02 v02r01<br>KDB 447498 D01 v06 / KDB 616217 D04 v01r02 / KDB 941225 D05 v02r05** |
| **Date of Testing** | : | **May. 09, 2025 ~ May. 24, 2025** |
| **Issued By** | : | **Huarui 7layers High Technology (Suzhou) Co., Ltd.,** |
| **Address** | : | **Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province** |

**FCC Designation No.** : **CN1325** **FCC Site Registration No.** : **434559**

**CERTIFICATION:** The above equipment has been tested by **Huarui 7layers High Technology (Suzhou) Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's SAR characteristics under the conditions specified in this report. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by A2LA or any government agencies.

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**Approved By :** Simpeibo
Peibo Sun / Manager

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# Release Control Record

| Report No. | Reason for Change | Date Issued |
|---|---|---|
| PSU-QSU2504140116SA01 | Initial release | May. 27, 2025 |
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# 1. Summary of Maximum SAR Value

| Equipment Class | Mode | Highest Reported Body $SAR_{1g}$ (0.5cm Gap) (W/Kg) |
|---|---|---|
| PCB | LTE Band 7 | 1.18 |
| | LTE Band 12/17 | 0.74 |
| | LTE Band 13 | 0.94 |
| | LTE Band 14 | 0.86 |
| | LTE Band 25/2 | 1.00 |
| | LTE Band 26/5 | 0.80 |
| | LTE Band 30 | 1.03 |
| | LTE Band 41/38 | 0.68 |
| | LTE Band 42 | 0.57 |
| | LTE Band 48 | 0.74 |
| | LTE Band 66/4 | 0.69 |
| | LTE Band 71 | 0.81 |
| | FR1 n5 | 0.77 |
| | FR1 n12 | 0.67 |
| | FR1 n14 | 0.87 |
| | FR1 n25/2 | 0.80 |
| | FR1 n30 | 1.07 |
| | FR1 n41/38 | 1.03 |
| | FR1 n66 | 0.62 |
| | FR1 n71 | 0.73 |
| | FR1 n77/78 | 1.16 |

**Note:**

1. The SAR limit **(Body: $SAR_{1g}$ 1.6 W/kg)** for general population / uncontrolled exposure is specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992.

## 2. Description of Equipment Under Test

| | |
|---|---|
| **EUT Type** | TCL LINKPORT IK511 |
| **FCC ID** | 2ACCJSCD004 |
| **IMEI** | 004400152020000 |
| **Brand Name** | TCL |
| **Model Name** | IK511US |
| **HW Version** | V3.0 |
| **SW Version** | IK511USV1_ZZ_01.00_01 |
| **Tx Frequency Bands (Unit: MHz)** | LTE Band 2 : 1850 ~ 1910<br>LTE Band 4 : 1710 ~ 1755<br>LTE Band 5 : 824 ~ 849<br>LTE Band 7 : 2500 ~ 2570<br>LTE Band 12 : 699 ~ 716<br>LTE Band 13 : 777 ~ 787<br>LTE Band 14 : 788 ~ 798<br>LTE Band 17 : 704 ~ 716<br>LTE Band 25 : 1850 ~ 1915<br>LTE Band 26 : 814 ~ 849<br>LTE Band 30 : 2305 ~ 2315<br>LTE Band 38 : 2570 ~ 2620<br>LTE Band 41 : 2496 ~ 2690<br>LTE Band 42 : 3450 ~ 3550, 3550 ~ 3600<br>LTE Band 48 : 3550 ~ 3700<br>LTE Band 66 : 1710 ~ 1780<br>LTE Band 71 : 663 ~ 698<br>NR Band n2 : 1850 ~ 1910<br>NR Band n5 : 824 ~ 849<br>NR Band n12 : 699 ~ 716<br>NR Band n14 : 788 ~ 798<br>NR Band n25 : 1850 ~ 1915<br>NR Band n30 : 2305 ~ 2315<br>NR Band n38 : 2570 ~ 2620<br>NR Band n41 : 2496 ~ 2690<br>NR Band n66 : 1710 ~ 1780<br>NR Band n71 : 663 ~ 698<br>NR Band n77 : 3450 ~ 3550, 3700 ~ 3980<br>NR Band n78 : 3450 ~ 3550 |
| **Uplink Modulations** | LTE : QPSK, 16QAM, 64QAM, 256QAM<br>NR : Pi/2 BPSK (DFT-s-OFDM), QPSK (DFT-s-OFDM, CP-OFDM), 16QAM (DFT-s-OFDM, CP-OFDM), 64QAM (DFT-s-OFDM, CP-OFDM), 256QAM (DFT-s-OFDM, CP-OFDM) |
| **Subcarrier Spacing** | 15 kHz（FDD）/ 30 kHz（TDD） |
| **Maximum Tune-up Conducted Power (Unit: dBm)** | Please refer to section 4.5.1 of this report. |
| **Antenna Type** | Fixed Internal Antenna |
| **EUT Stage** | Production Unit |

**Note:**

1. The above EUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.
2. This device supports both LTE Band 2/4/5/17/38 & NR Band n2/38/78 and LTE Band 25/66/26/12/41 & NR Band n25/41/77. Since the supported frequency span for LTE Band 2/4/5/17/38 & NR Band n2/38/78 falls completely within the LTE Band 25/66/26/12/41 & NR Band n25/41/77, they have the same target power, and share the same transmission path, therefore SAR was only assessed for LTE Band 25/66/26/12/41 & NR Band n25/41/77.
3. For WWAN Antenna, when the SAR sensor is detected close to the body state, power reduction will be activated to limit the maximum power. Proximity sensor triggering distances please refer to section 4.1 of this report.

# 3. SAR Measurement System

## 3.1 Definition of Specific Absorption Rate (SAR)

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

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

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

## 3.2 SPEAG DASY System

DASY system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY5 software defined. The DASY software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion form the optical into digital electric signal of the DAE and transfers data to the PC.

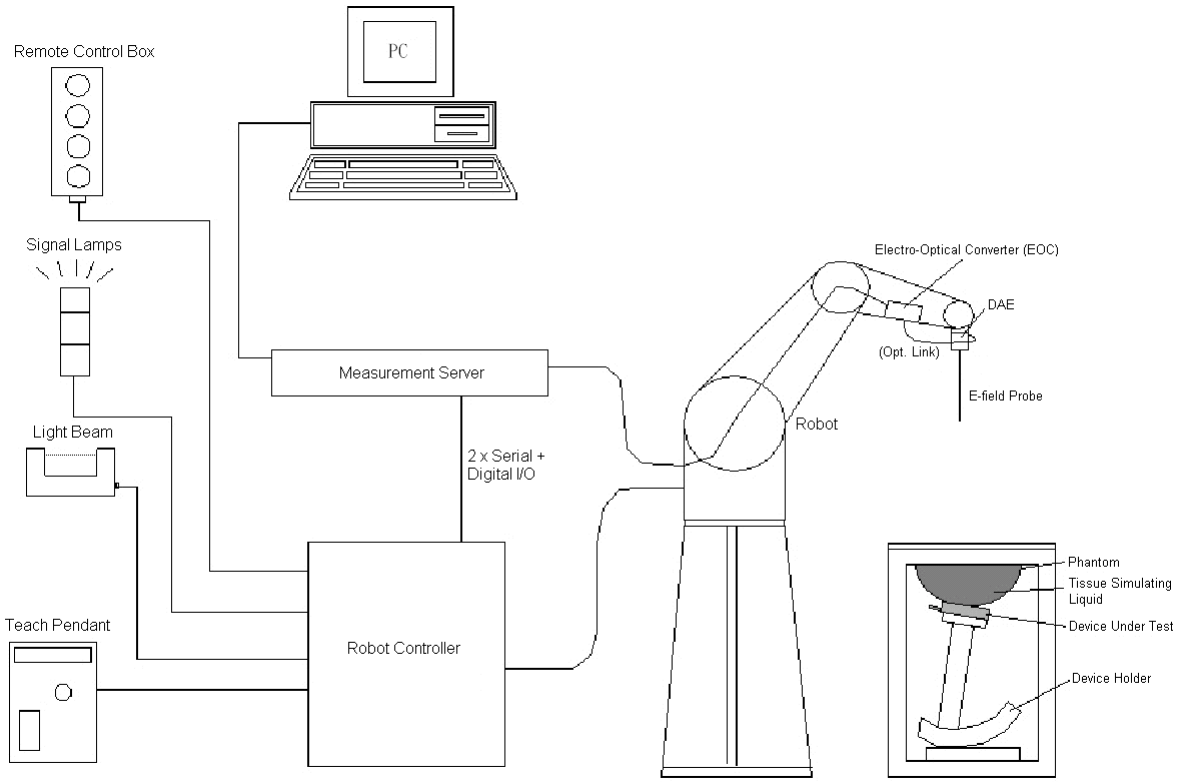



**Fig-3.1 DASY System Setup**

### 3.2.1 Robot

The DASY system uses the high precision robots from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY6: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

**Fig-3.2 DASY6**

### 3.2.2 Probes

The SAR measurement is conducted with the dosimetric probe. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.

| | | |
|---|---|---|
| **Model** | EX3DV4 |  |
| **Construction** | Symmetrical design with triangular core. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). | |
| **Frequency** | 10 MHz to 6 GHz<br>Linearity: ± 0.2 dB | |
| **Directivity** | ± 0.3 dB in HSL (rotation around probe axis)<br>± 0.5 dB in tissue material (rotation normal to probe axis) | |
| **Dynamic Range** | 10 µW/g to 100 mW/g<br>Linearity: ± 0.2 dB (noise: typically < 1 µW/g) | |
| **Dimensions** | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 2.5 mm (Body: 12 mm)<br>Typical distance from probe tip to dipole centers: 1 mm | |

| | | |
|---|---|---|
| **Model** | ES3DV3 |  |
| **Construction** | Symmetrical design with triangular core. Interleaved sensors. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE). | |
| **Frequency** | 10 MHz to 4 GHz<br>Linearity: ± 0.2 dB | |
| **Directivity** | ± 0.2 dB in HSL (rotation around probe axis)<br>± 0.3 dB in tissue material (rotation normal to probe axis) | |
| **Dynamic Range** | 5 µW/g to 100 mW/g<br>Linearity: ± 0.2 dB | |
| **Dimensions** | Overall length: 337 mm (Tip: 20 mm)<br>Tip diameter: 3.9 mm (Body: 12 mm)<br>Distance from probe tip to dipole centers: 2.0 mm | |

### 3.2.3 Data Acquisition Electronics (DAE)

| | | |
|---|---|---|
| **Model** | DAE3, DAE4 |  |
| **Construction** | Signal amplifier, multiplexer, A/D converter and control logic. Serial optical link for communication with DASY embedded system (fully remote controlled). Two step probe touch detector for mechanical surface detection and emergency robot stop. | |
| **Measurement Range** | -100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV) | |
| **Input Offset Voltage** | < 5µV (with auto zero) | |
| **Input Bias Current** | < 50 fA | |
| **Dimensions** | 60 x 60 x 68 mm | |

### 3.2.4 Phantoms

| | | |
|---|---|---|
| **Model** | Twin SAM |  |
| **Construction** | The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot. | |
| **Material** | Vinylester, glass fiber reinforced (VE-GF) | |
| **Shell Thickness** | 2 ± 0.2 mm (6 ± 0.2 mm at ear point) | |
| **Dimensions** | Length: 1000 mm<br>Width: 500 mm<br>Height: adjustable feet | |
| **Filling Volume** | approx. 25 liters | |

| | | |
|---|---|---|
| **Model** | ELI |  |
| **Construction** | Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles. | |
| **Material** | Vinylester, glass fiber reinforced (VE-GF) | |
| **Shell Thickness** | 2.0 ± 0.2 mm (bottom plate) | |
| **Dimensions** | Major axis: 600 mm<br>Minor axis: 400 mm | |
| **Filling Volume** | approx. 30 liters | |

### 3.2.5 Device Holder

| | |
|---|---|
| **Model** | Mounting Device |
| **Construction** | In combination with the Twin SAM Phantom or ELI4, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Rotation point is the ear opening point. Transmitter devices can be easily and accurately positioned according to IEC, IEEE, FCC or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). |
| **Material** | POM |

| | |
|---|---|
| **Model** | Laptop Extensions Kit |
| **Construction** | Simple but effective and easy-to-use extension for Mounting Device that facilitates the testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.). It is lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. |
| **Material** | POM, Acrylic glass, Foam |

### 3.2.6 System Validation Dipoles

| | |
|---|---|
| **Model** | D-Serial |
| **Construction** | Symmetrical dipole with I/4 balun. Enables measurement of feed point impedance with NWA. Matched for use near flat phantoms filled with tissue simulating solutions. |
| **Frequency** | 750 MHz to 5800 MHz |
| **Return Loss** | > 20 dB |
| **Power Capability** | > 100 W (f < 1GHz), > 40 W (f > 1GHz) |

### 3.2.7 Tissue Simulating Liquids

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm. The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in Table-3.1.

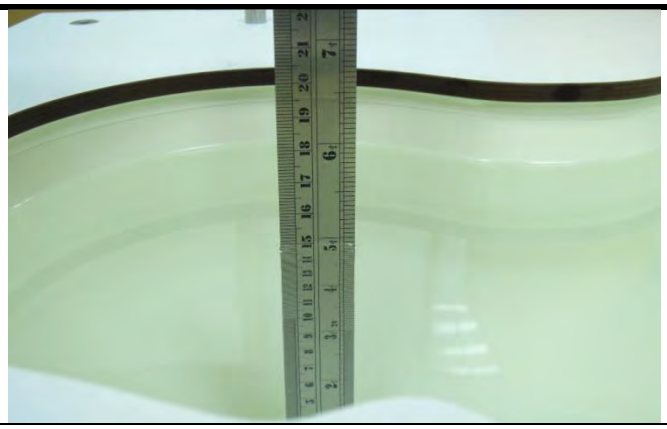


**Photo of Liquid Height for Head Position**

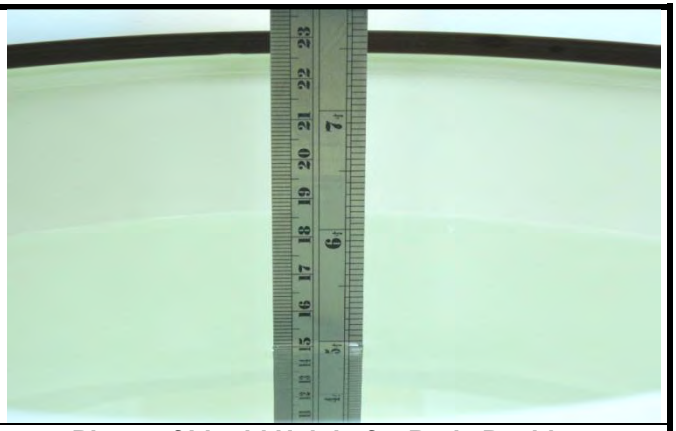


**Photo of Liquid Height for Body Position**

The dielectric properties of the head tissue simulating liquids are defined in IEEE 1528, and KDB 865664 D01 Appendix A. For the body tissue simulating liquids, the dielectric properties are defined in KDB 865664 D01 Appendix A. The dielectric properties of the tissue simulating liquids were verified prior to the SAR evaluation using a dielectric assessment kit and a network analyzer.

**Table-3.1 Targets of Tissue Simulating Liquid**

| Frequency (MHz) | Target Permittivity | Range of ±5% | Target Conductivity | Range of ±5% |
|---|---|---|---|---|
| For Head | | | | |
| 750 | 41.9 | 39.8 ~ 44.0 | 0.89 | 0.85 ~ 0.93 |
| 835 | 41.5 | 39.4 ~ 43.6 | 0.90 | 0.86 ~ 0.95 |
| 900 | 41.5 | 39.4 ~ 43.6 | 0.97 | 0.92 ~ 1.02 |
| 1450 | 40.5 | 38.5 ~ 42.5 | 1.20 | 1.14 ~ 1.26 |
| 1640 | 40.3 | 38.3 ~ 42.3 | 1.29 | 1.23 ~ 1.35 |
| 1750 | 40.1 | 38.1 ~ 42.1 | 1.37 | 1.30 ~ 1.44 |
| 1800 | 40.0 | 38.0 ~ 42.0 | 1.40 | 1.33 ~ 1.47 |
| 1900 | 40.0 | 38.0 ~ 42.0 | 1.40 | 1.33 ~ 1.47 |
| 2000 | 40.0 | 38.0 ~ 42.0 | 1.40 | 1.33 ~ 1.47 |
| 2300 | 39.5 | 37.5 ~ 41.5 | 1.67 | 1.59 ~ 1.75 |
| 2450 | 39.2 | 37.2 ~ 41.2 | 1.80 | 1.71 ~ 1.89 |
| 2600 | 39.0 | 37.1 ~ 41.0 | 1.96 | 1.86 ~ 2.06 |
| 3500 | 37.9 | 36.0 ~ 39.8 | 2.91 | 2.76 ~ 3.06 |
| 5200 | 36.0 | 34.2 ~ 37.8 | 4.66 | 4.43 ~ 4.89 |
| 5300 | 35.9 | 34.1 ~ 37.7 | 4.76 | 4.52 ~ 5.00 |
| 5500 | 35.6 | 33.8 ~ 37.4 | 4.96 | 4.71 ~ 5.21 |
| 5600 | 35.5 | 33.7 ~ 37.3 | 5.07 | 4.82 ~ 5.32 |
| 5800 | 35.3 | 33.5 ~ 37.1 | 5.27 | 5.01 ~ 5.53 |

The following table gives the recipes for tissue simulating liquids.

**Table-3.2 Recipes of Tissue Simulating Liquid**

| Tissue Type | Bactericide | DGBE | HEC | NaCl | Sucrose | Triton X-100 | Water | Diethylene Glycol Mono-hexylether |
|---|---|---|---|---|---|---|---|---|
| H750 | 0.2 | - | 0.2 | 1.5 | 56.0 | - | 42.1 | - |
| H835 | 0.2 | - | 0.2 | 1.5 | 57.0 | - | 41.1 | - |
| H900 | 0.2 | - | 0.2 | 1.4 | 58.0 | - | 40.2 | - |
| H1450 | - | 43.3 | - | 0.6 | - | - | 56.1 | - |
| H1640 | - | 45.8 | - | 0.5 | - | - | 53.7 | - |
| H1750 | - | 47.0 | - | 0.4 | - | - | 52.6 | - |
| H1800 | - | 44.5 | - | 0.3 | - | - | 55.2 | - |
| H1900 | - | 44.5 | - | 0.2 | - | - | 55.3 | - |
| H2000 | - | 44.5 | - | 0.1 | - | - | 55.4 | - |
| H2300 | - | 44.9 | - | 0.1 | - | - | 55.0 | - |
| H2450 | - | 45.0 | - | 0.1 | - | - | 54.9 | - |
| H2600 | - | 45.1 | - | 0.1 | - | - | 54.8 | - |
| H3500 | - | 28.0 | - | 0.2 | - | 20.0 | 71.8 | - |
| H5G | - | - | - | - | - | 17.2 | 65.5 | 17.3 |

## 3.3 SAR System Verification

The system check verifies that the system operates within its specifications. It is performed daily or before every SAR measurement. The system check uses normal SAR measurements in the flat section of the phantom with a matched dipole at a specified distance. The system verification setup is shown as below.

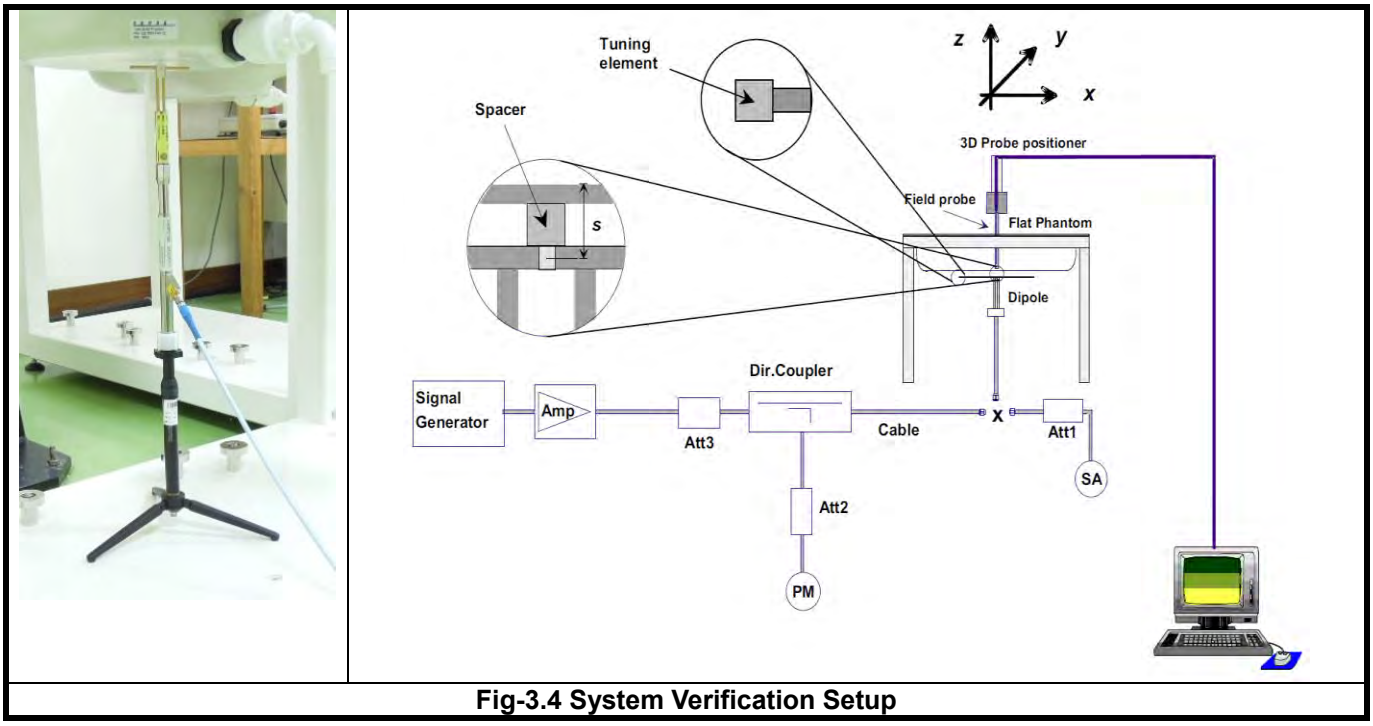



**Fig-3.4 System Verification Setup**

The validation dipole is placed beneath the flat phantom with the specific spacer in place. The distance spacer is touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The spectrum analyzer measures the forward power at the location of the system check dipole connector. The signal generator is adjusted for the desired forward power at the dipole connector and the power meter is read at that level. After connecting the cable to the dipole, the signal generator is readjusted for the same reading at power meter.

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

## 3.4 SAR Measurement Procedure

According to the SAR test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

(a) Make EUT to transmit maximum output power
(b) Measure conducted output power through RF cable
(c) Place the EUT in the specific position of phantom
(d) Perform SAR testing steps on the DASY system
(e) Record the SAR value

### 3.4.1 Area & Zoom Scan Procedure

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution over 10 g. According to KDB 865664 D01, the resolution for Area and Zoom scan is specified in the table below.

| Items | <= 2 GHz | 2-3 GHz | 3-4 GHz | 4-5 GHz | 5-6 GHz |
|---|---|---|---|---|---|
| Area Scan (Δx, Δy) | <= 15 mm | <= 12 mm | <= 12 mm | <= 10 mm | <= 10 mm |
| Zoom Scan (Δx, Δy) | <= 8 mm | <= 5 mm | <= 5 mm | <= 4 mm | <= 4 mm |
| Zoom Scan (Δz) | <= 5 mm | <= 5 mm | <= 4 mm | <= 3 mm | <= 2 mm |
| Zoom Scan Volume | >= 30 mm | >= 30 mm | >= 28 mm | >= 25 mm | >= 22 mm |

**Note:**

When zoom scan is required and report SAR is <= 1.4 W/kg, the zoom scan resolution of Δx / Δy (2-3GHz: <= 8 mm, 3-4GHz: <= 7 mm, 4-6GHz: <= 5 mm) may be applied.

### 3.4.2 Volume Scan Procedure

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

### 3.4.3 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

### 3.4.4 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

### 3.4.5 SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard’s method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

# 4. SAR Measurement Evaluation

## 4.1 EUT Configuration and Setting

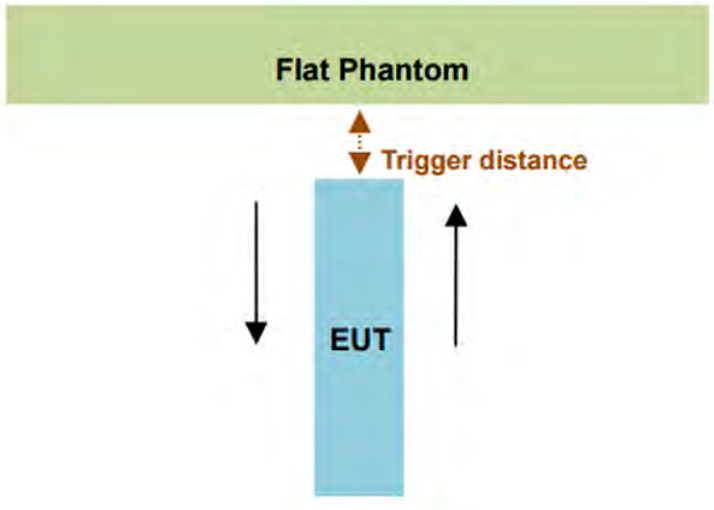
**<Connections between EUT and System Simulator>**

For WWAN SAR testing, the EUT was linked and controlled by base station emulator (R&S CMW500 is used for LTE). Communication between the EUT and the emulator was established by air link. The distance between the EUT and the communicating antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30 dB smaller than the output power of EUT. The EUT was set from the emulator to radiate maximum output power during SAR testing. For NR SAR testing, due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection.

**<Proximity Sensor Triggering Distances>**

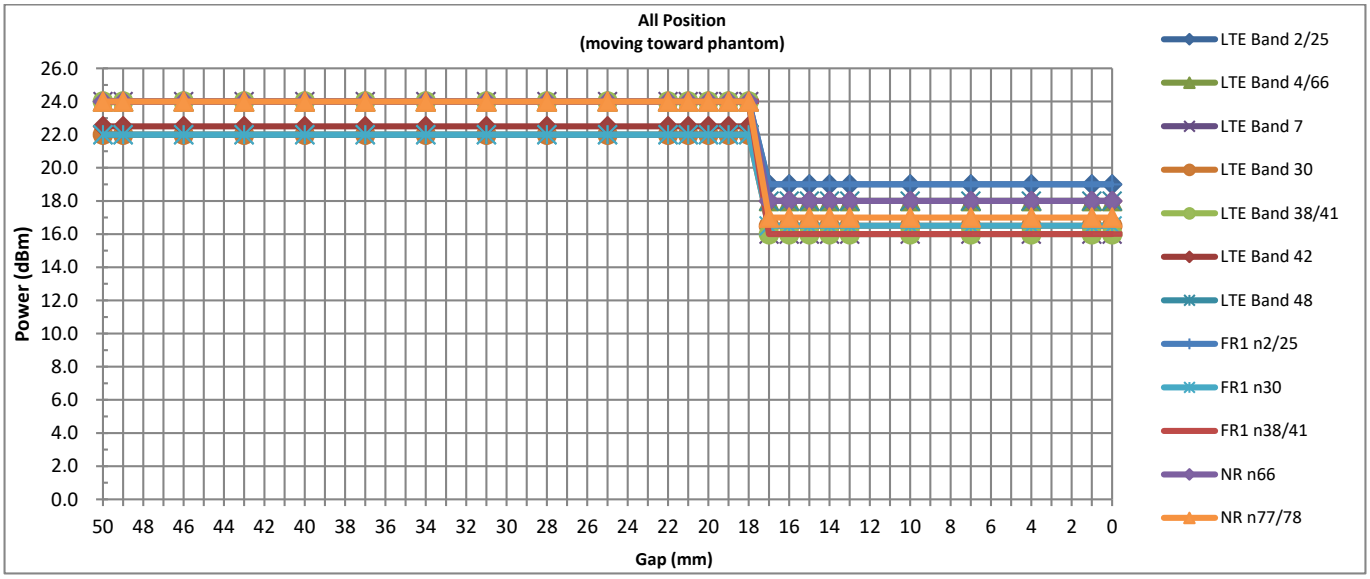
The proximity sensor triggering distance was determined per KDB 616217 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.

In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering than that for 5700MHz, and the tissue-equivalent medium for 5700MHz was used for formal proximity sensor triggering testing.

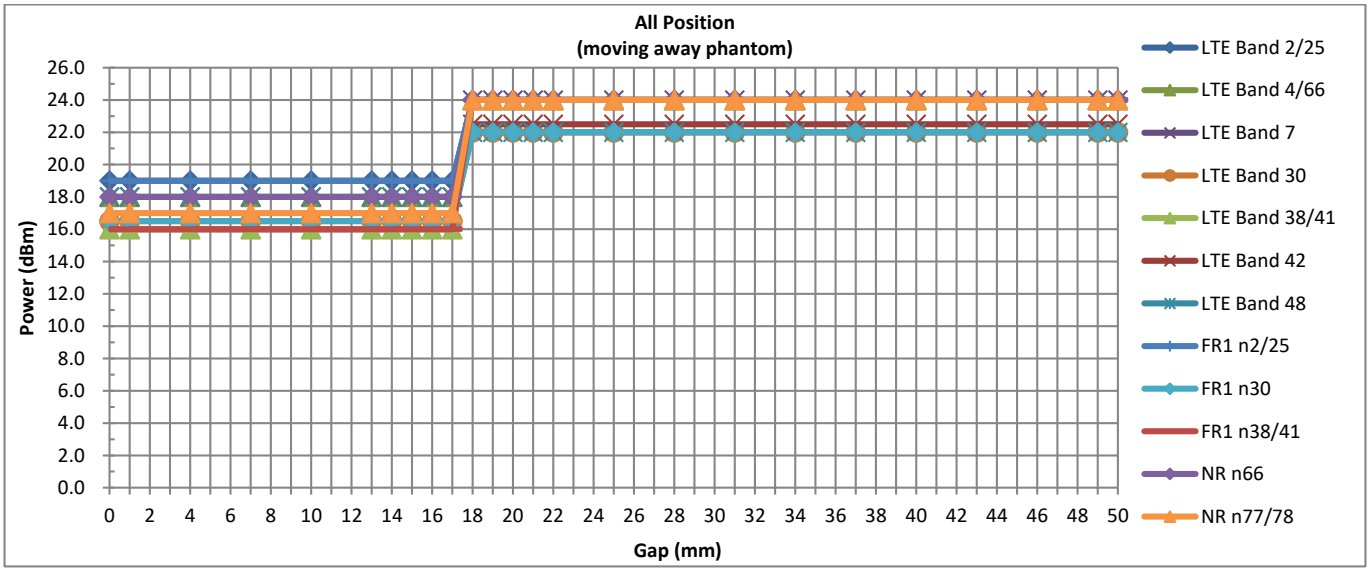



Summary for power verification per distance was tabulated in the below table.

| Output Power Verification in dBm for EUT All Position (moving toward phantom) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Distance (mm) | 50~23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12~0 |
| LTE Band 2/25 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| LTE Band 4/66 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| LTE Band 7 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| LTE Band 30 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| LTE Band 38/41 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| LTE Band 42 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| LTE Band 48 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| FR1 n2/25 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| FR1 n30 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 |
| FR1 n38/41 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 |
| NR n66 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 |
| NR n77/78 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 |



| Output Power Verification in dBm for EUT All Position (moving away phantom) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Distance (mm) | 0~12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23~50 |
| LTE Band 2/25 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| LTE Band 4/66 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| LTE Band 7 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| LTE Band 30 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| LTE Band 38/41 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| LTE Band 42 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 | 22.5 |
| LTE Band 48 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| FR1 n2/25 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| FR1 n30 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 | 22.0 |
| FR1 n38/41 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 16.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| NR n66 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |
| NR n77/78 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 17.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 | 24.0 |



**Proximity Sensor Coverage**

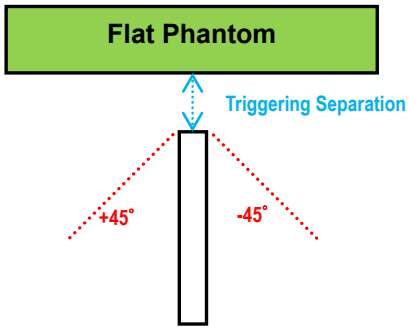
In KDB 616217 section 6.3, if a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.

However, this device uses a capacitive proximity sensor that is same metallic component as the transmitting antenna to facilitate triggering in any condition the user may use the device in proximity of the antenna in the device.

Therefore, no further sensor coverage assessments were required.

**Proximity Sensor Tilt Angle Influences**

The proximity sensor tilt angle influence was determined per KDB 616217 for applicable edge. Summary for proximity sensor tilt angle influence is shown in below.




| Orientation | Separation Distance (mm) | Tilt Angle | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | -45° | -40° | -30° | -20° | -10° | 0° | 10° | 20° | 30° | 40° | 45° |
| Vertical-Front | 17 | On | On | On | On | On | On | On | On | On | On | On |
| Vertical-Back | 17 | On | On | On | On | On | On | On | On | On | On | On |
| Vertical-Top | 17 | On | On | On | On | On | On | On | On | On | On | On |

**Summary for Proximity Sensor Triggering Distance**

The detailed trigger distance is as follows:

| Test position | Vertical-Front | Vertical-Back | Horizontal-Up | Horizontal-Down | Vertical-Top |
|---|---|---|---|---|---|
| Distance | 17mm | 17mm | 17mm | 17mm | 17mm |

**Note:**

1. The power reduction is depends on the proximity sensor input. For a steady SAR test, the power reduction was enabled or disabled manually by engineering software during SAR testing.
2. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance -1mm was performed.

**<Considerations Related to LTE for Setup and Testing>**

This device contains LTE transmitter which follows 3GPP standards, supports QPSK, 16QAM, 64QAM and 256QAM modulations, and supported LTE band and channel bandwidth is listed in below. The output power was tested per 3GPP TS 36.521-1 maximum transmit procedures for QPSK, 16QAM and 64QAM modulation. The results please refer to section 4.5 of this report.

| EUT Supported LTE Band and Channel Bandwidth | | | | | | |
|---|---|---|---|---|---|---|
| LTE Band | BW 1.4 MHz | BW 3 MHz | BW 5 MHz | BW 10 MHz | BW 15 MHz | BW 20 MHz |
| 2 | V | V | V | V | V | V |
| 4 | V | V | V | V | V | V |
| 5 | V | V | V | V | - | - |
| 7 | - | - | V | V | V | V |
| 12 | V | V | V | V | - | - |
| 13 | - | - | V | V | - | - |
| 14 | - | - | V | V | - | - |
| 17 | - | - | V | V | - | - |
| 25 | V | V | V | V | V | V |
| 26 | V | V | V | V | V | - |
| 30 | - | - | V | V | - | - |
| 38 | - | - | V | V | V | V |
| 41 | - | - | V | V | V | V |
| 42 | - | - | V | V | V | V |
| 48 | - | - | V | V | V | V |
| 66 | V | V | V | V | V | V |
| 71 | - | - | V | V | V | V |

The LTE maximum power reduction (MPR) in accordance with 3GPP TS 36.101 is active all times during LTE operation. The allowed MPR for the maximum output power is specified in below.

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

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

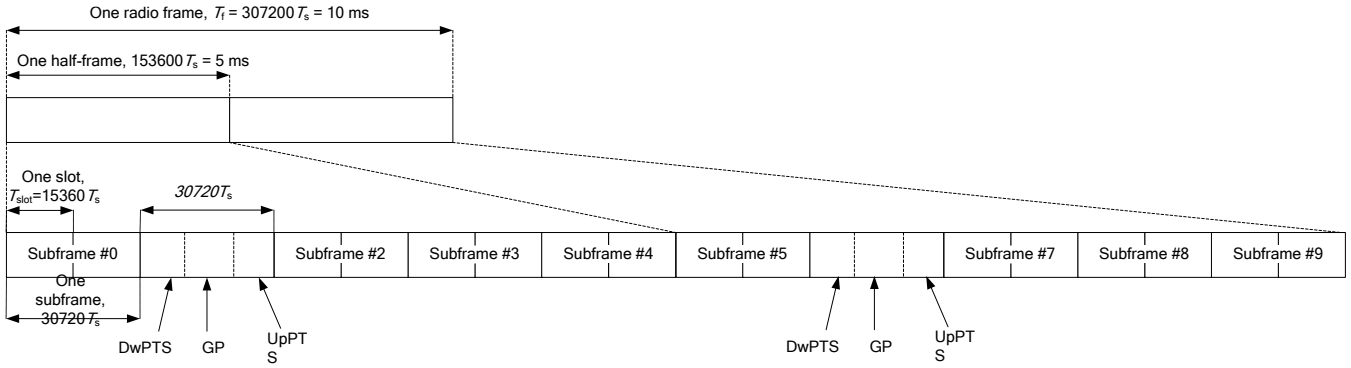
**Note:** MPR is according to the standard and implemented in the circuit (mandatory).

In addition, the device is compliant with additional maximum power reduction (A-MPR) requirements defined in 3GPP TS 36.101 section 6.2.4 that was disabled for all FCC compliance testing.

During LTE SAR testing, the related parameters of operating band, channel bandwidth, uplink channel number, modulation type, and RB was set in base station simulator. When the EUT has registered and communicated to base station simulator, the simulator set to make EUT transmitting the maximum radiated power.

**TDD-LTE Setup Configurations**

According to KDB 941225 D05, SAR testing for TDD-LTE device must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP TDD-LTE configurations. The TDD-LTE of this device supports frame structure type 2 defined in 3GPP TS 36.211 section 4.2, and the frame structure configuration can be referred to below.




**3GPP TS 36.211 Figure 4.2-1: Frame Structure Type 2**

| Special Subframe Configuration | Normal Cyclic Prefix in Downlink | | | Extended Cyclic Prefix in Downlink | | |
|---|---|---|---|---|---|---|
| | DwPTS | UpPTS | | DwPTS | UpPTS | |
| | | Normal Cyclic Prefix in Uplink | Extended Cyclic Prefix in Uplink | | Normal Cyclic Prefix in Uplink | Extended Cyclic Prefix in Uplink |
| 0 | 6592 • Ts | 2192 • Ts | 2560 • Ts | 7680 • Ts | 2192 • Ts | 2560 • Ts |
| 1 | 19760 • Ts | | | 20480 • Ts | | |
| 2 | 21952 • Ts | | | 23040 • Ts | | |
| 3 | 24144 • Ts | | | 25600 • Ts | | |
| 4 | 26336 • Ts | | | 7680 • Ts | 4384 • Ts | 5120 • Ts |
| 5 | 6592 • Ts | 4384 • Ts | 5120 • Ts | 20480 • Ts | | |
| 6 | 19760 • Ts | | | 23040 • Ts | | |
| 7 | 21952 • Ts | | | 12800 • Ts | | |
| 8 | 24144 • Ts | | | - | - | - |
| 9 | 13168 • Ts | | | - | - | - |

**3GPP TS 36.211 Table 4.2-1: Configuration of Special Subframe**

| Uplink-Downlink Configuration | Downlink-to-Uplink Switch-Point Periodicity | Subframe Number | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 5 ms | D | S | U | U | U | D | S | U | U | U |
| 1 | 5 ms | D | S | U | U | D | D | S | U | U | D |
| 2 | 5 ms | D | S | U | D | D | D | S | U | D | D |
| 3 | 10 ms | D | S | U | U | U | D | D | D | D | D |
| 4 | 10 ms | D | S | U | U | D | D | D | D | D | D |
| 5 | 10 ms | D | S | U | D | D | D | D | D | D | D |
| 6 | 5 ms | D | S | U | U | U | D | S | U | U | D |

**3GPP TS 36.211 Table 4.2-2: Uplink-Downlink Configurations**

The variety of different TD-LTE uplink-downlink configurations allows a network operator to allocate the network's capacity between uplink and downlink traffic to meet the needs of the network. The uplink duty cycle of these seven configurations can readily be computed and shown in below.

| UL-DL Configuration | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Highest Duty-Cycle | 63.33% | 43.33% | 23.33% | 31.67% | 21.67% | 11.67% | 53.33% |

Considering the highest transmission duty cycle, TDD-LTE was tested using Uplink-Downlink Configuration 0 with 6 uplink subframe and 2 special subframe. The special subframe was set to special subframe configuration 7 using extended cyclic prefix uplink. Therefore, SAR testing for TDD-LTE was performed at the maximum output power with highest transmission duty cycle of 63.33%.

**<Considerations Related to 5G NR for Setup and Testing>**

1. 5G NR supports SA mode. The details are as follows

| Mode | Band | Duplex | SCS(KHz) | BW(M) |
|---|---|---|---|---|
| SA | 5G NR n2 | FDD | 15 | 5, 10, 15, 20 |
| | 5G NR n5 | FDD | 15 | 5, 10, 15, 20 |
| | 5G NR n12 | FDD | 15 | 5, 10, 15 |
| | 5G NR n14 | FDD | 15 | 5, 10 |
| | 5G NR n25 | FDD | 15 | 5, 10, 15, 20 |
| | 5G NR n30 | FDD | 15 | 5, 10 |
| | 5G NR n66 | FDD | 15 | 5, 10, 15, 20 |
| | 5G NR n71 | FDD | 15 | 5, 10, 15, 20 |
| | 5G NR n38 | TDD | 30 | 10, 15, 20 |
| | 5G NR n41 | TDD | 30 | 10, 15, 20 |
| | 5G NR n77 | TDD | 30 | 10, 15, 20 |
| | 5G NR n78 | TDD | 30 | 10, 15, 20 |

2. 5G NR FDD supports both normal mode and Redcap mode. Since the output power of normal mode is equal to or greater than that of Redcap mode, only the normal mode needs to be tested for SAR.
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:

(1) For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg, CP-OFDM testing is not required.

(2) For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.

(3) SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offset at the upper edge, middle and lower edge of each required test channel.

(4) 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

(5) 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% RB and 1RB allocations and the highest reported SAR for 1RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel, and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(6) Pi/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, Pi/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.

(7) Smaller bandwidth output power for each RB allocation configuration for this device will not. ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device.

**Table 6.2.2.3-1: Maximum power reduction (MPR) for power class 3**

| Modulation | | MPR (dB) | | |
|---|---|---|---|---|
| | | Edge RB allocations | Outer RB allocations | Inner RB allocations |
| DFT-s-OFDM | Pi/2 BPSK | ≤ 3.5[1] | ≤ 1.2[1] | ≤ 0.2[1] |
| | | ≤ 0.5[2] | | 0[2] |
| | QPSK | ≤ 1 | | 0 |
| | 16 QAM | ≤ 2 | | ≤ 1 |
| | 64 QAM | ≤ 2.5 | | |
| | 256 QAM | ≤ 4.5 | | |
| CP-OFDM | QPSK | ≤ 3 | | ≤ 1.5 |
| | 16 QAM | ≤ 3 | | ≤ 2 |
| | 64 QAM | ≤ 3.5 | | |
| | 256 QAM | ≤ 6.5 | | |
| NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm. | | | | |
| NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. | | | | |

4. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection.

## 4.2 EUT Testing Position

### 4.2.1 Body Exposure Conditions

**<Simple Dongle Procedures>**

For USB dongle transmitter, according to KDB 447498 D02, SAR evaluation is required for all USB orientations illustrated as below with a device-to-phantom separation distance of 5 mm or less. The typical Horizontal-Up USB connection, found in the majority of host computers, must be tested using an appropriate host computer. A host computer with either Vertical-Front or Vertical-Back USB connection should be used to test one of the vertical USB orientations. If a suitable host computer is not available for testing the Horizontal-Down or the remaining Vertical USB orientation, a high quality USB cable, 12 inches or less, may be used for testing these other orientations.

| | | | |
|---|---|---|---|
|  |  |  |  |
| **USB Orientation 1 (Horizontal-Up)** | **USB Orientation 2 (Horizontal-Down)** | **USB Orientation 3 (Vertical-Front)** | **USB Orientation 4 (Vertical-Back)** |

**Fig-4.1 Illustration for USB Connector Orientations**

## 4.3 Tissue Verification

The measuring results for tissue simulating liquid are shown as below.

| Test Date | Tissue Type | Frequency (MHz) | Liquid Temp. (℃) | Measured Conductivity (σ) | Measured Permittivity ($\varepsilon_r$) | Target Conductivity (σ) | Target Permittivity ($\varepsilon_r$) | Conductivity Deviation (%) | Permittivity Deviation (%) |
|---|---|---|---|---|---|---|---|---|---|
| May. 11, 2025 | HSL | 750 | 22.6 | 0.908 | 43.057 | 0.89 | 41.90 | 2.02 | 2.76 |
| May. 13, 2025 | HSL | 835 | 22.4 | 0.917 | 41.094 | 0.90 | 41.50 | 1.89 | -0.98 |
| May. 14, 2025 | HSL | 1750 | 22.5 | 1.354 | 39.787 | 1.37 | 40.10 | -1.17 | -0.78 |
| May. 15, 2025 | HSL | 1900 | 22.6 | 1.438 | 40.254 | 1.40 | 40.00 | 2.71 | 0.63 |
| May. 16, 2025 | HSL | 2300 | 22.4 | 1.666 | 39.398 | 1.67 | 39.50 | -0.24 | -0.26 |
| May. 09, 2025 | HSL | 2600 | 22.3 | 1.961 | 39.501 | 1.96 | 39.00 | 0.05 | 1.28 |
| May. 17, 2025 | HSL | 3500 | 22.5 | 2.909 | 38.635 | 2.91 | 37.90 | -0.03 | 1.94 |
| May. 22, 2025 | HSL | 3500 | 22.5 | 3.017 | 39.758 | 2.91 | 37.90 | 3.68 | 4.90 |
| May. 19, 2025 | HSL | 3700 | 22.4 | 3.054 | 38.374 | 3.12 | 37.70 | -2.12 | 1.79 |
| May. 24, 2025 | HSL | 3700 | 22.3 | 3.005 | 39.297 | 3.12 | 37.70 | -3.69 | 4.24 |
| May. 21, 2025 | HSL | 3900 | 22.6 | 3.199 | 38.142 | 3.32 | 37.50 | -3.64 | 1.71 |

**Note:**

The dielectric properties of the tissue simulating liquid must be measured within 24 hours before the SAR testing and within ±5% of the target values. Liquid temperature during the SAR testing must be within ±2 □.

## 4.4 System Verification

The measuring result for system verification is tabulated as below.

**<1g SAR>**

| Test Date | Mode | Frequency (MHz) | Input Power (mW) | 1W Target SAR-1g (W/kg) | Measured SAR-1g (W/kg) | Normalized to 1W SAR-1g (W/kg) | Deviation (%) | Dipole S/N | Probe S/N | DAE S/N |
|---|---|---|---|---|---|---|---|---|---|---|
| May. 11, 2025 | HSL | 750 | 250 | 8.49 | 2.050 | 8.20 | -3.42 | 1067 | 3873 | 755 |
| May. 13, 2025 | HSL | 835 | 250 | 9.57 | 2.360 | 9.44 | -1.36 | 4d139 | 3873 | 755 |
| May. 14, 2025 | HSL | 1750 | 250 | 36.30 | 8.360 | 33.44 | -7.88 | 1071 | 3873 | 755 |
| May. 15, 2025 | HSL | 1900 | 250 | 39.80 | 9.300 | 37.20 | -6.53 | 5d159 | 3873 | 755 |
| May. 16, 2025 | HSL | 2300 | 50 | 49.60 | 2.510 | 50.20 | 1.21 | 1053 | 3873 | 755 |
| May. 09, 2025 | HSL | 2600 | 50 | 55.90 | 3.010 | 60.20 | 7.69 | 1110 | 3873 | 755 |
| May. 17, 2025 | HSL | 3500 | 100 | 65.70 | 6.270 | 62.70 | -4.57 | 1111 | 3873 | 755 |
| May. 22, 2025 | HSL | 3500 | 100 | 65.70 | 6.530 | 65.30 | -0.61 | 1111 | 3873 | 755 |
| May. 19, 2025 | HSL | 3700 | 100 | 66.60 | 6.790 | 67.90 | 1.95 | 1082 | 3873 | 755 |
| May. 24, 2025 | HSL | 3700 | 100 | 66.60 | 6.710 | 67.10 | 0.75 | 1082 | 3873 | 755 |
| May. 21, 2025 | HSL | 3900 | 100 | 68.20 | 6.900 | 69.00 | 1.17 | 1055 | 3873 | 755 |

**<10g SAR>**

| Test Date | Mode | Frequency (MHz) | Input Power (mW) | 1W Target SAR-10g (W/kg) | Measured SAR-10g (W/kg) | Normalized to 1W SAR-10g (W/kg) | Deviation (%) | Dipole S/N | Probe S/N | DAE S/N |
|---|---|---|---|---|---|---|---|---|---|---|
| May. 11, 2025 | HSL | 750 | 250 | 5.59 | 1.370 | 5.48 | -1.97 | 1067 | 3873 | 755 |
| May. 13, 2025 | HSL | 835 | 250 | 6.31 | 1.540 | 6.16 | -2.38 | 4d139 | 3873 | 755 |
| May. 14, 2025 | HSL | 1750 | 250 | 19.50 | 4.450 | 17.80 | -8.72 | 1071 | 3873 | 755 |
| May. 15, 2025 | HSL | 1900 | 250 | 20.90 | 4.820 | 19.28 | -7.75 | 5d159 | 3873 | 755 |
| May. 16, 2025 | HSL | 2300 | 50 | 24.00 | 1.240 | 24.80 | 3.33 | 1053 | 3873 | 755 |
| May. 09, 2025 | HSL | 2600 | 50 | 25.40 | 1.370 | 27.40 | 7.87 | 1110 | 3873 | 755 |
| May. 17, 2025 | HSL | 3500 | 100 | 24.80 | 2.380 | 23.80 | -4.03 | 1111 | 3873 | 755 |
| May. 22, 2025 | HSL | 3500 | 100 | 24.80 | 2.480 | 24.80 | 0.00 | 1111 | 3873 | 755 |
| May. 19, 2025 | HSL | 3700 | 100 | 24.20 | 2.500 | 25.00 | 3.31 | 1082 | 3873 | 755 |
| May. 24, 2025 | HSL | 3700 | 100 | 24.20 | 2.490 | 24.90 | 2.89 | 1082 | 3873 | 755 |
| May. 21, 2025 | HSL | 3900 | 100 | 23.50 | 2.420 | 24.20 | 2.98 | 1055 | 3873 | 755 |

**Note:**

Comparing to the reference SAR value provided by SPEAG, the validation data should be within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots can be referred to Appendix A of this report.

## 4.5 Maximum Output Power

### 4.5.1 Maximum Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance please refer to Appendix D.

### 4.5.2 Measured Conducted Power Result

The measuring conducted average power (Unit: dBm) please refer to Appendix D.

## 4.6 SAR Testing Results

### 4.6.1 SAR Test Reduction Considerations

**<KDB 447498 D01, General RF Exposure Guidance>**

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

(1) ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz

(2) ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

(3) ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

**<KDB 941225 D01, 3G SAR Measurement Procedures>**

The mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ 1/4 dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

**<KDB 941225 D05, SAR Evaluation Considerations for LTE Devices>**

(1) QPSK with 1 RB and 50% RB allocation

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

(2) QPSK with 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 ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(3) Higher order modulations

SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > 1/2 dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45

W/kg.

(4) Other channel bandwidth

SAR is required when the highest maximum output power of the smaller channel bandwidth is > 1/2 dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

**<KDB 941225 D05, SAR Evaluation Considerations for 5G NR Devices>**

(1) For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, the CP-OFDM mode will not higher than DFT-OFDM mode, therefore, similar FCC KB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-QPSK and the reported SAR for the DFT-QPSK configuration is ≤ 1.45 W/kg, CP-OFDM testing is not required.

(2) For DFT-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, for 16QAM/64QAM/256QAM and smaller bandwidth output power will spot check largest channel bandwidth worst RB configuration to ensure the 16QAM/64QAM/256QAM and smaller bandwidth output power will not ½ dB higher than the same configuration in the largest supported bandwidth.

(3) SAR testing start with the largest channel bandwidth and measure SAR for QPSK with 1RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offset at the upper edge, middle and lower edge of each required test channel.

(4) 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.

(5) 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% RB and 1RB allocations and the highest reported SAR for 1RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel, and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

(6) Pi/2 BPSK/16QAM/64QAM/256QAM output powers according to 3GPP MPR will not ½ dB higher than the same configuration in QPSK, also reported SAR for the QPSK configuration is less than 1.45 W/kg, Pi/2 BPSK/16QAM/64QAM/256QAM SAR testing are not required.

(7) Smaller bandwidth output power for each RB allocation configuration for this device will not. ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device.

### 4.6.2 SAR Results for Body Exposure Condition (Separation Distance is 0.5 cm Gap)

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | QPSK20M | Vertical-Front | 0.5cm | 21100 | 1 | 0 | Sensor on | - | 16.00 | 14.81 | 0.13 | 0.190 | - | 1.315 | 0.250 |
| | LTE Band 7 | QPSK20M | Vertical-Back | 0.5cm | 21100 | 1 | 0 | Sensor on | - | 16.00 | 14.81 | -0.13 | 0.255 | - | 1.315 | 0.335 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 21100 | 1 | 0 | Sensor on | - | 16.00 | 14.81 | 0.05 | 0.771 | - | 1.315 | 1.014 |
| | LTE Band 7 | QPSK20M | Horizontal- | 0.5cm | 21100 | 1 | 0 | Sensor on | - | 16.00 | 14.81 | 0.03 | 0.358 | - | 1.315 | 0.471 |
| P01 | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 21100 | 1 | 0 | Sensor on | - | 16.00 | 14.81 | 0.13 | 0.894 | - | 1.315 | **1.176** |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 20850 | 1 | 0 | Sensor on | - | 16.00 | 14.75 | 0.19 | 0.795 | - | 1.334 | 1.060 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 21350 | 1 | 0 | Sensor on | - | 16.00 | 14.76 | 0.19 | 0.740 | - | 1.330 | 0.985 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 20850 | 1 | 0 | Sensor on | - | 16.00 | 14.75 | 0.10 | 0.856 | - | 1.334 | 1.141 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 21350 | 1 | 0 | Sensor on | - | 16.00 | 14.76 | 0.18 | 0.854 | - | 1.330 | 1.136 |
| | LTE Band 7 | QPSK20M | Vertical-Front | 0.5cm | 21100 | 50 | 25 | Sensor on | - | 15.00 | 13.80 | -0.16 | 0.156 | - | 1.318 | 0.206 |
| | LTE Band 7 | QPSK20M | Vertical-Back | 0.5cm | 21100 | 50 | 25 | Sensor on | - | 15.00 | 13.80 | -0.13 | 0.205 | - | 1.318 | 0.270 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 21100 | 50 | 25 | Sensor on | - | 15.00 | 13.80 | -0.19 | 0.619 | - | 1.318 | 0.816 |
| | LTE Band 7 | QPSK20M | Horizontal- | 0.5cm | 21100 | 50 | 25 | Sensor on | - | 15.00 | 13.80 | 0.16 | 0.282 | - | 1.318 | 0.372 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 21100 | 50 | 25 | Sensor on | - | 15.00 | 13.80 | 0.02 | 0.706 | - | 1.318 | 0.931 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 20850 | 50 | 25 | Sensor on | - | 15.00 | 13.73 | 0.06 | 0.625 | - | 1.340 | 0.837 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 21350 | 50 | 25 | Sensor on | - | 15.00 | 13.75 | -0.14 | 0.585 | - | 1.334 | 0.780 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 20850 | 50 | 25 | Sensor on | - | 15.00 | 13.73 | 0.03 | 0.678 | - | 1.340 | 0.908 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 21350 | 50 | 25 | Sensor on | - | 15.00 | 13.75 | 0.11 | 0.675 | - | 1.334 | 0.900 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 0.5cm | 21100 | 100 | 0 | Sensor on | - | 15.00 | 13.77 | -0.15 | 0.622 | - | 1.327 | 0.826 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 0.5cm | 21100 | 100 | 0 | Sensor on | - | 15.00 | 13.77 | -0.11 | 0.717 | - | 1.327 | 0.952 |
| | LTE Band 7 | QPSK20M | Vertical-Front | 1.6cm | 21100 | 1 | 0 | Full | - | 24.00 | 22.70 | -0.14 | 0.018 | - | 1.349 | 0.024 |
| | LTE Band 7 | QPSK20M | Vertical-Back | 1.6cm | 21100 | 1 | 0 | Full | - | 24.00 | 22.70 | 0.00 | 0.077 | - | 1.349 | 0.103 |
| | LTE Band 7 | QPSK20M | Horizontal-Up | 1.6cm | 20850 | 1 | 0 | Full | - | 24.00 | 22.63 | 0.04 | 0.635 | - | 1.371 | 0.871 |
| | LTE Band 7 | QPSK20M | Horizontal- | 1.6cm | 21100 | 1 | 0 | Full | - | 24.00 | 22.70 | 0.15 | 0.334 | - | 1.349 | 0.451 |
| | LTE Band 7 | QPSK20M | Vertical-Top | 1.6cm | 21100 | 1 | 0 | Full | - | 24.00 | 22.70 | 0.12 | 0.870 | - | 1.349 | 1.174 |
| | LTE Band 12/17 | QPSK10M | Vertical-Front | 0.5cm | 23095 | 1 | 0 | Full | - | 24.00 | 22.91 | -0.15 | 0.237 | - | 1.285 | 0.305 |
| | LTE Band 12/17 | QPSK10M | Vertical-Back | 0.5cm | 23095 | 1 | 0 | Full | - | 24.00 | 22.91 | 0.19 | 0.250 | - | 1.285 | 0.321 |
| P02 | LTE Band 12/17 | QPSK10M | Horizontal-Up | 0.5cm | 23095 | 1 | 0 | Full | - | 24.00 | 22.91 | 0.11 | 0.572 | - | 1.285 | **0.735** |
| | LTE Band 12/17 | QPSK10M | Horizontal- | 0.5cm | 23095 | 1 | 0 | Full | - | 24.00 | 22.91 | 0.04 | 0.523 | - | 1.285 | 0.672 |
| | LTE Band 12/17 | QPSK10M | Vertical-Top | 0.5cm | 23095 | 1 | 0 | Full | - | 24.00 | 22.91 | -0.03 | 0.196 | - | 1.285 | 0.252 |
| | LTE Band 12/17 | QPSK10M | Vertical-Front | 0.5cm | 23095 | 25 | 12 | Full | - | 23.00 | 21.90 | 0.14 | 0.190 | - | 1.288 | 0.245 |
| | LTE Band 12/17 | QPSK10M | Vertical-Back | 0.5cm | 23095 | 25 | 12 | Full | - | 23.00 | 21.90 | -0.01 | 0.203 | - | 1.288 | 0.262 |
| | LTE Band 12/17 | QPSK10M | Horizontal-Up | 0.5cm | 23095 | 25 | 12 | Full | - | 23.00 | 21.90 | -0.14 | 0.468 | - | 1.288 | 0.603 |
| | LTE Band 12/17 | QPSK10M | Horizontal- | 0.5cm | 23095 | 25 | 12 | Full | - | 23.00 | 21.90 | 0.17 | 0.429 | - | 1.288 | 0.553 |
| | LTE Band 12/17 | QPSK10M | Vertical-Top | 0.5cm | 23095 | 25 | 12 | Full | - | 23.00 | 21.90 | -0.17 | 0.159 | - | 1.288 | 0.205 |
| | LTE Band 13 | QPSK10M | Vertical-Front | 0.5cm | 23230 | 1 | 49 | Full | - | 24.00 | 23.32 | 0.17 | 0.326 | - | 1.169 | 0.381 |
| | LTE Band 13 | QPSK10M | Vertical-Back | 0.5cm | 23230 | 1 | 49 | Full | - | 24.00 | 23.32 | -0.17 | 0.378 | - | 1.169 | 0.442 |
| P03 | LTE Band 13 | QPSK10M | Horizontal-Up | 0.5cm | 23230 | 1 | 49 | Full | - | 24.00 | 23.32 | 0.08 | 0.802 | - | 1.169 | **0.938** |
| | LTE Band 13 | QPSK10M | Horizontal- | 0.5cm | 23230 | 1 | 49 | Full | - | 24.00 | 23.32 | 0.05 | 0.686 | - | 1.169 | 0.802 |
| | LTE Band 13 | QPSK10M | Vertical-Top | 0.5cm | 23230 | 1 | 49 | Full | - | 24.00 | 23.32 | -0.01 | 0.272 | - | 1.169 | 0.318 |
| | LTE Band 13 | QPSK10M | Vertical-Front | 0.5cm | 23230 | 25 | 25 | Full | - | 23.00 | 22.36 | -0.04 | 0.256 | - | 1.159 | 0.297 |
| | LTE Band 13 | QPSK10M | Vertical-Back | 0.5cm | 23230 | 25 | 25 | Full | - | 23.00 | 22.36 | -0.17 | 0.305 | - | 1.159 | 0.353 |
| | LTE Band 13 | QPSK10M | Horizontal-Up | 0.5cm | 23230 | 25 | 25 | Full | - | 23.00 | 22.36 | -0.07 | 0.639 | - | 1.159 | 0.740 |
| | LTE Band 13 | QPSK10M | Horizontal- | 0.5cm | 23230 | 25 | 25 | Full | - | 23.00 | 22.36 | 0.10 | 0.544 | - | 1.159 | 0.630 |
| | LTE Band 13 | QPSK10M | Vertical-Top | 0.5cm | 23230 | 25 | 25 | Full | - | 23.00 | 22.36 | -0.17 | 0.217 | - | 1.159 | 0.251 |
| | LTE Band 13 | QPSK10M | Horizontal-Up | 0.5cm | 23230 | 50 | 0 | Full | - | 23.00 | 22.33 | -0.05 | 0.633 | - | 1.167 | 0.739 |
| | LTE Band 13 | QPSK10M | Horizontal- | 0.5cm | 23230 | 50 | 0 | Full | - | 23.00 | 22.33 | 0.16 | 0.540 | - | 1.167 | 0.630 |
| | LTE Band 14 | QPSK10M | Vertical-Front | 0.5cm | 23330 | 1 | 49 | Full | - | 24.00 | 23.44 | -0.06 | 0.303 | - | 1.138 | 0.345 |
| | LTE Band 14 | QPSK10M | Vertical-Back | 0.5cm | 23330 | 1 | 49 | Full | - | 24.00 | 23.44 | 0.17 | 0.318 | - | 1.138 | 0.362 |
| P04 | LTE Band 14 | QPSK10M | Horizontal-Up | 0.5cm | 23330 | 1 | 49 | Full | - | 24.00 | 23.44 | -0.09 | 0.755 | - | 1.138 | **0.859** |
| | LTE Band 14 | QPSK10M | Horizontal- | 0.5cm | 23330 | 1 | 49 | Full | - | 24.00 | 23.44 | -0.02 | 0.697 | - | 1.138 | 0.793 |
| | LTE Band 14 | QPSK10M | Vertical-Top | 0.5cm | 23330 | 1 | 49 | Full | - | 24.00 | 23.44 | 0.05 | 0.155 | - | 1.138 | 0.176 |
| | LTE Band 14 | QPSK10M | Vertical-Front | 0.5cm | 23330 | 25 | 25 | Full | - | 23.00 | 22.45 | 0.01 | 0.238 | - | 1.135 | 0.270 |
| | LTE Band 14 | QPSK10M | Vertical-Back | 0.5cm | 23330 | 25 | 25 | Full | - | 23.00 | 22.45 | -0.13 | 0.252 | - | 1.135 | 0.286 |
| | LTE Band 14 | QPSK10M | Horizontal-Up | 0.5cm | 23330 | 25 | 25 | Full | - | 23.00 | 22.45 | 0.05 | 0.605 | - | 1.135 | 0.687 |
| | LTE Band 14 | QPSK10M | Horizontal- | 0.5cm | 23330 | 25 | 25 | Full | - | 23.00 | 22.45 | 0.05 | 0.559 | - | 1.135 | 0.634 |
| | LTE Band 14 | QPSK10M | Vertical-Top | 0.5cm | 23330 | 25 | 25 | Full | - | 23.00 | 22.45 | -0.04 | 0.126 | - | 1.135 | 0.143 |
| | LTE Band 14 | QPSK10M | Horizontal-Up | 0.5cm | 23330 | 50 | 0 | Full | - | 23.00 | 22.41 | 0.06 | 0.600 | - | 1.146 | 0.687 |
| | LTE Band 25/2 | QPSK20M | Vertical-Front | 0.5cm | 26140 | 1 | 0 | Sensor on | - | 19.00 | 17.90 | 0.09 | 0.097 | - | 1.288 | 0.125 |
| | LTE Band 25/2 | QPSK20M | Vertical-Back | 0.5cm | 26140 | 1 | 0 | Sensor on | - | 19.00 | 17.90 | -0.08 | 0.360 | - | 1.288 | 0.464 |
| | LTE Band 25/2 | QPSK20M | Horizontal-Up | 0.5cm | 26140 | 1 | 0 | Sensor on | - | 19.00 | 17.90 | 0.14 | 0.662 | - | 1.288 | 0.853 |
| | LTE Band 25/2 | QPSK20M | Horizontal- | 0.5cm | 26140 | 1 | 0 | Sensor on | - | 19.00 | 17.90 | 0.09 | 0.505 | - | 1.288 | 0.651 |

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25/2 | QPSK20M | Vertical-Top | 0.5cm | 26140 | 1 | 0 | Sensor on | - | 19.00 | 17.90 | 0.10 | 0.265 | - | 1.288 | 0.341 |
| | LTE Band 25/2 | QPSK20M | Horizontal-Up | 0.5cm | 26340 | 1 | 0 | Sensor on | - | 19.00 | 17.80 | 0.17 | 0.705 | - | 1.318 | 0.929 |
| P05 | LTE Band 25/2 | QPSK20M | Horizontal-Up | 0.5cm | 26590 | 1 | 0 | Sensor on | - | 19.00 | 17.72 | 0.18 | 0.746 | - | 1.343 | **1.002** |
| | LTE Band 25/2 | QPSK20M | Vertical-Front | 0.5cm | 26140 | 50 | 25 | Sensor on | - | 18.00 | 16.89 | 0.13 | 0.078 | - | 1.291 | 0.101 |
| | LTE Band 25/2 | QPSK20M | Vertical-Back | 0.5cm | 26140 | 50 | 25 | Sensor on | - | 18.00 | 16.89 | 0.15 | 0.287 | - | 1.291 | 0.371 |
| | LTE Band 25/2 | QPSK20M | Horizontal-Up | 0.5cm | 26140 | 50 | 25 | Sensor on | - | 18.00 | 16.89 | 0.08 | 0.524 | - | 1.291 | 0.677 |
| | LTE Band 25/2 | QPSK20M | Horizontal- | 0.5cm | 26140 | 50 | 25 | Sensor on | - | 18.00 | 16.89 | 0.02 | 0.397 | - | 1.291 | 0.513 |
| | LTE Band 25/2 | QPSK20M | Vertical-Top | 0.5cm | 26140 | 50 | 25 | Sensor on | - | 18.00 | 16.89 | 0.01 | 0.218 | - | 1.291 | 0.281 |
| | LTE Band 25/2 | QPSK20M | Horizontal-Up | 0.5cm | 26140 | 100 | 0 | Sensor on | - | 18.00 | 16.86 | 0.04 | 0.516 | - | 1.300 | 0.671 |
| | LTE Band 25/2 | QPSK20M | Vertical-Front | 1.6cm | 26140 | 1 | 0 | Full | - | 24.00 | 22.88 | 0.02 | 0.127 | - | 1.294 | 0.164 |
| | LTE Band 25/2 | QPSK20M | Vertical-Back | 1.6cm | 26140 | 1 | 0 | Full | - | 24.00 | 22.88 | -0.18 | 0.366 | - | 1.294 | 0.474 |
| | LTE Band 25/2 | QPSK20M | Horizontal-Up | 1.6cm | 26590 | 1 | 0 | Full | - | 24.00 | 22.61 | -0.07 | 0.456 | - | 1.377 | 0.628 |
| | LTE Band 25/2 | QPSK20M | Horizontal- | 1.6cm | 26140 | 1 | 0 | Full | - | 24.00 | 22.88 | 0.17 | 0.322 | - | 1.294 | 0.417 |
| | LTE Band 25/2 | QPSK20M | Vertical-Top | 1.6cm | 26140 | 1 | 0 | Full | - | 24.00 | 22.88 | 0.09 | 0.198 | - | 1.294 | 0.256 |
| | LTE Band 26/5 | QPSK15M | Vertical-Front | 0.5cm | 26865 | 1 | 0 | Full | - | 24.00 | 23.45 | 0.17 | 0.381 | - | 1.135 | 0.432 |
| | LTE Band 26/5 | QPSK15M | Vertical-Back | 0.5cm | 26865 | 1 | 0 | Full | - | 24.00 | 23.45 | -0.15 | 0.239 | - | 1.135 | 0.271 |
| P06 | LTE Band 26/5 | QPSK15M | Horizontal-Up | 0.5cm | 26865 | 1 | 0 | Full | - | 24.00 | 23.45 | 0.02 | 0.702 | - | 1.135 | **0.797** |
| | LTE Band 26/5 | QPSK15M | Horizontal- | 0.5cm | 26865 | 1 | 0 | Full | - | 24.00 | 23.45 | -0.09 | 0.620 | - | 1.135 | 0.704 |
| | LTE Band 26/5 | QPSK15M | Vertical-Top | 0.5cm | 26865 | 1 | 0 | Full | - | 24.00 | 23.45 | -0.14 | 0.314 | - | 1.135 | 0.356 |
| | LTE Band 26/5 | QPSK15M | Horizontal-Up | 0.5cm | 26765 | 1 | 0 | Full | - | 24.00 | 23.29 | 0.08 | 0.664 | - | 1.178 | 0.782 |
| | LTE Band 26/5 | QPSK15M | Horizontal-Up | 0.5cm | 26965 | 1 | 0 | Full | - | 24.00 | 23.39 | 0.13 | 0.673 | - | 1.151 | 0.774 |
| | LTE Band 26/5 | QPSK15M | Vertical-Front | 0.5cm | 26865 | 36 | 19 | Full | - | 23.00 | 22.40 | 0.17 | 0.295 | - | 1.148 | 0.339 |
| | LTE Band 26/5 | QPSK15M | Vertical-Back | 0.5cm | 26865 | 36 | 19 | Full | - | 23.00 | 22.40 | 0.15 | 0.181 | - | 1.148 | 0.208 |
| | LTE Band 26/5 | QPSK15M | Horizontal-Up | 0.5cm | 26865 | 36 | 19 | Full | - | 23.00 | 22.40 | 0.14 | 0.544 | - | 1.148 | 0.625 |
| | LTE Band 26/5 | QPSK15M | Horizontal- | 0.5cm | 26865 | 36 | 19 | Full | - | 23.00 | 22.40 | 0.03 | 0.487 | - | 1.148 | 0.559 |
| | LTE Band 26/5 | QPSK15M | Vertical-Top | 0.5cm | 26865 | 36 | 19 | Full | - | 23.00 | 22.40 | 0.18 | 0.252 | - | 1.148 | 0.289 |
| | LTE Band 26/5 | QPSK15M | Horizontal-Up | 0.5cm | 26865 | 75 | 0 | Full | - | 23.00 | 22.45 | -0.04 | 0.536 | - | 1.135 | 0.608 |
| | LTE Band 30 | QPSK10M | Vertical-Front | 0.5cm | 27710 | 1 | 24 | Sensor on | - | 16.50 | 15.42 | -0.03 | 0.174 | - | 1.282 | 0.223 |
| | LTE Band 30 | QPSK10M | Vertical-Back | 0.5cm | 27710 | 1 | 24 | Sensor on | - | 16.50 | 15.42 | -0.16 | 0.264 | - | 1.282 | 0.339 |
| P07 | LTE Band 30 | QPSK10M | Horizontal-Up | 0.5cm | 27710 | 1 | 24 | Sensor on | - | 16.50 | 15.42 | 0.15 | 0.803 | - | 1.282 | **1.030** |
| | LTE Band 30 | QPSK10M | Horizontal- | 0.5cm | 27710 | 1 | 24 | Sensor on | - | 16.50 | 15.42 | 0.12 | 0.479 | - | 1.282 | 0.614 |
| | LTE Band 30 | QPSK10M | Vertical-Top | 0.5cm | 27710 | 1 | 24 | Sensor on | - | 16.50 | 15.42 | -0.04 | 0.498 | - | 1.282 | 0.639 |
| | LTE Band 30 | QPSK10M | Vertical-Front | 0.5cm | 27710 | 25 | 12 | Sensor on | - | 15.50 | 14.42 | -0.04 | 0.130 | - | 1.282 | 0.167 |
| | LTE Band 30 | QPSK10M | Vertical-Back | 0.5cm | 27710 | 25 | 12 | Sensor on | - | 15.50 | 14.42 | 0.18 | 0.202 | - | 1.282 | 0.259 |
| | LTE Band 30 | QPSK10M | Horizontal-Up | 0.5cm | 27710 | 25 | 12 | Sensor on | - | 15.50 | 14.42 | 0.16 | 0.636 | - | 1.282 | 0.816 |
| | LTE Band 30 | QPSK10M | Horizontal- | 0.5cm | 27710 | 25 | 12 | Sensor on | - | 15.50 | 14.42 | -0.19 | 0.376 | - | 1.282 | 0.482 |
| | LTE Band 30 | QPSK10M | Vertical-Top | 0.5cm | 27710 | 25 | 12 | Sensor on | - | 15.50 | 14.42 | 0.14 | 0.385 | - | 1.282 | 0.494 |
| | LTE Band 30 | QPSK10M | Horizontal-Up | 0.5cm | 27710 | 50 | 0 | Sensor on | - | 15.50 | 14.32 | -0.01 | 0.619 | - | 1.312 | 0.812 |
| | LTE Band 30 | QPSK10M | Vertical-Front | 1.6cm | 27710 | 1 | 24 | Full | - | 22.00 | 21.10 | 0.16 | 0.097 | - | 1.230 | 0.119 |
| | LTE Band 30 | QPSK10M | Vertical-Back | 1.6cm | 27710 | 1 | 24 | Full | - | 22.00 | 21.10 | -0.03 | 0.467 | - | 1.230 | 0.575 |
| | LTE Band 30 | QPSK10M | Horizontal-Up | 1.6cm | 27710 | 1 | 24 | Full | - | 22.00 | 21.10 | -0.15 | 0.722 | - | 1.230 | 0.888 |
| | LTE Band 30 | QPSK10M | Horizontal- | 1.6cm | 27710 | 1 | 24 | Full | - | 22.00 | 21.10 | 0.06 | 0.463 | - | 1.230 | 0.570 |
| | LTE Band 30 | QPSK10M | Vertical-Top | 1.6cm | 27710 | 1 | 24 | Full | - | 22.00 | 21.10 | -0.11 | 0.504 | - | 1.230 | 0.620 |
| | LTE Band 41/38 | QPSK20M | Vertical-Front | 0.5cm | 40620 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.11 | 0.18 | 0.101 | 1.006 | 1.227 | 0.125 |
| | LTE Band 41/38 | QPSK20M | Vertical-Back | 0.5cm | 40620 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.11 | -0.05 | 0.172 | 1.006 | 1.227 | 0.212 |
| | LTE Band 41/38 | QPSK20M | Horizontal-Up | 0.5cm | 40620 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.11 | -0.12 | 0.388 | 1.006 | 1.227 | 0.479 |
| | LTE Band 41/38 | QPSK20M | Horizontal- | 0.5cm | 40620 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.11 | -0.03 | 0.196 | 1.006 | 1.227 | 0.242 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 40620 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.11 | 0.13 | 0.520 | 1.006 | 1.227 | 0.642 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 39750 | 1 | 50 | Sensor on | 62.9 | 16.00 | 14.92 | 0.12 | 0.496 | 1.006 | 1.282 | 0.640 |
| P08 | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 40185 | 1 | 50 | Sensor on | 62.9 | 16.00 | 14.96 | 0.18 | 0.531 | 1.006 | 1.271 | **0.679** |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 41055 | 1 | 50 | Sensor on | 62.9 | 16.00 | 14.90 | 0.10 | 0.466 | 1.006 | 1.288 | 0.604 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 41490 | 1 | 50 | Sensor on | 62.9 | 16.00 | 15.07 | 0.13 | 0.463 | 1.006 | 1.239 | 0.577 |
| | LTE Band 41/38 | QPSK20M | Vertical-Front | 0.5cm | 40620 | 50 | 50 | Sensor on | 62.9 | 15.00 | 14.04 | 0.11 | 0.083 | 1.006 | 1.247 | 0.104 |
| | LTE Band 41/38 | QPSK20M | Vertical-Back | 0.5cm | 40620 | 50 | 50 | Sensor on | 62.9 | 15.00 | 14.04 | -0.10 | 0.135 | 1.006 | 1.247 | 0.169 |
| | LTE Band 41/38 | QPSK20M | Horizontal-Up | 0.5cm | 40620 | 50 | 50 | Sensor on | 62.9 | 15.00 | 14.04 | -0.04 | 0.317 | 1.006 | 1.247 | 0.398 |
| | LTE Band 41/38 | QPSK20M | Horizontal- | 0.5cm | 40620 | 50 | 50 | Sensor on | 62.9 | 15.00 | 14.04 | -0.03 | 0.162 | 1.006 | 1.247 | 0.203 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 40620 | 50 | 50 | Sensor on | 62.9 | 15.00 | 14.04 | 0.08 | 0.418 | 1.006 | 1.247 | 0.525 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 0.5cm | 40620 | 100 | 0 | Sensor on | 62.9 | 15.00 | 13.99 | -0.04 | 0.411 | 1.006 | 1.262 | 0.522 |
| | LTE Band 41/38 | QPSK20M | Vertical-Front | 1.6cm | 40620 | 1 | 50 | Full | 62.9 | 24.00 | 22.84 | -0.17 | 0.066 | 1.006 | 1.306 | 0.087 |
| | LTE Band 41/38 | QPSK20M | Vertical-Back | 1.6cm | 40620 | 1 | 50 | Full | 62.9 | 24.00 | 22.84 | 0.19 | 0.235 | 1.006 | 1.306 | 0.309 |
| | LTE Band 41/38 | QPSK20M | Horizontal-Up | 1.6cm | 40620 | 1 | 50 | Full | 62.9 | 24.00 | 22.84 | 0.17 | 0.321 | 1.006 | 1.306 | 0.422 |
| | LTE Band 41/38 | QPSK20M | Horizontal- | 1.6cm | 40620 | 1 | 50 | Full | 62.9 | 24.00 | 22.84 | -0.06 | 0.190 | 1.006 | 1.306 | 0.250 |
| | LTE Band 41/38 | QPSK20M | Vertical-Top | 1.6cm | 40185 | 1 | 50 | Full | 62.9 | 24.00 | 22.73 | 0.11 | 0.502 | 1.006 | 1.340 | 0.677 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 0.5cm | 42190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 17.04 | -0.01 | 0.401 | 1.006 | 1.247 | 0.503 |

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 42 | QPSK20M | Vertical-Back | 0.5cm | 42190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 17.04 | 0.00 | 0.107 | 1.006 | 1.247 | 0.134 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 42190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 17.04 | -0.09 | 0.434 | 1.006 | 1.247 | 0.545 |
| | LTE Band 42 | QPSK20M | Horizontal- | 0.5cm | 42190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 17.04 | 0.11 | 0.359 | 1.006 | 1.247 | 0.450 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 0.5cm | 42190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 17.04 | 0.04 | 0.163 | 1.006 | 1.247 | 0.205 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 42590 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.70 | -0.07 | 0.414 | 1.006 | 1.349 | 0.562 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 42990 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.61 | -0.11 | 0.405 | 1.006 | 1.377 | 0.561 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 0.5cm | 42190 | 50 | 25 | Sensor on | 62.9 | 17.00 | 16.05 | 0.19 | 0.320 | 1.006 | 1.245 | 0.401 |
| | LTE Band 42 | QPSK20M | Vertical-Back | 0.5cm | 42190 | 50 | 25 | Sensor on | 62.9 | 17.00 | 16.05 | 0.03 | 0.085 | 1.006 | 1.245 | 0.106 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 42190 | 50 | 25 | Sensor on | 62.9 | 17.00 | 16.05 | -0.16 | 0.352 | 1.006 | 1.245 | 0.441 |
| | LTE Band 42 | QPSK20M | Horizontal- | 0.5cm | 42190 | 50 | 25 | Sensor on | 62.9 | 17.00 | 16.05 | -0.11 | 0.282 | 1.006 | 1.245 | 0.353 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 0.5cm | 42190 | 50 | 25 | Sensor on | 62.9 | 17.00 | 16.05 | -0.10 | 0.126 | 1.006 | 1.245 | 0.158 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 1.6cm | 42190 | 1 | 0 | Full | 62.9 | 22.50 | 21.48 | 0.02 | 0.342 | 1.006 | 1.265 | 0.435 |
| | LTE Band 42 | QPSK20M | Vertical-Back | 1.6cm | 42190 | 1 | 0 | Full | 62.9 | 22.50 | 21.48 | 0.14 | 0.206 | 1.006 | 1.265 | 0.262 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 1.6cm | 42590 | 1 | 0 | Full | 62.9 | 22.50 | 21.20 | -0.04 | 0.208 | 1.006 | 1.349 | 0.282 |
| | LTE Band 42 | QPSK20M | Horizontal- | 1.6cm | 42190 | 1 | 0 | Full | 62.9 | 22.50 | 21.48 | -0.16 | 0.228 | 1.006 | 1.265 | 0.290 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 1.6cm | 42190 | 1 | 0 | Full | 62.9 | 22.50 | 21.48 | 0.02 | 0.195 | 1.006 | 1.265 | 0.248 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 0.5cm | 43340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | -0.06 | 0.383 | 1.006 | 1.393 | 0.537 |
| | LTE Band 42 | QPSK20M | Vertical-Back | 0.5cm | 43340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | -0.07 | 0.118 | 1.006 | 1.393 | 0.165 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 43340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | -0.12 | 0.399 | 1.006 | 1.393 | 0.559 |
| | LTE Band 42 | QPSK20M | Horizontal- | 0.5cm | 43340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | 0.12 | 0.329 | 1.006 | 1.393 | 0.461 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 0.5cm | 43340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | -0.01 | 0.286 | 1.006 | 1.393 | 0.401 |
| P09 | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 43190 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.54 | -0.12 | 0.402 | 1.006 | 1.400 | **0.566** |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 43490 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.52 | -0.05 | 0.386 | 1.006 | 1.406 | 0.546 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 0.5cm | 43340 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.60 | 0.08 | 0.307 | 1.006 | 1.380 | 0.426 |
| | LTE Band 42 | QPSK20M | Vertical-Back | 0.5cm | 43340 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.60 | -0.01 | 0.097 | 1.006 | 1.380 | 0.135 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 0.5cm | 43340 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.60 | -0.01 | 0.325 | 1.006 | 1.380 | 0.451 |
| | LTE Band 42 | QPSK20M | Horizontal- | 0.5cm | 43340 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.60 | 0.15 | 0.265 | 1.006 | 1.380 | 0.368 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 0.5cm | 43340 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.60 | 0.19 | 0.225 | 1.006 | 1.380 | 0.312 |
| | LTE Band 42 | QPSK20M | Vertical-Front | 1.6cm | 43340 | 1 | 0 | Full | 62.9 | 22.50 | 20.98 | 0.09 | 0.393 | 1.006 | 1.419 | 0.561 |
| | LTE Band 42 | QPSK20M | Vertical-Back | 1.6cm | 43340 | 1 | 0 | Full | 62.9 | 22.50 | 20.98 | 0.00 | 0.233 | 1.006 | 1.419 | 0.333 |
| | LTE Band 42 | QPSK20M | Horizontal-Up | 1.6cm | 43190 | 1 | 0 | Full | 62.9 | 22.50 | 20.95 | 0.08 | 0.223 | 1.006 | 1.429 | 0.321 |
| | LTE Band 42 | QPSK20M | Horizontal- | 1.6cm | 43340 | 1 | 0 | Full | 62.9 | 22.50 | 20.98 | 0.02 | 0.310 | 1.006 | 1.419 | 0.443 |
| | LTE Band 42 | QPSK20M | Vertical-Top | 1.6cm | 43340 | 1 | 0 | Full | 62.9 | 22.50 | 20.98 | -0.12 | 0.222 | 1.006 | 1.419 | 0.317 |
| | LTE Band 48 | QPSK20M | Vertical-Front | 0.5cm | 55830 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.74 | 0.09 | 0.405 | 1.006 | 1.337 | 0.545 |
| | LTE Band 48 | QPSK20M | Vertical-Back | 0.5cm | 55830 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.74 | 0.16 | 0.108 | 1.006 | 1.337 | 0.145 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 0.5cm | 55830 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.74 | -0.11 | 0.410 | 1.006 | 1.337 | 0.551 |
| | LTE Band 48 | QPSK20M | Horizontal- | 0.5cm | 55830 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.74 | 0.09 | 0.315 | 1.006 | 1.337 | 0.424 |
| | LTE Band 48 | QPSK20M | Vertical-Top | 0.5cm | 55830 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.74 | 0.05 | 0.237 | 1.006 | 1.337 | 0.319 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 0.5cm | 55340 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.56 | -0.02 | 0.359 | 1.006 | 1.393 | 0.503 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 0.5cm | 56150 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.72 | -0.07 | 0.408 | 1.006 | 1.343 | 0.551 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 0.5cm | 56640 | 1 | 0 | Sensor on | 62.9 | 18.00 | 16.66 | 0.03 | 0.353 | 1.006 | 1.361 | 0.483 |
| | LTE Band 48 | QPSK20M | Vertical-Front | 0.5cm | 55830 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.84 | -0.06 | 0.335 | 1.006 | 1.306 | 0.440 |
| | LTE Band 48 | QPSK20M | Vertical-Back | 0.5cm | 55830 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.84 | -0.14 | 0.090 | 1.006 | 1.306 | 0.118 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 0.5cm | 55830 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.84 | -0.02 | 0.330 | 1.006 | 1.306 | 0.434 |
| | LTE Band 48 | QPSK20M | Horizontal- | 0.5cm | 55830 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.84 | 0.03 | 0.246 | 1.006 | 1.306 | 0.323 |
| | LTE Band 48 | QPSK20M | Vertical-Top | 0.5cm | 55830 | 50 | 25 | Sensor on | 62.9 | 17.00 | 15.84 | -0.07 | 0.191 | 1.006 | 1.306 | 0.251 |
| | LTE Band 48 | QPSK20M | Vertical-Front | 1.6cm | 55830 | 1 | 0 | Full | 62.9 | 22.00 | 20.59 | 0.09 | 0.490 | 1.006 | 1.384 | 0.682 |
| | LTE Band 48 | QPSK20M | Vertical-Back | 1.6cm | 55830 | 1 | 0 | Full | 62.9 | 22.00 | 20.59 | -0.15 | 0.258 | 1.006 | 1.384 | 0.359 |
| | LTE Band 48 | QPSK20M | Horizontal-Up | 1.6cm | 55830 | 1 | 0 | Full | 62.9 | 22.00 | 20.59 | -0.03 | 0.245 | 1.006 | 1.384 | 0.341 |
| | LTE Band 48 | QPSK20M | Horizontal- | 1.6cm | 55830 | 1 | 0 | Full | 62.9 | 22.00 | 20.59 | -0.15 | 0.336 | 1.006 | 1.384 | 0.468 |
| | LTE Band 48 | QPSK20M | Vertical-Top | 1.6cm | 55830 | 1 | 0 | Full | 62.9 | 22.00 | 20.59 | 0.17 | 0.249 | 1.006 | 1.384 | 0.347 |
| | LTE Band 48 | QPSK20M | Vertical-Front | 1.6cm | 55340 | 1 | 0 | Full | 62.9 | 22.00 | 20.47 | 0.11 | 0.445 | 1.006 | 1.422 | 0.637 |
| P10 | LTE Band 48 | QPSK20M | Vertical-Front | 1.6cm | 56150 | 1 | 0 | Full | 62.9 | 22.00 | 20.57 | 0.07 | 0.532 | 1.006 | 1.390 | **0.744** |
| | LTE Band 48 | QPSK20M | Vertical-Front | 1.6cm | 56640 | 1 | 0 | Full | 62.9 | 22.00 | 20.49 | -0.16 | 0.436 | 1.006 | 1.416 | 0.621 |
| | LTE Band 66/4 | QPSK20M | Vertical-Front | 0.5cm | 132572 | 1 | 50 | Sensor on | - | 18.00 | 16.84 | 0.14 | 0.065 | - | 1.306 | 0.085 |
| | LTE Band 66/4 | QPSK20M | Vertical-Back | 0.5cm | 132572 | 1 | 50 | Sensor on | - | 18.00 | 16.84 | -0.12 | 0.372 | - | 1.306 | 0.486 |
| | LTE Band 66/4 | QPSK20M | Horizontal-Up | 0.5cm | 132572 | 1 | 50 | Sensor on | - | 18.00 | 16.84 | 0.11 | 0.511 | - | 1.306 | 0.667 |
| | LTE Band 66/4 | QPSK20M | Horizontal- | 0.5cm | 132572 | 1 | 50 | Sensor on | - | 18.00 | 16.84 | 0.06 | 0.355 | - | 1.306 | 0.464 |
| | LTE Band 66/4 | QPSK20M | Vertical-Top | 0.5cm | 132572 | 1 | 50 | Sensor on | - | 18.00 | 16.84 | -0.02 | 0.155 | - | 1.306 | 0.202 |
| | LTE Band 66/4 | QPSK20M | Horizontal-Up | 0.5cm | 132072 | 1 | 50 | Sensor on | - | 18.00 | 16.54 | 0.00 | 0.446 | - | 1.400 | 0.624 |
| P11 | LTE Band 66/4 | QPSK20M | Horizontal-Up | 0.5cm | 132322 | 1 | 50 | Sensor on | - | 18.00 | 16.66 | 0.03 | 0.510 | - | 1.361 | **0.694** |
| | LTE Band 66/4 | QPSK20M | Vertical-Front | 0.5cm | 132572 | 50 | 25 | Sensor on | - | 17.00 | 15.80 | 0.00 | 0.050 | - | 1.318 | 0.066 |
| | LTE Band 66/4 | QPSK20M | Vertical-Back | 0.5cm | 132572 | 50 | 25 | Sensor on | - | 17.00 | 15.80 | 0.10 | 0.291 | - | 1.318 | 0.384 |
| | LTE Band 66/4 | QPSK20M | Horizontal-Up | 0.5cm | 132572 | 50 | 25 | Sensor on | - | 17.00 | 15.80 | -0.15 | 0.409 | - | 1.318 | 0.539 |

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66/4 | QPSK20M | Horizontal- | 0.5cm | 132572 | 50 | 25 | Sensor on | - | 17.00 | 15.80 | 0.14 | 0.292 | - | 1.318 | 0.385 |
| | LTE Band 66/4 | QPSK20M | Vertical-Top | 0.5cm | 132572 | 50 | 25 | Sensor on | - | 17.00 | 15.80 | -0.18 | 0.120 | - | 1.318 | 0.158 |
| | LTE Band 66/4 | QPSK20M | Vertical-Front | 1.6cm | 132572 | 1 | 50 | Full | - | 24.00 | 22.75 | -0.04 | 0.152 | - | 1.334 | 0.203 |
| | LTE Band 66/4 | QPSK20M | Vertical-Back | 1.6cm | 132572 | 1 | 50 | Full | - | 24.00 | 22.75 | 0.01 | 0.411 | - | 1.334 | 0.548 |
| | LTE Band 66/4 | QPSK20M | Horizontal-Up | 1.6cm | 132322 | 1 | 50 | Full | - | 24.00 | 22.64 | 0.08 | 0.506 | - | 1.368 | 0.692 |
| | LTE Band 66/4 | QPSK20M | Horizontal- | 1.6cm | 132572 | 1 | 50 | Full | - | 24.00 | 22.75 | 0.01 | 0.504 | - | 1.334 | 0.672 |
| | LTE Band 66/4 | QPSK20M | Vertical-Top | 1.6cm | 132572 | 1 | 50 | Full | - | 24.00 | 22.75 | -0.05 | 0.127 | - | 1.334 | 0.169 |
| | LTE Band 71 | QPSK20M | Vertical-Front | 0.5cm | 133322 | 1 | 50 | Full | - | 24.00 | 22.88 | -0.05 | 0.354 | - | 1.294 | 0.458 |
| | LTE Band 71 | QPSK20M | Vertical-Back | 0.5cm | 133322 | 1 | 50 | Full | - | 24.00 | 22.88 | 0.10 | 0.253 | - | 1.294 | 0.327 |
| P12 | LTE Band 71 | QPSK20M | Horizontal-Up | 0.5cm | 133322 | 1 | 50 | Full | - | 24.00 | 22.88 | 0.09 | 0.626 | - | 1.294 | **0.810** |
| | LTE Band 71 | QPSK20M | Horizontal- | 0.5cm | 133322 | 1 | 50 | Full | - | 24.00 | 22.88 | 0.03 | 0.584 | - | 1.294 | 0.756 |
| | LTE Band 71 | QPSK20M | Vertical-Top | 0.5cm | 133322 | 1 | 50 | Full | - | 24.00 | 22.88 | -0.19 | 0.162 | - | 1.294 | 0.210 |
| | LTE Band 71 | QPSK20M | Vertical-Front | 0.5cm | 133322 | 50 | 25 | Full | - | 23.00 | 21.63 | 0.16 | 0.277 | - | 1.371 | 0.380 |
| | LTE Band 71 | QPSK20M | Vertical-Back | 0.5cm | 133322 | 50 | 25 | Full | - | 23.00 | 21.63 | -0.03 | 0.204 | - | 1.371 | 0.280 |
| | LTE Band 71 | QPSK20M | Horizontal-Up | 0.5cm | 133322 | 50 | 25 | Full | - | 23.00 | 21.63 | -0.12 | 0.505 | - | 1.371 | 0.692 |
| | LTE Band 71 | QPSK20M | Horizontal- | 0.5cm | 133322 | 50 | 25 | Full | - | 23.00 | 21.63 | -0.14 | 0.477 | - | 1.371 | 0.654 |
| | LTE Band 71 | QPSK20M | Vertical-Top | 0.5cm | 133322 | 50 | 25 | Full | - | 23.00 | 21.63 | -0.07 | 0.133 | - | 1.371 | 0.182 |
| | LTE Band 71 | QPSK20M | Horizontal-Up | 0.5cm | 133322 | 100 | 0 | Full | - | 23.00 | 21.60 | -0.16 | 0.500 | - | 1.380 | 0.690 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Front | 0.5cm | 167300 | 1 | 1 | Full | - | 24.00 | 23.37 | -0.19 | 0.386 | - | 1.156 | 0.446 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Back | 0.5cm | 167300 | 1 | 1 | Full | - | 24.00 | 23.37 | 0.13 | 0.356 | - | 1.156 | 0.412 |
| P13 | FR1 n5 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 167300 | 1 | 1 | Full | - | 24.00 | 23.37 | -0.04 | 0.663 | - | 1.156 | **0.767** |
| | FR1 n5 | DFT-QPSK20M | Horizontal- | 0.5cm | 167300 | 1 | 1 | Full | - | 24.00 | 23.37 | 0.03 | 0.588 | - | 1.156 | 0.680 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Top | 0.5cm | 167300 | 1 | 1 | Full | - | 24.00 | 23.37 | -0.01 | 0.318 | - | 1.156 | 0.368 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Front | 0.5cm | 167300 | 50 | 28 | Full | - | 24.00 | 23.35 | -0.02 | 0.337 | - | 1.161 | 0.391 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Back | 0.5cm | 167300 | 50 | 28 | Full | - | 24.00 | 23.35 | -0.08 | 0.311 | - | 1.161 | 0.361 |
| | FR1 n5 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 167300 | 50 | 28 | Full | - | 24.00 | 23.35 | 0.10 | 0.602 | - | 1.161 | 0.699 |
| | FR1 n5 | DFT-QPSK20M | Horizontal- | 0.5cm | 167300 | 50 | 28 | Full | - | 24.00 | 23.35 | 0.08 | 0.482 | - | 1.161 | 0.560 |
| | FR1 n5 | DFT-QPSK20M | Vertical-Top | 0.5cm | 167300 | 50 | 28 | Full | - | 24.00 | 23.35 | -0.14 | 0.290 | - | 1.161 | 0.337 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Front | 0.5cm | 141500 | 1 | 1 | Full | - | 24.00 | 23.27 | 0.08 | 0.309 | - | 1.183 | 0.366 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Back | 0.5cm | 141500 | 1 | 1 | Full | - | 24.00 | 23.27 | -0.15 | 0.332 | - | 1.183 | 0.393 |
| P14 | FR1 n12 | DFT_QPSK15M | Horizontal-Up | 0.5cm | 141500 | 1 | 1 | Full | - | 24.00 | 23.27 | -0.02 | 0.566 | - | 1.183 | **0.670** |
| | FR1 n12 | DFT_QPSK15M | Horizontal- | 0.5cm | 141500 | 1 | 1 | Full | - | 24.00 | 23.27 | 0.11 | 0.539 | - | 1.183 | 0.638 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Top | 0.5cm | 141500 | 1 | 1 | Full | - | 24.00 | 23.27 | 0.07 | 0.269 | - | 1.183 | 0.318 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Front | 0.5cm | 141500 | 36 | 22 | Full | - | 24.00 | 23.24 | 0.11 | 0.303 | - | 1.191 | 0.361 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Back | 0.5cm | 141500 | 36 | 22 | Full | - | 24.00 | 23.24 | 0.19 | 0.330 | - | 1.191 | 0.393 |
| | FR1 n12 | DFT_QPSK15M | Horizontal-Up | 0.5cm | 141500 | 36 | 22 | Full | - | 24.00 | 23.24 | -0.01 | 0.562 | - | 1.191 | 0.669 |
| | FR1 n12 | DFT_QPSK15M | Horizontal- | 0.5cm | 141500 | 36 | 22 | Full | - | 24.00 | 23.24 | 0.19 | 0.533 | - | 1.191 | 0.635 |
| | FR1 n12 | DFT_QPSK15M | Vertical-Top | 0.5cm | 141500 | 36 | 22 | Full | - | 24.00 | 23.24 | -0.05 | 0.261 | - | 1.191 | 0.311 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Front | 0.5cm | 158600 | 1 | 1 | Full | - | 24.00 | 23.35 | -0.17 | 0.380 | - | 1.161 | 0.441 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Back | 0.5cm | 158600 | 1 | 1 | Full | - | 24.00 | 23.35 | 0.02 | 0.416 | - | 1.161 | 0.483 |
| | FR1 n14 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 158600 | 1 | 1 | Full | - | 24.00 | 23.35 | -0.16 | 0.636 | - | 1.161 | 0.739 |
| | FR1 n14 | DFT_QPSK10M | Horizontal- | 0.5cm | 158600 | 1 | 1 | Full | - | 24.00 | 23.35 | -0.04 | 0.590 | - | 1.161 | 0.685 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Top | 0.5cm | 158600 | 1 | 1 | Full | - | 24.00 | 23.35 | 0.13 | 0.276 | - | 1.161 | 0.321 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Front | 0.5cm | 158600 | 25 | 14 | Full | - | 24.00 | 23.33 | -0.10 | 0.444 | - | 1.167 | 0.518 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Back | 0.5cm | 158600 | 25 | 14 | Full | - | 24.00 | 23.33 | 0.11 | 0.485 | - | 1.167 | 0.566 |
| P15 | FR1 n14 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 158600 | 25 | 14 | Full | - | 24.00 | 23.33 | 0.00 | 0.743 | - | 1.167 | **0.867** |
| | FR1 n14 | DFT_QPSK10M | Horizontal- | 0.5cm | 158600 | 25 | 14 | Full | - | 24.00 | 23.33 | -0.09 | 0.677 | - | 1.167 | 0.790 |
| | FR1 n14 | DFT_QPSK10M | Vertical-Top | 0.5cm | 158600 | 25 | 14 | Full | - | 24.00 | 23.33 | -0.10 | 0.320 | - | 1.167 | 0.373 |
| | FR1 n14 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 158600 | 50 | 0 | Full | - | 24.00 | 23.30 | -0.06 | 0.731 | - | 1.175 | 0.859 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Front | 0.5cm | 376500 | 1 | 1 | Sensor on | - | 19.00 | 18.20 | -0.19 | 0.099 | - | 1.202 | 0.119 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Back | 0.5cm | 376500 | 1 | 1 | Sensor on | - | 19.00 | 18.20 | 0.09 | 0.369 | - | 1.202 | 0.444 |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 376500 | 1 | 1 | Sensor on | - | 19.00 | 18.20 | -0.19 | 0.624 | - | 1.202 | 0.750 |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal- | 0.5cm | 376500 | 1 | 1 | Sensor on | - | 19.00 | 18.20 | 0.07 | 0.397 | - | 1.202 | 0.477 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Top | 0.5cm | 376500 | 1 | 1 | Sensor on | - | 19.00 | 18.20 | 0.01 | 0.330 | - | 1.202 | 0.397 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Front | 0.5cm | 376500 | 50 | 28 | Sensor on | - | 19.00 | 18.17 | -0.13 | 0.111 | - | 1.211 | 0.134 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Back | 0.5cm | 376500 | 50 | 28 | Sensor on | - | 19.00 | 18.17 | -0.10 | 0.386 | - | 1.211 | 0.467 |
| P16 | FR1 n25/2 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 376500 | 50 | 28 | Sensor on | - | 19.00 | 18.17 | 0.15 | 0.660 | - | 1.211 | **0.799** |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal- | 0.5cm | 376500 | 50 | 28 | Sensor on | - | 19.00 | 18.17 | 0.11 | 0.416 | - | 1.211 | 0.504 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Top | 0.5cm | 376500 | 50 | 28 | Sensor on | - | 19.00 | 18.17 | -0.08 | 0.356 | - | 1.211 | 0.431 |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 372000 | 50 | 28 | Sensor on | - | 19.00 | 18.11 | 0.08 | 0.641 | - | 1.227 | 0.787 |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 381000 | 50 | 28 | Sensor on | - | 19.00 | 18.16 | -0.01 | 0.635 | - | 1.213 | 0.771 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Front | 1.6cm | 376500 | 50 | 28 | Full | - | 24.00 | 23.20 | 0.01 | 0.123 | - | 1.202 | 0.148 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Back | 1.6cm | 376500 | 50 | 28 | Full | - | 24.00 | 23.20 | 0.12 | 0.396 | - | 1.202 | 0.476 |
| | FR1 n25/2 | DFT-QPSK20M | Horizontal-Up | 1.6cm | 376500 | 50 | 28 | Full | - | 24.00 | 23.20 | -0.02 | 0.476 | - | 1.202 | 0.572 |

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FR1 n25/2 | DFT-QPSK20M | Horizontal- | 1.6cm | 376500 | 50 | 28 | Full | - | 24.00 | 23.20 | 0.02 | 0.352 | - | 1.202 | 0.423 |
| | FR1 n25/2 | DFT-QPSK20M | Vertical-Top | 1.6cm | 376500 | 50 | 28 | Full | - | 24.00 | 23.20 | 0.18 | 0.187 | - | 1.202 | 0.225 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Front | 0.5cm | 462000 | 1 | 1 | Sensor on | - | 16.50 | 15.80 | 0.18 | 0.136 | - | 1.175 | 0.160 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Back | 0.5cm | 462000 | 1 | 1 | Sensor on | - | 16.50 | 15.80 | -0.18 | 0.477 | - | 1.175 | 0.560 |
| | FR1 n30 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 462000 | 1 | 1 | Sensor on | - | 16.50 | 15.80 | 0.16 | 0.889 | - | 1.175 | 1.044 |
| | FR1 n30 | DFT_QPSK10M | Horizontal- | 0.5cm | 462000 | 1 | 1 | Sensor on | - | 16.50 | 15.80 | -0.13 | 0.625 | - | 1.175 | 0.734 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Top | 0.5cm | 462000 | 1 | 1 | Sensor on | - | 16.50 | 15.80 | -0.05 | 0.683 | - | 1.175 | 0.802 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Front | 0.5cm | 462000 | 25 | 14 | Sensor on | - | 16.50 | 15.78 | -0.04 | 0.141 | - | 1.180 | 0.166 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Back | 0.5cm | 462000 | 25 | 14 | Sensor on | - | 16.50 | 15.78 | -0.01 | 0.481 | - | 1.180 | 0.568 |
| P17 | FR1 n30 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 462000 | 25 | 14 | Sensor on | - | 16.50 | 15.78 | 0.12 | 0.908 | - | 1.180 | **1.072** |
| | FR1 n30 | DFT_QPSK10M | Horizontal- | 0.5cm | 462000 | 25 | 14 | Sensor on | - | 16.50 | 15.78 | -0.18 | 0.637 | - | 1.180 | 0.752 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Top | 0.5cm | 462000 | 25 | 14 | Sensor on | - | 16.50 | 15.78 | 0.08 | 0.690 | - | 1.180 | 0.814 |
| | FR1 n30 | DFT_QPSK10M | Horizontal-Up | 0.5cm | 462000 | 50 | 0 | Sensor on | - | 15.50 | 14.75 | 0.13 | 0.872 | - | 1.189 | 1.036 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Top | 0.5cm | 462000 | 50 | 0 | Sensor on | - | 15.50 | 14.75 | -0.17 | 0.535 | - | 1.189 | 0.636 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Front | 1.6cm | 462000 | 25 | 14 | Full | - | 22.00 | 21.28 | 0.09 | 0.071 | - | 1.180 | 0.084 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Back | 1.6cm | 462000 | 25 | 14 | Full | - | 22.00 | 21.28 | 0.18 | 0.331 | - | 1.180 | 0.391 |
| | FR1 n30 | DFT_QPSK10M | Horizontal-Up | 1.6cm | 462000 | 25 | 14 | Full | - | 22.00 | 21.28 | 0.10 | 0.519 | - | 1.180 | 0.613 |
| | FR1 n30 | DFT_QPSK10M | Horizontal- | 1.6cm | 462000 | 25 | 14 | Full | - | 22.00 | 21.28 | -0.10 | 0.350 | - | 1.180 | 0.413 |
| | FR1 n30 | DFT_QPSK10M | Vertical-Top | 1.6cm | 462000 | 25 | 14 | Full | - | 22.00 | 21.28 | -0.10 | 0.425 | - | 1.180 | 0.502 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Front | 0.5cm | 518598 | 1 | 1 | Sensor on | - | 16.00 | 15.10 | -0.19 | 0.149 | - | 1.230 | 0.183 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Back | 0.5cm | 518598 | 1 | 1 | Sensor on | - | 16.00 | 15.10 | -0.19 | 0.216 | - | 1.230 | 0.266 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 518598 | 1 | 1 | Sensor on | - | 16.00 | 15.10 | 0.19 | 0.597 | - | 1.230 | 0.734 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal- | 0.5cm | 518598 | 1 | 1 | Sensor on | - | 16.00 | 15.10 | -0.03 | 0.334 | - | 1.230 | 0.411 |
| P18 | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 518598 | 1 | 1 | Sensor on | - | 16.00 | 15.10 | 0.16 | 0.835 | - | 1.230 | **1.027** |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 501204 | 1 | 1 | Sensor on | - | 16.00 | 15.05 | -0.18 | 0.588 | - | 1.245 | 0.732 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 535998 | 1 | 1 | Sensor on | - | 16.00 | 15.06 | 0.15 | 0.575 | - | 1.242 | 0.714 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 501204 | 1 | 1 | Sensor on | - | 16.00 | 15.05 | 0.13 | 0.824 | - | 1.245 | 1.025 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 535998 | 1 | 1 | Sensor on | - | 16.00 | 15.06 | 0.14 | 0.816 | - | 1.242 | 1.013 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Front | 0.5cm | 518598 | 25 | 13 | Sensor on | - | 16.00 | 15.08 | -0.15 | 0.138 | - | 1.236 | 0.171 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Back | 0.5cm | 518598 | 25 | 13 | Sensor on | - | 16.00 | 15.08 | -0.15 | 0.204 | - | 1.236 | 0.252 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 518598 | 25 | 13 | Sensor on | - | 16.00 | 15.08 | -0.18 | 0.591 | - | 1.236 | 0.730 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal- | 0.5cm | 518598 | 25 | 13 | Sensor on | - | 16.00 | 15.08 | 0.08 | 0.326 | - | 1.236 | 0.403 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 518598 | 25 | 13 | Sensor on | - | 16.00 | 15.08 | 0.09 | 0.830 | - | 1.236 | 1.026 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 501204 | 25 | 13 | Sensor on | - | 16.00 | 15.02 | 0.07 | 0.582 | - | 1.253 | 0.729 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 535998 | 25 | 13 | Sensor on | - | 16.00 | 15.04 | 0.11 | 0.568 | - | 1.247 | 0.709 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 501204 | 25 | 13 | Sensor on | - | 16.00 | 15.02 | 0.13 | 0.818 | - | 1.253 | 1.025 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 535998 | 25 | 13 | Sensor on | - | 16.00 | 15.04 | 0.04 | 0.807 | - | 1.247 | 1.007 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 518598 | 50 | 0 | Sensor on | - | 16.00 | 15.06 | 0.14 | 0.585 | - | 1.242 | 0.726 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 0.5cm | 518598 | 50 | 0 | Sensor on | - | 16.00 | 15.06 | -0.14 | 0.824 | - | 1.242 | 1.023 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Front | 1.6cm | 518598 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.11 | 0.104 | - | 1.202 | 0.125 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Back | 1.6cm | 518598 | 1 | 1 | Full | - | 24.00 | 23.20 | -0.17 | 0.422 | - | 1.202 | 0.507 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal-Up | 1.6cm | 518598 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.18 | 0.562 | - | 1.202 | 0.676 |
| | FR1 n41/38 | DFT-QPSK20M | Horizontal- | 1.6cm | 518598 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.07 | 0.322 | - | 1.202 | 0.387 |
| | FR1 n41/38 | DFT-QPSK20M | Vertical-Top | 1.6cm | 518598 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.11 | 0.759 | - | 1.202 | 0.913 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Front | 0.5cm | 354000 | 1 | 1 | Sensor on | - | 18.00 | 16.93 | -0.07 | 0.132 | - | 1.279 | 0.169 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Back | 0.5cm | 354000 | 1 | 1 | Sensor on | - | 18.00 | 16.93 | -0.14 | 0.353 | - | 1.279 | 0.452 |
| | FR1 n66 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 354000 | 1 | 1 | Sensor on | - | 18.00 | 16.93 | 0.06 | 0.469 | - | 1.279 | 0.600 |
| | FR1 n66 | DFT-QPSK20M | Horizontal- | 0.5cm | 354000 | 1 | 1 | Sensor on | - | 18.00 | 16.93 | 0.02 | 0.362 | - | 1.279 | 0.463 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Top | 0.5cm | 354000 | 1 | 1 | Sensor on | - | 18.00 | 16.93 | 0.19 | 0.138 | - | 1.279 | 0.177 |
| | FR1 n66 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 344000 | 1 | 1 | Sensor on | - | 18.00 | 16.86 | 0.02 | 0.458 | - | 1.300 | 0.595 |
| P19 | FR1 n66 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 349000 | 1 | 1 | Sensor on | - | 18.00 | 16.80 | 0.15 | 0.470 | - | 1.318 | **0.620** |
| | FR1 n66 | DFT-QPSK20M | Vertical-Front | 0.5cm | 354000 | 50 | 28 | Sensor on | - | 18.00 | 16.90 | 0.00 | 0.128 | - | 1.288 | 0.165 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Back | 0.5cm | 354000 | 50 | 28 | Sensor on | - | 18.00 | 16.90 | -0.14 | 0.348 | - | 1.288 | 0.448 |
| | FR1 n66 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 354000 | 50 | 28 | Sensor on | - | 18.00 | 16.90 | 0.12 | 0.465 | - | 1.288 | 0.599 |
| | FR1 n66 | DFT-QPSK20M | Horizontal- | 0.5cm | 354000 | 50 | 28 | Sensor on | - | 18.00 | 16.90 | 0.02 | 0.349 | - | 1.288 | 0.450 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Top | 0.5cm | 354000 | 50 | 28 | Sensor on | - | 18.00 | 16.90 | -0.01 | 0.136 | - | 1.288 | 0.175 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Front | 1.6cm | 354000 | 1 | 1 | Full | - | 24.00 | 22.98 | 0.01 | 0.128 | - | 1.265 | 0.162 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Back | 1.6cm | 354000 | 1 | 1 | Full | - | 24.00 | 22.98 | 0.02 | 0.337 | - | 1.265 | 0.426 |
| | FR1 n66 | DFT-QPSK20M | Horizontal-Up | 1.6cm | 349000 | 1 | 1 | Full | - | 24.00 | 22.83 | -0.01 | 0.473 | - | 1.309 | 0.619 |
| | FR1 n66 | DFT-QPSK20M | Horizontal- | 1.6cm | 354000 | 1 | 1 | Full | - | 24.00 | 22.98 | 0.02 | 0.429 | - | 1.265 | 0.543 |
| | FR1 n66 | DFT-QPSK20M | Vertical-Top | 1.6cm | 354000 | 1 | 1 | Full | - | 24.00 | 22.98 | 0.03 | 0.108 | - | 1.265 | 0.137 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Front | 0.5cm | 136100 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.08 | 0.280 | - | 1.202 | 0.337 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Back | 0.5cm | 136100 | 1 | 1 | Full | - | 24.00 | 23.20 | 0.16 | 0.248 | - | 1.202 | 0.298 |
| P20 | FR1 n71 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 136100 | 1 | 1 | Full | - | 24.00 | 23.20 | -0.11 | 0.609 | - | 1.202 | **0.732** |

| Plot No. | Band | Mode | Test Position | Separation Distance (cm) | Ch. | RB# | RB offset | Power Reduction | Duty Cycle | Max. Tune-up Power (dBm) | Measured Conducted Power (dBm) | Power Drift (dB) | Measured SAR-1g (W/kg) | Duty Cycle Scaling Factor | Tune-up Scaling Factor | Scaled SAR-1g (W/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FR1 n71 | DFT-QPSK20M | Horizontal- | 0.5cm | 136100 | 1 | 1 | Full | - | 24.00 | 23.20 | -0.13 | 0.591 | - | 1.202 | 0.711 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Top | 0.5cm | 136100 | 1 | 1 | Full | - | 24.00 | 23.20 | -0.16 | 0.254 | - | 1.202 | 0.305 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Front | 0.5cm | 136100 | 50 | 28 | Full | - | 24.00 | 23.17 | -0.03 | 0.256 | - | 1.211 | 0.310 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Back | 0.5cm | 136100 | 50 | 28 | Full | - | 24.00 | 23.17 | 0.08 | 0.232 | - | 1.211 | 0.281 |
| | FR1 n71 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 136100 | 50 | 28 | Full | - | 24.00 | 23.17 | -0.04 | 0.565 | - | 1.211 | 0.684 |
| | FR1 n71 | DFT-QPSK20M | Horizontal- | 0.5cm | 136100 | 50 | 28 | Full | - | 24.00 | 23.17 | -0.16 | 0.549 | - | 1.211 | 0.665 |
| | FR1 n71 | DFT-QPSK20M | Vertical-Top | 0.5cm | 136100 | 50 | 28 | Full | - | 24.00 | 23.17 | -0.17 | 0.235 | - | 1.211 | 0.284 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 633332 | 1 | 1 | Sensor on | - | 17.00 | 16.11 | 0.13 | 0.411 | - | 1.227 | 0.504 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 0.5cm | 633332 | 1 | 1 | Sensor on | - | 17.00 | 16.11 | -0.16 | 0.136 | - | 1.227 | 0.167 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 633332 | 1 | 1 | Sensor on | - | 17.00 | 16.11 | 0.18 | 0.447 | - | 1.227 | 0.549 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 633332 | 1 | 1 | Sensor on | - | 17.00 | 16.11 | -0.08 | 0.418 | - | 1.227 | 0.513 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 0.5cm | 633332 | 1 | 1 | Sensor on | - | 17.00 | 16.11 | -0.03 | 0.233 | - | 1.227 | 0.286 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 633332 | 25 | 13 | Sensor on | - | 17.00 | 16.09 | 0.19 | 0.419 | - | 1.233 | 0.517 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 0.5cm | 633332 | 25 | 13 | Sensor on | - | 17.00 | 16.09 | 0.14 | 0.139 | - | 1.233 | 0.171 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 633332 | 25 | 13 | Sensor on | - | 17.00 | 16.09 | -0.07 | 0.453 | - | 1.233 | 0.559 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 633332 | 25 | 13 | Sensor on | - | 17.00 | 16.09 | 0.17 | 0.421 | - | 1.233 | 0.519 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 0.5cm | 633332 | 25 | 13 | Sensor on | - | 17.00 | 16.09 | 0.13 | 0.245 | - | 1.233 | 0.302 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 630668 | 25 | 13 | Sensor on | - | 17.00 | 16.06 | 0.05 | 0.478 | - | 1.242 | 0.594 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 636000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | 0.11 | 0.417 | - | 1.256 | 0.524 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 633332 | 25 | 13 | Full | - | 24.00 | 23.13 | -0.17 | 0.542 | - | 1.222 | 0.662 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 1.6cm | 633332 | 25 | 13 | Full | - | 24.00 | 23.13 | 0.03 | 0.285 | - | 1.222 | 0.348 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 1.6cm | 630668 | 25 | 13 | Full | - | 24.00 | 23.12 | 0.09 | 0.358 | - | 1.225 | 0.438 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 1.6cm | 633332 | 25 | 13 | Full | - | 24.00 | 23.13 | 0.10 | 0.450 | - | 1.222 | 0.550 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 1.6cm | 633332 | 25 | 13 | Full | - | 24.00 | 23.13 | 0.15 | 0.284 | - | 1.222 | 0.347 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 630668 | 25 | 13 | Full | - | 24.00 | 23.12 | 0.02 | 0.519 | - | 1.225 | 0.636 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 636000 | 25 | 13 | Full | - | 24.00 | 23.00 | -0.11 | 0.543 | - | 1.259 | 0.684 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 656000 | 1 | 1 | Sensor on | - | 17.00 | 16.03 | 0.10 | 0.795 | - | 1.250 | 0.994 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 0.5cm | 656000 | 1 | 1 | Sensor on | - | 17.00 | 16.03 | -0.19 | 0.235 | - | 1.250 | 0.294 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 656000 | 1 | 1 | Sensor on | - | 17.00 | 16.03 | 0.01 | 0.366 | - | 1.250 | 0.458 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 656000 | 1 | 1 | Sensor on | - | 17.00 | 16.03 | -0.03 | 0.341 | - | 1.250 | 0.426 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 0.5cm | 656000 | 1 | 1 | Sensor on | - | 17.00 | 16.03 | 0.06 | 0.288 | - | 1.250 | 0.360 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 647334 | 1 | 1 | Sensor on | - | 17.00 | 15.98 | 0.12 | 0.513 | - | 1.265 | 0.649 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 664666 | 1 | 1 | Sensor on | - | 17.00 | 15.94 | 0.17 | 0.694 | - | 1.276 | 0.886 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 647334 | 1 | 1 | Sensor on | - | 17.00 | 15.98 | 0.05 | 0.239 | - | 1.265 | 0.302 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 664666 | 1 | 1 | Sensor on | - | 17.00 | 15.94 | 0.11 | 0.317 | - | 1.276 | 0.405 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 647334 | 1 | 1 | Sensor on | - | 17.00 | 15.98 | -0.13 | 0.225 | - | 1.265 | 0.285 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 664666 | 1 | 1 | Sensor on | - | 17.00 | 15.94 | -0.06 | 0.297 | - | 1.276 | 0.379 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 656000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | 0.10 | 0.849 | - | 1.256 | 1.066 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 0.5cm | 656000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | 0.17 | 0.248 | - | 1.256 | 0.311 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 656000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | -0.05 | 0.388 | - | 1.256 | 0.487 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 656000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | 0.19 | 0.365 | - | 1.256 | 0.458 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 0.5cm | 656000 | 25 | 13 | Sensor on | - | 17.00 | 16.01 | 0.12 | 0.307 | - | 1.256 | 0.386 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 647334 | 25 | 13 | Sensor on | - | 17.00 | 15.95 | 0.11 | 0.546 | - | 1.274 | 0.695 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 664666 | 25 | 13 | Sensor on | - | 17.00 | 15.92 | 0.11 | 0.739 | - | 1.282 | 0.948 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 647334 | 25 | 13 | Sensor on | - | 17.00 | 15.95 | 0.05 | 0.252 | - | 1.274 | 0.321 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 664666 | 25 | 13 | Sensor on | - | 17.00 | 15.92 | 0.13 | 0.341 | - | 1.282 | 0.437 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 647334 | 25 | 13 | Sensor on | - | 17.00 | 15.95 | 0.11 | 0.236 | - | 1.274 | 0.301 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 664666 | 25 | 13 | Sensor on | - | 17.00 | 15.92 | 0.19 | 0.319 | - | 1.282 | 0.409 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 0.5cm | 656000 | 50 | 0 | Sensor on | - | 17.00 | 15.99 | -0.16 | 0.840 | - | 1.262 | 1.060 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 0.5cm | 656000 | 50 | 0 | Sensor on | - | 17.00 | 15.99 | 0.04 | 0.384 | - | 1.262 | 0.485 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 0.5cm | 656000 | 50 | 0 | Sensor on | - | 17.00 | 15.99 | -0.07 | 0.360 | - | 1.262 | 0.454 |
| P21 | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 656000 | 25 | 13 | Full | - | 24.00 | 23.04 | 0.16 | 0.932 | - | 1.247 | **1.163** |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Back | 1.6cm | 656000 | 25 | 13 | Full | - | 24.00 | 23.04 | 0.15 | 0.407 | - | 1.247 | 0.508 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal-Up | 1.6cm | 656000 | 25 | 13 | Full | - | 24.00 | 23.04 | -0.14 | 0.391 | - | 1.247 | 0.488 |
| | FR1 n77/78 | DFT-QPSK20M | Horizontal- | 1.6cm | 656000 | 25 | 13 | Full | - | 24.00 | 23.04 | -0.11 | 0.491 | - | 1.247 | 0.612 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Top | 1.6cm | 656000 | 25 | 13 | Full | - | 24.00 | 23.04 | 0.07 | 0.357 | - | 1.247 | 0.445 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 647334 | 25 | 13 | Full | - | 24.00 | 22.82 | 0.11 | 0.540 | - | 1.312 | 0.709 |
| | FR1 n77/78 | DFT-QPSK20M | Vertical-Front | 1.6cm | 664666 | 25 | 13 | Full | - | 24.00 | 22.75 | 0.08 | 0.790 | - | 1.334 | 1.053 |

### 4.6.3 SAR Measurement Variability

According to KDB 865664 D01, SAR measurement variability was assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. Alternatively, if the highest measured SAR for both head and body tissue-equivalent media are ≤ 1.45 W/kg and the ratio of these highest SAR values, i.e., largest divided by smallest value, is ≤ 1.10, the highest SAR configuration for either head or body tissue-equivalent medium may be used to perform the repeated measurement. 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.

SAR repeated measurement procedure:

1. When the highest measured SAR is < 0.80 W/kg, repeated measurement is not required.
2. When the highest measured SAR is >= 0.80 W/kg, repeat that measurement once.
3. 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 >= 1.45 W/kg, perform a second repeated measurement.
4. If the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20, and the original, first or second repeated measurement is >= 1.5 W/kg, perform a third repeated measurement.

| Band | Test Position | Separation Distance (cm) | Ch. | Original Measured SAR-1g (W/kg) | 1st Repeated SAR-1g (W/kg) | L/S Ratio | 2nd Repeated SAR-1g (W/kg) | L/S Ratio | 3rd Repeated SAR-1g (W/kg) | L/S Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| LTE Band 13 | Horizontal-Up | 0.5cm | 23230 | 0.802 | 0.796 | 1.007 | N/A | N/A | N/A | N/A |
| FR1 n30 | Horizontal-Up | 0.5cm | 462000 | 0.908 | 0.901 | 1.008 | N/A | N/A | N/A | N/A |
| LTE Band 7 | Vertical-Top | 0.5cm | 21100 | 0.894 | 0.875 | 1.022 | N/A | N/A | N/A | N/A |
| FR1 n77/78 | Vertical-Front | 1.6cm | 656000 | 0.932 | 0.904 | 1.031 | N/A | N/A | N/A | N/A |

**Test Engineer：** Renjie Liu, and Zixiao Xia.

# 5. Calibration of Test Equipment

| Equipment | Manufacturer | Model | SN | Cal. Data | Due Data |
|---|---|---|---|---|---|
| System Validation Dipole | SPEAG | D750V3 | 1067 | Jun. 17, 2024 | Jun. 16, 2025 |
| System Validation Dipole | SPEAG | D835V2 | 4d139 | Jun. 16, 2024 | Jun. 15, 2025 |
| System Validation Dipole | SPEAG | D1750V2 | 1071 | Jun. 17, 2024 | Jun. 16, 2025 |
| System Validation Dipole | SPEAG | D1900V2 | 5d159 | Jun. 15, 2024 | Jun. 14, 2025 |
| System Validation Dipole | SPEAG | D2300V2 | 1053 | Jun. 16, 2024 | Jun. 15, 2025 |
| System Validation Dipole | SPEAG | D2600V2 | 1110 | Jun. 17, 2024 | Jun. 16, 2025 |
| System Validation Dipole | SPEAG | D3500V2 | 1111 | Nov. 11, 2024 | Nov. 10, 2025 |
| System Validation Dipole | SPEAG | D3700V2 | 1082 | Nov. 08, 2024 | Nov. 07, 2025 |
| System Validation Dipole | SPEAG | D3900V2 | 1055 | Nov. 07, 2024 | Nov. 06, 2025 |
| Dosimetric E-Field Probe | SPEAG | EX3DV4 | 3873 | Sep. 29, 2024 | Sep. 28, 2025 |
| Data Acquisition Electronics | SPEAG | DAE4 | 755 | Jul. 05, 2024 | Jul. 04, 2025 |
| Dielectric Probe Kit | SPEAG | DAK-3.5 | 1076 | Aug. 20, 2024 | Aug. 19, 2025 |
| Radio Communication Analyzer | Rohde&Schwarz | CMW500 | 166205 | Aug. 01, 2024 | Jul. 31, 2025 |
| ENA Series Network Analyzer | Agilent | E5071C | MY46214638 | Apr. 28, 2024 | Apr. 26, 2026 |
| Spectrum Analyzer | KEYSIGHT | N9010A | MY54510355 | Jan. 31, 2024 | Jan. 29, 2026 |
| ESG Analog Signal Generator | Rohde&Schwarz | SMB100B | 102507 | Mar. 28, 2024 | Mar. 26, 2026 |
| Power Meter | Agilent | N1914A | MY52180044 | Jan. 16, 2025 | Jan. 15, 2026 |
| Power Sensor | Agilent | E9304A H18 | MY52050011 | Jan. 16, 2025 | Jan. 15, 2026 |
| Power Meter | Rohde&Schwarz | NRX | 102380 | Mar. 28, 2024 | Mar. 26, 2026 |
| Power Sensor | Rohde&Schwarz | NRP6A | 102942 | Mar. 20, 2024 | Mar. 18, 2026 |
| Temp. & Humi. Recorder | HUATO | A2000TH | HE20107712 | Apr. 29, 2024 | Apr. 27, 2026 |
| Electronic Thermometer | YONGFA | YF-160A | 120100323 | Apr. 29, 2024 | Apr. 27, 2026 |
| Coupler | Woken | 0110A056020-10 | COM27RW1A3 | May. 20, 2024 | May. 18, 2026 |

# 6. Measurement Uncertainty

| DASY6 Uncertainty Budget According to IEEE 1528-2013 and IEC 62209-1/2016 (30 MHz - 6 GHz range) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Error Description** | **Uncertainty Value (±%)** | **Probability** | **Divisor** | **(Ci) 1g** | **(Ci) 10g** | **Standard Uncertainty (1g) (±%)** | **Standard Uncertainty (10g) (±%)** | **(Vi) Veff** |
| **Measurement System** | | | | | | | | |
| Probe Calibration | 6.65 | N | 1 | 1 | 1 | 6.7 | 6.7 | ∞ |
| Axial Isotropy | 4.7 | R | 1.732 | 0.7 | 0.7 | 1.9 | 1.9 | ∞ |
| Hemispherical Isotropy | 9.6 | R | 1.732 | 0.7 | 0.7 | 3.9 | 3.9 | ∞ |
| Boundary Effects | 2.0 | R | 1.732 | 1 | 1 | 1.2 | 1.2 | ∞ |
| Linearity | 4.7 | R | 1.732 | 1 | 1 | 2.7 | 2.7 | ∞ |
| System Detection Limits | 1.0 | R | 1.732 | 1 | 1 | 0.6 | 0.6 | ∞ |
| Modulation Response | 3.2 | R | 1.732 | 1 | 1 | 1.8 | 1.8 | ∞ |
| Readout Electronics | 0.3 | N | 1 | 1 | 1 | 0.3 | 0.3 | ∞ |
| Response Time | 0.0 | R | 1.732 | 1 | 1 | 0.0 | 0.0 | ∞ |
| Integration Time | 2.6 | R | 1.732 | 1 | 1 | 1.5 | 1.5 | ∞ |
| RF Ambient Noise | 3.0 | R | 1.732 | 1 | 1 | 1.7 | 1.7 | ∞ |
| RF Ambient Reflections | 3.0 | R | 1.732 | 1 | 1 | 1.7 | 1.7 | ∞ |
| Probe Positioner | 0.4 | R | 1.732 | 1 | 1 | 0.2 | 0.2 | ∞ |
| Probe Positioning | 6.7 | R | 1.732 | 1 | 1 | 3.9 | 3.9 | ∞ |
| Max. SAR Eval. | 4.0 | R | 1.732 | 1 | 1 | 2.3 | 2.3 | ∞ |
| **Test Sample Related** | | | | | | | | |
| Device Positioning | 4.3 | N | 1 | 1 | 1 | 4.3 | 4.3 | 35 |
| Device Holder | 4.9 | N | 1 | 1 | 1 | 4.9 | 4.9 | 12 |
| Power Drift | 5.0 | R | 1.732 | 1 | 1 | 2.9 | 2.9 | ∞ |
| Power Scaling | 0.0 | R | 1.732 | 1 | 1 | 0.0 | 0.0 | ∞ |
| **Phantom and Setup** | | | | | | | | |
| Phantom Uncertainty | 6.6 | R | 1.732 | 1 | 1 | 3.8 | 3.8 | ∞ |
| SAR correction | 0.0 | R | 1.732 | 1 | 0.84 | 0.0 | 0.0 | ∞ |
| Liquid Conductivity Repeatability | 0.16 | N | 1 | 0.78 | 0.71 | 0.1 | 0.1 | 5 |
| Liquid Conductivity (target) | 10.0 | R | 1.732 | 0.78 | 0.71 | 4.5 | 4.1 | ∞ |
| Liquid Conductivity (mea.) | 2.5 | R | 1.732 | 0.78 | 0.71 | 1.1 | 1.0 | ∞ |
| Temp. unc. - Conductivity | 3.64 | R | 1.732 | 0.78 | 0.71 | 1.6 | 1.5 | ∞ |
| Liquid Permittivity Repeatability | 0.08 | N | 1 | 0.23 | 0.26 | 0.0 | 0.0 | 5 |
| Liquid Permittivity (target) | 10.0 | R | 1.732 | 0.23 | 0.26 | 1.3 | 1.5 | ∞ |
| Liquid Permittivity (mea.) | 2.5 | R | 1.732 | 0.23 | 0.26 | 0.3 | 0.4 | ∞ |
| Temp. unc. - Permittivity | 1.78 | R | 1.732 | 0.23 | 0.26 | 0.2 | 0.3 | ∞ |
| **Combined Std. Uncertainty** | | | | | | 14.0% | 13.9% | 624 |
| **Coverage Factor for 95 %** | | | | | | K=2 | K=2 | |
| **Expanded STD Uncertainty** | | | | | | 28.0% | 27.7% | |

**Uncertainty budget for frequency range 30 MHz to 6 GHz**

# 7. Information on the Testing Laboratories

We, Huarui 7layers High Technology (Suzhou) Co., Ltd., were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation.

If you have any comments, please feel free to contact us at the following:

Add: Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province
Tel: +86 (0557) 368 1008

The road map of all our labs can be found in our web site also
Web: http://www.7Layers.com

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# Appendix A. SAR Plots of System Verification

The plots for system verification with largest deviation for each SAR system combination are shown as follows.

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/11

## System Check_HSL750_20250511

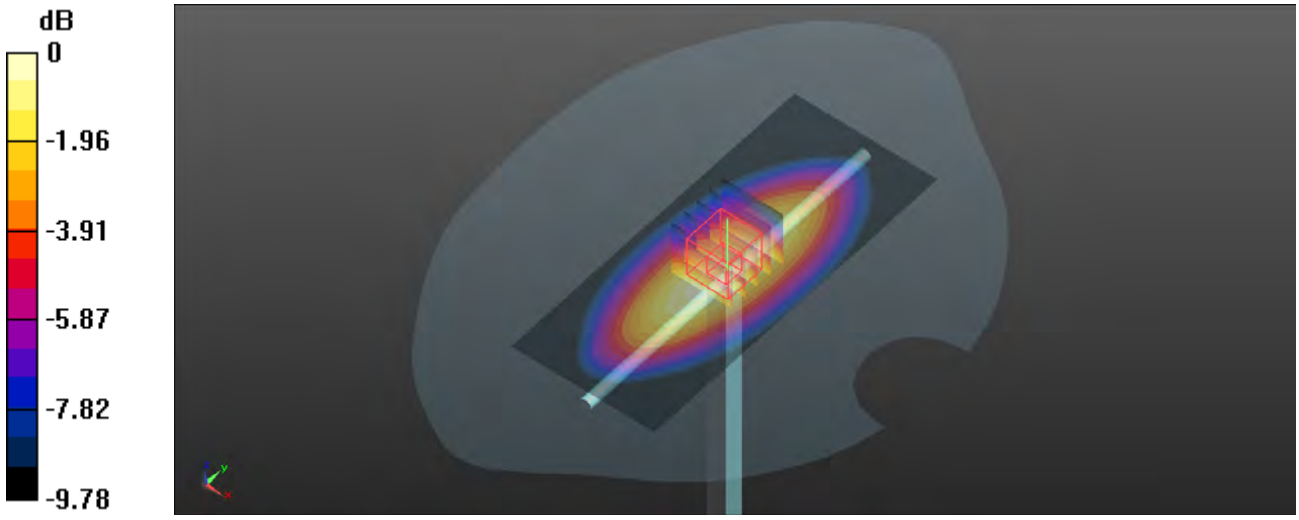
### DUT: Dipole:750 MHz;Type:D750V3

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL750_0511 Medium parameters used: f = 750 MHz; $\sigma$ = 0.908 S/m; $\varepsilon_r$ = 43.057; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5℃; Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.87, 9.87, 9.87) @ 750 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=250mW/Area Scan (51x121x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.56 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 53.69 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 3.01 W/kg
**SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.37 W/kg**
Smallest distance from peaks to all points 3 dB below = 19.5 mm
Ratio of SAR at M2 to SAR at M1 = 68%
Maximum value of SAR (measured) = 2.57 W/kg




0 dB = 2.57 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/13

## System Check_HSL835_20250513

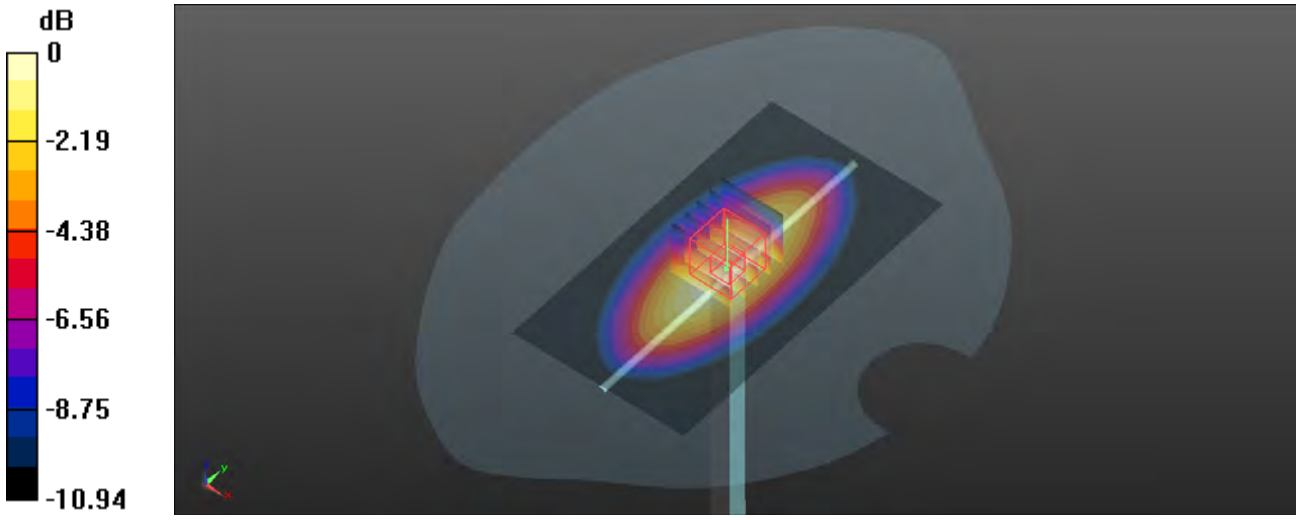
### DUT: Dipole:835 MHz;Type:D835V2

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL835_0513 Medium parameters used: f = 835 MHz; $\sigma$ = 0.917 S/m; $\varepsilon_r$ = 41.094; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.3℃; Liquid Temperature：22.4℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(9.47, 9.47, 9.47) @ 835 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=250mW/Area Scan (61x111x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.04 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 58.14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.59 W/kg
**SAR(1 g) = 2.36 W/kg; SAR(10 g) = 1.54 W/kg**
Smallest distance from peaks to all points 3 dB below = 17.2 mm
Ratio of SAR at M2 to SAR at M1 = 65.8%
Maximum value of SAR (measured) = 3.02 W/kg




0 dB = 3.02 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/14

## System Check_HSL1750_20250514

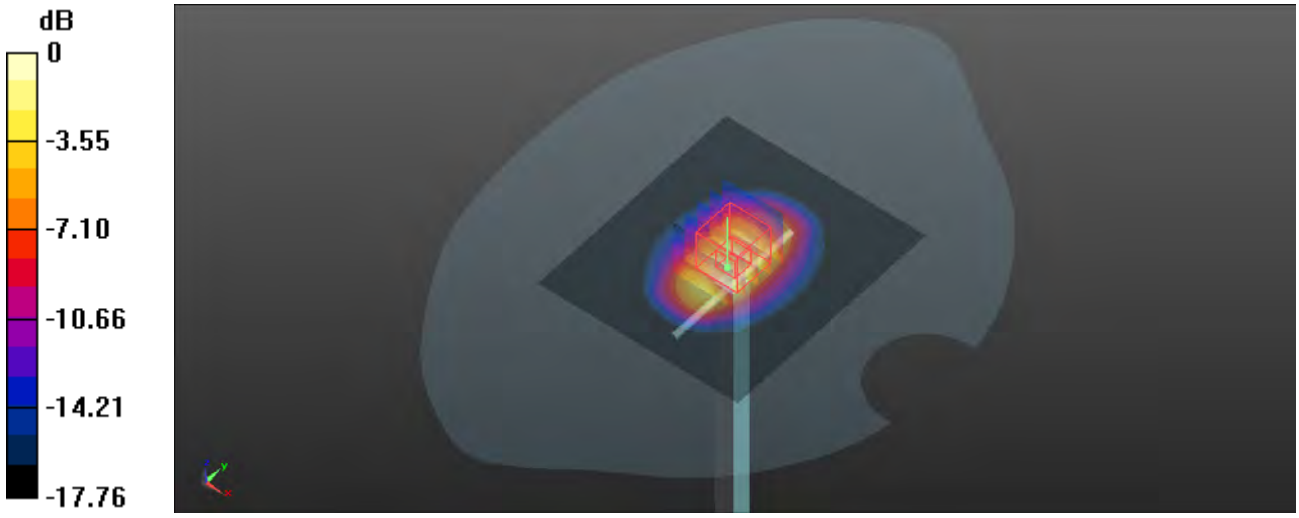
### DUT: Dipole:1750 MHz;Type:D1750V2

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL1750_0514 Medium parameters used: f = 1750 MHz; $\sigma$ = 1.354 S/m; $\varepsilon_r$ = 39.787; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5℃; Liquid Temperature：22.5℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(8.31, 8.31, 8.31) @ 1750 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=250mW/Area Scan (71x81x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 11.8 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 95.36 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 14.9 W/kg
**SAR(1 g) = 8.36 W/kg; SAR(10 g) = 4.45 W/kg**
Smallest distance from peaks to all points 3 dB below = 11.2 mm
Ratio of SAR at M2 to SAR at M1 = 56%
Maximum value of SAR (measured) = 11.7 W/kg




0 dB = 11.7 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/15

## System Check_HSL1900_20250515

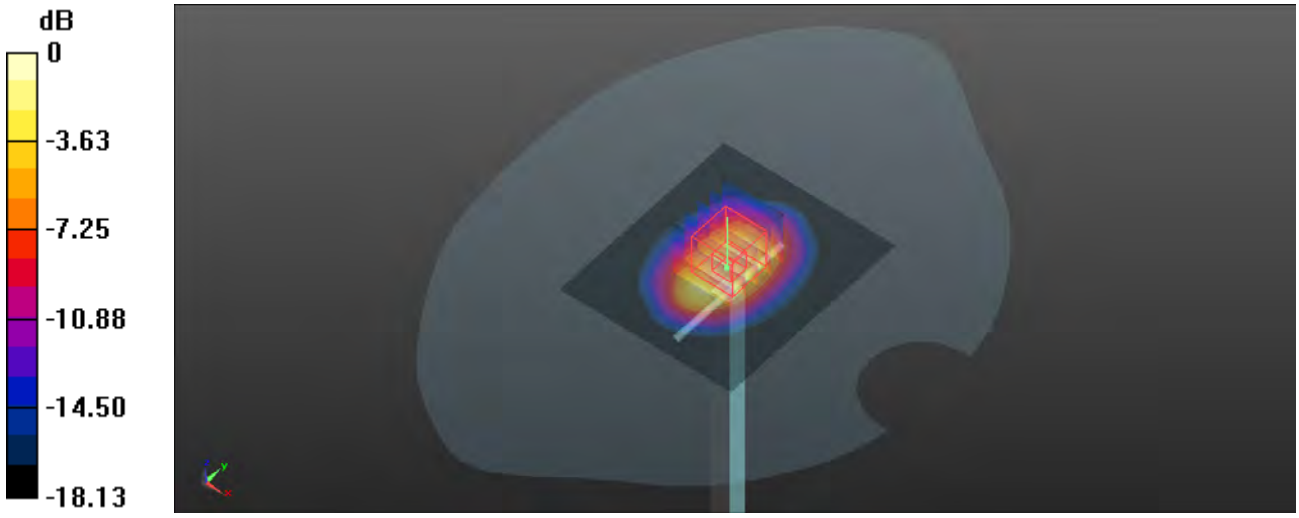
### DUT: Dipole:1900MHz;Type:D1900V2

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL1900_0515 Medium parameters used: f = 1900 MHz; $\sigma$ = 1.438 S/m; $\varepsilon_r$ = 40.254; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4℃; Liquid Temperature：22.6℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.97, 7.97, 7.97) @ 1900 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=250mW/Area Scan (61x71x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.3 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 98.21 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 17.0 W/kg
**SAR(1 g) = 9.3 W/kg; SAR(10 g) = 4.82 W/kg**
Smallest distance from peaks to all points 3 dB below = 11.2 mm
Ratio of SAR at M2 to SAR at M1 = 54.4%
Maximum value of SAR (measured) = 13.4 W/kg




0 dB = 13.4 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/16

## System Check_HSL2300_20250516

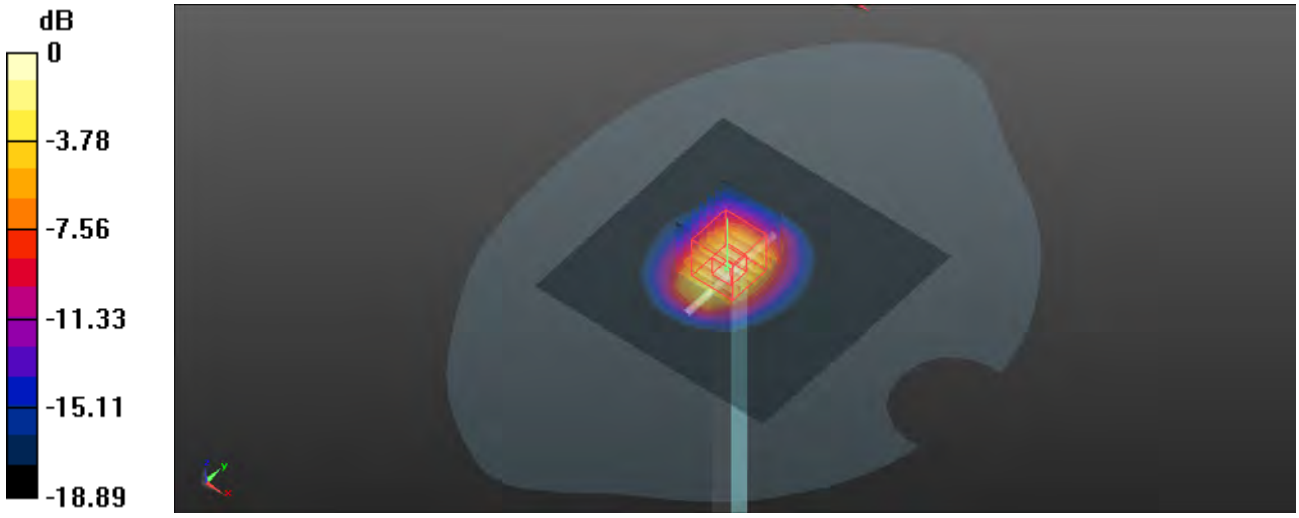
### DUT: Dipole:2300 MHz;Type:D2300V2

Communication System: CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: HSL2300_0516 Medium parameters used: f = 2300 MHz; $\sigma$ = 1.666 S/m; $\varepsilon_r$ = 39.398; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4℃; Liquid Temperature：22.4℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.71, 7.71, 7.71) @ 2300 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=50mW/Area Scan (101x101x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.93 W/kg

**Pin=50mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 36.64 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 4.84 W/kg
**SAR(1 g) = 2.51 W/kg; SAR(10 g) = 1.24 W/kg**
Smallest distance from peaks to all points 3 dB below = 10.8 mm
Ratio of SAR at M2 to SAR at M1 = 54.2%
Maximum value of SAR (measured) = 2.84 W/kg




0 dB = 2.84 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/9

## System Check_HSL2600_20250509

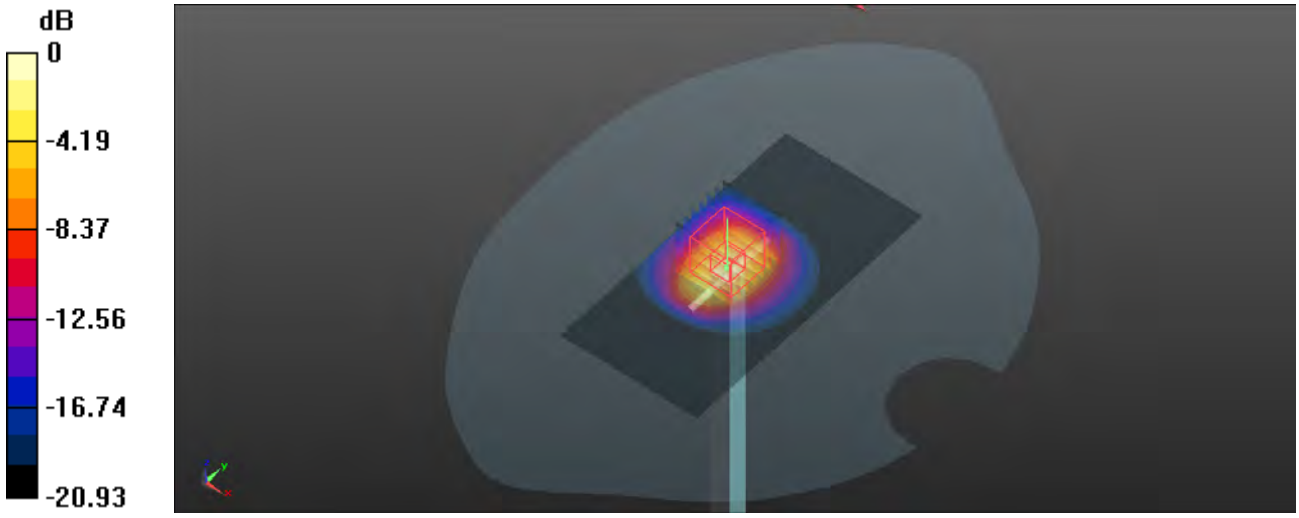
### DUT: Dipole:2600 MHz;Type:D2600V2

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL2600_0509 Medium parameters used: f = 2600 MHz; $\sigma$ = 1.961 S/m; $\varepsilon_r$ = 39.501; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6℃; Liquid Temperature：22.3℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(7.31, 7.31, 7.31) @ 2600 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=50mW/Area Scan (61x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 5.04 W/kg

**Pin=50mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 35.26 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 6.03 W/kg
**SAR(1 g) = 3.01 W/kg; SAR(10 g) = 1.37 W/kg**
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 50.6%
Maximum value of SAR (measured) = 4.96 W/kg




0 dB = 4.96 W/kg

Test Laboratory: ritt 7 Layers SAR/HAC Testing Lab Date: 2025/5/17

## System Check_HSL3500_20250517

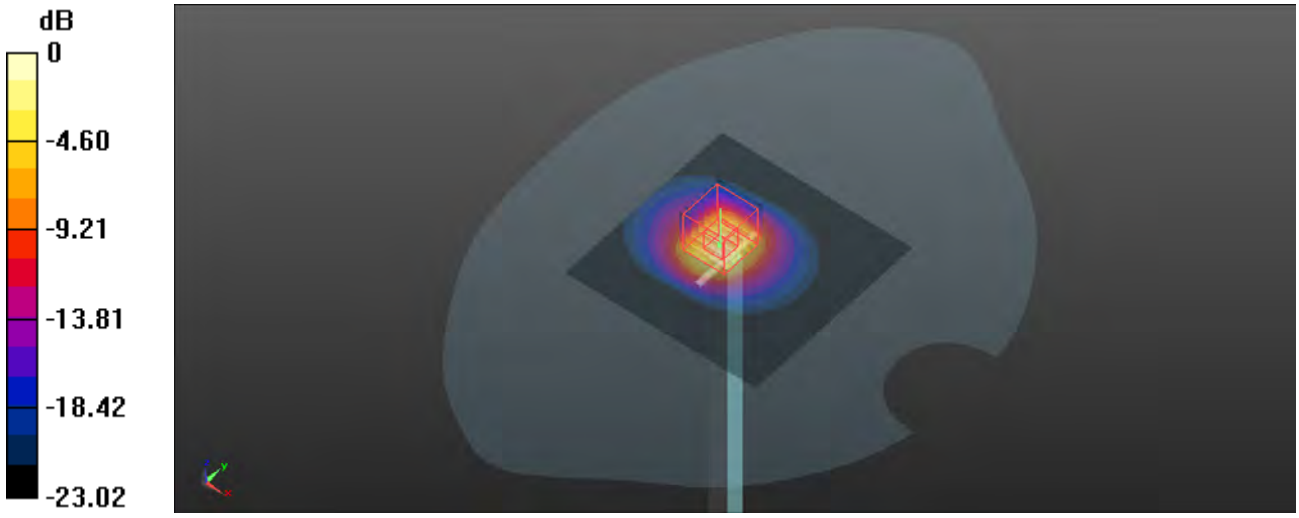
### DUT: Dipole:3500 MHz;Type:D3500V2

Communication System: CW; Frequency: 3500 MHz;Duty Cycle: 1:1
Medium: HSL3500_0517 Medium parameters used: f = 3500 MHz; $\sigma$ = 2.909 S/m; $\varepsilon_r$ = 38.635; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.4℃; Liquid Temperature：22.5℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3873; ConvF(6.71, 6.71, 6.71) @ 3500 MHz; Calibrated: 2024/9/29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn755; Calibrated: 2024/7/5
- Phantom: SAM with CRP V5.0; Type: QD000P40CB; Serial: TP:1502
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Pin=100mW/Area Scan (101x101x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 12.2 W/kg

**Pin=100mW/Zoom Scan (7x7x12)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 29.21 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 16.3 W/kg
**SAR(1 g) = 6.27 W/kg; SAR(10 g) = 2.38 W/kg**
Smallest distance from peaks to all points 3 dB below = 8.2 mm
Ratio of SAR at M2 to SAR at M1 = 67.3%
Maximum value of SAR (measured) = 12.1 W/kg




0 dB = 12.1 W/kg