FCC SAR Test Report

Report No.	:	**PSU-QSU2504140116SA01**
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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 KDB 865664 D01 v01r04 / KDB 865664 D02 v01r02 / KDB 447498 D02 v02r01 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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Release Control Record

Report No.	Reason for Change	Date Issued
PSU-QSU2504140116SA01	Initial release	May. 27, 2025

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 LTE Band 4 : 1710 ~ 1755 LTE Band 5 : 824 ~ 849 LTE Band 7 : 2500 ~ 2570 LTE Band 12 : 699 ~ 716 LTE Band 13 : 777 ~ 787 LTE Band 14 : 788 ~ 798 LTE Band 17 : 704 ~ 716 LTE Band 25 : 1850 ~ 1915 LTE Band 26 : 814 ~ 849 LTE Band 30 : 2305 ~ 2315 LTE Band 38 : 2570 ~ 2620 LTE Band 41 : 2496 ~ 2690 LTE Band 42 : 3450 ~ 3550, 3550 ~ 3600 LTE Band 48 : 3550 ~ 3700 LTE Band 66 : 1710 ~ 1780 LTE Band 71 : 663 ~ 698 NR Band n2 : 1850 ~ 1910 NR Band n5 : 824 ~ 849 NR Band n12 : 699 ~ 716 NR Band n14 : 788 ~ 798 NR Band n25 : 1850 ~ 1915 NR Band n30 : 2305 ~ 2315 NR Band n38 : 2570 ~ 2620 NR Band n41 : 2496 ~ 2690 NR Band n66 : 1710 ~ 1780 NR Band n71 : 663 ~ 698 NR Band n77 : 3450 ~ 3550, 3700 ~ 3980 NR Band n78 : 3450 ~ 3550
Uplink Modulations	LTE : QPSK, 16QAM, 64QAM, 256QAM 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.

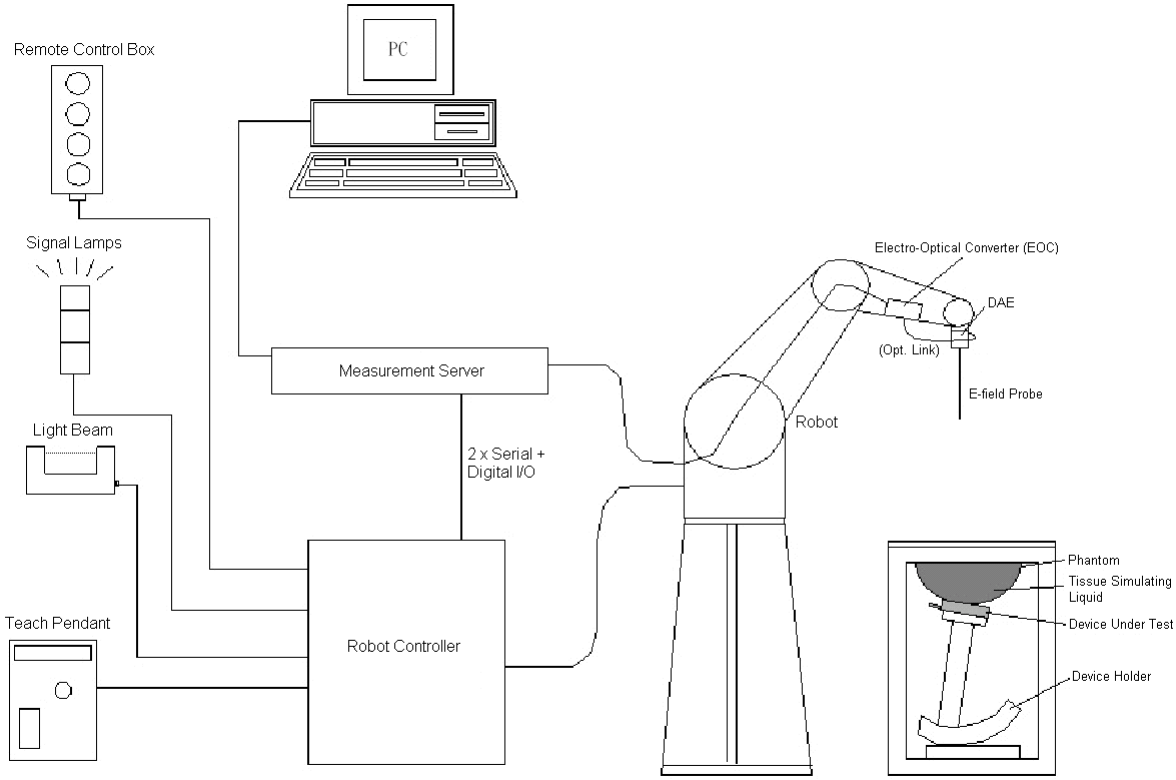


Fig-3.1 DASY System Setup

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 Linearity: ± 0.2 dB	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) 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 Linearity: ± 0.2 dB	
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	5 µW/g to 100 mW/g Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) 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 Width: 500 mm 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 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.

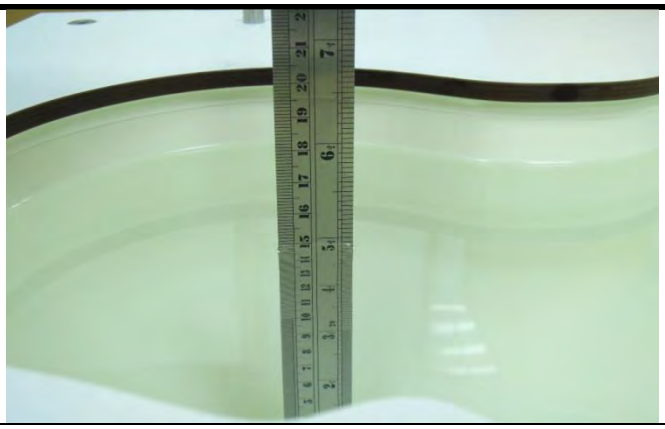


Photo of Liquid Height for Head Position

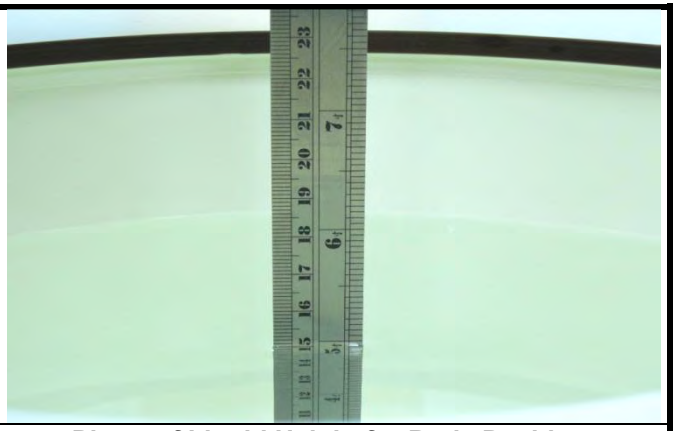


Photo of Liquid Height for Body Position

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.

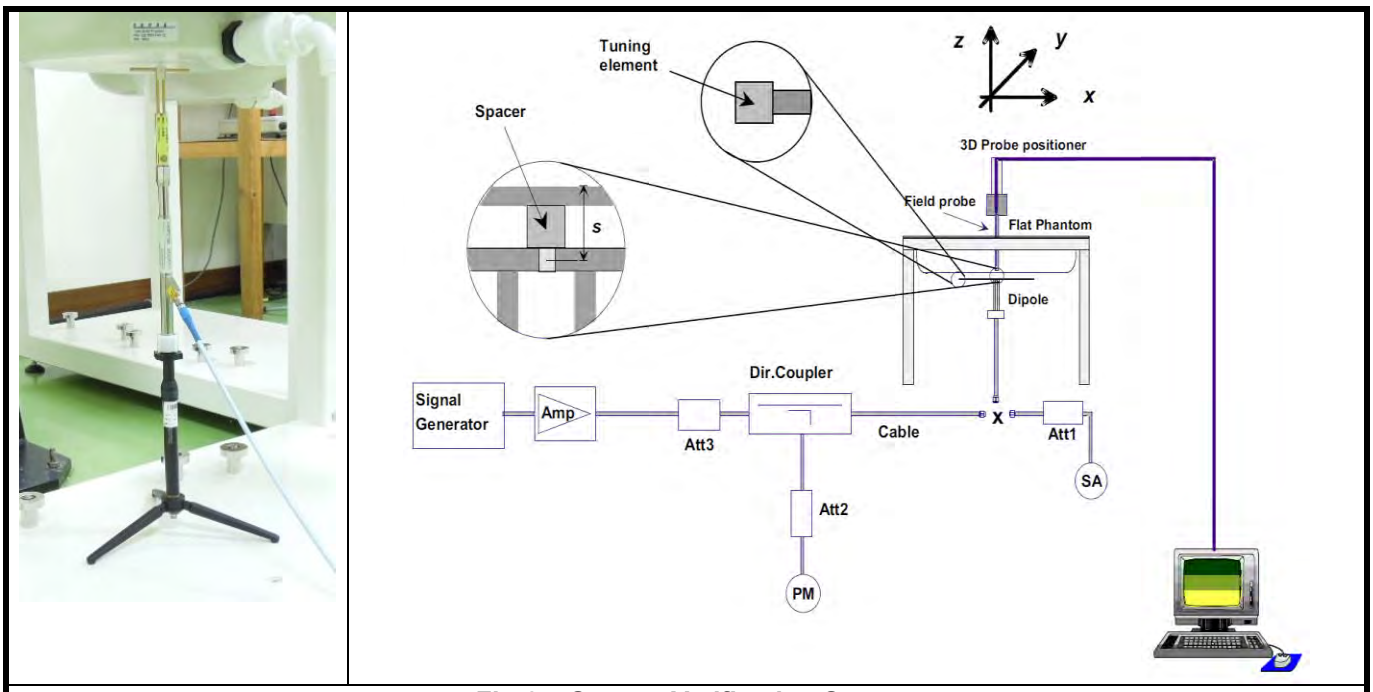


Fig-3.4 System Verification Setup

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

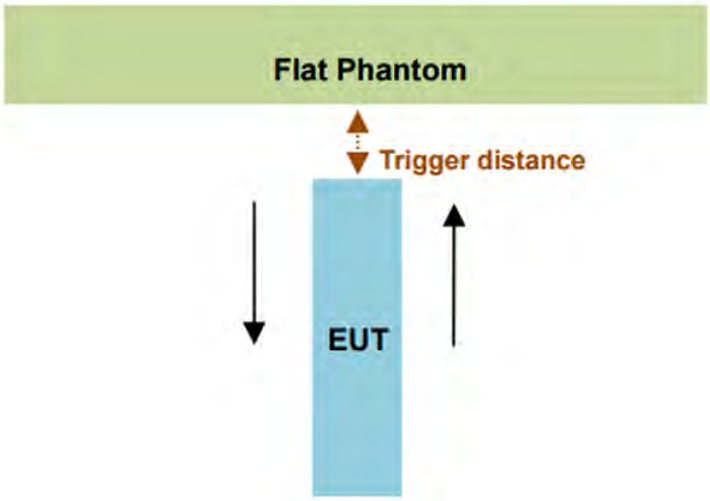
<Connections between EUT and System Simulator>

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>

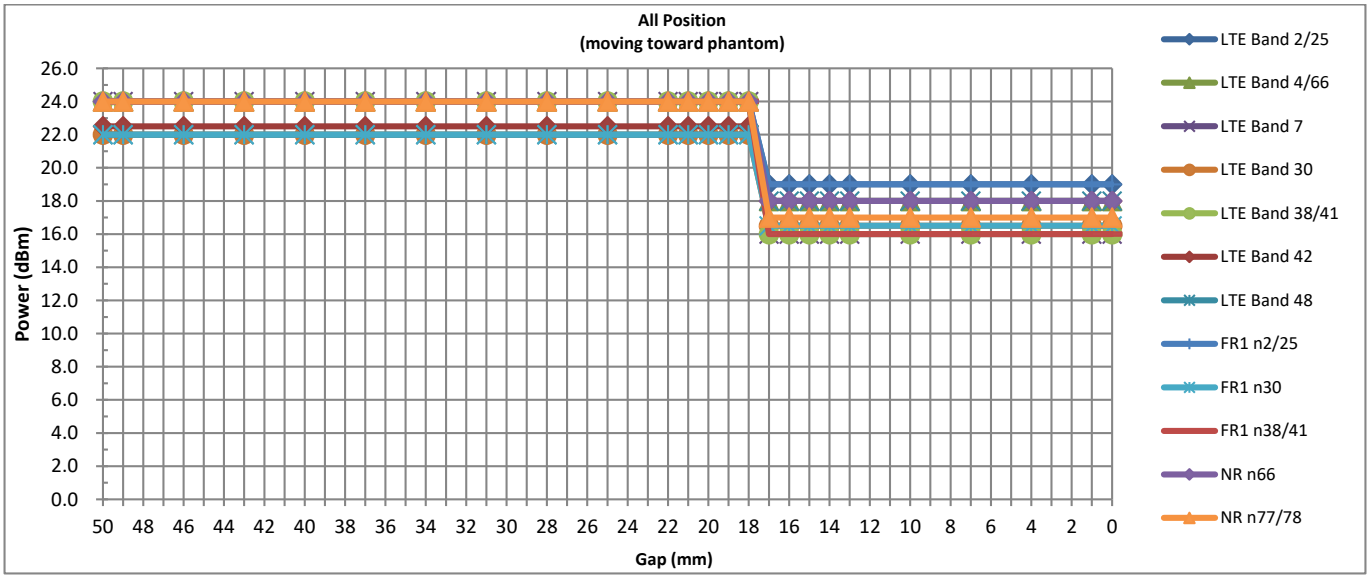
The proximity sensor triggering distance was determined per KDB 616217 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed.

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.

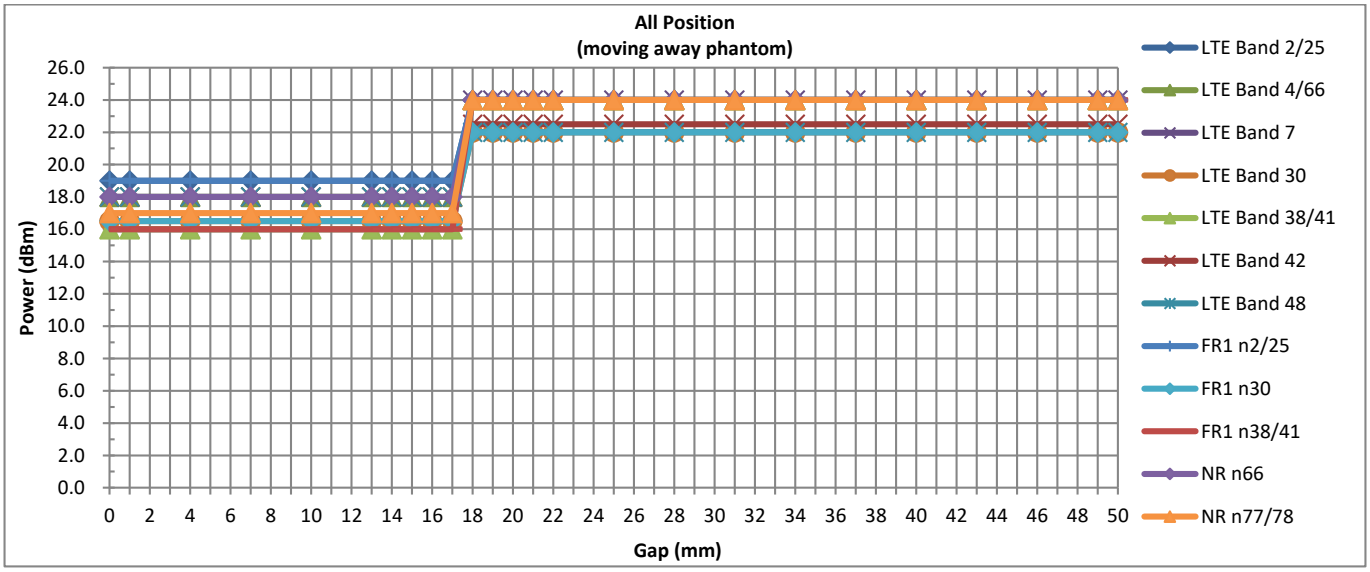


Summary for power verification per distance was tabulated in the below table.

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



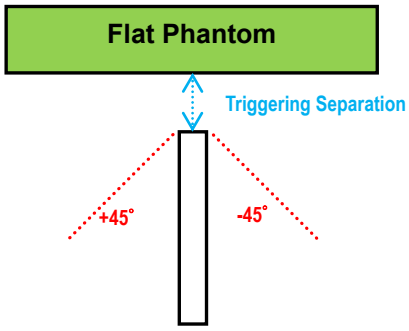
Proximity Sensor Coverage

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

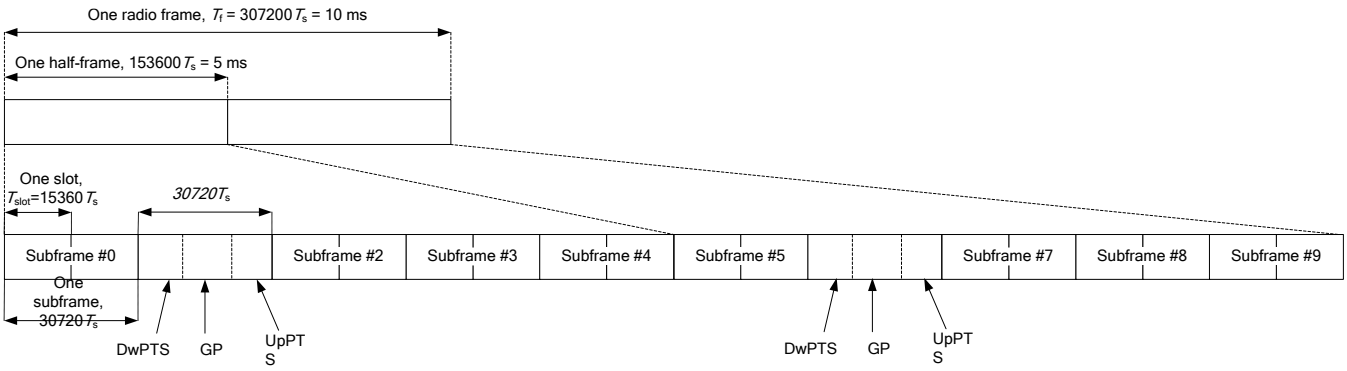
Note: MPR is according to the standard and implemented in the circuit (mandatory).

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 (ε_r)	Target Conductivity (σ)	Target Permittivity (ε_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

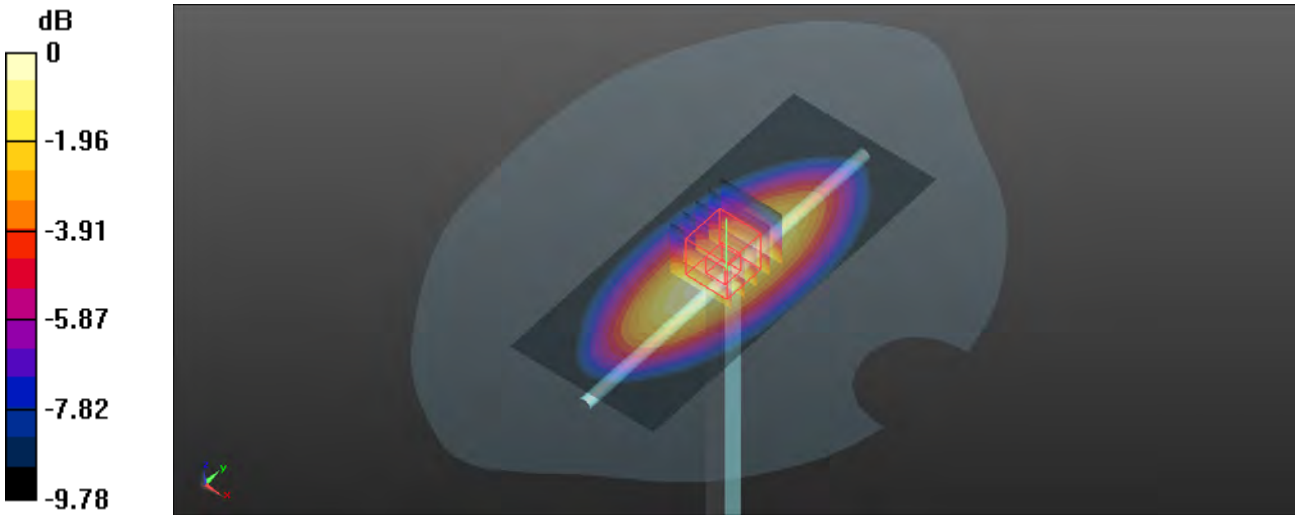
DUT: Dipole:750 MHz;Type:D750V3

Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: HSL750_0511 Medium parameters used: f = 750 MHz; σ = 0.908 S/m; ε_r = 43.057; ρ = 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

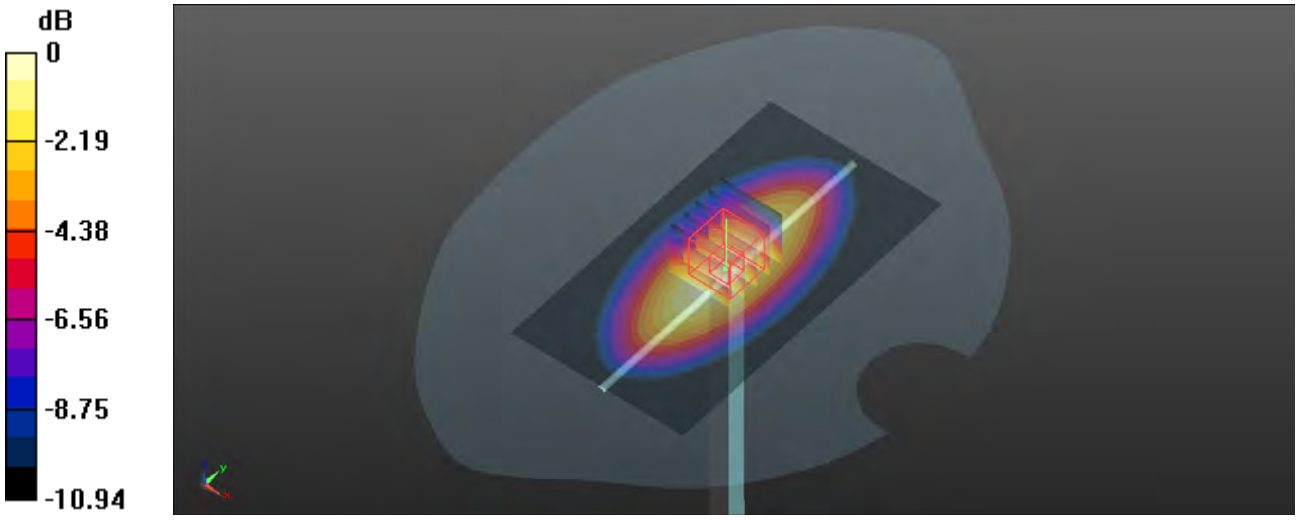
DUT: Dipole:835 MHz;Type:D835V2

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: HSL835_0513 Medium parameters used: f = 835 MHz; σ = 0.917 S/m; ε_r = 41.094; ρ = 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

System Check_HSL1750_20250514

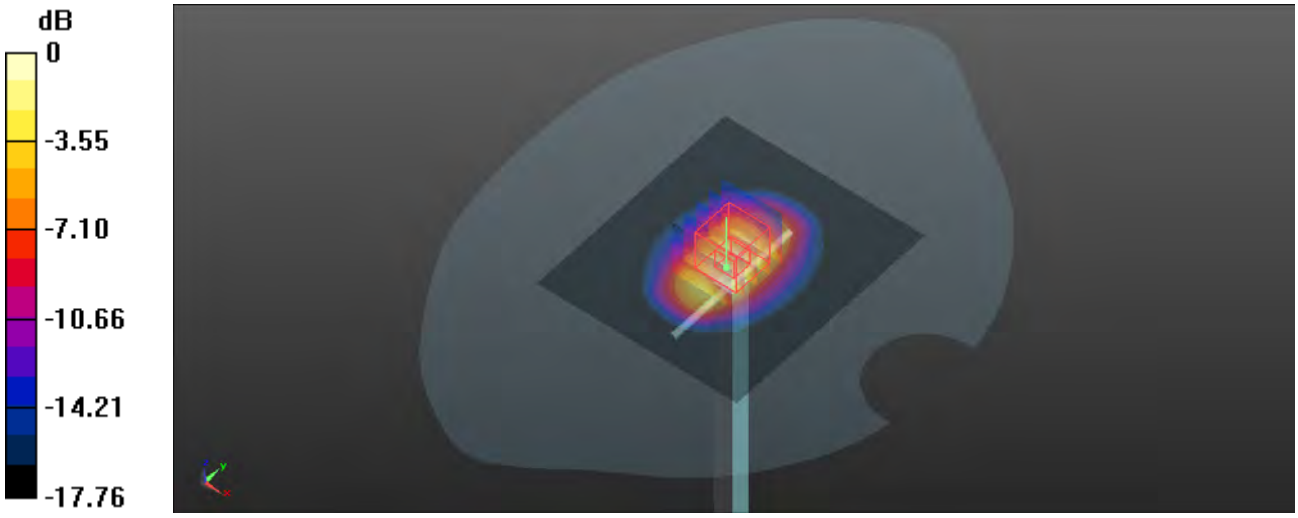
DUT: Dipole:1750 MHz;Type:D1750V2

Communication System: CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: HSL1750_0514 Medium parameters used: f = 1750 MHz; σ = 1.354 S/m; ε_r = 39.787; ρ = 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

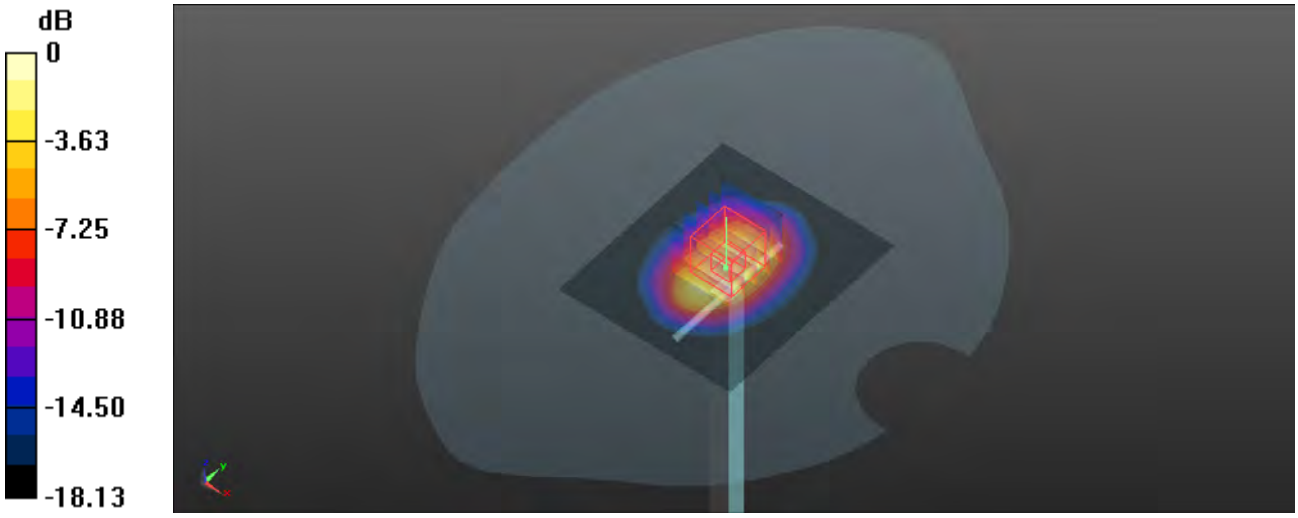
DUT: Dipole:1900MHz;Type:D1900V2

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: HSL1900_0515 Medium parameters used: f = 1900 MHz; σ = 1.438 S/m; ε_r = 40.254; ρ = 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

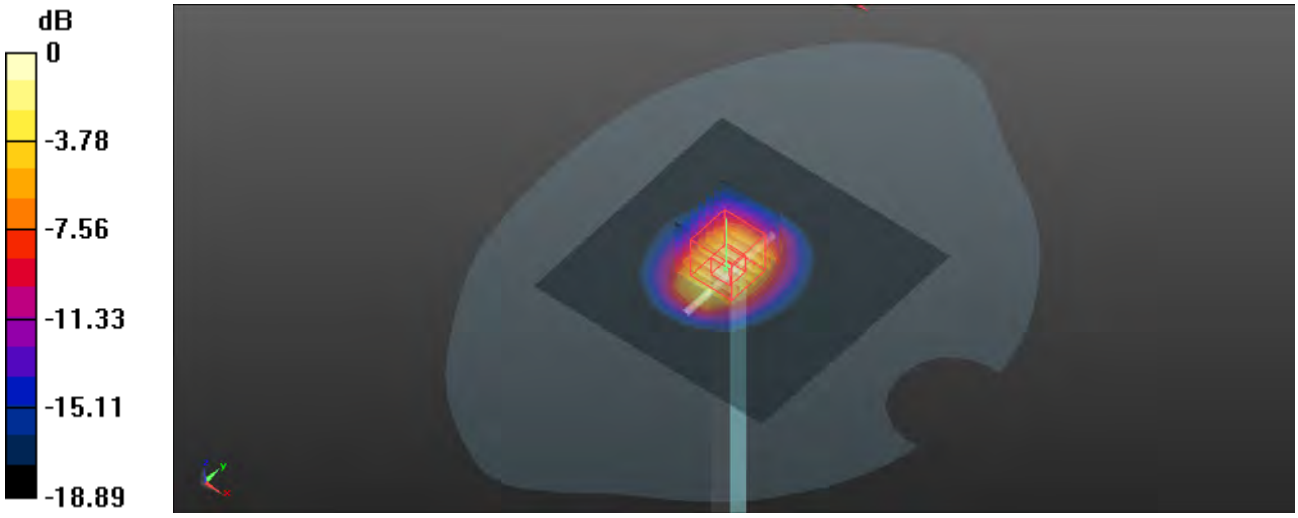
DUT: Dipole:2300 MHz;Type:D2300V2

Communication System: CW; Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: HSL2300_0516 Medium parameters used: f = 2300 MHz; σ = 1.666 S/m; ε_r = 39.398; ρ = 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

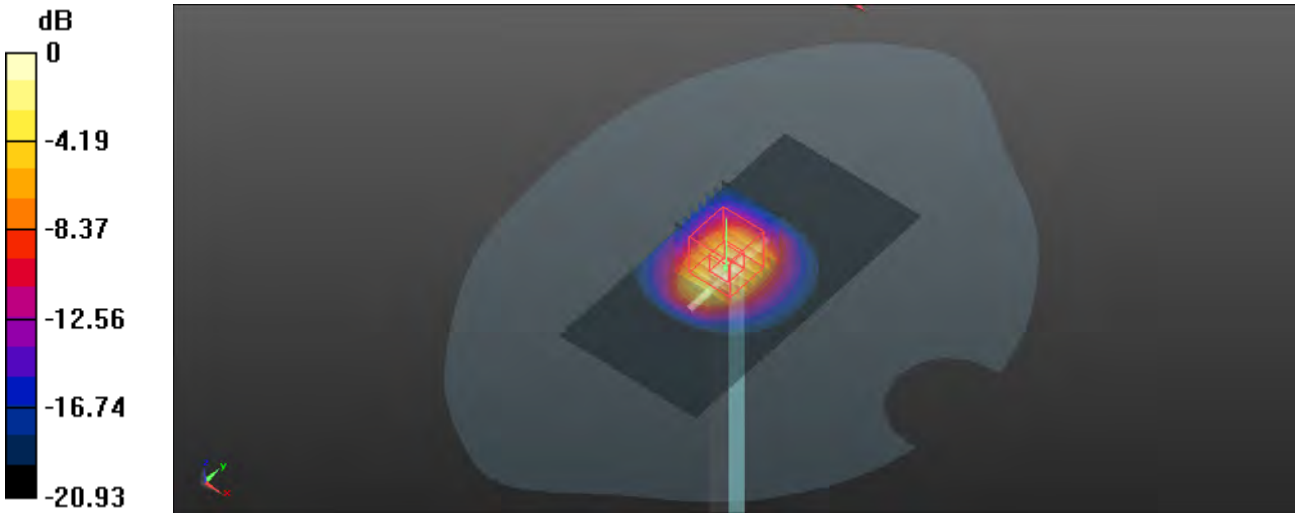
DUT: Dipole:2600 MHz;Type:D2600V2

Communication System: CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: HSL2600_0509 Medium parameters used: f = 2600 MHz; σ = 1.961 S/m; ε_r = 39.501; ρ = 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

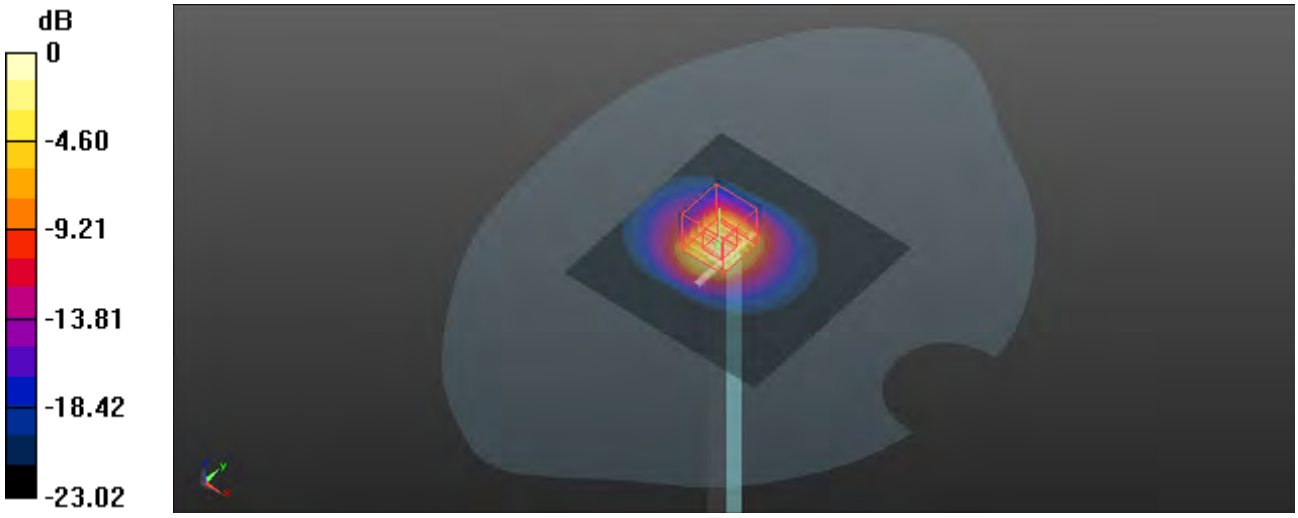
DUT: Dipole:3500 MHz;Type:D3500V2

Communication System: CW; Frequency: 3500 MHz;Duty Cycle: 1:1
Medium: HSL3500_0517 Medium parameters used: f = 3500 MHz; σ = 2.909 S/m; ε_r = 38.635; ρ = 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