SAR TEST REPORT

Product Name: Mobile phone

Model Name: PL04

FCC ID: 2ALJJPL04

Issued For	:	PCD, LLC 1500 Tradeport Drive, Suite A, Orlando, Florida, United States
Issued By	:	Shenzhen LGT Test Service Co., Ltd. Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
Report Number:		LGT23G115HA01
Sample Received Date:		Aug. 01, 2023
Date of Test:		Aug. 02, 2023 ~ Aug. 05, 2023
Date of Issue:		Aug. 16, 2023
Max. SAR (1g):		Head: 1.361 W/kg Body: 1.234 W/kg

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Revision History

Rev.	Issue Date	Contents
00	Aug. 16, 2023	Initial Issue

TEST REPORT CERTIFICATION

Applicant	PCD, LLC
Address	1500 Tradeport Drive, Suite A, Orlando, Florida, United States
Manufacture	SHENZHEN HUAYUE WORLDCOM SOFTWARE TECHNOLOGY CO.LTD
Address	Room 703-704, Building B, Phase 1, Wanke Yuncheng Innovation Valley, Xili Street, Nanshan District, Shenzhen, China
Product Name	Mobile phone
Trademark	N/A
Model Name	PL04
Sample number	LGT2307100-1

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
ANSI/IEEE Std. C95.1-1992 FCC 47 CFR Part 2 (2.1093) IEEE 1528: 2013	PASS

Prepared by:

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Zane Shan
Engineer

Approved by:

Vita Li
Manager

1. General Information

Environmental evaluation measurements of specific absorption rate (SAR) distributions in emulated human head and body tissues exposed to radio frequency (RF) radiation from wireless portable devices for compliance with the rules and regulations of the U.S. Federal Communications Commission (FCC).

1.1 EUT Description

<table>
<tr><td>Product Name</td><td colspan="3">Mobile phone</td></tr>
<tr><td>Trademark</td><td colspan="3">N/A</td></tr>
<tr><td>Model Name</td><td colspan="3">PL04</td></tr>
<tr><td>Series Model</td><td colspan="3">N/A</td></tr>
<tr><td>Model Difference</td><td colspan="3">N/A</td></tr>
<tr><td>Device Category</td><td colspan="3">Portable</td></tr>
<tr><td>Product stage</td><td colspan="3">Production unit</td></tr>
<tr><td>RF Exposure Environment</td><td colspan="3">General Population / Uncontrolled</td></tr>
<tr><td>Hardware Version</td><td colspan="3">N/A</td></tr>
<tr><td>Software Version</td><td colspan="3">N/A</td></tr>
<tr><td>Frequency Range</td><td colspan="3">WCDMA Band II: 1850 ~ 1910 MHz
WCDMA Band V: 824 ~ 849 MHz
LTE Band 2:1850 ~1910MHz
LTE Band 4:1710 ~1755MHz
LTE Band 7:2500 ~ 2570MHz
Bluetooth: 2402 ~ 2480 MHz</td></tr>
<tr><td rowspan="8">Max. Reported SAR(1g):
(Limit:1.6W/kg)
Test distance:
Head:0mm
Body:10mm</td><td>Mode</td><td>Head (W/ kg)</td><td>Body Worn (W/kg)</td></tr>
<tr><td>WCDMA Band II</td><td>1.142</td><td>1.101</td></tr>
<tr><td>WCDMA Band V</td><td>0.627</td><td>0.720</td></tr>
<tr><td>Bluetooth</td><td>0.050</td><td>0.087</td></tr>
<tr><td>LTE Band 2</td><td>1.361</td><td>1.234</td></tr>
<tr><td>LTE Band 4</td><td>1.132</td><td>1.212</td></tr>
<tr><td>LTE Band 7</td><td>0.361</td><td>0.808</td></tr>
<tr><td colspan="2">1-g Sum SAR</td><td>1.411</td><td>1.321</td></tr>
<tr><td>Battery</td><td colspan="3">Rated Voltage:3.7V
Capacity: 1000mAh</td></tr>
<tr><td>Description test modes</td><td colspan="3">SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested</td></tr>
<tr><td>Operating Mode:</td><td colspan="3">WCDMA: RMC, HSDPA, HSUPA Release 6
LTE: QPSK, 16QAM
Bluetooth: GFSK +π/4DQPSK+8DPSK</td></tr>
<tr><td>Antenna Specification</td><td colspan="3">WCDMA/LTE: PIFA Antenna
Bluetooth: Monopole Antenna</td></tr>
<tr><td>Operating Mode</td><td colspan="3">Maximum continuous output</td></tr>
<tr><td>SIM Card</td><td colspan="3">Support dual-SIM, dual standby, the multiple SIM card with
two lines cannot trans mitting at the same time</td></tr>
<tr><td>Hotspot Mode</td><td colspan="3">Not Support</td></tr>
<tr><td>DTM Mode</td><td colspan="3">Not Support</td></tr>
</table>

1.2 Test Environment

Ambient conditions in the SAR laboratory:

Items	Required
Temperature (℃)	18-25
Humidity (%RH)	30-70

1.3 Test Factory

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Chen Hsong Industrial Park, No.177 Renmin West Road, Jinsha Community, Kengzi Street, Pingshan New District, Shenzhen, China
Accreditation Certificate	FCC Registration No.: 746540
	A2LA Certificate No.: 6727.01
	IC Registration No.: CN0136

2. Test Standards and Limits

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	ANSI/IEEE Std. C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	IEEE Std. 1528-2013	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
4	FCC KDB 447498 D04 v01	RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices
5	FCC KDB 865664 D01 v01r04	SAR Measurement 100 MHz to 6 GHz
6	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
7	FCC KDB 941225 D01 v03r01	SAR Measurement Procedures for 3G Devices
8	FCC KDB 941225 D05 v02r05	SAR for LTE Devices
9	FCC KDB 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets

(A). Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

(B). Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

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

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

NOTE
GENERAL POPULATION/UNCONTROLLED EXPOSURE
PARTIAL BODY LIMIT
1.6 W/kg

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:

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

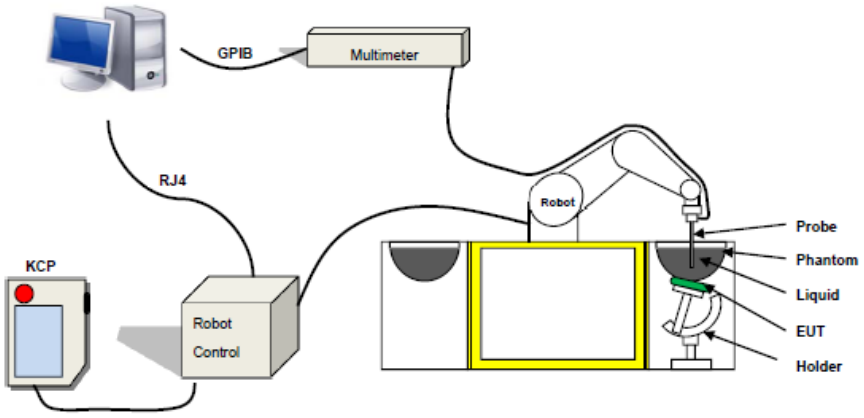
SAR is expressed in units of Watts per kilogram (W/kg) SAR measurement can be related to the electrical field in the tissue by

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

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

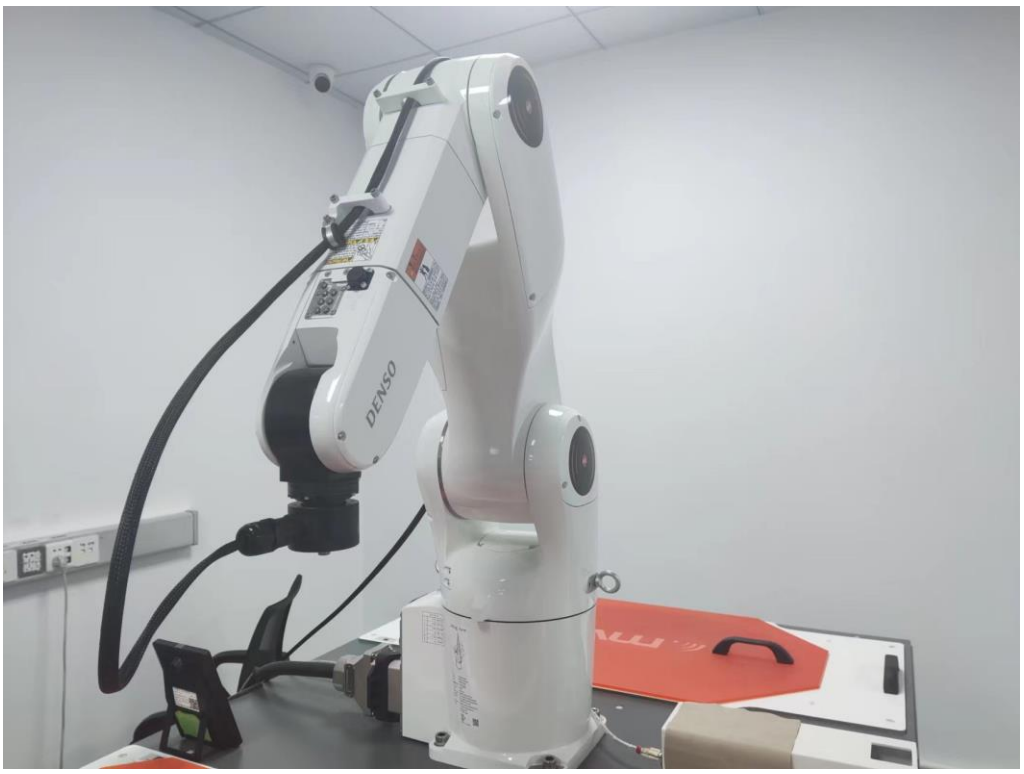
3.2 SAR System

MVG SAR System Diagram:



COMOSAR is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The COMOSAR system consists of the following items:
- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.



The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 1g mass.

3.2.1 Probe

For the measurements the Specific Dosimetric E-Field Probe SN 04/22 EPGO364 with following specifications is used
- Probe Length: 330 mm
- Length of Individual Dipoles: 2mm
- Maximum external diameter: 8 mm
- Probe Tip External Diameter: 2.5 mm
- Distance between dipole/probe extremity: 1 mm
- Dynamic range: 0.01-100 W/kg
- Probe linearity: 3%
- Axial Isotropy: < 0.10 dB
- Spherical Isotropy: < 0.10 dB
- Calibration range: 600 MHz to 6 GHz for head & body simulating liquid.
-Angle between probe axis (evaluation axis) and surface normal line: less than 30°

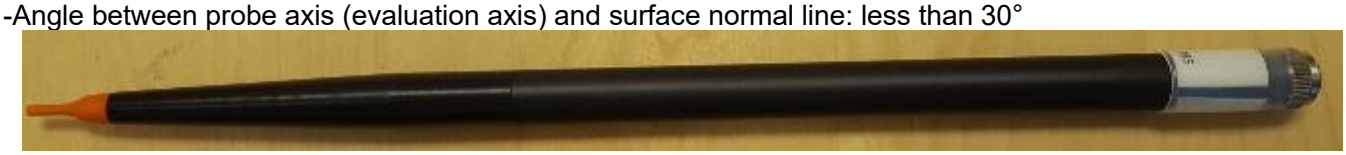


Figure 1-MVG COMOSAR Dosimetric E field Probe

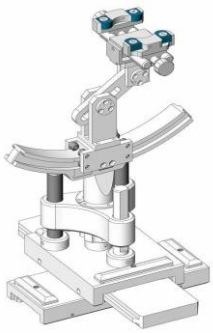
3.2.2 Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

Figure-SN 06/22 SAM 148

Figure-SN 06/22 ELLI 51

3.2.3 Device Holder



The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of ± 0.5 mm would produce a SAR uncertainty of ± 20 %. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the dielectric parameters are within the tolerances of the specified target values

The uncertainty due to the liquid conductivity and permittivity arises from two different sources. The first source of error is the deviation of the liquid conductivity from its target value (max _ 5 %) and the second source of error arises from the measurement procedures used to assess conductivity. The uncertainty shall be assessed using a rectangular probability For 1 g averaging, the maximum weighting coefficient for SAR is 0,5.

IEEE SCC-34/SC-2 RECOMMENDED TISSUE DIELECTRIC PARAMETERS
The head and body tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 have been incorporated in the following table.

Frequency	εr		σ 1g S/m	
	Head	Body	Head	Body
300	45.3	45.3	0.87	0.87
450	43.5	43.5	0.87	0.87
900	41.5	41.5	0.97	0.97
1450	40.5	40.5	1.20	1.20
1800	40.0	40.0	1.40	1.40
2450	39.2	39.2	1.80	1.80
3000	38.5	38.5	2.40	2.40
5200	36.0	36.0	4.70	4.70

LIQUID MEASUREMENT RESULTS

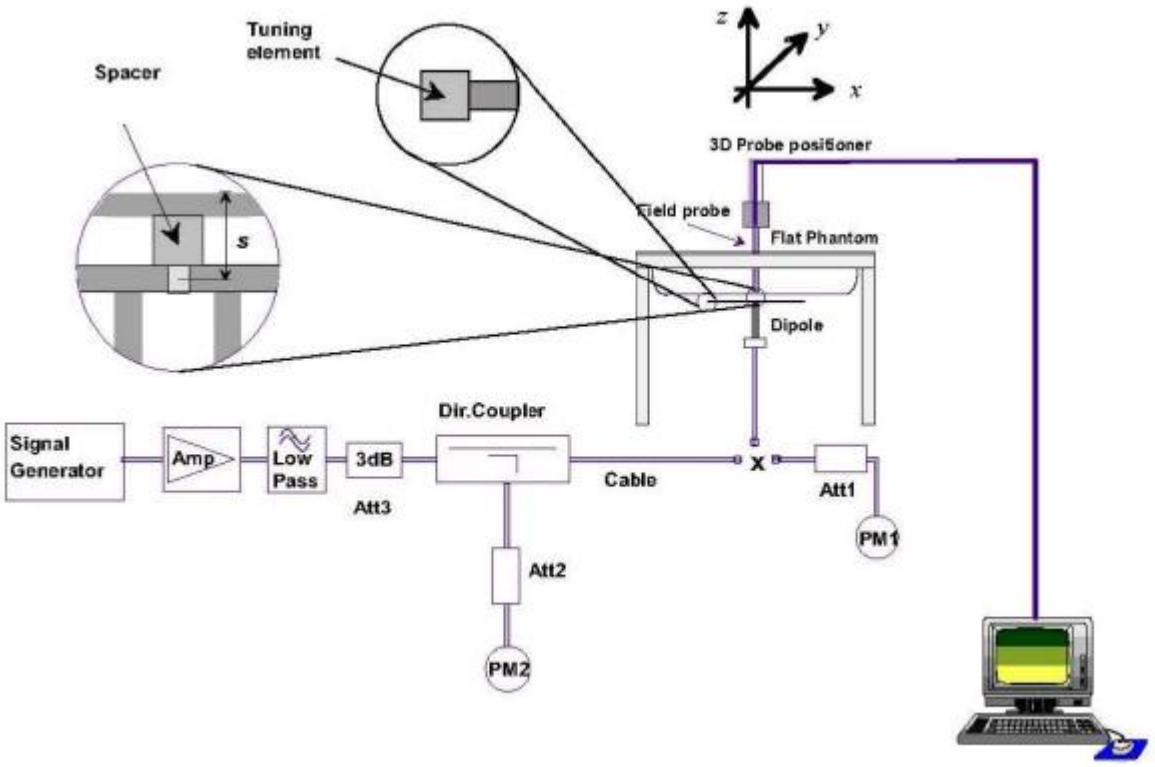
Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency (MHz)	Temp. [°C]					
2023-08-02	20.2	45	835	19.9	Permittivity	41.50	41.63	0.31	±5
					Conductivity	0.90	0.94	4.44	±5
2023-08-03	21.2	46	1800	21	Permittivity	40.00	41.52	3.80	±5
					Conductivity	1.40	1.44	2.86	±5
2023-08-04	23.1	57	1900	22.8	Permittivity	40.00	40.82	2.05	±5
					Conductivity	1.40	1.42	1.43	±5
2023-08-02	23.2	57	2450	22.9	Permittivity	39.20	40.72	3.88	±5
					Conductivity	1.80	1.85	2.78	±5
2023-08-05	22.2	56	2600	21.9	Permittivity	39.00	39.70	1.79	±5
					Conductivity	1.96	1.95	-0.51	±5
2023-08-06	23.5	58	1800	22.3	Permittivity	40.00	41.45	3.63	±5
					Conductivity	1.40	1.42	1.43	±5
2023-08-07	22.8	42	1900	22.5	Permittivity	40.00	40.79	1.98	±5
					Conductivity	1.40	1.45	3.57	±5

5. SAR System Validation

5.1 Validation System

Each MVG system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the MVG software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

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



5.2 Validation Result

Comparing to the original SAR value provided by MVG, the validation data should be within its specification of ±10 %.

Date	Freq.	Power	Tested Value	Normalized SAR	Target SAR	Tolerance	Limit
	(MHz)	(mW)	(W/Kg)	(W/kg)	1g(W/kg)	(%)	(%)
203-08-02	835	100	0.978	9.78	9.75	0.31	10
203-08-03	1800	100	3.885	38.85	39.06	-0.54	10
203-08-04	1900	100	4.084	40.84	40.85	-0.02	10
203-08-02	2450	100	5.432	54.32	54.28	0.07	10
203-08-05	2600	100	5.648	56.48	56.58	-0.18	10
203-08-03	1800	100	3.882	38.82	39.06	-0.61	10
203-08-04	1900	100	4.108	41.08	40.85	0.56	10

Note:

1. The tolerance limit of System validation ±10%.
2. The dipole input power (forward power) was 100 mW.
3. The results are normalized to 1 W input power.

6. SAR Evaluation Procedures

The procedure for assessing the average SAR value consists of the following steps:

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface

- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.

- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.

- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

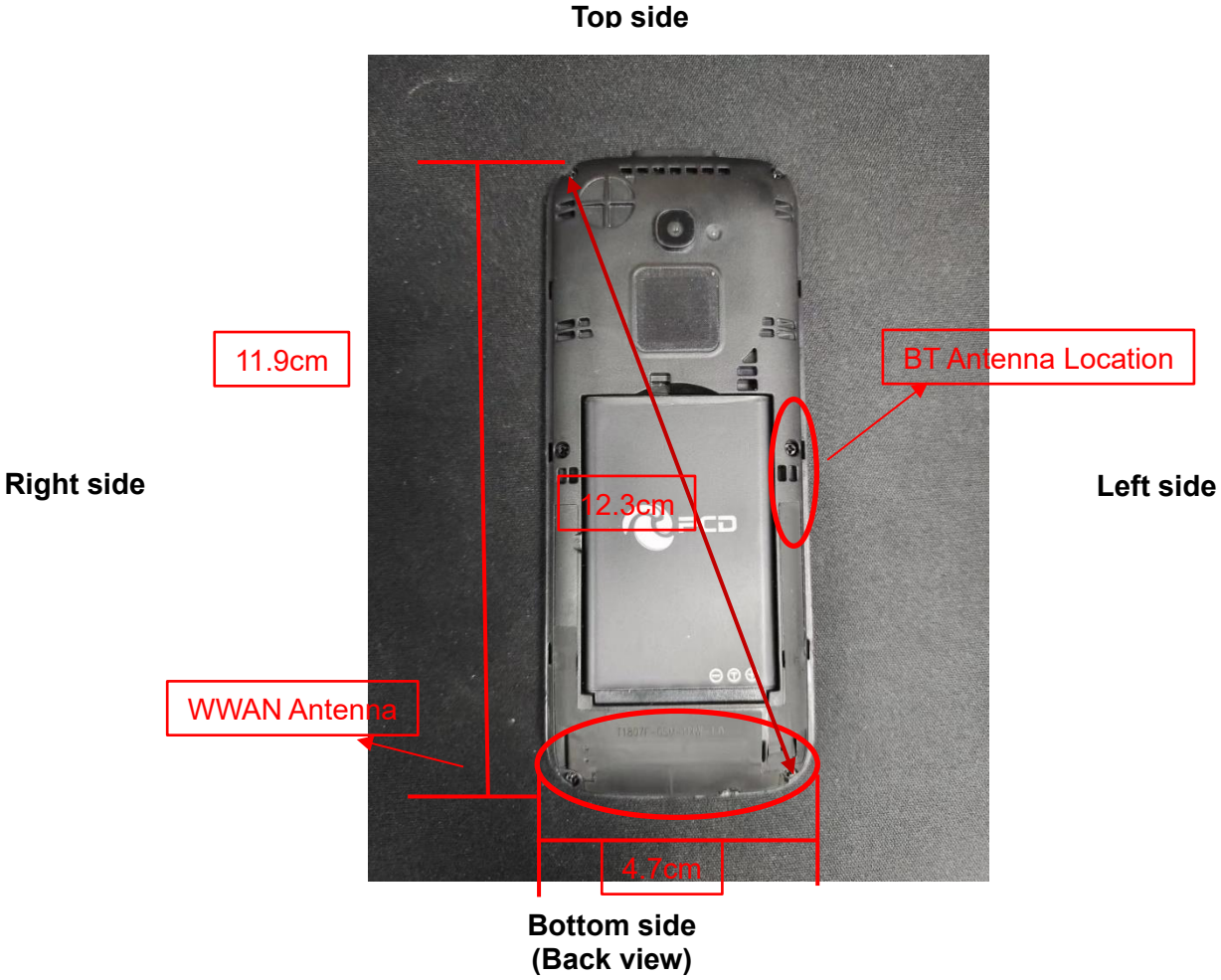
➢ Area Scan& Zoom Scan

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. Area scan and zoom scan resolution setting follows KDB 865664 D01 quoted below.

When the 1-g SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are required for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR.

7. EUT Antenna Location Sketch

It is a Mobile phone, support WCDMA/LTE/BT mode.



Antenna Separation Distance(cm)						
ANT	Back Side	Front Side	Left Side	Right Side	Top Side	Bottom Side
BT	≤0.5	≤0.5	≤0.5	4.1	5.2	3.7
WWAN	≤0.5	≤0.5	≤0.5	≤0.5	6.6	≤0.5

Note 1: The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report.

7.1 SAR test exclusion consider table

The WWAN/BT SAR evaluation of Maximum power (dBm) summing tolerance.

Exposure Position	Wireless Interface	WCDMA II	WCDMA V	LTE Band 2
	Calculated Frequency (GHz)	1.8524	0.8364	1.86
	Maximum Turn-up power (dBm)	22.5	21.5	24
	Maximum rated power(mW)	177.83	141.25	251.19
Back Side	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.43	9.23	3.42
	Testing required?	YES	YES	YES
Front Side	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.43	9.23	3.42
	Testing required?	YES	YES	YES
Left Edge	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.43	9.23	3.42
	Testing required?	YES	YES	YES
Right Edge	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.43	9.23	3.42
	Testing required?	YES	YES	YES
Top Edge	Separation distance (cm)	6.6	6.6	6.6
	exclusion threshold(mW)	397.28	355.38	396.89
	Testing required?	NO	NO	NO
Bottom Edge	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.43	9.23	3.42
	Testing required?	YES	YES	YES

Exposure Position	Wireless Interface	LTE Band 4	LTE Band 7	BT
	Calculated Frequency (GHz)	1.7325	2.535	2441
	Maximum Turn-up power (dBm)	23.5	22	9
	Maximum rated power(mW)	223.87	158.49	7.94
Back Side	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.62	2.67	0.01
	Testing required?	YES	YES	YES
Front Side	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.62	2.67	0.01
	Testing required?	YES	YES	YES
Left Edge	Separation distance (cm)	0.5	0.5	0.5
	exclusion threshold(mW)	3.62	2.67	0.01
	Testing required?	YES	YES	YES
Right Edge	Separation distance (cm)	0.5	0.5	4.1
	exclusion threshold(mW)	3.62	2.67	13.96
	Testing required?	YES	YES	NO
Top Edge	Separation distance (cm)	6.6	6.6	5.2
	exclusion threshold(mW)	403.73	368.38	31.32
	Testing required?	NO	NO	NO
Bottom Edge	Separation distance (cm)	0.5	0.5	3.7
	exclusion threshold(mW)	3.62	2.67	9.84
	Testing required?	YES	YES	NO

Note：

1. maximum power is the source-based time-average power and represents the maximum RF output power among production units.
2. Per KDB 447498 D04, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
3. Per KDB 447498 D04, if the maximum time-averaged power available does not exceed 1 mW. This stand-alone SAR exemption test.

4. Per KDB 447498 D04, the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold Pth (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

5. Per KDB 447498 D04, An alternative to the SAR-based exemption is using below table and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in below table to apply, R must be at least λ/2π, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

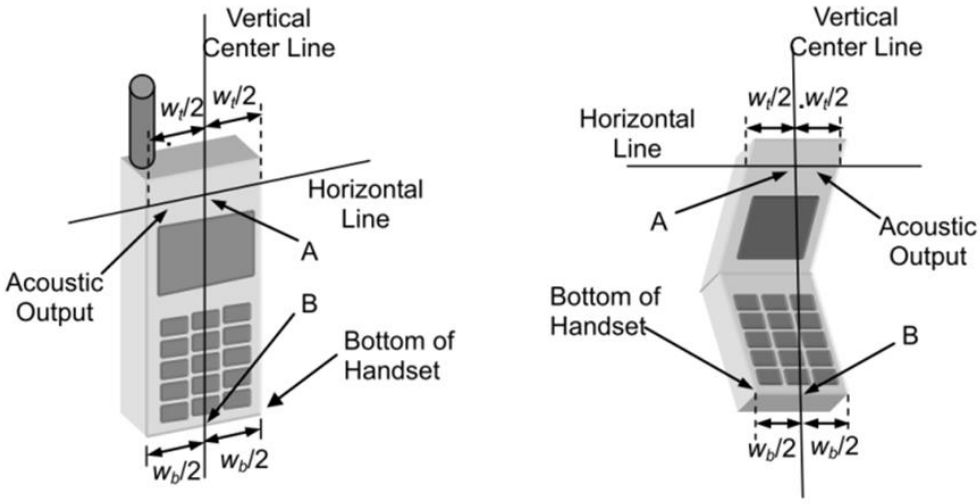
RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

8. EUT Test Position

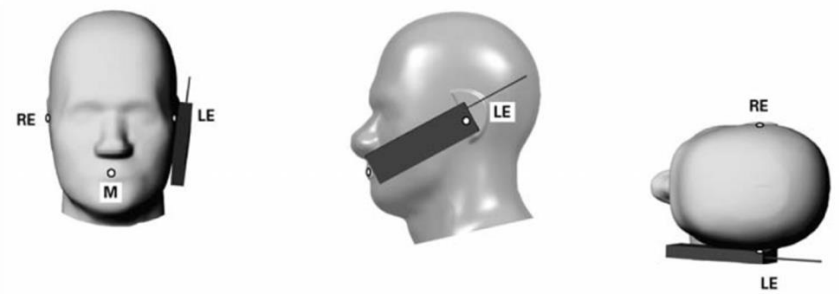
This EUT was tested in Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.

8.1 Define Two Imaginary Lines on the Handset

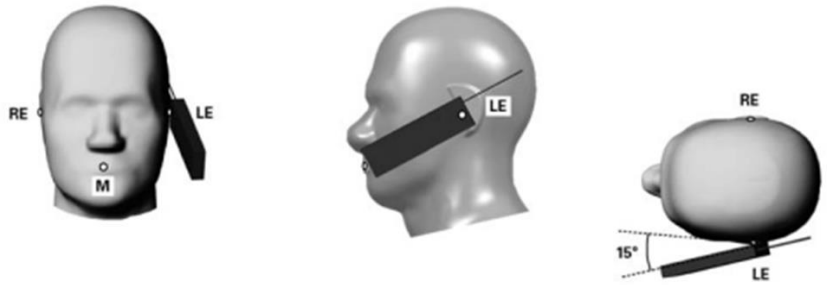
(1) The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.
(2) The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.
(3) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.



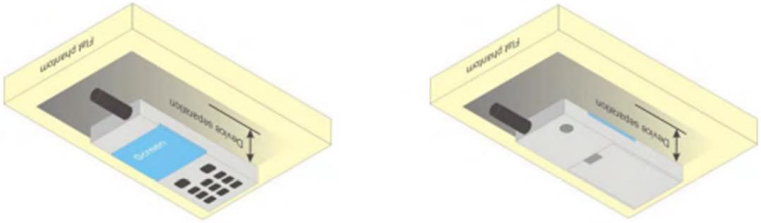
Cheek Position
1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center piece in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.
2) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



Title Position
(1) To position the device in the “cheek” position described above.
(2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.

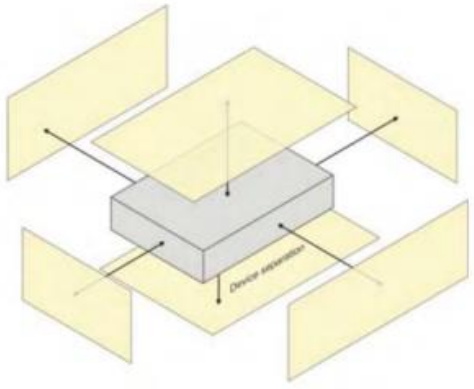


Body-worn Position Conditions:
Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. When the same wireless transmission configuration is used for testing body-worn accessory and hotspot mode SAR, respectively, in voice and data mode, SAR results for the most conservative *test separation distance* configuration may be used to support both SAR conditions. When the *reported* SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest *reported* SAR configuration for that wireless mode and frequency band should be repeated for the body-worn accessory with a headset attached to the handset.



8.2 Hotspot mode exposure position condition

For handsets that support hotspot mode operations, with wireless router capabilities and various web browsing function, the relevant hand and body exposure condition are tested according to the hotspot SAR procedures in KDB 941225. A test separation distance of 10 mm is required between the phantom and all surface and edges with a transmitting antenna located within 25 mm form that surface or edge. When form factor of a handset is smaller than 9cm x 5cm, a test separation distance of 5mm (instead of 10mm) is required for testing hotspot mode. When the separate distance required for body-worn accessory testing is larger than or equal to that tested for hotspot mode, in the same wireless mode and for the same surface of the phone, the hotspot mode SAR data may be used to support body-worn accessory SAR compliance for that particular configuration (surface).



9. Uncertainty

9.1 Measurement Uncertainty

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in IEEE 1528: 2013.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Symbol	Uncertainty Component	Prob. Dist.	Unc. $a(x_i)$	Div. q_i	$u(x_i) = a(x_i)/q_i$	C_i	$u(y) = C_i * u(x_i)$	v_i
Measurement system errors								
CF	Probe calibration	N (k = 2)	5.8	2	2.90	1	2.90	∞
CF_{drift}	Probe calibration drift	R	0.12	√3	0.07	1	0.07	∞
LIN	Probe linearity and detection limit	R	1.91	√3	1.10	1	1.10	∞
BBS	Broadband signal	R	0.15	√3	0.09	1	0.09	∞
ISO	Probe isotropy	R	0.18	√3	0.10	1	0.10	∞
DAE	Other probe and data acquisition errors	N	2.7	1	2.70	1	2.70	∞
AMB	RF ambient and noise	N	1.73	1	1.73	1	1.73	∞
Δ_{xyz}	Probe positioning errors	N	0.81	1	0.81	2/δ	0.81	
DAT	Data processing errors	N	2.5	1	2.50	1	2.50	∞
Phantom and device (DUT or validation antenna) errors								
LIQ(σ)	Measurement of phantom conductivity(σ)	N	4.4	1	4.4	cε, cσ	4.40	∞
LIQ(T_c)	Temperature effects (medium)	R	2.9	√3	1.67	cε, cσ	1.67	∞
EPS	Shell permittivity	R	3.4	√3	1.96	See 8.4.2.3	0.49	∞
DIS	Distance between the radiating element of the DUT and the phantom medium	N	0.8	1	0.8	2	1.60	∞
D_{xyz}	Repeatability of positioning the DUT or source against the phantom	N	1.5	1	1.5	1	1.50	5
H	Device holder effects	N	3	1	3	1	3.00	
MOD	Effect of operating mode on probe sensitivity	R	3.59	√3	2.07	1	2.07	∞
TAS	Time-average SAR	R	1.73	√3	1.00	1	1.00	∞
RF_{drift}	Variation in SAR due to drift in output of DUT	N	2.89	1	2.89	1	2.89	
VAL	Validation antenna uncertainty (validation measurement only)	N	1.45	1	1.45	1	1.45	
P_{in}	Uncertainty in accepted power (validation measurement only)	N	2.5	1	2.5	1	2.50	
Corrections to the SAR result (if applied)								
C(ε′,σ)	Phantom deviation from target (ε′,σ))	N	2.31	1	2.31	1	2.31	
C(R)	SAR scaling	R	1.15	√3	0.66	1	0.66	
u(ΔSAR)	Combined uncertainty						9.53	
U	Expanded uncertainty and effective degrees of freedom					U =	19.06	

10. Conducted Power Measurement

10.1 Test Result:

WCDMA

Band	WCDMA Band 2			WCDMA Band 5		
Channel	9262	9400	9538	9262	9400	9538
Frequency (MHz)	1852.4	1880	1907.6	1852.4	1880	1907.6
RMC 12.2Kbps	22.12	22.02	21.75	20.20	21.07	20.96
HSDPA Subtest-1	21.13	20.67	20.65	20.77	21.07	20.60
HSDPA Subtest-2	21.10	20.68	20.67	20.75	21.07	20.60
HSDPA Subtest-3	21.12	20.68	20.65	20.75	21.07	20.60
HSDPA Subtest-4	21.12	20.69	20.69	20.75	21.08	20.61
HSUPA Subtest-1	21.04	20.66	20.62	20.61	21.13	20.64
HSUPA Subtest-2	21.04	20.64	20.60	20.77	21.09	20.62
HSUPA Subtest-3	21.02	20.62	20.60	20.77	21.08	20.62
HSUPA Subtest-4	21.02	20.62	20.59	20.77	21.08	20.62
HSUPA Subtest-5	21.02	20.59	20.56	20.77	21.08	20.60

According to 3GPP 25.101 sub-clause 6.2.2, the maximum output power is allowed to be reduced by following the table.

Table 6.1A: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM (db)	MPR (db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for βc/βd=12/15, βhs/ βc=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

Bluetooth

BT				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	6.85	4.84
	39	2441	7.53	5.66
	78	2480	6.73	4.71
π/4-QPSK(2Mbps)	0	2402	7.59	5.74
	39	2441	8.44	6.98
	78	2480	7.71	5.90
8DPSK(3Mbps)	0	2402	7.74	5.94
	39	2441	8.60	7.24
	78	2480	7.92	6.19

LTE Conducted Power

General Note:

1. Anritsu CMW500 base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are $\leqslant$ 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. Per KDB 941225 D05, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is $\leqslant$ 1.45 W/kg; Per KDB 941225 D05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is $\leqslant$ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.44	23.48	22.98
1.4	1	2		23.44	23.41	22.96
1.4	1	5		23.58	23.42	22.94
1.4	3	0		23.5	23.38	22.98
1.4	3	1		23.63	23.36	22.94
1.4	3	2		23.51	23.31	22.97
1.4	6	0		22.55	22.42	21.91
1.4	1	0	16-QAM	23.37	22.93	21.83
1.4	1	2		23.29	22.9	21.86
1.4	1	5		23.33	22.95	21.73
1.4	3	0		22.64	22.41	22.1
1.4	3	1		22.53	22.41	21.94
1.4	3	2		22.86	22.4	21.96
1.4	6	0		21.76	21.64	21.23
3	1	0	QPSK	23.51	23.35	23.05
3	1	7		23.55	23.22	23.04
3	1	14		23.54	23.26	22.92
3	8	0		22.54	22.34	22.15
3	8	4		22.54	22.35	22.15
3	8	7		22.46	22.32	22.03
3	15	0		22.54	22.33	21.98
3	1	0	16-QAM	22.29	22.79	22.78
3	1	7		22.3	22.56	22.79
3	1	14		22.34	22.7	22.58
3	8	0		21.82	21.74	21.32
3	8	4		21.81	21.75	21.32
3	8	7		22.09	21.74	21.16
3	15	0		21.71	21.58	21.13

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.52	23.56	23.16
5	1	12		23.58	23.43	23.2
5	1	24		23.53	23.51	23.03
5	12	0		22.71	22.44	22.18
5	12	6		22.71	22.43	22.17
5	12	11		22.66	22.41	22.29
5	25	0		22.57	22.44	22.1
5	1	0	16-QAM	22.03	22.75	21.9
5	1	12		22.05	22.51	21.98
5	1	24		22.13	22.57	21.96
5	12	0		21.76	21.49	21.52
5	12	6		21.76	21.61	21.53
5	12	11		21.92	21.5	21.28
5	25	0		21.95	21.53	21.17
10	1	0	QPSK	23.53	23.68	23.39
10	1	24		23.58	23.57	23.4
10	1	49		23.69	23.38	23.12
10	25	0		22.68	22.45	22.32
10	25	12		22.65	22.44	22.32
10	25	24		22.65	22.4	22.19
10	50	0		22.57	22.33	22.15
10	1	0	16-QAM	22.89	22.74	22.24
10	1	24		23.14	22.61	22.03
10	1	49		22.89	22.56	22.01
10	25	0		21.86	21.7	21.46
10	25	12		21.87	21.7	21.76
10	25	24		21.79	21.54	21.44
10	50	0		21.77	21.56	21.36

LTE Band 2 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.53	23.49	23.46
15	1	37		23.48	23.35	23.51
15	1	74		23.48	23.28	23.15
15	36	0		22.65	22.43	22.27
15	36	18		22.64	22.43	22.26
15	36	39		22.81	22.43	22.26
15	75	0		22.61	22.42	22.23
15	1	0	16-QAM	22.96	22.87	22.6
15	1	38		23.04	22.76	22.46
15	1	75		23.18	22.57	22.24
15	36	0		21.92	21.54	21.37
15	36	18		21.82	21.55	21.38
15	36	39		21.82	21.55	21.38
15	75	0		21.86	21.61	21.38
20	1	0	QPSK	23.72	23.69	23.57
20	1	49		23.63	23.56	23.51
20	1	99		23.79	23.47	23.16
20	50	0		22.62	22.52	22.5
20	50	24		22.62	22.62	22.5
20	50	49		22.62	22.4	22.09
20	100	0		22.68	22.57	22.38
20	1	0	16-QAM	23.32	22.91	22.43
20	1	49		23.49	22.71	22.43
20	1	99		23.44	22.52	22.12
20	50	0		21.76	21.78	21.56
20	50	24		21.77	21.63	21.56
20	50	49		21.93	21.59	21.28
20	100	0		21.84	21.62	21.4

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.1	22.91	22.56
1.4	1	2		23.01	22.84	22.54
1.4	1	5		23.01	22.79	22.56
1.4	3	0		23.17	22.94	22.52
1.4	3	1		23.14	22.91	22.51
1.4	3	2		23.17	22.87	22.57
1.4	6	0		22.45	21.97	21.44
1.4	1	0	16-QAM	22.06	22.89	21.71
1.4	1	2		22.09	22.76	21.77
1.4	1	5		22.12	22.84	21.82
1.4	3	0		22.23	22.01	21.48
1.4	3	1		22.35	22.2	21.35
1.4	3	2		22.26	22.19	21.43
1.4	6	0		22.01	21.16	20.98
3	1	0	QPSK	23.03	22.97	22.73
3	1	7		23	22.89	22.78
3	1	14		22.96	22.93	22.8
3	8	0		22.15	21.92	21.62
3	8	4		22.14	21.92	21.62
3	8	7		22.1	21.86	21.57
3	15	0		22.04	21.92	21.56
3	1	0	16-QAM	22.39	22.69	21.74
3	1	7		22.43	22.64	21.84
3	1	14		22.38	22.68	21.72
3	8	0		21.87	20.99	21
3	8	4		21.87	21	20.99
3	8	7		21.39	21.09	21.15
3	15	0		21.66	20.92	20.68

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.09	22.9	22.58
5	1	12		23.13	23.04	22.58
5	1	24		22.96	22.95	22.59
5	12	0		22.15	21.98	21.58
5	12	6		22.14	21.98	21.57
5	12	11		22.19	21.85	21.6
5	25	0		22.08	21.91	21.64
5	1	0	16-QAM	21.48	22.16	21.22
5	1	12		21.5	22.03	21.25
5	1	24		21.34	22.1	21.17
5	12	0		21.6	20.96	20.62
5	12	6		21.77	20.97	20.62
5	12	11		21.2	20.99	20.55
5	25	0		21.29	21.06	20.63
10	1	0	QPSK	23.07	23.32	23.01
10	1	24		23.01	23.12	22.87
10	1	49		22.91	23.19	22.72
10	25	0		22.22	21.99	21.65
10	25	12		22.21	22.01	21.65
10	25	24		22.05	21.84	21.65
10	50	0		21.95	21.96	21.6
10	1	0	16-QAM	22.48	22.21	21.54
10	1	24		22.36	22.14	21.63
10	1	49		22.4	22.11	21.63
10	25	0		21.23	21.11	20.79
10	25	12		21.23	21.03	20.98
10	25	24		21.08	21.37	20.74
10	50	0		21.46	21.01	20.85

LTE Band 4 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.27	23.39	22.88
15	1	37		23.12	23.29	22.71
15	1	74		22.93	23	22.72
15	36	0		22.15	21.92	21.76
15	36	18		22.15	21.92	21.76
15	36	39		22.15	21.9	21.75
15	75	0		22.19	21.9	21.71
15	1	0	16-QAM	22.84	22.28	22.42
15	1	38		22.87	22.12	22.27
15	1	75		22.6	22.13	22.26
15	36	0		21.16	21.04	20.86
15	36	18		21.17	20.93	20.87
15	36	39		21.17	20.94	20.87
15	75	0		21.12	21.13	20.83
20	1	0	QPSK	23.23	23.28	23.08
20	1	49		23.09	23	23.12
20	1	99		23.25	22.89	22.71
20	50	0		22.14	21.99	21.8
20	50	24		22.13	22	21.8
20	50	49		22.01	21.87	21.69
20	100	0		21.91	21.89	21.72
20	1	0	16-QAM	22.45	22.56	22.78
20	1	49		22.31	22.42	22.53
20	1	99		22.7	22.3	22.5
20	50	0		21.32	21.62	20.95
20	50	24		21.32	21.58	21.08
20	50	49		21.02	21.1	21.04
20	100	0		21.2	20.97	20.94

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	21.34	21.46	21.63
5	1	12		21.39	21.39	21.47
5	1	24		21.4	21.41	21.53
5	12	0		20.36	20.28	20.74
5	12	6		20.38	20.3	20.43
5	12	11		20.43	20.3	20.5
5	25	0		20.44	20.32	20.6
5	1	0	16-QAM	19.96	20.52	20.28
5	1	12		19.86	20.46	20.17
5	1	24		19.86	20.53	20.3
5	12	0		19.49	19.63	19.44
5	12	6		19.53	19.38	19.59
5	12	11		19.76	19.39	19.55
5	25	0		19.7	19.65	19.38
10	1	0	QPSK	21.42	21.57	21.48
10	1	24		21.41	21.45	21.55
10	1	49		21.34	21.57	21.56
10	25	0		20.46	20.33	20.52
10	25	12		20.47	20.33	20.48
10	25	24		20.4	20.66	20.46
10	50	0		20.32	20.38	20.49
10	1	0	16-QAM	20.65	20.64	20.27
10	1	24		20.64	20.57	20.32
10	1	49		20.6	20.78	20.25
10	25	0		19.55	19.61	19.75
10	25	12		19.6	19.45	19.74
10	25	24		19.72	19.55	19.88
10	50	0		19.58	19.59	19.71

LTE Band 7 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.37	21.51	21.41
15	1	37		21.41	21.53	21.53
15	1	74		21.3	21.59	21.6
15	36	0		20.43	20.43	20.49
15	36	18		20.42	20.44	20.48
15	36	39		20.41	20.45	20.47
15	75	0		20.55	20.55	20.35
15	1	0	16-QAM	21.02	20.62	21.17
15	1	38		20.95	20.78	20.99
15	1	75		20.95	20.7	21
15	36	0		19.49	19.53	19.65
15	36	18		19.5	19.56	19.65
15	36	39		19.51	19.58	19.66
15	75	0		19.65	19.57	19.61
20	1	0	QPSK	21.55	21.73	21.44
20	1	49		21.51	21.73	21.47
20	1	99		21.44	21.76	21.59
20	50	0		20.48	20.39	20.38
20	50	24		20.48	20.4	20.47
20	50	49		20.42	20.57	20.55
20	100	0		20.35	20.31	20.58
20	1	0	16-QAM	20.79	20.67	21.21
20	1	49		20.58	20.71	21.36
20	1	99		20.55	20.94	21.3
20	50	0		19.58	19.48	19.62
20	50	24		19.61	19.52	19.61
20	50	49		19.6	19.57	19.54
20	100	0		19.56	19.39	19.57

11. EUT and Test Setup Photo

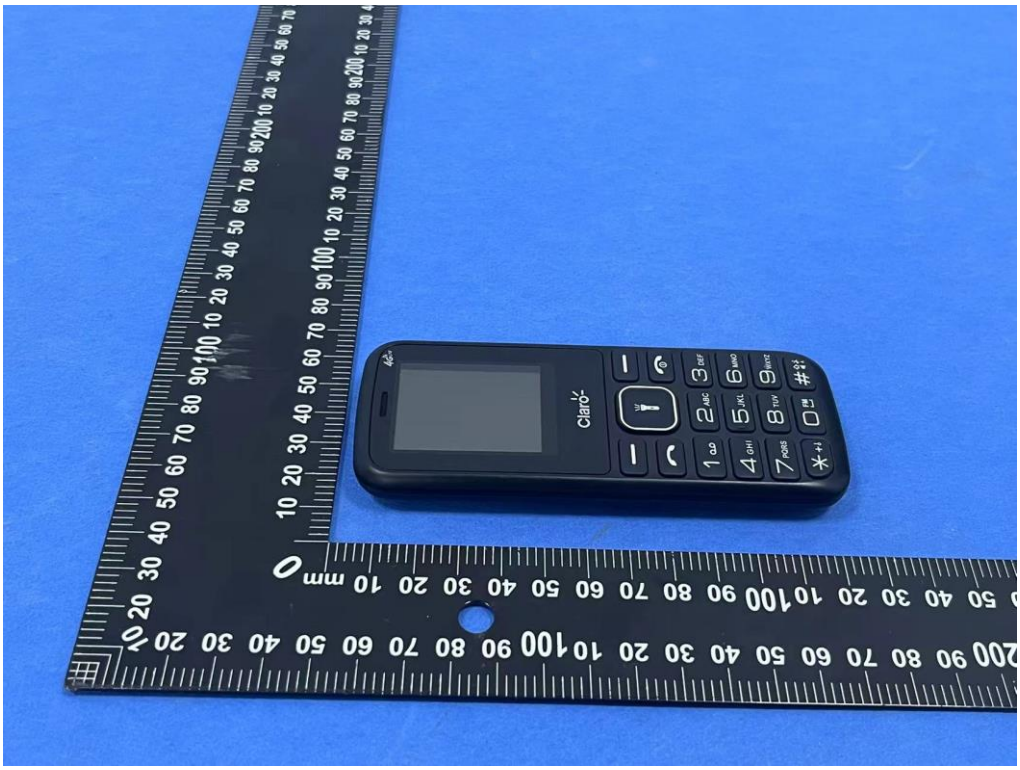
11.1 EUT Photos

Front side

Back side

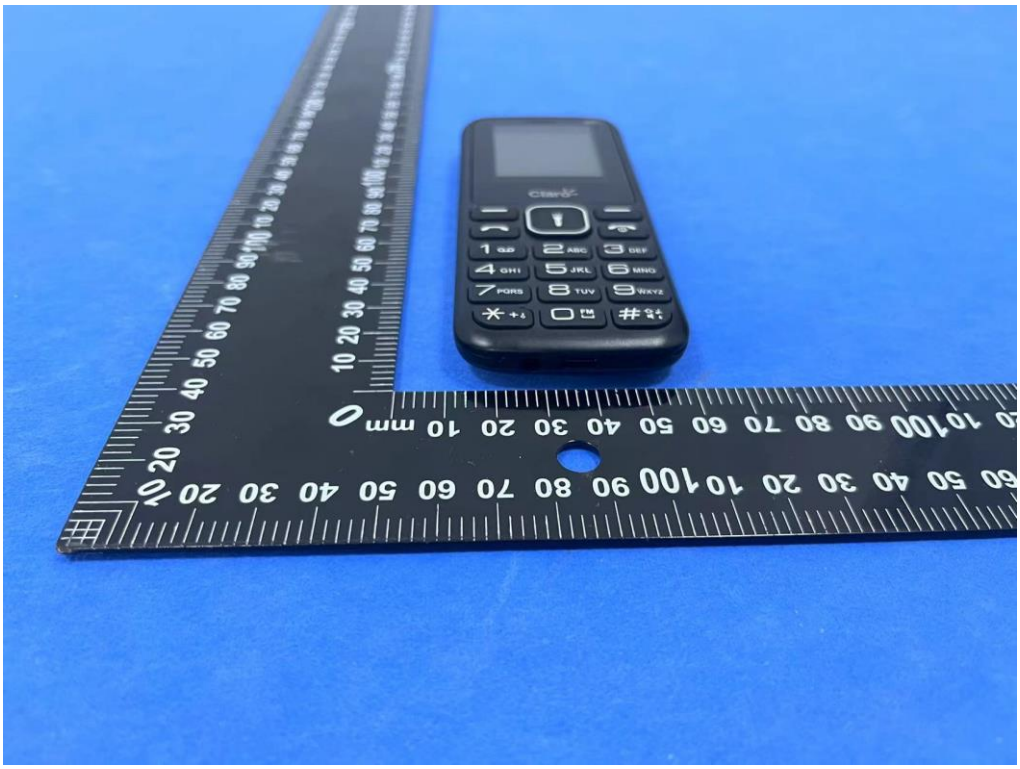
Right Edge

Left Edge



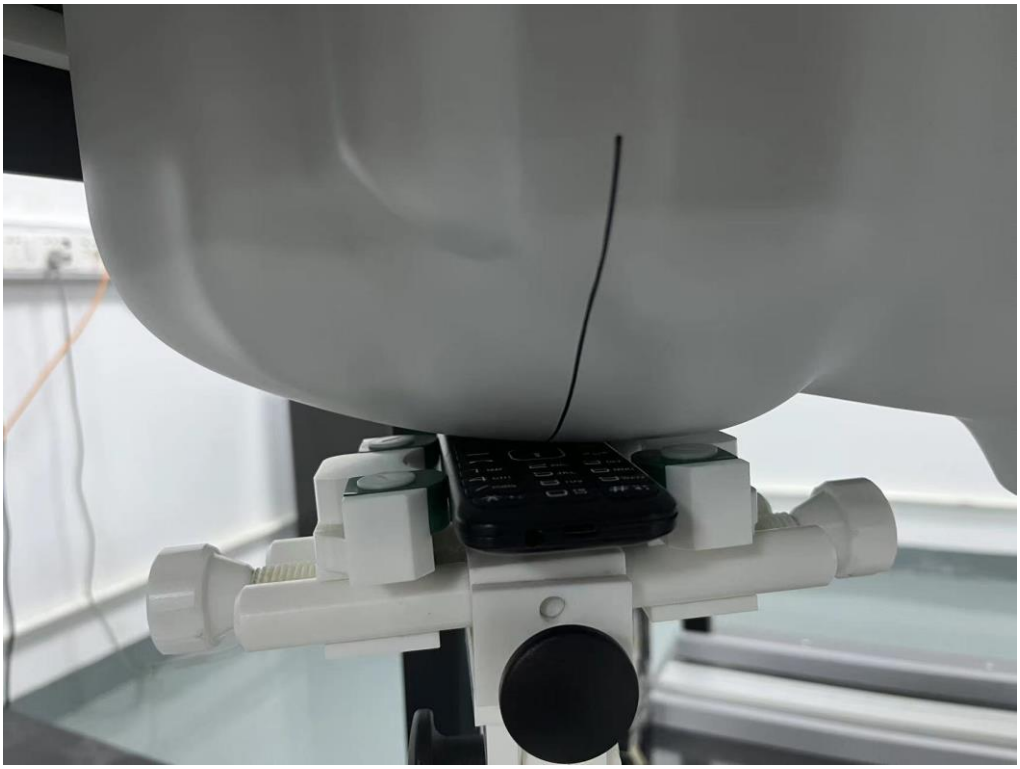
Top Edge

Bottom Edge



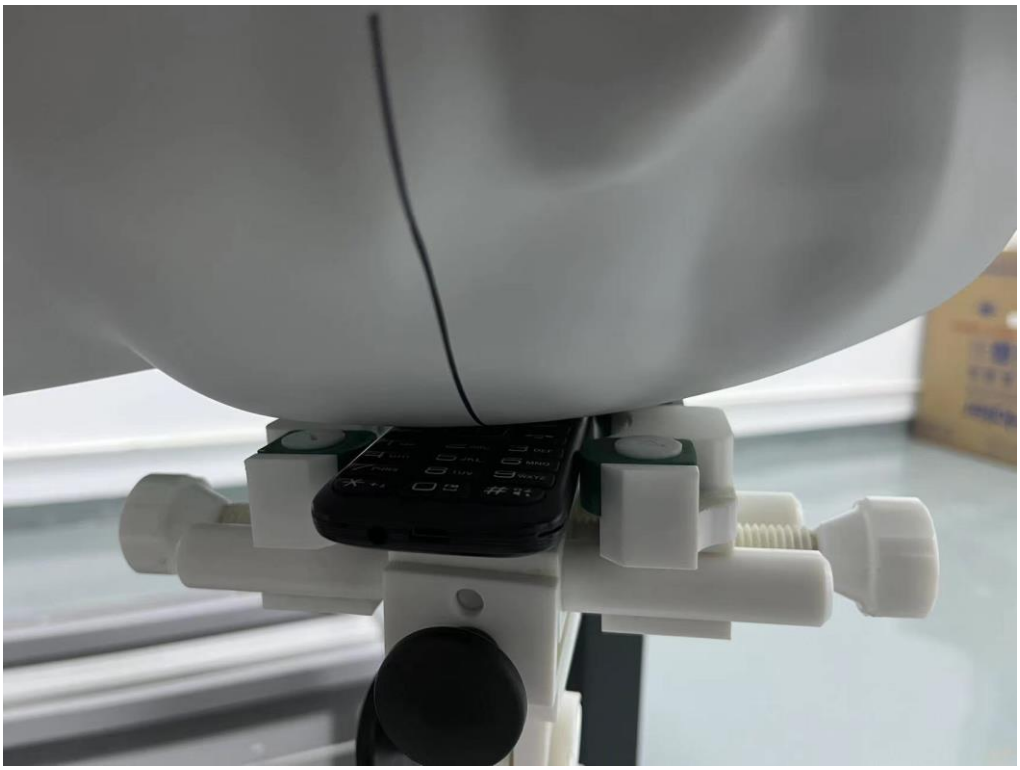
11.2 Setup Photos

Right Touch

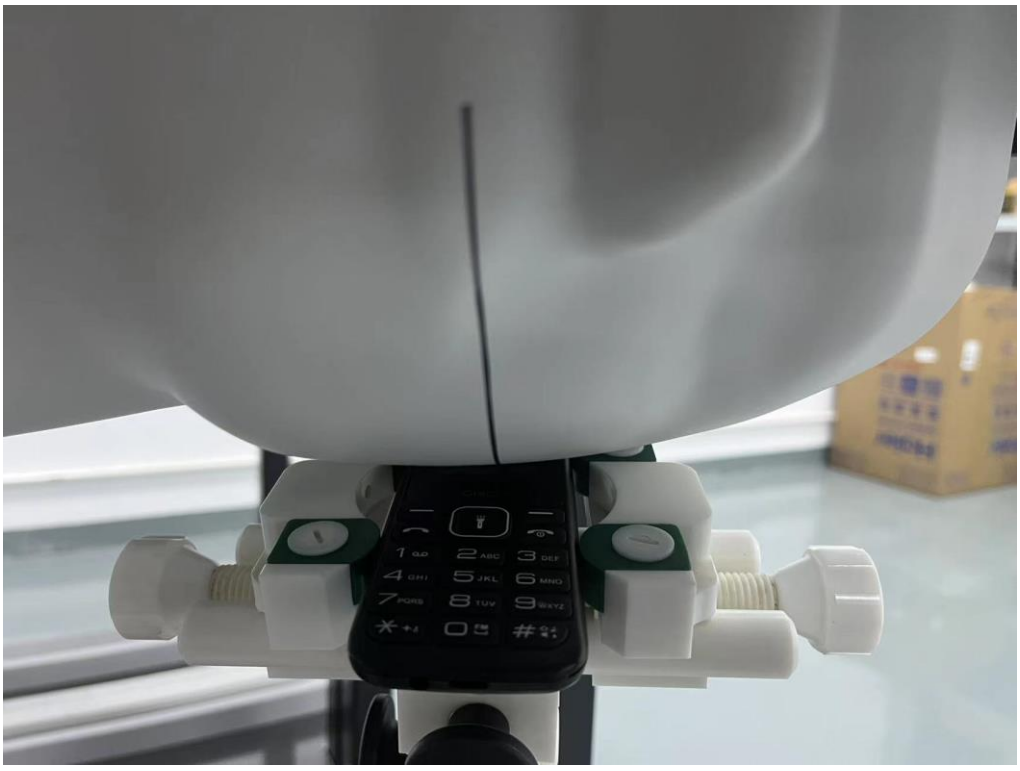


Right Tilt

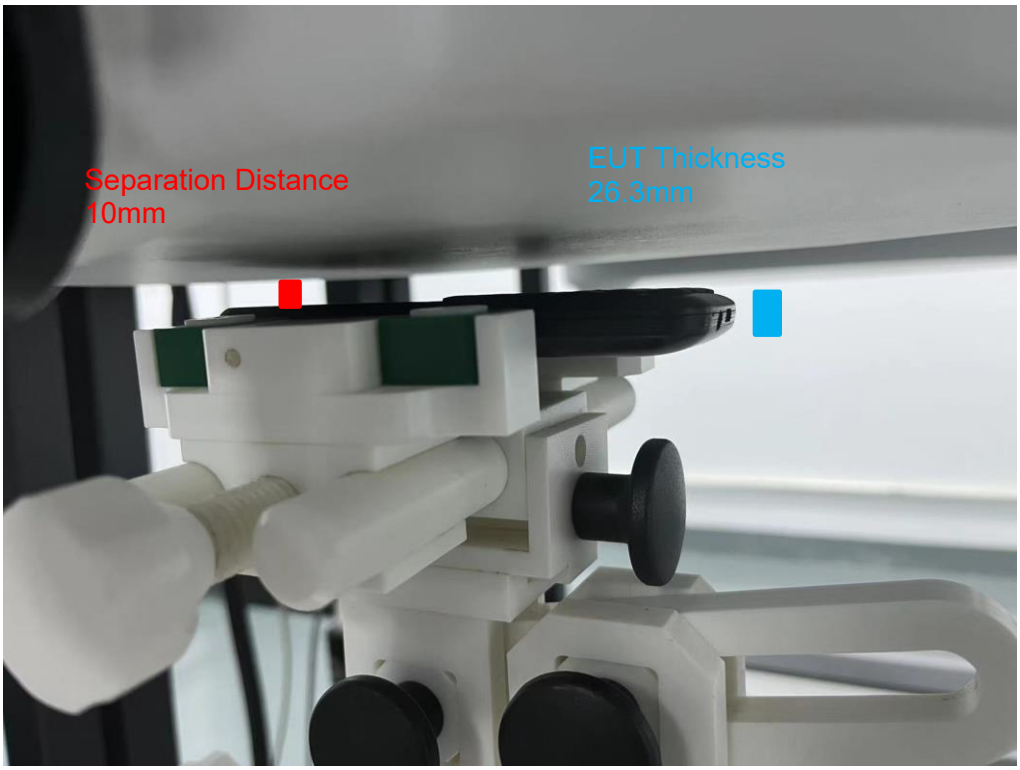
Left Touch



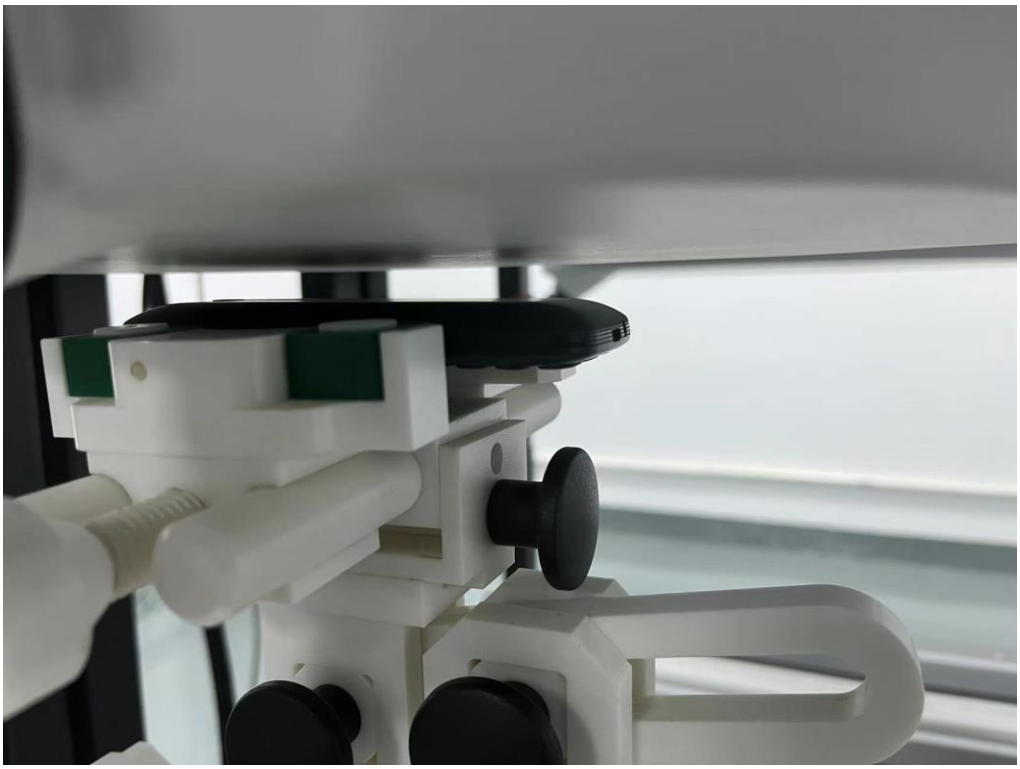
Left Tilt



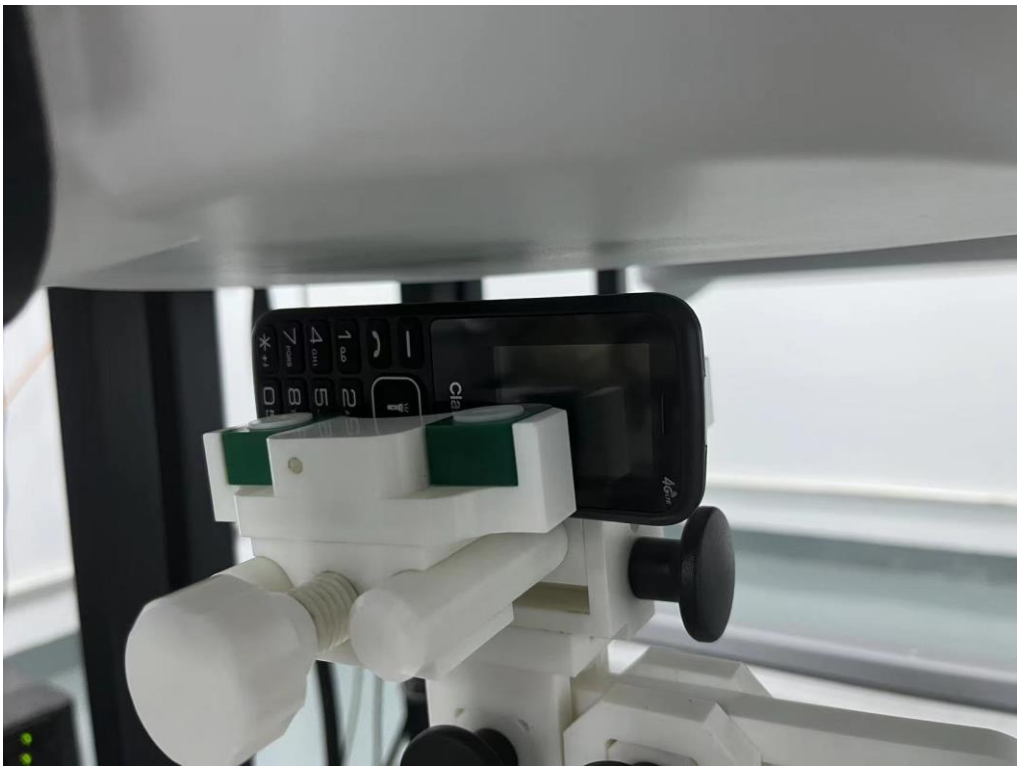
Body Front side (separation distance is 10mm)



Body Back side (separation distance10mm)



Body Left side (separation distance is 10mm)

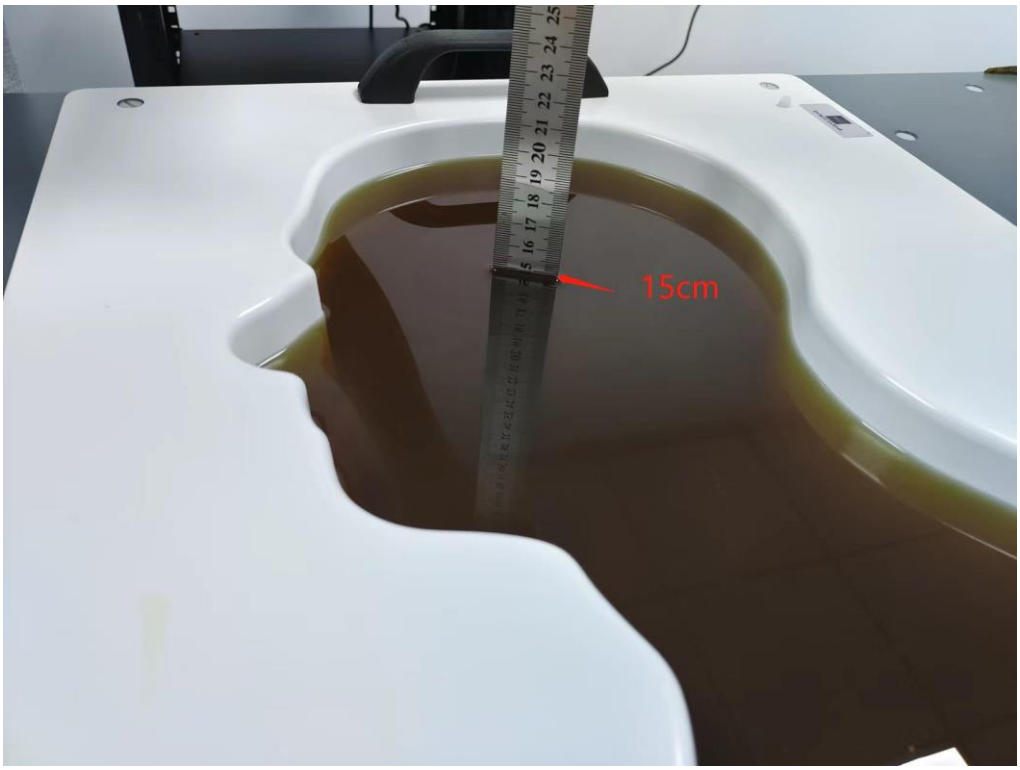


Body Right side (separation distance is 10mm)

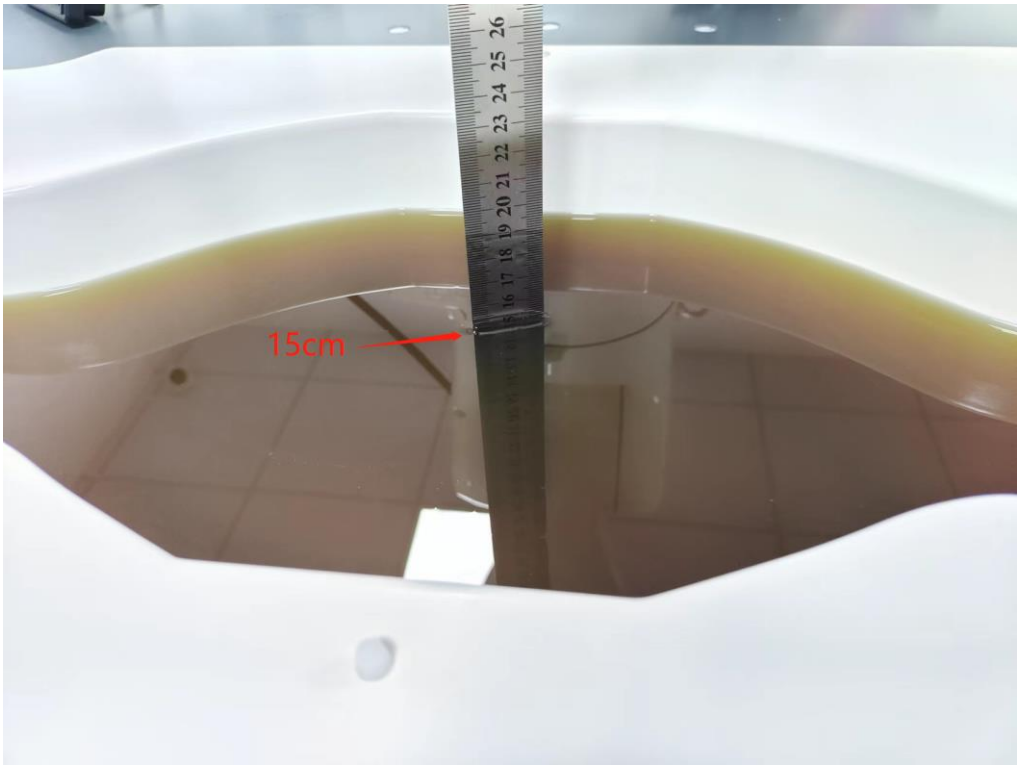
Body Top side (separation distance is 10mm)

Body Bottom side (separation distance is 10mm)

Liquid depth (15 cm)



Liquid depth (15 cm)



12. SAR Result Summary

12.1 Head SAR

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR (W/Kg)	Meas.No.
WCDMA Band II	RMC	Right Cheek	1852.4	1.046	1.91	22.50	22.12	**1.142**	**1**
		Right Cheek	1880	0.902	2.24	22.50	22.00	1.012	/
		Right Cheek	1907.6	0.813	-3.85	22.50	21.75	0.966	/
		Right Tilt	1852.4	0.526	3.36	22.50	22.12	0.574	/
		Left Cheek	1852.4	1.025	-1.55	22.50	22.12	1.119	/
		Left Cheek	1880	0.904	-1.03	22.50	22.00	1.014	/
		Left Cheek	1907.6	0.775	-0.58	22.50	21.75	0.921	/
		Left Tilt	1852.4	0.524	0.48	22.50	22.12	0.572	/
WCDMA Band V	RMC	Right Cheek	836.4	0.568	-0.19	21.50	21.07	**0.627**	**3**
		Right Tilt	836.4	0.282	3.58	21.50	21.07	0.311	/
		Left Cheek	836.4	0.563	0.93	21.50	21.07	0.622	/
		Left Tilt	836.4	0.293	-3.74	21.50	21.07	0.323	/
BT	8DPSK	Right Cheek	2441	0.018	1.54	9.00	8.60	0.020	/
		Right Tilt	2441	0.036	1.44	9.00	8.60	0.039	/
		Left Cheek	2441	0.024	-1.83	9.00	8.60	0.026	/
		Left Tilt	2441	0.046	2.46	9.00	8.60	**0.050**	**5**

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Result 1g (W/Kg)	Power Drift (%)	Max. Turn-up Power (dBm)	Meas. Output Power (dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	1.141	-2.16	24	23.79	1.198	/
			1	0	Right Cheek	1880	1.012	-1.53	24	23.69	1.087	/
			1	0	Right Cheek	1900	0.925	0.38	24	23.57	1.021	/
			50	0	Right Cheek	1860	0.822	0.72	23	22.62	0.897	/
			50	0	Right Cheek	1880	0.933	-3.28	23	22.62	1.018	/
			50	0	Right Cheek	1900	0.802	1.34	23	22.5	0.900	/
			100	0	Right Cheek	1860	0.726	2.78	23	22.68	0.782	/
			1	0	Right Tilt	1860	0.578	0.68	24	23.79	0.607	/
			50	0	Right Tilt	1880	0.474	-0.33	23	22.62	0.517	/
			1	0	Left Cheek	1860	1.297	-2.85	24	23.79	**1.361**	**7**
			1	0	Left Cheek	1880	1.147	0.38	24	23.69	1.232	/
			1	0	Left Cheek	1900	0.997	0.34	24	23.57	1.101	/
			50	0	Left Cheek	1860	0.935	2.20	23	22.62	1.020	/
			50	0	Left Cheek	1880	1.057	-1.93	23	22.62	1.154	/
			50	0	Left Cheek	1900	0.933	-2.58	23	22.62	1.018	/
			100	0	Left Cheek	1860	0.805	2.32	23	22.68	0.867	/
			100	0	Left Cheek	1880	0.786	3.12	23	22.57	0.868	/
			100	0	Left Cheek	1900	0.737	-0.42	23	22.38	0.850	/
			1	0	Left Tilt	1860	0.657	1.65	24	23.79	0.690	/
			50	0	Left Tilt	1880	0.535	-0.36	23	22.62	0.584	/
LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	0.852	-2.20	23.5	23.25	0.902	/
			1	0	Right Cheek	1732.5	0.959	-0.40	23.5	23.28	1.009	/
			1	0	Right Cheek	1745	0.811	0.96	23.5	23.12	0.885	/
			50	0	Right Cheek	1720	0.800	3.97	22.5	22.14	0.869	/
			50	0	Right Cheek	1732.5	0.685	3.61	22.5	22	0.769	/
			50	0	Right Cheek	1745	0.617	-0.03	22.5	21.8	0.725	/
			100	0	Right Cheek	1720	0.595	2.60	22.5	21.91	0.682	/
			1	0	Right Tilt	1732.5	0.495	-3.12	23.5	23.28	0.521	/
			50	0	Right Tilt	1720	0.416	-0.81	22.5	22.14	0.452	/
			1	0	Left Cheek	1720	0.949	3.11	23.5	23.25	1.005	/
			1	0	Left Cheek	1732.5	1.076	0.83	23.5	23.28	**1.132**	**9**
			1	0	Left Cheek	1745	0.910	-2.10	23.5	23.12	0.993	/

			50	0	Left Cheek	1720	0.950	2.20	22.5	22.14	1.032	/
			50	0	Left Cheek	1732.5	0.827	-0.46	22.5	22	0.928	/
			50	0	Left Cheek	1745	0.771	-2.89	22.5	21.8	0.906	/
			100	0	Left Cheek	1720	0.675	0.64	22.5	21.91	0.773	/
			1	0	Left Tilt	1732.5	0.556	-3.94	23.5	23.28	0.585	/
			50	0	Left Tilt	1720	0.393	2.17	22.5	22.14	0.427	/
LTE Band 7	20M	QPSK	1	0	Right Cheek	2535	0.342	-0.27	22	21.76	**0.361**	**11**
			50	0	Right Cheek	2535	0.281	0.81	21	20.57	0.310	/
			1	0	Right Tilt	2535	0.174	1.11	22	21.76	0.184	/
			50	0	Right Tilt	2535	0.159	-1.52	21	20.57	0.176	/
			1	0	Left Cheek	2535	0.205	-2.35	22	21.76	0.217	/
			50	0	Left Cheek	2535	0.156	3.47	21	20.57	0.172	/
			1	0	Left Tilt	2535	0.122	-1.48	22	21.76	0.129	/
			50	0	Left Tilt	2535	0.093	1.98	21	20.57	0.103	/

Note:

1. Per KDB 447498 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.

a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.

b. Scaled SAR(W/kg) = Measured SAR(W/kg) *Tune-up Scaling Factor

2. Per KDB 865664 D01, Repeated measurement is not required when the original highest measured SAR is <0.80 W/kg

12.2 Body-worn SAR

Band	Model	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift (%)	Max. Turn-up Power (dBm)	Meas. Output Power (dBm)	Scaled SAR (W/Kg)	Meas. No.
WCDMA Band II	RMC	Front Side	1852.4	0.922	-3.86	22.50	22.12	1.006	/
		Back Side	1852.4	1.009	0.46	22.50	22.12	**1.101**	**2**
		Back Side	1880	0.923	-3.71	22.50	22.00	1.036	/
		Back Side	1907.6	0.806	-3.90	22.50	21.75	0.958	/
		Left Side	1852.4	0.248	2.74	22.50	22.12	0.271	/
		Right Side	1852.4	0.511	-2.81	22.50	22.12	0.558	/
		Bottom Side	1852.4	0.393	3.39	22.50	22.12	0.429	/
WCDMA Band V	RMC	Front Side	836.4	0.460	0.94	21.50	21.07	0.508	/
		Back Side	836.4	0.652	-3.70	21.50	21.07	**0.720**	**4**
		Left Side	836.4	0.277	2.66	21.50	21.07	0.306	/
		Right Side	836.4	0.337	-0.36	21.50	21.07	0.372	/
		Bottom Side	836.4	0.031	-3.98	21.50	21.07	0.034	/
BT	8DPSK	Front Side	2441	0.034	-1.45	9.00	8.60	0.037	/
		Back Side	2441	0.062	-0.84	9.00	8.60	0.068	/
		Left Side	2441	0.032	0.36	9.00	8.60	0.035	/
		Right Side	2441	0.079	-0.02	9.00	8.60	**0.087**	**6**
		Top Side	2441	0.046	2.80	9.00	8.60	0.050	/
		Bottom Side	2441	0.022	-3.40	9.00	8.60	0.024	/

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	SAR (1g) (W/kg)	Power Drift (%)	Max. Turn-up Power (dBm)	Meas. Output Power (dBm)	Scaled SAR (W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Front side	1860	1.089	1.77	24	23.79	1.143	/
			1	0	Front side	1880	0.939	-2.58	24	23.69	1.008	/
			1	0	Front side	1900	0.856	3.42	24	23.57	0.945	/
			50	0	Front side	1860	0.809	2.87	23	22.62	0.883	/
			50	0	Front side	1880	0.916	2.03	23	22.62	1.000	/
			50	0	Front side	1900	0.813	3.94	23	22.5	0.912	/
			100	0	Front side	1860	0.721	3.72	23	22.68	0.776	/
			1	0	Back Side	1860	1.176	-2.29	24	23.79	**1.234**	**8**
			1	0	Back Side	1880	1.029	-2.46	24	23.69	1.105	***/***
			1	0	Back Side	1900	0.892	0.83	24	23.57	0.985	***/***
			50	0	Back Side	1860	0.827	-0.89	23	22.62	0.903	/
			50	0	Back Side	1880	0.952	-0.57	23	22.62	1.039	/
			50	0	Back Side	1900	0.810	-1.76	23	22.5	0.909	/
			100	0	Back Side	1860	0.679	1.09	23	22.68	0.731	/
			1	0	Left Side	1860	0.456	1.00	24	23.79	0.479	/
			50	0	Left Side	1880	0.384	-0.86	23	22.62	0.419	/
			1	0	Right Side	1860	0.618	-1.04	24	23.79	0.649	/
			50	0	Right Side	1880	0.511	0.62	23	22.62	0.558	/
			1	0	Bottom Side	1860	0.482	-0.91	24	23.79	0.506	***/***
			50	0	Bottom Side	1880	0.409	1.30	23	22.62	0.446	/
LTE Band 4	20M	QPSK	1	0	Front side	1720	0.735	-0.95	23.5	23.25	0.779	/
			1	0	Front side	1732.5	0.836	-0.13	23.5	23.28	0.879	/
			1	0	Front side	1745	0.687	0.88	23.5	23.12	0.750	/
			50	0	Front side	1720	0.656	-3.99	22.5	22.14	0.713	/
			1	0	Back Side	1720	1.024	-3.04	23.5	23.25	1.085	/
			1	0	Back Side	1732.5	1.152	-3.34	23.5	23.28	**1.212**	**10**
			1	0	Back Side	1745	0.959	2.75	23.5	23.12	1.047	/
			50	0	Back Side	1720	0.903	3.27	22.5	22.14	0.981	/
			50	0	Back Side	1732.5	0.770	3.55	22.5	22	0.864	/
			50	0	Back Side	1745	0.731	0.30	22.5	21.8	0.859	/
			100	0	Back Side	1720	0.644	-1.60	22.5	21.91	0.738	/
			1	0	Left Side	1732.5	0.450	3.60	23.5	23.28	0.473	/
			50	0	Left Side	1720	0.374	-3.10	22.5	22.14	0.406	/
			1	0	Right Side	1732.5	0.611	1.68	23.5	23.28	0.643	/
			50	0	Right Side	1720	0.500	0.79	22.5	22.14	0.543	/
			1	0	Bottom Side	1732.5	0.530	-0.78	23.5	23.28	0.558	***/***
			50	0	Bottom Side	1720	0.416	-2.53	22.5	22.14	0.452	/
LTE Band 7	20M	QPSK	1	0	Front side	2535	0.624	2.52	22	21.76	0.659	/
			50	0	Front side	2535	0.523	2.95	21	20.57	0.577	/
			1	0	Back Side	2510	0.634	3.32	22	21.55	0.703	***/***
			1	0	Back Side	2535	0.765	-3.69	22	21.76	**0.808**	**12**
			1	0	Back Side	2560	0.651	3.10	22	21.59	0.715	***/***
			50	0	Back Side	2535	0.636	1.83	21	20.57	0.702	/
			1	0	Left Side	2535	0.299	3.10	22	21.76	0.316	/

			50	0	Left Side	2535	0.245	-3.52	21	20.57	0.270	/
			1	0	Right Side	2535	0.404	-0.79	22	21.76	0.427	/
			50	0	Right Side	2535	0.339	-0.14	21	20.57	0.374	/
			1	0	Bottom Side	2535	0.398	2.77	22	21.76	0.421	/
			50	0	Bottom Side	2535	0.334	-1.17	21	20.57	0.369	/

Note:

1. The test separation of all above table is 10mm.
2. Per KDB 447498 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. Scaled SAR(W/kg) = Measured SAR(W/kg) *Tune-up Scaling Factor

Repeated SAR

Band	Mode	Test Position	Freq.	Result 1g (W/Kg)	Power Drift(%)	Max.Turn-up Power(dBm)	Meas.Output Power(dBm)	Scaled SAR(W/Kg)
WCDMA Band II	RMC	Right Cheek	1852.4	1.014	2.68	22.5	22.12	1.107
		Right Cheek	1880	0.884	3.07	22.5	22.00	0.991
		Right Cheek	1907.6	0.810	1.69	22.5	21.75	0.963
		Left Cheek	1852.4	0.994	1.60	22.5	22.12	1.084
		Left Cheek	1880	0.903	-2.96	22.5	22.00	1.014
		Left Cheek	1907.6	0.737	-2.92	22.5	21.75	0.876
		Back Side	1852.4	0.960	-0.90	22.5	22.12	1.048
		Back Side	1880	0.922	-0.63	22.5	22.00	1.035
		Back Side	1907.6	0.790	1.22	22.5	21.75	0.939

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Result 1g (W/Kg)	Power Drift (%)	Max. Turn-up Power (dBm)	Meas. Output Power (dBm)	Scaled SAR(W/Kg)	Meas. No.
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	1.107	2.84	25.00	24.23	1.322	-
			1	0	Right Cheek	1880	1.001	1.96	25.00	24.35	1.162	-
			1	0	Right Cheek	1900	0.909	-3.69	25.00	24.69	0.976	-
			50	0	Right Cheek	1860	0.795	-0.63	24.50	24.26	0.841	-
			50	0	Right Cheek	1880	0.914	-0.64	24.50	24.29	0.959	-
			50	0	Right Cheek	1900	0.784	3.28	24.50	24.38	0.806	-
			1	0	Left Cheek	1860	1.272	1.04	24.00	23.79	1.336	-
			1	0	Left Cheek	1880	1.127	-3.28	24.00	23.69	1.211	-
			1	0	Left Cheek	1900	0.969	0.31	24.00	23.57	1.069	-
			50	0	Left Cheek	1860	0.923	1.53	23.00	22.62	1.008	-
			50	0	Left Cheek	1880	1.005	-2.07	23.00	22.62	1.097	-
			50	0	Left Cheek	1900	0.921	3.43	23.00	22.62	1.005	-
			100	0	Left Cheek	1860	0.792	1.68	23.00	22.68	0.853	-
			100	0	Left Cheek	1880	0.771	-0.47	23.00	22.57	0.851	-
			100	0	Left Cheek	1900	0.729	-2.75	23.00	22.38	0.841	-
			1	0	Front side	1860	1.061	-0.90	24.00	23.79	1.114	-
			1	0	Front side	1880	0.900	-1.70	24.00	23.69	0.966	-
			1	0	Front side	1900	0.832	1.51	24.00	23.57	0.919	-
			50	0	Front side	1860	0.784	-3.03	23.00	22.62	0.855	-
			50	0	Front side	1880	0.886	-2.94	23.00	22.62	0.967	-
			50	0	Front side	1900	0.786	-2.15	23.00	22.50	0.882	-
			1	0	Back Side	1860	1.147	-3.44	24.00	23.79	1.204	-
			1	0	Back Side	1880	0.987	-0.07	24.00	23.69	1.060	-
			1	0	Back Side	1900	0.876	-1.41	24.00	23.57	0.967	-

			50	0	Back Side	1860	0.804	0.75	23.00	22.62	0.878	-
			50	0	Back Side	1880	0.932	2.58	23.00	22.62	1.017	-
			50	0	Back Side	1900	0.778	1.45	23.00	22.50	0.873	-
LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	0.832	1.64	23.50	23.25	0.881	-
			1	0	Right Cheek	1732.5	0.948	2.17	23.50	23.28	0.997	-
			1	0	Right Cheek	1745	0.788	-3.21	23.50	23.12	0.860	-
			50	0	Right Cheek	1720	0.771	2.54	22.50	22.14	0.838	-
			1	0	Left Cheek	1720	0.929	3.45	23.50	23.25	0.984	-
			1	0	Left Cheek	1732.5	1.061	-2.63	23.50	23.28	1.116	-
			1	0	Left Cheek	1745	0.892	0.93	23.50	23.12	0.973	-
			50	0	Left Cheek	1720	0.904	-3.21	22.50	22.14	0.983	-
			50	0	Left Cheek	1732.5	0.827	-1.79	22.50	22.00	0.927	-
			50	0	Left Cheek	1745	0.739	1.15	22.50	21.80	0.868	-
			1	0	Front side	1732.5	0.817	-1.31	23.50	23.28	0.859	-
			1	0	Back Side	1720	1.022	2.77	23.50	23.25	1.083	-
			1	0	Back Side	1732.5	1.108	-0.99	23.50	23.28	1.165	-
			1	0	Back Side	1745	0.948	0.61	23.50	23.12	1.035	-
			50	0	Back Side	1720	0.893	-2.02	22.50	22.14	0.970	-
			50	0	Back Side	1732.5	0.751	2.06	22.50	22.00	0.843	-
			50	0	Back Side	1745	0.714	0.71	22.50	21.80	0.838	-
LTE Band 7	10M	QPSK	1	0	Back Side	2535	0.737	0.10	22.00	21.76	0.779	-

Repeated SAR measurement

Band	Mode	Test Position	Freq.	Original Measured SAR 1g(W/kg)	1 st Repeated SAR 1g	Ratio	Original Measured SAR 1g(W/kg)	2nd Repeated SAR 1g
WCDMA Band II	RMC	Right Cheek	1852.4	1.046	1.014	1.032	-	-
		Right Cheek	1880	0.902	0.884	1.021	-	-
		Right Cheek	1907.6	0.813	0.810	1.003	-	-
		Left Cheek	1852.4	1.025	0.994	1.032	-	-
		Left Cheek	1880	0.904	0.903	1.001	-	-
		Left Cheek	1907.6	0.775	0.737	1.051	-	-
		Back Side	1852.4	1.009	0.960	1.051	-	-
		Back Side	1880	0.923	0.922	1.001	-	-
		Back Side	1907.6	0.806	0.790	1.020	-	-

Band	BW (MHz)	Mod.	RB Size	RB offset	Test Position	Freq.	Original Measured SAR 1g(W/kg) 1g (W/Kg)	1 st Repeated SAR 1g	Ratio	Original Measured	2nd Repeated SAR 1g	Ratio
LTE Band 2	20M	QPSK	1	0	Right Cheek	1860	1.141	1.107	1.031	-	-	-
			1	0	Right Cheek	1880	1.012	1.001	1.011	-	-	-
			1	0	Right Cheek	1900	0.925	0.909	1.018	-	-	-
			50	0	Right Cheek	1860	0.822	0.795	1.033			
			50	0	Right Cheek	1880	0.933	0.914	1.021	-	-	-
			50	0	Right Cheek	1900	0.802	0.784	1.023	-	-	-
			1	0	Left Cheek	1860	1.297	1.272	1.019	-	-	-
			1	0	Left Cheek	1880	1.147	1.127	1.017	-	-	-
			1	0	Left Cheek	1900	0.997	0.969	1.029	-	-	-
			50	0	Left Cheek	1860	0.935	0.923	1.013	-	-	-
			50	0	Left Cheek	1880	1.057	1.005	1.052	-	-	-
			50	0	Left Cheek	1900	0.933	0.921	1.013	-	-	-
			100	0	Left Cheek	1860	0.805	0.792	1.016	-	-	-
			100	0	Left Cheek	1880	0.786	0.771	1.020	-	-	-
			100	0	Left Cheek	1900	0.737	0.729	1.010	-	-	-
			1	0	Front side	1860	1.089	1.061	1.026	-	-	-
			1	0	Front side	1880	0.939	0.900	1.044	-	-	-
			1	0	Front side	1900	0.856	0.832	1.028	-	-	-
			50	0	Front side	1860	0.809	0.784	1.032	-	-	-
			50	0	Front side	1880	0.916	0.886	1.034	-	-	-
			50	0	Front side	1900	0.813	0.786	1.034	-	-	-
			1	0	Back Side	1860	1.176	1.147	1.025	-	-	-
			1	0	Back Side	1880	1.029	0.987	1.042	-	-	-
			1	0	Back Side	1900	0.892	0.876	1.018	-	-	-
			50	0	Back Side	1860	0.827	0.804	1.028	-	-	-
			50	0	Back Side	1880	0.952	0.932	1.022	-	-	-
			50	0	Back Side	1900	0.810	0.778	1.041	-	-	-

LTE Band 4	20M	QPSK	1	0	Right Cheek	1720	0.852	0.832	1.024			
			1	0	Right Cheek	1732.5	0.959	0.948	1.011	-	-	-
			1	0	Right Cheek	1745	0.811	0.788	1.029	-	-	-
			50	0	Right Cheek	1720	0.800	0.771	1.037	-	-	-
			1	0	Left Cheek	1720	0.949	0.929	1.022	-	-	-
			1	0	Left Cheek	1732.5	1.076	1.061	1.014	-	-	-
			1	0	Left Cheek	1745	0.910	0.892	1.021			
			50	0	Left Cheek	1720	0.950	0.904	1.050	-	-	-
			50	0	Left Cheek	1732.5	0.827	0.827	1.001	-	-	-
			50	0	Left Cheek	1745	0.771	0.739	1.044	-	-	-
			1	0	Front side	1732.5	0.836	0.817	1.023	-	-	-
			1	0	Back Side	1720	1.024	1.022	1.002	-	-	-
			1	0	Back Side	1732.5	1.152	1.108	1.040	-	-	-
			1	0	Back Side	1745	0.959	0.948	1.011	-	-	-
			50	0	Back Side	1720	0.903	0.893	1.011	-	-	-
			50	0	Back Side	1732.5	0.770	0.751	1.025	-	-	-
			50	0	Back Side	1745	0.731	0.714	1.024	-	-	-
LTE Band 7	10M	QPSK	1	0	Back Side	2535	0.765	0.737	1.038			

Note:

1. Per KDB 865664 D01,for each frequency band ,repeated SAR measurement is required only when the measured SAR is≥0.8W/Kg.
2. Per KDB 865664 D01,if the ratio of largest to smallest SAR for the original and first repeated measurement is≤1.2 and the measured SAR＜1.45W/Kg, only one repeated measurement is required.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is＞1.20 or when the original or repeated measurement is ≥1.45W/Kg.
4. The ratio is the difference in percentage between original and repeated measured SAR.

Simultaneous Multi-band Transmission Evaluation:
Application Simultaneous Transmission information:

Position	Simultaneous State
Head	1. WCDMA + Bluetooth
	2. LTE + Bluetooth
Body	1. WCDMA + Bluetooth
	2. LTE + Bluetooth

NOTE:
1. For simultaneous transmission at head and body exposure position, 2 transmitters simultaneous transmission was the worst state.
2. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
3. KDB 447498 Appendix E, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
SARest =1.6 · Pant / Pth [W/kg].
Pant is maximum time-averaged power or effective radiated power (ERP), whichever is greater, and Pth is defined in Formula KDB 447498 (B.2). When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR-1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR-1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

Simultaneous Mode	Position	Mode	Max. 1-g SAR (W/kg)	1-g Sum SAR (W/kg)
WCDMA + Bluetooth	Head	WCDMA	1.142	1.192
		Bluetooth	0.050	
	Body	WCDMA	1.101	1.188
		Bluetooth	0.087	
LTE + Bluetooth	Head	LTE	1.361	1.411
		Bluetooth	0.050	
	Body	LTE	1.234	1.321
		Bluetooth	0.087	

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.

When the sum of SAR 1g of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit (SAR-1g 1.6 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR 1g is greater than the SAR limit (SAR-1g 1.6 W/kg), SAR test exclusion is determined by the SPLSR.

13. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
835MHz Dipole	MVG	DIP0G835	SN 06/22 DIP0G835-639	2022.02.11	2025.02.10
1800MHz Dipole	MVG	DIP1G800	SN 06/22 DIP1G800-640	2022.02.11	2025.02.10
1900MHz Dipole	MVG	DIP1G900	SN 06/22 DIP1G900-641	2022.02.11	2025.02.10
2450MHz Dipole	MVG	DIP2G450	SN 06/22 DIP2G450-645	2022.02.11	2025.02.10
2600MHz Dipole	MVG	DIP2G600	SN 06/22 DIP2G600-646	2022.02.11	2025.02.10
E-Field Probe	MVG	EPGO364	SN 04/22 EPGO364	2023.02.10	2024.02.09
Liquid Calibration Kit	MVG	OCPG 87	SN 06/22 OCPG87	2023.02.10	2024.02.09
Antenna	MVG	ANTA 73	SN 06/22 ANTA 73	N/A	N/A
Ellipsoid Phantom	MVG	ELLI 51	SN 06/22 ELLI 51	N/A	N/A
Phantom	MVG	SAM 148	SN 06/22 SAM148	N/A	N/A
Phone holder	MVG	MSH 117	SN 06/22 MSH 117	N/A	N/A
Laptop holder	MVG	LSH 36	SN 06/22 LSH 38	N/A	N/A
Directional coupler	SHW	SHWDCP	202203280013	N/A	N/A
Network Analyzer	Agilent	E5071C	MY46418070	2023.03.27	2024.03.26
Multi Meter	Keithley	DMM6500	DMM6500	2023.03.27	2024.03.26
Signal Generator	Keithley	N5182B	MY59100717	2023.04.07	2024.04.06
Wireless Communication Test Set	R&S	CMW500	137737	2023.04.14	2024.04.13
Power Sensor	R&S	Z11	116184	2023.03.27	2024.03.26
Temperature hygrometer	N/A	ST-W2318	N/A	2023.04.24	2024.04.23
Thermograph	N/A	TP101	N/A	2023.04.25	2024.04.24

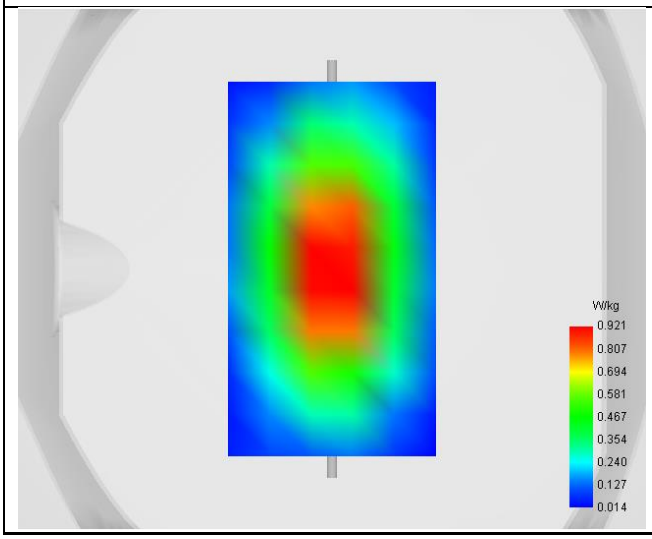
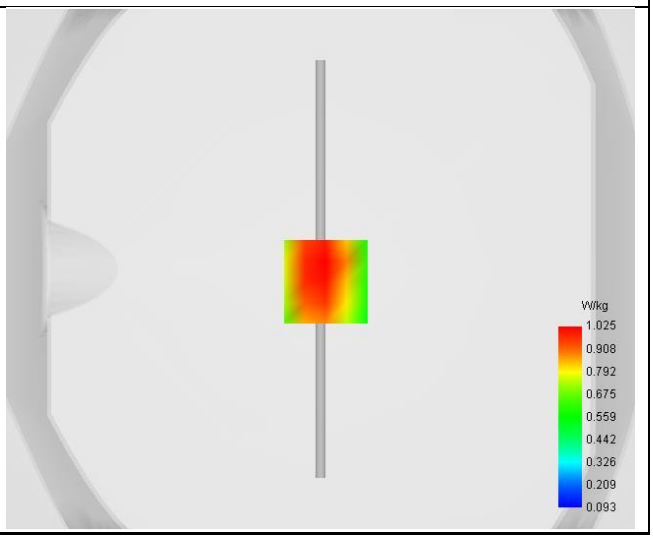
Appendix A. System Validation Plots

System Performance Check Data (835MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm,dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-02

Experimental conditions.

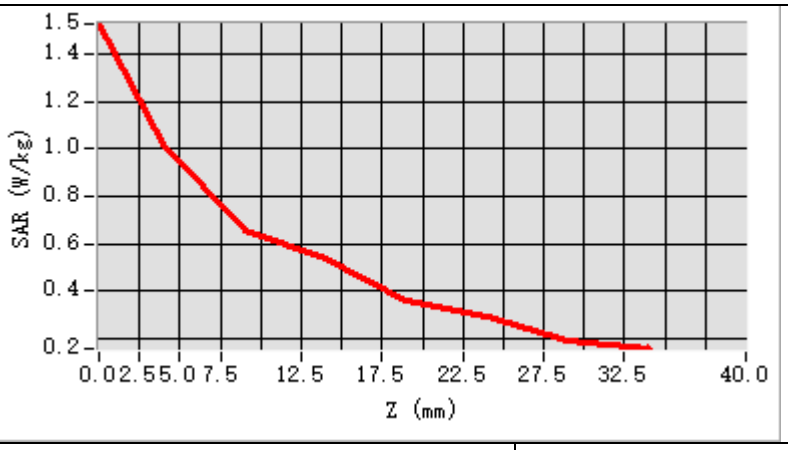
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW
Frequency (MHz)	835.000
Relative permittivity	41.63
Conductivity (S/m)	0.94
Probe	SN 04/22 EPGO364
ConvF	1.72
Crest factor:	1:1

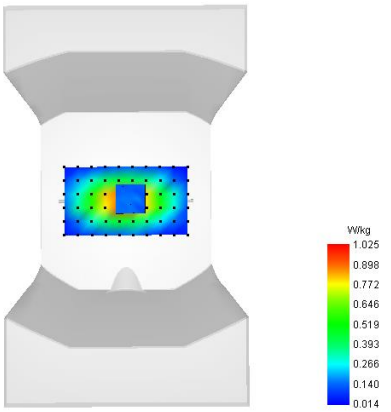
SURFACE SAR	VOLUME SAR
	

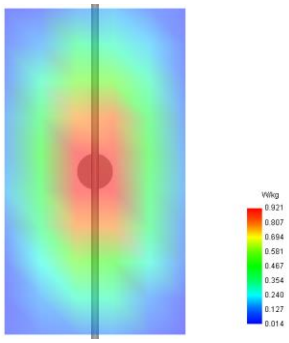
Maximum location: X=5.00, Y=5.00 ; SAR Peak: 1.45 W/kg

SAR 10g (W/Kg)	0.617
SAR 1g (W/Kg)	0.978

Z Axis Scan


1.5
1.4
1.2
1.0
0.8
0.6
0.4
0.2
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)


W/kg
1.025
0.898
0.772
0.646
0.519
0.393
0.266
0.140
0.014

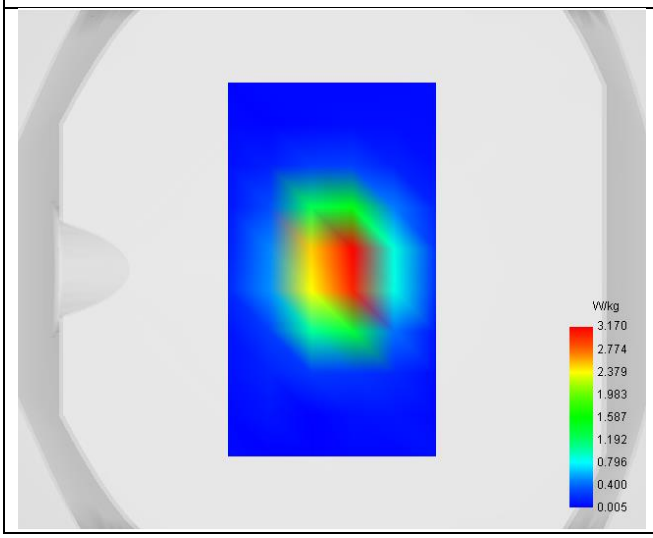
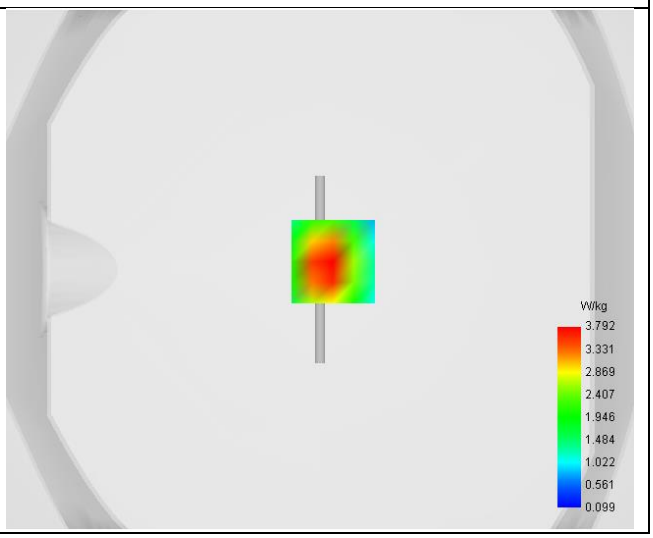


System Performance Check Data (1800MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-03

Experimental conditions.

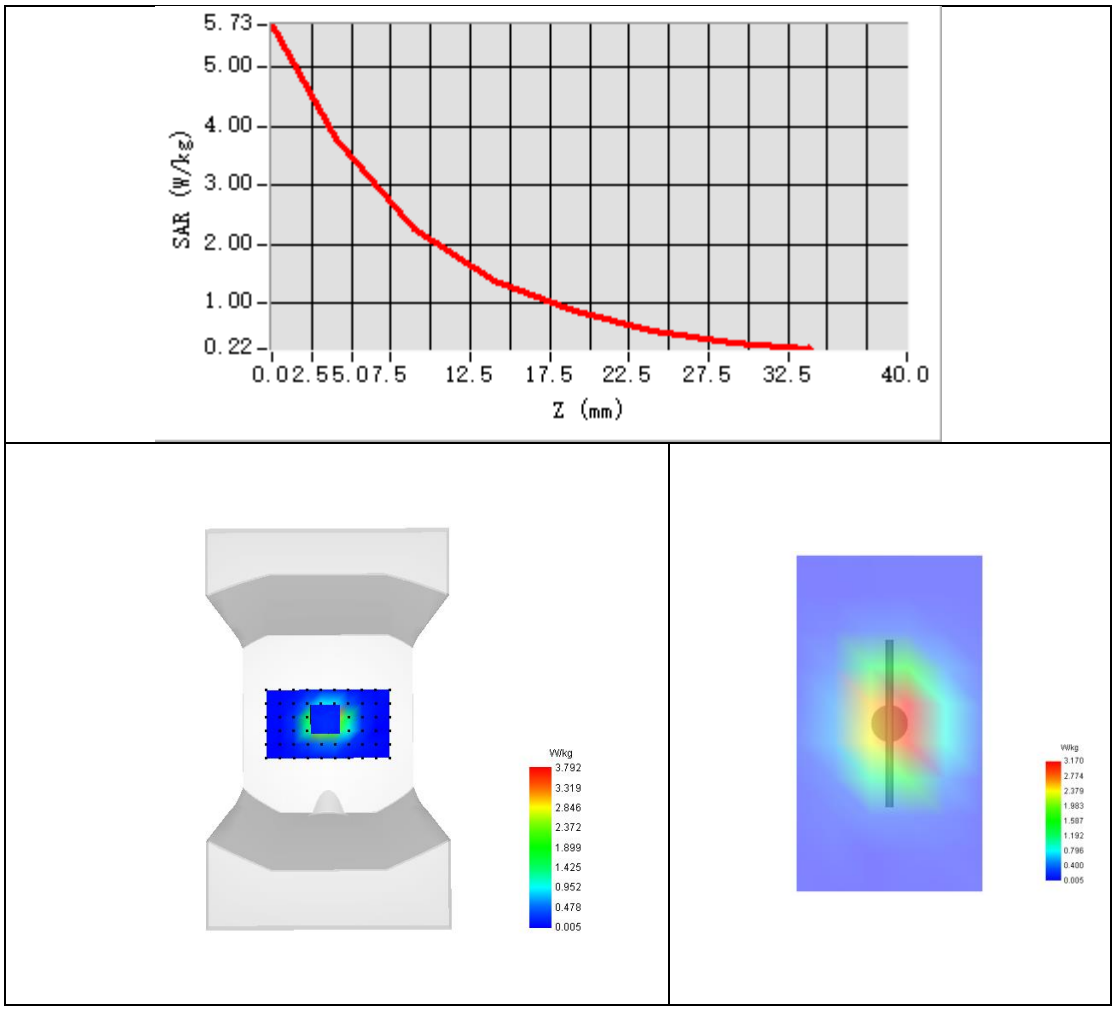
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW
Frequency (MHz)	1800.000
Relative permittivity	41.52
Conductivity (S/m)	1.44
Probe	SN 04/22 EPGO364
ConvF	1.95
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=5.00, Y=3.00 ; SAR Peak: 5.94 W/kg

SAR 10g (W/Kg)	2.089
SAR 1g (W/Kg)	3.885

Z Axis Scan

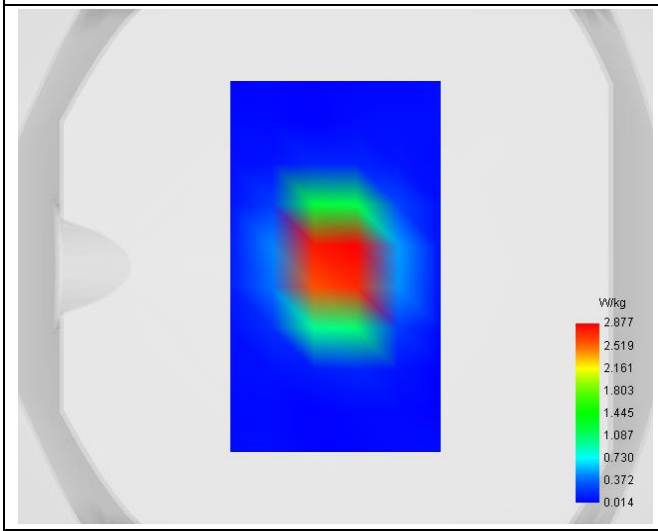
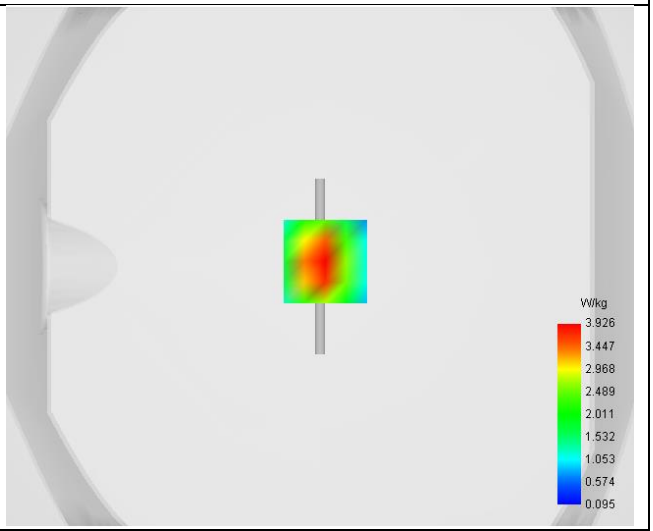

5.73
5.00
4.00
3.00
2.00
1.00
0.22
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
3.792
3.319
2.846
2.372
1.899
1.425
0.952
0.478
0.005
W/kg
3.170
2.774
2.379
1.983
1.587
1.192
0.796
0.400
0.005

System Performance Check Data (1900MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-04

Experimental conditions.

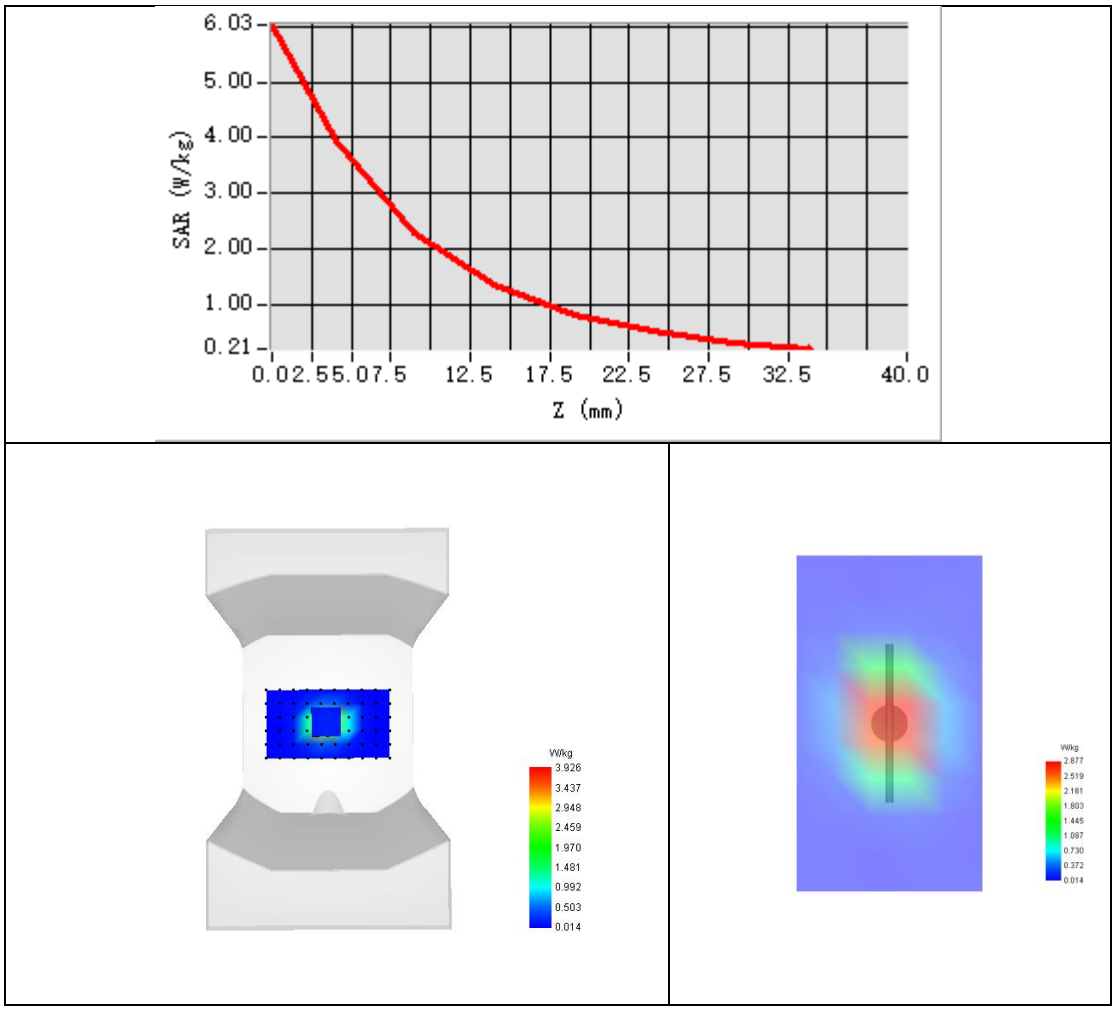
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW
Frequency (MHz)	1900.000
Relative permittivity	40.82
Conductivity (S/m)	1.42
Probe	SN 04/22 EPGO364
ConvF	2.25
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=2.00, Y=2.00 ; SAR Peak: 6.15 W/kg

SAR 10g (W/Kg)	2.096
SAR 1g (W/Kg)	4.084

Z Axis Scan

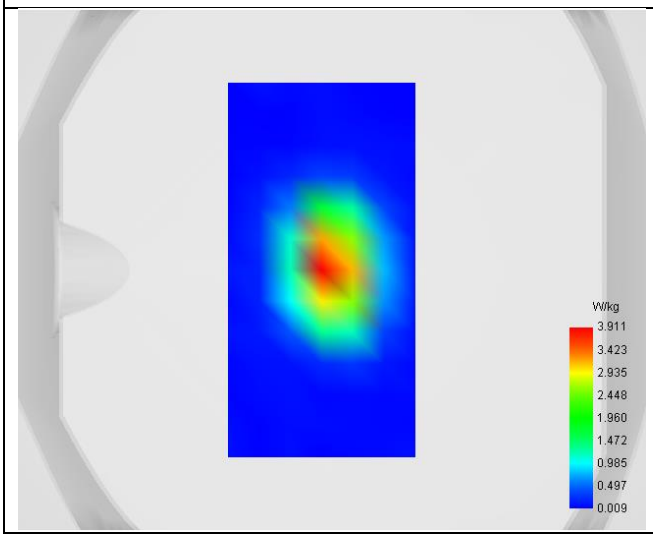
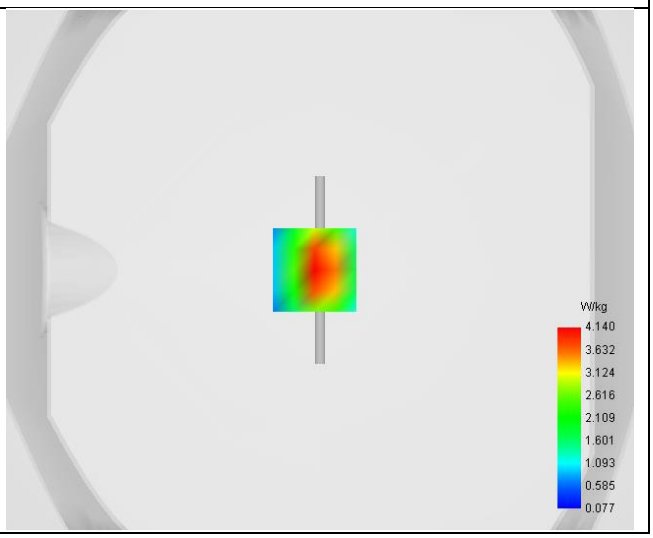

6.03
5.00
4.00
3.00
2.00
1.00
0.21
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
3.926
3.437
2.948
2.459
1.970
1.481
0.992
0.503
0.014
W/kg
2.877
2.519
2.161
1.803
1.445
1.087
0.730
0.372
0.014

System Performance Check Data (1800MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-06

Experimental conditions.

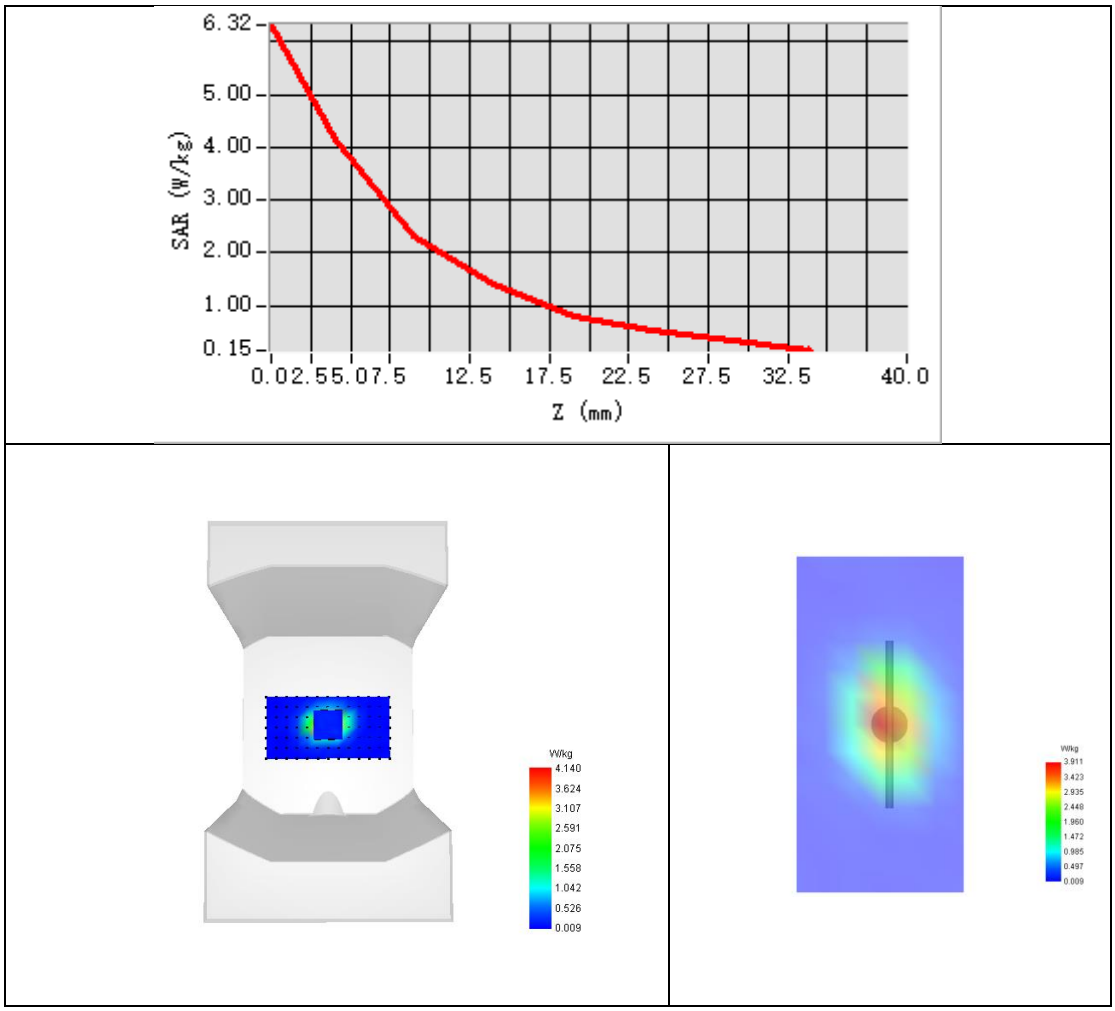
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW
Frequency (MHz)	1800.000
Relative permittivity	41.45
Conductivity (S/m)	1.42
Probe	SN 04/22 EPGO364
ConvF	1.95
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=-2.00, Y=0.00 ; SAR Peak: 6.54 W/kg

SAR 10g (W/Kg)	2.355
SAR 1g (W/Kg)	3.882

Z Axis Scan

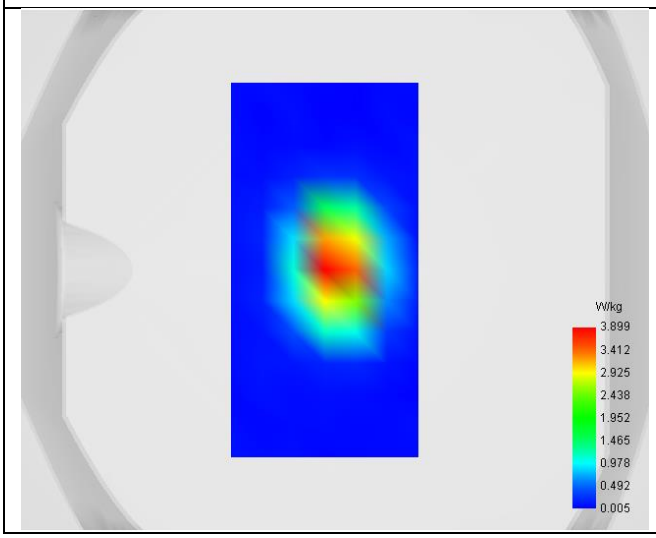
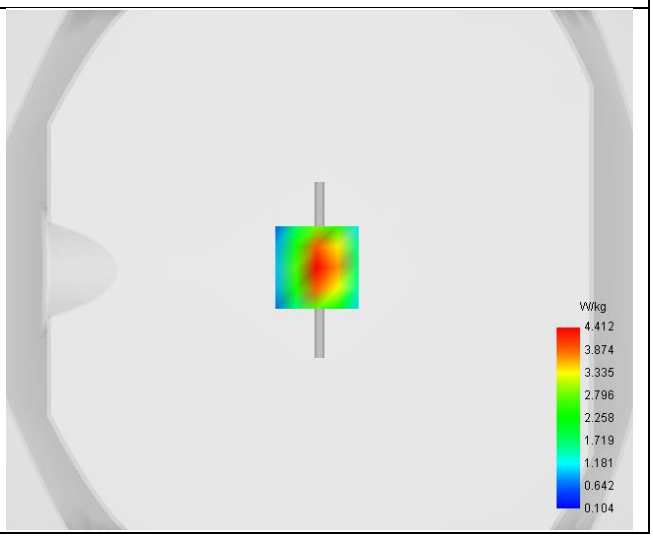

6.32
5.00
4.00
3.00
2.00
1.00
0.15
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
4.140
3.624
3.107
2.591
2.075
1.558
1.042
0.526
0.009
W/kg
3.911
3.423
2.935
2.448
1.960
1.472
0.985
0.497
0.009

System Performance Check Data (1900MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-07

Experimental conditions.

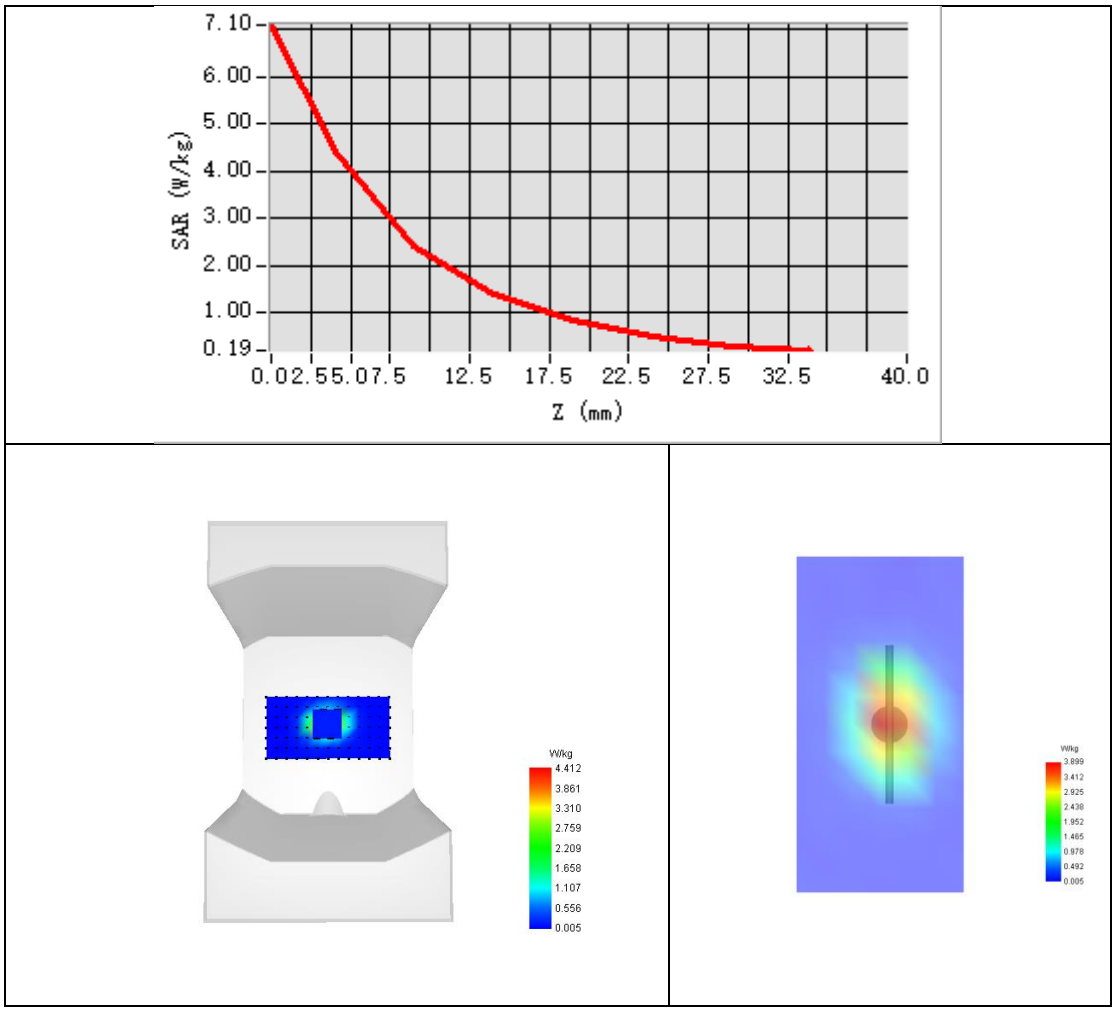
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW
Frequency (MHz)	1900.000
Relative permittivity	40.79
Conductivity (S/m)	1.45
Probe	SN 04/22 EPGO364
ConvF	2.25
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=-1.00, Y=1.00 ; SAR Peak: 7.18 W/kg

SAR 10g (W/Kg)	2.455
SAR 1g (W/Kg)	4.108

Z Axis Scan

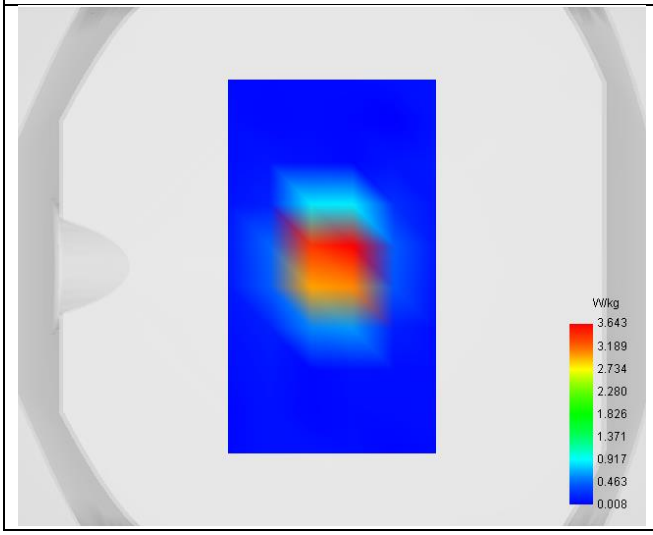
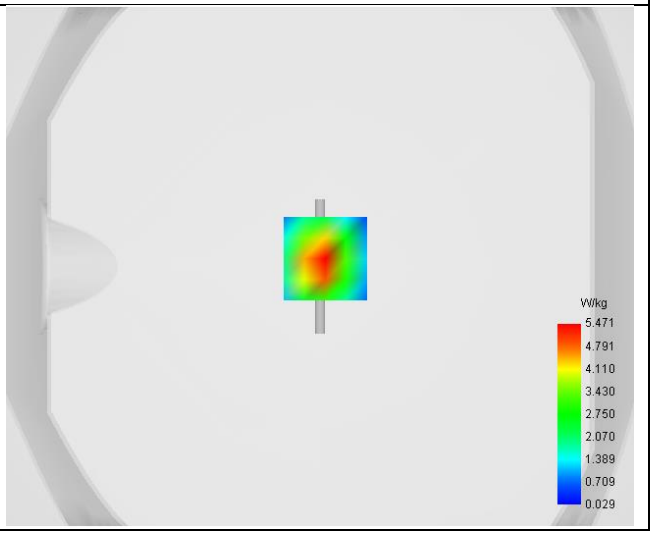

7.10
6.00
5.00
4.00
3.00
2.00
1.00
0.19
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
4.412
3.861
3.310
2.759
2.209
1.658
1.107
0.556
0.005
W/kg
3.899
3.412
2.925
2.438
1.952
1.465
0.978
0.492
0.005

System Performance Check Data (2450MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-02

Experimental conditions.

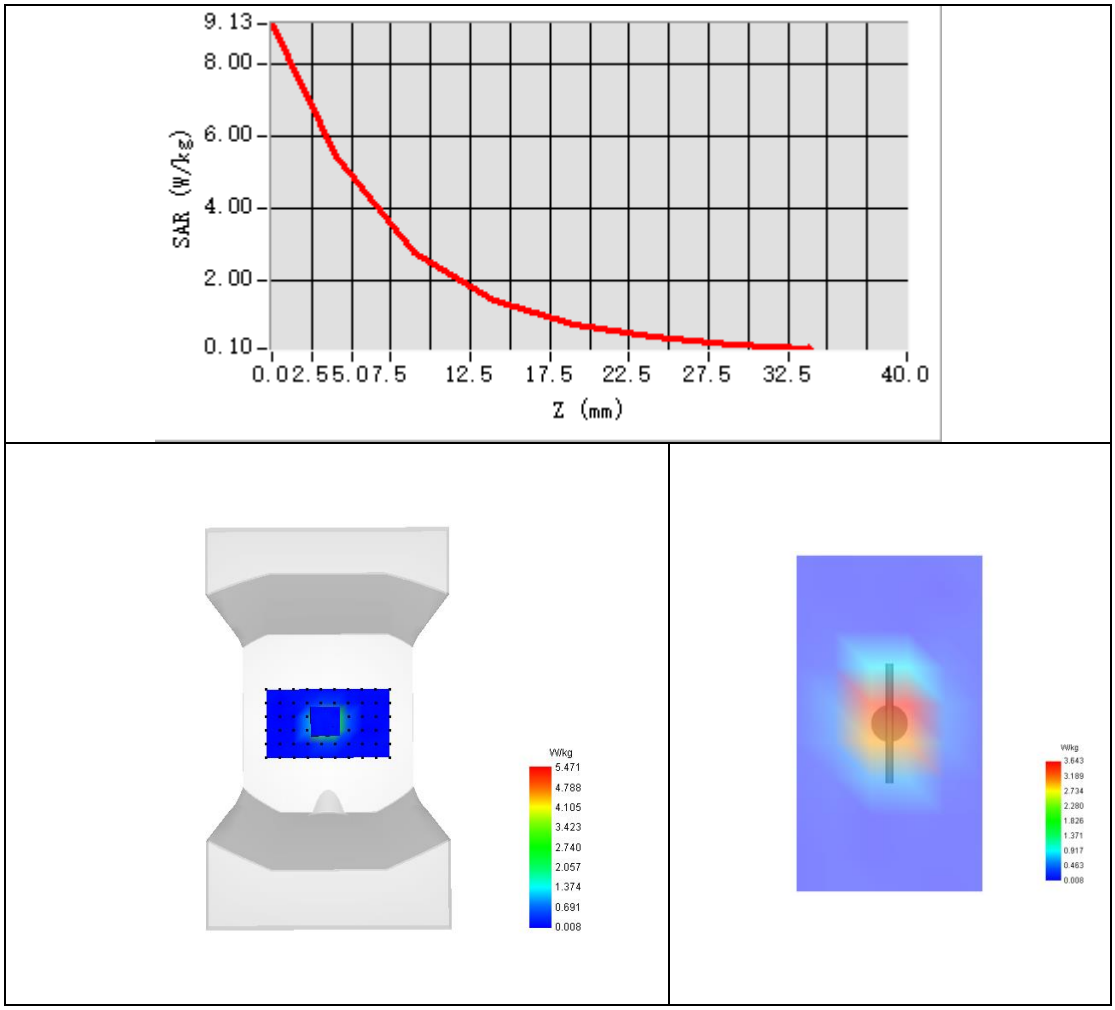
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW
Frequency (MHz)	2450.000
Relative permittivity	40.72
Conductivity (S/m)	1.85
Probe	SN 04/22 EPGO364
ConvF	2.33
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=2.00, Y=3.00 ; SAR Peak: 9.30 W/kg

SAR 10g (W/Kg)	2.352
SAR 1g (W/Kg)	5.432

Z Axis Scan

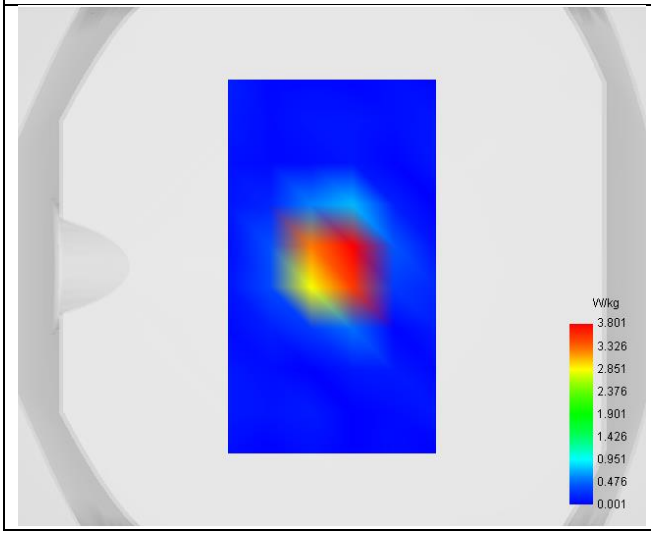
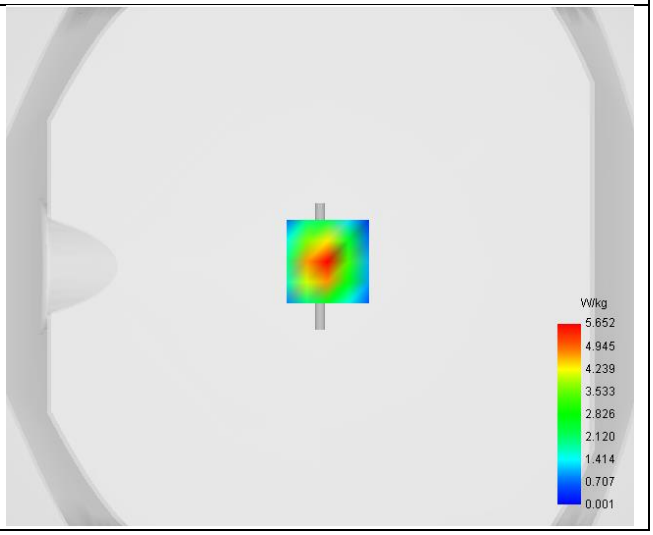

9.13
8.00
6.00
4.00
2.00
0.10
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
5.471
4.788
4.105
3.423
2.740
2.057
1.374
0.691
0.008
W/kg
3.643
3.189
2.734
2.280
1.826
1.371
0.917
0.463
0.008

System Performance Check Data (2600MHz)

Type: Phone measurement (Complete)
Area scan resolution: dx=8mm, dy=8mm
Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm
Date of measurement: 2023-08-05

Experimental conditions.

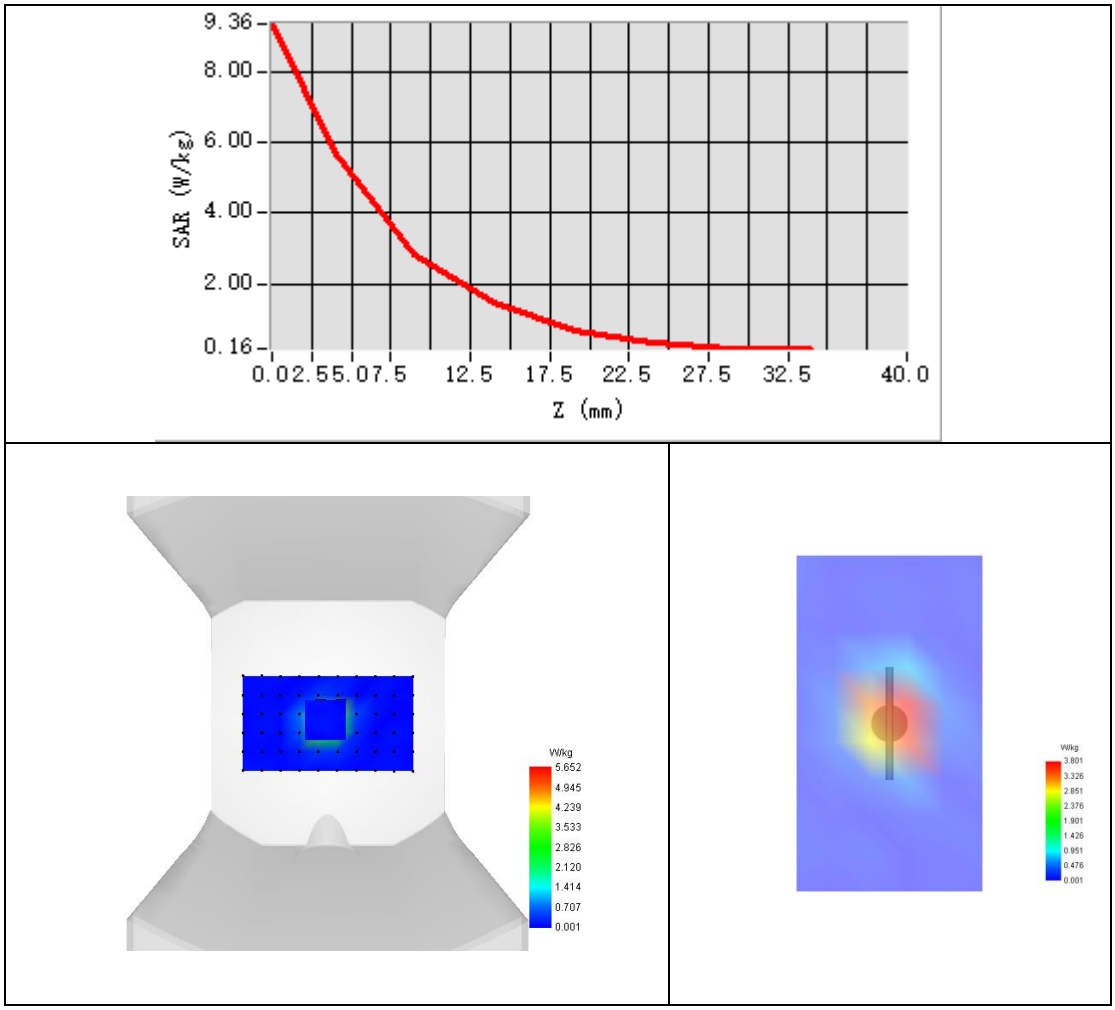
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW
Frequency (MHz)	2600.000
Relative permittivity	39.70
Conductivity (S/m)	1.95
Probe	SN 04/22 EPGO364
ConvF	2.36
Crest factor:	1:1

SURFACE	VOLUME SAR
	

Maximum location: X=3.00, Y=2.00 ; SAR Peak: 9.65 W/kg

SAR 10g (W/Kg)	2.415
SAR 1g (W/Kg)	5.648

Z Axis Scan


9.36
8.00
6.00
4.00
2.00
0.16
SAR (W/kg)
0.0 2.5 5.0 7.5 12.5 17.5 22.5 27.5 32.5 40.0
Z (mm)
W/kg
5.652
4.945
4.239
3.533
2.826
2.120
1.414
0.707
0.001
W/kg
3.801
3.326
2.851
2.376
1.901
1.426
0.951
0.476
0.001

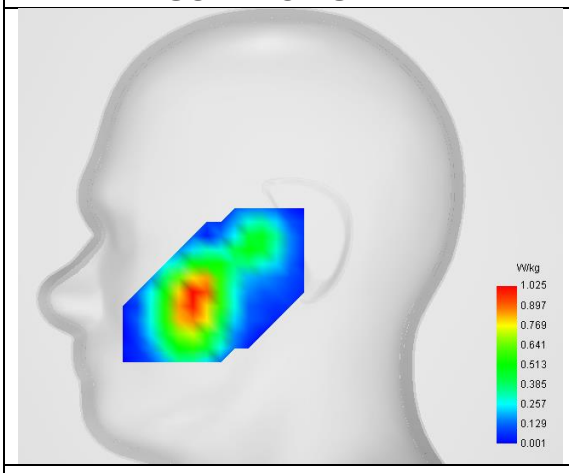
Appendix B. SAR Test Plots

Plot 1:

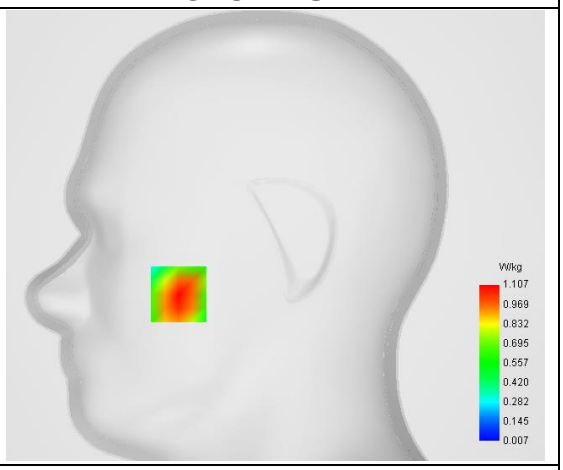
Test Date	2023-08-06
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	Band 2 (1900)
Signal	WCDMA
Frequency	1852.4
SAR 10g (W/Kg)	0.616
SAR 1g (W/Kg)	1.046

Maximum location: X=-56.00, Y=-34.00 ; SAR Peak: 1.59 W/kg

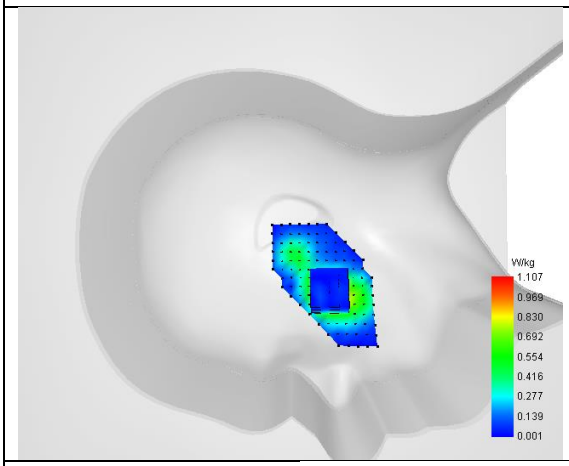
SURFACE SAR



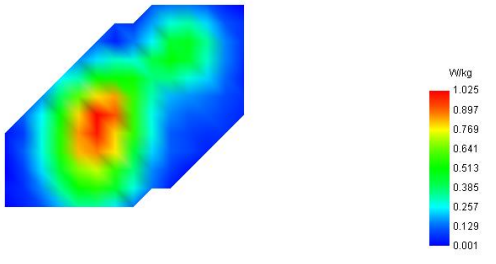
VOLUME SAR

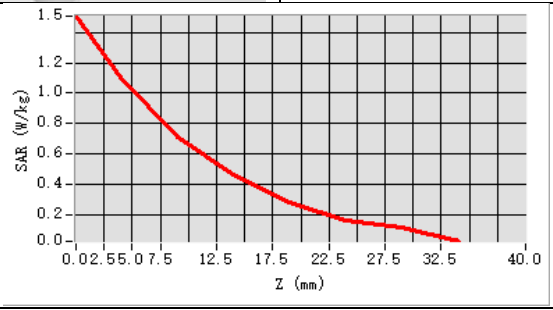


3D screen shot



Hot spot position

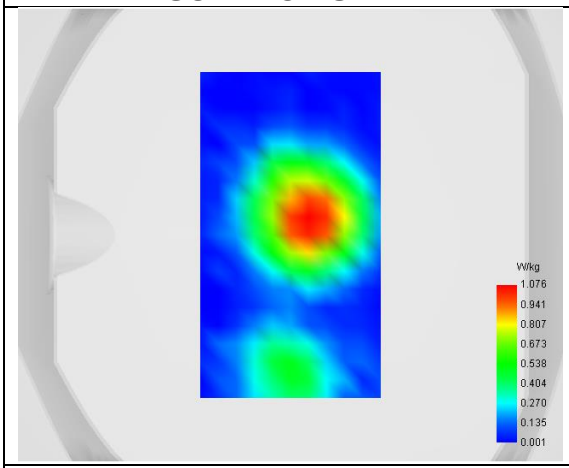
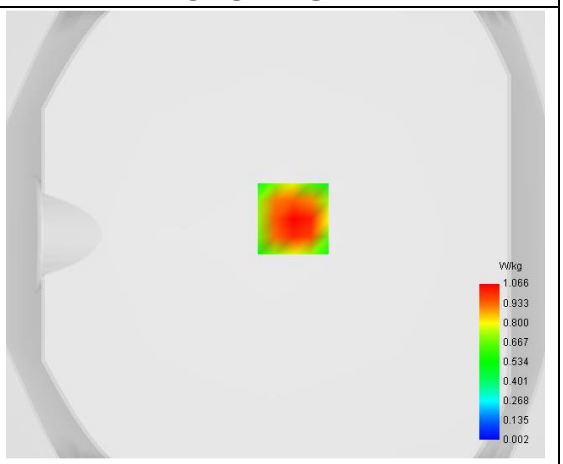
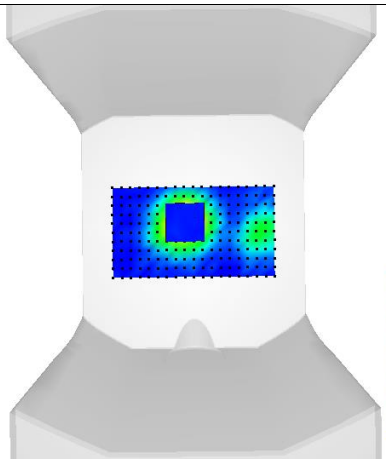
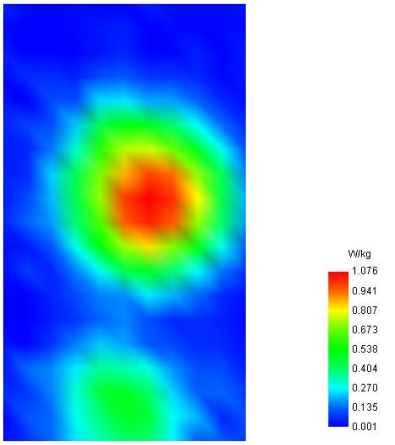
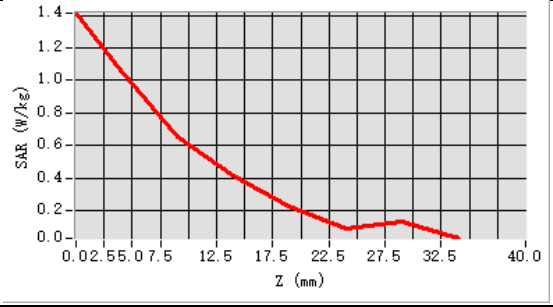




Plot 2:

Test Date	2023-08-06
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	Band 2 (1900)
Signal	WCDMA
Frequency	1852.4
SAR 10g (W/Kg)	0.572
SAR 1g (W/Kg)	1.009

Maximum location: X=8.00, Y=7.00 ; SAR Peak: 1.61 W/kg

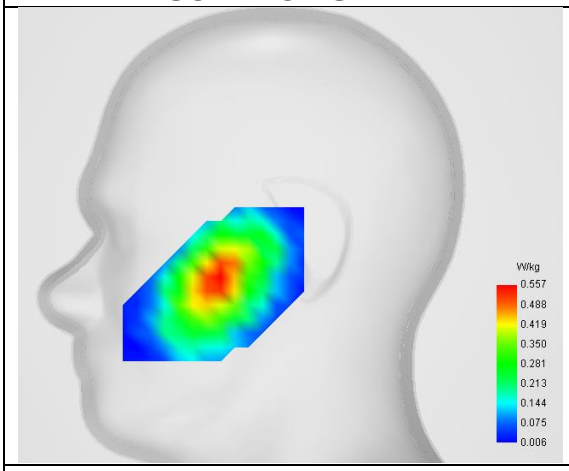
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 3:

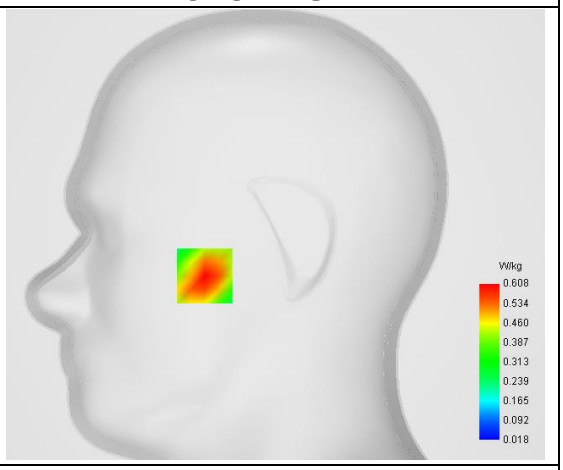
Test Date	2023-08-02
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	Band 5 (850)
Signal	WCDMA
Frequency	836.4
SAR 10g (W/Kg)	0.351
SAR 1g (W/Kg)	0.568

Maximum location: X=-41.00, Y=-24.00 ; SAR Peak: 0.89 W/kg

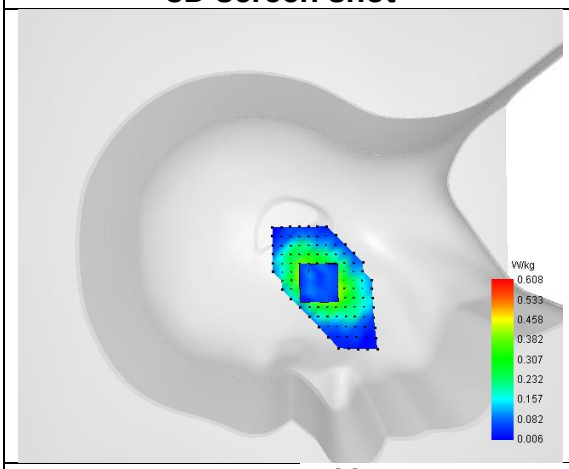
SURFACE SAR



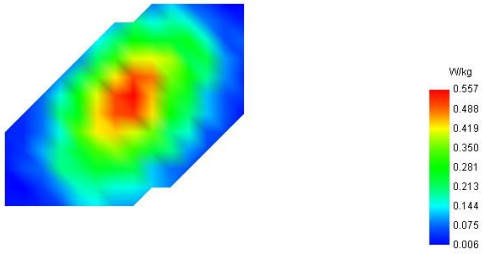
VOLUME SAR

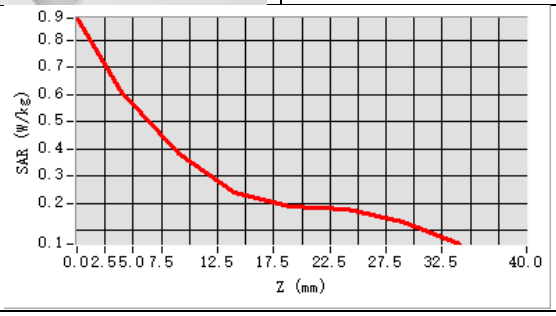


3D screen shot



Hot spot position

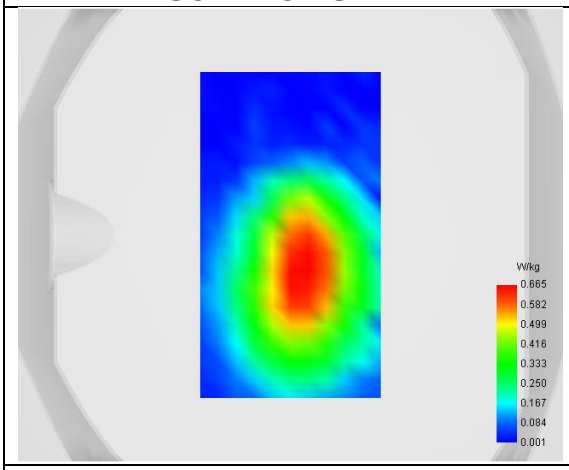
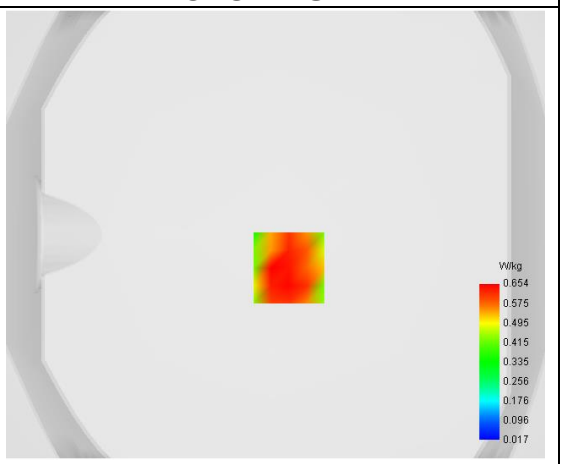
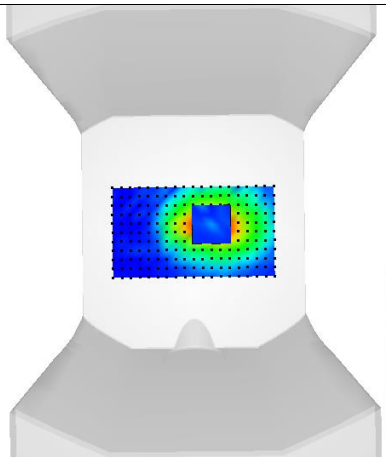
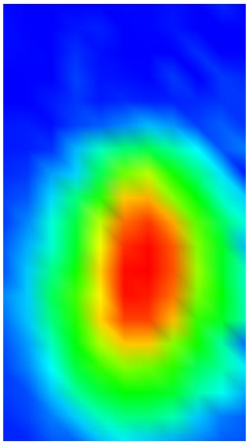
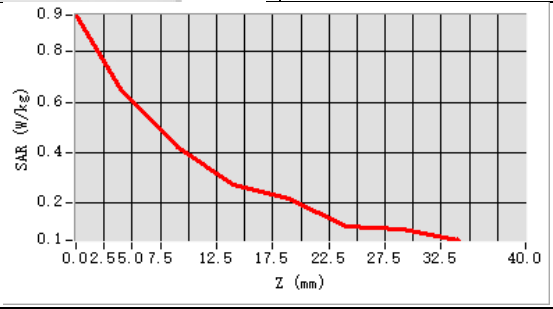




Plot 4:

Test Date	2023-08-02
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	Band 5 (850)
Signal	WCDMA
Frequency	836.4
SAR 10g (W/Kg)	0.394
SAR 1g (W/Kg)	0.652

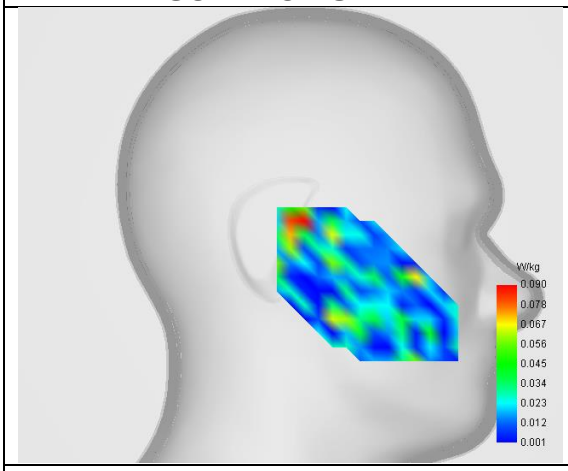
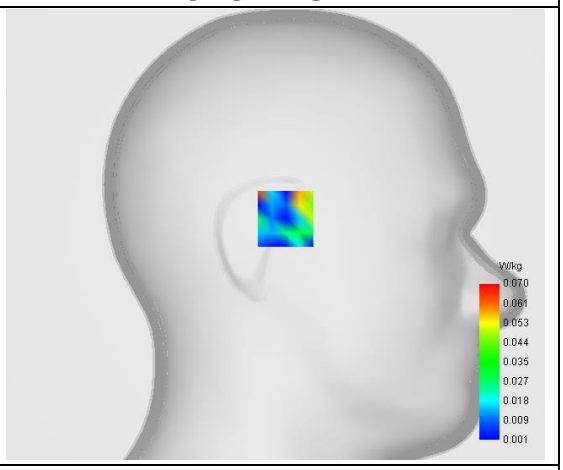
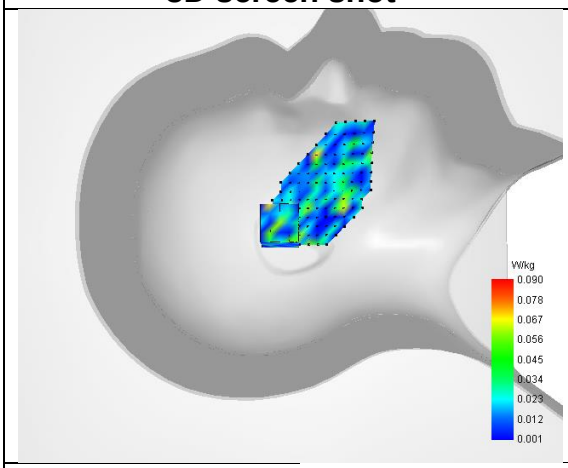
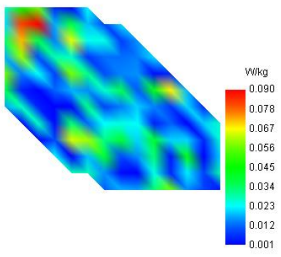
Maximum location: X=6.00, Y=-15.00 ; SAR Peak: 1.01 W/kg

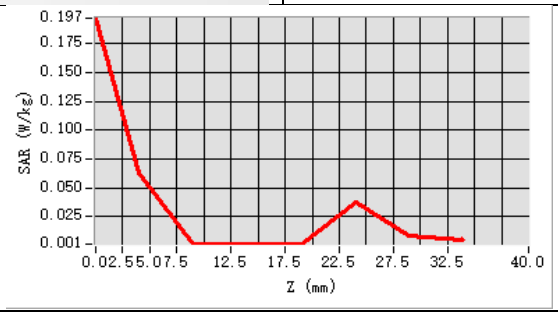
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 5:

Test Date	2023-08-02
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Tilt
Band	Bluetooth
Signal	Bluetooth
Frequency	2441
SAR 10g (W/Kg)	0.014
SAR 1g (W/Kg)	0.046

Maximum location: X=-6.00, Y=9.00 ; SAR Peak: 0.20 W/kg

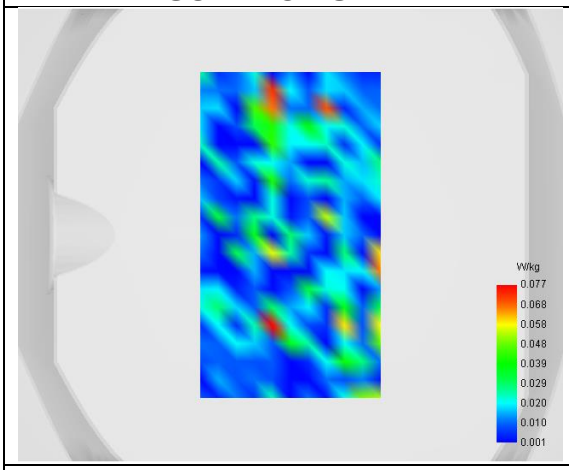
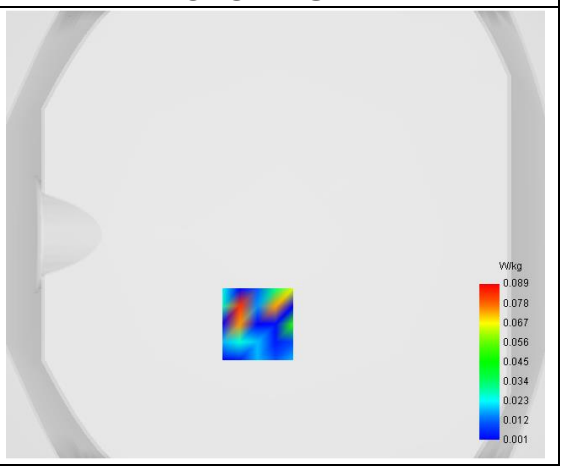
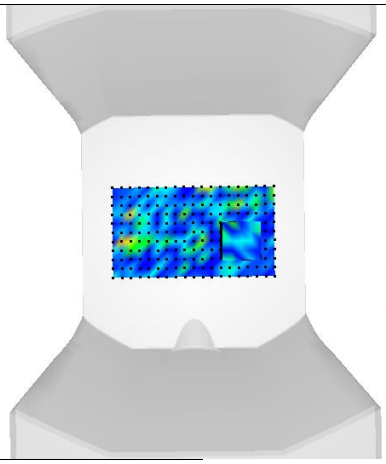
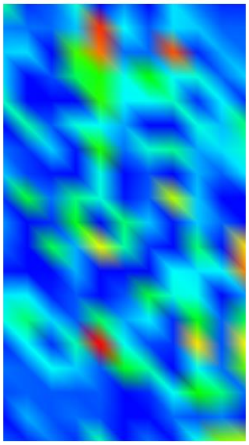
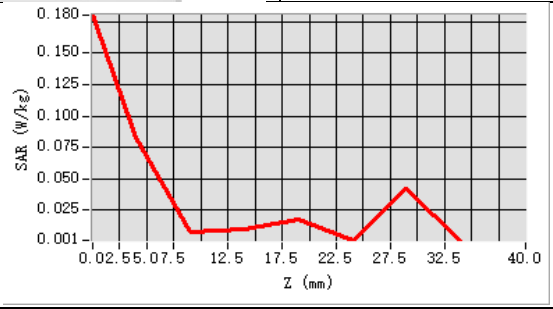
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	



Plot 6:

Test Date	2023-08-02
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Side
Band	Bluetooth
Signal	Bluetooth
Frequency	2441
SAR 10g (W/Kg)	0.026
SAR 1g (W/Kg)	0.079

Maximum location: X=-8.00, Y=-40.00 ; SAR Peak: 0.24 W/kg

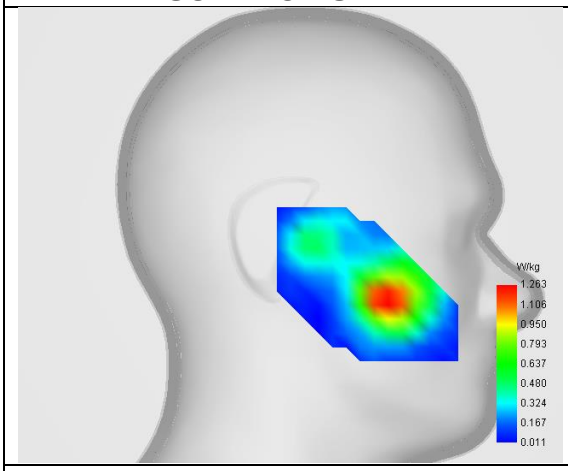
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 7:

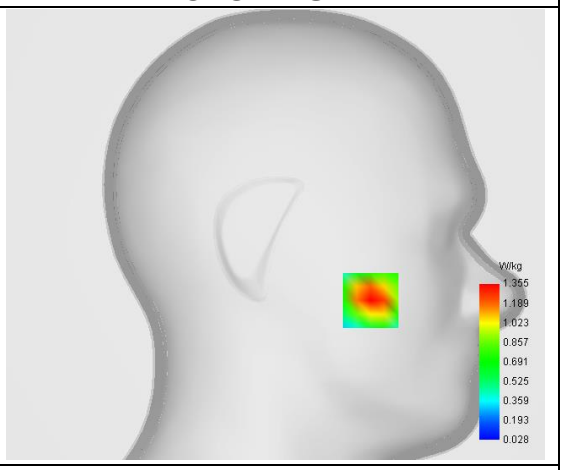
Test Date	2023-08-07
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Cheek
Band	LTE band 2
Signal	LTE FDD
Frequency	1860
SAR 10g (W/Kg)	0.736
SAR 1g (W/Kg)	1.297

Maximum location: X=-55.00, Y=-38.00 ; SAR Peak: 2.04 W/kg

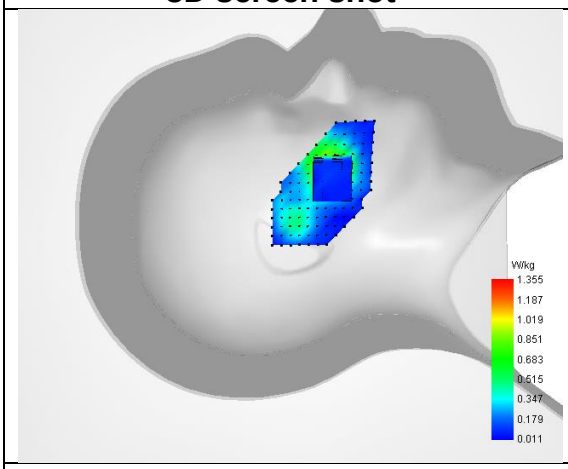
SURFACE SAR



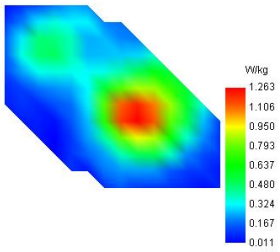
VOLUME SAR

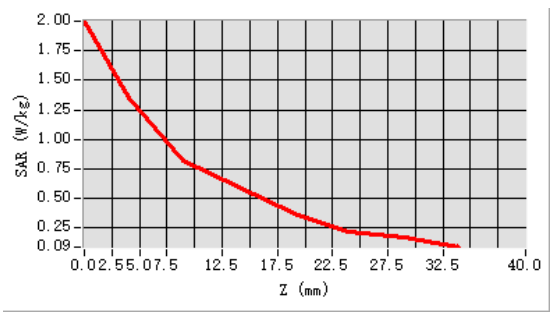


3D screen shot



Hot spot position



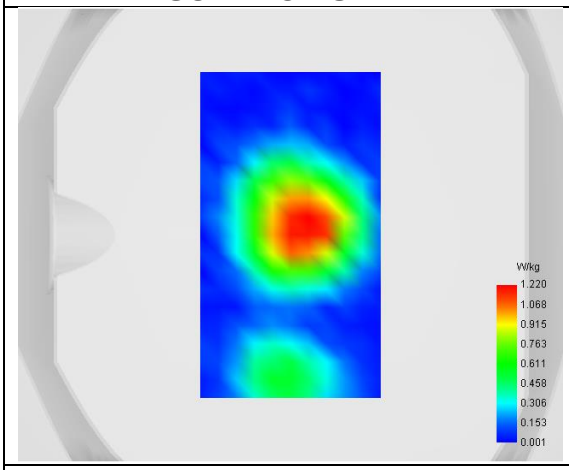


Plot 8:

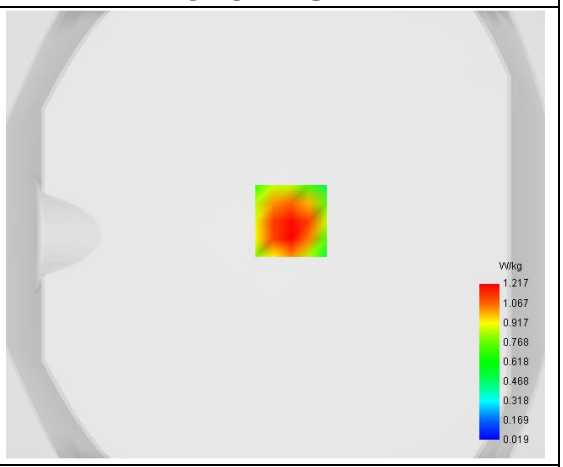
Test Date	2023-08-07
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE band 2
Signal	LTE FDD
Frequency	1860
SAR 10g (W/Kg)	0.680
SAR 1g (W/Kg)	1.176

Maximum location: X=7.00, Y=6.00 ; SAR Peak: 1.81 W/kg

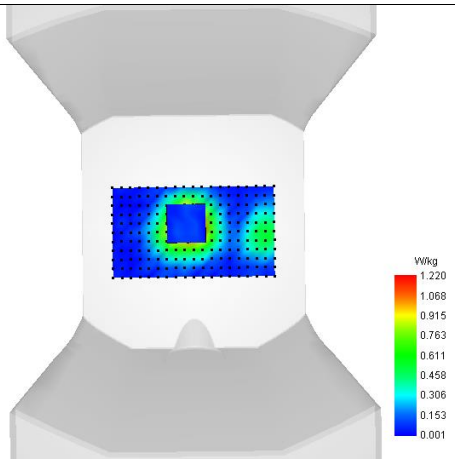
SURFACE SAR



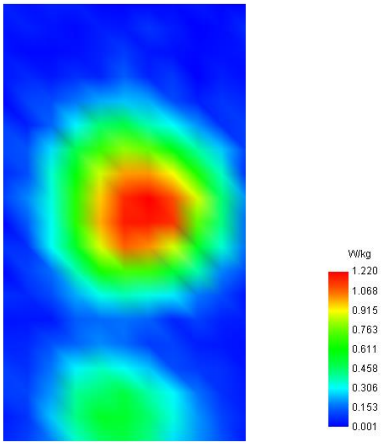
VOLUME SAR

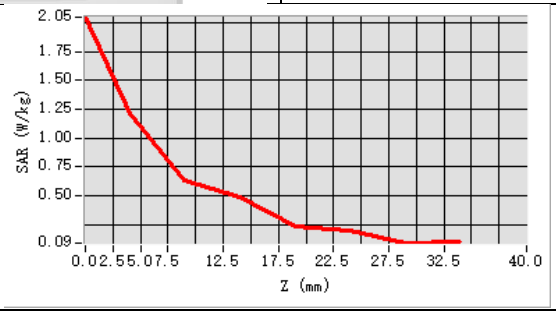


3D screen shot



Hot spot position

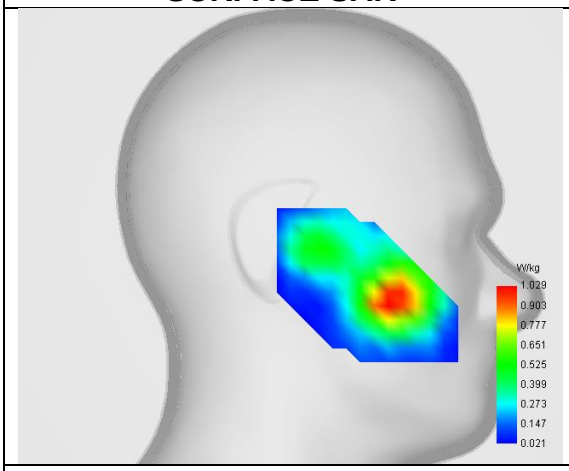
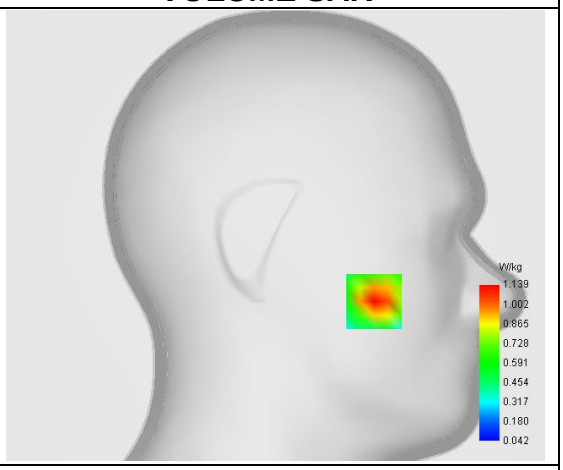
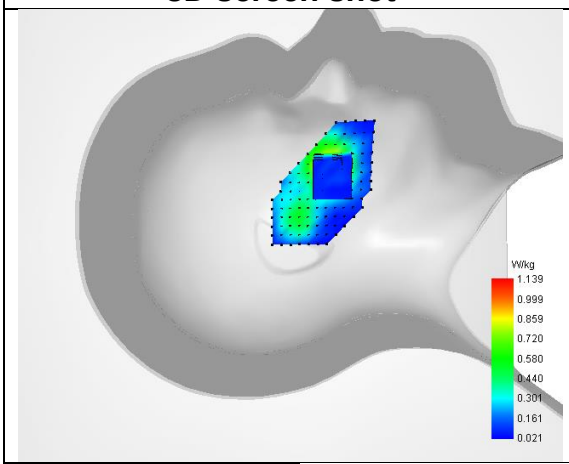
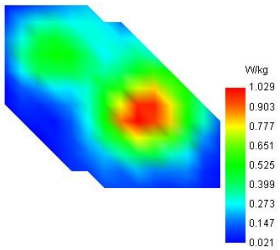
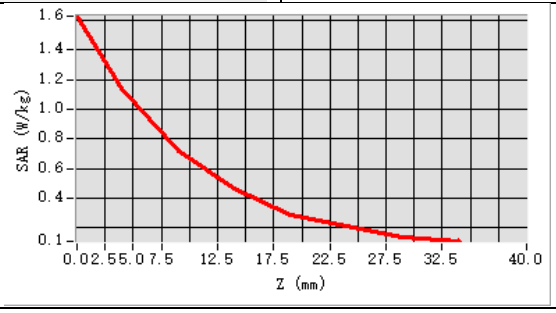




Plot 9:

Test Date	2023-08-03
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Left head
Device Position	Cheek
Band	LTE band 4
Signal	LTE FDD
Frequency	1732.5
SAR 10g (W/Kg)	0.614
SAR 1g (W/Kg)	1.076

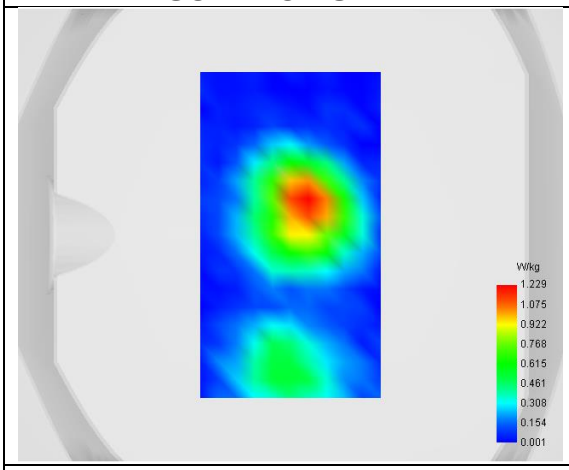
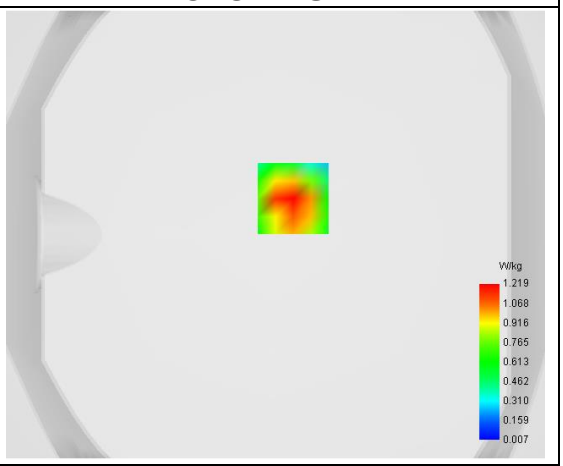
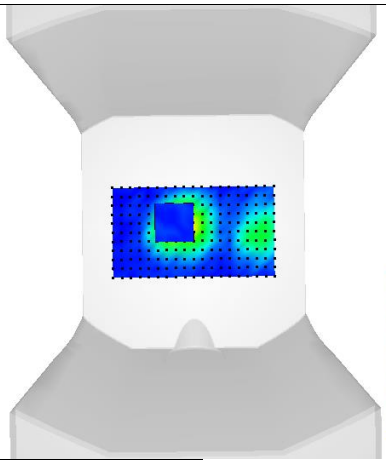
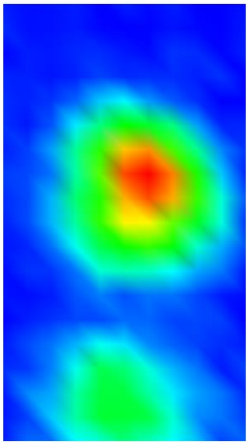
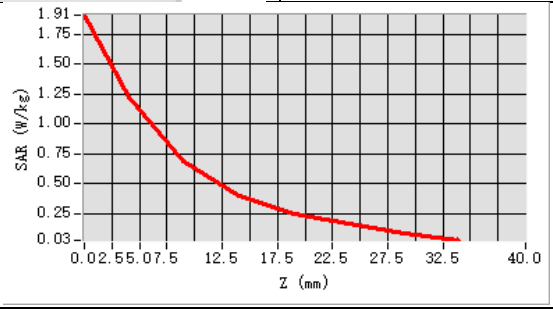
Maximum location: X=-57.00, Y=-38.00 ; SAR Peak: 1.70 W/kg

SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 10:

Test Date	2023-08-03
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE band 4
Signal	LTE FDD
Frequency	1732.5
SAR 10g (W/Kg)	0.611
SAR 1g (W/Kg)	1.152

Maximum location: X=8.00, Y=16.00 ; SAR Peak: 1.99 W/kg

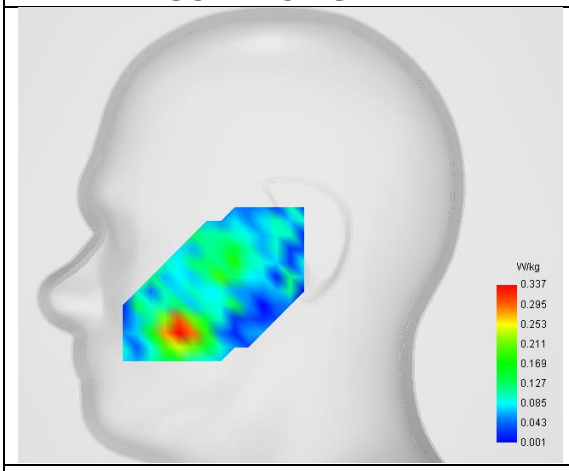
SURFACE SAR	VOLUME SAR
	
3D screen shot	**Hot spot position**
	
	

Plot 11:

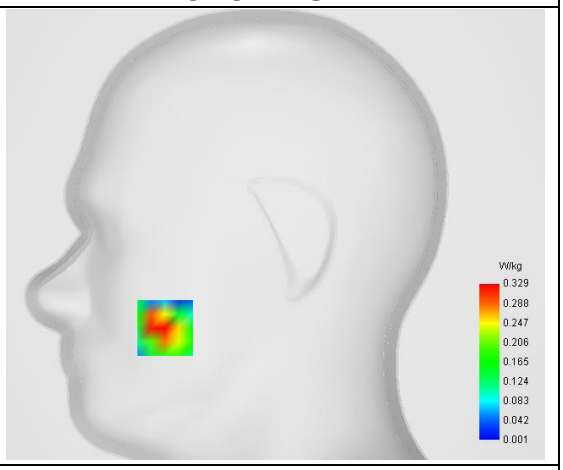
Test Date	2023-08-05
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	LTE band 7
Signal	LTE FDD
Frequency	2535
SAR 10g (W/Kg)	0.160
SAR 1g (W/Kg)	0.342

Maximum location: X=-64.00, Y=-54.00 ; SAR Peak: 0.63 W/kg

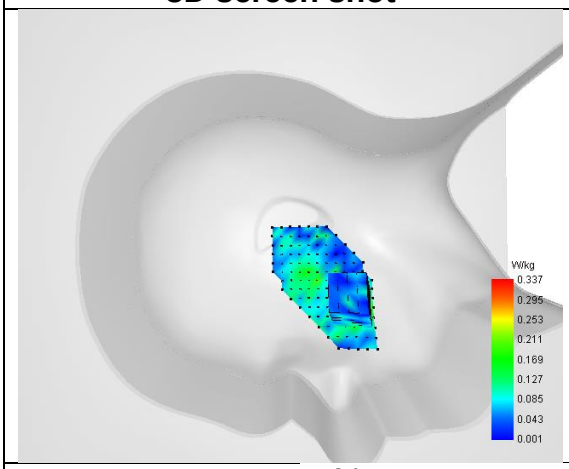
SURFACE SAR



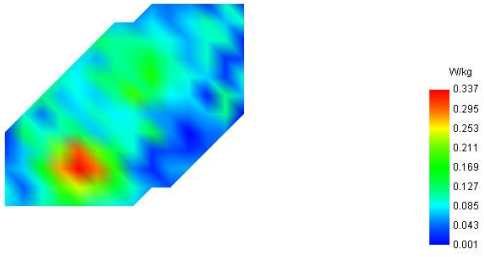
VOLUME SAR

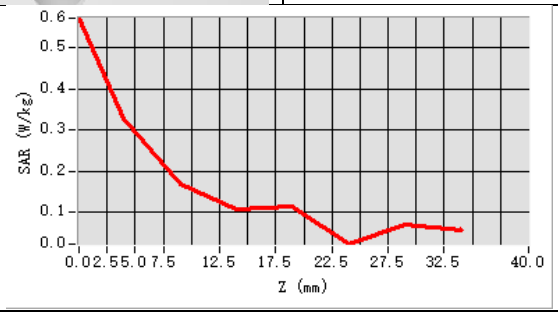


3D screen shot



Hot spot position



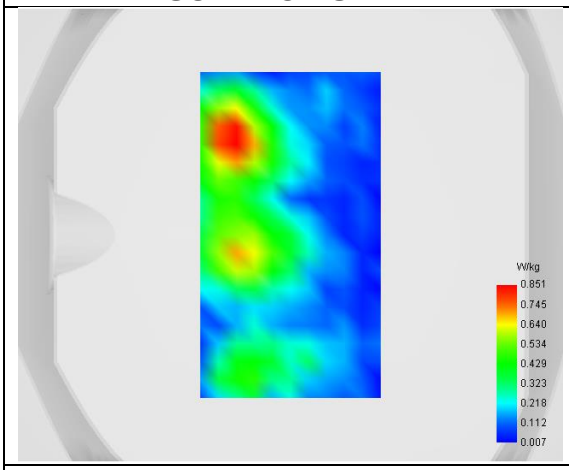


Plot 12:

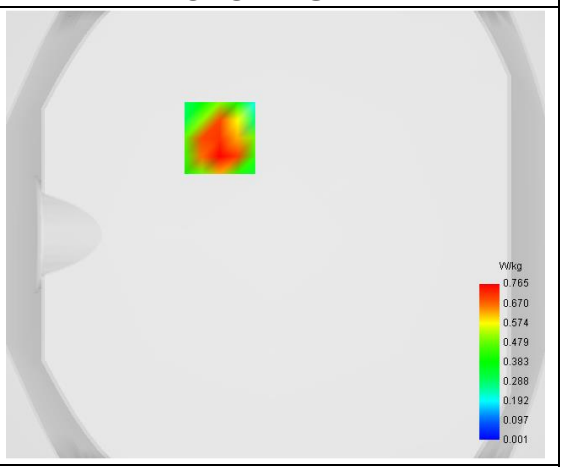
Test Date	2023-08-05
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE band 7
Signal	LTE FDD
Frequency	2535
SAR 10g (W/Kg)	0.358
SAR 1g (W/Kg)	0.765

Maximum location: X=-25.00, Y=43.00 ; SAR Peak: 1.48 W/kg

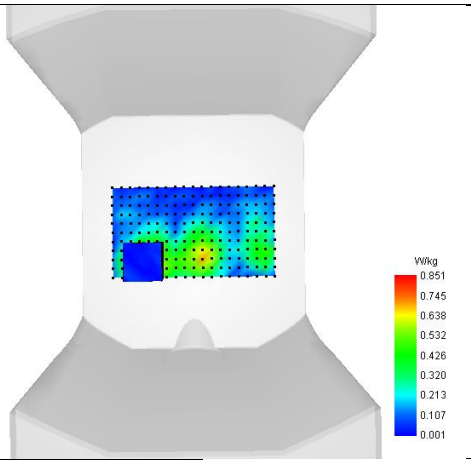
SURFACE SAR



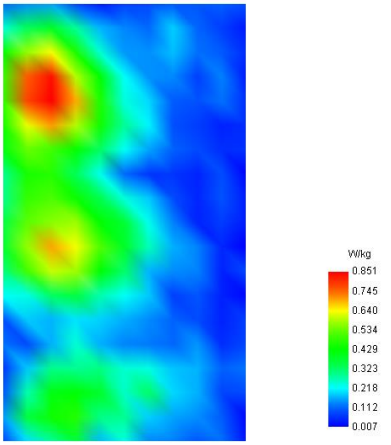
VOLUME SAR

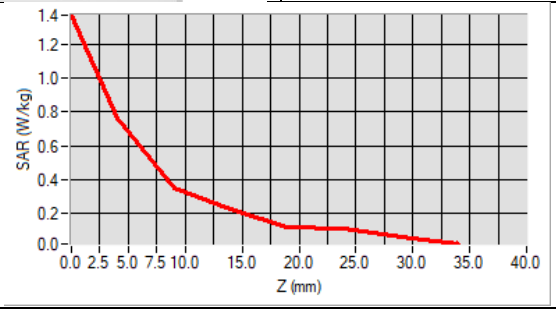


3D screen shot



Hot spot position





Appendix C. Probe Calibration and Dipole Calibration Report

Refer the appendix Calibration Report.

※※※※※END OF THE REPORT※※※※※