



SAR Test Report

Report No.:LCSA04094069E

Issued for

WHOOOP INTERNATIONAL TRADING LIMITED

Flat-B 8/F Chong Gming Building 72 Cheung Sha Wan Road,
Kowloon, Hong Kong

Product Name: 4G SMARTPHONE

Brand Name: ROVER

Model Name: CHIPPY

Series Model(s): N/A

FCC ID: 2AP7LCHIPPY

Test Standards: ANSI/IEEE Std. C95.1-1992
FCC 47 CFR Part 2 (2.1093)
IEC/IEEE 62209-1528

Max. SAR (1g) Head: 0.302 W/kg

Body: 0.665 W/kg

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**TEST REPORT**

Applicant's name: WHOOP INTERNATIONAL TRADING LIMITED
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Product description

Product Name: 4G SMARTPHONE
Brand Name: ROVER
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Series Model(s): N/A

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Date of Test

Date (s) of performance of tests: 29 Mar. 2024 ~ 09 Apr. 2024
Date of Issue: 12 Apr. 2024
Test Result: **Pass**

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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	12 Apr. 2024	LCSA04094069E	ALL	Initial Issue



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

Product Name	4G SMARTPHONE
Brand Name	ROVER
Model Name	CHIPPY
Series Model(s)	N/A
Model Difference	N/A
Battery	Rated Voltage: DC3.8V Charge Limit Voltage: 4.35V Capacity: 3750
Device Category	Portable
Product stage	Production unit
RF Exposure Environment	General Population / Uncontrolled
Hardware Version	J518A_63_32EMB_D3EFV1.0
Software Version	RROVER_CHIPPY_14_V01_20240316
Frequency Range	GSM 850: 824 MHz ~ 849 MHz PCS1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz LTE Band 2: 1850~1910MHz LTE Band 4: 1710~1755MHz LTE Band 5: 824~849MHz LTE Band 12: 699~716MHz LTE Band 13: 777~787MHz LTE Band 25: 1850~1915MHz LTE Band 26 Part 22: 824-849 MHz LTE Band 26 Part 90: 814~849MHz LTE Band 41: 2496-2690 MHz LTE Band 66: 1710~1780MHz LTE Band 71: 663-698MHz WLAN802.11b/g/n20: 2412 MHz ~ 2462 MHz Bluetooth: 2402 – 2480 MHz



Max. Reported SAR(1g): (Limit:1.6W/kg)	Band	Mode	Head (W/kg)	Body Worn and Hotspot (W/kg)
	PCE	GSM 850	0.286	0.273
	PCE	GSM 1900	0.080	0.354
	PCE	WCDMA Band II	0.302	0.652
	PCE	WCDMA Band V	0.136	0.510
	PCE	WCDMA Band IV	0.225	0.206
	PCE	LTE Band 2	0.143	0.665
	PCE	LTE Band 4	0.227	0.422
	PCE	LTE Band 5	0.248	0.256
	PCE	LTE Band 12	0.215	0.312
	PCE	LTE Band 13	0.134	0.176
	PCE	LTE Band 25	0.126	0.139
	PCE	LTE Band 26	0.218	0.249
	PCE	LTE Band 41	0.107	0.143
	PCE	LTE Band 66	0.200	0.464
	PCE	LTE Band 71	0.243	0.458
	DTS	2.4G WLAN	0.228	0.083
	DTS	BT	0.171	0.052
1-g Sum SAR			0.748	
FCC Equipment Class	Licensed Portable Transmitter Held to Ear (PCE) Digital Transmission System (DTS)			
Operating Mode	GSM: GSM Voice; GPRS/EGPRS Class 12 WCDMA: RMC, HSDPA, HSUPA Release 6 LTE: QPSK, 16QAM WLAN: 802.11 a/b/g/n20 Bluetooth: GFSK; $\pi/4$ -QPSK; 8DPSK; BLE: GFSK GPS: BPSK			
Antenna Specification	GSM/WCDMA/LTE: PIFA Antenna WLAN/BT: PIFA Antenna			
DTM Mode	Not Support			
Hotspot Mode	Support			
Sample Number	A240409080			
Note: 1. The dual SIM card mobile has 2 SIM slots and supports dual SIM dual standby. The WWAN radio transmission will be enabled by either one SIM at a time (Single active) 2. After pre-scan two SIM cards power, we found test result of the SIM1 was the worse, so we chose SIM1 card to perform all tests. 3. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power				



1.2 Test Environment

Ambient conditions in the SAR laboratory:

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

1.3 Test Factory

Shenzhen LCS Compliance Testing Laboratory Ltd..

101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China FCC test Firm Registration No.: 625569

IC Registration No.: 12108A

A2LA Certificate No.: 4338.01



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	IEC/IEEE 62209-1528	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)
4	FCC KDB 447498 D01 v06	Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies
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 648474 D04 v01r03	SAR Evaluation Considerations for Wireless Handsets
8	FCC KDB 248227 D01 Wi-Fi SAR v02r02	SAR Considerations for 802.11 Devices

(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 SAR Measurement Set-up

The OPENSAR system for performing compliance tests consist of the following items:

A standard high precision 6-axis robot (KUKA) with controller and software.

KUKA Control Panel (KCP)

A dosimetric probe, i.e., an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with a Video Positioning System(VPS).

The stress sensor is composed with mechanical and electronic when the electronic part detects a change on the electro-mechanical switch,It sends an “Emergency signal” to the robot controller that to stop robot’s moves

A computer operating Windows XP.

OPENSAR software

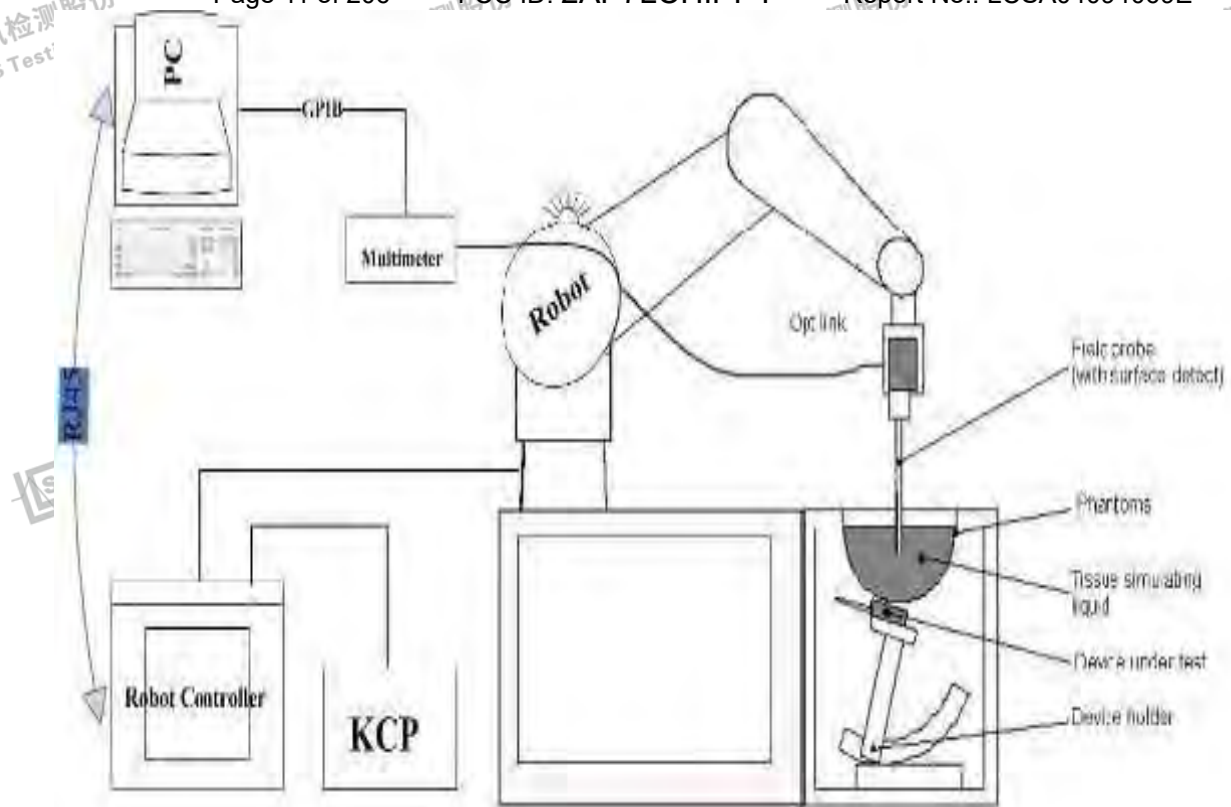
Remote control with teaches pendant and additional circuitry for robot safety such as warning lamps, etc.

The SAM phantom enabling testing left-hand right-hand and body usage.

The Position device for handheld EUT

Tissue simulating liquid mixed according to the given recipes .

System validation dipoles to validate the proper functioning of the system.



3.2 OPENSAR E-field Probe System

The SAR measurements were conducted with the dosimetric probe EPG0376 (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation.

Probe Specification

Construction Symmetrical design with triangular core

Interleaved sensors

Built-in shielding against static charges

PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration ISO/IEC 17025 calibration service available.

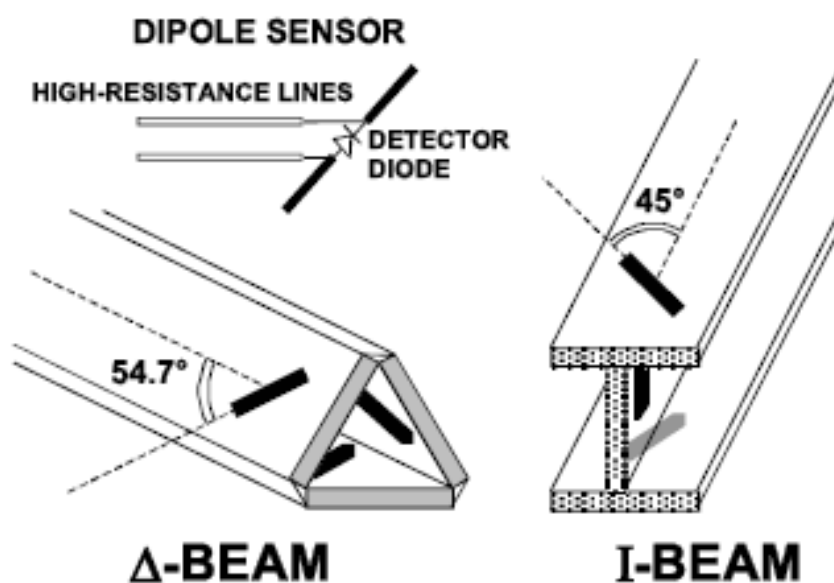
Frequency	450 MHz to 6 GHz; Linearity: 0.25 dB (450 MHz to 6 GHz)
Directivity	0.25 dB in HSL (rotation around probe axis) 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	0.01 W/kg to > 100 W/kg; Linearity: 0.25 dB
Dimensions	Overall length: 330 mm (Tip: 16 mm) Tip diameter: 5 mm (Body: 8 mm) Distance from probe tip to sensor centers: 2.5 mm
Application	General dosimetry up to 6 GHz



Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



3.3Phantoms

The SAM Phantom SAM117 is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is in compliance with the specification set in IEEE P1528 and CENELEC EN62209-1, EN62209-2:2010. The phantom enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robo

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.



SAM Twin Phantom

3.4 Device Holder

In combination with the Generic Twin Phantom SAM117, the Mounting Device enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatedly positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).



Device holder supplied by SATIMO

3.5 Scanning Procedure

The procedure for assessing the peak spatial-average SAR value consists of the following steps

Power Reference Measurement

The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point



in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged. After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2)$ mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Zoom Scan

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{\text{Zoom}}(n-1)$ mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.



Power Drift measurement

The drift job measures the field at the same location as the most recent reference job within the same procedure, and with the same settings. The drift measurement gives the field difference in dB from the reading conducted within the last reference measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test within a batch process. In the properties of the Drift job, the user can specify a limit for the drift and have OPENSAR software stop the measurements if this limit is exceeded.

3.6 Data Storage and Evaluation

Data Storage

The OPENSAR software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero.

Raw data can also be exported to perform the evaluation with other software packages.

Data Evaluation

The OPENSAR software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, ai0, ai1, ai2
	- Conversion factor	ConvFi
	- Diode compression point	Dcpi
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	ρ

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the OPENSAR components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

With V_i = compensated signal of channel i ($i = x, y, z$)
 U_i = input signal of channel i ($i = x, y, z$)
 cf = crest factor of exciting field
 dcp_i = diode compression point



From the compensated input signals the primary field data for each channel can be evaluated:

$$\text{E - fieldprobes : } E_i = \sqrt{\frac{V_i}{\text{Norm}_i \cdot \text{ConvF}}}$$

$$\text{H - fieldprobes : } H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1}f + a_{i2}f^2}{f}$$

With V_i = compensated signal of channel i (i = x, y, z)
 Norm_i = sensor sensitivity of channel i (i = x, y, z)
 [mV/(V/m)²] for E-field Probes
 ConvF = sensitivity enhancement in solution
 a_{ij} = sensor sensitivity factors for H-field probes
 f = carrier frequency [GHz]
 E_i = electric field strength of channel i in V/m
 H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1'000}$$

with SAR = local specific absorption rate in mW/g
 E_{tot} = total field strength in V/m
 σ = conductivity in [mho/m] or [Siemens/m]
 ρ = equivalent tissue density in g/cm³

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.



4. Tissue Simulating Liquids

4.1 Simulating Liquids Parameter Check

The liquid is consisted of water,salt,Glycol,Sugar,Preventol and Cellulose.The liquid has previously been proven to be suited for worst-case.It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB865664.

The composition of the tissue simulating liquid

Ingredient	750MHz		835MHz		1800 MHz		1900 MHz		2450MHz		2600MHz		5000MHz	
(% Weight)	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	39.28	51.3	41.45	52.5	54.5	40.2	54.9	40.4	62.7	73.2	60.3	71.4	65.5	78.6
Preventol	0.10	0.10	0.10	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEC	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DGBE	0.00	0.00	0.00	0.00	45.33	59.31	44.92	59.10	36.80	26.70	39.10	28.40	0.00	0.00
Triton X-100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.2	10.7

Target Frequency (MHz)	Head	
	ϵ_r	$\sigma(S/m)$
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1640	40.2	1.31
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
5200	36.0	4.66
5800	35.3	5.27

**LIQUID MEASUREMENT RESULTS**

Date	Ambient		Simulating Liquid		Parameters	Target	Measured	Deviation %	Limited %
	Temp. [°C]	Humidity %	Frequency (MHz)	Temp. [°C]					
2024-04-01	22.7	50	683	22.4	Permittivity	42.26	42.39	0.31	±5
					Conductivity	0.89	0.92	3.89	±5
2024-04-01	22.8	50	688	22.5	Permittivity	42.23	42.80	1.35	±5
					Conductivity	0.89	0.92	3.85	±5
2024-04-01	22.9	51	704	22.6	Permittivity	42.15	42.36	0.51	±5
					Conductivity	0.89	0.91	2.60	±5
2024-04-01	22.9	51	707.5	22.6	Permittivity	42.13	43.19	2.52	±5
					Conductivity	0.89	0.86	-3.06	±5
2024-04-01	23.0	51	750	22.7	Permittivity	41.90	42.48	1.38	±5
					Conductivity	0.89	0.85	-4.49	±5
2024-04-02	22.1	54	782	21.8	Permittivity	41.75	41.69	-0.14	±5
					Conductivity	0.89	0.91	1.82	±5
2024-04-02	22.9	51	821.5	22.6	Permittivity	41.56	41.35	-0.51	±5
					Conductivity	0.90	0.93	3.52	±5
2024-04-02	23.0	51	824.2	22.7	Permittivity	41.55	41.56	0.02	±5
					Conductivity	0.90	0.91	1.25	±5
2024-04-02	23.0	51	831.5	22.8	Permittivity	41.52	41.06	-1.10	±5
					Conductivity	0.90	0.88	-2.18	±5
2024-04-02	22.1	54	835	21.8	Permittivity	41.50	40.87	-1.52	±5
					Conductivity	0.90	0.91	1.11	±5
2024-04-02	23.1	51	836.5	22.8	Permittivity	41.49	41.36	-0.32	±5
					Conductivity	0.90	0.93	3.31	±5
2024-04-02	23.2	52	844	22.9	Permittivity	41.46	41.30	-0.38	±5
					Conductivity	0.90	0.88	-2.34	±5
2024-04-02	22.1	55	846.6	21.8	Permittivity	41.45	40.92	-1.27	±5
					Conductivity	0.90	0.87	-3.48	±5
2024-04-02	22.1	55	848.8	21.8	Permittivity	41.44	40.72	-1.73	±5
					Conductivity	0.90	0.86	-4.62	±5
2024-04-03	23.9	50	1712.6	23.6	Permittivity	40.12	41.36	3.08	±5
					Conductivity	1.35	1.37	1.48	±5
2024-04-03	23.2	52	1732.5	22.9	Permittivity	40.10	40.95	2.13	±5
					Conductivity	1.36	1.38	1.36	±5



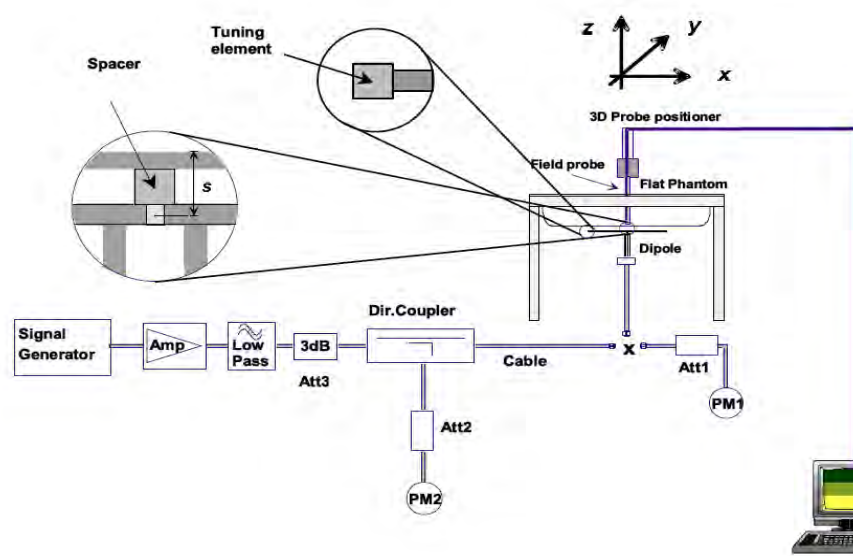
2024-04-03	23.2	52	1745	22.9	Permittivity	40.08	40.23	0.38	±5
					Conductivity	1.37	1.34	-2.09	±5
2024-04-03	23.3	52	1770	22.9	Permittivity	40.04	40.30	0.64	±5
					Conductivity	1.38	1.43	3.41	±5
2024-04-03	23.9	50	1800	23.5	Permittivity	40.00	40.82	2.05	±5
					Conductivity	1.40	1.44	2.86	±5
2024-04-06	22.8	47	1850.2	22.5	Permittivity	40.00	40.62	1.55	±5
					Conductivity	1.40	1.43	2.14	±5
2024-04-06	23.3	53	1852.4	23.0	Permittivity	40.00	40.64	1.60	±5
					Conductivity	1.40	1.44	2.86	±5
2024-04-06	23.4	53	1860	23.2	Permittivity	40.00	40.17	0.43	±5
					Conductivity	1.40	1.42	1.43	±5
2024-04-06	23.4	53	1880	23.1	Permittivity	40.00	40.60	1.50	±5
					Conductivity	1.40	1.42	1.43	±5
2024-04-06	23.5	53	1882.5	23.2	Permittivity	40.00	40.98	2.45	±5
					Conductivity	1.40	1.37	-2.14	±5
2024-04-06	22.9	47	1900	22.6	Permittivity	40.00	40.73	1.82	±5
					Conductivity	1.40	1.41	0.71	±5
2024-04-06	22.9	48	1907.6	22.6	Permittivity	40.00	40.93	2.33	±5
					Conductivity	1.40	1.39	-0.71	±5
2024-04-07	21.8	45	2441	21.5	Permittivity	39.22	40.14	2.36	±5
					Conductivity	1.79	1.81	1.00	±5
2024-04-07	21.8	45	2450	21.4	Permittivity	39.20	40.13	2.37	±5
					Conductivity	1.80	1.83	1.67	±5
2024-04-07	21.9	45	2462	21.5	Permittivity	39.18	39.49	0.79	±5
					Conductivity	1.81	1.86	2.72	±5
2024-04-08	22.1	46	2506	21.8	Permittivity	39.13	39.25	0.32	±5
					Conductivity	1.86	1.89	1.63	±5
2024-04-08	22.1	46	2593	21.8	Permittivity	39.01	40.03	2.62	±5
					Conductivity	1.95	1.95	-0.13	±5
2024-04-08	22.1	46	2600	21.8	Permittivity	39.00	39.65	1.67	±5
					Conductivity	1.96	2.01	2.55	±5



5. SAR System Validation

5.1 The purpose of the system check is to verify that the system operates within its specifications at the device test frequency. The system check is simple check of repeatability to make sure that the system works correctly at the time of the compliance test;

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system ($\pm 10\%$).



The output power on dipole port must be calibrated to 20 dBm (100mW) before dipole is connected.



Photo of Dipole Setup

**Justification for Extended SAR Dipole Calibrations**

Referring to KDB 865664D01V01r04, if dipoles are verified in return loss ($< -20\text{dB}$, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended. While calibration intervals not exceed 3 years.

SID750 SN 07/14 DIP 0G750-302 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-29	-34.80		50.7		1.6	
2022-09-29	-34.35	-1.29	51.2	0.5	1.5	-0.1
2023-09-29	-34.42	-1.09	51.3	0.4	1.5	-0.1

SID835 SN 07/14 DIP 0G835-303 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-29	-24.49		54.9		2.8	
2022-09-29	-24.17	-1.31	54.5	-0.4	2.6	-0.2
2023-09-29	-24.20	-1.18	54.2	-0.7	2.5	-0.3

SID1800 SN 30/14 DIP 1G800-301 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-29	-20.26		43.1		6.9	
2022-09-29	-20.13	-0.64	42.9	-0.2	6.7	-0.2
2023-09-29	-20.15	-0.54	42.8	-0.3	6.6	-0.3

SID1900 SN 38/18 DIP 1G900-466 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-22	-26.43		50.5		4.7	
2022-09-22	-26.33	-0.38	50.2	-0.3	4.5	-0.2
2023-09-22	-26.40	-0.11	50.1	-0.4	4.6	-0.1

SID2450 SN 07/14 DIP 2G450-306 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-29	-25.59		44.7		-1.1	
2022-09-29	-25.68	0.35	44.8	0.1	-1.0	0.1
2023-09-29	-25.70	0.43	44.5	-0.2	-1.1	0.0

SID2600 SN 38/18 DIP 2G600-468 Extend Dipole Calibrations

Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2021-09-22	-29.14		49.2		3.4	
2022-09-22	-29.12	-0.07	49.1	-0.1	3.2	-0.2
2023-09-22	-29.10	-0.07	49.2	0.0	3.3	-0.1



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)	(%)	(%)
2024-04-01	750	100	0.837	8.37	8.38	-0.12	10
2024-04-02	835	100	0.945	9.45	9.6	-1.56	10
2024-04-03	1800	100	3.795	37.95	38.13	-0.47	10
2024-04-06	1900	100	3.828	38.28	39.70	-3.58	10
2024-04-07	2450	100	5.291	52.91	53.89	-1.82	10
2024-04-08	2600	100	5.292	52.92	54.14	-2.25	10

Note:

1. The tolerance limit of System validation $\pm 10\%$.
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 to 16 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 D01v01r01 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 GSM/WCDMA/LTE/WLAN mode.

Top side



WLAN/BT
Antennas

Left side

Right side

Antenna Separation Distance(cm)						
ANT	Back Side	Front Side	Left Side	Right Side	Top Side	Bottom Side
WLAN/BT	≤0.5	≤0.5	0.5	5.5	0.5	15
WWAN	≤0.5	≤0.5	0.5	4	15.5	0.5

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



Exposure Position	Wireless Interface	GSM850	PCS1900	WCDMA II	WCDMA V	WCDMA IV
	Calculated Frequency(GHz)	0.8242	1.8502	1.8524	0.8466	1.7126
	Maximum Turn-up power (dBm)	31.5	26	23.5	23	23
	Maximum rated power(mW)	1412.54	398.11	223.87	199.53	199.53
Back Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	9.42	3.44	3.43	9.07	3.66
	Testing required?	YES	YES	YES	YES	YES
Front Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	9.42	3.44	3.43	9.07	3.66
	Testing required?	YES	YES	YES	YES	YES
Left Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	9.42	3.44	3.43	9.07	3.66
	Testing required?	YES	YES	YES	YES	YES
Right Side	Separation distance (cm)	4	4	4	4	4
	exclusion threshold(mW)	175.08	158.05	157.98	174.85	162.38
	Testing required?	YES	YES	YES	YES	YES
Top Side	Separation distance (cm)	15.5	15.5	15.5	15.5	15.5
	exclusion threshold(mW)	1175.10	1913.84	1913.72	1201.67	1922.05
	Testing required?	YES	NO	NO	NO	NO
Bottom Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	9.42	3.44	3.43	9.07	3.66
	Testing required?	YES	YES	YES	YES	YES



Exposure Position	Wireless Interface	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 12	LTE Band 13
	Calculated Frequency(GHz)	1.88	1.7325	0.844	0.7	0.782
	Maximum Turn-up power (dBm)	23.5	23	23.5	23.5	23
	Maximum rated power(mW)	223.87	199.53	223.87	223.87	199.53
Back Side	Separation distance (cm)	0.5	0.5	0.5	0.5	0.5
	exclusion threshold(mW)	3.39	3.62	9.11	11.84	10.14
	Testing required?	YES	YES	YES	YES	YES
Front Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	3.62	9.11	11.84	10.14
	Testing required?	YES	YES	YES	YES	YES
Left Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	3.62	9.11	11.84	10.14
	Testing required?	YES	YES	YES	YES	YES
Right Side	Separation distance (cm)	4	4	4	4	4
	exclusion threshold(mW)	157.17	161.72	174.88	176.47	175.53
	Testing required?	YES	YES	YES	YES	YES
Top Side	Separation distance (cm)	15.5	15.5	15.5	15.5	15.5
	exclusion threshold(mW)	1912.15	1920.82	1198.59	1025.46	1124.70
	Testing required?	NO	NO	NO	NO	NO
Bottom Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	3.62	9.11	11.84	10.14
	Testing required?	YES	YES	YES	YES	YES



Exposure Position	Wireless Interface	LTE Band 25	LTE Band 26	LTE Band 38	LTE Band 41	LTE Band 66	LTE Band 71
	Calculated Frequency(GHz)	1.8825	0.8215	2.595	2.593	1755	688
Exposure Position	Maximum Turn-up power (dBm)	23.5	23.5	23.5	22.5	23	23.5
	Maximum rated power(mW)	223.87	223.87	223.87	177.83	199.53	223.87
Back Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	9.46	2.62	2.62	0.01	0.03
	Testing required?	YES	YES	YES	YES	YES	YES
Front Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	9.46	2.62	2.62	0.01	0.03
	Testing required?	YES	YES	YES	YES	YES	YES
Left Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	9.46	2.62	2.62	0.01	0.03
	Testing required?	YES	YES	YES	YES	YES	YES
Right Side	Separation distance (cm)	4	4	4	4	4	4
	exclusion threshold(mW)	157.10	175.11	235.57	140.46	14.40	19.97
	Testing required?	YES	YES	NO	YES	YES	YES
Top Side	Separation distance (cm)	15.5	15.5	15.5	15.5	15.5	15.5
	exclusion threshold(mW)	1912.01	5233.25	1878.34	1878.42	1309.57	1379.23
	Testing required?	NO	NO	NO	NO	NO	NO
Bottom Side	Separation distance (cm)	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
	exclusion threshold(mW)	3.39	9.46	2.62	2.62	0.01	0.03
	Testing required?	YES	YES	YES	YES	YES	YES



Exposure Position	Wireless Interface	BT	2.4G WLAN
	Calculated Frequency(GHz)	2.441	2.412
	Maximum Turn-up power (dBm)	6	11.5
	Maximum rated power(mW)	3.98	14.13
Back Side	Separation distance (cm)	≤0.5	≤0.5
	exclusion threshold(mW)	2.75	2.78
	Testing required?	YES	YES
Front Side	Separation distance (cm)	≤0.5	≤0.5
	exclusion threshold(mW)	2.75	2.78
	Testing required?	YES	YES
Left Side	Separation distance (cm)	≤0.5	≤0.5
	exclusion threshold(mW)	2.75	2.78
	Testing required?	YES	YES
Right Side	Separation distance (cm)	5.5	5.5
	exclusion threshold(mW)	262.84	263.72
	Testing required?	NO	NO
Top Side	Separation distance (cm)	≤0.5	≤0.5
	exclusion threshold(mW)	2.75	2.78
	Testing required?	YES	YES
Bottom Side	Separation distance (cm)	15	15
	exclusion threshold(mW)	1770.80	1772.12
	Testing required?	NO	NO



8. EUT Test Position

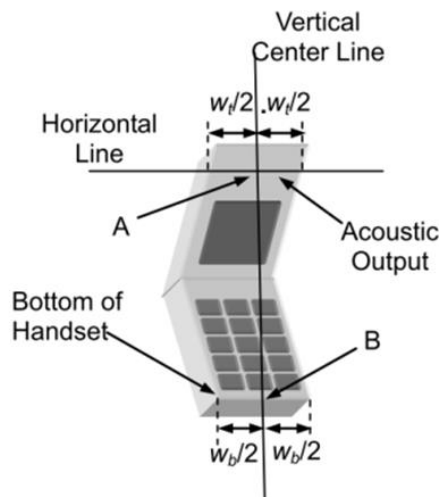
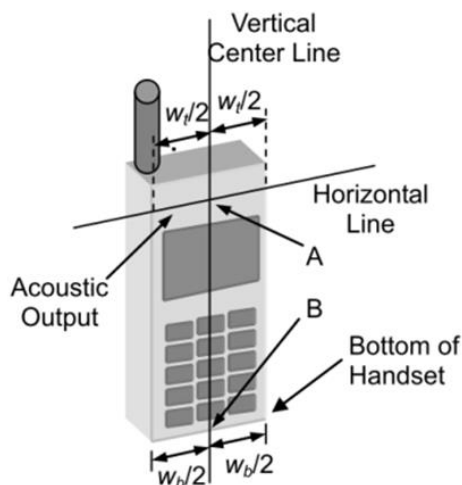
This EUT was tested in Front Side, Back Side, Left Edge, Right Edge, Top Edge, Bottom Edge.

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 w_t of the handset at the level of the acoustic output, and the midpoint of the width w_b 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.

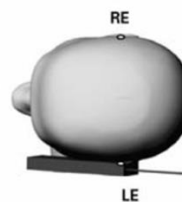
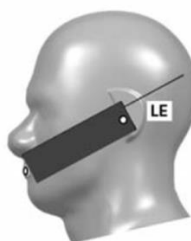
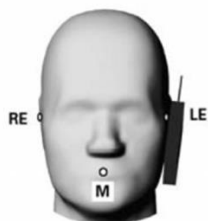
(3) The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially 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.

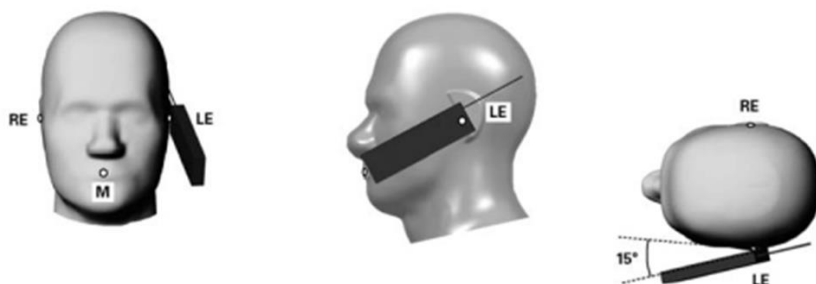
2) To move the device towards the phantom with the ear piece aligned with the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost.





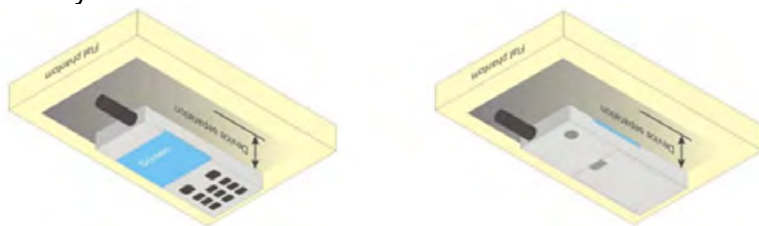
Title Position

- (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.



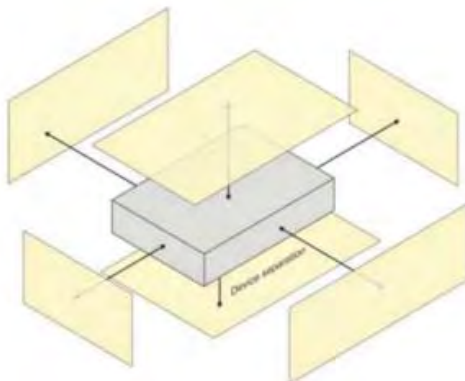
Body-worn Position Conditions:

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 $> 1.2 \text{ W/kg}$, 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 from 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).



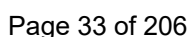
9. Measurement Uncertainty

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 $k=2$.

[illegible]



Phantom uncertainty	4.00	R	√3	1	1	2.31	2.31	∞
Liquid conductivity (target)	2.50	N	1	0.78	0.71	1.95	1.78	5
Liquid conductivity (meas)	4.00	N	1	0.23	0.26	0.92	1.04	5
Liquid Permittivity (target)	2.50	N	1	0.78	0.71	1.95	1.78	∞
Liquid Permittivity (meas)	5.00	N	1	0.23	0.26	1.15	1.30	∞
Combined Standard		RSS	$U_c = \sqrt{\sum_{i=1}^n C_i^2 U_i^2}$			10.63 %	10.54 %	
Expanded Uncertainty (95% Confidence interval)	U = k U _c , k=2					21.26 %	21.08 %	



10.1 Test Result

Frame- Average Power(dBm)						
Band	GSM 850			PCS 1900		
Channel	128	190	251	512	661	810
Frequency (MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GPRS (GMSK, 1-Slot)	23.84	23.82	23.94	20.44	20.41	20.24
GPRS (GMSK, 2-Slot)	23.69	23.75	23.90	20.39	20.38	20.20
GPRS (GMSK, 3-Slot)	25.05	24.88	24.81	21.26	21.28	21.12
GPRS (GMSK, 4-Slot)	25.01	24.78	24.68	21.42	21.40	21.34
EGPRS(8PSK, 1-Slot)	24.29	24.06	24.05	20.61	20.53	20.31
EGPRS(8PSK, 2-Slot)	17.46	17.99	17.95	16.48	16.89	16.11
EGPRS(8PSK, 3-Slot)	19.58	19.36	19.18	17.99	18.24	17.79
EGPRS(8PSK, 4-Slot)	18.72	18.92	18.42	17.55	17.47	17.24

Remark :

1. SAR testing was performed on the maximum frame-averaged power mode.
2. The frame-averaged power is linearly proportion to the slot number configured and it is linearly scaled the maximum

Burst - averaged power based on time slots. The calculated method is shown as below:

Frame-averaged power = Burst averaged power (1 TX Slot) – 9.03 dB

Frame-averaged power = Burst averaged power (2 TX Slots) – 6.02 dB

Frame-averaged power = Burst averaged power (3 TX Slots) - 4.26 dB

Frame-averaged power = Burst averaged power (4 TX Slots) – 3.01 dB



WCDMA

Band	WCDMA Band 2			WCDMA Band 5			WCDMA Band 4		
Channel	9262	9400	9538	4132	4183	4233	1312	1413	1513
Frequency (MHz)	1852.4	1880	1907.6	826.4	836.6	846.6	1712.6	1740	1752.4
RMC 12.2Kbps	23.39	23.17	22.99	22.75	22.76	22.97	22.80	22.67	22.71
HSDPA Subtest-1	22.50	22.21	21.98	22.35	22.09	21.88	22.73	22.58	22.06
HSDPA Subtest-2	21.76	22.34	22.10	21.49	22.22	22.01	22.20	22.55	22.35
HSDPA Subtest-3	21.87	21.64	22.07	21.88	21.29	22.43	21.95	21.66	22.43
HSDPA Subtest-4	21.87	21.67	21.30	22.05	21.87	21.80	22.20	21.54	21.53
HSUPA Subtest-1	22.41	22.46	22.07	22.09	22.35	22.01	22.79	22.70	22.57
HSUPA Subtest-2	22.51	22.10	22.37	22.35	22.13	21.91	22.71	22.42	22.15
HSUPA Subtest-3	22.35	22.30	22.36	22.24	21.89	22.25	22.35	22.28	22.29
HSUPA Subtest-4	22.02	21.87	22.13	21.84	22.38	22.55	22.35	22.24	22.34
HSUPA Subtest-5	21.84	22.08	21.67	22.34	22.54	22.09	21.95	22.24	22.02

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	$0 \leq CM \leq 3.5$	$MAX(CM-1,0)$
Note: CM=1 for $\beta_c/\beta_d=12/15$, $\beta_{hs}/\beta_c=24/15$.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.

**2.4G WLAN**

2.4GWIFI				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
802.11b	1	2412	11.13	12.97
	7	2437	11.07	12.79
	11	2462	11.3	13.49
802.11g	1	2412	9.06	8.05
	7	2437	12.62	18.28
	11	2462	12.81	19.10
802.11 n-HT20	1	2412	10.37	10.89
	7	2437	11.99	15.81
	11	2462	12.46	17.62

BT

BT				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	1.69	1.48
	39	2441	3.45	2.21
	78	2480	2.81	1.91
$\pi/4$ -QPSK(2Mbps)	0	2402	3.7	2.34
	39	2441	5.46	3.52
	78	2480	4.74	2.98
8DPSK(3Mbps)	0	2402	4.05	2.54
	39	2441	5.81	3.81
	78	2480	5.08	3.22

BLE

BLE				
Mode	Channel Number	Frequency (MHz)	Average Power (dBm)	Output Power (mW)
GFSK(1Mbps)	0	2402	0.42	1.10
	19	2440	2.16	1.64
	39	2480	1.67	1.47

**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 ≤ 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 $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 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 $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05, smaller bandwidth SAR testing is not required.



LTE Band 2

LTE Band 2 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.29	22.79	22.51
1.4	1	2		23.32	22.86	22.43
1.4	1	5		23.27	22.84	22.47
1.4	3	0		23.13	22.89	22.3
1.4	3	1		23.07	22.94	22.22
1.4	3	3		23.01	22.85	22.27
1.4	6	0		22.51	22.4	21.67
1.4	1	0	16-QAM	22.6	22.32	22.05
1.4	1	2		22.61	22.37	22
1.4	1	5		22.6	22.32	22.04
1.4	3	0		22.22	21.97	21.32
1.4	3	1		22.16	21.93	21.35
1.4	3	3		22.17	21.85	21.3
1.4	6	0		20.93	21.24	20.39
3	1	0	QPSK	23.25	22.89	22.68
3	1	7		23.26	22.87	22.48
3	1	14		23.21	22.82	22.48
3	8	0		22.48	22.44	21.86
3	8	3		22.53	22.44	21.7
3	8	7		22.51	22.37	21.66
3	15	0		22.5	22.41	21.68
3	1	0	16-QAM	22.23	22.34	22.27
3	1	7		22.28	22.35	22.14
3	1	14		22.22	22.34	22.06
3	8	0		21.12	21.13	20.49
3	8	3		21.16	21.16	20.32
3	8	7		21.15	21.12	20.32
3	15	0		20.96	21.09	20.38



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.04	23.02	22.44
5	1	12		23.03	22.97	22.32
5	1	24		23.08	22.95	22.13
5	12	0		22.5	22.35	21.94
5	12	6		22.53	22.31	21.9
5	12	13		22.54	22.3	21.72
5	25	0		22.54	22.33	21.91
5	1	0	16-QAM	22.98	22.52	21.67
5	1	12		22.9	22.53	21.39
5	1	24		22.96	22.57	21.28
5	12	0		20.9	21.19	20.5
5	12	6		20.99	21.15	20.49
5	12	13		21.01	21.18	20.42
5	25	0		21.15	21.15	20.36
10	1	0	QPSK	23.32	22.88	22.93
10	1	24		23.27	22.85	22.7
10	1	49		23.41	22.83	22.44
10	25	0		22.54	22.28	22.15
10	25	12		22.62	22.31	22.08
10	25	25		22.48	22.26	22.02
10	50	0		22.48	22.38	22.12
10	1	0	16-QAM	22.26	22.85	22.37
10	1	24		22.3	22.85	22.19
10	1	49		22.34	22.84	21.86
10	25	0		21.11	21.27	20.82
10	25	12		21.45	21.32	20.97
10	25	25		21.13	20.94	20.55
10	50	0		21.48	21.33	20.91



LTE BAND 2

LTE Band 2 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.34	22.88	22.96
15	1	37		23.35	22.79	22.79
15	1	74		23.31	22.71	22.37
15	36	0		22.59	22.22	22.29
15	36	18		22.6	22.42	22.17
15	36	39		22.51	22.29	21.89
15	75	0		22.49	22.26	22.21
15	1	0	16-QAM	22.31	22.94	22.09
15	1	38		22.32	22.81	22.03
15	1	74		22.39	22.77	21.56
15	36	0		21.4	21.16	20.8
15	36	18		21.13	21.19	20.77
15	36	39		21.41	20.81	20.5
15	75	0		21.08	21.22	20.75
20	1	0	QPSK	23.25	23.29	22.81
20	1	50		23.24	23.14	22.79
20	1	99		23.19	23.09	22.4
20	50	0		22.56	22.35	22.34
20	50	25		22.54	22.46	22.35
20	50	50		22.52	22.49	22.12
20	100	0		22.62	22.34	22.27
20	1	0	16-QAM	22.8	22.68	22.93
20	1	50		22.78	22.53	22.9
20	1	99		22.71	22.54	22.41
20	50	0		21.55	23.46	20.98
20	50	25		21.25	21.22	20.95
20	50	50		21.15	21.02	21.02
20	100	0		21.21	21.27	20.9



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.62	22.37	22.56
1.4	1	2		22.64	22.35	22.66
1.4	1	5		22.63	22.35	22.56
1.4	3	0		22.33	22.47	22.6
1.4	3	1		22.38	22.46	22.65
1.4	3	3		22.34	22.47	22.57
1.4	6	0		21.77	21.95	22.11
1.4	1	0	16-QAM	22.57	22.78	22.56
1.4	1	2		22.56	22.72	22.48
1.4	1	5		22.53	22.69	22.57
1.4	3	0		21.3	21.53	21.57
1.4	3	1		21.33	21.52	21.58
1.4	3	3		21.32	21.5	21.64
1.4	6	0		20.37	20.7	20.68
3	1	0	QPSK	22.63	22.49	22.58
3	1	7		22.7	22.4	22.61
3	1	14		22.67	22.45	22.52
3	8	0		21.85	22	22.03
3	8	3		21.92	21.94	22.09
3	8	7		21.81	21.9	22.05
3	15	0		21.9	21.94	22.08
3	1	0	16-QAM	21.58	22.73	22.53
3	1	7		21.61	22.71	22.49
3	1	14		21.63	22.7	22.55
3	8	0		20.53	20.57	20.97
3	8	4		20.48	20.52	20.97
3	8	7		20.49	20.56	20.75
3	15	0		20.3	20.71	21



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.27	22.66	22.42
5	1	12		22.25	22.58	22.5
5	1	24		22.29	22.61	22.56
5	12	0		21.87	22.02	22.14
5	12	6		21.81	21.95	22.08
5	12	13		21.96	21.99	22.16
5	25	0		21.9	22.01	22.16
5	1	0	16-QAM	21.71	22.18	21.51
5	1	12		21.83	22.12	21.67
5	1	24		22.01	22.12	21.71
5	12	0		20.32	20.56	20.57
5	12	6		20.38	20.6	20.92
5	12	13		20.36	20.61	21.05
5	25	0		20.56	20.51	20.88
10	1	0	QPSK	22.55	22.56	22.58
10	1	24		22.63	22.43	22.71
10	1	49		22.69	22.37	22.69
10	25	0		21.98	22.11	21.88
10	25	12		21.85	21.9	21.99
10	25	25		21.96	21.94	22.1
10	50	0		21.94	22.04	21.95
10	1	0	16-QAM	21.6	22.52	22.43
10	1	24		21.85	22.43	22.55
10	1	49		21.8	22.56	22.55
10	25	0		20.46	20.76	20.87
10	25	12		20.84	20.7	20.69
10	25	25		20.89	20.59	21.01
10	50	0		20.75	20.71	20.62



LTE BAND 4

LTE Band 4 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.62	22.57	22.33
15	1	37		22.72	22.5	22.41
15	1	74		22.81	22.35	22.61
15	36	0		21.93	21.98	21.9
15	36	19		22.03	21.91	21.88
15	36	39		22.05	21.91	22.04
15	75	0		22.01	21.93	21.96
15	1	0	16-QAM	21.68	22.56	22.26
15	1	38		21.77	22.47	22.63
15	1	75		21.83	22.36	22.54
15	36	0		20.77	20.87	20.55
15	36	19		20.9	20.61	20.95
15	36	39		20.62	20.54	20.6
15	75	0		20.91	20.65	20.94
20	1	0	QPSK	22.49	22.75	22.51
20	1	50		22.64	22.63	22.46
20	1	99		22.65	22.56	22.66
20	50	0		22.01	22.04	21.8
20	50	25		22.07	22.85	21.85
20	50	50		22.13	21.99	21.98
20	100	0		22.04	21.95	21.92
20	1	0	16-QAM	21.94	22.73	21.61
20	1	50		22.13	22.73	21.66
20	1	99		22.24	22.69	21.88
20	50	0		20.84	20.71	20.79
20	50	25		20.92	20.61	20.58
20	50	50		20.71	20.6	20.76
20	100	0		20.88	20.6	20.63



LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.81	22.72	23.1
1.4	1	2		22.78	22.8	23.05
1.4	1	5		22.77	22.76	23.02
1.4	3	0		22.58	22.88	22.89
1.4	3	1		22.63	22.92	22.9
1.4	3	2		22.56	22.82	22.84
1.4	6	0		22.07	22.26	22.33
1.4	1	0	16-QAM	22.38	23.04	22.55
1.4	1	2		22.38	22.98	22.61
1.4	1	5		22.36	23.08	22.57
1.4	3	0		21.64	21.94	21.87
1.4	3	1		21.67	21.89	21.88
1.4	3	2		21.62	21.91	21.87
1.4	6	0		20.52	20.9	20.85
3	1	0	QPSK	22.77	22.74	23.15
3	1	7		22.74	22.79	23.09
3	1	14		22.74	22.75	22.95
3	8	0		22.2	22.41	22.42
3	8	4		22.06	22.4	22.35
3	8	7		22.13	22.45	22.37
3	15	0		22.17	22.34	22.34
3	1	0	16-QAM	21.81	23.01	22.69
3	1	7		21.82	23.12	22.73
3	1	14		21.9	23.04	22.59
3	8	0		20.49	21.16	21.21
3	8	4		20.49	20.81	21.22
3	8	7		20.92	20.77	20.72
3	15	0		20.77	20.9	21.33



LTE BAND 5

LTE Band 5 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.61	22.91	22.79
5	1	12		22.68	22.92	22.84
5	1	24		22.67	22.92	22.71
5	12	0		22.08	22.26	22.43
5	12	6		22.16	22.41	22.39
5	12	11		22	22.39	22.43
5	25	0		22.06	22.41	22.34
5	1	0	16-QAM	22.48	22.46	22.02
5	1	12		22.48	22.62	21.92
5	1	24		22.41	22.58	21.85
5	12	0		20.55	21.3	21.31
5	12	6		20.98	20.97	21.38
5	12	11		20.98	20.95	21.35
5	25	0		21.15	20.78	21.18
10	1	0	QPSK	22.94	22.65	23.06
10	1	24		22.96	22.8	23.09
10	1	49		23	22.92	23
10	25	0		22.22	22.4	22.35
10	25	12		22.05	22.37	22.35
10	25	24		22.19	22.36	22.34
10	50	0		22.23	22.37	22.36
10	1	0	16-QAM	21.81	22.72	22.53
10	1	24		21.9	22.86	22.41
10	1	49		22.04	22.94	22.34
10	25	0		21.08	21.34	20.94
10	25	12		20.71	23.22	21.02
10	25	24		20.76	21.42	21.4
10	50	0		20.73	21.01	20.97



LTE BAND 12

LTE Band 12 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.29	22.99	23.27
1.4	1	2		23.3	23.08	23.28
1.4	1	5		23.29	23.07	23.21
1.4	3	0		23.22	23.22	23.13
1.4	3	1		23.22	23.23	23.08
1.4	3	2		23.22	23.19	23.07
1.4	6	0		22.69	22.64	22.56
1.4	1	0	16-QAM	22.82	23.35	22.78
1.4	1	2		22.81	23.35	22.78
1.4	1	5		22.76	23.32	22.77
1.4	3	0		22.24	22.19	22.29
1.4	3	1		22.2	22.11	22.22
1.4	3	2		22.2	22.19	21.99
1.4	6	0		21.46	21.59	21.02
3	1	0	QPSK	23.26	23.02	23.25
3	1	7		23.27	23.08	23.28
3	1	14		23.25	23.06	23.24
3	8	0		22.71	22.64	22.63
3	8	4		22.72	22.61	22.55
3	8	7		22.58	22.55	22.63
3	15	0		22.72	22.6	22.57
3	1	0	16-QAM	22.24	23.38	22.98
3	1	7		22.23	23.35	22.9
3	1	14		22.65	23.21	22.79
3	8	0		21.4	21.19	20.95
3	8	4		21.3	21.49	20.98
3	8	7		21.39	21.43	21.07
3	15	0		21.52	21.57	20.94



LTE Band 12 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.16	23.21	23.06
5	1	12		23.06	23.19	23.07
5	1	24		23.15	23.23	22.97
5	12	0		22.73	22.63	22.62
5	12	6		22.67	22.63	22.72
5	12	11		22.56	22.51	22.6
5	25	0		22.63	22.58	22.59
5	1	0	16-QAM	22.94	22.61	22.13
5	1	12		23.36	22.53	22.22
5	1	24		23.04	22.6	22.1
5	12	0		21.38	21.23	21.11
5	12	6		21.41	21.55	21.05
5	12	11		21.36	21.51	21.07
5	25	0		21.61	21.52	20.87
10	1	0	QPSK	23.38	23.03	23.3
10	1	24		23.41	23.01	23.32
10	1	49		23.36	23.08	23.29
10	25	0		22.76	22.81	22.63
10	25	12		22.56	22.75	22.61
10	25	24		22.77	22.74	22.63
10	50	0		22.68	22.63	22.61
10	1	0	16-QAM	22.38	23.44	22.92
10	1	24		22.39	23.16	22.67
10	1	49		22.34	23.15	22.76
10	25	0		21.55	21.33	21.5
10	25	12		21.57	21.64	21.1
10	25	24		21.21	21.12	21.09
10	50	0		21.59	21.59	20.93



LTE Band 13 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.59	22.71	22.45
5	1	12		22.49	22.57	22.35
5	1	24		22.45	22.58	22.33
5	12	0		22.16	22.11	22.15
5	12	6		22.13	21.98	21.99
5	12	11		22.09	22.16	21.9
5	25	0		22.1	22.14	21.98
5	1	0	16-QAM	22.16	22.28	21.58
5	1	12		22.11	22.22	21.54
5	1	24		22.03	22.18	21.49
5	12	0		21.06	20.73	20.53
5	12	6		20.71	20.53	20.52
5	12	11		20.66	20.7	20.6
5	25	0		20.85	20.61	20.45
10	1	0	QPSK	/	22.8	/
10	1	24		/	22.63	/
10	1	49		/	22.55	/
10	25	0		/	22.22	/
10	25	12		/	22.07	/
10	25	24		/	22.09	/
10	50	0		/	22.03	/
10	1	0	16-QAM	/	21.97	/
10	1	24		/	21.91	/
10	1	49		/	21.82	/
10	25	0		/	20.75	/
10	25	12		/	20.59	/
10	25	24		/	20.49	/
10	50	0		/	20.62	/



LTE BAND 25

LTE Band 25 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	23.07	22.62	22.05
1.4	1	2		23.06	22.67	22.08
1.4	1	5		23.07	22.67	22
1.4	3	0		22.83	22.71	21.85
1.4	3	1		22.88	22.77	21.86
1.4	3	2		22.83	22.7	21.75
1.4	6	0		22.35	22.22	21.31
1.4	1	0	16-QAM	22.49	22.16	21.65
1.4	1	2		22.47	22.13	21.54
1.4	1	5		22.5	22.15	21.54
1.4	3	0		22.03	21.74	21.03
1.4	3	1		22.08	21.8	20.88
1.4	3	2		22.07	21.72	20.88
1.4	6	0		20.84	20.77	19.88
3	1	0	QPSK	22.96	22.61	22.04
3	1	7		23	22.65	22.09
3	1	14		23.06	22.63	22
3	8	0		22.29	22.22	21.37
3	8	4		22.33	22.27	21.35
3	8	7		22.31	22.22	21.36
3	15	0		22.37	22.22	21.3
3	1	0	16-QAM	22.11	22.16	21.71
3	1	7		22.16	22.1	21.7
3	1	14		22.16	22.23	21.57
3	8	0		20.86	20.69	20.13
3	8	4		20.85	20.67	20.17
3	8	7		21.14	20.7	19.78
3	15	0		20.98	20.69	20.16



LTE Band 25 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.8	22.77	21.91
5	1	12		22.89	22.81	21.75
5	1	24		22.89	22.7	21.74
5	12	0		22.46	22.19	21.57
5	12	6		22.36	22.14	21.46
5	12	11		22.32	22.21	21.39
5	25	0		22.35	22.22	21.33
5	1	0	16-QAM	22.76	22.36	21.03
5	1	12		22.83	22.33	20.97
5	1	24		22.79	22.31	20.88
5	12	0		20.81	20.74	20.07
5	12	6		21.01	20.69	20.26
5	12	11		21.08	20.72	20.28
5	25	0		21.28	20.64	20.01
10	1	0	QPSK	23.11	22.59	22.45
10	1	24		23.11	22.49	22.15
10	1	49		23.12	22.62	21.97
10	25	0		22.44	22.15	21.77
10	25	12		22.33	22.18	21.61
10	25	24		22.38	22.08	21.45
10	50	0		22.4	22.24	21.59
10	1	0	16-QAM	22.09	22.73	21.93
10	1	24		22.1	22.73	21.73
10	1	49		22.14	22.87	21.39
10	25	0		21.2	20.74	20.6
10	25	12		20.98	20.68	20.54
10	25	24		21.21	21.02	20.29
10	50	0		20.98	20.74	20.45



LTE Band 25 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.1	22.62	22.76
15	1	37		23.16	22.53	22.35
15	1	74		23.16	22.46	21.99
15	36	0		22.31	22.19	21.88
15	36	18		22.41	22.1	21.71
15	36	39		22.45	22.11	21.56
15	75	0		22.37	22.14	21.73
15	1	0	16-QAM	22.17	22.75	21.92
15	1	38		22.15	22.67	21.59
15	1	75		22.09	22.6	21.15
15	36	0		20.97	20.94	20.65
15	36	18		21.21	20.63	20.58
15	36	39		21.19	20.65	20.09
15	75	0		21.27	20.66	20.64
20	1	0	QPSK	22.95	23.18	22.84
20	1	49		23.08	22.94	22.57
20	1	99		23.04	23.03	22.2
20	50	0		22.41	22.3	22.19
20	50	24		22.5	22.24	21.83
20	50	49		22.35	22.21	21.66
20	100	0		22.47	22.28	21.89
20	1	0	16-QAM	22.54	22.49	22.76
20	1	49		22.58	22.34	22.51
20	1	99		22.58	22.32	22.05
20	50	0		21.07	21.05	20.76
20	50	24		21.3	20.73	20.82
20	50	49		21.28	20.75	20.56
20	100	0		21.27	20.82	20.76



LTE BAND 26

LTE Band 26Part22 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.8	22.72	23
1.4	1	2		22.81	22.78	23.05
1.4	1	5		22.84	22.81	23.04
1.4	3	0		22.63	22.85	22.83
1.4	3	1		22.68	22.89	22.97
1.4	3	2		22.6	22.95	22.93
1.4	6	0		22.11	22.29	22.4
1.4	1	0	16-QAM	22.42	22.94	22.91
1.4	1	2		22.46	22.96	22.67
1.4	1	5		22.4	22.98	22.64
1.4	3	0		21.63	21.74	22.27
1.4	3	1		21.69	21.81	21.88
1.4	3	2		21.62	21.81	21.95
1.4	6	0		20.58	21.25	20.93
3	1	0	QPSK	22.78	22.73	23.1
3	1	7		22.76	22.82	23.09
3	1	14		22.86	22.8	23.07
3	8	0		22.08	22.36	22.34
3	8	4		22.1	22.36	22.28
3	8	7		22.03	22.25	22.44
3	15	0		22.06	22.3	22.28
3	1	0	16-QAM	21.83	22.98	23.13
3	1	7		21.84	23.06	23.09
3	1	14		21.95	23.08	22.68
3	8	0		20.45	20.84	21.29
3	8	4		20.42	21.19	21.14
3	8	7		20.97	21.22	20.87
3	15	0		20.6	21.33	21.31



LTE Band 26Part22 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.54	22.89	22.88
5	1	12		22.69	22.92	22.75
5	1	24		22.67	22.88	22.79
5	12	0		22.07	22.27	22.44
5	12	6		22.15	22.36	22.29
5	12	11		21.97	22.27	22.32
5	25	0		22.04	22.36	22.26
5	1	0	16-QAM	22.5	22.41	21.96
5	1	12		22.44	22.56	22.23
5	1	24		22.42	22.51	21.89
5	12	0		20.53	20.83	21.33
5	12	6		20.92	21.33	21.3
5	12	11		20.9	21.28	21.31
5	25	0		21.1	21.21	21.26
10	1	0	QPSK	22.88	22.66	23.03
10	1	24		22.89	22.82	23.09
10	1	49		23.05	22.86	22.99
10	25	0		22.01	22.28	22.34
10	25	12		22.16	22.26	22.35
10	25	24		22.25	22.25	22.36
10	50	0		22.25	22.26	22.36
10	1	0	16-QAM	21.83	22.67	22.44
10	1	24		21.84	22.76	22.4
10	1	49		22.05	22.9	22.49
10	25	0		21.08	21	20.94
10	25	12		20.79	21.44	21.4
10	25	24		20.77	21.41	21.39
10	50	0		20.83	21.38	21.42



LTE Band 26Part22 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.9	22.63	22.82
15	1	24		23.01	22.86	23
15	1	49		23.13	22.93	22.94
15	25	0		22.05	22.23	22.41
15	25	12		22.12	22.27	22.43
15	25	24		22.2	22.47	22.29
15	50	0		22.12	22.37	22.4
15	1	0	16-QAM	21.85	22.57	22.05
15	1	24		21.93	22.83	22.16
15	1	49		22.09	22.84	22.16
15	25	0		20.67	20.77	21.24
15	25	12		20.64	21.22	20.86
15	25	24		20.87	20.88	21.33
15	50	0		20.79	21.33	20.95





LTE Band 26Part90 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.74	22.46	23.01
1.4	1	2		22.75	22.45	22.95
1.4	1	5		22.68	22.35	22.83
1.4	3	0		22.62	22.66	22.67
1.4	3	1		22.68	22.66	22.58
1.4	3	2		22.66	22.69	22.64
1.4	6	0		22.12	22.14	22.1
1.4	1	0	16-QAM	22.72	22.79	22.48
1.4	1	2		22.73	22.85	22.44
1.4	1	5		22.6	22.87	22.4
1.4	3	0		22.12	21.48	21.68
1.4	3	1		22.08	21.54	21.68
1.4	3	2		22.08	21.53	21.58
1.4	6	0		20.96	20.97	20.83
3	1	0	QPSK	22.85	22.43	22.82
3	1	7		22.7	22.39	22.84
3	1	14		22.67	22.42	22.87
3	8	0		22.06	22.2	22.12
3	8	4		22.15	22.06	22.13
3	8	7		22.16	22.12	22.01
3	15	0		22.11	22.05	22.09
3	1	0	16-QAM	22.14	22.93	22.41
3	1	7		22.17	22.87	22.5
3	1	14		21.81	22.96	22.44
3	8	0		20.96	20.94	20.37
3	8	4		20.97	20.98	21.01
3	8	7		21	20.93	21
3	15	0		21.11	21.08	21.06



LTE Band 26Part90 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.71	22.69	22.44
5	1	12		22.62	22.68	22.42
5	1	24		22.67	22.7	22.5
5	12	0		22.07	22.05	22.05
5	12	6		22.07	21.95	22.03
5	12	11		22.05	22.09	22.11
5	25	0		22.19	22.13	22.1
5	1	0	16-QAM	22.68	22.24	21.63
5	1	12		22.32	22.19	21.68
5	1	24		22.26	22.25	21.66
5	12	0		20.93	20.96	20.56
5	12	6		20.87	21.04	20.54
5	12	11		20.86	20.64	21
5	25	0		21.07	20.96	20.42
10	1	0	QPSK	N/A	22.93	N/A
10	1	24		N/A	22.87	N/A
10	1	49		N/A	22.84	N/A
10	25	0		N/A	23.05	N/A
10	25	12		N/A	22.03	N/A
10	25	24		N/A	22.15	N/A
10	50	0		N/A	22.17	N/A
10	1	0	16-QAM	N/A	22.23	N/A
10	1	24		N/A	21.8	N/A
10	1	49		N/A	21.82	N/A
10	25	0		N/A	21.07	N/A
10	25	12		N/A	21.09	N/A
10	25	24		N/A	20.54	N/A
10	50	0		N/A	21.05	N/A



LTE BAND 38

LTE Band 41 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.18	21.75	21.2
5	1	12		22.17	21.73	21.08
5	1	24		22.2	21.69	21.05
5	12	0		21.5	21.3	20.65
5	12	6		21.53	21.3	20.56
5	12	11		21.42	21.31	20.54
5	25	0		21.4	21.29	20.59
5	1	0	16-QAM	21	21.21	20.55
5	1	12		21.65	21.26	20.55
5	1	24		21.61	21.31	20.26
5	12	0		19.98	19.7	19.04
5	12	6		20.05	19.71	19.02
5	12	11		20.06	19.53	19.15
5	25	0		20.22	20	18.97
10	1	0	QPSK	21.96	21.65	21.1
10	1	24		22.05	21.66	20.97
10	1	49		22.01	21.65	20.83
10	25	0		21.47	21.39	20.64
10	25	12		21.56	21.29	20.49
10	25	24		21.54	21.33	20.46
10	50	0		21.56	21.21	20.54
10	1	0	16-QAM	21.39	21.41	20.67
10	1	24		21.41	21.58	20.51
10	1	49		21.51	21.72	20.52
10	25	0		20.06	19.86	19.33
10	25	12		20.07	19.91	19.21
10	25	24		20.16	19.89	19.14
10	50	0		20.21	20	19.3



LTE Band 41 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	21.96	21.67	21.09
15	1	37		21.95	21.64	21.03
15	1	74		22.05	21.69	20.97
15	36	0		21.49	21.26	20.62
15	36	18		21.52	21.39	20.67
15	36	39		21.6	21.33	20.61
15	75	0		21.59	21.35	20.52
15	1	0	16-QAM	21.42	21.29	21.12
15	1	38		21.44	21.57	21.23
15	1	75		21.47	21.46	20.79
15	36	0		20.14	19.96	19.21
15	36	18		20.11	19.89	19.07
15	36	39		20.21	19.96	18.86
15	75	0		20.19	20.01	19.3
20	1	0	QPSK	22.03	21.82	21.38
20	1	49		22.01	21.83	21.32
20	1	99		21.96	22.09	21.1
20	50	0		21.54	21.3	20.7
20	50	24		21.63	21.31	20.58
20	50	49		21.53	21.32	20.53
20	100	0		21.63	21.32	20.58
20	1	0	16-QAM	21.38	21.22	20.5
20	1	49		21.52	21.21	20.62
20	1	99		21.44	21.39	20.47
20	50	0		22.25	19.91	19.33
20	50	24		20.26	19.93	19.24
20	50	49		20.25	19.8	19.23
20	100	0		20.33	19.94	19.31



LTE Band 66 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
1.4	1	0	QPSK	22.49	22.35	22.52
1.4	1	2		22.49	22.34	22.43
1.4	1	5		22.5	22.32	22.52
1.4	3	0		22.3	22.4	22.18
1.4	3	1		22.36	22.46	22.24
1.4	3	2		22.31	22.4	22.18
1.4	6	0		21.62	21.97	21.71
1.4	1	0	16-QAM	21.81	22.46	22
1.4	1	2		21.82	22.46	22.04
1.4	1	5		21.8	22.45	22.04
1.4	3	0		21.4	21.63	21.37
1.4	3	1		21.38	21.65	21.47
1.4	3	2		21.42	21.63	21.37
1.4	6	0		20.19	20.86	20.23
3	1	0	QPSK	22.45	22.21	22.48
3	1	7		22.48	22.42	22.43
3	1	14		22.44	22.28	22.47
3	8	0		21.75	21.96	21.78
3	8	4		21.81	22.01	21.75
3	8	7		21.82	21.99	21.78
3	15	0		21.79	21.96	21.74
3	1	0	16-QAM	21.48	22.35	22.13
3	1	7		21.53	22.48	22.02
3	1	14		21.63	22.44	22.04
3	8	0		20.19	20.78	20.35
3	8	4		20.19	20.82	20.21
3	8	7		20.51	20.8	20.19
3	15	0		20.25	20.84	20.22



LTE Band 66 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	22.35	22.47	22.27
5	1	12		22.34	22.63	22.15
5	1	24		22.43	22.59	22.19
5	12	0		21.78	21.92	21.81
5	12	6		21.86	21.98	21.86
5	12	11		21.81	22.02	21.75
5	25	0		21.76	21.97	21.73
5	1	0	16-QAM	22.2	21.99	21.9
5	1	12		22.24	22.17	21.82
5	1	24		22.19	22.19	21.82
5	12	0		20.21	20.68	20.43
5	12	6		20.51	20.9	20.41
5	12	11		20.48	20.92	20.29
5	25	0		20.68	20.9	20.42
10	1	0	QPSK	22.59	21.98	22.64
10	1	24		22.62	22.19	22.48
10	1	49		22.78	22.19	22.34
10	25	0		21.84	21.8	21.97
10	25	12		21.95	21.91	21.83
10	25	24		21.91	21.91	21.83
10	50	0		21.9	22	21.82
10	1	0	16-QAM	21.5	22.4	22.1
10	1	24		21.62	22.49	21.9
10	1	49		21.71	22.6	21.85
10	25	0		20.7	20.79	20.75
10	25	12		20.54	20.97	20.46
10	25	24		20.62	20.87	20.43
10	50	0		20.46	21.03	20.36



LTE Band 66 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	22.57	22.04	22.71
15	1	37		22.68	22.27	22.43
15	1	74		22.83	22.36	22.28
15	36	0		21.94	21.86	22.11
15	36	18		21.86	22.05	21.97
15	36	39		21.99	22.11	21.76
15	75	0		21.91	22.01	21.88
15	1	0	16-QAM	21.51	22.41	21.96
15	1	38		21.66	22.55	21.76
15	1	75		21.77	22.58	21.6
15	36	0		20.45	20.59	20.64
15	36	18		20.51	20.89	20.67
15	36	39		20.55	20.89	20.35
15	75	0		20.5	20.95	20.8
20	1	0	QPSK	22.47	22.5	22.64
20	1	49		22.66	22.59	22.57
20	1	99		22.61	22.86	22.33
20	50	0		21.89	21.8	22.15
20	50	24		21.98	22.07	22.01
20	50	49		21.99	22.13	21.88
20	100	0		22.06	22.06	22.1
20	1	0	16-QAM	21.9	22.19	22.06
20	1	49		22.08	22.31	22.04
20	1	99		22.17	22.42	21.76
20	50	0		20.52	20.68	20.65
20	50	24		20.55	20.96	20.68
20	50	49		20.61	20.97	20.49
20	100	0		20.6	20.92	20.73



LTE Band 71 Maximum Average Power [dBm]

BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
5	1	0	QPSK	23.3	22.99	23.03
5	1	2		23.3	22.92	23.05
5	1	5		23.32	22.95	23.07
5	3	0		22.66	22.67	22.68
5	3	1		22.75	22.64	22.62
5	3	2		22.79	22.51	22.69
5	6	0		22.81	22.55	22.67
5	1	0	16-QAM	22.74	22.53	22.57
5	1	2		22.86	22.91	22.6
5	1	5		22.77	22.99	22.59
5	3	0		21.68	21.53	21.19
5	3	1		21.63	21.45	21.03
5	3	2		21.69	21.54	21.03
5	6	0		21.63	21.43	21.11
10	1	0	QPSK	23.4	23	23.15
10	1	7		23.47	23.02	23.29
10	1	14		23.44	23.01	23.32
10	8	0		22.67	22.53	22.66
10	8	4		22.79	22.56	22.63
10	8	7		22.62	22.49	22.73
10	15	0		22.73	22.51	22.63
10	1	0	16-QAM	22.32	23.49	22.57
10	1	7		22.3	23.38	22.56
10	1	14		22.38	23.05	22.74
10	8	0		21.7	21.6	21.08
10	8	4		21.21	21.58	21.06
10	8	7		21.7	21.58	21.14
10	15	0		21.2	21.53	21.09



LTE Band 71 Maximum Average Power [dBm]

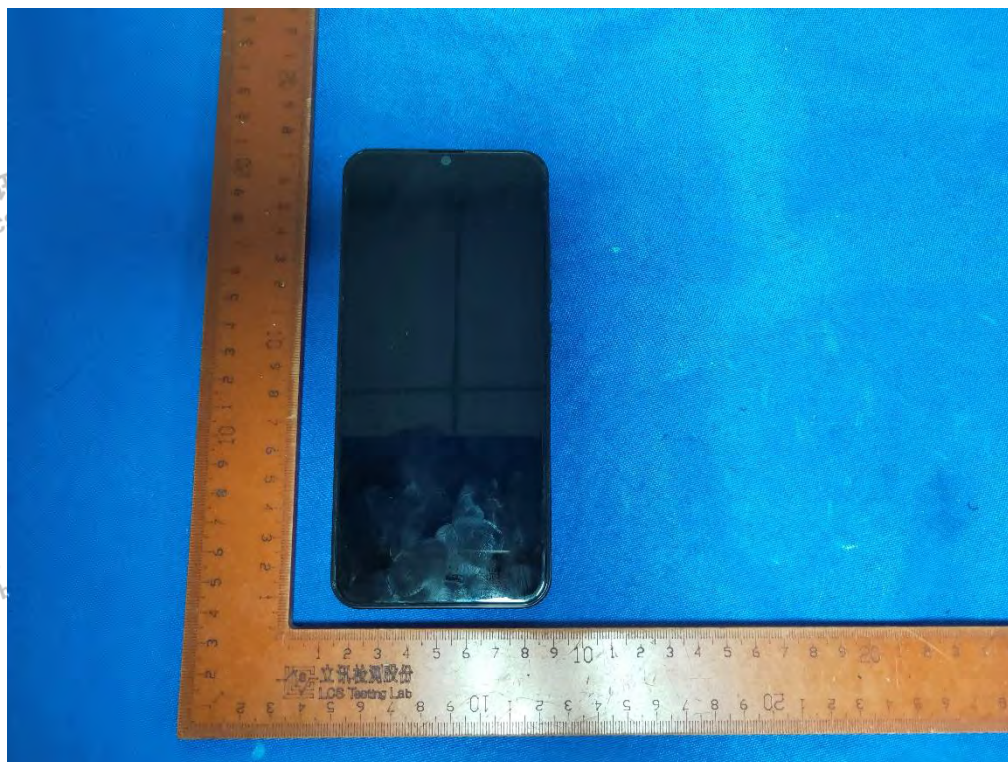
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
15	1	0	QPSK	23.24	22.96	23.15
15	1	12		23.4	22.85	23.13
15	1	24		23.34	22.99	23.27
15	12	0		22.73	22.53	22.61
15	12	6		22.56	22.56	22.68
15	12	11		22.63	22.54	22.73
15	25	0		22.6	22.53	22.69
15	1	0	16-QAM	22.36	23.03	22.31
15	1	12		22.41	23.35	22.33
15	1	24		22.67	23.18	22.45
15	12	0		21.19	21.51	21.51
15	12	6		21.61	21.47	21.1
15	12	11		21.11	21.53	21.13
15	25	0		21.59	21.47	21.21
20	1	0	QPSK	23.17	23.36	23.13
20	1	24		23.26	23.17	23.2
20	1	49		23.08	23.23	23.4
20	25	0		22.75	22.56	22.66
20	25	12		22.76	22.59	22.68
20	25	24		22.74	22.59	22.64
20	50	0		22.72	22.63	22.73
20	1	0	16-QAM	22.53	23.5	22.84
20	1	24		22.63	23.63	22.56
20	1	49		22.87	23.42	22.67
20	25	0		21.24	21.6	21.58
20	25	12		21.62	21.54	21.59
20	25	24		21.63	21.59	21.1
20	50	0		21.64	21.49	21.57



11. EUT And Test Setup Photo

11.1 EUT Photo

Front side



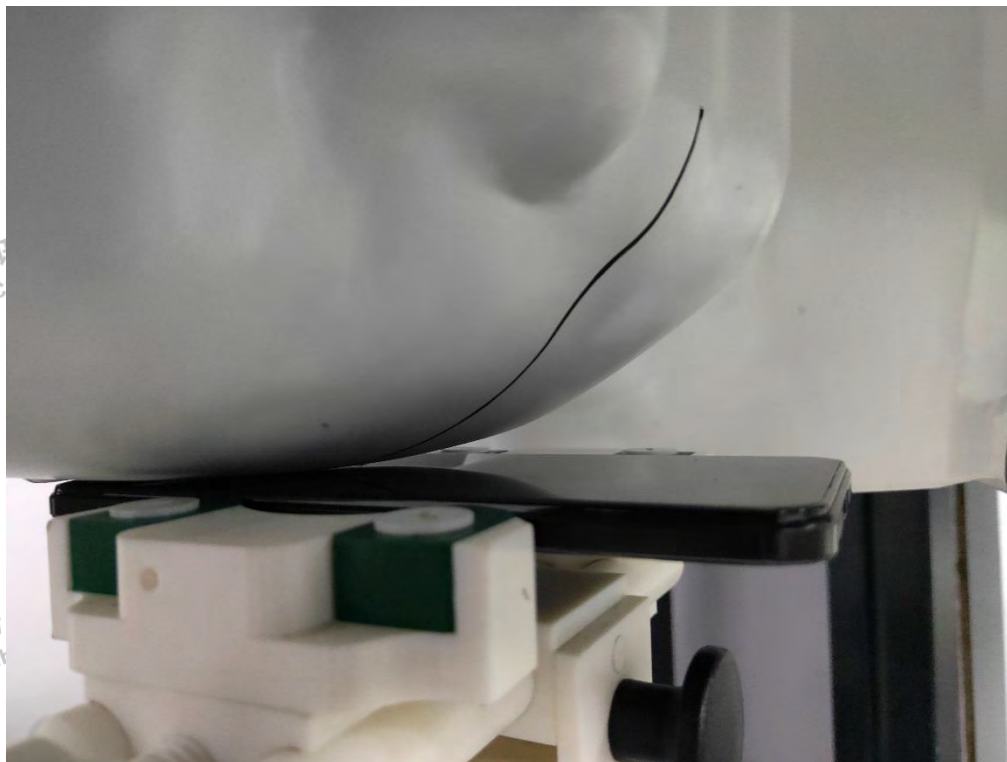
Back side



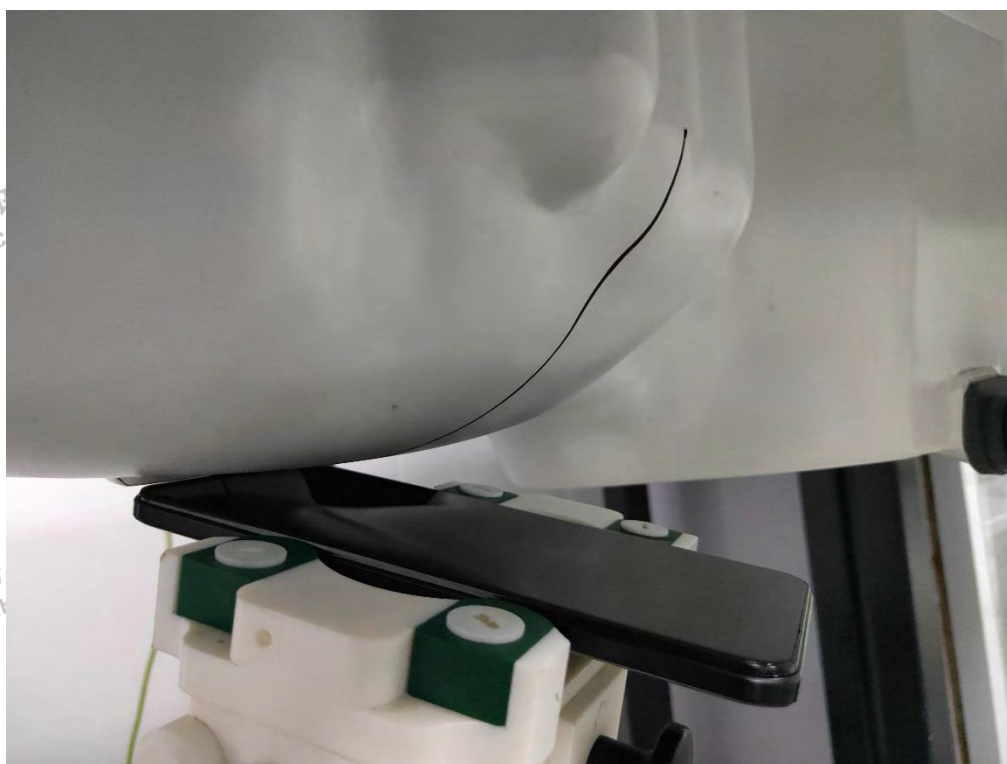


11.2 Setup Photo

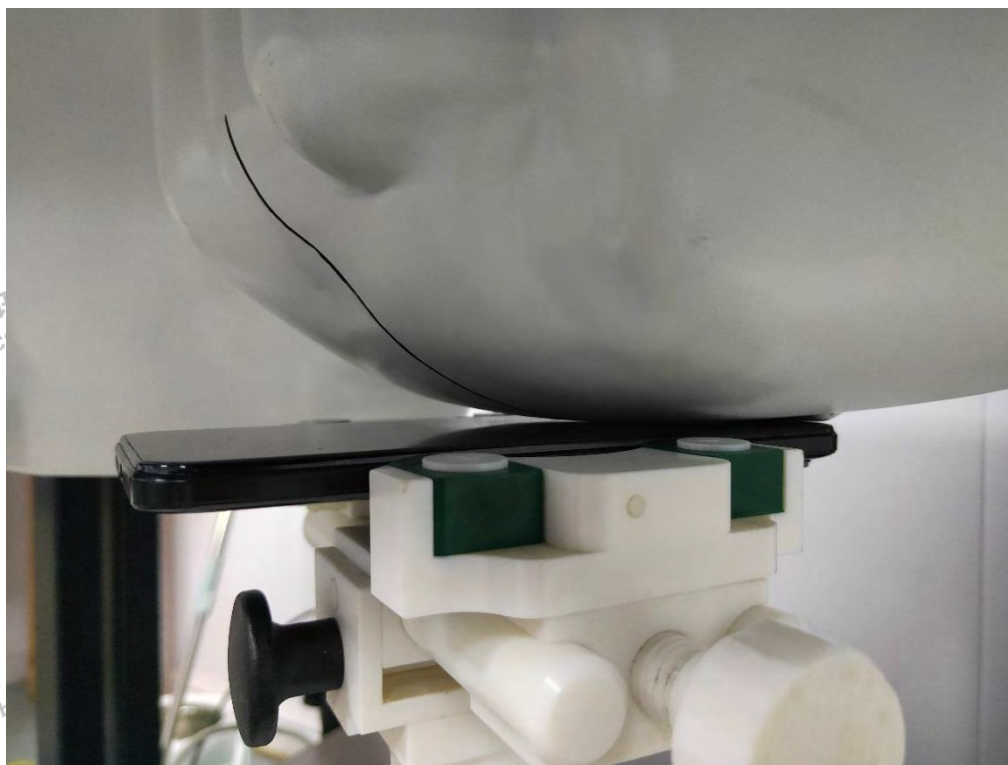
Right Touch



Right Tilt



Left Touch

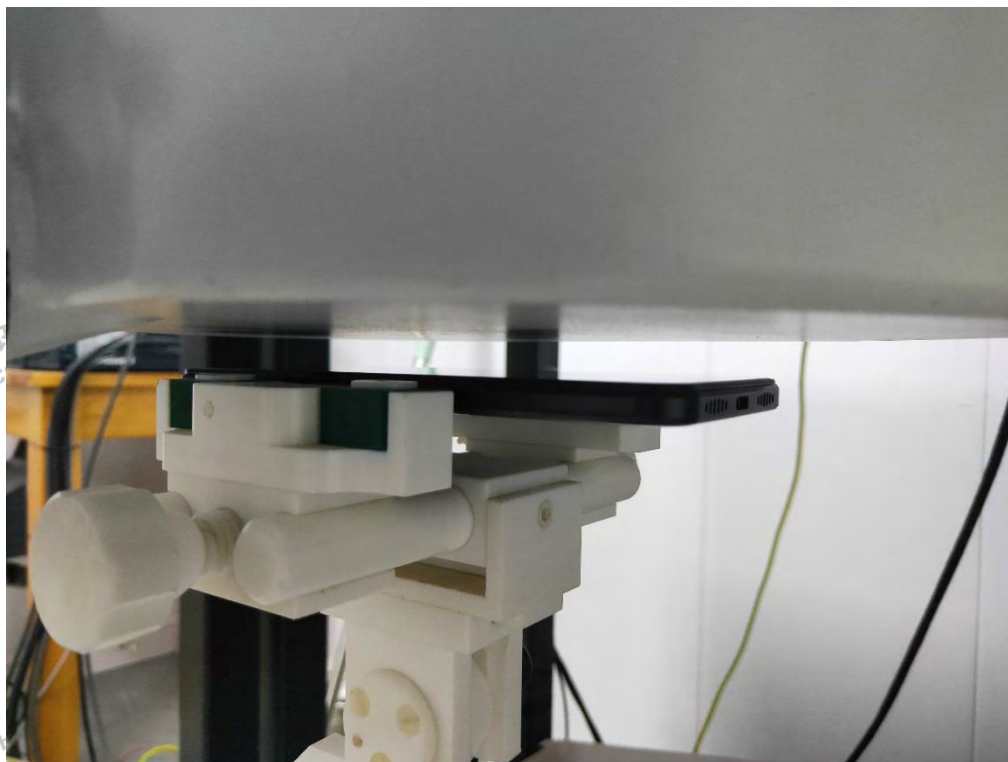


Left Tilt

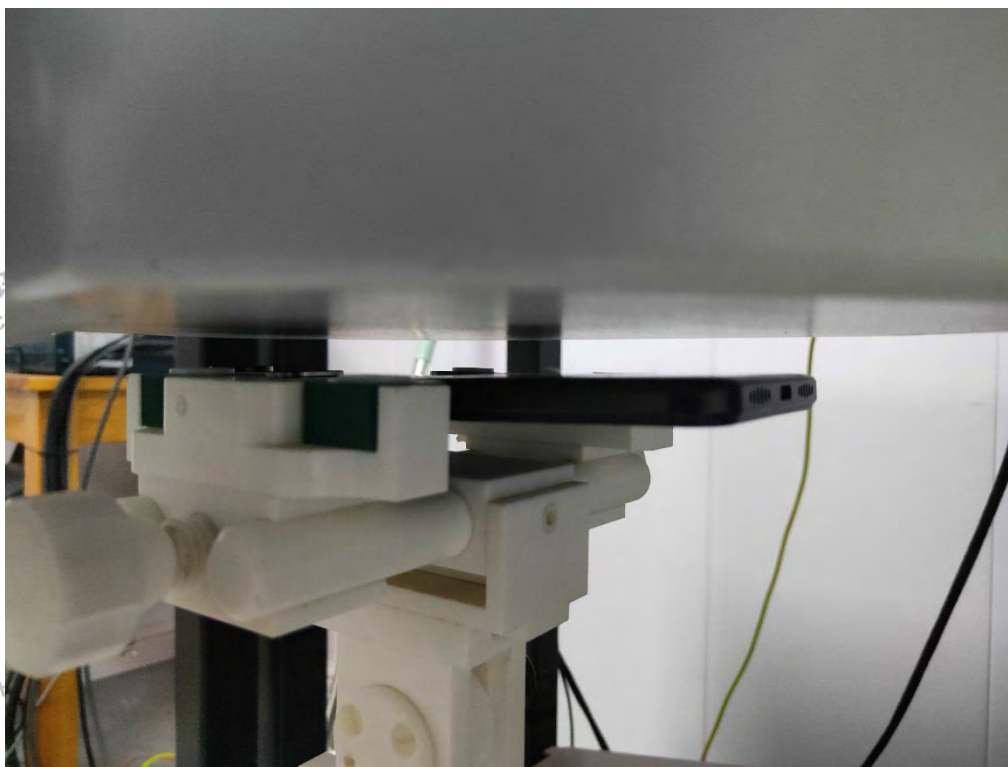




Body Front side(separation distance is 10mm)



Body Back side(separation distance is 10mm)





Body Left side(separation distance is 10mm)



Body Right side(separation distance is 10mm)





Body Bottom side(separation distance is 10mm)



Body Top side(separation distance is 10mm)





12. SAR Result Summary

12.1 Head-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.
GSM850	GPRS Data-4 Slot	Right Cheek	848.8	0.284	0.29	33.00	32.97	0.286	1
		Right Tilt	848.8	0.083	-3.70	33.00	32.97	0.084	/
		Left Cheek	848.8	0.255	3.14	33.00	32.97	0.257	/
		Left Tilt	848.8	0.074	-2.62	33.00	32.97	0.075	/
GSM1900	GPRS Data-4 Slot	Right Cheek	1850.2	0.079	-1.18	29.50	29.47	0.080	3
		Right Tilt	1850.2	0.033	-0.58	29.50	29.47	0.033	/
		Left Cheek	1850.2	0.071	1.72	29.50	29.47	0.071	/
		Left Tilt	1850.2	0.028	1.09	29.50	29.47	0.028	/
WCDMA Band II	RMC	Right Cheek	1852.4	0.294	0.86	23.50	23.39	0.302	5
		Right Cheek	1880	0.251	-3.04	23.50	23.17	0.271	/
		Right Cheek	1907.6	0.223	1.71	23.50	22.99	0.251	/
		Right Tilt	1852.4	0.092	0.34	23.50	23.39	0.094	/
		Left Cheek	1852.4	0.277	2.43	23.50	23.39	0.284	/
		Left Tilt	1852.4	0.088	-3.95	23.50	23.39	0.090	/
WCDMA Band V	RMC	Right Cheek	846.6	0.135	-0.16	23.00	22.97	0.136	7
		Right Tilt	846.6	0.054	1.09	23.00	22.97	0.054	/
		Left Cheek	846.6	0.122	0.13	23.00	22.97	0.123	/
		Left Tilt	846.6	0.047	2.37	23.00	22.97	0.047	/
WCDMA Band IV	RMC	Right Cheek	1712.6	0.215	-0.90	23.00	22.80	0.225	9
		Right Tilt	1712.6	0.066	-0.67	23.00	22.80	0.069	/
		Left Cheek	1712.6	0.194	1.53	23.00	22.80	0.203	/
		Left Tilt	1712.6	0.059	-0.33	23.00	22.80	0.062	/



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	1880	0.136	3.09	23.5	23.29	0.143	11
			50	0	Right Cheek	1860	0.122	-1.72	23	22.56	0.135	/
			1	0	Right Tilt	1880	0.067	0.00	23.5	23.29	0.070	/
			50	0	Right Tilt	1860	0.063	-3.26	23	22.56	0.070	/
			1	0	Left Cheek	1880	0.125	-0.90	23.5	23.29	0.131	/
			50	0	Left Cheek	1860	0.117	2.22	23	22.56	0.129	/
			1	0	Left Tilt	1880	0.056	2.73	23.5	23.29	0.059	/
			50	0	Left Tilt	1860	0.049	-0.58	23	22.56	0.054	/
LTE Band 4	20M	QPSK	1	0	Right Cheek	1732.5	0.214	-1.41	23	22.75	0.227	13
			50	0	Right Cheek	1732.5	0.195	-2.28	23	22.85	0.202	/
			1	0	Right Tilt	1732.5	0.077	-0.77	23	22.75	0.082	/
			50	0	Right Tilt	1732.5	0.065	2.81	23	22.85	0.067	/
			1	0	Left Cheek	1732.5	0.209	1.86	23	22.75	0.221	/
			50	0	Left Cheek	1732.5	0.190	3.27	23	22.85	0.197	/
			1	0	Left Tilt	1732.5	0.069	-0.24	23	22.75	0.073	/
			50	0	Left Tilt	1732.5	0.061	-0.84	23	22.85	0.063	/
LTE Band 5	10M	QPSK	1	0	Right Cheek	844	0.226	0.61	23.5	23.09	0.248	15
			25	0	Right Cheek	836.5	0.201	-1.18	22.5	22.4	0.206	/
			1	0	Right Tilt	844	0.079	2.06	23.5	23.09	0.087	/
			25	0	Right Tilt	836.5	0.070	2.68	22.5	22.4	0.072	/
			1	0	Left Cheek	844	0.187	2.14	23.5	23.09	0.206	/
			25	0	Left Cheek	836.5	0.177	2.74	22.5	22.4	0.181	/
			1	0	Left Tilt	844	0.064	2.31	23.5	23.09	0.070	/
			25	0	Left Tilt	836.5	0.058	2.53	22.5	22.4	0.059	/
LTE Band 12	10M	QPSK	1	0	Right Cheek	704	0.211	-3.06	23.5	23.41	0.215	17
			25	0	Right Cheek	707.5	0.192	-2.15	23	22.81	0.201	/
			1	0	Right Tilt	704	0.068	-1.67	23.5	23.41	0.069	/
			25	0	Right Tilt	707.5	0.060	3.78	23	22.81	0.063	/
			1	0	Left Cheek	704	0.187	0.87	23.5	23.41	0.191	/
			25	0	Left Cheek	707.5	0.175	-1.72	23	22.81	0.183	/
			1	0	Left Tilt	704	0.063	-1.66	23.5	23.41	0.064	/
			25	0	Left Tilt	707.5	0.058	3.26	23	22.81	0.061	/



LTE Band 13	10M	QPSK	1	0	Right Cheek	782	0.128	-2.44	23	22.8	0.134	19
			25	0	Right Cheek	782	0.122	3.59	22.5	22.22	0.130	/
			1	0	Right Tilt	782	0.045	-0.47	23	22.8	0.047	/
			25	0	Right Tilt	782	0.041	0.50	22.5	22.22	0.044	/
			1	0	Left Cheek	782	0.110	-3.67	23	22.8	0.115	/
			25	0	Left Cheek	782	0.105	2.33	22.5	22.22	0.112	/
			1	0	Left Tilt	782	0.042	2.00	23	22.8	0.044	/
			25	0	Left Tilt	782	0.038	-0.38	22.5	22.22	0.041	/
LTE Band 25	20M	QPSK	1	0	Right Cheek	1882.5	0.117	-1.02	23.5	23.18	0.126	21
			50	0	Right Cheek	1860	0.109	-3.57	23	22.5	0.122	/
			1	0	Right Tilt	1882.5	0.041	1.28	23.5	23.18	0.044	/
			50	0	Right Tilt	1860	0.035	-3.91	23	22.5	0.039	/
			1	0	Left Cheek	1882.5	0.108	1.48	23.5	23.18	0.116	/
			50	0	Left Cheek	1860	0.100	-3.27	23	22.5	0.112	/
			1	0	Left Tilt	1882.5	0.039	1.97	23.5	23.18	0.042	/
			50	0	Left Tilt	1860	0.034	3.61	23	22.5	0.038	/
LTE Band 26	15M	QPSK	1	0	Right Cheek	821.5	0.200	1.77	23.5	23.13	0.218	23
			36	0	Right Cheek	831.5	0.191	3.42	22.5	22.47	0.192	/
			1	0	Right Tilt	821.5	0.079	2.70	23.5	23.13	0.086	/
			36	0	Right Tilt	831.5	0.075	2.29	22.5	22.47	0.076	/
			1	0	Left Cheek	821.5	0.184	-2.06	23.5	23.13	0.200	/
			36	0	Left Cheek	831.5	0.176	-1.07	22.5	22.47	0.177	/
			1	0	Left Tilt	821.5	0.074	1.51	23.5	23.13	0.081	/
			36	0	Left Tilt	831.5	0.072	-1.17	22.5	22.47	0.072	/
LTE Band 41	20M	QPSK	1	0	Right Cheek	2593	0.097	2.74	22.5	22.09	0.107	25
			50	0	Right Cheek	2506	0.091	3.54	22	21.63	0.099	/
			1	0	Right Tilt	2593	0.037	2.40	22.5	22.09	0.041	/
			50	0	Right Tilt	2506	0.034	-1.15	22	21.63	0.037	/
			1	0	Left Cheek	2593	0.084	0.83	22.5	22.09	0.092	/
			50	0	Left Cheek	2506	0.080	3.37	22	21.63	0.087	/
			1	0	Left Tilt	2593	0.032	0.51	22.5	22.09	0.035	/
			50	0	Left Tilt	2506	0.029	2.37	22	21.63	0.032	/



LTE Band 66	20M	QPSK	1	0	Right Cheek	1745	0.194	-0.15	23	22.86	0.200	27
			50	0	Right Cheek	1770	0.182	-3.36	22.5	22.15	0.197	/
			1	0	Right Tilt	1745	0.081	-0.68	23	22.86	0.084	/
			50	0	Right Tilt	1770	0.075	-3.63	22.5	22.15	0.081	/
			1	0	Left Cheek	1745	0.171	3.21	23	22.86	0.177	/
			50	0	Left Cheek	1770	0.160	-0.93	22.5	22.15	0.173	/
			1	0	Left Tilt	1745	0.075	1.02	23	22.86	0.077	/
			50	0	Left Tilt	1770	0.064	-3.85	22.5	22.15	0.069	/
LTE Band 71	20M	QPSK	1	0	Right Cheek	688	0.237	-0.76	23.5	23.4	0.243	29
			50	0	Right Cheek	683	0.221	-1.87	23	22.76	0.234	/
			1	0	Right Tilt	688	0.085	-2.34	23.5	23.4	0.087	/
			50	0	Right Tilt	683	0.076	-3.78	23	22.76	0.080	/
			1	0	Left Cheek	688	0.222	-0.10	23.5	23.4	0.227	/
			50	0	Left Cheek	683	0.213	-3.22	23	22.76	0.225	/
			1	0	Left Tilt	688	0.080	-2.58	23.5	23.4	0.082	/
			50	0	Left Tilt	683	0.071	-2.37	23	22.76	0.075	/



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.
2.4G WLAN	802.11b	Right Cheek	2462	0.218	2.47	11.50	11.30	0.228	31
		Right Tilt	2462	0.162	0.06	11.50	11.30	0.170	/
		Left Cheek	2462	0.202	2.39	11.50	11.30	0.212	/
		Left Tilt	2462	0.155	-3.89	11.50	11.30	0.162	/
	802.11g	Right Cheek	2462	0.194	1.60	13.00	12.81	0.203	/
		Right Tilt	2462	0.144	-0.81	13.00	12.81	0.150	/
		Left Cheek	2462	0.181	-0.28	13.00	12.81	0.189	/
		Left Tilt	2462	0.142	3.56	13.00	12.81	0.148	/
BT	GFSK	Right Cheek	2441	0.164	2.71	6.00	5.81	0.171	33
		Right Tilt	2441	0.054	-1.01	6.00	5.81	0.056	/
		Left Cheek	2441	0.120	2.49	6.00	5.81	0.125	/
		Left Tilt	2441	0.047	-2.74	6.00	5.81	0.049	/

Note:

- Per KDB 447498 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - 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.
 - Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
- Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was **0.323** W/Kg for Head)
- When the user enables the personal Wireless router functions for the handsets, actual operations include simultaneous transmission of both the Wi-Fi transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

**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.
GSM850	GPRS Data-2 Slot	Front Side	824.2	0.166	-1.53	31.50	31.07	0.183	2
		Back Side	824.2	0.247	3.71	31.50	31.07	0.273	/
		Left Side	824.2	0.122	2.55	31.50	31.07	0.135	/
		Right Side	824.2	0.063	0.34	31.50	31.07	0.070	/
		Top Side	824.2	0.021	2.61	31.50	31.07	0.023	/
		Bottom Side	824.2	0.040	-2.23	31.50	31.07	0.044	/
GSM1900	GPRS Data-3 Slot	Front Side	1850.2	0.288	-2.05	26.00	25.68	0.310	4
		Back Side	1850.2	0.329	1.29	26.00	25.68	0.354	/
		Left Side	1850.2	0.121	-0.55	26.00	25.68	0.130	/
		Right Side	1850.2	0.066	3.98	26.00	25.68	0.071	/
		Bottom Side	1850.2	0.187	0.19	26.00	25.68	0.201	/
WCDMA Band II	RMC	Front Side	1852.4	0.632	3.86	23.50	23.39	0.648	6
		Back Side	1852.4	0.636	1.05	23.50	23.39	0.652	/
		Left Side	1852.4	0.245	1.58	23.50	23.39	0.251	/
		Right Side	1852.4	0.115	3.57	23.50	23.39	0.118	/
		Bottom Side	1852.4	0.278	-1.57	23.50	23.39	0.285	/
WCDMA Band V	RMC	Front Side	846.6	0.389	4.00	23.00	22.97	0.392	8
		Back Side	846.6	0.506	0.10	23.00	22.97	0.510	/
		Left Side	846.6	0.260	-1.44	23.00	22.97	0.262	/
		Right Side	846.6	0.166	-0.75	23.00	22.97	0.167	/
		Bottom Side	846.6	0.438	3.91	23.00	22.97	0.441	/
WCDMA Band IV	RMC	Front Side	1712.6	0.151	1.21	23.00	22.80	0.158	10
		Back Side	1712.6	0.197	1.32	23.00	22.80	0.206	/
		Left Side	1712.6	0.101	-2.80	23.00	22.80	0.106	/
		Right Side	1712.6	0.054	1.71	23.00	22.80	0.057	/
		Bottom Side	1712.6	0.120	3.73	23.00	22.80	0.126	/



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	Front side	1880	0.201	1.54	23.5	23.29	0.211	/
			50	0	Front side	1860	0.181	-1.90	23	22.56	0.200	/
			1	0	Back Side	1860	0.518	-1.07	23.5	23.25	0.549	/
			1	0	Back Side	1880	0.634	-3.82	23.5	23.29	0.665	12
			1	0	Back Side	1900	0.522	0.17	23.5	22.81	0.612	/
			50	0	Back Side	1860	0.588	0.21	23	22.56	0.651	/
			1	0	Left Side	1880	0.257	-2.27	23.5	23.29	0.270	/
			50	0	Left Side	1860	0.243	-2.20	23	22.56	0.269	/
			1	0	Right Side	1880	0.125	0.32	23.5	23.29	0.131	/
			50	0	Right Side	1860	0.107	0.39	23	22.56	0.118	/
			1	0	Bottom Side	1880	0.355	2.51	23.5	23.29	0.373	/
			50	0	Bottom Side	1860	0.321	-2.75	23	22.56	0.355	/
LTE Band 4	20M	QPSK	1	0	Front side	1732.5	0.152	2.56	23	22.75	0.161	/
			50	0	Front side	1732.5	0.144	3.37	23	22.85	0.149	/
			1	0	Back Side	1732.5	0.398	-0.11	23	22.75	0.422	14
			50	0	Back Side	1732.5	0.371	-2.46	23	22.85	0.384	/
			1	0	Left Side	1732.5	0.159	-3.67	23	22.75	0.168	/
			50	0	Left Side	1732.5	0.146	0.56	23	22.85	0.151	/
			1	0	Right Side	1732.5	0.047	-0.38	23	22.75	0.050	/
			50	0	Right Side	1732.5	0.041	-3.74	23	22.85	0.042	/
			1	0	Bottom Side	1732.5	0.251	0.23	23	22.75	0.266	/
			50	0	Bottom Side	1732.5	0.223	1.20	23	22.85	0.231	/
LTE Band 5	10M	QPSK	1	0	Front side	844	0.152	3.67	23.5	23.09	0.167	/
			25	0	Front side	836.5	0.136	0.29	22.5	22.4	0.139	/
			1	0	Back Side	844	0.233	3.91	23.5	23.09	0.256	16
			25	0	Back Side	836.5	0.221	-2.98	22.5	22.4	0.226	/
			1	0	Left Side	844	0.142	-2.69	23.5	23.09	0.156	/
			25	0	Left Side	836.5	0.135	2.45	22.5	22.4	0.138	/
			1	0	Right Side	844	0.042	3.22	23.5	23.09	0.046	/
			25	0	Right Side	836.5	0.039	2.21	22.5	22.4	0.040	/
			1	0	Bottom Side	844	0.158	3.77	23.5	23.09	0.174	/
			25	0	Bottom Side	836.5	0.149	3.98	22.5	22.4	0.152	/



LTE Band 12	10M	QPSK	1	0	Front side	704	0.240	-0.24	23.5	23.41	0.245	/
			25	0	Front side	707.5	0.223	-3.29	23	22.81	0.233	/
			1	0	Back Side	704	0.306	-0.64	23.5	23.41	0.312	18
			25	0	Back Side	707.5	0.287	-3.97	23	22.81	0.300	/
			1	0	Left Side	704	0.147	-3.55	23.5	23.41	0.150	/
			25	0	Left Side	707.5	0.144	1.24	23	22.81	0.150	/
			1	0	Right Side	704	0.069	1.53	23.5	23.41	0.070	/
			25	0	Right Side	707.5	0.061	-2.62	23	22.81	0.064	/
			1	0	Bottom Side	704	0.150	3.27	23.5	23.41	0.153	/
			25	0	Bottom Side	707.5	0.143	-3.82	23	22.81	0.149	/
LTE Band 13	10M	QPSK	1	0	Front side	782	0.092	-2.17	23	22.8	0.096	/
			25	0	Front side	782	0.081	3.97	22.5	22.22	0.086	/
			1	0	Back Side	782	0.168	-0.51	23	22.8	0.176	20
			25	0	Back Side	782	0.155	2.07	22.5	22.22	0.165	/
			1	0	Left Side	782	0.078	-0.25	23	22.8	0.082	/
			25	0	Left Side	782	0.070	-1.80	22.5	22.22	0.075	/
			1	0	Right Side	782	0.041	2.70	23	22.8	0.043	/
			25	0	Right Side	782	0.038	-2.31	22.5	22.22	0.041	/
			1	0	Bottom Side	782	0.100	-1.97	23	22.8	0.105	/
			25	0	Bottom Side	782	0.088	0.85	22.5	22.22	0.094	/
LTE Band 25	20M	QPSK	1	0	Front side	1882.5	0.089	-3.85	23.5	23.18	0.096	/
			50	0	Front side	1860	0.084	3.67	23	22.5	0.094	/
			1	0	Back Side	1882.5	0.129	3.74	23.5	23.18	0.139	22
			50	0	Back Side	1860	0.121	-1.21	23	22.5	0.136	/
			1	0	Left Side	1882.5	0.066	2.79	23.5	23.18	0.071	/
			50	0	Left Side	1860	0.061	-0.12	23	22.5	0.068	/
			1	0	Right Side	1882.5	0.035	2.45	23.5	23.18	0.038	/
			50	0	Right Side	1860	0.032	-2.93	23	22.5	0.036	/
			1	0	Bottom Side	1882.5	0.070	1.76	23.5	23.18	0.075	/
			50	0	Bottom Side	1860	0.067	-3.83	23	22.5	0.075	/



LTE Band 26	15M	QPSK	1	0	Front side	821.5	0.174	3.25	23.5	23.13	0.189	/
			36	0	Front side	831.5	0.162	1.58	22.5	22.47	0.163	/
			1	0	Back Side	821.5	0.229	1.59	23.5	23.13	0.249	24
			36	0	Back Side	831.5	0.210	0.49	22.5	22.47	0.211	/
			1	0	Left Side	821.5	0.142	-2.76	23.5	23.13	0.155	/
			36	0	Left Side	831.5	0.133	3.35	22.5	22.47	0.134	/
			1	0	Right Side	821.5	0.047	2.38	23.5	23.13	0.051	/
			36	0	Right Side	831.5	0.042	0.17	22.5	22.47	0.042	/
			1	0	Bottom Side	821.5	0.123	-0.67	23.5	23.13	0.134	/
			36	0	Bottom Side	831.5	0.112	-2.72	22.5	22.47	0.113	/
LTE Band 41	20M	QPSK	1	0	Front side	2593	0.088	2.44	22.5	22.09	0.097	/
			50	0	Front side	2506	0.074	2.71	22	21.63	0.081	/
			1	0	Back Side	2593	0.130	1.19	22.5	22.09	0.143	26
			50	0	Back Side	2506	0.122	0.57	22	21.63	0.133	/
			1	0	Left Side	2593	0.047	0.12	22.5	22.09	0.052	/
			50	0	Left Side	2506	0.041	-1.38	22	21.63	0.045	/
			1	0	Right Side	2593	0.033	1.94	22.5	22.09	0.036	/
			50	0	Right Side	2506	0.029	-0.66	22	21.63	0.032	/
			1	0	Bottom Side	2593	0.050	-1.87	22.5	22.09	0.055	/
			50	0	Bottom Side	2506	0.048	-0.34	22	21.63	0.052	/
LTE Band 66	20M	QPSK	1	0	Front side	1745	0.335	-1.75	23	22.86	0.346	/
			50	0	Front side	1770	0.312	-3.88	22.5	22.15	0.338	/
			1	0	Back Side	1745	0.449	-1.13	23	22.86	0.464	28
			50	0	Back Side	1770	0.415	0.11	22.5	22.15	0.450	/
			1	0	Left Side	1745	0.213	-0.66	23	22.86	0.220	/
			50	0	Left Side	1770	0.187	-3.40	22.5	22.15	0.203	/
			1	0	Right Side	1745	0.095	-1.11	23	22.86	0.098	/
			50	0	Right Side	1770	0.082	0.38	22.5	22.15	0.089	/
			1	0	Bottom Side	1745	0.198	-3.99	23	22.86	0.204	/
			50	0	Bottom Side	1770	0.177	2.93	22.5	22.15	0.192	/



LTE Band 71	20M	QPSK	1	0	Front side	688	0.280	-2.39	23.5	23.4	0.287	/
			50	0	Front side	683	0.269	-0.76	23	22.76	0.284	/
			1	0	Back Side	688	0.448	-3.65	23.5	23.4	0.458	30
			50	0	Back Side	683	0.423	1.40	23	22.76	0.447	/
			1	0	Left Side	688	0.221	-1.29	23.5	23.4	0.226	/
			50	0	Left Side	683	0.204	-0.14	23	22.76	0.216	/
			1	0	Right Side	688	0.124	2.59	23.5	23.4	0.127	/
			50	0	Right Side	683	0.110	-2.12	23	22.76	0.116	/
			1	0	Bottom Side	688	0.251	-2.66	23.5	23.4	0.257	/
			50	0	Bottom Side	683	0.223	-0.74	23	22.76	0.236	/

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.
2.4GHz WLAN	802.11b	Front Side	2462	0.069	-1.58	11.50	11.30	0.072	/
		Back Side	2462	0.079	-0.57	11.50	11.30	0.083	32
		Left Side	2462	0.023	3.07	11.50	11.30	0.024	/
		Top Side	2462	0.050	-3.69	11.50	11.30	0.052	/
	802.11g	Front Side	2462	0.052	-0.88	13.00	12.81	0.054	/
		Back Side	2462	0.063	3.97	13.00	12.81	0.066	/
		Left Side	2462	0.02	1.93	13.00	12.81	0.021	/
		Top Side	2462	0.042	-0.01	13.00	12.81	0.044	/
BT	GFSK	Front Side	2441	0.041	3.57	6.00	5.81	0.043	/
		Back Side	2441	0.050	-0.95	6.00	5.81	0.052	34
		Left Side	2441	0.025	2.14	6.00	5.81	0.026	/
		Top Side	2441	0.036	-3.57	6.00	5.81	0.038	/

Note:

- The test separation of all above table is 0mm.
- Per KDB 447498 D04, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - 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.
 - Scaled SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
- Per KDB 248227- When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg. (The highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power was **0.118** W/Kg for Body)
- When the user enables the personal Wireless router functions for the handsets, actual operations include simultaneous transmission of both the Wi-Fi transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

**Simultaneous Multi-band Transmission Evaluation:**

Application Simultaneous Transmission information:

Position	Simultaneous State
Body	1. GSM + 2.4GHz WLAN
	2. WCDMA + 2.4GHz WLAN
	3. LTE + 2.4GHz WLAN
	4. GSM + BT
	5. WCDMA + BT
	6. LTE + BT
Head	1. GSM + 2.4GHz WLAN
	2. WCDMA + 2.4GHz WLAN
	3. LTE + 2.4GHz WLAN
	4. GSM + BT
	5. WCDMA + BT
	6. LTE + BT

NOTE:

1. WLAN/BT can't simultaneous transmission at the same time.
2. For simultaneous transmission at head and body exposure position, 2 transmitters simultaneous transmission was the worst state.
3. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
4. 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:
$$SAR_{est} = 1.6 \cdot P_{ant} / P_{th} [W/kg].$$

P_{ant} is maximum time-averaged power or effective radiated power (ERP), whichever is greater, and P_{th} is defined in Formula KDB 447498 (B.2).



Simultaneous Mode	Position	Mode	Max. 1-g SAR	1-g Sum SAR
			(W/kg)	(W/kg)
GSM + 2.4G WLAN	Head	GSM	0.286	0.514
		2.4G WLAN	0.228	
	Body	GSM	0.354	0.582
		2.4G WLAN	0.228	
GSM + Bluetooth	Head	GSM	0.286	0.457
		Bluetooth	0.171	
	Body	GSM	0.354	0.406
		Bluetooth	0.052	
WCDMA + 2.4G WLAN	Head	WCDMA	0.302	0.582
		2.4G WLAN	0.280	
	Body	WCDMA	0.652	0.735
		2.4G WLAN	0.083	
WCDMA + Bluetooth	Head	WCDMA	0.302	0.473
		Bluetooth	0.171	
	Body	WCDMA	0.562	0.614
		Bluetooth	0.052	
LTE + 2.4G WLAN	Head	LTE	0.248	0.476
		2.4G WLAN	0.228	
	Body	LTE	0.665	0.748
		2.4G WLAN	0.083	
LTE + Bluetooth	Head	LTE	0.248	0.419
		Bluetooth	0.171	
	Body	LTE	0.665	0.717
		Bluetooth	0.052	

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

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	PC	Lenovo	G5005	MY42081102	N/A	N/A
2	SAR Measurement system	SATIMO	4014_01	SAR_4014_01	N/A	N/A
3	Signal Generator	Agilent	E4438C	MY49072627	2023-06-09	2024-06-08
4	S-parameter Network Analyzer	Agilent	8753ES	US38432944	2023-06-09	2024-06-08
5	Wideband Radio Communication Tester	R&S	CMW500	103818-1	2023-10-25	2024-10-24
6	E-Field PROBE	MVG	SSE2	SN 25/22 EPGO376	2023-06-22	2024-06-21
7	DIPOLE 750	SATIMO	SID 750	SN 30/14 DIP 0G750-302	2021-09-29	2024-09-28
8	DIPOLE 835	SATIMO	SID 835	SN 07/14 DIP 0G835-303	2021-09-29	2024-09-28
9	DIPOLE 1800	SATIMO	SID 1800	SN 07/14 DIP 1G800-301	2021-09-29	2024-09-28
10	DIPOLE 1900	SATIMO	SID 1900	SN 38/18 DIP 1G900-466	2021-09-22	2024-09-21
11	DIPOLE 2450	SATIMO	SID 2450	SN 07/14 DIP 2G450-306	2021-09-29	2024-09-28
12	DIPOLE 2600	SATIMO	SID 2600	SN 38/18 DIP 2G600-468	2021-09-22	2024-09-21
14	COMOSAR OPENCoaxial Probe	SATIMO	OCPG 68	SN 40/14 OCPG68	2023-10-25	2024-10-24
16	Communication Antenna	SATIMO	ANTA57	SN 39/14 ANTA57	2023-10-25	2024-10-24
17	FEATURE PHONEPOSITIONING DEVICE	SATIMO	MSH98	SN 40/14 MSH98	N/A	N/A
18	DUMMY PROBE	SATIMO	DP60	SN 03/14 DP60	N/A	N/A
19	SAM PHANTOM	SATIMO	SAM117	SN 40/14 SAM117	N/A	N/A
20	Liquid measurement Kit	HP	85033D	3423A03482	N/A	N/A
21	Power meter	Agilent	E4419B	MY45104493	2023-10-25	2024-10-24
22	Power meter	Agilent	E4419B	MY45100308	2023-10-25	2024-10-24
23	Power sensor	Agilent	E9301H	MY41495616	2023-10-25	2024-10-24
24	Power sensor	Agilent	E9301H	MY41495234	2023-10-25	2024-10-24
25	Directional Coupler	MCLI/USA	4426-20	03746	2023-06-09	2024-06-08



Appendix A. System Validation Plots

System Performance Check Data (750MHz)

Type: Phone measurement (Complete)

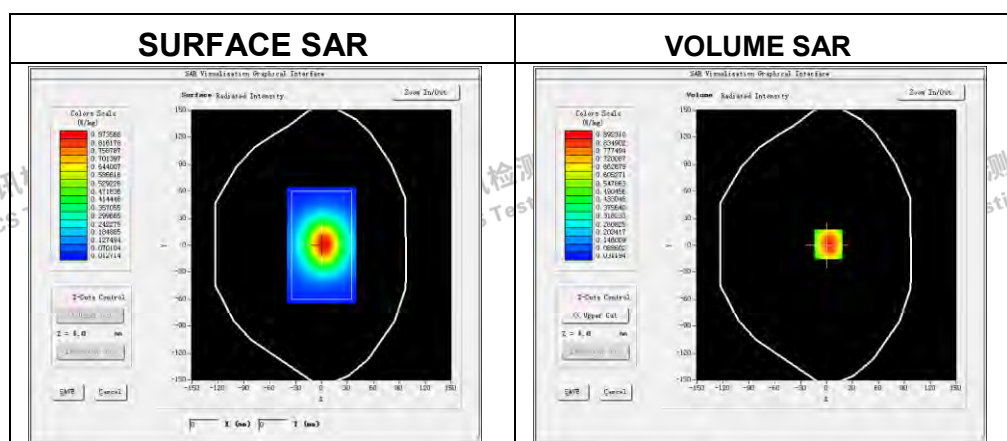
Area scan resolution: dx=15mm dy=15mm

Zoom scan resolution: 5x5x7,dx=8mm dy=8mm dz=5mm

Date of measurement: 2024-04-01

Experimental conditions

Phantom	Validation plane
Device Position	-
Band	750MHz
Channels	-
Signal	CW
Frequency (MHz)	750MHz
Relative permittivity	42.48
Conductivity (S/m)	0.85
Probe	SN 25/22 EPG0376
ConvF	1.58
Crest factor	1:1

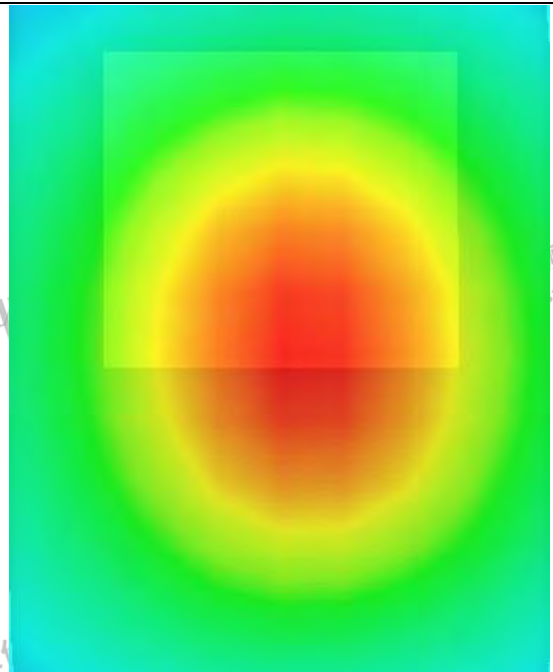
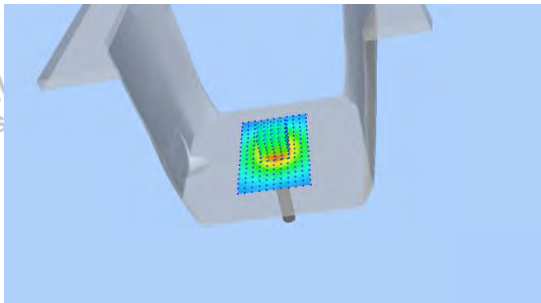
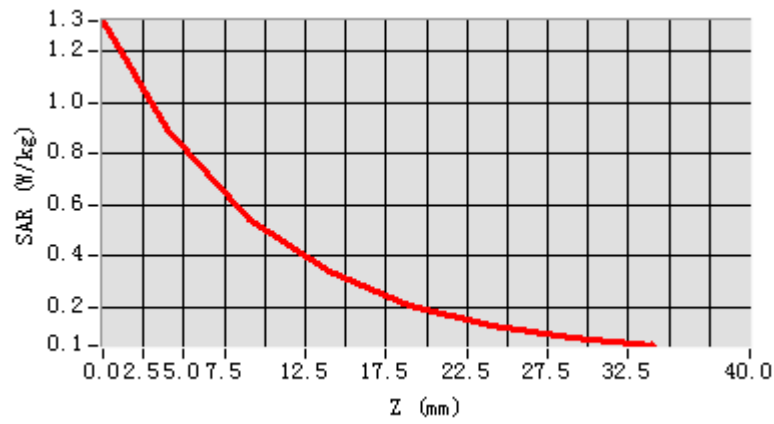


Maximum location: X=2.00, Y=1.00

SAR 10g (W/Kg)	0.554749
SAR 1g (W/Kg)	0.836901



Z Axis Scan



**System Performance Check Data (835MHz)**

Type: Phone measurement (Complete)

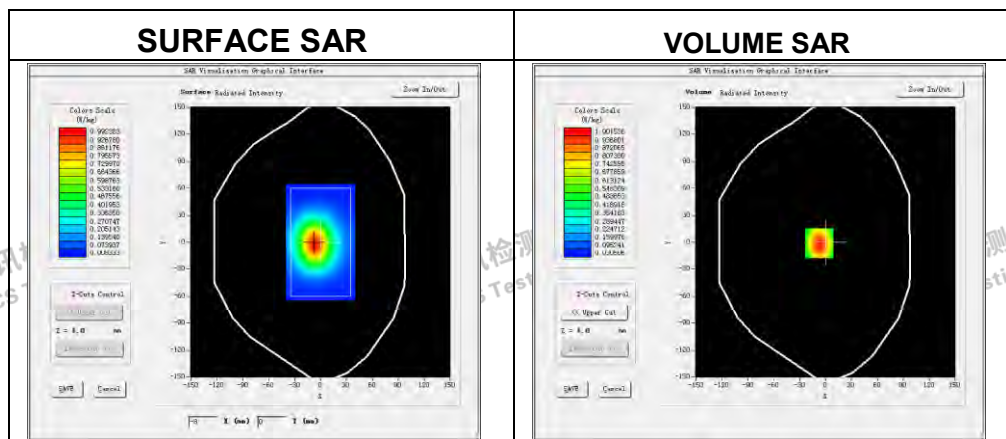
Area scan resolution: dx=15mm dy=15mm

Zoom scan resolution: 5x5x7, dx=8mm dy=8mm dz=5mm

Date of measurement: 2024-04-02

Experimental conditions

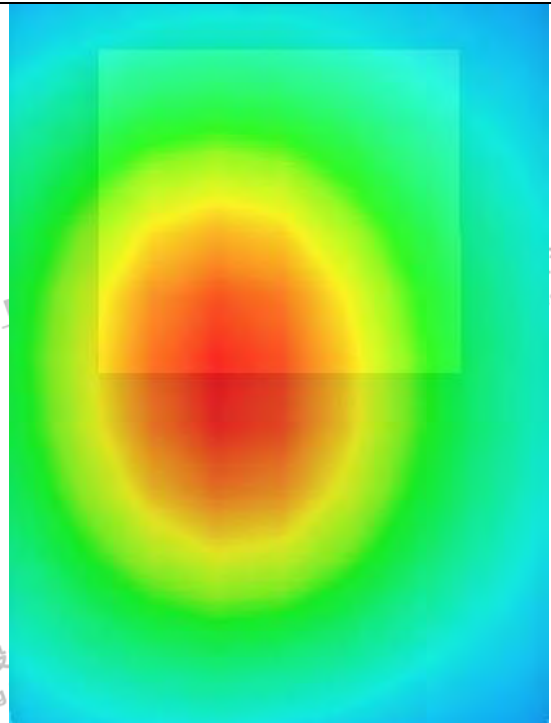
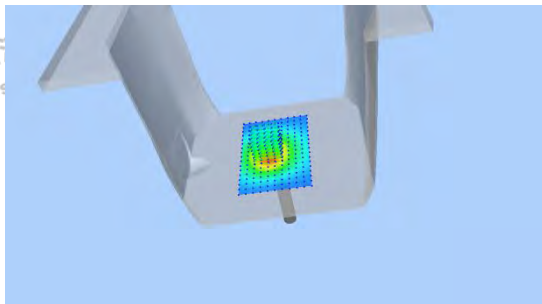
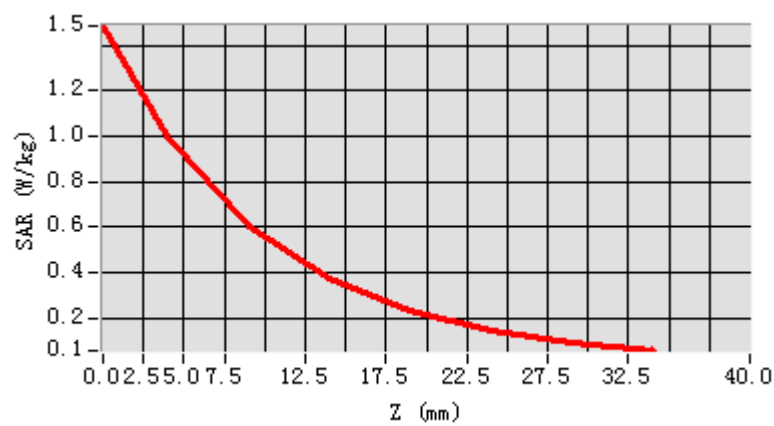
Phantom	Validation plane
Device Position	-
Band	835MHz
Channels	-
Signal	CW
Frequency (MHz)	835MHz
Relative permittivity	40.87
Conductivity (S/m)	0.91
Probe	SN 25/22 EPG0376
ConvF:	1.57
Crest factor:	1:1

**Maximum location: X=-7.00, Y=-1.00**

SAR 10g (W/Kg)	0.655215
SAR 1g (W/Kg)	0.944968



Z Axis Scan



**System Performance Check Data(1800MHz)**

Type: Phone measurement (Complete)

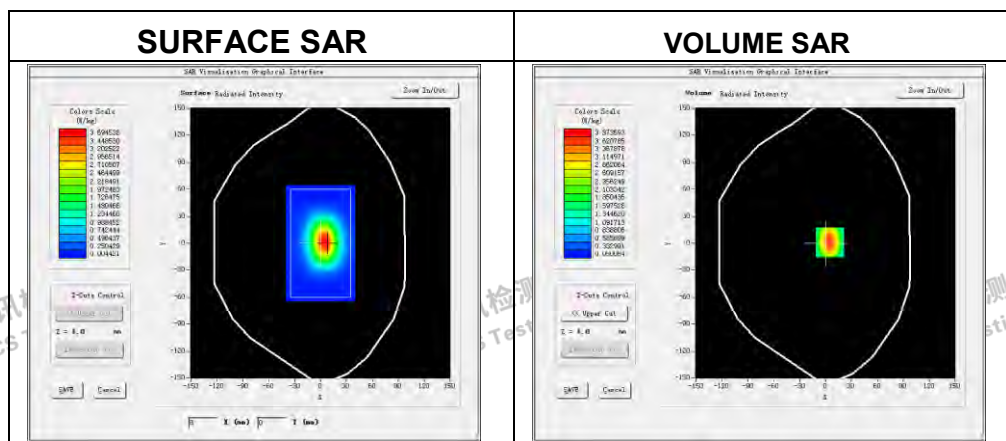
Area scan resolution: dx=15mm dy=15mm

Zoom scan resolution: 5x5x7,dx=8mm dy=8mm dz=5mm

Date of measurement: 2024-04-03

Experimental conditions.

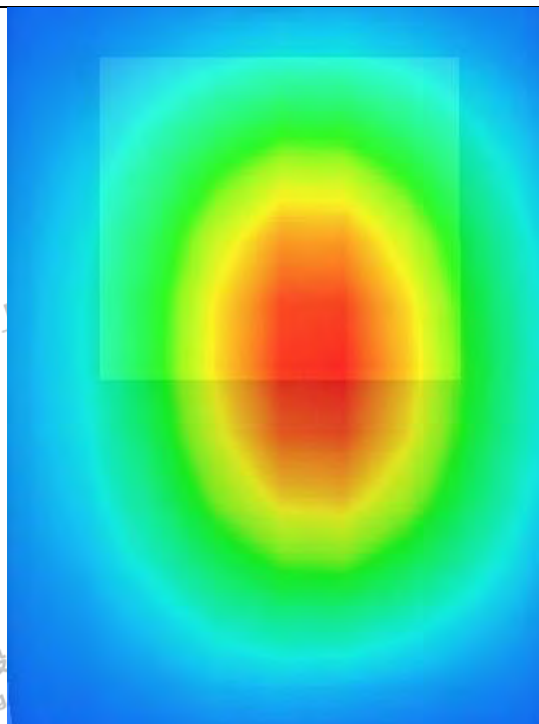
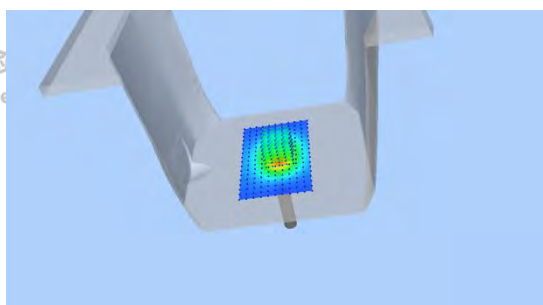
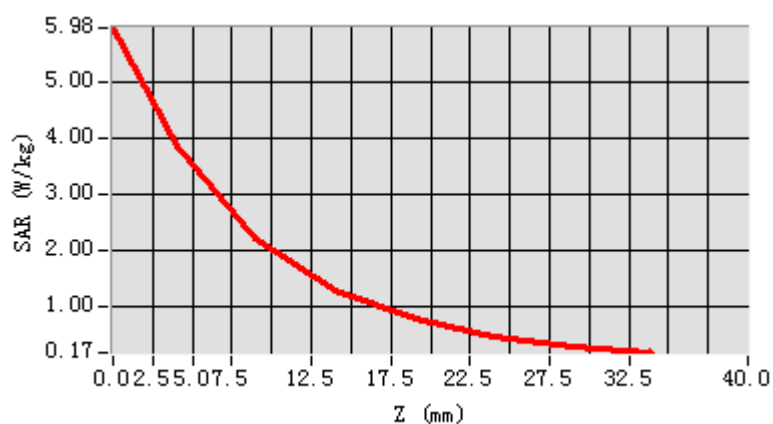
Phantom	Validation plane
Device Position	-
Band	1800MHz
Channels	-
Signal	CW
Frequency (MHz)	1800MHz
Relative permittivity	40.82
Conductivity (S/m)	1.44
Probe	SN 25/22 EPG0376
ConvF	1.60
Crest factor:	1:1

**Maximum location: X=5.00, Y=1.00**

SAR 10g (W/Kg)	2.085691
SAR 1g (W/Kg)	3.794852



Z Axis Scan



**System Performance Check Data (1900MHz)**

Type: Phone measurement (Complete)

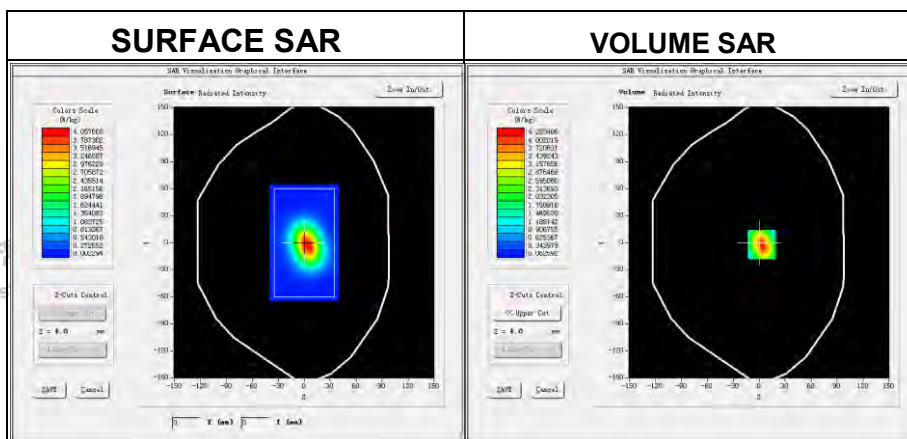
Area scan resolution: dx=15mm dy=15mm

Zoom scan resolution: 5x5x7,dx=8mm dy=8mm dz=5mm

Date of measurement: 2024-04-06

Experimental conditions.

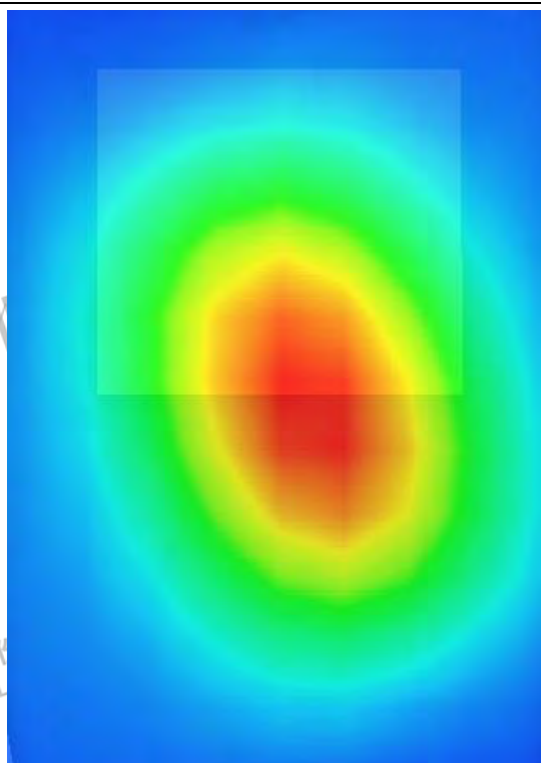
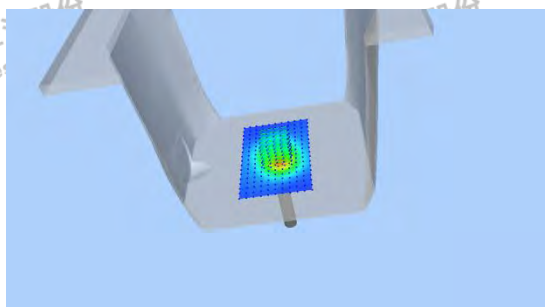
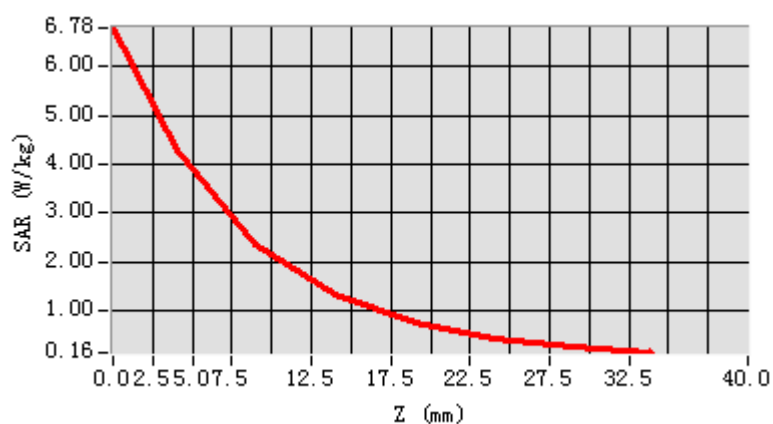
Phantom	Validation plane
Device Position	-
Band	1900MHz
Channels	-
Signal	CW
Frequency (MHz)	1900MHz
Relative permittivity	40.89
Conductivity (S/m)	1.42
Probe	SN 25/22 EPG0376
ConvF:	1.78
Crest factor:	1:1

**Maximum location: X=3.00, Y=-2.00**

SAR 10g (W/Kg)	2.052752
SAR 1g (W/Kg)	3.827693



Z Axis Scan



**System Performance Check Data (2450MHz)**

Type: Phone measurement (Complete)

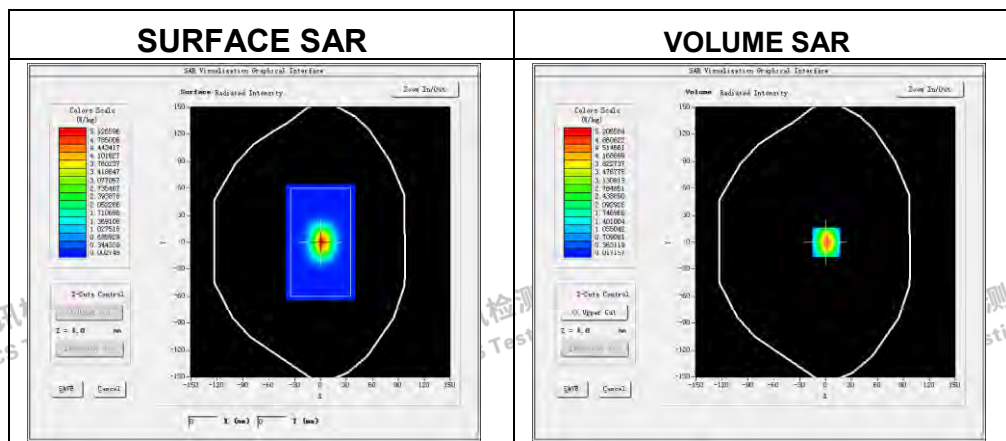
Area scan resolution: dx=15mm dy=15mm

Zoom scan resolution: 5x5x7,dx=8mm dy=8mm dz=5mm

Date of measurement: 2024-04-07

Experimental conditions.

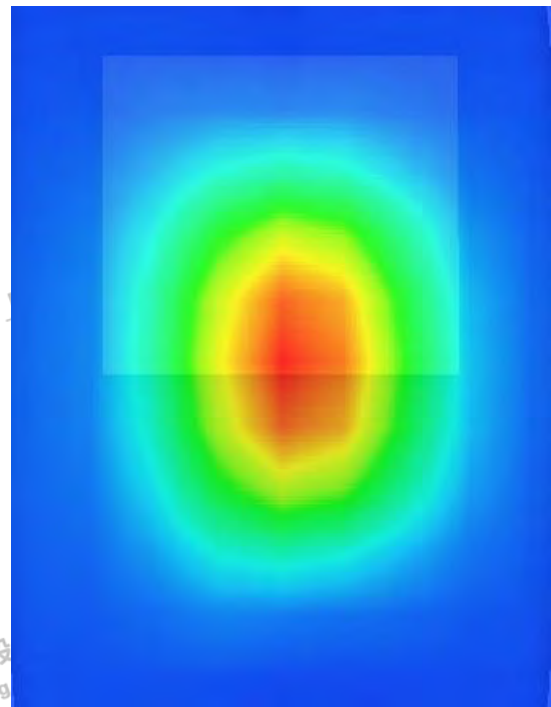
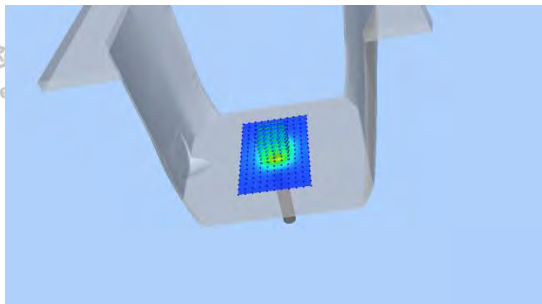
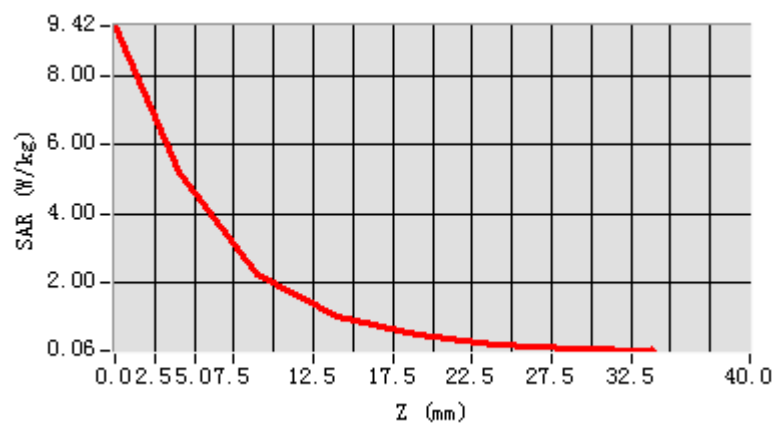
Device Position	Validation plane
Band	2450 MHz
Channels	-
Signal	CW
Frequency (MHz)	2450
Relative permittivity	40.13
Conductivity (S/m)	1.83
Probe	SN 25/22 EPGO376
ConvF	1.75
Crest factor:	1:1

**Maximum location: X=1.00, Y=0.00**

SAR 10g (W/Kg)	2.387328
SAR 1g (W/Kg)	5.291142



Z Axis Scan



**System Performance Check Data (2600MHz)**

Type: Dipole measurement (Complete)

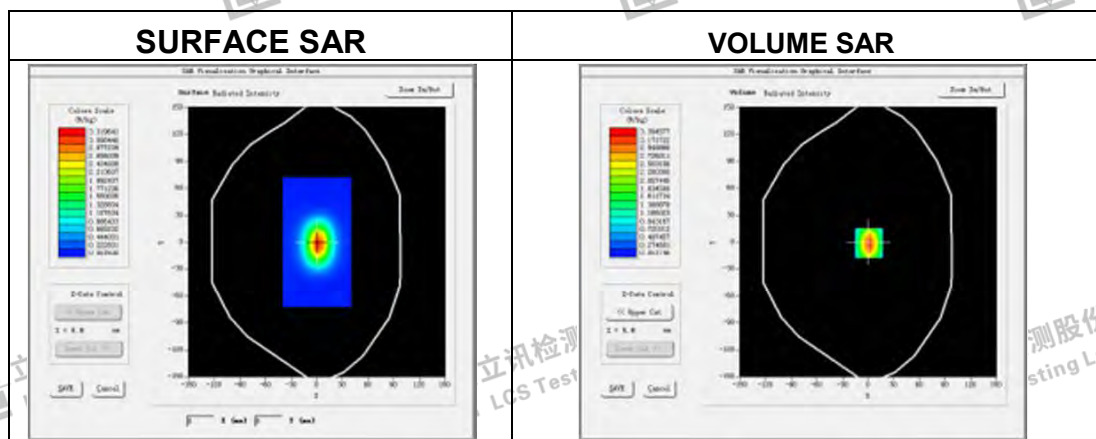
Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=4mm, dy=4mm, dz=2mm

Date of measurement: 2024-04-08

Experimental conditions.

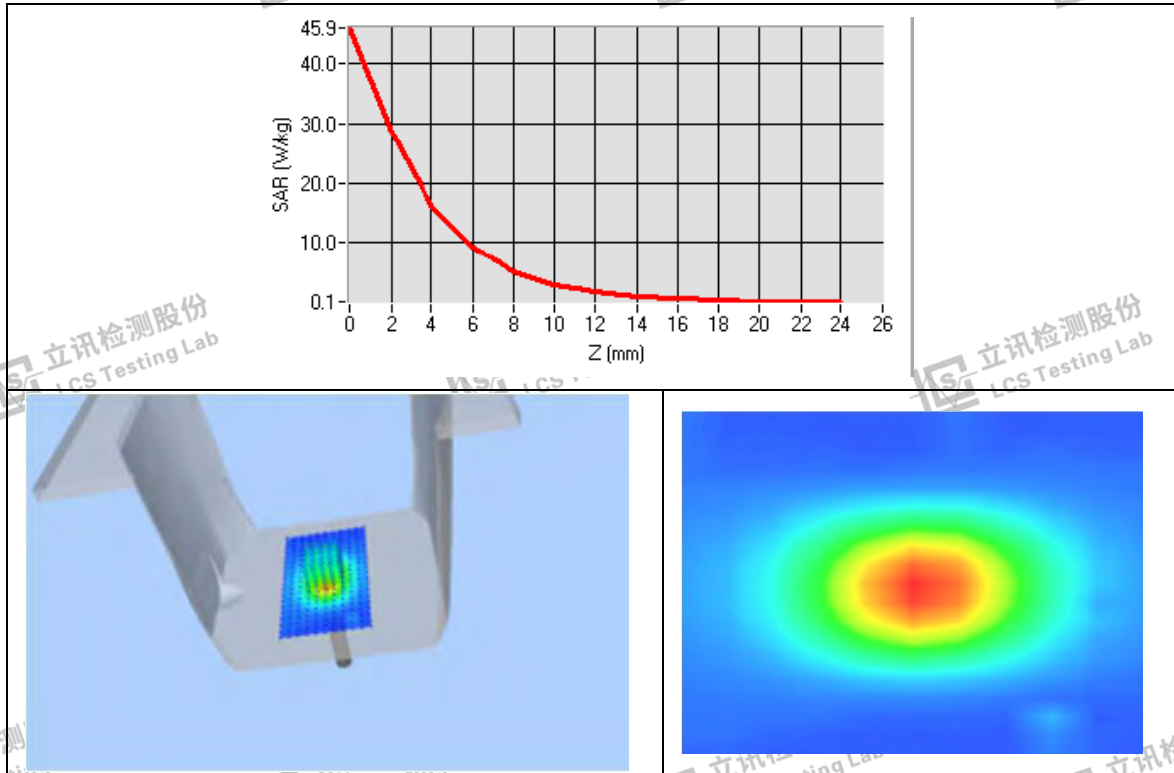
Device Position	Validation plane
Band	2600 MHz
Channels	-
Signal	CW
Frequency (MHz)	2600
Relative permittivity	39.65
Conductivity (S/m)	2.01
Probe	SN 25/22 EPG0376
ConvF	1.85
Crest factor:	1:1

**Maximum location: X=7.00, Y=2.00**

SAR 10g (W/Kg)	2.491897
SAR 1g (W/Kg)	5.292163



Z Axis Scan



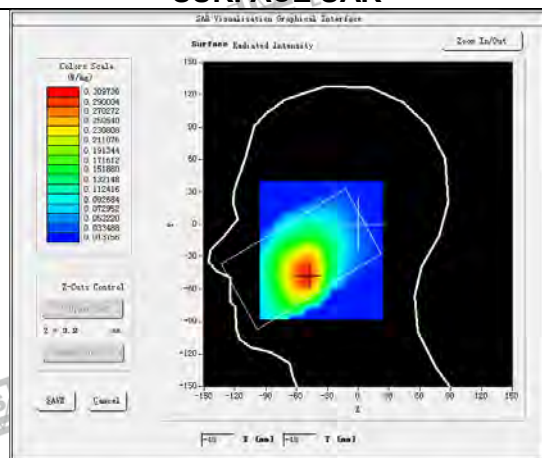
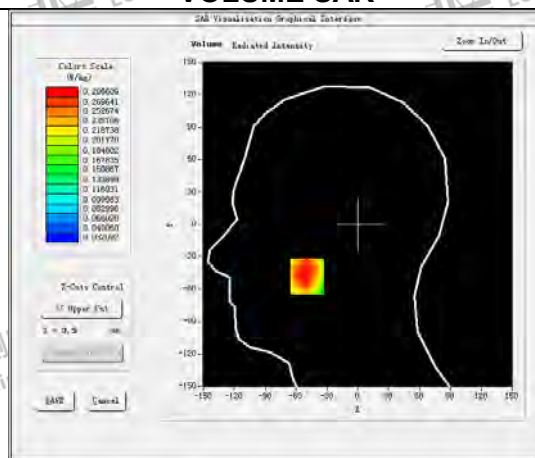
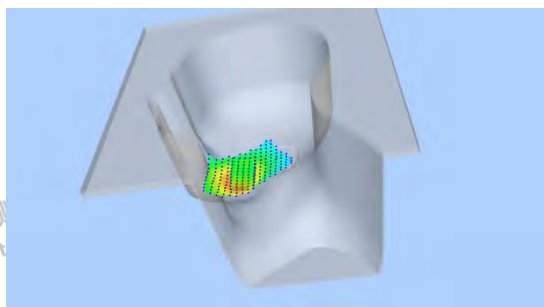
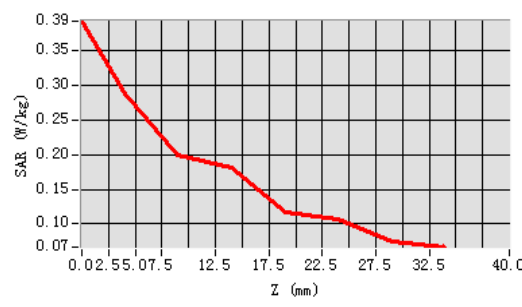
**Appendix B. SAR Test Plots****Plot 1: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	GPRS 850
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	848.8
Relative permittivity (real part)	40.72
Conductivity (S/m)	0.86

Maximum location: X=-49.00, Y=-48.00

SAR Peak: 0.39 W/kg

SAR 10g (W/Kg)	0.203827
SAR 1g (W/Kg)	0.283741

SURFACE SAR**VOLUME SAR****3D****Z Axis Scan**



Plot 2: DUT: 4G SMARTPHONE EUT Model: CHIPPY

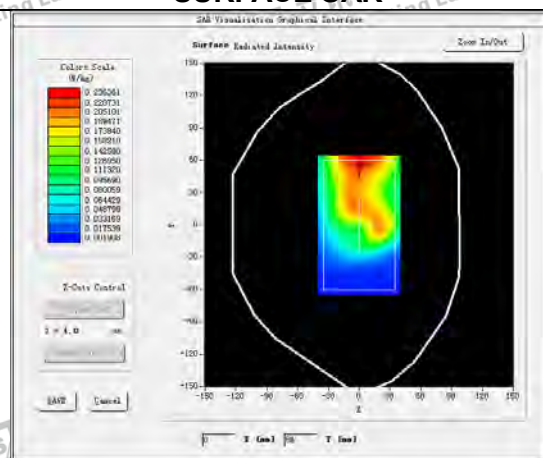
Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	GPRS 850
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	824.2
Relative permittivity (real part)	41.56
Conductivity (S/m)	0.91

Maximum location: X=1.00, Y=58.00

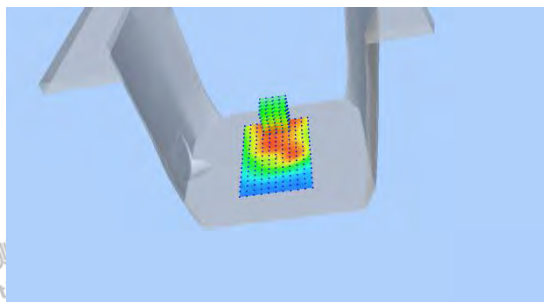
SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.173419
SAR 1g (W/Kg)	0.247499

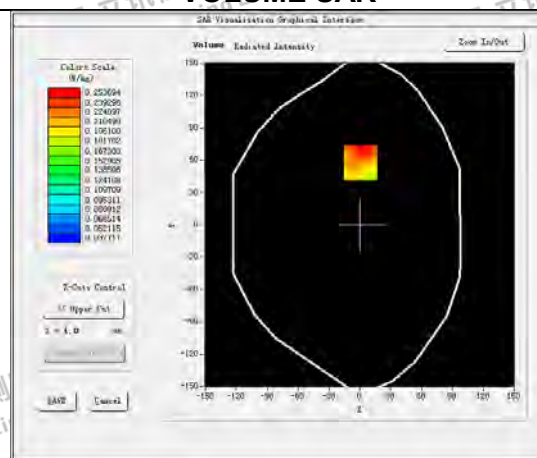
SURFACE SAR



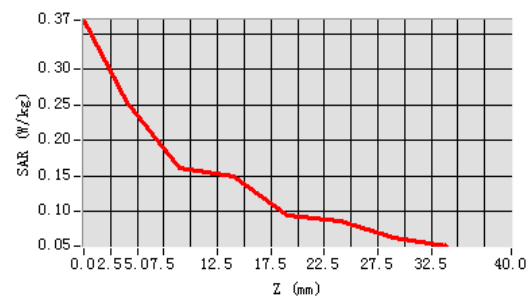
3D



VOLUME SAR



Z Axis Scan





Plot 3: DUT: 4G SMARTPHONE EUT Model: CHIPPY

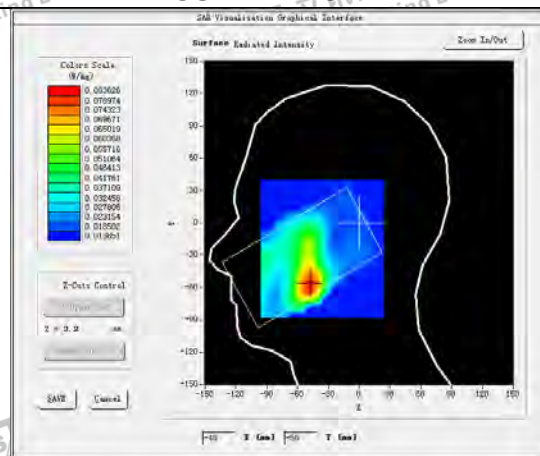
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	GPRS 1900
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	1850.2
Relative permittivity (real part)	40.62
Conductivity (S/m)	1.43

Maximum location: X=-48.00, Y=-57.00

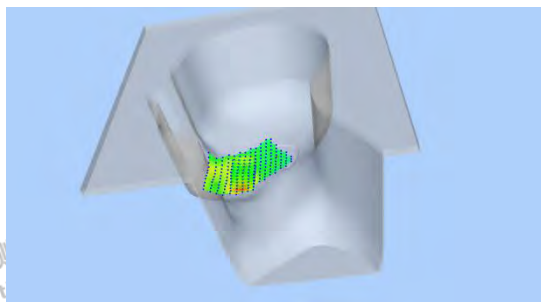
SAR Peak: 0.11 W/kg

SAR 10g (W/Kg)	0.052229
SAR 1g (W/Kg)	0.079256

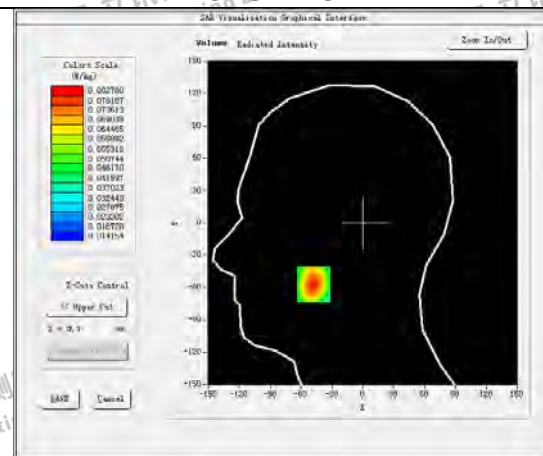
SURFACE SAR



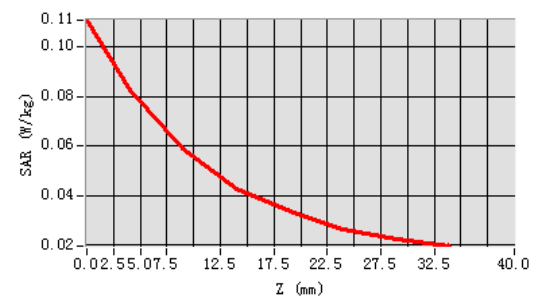
3D



VOLUME SAR



Z Axis Scan





Plot 4: DUT: 4G SMARTPHONE EUT Model: CHIPPY

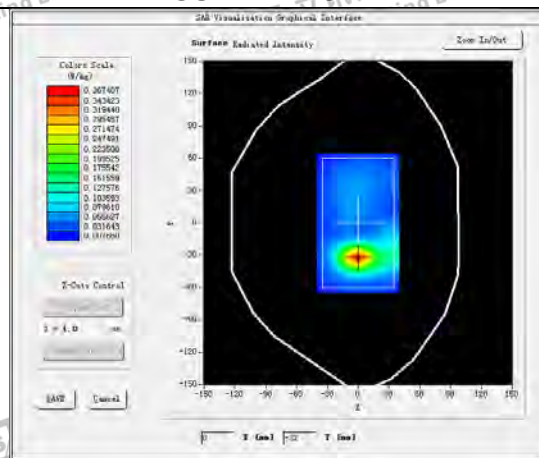
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	GPRS 1900
Signal	Duty Cycle: 2.00 (Crest factor: 2.0)
Frequency (MHz)	1850.2
Relative permittivity (real part)	40.62
Conductivity (S/m)	1.43

Maximum location: X=0.00, Y=-32.00

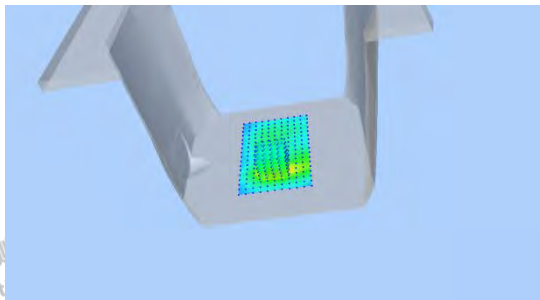
SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.172157
SAR 1g (W/Kg)	0.328723

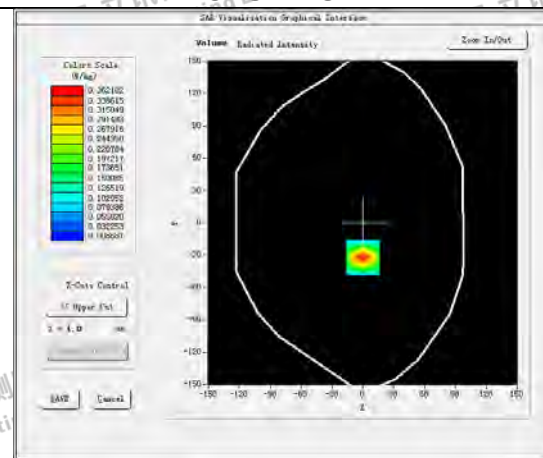
SURFACE SAR



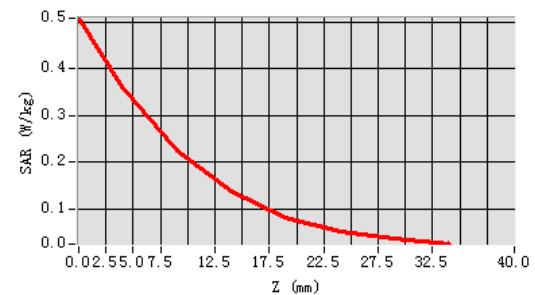
3D



VOLUME SAR



Z Axis Scan





Plot 5: DUT: 4G SMARTPHONE EUT Model: CHIPPY

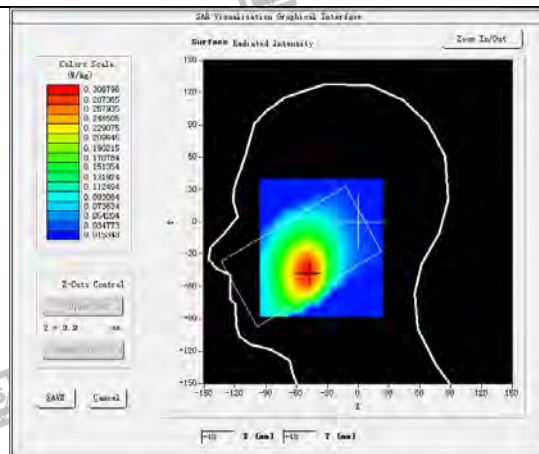
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	WCDMA II
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1852.4
Relative permittivity (real part)	40.64
Conductivity (S/m)	1.44

Maximum location: X=-49.00, Y=-47.00

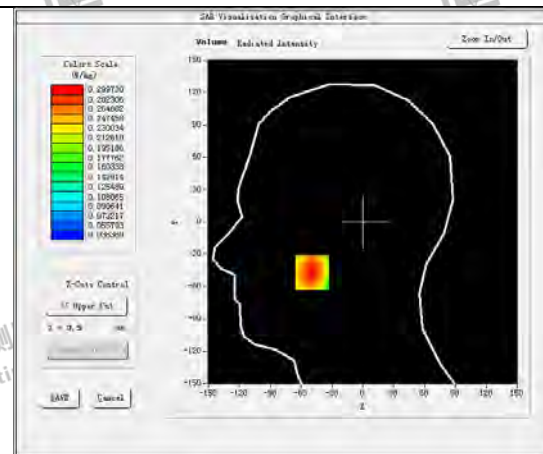
SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.212654
SAR 1g (W/Kg)	0.294286

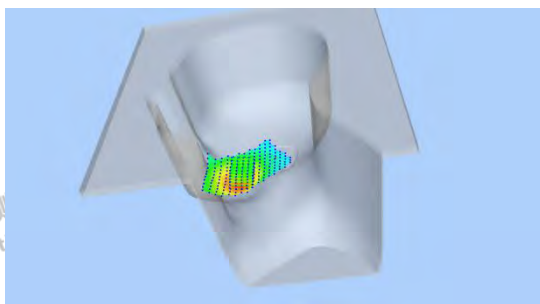
SURFACE SAR



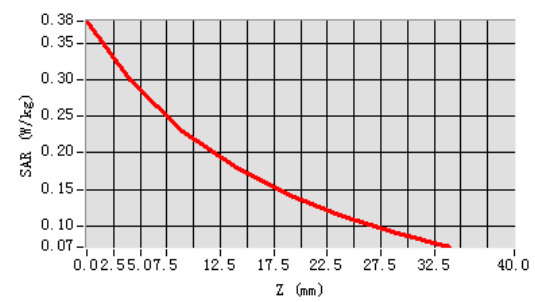
VOLUME SAR



3D



Z Axis Scan





Plot 6: DUT: 4G SMARTPHONE EUT Model: CHIPPY

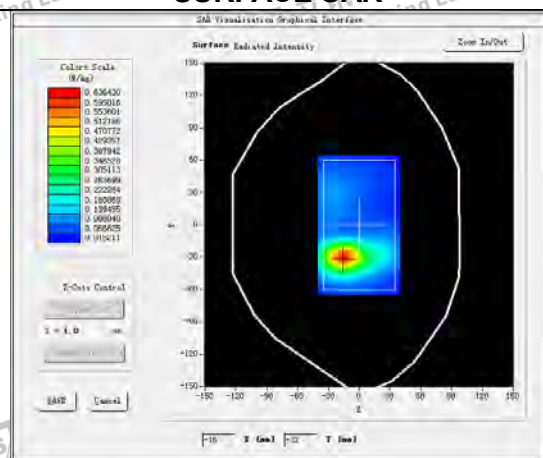
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	WCDMA II
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1852.4
Relative permittivity (real part)	40.64
Conductivity (S/m)	1.44

Maximum location: X=-16.00, Y=-30.00

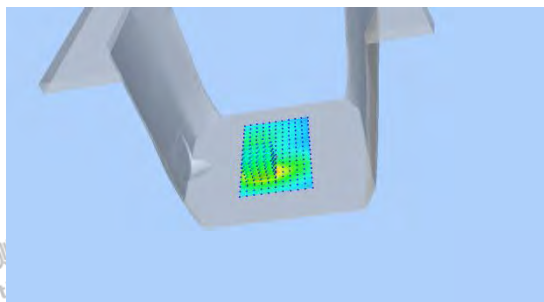
SAR Peak: 0.98 W/kg

SAR 10g (W/Kg)	0.345056
SAR 1g (W/Kg)	0.631907

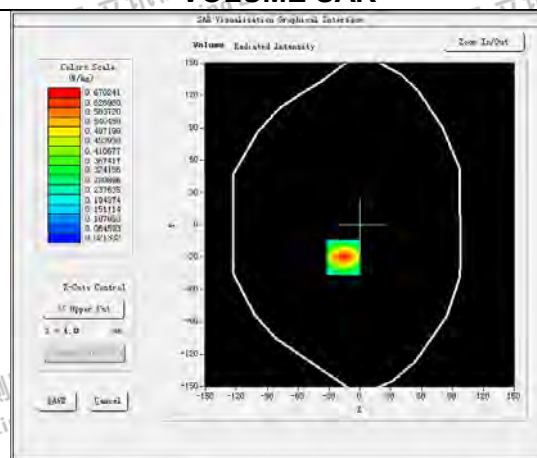
SURFACE SAR



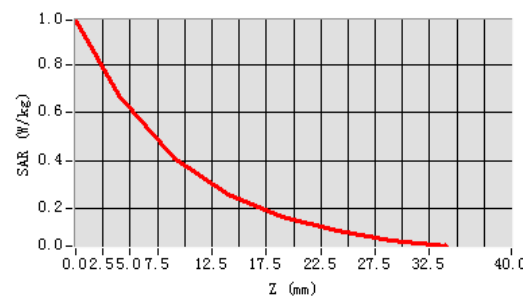
3D



VOLUME SAR



Z Axis Scan





Plot 7: DUT: 4G SMARTPHONE EUT Model: CHIPPY

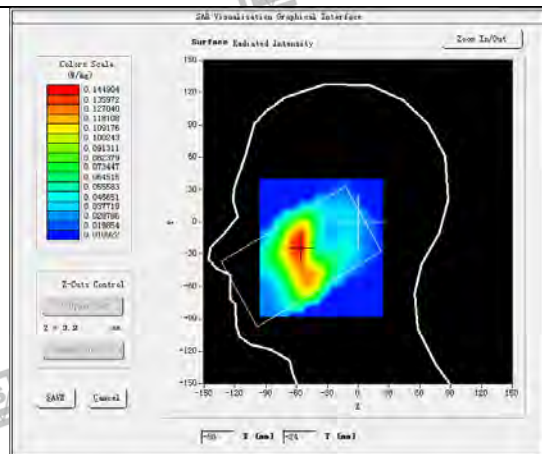
Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	WCDMA V
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	846.6
Relative permittivity (real part)	40.92
Conductivity (S/m)	0.87

Maximum location: X=-58.00, Y=-23.00

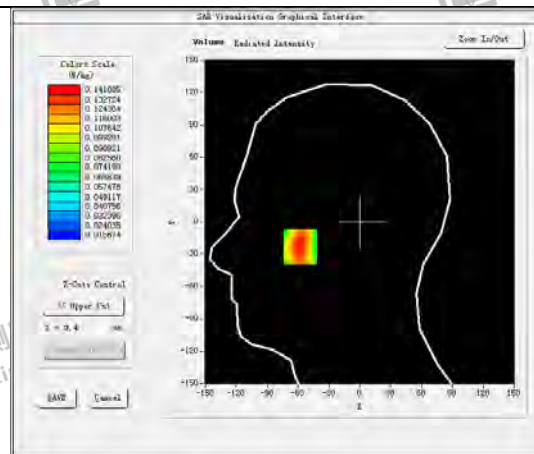
SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.088753
SAR 1g (W/Kg)	0.134590

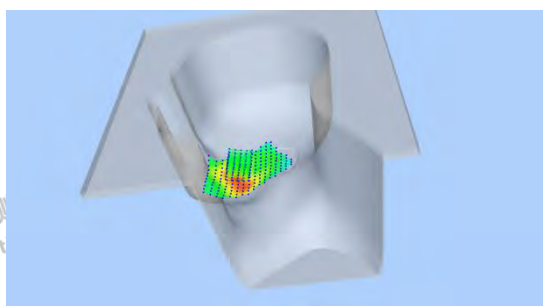
SURFACE SAR



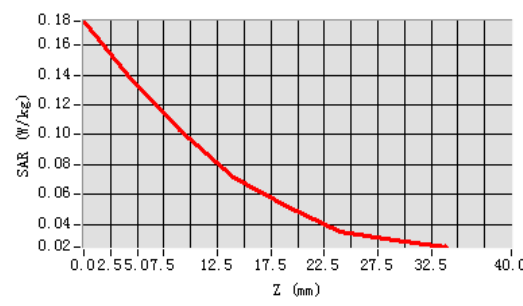
VOLUME SAR



3D



Z Axis Scan





Plot 8: DUT: 4G SMARTPHONE EUT Model: CHIPPY

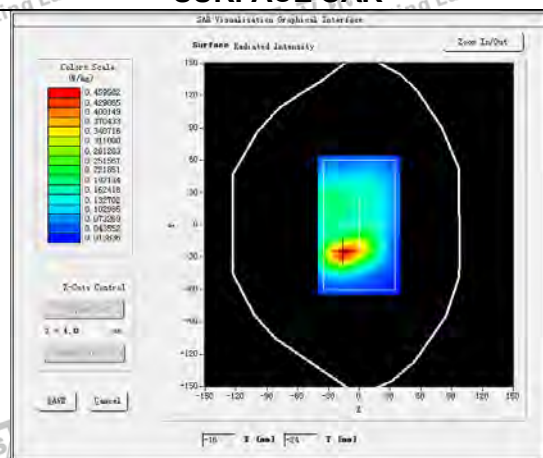
Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	WCDMA V
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	846.6
Relative permittivity (real part)	40.92
Conductivity (S/m)	0.87

Maximum location: X=-15.00, Y=-26.00

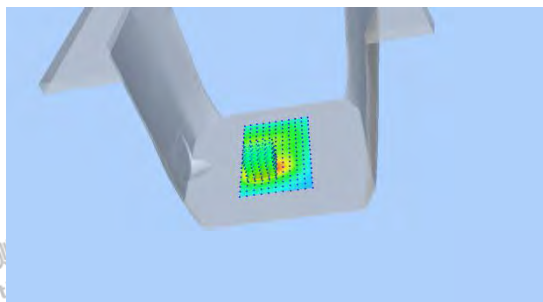
SAR Peak: 0.66 W/kg

SAR 10g (W/Kg)	0.254736
SAR 1g (W/Kg)	0.438098

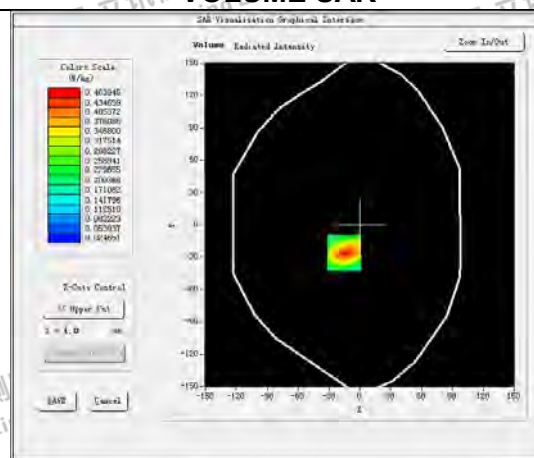
SURFACE SAR



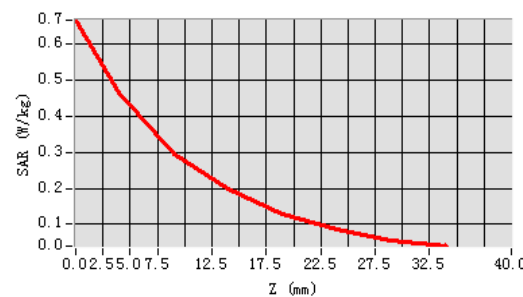
3D



VOLUME SAR



Z Axis Scan





Plot 9: DUT: 4G SMARTPHONE EUT Model: CHIPPY

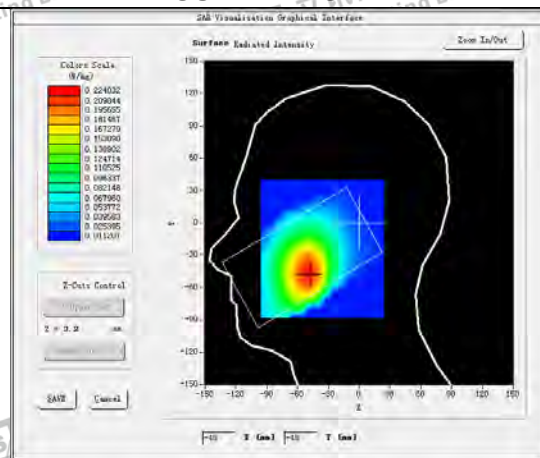
Test Date	2024-04-06
ConvF	1.57
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	WCDMA IV
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1712.6
Relative permittivity (real part)	41.36
Conductivity (S/m)	1.37

Maximum location: X=-49.00, Y=-47.00

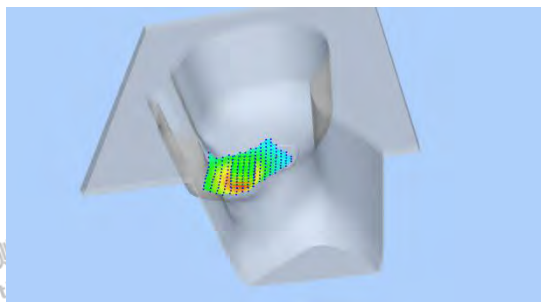
SAR Peak: 0.28 W/kg

SAR 10g (W/Kg)	0.155827
SAR 1g (W/Kg)	0.214978

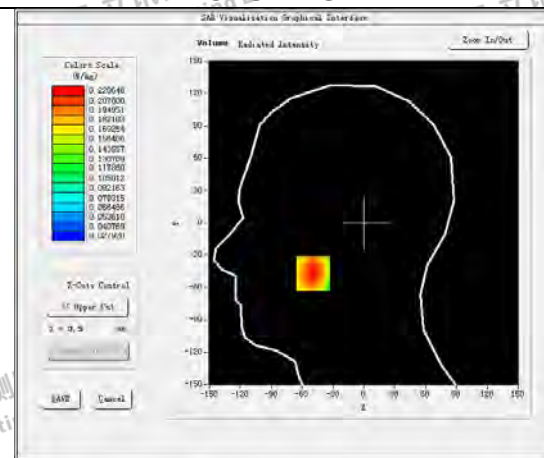
SURFACE SAR



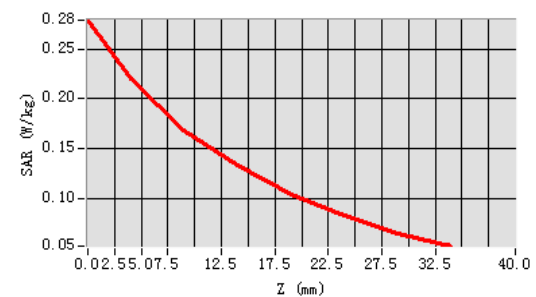
3D



VOLUME SAR



Z Axis Scan





Plot 10: DUT: 4G SMARTPHONE EUT Model: CHIPPY

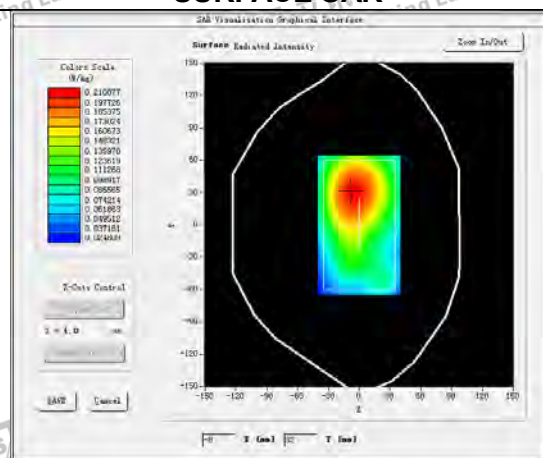
Test Date	2024-04-06
ConvF	1.57
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	WCDMA IV
Signal	WCDMA (Crest factor: 1.0)
Frequency (MHz)	1712.6
Relative permittivity (real part)	41.36
Conductivity (S/m)	1.37

Maximum location: X=-6.00, Y=31.00

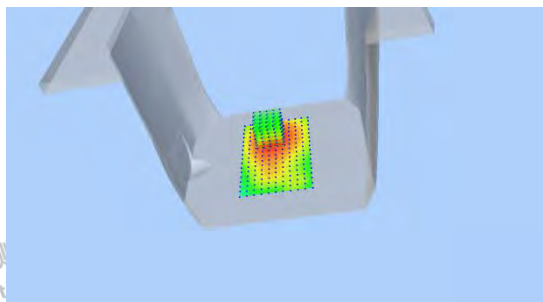
SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.146581
SAR 1g (W/Kg)	0.196680

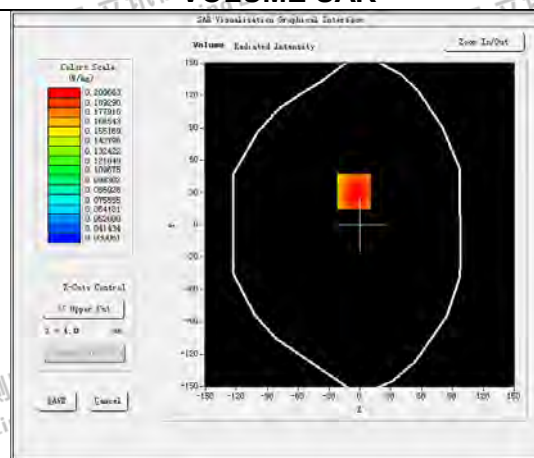
SURFACE SAR



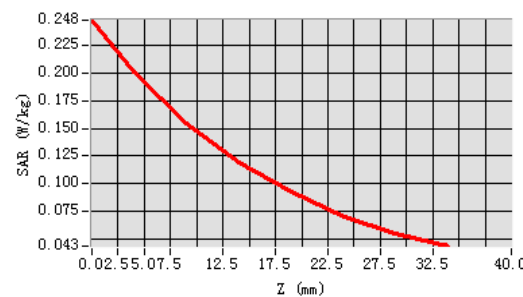
3D



VOLUME SAR



Z Axis Scan





Plot 11: DUT: 4G SMARTPHONE EUT Model: CHIPPY

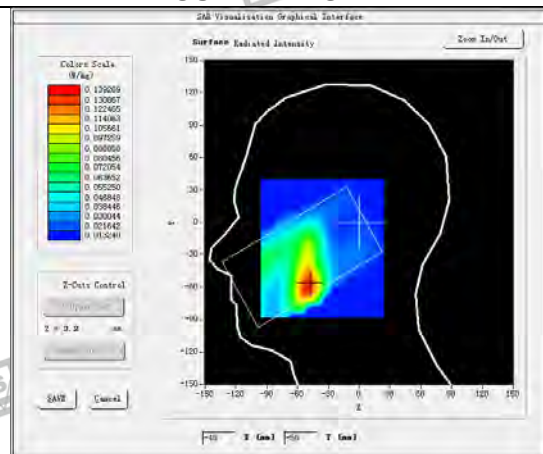
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 2 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1880
Relative permittivity (real part)	40.82
Conductivity (S/m)	1.44

Maximum location: X=-49.00, Y=-57.00

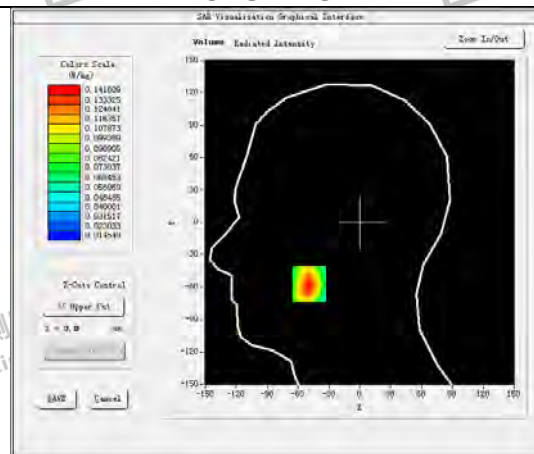
SAR Peak: 0.20 W/kg

SAR 10g (W/Kg)	0.084883
SAR 1g (W/Kg)	0.136269

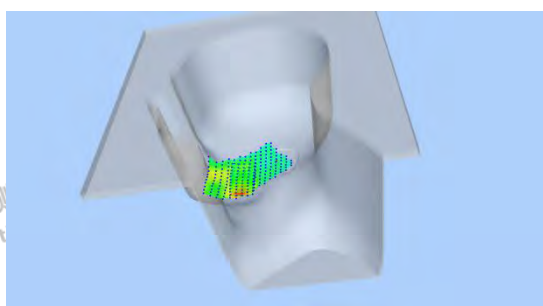
SURFACE SAR



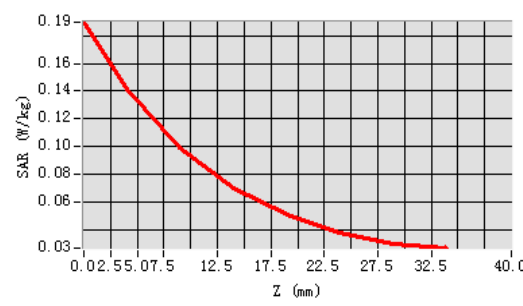
VOLUME SAR



3D



Z Axis Scan





Plot 12: DUT: 4G SMARTPHONE EUT Model: CHIPPY

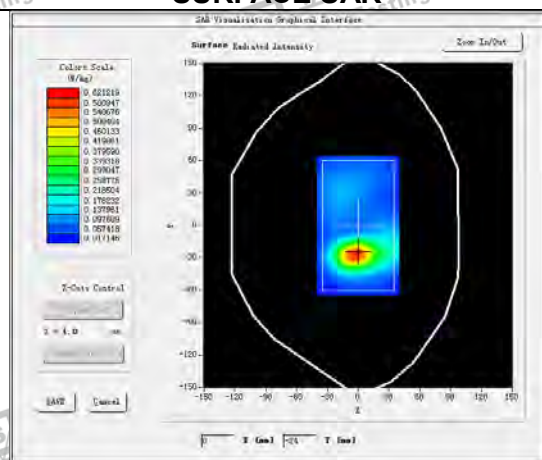
Test Date	2024-04-06
ConvF	1.78
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 2 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1880
Relative permittivity (real part)	40.82
Conductivity (S/m)	1.44

Maximum location: X=-2.00, Y=-26.00

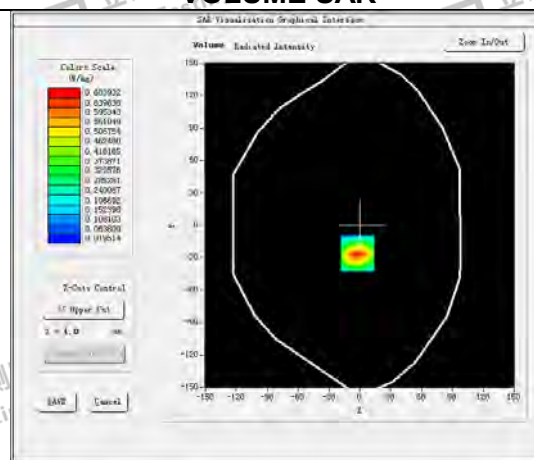
SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.337021
SAR 1g (W/Kg)	0.633965

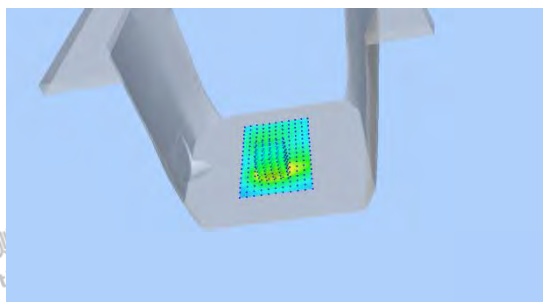
SURFACE SAR



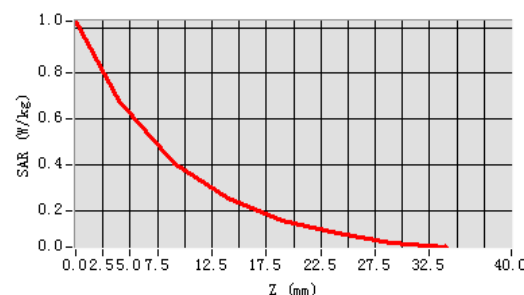
VOLUME SAR



3D



Z Axis Scan



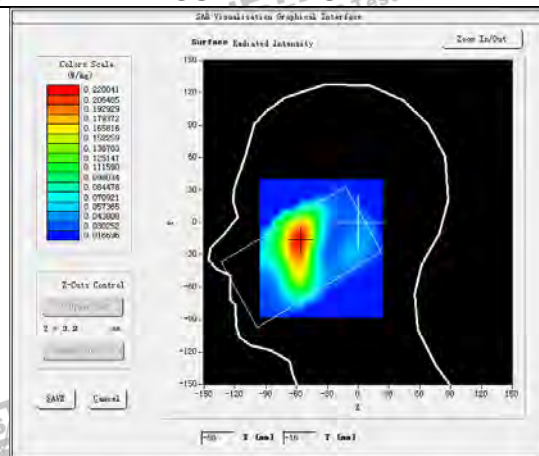
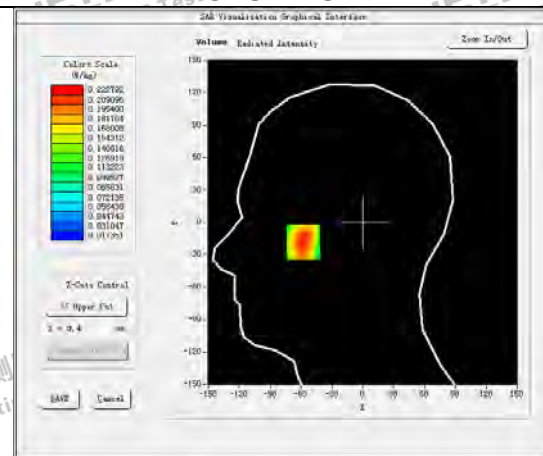
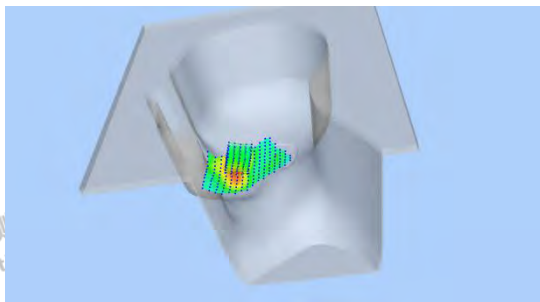
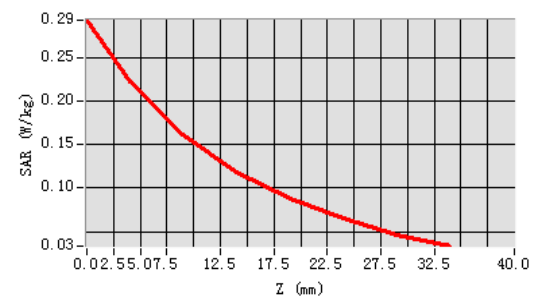
**Plot 13: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-03
ConvF	1.60
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 4 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1732.5
Relative permittivity (real part)	40.95
Conductivity (S/m)	1.38

Maximum location: X=-58.00, Y=-17.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.140612
SAR 1g (W/Kg)	0.213656

SURFACE SAR**VOLUME SAR****3D****Z Axis Scan**



Plot 14: DUT: 4G SMARTPHONE EUT Model: CHIPPY

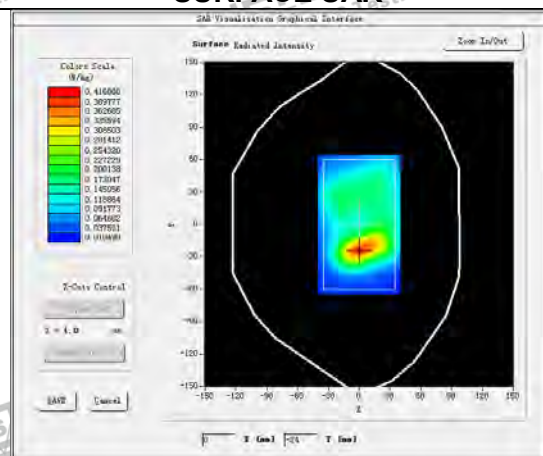
Test Date	2024-04-03
ConvF	1.60
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 4 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1732.5
Relative permittivity (real part)	40.95
Conductivity (S/m)	1.38

Maximum location: X=0.00, Y=-24.00

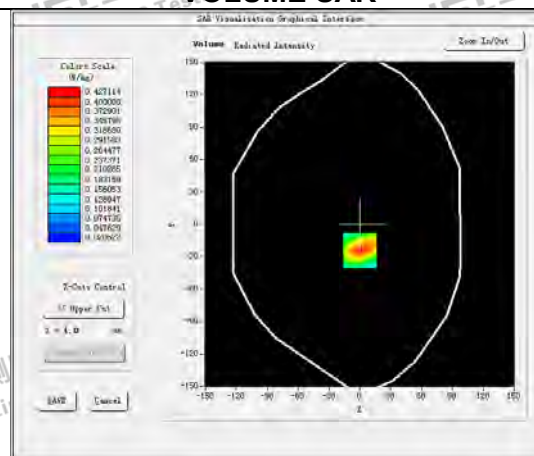
SAR Peak: 0.60 W/kg

SAR 10g (W/Kg)	0.229655
SAR 1g (W/Kg)	0.397804

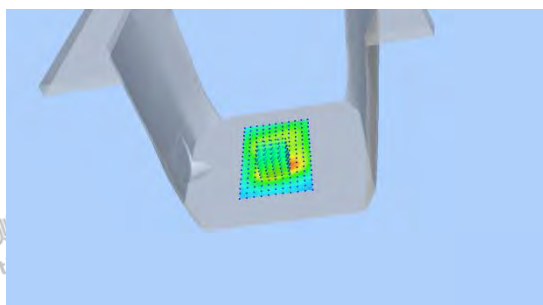
SURFACE SAR



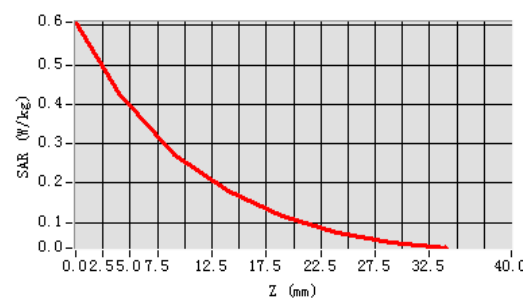
VOLUME SAR



3D



Z Axis Scan



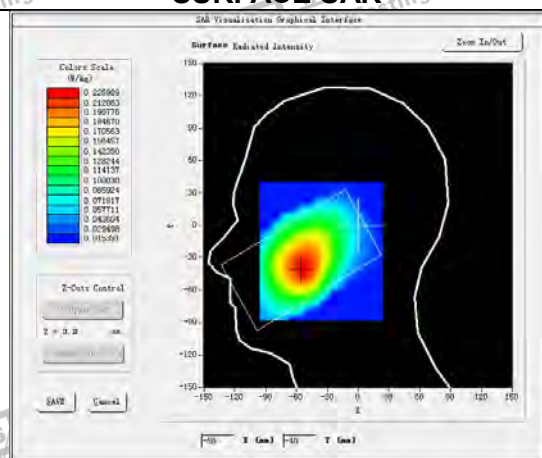
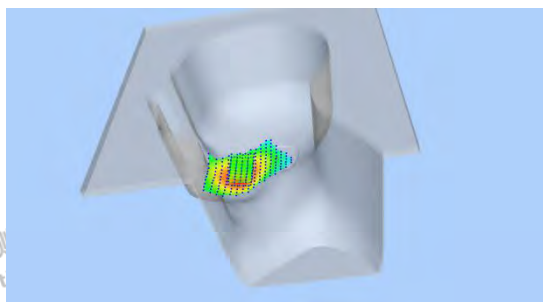
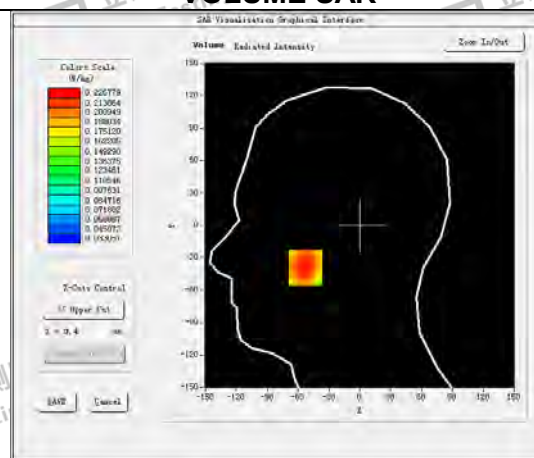
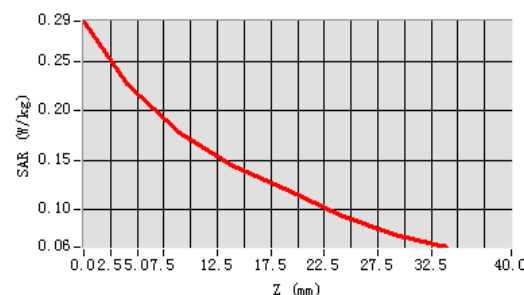
**Plot 15: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 5 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	41.30
Conductivity (S/m)	0.88

Maximum location: X=-53.00, Y=-39.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.169757
SAR 1g (W/Kg)	0.225748

SURFACE SAR**3D****VOLUME SAR****Z Axis Scan**

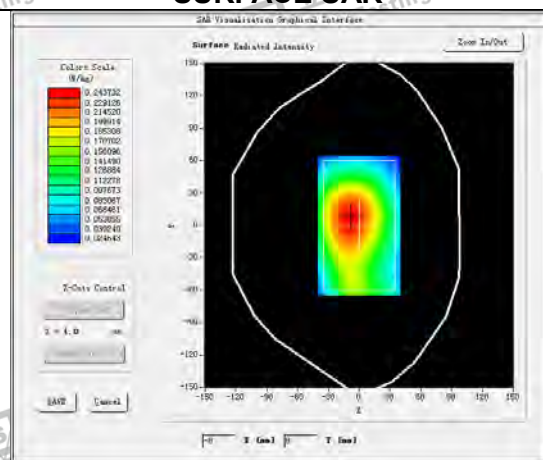
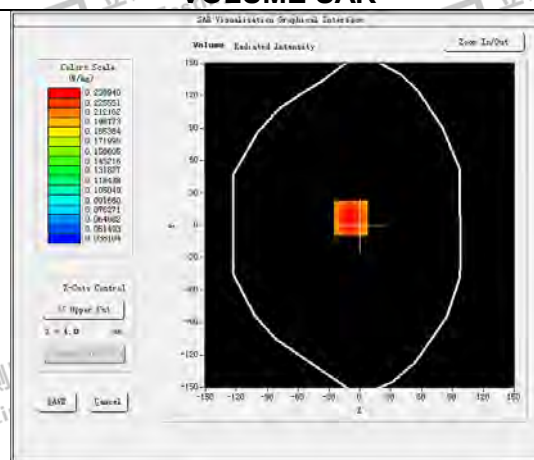
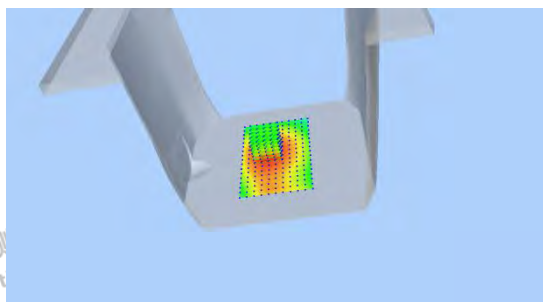
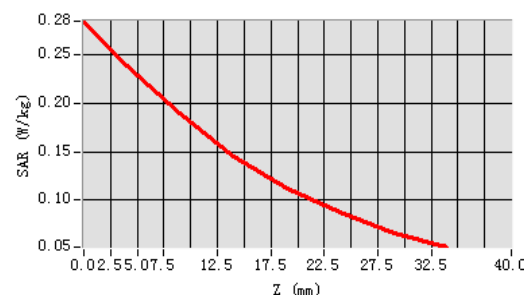
**Plot 16: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-02
ConvF	1.57
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 5 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	844
Relative permittivity (real part)	41.30
Conductivity (S/m)	0.88

Maximum location: X=-9.00, Y=7.00

SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)	0.174331
SAR 1g (W/Kg)	0.233137

SURFACE SAR**VOLUME SAR****3D****Z Axis Scan**



Plot 17: DUT: 4G SMARTPHONE EUT Model: CHIPPY

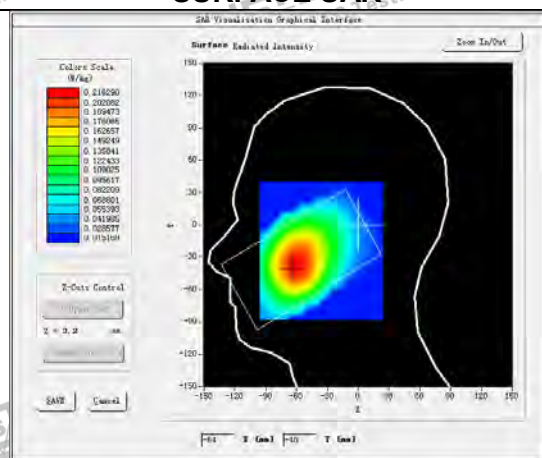
Test Date	2024-04-01
ConvF	1.58
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 12 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	704
Relative permittivity (real part)	42.54
Conductivity (S/m)	0.91

Maximum location: X=-61.00, Y=-38.00

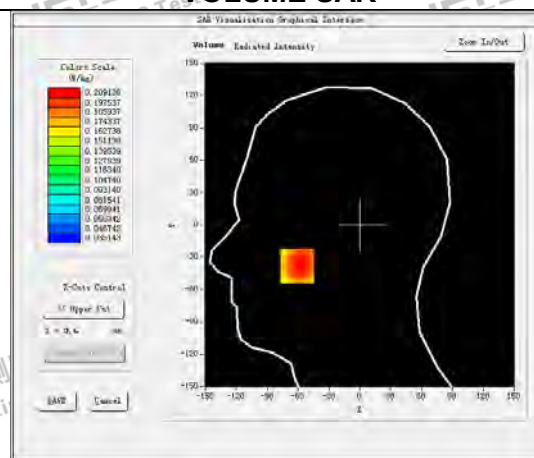
SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.160967
SAR 1g (W/Kg)	0.210639

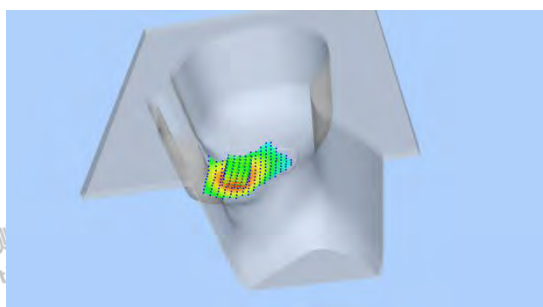
SURFACE SAR



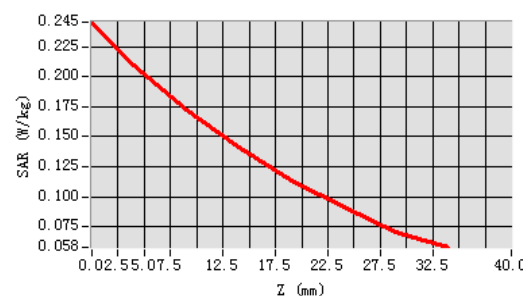
VOLUME SAR



3D



Z Axis Scan





Plot 18: DUT: 4G SMARTPHONE EUT Model: CHIPPY

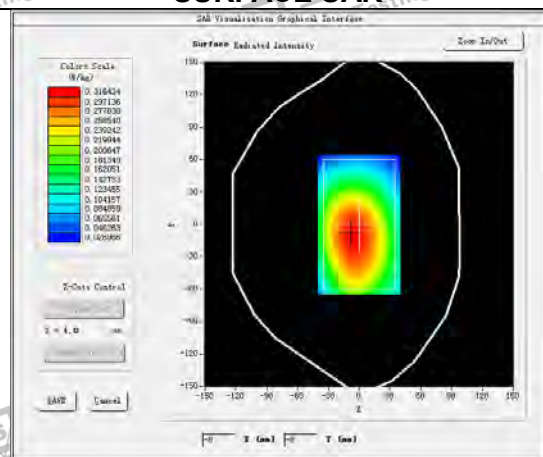
Test Date	2024-04-01
ConvF	1.58
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 12 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	704
Relative permittivity (real part)	41.69
Conductivity (S/m)	0.91

Maximum location: X=-6.00, Y=-11.00

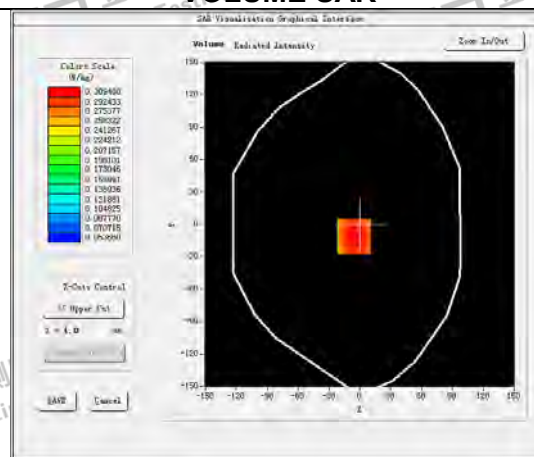
SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.230594
SAR 1g (W/Kg)	0.306248

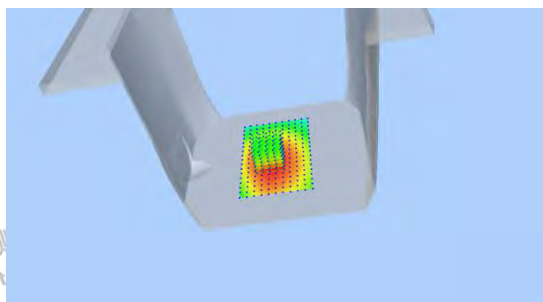
SURFACE SAR



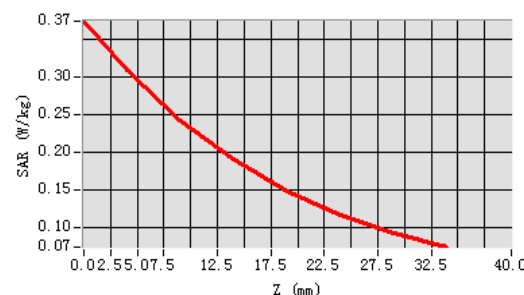
VOLUME SAR



3D



Z Axis Scan



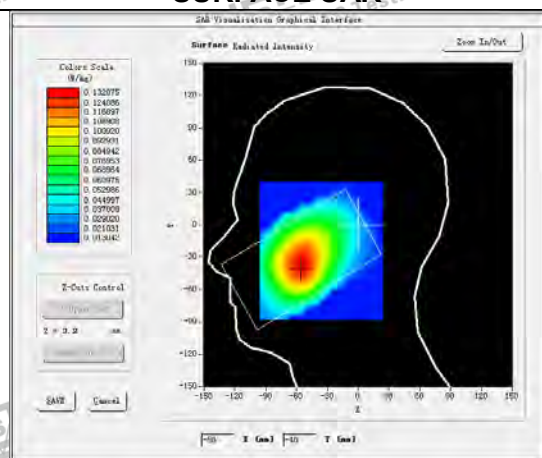
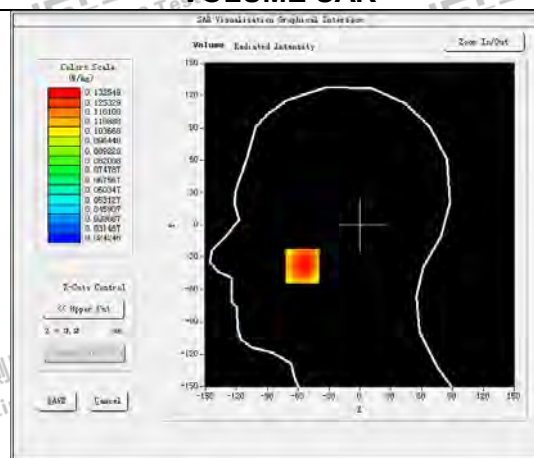
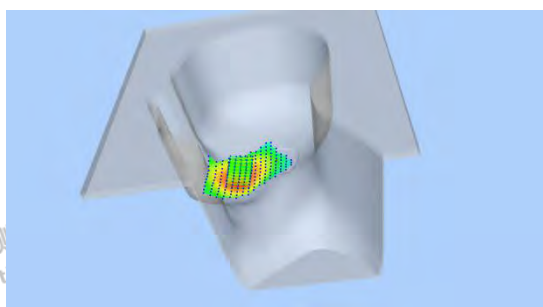
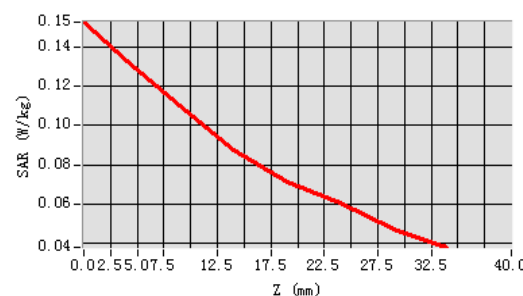
**Plot 19: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-01
ConvF	1.58
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 13(RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	782
Relative permittivity (real part)	42.46
Conductivity (S/m)	0.85

Maximum location: X=-56.00, Y=-38.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.099424
SAR 1g (W/Kg)	0.128309

SURFACE SAR**VOLUME SAR****3D****Z Axis Scan**

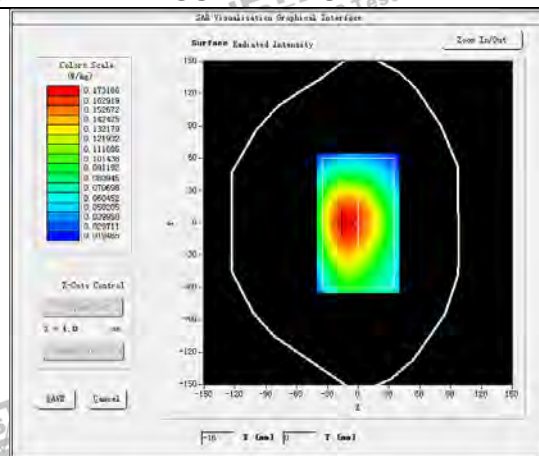
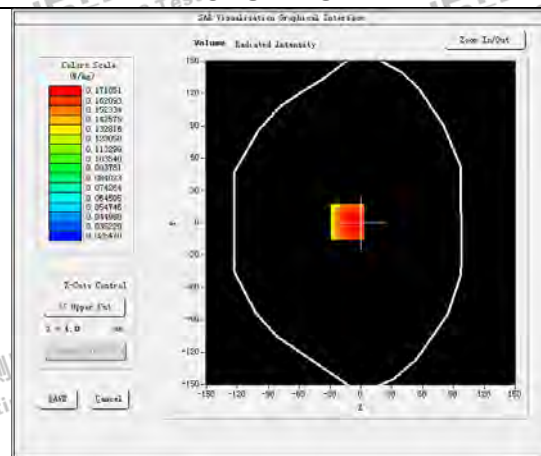
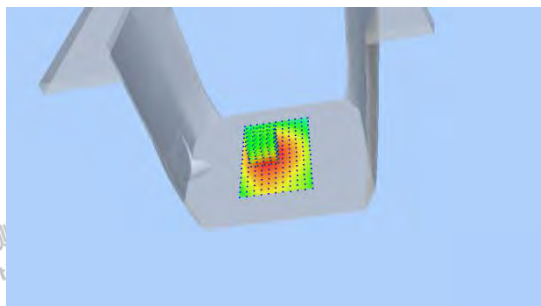
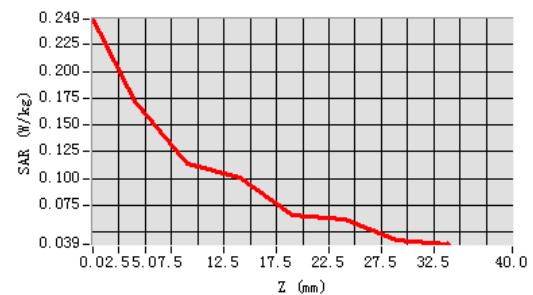
**Plot 20: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-01
ConvF	1.58
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 13(RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	782
Relative permittivity (real part)	41.69
Conductivity (S/m)	0.91

Maximum location: X=-13.00, Y=1.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.123301
SAR 1g (W/Kg)	0.168310

SURFACE SAR**VOLUME SAR****3D****Z Axis Scan**

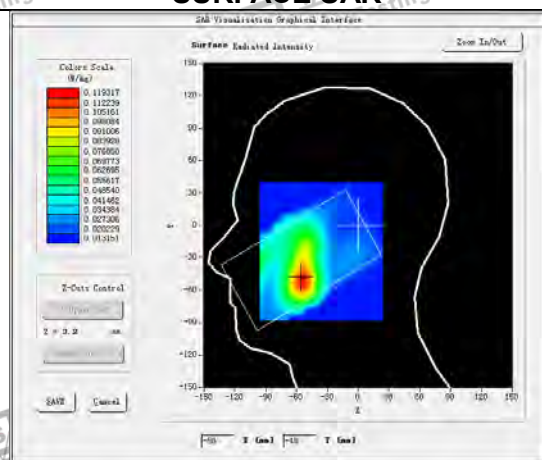
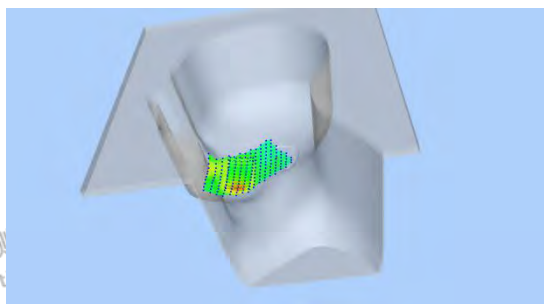
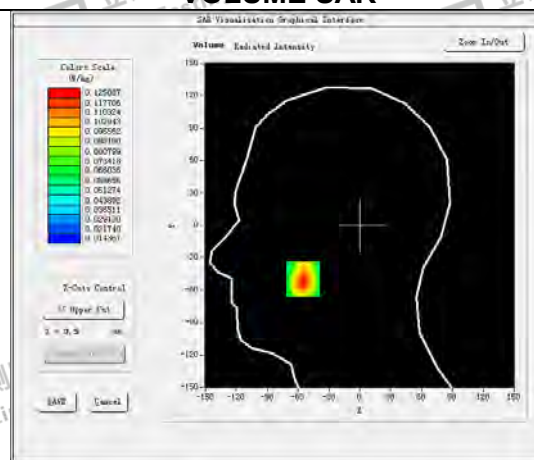
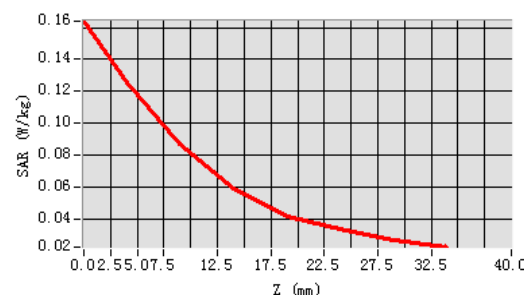
**Plot 21: DUT: 4G SMARTPHONE EUT Model: CHIPPY**

Test Date	2024-04-06
ConvF	1.85
Probe	SN 25/22 EPGO376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Right Head
Band	LTE Band 25 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1882.5
Relative permittivity (real part)	40.98
Conductivity (S/m)	1.37

Maximum location: X=-55.00, Y=-50.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.073536
SAR 1g (W/Kg)	0.117406

SURFACE SAR**3D****VOLUME SAR****Z Axis Scan**



Plot 22: DUT: 4G SMARTPHONE EUT Model: CHIPPY

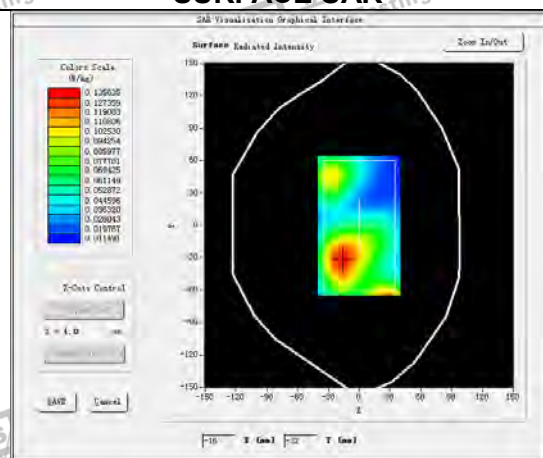
Test Date	2024-04-06
ConvF	1.85
Probe	SN 25/22 EPG0376
Area Scan	dx=15mm dy=15mm, h= 5.00 mm
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Back Side
Band	LTE Band 25 (RB 1)
Signal	LTE (Crest factor: 1.0)
Frequency (MHz)	1882.5
Relative permittivity (real part)	40.98
Conductivity (S/m)	1.37

Maximum location: X=-17.00, Y=-32.00

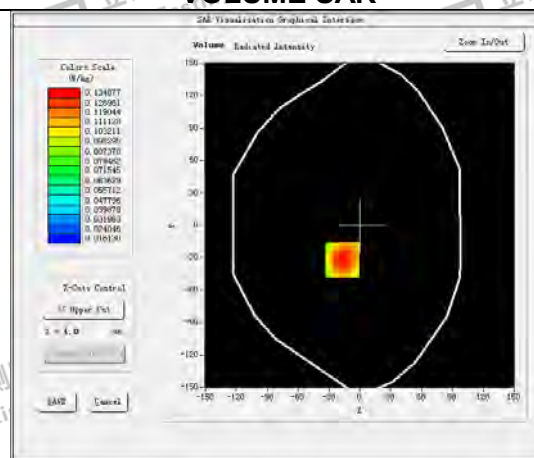
SAR Peak: 0.19 W/kg

SAR 10g (W/Kg)	0.083948
SAR 1g (W/Kg)	0.128867

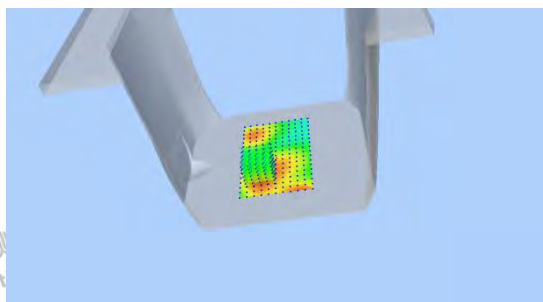
SURFACE SAR



VOLUME SAR



3D



Z Axis Scan

