

SAR TEST REPORT

FCC ID. :	2AQRM-A67W	
Test Report No..... :	TCT241011E028	
Date of issue..... :	Oct. 27, 2024	
Testing laboratory :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	FOXX Development Inc.	
Address..... :	3480 Preston Ridge Road, Suite500, Alpharetta, GA 30005, USA	
Manufacturer's name ... :	FOXX Development Inc.	
Address..... :	3480 Preston Ridge Road, Suite500, Alpharetta, GA 30005, USA	
Test item description :	Smart Phone	
Trade Mark :	FOXXD, FOXX, MIRO	
Model/Type reference..... :	A67W	
SAR Max. Values.....:	0.502 W/Kg (1g) for head; 0.742 W/Kg (1g) for Body-worn; 0.752 W/Kg (1g) for Hotspot	
Simultaneous Reported SAR.....:	0.812 W/Kg (1g) for head; 0.958 W/Kg (1g) for Body-worn; 0.986 W/Kg (1g) for Hotspot	
Date of receipt of test item :	Oct. 11, 2024	
Date (s) of performance of test..... :	Oct. 11, 2024 ~ Oct. 27, 2024	
Tested by (+signature) ... :	Karl WANG	
Check by (+signature).... :	Beryl Zhao	
Approved by (+signature):	Tomsin	

General disclaimer:

This report shall not be reproduced except in full, without the written approval of SHENZHEN TONGCE TESTING LAB. This document may be altered or revised by SHENZHEN TONGCE TESTING LAB personnel only, and shall be noted in the revision section of the document. The test results in the report only apply to the tested sample.

TABLE OF CONTENTS

1. General Product Information	4
1.1. EUT description	4
1.2. Model(s) list.....	5
2. Test standard	6
3. Facilities and Accreditations	6
3.1. Facilities	6
3.2. Location	6
3.3. Environment Condition:.....	6
4. Test Result Summary	7
5. RF Exposure Limit.....	9
6. SAR Measurement System Configuration.....	10
6.1. SAR Measurement Set-up.....	10
6.2. E-field Probe	11
6.3. Phantom	11
6.4. Device Holder.....	12
6.5. Data Storage and Evaluation	13
6.6. Position of the wireless device in relation to the phantom.....	14
6.7. Tissue Dielectric Parameters.....	17
6.8. Tissue-equivalent Liquid Properties	18
6.9. System Check.....	19
7. Measurement Procedure.....	20
8. Conducted Output Power	23
9. Exposure Position Consideration	45
9.1. EUT Antenna Location	45
9.2. Test Position Consideration.....	45
10. SAR Test Results Summary	46
10.1.Head 1g SAR Data	46
10.2.Body-Worn 1g SAR Data.....	50
10.3.Hotspot 1g SAR Data.....	52
10.4.Simultaneous Transmission Conclusion.....	56
10.5.SAR Simultaneous Transmission Analysis.....	57
10.6.Measurement Uncertainty (450MHz-3GHz)	65
10.7.Test Equipment List	67
11. System Check Results	68

12. SAR Test Data.....	80
Appendix A: EUT Photos	172
Appendix B: Test Setup Photos	175
Appendix C: Probe Calibration Certificate	177
Appendix D: Dipole Calibration Report.....	195
Appendix E: SAR SYSTEM VALIDATION.....	261
Appendix F: The Check Data of Impedance and Return Loss	262

1. General Product Information

1.1. EUT description

Test item description.....:	Smart Phone
Model/Type reference.....:	A67W
Sample Number.....:	TCT241011E028-0101/01
Rating(s).....:	Rechargeable Li-ion Battery DC 3.8V
2G	
Operation Band.....:	GSM850, GSM1900
Supported type.....:	GSM/GPRS
Power Class.....:	GSM850:Power Class 5; GSM1900:Power Class 0
Modulation Type.....:	GMSK for GSM/GPRS
GSM Release Version.....:	R99
GPRS Multislot Class.....:	12
EGPRS Multislot Class.....:	N/A
3G	
Operation Band.....:	FDD Band II & FDD Band IV & FDD Band V
Power Class.....:	Power Class 3
Modulation Type.....:	QPSK for WCDMA/HSDPA/HSUPA
WCDMA Release Version.....:	R99
HSDPA Release Version.....:	Release 5
HSUPA Release Version.....:	Release 6
DC-HSUPA Release Version.....:	Not Supported
LTE	
Operation Band.....:	LTE Band 2 & LTE Band 4 & LTE Band 5 & LTE Band 12 & LTE Band 17 & LTE Band 41 & LTE Band 66 & LTE Band 71
Power Class.....:	Power Class 3
Modulation Type.....:	QPSK & 16-QAM for LTE
Wi-Fi 2.4G	
Supported type.....:	802.11b/802.11g/802.11n
Modulation Type.....:	802.11b: DSSS 802.11g/802.11n: OFDM
Operation Frequency.....:	802.11b/802.11g/802.11n(HT20):2412MHz~2462MHz;
Channel number.....:	802.11b/802.11g/802.11n(HT20):11
Channel separation.....:	5MHz

Bluetooth	
Bluetooth Version.....:	Supported 5.0
Modulation.....:	GFSK(1Mbps) , $\pi/4$ -DQPSK(2Mbps) , 8-DPSK(3Mbps)
Operation Frequency.....:	2402MHz~2480MHz
Channel number.....:	79/40
Channel separation.....:	1MHz/2MHz

1.2. Model(s) list

None.

2. Test standard

The tests were performed according to following standards:

FCC 47 CFR §2.1093

IEC-IEEE 62209-1528-2020: 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

KDB447498 D01:General RF Exposure Guidance v06

KDB865664 D01:SAR measurement 100MHz to 6GHz v01r04

KDB865664 D02:RF Exposure Reporting v01r02.

KDB941225 D01:3G SAR Procedures v03r01

KDB248227 D01:802.11 wi-fi SAR v02r02

KDB941225 D05:SAR for LTE devices v02r05

KDB941225 D06:Hotspot Mode v02r01

KDB941225 D07:UMPC Mini Tablet v01r02

KDB690783 D01:SAR Listings on Grant v01r03

3. Facilities and Accreditations

3.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB.

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

3.3. Environment Condition:

Temperature:	18°C ~25°C
Humidity:	35%~75% RH
Atmospheric Pressure:	1011 mbar

4. Test Result Summary

The maximum results of Specific Absorption Rate (SAR) found during test as bellows:
<Highest Reported standalone SAR Summary>

Exposure Position	Frequency Band	Reported SAR (W/kg)	Equipment Class	Highest Reported SAR (W/kg)
Head 1-g SAR	GSM 850	0.315	PCE	0.502
	GSM 1900	0.391		
	WCDMA Band II	0.226		
	WCDMA Band IV	0.502		
	WCDMA Band V	0.217		
	LTE Band 2	0.385		
	LTE Band 4	0.371		
	LTE Band 5	0.195		
	LTE Band 12	0.080		
	LTE Band 17	0.136		
	LTE Band 41	0.075		
	LTE Band 66	0.424		
	LTE Band 71	0.074		
	WLAN 2.4 GHz	0.314	DTS	
	BT	0.128	DSS	
Body-worn 1-g SAR (10 mm Gap)	GSM 850	0.181	PCE	0.742
	GSM 1900	0.669		
	WCDMA Band II	0.550		
	WCDMA Band IV	0.742		
	WCDMA Band V	0.203		
	LTE Band 2	0.468		
	LTE Band 4	0.405		
	LTE Band 5	0.131		
	LTE Band 12	0.204		
	LTE Band 17	0.184		
	LTE Band 41	0.463		
	LTE Band 66	0.333		
	LTE Band 71	0.298		
	WLAN 2.4 GHz	0.216	DTS	
	BT	0.044	DSS	

Hotspot 1-g SAR (10 mm Gap)	GSM 850	0.142	PCE	0.752
	GSM 1900	0.693		
	WCDMA Band II	0.503		
	WCDMA Band IV	0.752		
	WCDMA Band V	0.203		
	LTE Band 2	0.454		
	LTE Band 4	0.399		
	LTE Band 5	0.121		
	LTE Band 12	0.210		
	LTE Band 17	0.215		
	LTE Band 41	0.625		
	LTE Band 66	0.335		
	LTE Band 71	0.266		
	WLAN 2.4 GHz	0.234	DTS	

<Highest Reported simultaneous SAR Summary>

Exposure Position	Frequency Band	Highest Reported Simultaneous Transmission SAR (W/kg)
Head 1-g SAR	WCDMA Band IV + WIFI 2.4G	0.812
Body 1-g SAR (10 mm Gap)	WCDMA Band IV + WIFI 2.4G	0.958
Hotspot 1-g SAR (10 mm Gap)	WCDMA Band IV + WIFI 2.4G	0.986

Note:

1. The highest simultaneous transmission is scalar summation of Reported standalone SAR per FCC KDB 690783 D01 v01r03, and scalar SAR summation of all possible simultaneous transmission scenarios are < 1.6W/kg.
2. This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-2005, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013.
3. This EUT owns four cards, after we perform the pretest for these two SIM card; we found the SIM 1 is the worst case, so its result is recorded in this report.

5. RF Exposure Limit

Type Exposure	SAR (W/kg)
	Uncontrolled Exposure Limit
Spatial Peak SAR (averaged over any 1 g of tissue)	1.60
Spatial Peak SAR (hands/wrists/feet/ankles averaged over 10g)	4.00
Spatial Peak SAR (averaged over the whole body)	0.08
Note: 1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time. 2. The Spatial Average value of the SAR averaged over the whole body. 3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.	

6. SAR Measurement System Configuration

6.1. 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.

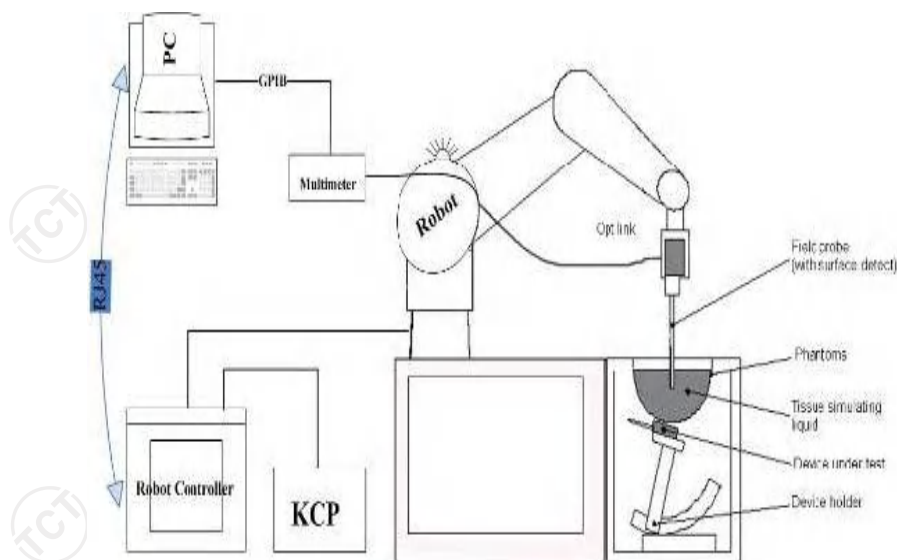
OPENSAR software Remote control with teaches pendant and additional circuitry for robot safety such as warning lamps, etc.

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.



KUKA SAR Test Sysytem Configuration

6.2. E-field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by MVG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

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.

Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 25/22 EPG0375
Frequency Range of Probe	0.15 GHz- 6GHz
Resistance of Three Dipoles at Connector	Dipole 1:R1=0.197MΩ Dipole 2:R3=0.230MΩ Dipole 3:R3=0.208MΩ

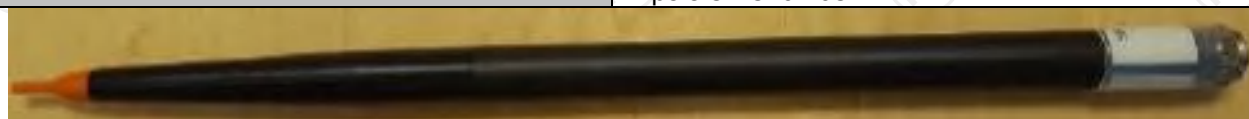


Photo of E-Field Probe

6.3. Phantom

The SAM Phantom SAM120 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 IEC-IEEE 62209-1528-2020.

The phantom enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region.

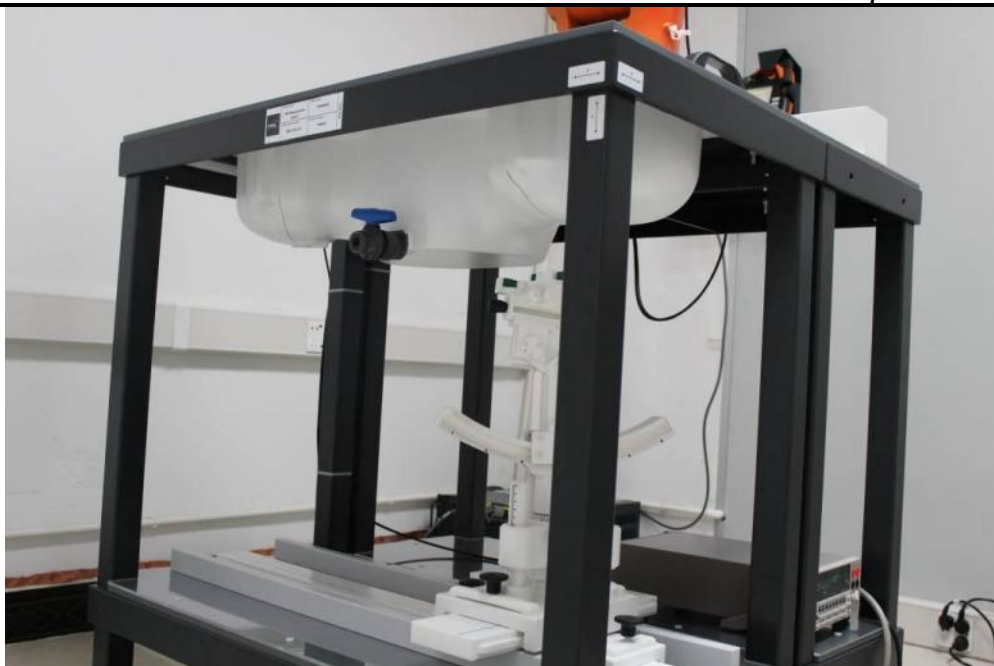
A cover prevents the evaporation of the liquid.

Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot

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.

Name: COMOSAR IEEE SAM PHANTOM
S/N: SN 19/15 SAM 120
Manufacture: MVG

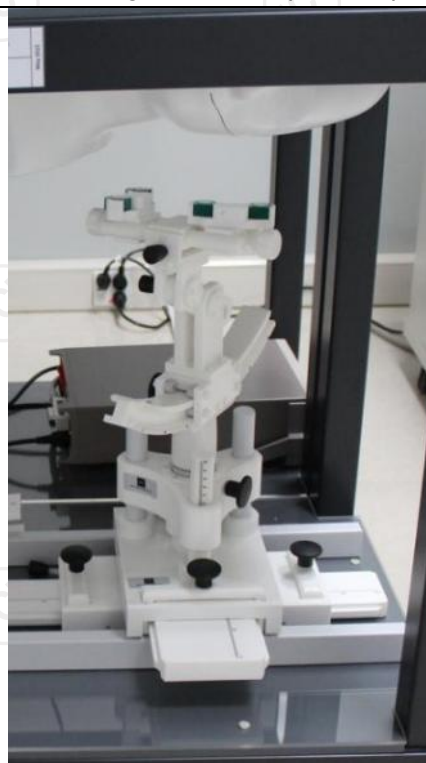


SAM Twin Phantom

6.4. Device Holder

In combination with the Generic Twin Phantom SAM120, 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).

COMOSAR Mobile
phone positioning
system

6.5. 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 millimeter 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:

$$V_i = U_i + U_i^2 \cdot c \cdot f / d \cdot c \cdot p_i$$

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	(MVG parameter)
	dcpi	= diode compression point	(MVG parameter)

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

$$\text{E-field probes: } E_i = (V_i / \text{Normi} \cdot \text{ConvF})^{1/2}$$

$$\text{H-field probes: } H_i = (V_i)^{1/2} \cdot (ai0 + ai1 \cdot f + ai2 \cdot f^2) / f$$

With	V_i	= compensated signal of channel i	(i = x, y, z)
	Normi	= sensor sensitivity of channel i	(i = x, y, z)
		[mV/(V/m)²] for E-field Probes	
	ConvF	= sensitivity enhancement in solution	
	aij	= 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):

$$E_{\text{tot}} = (E_x^2 + E_y^2 + E_z^2)^{1/2}$$

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

$$\text{SAR} = (E_{\text{tot}})^2 \cdot \sigma / (\rho \cdot 1000)$$

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. The power flow density is calculated assuming the excitation field to be a free space field.

6.6. Position of the wireless device in relation to the phantom

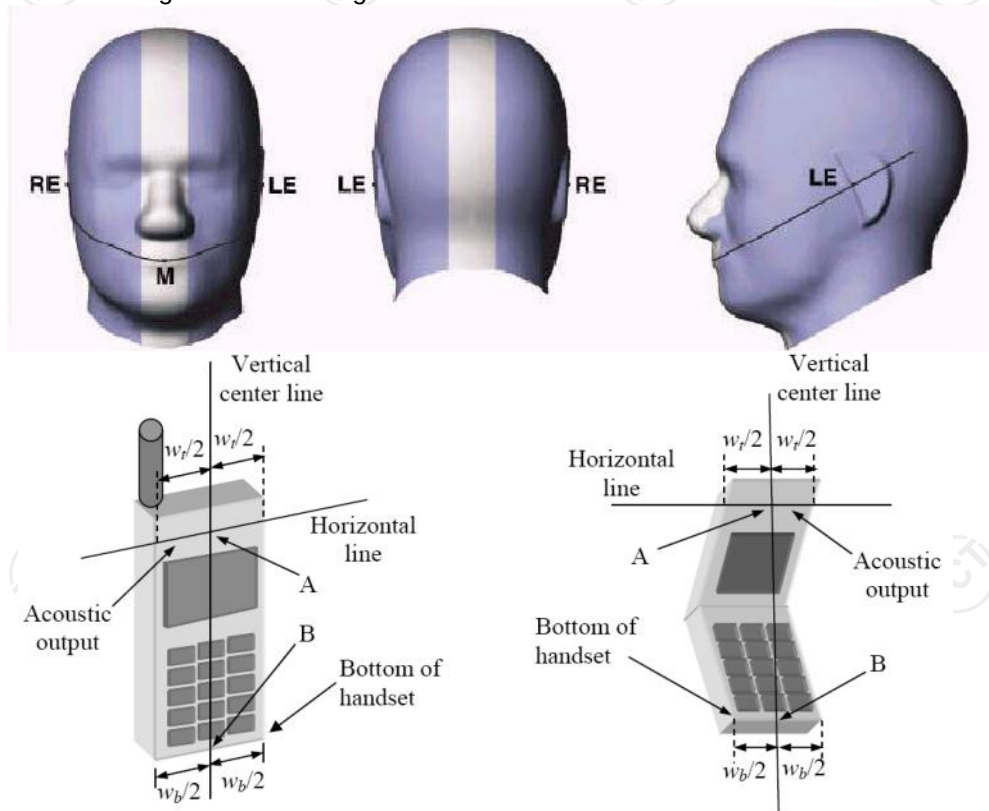
Handset Reference Points

$$P_{\text{pwe}} = E_{\text{tot}}^2 / 3770 \text{ or } P_{\text{pwe}} = H_{\text{tot}}^2 \cdot 37.7$$

With P_{pwe} = equivalent power density of a plane wave in mW/cm²

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m



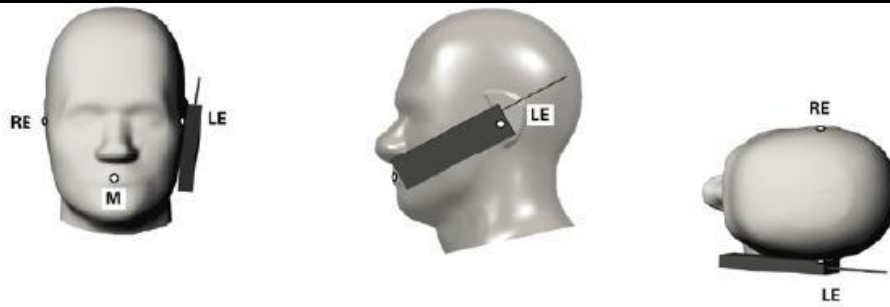
W_t Width of the handset at the level of the acoustic

W_b Width of the bottom of the handset

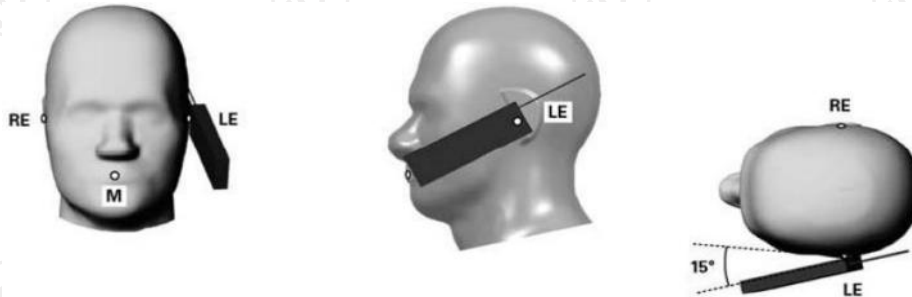
A Midpoint of the width w_t of the handset at the level of the acoustic output

B Midpoint of the width w_b of the bottom of the handset

Positioning for Cheek / Touch



Positioning for Ear / 15° Tilt



Body Worn Accessory Configurations

To position the device parallel to the phantom surface with either keypad up or down.

To adjust the device parallel to the flat phantom.

To adjust the distance between the device surface and the flat phantom to 15mm or holster surface and the flat phantom to 0 mm.

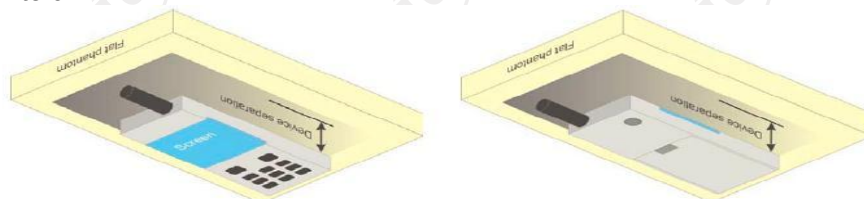


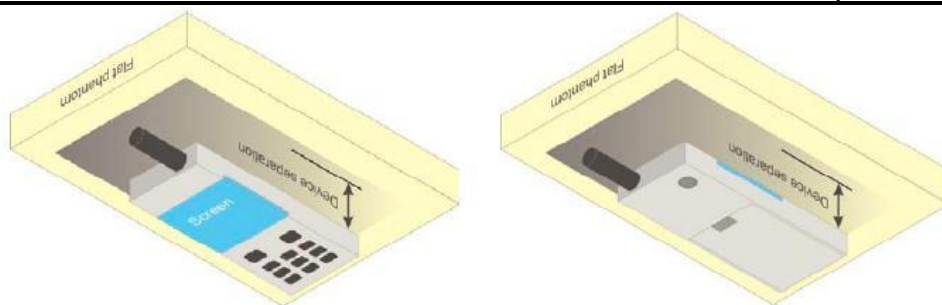
Illustration for Body Worn Position

Wireless Router (Hotspot) Configurations

Some battery-operated handsets have the capability to transmit and receive internet connectivity through simultaneous transmission of WIFI in conjunction with a separate licensed transmitter. The FCC has provided guidance in KDB Publication 941225 D06 where SAR test considerations for handsets (L x W ≥

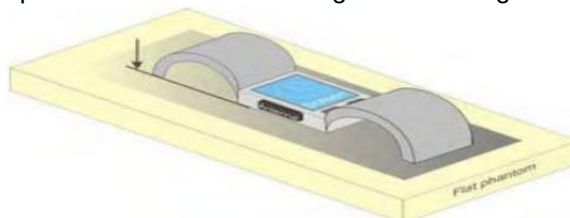
9 cm x 5 cm) are based on a composite test separation distance of 10 mm from the front, back and edges of the device with antennas 2.5 cm or closer to the edge of the device, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. Therefore, SAR must be evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

**Illustration for Hotspot Position****Limb-worn device**

A limb-worn device is a unit whose intended use includes being strapped to the arm or leg of the user while transmitting (except in idle mode). It is similar to a body-worn device. Therefore, the test positions of 6.1.4.4 also apply. The strap shall be opened so that it is divided into two parts as shown in Figure 9. The device shall be positioned directly against the phantom surface with the strap straightened as much as possible and the back of the device towards the phantom.

If the strap cannot normally be opened to allow placing in direct contact with the phantom surface, it may be necessary to break the strap of the device but ensuring to not damage the antenna.

**Test position for limb-worn devices**

6.7. Tissue Dielectric Parameters

The liquid used for the frequency range of 100MHz-6G consisted of water, sugar, salt and Cellulose. The liquid has been previously proven to be suited for worst-case. The following Table shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528 and IEC 62209.

The simulating liquids should be checked at the beginning of a series of SAR measurements to determine of the determine of the dielectric parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

The following materials are used for producing the tissue-equivalent materials

Targets for tissue simulating liquid

Frequency (MHz)	Liquid Type	Liquid Type (σ)	$\pm 5\%$ Range	Permittivity (ϵ)	$\pm 5\%$ Range
300	Head	0.87	0.83~0.91	45.3	43.04~47.57
450	Head	0.87	0.83~0.91	43.5	41.33~45.68
835	Head	0.90	0.86~0.95	41.5	39.43~43.58
900	Head	0.97	0.92~1.02	41.5	39.43~43.58
1800-2000	Head	1.40	1.33~1.47	40.0	38.00~42.00
2450	Head	1.80	1.71~1.89	39.2	37.24~41.16
2600	Head	1.96	1.86~2.06	39.0	37.05~40.95
3000	Head	2.40	2.28~2.52	38.5	36.58~40.43
5800	Head	5.27	5.01~5.53	35.3	33.54~37.07

(ϵ_r = relative permittivity, σ = conductivity and $\rho = 1000 \text{ kg/m}^3$)

6.8. Tissue-equivalent Liquid Properties

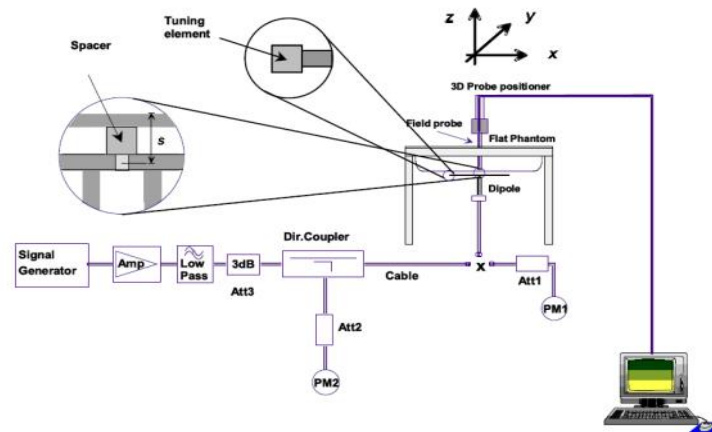
Test Date dd/mm/yy	Temp °C	Tissue Type	Measured Frequency (MHz)	ϵ_r	σ (s/m)	Dev ϵ_r (%)	Dev σ (%)
10/14/2024	22°C	750H	750	41.90	0.89	2.63	-1.12
10/15/2024	22°C	835H	825	41.43	0.86	-0.17	-4.44
			835	41.42	0.87	-0.19	-3.33
			850	40.39	0.88	-2.67	-2.22
10/18/2024	22°C	1800H	1710	39.11	1.34	-2.23	-4.29
			1720	39.10	1.35	-2.25	-3.57
			1750	39.08	1.37	-2.30	-2.14
			1800	39.07	1.38	-2.33	-1.43
10/22/2024	22°C	1900H	1850	39.11	1.34	-2.23	-4.29
			1880	39.10	1.35	-2.25	-3.57
			1900	39.08	1.37	-2.30	-2.14
			1910	39.07	1.38	-2.33	-1.43
10/24/2024	22°C	2450H	2410	37.84	1.79	-3.47	-0.56
			2435	37.85	1.81	-3.44	0.56
			2450	37.82	1.83	-3.52	1.67
			2460	37.80	1.84	-3.57	2.22
10/25/2024	22°C	2600H	2510	38.86	1.93	-0.36	-1.53
			2535	38.85	1.92	-0.39	-2.04
			2560	38.89	1.90	-0.28	-3.06
			2600	38.82	1.97	-0.46	0.51

6.9. System Check

The SAR system must be validated against its performance specifications before it is deployed. When SAR probe and system component or software are changed, upgraded or recalibrated, these must be validated with the SAR system(s) that operates with such component. Reference dipoles are used with the required tissue-equivalent media for system validation.

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

System check is performed regularly on all frequency bands where tests are performed with the OPENSAR system.



System Check Set-up

Verification Results

Frequency (MHz)	Liquid Type	Measured Value in 100mW (W/kg)		Normalized to 1W (W/kg)		Target Value (W/kg)		Deviation (%)	
		1 g Average	10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average	10 g Average
750	Head	0.80	0.56	8.00	5.60	8.31	5.71	-3.73	-1.93
835	Head	0.89	0.57	8.90	5.70	9.53	6.12	-6.61	-6.86
1800	Head	3.75	2.20	37.53	21.98	37.67	20.23	-0.37	8.65
1900	Head	3.58	1.90	35.80	19.00	39.26	20.49	-8.81	-7.27
2450	Head	4.99	2.36	49.90	23.60	53.26	24.15	-6.31	-2.28
2600	Head	5.41	2.43	54.14	24.30	54.31	24.14	-0.31	0.66

Comparing to the original SAR value provided by MVG, the verification data should be within its specification of 10%. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table as below indicates the system performance check can meet the variation criterion and the plots can be referred to Section 10 of this report.

7. Measurement Procedure

Conducted power measurement

For WWAN power measurement, use base station simulator to configure EUT WWAN transition in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.

Read the WWAN RF power level from the base station simulator.

For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.

Connect EUT RF port through RF cable to the power meter or spectrum analyser, and measure WLAN/BT output power.

Conducted power measurement

Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.

Place the EUT in positions as Appendix B demonstrates.

Set scan area, grid size and other setting on the MVG software.

Measure SAR results for the highest power channel on each testing position.

Find out the largest SAR result on these testing positions of each band.

Measure SAR results for other channels in worst SAR testing position if the Reported SAR or highest power channel is larger than 0.8 W/kg.

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

Power reference measurement

Area scan

Zoom scan

Power drift measurement

Spatial Peak SAR Evaluation

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

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

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

Extraction of the measured data (grid and values) from the Zoom Scan.

Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters).

Generation of a high-resolution mesh within the measured volume.

Interpolation of all measured values from the measurement grid to the high-resolution grid

Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface

Calculation of the averaged SAR within masses of 1g and 10g.

Power Reference Measurement

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

Area & Zoom Scan Procedures

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 10g. Area scan and zoom scan resolution setting follows KDB 865664 D01v01r03 quoted below.

			≤ 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: Δx _{Area} , Δy _{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.	
Maximum zoom scan spatial resolution: Δx _{Zoom} , Δy _{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: Δz _{Zoom} (n)		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	Δz _{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
		Δz _{Zoom} (n>1): between subsequent points	≤ 1.5 · Δz _{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 <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> 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.				

Volume Scan Procedures

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

SAR Averaged Methods

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

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

Power Drift Monitoring

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

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

Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100KHz to 6GHz ,when the highest measurement 1-g SAR within a frequency band is <1.5W/kg, the extensive SAR measurement uncertainty analysis described IEEE Std 1528-2013 is not required in SAR report submitted for equipment approval.

8. Conducted Output Power

Band: GSM 850	Measured Power (dBm)			Calculation (dB)	Averaged Power (dBm)		
Channel	128	190	251		128	190	251
Frequency	824.2	836.6	848.8		824.2	836.6	848.8
GSM (GMSK, Voice)	33.92	34.00	33.97	-9.03	24.89	24.97	24.94
GPRS (GMSK, 1-slot)	32.88	32.77	32.77	-9.03	23.85	23.74	23.74
GPRS (GMSK, 2-slot)	32.79	32.68	32.61	-6.02	26.77	26.66	26.59
GPRS (GMSK, 3-slot)	32.57	32.44	32.36	-4.26	28.31	28.18	28.10
GPRS (GMSK, 4-slot)	32.28	32.12	31.95	-3.01	29.27	29.11	28.94

Note:

1. Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

2. According to the conducted power as above, the body measurements are performed with 1Tx slots for 850MHz for GPRS.

3. The device do not support power reduction, so power of hotspot activated as the same as hotspot disabled

Band: GSM 1900	Measured Power (dBm)			Calculation (dB)	Averaged Power (dBm)		
Channel	512	661	810		512	661	810
Frequency	1850.2	1880.0	1909.8		1850.2	1880.0	1909.8
GSM (GMSK, Voice)	31.04	30.87	30.72	-9.03	22.01	21.84	21.69
GPRS (GMSK, 1-slot)	31.13	30.77	30.54	-9.03	22.10	21.74	21.51
GPRS (GMSK, 2-slot)	30.82	30.38	30.09	-6.02	24.80	24.36	24.07
GPRS (GMSK, 3-slot)	30.37	29.88	29.60	-4.26	26.11	25.62	25.34
GPRS (GMSK, 4-slot)	29.53	29.03	28.72	-3.01	26.52	26.02	25.71

Note:

1. Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

2. According to the conducted power as above, the body measurements are performed with 1Tx slots for 1900MHz for GPRS.

3. The device do not support power reduction, so power of hotspot activated as the same as hotspot disabled

Band	WCDMA Band II			WCDMA Band V		
Channel	9262	9400	9538	4132	4182	4233
Frequency	1852.40	1880.00	1907.60	826.40	836.40	846.60
RMC 12.2Kbps	23.77	24.00	21.32	21.85	23.98	24.01
HSDPA Subtest-1	19.09	19.94	20.84	17.62	19.35	19.93
HSDPA Subtest-2	19.14	19.95	20.84	17.42	19.32	19.98
HSDPA Subtest-3	19.15	19.95	20.85	17.44	19.31	19.97
HSDPA Subtest-4	19.10	19.91	20.81	17.41	19.27	20.02
HSUPA Subtest-1	17.02	17.95	18.96	15.29	17.38	17.74
HSUPA Subtest-2	17.14	17.44	18.50	15.39	16.85	17.93
HSUPA Subtest-3	17.13	17.70	18.44	15.61	17.13	18.05
HSUPA Subtest-4	16.87	17.43	18.77	15.38	17.37	17.83
HSUPA Subtest-5	16.63	17.47	18.88	15.61	17.36	18.03
Band	WCDMA Band IV					
Channel	1312	1450	1513			
Frequency	1712.4	1740.0	1752.6			
RMC 12.2Kbps	24.63	24.28	22.95			
HSDPA Subtest-1	20.07	19.96	18.54			
HSDPA Subtest-2	20.13	19.87	18.57			
HSDPA Subtest-3	20.02	19.89	18.58			
HSDPA Subtest-4	20.12	19.84	18.53			
HSUPA Subtest-1	17.62	17.69	16.41			
HSUPA Subtest-2	17.32	17.39	16.40			
HSUPA Subtest-3	17.23	17.67	16.40			
HSUPA Subtest-4	17.26	17.38	16.17			
HSUPA Subtest-5	17.56	17.38	15.88			

Note:

1. According to the power listed above, the HSDPA and HSUPA were not determined for SAR testing.
2. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2kbps RMC(reference measurement channel) configuration in test loop mode
3. The device do not support power reduction, so power of hotspot activated as the same as hotspot disabled

WLAN 2.4G						
Mode	802.11b			802.11g		
Channel	1	6	11	1	6	11
Frequency	2412	2437	2462	2412	2437	2462
Average Power (dBm)	12.20	14.55	15.44	11.39	13.44	13.59
Mode	802.11n(HT20)					
Channel	1	6	11			
Frequency	2412	2437	2462			
Average Power (dBm)	11.63	13.80	13.64			

Bluetooth						
Mode	GFSK			Pi/4DQPSK		
Channel	0	39	78	0	39	78
Frequency	2402	2441	2480	2402	2441	2480
Average Power (dBm)	5.97	4.99	5.91	4.84	5.55	6.33
Mode	8DPSK			BLE(1M)		
Channel	0	39	78	0	20	39
Frequency	2402	2441	2480	2402	2440	2480
Average Power (dBm)	5.51	6.09	6.73	-4.00	-1.06	0.61

Channel	Frequency (GHz)	Max. Tune-up Power (dBm)	Max. Power (mW)	Test distance (mm)	Result	Exclusion thresholds for 1-g SAR	Exclusion thresholds for 10-g SAR
38	2.480	1.00	1.26	5	0.40	3.0	7.5

Note

- Per KDB447498 D04, the 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$
for 1-g SAR, where
 ·f(GHz) is the RF channel transmit frequency in GHz
 ·Power and distance are rounded to the nearest mW and mm before calculation
 ·The result is rounded to one decimal place for comparison
- Base on the result of note1, RF exposure evaluation of BLE is not required.
- Per KDB 248227 D01 v02r02, choose the highest output power channel to test SAR and determine further SAR exclusion.
 The output power of all data rate were prescan, just the worst case (the lowest data rate) of all mode were shown in report.

LTE Band 2

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18607	18900	19193
1.4MHz	QPSK	1	0	17.31	17.19	21.51
			2	17.34	17.22	21.59
			5	17.26	17.29	21.64
		3	0	17.45	17.34	21.62
			2	17.33	17.38	21.69
			3	17.32	17.31	21.65
		6	0	16.31	16.31	20.52
	16QAM	1	0	16.89	16.96	21.01
			2	16.83	17.01	21.08
			5	16.77	17.09	21.13
		3	0	16.20	16.41	20.37
			2	16.19	16.47	20.40
			3	16.16	16.57	20.40
		6	0	15.39	15.45	19.91
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18615	18900	19185
3MHz	QPSK	1	0	16.13	16.27	21.30
			7	16.15	16.25	21.47
			14	16.32	16.26	21.61
		8	0	16.28	16.27	20.75
			4	16.25	16.27	20.53
			7	16.32	16.29	20.55
		15	0	16.30	16.30	20.57
	16QAM	1	0	16.29	16.30	20.92
			7	16.27	16.31	20.81
			14	16.25	16.31	20.96
		8	0	16.24	16.31	19.91
			4	16.29	16.31	20.06
			7	16.33	16.31	20.10
		15	0	16.32	16.31	19.93

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18625	18900	19175
5MHz	QPSK	1	0	16.03	16.39	21.07
			13	16.03	16.39	21.15
			24	15.97	16.40	21.11
		12	0	16.04	16.41	21.08
			6	16.01	16.40	21.16
			13	15.97	16.41	21.14
		25	0	16.03	16.41	21.15
	16QAM	1	0	15.97	16.42	21.11
			13	16.04	16.42	21.15
			24	16.01	16.42	21.16
		12	0	15.98	16.42	21.15
			6	16.01	16.42	21.13
			13	15.99	16.42	21.10
		25	0	16.03	16.42	21.15
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18650	18900	19150
10MHz	QPSK	1	0	17.39	16.80	20.48
			25	16.65	17.40	21.07
			49	16.17	18.10	21.68
		25	0	15.94	16.00	19.75
			13	15.69	16.44	20.21
			25	15.31	16.75	20.79
		50	0	15.71	16.45	20.29
	16QAM	1	0	17.25	15.71	20.25
			25	16.50	16.43	20.85
			49	16.03	17.10	21.35
		25	0	15.02	15.16	18.90
			13	14.69	15.65	19.52
			25	14.45	15.97	19.80
		50	0	14.73	15.54	19.52

Conducted Power of LTE Band 2						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18675	18900	19125
15MHz	QPSK	1	0	17.31	16.40	20.01
			38	16.27	17.34	20.88
			74	16.06	18.41	21.70
		36	0	15.82	15.78	19.36
			18	15.19	16.27	19.86
			39	15.06	16.95	20.66
		75	0	15.35	16.33	19.85
	16QAM	1	0	17.16	16.14	19.62
			38	16.14	17.13	20.46
			74	15.84	18.19	21.29
		36	0	14.84	14.81	18.42
			18	14.42	15.48	18.90
			39	14.19	16.01	19.69
		75	0	14.46	15.61	18.92
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				18700	18900	19100
20MHz	QPSK	1	0	17.20	16.24	19.34
			50	16.20	17.53	21.74
			99	16.44	18.91	20.72
		50	0	15.70	15.66	18.86
			25	15.26	16.37	20.15
			50	15.01	17.28	19.46
		100	0	15.33	16.49	19.62
	16QAM	1	0	16.78	16.55	18.67
			50	15.72	17.61	20.05
			99	15.73	19.05	21.11
		50	0	14.75	15.08	17.97
			25	14.29	15.44	18.50
			50	14.10	16.23	19.55
		100	0	14.35	15.67	18.56

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19957	20175	20393
1.4MHz	QPSK	1	0	21.02	23.18	24.35
			2	21.14	23.36	24.36
			5	21.23	23.47	24.30
		3	0	21.07	23.22	24.30
			2	21.11	23.20	24.35
			3	21.19	23.31	24.30
		6	0	20.24	22.17	23.19
	16QAM	1	0	20.13	23.02	24.01
			2	20.24	22.91	23.96
			5	20.29	23.00	24.00
		3	0	19.98	22.30	22.91
			2	20.02	22.39	22.88
			3	20.09	22.39	22.84
		6	0	19.27	21.53	22.64
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19965	20175	20385
3MHz	QPSK	1	0	20.95	23.21	24.17
			7	21.13	23.31	24.21
			14	21.28	23.40	24.24
		8	0	20.20	22.30	23.35
			4	20.30	22.32	23.31
			7	20.30	22.34	23.29
		15	0	20.39	22.27	23.33
	16QAM	1	0	20.79	22.19	24.41
			7	20.91	22.27	24.40
			14	20.99	22.33	24.44
		8	0	19.54	21.54	22.49
			4	19.58	21.53	22.46
			7	19.54	21.55	22.77
		15	0	19.48	21.42	22.52

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				19975	20175	20375
5MHz	QPSK	1	0	21.04	22.99	24.10
			13	21.20	23.16	24.13
			24	21.41	23.26	24.16
		12	0	20.31	22.10	23.21
			6	20.27	22.26	23.26
			13	20.42	22.32	23.27
		25	0	20.39	22.24	23.25
	16QAM	1	0	19.75	22.58	23.50
			13	19.98	22.67	23.69
			24	20.20	22.93	23.66
		12	0	19.36	21.28	22.63
			6	19.30	21.37	22.41
			13	19.43	21.42	22.40
		25	0	19.38	21.43	22.34
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20000	20175	20350
10MHz	QPSK	1	0	21.08	22.90	23.97
			25	21.63	23.30	24.18
			49	22.15	23.64	24.29
		25	0	20.40	22.08	23.10
			13	20.65	22.31	23.12
			25	20.88	22.38	23.25
		50	0	20.67	22.32	23.11
	16QAM	1	0	20.78	21.89	24.02
			25	21.25	22.17	24.17
			49	21.71	22.48	24.15
		25	0	19.41	21.32	22.15
			13	19.79	21.50	22.27
			25	20.04	21.91	22.33
		50	0	19.75	21.37	22.28

Conducted Power of LTE Band 4						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20025	20175	20325
15MHz	QPSK	1	0	21.13	22.62	23.76
			38	21.99	23.08	24.06
			74	22.63	23.57	24.25
		36	0	20.52	22.12	22.93
			18	20.86	22.28	23.21
			39	21.21	22.50	23.19
		75	0	20.93	22.17	23.12
	16QAM	1	0	21.10	22.48	23.70
			38	21.88	22.94	24.17
			74	22.51	23.41	24.29
		36	0	19.64	21.07	22.35
			18	20.01	21.35	22.24
			39	20.40	21.64	22.62
		75	0	20.04	21.40	22.32
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20050	20175	20300
20MHz	QPSK	1	0	21.05	22.55	23.50
			50	22.13	23.33	24.32
			99	22.93	23.82	24.05
		50	0	20.69	21.93	22.77
			25	21.15	22.31	23.08
			50	21.78	22.57	23.06
		100	0	21.28	22.34	23.04
	16QAM	1	0	20.79	22.73	23.40
			50	21.62	23.39	23.97
			99	22.66	24.02	24.14
		50	0	19.87	20.81	22.30
			25	20.37	21.28	22.51
			50	20.81	21.68	22.32
		100	0	20.30	21.38	22.21

LTE Band 5

Conducted Power of LTE Band 5						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20407	20525	20643
1.4MHz	QPSK	1	0	22.64	20.22	18.58
			2	22.71	20.29	18.54
			5	22.52	20.27	18.53
		3	0	22.83	20.24	18.52
			2	22.80	20.22	18.52
			3	22.75	20.21	18.57
		6	0	21.55	20.19	18.56
	16QAM	1	0	22.27	20.20	18.56
			2	22.25	20.17	18.55
			5	22.19	20.19	18.55
		3	0	21.53	20.23	18.55
			2	21.52	20.27	18.55
			3	21.54	20.27	18.54
		6	0	20.58	20.26	18.54
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20415	20525	20635
3MHz	QPSK	1	0	22.64	21.36	19.79
			7	22.50	20.86	19.55
			14	22.49	20.72	19.46
		8	0	21.70	20.16	18.68
			4	21.54	20.24	18.60
			7	21.35	20.09	18.50
		15	0	21.71	20.18	18.61
	16QAM	1	0	22.64	20.41	20.11
			7	22.42	20.23	20.04
			14	22.30	20.01	19.68
		8	0	20.77	19.19	18.29
			4	20.65	19.33	18.10
			7	20.79	19.31	17.62
		15	0	20.47	19.26	18.16

Conducted Power of LTE Band 5						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20425	20525	20625
5MHz	QPSK	1	0	21.59	21.37	19.99
			13	21.47	20.81	19.52
			24	21.51	20.64	19.31
		12	0	21.48	20.13	19.06
			6	21.47	20.19	18.87
			13	21.45	20.01	18.59
		25	0	21.44	20.20	18.80
	16QAM	1	0	21.42	20.84	19.58
			13	21.41	20.48	19.29
			24	21.40	20.24	19.02
		12	0	21.40	19.34	18.07
			6	21.39	19.22	18.35
			13	21.38	19.06	18.15
		25	0	21.38	19.33	18.34
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				20450	20525	20600
10MHz	QPSK	1	0	21.20	20.17	21.02
			25	21.15	20.16	20.96
			49	21.13	20.16	21.03
		25	0	21.17	20.16	20.16
			13	21.16	20.19	20.02
			25	21.15	20.13	20.15
		50	0	21.14	20.13	20.05
	16QAM	1	0	21.13	20.25	21.32
			25	21.12	20.23	21.43
			49	21.11	20.24	21.27
		25	0	21.14	20.27	19.75
			13	21.12	20.28	19.71
			25	21.11	20.28	19.77
		50	0	21.13	20.27	19.72

LTE Band 12

Conducted Power of LTE Band 12						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23017	23095	23173
1.4MHz	QPSK	1	0	16.94	16.69	17.47
			2	17.34	16.72	17.41
			5	17.58	16.41	16.90
		3	0	17.18	16.64	17.34
			2	17.51	16.61	17.21
			3	17.57	16.49	17.00
		6	0	17.33	16.53	17.08
	16QAM	1	0	16.85	16.65	17.13
			2	17.32	16.76	17.15
			5	17.52	16.46	16.63
		3	0	17.33	16.55	17.33
			2	17.67	16.54	17.20
			3	17.72	16.45	17.01
		6	0	17.34	16.50	16.94
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23025	23095	23165
3MHz	QPSK	1	0	17.04	16.80	17.41
			7	18.08	16.71	17.72
			14	17.78	16.27	16.98
		8	0	17.53	16.67	17.53
			4	17.91	16.57	17.49
			7	17.88	16.43	17.25
		15	0	17.66	16.52	17.32
	16QAM	1	0	16.88	16.61	17.23
			7	17.91	16.59	17.47
			14	17.52	16.21	16.67
		8	0	17.52	16.66	17.44
			4	17.84	16.56	17.38
			7	17.79	16.43	17.12
		15	0	17.63	16.53	17.25

Conducted Power of LTE Band 12

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23035	23095	23155
5MHz	QPSK	1	0	16.73	16.38	18.27
			13	17.95	16.61	18.20
			24	16.59	16.01	18.16
		12	0	17.60	16.57	18.12
			6	17.78	16.57	18.09
			13	17.20	16.30	18.07
		25	0	17.38	16.42	18.05
	16QAM	1	0	16.89	16.19	18.03
			13	17.94	16.41	18.01
			24	16.66	15.84	17.99
		12	0	17.53	16.54	17.98
			6	17.67	16.54	17.97
			13	17.10	16.27	17.96
		25	0	17.27	16.42	17.95
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23060	23095	23130
10MHz	QPSK	1	0	17.02	16.79	17.24
			25	16.69	16.55	18.08
			49	16.67	17.19	17.66
		25	0	17.24	16.68	17.33
			13	16.88	16.60	17.73
			25	16.82	16.78	17.70
		50	0	17.00	16.69	17.72
	16QAM	1	0	16.94	17.09	17.21
			25	16.56	17.00	17.65
			49	16.59	17.68	17.68
		25	0	17.23	16.61	16.42
			13	16.91	16.57	16.79
			25	16.85	16.76	17.16
		50	0	16.97	16.64	16.74

LTE Band 17

Conducted Power of LTE Band 17						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23755	23790	23825
5MHz	QPSK	1	0	16.57	17.35	17.34
			13	17.02	17.76	18.23
			24	16.15	17.68	17.13
		12	0	16.81	17.45	17.84
			6	16.89	17.64	18.12
			13	16.54	17.71	17.85
		25	0	16.65	17.56	17.86
	16QAM	1	0	16.53	17.21	17.56
			13	17.08	17.71	18.48
			24	16.27	17.62	17.32
		12	0	16.73	16.31	16.85
			6	16.82	16.52	17.12
			13	16.49	16.60	16.84
		25	0	16.55	16.47	16.79
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				23780	23790	23800
10MHz	QPSK	1	0	17.36	17.34	17.20
			25	18.42	17.39	17.55
			49	17.41	18.17	17.64
		25	0	17.57	17.40	17.27
			13	17.96	17.57	17.59
			25	17.57	18.04	17.95
		50	0	17.75	17.72	17.63
	16QAM	1	0	17.44	17.89	17.17
			25	17.49	17.95	17.54
			49	18.50	18.69	17.62
		25	0	16.53	16.42	16.37
			13	16.55	16.59	16.69
			25	16.95	17.06	17.05
		50	0	16.72	16.70	16.66

LTE Band 41

Conducted Power of LTE Band 41						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				39675	40620	41565
5MHz	QPSK	1	0	20.61	20.46	20.74
			13	20.46	20.43	20.75
			24	20.48	20.45	20.63
		12	0	19.70	19.52	19.70
			6	19.55	19.47	19.64
			13	19.64	19.54	19.62
		25	0	19.58	19.53	19.68
	16QAM	1	0	21.20	19.95	19.70
			13	20.73	20.18	20.04
			24	20.86	20.10	19.97
		12	0	18.46	18.36	18.53
			6	18.62	18.39	18.49
			13	18.53	18.43	18.58
		25	0	18.63	18.57	18.65
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				39700	40620	41540
10MHz	QPSK	1	0	20.62	20.48	20.65
			25	20.46	20.67	20.66
			49	20.48	20.46	20.59
		25	0	19.63	19.56	19.53
			13	19.66	19.51	19.51
			25	19.73	19.60	19.60
		50	0	19.71	19.48	19.57
	16QAM	1	0	19.94	20.83	19.92
			25	20.59	20.35	20.21
			49	20.32	20.83	20.14
		25	0	18.86	18.50	18.65
			13	18.74	18.74	18.74
			25	18.79	18.62	18.68
		50	0	18.63	18.78	18.76

Conducted Power of LTE Band 41

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				39725	40620	41515
15MHz	QPSK	1	0	20.68	20.56	20.70
			38	20.46	20.56	20.64
			74	20.49	20.65	20.60
		36	0	19.69	19.46	19.67
			18	19.71	19.44	19.65
			39	19.53	19.51	19.64
		75	0	19.56	19.47	19.59
	16QAM	1	0	20.25	20.81	20.08
			38	20.50	20.81	19.98
			74	20.31	20.88	20.09
		36	0	18.56	18.52	18.66
			18	18.56	18.53	18.64
			39	18.50	18.47	18.57
		75	0	18.69	18.48	18.70
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				39750	40620	41490
20MHz	QPSK	1	0	20.84	20.54	20.52
			50	20.81	20.45	20.55
			99	20.56	20.46	20.54
		50	0	19.74	19.64	19.56
			25	19.58	19.56	19.59
			50	19.66	19.42	19.65
		100	0	19.63	19.58	19.72
	16QAM	1	0	20.77	20.24	20.85
			50	20.71	20.21	21.12
			99	20.15	19.86	20.69
		50	0	18.76	18.61	18.76
			25	18.71	18.61	18.77
			50	18.72	18.66	18.82
		100	0	18.59	18.65	18.70

LTE Band 66

Conducted Power of LTE Band 66						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131979	132322	132665
1.4MHz	QPSK	1	0	22.96	22.95	23.59
			2	23.10	23.06	23.58
			5	22.94	22.90	23.36
		3	0	22.95	23.01	23.61
			2	23.01	23.05	23.57
			3	22.94	22.99	23.49
		6	0	22.90	22.97	23.56
	16QAM	1	0	22.84	22.93	23.43
			2	23.04	23.05	23.46
			5	22.90	22.90	23.21
		3	0	22.70	22.80	23.36
			2	22.76	22.83	23.29
			3	22.72	22.77	23.20
		6	0	22.83	22.77	23.44
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131987	132322	132657
3MHz	QPSK	1	0	22.70	22.86	23.68
			7	22.98	22.96	23.63
			14	22.93	22.77	23.22
		8	0	22.82	22.90	23.77
			4	22.93	22.91	23.68
			7	22.94	22.86	23.53
		15	0	22.86	22.87	23.66
	16QAM	1	0	22.68	22.64	23.75
			7	22.97	22.76	23.69
			14	22.94	22.59	23.27
		8	0	22.70	22.83	23.67
			4	22.82	22.83	23.58
			7	22.83	22.79	23.43
		15	0	22.69	22.71	23.56

Conducted Power of LTE Band 66

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				131997	132322	132647
5MHz	QPSK	1	0	22.30	22.51	23.59
			13	23.05	22.88	23.75
			24	22.76	22.44	23.00
		12	0	22.65	22.71	23.78
			6	22.92	22.81	23.79
			13	22.92	22.67	23.48
		25	0	22.78	22.69	23.64
	16QAM	1	0	22.31	22.52	23.52
			13	23.05	22.87	23.67
			24	22.80	22.45	22.95
		12	0	22.60	22.64	23.66
			6	22.86	22.73	23.67
			13	22.87	22.60	23.38
		25	0	22.68	22.65	23.54
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132022	132322	132622
10MHz	QPSK	1	0	22.39	22.74	23.79
			25	23.12	22.74	23.84
			49	23.75	22.96	23.42
		25	0	22.86	22.80	24.10
			13	23.20	22.82	24.03
			25	23.56	22.97	23.90
		50	0	23.18	22.86	24.02
	16QAM	1	0	22.42	22.54	23.85
			25	23.14	22.57	23.92
			49	23.77	22.78	23.49
		25	0	22.77	22.73	23.93
			13	23.11	22.73	23.88
			25	23.46	22.85	23.75
		50	0	23.10	22.77	23.88

Conducted Power of LTE Band 66

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132047	132322	132597
15MHz	QPSK	1	0	22.60	23.02	23.72
			38	23.33	22.70	24.01
			74	23.70	22.90	23.33
		36	0	23.03	22.89	24.05
			18	23.27	22.72	24.07
			39	23.62	22.80	23.91
		75	0	23.29	22.82	24.00
	16QAM	1	0	22.71	22.83	23.74
			38	23.45	22.52	24.07
			74	23.84	22.72	23.41
		36	0	22.95	22.78	23.85
			18	23.21	22.60	23.90
			39	23.57	22.64	23.77
		75	0	23.20	22.72	23.81
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				132072	132322	132572
20MHz	QPSK	1	0	22.80	23.32	23.48
			50	23.53	22.55	24.27
			99	24.05	23.53	23.94
		50	0	23.07	22.93	23.82
			25	23.49	22.81	24.26
			50	23.90	23.16	24.11
		100	0	23.45	23.04	24.05
	16QAM	1	0	22.70	23.44	23.42
			50	23.45	22.65	24.02
			99	24.19	23.51	23.88
		50	0	22.98	22.92	23.61
			25	23.41	22.77	23.93
			50	23.83	23.07	24.09
		100	0	23.38	22.95	23.86

LTE Band 71

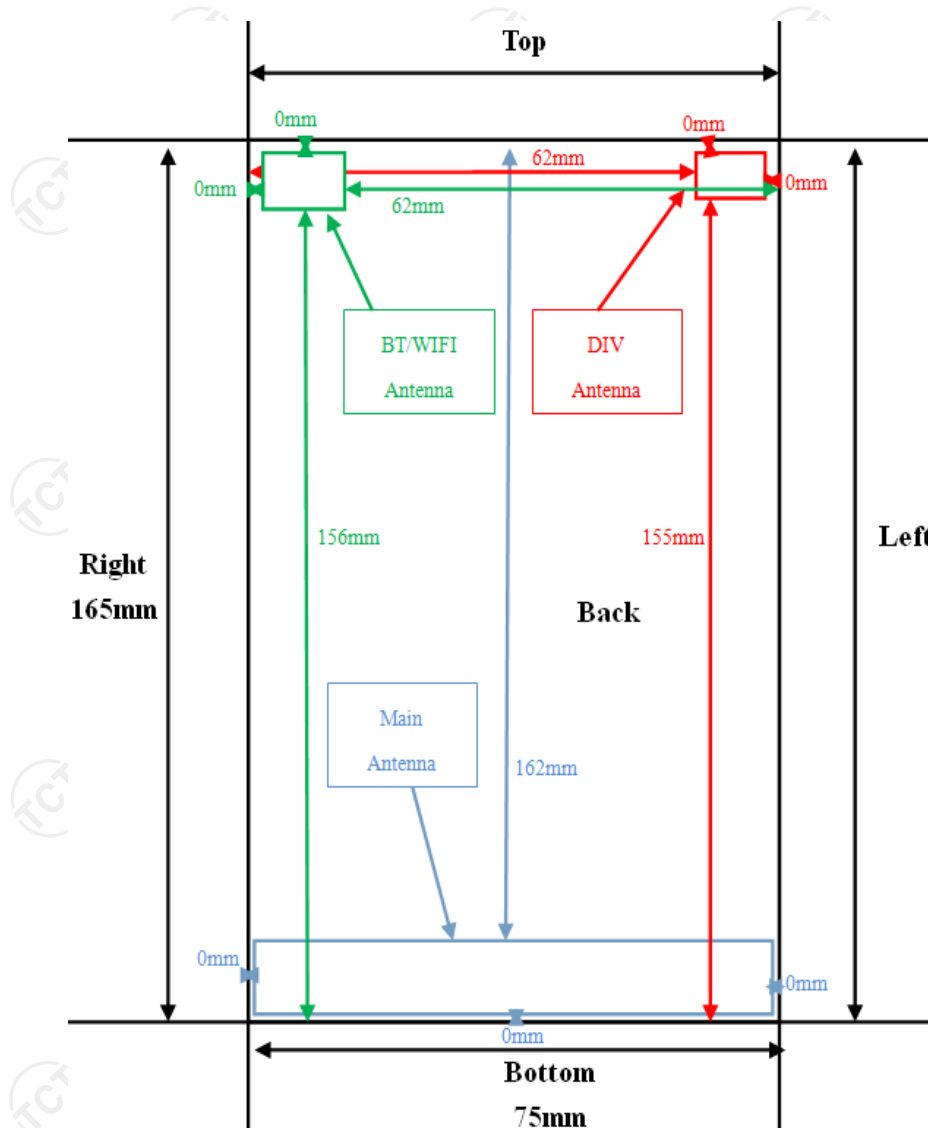
Conducted Power of LTE Band 71						
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				133147	133297	133447
5MHz	QPSK	1	0	20.99	20.79	21.53
			13	21.57	21.35	21.53
			24	21.93	21.23	21.54
		12	0	21.12	21.12	20.45
			6	21.40	21.30	20.34
			13	21.68	21.29	20.54
		25	0	21.39	21.21	20.32
	16QAM	1	0	20.84	20.80	20.21
			13	21.57	21.35	20.23
			24	21.98	21.29	20.14
		12	0	21.05	21.09	19.32
			6	21.37	21.26	19.33
			13	21.69	21.25	19.27
		25	0	21.41	21.19	19.28
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				133172	133297	133422
10MHz	QPSK	1	0	21.02	21.05	21.23
			25	21.05	21.18	21.27
			49	21.20	21.22	21.46
		25	0	19.97	20.22	20.32
			13	20.25	20.26	20.31
			25	20.30	20.27	20.52
		50	0	20.24	20.28	20.34
	16QAM	1	0	19.84	20.41	20.61
			25	20.05	20.62	20.76
			49	19.85	20.60	20.74
		25	0	19.18	19.44	19.44
			13	19.52	19.44	19.37
			25	19.37	19.47	19.46
		50	0	19.43	19.41	19.44

Conducted Power of LTE Band 71

Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				133197	133297	133397
15MHz	QPSK	1	0	21.07	21.13	21.17
			38	21.13	21.17	21.25
			74	21.18	21.21	21.35
		36	0	20.35	20.10	20.19
			18	20.14	20.34	20.36
			39	20.35	20.25	20.23
		75	0	20.24	20.33	20.41
	16QAM	1	0	20.34	20.62	20.36
			38	20.56	20.57	20.45
			74	20.45	20.64	20.54
		36	0	19.35	19.48	19.53
			18	19.31	19.38	19.60
			39	19.41	19.44	19.48
		75	0	19.24	19.30	19.45
Bandwidth	Modulation	RB size	RB offset	Channel	Channel	Channel
				133222	133322	133372
20MHz	QPSK	1	0	21.00	21.34	21.03
			50	21.11	21.49	21.32
			99	21.26	21.38	21.37
		50	0	20.36	20.14	20.32
			25	20.08	20.30	20.16
			50	20.11	20.30	20.29
		100	0	20.11	20.21	20.16
	16QAM	1	0	20.60	20.93	19.82
			50	20.67	20.82	19.92
			99	20.79	20.97	20.10
		50	0	19.23	19.46	19.51
			25	19.27	19.39	19.49
			50	19.45	19.58	19.51
		100	0	19.34	19.20	19.40

9. Exposure Position Consideration

9.1. EUT Antenna Location



9.2. Test Position Consideration

Test Positions						
Mode	Back	Front	Top Side	Bottom Side	Right Side	Left Side
GSM/WCDMA/CDMA /LTE	Yes	Yes	No	Yes	Yes	Yes
WIFI/BT	Yes	Yes	Yes	No	Yes	No

Note:

1. KDB447498 D04, particular DUT edges were not required to be evaluated for SAR if the antenna-to-edge distance is greater than 2.5cm.
2. The product only supports public address and no earpiece, so only the front and bottom need to be tested.
3. WWAN diversity antenna is RX only.

10. SAR Test Results Summary

10.1. Head 1g SAR Data

Band	Mode	Test Position	CH.	Freq. (MHz)	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)	Limit (W/Kg)
GSM850	voice	Left Cheek	190	836.6	34.00	34.50	0.75	0.281	1.122	0.315	1.60
		Left Tilt	190	836.6	34.00	34.50	-0.83	0.141	1.122	0.158	
		Right Cheek	190	836.6	34.00	34.50	0.77	0.252	1.122	0.283	
		Right Tilt	190	836.6	34.00	34.50	-2.66	0.132	1.122	0.148	
GSM1900	voice	Left Cheek	512	1850.2	31.04	31.50	-1.86	0.352	1.112	0.391	
		Left Tilt	512	1850.2	31.04	31.50	2.11	0.204	1.112	0.227	
		Right Cheek	512	1850.2	31.04	31.50	0.06	0.324	1.112	0.360	
		Right Tilt	512	1850.2	31.04	31.50	1.03	0.194	1.112	0.216	
WCDMA Band II	RMC	Left Cheek	9400	1880	24.00	24.50	2.48	0.201	1.122	0.226	
		Left Tilt	9400	1880	24.00	24.50	-1.24	0.104	1.122	0.117	
		Right Cheek	9400	1880	24.00	24.50	-0.41	0.184	1.122	0.206	
		Right Tilt	9400	1880	24.00	24.50	4.13	0.092	1.122	0.103	
WCDMA Band IV	RMC	Left Cheek	1312	1712.4	24.63	25.00	-0.12	0.461	1.089	0.502	
		Left Tilt	1312	1712.4	24.63	25.00	-2.06	0.334	1.089	0.364	
		Right Cheek	1312	1712.4	24.63	25.00	-1.59	0.457	1.089	0.498	
		Right Tilt	1312	1712.4	24.63	25.00	-0.99	0.307	1.089	0.334	
WCDMA Band V	RMC	Left Cheek	4233	846	24.01	24.50	-0.19	0.194	1.119	0.217	
		Left Tilt	4233	846	24.01	24.50	3.00	0.084	1.119	0.094	
		Right Cheek	4233	846	24.01	24.50	-1.31	0.104	1.119	0.116	
		Right Tilt	4233	846	24.01	24.50	1.75	0.052	1.119	0.058	

2.4G	802.11b	Left Cheek	11	2462	15.44	15.50	-1.36	0.284	1.014	0.288	1.60
		Left Tilt	11	2462	15.44	15.50	2.50	0.121	1.014	0.123	
		Right Cheek	11	2462	15.44	15.50	-1.57	0.310	1.014	0.314	
		Right Tilt	11	2462	15.44	15.50	1.33	0.162	1.014	0.164	
BT	8DPSK	Left Cheek	78	2480	6.73	7.00	0.20	0.120	1.064	0.128	
		Left Tilt	78	2480	6.73	7.00	0.26	0.062	1.064	0.066	
		Right Cheek	78	2480	6.73	7.00	-0.95	0.104	1.064	0.111	
		Right Tilt	78	2480	6.73	7.00	-2.93	0.051	1.064	0.054	

Band	Mode	Test Position	CH.	Freq. (MHz)	RB allocation	RB offset	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)
LTE Band 2	QPSK (20MHz)	Right Cheek	19100	1900	1	50	21.74	22.00	0.20	0.344	1.062	0.365
					50	25	20.15	20.50	1.65	0.302	1.084	0.327
		Right Tilt	19100	1900	1	50	21.74	22.00	2.87	0.192	1.062	0.204
					50	25	20.15	20.50	-1.03	0.151	1.084	0.164
		Left Cheek	19100	1900	1	50	21.74	22.00	1.89	0.363	1.062	0.385
					50	25	20.15	20.50	-0.92	0.334	1.084	0.362
		Left Tilt	19100	1900	1	50	21.74	22.00	-3.69	0.221	1.062	0.235
					50	25	20.15	20.50	1.03	0.182	1.084	0.197
LTE Band 4	QPSK (20MHz)	Right Cheek	20300	1745	1	50	24.32	24.50	2.31	0.342	1.042	0.356
					50	25	23.08	23.50	-0.16	0.304	1.102	0.335
		Right Tilt	20300	1745	1	50	24.32	24.50	1.62	0.191	1.042	0.199
					50	25	23.08	23.50	1.09	0.152	1.102	0.167
		Left Cheek	20300	1745	1	50	24.32	24.50	1.57	0.356	1.042	0.371
					50	25	23.08	23.50	-3.30	0.334	1.102	0.368
		Left Tilt	20300	1745	1	50	24.32	24.50	-2.96	0.203	1.042	0.212
					50	25	23.08	23.50	-0.58	0.182	1.102	0.200

LTE Band 5	QPSK (10MHz)	Right Cheek	20450	829	1	0	21.20	21.50	2.12	0.174	1.072	0.186
					25	0	21.17	21.50	0.07	0.157	1.079	0.169
		Right Tilt	20450	829	1	0	21.20	21.50	-0.77	0.082	1.072	0.088
					25	0	21.17	21.50	-0.02	0.061	1.079	0.066
		Left Cheek	20450	829	1	0	21.20	21.50	1.82	0.182	1.072	0.195
					25	0	21.17	21.50	-0.47	0.168	1.079	0.181
		Left Tilt	20450	829	1	0	21.20	21.50	4.13	0.091	1.072	0.098
					25	0	21.17	21.50	-1.09	0.080	1.079	0.086
LTE Band 12	QPSK (10MHz)	Right Cheek	23130	711	1	25	18.08	18.50	0.41	0.064	1.102	0.070
					25	13	17.73	18.00	0.53	0.052	1.064	0.055
		Right Tilt	23130	711	1	25	18.08	18.50	3.69	0.031	1.102	0.034
					25	13	17.73	18.00	-1.63	0.024	1.064	0.026
		Left Cheek	23130	711	1	25	18.08	18.50	-0.16	0.073	1.102	0.080
					25	13	17.73	18.00	2.62	0.052	1.064	0.055
		Left Tilt	23130	711	1	25	18.08	18.50	-0.67	0.044	1.102	0.048
					25	13	17.73	18.00	2.88	0.035	1.064	0.037
LTE Band 17	QPSK (10MHz)	Right Cheek	23780	709	1	25	18.42	18.50	2.35	0.124	1.019	0.126
					25	13	17.96	18.00	0.60	0.104	1.009	0.105
		Right Tilt	23780	709	1	25	18.42	18.50	2.43	0.062	1.019	0.063
					25	13	17.96	18.00	1.71	0.051	1.009	0.051
		Left Cheek	23780	709	1	25	18.42	18.50	0.72	0.134	1.019	0.136
					25	13	17.96	18.00	-3.16	0.112	1.009	0.113
		Left Tilt	23780	709	1	25	18.42	18.50	-1.01	0.074	1.019	0.075
					25	13	17.96	18.00	-0.98	0.062	1.009	0.063

LTE Band 41	QPSK (20MHz)	Right Cheek	39750	2506	1	0	20.84	21.00	0.14	0.061	1.038	0.063
					50	0	19.74	20.00	-0.21	0.042	1.062	0.045
		Right Tilt	39750	2506	1	0	20.84	21.00	-1.47	0.031	1.038	0.032
					50	0	19.74	20.00	-1.62	0.022	1.062	0.023
		Left Cheek	39750	2506	1	0	20.84	21.00	1.86	0.072	1.038	0.075
					50	0	19.74	20.00	2.40	0.051	1.062	0.054
		Left Tilt	39750	2506	1	0	20.84	21.00	2.31	0.052	1.038	0.054
					50	0	19.74	20.00	-1.73	0.021	1.062	0.022
LTE Band 66	QPSK (20MHz)	Right Cheek	132572	1770	1	50	24.27	24.50	-2.39	0.388	1.054	0.409
					50	25	24.26	24.50	-0.23	0.352	1.057	0.372
		Right Tilt	132572	1770	1	50	24.27	24.50	0.47	0.184	1.054	0.194
					50	25	24.26	24.50	3.31	0.151	1.057	0.160
		Left Cheek	132572	1770	1	50	24.27	24.50	0.57	0.402	1.054	0.424
					50	25	24.26	24.50	0.85	0.381	1.057	0.403
		Left Tilt	132572	1770	1	50	24.27	24.50	1.39	0.201	1.054	0.212
					50	25	24.26	24.50	0.47	0.182	1.057	0.192
LTE Band 71	QPSK (20MHz)	Right Cheek	133322	683	1	50	21.49	21.50	-0.36	0.065	1.002	0.065
					50	25	20.30	20.50	-1.82	0.057	1.047	0.060
		Right Tilt	133322	683	1	50	21.49	21.50	-2.33	0.032	1.002	0.032
					50	25	20.30	20.50	-3.28	0.027	1.047	0.028
		Left Cheek	133322	683	1	50	21.49	21.50	0.86	0.074	1.002	0.074
					50	25	20.30	20.50	-0.15	0.062	1.047	0.065
		Left Tilt	133322	683	1	50	21.49	21.50	1.62	0.047	1.002	0.047
					50	25	20.30	20.50	1.34	0.038	1.047	0.040

10.2. Body-Worn 1g SAR Data

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)	96Limit (W/Kg)
GSM850	voice	Back	190	836.6	34.00	34.50	0.76	0.161	1.122	0.181	1.60
		Front	190	836.6	34.00	34.50	0.41	0.082	1.122	0.092	
	GPRS 4 slots	Back	128	824.2	32.28	32.50	1.76	0.144	1.052	0.151	
		Front	128	824.2	32.28	32.50	1.84	0.072	1.052	0.076	
GSM1900	voice	Back	512	1850.2	31.04	31.50	1.18	0.519	1.112	0.577	
		Front	512	1850.2	31.04	31.50	2.41	0.274	1.112	0.305	
	GPRS 4 slots	Back	512	1850.2	29.53	30.00	2.92	0.600	1.114	0.669	
		Front	512	1850.2	29.53	30.00	-0.24	0.334	1.114	0.372	
WCDMA Band II	RMC	Back	9400	1880	24.00	24.50	0.16	0.490	1.122	0.550	
		Front	9400	1880	24.00	24.50	2.07	0.254	1.122	0.285	
WCDMA Band IV	RMC	Back	1312	1712.4	24.63	25.00	-0.19	0.681	1.089	0.742	
		Front	1312	1712.4	24.63	25.00	-0.51	0.364	1.089	0.396	
WCDMA Band V	RMC	Back	4233	846	24.01	24.50	0.96	0.181	1.119	0.203	
		Front	4233	846	24.01	24.50	1.06	0.094	1.119	0.105	
2.4G	802.11b	Back	11	2462	15.44	15.50	0.08	0.213	1.014	0.216	
		Front	11	2462	15.44	15.50	-1.10	0.104	1.014	0.105	
BT	8DPSK	Back	78	2480	6.73	7.00	-1.82	0.041	1.064	0.044	
		Front	78	2480	6.73	7.00	-2.60	0.020	1.064	0.021	

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	RB allocation	RB offset	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)
LTE Band 2	QPSK (20MHz)	Back	19100	1900	1	50	21.74	22.00	0.82	0.441	1.062	0.468
					50	25	20.15	20.50	0.20	0.402	1.084	0.436
		Front	19100	1900	1	50	21.74	22.00	0.77	0.220	1.062	0.234
					50	25	20.15	20.50	-1.68	0.201	1.084	0.218
LTE Band 4	QPSK (20MHz)	Back	20300	1745	1	50	24.32	24.50	0.76	0.387	1.042	0.405
					50	25	23.08	23.50	-0.93	0.367	1.102	0.404
		Front	20300	1745	1	50	24.32	24.50	-2.63	0.184	1.042	0.192
					50	25	23.08	23.50	-1.73	0.162	1.102	0.178

LTE Band 5	QPSK (10MHz)	Back	20450	829	1	0	21.20	21.50	-2.69	0.122	1.072	0.131
					25	0	21.17	21.50	-0.08	0.104	1.079	0.112
		Front	20450	829	1	0	21.20	21.50	-1.37	0.061	1.072	0.065
					25	0	21.17	21.50	1.11	0.052	1.079	0.056
LTE Band 12	QPSK (10MHz)	Back	23130	711	1	25	18.08	18.50	-1.01	0.185	1.102	0.204
					25	13	17.73	18.00	3.01	0.166	1.064	0.177
		Front	23130	711	1	25	18.08	18.50	0.47	0.094	1.102	0.104
					25	13	17.73	18.00	1.01	0.083	1.064	0.088
LTE Band 17	QPSK (15MHz)	Back	23780	709	1	25	18.42	18.50	0.29	0.181	1.019	0.184
					25	13	17.96	18.00	-1.71	0.162	1.009	0.163
		Front	23780	709	1	25	18.42	18.50	-1.53	0.094	1.019	0.096
					25	13	17.96	18.00	-0.89	0.072	1.009	0.073
LTE Band 41	QPSK (20MHz)	Back	39750	2506	1	0	20.84	21.00	2.95	0.446	1.038	0.463
					50	0	19.74	20.00	-0.92	0.424	1.062	0.450
		Front	39750	2506	1	0	20.84	21.00	-1.36	0.223	1.038	0.231
					50	0	19.74	20.00	1.91	0.212	1.062	0.225
LTE Band 66	QPSK (20MHz)	Back	132572	1770	1	50	24.27	24.50	1.82	0.316	1.054	0.333
					50	25	24.26	24.50	1.33	0.302	1.057	0.319
		Front	132572	1770	1	50	24.27	24.50	0.17	0.163	1.054	0.172
					50	25	24.26	24.50	0.01	0.151	1.057	0.160
LTE Band 71	QPSK (20MHz)	Back	133322	683	1	50	21.49	21.50	0.81	0.297	1.002	0.298
					50	25	20.30	20.50	-2.93	0.262	1.047	0.274
		Front	133322	683	1	50	21.49	21.50	0.21	0.194	1.002	0.194
					50	25	20.30	20.50	2.34	0.161	1.047	0.169

Note:

1. Per KDB447498 D04, for each exposure position, if the highest output power channel Reported SAR $\leq 0.8\text{W/kg}$, other channels SAR testing is not necessary.
2. Per KDB447498 D04, body-worn use is evaluated with the device positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium.
3. Per KDB447498 D04, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor = $10^{[(\text{tune-up limit power (dBm)} - \text{Ave. power power (dBm)})/10]}$, where tune-up limit is the maximum rated power among all production units.
Reported SAR(W/kg) = Measured SAR (W/kg) * Scaling Factor.
4. Per KDB865664D01 v01r04 perform a second repeated measurement only the ratio of largest to smallest SAR for the original and first repeated measurement is >1.20 or when the original or repeated measurement is $\geq 1.45\text{W/kg}$.
5. Perform a second measurement only if the original, first and second repeated measurement is $\geq 1.5\text{w/kg}$ and the ratio of largest to smallest SAR for the original, first and second repeated measurement is >1.20 .

10.3. Hotspot 1g SAR Data

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)	Limit (W/Kg)
GSM850	GPRS 4 slots	Front	128	824.2	32.28	32.50	2.87	0.062	1.052	0.065	1.60
		Back	128	824.2	32.28	32.50	-3.45	0.135	1.052	0.142	
		Right	128	824.2	32.28	32.50	-0.16	0.021	1.052	0.022	
		Left	128	824.2	32.28	32.50	1.97	0.012	1.052	0.013	
		Bottom	128	824.2	32.28	32.50	-3.69	0.022	1.052	0.023	
GSM1900	GPRS 4 slots	Front	512	1850.2	29.53	30.00	1.03	0.311	1.114	0.347	
		Back	512	1850.2	29.53	30.00	-1.75	0.622	1.114	0.693	
		Right	512	1850.2	29.53	30.00	-0.76	0.022	1.114	0.025	
		Left	512	1850.2	29.53	30.00	1.62	0.015	1.114	0.017	
		Bottom	512	1850.2	29.53	30.00	1.09	0.022	1.114	0.025	
WCDMA Band II	RMC	Front	9400	1880	24.00	24.50	0.12	0.224	1.122	0.251	
		Back	9400	1880	24.00	24.50	1.96	0.448	1.122	0.503	
		Right	9400	1880	24.00	24.50	-2.96	0.021	1.122	0.024	
		Left	9400	1880	24.00	24.50	-0.58	0.016	1.122	0.018	
		Bottom	9400	1880	24.00	24.50	0.68	0.024	1.122	0.027	
WCDMA Band IV	RMC	Front	1312	1712.4	24.63	25.00	0.09	0.373	1.089	0.406	
		Back	1312	1712.4	24.63	25.00	-0.41	0.691	1.089	0.752	
		Right	1312	1712.4	24.63	25.00	-0.02	0.012	1.089	0.013	
		Left	1312	1712.4	24.63	25.00	2.10	0.022	1.089	0.024	
		Bottom	1312	1712.4	24.63	25.00	-0.75	0.018	1.089	0.020	
WCDMA Band V	RMC	Front	4233	846	24.01	24.50	4.13	0.092	1.119	0.103	
		Back	4233	846	24.01	24.50	-1.86	0.181	1.119	0.203	
		Right	4233	846	24.01	24.50	-3.69	0.014	1.119	0.016	
		Left	4233	846	24.01	24.50	-1.74	0.023	1.119	0.026	
		Bottom	4233	846	24.01	24.50	3.69	0.017	1.119	0.019	
2.4G	802.11b	Front	11	2462	15.44	15.50	0.36	0.124	1.014	0.126	
		Back	11	2462	15.44	15.50	1.86	0.231	1.014	0.234	
		Right	11	2462	15.44	15.50	-1.74	0.021	1.014	0.021	
		Top	11	2462	15.44	15.50	-1.75	0.019	1.014	0.019	

Band	Mode	Test Position with 10mm	CH.	Freq. (MHz)	RB allocation	RB offset	Ave. Power (dBm)	Tune-Up Limit (dBm)	Power Drift (%)	Meas. SAR1g (W/kg)	Scaling Factor	Reported SAR1g (W/kg)
LTE Band 2	QPSK (20MHz)	Front	19100	1900	1	50	21.74	22.00	-4.08	0.214	1.062	0.227
					50	25	20.15	20.50	1.28	0.203	1.084	0.220
		Back	19100	1900	1	50	21.74	22.00	1.86	0.428	1.062	0.454
					50	25	20.15	20.50	-1.22	0.407	1.084	0.441
		Right	19100	1900	1	50	21.74	22.00	2.35	0.021	1.062	0.022
					50	25	20.15	20.50	0.94	0.014	1.084	0.015
		Left	19100	1900	1	50	21.74	22.00	2.43	0.011	1.062	0.012
					50	25	20.15	20.50	-1.05	0.010	1.084	0.011
		Bottom	19100	1900	1	50	21.74	22.00	-1.84	0.021	1.062	0.022
					50	25	20.15	20.50	2.14	0.020	1.084	0.022
LTE Band 4	QPSK (20MHz)	Front	20300	1745	1	50	24.32	24.50	-1.01	0.186	1.042	0.194
					50	25	23.08	23.50	-0.46	0.164	1.102	0.181
		Back	20300	1745	1	50	24.32	24.50	2.89	0.371	1.042	0.399
					50	25	23.08	23.50	0.37	0.362	1.102	0.387
		Right	20300	1745	1	50	24.32	24.50	-1.47	0.022	1.042	0.023
					50	25	23.08	23.50	-0.58	0.010	1.102	0.011
		Left	20300	1745	1	50	24.32	24.50	1.24	0.025	1.042	0.026
					50	25	23.08	23.50	-0.99	0.016	1.102	0.018
		Bottom	20300	1745	1	50	24.32	24.50	2.31	0.020	1.042	0.021
					50	25	23.08	23.50	-0.03	0.011	1.102	0.012
LTE Band 5	QPSK (10MHz)	Front	20450	829	1	0	21.20	21.50	-2.39	0.062	1.072	0.066
					25	0	21.17	21.50	-0.23	0.057	1.079	0.061
		Back	20450	829	1	0	21.20	21.50	1.09	0.113	1.072	0.121
					25	0	21.17	21.50	1.73	0.107	1.079	0.115
		Right	20450	829	1	0	21.20	21.50	-1.51	0.021	1.072	0.023
					25	0	21.17	21.50	0.85	0.010	1.079	0.011
		Left	20450	829	1	0	21.20	21.50	-0.44	0.022	1.072	0.024
					25	0	21.17	21.50	-1.24	0.014	1.079	0.015
		Bottom	20450	829	1	0	21.20	21.50	-0.36	0.017	1.072	0.018
					25	0	21.17	21.50	-1.82	0.010	1.079	0.011
LTE Band 12	QPSK (10MHz)	Front	23130	711	1	25	18.08	18.50	1.43	0.104	1.102	0.115
					25	13	17.73	18.00	-2.98	0.098	1.064	0.104
		Back	23130	711	1	25	18.08	18.50	0.81	0.191	1.102	0.210
					25	13	17.73	18.00	-0.15	0.154	1.064	0.164
		Right	23130	711	1	25	18.08	18.50	-0.92	0.027	1.102	0.030
					25	13	17.73	18.00	-1.62	0.014	1.064	0.015
		Left	23130	711	1	25	18.08	18.50	1.01	0.022	1.102	0.024
					25	13	17.73	18.00	0.41	0.011	1.064	0.012
		Bottom	23130	711	1	25	18.08	18.50	-0.62	0.021	1.102	0.023
					25	13	17.73	18.00	-2.77	0.012	1.064	0.013

LTE Band 17	QPSK (10MHz)	Front	23780	709	1	25	18.42	18.50	0.67	0.102	1.019	0.104
					25	13	17.96	18.00	2.41	0.101	1.009	0.102
		Back	23780	709	1	25	18.42	18.50	0.17	0.211	1.019	0.215
					25	13	17.96	18.00	1.27	0.204	1.009	0.206
		Right	23780	709	1	25	18.42	18.50	2.44	0.021	1.019	0.021
					25	13	17.96	18.00	2.07	0.014	1.009	0.014
		Left	23780	709	1	25	18.42	18.50	-1.34	0.024	1.019	0.024
					25	13	17.96	18.00	-1.16	0.012	1.009	0.012
LTE Band 41	QPSK (10MHz)	Front	39750	2506	1	0	20.84	21.00	1.66	0.304	1.038	0.315
					50	0	19.74	20.00	-1.37	0.295	1.062	0.313
		Back	39750	2506	1	0	20.84	21.00	0.48	0.602	1.038	0.625
					50	0	19.74	20.00	-0.37	0.584	1.062	0.620
		Right	39750	2506	1	0	20.84	21.00	2.55	0.024	1.038	0.025
					50	0	19.74	20.00	-0.83	0.012	1.062	0.013
		Left	39750	2506	1	0	20.84	21.00	-2.69	0.021	1.038	0.022
					50	0	19.74	20.00	1.84	0.010	1.062	0.011
LTE Band 66	QPSK (20MHz)	Front	132572	1770	1	50	24.27	24.50	-0.64	0.164	1.054	0.173
					50	25	24.26	24.50	0.24	0.152	1.057	0.161
		Back	132572	1770	1	50	24.27	24.50	0.85	0.318	1.054	0.335
					50	25	24.26	24.50	2.11	0.304	1.057	0.321
		Right	132572	1770	1	50	24.27	24.50	-4.11	0.024	1.054	0.025
					50	25	24.26	24.50	0.61	0.012	1.057	0.013
		Left	132572	1770	1	50	24.27	24.50	-2.66	0.021	1.054	0.022
					50	25	24.26	24.50	1.03	0.012	1.057	0.013
		Bottom	132572	1770	1	50	24.27	24.50	-2.60	0.022	1.054	0.023
					50	25	24.26	24.50	0.01	0.011	1.057	0.012

LTE Band 71	QPSK (20MHz)	Front	133322	683	1	50	21.49	21.50	-2.40	0.162	1.002	0.162
					50	25	20.30	20.50	2.64	0.152	1.047	0.159
		Back	133322	683	1	50	21.49	21.50	-1.08	0.265	1.002	0.266
					50	25	20.30	20.50	-1.16	0.254	1.047	0.266
		Right	133322	683	1	50	21.49	21.50	0.91	0.024	1.002	0.024
					50	25	20.30	20.50	-1.05	0.012	1.047	0.013
		Left	133322	683	1	50	21.49	21.50	0.63	0.022	1.002	0.022
					50	25	20.30	20.50	1.62	0.012	1.047	0.013
		Bottom	133322	683	1	50	21.49	21.50	-1.18	0.012	1.002	0.012
					50	25	20.30	20.50	0.91	0.010	1.047	0.010

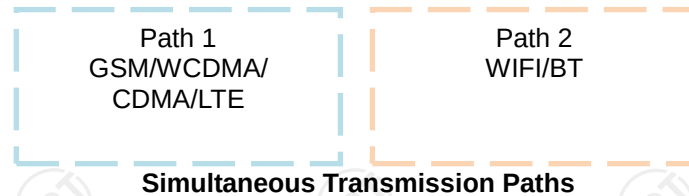
Note:

1. Per KDB447498 D04, for each exposure position, if the highest output power channel Reported SAR $\leq 0.8\text{W/kg}$, other channels SAR testing is not necessary.
2. Per KDB447498 D04, body-worn with hotspot use is evaluated with the device positioned at 10 mm from a flat phantom filled with head tissue-equivalent medium.
3. Per KDB447498 D04, the report SAR is measured SAR value adjusted for maximum tune-up tolerance. Scaling Factor = $10^{[(\text{tune-up limit power(dBm)} - \text{Ave. power (dBm)})/10]}$, where tune-up limit is the maximum rated power among all production units.
Reported SAR(W/kg) = Measured SAR (W/kg) * Scaling Factor.
4. Per KDB865664D01 v01r04 perform a second repeated measurement only the ratio of largest to smallest SAR for the original and first repeated measurement is >1.20 or when the original or repeated measurement is $\geq 1.45\text{W/kg}$.
5. Perform a second measurement only if the original, first and second repeated measurement is $\geq 1.5\text{W/kg}$ and the ratio of largest to smallest SAR for the original, first and second repeated measurement is >1.20 .

10.4. Simultaneous Transmission Conclusion

Multi-Band Simultaneous Transmission Considerations

According to FCC KDB Publication 447498 D01v05r02, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the EUT are shown in below Figure and are color-coded to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.



Simultaneous Transmission Possibilities

The Simultaneous Transmission Possibilities of this device are as below:

NO.	Configuration	Head	Body-Worn	Hotspot
1	GSM850/1900(Voice)+WIFI(2.4/5G)	YES	YES	NO
2	GPRS 850/1900(DATA)+WIFI(2.4)	NO	YES	YES
3	GPRS 850/1900(DATA)+WIFI(5G)	NO	YES	NO
4	WCDMA+ WIFI(2.4)	YES	YES	YES
5	WCDMA+ WIFI(5G)	NO	NO	NO
6	LTE+WIFI(2.4)	YES	YES	YES
7	LTE+WIFI(5G)	NO	NO	NO
8	GSM850/1900(Voice)+BT	YES	YES	NO
9	GPRS/EDGE 850/1900(DATA)+BT	YES	YES	NO
10	WCDMA+ BT	YES	YES	NO
11	LTE+BT	YES	YES	NO

10.5. SAR Simultaneous Transmission Analysis

Band	Test Position	Scaled SAR			Σ SAR (W/kg)	SPLSR	Remark
		Head	WIFI 2.4G	BT			
GSM850 (voice)	Left Cheek	0.315	0.288	0.128	0.603	N/A	N/A
	Left Tilt	0.158	0.123	0.066	0.281	N/A	N/A
	Right Cheek	0.283	0.314	0.111	0.597	N/A	N/A
	Right Tilt	0.148	0.164	0.054	0.312	N/A	N/A
GSM1900 (voice)	Left Cheek	0.391	0.288	0.128	0.679	N/A	N/A
	Left Tilt	0.227	0.123	0.066	0.35	N/A	N/A
	Right Cheek	0.360	0.314	0.111	0.674	N/A	N/A
	Right Tilt	0.216	0.164	0.054	0.38	N/A	N/A
WCDMA Band II	Left Cheek	0.226	0.288	0.128	0.514	N/A	N/A
	Left Tilt	0.117	0.123	0.066	0.24	N/A	N/A
	Right Cheek	0.206	0.314	0.111	0.52	N/A	N/A
	Right Tilt	0.103	0.164	0.054	0.267	N/A	N/A
WCDMA Band IV	Left Cheek	0.502	0.288	0.128	0.79	N/A	N/A
	Left Tilt	0.364	0.123	0.066	0.487	N/A	N/A
	Right Cheek	0.498	0.314	0.111	0.812	N/A	N/A
	Right Tilt	0.334	0.164	0.054	0.498	N/A	N/A
WCDMA Band V	Left Cheek	0.217	0.288	0.128	0.505	N/A	N/A
	Left Tilt	0.094	0.123	0.066	0.217	N/A	N/A
	Right Cheek	0.116	0.314	0.111	0.43	N/A	N/A
	Right Tilt	0.058	0.164	0.054	0.222	N/A	N/A

Band	Test Position	RB allocation	Scaled			Σ SAR (W/kg)	SPLSR	Remark
			Head	WIFI2.4G	Bluetooth			
LTE Band 2 QPSK (20MHz)	Right Cheek	1	0.365	0.314	0.111	0.679	N/A	N/A
		50	0.327	0.314	0.111	0.641	N/A	N/A
	Right Tilt	1	0.204	0.164	0.054	0.368	N/A	N/A
		50	0.164	0.164	0.054	0.328	N/A	N/A
	Left Cheek	1	0.385	0.288	0.128	0.673	N/A	N/A
		50	0.362	0.288	0.128	0.65	N/A	N/A
	Left Tilt	1	0.235	0.123	0.066	0.358	N/A	N/A
		50	0.197	0.123	0.066	0.32	N/A	N/A

LTE Band 4 QPSK (20MHz)	Right Cheek	1	0.356	0.314	0.111	0.67	N/A	N/A
		50	0.335	0.314	0.111	0.649	N/A	N/A
	Right Tilt	1	0.199	0.164	0.054	0.363	N/A	N/A
		50	0.167	0.164	0.054	0.331	N/A	N/A
	Left Cheek	1	0.371	0.288	0.128	0.659	N/A	N/A
		50	0.368	0.288	0.128	0.656	N/A	N/A
	Left Tilt	1	0.212	0.123	0.066	0.335	N/A	N/A
		50	0.200	0.123	0.066	0.323	N/A	N/A
LTE Band 5 QPSK (10MHz)	Right Cheek	1	0.186	0.314	0.111	0.5	N/A	N/A
		25	0.169	0.314	0.111	0.483	N/A	N/A
	Right Tilt	1	0.088	0.164	0.054	0.252	N/A	N/A
		25	0.066	0.164	0.054	0.23	N/A	N/A
	Left Cheek	1	0.195	0.288	0.128	0.483	N/A	N/A
		25	0.181	0.288	0.128	0.469	N/A	N/A
	Left Tilt	1	0.098	0.123	0.066	0.221	N/A	N/A
		25	0.086	0.123	0.066	0.209	N/A	N/A
LTE Band 12 QPSK (10MHz)	Right Cheek	1	0.070	0.314	0.111	0.384	N/A	N/A
		25	0.055	0.314	0.111	0.369	N/A	N/A
	Right Tilt	1	0.034	0.164	0.054	0.198	N/A	N/A
		25	0.026	0.164	0.054	0.19	N/A	N/A
	Left Cheek	1	0.080	0.288	0.128	0.368	N/A	N/A
		25	0.055	0.288	0.128	0.343	N/A	N/A
	Left Tilt	1	0.048	0.123	0.066	0.171	N/A	N/A
		25	0.037	0.123	0.066	0.16	N/A	N/A
LTE Band 17 QPSK (10MHz)	Right Cheek	1	0.126	0.314	0.111	0.44	N/A	N/A
		25	0.105	0.314	0.111	0.419	N/A	N/A
	Right Tilt	1	0.063	0.164	0.054	0.227	N/A	N/A
		25	0.051	0.164	0.054	0.215	N/A	N/A
	Left Cheek	1	0.136	0.288	0.128	0.424	N/A	N/A
		25	0.113	0.288	0.128	0.401	N/A	N/A
	Left Tilt	1	0.075	0.123	0.066	0.198	N/A	N/A
		25	0.063	0.123	0.066	0.186	N/A	N/A
LTE Band 41 QPSK (20MHz)	Right Cheek	1	0.063	0.314	0.111	0.377	N/A	N/A
		50	0.045	0.314	0.111	0.359	N/A	N/A
	Right Tilt	1	0.032	0.164	0.054	0.196	N/A	N/A
		50	0.023	0.164	0.054	0.187	N/A	N/A
	Left Cheek	1	0.075	0.288	0.128	0.363	N/A	N/A
		50	0.054	0.288	0.128	0.342	N/A	N/A
	Left Tilt	1	0.054	0.123	0.066	0.177	N/A	N/A
		50	0.022	0.123	0.066	0.145	N/A	N/A

LTE Band 66 QPSK (20MHz)	Right Cheek	1	0.409	0.314	0.111	0.723	N/A	N/A
		50	0.372	0.314	0.111	0.686	N/A	N/A
	Right Tilt	1	0.194	0.164	0.054	0.358	N/A	N/A
		50	0.160	0.164	0.054	0.324	N/A	N/A
	Left Cheek	1	0.424	0.288	0.128	0.712	N/A	N/A
		50	0.403	0.288	0.128	0.691	N/A	N/A
	Left Tilt	1	0.212	0.123	0.066	0.335	N/A	N/A
		50	0.192	0.123	0.066	0.315	N/A	N/A
LTE Band 71 QPSK (20MHz)	Right Cheek	1	0.065	0.314	0.111	0.379	N/A	N/A
		50	0.060	0.314	0.111	0.374	N/A	N/A
	Right Tilt	1	0.032	0.164	0.054	0.196	N/A	N/A
		50	0.028	0.164	0.054	0.192	N/A	N/A
	Left Cheek	1	0.074	0.288	0.128	0.362	N/A	N/A
		50	0.065	0.288	0.128	0.353	N/A	N/A
	Left Tilt	1	0.047	0.123	0.066	0.17	N/A	N/A
		50	0.040	0.123	0.066	0.163	N/A	N/A

Band	Test Position	Scaled SAR			Σ SAR (W/kg)	SPLSR	Remark
		Body-Worn	WIFI 2.4G	BT			
GSM850 (voice)	Back	0.181	0.216	0.044	0.397	N/A	N/A
	Front	0.092	0.105	0.021	0.197	N/A	N/A
GSM850 (GPRS 4slot)	Back	0.151	0.216	0.044	0.367	N/A	N/A
	Front	0.076	0.105	0.021	0.181	N/A	N/A
GSM1900 (voice)	Back	0.577	0.216	0.044	0.793	N/A	N/A
	Front	0.305	0.105	0.021	0.41	N/A	N/A
GSM1900 (GPRS 4slot)	Back	0.669	0.216	0.044	0.885	N/A	N/A
	Front	0.372	0.105	0.021	0.477	N/A	N/A
WCDMA Band II	Back	0.550	0.216	0.044	0.766	N/A	N/A
	Front	0.285	0.105	0.021	0.39	N/A	N/A
WCDMA Band IV	Back	0.742	0.216	0.044	0.958	N/A	N/A
	Front	0.396	0.105	0.021	0.501	N/A	N/A
WCDMA Band V	Back	0.203	0.216	0.044	0.419	N/A	N/A
	Front	0.105	0.105	0.021	0.21	N/A	N/A

Band	Test Position	RB allocation	Scaled			Σ SAR (W/kg)	SPLSR	Remark
			Body-Worn	WIFI 2.4G	Bluetooth			
LTE Band 2 QPSK (20MHz)	Back	1	0.468	0.216	0.044	0.684	N/A	N/A
		50	0.436	0.216	0.044	0.652	N/A	N/A
	Front	1	0.234	0.105	0.021	0.339	N/A	N/A
		50	0.218	0.105	0.021	0.323	N/A	N/A
LTE Band 4 QPSK (20MHz)	Back	1	0.405	0.216	0.044	0.621	N/A	N/A
		50	0.404	0.216	0.044	0.62	N/A	N/A
	Front	1	0.192	0.105	0.021	0.297	N/A	N/A
		50	0.178	0.105	0.021	0.283	N/A	N/A
LTE Band 5 QPSK (10MHz)	Back	1	0.131	0.216	0.044	0.347	N/A	N/A
		25	0.112	0.216	0.044	0.328	N/A	N/A
	Front	1	0.065	0.105	0.021	0.17	N/A	N/A
		25	0.056	0.105	0.021	0.161	N/A	N/A
LTE Band 12 QPSK (10MHz)	Back	1	0.204	0.216	0.044	0.42	N/A	N/A
		25	0.177	0.216	0.044	0.393	N/A	N/A
	Front	1	0.104	0.105	0.021	0.209	N/A	N/A
		25	0.088	0.105	0.021	0.193	N/A	N/A
LTE Band 17 QPSK (10MHz)	Back	1	0.184	0.216	0.044	0.4	N/A	N/A
		25	0.163	0.216	0.044	0.379	N/A	N/A
	Front	1	0.096	0.105	0.021	0.201	N/A	N/A
		25	0.073	0.105	0.021	0.178	N/A	N/A
LTE Band 41 QPSK (20MHz)	Back	1	0.463	0.216	0.044	0.679	N/A	N/A
		50	0.450	0.216	0.044	0.666	N/A	N/A
	Front	1	0.231	0.105	0.021	0.336	N/A	N/A
		50	0.225	0.105	0.021	0.33	N/A	N/A
LTE Band 66 QPSK (20MHz)	Back	1	0.333	0.216	0.044	0.549	N/A	N/A
		50	0.319	0.216	0.044	0.535	N/A	N/A
	Front	1	0.172	0.105	0.021	0.277	N/A	N/A
		50	0.160	0.105	0.021	0.265	N/A	N/A
LTE Band 71 QPSK (20MHz)	Back	1	0.298	0.216	0.044	0.514	N/A	N/A
		50	0.274	0.216	0.044	0.49	N/A	N/A
	Front	1	0.194	0.105	0.021	0.299	N/A	N/A
		50	0.169	0.105	0.021	0.274	N/A	N/A

Band	Test Position	Scaled SAR		Σ SAR (W/kg)	SPLSR	Remark
		Hotspot	WIFI 2.4G			
GSM850 (GPRS)	Front	0.065	0.126	0.191	N/A	N/A
	Back	0.142	0.234	0.376	N/A	N/A
	Right	0.022	0.021	0.043	N/A	N/A
	Left	0.013	/	0.013	N/A	N/A
	Bottom	0.023	/	0.023	N/A	N/A
	Top	/	0.019	0.019	N/A	N/A
GSM1900(GPRS)	Front	0.347	0.126	0.473	N/A	N/A
	Back	0.693	0.234	0.927	N/A	N/A
	Right	0.025	0.021	0.046	N/A	N/A
	Left	0.017	/	0.017	N/A	N/A
	Bottom	0.025	/	0.025	N/A	N/A
	Top	/	0.019	0.019	N/A	N/A
WCDMA Band II	Front	0.251	0.126	0.377	N/A	N/A
	Back	0.503	0.234	0.737	N/A	N/A
	Right	0.024	0.021	0.045	N/A	N/A
	Left	0.018	/	0.018	N/A	N/A
	Bottom	0.027	/	0.027	N/A	N/A
	Top	/	0.019	0.019	N/A	N/A
WCDMA Band IV	Front	0.406	0.126	0.532	N/A	N/A
	Back	0.752	0.234	0.986	N/A	N/A
	Right	0.013	0.021	0.034	N/A	N/A
	Left	0.024	/	0.024	N/A	N/A
	Bottom	0.020	/	0.02	N/A	N/A
	Top	/	0.019	0.019	N/A	N/A
WCDMA Band V	Front	0.103	0.126	0.229	N/A	N/A
	Back	0.203	0.234	0.437	N/A	N/A
	Right	0.016	0.021	0.037	N/A	N/A
	Left	0.026	/	0.026	N/A	N/A
	Bottom	0.019	/	0.019	N/A	N/A
	Top	/	0.019	0.019	N/A	N/A

Band	Test Position	RB allocation	Scaled		Σ SAR (W/kg)	SPLSR	Remark
			Hotspot	WIFI2.4G			
LTE Band 2 QPSK (20MHz)	Front	1	0.227	0.126	0.353	N/A	N/A
		50	0.220	0.126	0.346	N/A	N/A
	Back	1	0.454	0.234	0.688	N/A	N/A
		50	0.441	0.234	0.675	N/A	N/A
	Right	1	0.022	0.021	0.043	N/A	N/A
		50	0.015	0.021	0.036	N/A	N/A
	Left	1	0.012	/	0.012	N/A	N/A
		50	0.011	/	0.011	N/A	N/A
	Bottom	1	0.022	/	0.022	N/A	N/A
		50	0.022	/	0.022	N/A	N/A
LTE Band 4 QPSK (20MHz)	Front	1	0.194	0.126	0.32	N/A	N/A
		50	0.181	0.126	0.307	N/A	N/A
	Back	1	0.399	0.234	0.633	N/A	N/A
		50	0.387	0.234	0.621	N/A	N/A
	Right	1	0.023	0.021	0.044	N/A	N/A
		50	0.011	0.021	0.032	N/A	N/A
	Left	1	0.026	/	0.026	N/A	N/A
		50	0.018	/	0.018	N/A	N/A
	Bottom	1	0.021	/	0.021	N/A	N/A
		50	0.012	/	0.012	N/A	N/A
LTE Band 5 QPSK (10MHz)	Front	1	0.066	0.126	0.192	N/A	N/A
		25	0.061	0.126	0.187	N/A	N/A
	Back	1	0.121	0.234	0.355	N/A	N/A
		25	0.115	0.234	0.349	N/A	N/A
	Right	1	0.023	0.021	0.044	N/A	N/A
		25	0.011	0.021	0.032	N/A	N/A
	Left	1	0.024	/	0.024	N/A	N/A
		25	0.015	/	0.015	N/A	N/A
	Bottom	1	0.018	/	0.018	N/A	N/A
		25	0.011	/	0.011	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		25	/	0.019	0.019	N/A	N/A

LTE Band 12 QPSK (10MHz)	Front	1	0.115	0.126	0.241	N/A	N/A
		25	0.104	0.126	0.23	N/A	N/A
	Back	1	0.210	0.234	0.444	N/A	N/A
		25	0.164	0.234	0.398	N/A	N/A
	Right	1	0.030	0.021	0.051	N/A	N/A
		25	0.015	0.021	0.036	N/A	N/A
	Left	1	0.024	/	0.024	N/A	N/A
		25	0.012	/	0.012	N/A	N/A
	Bottom	1	0.023	/	0.023	N/A	N/A
		25	0.013	/	0.013	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		25	/	0.019	0.019	N/A	N/A
LTE Band 17 QPSK (10MHz)	Front	1	0.104	0.126	0.23	N/A	N/A
		25	0.102	0.126	0.228	N/A	N/A
	Back	1	0.215	0.234	0.449	N/A	N/A
		25	0.206	0.234	0.44	N/A	N/A
	Right	1	0.021	0.021	0.042	N/A	N/A
		25	0.014	0.021	0.035	N/A	N/A
	Left	1	0.024	/	0.024	N/A	N/A
		25	0.012	/	0.012	N/A	N/A
	Bottom	1	0.021	/	0.021	N/A	N/A
		25	0.011	/	0.011	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		25	/	0.019	0.019	N/A	N/A
LTE Band 41 QPSK (20MHz)	Front	1	0.315	0.126	0.441	N/A	N/A
		50	0.313	0.126	0.439	N/A	N/A
	Back	1	0.625	0.234	0.859	N/A	N/A
		50	0.620	0.234	0.854	N/A	N/A
	Right	1	0.025	0.021	0.046	N/A	N/A
		50	0.013	0.021	0.034	N/A	N/A
	Left	1	0.022	/	0.022	N/A	N/A
		50	0.011	/	0.011	N/A	N/A
	Bottom	1	0.023	/	0.023	N/A	N/A
		50	0.012	/	0.012	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		50	/	0.019	0.019	N/A	N/A

LTE Band 66 QPSK (20MHz)	Front	1	0.173	0.126	0.299	N/A	N/A
		50	0.161	0.126	0.287	N/A	N/A
	Back	1	0.335	0.234	0.569	N/A	N/A
		50	0.321	0.234	0.555	N/A	N/A
	Right	1	0.025	0.021	0.046	N/A	N/A
		50	0.013	0.021	0.034	N/A	N/A
	Left	1	0.022	/	0.022	N/A	N/A
		50	0.013	/	0.013	N/A	N/A
	Bottom	1	0.023	/	0.023	N/A	N/A
		50	0.012	/	0.012	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		50	/	0.019	0.019	N/A	N/A
LTE Band 71 QPSK (20MHz)	Front	1	0.162	0.126	0.288	N/A	N/A
		50	0.159	0.126	0.285	N/A	N/A
	Back	1	0.266	0.234	0.5	N/A	N/A
		50	0.266	0.234	0.5	N/A	N/A
	Right	1	0.024	0.021	0.045	N/A	N/A
		50	0.013	0.021	0.034	N/A	N/A
	Left	1	0.022	/	0.022	N/A	N/A
		50	0.013	/	0.013	N/A	N/A
	Bottom	1	0.012	/	0.012	N/A	N/A
		50	0.010	/	0.01	N/A	N/A
	Top	1	/	0.019	0.019	N/A	N/A
		50	/	0.019	0.019	N/A	N/A

Simultaneous Transmission Conclusion

The above numerical summed SAR results for all the case simultaneous transmission conditions were below the SAR limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the SAR limit and therefore measured volumetric simultaneous SAR summation is not required per FCC KDB Publication 447498 D01v05r02.

10.6. Measurement Uncertainty (450MHz-3GHz)

UNCERTAINTY EVALUATION FOR HEADSET SAR									
Uncertainty Component	Description	Uncertainty Value(%)	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. 1g(%)	Std. Unc. 10g(%)	v
Measurement system									
Probe calibration	7.2.1	5.8	N	1	1	1	5.8	5.8	∞
Axial isotropy	7.2.1.1	3.5	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.43	1.43	∞
Hemispherical isotropy	7.2.1.1	5.9	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary Effects	7.2.1.4	1.00	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	7.2.1.2	4.70	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	7.2.1.2	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation Response	7.2.1.3	3	N	1	1	1	3.00	3.00	∞
Readout Electronics	7.2.1.5	0.5	N	1	1	1	0.50	0.50	∞
Response Time	7.2.1.6	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	7.2.1.7	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF Ambient Conditions-Noise	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF Ambient Conditions-Reflection	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioned mechanical Tolerance	7.2.2.1	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	7.2.2.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation interpolation and integration algorithms for Max.SAR evaluation	7.2.4	2.3	R	1	1	1	1.33	1.33	∞
Test sample related									
Test sample positioning	7.2.2.4.4	2.6	N	1	1	1	2.60	2.60	∞
Device holder uncertainty	7.2.2.4.2 7.2.2.4.3	3	N	1	1	1	3.00	3.00	∞
output power variation-SAR drift measurement	7.2.3.6	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
SAR scaling	7.2.5	2	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Phantom and tissue parameters									
Phantom uncertainty (shape and thickness tolerances)	7.2.2.2	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
uncertainty in SAR correction for deviation (in permittivity and conductivity)	7.2.6	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid conductivity -measurement uncertainty	7.2.3.3	4	N	1	0.23	0.26	0.92	1.04	∞
Liquid permittivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid permittivity measurement uncertainty	7.2.3.4	5	N	1	0.23	0.26	1.15	1.30	∞
Combined standard uncertainty			RSS				10.83	10.54	
Expanded uncertainty (95%CONFIDENCEINTERVAL)			k				21.26	21.08	

UNCERTAINTY FOR PERFORMANCE CHECK

Uncertainty Component	Description	Uncertainty Value(%)	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. 1g(%)	Std. Unc. 10g(%)	v
Measurement system									
Probe calibration	7.2.1	5.8	N	1	1	1	5.8	5.8	∞
Axial isotropy	7.2.1.1	3.5	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.43	1.43	∞
Hemispherical isotropy	7.2.1.1	5.9	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.41	2.41	∞
Boundary Effects	7.2.1.4	1.00	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	7.2.1.2	4.70	R	$\sqrt{3}$	1	1	2.71	2.71	∞
System detection limits	7.2.1.2	1	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Modulation Response	7.2.1.3	3	N	1	1	1	0.00	0.00	∞
Readout Electronics	7.2.1.5	0.5	N	1	1	1	0.50	0.50	∞
Response Time	7.2.1.6	0	R	$\sqrt{3}$	1	1	0.00	0.00	∞
Integration Time	7.2.1.7	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
RF Ambient Conditions-Noise	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
RF Ambient Conditions-Reflection	7.2.3.7	3	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioned mechanical Tolerance	7.2.2.1	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Probe positioning with respect to phantom shell	7.2.2.3	1.4	R	$\sqrt{3}$	1	1	0.81	0.81	∞
Extrapolation interpolation and integration algorithms for Max.SAR evaluation	7.2.4	2.3	R	1	1	1	1.33	1.33	∞
Dipole									
Deviation of experimental source from numerical source		4	N	1	1	1	4.00	4.00	∞
Input power and SAR drift measurement	7.2.3.6	5	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole axis to liquid distance		2	R	$\sqrt{3}$	1	1			∞
Phantom and tissue parameters									
Phantom uncertainty (shape and thickness tolerances)	7.2.2.2	4	R	$\sqrt{3}$	1	1	2.31	2.31	∞
uncertainty in SAR correction for deviation (in permittivity and conductivity)	7.2.6	2	N	1	1	0.84	2.00	1.68	∞
Liquid conductivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid conductivity -measurement uncertainty	7.2.3.3	4	N	1	0.23	0.26	0.92	1.04	∞
Liquid permittivity (temperature uncertainty)	7.2.3.5	2.5	N	1	0.78	0.71	1.95	1.78	∞
Liquid permittivity measurement uncertainty	7.2.3.4	5	N	1	0.23	0.26	1.15	1.30	∞
Combined standard uncertainty			RSS				10.15	10.05	
Expanded uncertainty (95%CONFIDENCEINTE RVAL			k				20.29	20.10	

10.7. Test Equipment List

Test Equipment	Manufacturer	Model	Serial Number	Calibration	
				Calibration Date (D.M.Y)	Calibration Due (D.M.Y)
PC	Lenovo	H3050	N/A	N/A	N/A
Signal Generator	Agilent	N5182A	MY47070282	Jun. 27, 2024	Jun. 26, 2025
Multimeter	Keithley	Multimeter 2000	4078275	Jun. 27, 2024	Jun. 26, 2025
Network Analyzer	Agilent	8753E	US38432457	Jun. 27, 2024	Jun. 26, 2025
Wideband Radio Communication Tester	R&S	CMW500	114220	Jun. 27, 2024	Jun. 26, 2025
Power Meter	Agilent	E4418B	GB43312526	Jun. 27, 2024	Jun. 26, 2025
Power Meter	Agilent	E4416A	MY45101555	Jun. 27, 2024	Jun. 26, 2025
Power Meter	Agilent	N1912A	MY50001018	Jun. 27, 2024	Jun. 26, 2025
Power Sensor	Agilent	E9301A	MY41497725	Jun. 27, 2024	Jun. 26, 2025
Power Sensor	Agilent	E9327A	MY44421198	Jun. 27, 2024	Jun. 26, 2025
Power Sensor	Agilent	E9323A	MY53070005	Jun. 27, 2024	Jun. 26, 2025
Power Amplifier	PE	PE15A4019	112342	N/A	N/A
Directional Coupler	Agilent	722D	MY52180104	N/A	N/A
Attenuator	Chensheng	FF779	134251	N/A	N/A
E-Field PROBE	MVG	SSE2	SN 25/22 EPGO375	Jun. 29, 2024	Jun. 28, 2025
DIPOLE 750	MVG	SID750	SN 16/15 DIP 0G750-368	Jun. 05, 2024	Jun. 04, 2027
DIPOLE 835	MVG	SID835	SN 16/15 DIP 0G835-369	Jun. 05, 2024	Jun. 04, 2027
DIPOLE 1800	MVG	SID 1800	SN 16/15 DIP 1G800-371	Jun. 05, 2024	Jun. 04, 2027
DIPOLE 1900	MVG	SID1900	SN 16/15 DIP 1G900-372	Jun. 05, 2024	Jun. 04, 2027
DIPOLE 2450	MVG	SID 2450	SN 16/15 DIP 2G450-374	Jun. 05, 2024	Jun. 04, 2027
DIPOLE 2600	MVG	SID 2600	SN 16/15 DIP 2G600-375	Jun. 05, 2024	Jun. 04, 2027
Limesar Dielectric Probe	MVG	SCLMP	SN 19/15 OCPG71	Jun. 05, 2024	Jun. 04, 2025
Communication Antenna	MVG	ANTA59	SN 39/14 ANTA59	N/A	N/A
Mobile Phone Position Device	MVG	MSH101	SN 19/15 MSH101	N/A	N/A
Dummy Probe	MVG	DP66	SN 13/15 DP66	N/A	N/A
SAM PHANTOM	MVG	SAM120	SN 19/15 SAM120	N/A	N/A
PHANTOM TABLE	MVG	TABP101	SN 19/15 TABP101	N/A	N/A
Robot TABLE	MVG	TABP61	SN 19/15 TABP61	N/A	N/A
6 AXIS ROBOT	KUKA	KR6-R900	501822	N/A	N/A

Note: 1. N/A means this equipment no need to calibrate

2. Each Time means this device need to calibrate every use time

3. The dipole was not damaged properly repaired.

4. The measured SAR deviates from the calibrated SAR value by less than 10%

5. The most recent return-loss result meets the required 20 dB minimum return-loss requirement

6. The most recent measurement of the real or imaginary parts of the impedance deviates by less than 5 Ω from the previous measurement.

11. System Check Results

Date of measurement: 10/14/2024 Test mode: 750 (Head)

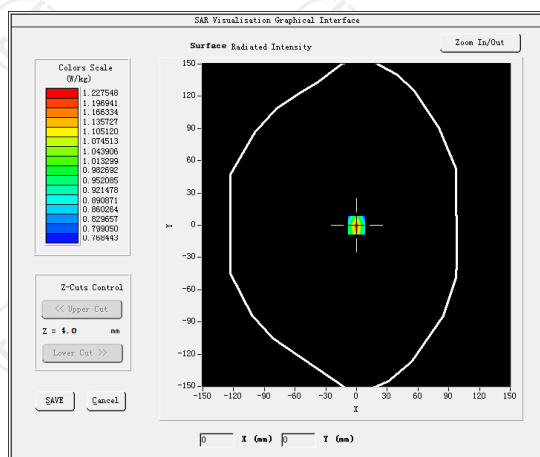
Product Description: Validation

Dipole Model: SID750

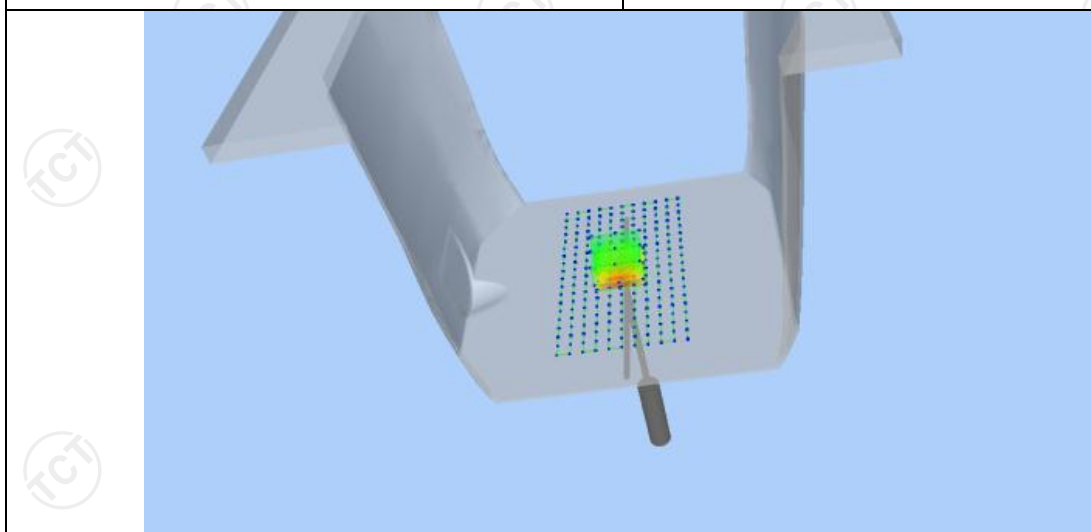
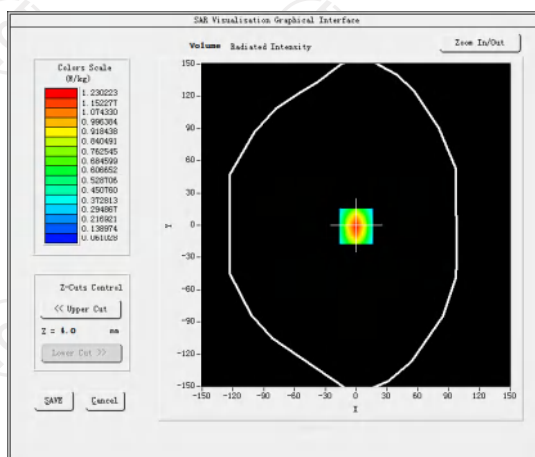
E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	1.71
Frequency (MHz)	750.000000
Relative permittivity (real part)	41.901260
Relative permittivity (imaginary part)	17.130904
Conductivity (S/m)	0.891220
Variation (%)	-0.090000
SAR 10g (W/Kg)	0.560421
SAR 1g (W/Kg)	0.804230

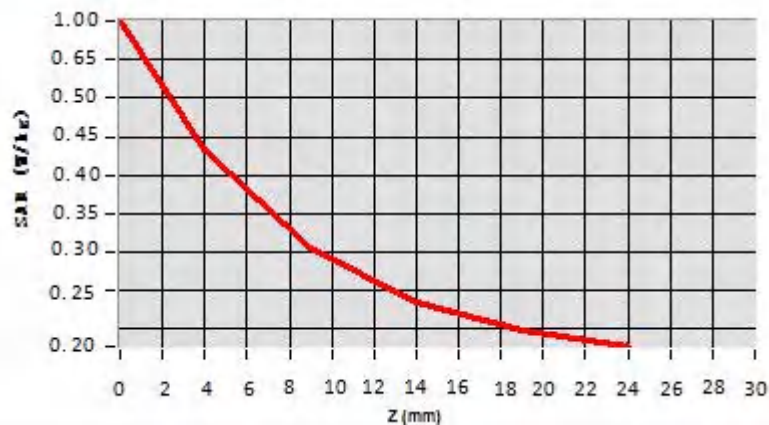
SURFACE SAR



VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0014	0.4404	0.3024	0.2342	0.2221



Hot spot position



Date of measurement: 10/15/2024 Test mode: 835 (Head)

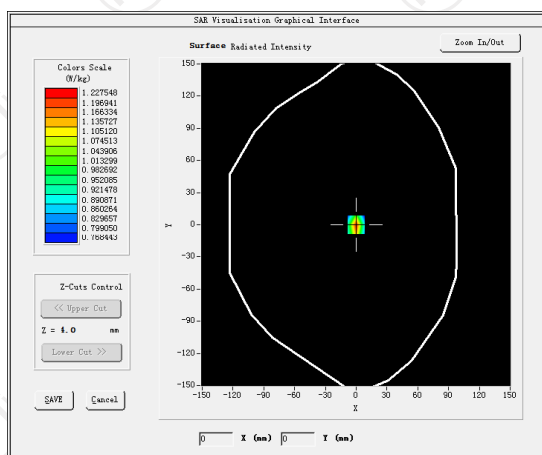
Product Description: Validation

Dipole Model: SID835

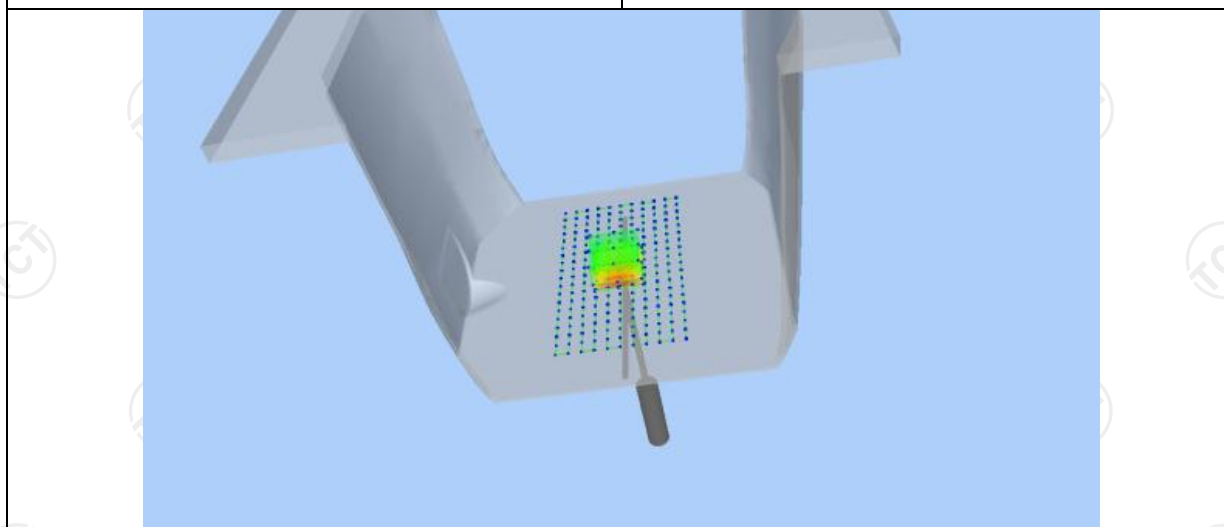
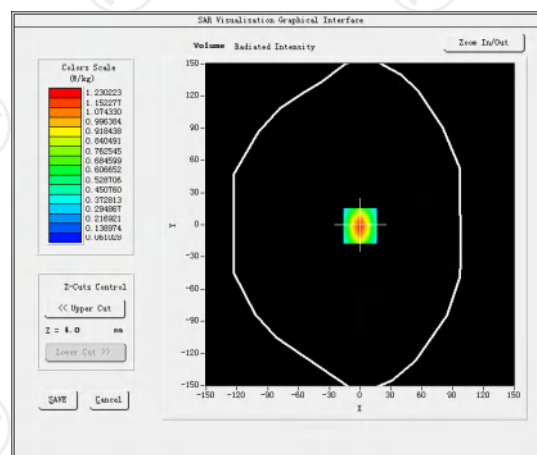
E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	1.80
Frequency (MHz)	835.000000
Relative permittivity (real part)	41.417760
Relative permittivity (imaginary part)	18.129852
Conductivity (S/m)	0.874923
Variation (%)	-0.090000
SAR 10g (W/Kg)	0.570250
SAR 1g (W/Kg)	0.886135

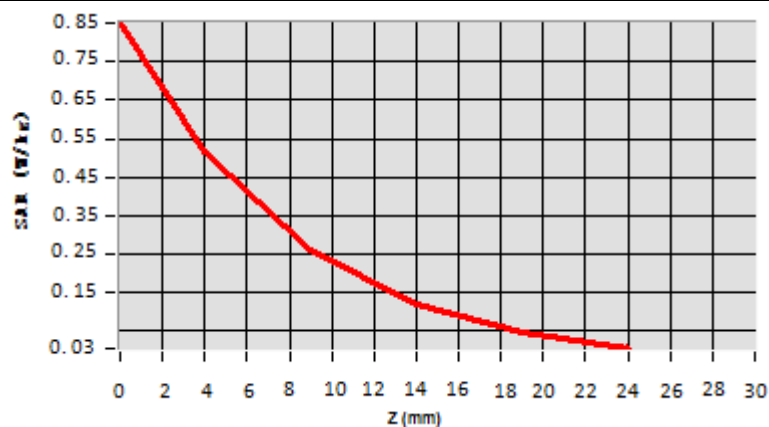
SURFACE SAR



VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8625	0.5302	0.2594	0.1302	0.1025



Hot spot position



Date of measurement: 10/18/2024 Test mode: 1800MHz (Head)

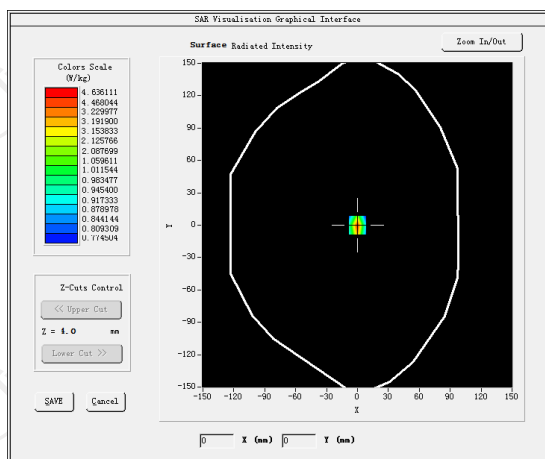
Product Description: Validation

Dipole Model: SID1800

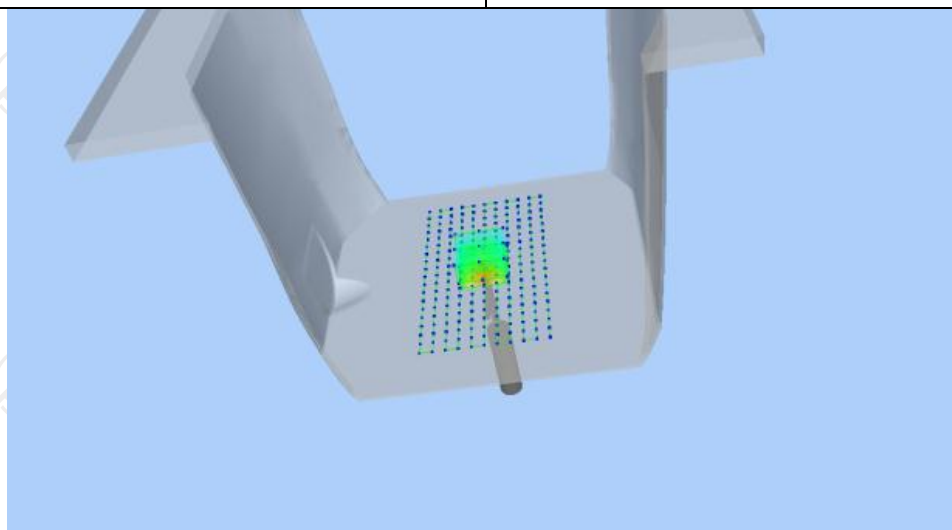
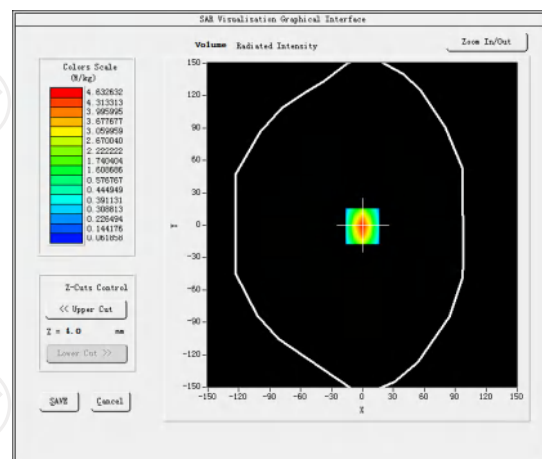
E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	2.08
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.070000
Relative permittivity (imaginary part)	14.000000
Conductivity (S/m)	1.380000
Variation (%)	1.250000
SAR 10g (W/Kg)	2.201458
SAR 1g (W/Kg)	3.752497

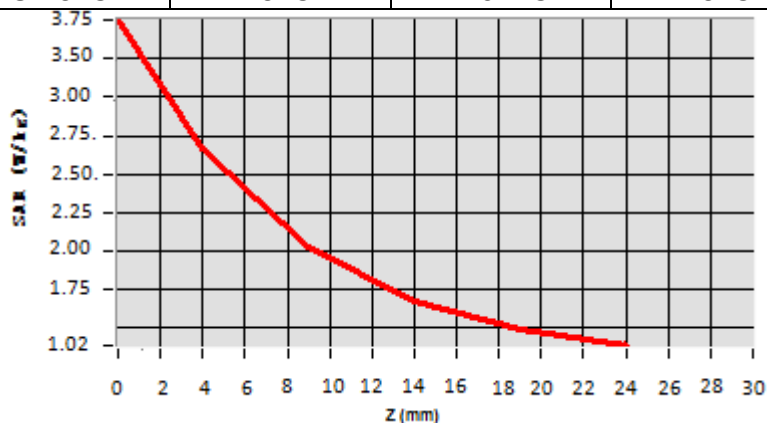
SURFACE SAR



VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.7625	2.6254	2.0245	1.6254	1.0214



Hot spot position



Date of measurement: 10/22/2024 Test mode: 1900MHz (Head)

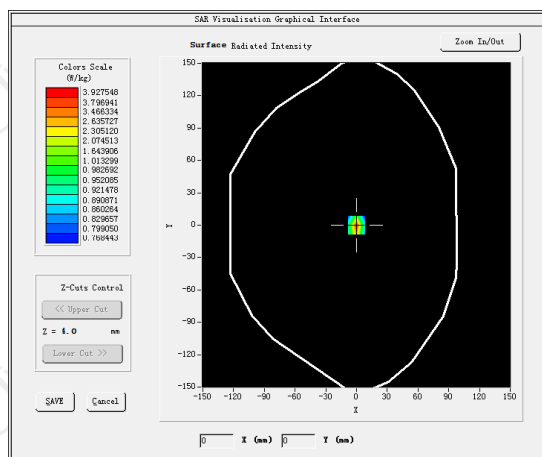
Product Description: Validation

Dipole Model: SID1900

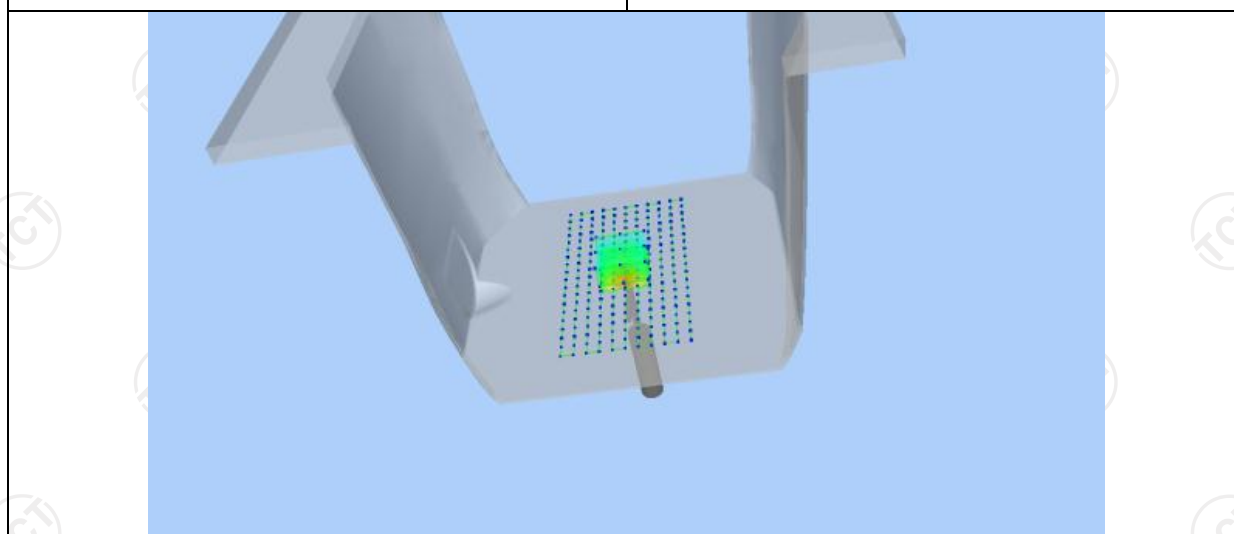
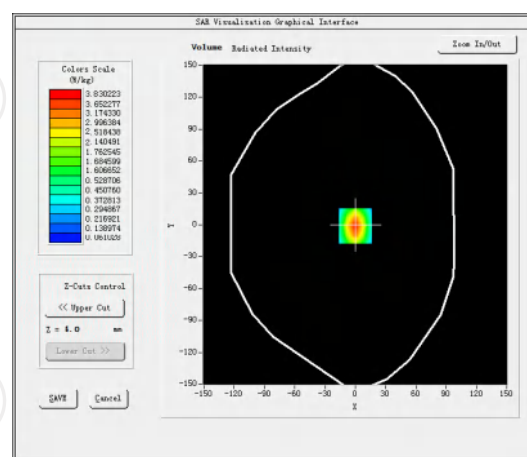
E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	2.23
Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.367609
Variation (%)	-0.910000
SAR 10g (W/Kg)	1.899324
SAR 1g (W/Kg)	3.576354

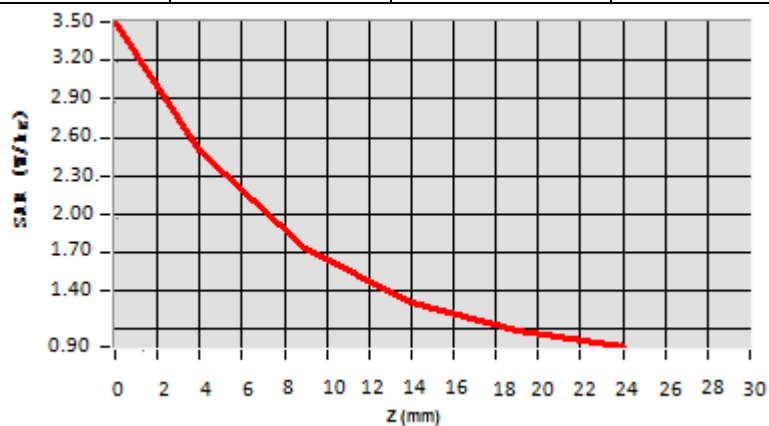
SURFACE SAR



VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	3.5325	2.5687	1.7025	1.3025	0.1125



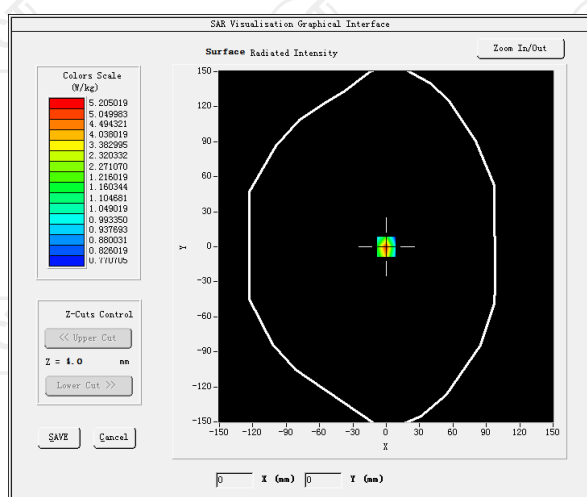
Hot spot position



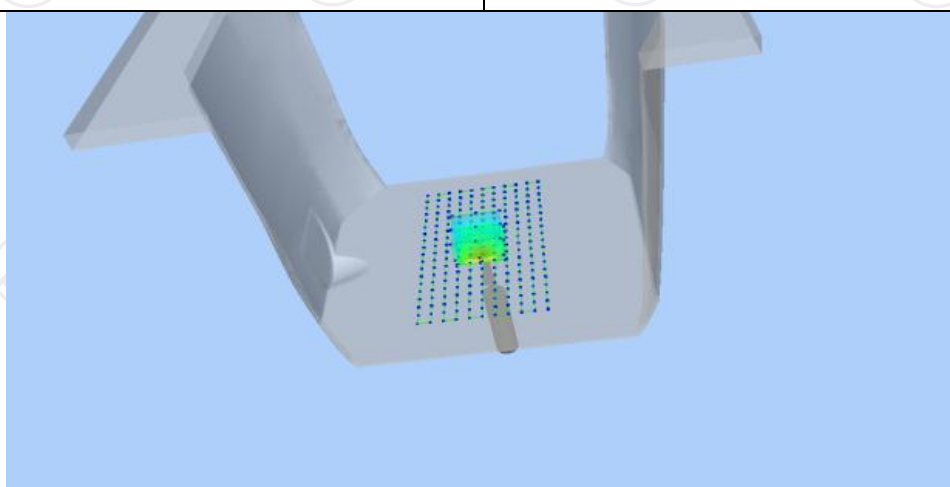
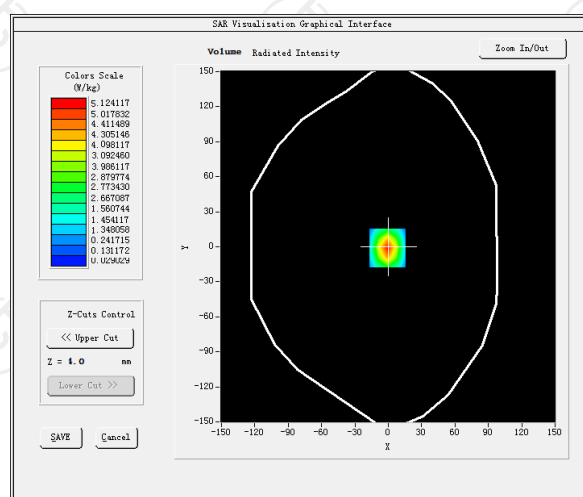
Date of measurement: 10/24/2024 Test mode: 2450MHz (Head)
 Product Description: Validation
 Dipole Model: SID2450
 E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	2.31
Frequency (MHz)	2450.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	-0.470000
SAR 10g (W/Kg)	2.364445
SAR 1g (W/Kg)	4.994244

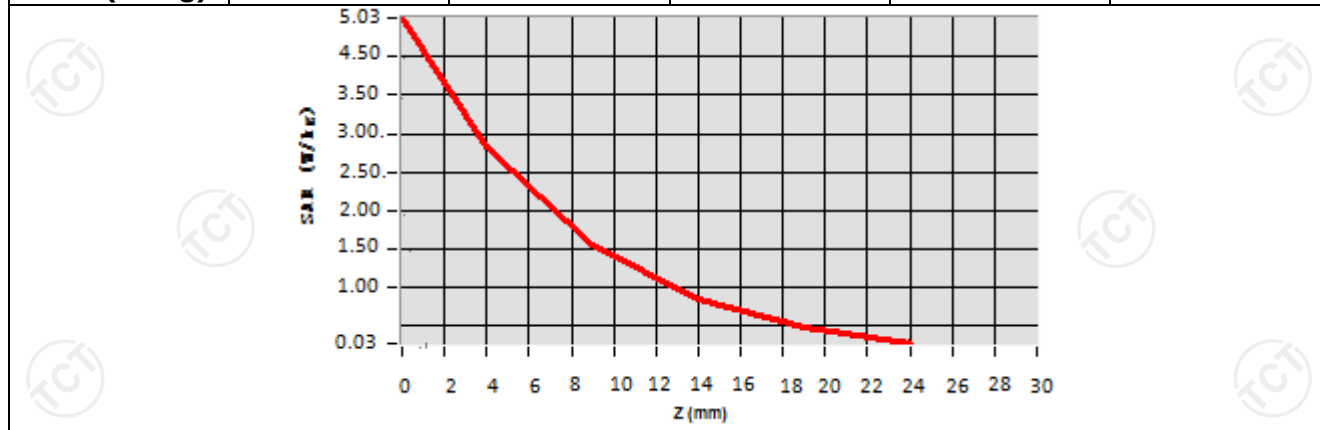
SURFACE SAR



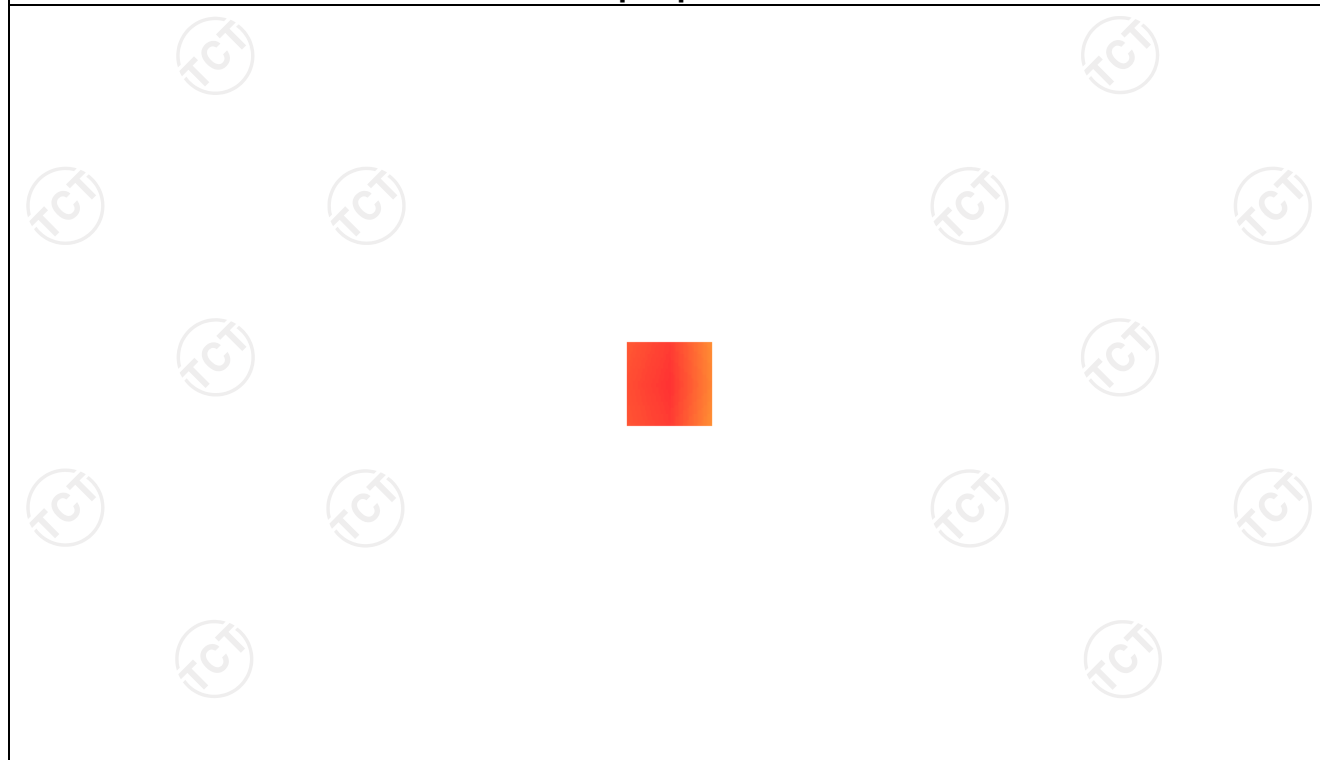
VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	5.0262	2.7584	1.5026	0.8252	0.4125



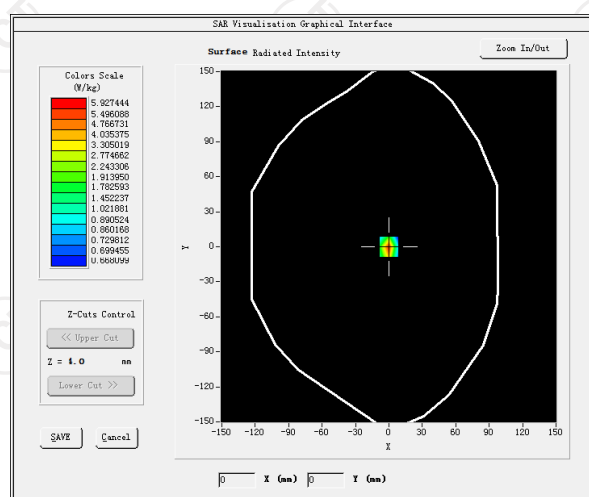
Hot spot position



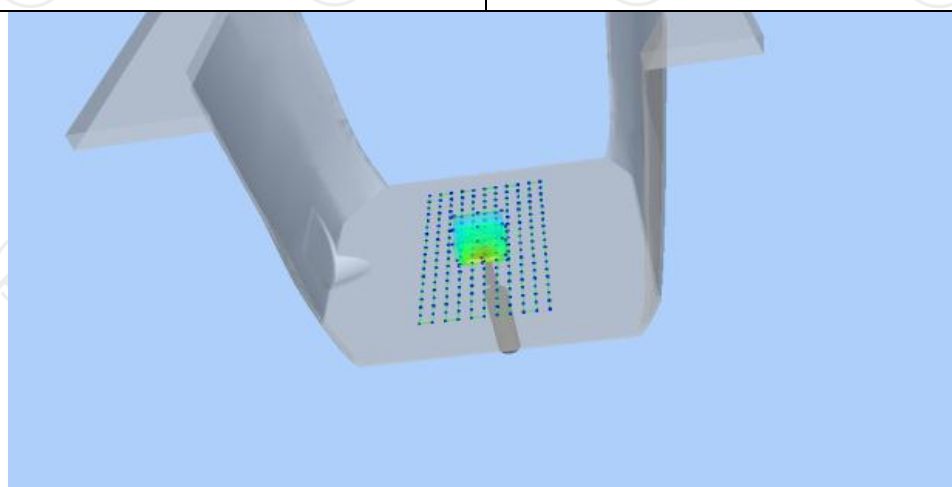
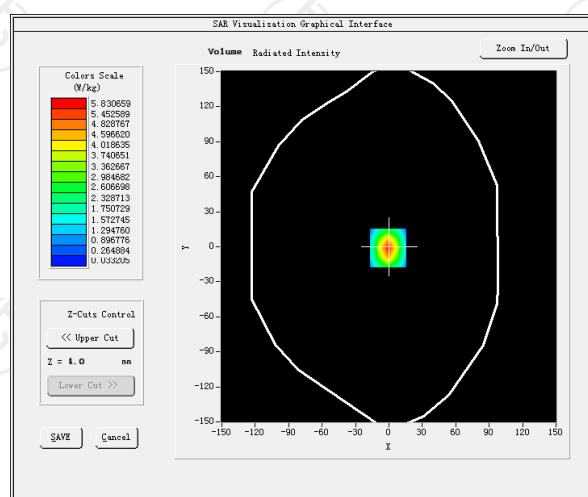
Date of measurement: 10/25/2024 Test mode: 2600MHz (Head)
 Product Description: Validation
 Dipole Model: SID2600
 E-Field Probe: SSE2 (SN 25/22 EPGO375)

Phantom	Validation plane
Input Power	100mW
Crest Factor	1.0
Probe Conversion factor	4.36
Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.823477
Relative permittivity (imaginary part)	13.545489
Conductivity (S/m)	1.972567
Variation (%)	-1.360000
SAR 10g (W/Kg)	2.430127
SAR 1g (W/Kg)	5.413744

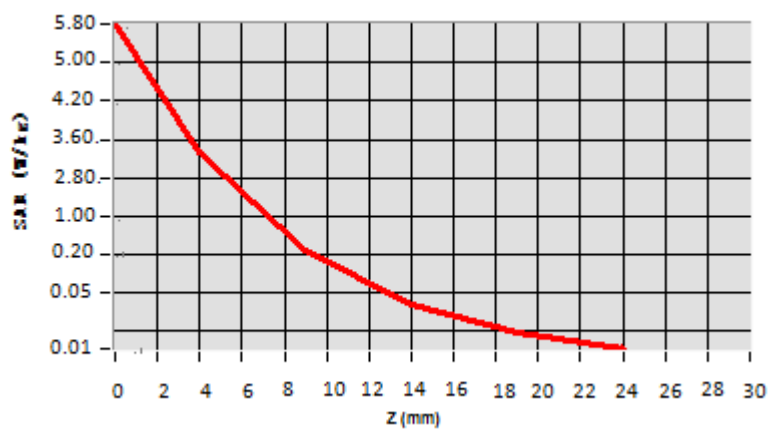
SURFACE SAR



VOLUME SAR



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	5.7893	3.2375	0.2098	0.0387	0.0249



Hot spot position



12. SAR Test Data

GSM850

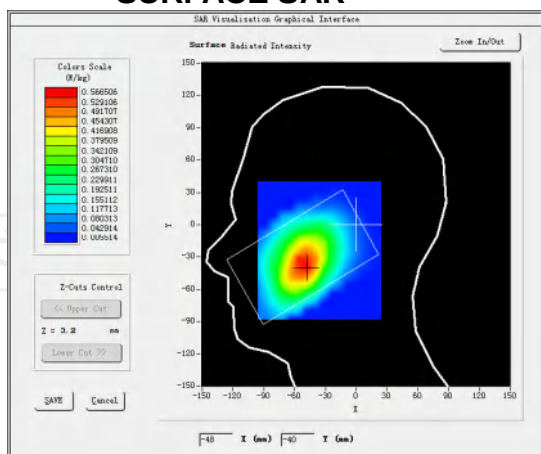
MEASUREMENT 1

Middle Band SAR (Channel 190)

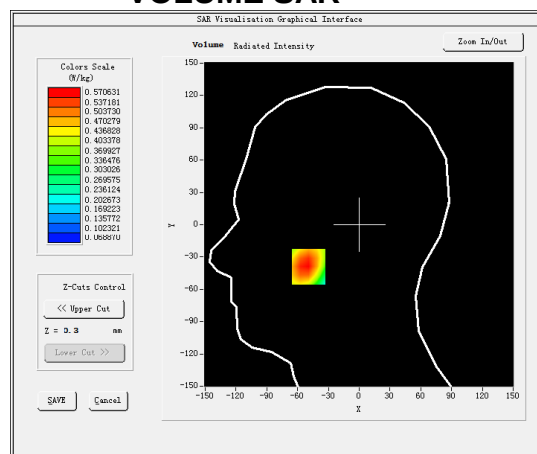
Date: 10/15/2024

Frequency (MHz)	836.600000
Relative permittivity (real part)	40.606560
Relative permittivity (imaginary part)	18.313232
Conductivity (S/m)	0.850955
Variation (%)	0.750000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	GSM850(voice)

SURFACE SAR



VOLUME SAR



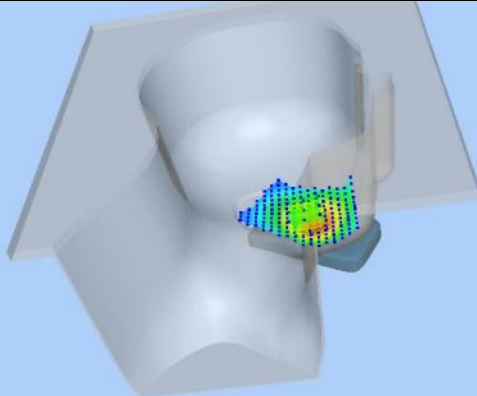
Maximum location: X=-49.00, Y=-39.00 SAR Peak: 0.43W/kg

SAR 10g (W/Kg)

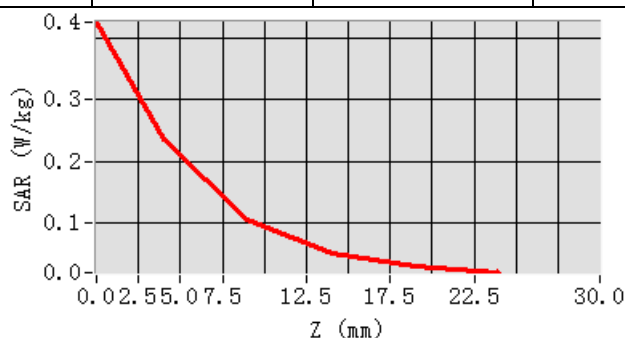
0.160312

SAR 1g (W/Kg)

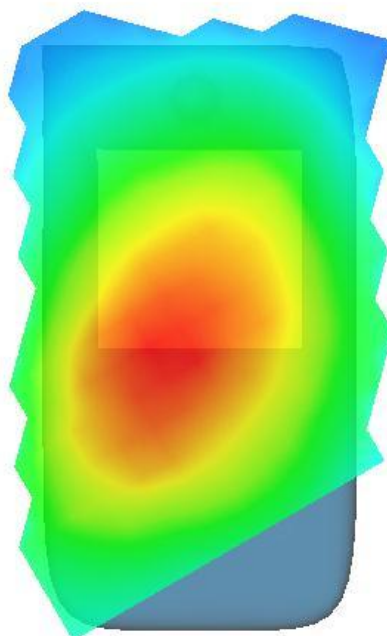
0.281167



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4263	0.2351	0.1055	0.0490	0.0278



Hot spot position



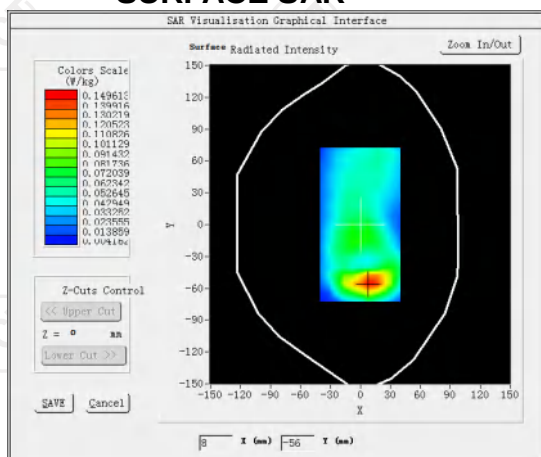
MEASUREMENT 2

Middle Band SAR (Channel 190)

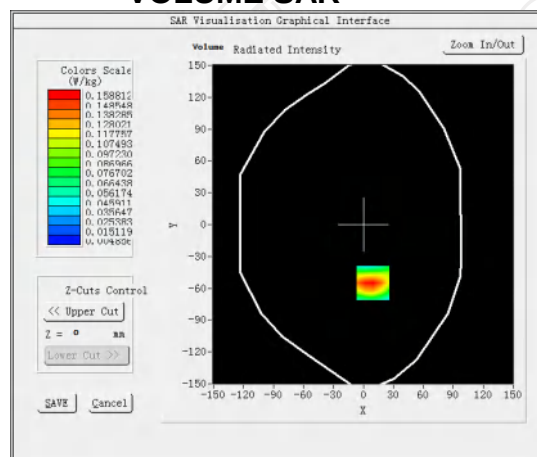
Date: 10/15/2024

Frequency (MHz)	836.600000
Relative permittivity (real part)	40.606560
Relative permittivity (imaginary part)	18.313232
Conductivity (S/m)	0.850955
Variation (%)	0.760000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(10mm)
Band	GSM850(Voice)

SURFACE SAR

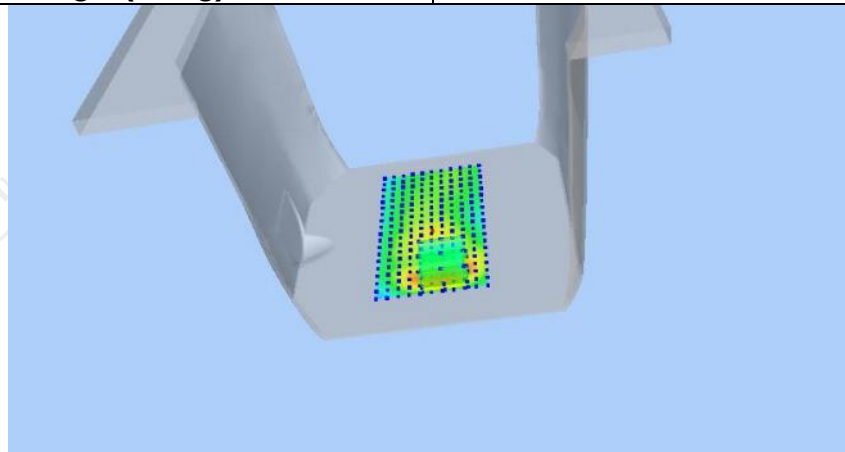


VOLUME SAR

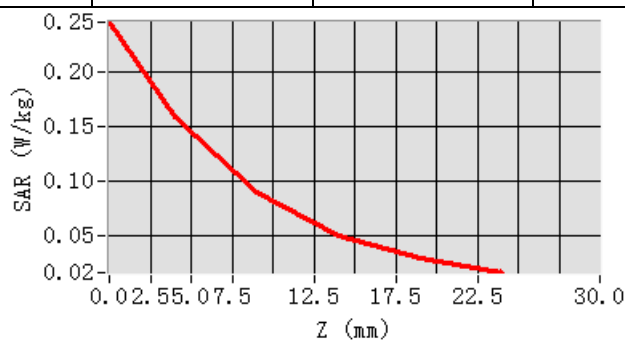


Maximum location: X=10.00, Y=-55.00 SAR Peak: 0.25 W/kg

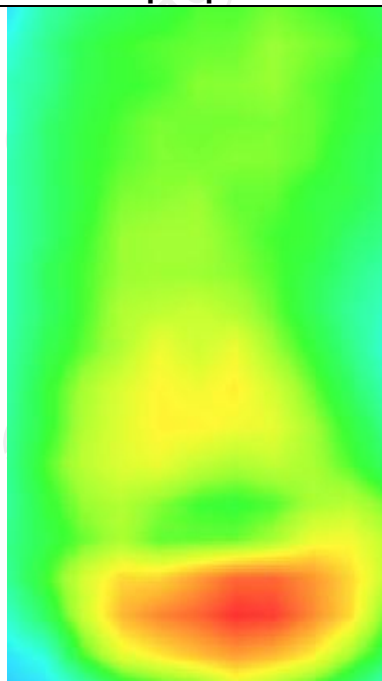
SAR 10g (W/Kg)	0.091684
SAR 1g (W/Kg)	0.161157



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2457	0.1588	0.0896	0.0506	0.0294



Hot spot position



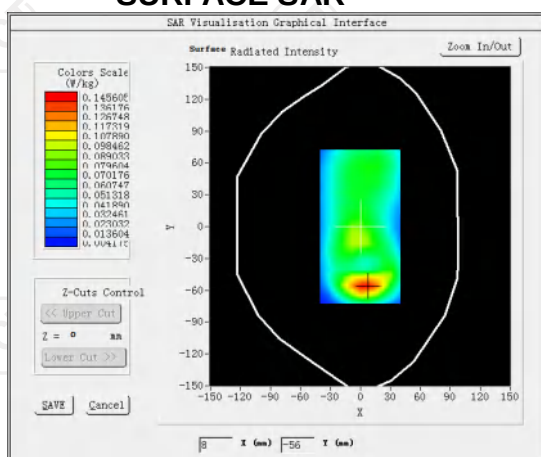
MEASUREMENT 3

Lower Band SAR (Channel 128)

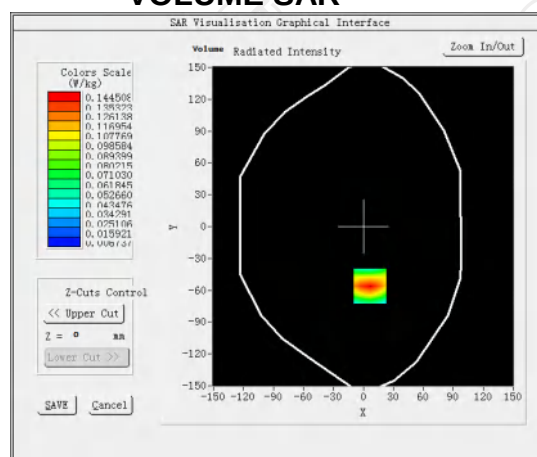
Date: 10/15/2024

Frequency (MHz)	824.200000
Relative permittivity (real part)	40.606560
Relative permittivity (imaginary part)	18.313232
Conductivity (S/m)	0.850955
Variation (%)	1.760000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM850(GPRS 4slot)</u>

SURFACE SAR

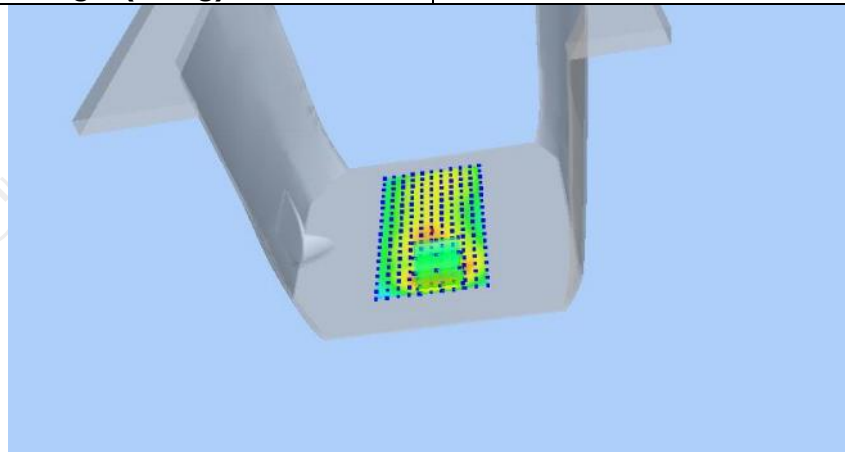


VOLUME SAR

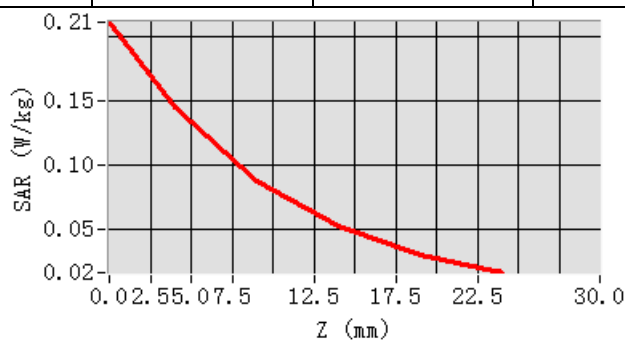


Maximum location: X=7.00, Y=-56.00 SAR Peak: 0.21 W/kg

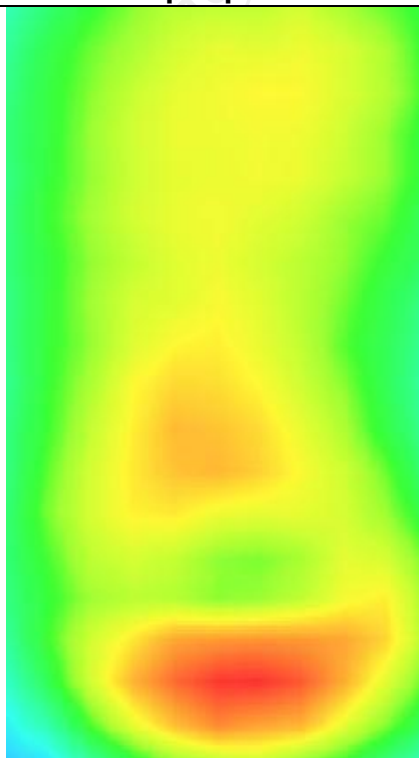
SAR 10g (W/Kg)	0.070315
SAR 1g (W/Kg)	0.144313



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2111	0.1445	0.0875	0.0518	0.0299



Hot spot position



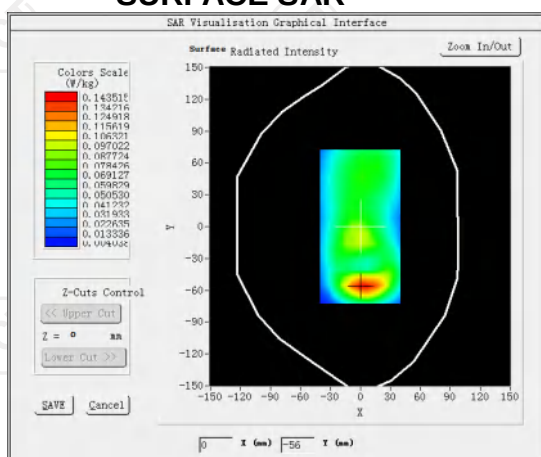
MEASUREMENT 4

Lower Band SAR (Channel 128)

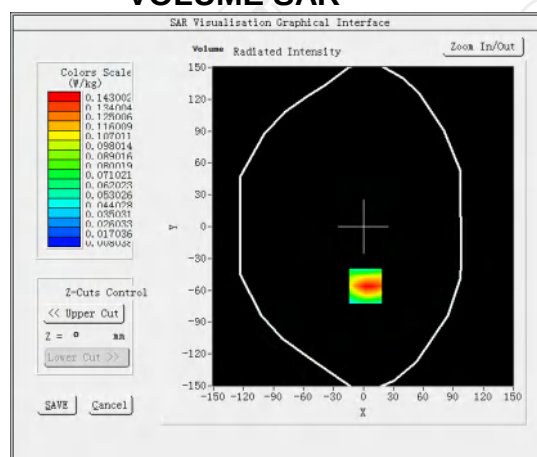
Date: 10/15/2024

Frequency (MHz)	824.200000
Relative permittivity (real part)	40.606560
Relative permittivity (imaginary part)	18.313232
Conductivity (S/m)	0.850955
Variation (%)	-3.450000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(10mm)
Band	GSM850(GPRS 4slot hotspot)

SURFACE SAR

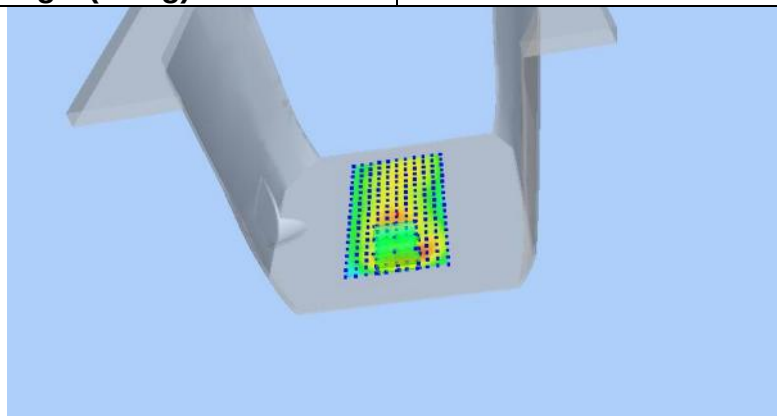


VOLUME SAR

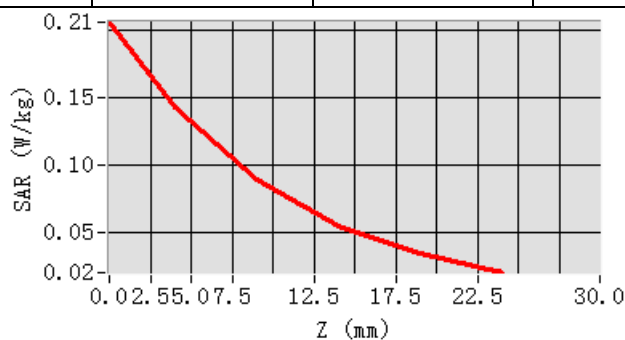


Maximum location: X=2.00, Y=-56.00 SAR Peak: 0.21 W/kg

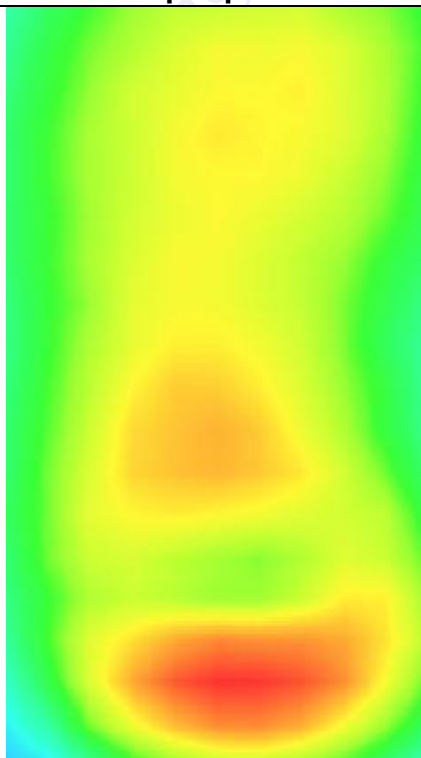
SAR 10g (W/Kg)	0.076709
SAR 1g (W/Kg)	0.135469



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2063	0.1430	0.0887	0.0546	0.0336



Hot spot position



GSM1900

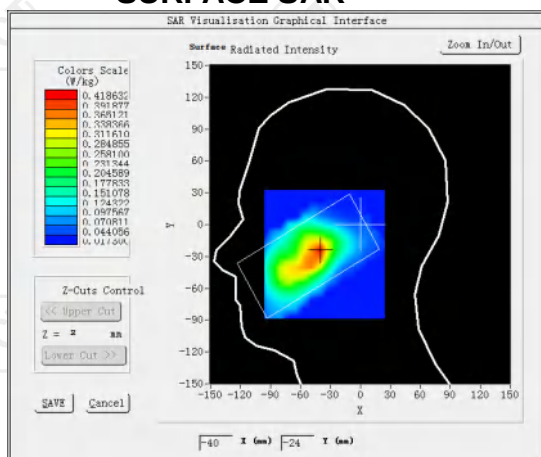
MEASUREMENT 1

Lower Band SAR (Channel 512):

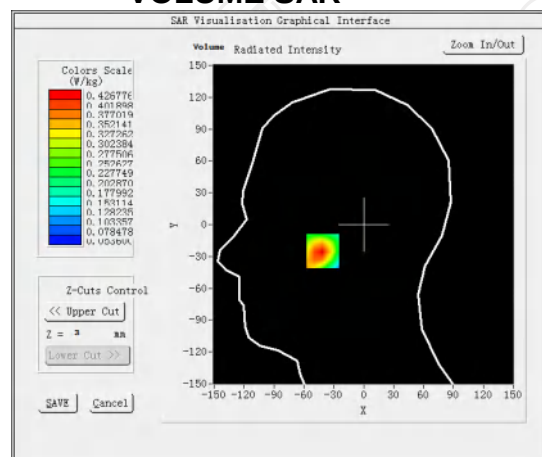
Date: 10/22/2024

Frequency (MHz)	1850.200000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.367609
Variation (%)	-1.860000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	GSM1900(voice)

SURFACE SAR



VOLUME SAR



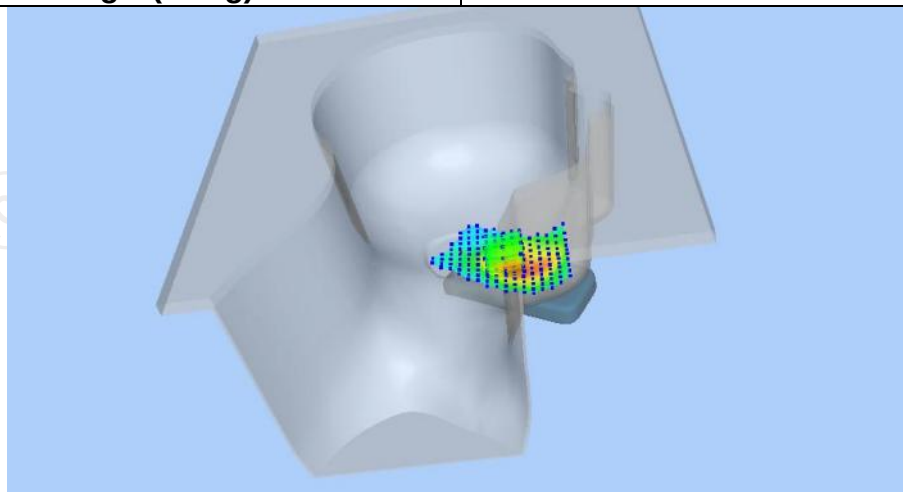
Maximum location: X=-41.00, Y=-35.00 SAR Peak: 0.59W/kg

SAR 10g (W/Kg)

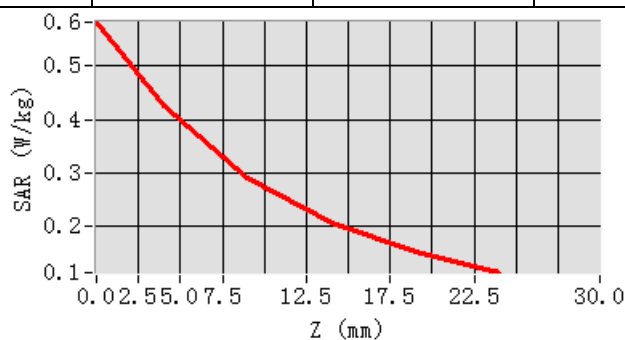
0.241056

SAR 1g (W/Kg)

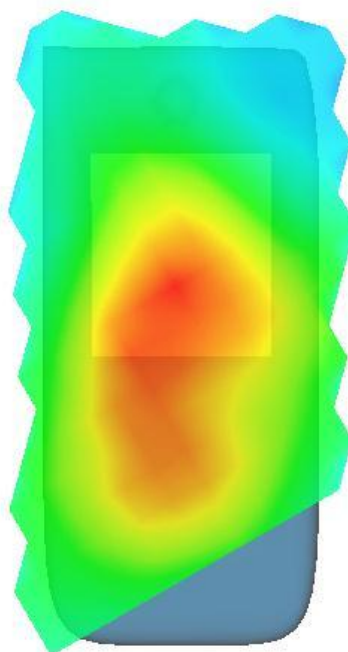
0.351842



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5810	0.4268	0.2921	0.2063	0.1527



Hot spot position



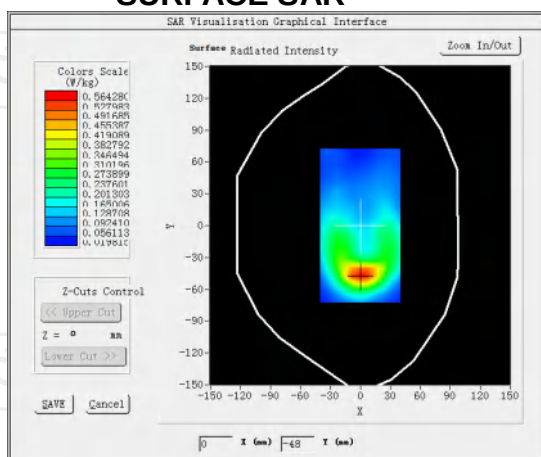
MEASUREMENT 2

Lower Band SAR (Channel 512):

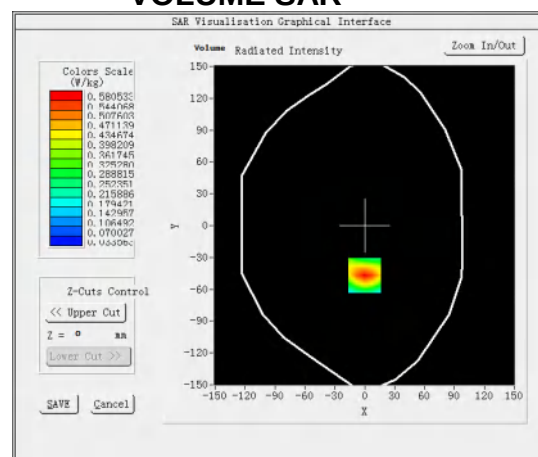
Date: 10/22/2024

Frequency (MHz)	1850.200000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.367609
Variation (%)	1.180000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM1900(voice)</u>

SURFACE SAR

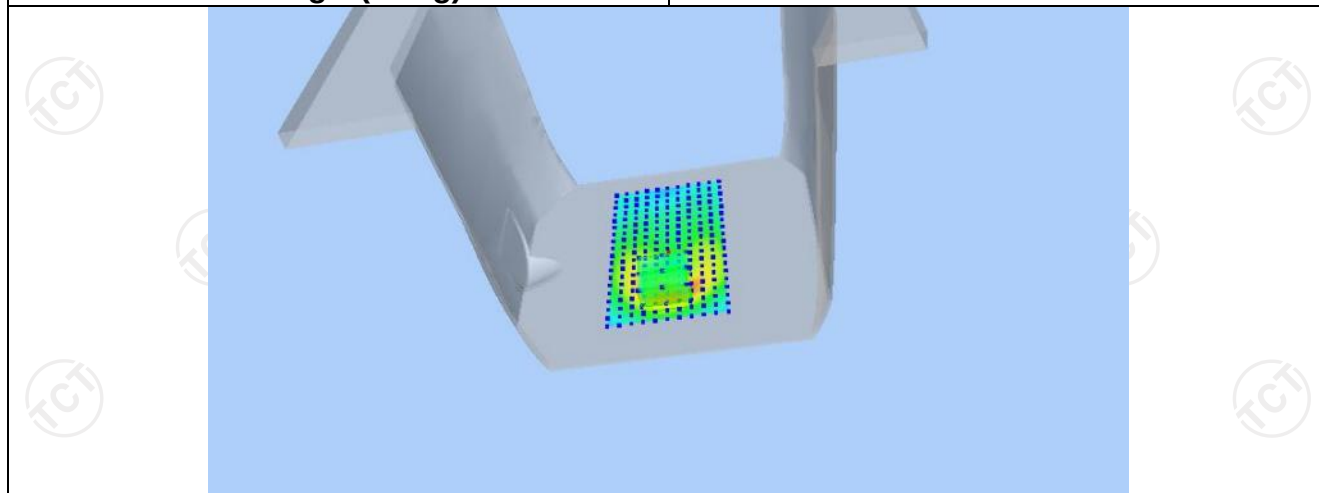


VOLUME SAR

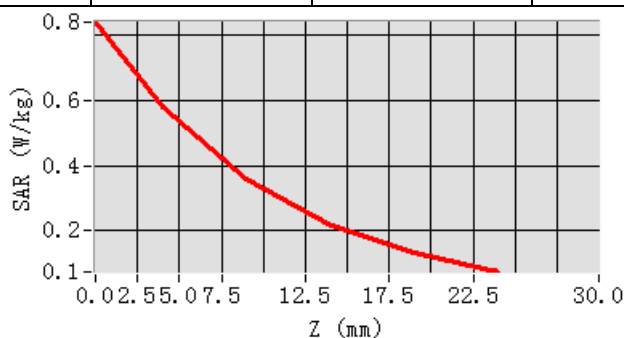


Maximum location: X=0.00, Y=-47.00 SAR Peak: 0.84 W/kg

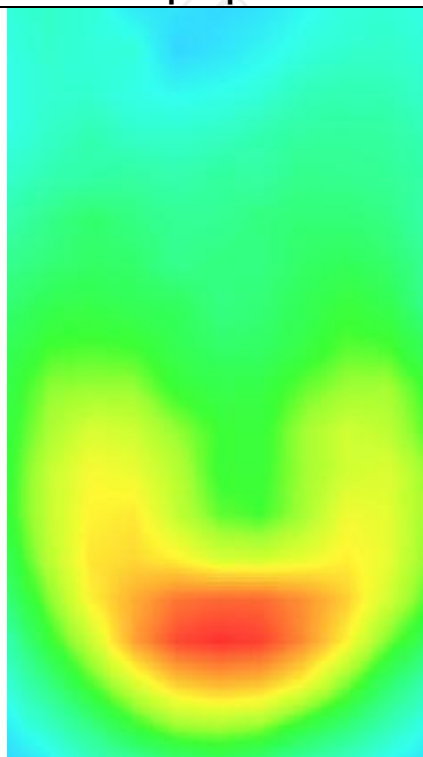
SAR 10g (W/Kg)	0.337512
SAR 1g (W/Kg)	0.519240



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8414	0.5805	0.3567	0.2159	0.1294



Hot spot position



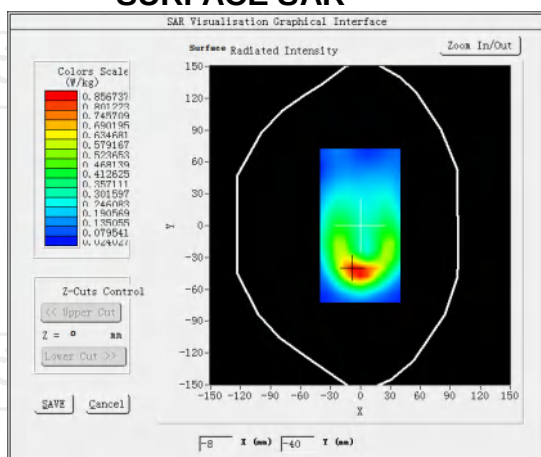
MEASUREMENT 3

Lower Band SAR (Channel 512):

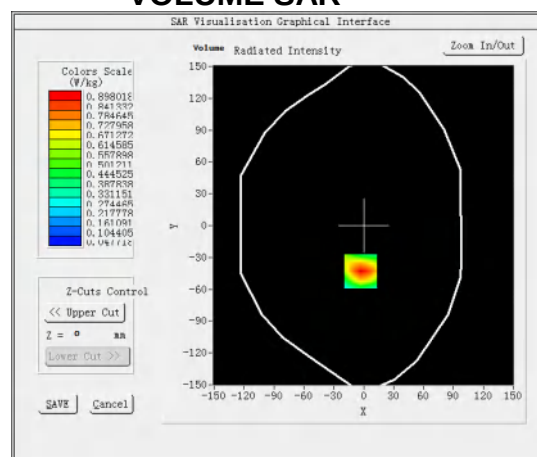
Date: 10/22/2024

Frequency (MHz)	1850.200000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.367609
Variation (%)	2.920000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM1900(GPRS 4slot)</u>

SURFACE SAR



VOLUME SAR



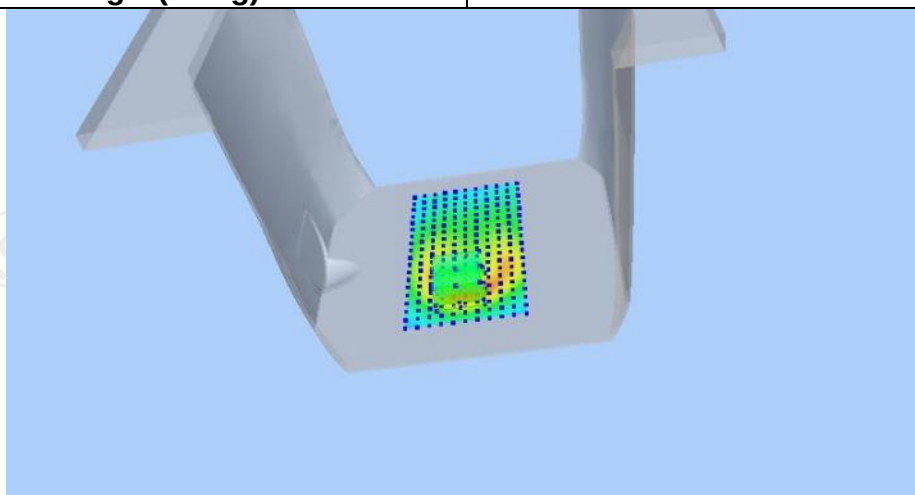
Maximum location: X=-3.00, Y=-43.00 SAR Peak: 1.36 W/kg

SAR 10g (W/Kg)

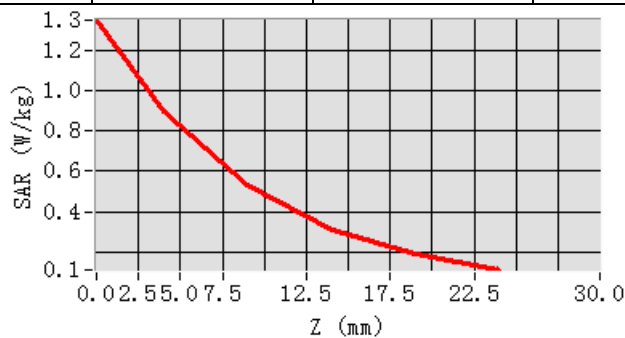
0.581257

SAR 1g (W/Kg)

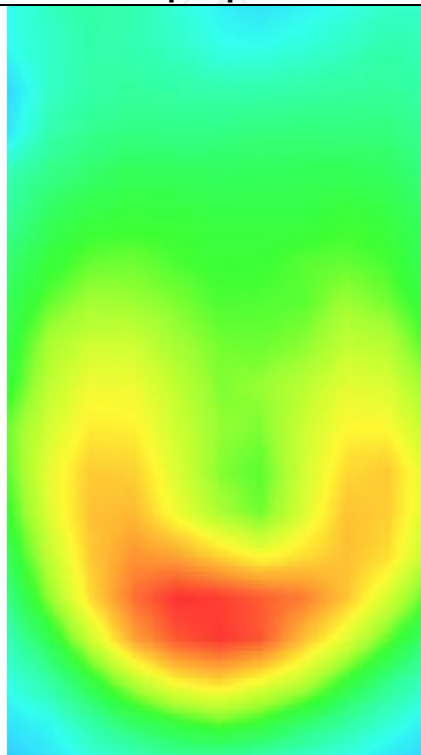
0.600061



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.3494	0.8980	0.5288	0.3119	0.1885



Hot spot position



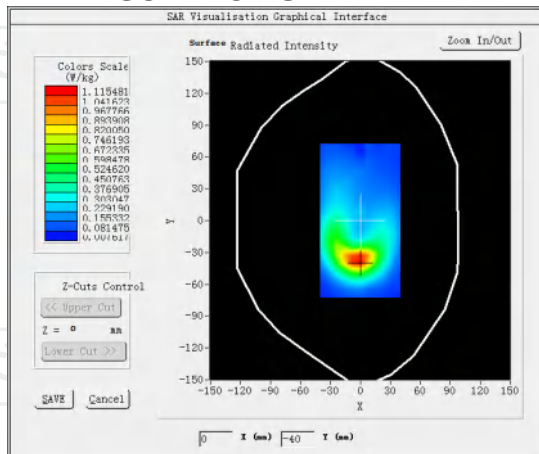
MEASUREMENT 4

Lower Band SAR (Channel 512):

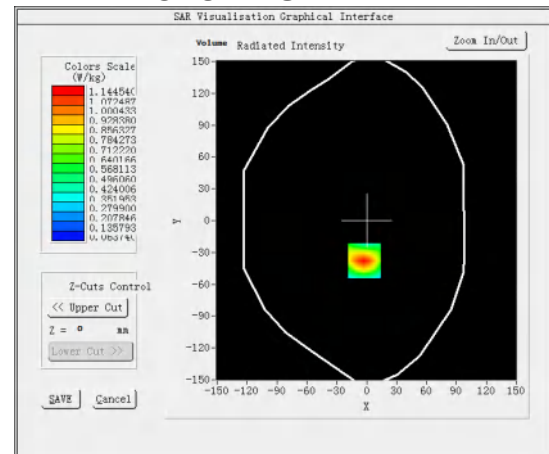
Date: 10/22/2024

Frequency (MHz)	1850.200000
Relative permittivity (real part)	39.076721
Relative permittivity (imaginary part)	12.607061
Conductivity (S/m)	1.367609
Variation (%)	-1.750000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>GSM1900(GPRS 4slot hotspot)</u>

SURFACE SAR



VOLUME SAR



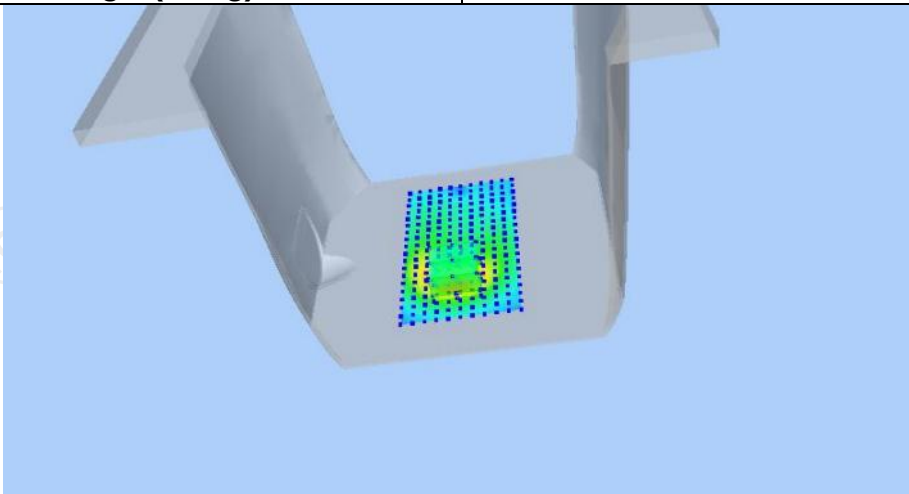
Maximum location: X=-2.00, Y=-38.00 SAR Peak: 1.80 W/kg

SAR 10g (W/Kg)

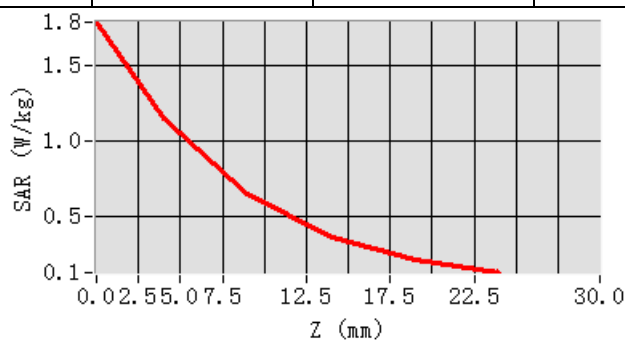
0.826121

SAR 1g (W/Kg)

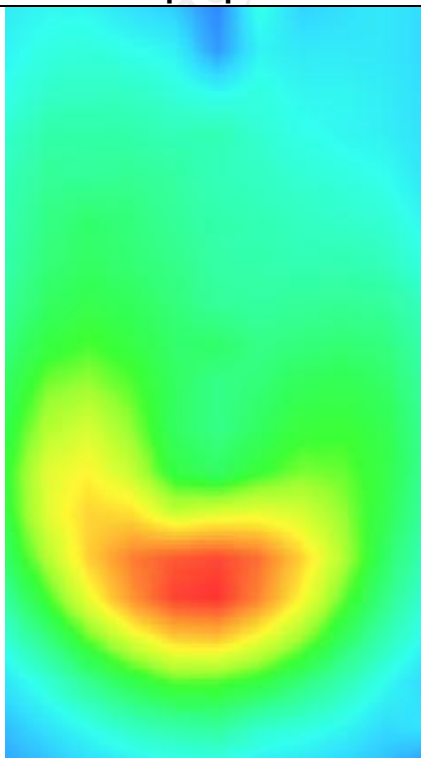
0.621560



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.7861	1.1445	0.6398	0.3597	0.2111



Hot spot position



WCDMA Band II

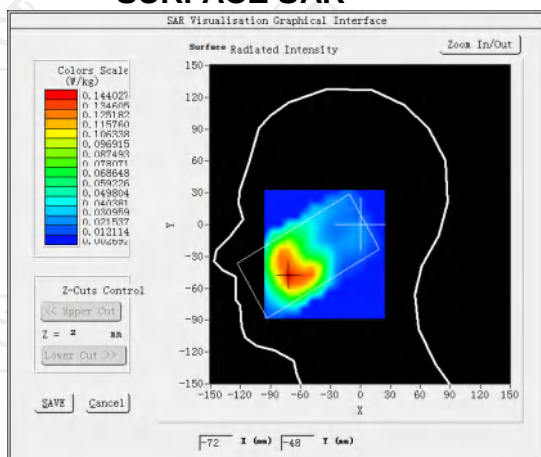
MEASUREMENT 1

Middle Band SAR (Channel 9400):

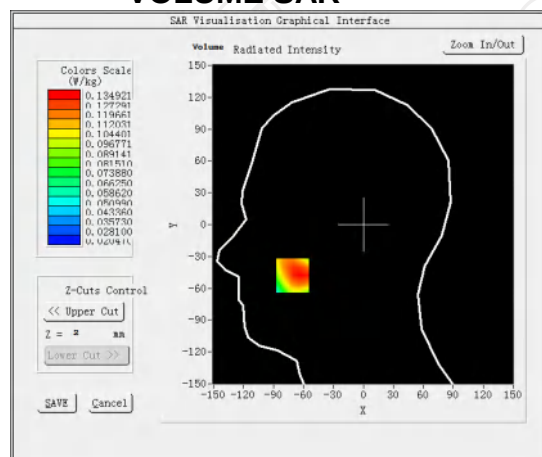
Date: 10/22/2024

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.408000
Conductivity (S/m)	1.400391
Variation (%)	2.480000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>BAND2 WCDMA1900</u>

SURFACE SAR



VOLUME SAR



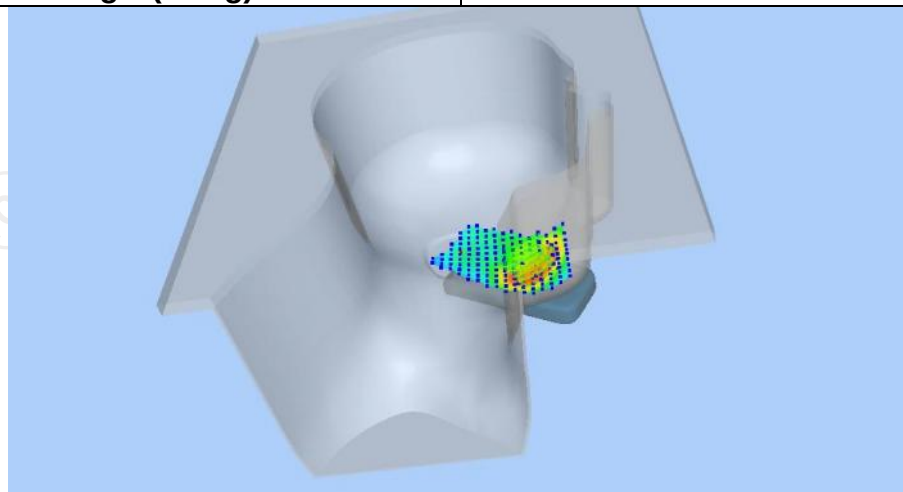
Maximum location: X=-71.00, Y=-48.00 SAR Peak: 0.24 W/kg

SAR 10g (W/Kg)

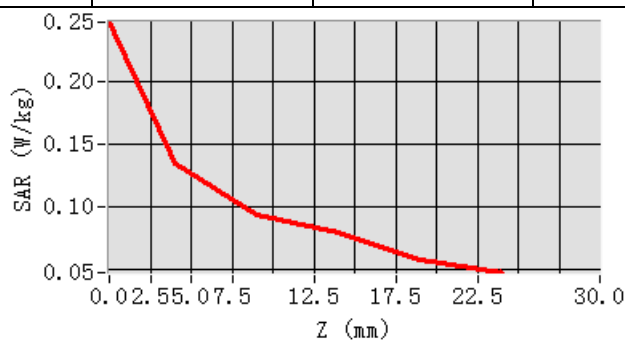
0.070247

SAR 1g (W/Kg)

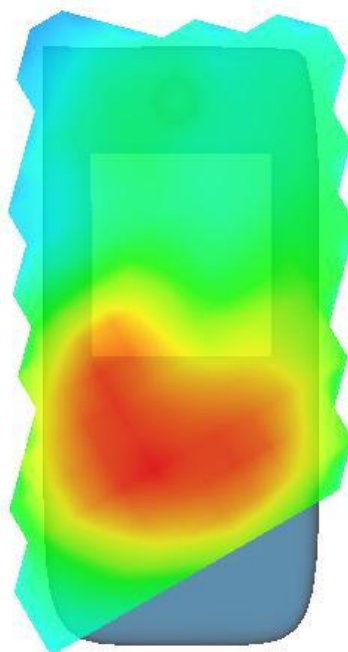
0.200962



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2481	0.1353	0.0924	0.0796	0.0571



Hot spot position



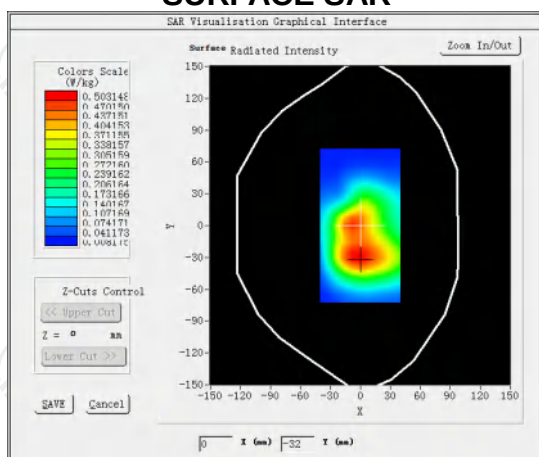
MEASUREMENT 2

Middle Band SAR (Channel 9400):

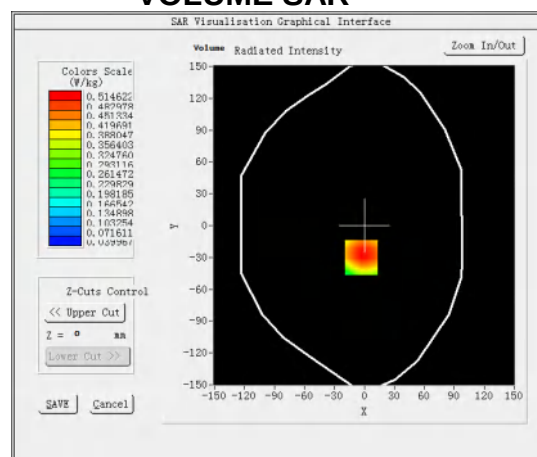
Date: 10/22/2024

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.408000
Conductivity (S/m)	1.400391
Variation (%)	0.160000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>BAND2 WCDMA1900</u>

SURFACE SAR



VOLUME SAR



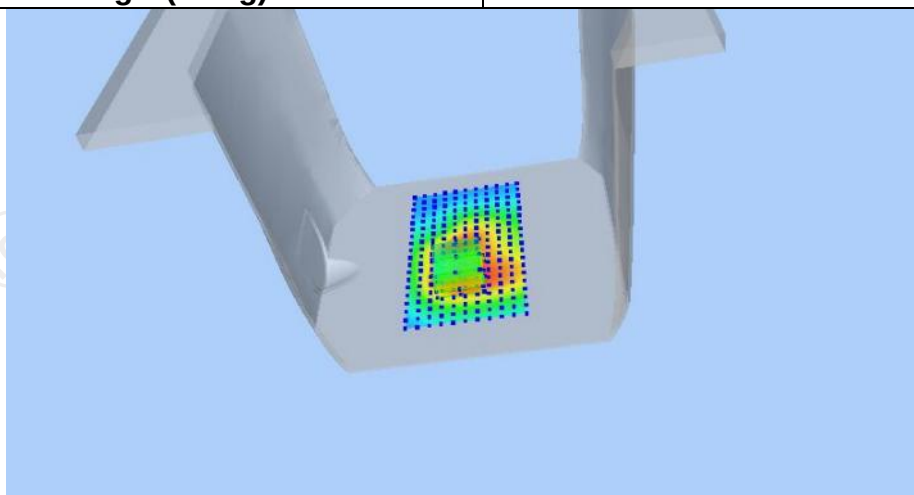
Maximum location: X=-3.00, Y=-30.00 SAR Peak: 0.75 W/kg

SAR 10g (W/Kg)

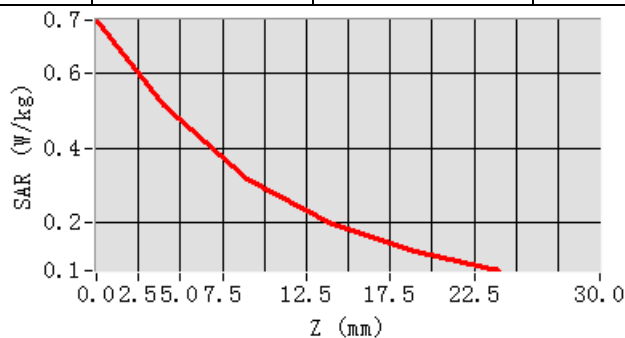
0.254162

SAR 1g (W/Kg)

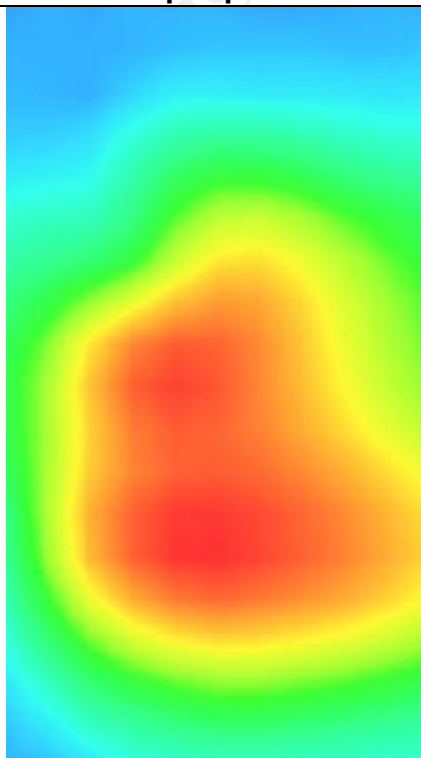
0.490214



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7411	0.5204	0.3207	0.1993	0.1236



Hot spot position



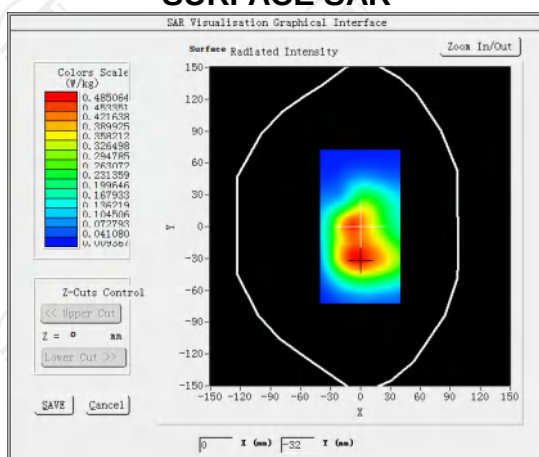
MEASUREMENT 3

Middle Band SAR (Channel 9400):

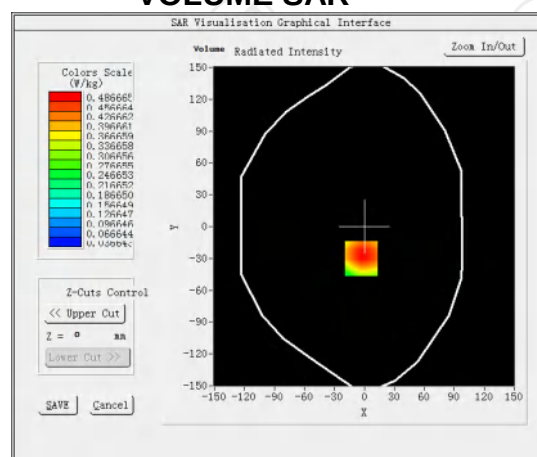
Date: 10/22/2024

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.408000
Conductivity (S/m)	1.400391
Variation (%)	1.960000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>BAND2 WCDMA1900(hotspot)</u>

SURFACE SAR

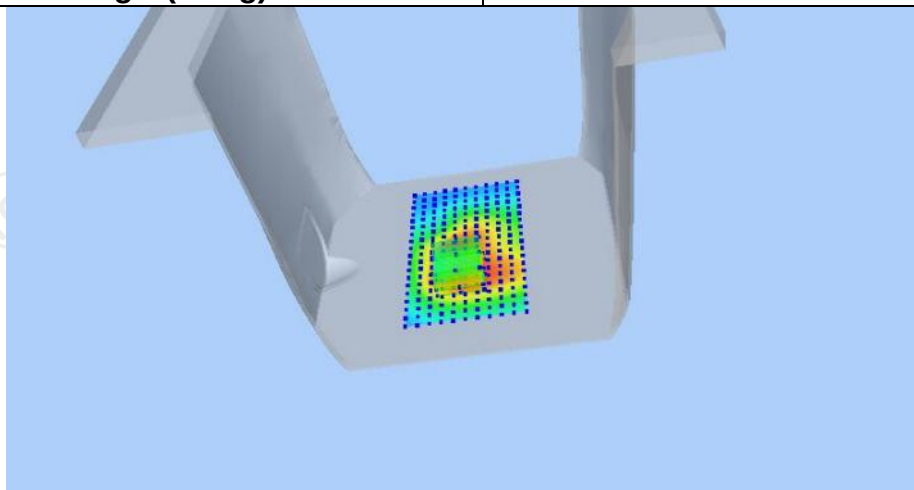


VOLUME SAR

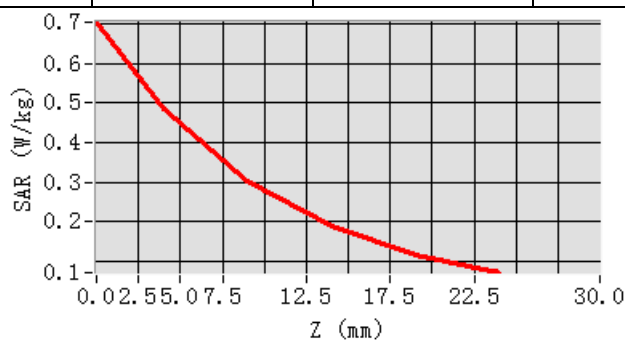


Maximum location: X=-3.00, Y=-30.00 SAR Peak 0.71 W/kg

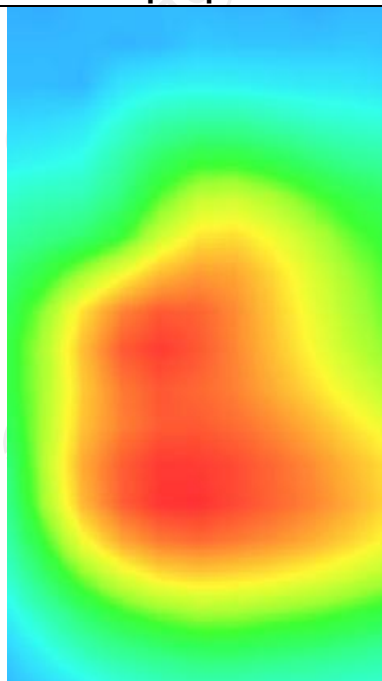
SAR 10g (W/Kg)	0.230127
SAR 1g (W/Kg)	0.447842



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7036	0.4867	0.3023	0.1879	0.1185



Hot spot position



WCDMA Band IV

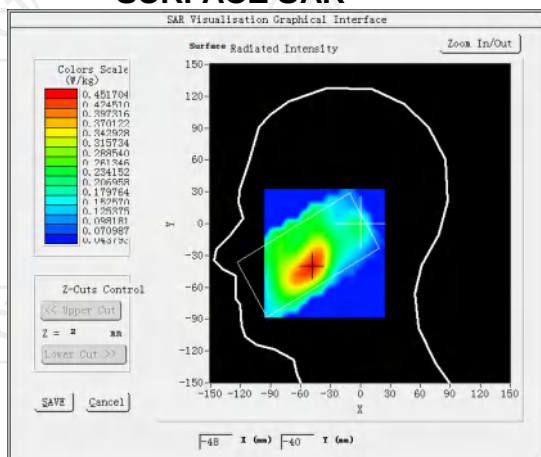
MEASUREMENT 1

Lower Band SAR (Channel 1312):

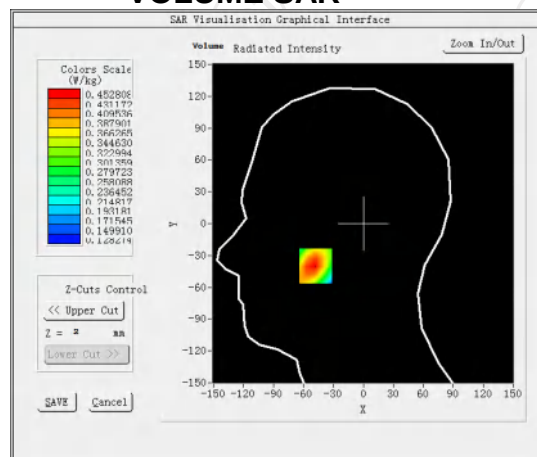
Date: 10/21/2022

Frequency (MHz)	1712.400000
Relative permittivity (real part)	39.070000
Relative permittivity (imaginary part)	14.000000
Conductivity (S/m)	1.380000
Variation (%)	-0.120000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>BAND4 WCDMA1700</u>

SURFACE SAR

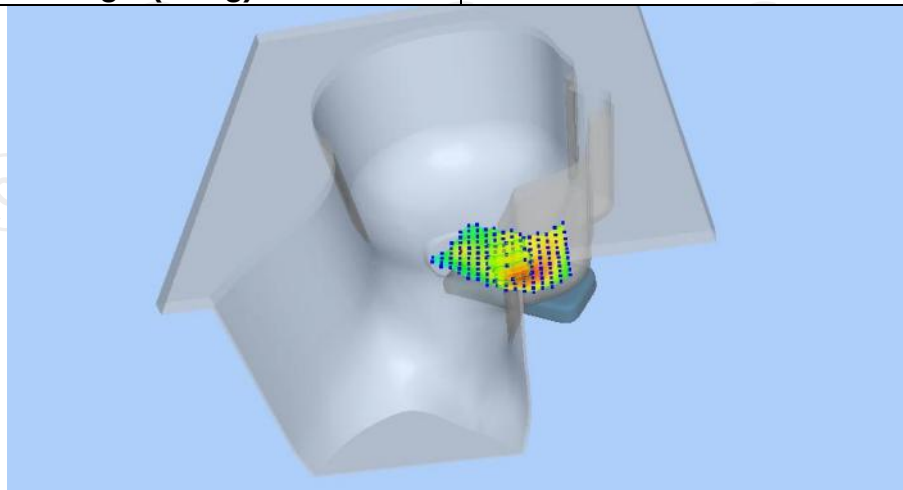


VOLUME SAR

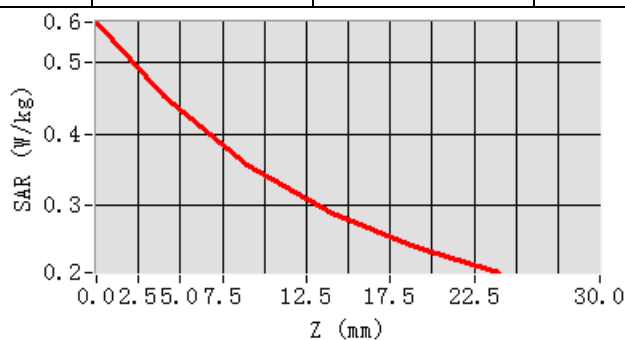


Maximum location: X=-48.00, Y=-40.00 SAR Peak: 0.56 W/kg

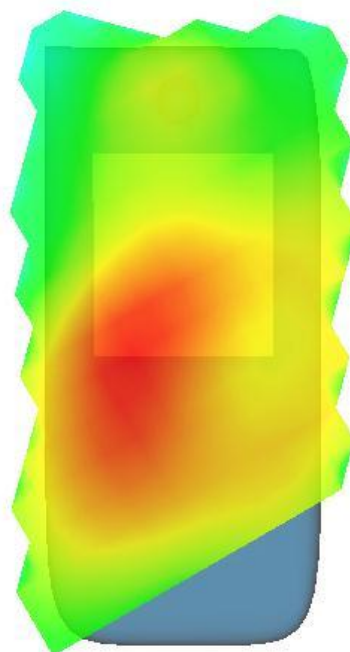
SAR 10g (W/Kg)	0.325342
SAR 1g (W/Kg)	0.461119



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5562	0.4528	0.3556	0.2881	0.2417



Hot spot position



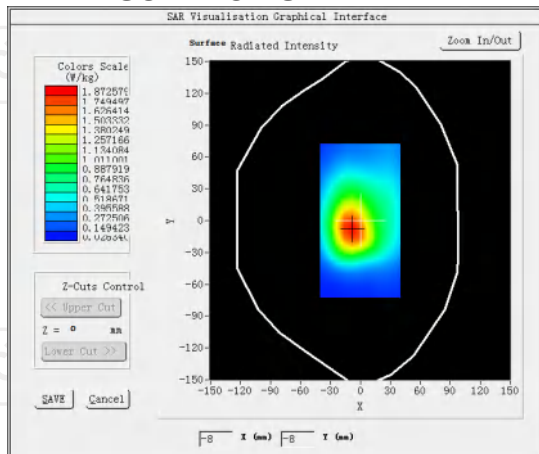
MEASUREMENT 2

Lower Band SAR (Channel 1312):

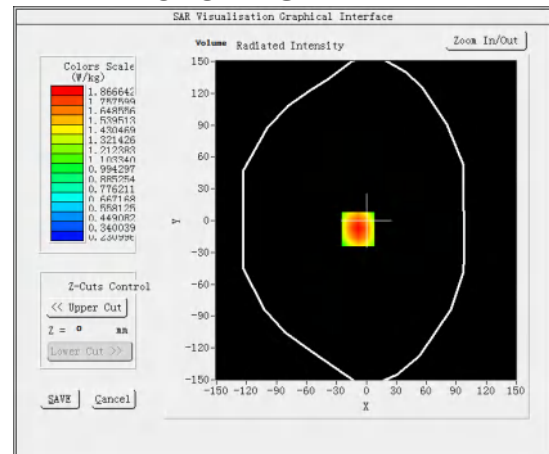
Date: 10/21/2022

Frequency (MHz)	1712.400000
Relative permittivity (real part)	39.070000
Relative permittivity (imaginary part)	14.000000
Conductivity (S/m)	1.380000
Variation (%)	-0.190000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back (10mm)</u>
Band	<u>BAND4 WCDMA1700</u>

SURFACE SAR

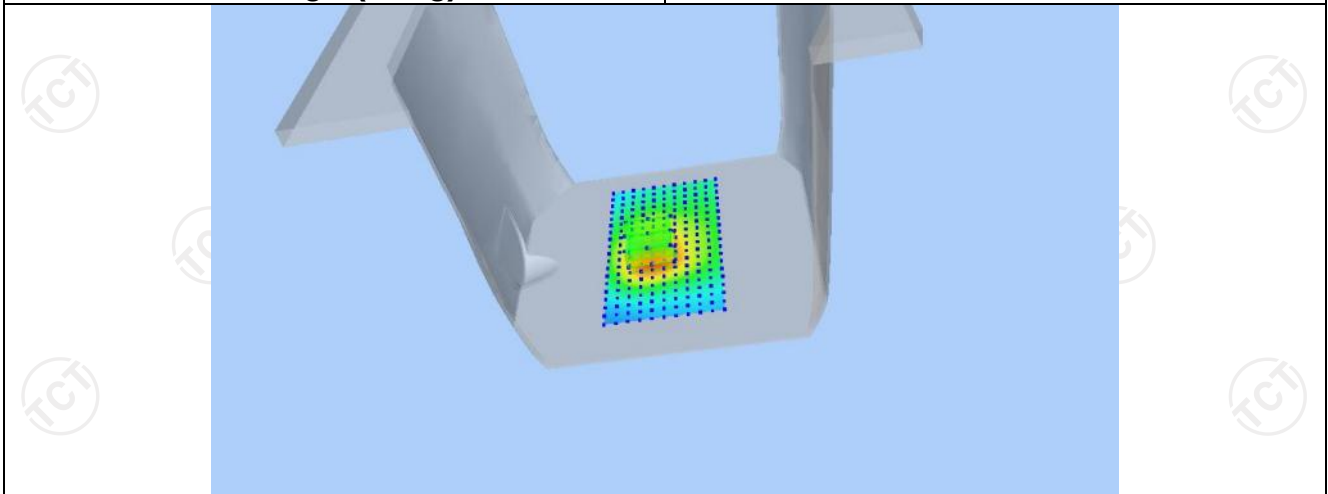


VOLUME SAR

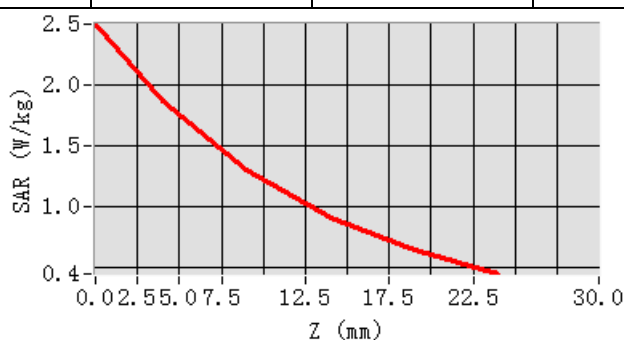


Maximum location: X=-8.00, Y=-8.00 SAR Peak: 2.50 W/kg

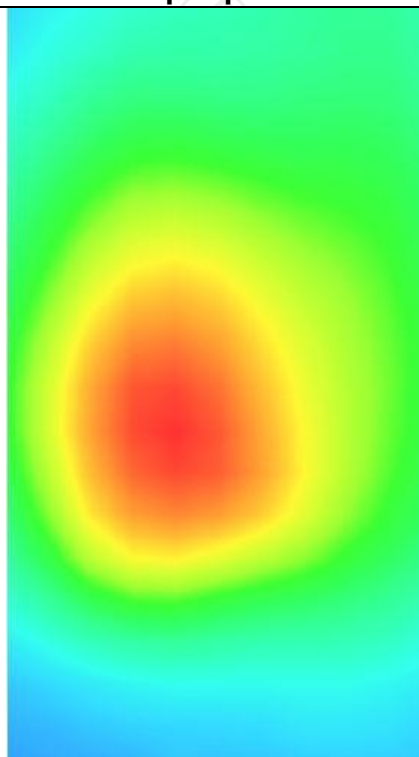
SAR 10g (W/Kg)	1.183260
SAR 1g (W/Kg)	0.681300



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.4958	1.8666	1.2928	0.9023	0.6380



Hot spot position



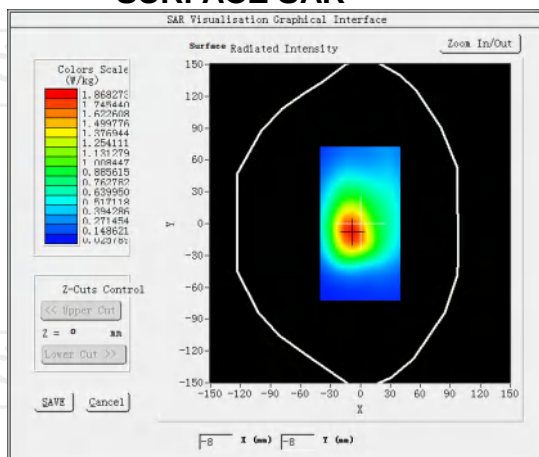
MEASUREMENT 3

Lower Band SAR (Channel 1312):

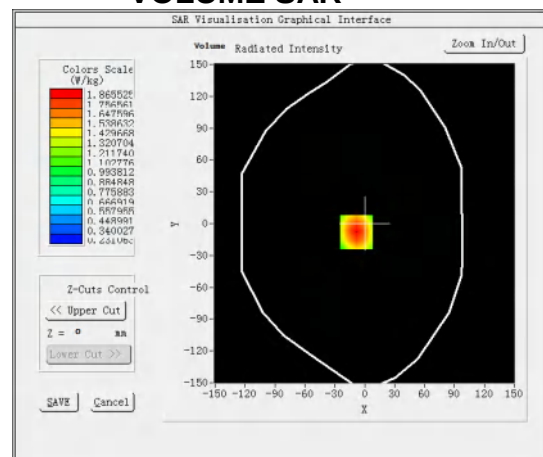
Date: 10/21/2022

Frequency (MHz)	1712.400000
Relative permittivity (real part)	39.070000
Relative permittivity (imaginary part)	14.000000
Conductivity (S/m)	1.380000
Variation (%)	-0.410000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back (hotspot 10mm)</u>
Band	<u>BAND4 WCDMA1700</u>

SURFACE SAR

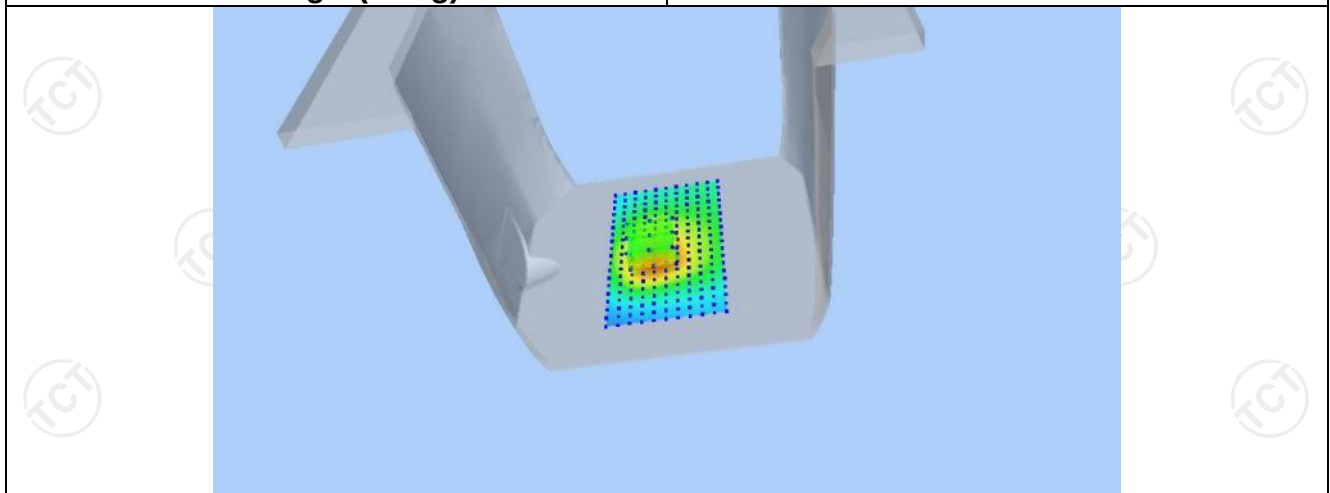


VOLUME SAR

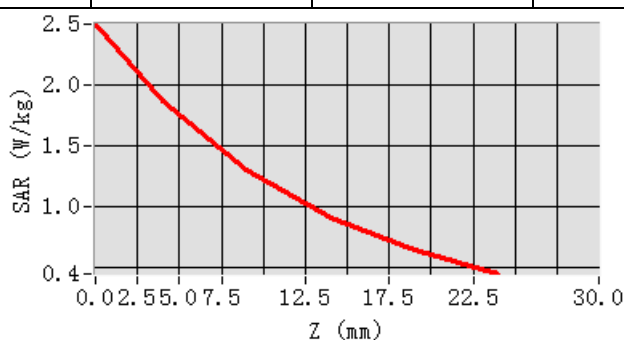


Maximum location: X=-8.00, Y=-8.00 SAR Peak: 2.50 W/kg

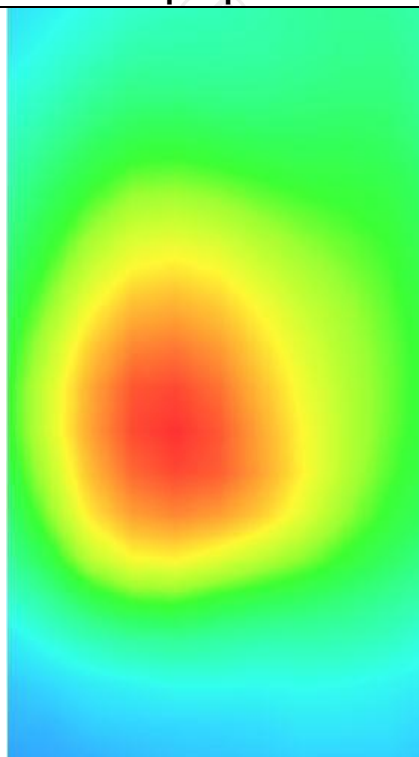
SAR 10g (W/Kg)	1.182131
SAR 1g (W/Kg)	0.691147



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	2.4952	1.8655	1.2913	0.9005	0.6362



Hot spot position



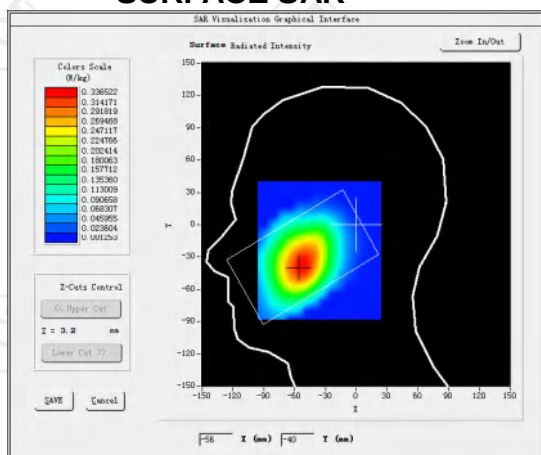
WCDMA Band V MEASUREMENT 1

Hight Band SAR (Channel 4233):

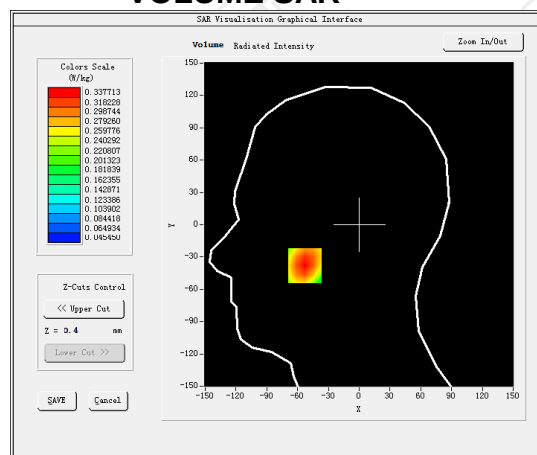
Date: 10/15/2024

Frequency (MHz)	846.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-0.190000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>BAND5 WCDMA850</u>

SURFACE SAR

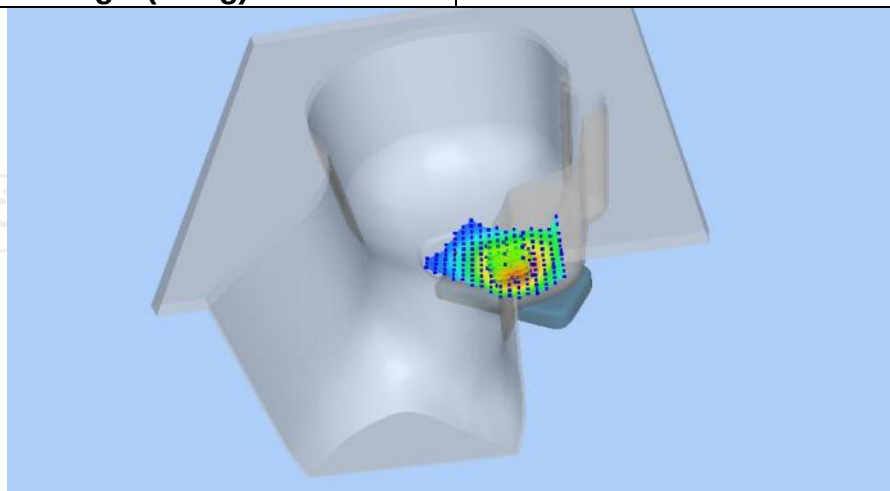


VOLUME SAR

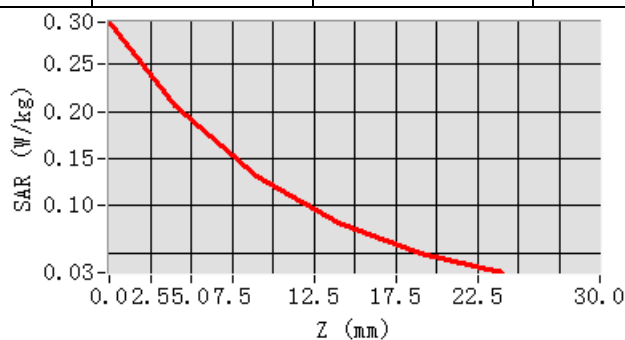


Maximum location: X=-53.00, Y=-38.00 SAR Peak: 0.31 W/kg

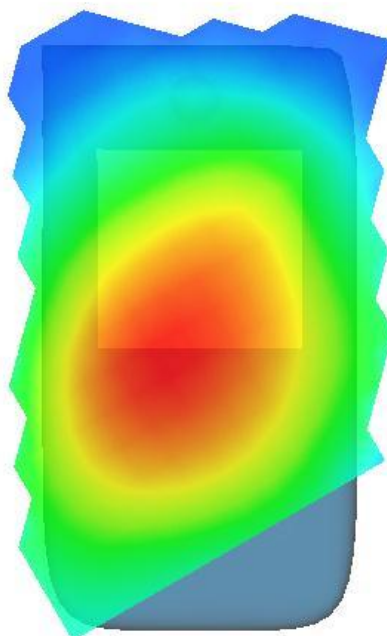
SAR 10g (W/Kg)	0.121593
SAR 1g (W/Kg)	0.194221



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2950	0.2071	0.1304	0.0811	0.0500



Hot spot position



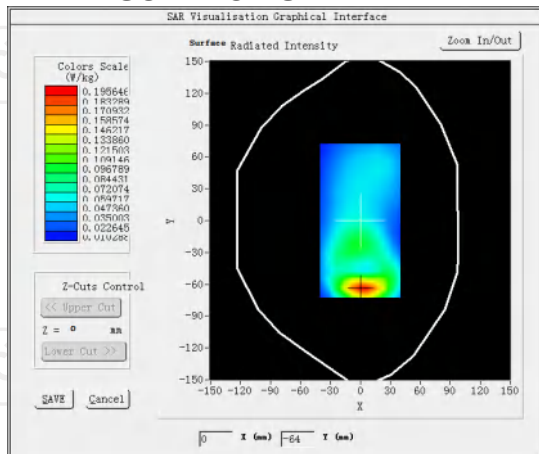
MEASUREMENT 2

Hight Band SAR (Channel 4233):

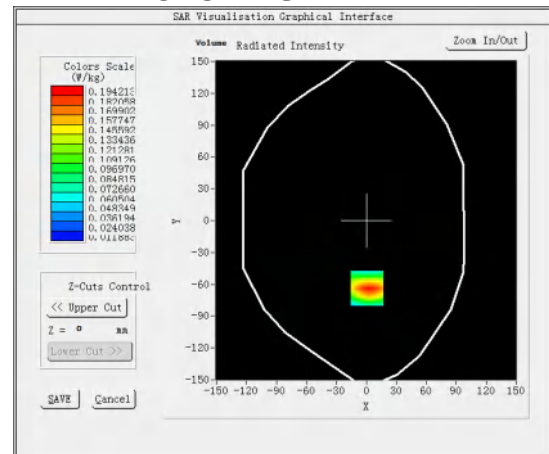
Date: 10/15/2024

Frequency (MHz)	846.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	0.960000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>BAND5 WCDMA850</u>

SURFACE SAR

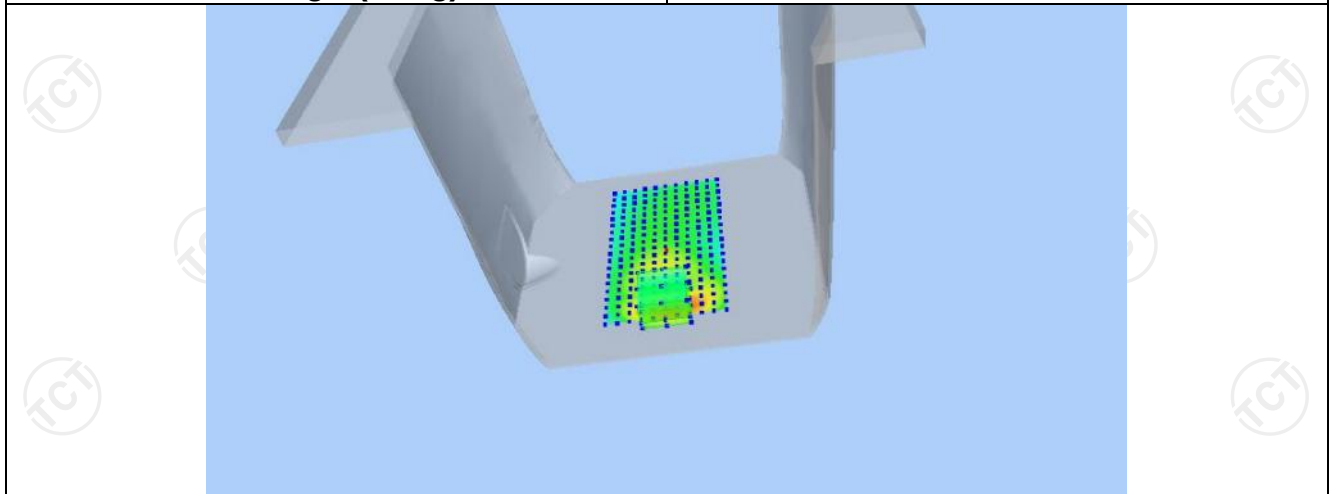


VOLUME SAR

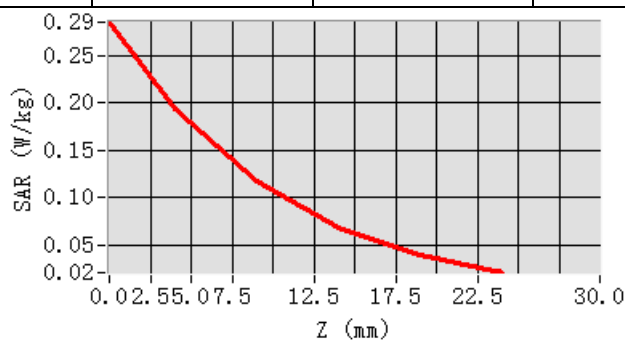


Maximum location: X=1.00, Y=-64.00 SAR Peak: 0.29 W/kg

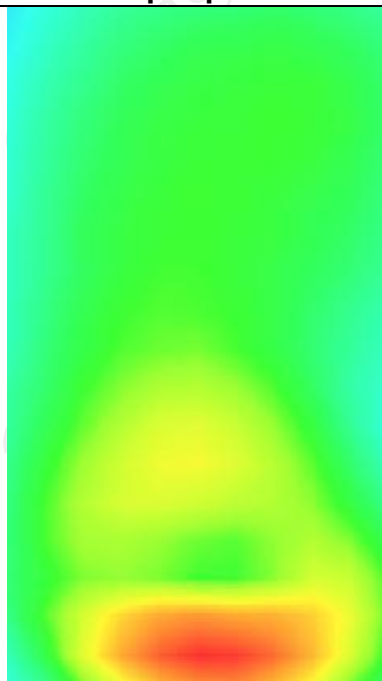
SAR 10g (W/Kg)	0.118976
SAR 1g (W/Kg)	0.180872



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2851	0.1937	0.1176	0.0710	0.0426



Hot spot position



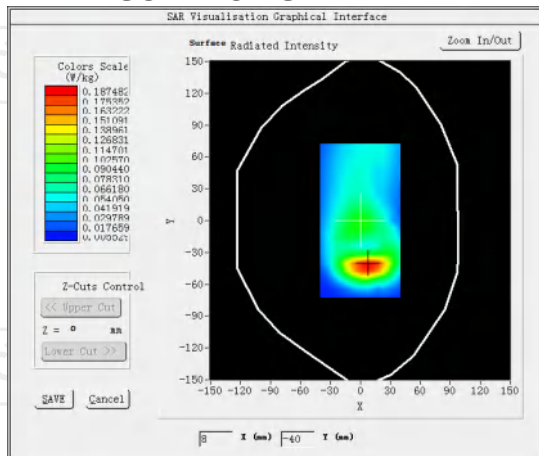
MEASUREMENT 3

Hight Band SAR (Channel 4233):

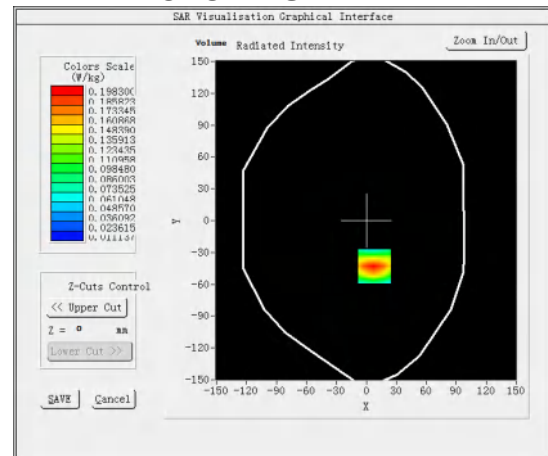
Date: 10/15/2024

Frequency (MHz)	846.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-1.860000
Crest Factor:	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>BAND5 WCDMA850(hotspot)</u>

SURFACE SAR

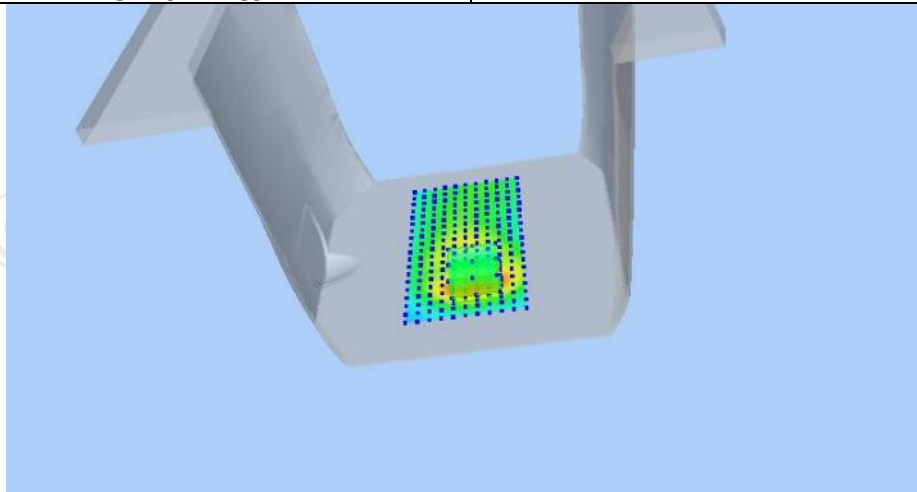


VOLUME SAR

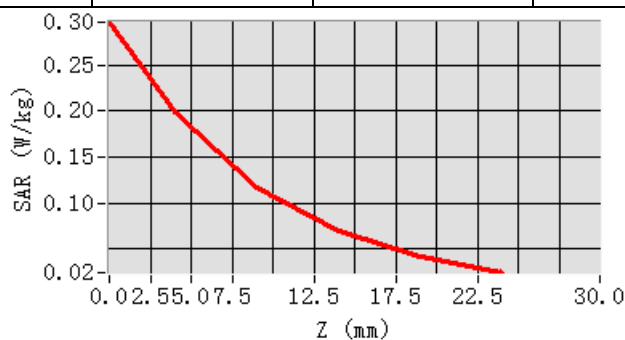


Maximum location: X=8.00, Y=-43.00 SAR Peak: 0.30 W/kg

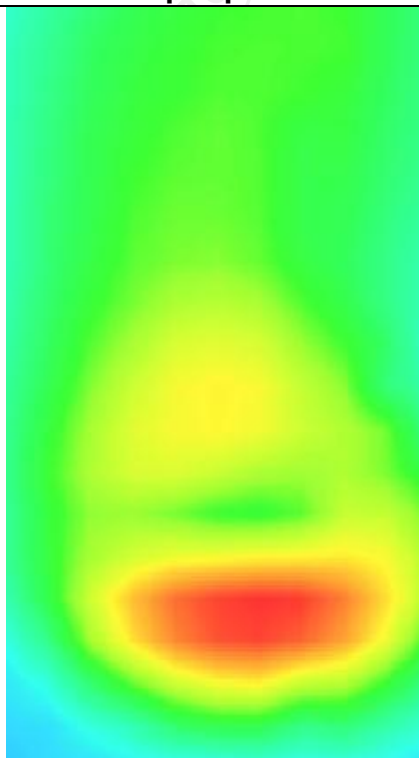
SAR 10g (W/Kg)	0.126804
SAR 1g (W/Kg)	0.181157



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2970	0.1983	0.1171	0.0691	0.0416



Hot spot position



LTE Band 2

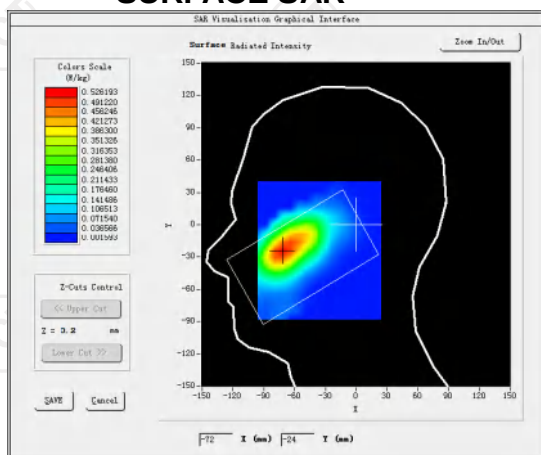
MEASUREMENT 1

Hight Band SAR (Channel 19100):

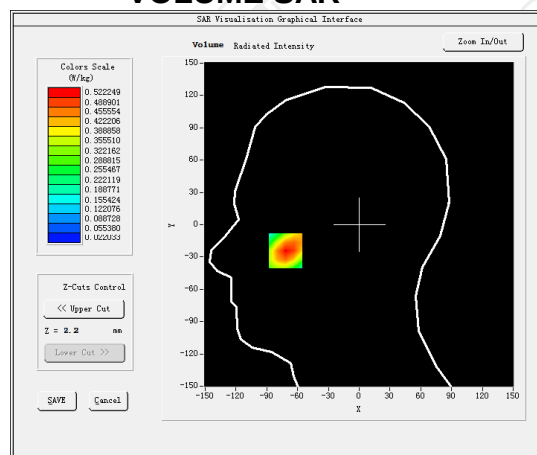
Date: 10/22/2024

Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.411700
Conductivity (S/m)	1.400405
Variation (%)	1.890000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 2 (1 RB#50)</u>

SURFACE SAR

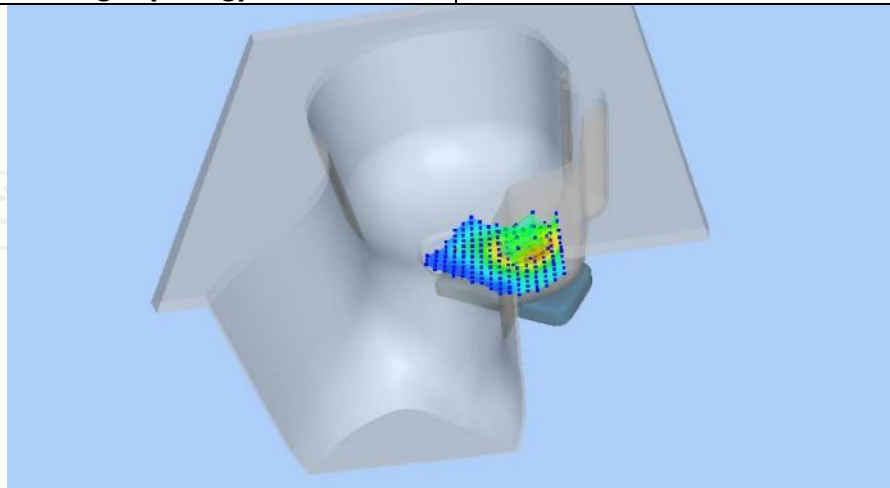


VOLUME SAR

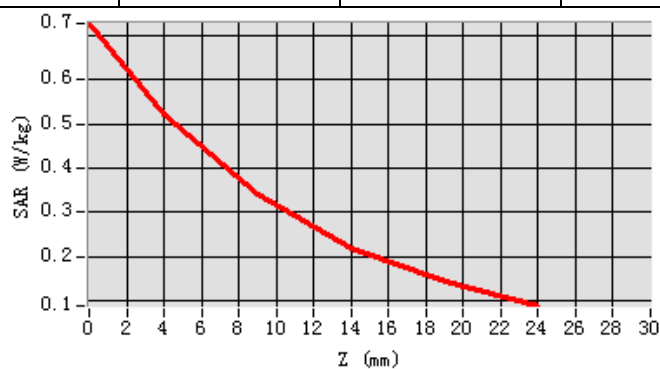


Maximum location: X=-22.00, Y=-21.00 SAR Peak: 0.60 W/kg

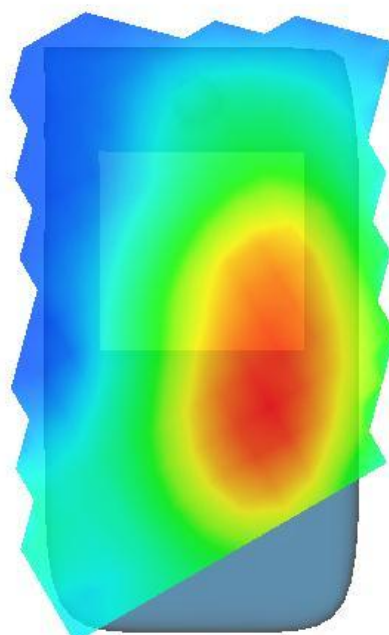
SAR 10g (W/Kg)	0.243197
SAR 1g (W/Kg)	0.362846



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6282	0.4222	0.3397	0.2201	0.1424



Hot spot position



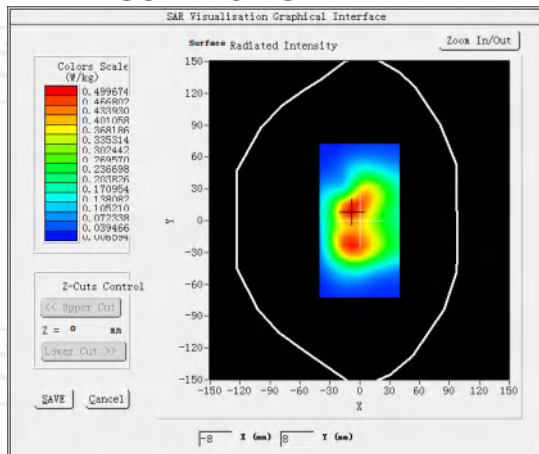
MEASUREMENT 2

Hight Band SAR (Channel 19100):

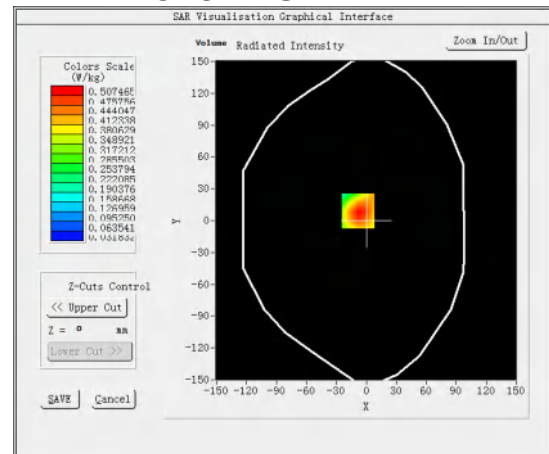
Date: 10/22/2024

Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.411700
Conductivity (S/m)	1.400405
Variation (%)	0.820000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 2 (1 RB#50)</u>

SURFACE SAR



VOLUME SAR



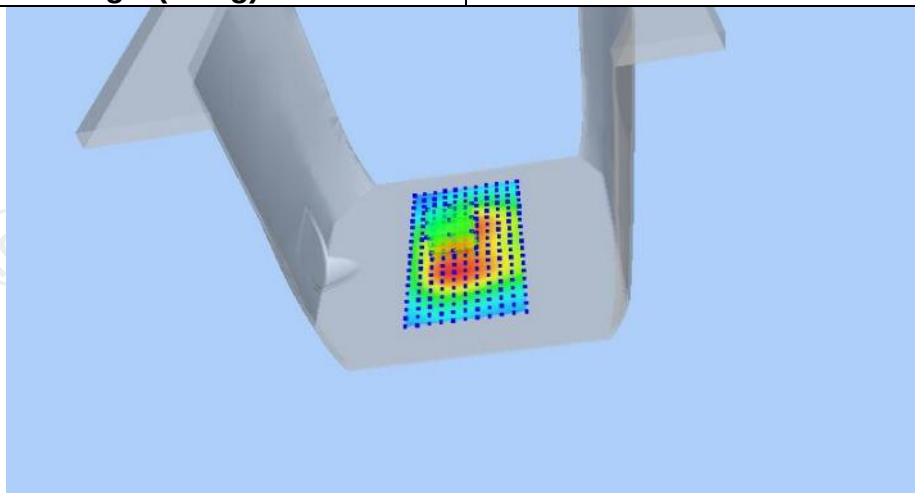
Maximum location: X=-8.00, Y=9.00 SAR Peak: 0.73 W/kg

SAR 10g (W/Kg)

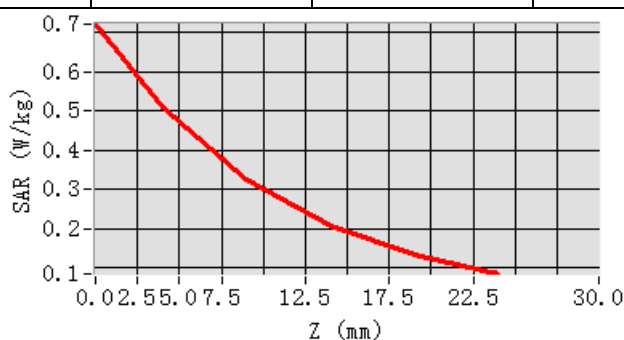
0.292051

SAR 1g (W/Kg)

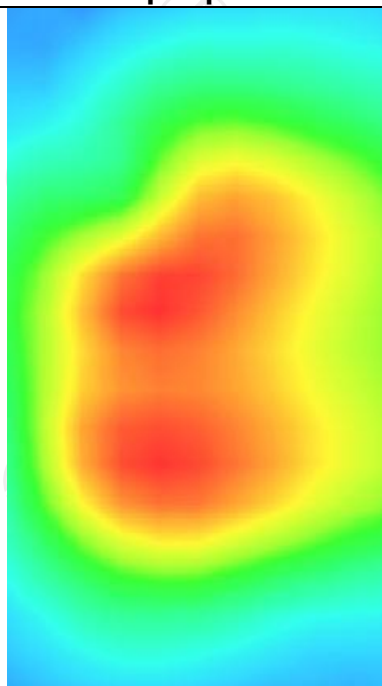
0.440814



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7211	0.5075	0.3230	0.2062	0.1336



Hot spot position



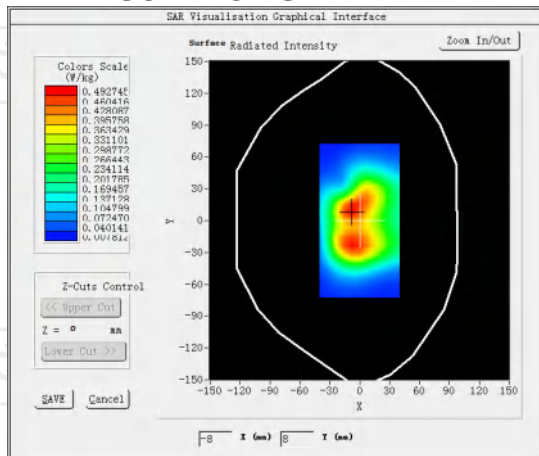
MEASUREMENT 3

Hight Band SAR (Channel 19100):

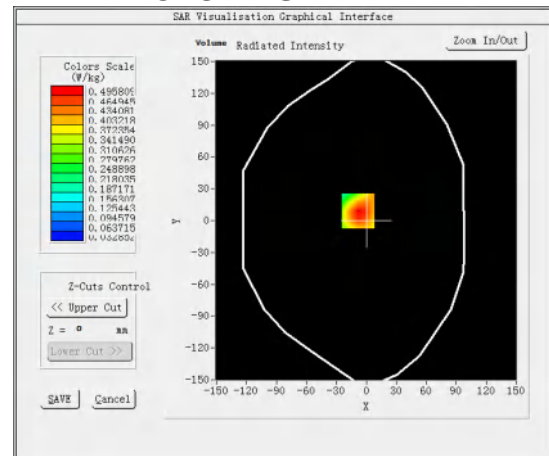
Date: 10/22/2024

Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.411700
Conductivity (S/m)	1.400405
Variation (%)	1.860000
Crest Factor	1.0
Probe Conversion factor	2.23
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(hotspot 10mm)</u>
Band	<u>LTE band 2 (1 RB#50)</u>

SURFACE SAR

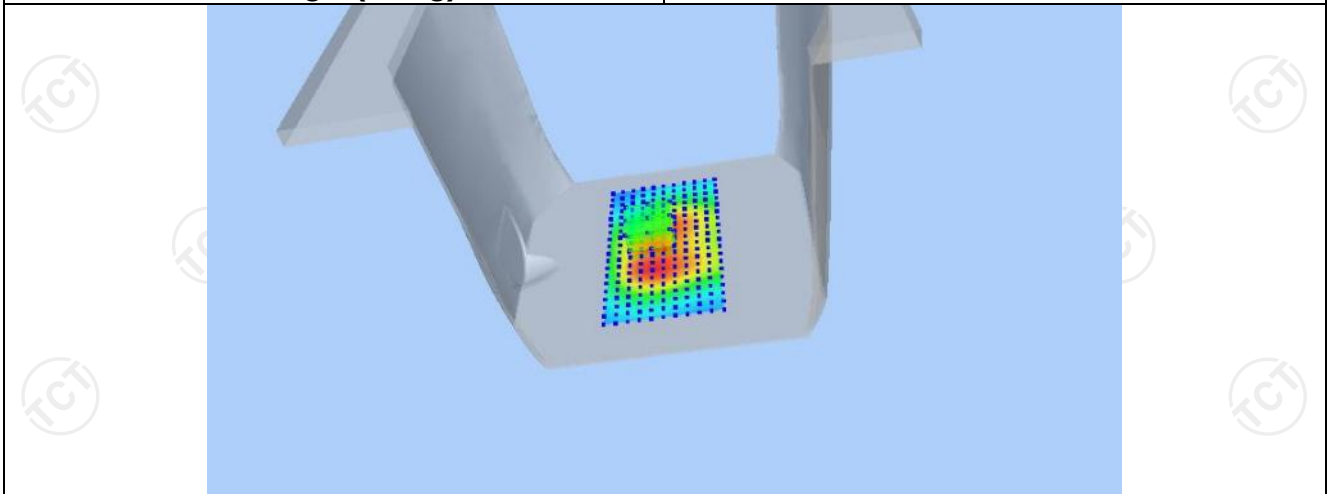


VOLUME SAR

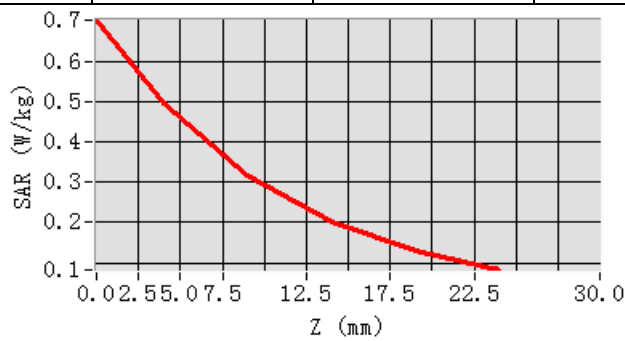


Maximum location: X=-8.00, Y=9.00 SAR Peak: 0.71 W/kg

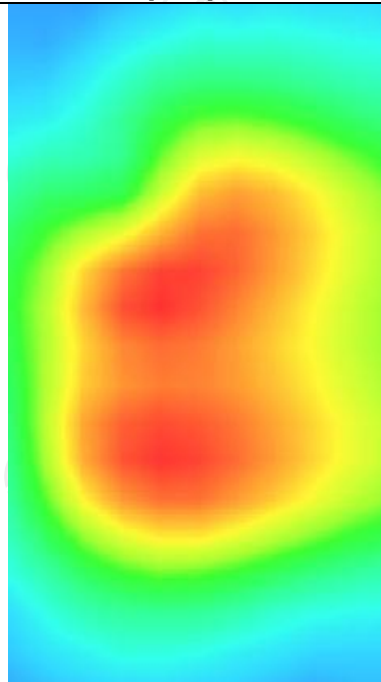
SAR 10g (W/Kg)	0.286184
SAR 1g (W/Kg)	0.428413



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7016	0.4958	0.3172	0.2033	0.1318



Hot spot position



LTE Band 4

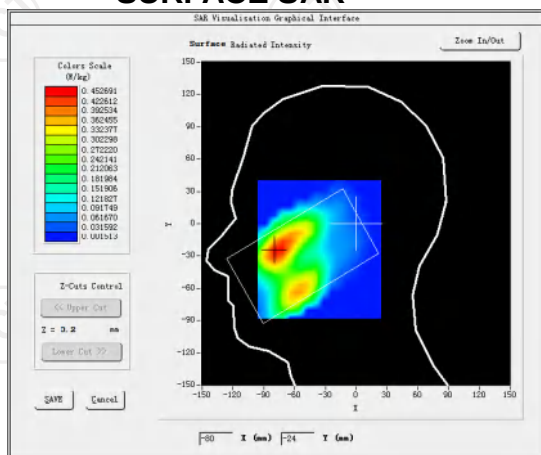
MEASUREMENT 1

Hight Band SAR (Channel 20300):

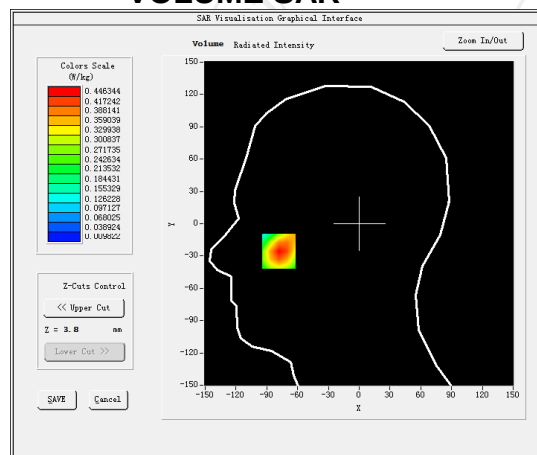
Date: 10/18/2024

Frequency (MHz)	1745.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	1.570000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 4(1 RB#50)</u>

SURFACE SAR



VOLUME SAR



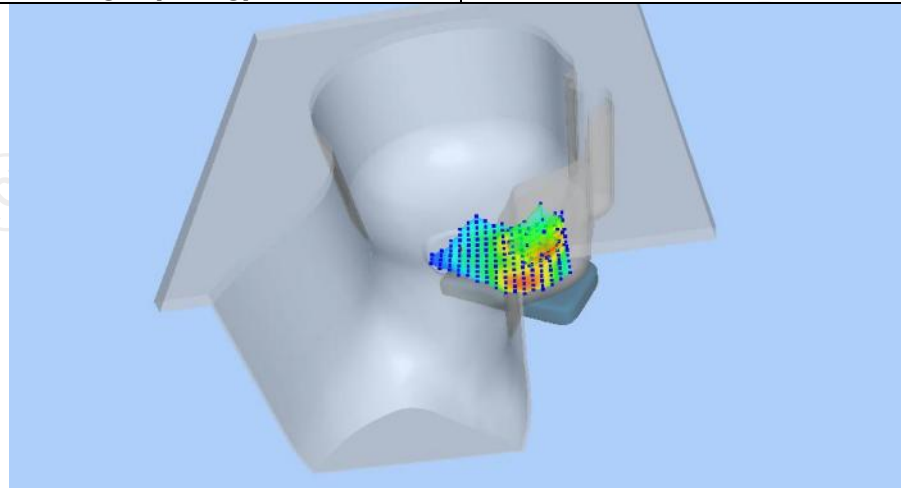
Maximum location: X=-67.00, Y=-15.00 SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)

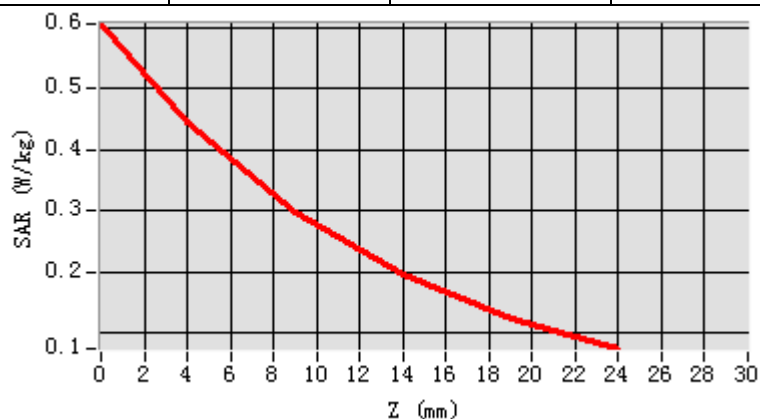
0.200331

SAR 1g (W/Kg)

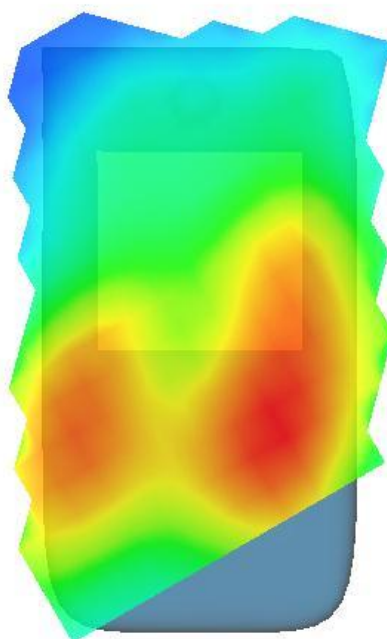
0.305715



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.6064	0.4440	0.2912	0.1923	0.1315



Hot spot position



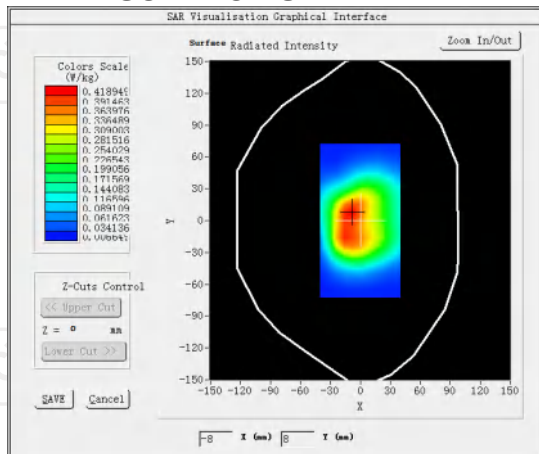
MEASUREMENT 2

Hight Band SAR (Channel 20300):

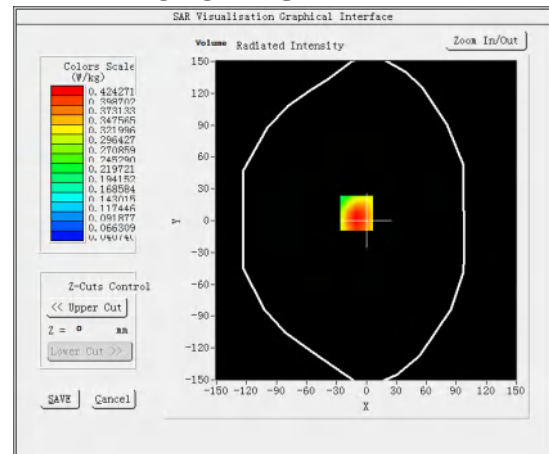
Date: 10/18/2024

Frequency (MHz)	1745.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	0.760000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 4(1 RB#50)</u>

SURFACE SAR

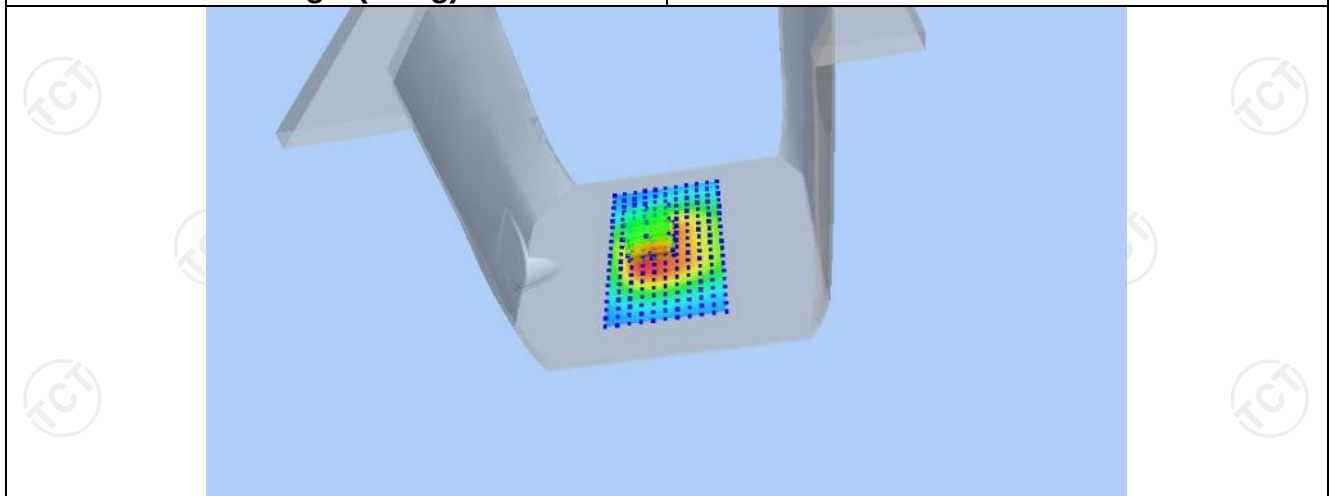


VOLUME SAR

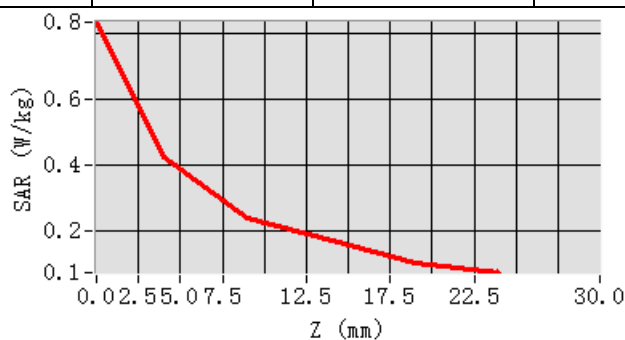


Maximum location: X=-10.00, Y=7.00 SAR Peak: 0.61 W/kg

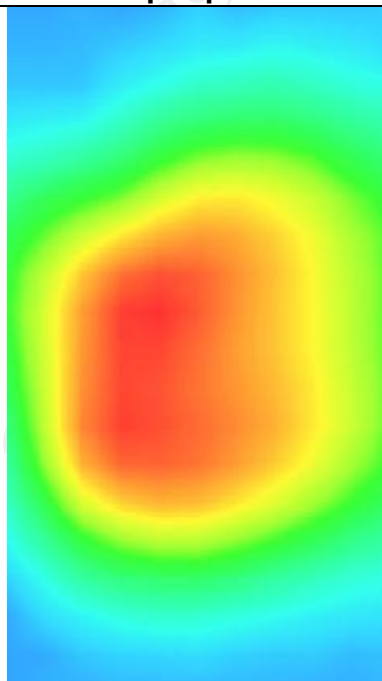
SAR 10g (W/Kg)	0.209541
SAR 1g (W/Kg)	0.387301



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8348	0.4243	0.2386	0.1714	0.1047



Hot spot position



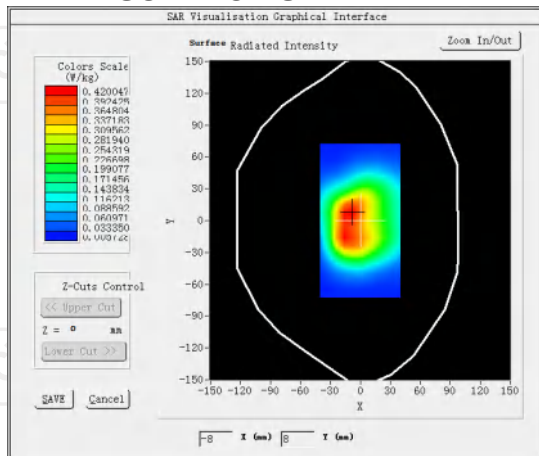
MEASUREMENT 3

Hight Band SAR (Channel 20300):

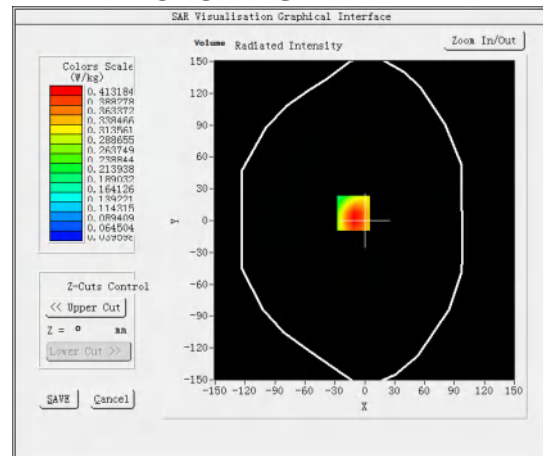
Date: 10/18/2024

Frequency (MHz)	1745.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	2.890000
Crest Factor	1.0
Probe Conversion factor	2.08
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(hotspot 10mm)</u>
Band	<u>LTE band 4(1 RB#50)</u>

SURFACE SAR

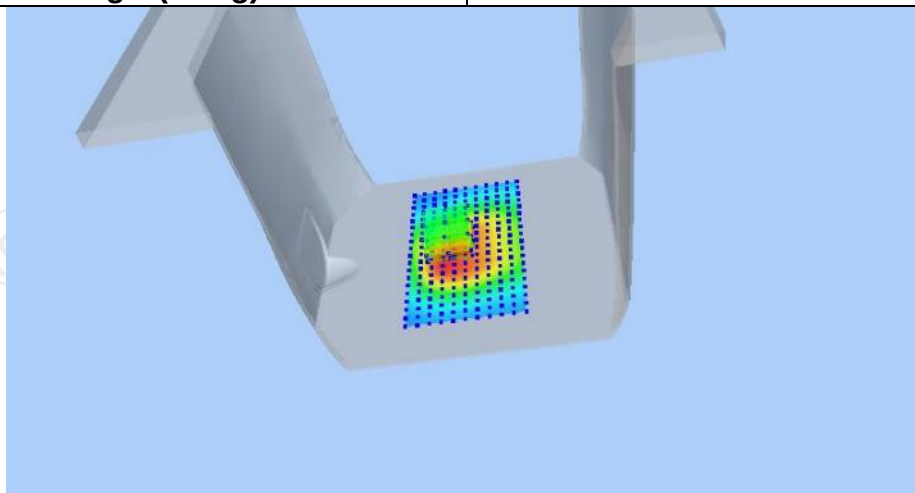


VOLUME SAR

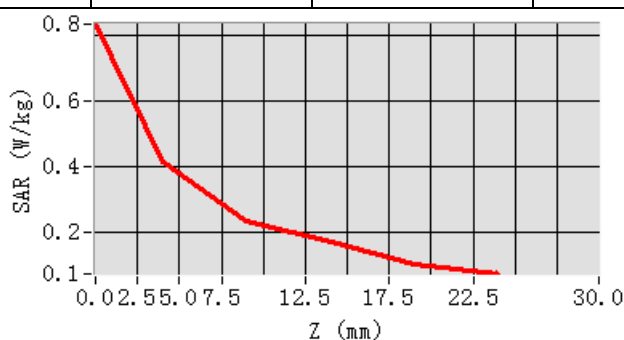


Maximum location: X=-11.00, Y=7.00 SAR Peak: 0.59 W/kg

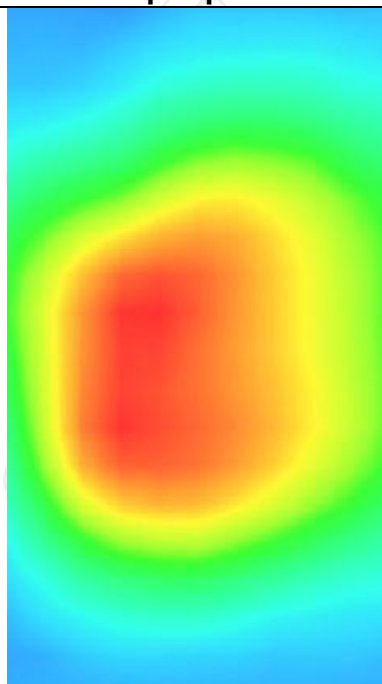
SAR 10g (W/Kg)	0.224371
SAR 1g (W/Kg)	0.371205



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8360	0.4132	0.2322	0.1706	0.1030



Hot spot position



LTE Band 5

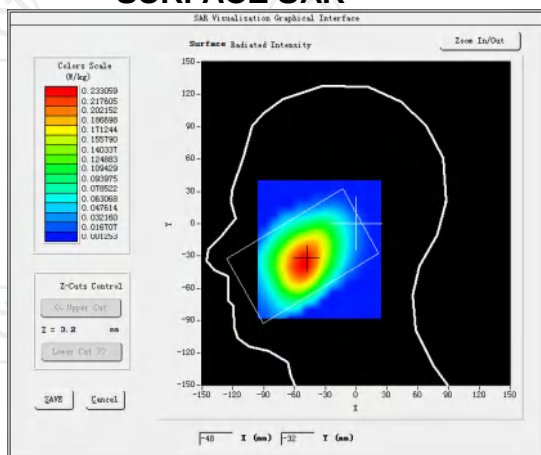
MEASUREMENT 1

Lower Band SAR (Channel 20450):

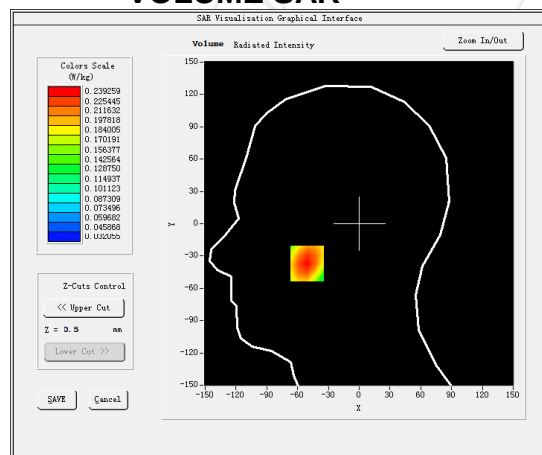
Date: 10/15/2024

Frequency (MHz)	829.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	1.820000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE band 5(1 RB#0)

SURFACE SAR



VOLUME SAR



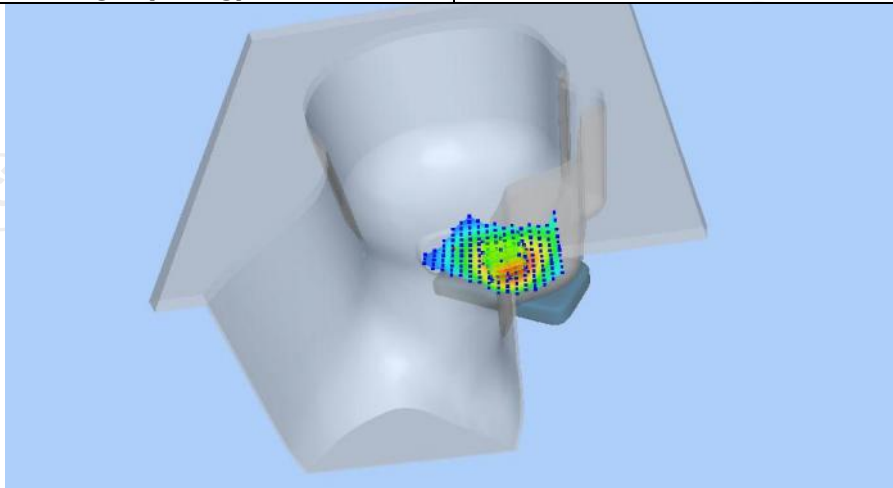
Maximum location: X=-51.00, Y=-37.00 SAR Peak: 0.29 W/kg

SAR 10g (W/Kg)

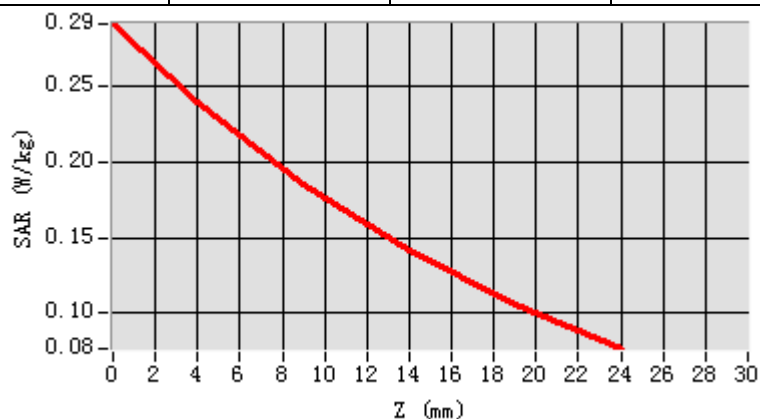
0.113267

SAR 1g (W/Kg)

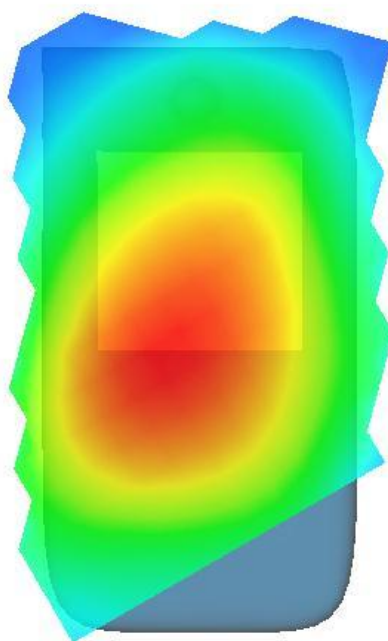
0.182116



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2913	0.2393	0.1850	0.1411	0.1058



Hot spot position



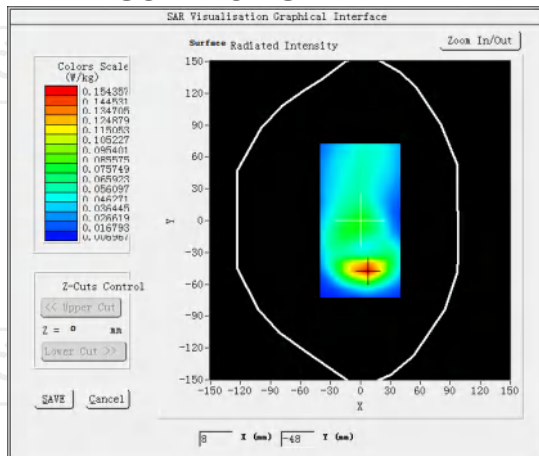
MEASUREMENT 2

Lower Band SAR (Channel 20450):

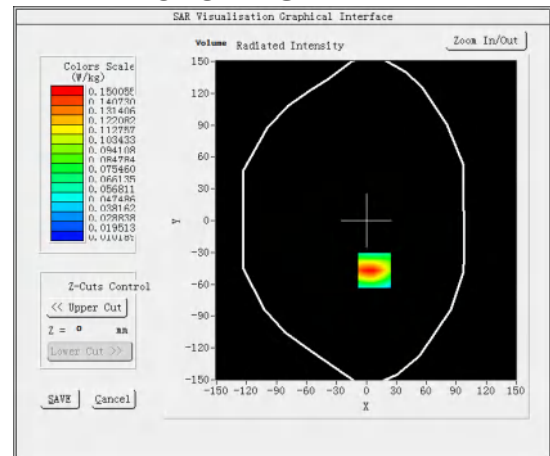
Date: 10/15/2024

Frequency (MHz)	829.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	-2.690000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 5(1 RB#0)</u>

SURFACE SAR

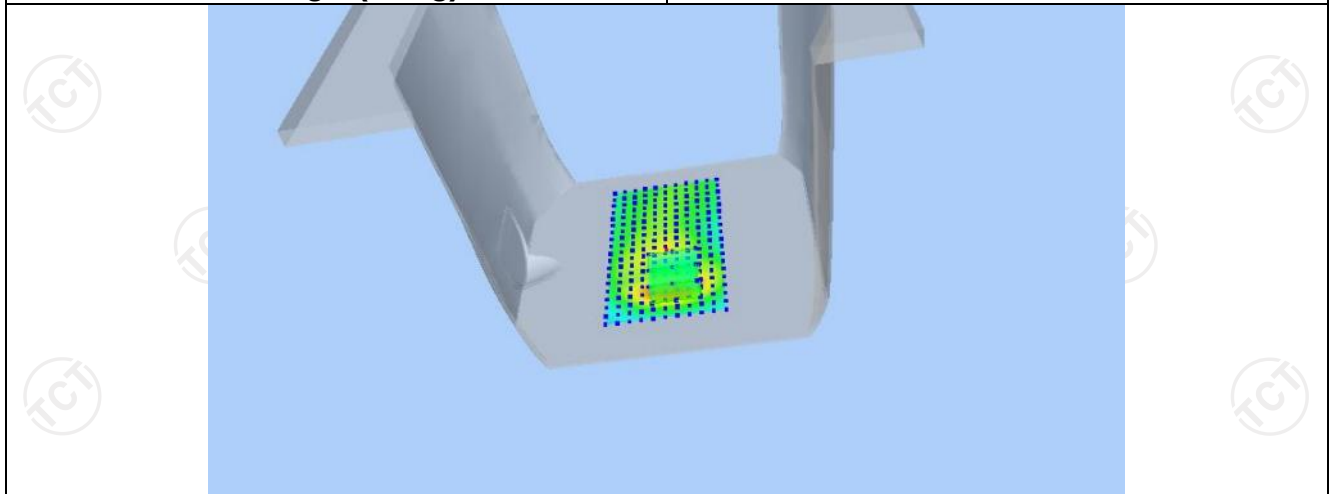


VOLUME SAR

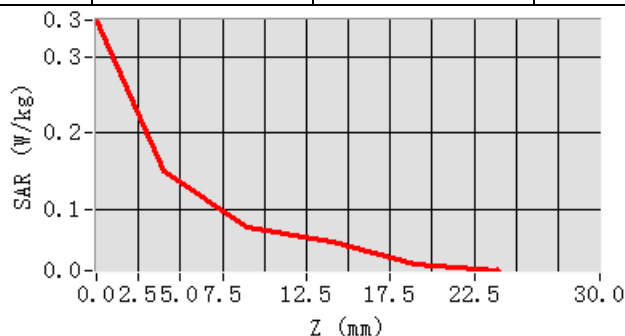


Maximum location: X=8.00, Y=-47.00 SAR Peak: 0.22 W/kg

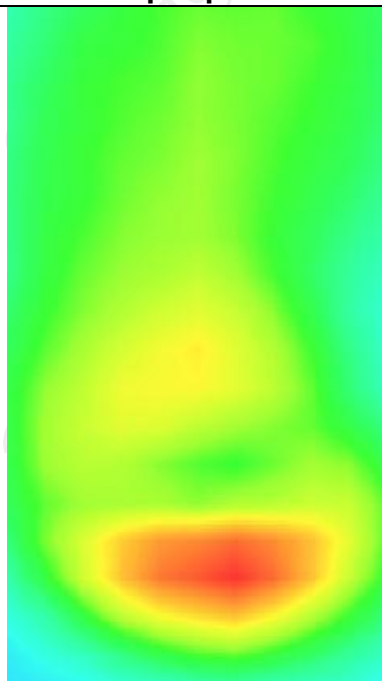
SAR 10g (W/Kg)	0.068913
SAR 1g (W/Kg)	0.121818



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3494	0.1501	0.0758	0.0560	0.0275



Hot spot position



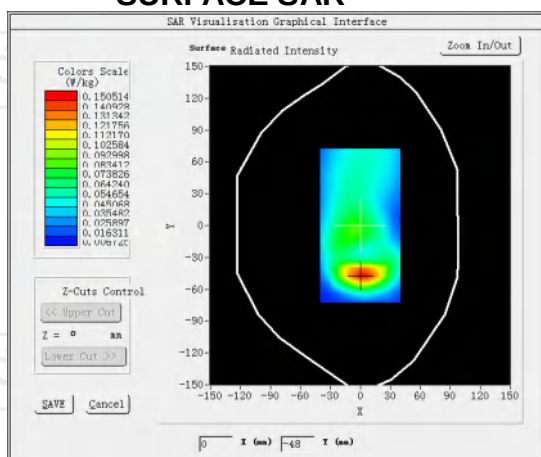
MEASUREMENT 3

Lower Band SAR (Channel 20450):

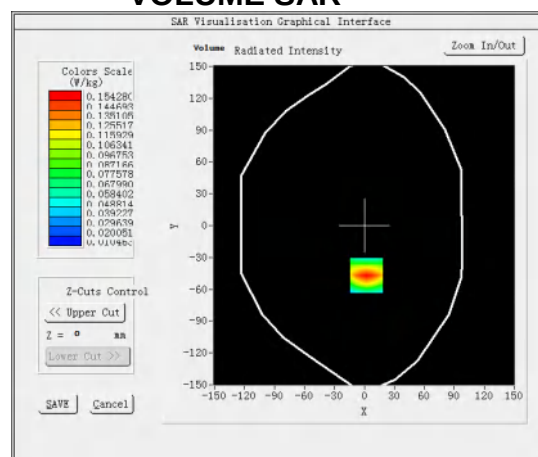
Date: 10/15/2024

Frequency (MHz)	829.000000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901561
Variation (%)	1.090000
Crest Factor	1.0
Probe Conversion factor	1.80
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back((hotspot 10mm)</u>
Band	<u>LTE band 5(1 RB#0)</u>

SURFACE SAR

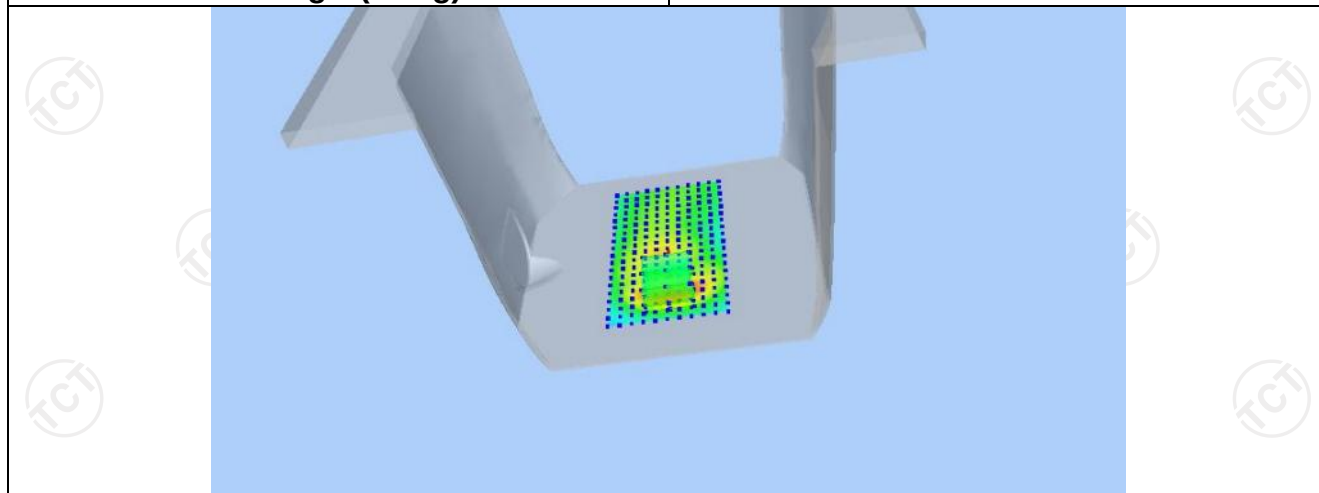


VOLUME SAR

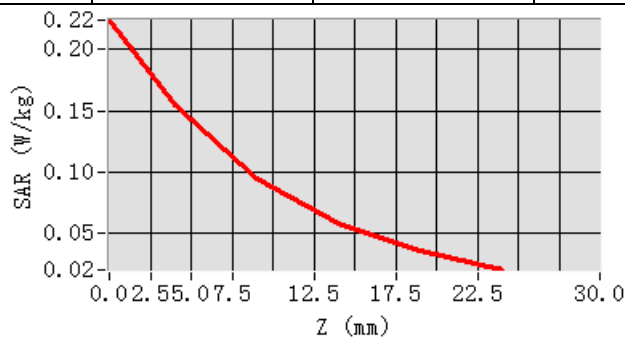


Maximum location: X=2.00, Y=-47.00 SAR Peak: 0.22 W/kg

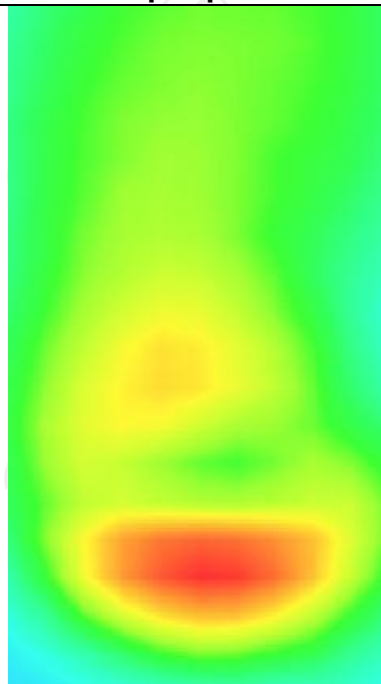
SAR 10g (W/Kg)	0.082614
SAR 1g (W/Kg)	0.113484



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2234	0.1543	0.0952	0.0583	0.0358



Hot spot position

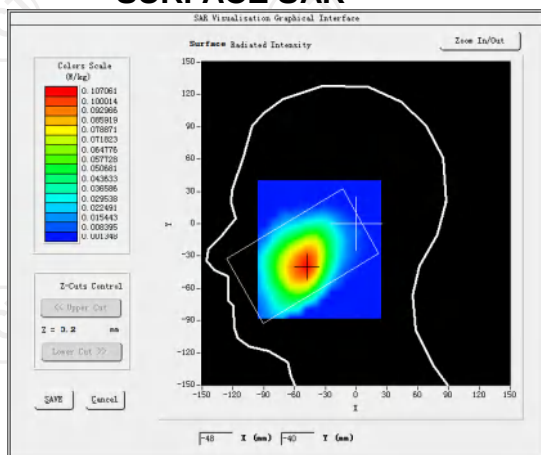


LTE Band 12

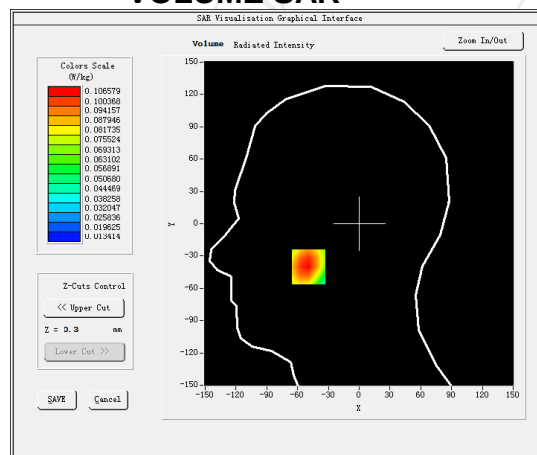
MEASUREMENT 1

High Band SAR (Channel 23130):		Date: 10/14/2024
Frequency (MHz)	711.000000	
Relative permittivity (real part)	42.126667	
Relative permittivity (imaginary part)	23.264000	
Conductivity (S/m)	0.914404	
Variation (%)	-0.160000	
Crest Factor	1.0	
Probe Conversion factor	1.71	
E-Field Probe:	SSE2 (SN 25/22 EPG0375)	
Area Scan	dx=8mm dy=8mm, h= 5.00 mm	
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm	
Phantom	Left head	
Device Position	Cheek	
Band	LTE band 12(1 RB#25)	

SURFACE SAR



VOLUME SAR



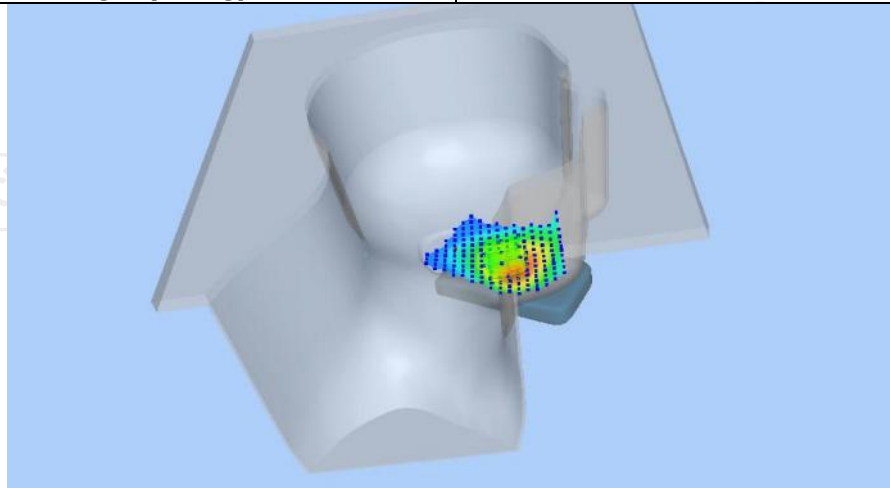
Maximum location: X=-39.00, Y=-41.00 SAR Peak: 0.11 W/kg

SAR 10g (W/Kg)

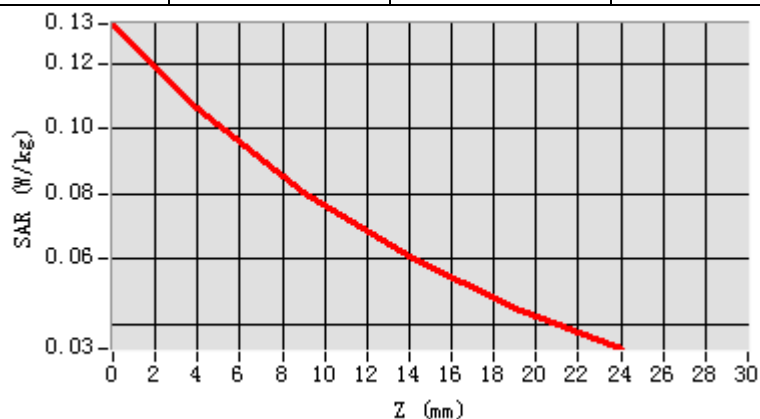
0.042132

SAR 1g (W/Kg)

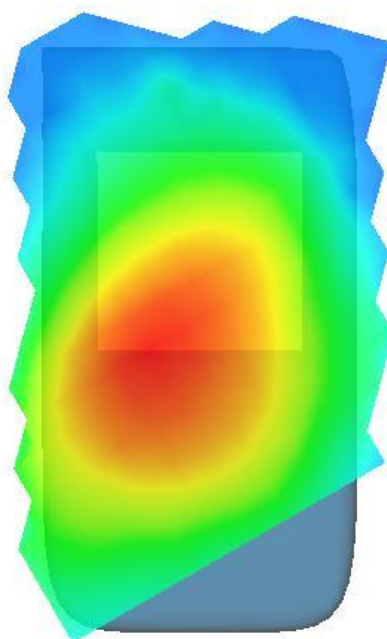
0.073483



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1331	0.1051	0.0707	0.0606	0.0451



Hot spot position



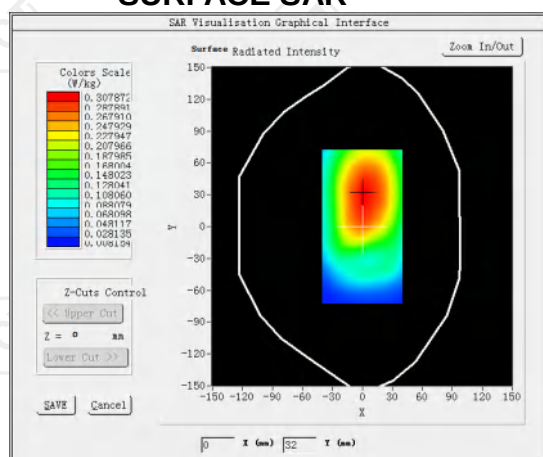
MEASUREMENT 2

High Band SAR (Channel 23130):

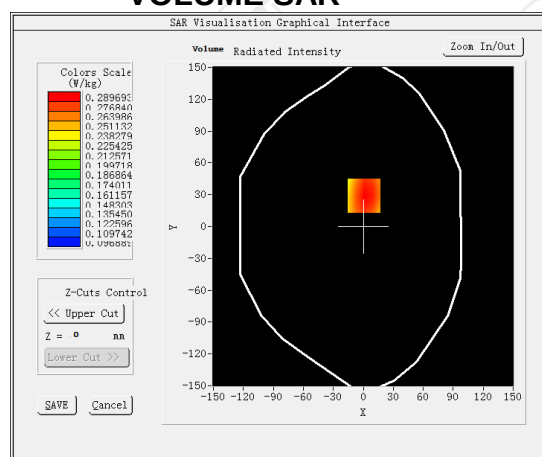
Date: 10/14/2024

Frequency (MHz)	711.000000
Relative permittivity (real part)	42.126667
Relative permittivity (imaginary part)	23.264000
Conductivity (S/m)	0.914404
Variation (%)	-1.010000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 12(1 RB#25)</u>

SURFACE SAR

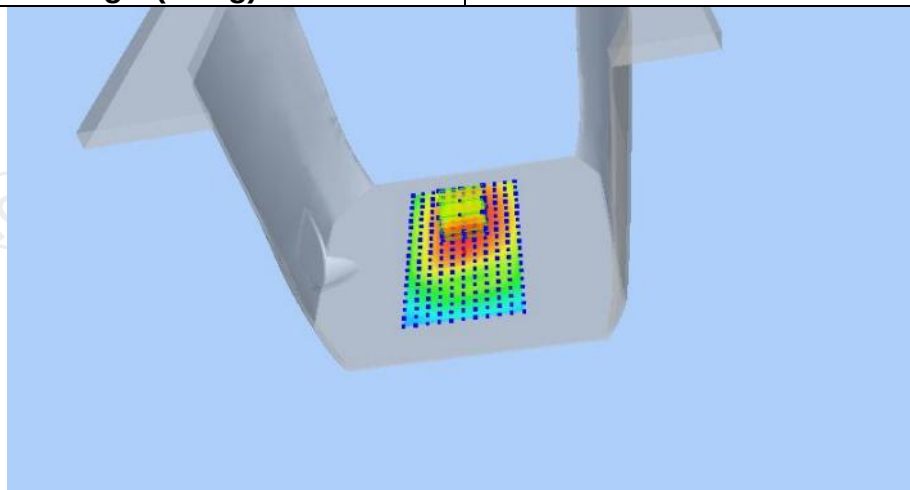


VOLUME SAR

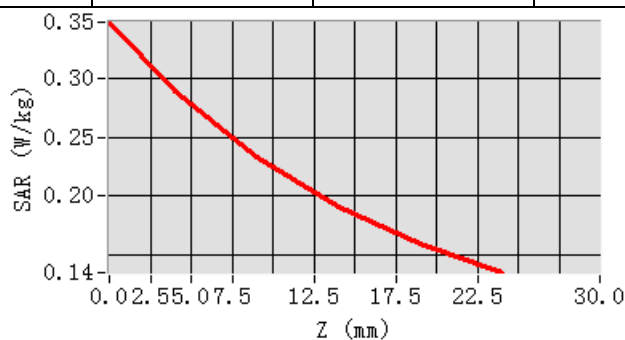


Maximum location: X=1.00, Y=29.00 SAR Peak: 0.35 W/kg

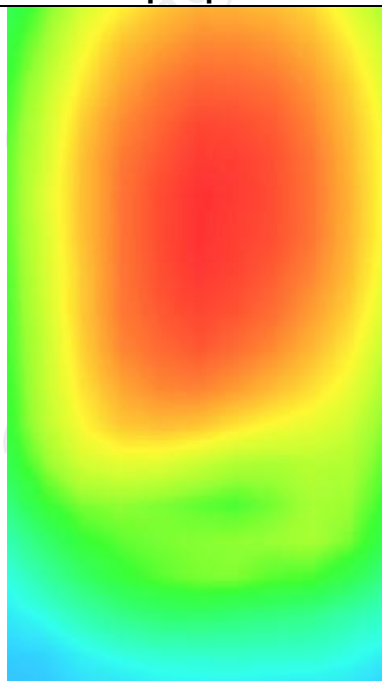
SAR 10g (W/Kg)	0.135348
SAR 1g (W/Kg)	0.185274



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3479	0.2897	0.2328	0.1909	0.1601



Hot spot position



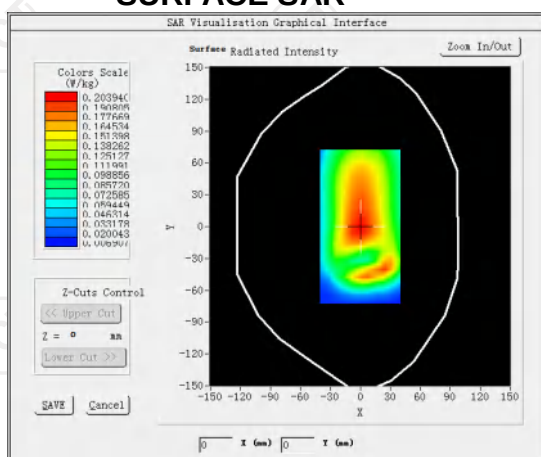
MEASUREMENT 3

High Band SAR (Channel 23130):

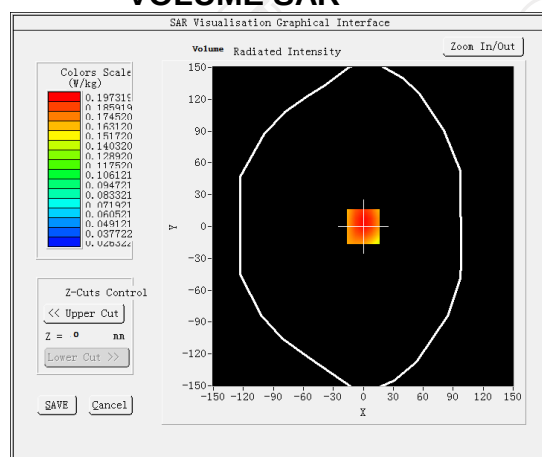
Date: 10/14/2024

Frequency (MHz)	707.500000
Relative permittivity (real part)	42.126667
Relative permittivity (imaginary part)	23.264000
Conductivity (S/m)	0.914404
Variation (%)	0.810000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	<u>Body back(hotspot 10mm)</u>
Band	<u>LTE band 12(1 RB#25)</u>

SURFACE SAR

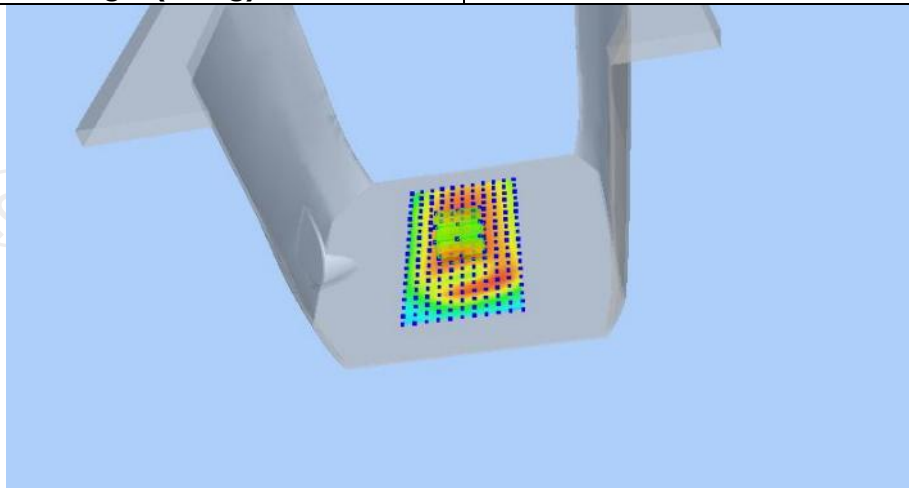


VOLUME SAR

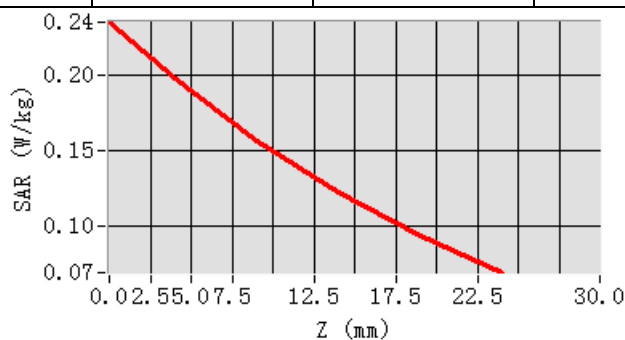


Maximum location: X=0.00, Y=0.00 SAR Peak: 0.24 W/kg

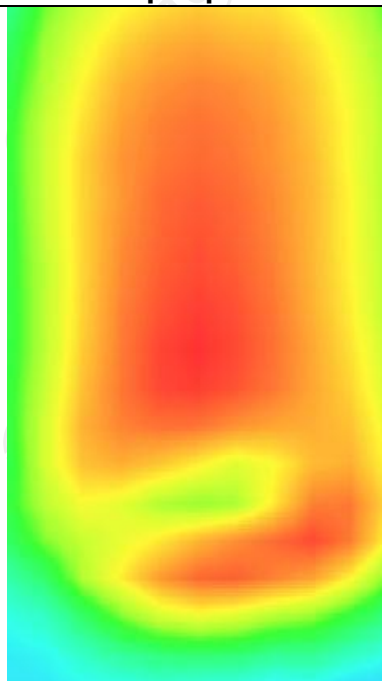
SAR 10g (W/Kg)	0.085218
SAR 1g (W/Kg)	0.190571



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2351	0.1973	0.1565	0.1222	0.0935



Hot spot position



LTE Band 17

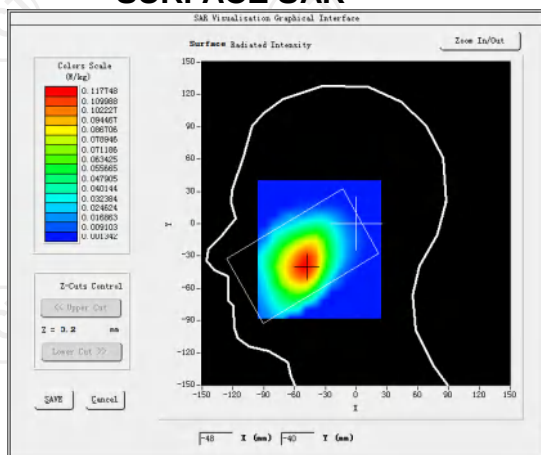
MEASUREMENT 1

Lower Band SAR (Channel 23780):

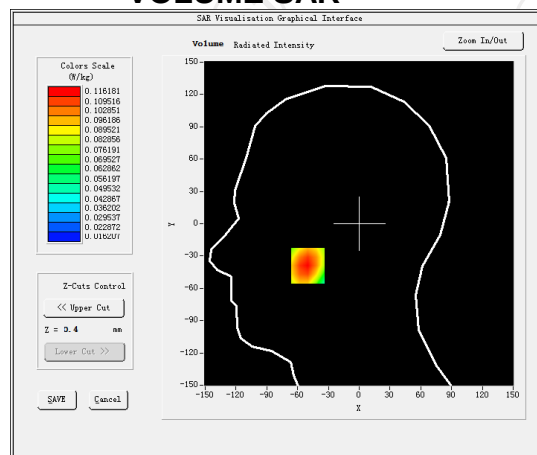
Date: 10/14/2024

Frequency (MHz)	709.000000
Relative permittivity (real part)	40.761260
Relative permittivity (imaginary part)	17.130904
Conductivity (S/m)	0.931220
Variation (%)	0.720000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7, dx=8mm dy=8mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE band 17(1 RB#25)

SURFACE SAR



VOLUME SAR



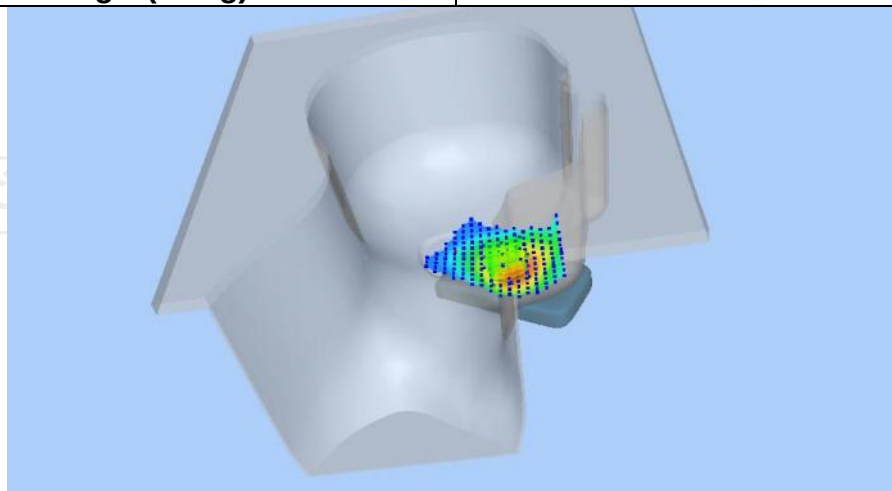
Maximum location: X=-50.00, Y=-39.00 SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)

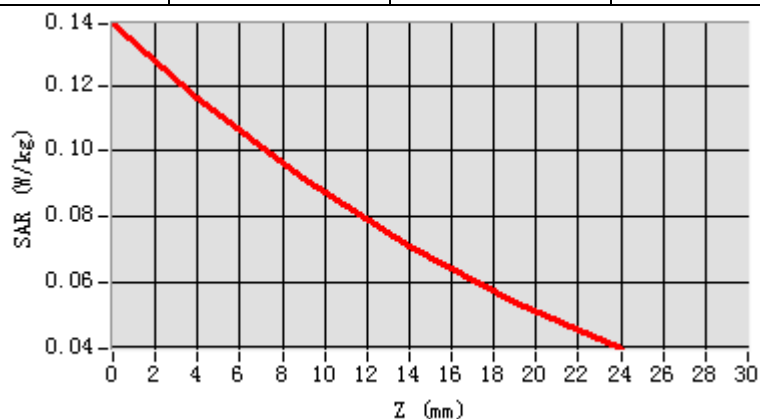
0.081643

SAR 1g (W/Kg)

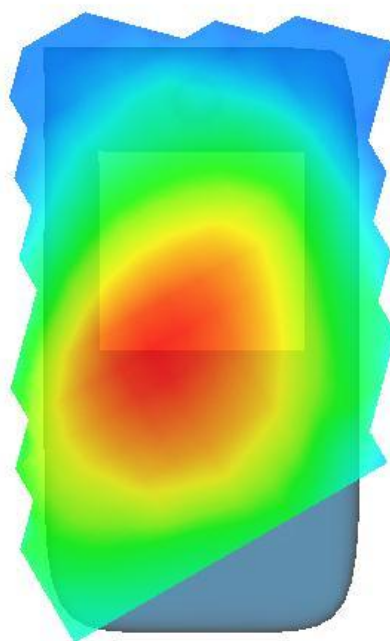
0.133733



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1390	0.1162	0.0916	0.0710	0.0539



Hot spot position



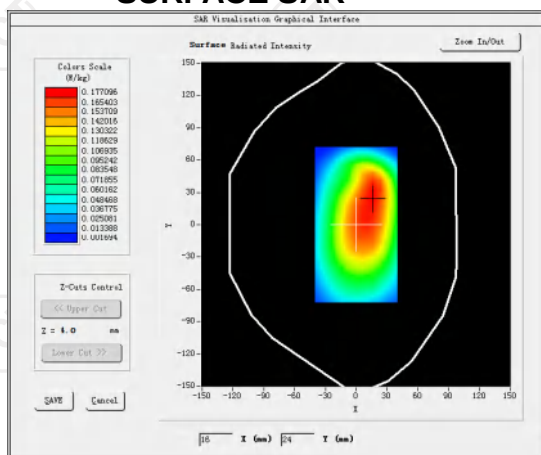
MEASUREMENT 2

Lower Band SAR (Channel 23780):

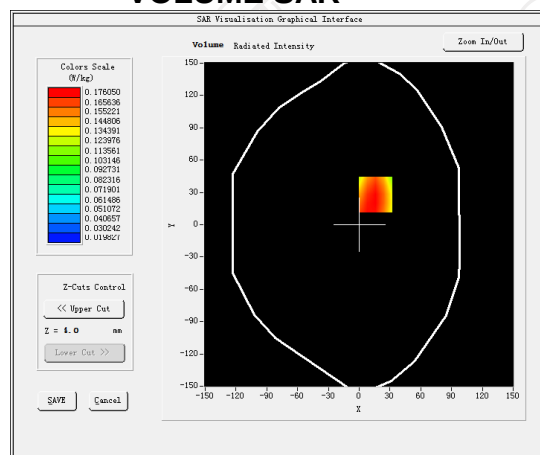
Date: 10/14/2024

Frequency (MHz)	709.000000
Relative permittivity (real part)	40.761260
Relative permittivity (imaginary part)	17.130904
Conductivity (S/m)	0.931220
Variation (%)	0.290000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 17(1 RB#25)</u>

SURFACE SAR

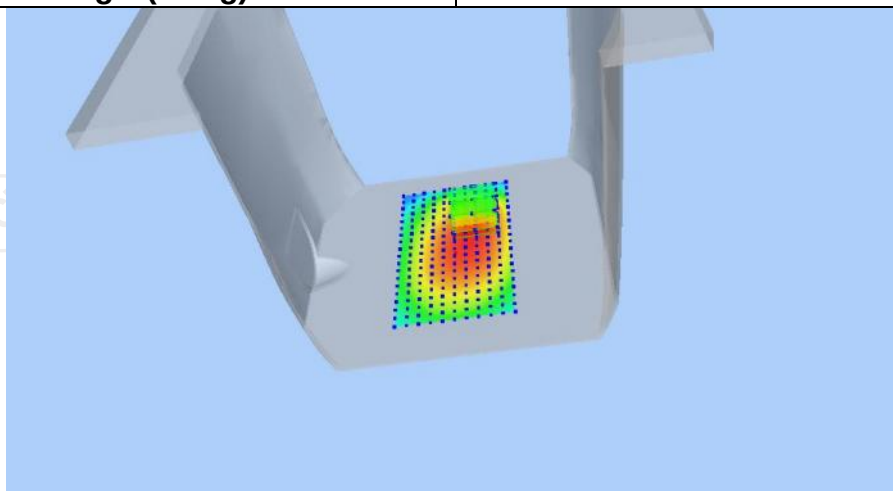


VOLUME SAR

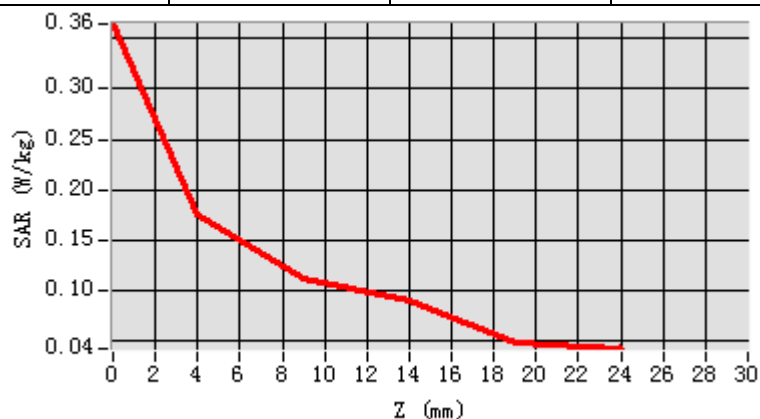


Maximum location: X=16.00, Y=28.00 SAR Peak: 0.23 W/kg

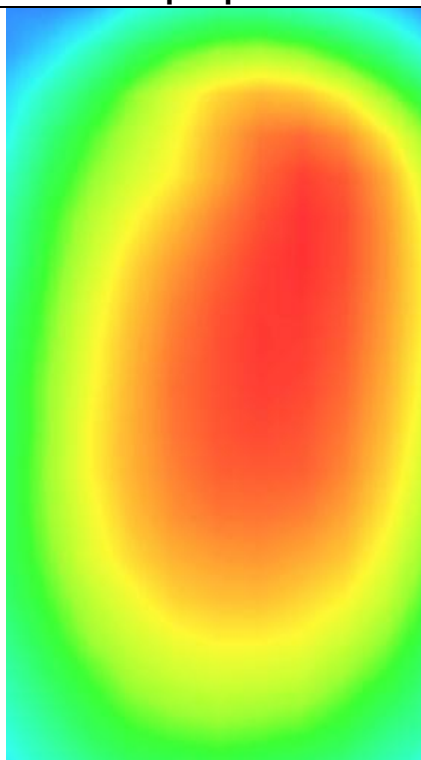
SAR 10g (W/Kg)	0.122715
SAR 1g (W/Kg)	0.180877



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3647	0.1761	0.1123	0.0891	0.0484



Hot spot position



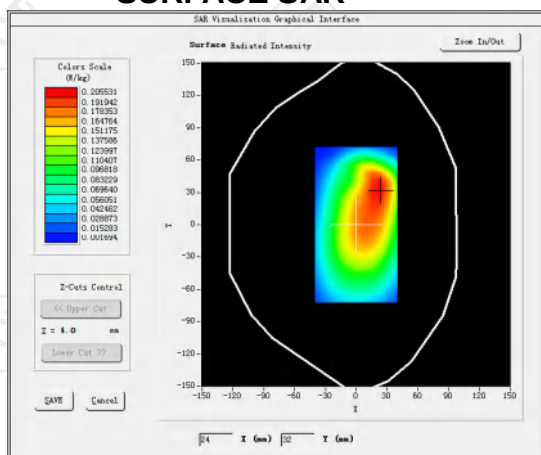
MEASUREMENT 3

Lower Band SAR (Channel 23780):

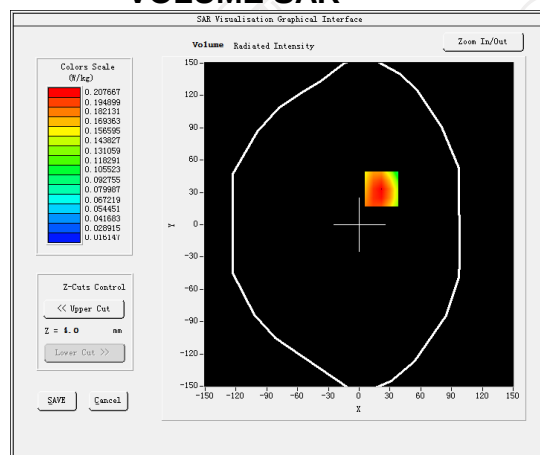
Date: 10/14/2024

Frequency (MHz)	709.000000
Relative permittivity (real part)	40.761260
Relative permittivity (imaginary part)	17.130904
Conductivity (S/m)	0.931220
Variation (%)	0.170000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	<u>Body back(hotspot 10mm)</u>
Band	<u>LTE band 17(1 RB#25)</u>

SURFACE SAR

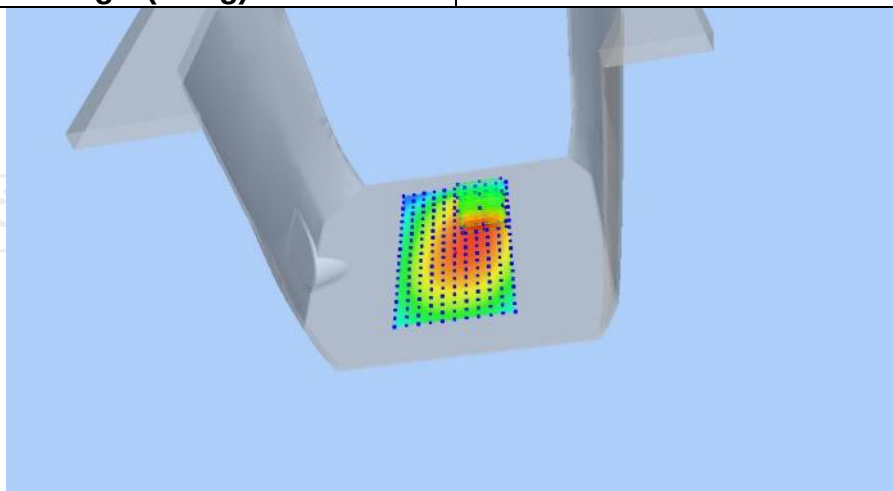


VOLUME SAR

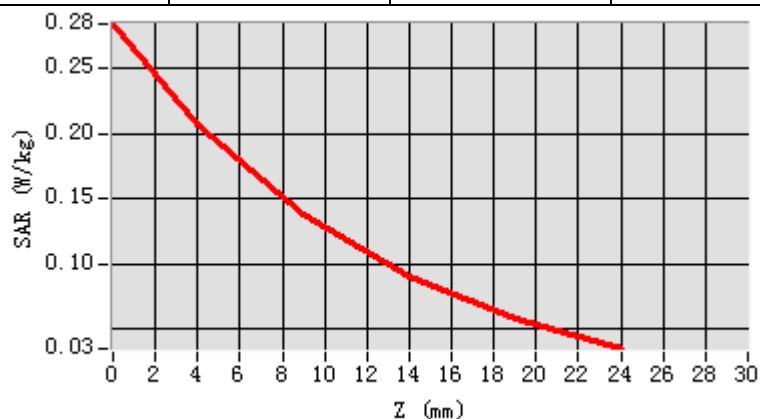


Maximum location: X=22.00, Y=33.00 SAR Peak: 0.29 W/kg

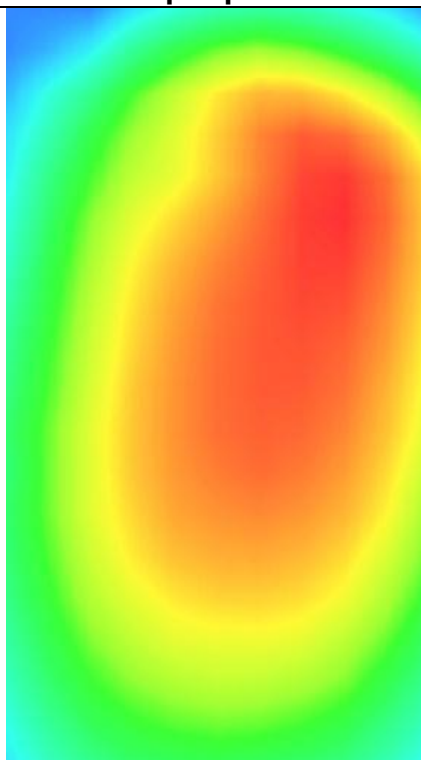
SAR 10g (W/Kg)	0.138321
SAR 1g (W/Kg)	0.211390



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2842	0.2077	0.1378	0.0901	0.0578



Hot spot position



LTE Band 41

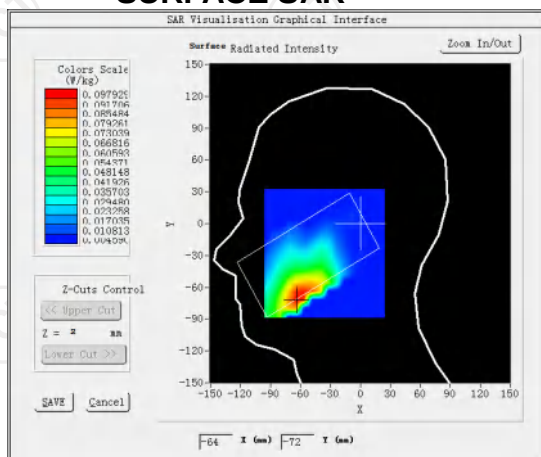
MEASUREMENT 1

Low Band SAR (Channel 39750):

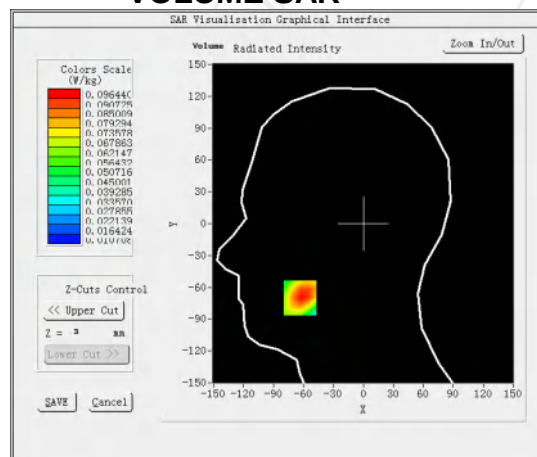
Date: 10/25/2024

Frequency (MHz)	2506.000000
Relative permittivity (real part)	39.009335
Relative permittivity (imaginary part)	13.553667
Conductivity (S/m)	1.952481
Variation (%)	1.860000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=5mm dy=5mm</u> <u>dz=5mm, Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 41(1 RB#0)</u>

SURFACE SAR



VOLUME SAR



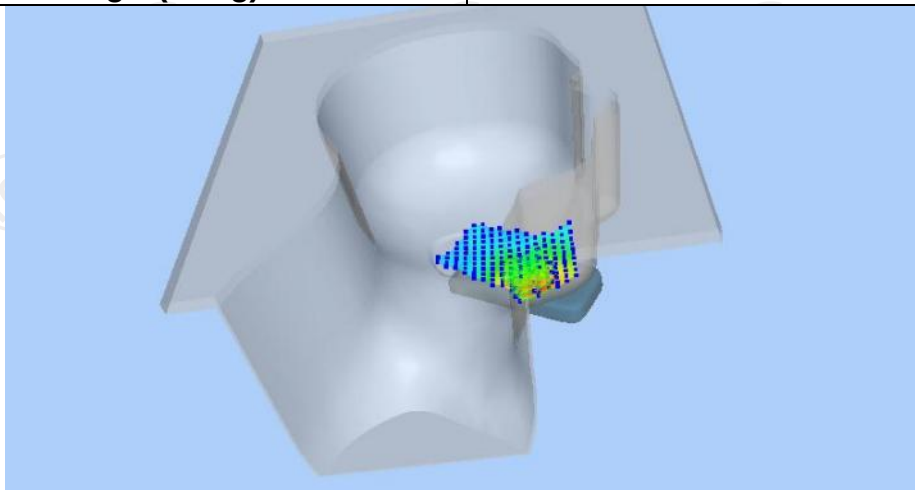
Maximum location: X=-63.00, Y=-70.00 SAR Peak: 0.14 W/kg

SAR 10g (W/Kg)

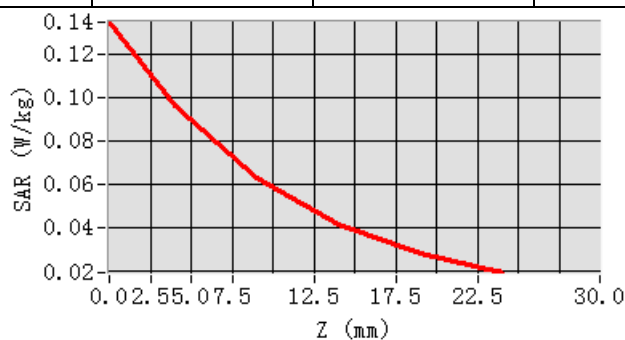
0.046149

SAR 1g (W/Kg)

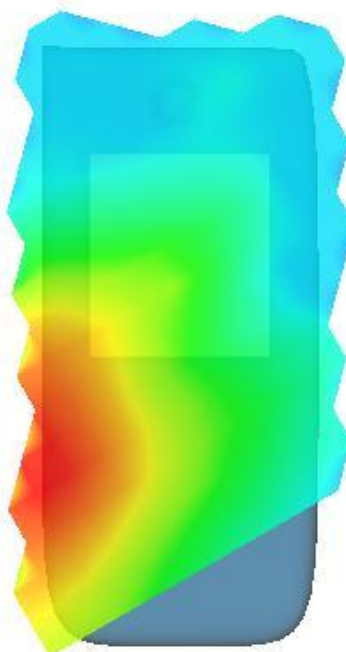
0.071830



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1351	0.0964	0.0630	0.0418	0.0287



Hot spot position



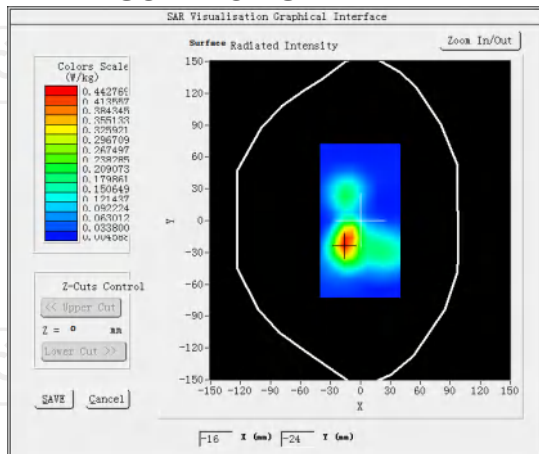
MEASUREMENT 2

Low Band SAR (Channel 39750):

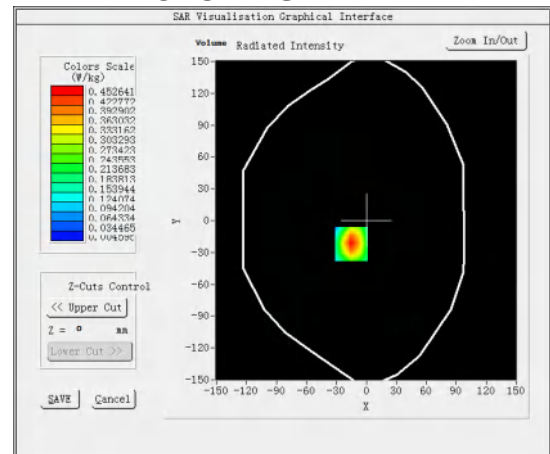
Date: 10/25/2024

Frequency (MHz)	2506.000000
Relative permittivity (real part)	39.009335
Relative permittivity (imaginary part)	13.553667
Conductivity (S/m)	1.952481
Variation (%)	2.950000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=12mm dy=12mm, h= 5.00 mm
ZoomScan	5x5x7, dx=5mm dy=5mm dz=5mm, Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back (10mm)
Band	LTE band 41(1 RB#0)

SURFACE SAR



VOLUME SAR



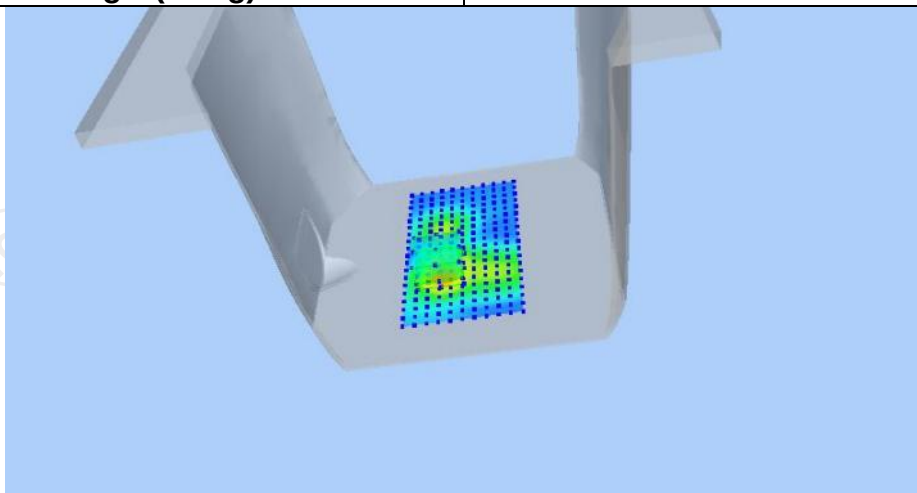
Maximum location: X=-15.00, Y=-22.00 SAR Peak: 0.75 W/kg

SAR 10g (W/Kg)

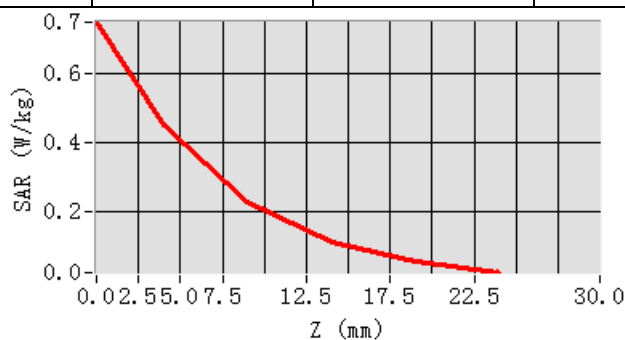
0.311451

SAR 1g (W/Kg)

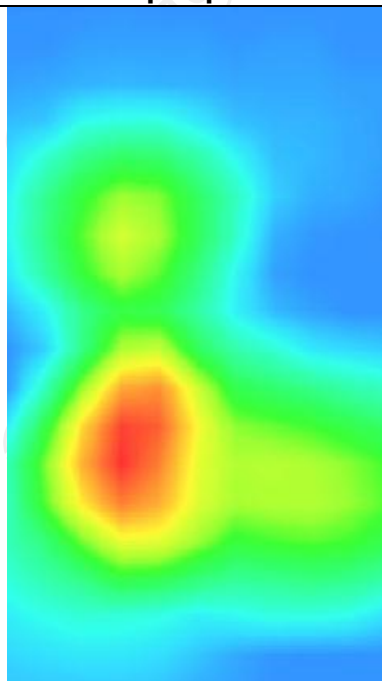
0.446217



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7498	0.4526	0.2287	0.1120	0.0551



Hot spot position



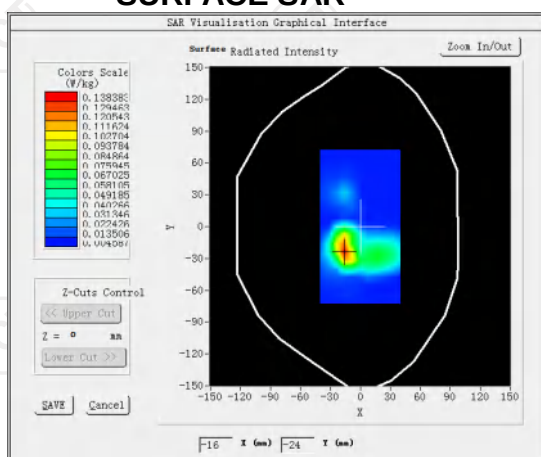
MEASUREMENT 3

Low Band SAR (Channel 39750):

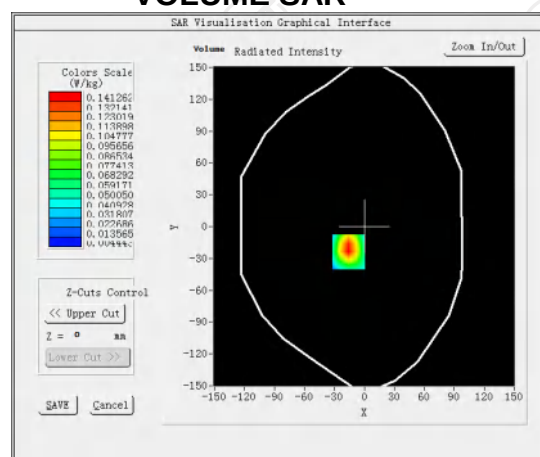
Date: 10/25/2024

Frequency (MHz)	2506.000000
Relative permittivity (real part)	39.009335
Relative permittivity (imaginary part)	13.553667
Conductivity (S/m)	1.952481
Variation (%)	0.480000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	<u>Body back (hotspot 10mm)</u>
Band	<u>LTE band 41(1 RB#0)</u>

SURFACE SAR

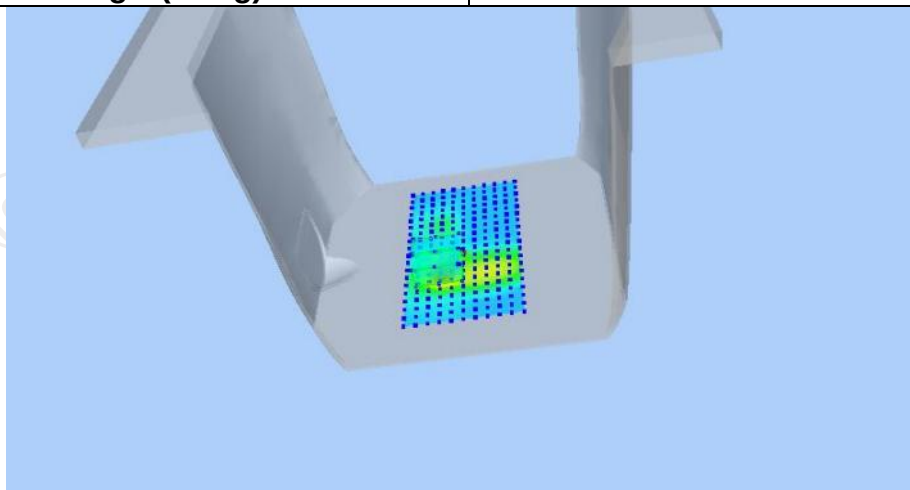


VOLUME SAR

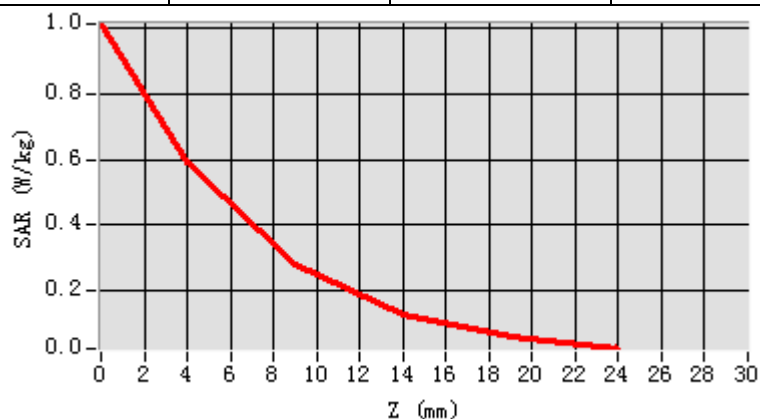


Maximum location: X=-16.00, Y=-24.00 SAR Peak: 1.00 W/kg

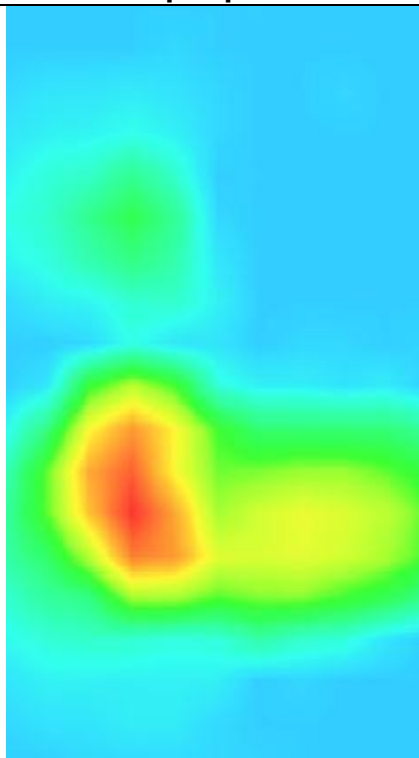
SAR 10g (W/Kg)	0.397315
SAR 1g (W/Kg)	0.601845



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	1.0151	0.5893	0.2786	0.1246	0.0547



Hot spot position



LTE Band 66

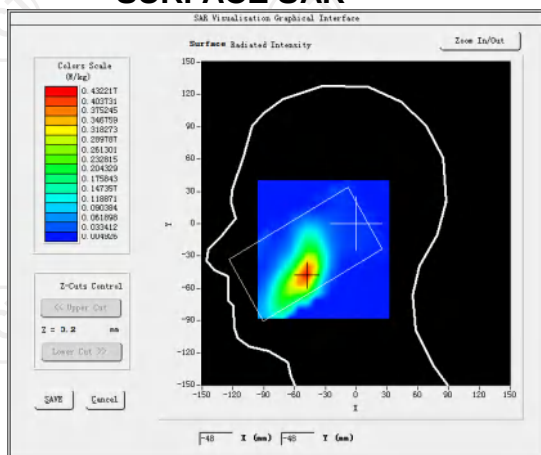
MEASUREMENT 1

Hight Band SAR (Channel 132572):

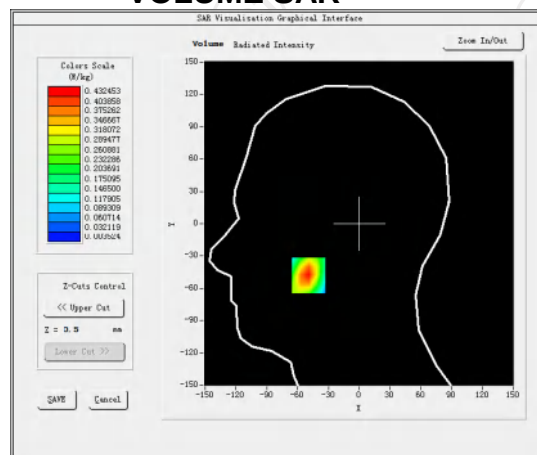
Date: 10/18/2024

Frequency (MHz)	1770.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	0.570000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Left head
Device Position	Cheek
Band	LTE band 66(1 RB#50)

SURFACE SAR



VOLUME SAR



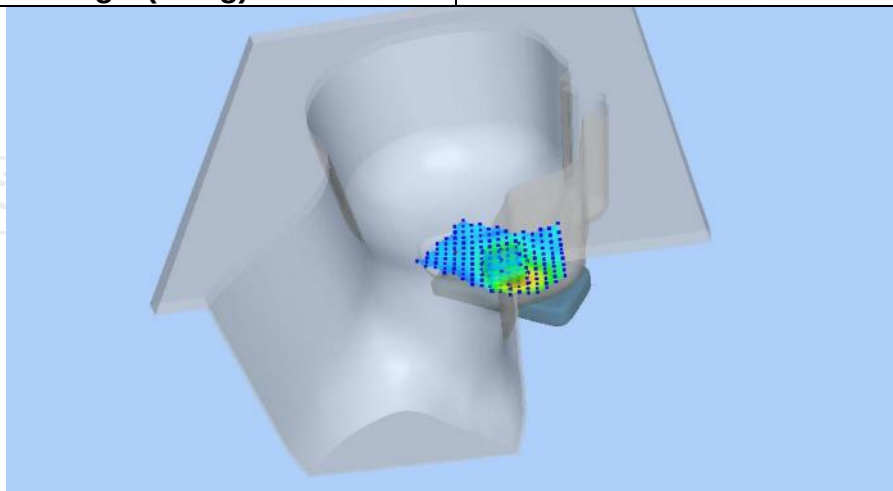
Maximum location: X=-49.00, Y=-48.00 SAR Peak: 0.88 W/kg

SAR 10g (W/Kg)

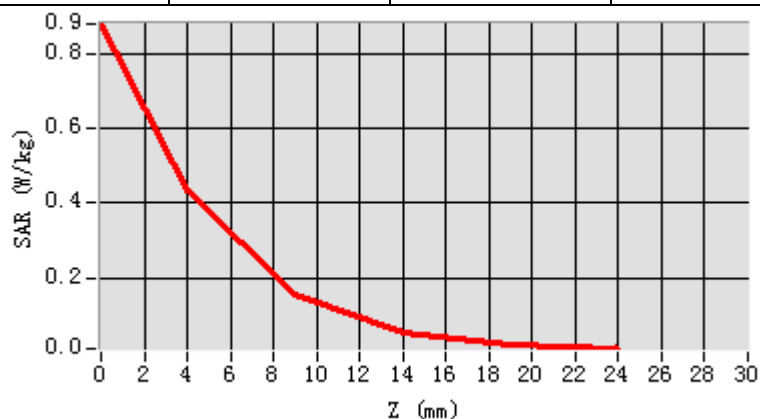
0.362509

SAR 1g (W/Kg)

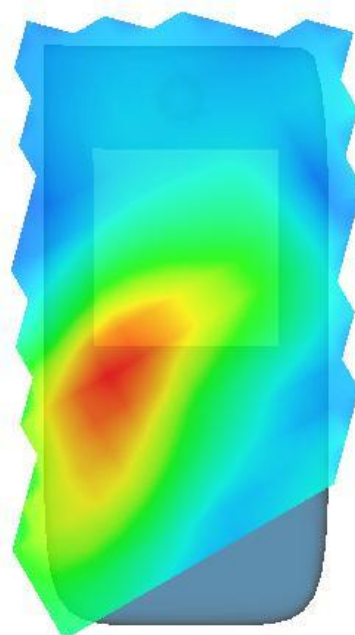
0.401513



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.8804	0.4325	0.1545	0.0508	0.0199



Hot spot position



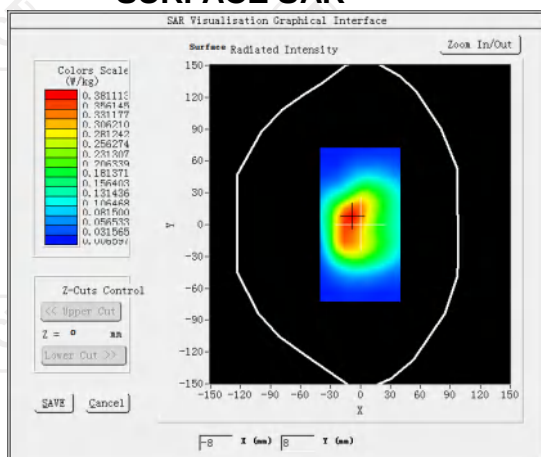
MEASUREMENT 2

Hight Band SAR (Channel 132572):

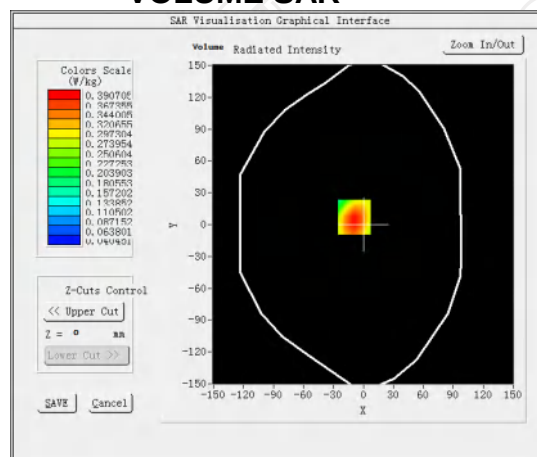
Date: 10/18/2024

Frequency (MHz)	1770.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	1.820000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	dx=8mm dy=8mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm
Phantom	Validation plane
Device Position	Body back(10mm)
Band	LTE band 66(1 RB#50)

SURFACE SAR

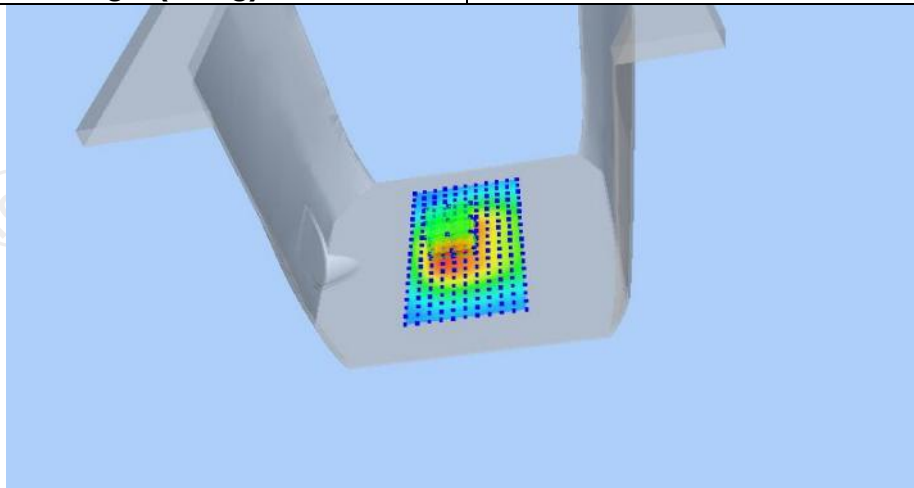


VOLUME SAR

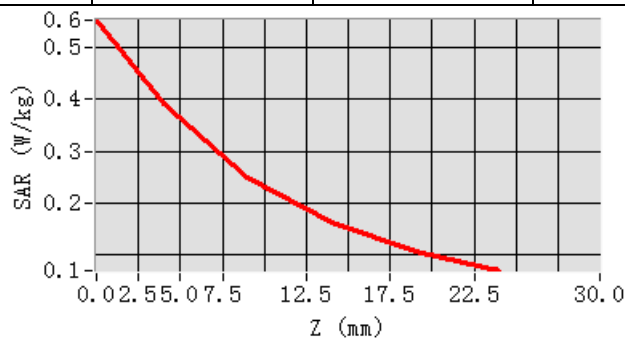


Maximum location: X=-9.00, Y=700 SAR Peak: 0.56W/kg

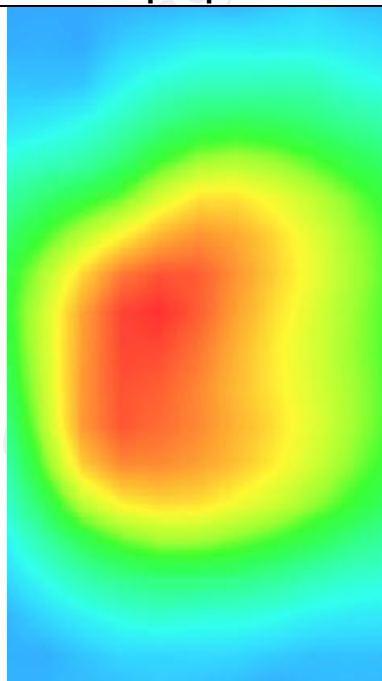
SAR 10g (W/Kg)	0.229415
SAR 1g (W/Kg)	0.316473



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5530	0.3907	0.2507	0.1622	0.1072



Hot spot position



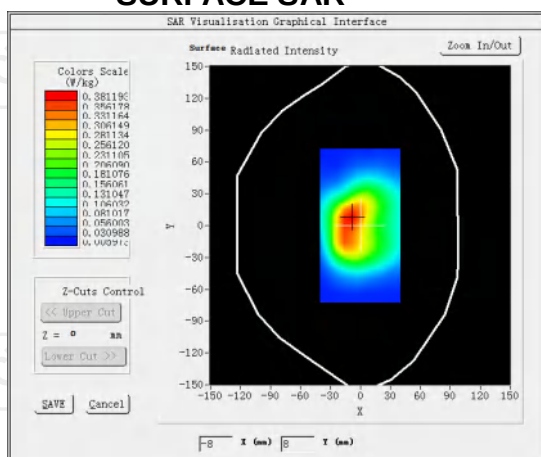
MEASUREMENT 3

Hight Band SAR (Channel 132572):

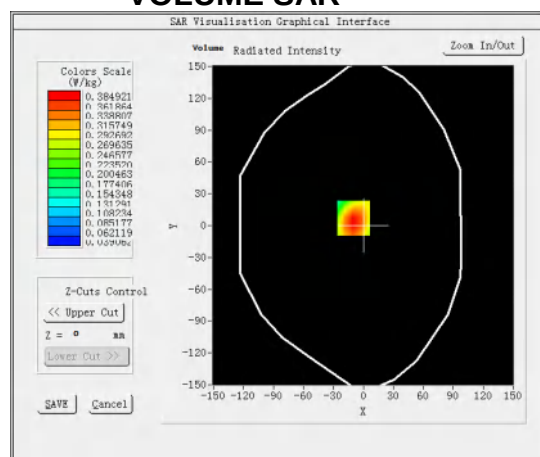
Date: 10/18/2024

Frequency (MHz)	1770.000000
Relative permittivity (real part)	40.115910
Relative permittivity (imaginary part)	14.136136
Conductivity (S/m)	1.360603
Variation (%)	0.850000
Crest Factor	1.0
Probe Conversion factor	4.36
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(hotspot10mm)
Band	<u>LTE band 66(1 RB#50)</u>

SURFACE SAR

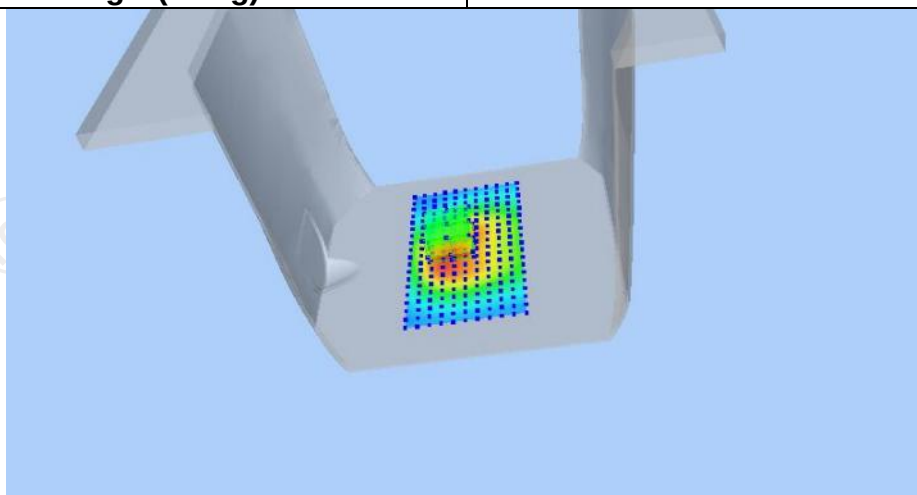


VOLUME SAR

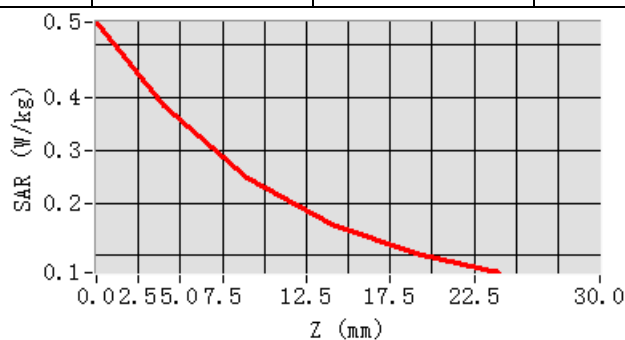


Maximum location: X=-10.00, Y=7.00 SAR Peak: 0.55 W/kg

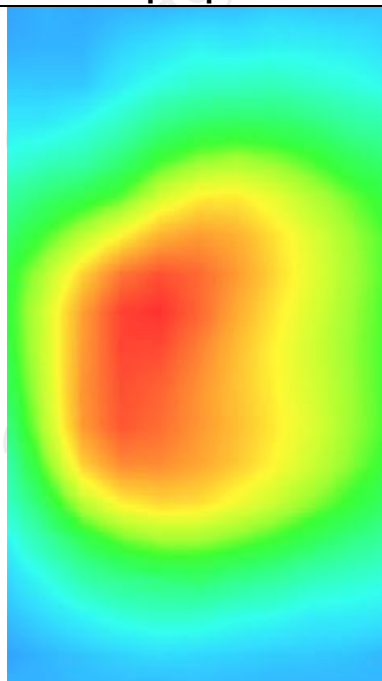
SAR 10g (W/Kg)	0.208612
SAR 1g (W/Kg)	0.318145



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.5434	0.3849	0.2476	0.1603	0.1057



Hot spot position

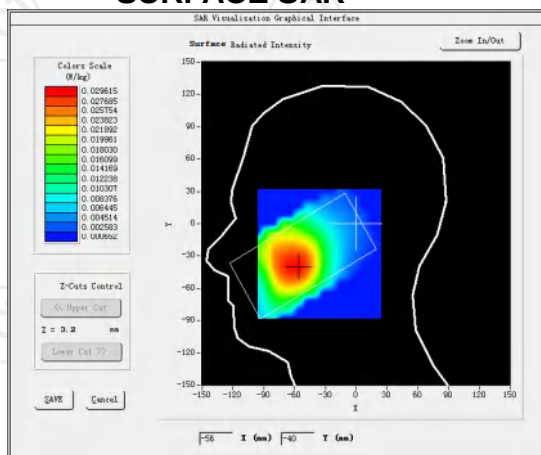


LTE Band 71

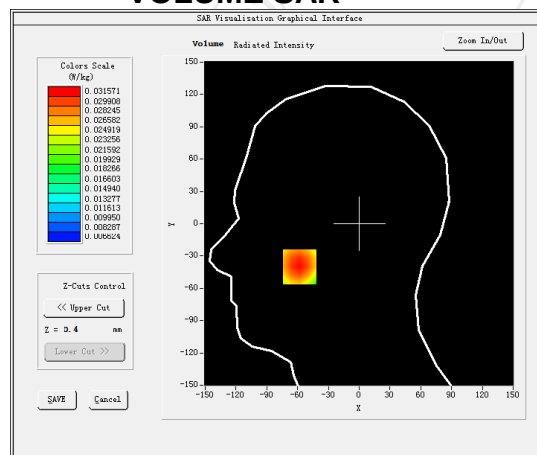
MEASUREMENT 1

Middle Band SAR (Channel 133322):		Date: 10/14/2024
Frequency (MHz)	683.000000	
Relative permittivity (real part)	41.432976	
Relative permittivity (imaginary part)	12.468860	
Conductivity (S/m)	0.862835	
Variation (%)	0.860000	
Crest Factor	1.0	
Probe Conversion factor	1.71	
E-Field Probe:	SSE2 (SN 25/22 EPG0375)	
Area Scan	dx=8mm dy=8mm, h= 5.00 mm	
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete/ndx=8mm dy=8mm, h= 5.00 mm	
Phantom	Left head	
Device Position	Cheek	
Band	LTE band 71(1 RB#50)	

SURFACE SAR



VOLUME SAR



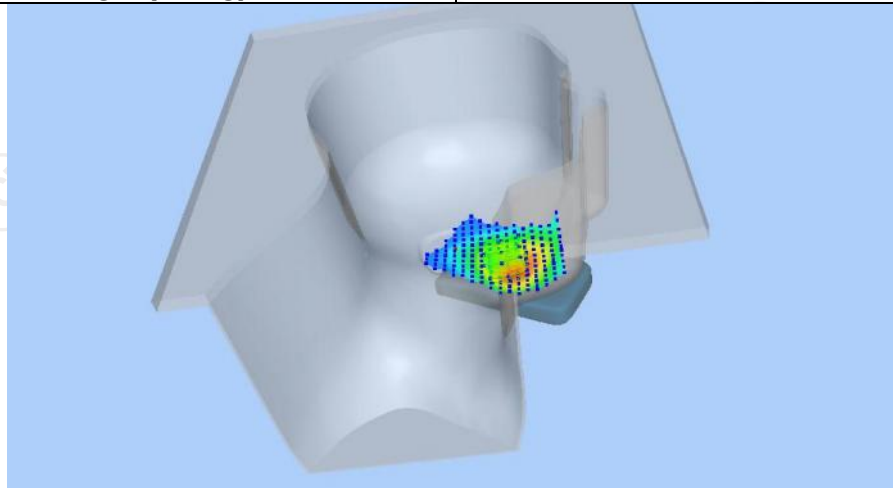
Maximum location: X=-49.00, Y=-40.00 SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)

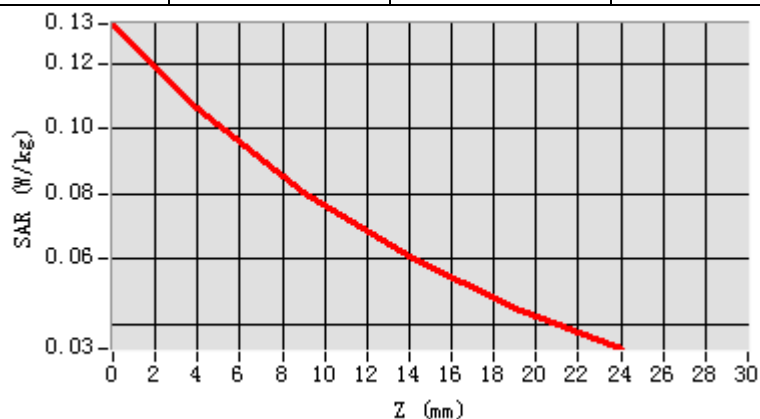
0.040246

SAR 1g (W/Kg)

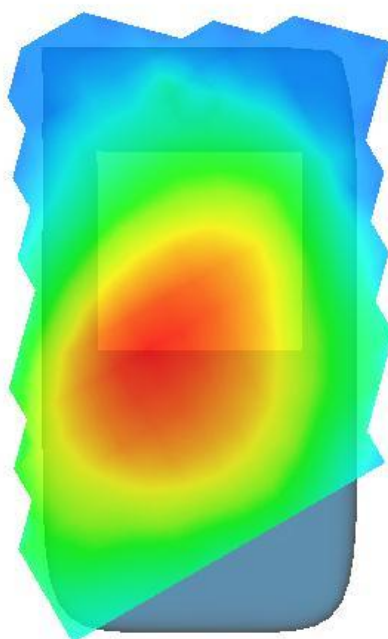
0.074151



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.1321	0.1066	0.0808	0.0608	0.0452



Hot spot position



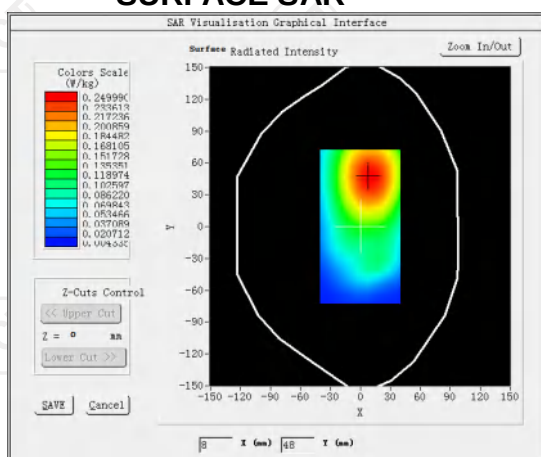
MEASUREMENT 2

Middle Band SAR (Channel 133322):

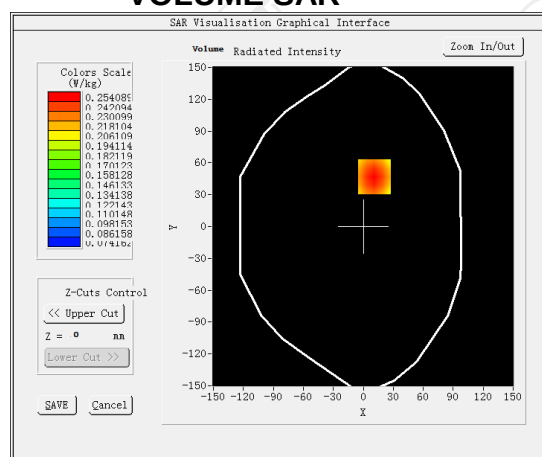
Date: 10/14/2024

Frequency (MHz)	683.000000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	0.810000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body back(10mm)</u>
Band	<u>LTE band 71(1 RB#50)</u>

SURFACE SAR

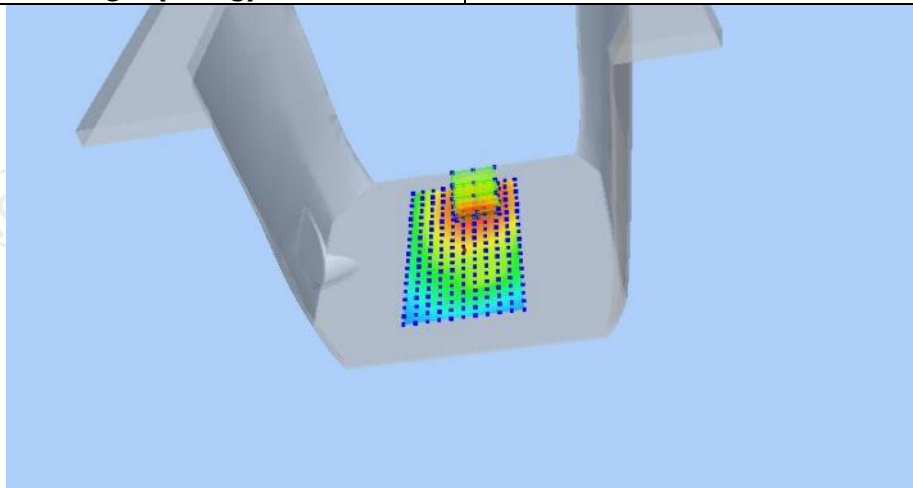


VOLUME SAR

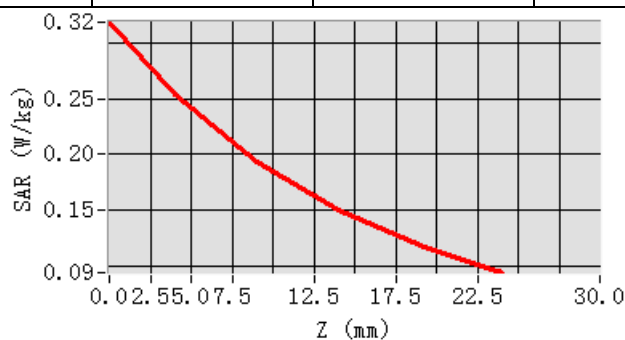


Maximum location: X=11.00, Y=47.00 SAR Peak: 0.32 W/kg

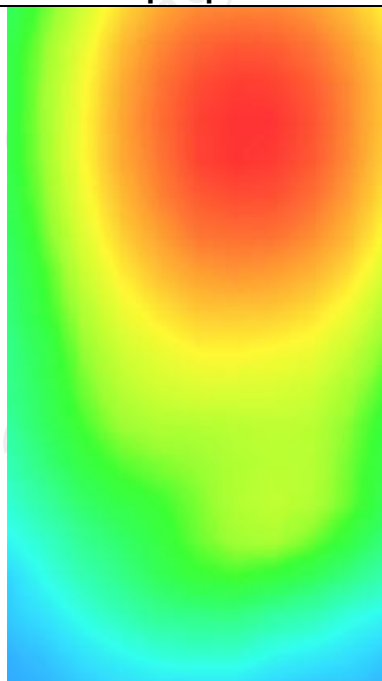
SAR 10g (W/Kg)	0.138156
SAR 1g (W/Kg)	0.297451



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3181	0.2541	0.1933	0.1498	0.1189



Hot spot position



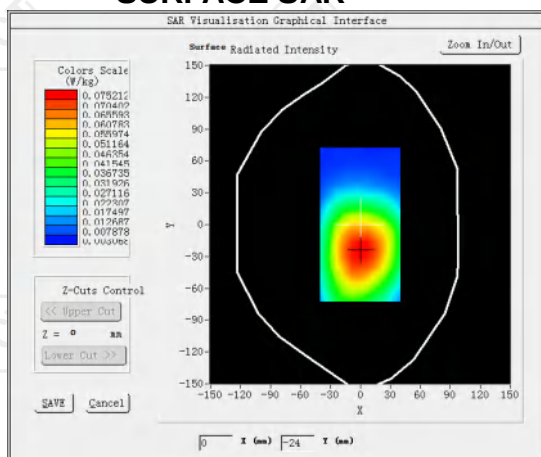
MEASUREMENT 3

Middle Band SAR (Channel 133322):

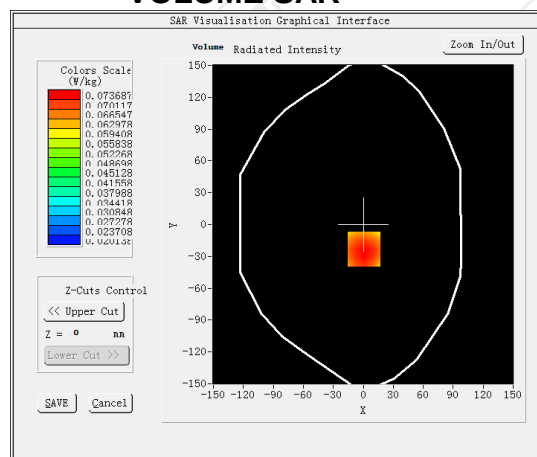
Date: 10/14/2024

Frequency (MHz)	683.000000
Relative permittivity (real part)	41.432976
Relative permittivity (imaginary part)	12.468860
Conductivity (S/m)	0.862835
Variation (%)	-1.080000
Crest Factor	1.0
Probe Conversion factor	1.71
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=8mm dy=8mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=8mm dy=8mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	<u>Body back(hotspot 10mm)</u>
Band	<u>LTE band 71(1 RB#50)</u>

SURFACE SAR

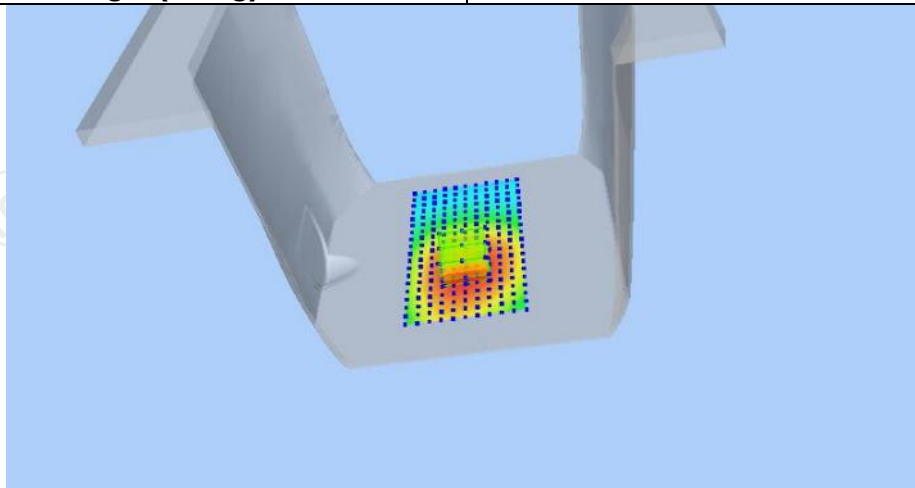


VOLUME SAR

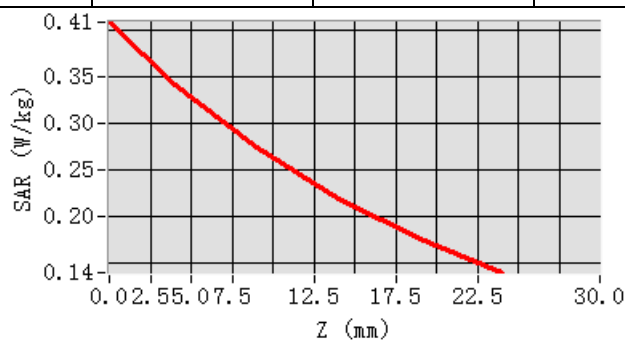


Maximum location: X=7.00, Y=15.00 SAR Peak: 0.41 W/kg

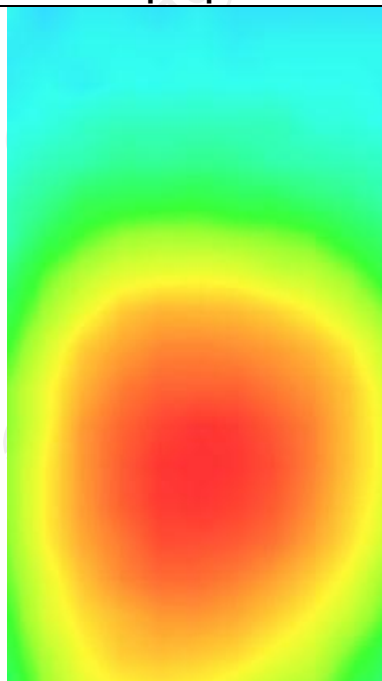
SAR 10g (W/Kg)	0.142587
SAR 1g (W/Kg)	0.264732



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.4080	0.3414	0.2729	0.2187	0.1755

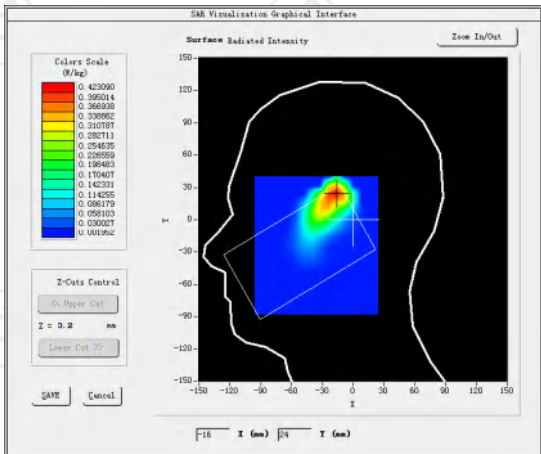
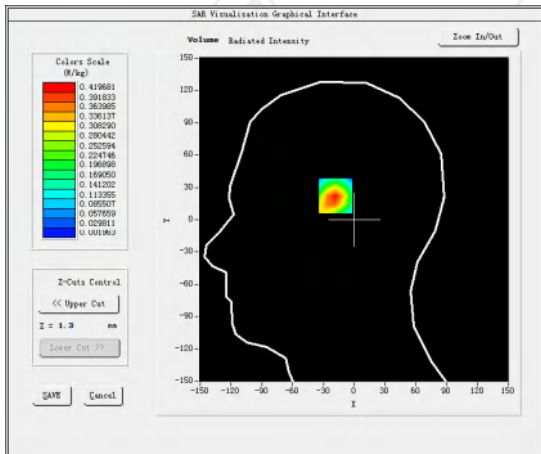


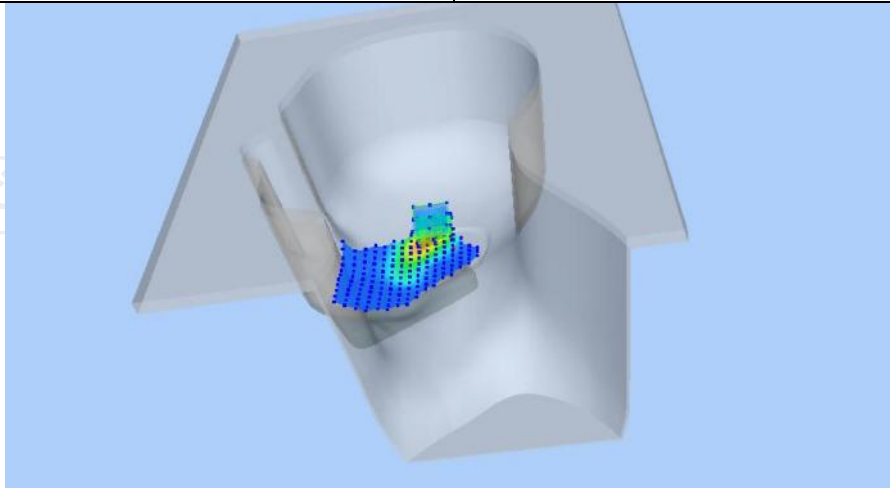
Hot spot position



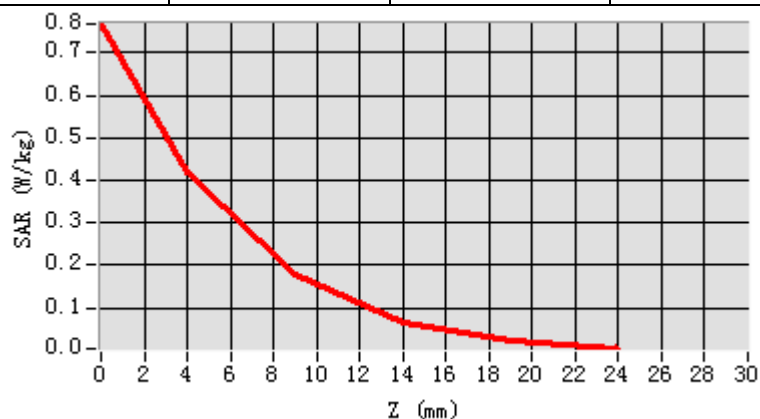
WLAN 2.4G

MEASUREMENT 1

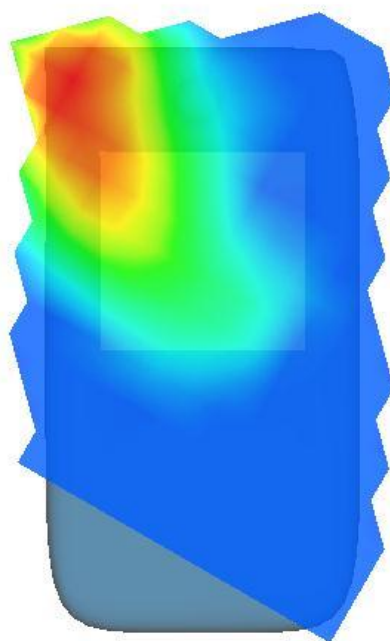
High Band SAR (Channel 11):		Date: 10/24/2024
Frequency (MHz)	2462.000000	
Relative permittivity (real part)	37.821613	
Relative permittivity (imaginary part)	13.546980	
Conductivity (S/m)	1.834111	
Variation (%)	-1.570000	
Crest Factor	1.0	
Probe Conversion factor	2.31	
E-Field Probe:	SSE2 (SN 25/22 EPG0375)	
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>	
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>	
Phantom	Right head	
Device Position	Cheek	
Band	IEEE 802.11b ISM	
SURFACE SAR		VOLUME SAR
		
Maximum location: X=-17.00, Y=24.00 SAR Peak: 0.78 W/kg		
SAR 10g (W/Kg)	0.271261	
SAR 1g (W/Kg)	0.310245	



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.7682	0.4197	0.1767	0.0654	0.0210



Hot spot position



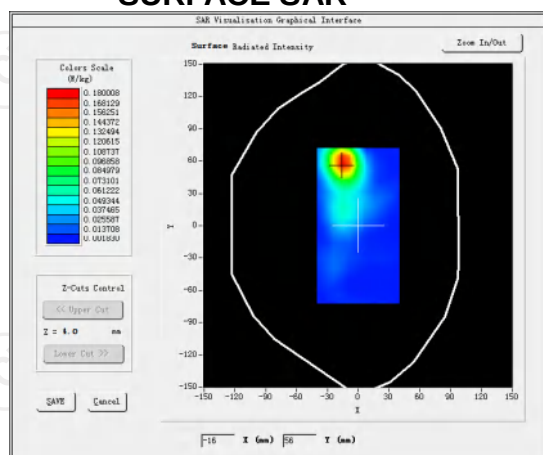
MEASUREMENT 2

High Band SAR (Channel 11):

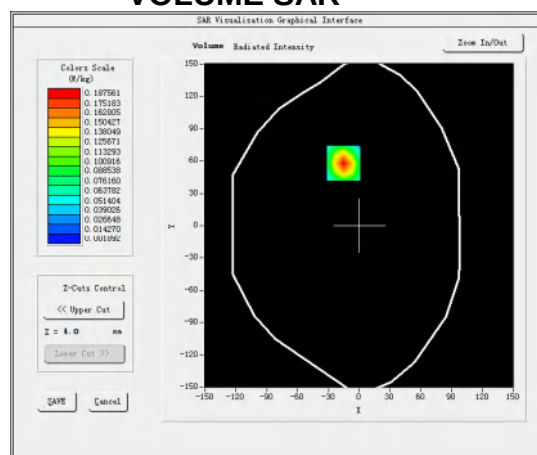
Date: 10/24/2024

Frequency (MHz)	2462.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	0.080000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(10mm)
Band	<u>IEEE 802.11b ISM</u>

SURFACE SAR

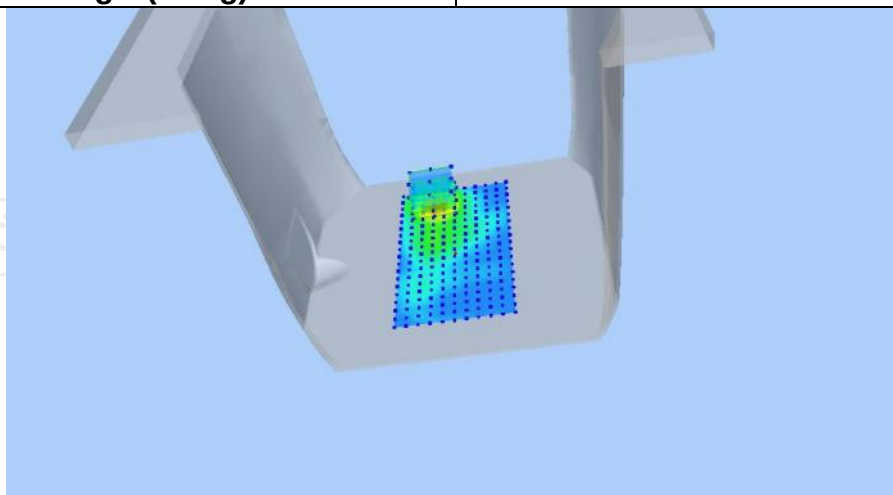


VOLUME SAR

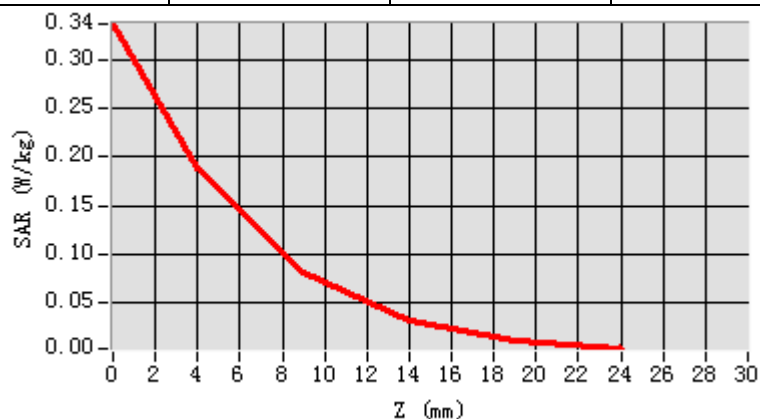


Maximum location: X=-15.00, Y=58.00 SAR Peak: 0.34 W/kg

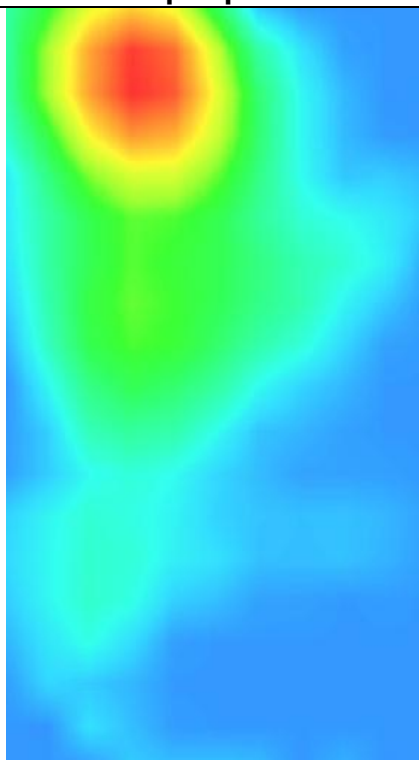
SAR 10g (W/Kg)	0.137530
SAR 1g (W/Kg)	0.213240



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3372	0.1876	0.0816	0.0317	0.0109



Hot spot position



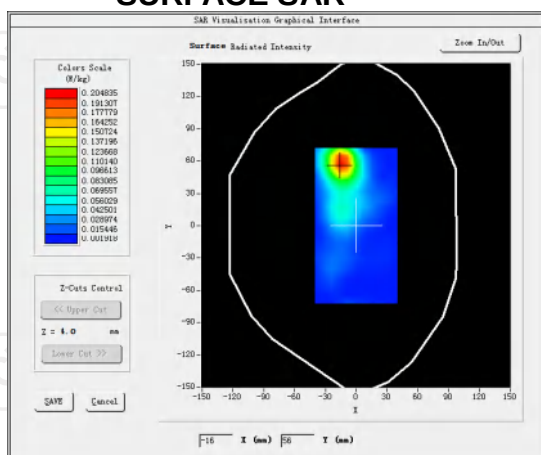
MEASUREMENT 3

High Band SAR (Channel 11):

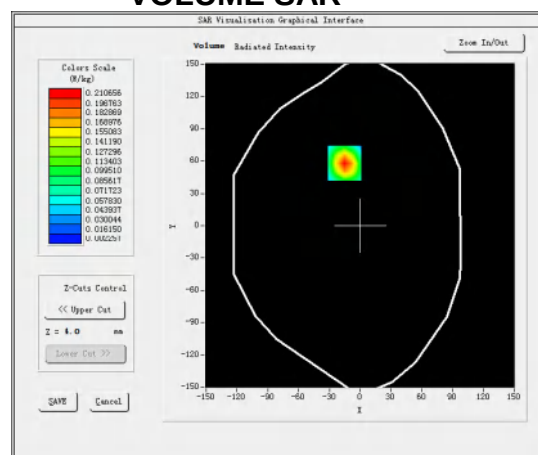
Date: 10/24/2024

Frequency (MHz)	2462.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	1.860000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(10mm)
Band	<u>IEEE 802.11b ISM(hotspot)</u>

SURFACE SAR

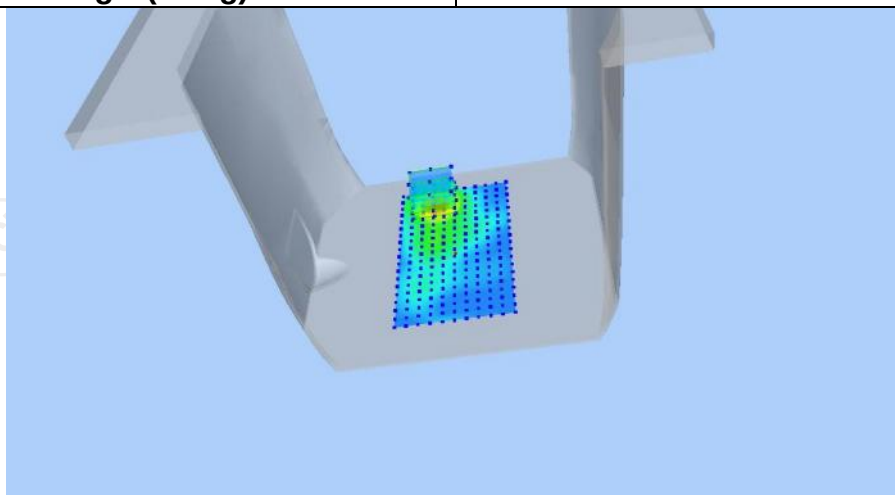


VOLUME SAR

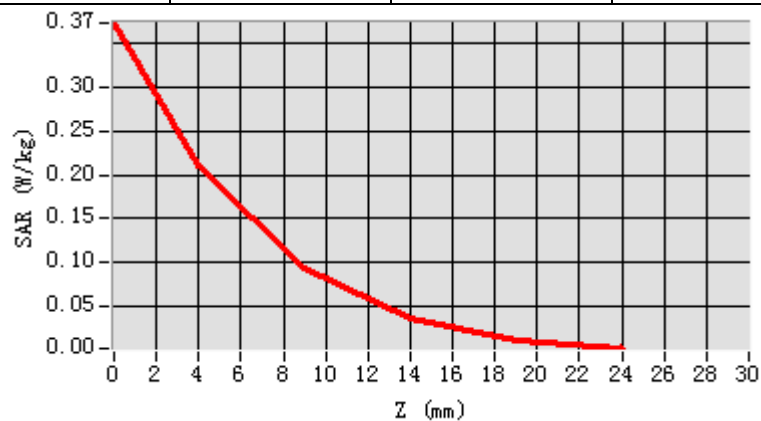


Maximum location: X=-15.00, Y=58.00 SAR Peak: 0.37 W/kg

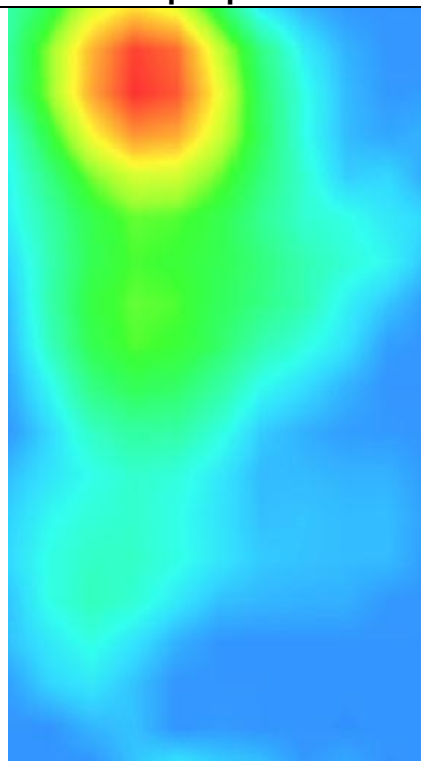
SAR 10g (W/Kg)	0.143152
SAR 1g (W/Kg)	0.231257



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.3732	0.2107	0.0935	0.0368	0.0124



Hot spot position



BT

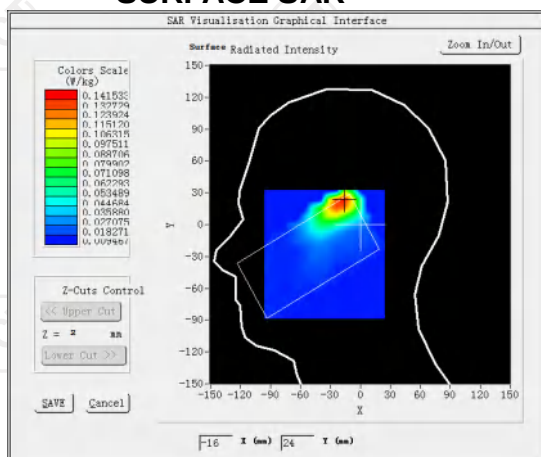
MEASUREMENT 1

Hight Band SAR (Channel 78):

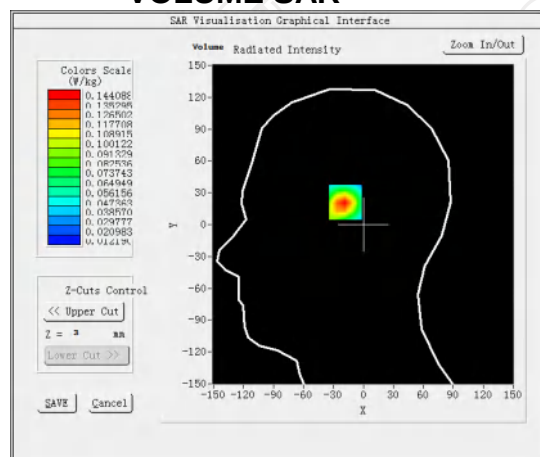
Date: 10/24/2024

Frequency (MHz)	2480.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	0.200000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>8DPSK</u>

SURFACE SAR

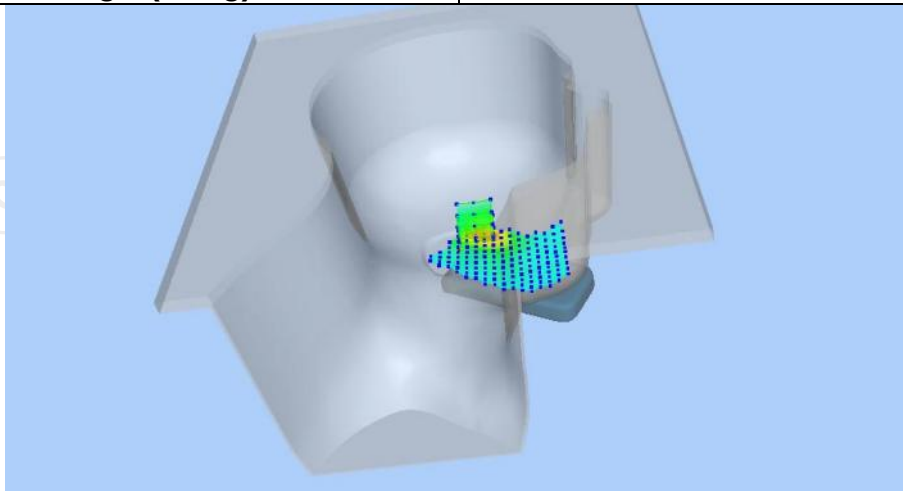


VOLUME SAR

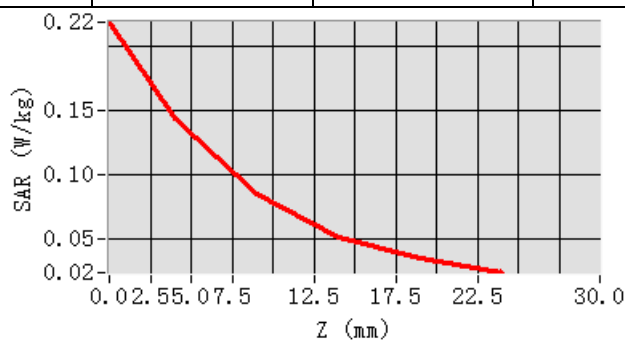


Maximum location: X=-17.00, Y=23.00 SAR Peak: 0.22 W/kg

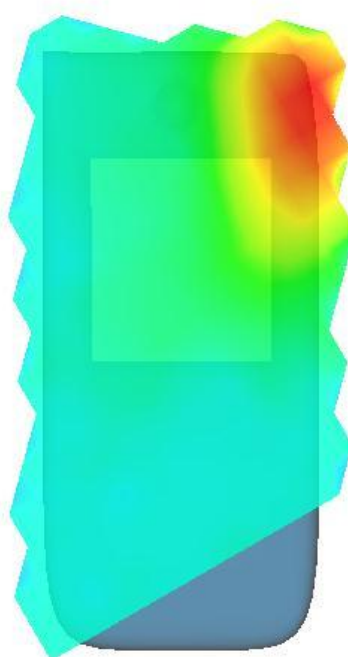
SAR 10g (W/Kg)	0.075130
SAR 1g (W/Kg)	0.120245



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.2186	0.1441	0.0851	0.0523	0.0350



Hot spot position



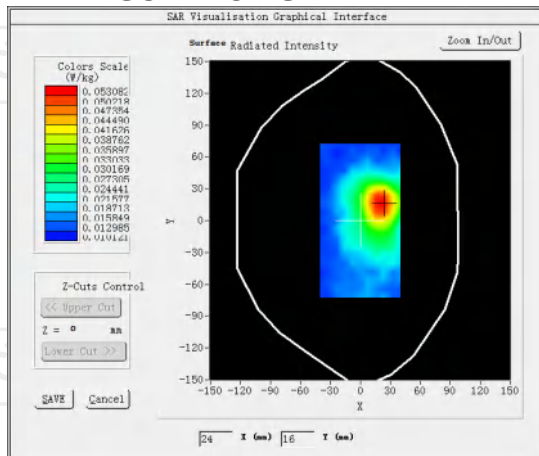
MEASUREMENT 2

Hight Band SAR (Channel 78):

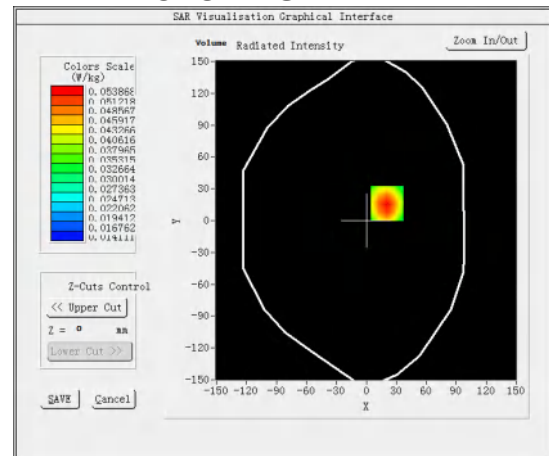
Date: 10/24/2024

Frequency (MHz)	2480.000000
Relative permittivity (real part)	37.821613
Relative permittivity (imaginary part)	13.546980
Conductivity (S/m)	1.834111
Variation (%)	-1.820000
Crest Factor	1.0
Probe Conversion factor	2.31
E-Field Probe:	SSE2 (SN 25/22 EPG0375)
Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7,dx=5mm dy=5mm</u> <u>dz=5mm,Complete/ndx=8mm dy=8mm, h=</u> <u>5.00 mm</u>
Phantom	Validation plane
Device Position	Body back(10mm)
Band	8DPSK

SURFACE SAR

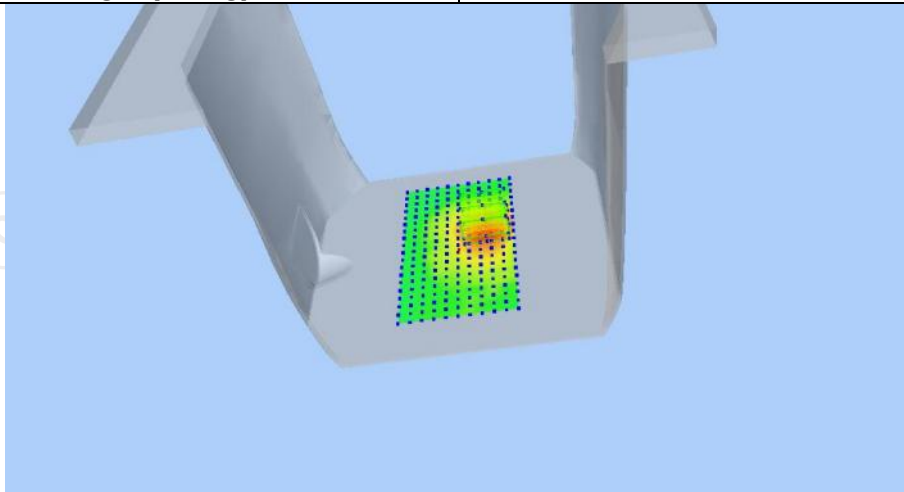


VOLUME SAR

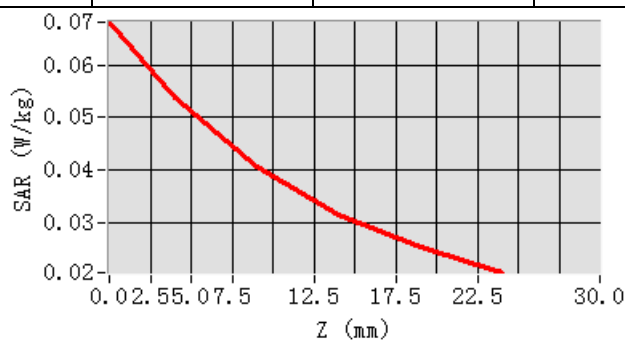


Maximum location: X=21.00, Y=16.00 SAR Peak: 0.07 W/kg

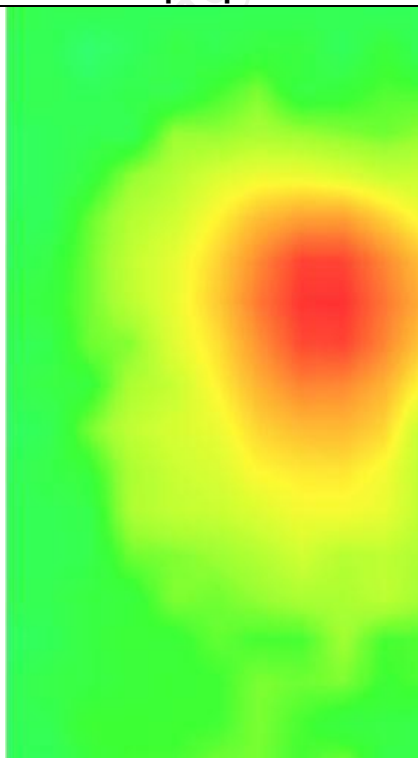
SAR 10g (W/Kg)	0.033175
SAR 1g (W/Kg)	0.041258



Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0681	0.0539	0.0406	0.0315	0.0252



Hot spot position



Appendix A: EUT Photos



Liquid depth



The Body Liquid of 835MHz (15.4cm)



The Body Liquid of 1800MHz (15.2 cm)



The Body Liquid of 1900MHz (16.4 cm)



The Body Liquid of 2450MHz (15.3cm)

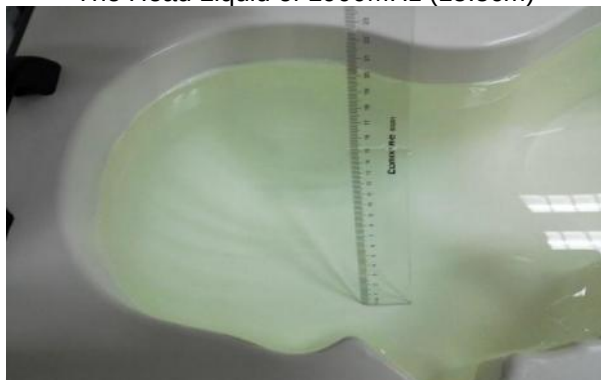
The Body Liquid of 2600MHz (16.5cm)



The Head Liquid of 1900MHz (15.5cm)



The Head Liquid of 2450MHz (15.6cm)



The Head Liquid of 835MHz (15.3cm)



The Head Liquid of 1800MHz (15.2cm)

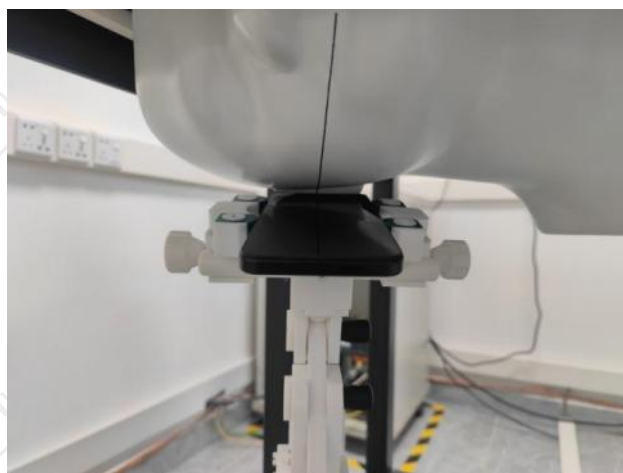


The Head Liquid of 2600MHz (15.1cm)

Appendix B: Test Setup Photos



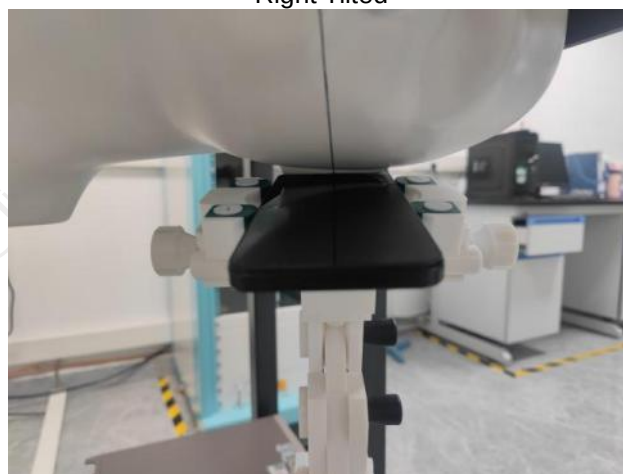
Right Cheek



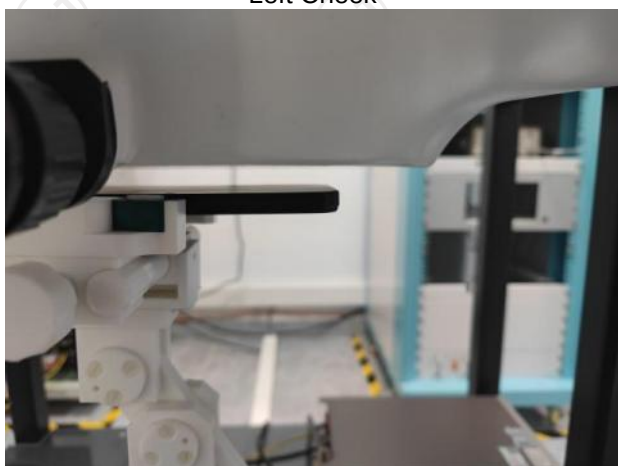
Right Tilted



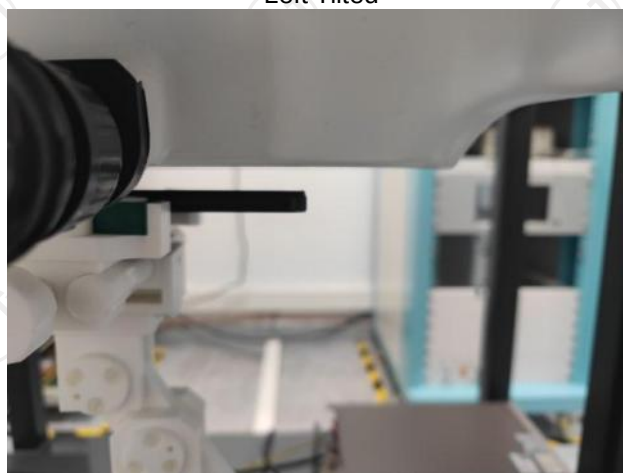
Left Cheek



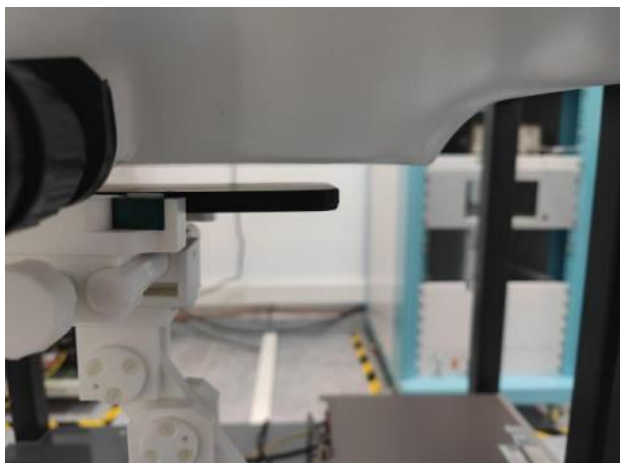
Left Tilted



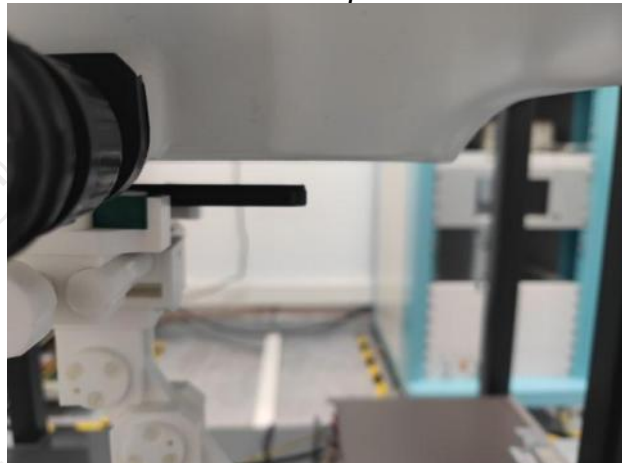
Body worn – Front (10mm)



Body worn – Back (10mm)



Hotspo Front (10mm)



Hotspo Back (10mm)



Hotspot Top (10mm)



Hotspot Right (10mm)



Hotspot Bottom (10mm)



Hotspot Left (10mm)

Appendix C: Probe Calibration Certificate

COMOSAR E-FIELD Probe



COMOSAR E-Field Probe Calibration Report

Ref : ACR.180.7.22.BES.B

SHENZHEN TONGCE TESTING LAB

2101 & 2201, ZHENCHANG FACTORY RENSHAN INDUSTRIAL
ZONE, FUHAI SUBDISTRICT, BAO'AN DISTRICT SHENZHEN,
GUANGDONG, 518103, PEOPLE'S REPUBLIC OF CHINA

MVG COMOSAR DOSIMETRIC E-FIELD PROBE

SERIAL NO.: SN 25/22 EPGO375

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon

29280 PLOUZANE - FRANCE

Calibration date: 06/29/2024



Accreditations #2-6789
Scope available on www.cofrac.fr

The use of the Cofrac brand and the accreditation references is prohibited from any reproduction.

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed at MVG, using the CALIPROBE test bench, for use with a MVG COMOSAR system only. The test results covered by accreditation are traceable to the International System of Units (SI).



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.180.7.22.BES.B

	Name	Function	Date	Signature
Prepared by :	Jérôme Le Gall	Measurement Responsible	6/30/2024	
Checked & approved by:	Jérôme Luc	Technical Manager	6/30/2024	
Authorized by:	Yann Toutain	Laboratory Director	7/05/2024	

	Customer Name
Distribution :	Shenzhen Tongce Testing Lab

Issue	Name	Date	Modifications
A	Jérôme Le Gall	6/30/2024	Initial release

Page: 2/11

Template_ACR.DDD.N.YY.MVGB.ISSUE_COMOSAR Probe vK

This document shall not be reproduced, except in full or in part, without the written approval of MVG. The information contained herein is to be used only for the purpose for which it is submitted and is not to be released in whole or part without written approval of MVG.

Page 178 of 263



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.180.7.22.BES.B

TABLE OF CONTENTS

1	Device Under Test	4
2	Product Description	4
2.1	General Information	4
3	Measurement Method	4
3.1	Linearity	4
3.2	Sensitivity	4
3.3	Lower Detection Limit	5
3.4	Isotropy	5
3.1	Boundary Effect	5
4	Measurement Uncertainty	6
5	Calibration Measurement Results	6
5.1	Sensitivity in air	6
5.2	Linearity	7
5.3	Sensitivity in liquid	8
5.4	Isotropy	9
6	List of Equipment	10

Page: 3/11

Template_ACR.DDD.N.YY.MVGB.ISSUE_COMOSAR Probe vK

This document shall not be reproduced, except in full or in part, without the written approval of MVG. The information contained herein is to be used only for the purpose for which it is submitted and is not to be released in whole or part without written approval of MVG.

**COMOSAR E-FIELD PROBE CALIBRATION REPORT**

Ref: ACR.180.7.22.BES.B

1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	MVG
Model	SSE2
Serial Number	SN 25/22 EPG0375
Product Condition (new / used)	New
Frequency Range of Probe	0.15 GHz-6GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.197 MΩ Dipole 2: R2=0.230 MΩ Dipole 3: R3=0.208 MΩ

2 PRODUCT DESCRIPTION**2.1 GENERAL INFORMATION**

MVG's COMOSAR E field Probes are built in accordance to the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards.



Figure 1 – MVG COMOSAR Dosimetric E field Probe

Probe Length	330 mm
Length of Individual Dipoles	2 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	2.5 mm
Distance between dipoles / probe extremity	1 mm

3 MEASUREMENT METHOD

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their affect. All calibrations / measurements performed meet the fore mentioned standards.

3.1 LINEARITY

The evaluation of the linearity was done in free space using the waveguide, performing a power sweep to cover the SAR range 0.01W/kg to 100W/kg.

3.2 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards.

Page: 4/11

Template ACR.DDD.N.YY.MVGB.ISSUE COMOSAR Probe vK

This document shall not be reproduced, except in full or in part, without the written approval of MVG. The information contained herein is to be used only for the purpose for which it is submitted and is not to be released in whole or part without written approval of MVG.



3.3 LOWER DETECTION LIMIT

The lower detection limit was assessed using the same measurement set up as used for the linearity measurement. The required lower detection limit is 10 mW/kg.

3.4 ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole with the dipole mounted under the flat phantom in the test configuration suggested for system validations and checks. The probe was rotated along its main axis from 0 to 360 degrees in 15-degree steps. The hemispherical isotropy is determined by inserting the probe in a thin plastic box filled with tissue-equivalent liquid, with the plastic box illuminated with the fields from a half wave dipole. The dipole is rotated about its axis (0°–180°) in 15° increments. At each step the probe is rotated about its axis (0°–360°).

3.1 BOUNDARY EFFECT

The boundary effect is defined as the deviation between the SAR measured data and the expected exponential decay in the liquid when the probe is oriented normal to the interface. To evaluate this effect, the liquid filled flat phantom is exposed to fields from either a reference dipole or waveguide. With the probe normal to the phantom surface, the peak spatial average SAR is measured and compared to the analytical value at the surface.

The boundary effect uncertainty can be estimated according to the following uncertainty approximation formula based on linear and exponential extrapolations between the surface and $d_{be} + d_{step}$ along lines that are approximately normal to the surface:

$$SAR_{uncertainty} [\%] = \Delta SAR_{be} \frac{(d_{be} + d_{step})^2}{2d_{step}} \frac{(e^{-d_{be}/\delta} - e^{-(d_{be} + d_{step})/\delta})}{\delta/2} \quad \text{for } (d_{be} + d_{step}) < 10 \text{ mm}$$

where

$SAR_{uncertainty}$ is the uncertainty in percent of the probe boundary effect

d_{be} is the distance between the surface and the closest *zoom-scan* measurement point, in millimetre

Δ_{step} is the separation distance between the first and second measurement points that are closest to the phantom surface, in millimetre, assuming the boundary effect at the second location is negligible

δ is the minimum penetration depth in millimetres of the head tissue-equivalent liquids defined in this standard, i.e., $\delta \approx 14$ mm at 3 GHz;

ΔSAR_{be} in percent of SAR is the deviation between the measured SAR value, at the distance d_{be} from the boundary, and the analytical SAR value.

The measured worst case boundary effect SAR uncertainty[%] for scanning distances larger than 4mm is 1.0% Limit, 2%).



4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique. All uncertainties listed below represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$, traceable to the Internationally Accepted Guides to Measurement Uncertainty.

Uncertainty analysis of the probe calibration in waveguide

ERROR SOURCES	Uncertainty value (%)	Probability Distribution	Divisor	ci	Standard Uncertainty (%)
Expanded uncertainty 95 % confidence level $k = 2$					14 %

5 CALIBRATION MEASUREMENT RESULTS

Calibration Parameters

Liquid Temperature	20 +/- 1 °C
Lab Temperature	20 +/- 1 °C
Lab Humidity	30-70 %

5.1 SENSITIVITY IN AIR

Normx dipole 1 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normy dipole 2 ($\mu\text{V}/(\text{V}/\text{m})^2$)	Normz dipole 3 ($\mu\text{V}/(\text{V}/\text{m})^2$)
0.64	0.53	0.44

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
106	108	109

Calibration curves $e_i=f(V)$ ($i=1,2,3$) allow to obtain E-field value using the formula:

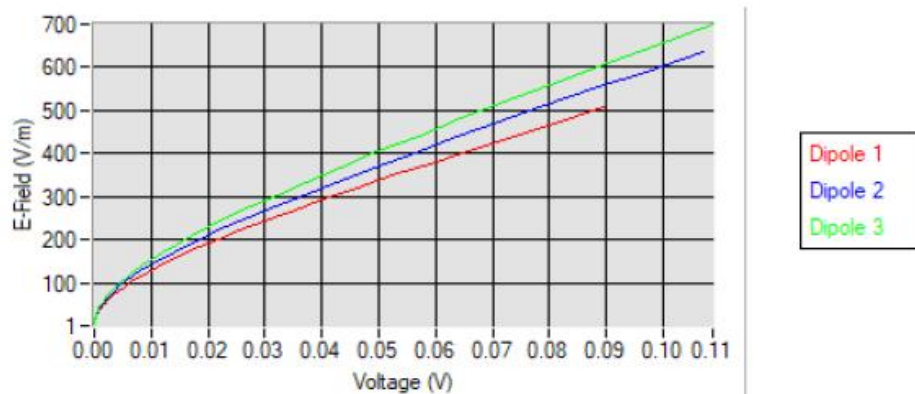
$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



COMOSAR E-FIELD PROBE CALIBRATION REPORT

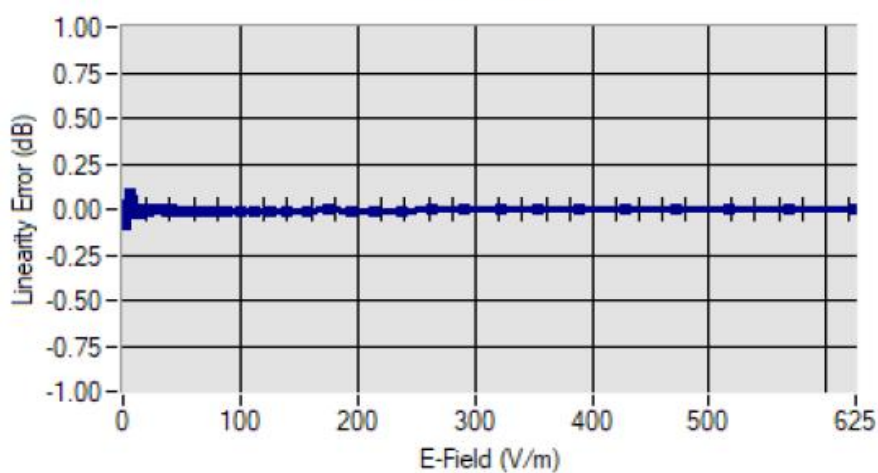
Ref: ACR.180.7.22.BES.B

Calibration curves



5.2 LINEARITY

Linearity



Linearity: +/-1.94% (+/-0.09dB)

Page: 7/11

Template_ACR.DDD.N.YY.MVGB.ISSUE_COMOSAR Probe vK

This document shall not be reproduced, except in full or in part, without the written approval of MVG. The information contained herein is to be used only for the purpose for which it is submitted and is not to be released in whole or part without written approval of MVG.



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.180.7.22.BES.B

5.3 SENSITIVITY IN LIQUID

Liquid	Frequency (MHz +/- 100MHz)	ConvF
HL750	750	1.71
BL750	750	1.78
HL900	900	1.91
BL900	900	1.96
HL1800	1800	2.08
BL1800	1800	2.16
HL2000	2000	2.03
BL2000	2000	2.10
HL2450	2450	2.31
BL2450	2450	2.37
HL2600	2600	2.16
BL2600	2600	2.23
HL3500	3500	2.21
BL3500	3500	2.28
HL3700	3700	3.45
BL3700	3700	3.15
HL4600	4600	3.30
BL4600	4600	3.70
HL5200	5200	2.01
BL5200	5200	2.08
HL5600	5600	2.07
BL5600	5600	2.12
HL5800	5800	2.06
BL5800	5800	2.13

LOWER DETECTION LIMIT: 7mW/kg

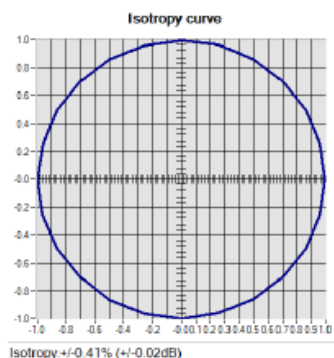


COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.180.7.22.BES.B

5.4 ISOTROPY

HL1800 MHz





COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.180.7.22.BES.B

6 LIST OF EQUIPMENT

Equipment Summary Sheet				
Equipment Description	Manufacturer / Model	Identification No.	Current Calibration Date	Next Calibration Date
CALIPROBE Test Bench	Version 2	NA	Validated. No cal required.	Validated. No cal required.
Network Analyzer	Rohde & Schwarz ZVM	100203	08/2021	08/2024
Network Analyzer	Agilent 8753ES	MY40003210	10/2023	10/2026
Network Analyzer – Calibration kit	HP 85033D	3423A08186	06/2021	06/2027
Multimeter	Keithley 2000	1160271	02/2023	02/2026
Signal Generator	Rohde & Schwarz SMB	106589	03/2022	03/2025
Amplifier	MVG	MODU-023-C-0002	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Power Meter	NI-USB 5680	170100013	06/2024	06/2027
Power Meter	Rohde & Schwarz NRVD	832839-056	11/2023	11/2026
Directional Coupler	Krytar 158020	131467	Characterized prior to test. No cal required.	Characterized prior to test. No cal required.
Waveguide	MVG	SN 32/16 WG4_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_0G900_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG6_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G500_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG8_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G800B_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_1G800H_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG10_1	Validated. No cal required.	Validated. No cal required.
Liquid transition	MVG	SN 32/16 WGLIQ_3G500_1	Validated. No cal required.	Validated. No cal required.
Waveguide	MVG	SN 32/16 WG12_1	Validated. No cal required.	Validated. No cal required.

Page: 10/11

Template_ACR.DDD.N.YY.MVGB.ISSUE_COMOSAR Probe vK

This document shall not be reproduced, except in full or in part, without the written approval of MVG. The information contained herein is to be used only for the purpose for which it is submitted and is not to be released in whole or part without written approval of MVG.