

FCC SAR EVALUATION REPORT

**In accordance with the requirements of
FCC 47 CFR Part 2(2.1093), ANSI/IEEE C95.1-1992 and
IEEE Std 1528-2013**

Product Name : PDA-GS0533W

Brand Name : N/A

Model Name : PDA-GS0533W

Family Model : N/A

Report No. : S23053002201001

FCC ID : 2AQR9-PDA-GS0533W

Prepared for

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TEST RESULT CERTIFICATION

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Product description

Product name PDA-GS0533W
Brand Name N/A
Model and/or type
reference PDA-GS0533W
Family Model N/A
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992

Standards IEEE Std 1528-2013
Published RF exposure KDB procedures

This device described above has been tested by Shenzhen NTEK. In accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 and KDB 865664 D01. Testing has shown that this device is capable of compliance with localized specific absorption rate (SAR) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992. The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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Test Sample Number S230530022001

Date of Test

Date (s) of performance of tests... Apr. 20, 2023 ~ May 20, 2023

Date of Issue May 31, 2023

Test Result **Pass**

Prepared By
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※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	May 31, 2023	Jack Li

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1. General Information

1.1. RF exposure limits

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

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

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

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

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

Occupational/Controlled Environments:

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

General Population/Uncontrolled Environments:

Are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

NOTE
HEAD AND TRUNK LIMIT
1.6 W/kg
APPLIED TO THIS EUT

1.2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for PDA-GS0533W are as follows.

RF Exposure Conditions		Max Reported SAR Value(W/kg)
1-g Head		1.149
1-g Body-Worn (Separation distance of 10mm)		0.575
1-g Hotspot (Separation distance of 10mm)		0.575
Max Simultaneous Tx	Head	1.388
	Body-Worn	0.720
	Hotspot	0.720

Note: The Max Simultaneous Tx is calculated based on the same configuration and test position. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR Part 2(2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 & KDB 865664 D01.

1.3. EUT Description

Device Information	
Product Name	PDA-GS0533W
Brand Name	N/A
Model Name	PDA-GS0533W
Family Model	N/A
Model Difference	N/A
FCC ID	2AQR9-PDA-GS0533W
Device Phase	Identical Prototype
Exposure Category	General population / Uncontrolled environment
Antenna Type	FPC Antenna
Battery Information	DC 3.8V, 4800mAh
HW Version	N/A
SW Version	N/A
Device Operating Configurations	
Supporting Mode(s)	GSM850/1900,WCDMABand2/4/5,LTEBand2/4/5/12/17 WLAN 2.4G/5G, Bluetooth, NFC
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK), NFC(ASK)
Device Class	B

Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 4	1710-1755	2110-2155
	WCDMA Band 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.3G	5260-5320	
	WLAN 5.6G	5500-5700	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
Power Class	4, tested with power level 5(GSM 850)		
	1, tested with power level 0(GSM 1900)		
	3, tested with power control "all 1"(WCDMA Band 2)		
	3, tested with power control "all 1"(WCDMA Band 4)		
	3, tested with power control "all 1"(WCDMA Band 5)		
	3, tested with power control all Max.(LTE Band 2)		
	3, tested with power control all Max.(LTE Band 4)		
	3, tested with power control all Max.(LTE Band 5)		
	3, tested with power control all Max.(LTE Band 12)		
	3, tested with power control all Max.(LTE Band 17)		

1.4. Test specification(s)

FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting

KDB 447498 D01 General RF Exposure Guidance

KDB 248227 D01 802.11 Wi-Fi SAR

KDB 941225 D01 3G SAR Procedures

KDB 941225 D05 SAR for LTE Devices

KDB 941225 D06 Hotspot SAR

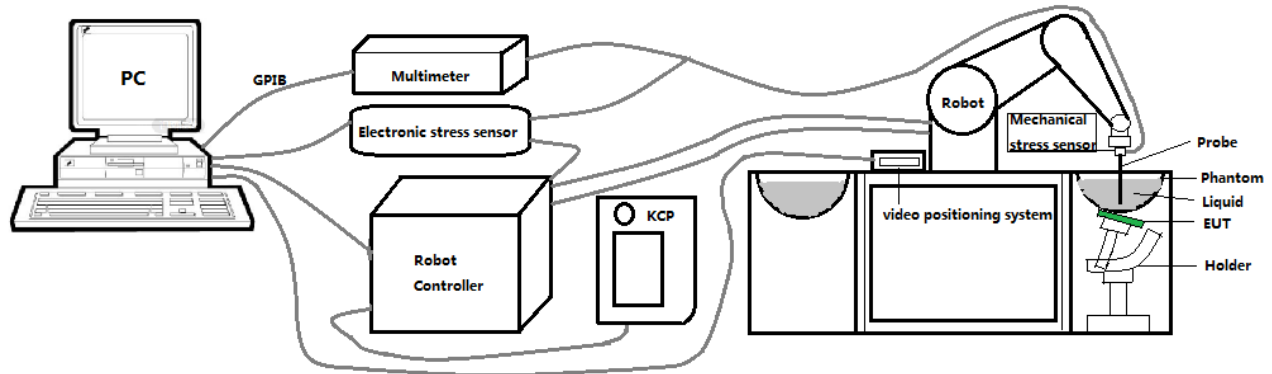
KDB 648474 D04 Handset SAR

1.5. Ambient Condition

Ambient temperature	20°C – 24°C
Relative Humidity	30% – 70%

2. SAR Measurement System

2.1. SATIMO SAR Measurement Set-up Diagram



These measurements were performed with the automated near-field scanning system OPENSAR from SATIMO. The system is based on a high precision robot (working range: 901 mm), which positions the probes with a positional repeatability of better than ± 0.03 mm. The SAR measurements were conducted with dosimetric probe (manufactured by SATIMO), designed in the classical triangular configuration and optimized for dosimetric evaluation.

The first step of the field measurement is the evaluation of the voltages induced on the probe by the device under test. Probe diode detectors are nonlinear. Below the diode compression point, the output voltage is proportional to the square of the applied E-field; above the diode compression point, it is linear to the applied E-field. The compression point depends on the diode, and a calibration procedure is necessary for each sensor of the probe.

The Keithley multimeter reads the voltage of each sensor and send these three values to the PC. The corresponding E field value is calculated using the probe calibration factors, which are stored in the working directory. This evaluation includes linearization of the diode characteristics. The field calculation is done separately for each sensor. Each component of the E field is displayed on the "Dipole Area Scan Interface" and the total E field is displayed on the "3D Interface"

2.2. Robot

The SATIMO SAR system uses the high precision robots from KUKA. For the 6-axis controller system, the robot controller version (KUKA) from KUKA is used. The KUKA robot series have many features that are important for our application:



- High precision (repeatability ± 0.03 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

2.3. E-Field Probe

This E-field detection probe is composed of three orthogonal dipoles linked to special Schottky diodes with low detection thresholds. The probe allows the measurement of electric fields in liquids such as the one defined in the IEEE and CENELEC standards.

For the measurements the Specific Dosimetric E-Field Probe SN 08/16 EPG0287 with following specifications is used



- Dynamic range: 0.01-100 W/kg
 - Tip Diameter : 2.5 mm
 - Distance between probe tip and sensor center: 1 mm
 - Distance between sensor center and the inner phantom surface: 2 mm (repeatability better than ± 1 mm).
 - Probe linearity: ± 0.08 dB
 - Axial isotropy: ± 0.01 dB
 - Hemispherical Isotropy: ± 0.01 dB
 - Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
 - Lower detection limit: 8mW/kg
- Angle between probe axis (evaluation axis) and surface normal line: less than 30° .

2.3.1. E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy shall be evaluated and within ± 0.25 dB. The sensitivity parameters (Norm X, Norm Y, and Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe are tested. The calibration data can be referred to appendix D of this report.

2.4. SAM phantoms

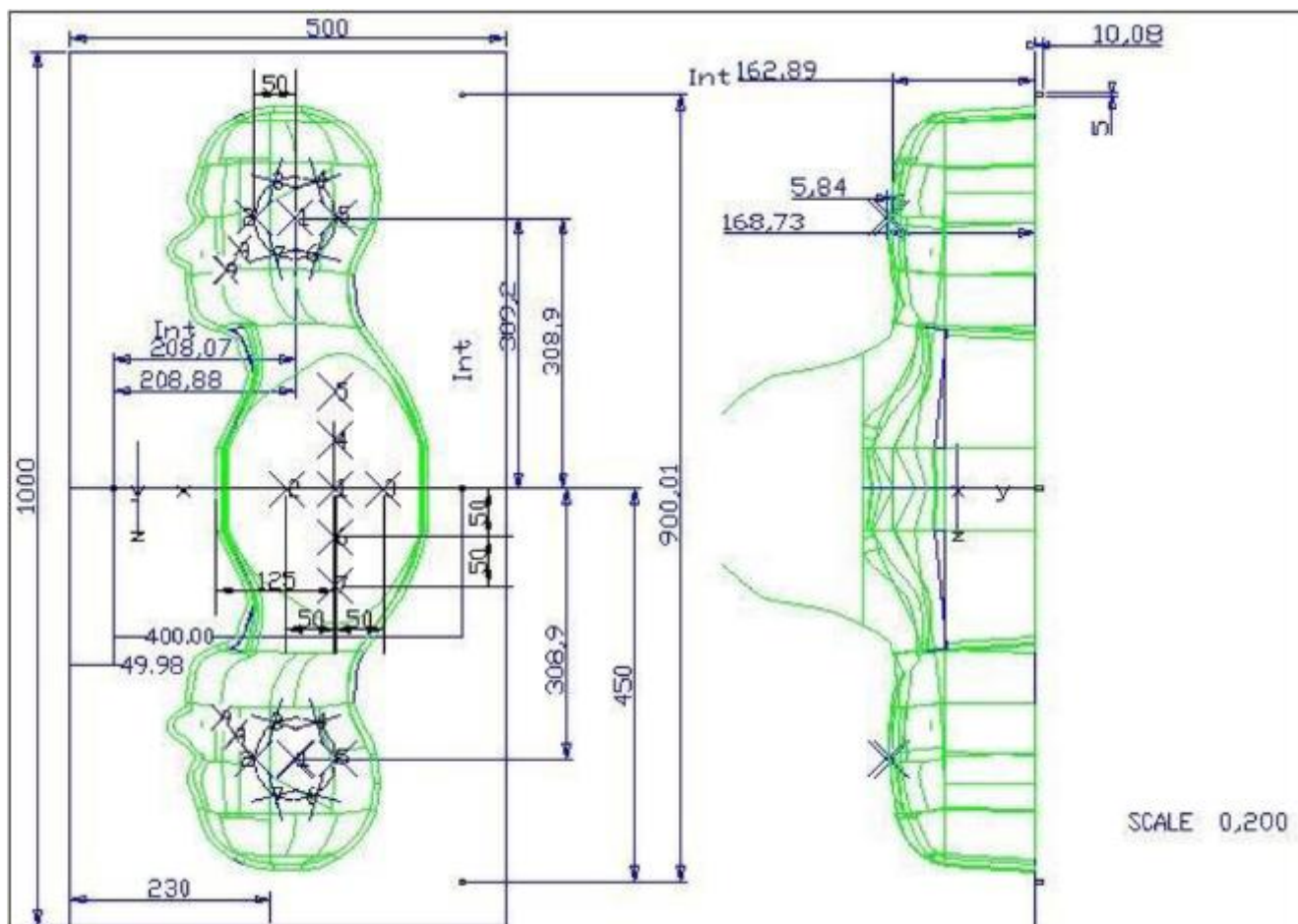
Photo of SAM phantom SN 16/15 SAM119



The SAM phantom is used to measure the SAR relative to people exposed to electro-magnetic field radiated by Smart Phones.

2.4.1. Technical Data

Serial Number	Shell thickness	Filling volume	Dimensions	Positionner Material	Permittivity	Loss Tangent
SN 16/15 SAM119	2 mm ±0.2 mm	27 liters	Length:1000 mm Width:500 mm Height:200 mm	Gelcoat with fiberglass	3.4	0.02

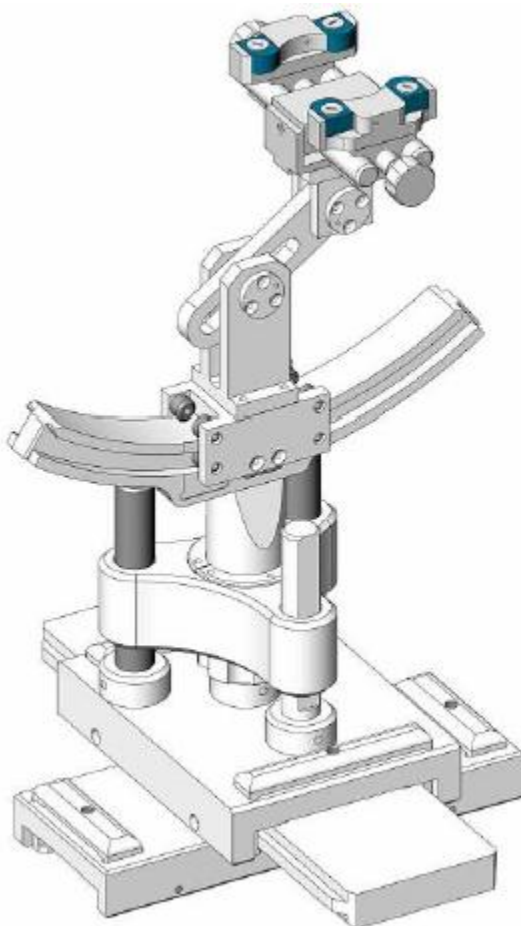


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

The test, based on ultrasonic system, allows measuring the thickness with an accuracy of 10 μm .

2.5. Device Holder

The positioning system allows obtaining cheek and tilting position with a very good accuracy. In compliance with CENELEC, the tilt angle uncertainty is lower than 1 degree.



Serial Number	Holder Material	Permittivity	Loss Tangent
SN 16/15 MSH100	Delrin	3.7	0.005

2.6. Test Equipment List

This table gives a complete overview of the SAR measurement equipment.

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Jan. 10, 2023	Jan. 09, 2024
☒	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	2300 MHz Dipole	SID2300	SN 03/16 DIP 2G300-358	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	3500 MHz Dipole	SID3500	SN 09/12 DIP 3G500-360	Oct. 15, 2022	Oct. 14, 2025
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
☒	R&S	Universal radio communication tester	CMU200	117858	Jun. 17, 2022	Jun. 16, 2023
☒	R&S	Wideband radio communication	CMW500	103917	Jun. 17, 2022	Jun. 16, 2023

		tester				
☒	HP	Network Analyzer	8753D	3410J01136	Jun. 17, 2022	Jun. 16, 2023
☒	Agilent	MXG Vector Signal Generator	N5182A	MY47070317	Jun. 16, 2022	Jun. 15, 2023
☒	Agilent	Power meter	E4419B	MY45102538	Jun. 17, 2022	Jun. 16, 2023
☒	Agilent	Power sensor	E9301A	MY41495644	Jun. 17, 2022	Jun. 16, 2023
☒	Agilent	Power sensor	E9301A	US39212148	Jun. 17, 2022	Jun. 16, 2023
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 17, 2020	Jul. 16, 2023
☒	N/A	Thermometer	N/A	LES-085	Mar. 27, 2023	Mar. 26, 2026
☒	MVG	SAM Phantom	SSM2	SN 16/15 SAM119	NCR	NCR
☒	MVG	Device Holder	SMPPD	SN 16/15 MSH100	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 750	Head 750	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 835	Head 835	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 1800	Head 1800	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 1900	Head 1900	NCR	NCR
☒	Shenzhen Tianxu Communication	Human Simulating Liquid	Head 2450	Head 2450	NCR	NCR

	Technology Co., Ltd.					
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 5200	Head 5200	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 5400	Head 5400	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 5800	Head 5800	NCR	NCR

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

- (a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
- (b) Read the WWAN RF power level from the base station simulator.
- (c) For Wi-Fi/BT power measurement, use engineering software to configure EUT Wi-Fi/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band.
- (d) Connect EUT RF port through RF cable to the power meter, and measure Wi-Fi/BT output power.

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT Wi-Fi/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix A demonstrates.
- (c) Set scan area, grid size and other setting on the OPENSAR software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band.
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of 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:

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

3.1. Power Reference

The Power Reference Measurement and Power Drift Measurements 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.

3.2. Area scan & Zoom scan

The area scan is a 2D scan to find the hot spot location on the DUT. The zoom scan is a 3D scan

above the hot spot to calculate the 1g and 10g SAR value.

Measurement of the SAR distribution with a grid of 8 to 16 mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors cannot directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme. Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8 * 4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks; additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g., 1 W/kg for 1.6 W/kg 1 g limit, or 1.26 W/kg for 2 W/kg, 10 g limit).

Area scan & Zoom scan scan parameters extracted from FCC KDB 865664 D01 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{\text{Zoom}}(n-1)$	
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 draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 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.

3.3. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.

The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

3.4. Volumetric Scan

The volumetric scan consists to a full 3D scan over a specific area. This 3D scan is useful form multi Tx SAR measurement. Indeed, it is possible with OpenSAR to add, point by point, several volumetric scan to calculate the SAR value of the combined measurement as it is define in the standard IEEE1528 and IEC62209.

3.5. Power Drift

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In OpenSAR 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 V/m. If the power drifts more than $\pm 5\%$, the SAR will be retested.

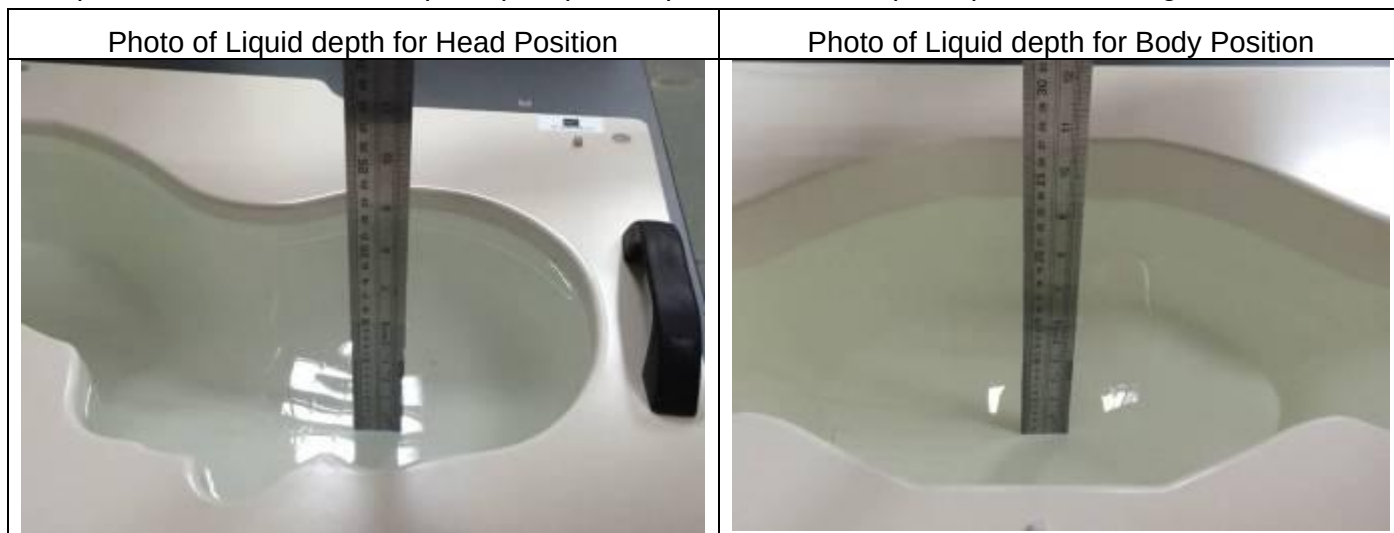
4. System Verification Procedure

4.1. Tissue Verification

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Ingredients (% of weight)	Head Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87	65.53	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97	24.24	24.24
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00	10.23	10.23

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15 cm. For head SAR testing, the liquid depth from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm.



4.1.1. Tissue Dielectric Parameter Check Results

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

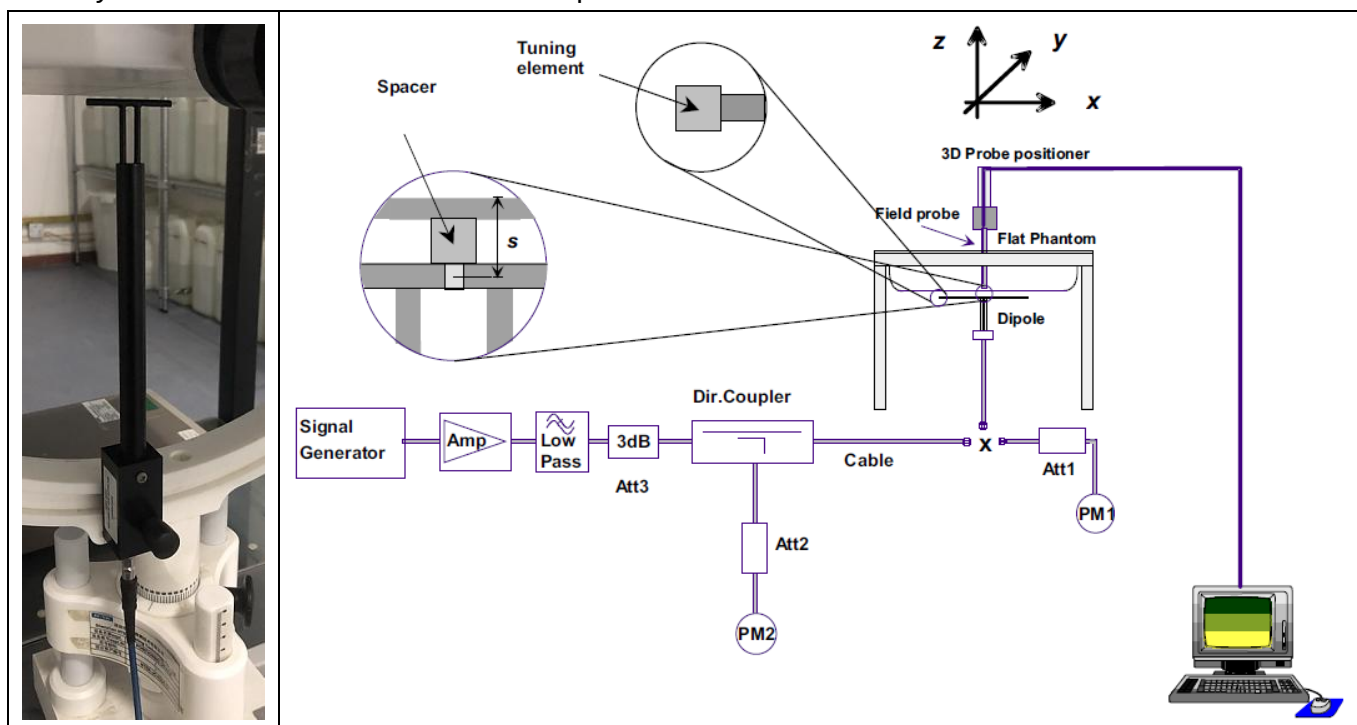
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		$\epsilon_r (\pm 5\%)$	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	40.71	0.89	21.7 °C	Apr. 20, 2023
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.44	0.92	21.3 °C	Apr. 22, 2023
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.96	1.38	21.3 °C	Apr. 24, 2023
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.85	1.43	21.6 °C	Apr. 26, 2023
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.19	1.76	21.4 °C	Apr. 28, 2023
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.13	4.77	21.1 °C	Apr. 30, 2023
Head 5400	5400	35.80 (34.01~37.59)	4.86 (4.62~5.10)	36.23	4.78	21.2 °C	May 10, 2023
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.71	5.29	21.6 °C	May 20, 2023

NOTE: The dielectric parameters of the tissue-equivalent liquid should be measured under similar ambient conditions and within 2 °C of the conditions expected during the SAR evaluation to satisfy protocol requirements.

4.2. System Verification Procedure

The system verification is performed for verifying the accuracy of the complete measurement system and performance of the software. The dipole is connected to the signal source consisting of signal generator and amplifier via a directional coupler, N-connector cable and adaption to SMA. It is fed with a power of 100mW (below 5GHz) or 100mW (above 5GHz). To adjust this power a power meter is used. The power sensor is connected to the cable before the system verification to measure the power at this point and do adjustments at the signal generator. At the outputs of the directional coupler both return loss as well as forward power are controlled during the system verification to make sure that emitted power at the dipole is kept constant. This can also be checked by the power drift measurement after the test (result on plot).

The system verification is shown as below picture:



4.2.1. System Verification Results

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

System Verification	Target SAR (1W) ($\pm 10\%$)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		
750MHz	8.53 (7.68~9.38)	5.56 (5.01~6.11)	8.86 (3.87%)	5.37 (-3.42%)	21.7 °C	Apr. 20, 2023
835MHz	9.84 (8.86~10.82)	6.22 (5.60~6.84)	10.50 (6.71%)	6.70 (7.72%)	21.3 °C	Apr. 22, 2023
1800MHz	37.96 (34.17~41.75)	19.81 (17.83~21.79)	40.08 (5.58%)	18.43 (-6.97%)	21.3 °C	Apr. 24, 2023
1900MHz	40.37 (36.34~44.40)	20.48 (18.44~22.52)	40.79 (1.04%)	20.32 (-0.78%)	21.6 °C	Apr. 26, 2023
2450MHz	53.69 (48.33~59.05)	23.94 (21.55~26.33)	54.22 (0.99%)	25.05 (4.64%)	21.4 °C	Apr. 28, 2023
5200MHz	162.34 (146.11~178.57)	55.42 (49.88~60.96)	173.94 (7.15%)	54.72 (-1.26%)	21.1 °C	Apr. 30, 2023
5400MHz	168.48 (151.64~185.32)	57.03 (51.33~62.73)	163.30 (-3.07%)	60.70 (6.44%)	21.2 °C	May 10, 2023
5800MHz	178.89 (161.01~196.77)	59.32 (53.39~65.25)	161.62 (-9.65%)	58.33 (-1.67%)	21.6 °C	May 20, 2023

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

Per KDB865664 D01 SAR measurement 100 MHz to 6 GHz, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. The additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

- 1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
- 2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
- 3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).
- 4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .

5.2. SAR measurement uncertainty

Per KDB865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. The equivalent ratio (1.5/1.6) is applied to extremity and occupational exposure conditions.

6. RF Exposure Positions

6.1. Ear and handset reference point

Figure 6.1.1 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M”, the left ear reference point (ERP) is marked “LE”, and the right ERP is marked “RE”.

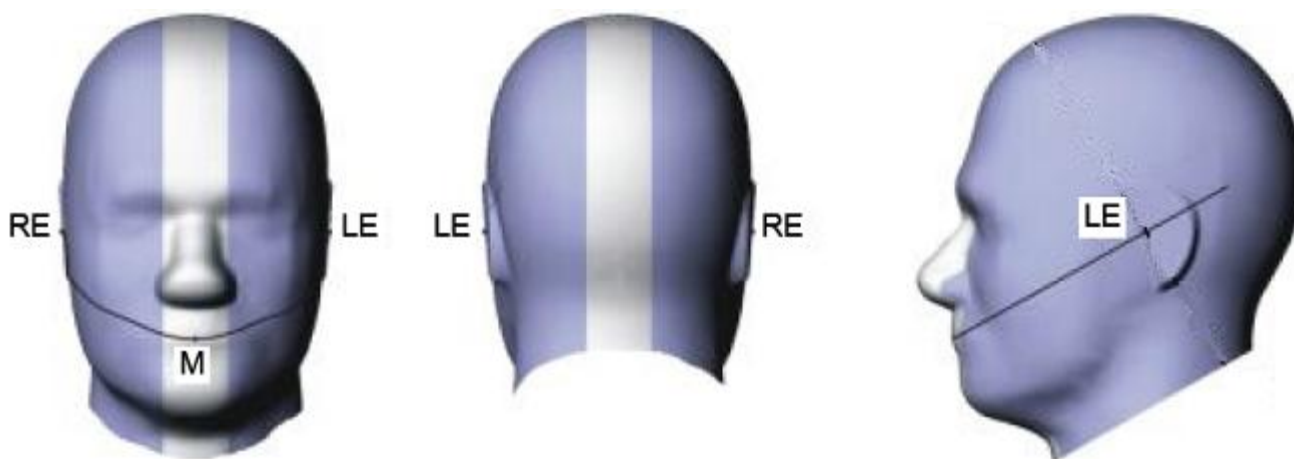


Fig 6.1.1 Front, back, and side views of SAM phantom

6.2. Definition of the cheek position

1. Define two imaginary lines on the handset, the vertical centerline and the horizontal line. The vertical centerline passes through two points on the front side of the handset: the midpoint of the width w_t of the handset at the level of the acoustic output (point A in Figure 6.2.1 and Figure 6.2.2), and the midpoint of the width w_b of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Figure 6.2.1). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Figure 6.2.2), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
2. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 6.2.3), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
3. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP
4. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
5. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.

6. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Figure 6.2.3. The actual rotation angles should be documented in the test report.

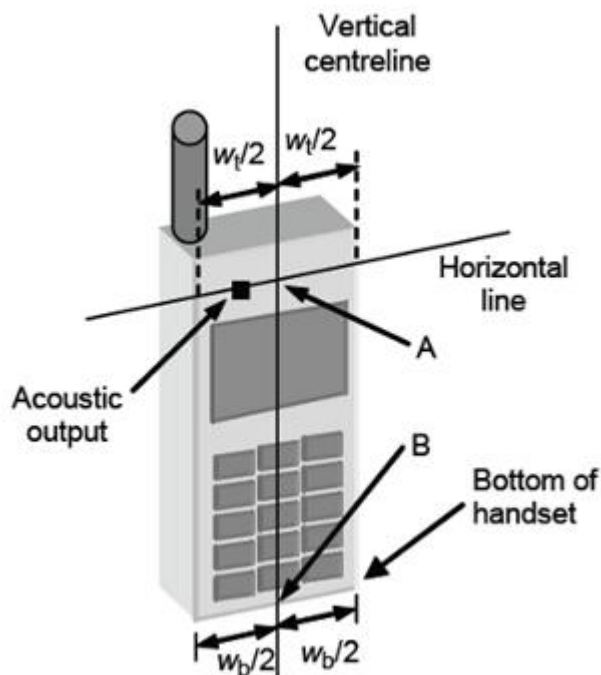


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

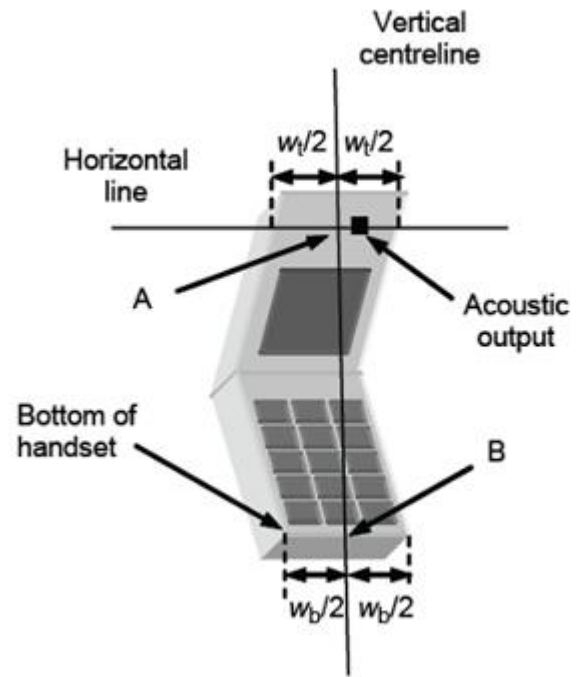


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

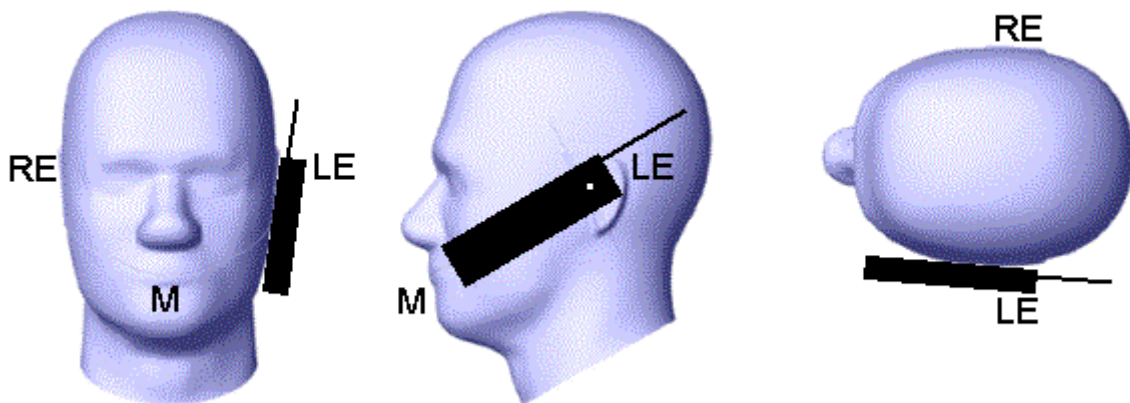


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

1. While maintaining the orientation of the handset, retract the handset parallel to the reference plane far enough away from the phantom to enable a rotation of the device by 15 degree.
2. Rotate the Handset around the horizontal line by 15 degree (see Figure 6.3.1).
3. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna, e.g., the antenna with the back of the phantom head, the angle of the handset shall be reduced. In this case, the tilt position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is in contact with the phantom, e.g., the antenna with the back of the head.

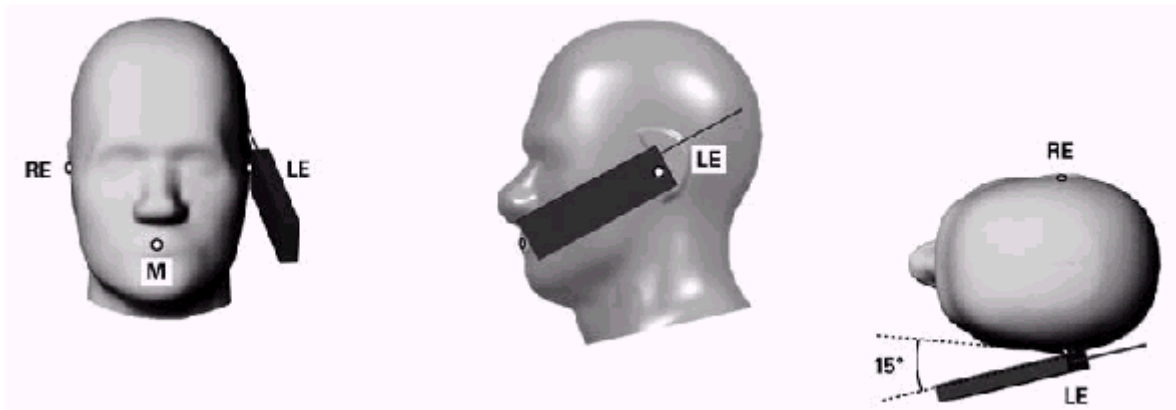


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

1. Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 6.4.1). Per KDB 648474 D04, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is $< 1.2 \text{ W/kg}$, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.
2. Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest

spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

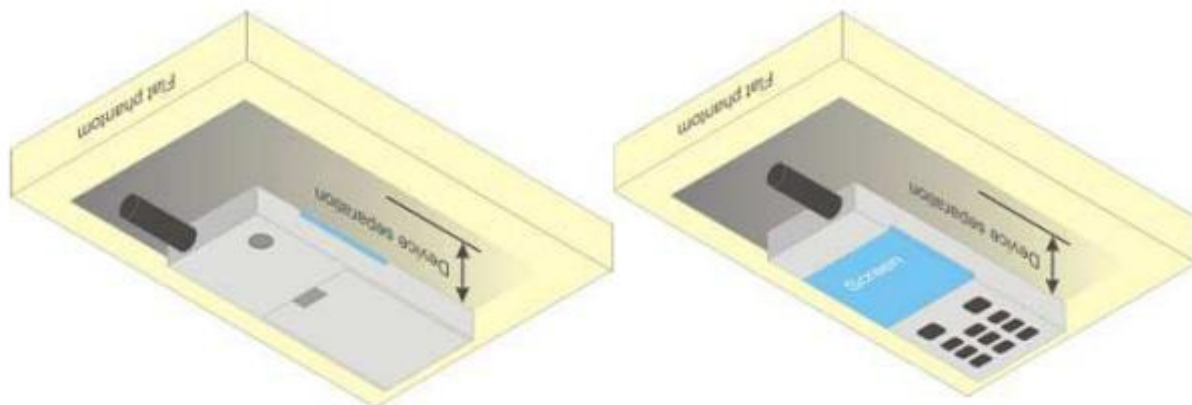


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WLAN simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, 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 WLAN 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 due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WLAN transmitter according to FCC KDB Publication 447498 D01 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

7. RF Output Power

7.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	189	251	Tune-up	128	189	251
Frequency (MHz)	(dBm)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8
GSM (GMSK)	34.00	33.70	33.71	33.70	24.97	24.67	24.68	24.67
GPRS(GMSK,1 Tx slot)	34.00	33.70	33.70	33.70	24.97	24.67	24.67	24.67
GPRS(GMSK,2 Tx slot)	33.50	33.09	33.07	33.09	27.48	27.07	27.05	27.07
GPRS(GMSK,3 Tx slot)	32.00	31.50	31.47	31.50	27.74	27.24	27.21	27.24
GPRS(GMSK,4 Tx slot)	31.00	30.50	30.44	30.48	27.99	27.49	27.43	27.47
EGPRS(8PSK,1 Tx slot)	29.00	28.65	28.45	28.22	19.97	19.62	19.42	19.19
EGPRS(8PSK,2 Tx slot)	27.50	27.18	27.03	27.35	21.48	21.16	21.01	21.33
EGPRS(8PSK,3 Tx slot)	26.00	25.52	25.22	25.13	21.74	21.26	20.96	20.87
EGPRS(8PSK,4 Tx slot)	25.00	24.52	24.21	23.50	21.99	21.51	21.20	20.49
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880	1909.8	(dBm)	1850.2	1880	1909.8
GSM (GMSK)	32.50	31.79	31.86	32.02	23.47	22.76	22.83	22.99
GPRS(GMSK,1 Tx slot)	32.50	31.79	31.88	32.03	23.47	22.76	22.85	23.00
GPRS(GMSK,2 Tx slot)	31.50	31.14	31.22	31.39	25.48	25.12	25.20	25.37
GPRS(GMSK,3 Tx slot)	30.00	29.57	29.61	29.80	25.74	25.31	25.35	25.54
GPRS(GMSK,4 Tx slot)	29.00	28.56	28.62	28.81	25.99	25.55	25.61	25.80
EGPRS(8PSK,1 Tx slot)	29.00	28.23	28.37	28.65	19.97	19.20	19.34	19.62
EGPRS(8PSK,2 Tx slot)	27.50	27.30	27.20	27.36	21.48	21.28	21.18	21.34
EGPRS(8PSK,3 Tx slot)	25.00	24.64	24.99	24.65	20.74	20.38	20.73	20.39
EGPRS(8PSK,4 Tx slot)	24.00	23.19	23.50	23.23	20.99	20.18	20.49	20.22

7.2. WCDMA Conducted Power

WCDMA Band 2	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC12.2K	25.00	24.37	24.46	24.51
HSDPA Sub 1	24.00	23.42	23.49	23.52
HSDPA Sub 2	23.00	23.00	23.00	22.99

HSDPA Sub 3	22.50	21.70	21.97	22.19
HSDPA Sub 4	22.50	21.95	21.70	22.12
HSUPA Sub 1	23.50	21.59	23.18	23.34
HSUPA Sub 2	23.50	23.34	23.31	23.32
HSUPA Sub 3	22.50	21.69	22.35	22.21
HSUPA Sub 4	24.00	23.35	23.44	23.56
HSUPA Sub 5	23.00	22.28	22.54	22.67
WCDMA Band 4	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
RMC12.2K	24.50	23.86	23.82	24.02
HSDPA Sub 1	23.50	22.94	22.94	23.09
HSDPA Sub 2	23.00	22.55	22.16	22.28
HSDPA Sub 3	22.00	21.45	21.16	21.63
HSDPA Sub 4	22.00	21.56	21.48	21.50
HSUPA Sub 1	23.00	22.15	22.70	22.89
HSUPA Sub 2	23.00	22.90	22.88	22.90
HSUPA Sub 3	22.00	21.21	21.61	21.62
HSUPA Sub 4	23.50	22.91	22.92	23.06
HSUPA Sub 5	22.50	21.59	22.05	22.49
WCDMA Band 5	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up (dBm)	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC12.2K	23.50	23.26	23.38	23.34
HSDPA Sub 1	22.50	22.35	22.49	22.41
HSDPA Sub 2	22.50	22.00	22.03	21.90
HSDPA Sub 3	21.50	20.96	20.97	21.01
HSDPA Sub 4	21.50	20.76	21.04	20.70
HSUPA Sub 1	22.50	21.81	22.33	22.22
HSUPA Sub 2	22.50	22.27	22.34	22.26
HSUPA Sub 3	21.50	20.50	21.17	21.09
HSUPA Sub 4	22.50	22.36	22.47	22.41
HSUPA Sub 5	22.00	21.03	21.68	21.30

7.3. LTE Conducted Power

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	23.00	21.83	22.18	22.59
			1	2	23.00	21.94	22.29	22.72
			1	5	23.00	21.80	22.19	22.59
			3	0	23.00	21.90	22.30	22.66
			3	1	23.00	21.93	22.32	22.72
			3	2	23.00	21.89	22.32	22.69
			6	0	22.00	20.93	21.34	21.73
		16QAM	1	0	22.00	21.01	21.34	21.85
			1	2	22.00	21.02	21.56	21.97
			1	5	22.00	20.87	21.39	21.87
			3	0	22.00	20.82	21.27	21.66
			3	1	22.00	20.85	21.27	21.74
			3	2	22.00	20.73	21.24	21.61
			6	0	21.00	19.95	20.43	20.76
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	23.00	21.86	22.34	22.65
			1	7	23.00	21.86	22.33	22.75
			1	14	23.00	21.84	22.31	22.72
			8	0	22.00	20.91	21.39	21.76
			8	4	22.00	20.90	21.40	21.78
			8	7	22.00	20.88	21.39	21.74
			15	0	22.00	20.91	21.42	21.76
		16QAM	1	0	22.00	21.07	21.50	21.96
			1	7	22.00	21.07	21.49	21.99
			1	14	22.00	21.13	21.61	21.96
			8	0	21.00	19.96	20.47	20.80
			8	4	21.00	19.94	20.43	20.82
			8	7	21.00	19.94	20.41	20.80
			15	0	21.00	19.94	20.41	20.71
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		

			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	23.00	21.80	22.27	22.61
			1	12	23.00	21.95	22.38	22.71
			1	24	23.00	21.86	22.24	22.60
			12	0	22.00	20.96	21.46	21.78
			12	6	22.00	21.03	21.46	21.81
			12	11	22.00	20.93	21.41	21.75
			25	0	22.00	20.95	21.46	21.79
		16QAM	1	0	22.00	20.98	21.45	21.88
			1	12	22.00	21.09	21.59	21.99
			1	24	22.00	21.03	21.44	21.79
			12	0	21.00	19.95	20.44	20.77
			12	6	21.00	19.98	20.44	20.79
			12	11	21.00	19.93	20.42	20.73
			25	0	21.00	20.00	20.49	20.81
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	23.00	21.92	22.34	22.77
			1	24	23.00	22.08	22.41	22.72
			1	49	23.00	22.11	22.31	22.69
			25	0	22.00	21.07	21.54	21.93
			25	12	22.00	21.08	21.47	21.76
			25	24	22.00	21.16	21.47	21.72
			50	0	22.00	21.12	21.52	21.83
		16QAM	1	0	22.50	21.07	21.48	21.92
			1	24	22.50	21.29	21.66	22.03
			1	49	22.50	21.46	21.54	22.00
			25	0	21.00	20.05	20.55	20.98
			25	12	21.00	20.05	20.44	20.82
			25	24	21.00	20.14	20.48	20.79
			50	0	21.00	20.10	20.51	20.87
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band	15MHz	QPSK	1	0	23.00	21.89	22.32	22.73
			1	37	23.00	22.18	22.39	22.79

2			1	74	23.00	22.18	22.41	22.62
			36	0	22.00	21.14	21.56	21.83
			36	18	22.00	21.20	21.52	21.82
			36	37	22.00	21.32	21.50	21.77
			75	0	22.00	21.22	21.56	21.81
		16QAM	1	0	22.00	21.06	21.54	21.86
			1	37	22.00	21.31	21.59	21.99
			1	74	22.00	21.41	21.64	21.79
			36	0	21.00	20.11	20.53	20.80
			36	18	21.00	20.16	20.49	20.82
			36	37	21.00	20.24	20.50	20.75
			75	0	21.00	20.21	20.55	20.79
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	23.00	21.72	22.20	22.47
			1	49	23.00	22.26	22.47	22.86
			1	99	23.00	22.05	22.29	22.47
			50	0	22.00	21.21	21.67	21.66
			50	24	22.00	21.25	21.51	21.84
			50	49	22.00	21.45	21.52	21.66
			100	0	22.00	21.33	21.58	21.65
		16QAM	1	0	22.50	20.85	21.41	21.70
			1	49	22.50	21.55	21.65	22.13
			1	99	22.50	21.33	21.55	21.73
			50	0	21.00	20.20	20.63	20.67
			50	24	21.00	20.24	20.48	20.87
			50	49	21.00	20.41	20.50	20.67
			100	0	21.00	20.28	20.56	20.66

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	21.50	21.11	21.33	21.34
			1	2	21.50	21.24	21.42	21.40
			1	5	21.50	21.10	21.33	21.31
			3	0	21.50	21.20	21.42	21.43
			3	1	21.50	21.24	21.42	21.43

			3	2	21.50	21.23	21.40	21.39
			6	0	20.50	20.20	20.40	20.43
		16QAM	1	0	21.00	20.29	20.56	20.49
			1	2	21.00	20.44	20.69	20.61
			1	5	21.00	20.39	20.55	20.48
			3	0	20.50	20.18	20.41	20.35
			3	1	20.50	20.22	20.40	20.44
			3	2	20.50	20.10	20.42	20.37
			6	0	20.00	19.27	19.51	19.48
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	21.50	21.11	21.39	21.36
			1	7	21.50	21.09	21.35	21.33
			1	14	21.50	21.13	21.35	21.39
			8	0	20.50	20.13	20.37	20.39
			8	4	20.50	20.17	20.41	20.43
			8	7	20.50	20.14	20.40	20.40
			15	0	20.50	20.16	20.34	20.41
		16QAM	1	0	21.00	20.33	20.54	20.54
			1	7	21.00	20.33	20.57	20.48
			1	14	21.00	20.38	20.53	20.58
			8	0	19.50	19.18	19.41	19.45
			8	4	19.50	19.22	19.46	19.46
			8	7	19.50	19.19	19.43	19.48
			15	0	19.50	19.14	19.38	19.41
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	21.50	21.02	21.25	21.20
			1	12	21.50	21.12	21.36	21.28
			1	24	21.50	21.03	21.29	21.16
			12	0	20.50	20.08	20.35	20.30
			12	6	20.50	20.19	20.46	20.35
			12	11	20.50	20.12	20.41	20.24
			25	0	20.50	20.12	20.38	20.28
		16QAM	1	0	21.00	20.29	20.43	20.43
			1	12	21.00	20.44	20.66	20.46

			1	24	21.00	20.18	20.47	20.38
			12	0	19.50	19.07	19.31	19.26
			12	6	19.50	19.16	19.43	19.30
			12	11	19.50	19.10	19.40	19.23
			25	0	19.50	19.11	19.38	19.28
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	21.50	21.09	21.34	21.30
			1	24	21.50	21.25	21.49	21.39
			1	49	21.50	21.14	21.40	21.29
			25	0	21.00	20.16	20.45	20.37
			25	12	21.00	20.23	20.46	20.43
			25	24	21.00	20.15	20.54	20.35
			50	0	21.00	20.16	20.50	20.37
		16QAM	1	0	21.00	20.37	20.61	20.51
			1	24	21.00	20.53	20.79	20.58
			1	49	21.00	20.44	20.61	20.52
			25	0	20.00	19.17	19.45	19.35
			25	12	20.00	19.23	19.46	19.40
			25	24	20.00	19.17	19.52	19.34
			50	0	19.50	19.19	19.49	19.36
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	21.50	21.07	21.29	21.21
			1	37	21.50	21.19	21.41	21.36
			1	74	21.50	21.14	21.34	21.22
			36	0	21.00	20.21	20.43	20.34
			36	18	21.00	20.26	20.45	20.42
			36	37	21.00	20.23	20.54	20.37
			75	0	20.50	20.19	20.47	20.36
		16QAM	1	0	21.00	20.33	20.42	20.48
			1	37	21.00	20.42	20.70	20.65
			1	74	21.00	20.30	20.56	20.46
			36	0	20.00	19.15	19.39	19.29
			36	18	20.00	19.20	19.43	19.35
			36	37	20.00	19.17	19.50	19.32

			75	0	19.50	19.20	19.47	19.34
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	21.50	20.86	21.05	21.00
			1	49	21.50	21.22	21.44	21.40
			1	99	21.50	21.00	21.21	21.06
			50	0	21.00	20.23	20.45	20.27
			50	24	21.00	20.26	20.46	20.43
			50	49	21.00	20.23	20.57	20.42
			100	0	21.00	20.23	20.51	20.35
		16QAM	1	0	21.00	20.16	20.33	20.17
			1	49	21.00	20.40	20.76	20.64
			1	99	21.00	20.27	20.35	20.39
			50	0	20.00	19.22	19.42	19.22
			50	24	20.00	19.25	19.45	19.38
			50	49	20.00	19.21	19.56	19.36
			100	0	19.50	19.20	19.48	19.30

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band 5	1.4MHz	QPSK	1	0	22.50	22.15	22.25	22.23
			1	2	22.50	22.27	22.38	22.31
			1	5	22.50	22.18	22.23	22.21
			3	0	22.50	22.26	22.32	22.31
			3	1	22.50	22.27	22.35	22.32
			3	2	22.50	22.24	22.31	22.30
			6	0	21.50	21.23	21.34	21.32
		16QAM	1	0	22.00	21.39	21.47	21.40
			1	2	22.00	21.51	21.69	21.67
			1	5	22.00	21.49	21.51	21.44
			3	0	21.50	21.19	21.35	21.24
			3	1	21.50	21.28	21.41	21.35
			3	2	21.50	21.24	21.32	21.29
			6	0	20.50	20.32	20.43	20.38
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		

			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	22.50	22.27	22.32	22.36
			1	7	22.50	22.27	22.35	22.33
			1	14	22.50	22.25	22.37	22.31
			8	0	21.50	21.24	21.35	21.39
			8	4	21.50	21.30	21.45	21.42
			8	7	21.50	21.24	21.39	21.35
			15	0	21.50	21.23	21.37	21.35
		16QAM	1	0	22.00	21.40	21.63	21.62
			1	7	22.00	21.48	21.53	21.57
			1	14	22.00	21.53	21.62	21.43
			8	0	20.50	20.29	20.40	20.40
			8	4	20.50	20.34	20.49	20.44
			8	7	20.50	20.29	20.43	20.41
			15	0	20.50	20.23	20.37	20.38
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	22.50	22.13	22.21	22.25
			1	12	22.50	22.27	22.37	22.34
			1	24	22.50	22.13	22.25	22.16
			12	0	21.50	21.21	21.34	21.40
			12	6	21.50	21.33	21.46	21.44
			12	11	21.50	21.31	21.38	21.34
			25	0	21.50	21.28	21.36	21.39
		16QAM	1	0	22.00	21.42	21.39	21.45
			1	12	22.00	21.58	21.58	21.66
			1	24	22.00	21.32	21.47	21.42
			12	0	20.50	20.20	20.32	20.37
			12	6	20.50	20.31	20.46	20.40
			12	11	20.50	20.28	20.38	20.28
			25	0	20.50	20.28	20.36	20.36
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band	10MHz	QPSK	1	0	22.50	22.23	22.28	22.42
			1	24	22.50	22.35	22.39	22.45

5			1	49	22.50	22.30	22.40	22.28
			25	0	21.50	21.29	21.39	21.47
			25	12	21.50	21.29	21.41	21.46
			25	24	21.50	21.33	21.43	21.39
			50	0	21.50	21.28	21.41	21.44
		16QAM	1	0	22.00	21.50	21.46	21.65
			1	24	22.00	21.66	21.72	21.69
			1	49	22.00	21.54	21.69	21.49
			25	0	20.50	20.26	20.39	20.46
			25	12	20.50	20.32	20.40	20.44
			25	24	20.50	20.33	20.43	20.36
			50	0	20.50	20.29	20.39	20.42

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23017/699.7	23095/707.5	23173/715.3
LTE Band 12	1.4MHz	QPSK	1	0	22.50	22.33	22.36	22.13
			1	2	22.50	22.46	22.43	22.22
			1	5	22.50	22.40	22.31	22.09
			3	0	23.00	22.48	22.40	22.20
			3	1	23.00	22.50	22.41	22.20
			3	2	23.00	22.48	22.41	22.16
			6	0	22.00	21.52	21.45	21.25
		16QAM	1	0	22.50	21.91	21.69	21.39
			1	2	22.50	22.07	21.83	21.58
			1	5	22.50	21.93	21.57	21.36
			3	0	22.00	21.65	21.49	21.25
			3	1	22.00	21.68	21.47	21.33
			3	2	22.00	21.61	21.47	21.22
			6	0	21.00	20.63	20.54	20.34
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23025/700.5	23095/707.5	23165/714.5
LTE Band 12	3MHz	QPSK	1	0	23.00	22.51	22.40	22.21
			1	7	23.00	22.46	22.38	22.14
			1	14	23.00	22.45	22.37	22.13
			8	0	22.00	21.56	21.44	21.27
			8	4	22.00	21.61	21.48	21.26

			8	7	22.00	21.57	21.42	21.23
			15	0	22.00	21.51	21.43	21.22
		16QAM	1	0	22.00	21.97	21.80	21.52
			1	7	22.00	21.94	21.74	21.52
			1	14	22.00	21.89	21.58	21.53
			8	0	21.00	20.66	20.47	20.29
			8	4	21.00	20.70	20.52	20.29
			8	7	21.00	20.65	20.45	20.27
			15	0	21.00	20.56	20.41	20.21
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	22.50	22.40	22.35	22.15
			1	12	22.50	22.48	22.39	22.20
			1	24	22.50	22.38	22.22	22.05
			12	0	22.00	21.51	21.44	21.32
			12	6	22.00	21.58	21.49	21.33
			12	11	22.00	21.55	21.45	21.17
			25	0	21.50	21.49	21.44	21.25
		16QAM	1	0	22.00	21.91	21.68	21.54
			1	12	22.00	21.92	21.74	21.48
			1	24	22.00	21.78	21.54	21.38
			12	0	21.00	20.53	20.43	20.30
			12	6	21.00	20.58	20.44	20.29
			12	11	21.00	20.50	20.43	20.12
			25	0	21.00	20.53	20.44	20.26
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	23.00	22.51	22.47	22.43
			1	24	23.00	22.55	22.44	22.38
			1	49	23.00	22.31	22.20	22.11
			25	0	21.50	21.47	21.48	21.45
			25	12	21.50	21.49	21.46	21.37
			25	24	21.50	21.49	21.43	21.28
			50	0	21.50	21.47	21.43	21.37
		16QAM	1	0	22.00	21.90	21.80	21.78
			1	24	22.00	21.88	21.86	21.59

			1	49	22.00	21.57	21.55	21.48
			25	0	21.00	20.50	20.51	20.45
			25	12	21.00	20.53	20.46	20.35
			25	24	21.00	20.49	20.42	20.26
			50	0	20.50	20.49	20.47	20.35

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	22.50	22.35	22.33	22.18
			1	12	22.50	22.38	22.34	22.25
			1	24	22.50	22.25	22.12	22.07
			12	0	22.00	21.48	21.41	21.32
			12	6	22.00	21.50	21.44	21.32
			12	11	22.00	21.45	21.34	21.18
			25	0	21.50	21.46	21.39	21.25
		16QAM	1	0	22.00	21.72	21.55	21.47
			1	12	22.00	21.67	21.66	21.57
			1	24	22.00	21.51	21.49	21.46
			12	0	20.50	20.45	20.39	20.25
			12	6	20.50	20.48	20.39	20.29
			12	11	20.50	20.43	20.32	20.16
			25	0	20.50	20.47	20.38	20.26

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	22.50	22.44	22.42	22.45
			1	24	22.50	22.41	22.40	22.36
			1	49	22.50	22.20	22.17	22.18
			25	0	21.50	21.49	21.46	21.46
			25	12	21.50	21.43	21.44	21.40
			25	24	21.50	21.34	21.30	21.28
			50	0	21.50	21.41	21.38	21.36
		16QAM	1	0	22.00	21.86	21.76	21.80
			1	24	22.00	21.73	21.69	21.59
			1	49	22.00	21.58	21.48	21.54
			25	0	20.50	20.49	20.47	20.46
			25	12	20.50	20.42	20.43	20.37

			25	24	20.50	20.34	20.32	20.28
			50	0	20.50	20.43	20.40	20.37

7.4. WLAN & Bluetooth Output Power

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	16.00	15.60
	6	2437	16.00	15.77
	11	2462	16.00	15.79
802.11g	1	2412	13.50	12.93
	6	2437	13.50	13.34
	11	2462	13.50	12.93
802.11n HT20	1	2412	11.50	11.29
	6	2437	11.50	11.30
	11	2462	11.50	10.98
802.11n HT40	3	2422	10.50	10.33
	6	2437	10.50	10.25
	9	2452	10.50	10.20

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	36	5180	11	10.62
	40	5200	11	10.34
	48	5240	11	9.96
802.11n HT20	36	5180	11	10.63
	40	5200	11	10.12
	48	5240	11	10.3
802.11n HT40	38	5190	11	10.52
	46	5230	11	10.31
802.11ac VHT20	36	5180	10.5	10.07
	40	5200	10.5	10.23
	48	5240	10.5	10.22
802.11ac VHT40	38	5190	10.5	10
	46	5230	10.5	10.22
802.11ac VHT80	42	5210	10	9.59

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	52	5260	11.00	10.72
	56	5280	11.00	10.33
	64	5320	11.00	10.45
802.11n HT20	52	5260	10.50	9.92
	56	5280	10.50	10.06
	64	5320	10.50	10.26
802.11n HT40	54	5270	10.50	10.26
	62	5310	10.50	10.05
802.11ac VHT20	52	5260	10.50	10.44
	56	5280	10.50	10.17
	64	5320	10.50	10.18
802.11ac VHT40	54	5270	10.50	10.37
	62	5310	10.50	10.43
802.11ac VHT80	58	5290	10.50	10.18

NOTE: Power measurement results of WLAN 5.3G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	100	5500	10.50	10.18
	120	5600	10.50	10.04
	140	5700	10.50	10.21
802.11n HT20	100	5500	11.00	10.70
	120	5600	11.00	10.49
	140	5700	11.00	10.03
802.11n HT40	102	5510	10.50	10.23
	118	5590	10.50	10.10
802.11ac VHT20	134	5670	10.50	10.13
	100	5500	10.50	10.19
	120	5600	10.50	10.34
802.11ac VHT40	140	5700	10.50	10.28
	102	5510	11.00	9.93
	118	5590	11.00	10.54
802.11ac VHT80	134	5670	11.00	9.75
	106	5530	10.50	10.37

NOTE: Power measurement results of WLAN 5.6G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	149	5745	10.50	10.39
	157	5785	10.50	10.22
	165	5825	10.50	9.99
802.11n HT20	149	5745	10.50	10.28
	157	5785	10.50	10.05
	165	5825	10.50	9.82
802.11n HT40	151	5755	10.50	10.03
	159	5795	10.50	10.08
802.11ac VHT20	149	5745	10.50	10.20
	157	5785	10.50	10.10
	165	5825	10.50	10.25
802.11ac VHT40	151	5755	11.00	10.65
	159	5795	11.00	10.31

802.11ac VHT80	155	5775	10.50	10.01
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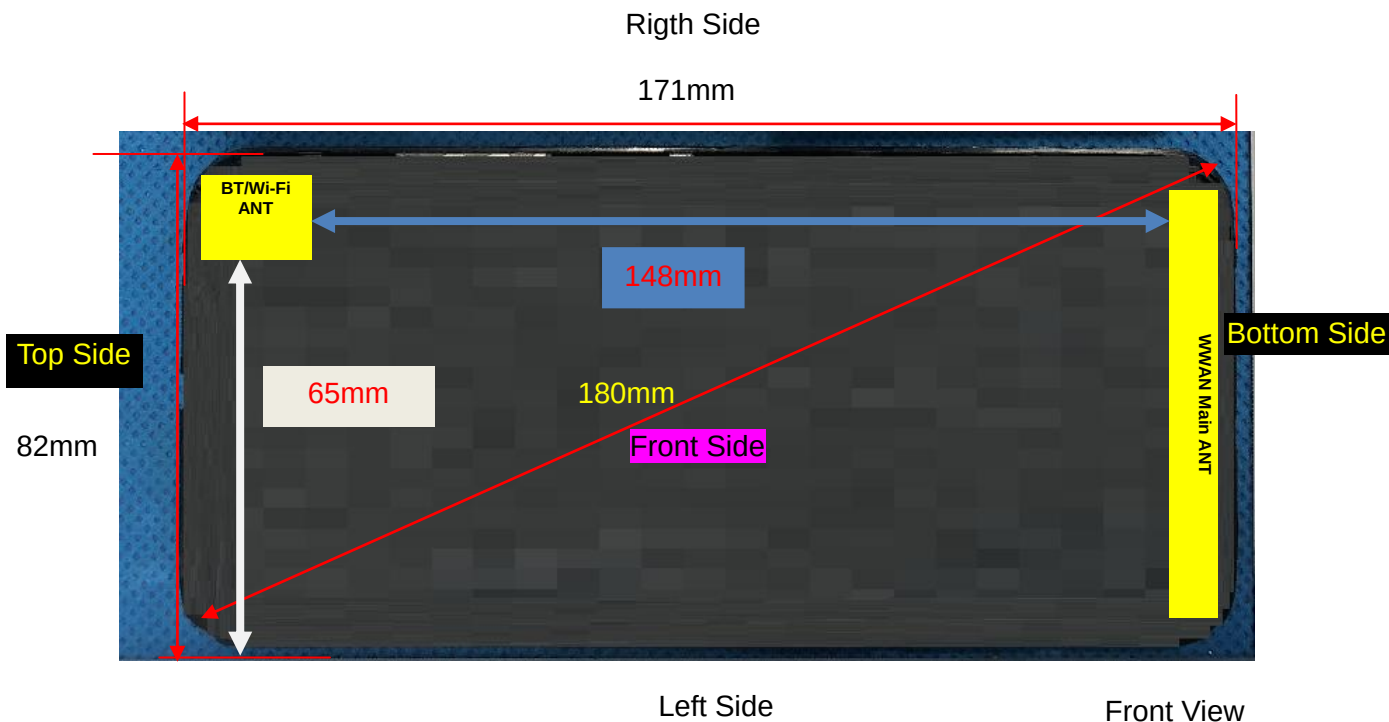
NOTE: Power measurement results of WLAN 5.8G.

BR+EDR	Output Power (dBm)				
	Data Rates	Tune-up (dBm)	Channel		
			0CH	39CH	78CH
	0CH	5	4.89	3.82	4.11
	39CH	4	3.83	3.05	3.06
	78CH	4	3.34	2.22	2.16

BLE	Channel	Tune-up (dBm)	Output Power (dBm)	
			1M	2M
	0CH	-8.00	-8.11	-8.01
	19CH	-8.00	-8.42	-8.37
	39CH	-9.00	-9.26	-9.26

NOTE: Power measurement results of Bluetooth.

8. Antenna Location



Note: Since the confidentiality request of EUT, the antenna location example diagram see as above.

Distance of the Antenna to the EUT surface/edge						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	≤ 25mm	≤ 25mm	≤ 25mm	≤ 25mm	> 25mm	≤ 25mm
WLAN & Bluetooth	≤ 25mm	≤ 25mm	> 25mm	≤ 25mm	≤ 25mm	>25mm
Positions for SAR tests						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	Yes	Yes	Yes	Yes	NO	Yes
WLAN & Bluetooth	Yes	Yes	NO	Yes	Yes	NO

9. Stand-alone SAR test exclusion

Refer to FCC KDB 447498D01, the 1-g SAR and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}]}{\leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where:}}$$

- $f_{(\text{GHz})}$ 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

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
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Bluetooth	5.00	3.16	5	2.480	1.0	3	Yes
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NOTE: Standalone SAR test exclusion for Bluetooth.

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] * [\sqrt{f_{(\text{GHz})}}/x]$ W/kg for test separation distances $\leq 50\text{mm}$, where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

When the minimum test separation distance is $< 5 \text{ mm}$, a distance of 5 mm is applied to determine SAR test exclusion.

Mode	Position	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/Kg)
Bluetooth	Head	5.00	3.16	5	2.48	7.5	0.132
Bluetooth	Body	5.00	3.16	10	2.48	7.5	0.066
Bluetooth	Hotspot	5.00	3.16	10	2.48	7.5	0.066

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement Result

10.1.1. SAR measurement Result of GSM850

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	189/836.4	GPRS(GMSK 4TS)	0.606	0.402	2.01	30.44	31.00	0.689	2023/4/22	1#
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.303	0.197	-2.45	30.44	31.00	0.345	2023/4/22	
Right Cheek	189/836.4	GPRS(GMSK 4TS)	0.569	0.374	-2.69	30.44	31.00	0.647	2023/4/22	
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.305	0.198	3.29	30.44	31.00	0.347	2023/4/22	

NOTE: Head SAR test results of GSM850.

Test	Test	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled	Date	Plot
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Position of Body-Worn with 10mm	channel /Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g (W/Kg)		
			1g	10g						
Front Side	189/836.4	GPRS(GMSK 4TS)	0.234	0.165	0.21	30.44	31.00	0.266	2023/4/22	
Back Side	189/836.4	GPRS(GMSK 4TS)	0.364	0.262	-2.59	30.44	31.00	0.414	2023/4/22	2#

NOTE: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	189/836.4	GPRS(GMSK 4TS)	0.234	0.165	0.21	30.44	31.00	0.266	2023/4/22	
Back Side	189/836.4	GPRS(GMSK 4TS)	0.364	0.262	-2.59	30.44	31.00	0.414	2023/4/22	2#
Left Side	189/836.4	GPRS(GMSK 4TS)	0.114	0.078	2.14	30.44	31.00	0.130	2023/4/22	
Right Side	189/836.4	GPRS(GMSK 4TS)	0.111	0.079	0.30	30.44	31.00	0.126	2023/4/22	
Bottom Side	189/836.4	GPRS(GMSK 4TS)	0.205	0.148	-1.45	30.44	31.00	0.233	2023/4/22	

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	661/1880	GPRS(GMSK 4TS)	0.557	0.264	3.55	28.62	29.00	0.608	2023/4/26	3#
Left Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.307	0.143	-3.73	28.62	29.00	0.335	2023/4/26	
Right Cheek	661/1880	GPRS(GMSK 4TS)	0.510	0.230	-0.55	28.62	29.00	0.557	2023/4/26	
Right Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.242	0.112	2.33	28.62	29.00	0.264	2023/4/26	

NOTE: Head SAR test results of GSM1900

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
Front Side	661/1880	GPRS(GMSK 4TS)	0.276	0.145	3.27	28.62	29.00	0.301	2023/4/26	
Back Side	661/1880	GPRS(GMSK 4TS)	0.426	0.233	0.95	28.62	29.00	0.465	2023/4/26	4#

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	661/1880	GPRS(GMSK 4TS)	0.276	0.145	3.27	28.62	29.00	0.301	2023/4/26	
Back Side	661/1880	GPRS(GMSK 4TS)	0.426	0.233	0.95	28.62	29.00	0.465	2023/4/26	4#
Left Side	661/1880	GPRS(GMSK 4TS)	0.150	0.086	0.23	28.62	29.00	0.164	2023/4/26	
Right Side	661/1880	GPRS(GMSK 4TS)	0.138	0.075	-3.58	28.62	29.00	0.151	2023/4/26	
Bottom Side	661/1880	GPRS(GMSK 4TS)	0.220	0.117	0.69	28.62	29.00	0.240	2023/4/26	

NOTE: Hotspot SAR test results of GSM1900

10.1.3. SAR measurement Result of WCDMA Band 2

Test Position of Head	Test channel /Freq	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	9400/1880	RMC12.2K	0.977	0.577	-0.71	24.46	25.00	1.106	2023/4/26	
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.532	0.298	0.37	24.46	25.00	0.602	2023/4/26	
Right Cheek	9400/1880	RMC12.2K	0.838	0.495	-1.14	24.46	25.00	0.949	2023/4/26	

Test Position of Head	Test channel /Freq	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						

Left Cheek	1413/1732.6	RMC12.2K	0.745	0.460	-1.23	23.82	24.50	0.871	2023/4/24	7#
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.375	0.220	2.02	23.82	24.50	0.439	2023/4/24	
Right Cheek	1413/1732.6	RMC12.2K	0.705	0.427	0.75	23.82	24.50	0.824	2023/4/24	
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.351	0.206	-0.16	23.82	24.50	0.410	2023/4/24	
Left Cheek	1312/1712.4	RMC12.2K	0.639	0.383	-2.23	23.86	24.50	0.740	2023/4/24	
Left Cheek	1513/1752.6	RMC12.2K	0.646	0.387	2.45	24.02	24.50	0.721	2023/4/24	
Left Cheek Repeated	1413/1732.6	RMC12.2K	0.720	0.455	-2.26	23.82	24.50	0.842	2023/4/24	

NOTE: Head SAR test results of WCDMA Band 4

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
Front Side	1413/1732.6	RMC12.2K	0.234	0.138	1.05	23.82	24.50	0.274	2023/4/24	
Back Side	1413/1732.6	RMC12.2K	0.342	0.213	-0.96	23.82	24.50	0.400	2023/4/24	8#

NOTE: Body-Worn SAR test results of WCDMA Band 4

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	1413/1732.6	RMC12.2K	0.234	0.138	1.05	23.82	24.50	0.274	2023/4/24	
Back Side	1413/1732.6	RMC12.2K	0.342	0.213	-0.96	23.82	24.50	0.400	2023/4/24	8#
Left Side	1413/1732.6	RMC12.2K	0.105	0.064	0.21	23.82	24.50	0.123	2023/4/24	
Right	1413/1732.6	RMC12.2K	0.108	0.067	2.79	23.82	24.50	0.126	2023/4/24	

Side										
Bottom Side	1413/1732.6	RMC12.2K	0.114	0.070	-0.32	23.82	24.50	0.133	2023/4/24	

NOTE: Hotspot SAR test results of WCDMA Band 4

10.1.5. SAR measurement Result of WCDMA Band 5

Test Position of Head	Test channel /Freq	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	4182/836.4	RMC12.2K	0.294	0.214	-2.07	23.38	23.50	0.302	2023/4/22	9#
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.151	0.104	1.93	23.38	23.50	0.155	2023/4/22	
Right Cheek	4182/836.4	RMC12.2K	0.256	0.179	-1.40	23.38	23.50	0.263	2023/4/22	
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.138	0.096	2.81	23.38	23.50	0.142	2023/4/22	

NOTE: Head SAR test results of WCDMA Band 5

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
Front Side	4182/836.4	RMC12.2K	0.126	0.091	0.30	23.38	23.50	0.130	2023/4/22	
Back Side	4182/836.4	RMC12.2K	0.192	0.143	-0.56	23.38	23.50	0.197	2023/4/22	10#

NOTE: Body-Worn SAR test results of WCDMA Band 5

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	4182/836.4	RMC12.2K	0.126	0.091	0.30	23.38	23.50	0.130	2023/4/22	
Back Side	4182/836.4	RMC12.2K	0.192	0.143	-0.56	23.38	23.50	0.197	2023/4/22	10#
Left Side	4182/836.4	RMC12.2K	0.063	0.046	3.49	23.38	23.50	0.065	2023/4/22	
Right Side	4182/836.4	RMC12.2K	0.072	0.051	-2.64	23.38	23.50	0.074	2023/4/22	
Bottom Side	4182/836.4	RMC12.2K	0.110	0.078	-3.67	23.38	23.50	0.113	2023/4/22	

NOTE: Hotspot SAR test results of WCDMA Band 5

10.1.6. SAR measurement Result of LTE Band 2

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Left Cheek	18900/1880	20M QPSK(1,49)	1.003	0.592	-0.43	22.47	23.00	1.133	2023/4/26	
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.562	0.328	3.07	22.47	23.00	0.635	2023/4/26	
Right Cheek	18900/1880	20M QPSK(1,49)	0.853	0.478	1.16	22.47	23.00	0.964	2023/4/26	
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.455	0.260	3.46	22.47	23.00	0.514	2023/4/26	
Left Cheek	18700/1860	20M QPSK(1,49)	0.969	0.578	-1.38	22.26	23.00	1.149	2023/4/26	
Left Cheek	19100/1900	20M QPSK(1,49)	1.107	0.650	-0.80	22.86	23.00	1.143	2023/4/26	17#
Left Cheek Repeated	19100/1900	20M QPSK(1,49)	1.100	0.644	3.33	22.86	23.00	1.136	2023/4/26	
50%RB										
Left Cheek	18900/1880	20M QPSK(50,24)	0.591	0.353	0.85	21.51	22.00	0.662	2023/4/26	
Left Tilt 15 Degree	18900/1880	20M QPSK(50,24)	0.292	0.195	-2.27	21.51	22.00	0.327	2023/4/26	
Right Cheek	18900/1880	20M QPSK(50,24)	0.454	0.250	0.24	21.51	22.00	0.508	2023/4/26	
Right Tilt 15 Degree	18900/1880	20M QPSK(50,24)	0.264	0.150	2.81	21.51	22.00	0.296	2023/4/26	
100%RB										
Left Cheek	18900/1880	20M QPSK(100,0)	0.590	0.311	2.53	21.58	22.00	0.650	2023/4/26	

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
1RB										
Front Side	18900/1880	20M QPSK(1,49)	0.306	0.173	3.75	22.47	23.00	0.346	2023/4/26	
Back Side	18900/1880	20M QPSK(1,49)	0.468	0.276	-0.43	22.47	23.00	0.529	2023/4/26	18#
50%RB										
Front Side	18900/1880	20M QPSK(50,24)	0.155	0.093	-2.48	21.51	22.00	0.174	2023/4/26	
Back Side	18900/1880	20M QPSK(50,24)	0.246	0.154	0.72	21.51	22.00	0.275	2023/4/26	

NOTE: Body-Worn SAR test results of LTE Band 2

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	18900/1880	20M QPSK(1,49)	0.306	0.173	3.75	22.47	23.00	0.346	2023/4/26	
Back Side	18900/1880	20M QPSK(1,49)	0.468	0.276	-0.43	22.47	23.00	0.529	2023/4/26	18#
Left Side	18900/1880	20M QPSK(1,49)	0.142	0.078	0.23	22.47	23.00	0.160	2023/4/26	
Right Side	18900/1880	20M QPSK(1,49)	0.153	0.089	2.78	22.47	23.00	0.173	2023/4/26	
Bottom Side	18900/1880	20M QPSK(1,49)	0.153	0.087	-3.29	22.47	23.00	0.173	2023/4/26	
50%RB										
Front Side	18900/1880	20M QPSK(50,24)	0.155	0.093	-2.48	21.51	22.00	0.174	2023/4/26	
Back Side	18900/1880	20M QPSK(50,24)	0.246	0.154	0.72	21.51	22.00	0.275	2023/4/26	
Left Side	18900/1880	20M QPSK(50,24)	0.074	0.045	1.20	21.51	22.00	0.083	2023/4/26	

Right Side	18900/1880	20M QPSK(50,24)	0.079	0.050	-4.64	21.51	22.00	0.088	2023/4/26	
Bottom Side	18900/1880	20M QPSK(50,24)	0.082	0.048	-3.41	21.51	22.00	0.092	2023/4/26	

NOTE: Hotspot SAR test results of LTE Band 2

10.1.7. SAR measurement Result of LTE Band 4

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Left Cheek	20175/1732.5	20M QPSK(1,49)	0.778	0.478	-1.28	21.44	21.50	0.789	2023/4/24	19#
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.447	0.272	-1.30	21.44	21.50	0.453	2023/4/24	
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.667	0.398	-0.84	21.44	21.50	0.676	2023/4/24	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.336	0.204	1.13	21.44	21.50	0.341	2023/4/24	
50%RB										
Left Cheek	20175/1732.5	20M QPSK(50,49)	0.689	0.432	3.99	20.51	21.00	0.771	2023/4/24	
Left Tilt 15 Degree	20175/1732.5	20M QPSK(50,49)	0.390	0.236	0.15	20.51	21.00	0.437	2023/4/24	
Right Cheek	20175/1732.5	20M QPSK(50,49)	0.573	0.345	4.33	20.51	21.00	0.641	2023/4/24	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(50,49)	0.319	0.183	4.60	20.51	21.00	0.357	2023/4/24	

NOTE: Head SAR test results of LTE Band 4

Test Position of	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g	Date	Plot
			1g	10g						

Body-Worn with 10mm								(W/Kg)		
1RB										
Front Side	20175/1732.5	20M QPSK(1,49)	0.216	0.130	1.67	21.44	21.50	0.219	2023/4/24	
Back Side	20175/1732.5	20M QPSK(1,49)	0.341	0.212	-1.04	21.44	21.50	0.346	2023/4/24	20#
50%RB										
Front Side	20175/1732.5	20M QPSK(50,49)	0.111	0.069	2.11	20.51	21.00	0.124	2023/4/24	
Back Side	20175/1732.5	20M QPSK(50,49)	0.202	0.117	1.42	20.51	21.00	0.226	2023/4/24	

NOTE: Body-Worn SAR test results of LTE Band 4

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	20175/1732.5	20M QPSK(1,49)	0.216	0.130	1.67	21.44	21.50	0.219	2023/4/24	
Back Side	20175/1732.5	20M QPSK(1,49)	0.341	0.212	-1.04	21.44	21.50	0.346	2023/4/24	20#
Left Side	20175/1732.5	20M QPSK(1,49)	0.108	0.062	2.01	21.44	21.50	0.110	2023/4/24	
Right Side	20175/1732.5	20M QPSK(1,49)	0.111	0.068	-2.52	21.44	21.50	0.113	2023/4/24	
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.114	0.069	3.44	21.44	21.50	0.116	2023/4/24	
50%RB										
Front Side	20175/1732.5	20M QPSK(50,49)	0.111	0.069	2.11	20.51	21.00	0.124	2023/4/24	
Back Side	20175/1732.5	20M QPSK(50,49)	0.202	0.117	1.42	20.51	21.00	0.226	2023/4/24	
Left Side	20175/1732.5	20M QPSK(50,49)	0.060	0.027	1.02	20.51	21.00	0.067	2023/4/24	

Right Side	20175/1732.5	20M QPSK(50,49)	0.065	0.036	-2.70	20.51	21.00	0.073	2023/4/24	
Bottom Side	20175/1732.5	20M QPSK(50,49)	0.061	0.038	-2.74	20.51	21.00	0.068	2023/4/24	

NOTE: Hotspot SAR test results of LTE Band 4

10.1.8. SAR measurement Result of LTE Band 5

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Left Cheek	20525/836.5	10M QPSK(1,24)	0.365	0.268	0.71	22.39	22.50	0.374	2023/4/22	21#
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.188	0.133	1.41	22.39	22.50	0.193	2023/4/22	
Right Cheek	20525/836.5	10M QPSK(1,24)	0.317	0.233	3.55	22.39	22.50	0.325	2023/4/22	
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.148	0.105	0.49	22.39	22.50	0.152	2023/4/22	
50%RB										
Left Cheek	20525/836.5	10M QPSK(25,0)	0.207	0.143	-3.42	21.39	21.50	0.212	2023/4/22	
Left Tilt 15 Degree	20525/836.5	10M QPSK(25,0)	0.105	0.072	-4.77	21.39	21.50	0.108	2023/4/22	
Right Cheek	20525/836.5	10M QPSK(25,0)	0.159	0.121	-1.12	21.39	21.50	0.163	2023/4/22	
Right Tilt 15 Degree	20525/836.5	10M QPSK(25,0)	0.078	0.059	1.52	21.39	21.50	0.080	2023/4/22	

NOTE: Head SAR test results of LTE Band 5

[illegible]

Body-Worn with 10mm								(W/Kg)		
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.174	0.125	2.72	22.39	22.50	0.178	2023/4/22	
Back Side	20525/836.5	10M QPSK(1,24)	0.241	0.180	0.05	22.39	22.50	0.247	2023/4/22	22#
50%RB										
Front Side	20525/836.5	10M QPSK(25,0)	0.087	0.072	3.59	21.39	21.50	0.089	2023/4/22	
Back Side	20525/836.5	10M QPSK(25,0)	0.132	0.090	-0.43	21.39	21.50	0.135	2023/4/22	

NOTE: Body-Worn SAR test results of LTE Band 5

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.174	0.125	2.72	22.39	22.50	0.178	2023/4/22	
Back Side	20525/836.5	10M QPSK(1,24)	0.241	0.180	0.05	22.39	22.50	0.247	2023/4/22	22#
Left Side	20525/836.5	10M QPSK(1,24)	0.075	0.056	3.54	22.39	22.50	0.077	2023/4/22	
Right Side	20525/836.5	10M QPSK(1,24)	0.075	0.055	-1.79	22.39	22.50	0.077	2023/4/22	
Bottom Side	20525/836.5	10M QPSK(1,24)	0.130	0.097	-3.93	22.39	22.50	0.133	2023/4/22	
50%RB										
Front Side	20525/836.5	10M QPSK(25,0)	0.087	0.072	3.59	21.39	21.50	0.089	2023/4/22	
Back Side	20525/836.5	10M QPSK(25,0)	0.132	0.090	-0.43	21.39	21.50	0.135	2023/4/22	
Left Side	20525/836.5	10M QPSK(25,0)	0.039	0.032	-0.82	21.39	21.50	0.040	2023/4/22	

Right Side	20525/836.5	10M QPSK(25,0)	0.043	0.029	-3.68	21.39	21.50	0.044	2023/4/22	
Bottom Side	20525/836.5	10M QPSK(25,0)	0.069	0.057	2.46	21.39	21.50	0.071	2023/4/22	

NOTE: Hotspot SAR test results of LTE Band 5

10.1.9. SAR measurement Result of LTE Band 12

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Left Cheek	23095/707.5	10M QPSK(1,24)	0.447	0.348	0.68	22.44	23.00	0.509	2023/4/20	23#
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.255	0.193	-3.26	22.44	23.00	0.290	2023/4/20	
Right Cheek	23095/707.5	10M QPSK(1,24)	0.416	0.321	0.48	22.44	23.00	0.473	2023/4/20	
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.209	0.156	1.11	22.44	23.00	0.238	2023/4/20	
50%RB										
Left Cheek	23095/707.5	10M QPSK(25,12)	0.238	0.201	-4.03	21.46	21.50	0.240	2023/4/20	
Left Tilt 15 Degree	23095/707.5	10M QPSK(25,12)	0.146	0.109	4.46	21.46	21.50	0.147	2023/4/20	
Right Cheek	23095/707.5	10M QPSK(25,12)	0.224	0.164	2.29	21.46	21.50	0.226	2023/4/20	
Right Tilt 15 Degree	23095/707.5	10M QPSK(25,12)	0.108	0.081	-3.47	21.46	21.50	0.109	2023/4/20	

NOTE: Head SAR test results of LTE Band 12

Test Position of Body-Worn	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted	Tune-up	Scaled	Date	Plot
			1-g	10-g		Power (dBm)	Power (dBm)	SAR 1-g		

with 10mm								(W/Kg)		
1RB										
Front Side	23095/707.5	10M QPSK(1,24)	0.324	0.240	-1.26	22.44	23.00	0.369	2023/4/20	
Back Side	23095/707.5	10M QPSK(1,24)	0.505	0.394	0.21	22.44	23.00	0.575	2023/4/20	24#
50%RB										
Front Side	23095/707.5	10M QPSK(25,12)	0.184	0.131	0.69	21.46	21.50	0.186	2023/4/20	
Back Side	23095/707.5	10M QPSK(25,12)	0.281	0.222	0.63	21.46	21.50	0.284	2023/4/20	

NOTE: Body-Worn SAR test results of LTE Band 12

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	23095/707.5	10M QPSK(1,24)	0.324	0.240	-1.26	22.44	23.00	0.369	2023/4/20	
Back Side	23095/707.5	10M QPSK(1,24)	0.505	0.394	0.21	22.44	23.00	0.575	2023/4/20	24#
Left Side	23095/707.5	10M QPSK(1,24)	0.162	0.120	2.97	22.44	23.00	0.184	2023/4/20	
Right Side	23095/707.5	10M QPSK(1,24)	0.162	0.125	-1.17	22.44	23.00	0.184	2023/4/20	
Bottom Side	23095/707.5	10M QPSK(1,24)	0.265	0.201	-3.72	22.44	23.00	0.301	2023/4/20	
50%RB										
Front Side	23095/707.5	10M QPSK(25,12)	0.184	0.131	0.69	21.46	21.50	0.186	2023/4/20	
Back Side	23095/707.5	10M QPSK(25,12)	0.281	0.222	0.63	21.46	21.50	0.284	2023/4/20	
Left Side	23095/707.5	10M QPSK(25,12)	0.093	0.062	1.56	21.46	21.50	0.094	2023/4/20	
Right Side	23095/707.5	10M QPSK(25,12)	0.090	0.073	2.94	21.46	21.50	0.091	2023/4/20	
Bottom Side	23095/707.5	10M QPSK(25,12)	0.146	0.109	-4.94	21.46	21.50	0.147	2023/4/20	

NOTE: Hotspot SAR test results of LTE Band 12

10.1.10. SAR measurement Result of LTE Band 17

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Left Cheek	23790/710	10M QPSK(1,0)	0.463	0.359	0.92	22.42	22.50	0.472	2023/4/20	25#
Left Tilt 15 Degree	23790/710	10M QPSK(1,0)	0.271	0.208	3.29	22.42	22.50	0.276	2023/4/20	
Right Cheek	23790/710	10M QPSK(1,0)	0.427	0.328	1.07	22.42	22.50	0.435	2023/4/20	
Right Tilt 15 Degree	23790/710	10M QPSK(1,0)	0.215	0.162	-0.83	22.42	22.50	0.219	2023/4/20	
50%RB										
Left Cheek	23790/710	10M QPSK(25,0)	0.276	0.180	-1.47	21.46	21.50	0.279	2023/4/20	
Left Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.157	0.122	2.24	21.46	21.50	0.158	2023/4/20	
Right Cheek	23790/710	10M QPSK(25,0)	0.225	0.180	0.11	21.46	21.50	0.227	2023/4/20	
Right Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.116	0.081	-1.17	21.46	21.50	0.117	2023/4/20	

NOTE: Head SAR test results of LTE Band 17

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	23790/710	10M QPSK(1,0)	0.324	0.240	0.45	22.42	22.50	0.330	2023/4/20	
Back Side	23790/710	10M QPSK(1,0)	0.515	0.402	-0.18	22.42	22.50	0.525	2023/4/20	26#
50%RB										
Front Side	23790/710	10M QPSK(25,0)	0.191	0.139	1.47	21.46	21.50	0.193	2023/4/20	
Back Side	23790/710	10M QPSK(25,0)	0.263	0.207	1.48	21.46	21.50	0.265	2023/4/20	

NOTE: Body-Worn SAR test results of LTE Band 17

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	23790/710	10M QPSK(1,0)	0.324	0.240	0.45	22.42	22.50	0.330	2023/4/20	
Back Side	23790/710	10M QPSK(1,0)	0.515	0.402	-0.18	22.42	22.50	0.525	2023/4/20	26#
Left Side	23790/710	10M QPSK(1,0)	0.165	0.125	-0.24	22.42	22.50	0.168	2023/4/20	
Right Side	23790/710	10M QPSK(1,0)	0.159	0.118	0.08	22.42	22.50	0.162	2023/4/20	
Bottom Side	23790/710	10M QPSK(1,0)	0.270	0.207	0.99	22.42	22.50	0.275	2023/4/20	
50%RB										
Front Side	23790/710	10M QPSK(25,0)	0.191	0.139	1.47	21.46	21.50	0.193	2023/4/20	
Back Side	23790/710	10M QPSK(25,0)	0.263	0.207	1.48	21.46	21.50	0.265	2023/4/20	
Left Side	23790/710	10M QPSK(25,0)	0.095	0.074	-2.67	21.46	21.50	0.096	2023/4/20	
Right Side	23790/710	10M QPSK(25,0)	0.094	0.070	1.51	21.46	21.50	0.095	2023/4/20	
Bottom Side	23790/710	10M QPSK(25,0)	0.139	0.123	4.23	21.46	21.50	0.140	2023/4/20	

NOTE: Hotspot SAR test results of LTE Band 17

10.1.11. SAR measurement Result of WLAN2.4G

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left	11/2462	802.11b	0.228	0.132	-1.07	15.79	16.00	0.239	2023/4/28	15#

Cheek										
Left Tilt 15 Degree	11/2462	802.11b	0.118	0.067	-0.11	15.79	16.00	0.124	2023/4/28	
Right Cheek	11/2462	802.11b	0.210	0.122	0.05	15.79	16.00	0.220	2023/4/28	
Right Tilt 15 Degree	11/2462	802.11b	0.115	0.063	0.84	15.79	16.00	0.121	2023/4/28	

NOTE: Head SAR test results of WLAN2.4G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	11/2462	802.11b	0.090	0.043	-3.60	15.79	16.00	0.094	2023/4/28	
Back Side	11/2462	802.11b	0.138	0.070	-2.34	15.79	16.00	0.145	2023/4/28	16#

NOTE: Body-worn SAR test results of WLAN2.4G

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	11/2462	802.11b	0.090	0.043	-3.60	15.79	16.00	0.094	2023/4/28	
Back Side	11/2462	802.11b	0.138	0.070	-2.34	15.79	16.00	0.145	2023/4/28	16#
Right Side	11/2462	802.11b	0.051	0.026	2.85	15.79	16.00	0.054	2023/4/28	
Top Side	11/2462	802.11b	0.036	0.018	-1.40	15.79	16.00	0.038	2023/4/28	

NOTE: Hotspot SAR test results of WLAN2.4G

10.1.12. SAR measurement Result of WLAN5.2G

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left	36/5180	802.11n	0.075	0.026	-0.84	10.63	11.00	0.082	2023/4/30	11#

Cheek		HT20								
Left Tilt 15 Degree	36/5180	802.11n HT20	0.039	0.013	-2.68	10.63	11.00	0.042	2023/4/30	
Right Cheek	36/5180	802.11n HT20	0.064	0.022	0.59	10.63	11.00	0.070	2023/4/30	
Right Tilt 15 Degree	36/5180	802.11n HT20	0.034	0.011	1.23	10.63	11.00	0.037	2023/4/30	

NOTE: Head SAR test results of WLAN5.2G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	36/5180	802.11n HT20	0.030	0.011	0.56	10.63	11.00	0.033	2023/4/30	
Back Side	36/5180	802.11n HT20	0.039	0.015	-0.62	10.63	11.00	0.042	2023/4/30	13#

NOTE: Body-worn SAR test results of WLAN5.2G

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	36/5180	802.11n HT20	0.030	0.011	0.56	10.63	11.00	0.033	2023/4/30	
Back Side	36/5180	802.11n HT20	0.039	0.015	-0.62	10.63	11.00	0.042	2023/4/30	13#
Right Side	36/5180	802.11n HT20	0.024	0.009	1.81	10.63	11.00	0.026	2023/4/30	
Top Side	36/5180	802.11n HT20	0.010	0.008	-3.67	10.63	11.00	0.011	2023/4/30	

NOTE: Hotspot SAR test results of WLAN5.2G

10.1.13. SAR measurement Result of WLAN5.3G

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	52/5260	802.11a	0.072	0.023	1.02	10.72	11.00	0.077	2023/4/30	27#
Left Tilt 15 Degree	52/5260	802.11a	0.037	0.012	1.86	10.72	11.00	0.039	2023/4/30	
Right Cheek	52/5260	802.11a	0.066	0.021	0.74	10.72	11.00	0.070	2023/4/30	
Right Tilt 15 Degree	52/5260	802.11a	0.030	0.009	0.42	10.72	11.00	0.032	2023/4/30	

NOTE: Head SAR test results of WLAN5.3G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	52/5260	802.11a	0.025	0.010	0.13	10.72	11.00	0.027	2023/4/30	
Back Side	52/5260	802.11a	0.035	0.012	0.20	10.72	11.00	0.037	2023/4/30	29#

NOTE: Body-worn SAR test results of WLAN5.3G

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	52/5260	802.11a	0.025	0.010	0.13	10.72	11.00	0.027	2023/4/30	
Back Side	52/5260	802.11a	0.035	0.012	0.20	10.72	11.00	0.037	2023/4/30	29#
Right Side	52/5260	802.11a	0.021	0.009	-3.39	10.72	11.00	0.022	2023/4/30	
Top Side	52/5260	802.11a	0.016	0.008	0.58	10.72	11.00	0.017	2023/4/30	

NOTE: Hotspot SAR test results of WLAN5.3G

10.1.14. SAR measurement Result of WLAN5.6G

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	100/5500	802.11n	0.085	0.022	1.02	10.70	11.00	0.091	2023/5/10	28#
Left Tilt 15 Degree	100/5500	802.11n	0.046	0.012	-1.48	10.70	11.00	0.049	2023/5/10	
Right Cheek	100/5500	802.11n	0.075	0.019	-0.06	10.70	11.00	0.080	2023/5/10	
Right Tilt 15 Degree	100/5500	802.11n	0.041	0.010	-0.78	10.70	11.00	0.044	2023/5/10	

NOTE: Head SAR test results of WLAN5.6G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	100/5500	802.11n	0.032	0.012	0.25	10.70	11.00	0.034	2023/5/10	
Back Side	100/5500	802.11n	0.040	0.012	0.36	10.70	11.00	0.043	2023/5/10	30#

NOTE: Body-worn SAR test results of WLAN5.6G

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	100/5500	802.11n	0.032	0.012	0.25	10.70	11.00	0.034	2023/5/10	
Back Side	100/5500	802.11n	0.040	0.012	0.36	10.70	11.00	0.043	2023/5/10	30#
Right Side	100/5500	802.11n	0.023	0.010	0.31	10.70	11.00	0.025	2023/5/10	
Top Side	100/5500	802.11n	0.017	0.008	0.12	10.70	11.00	0.018	2023/5/10	

NOTE: Hotspot SAR test results of WLAN5.6G

10.1.15. SAR measurement Result of WLAN5.8G

Test Position of Head	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Left Cheek	151/5755	802.11ac VHT40	0.087	0.026	-2.15	10.65	11.00	0.094	2023/5/20	12#
Left Tilt 15 Degree	151/5755	802.11ac VHT40	0.045	0.013	-2.42	10.65	11.00	0.049	2023/5/20	
Right Cheek	151/5755	802.11ac VHT40	0.082	0.025	3.92	10.65	11.00	0.089	2023/5/20	
Right Tilt 15 Degree	151/5755	802.11ac VHT40	0.041	0.012	1.98	10.65	11.00	0.044	2023/5/20	

NOTE: Head SAR test results of WLAN5.8G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	151/5755	802.11ac VHT40	0.036	0.012	0.11	10.65	11.00	0.039	2023/5/20	
Back Side	151/5755	802.11ac VHT40	0.044	0.015	-1.12	10.65	11.00	0.048	2023/5/20	14#

NOTE: Body-worn SAR test results of WLAN5.8G

Test Position of Hotspot with 10mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	151/5755	802.11ac VHT40	0.036	0.012	0.11	10.65	11.00	0.039	2023/5/20	
Back Side	151/5755	802.11ac VHT40	0.044	0.015	-1.12	10.65	11.00	0.048	2023/5/20	14#

Right Side	151/5755	802.11ac VHT40	0.018	0.016	0.78	10.65	11.00	0.020	2023/5/20	
Top Side	151/5755	802.11ac VHT40	0.015	0.013	0.60	10.65	11.00	0.016	2023/5/20	

NOTE: Hotspot SAR test results of WLAN5.8G

10.2. Simultaneous Transmission Analysis

Per KDB 447498 D01, simultaneous transmission SAR is compliant if,

- Scalar SAR summation $< 1.6\text{W/kg}$.
- $\text{SPLSR} = (\text{SAR}_1 + \text{SAR}_2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2]$, where (x_1, y_1, z_1) and (x_2, y_2, z_2) are the coordinates of the extrapolated peak SAR locations in the zoom scan. If $\text{SPLSR} \leq 0.04$, simultaneously transmission SAR measurement is not necessary.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DTS			
Head	Left Cheek	1.149	0.239	1.388	N/A	N/A
	Left Tilt 15 Degree	0.635	0.124	0.759	N/A	N/A
	Right Cheek	0.964	0.220	1.184	N/A	N/A
	Right Tilt 15 Degree	0.514	0.121	0.635	N/A	N/A
Body-Worn	Front Side	0.369	0.094	0.463	N/A	N/A
	Back Side	0.575	0.145	0.720	N/A	N/A
Hotspot	Front Side	0.369	0.094	0.463	N/A	N/A
	Back Side	0.575	0.145	0.720	N/A	N/A
	Left Side	0.184	N/A	0.184	N/A	N/A
	Right Side	0.184	0.054	0.238	N/A	N/A
	Top Side	N/A	0.038	0.038	N/A	N/A
	Bottom Side	0.301	N/A	0.301	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	NII			
Head	Left Cheek	1.149	0.094	1.243	N/A	N/A
	Left Tilt 15 Degree	0.635	0.049	0.684	N/A	N/A

	Right Cheek	0.964	0.089	1.053	N/A	N/A
	Right Tilt 15 Degree	0.514	0.044	0.558	N/A	N/A
Body-Worn	Front Side	0.369	0.039	0.408	N/A	N/A
	Back Side	0.575	0.048	0.623	N/A	N/A
Hotspot	Front Side	0.369	0.039	0.408	N/A	N/A
	Back Side	0.575	0.048	0.623	N/A	N/A
	Left Side	0.184	N/A	0.184	N/A	N/A
	Right Side	0.184	0.026	0.210	N/A	N/A
	Top Side	N/A	0.018	0.018	N/A	N/A
	Bottom Side	0.301	N/A	0.301	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DSS			
Head	Left Cheek	1.149	0.132	1.281	N/A	N/A
	Left Tilt 15 Degree	0.635	0.132	0.767	N/A	N/A
	Right Cheek	0.964	0.132	1.096	N/A	N/A
	Right Tilt 15 Degree	0.514	0.132	0.646	N/A	N/A
Body-Worn	Front Side	0.369	0.066	0.435	N/A	N/A
	Back Side	0.575	0.066	0.641	N/A	N/A
Hotspot	Front Side	0.369	0.066	0.435	N/A	N/A
	Back Side	0.575	0.066	0.641	N/A	N/A
	Left Side	0.184	N/A	0.184	N/A	N/A
	Right Side	0.184	0.066	0.250	N/A	N/A
	Top Side	N/A	0.066	0.066	N/A	N/A
	Bottom Side	0.301	N/A	0.301	N/A	N/A

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

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MEASUREMENT 1

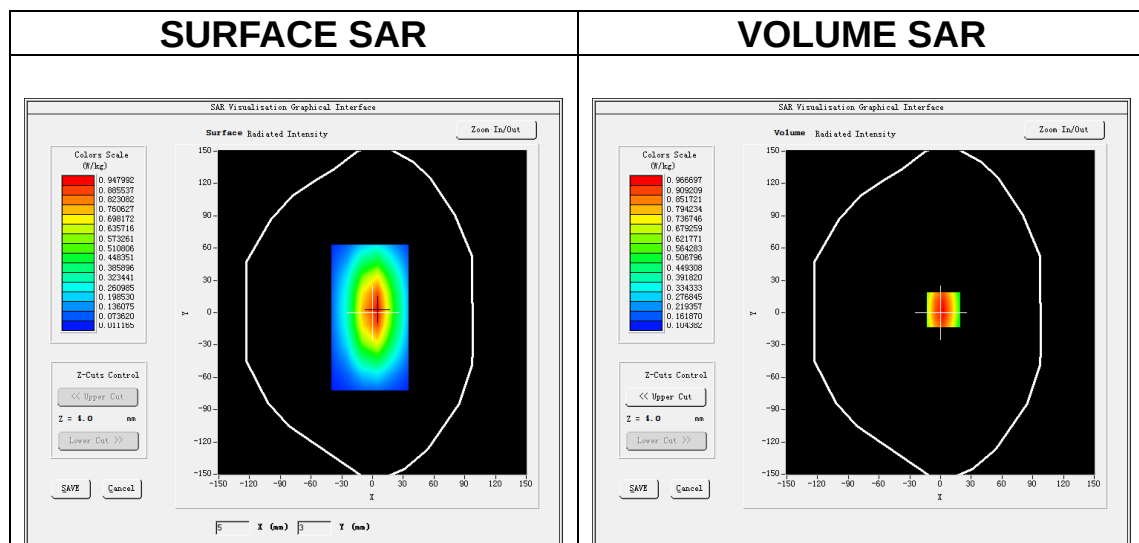
Date of measurement: 20/4/2023

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.49</u>

B. SAR Measurement Results

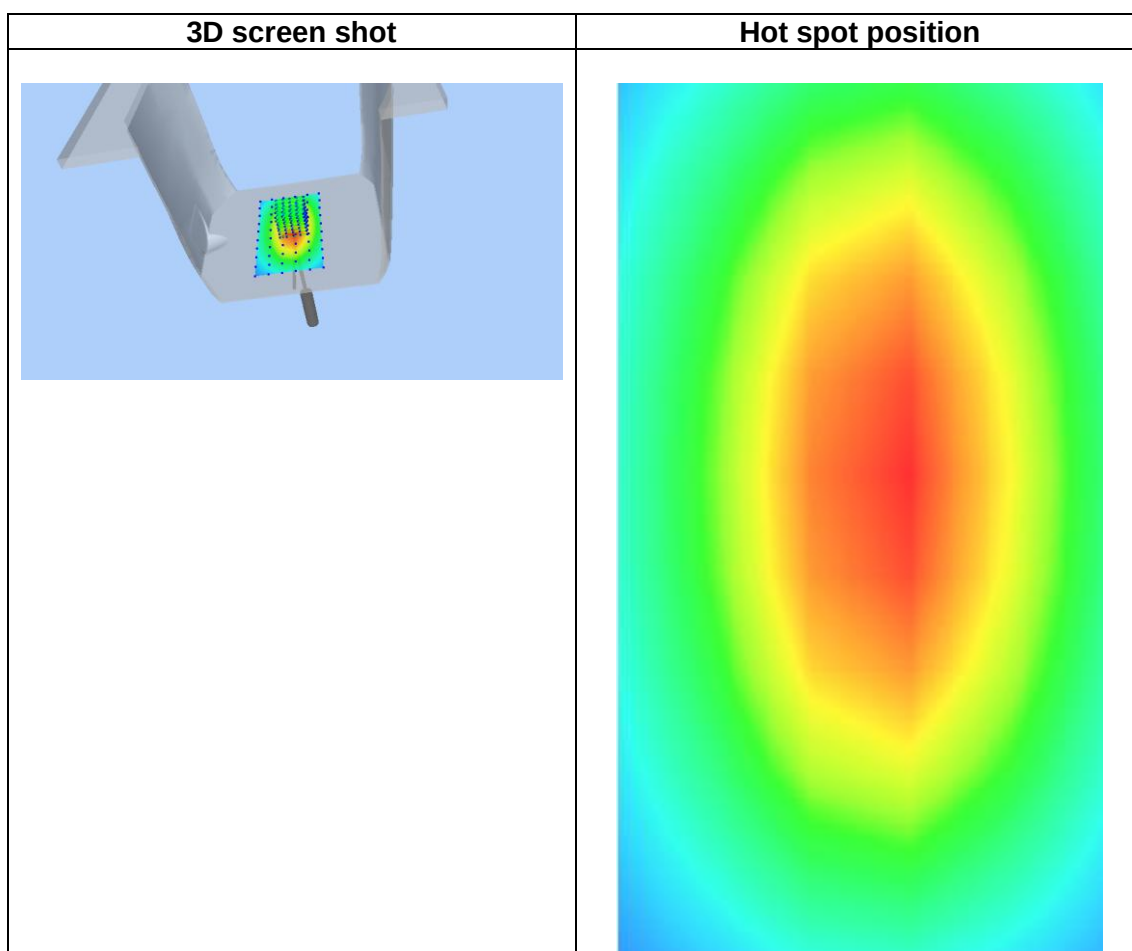
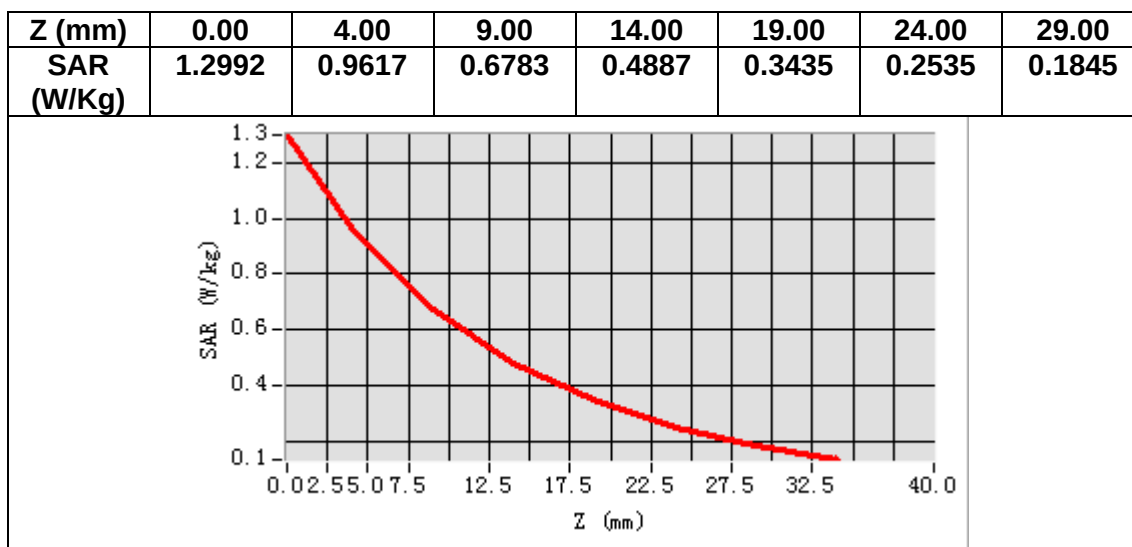
Frequency (MHz)	750.000000
Relative permittivity (real part)	40.705340
Relative permittivity (imaginary part)	21.406276
Conductivity (S/m)	0.891928
Variation (%)	2.730000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.537332
SAR 1g (W/Kg)	0.886321



MEASUREMENT 2

Date of measurement: 22/4/2023

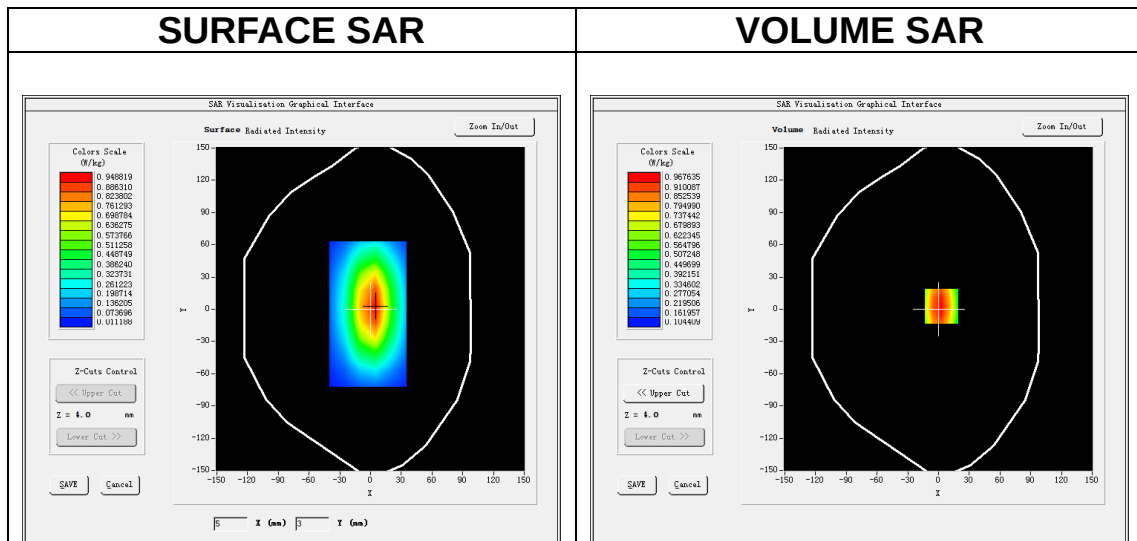
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.50</u>

B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.441097
Relative permittivity (imaginary part)	19.819841
Conductivity (S/m)	0.919420
Variation (%)	-2.720000

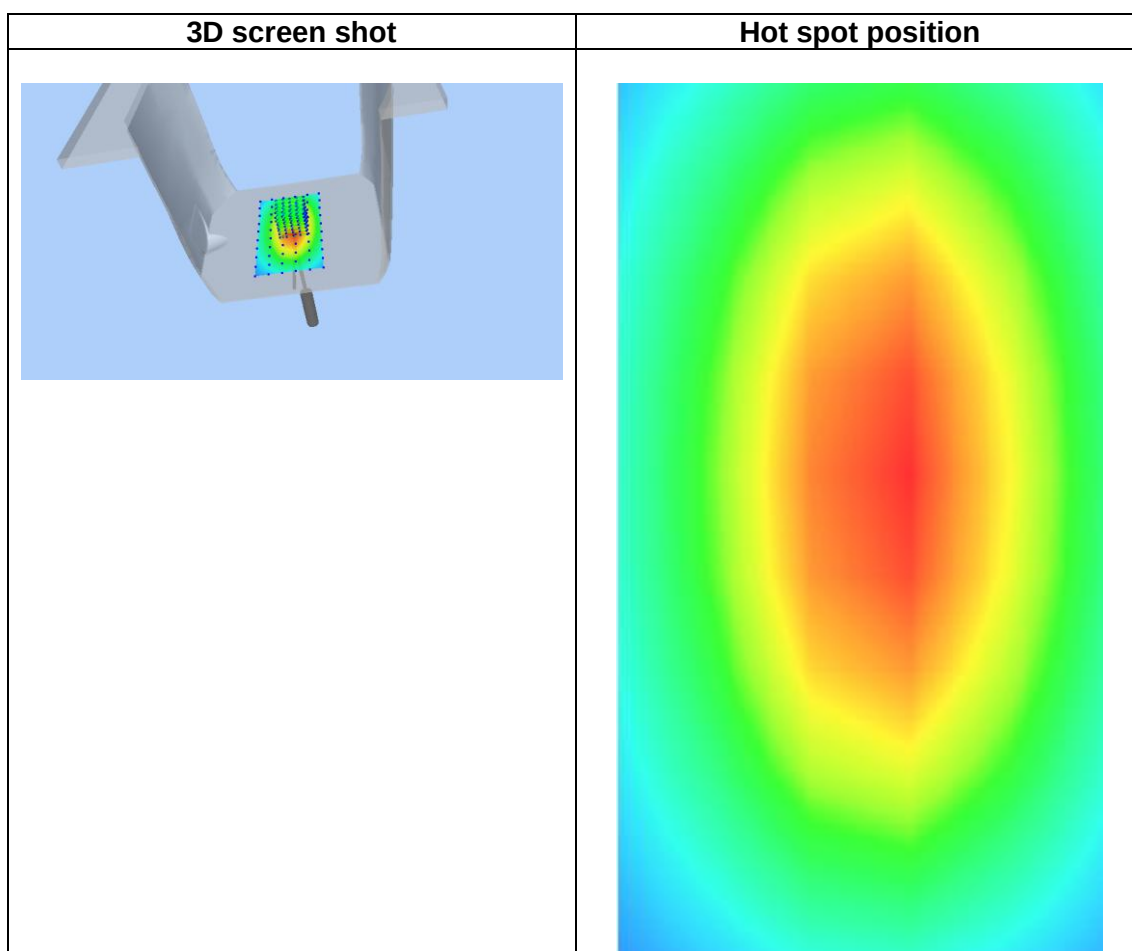
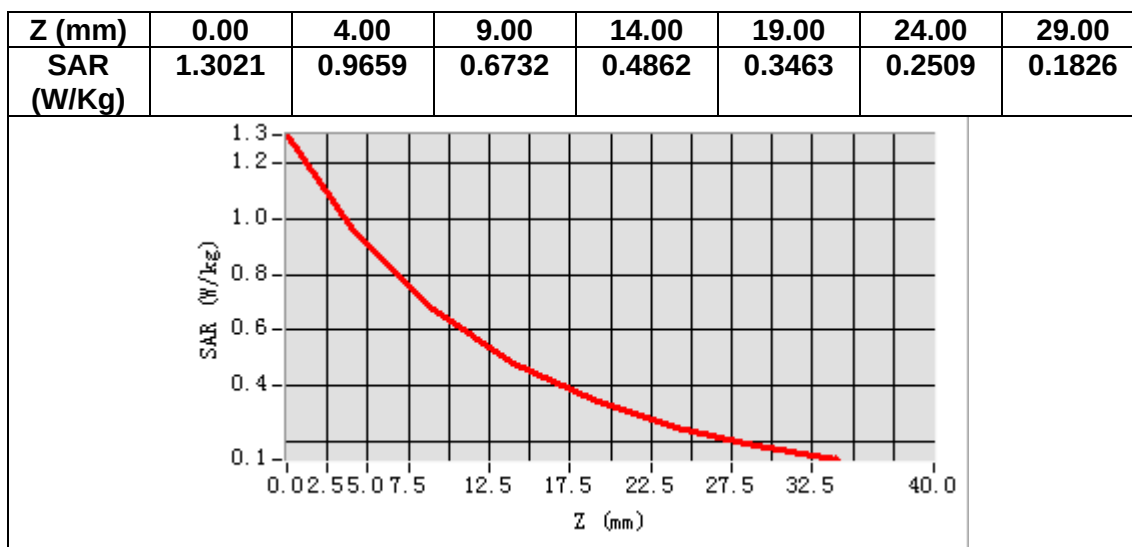
SURFACE SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.670333
SAR 1g (W/Kg)	1.050172



MEASUREMENT 3

Date of measurement: 24/4/2023

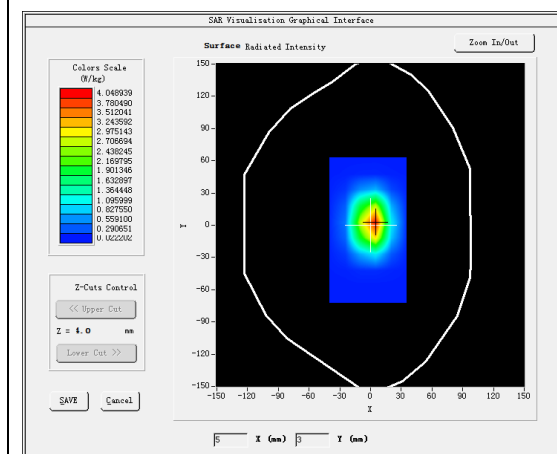
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.73</u>

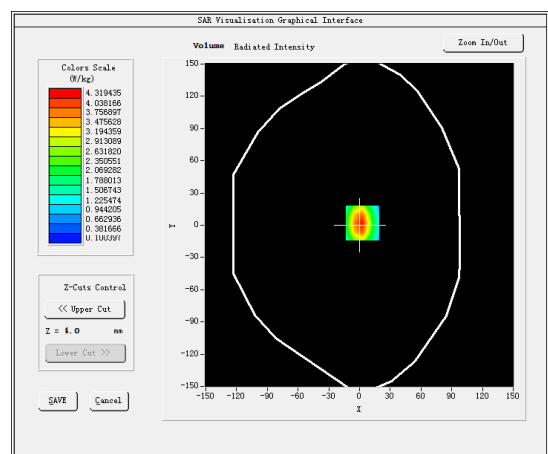
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.962126
Relative permittivity (imaginary part)	13.799279
Conductivity (S/m)	1.379928
Variation (%)	2.980000

SURFACE SAR



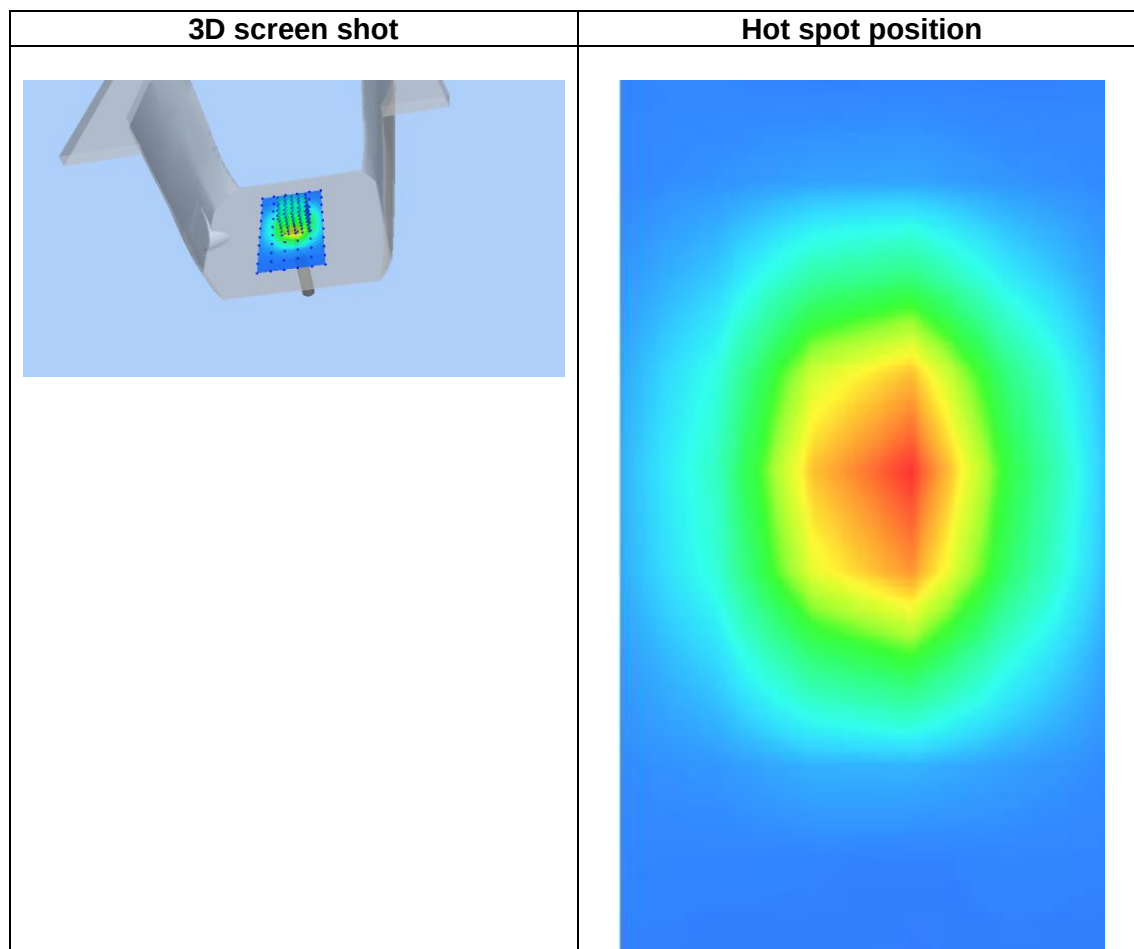
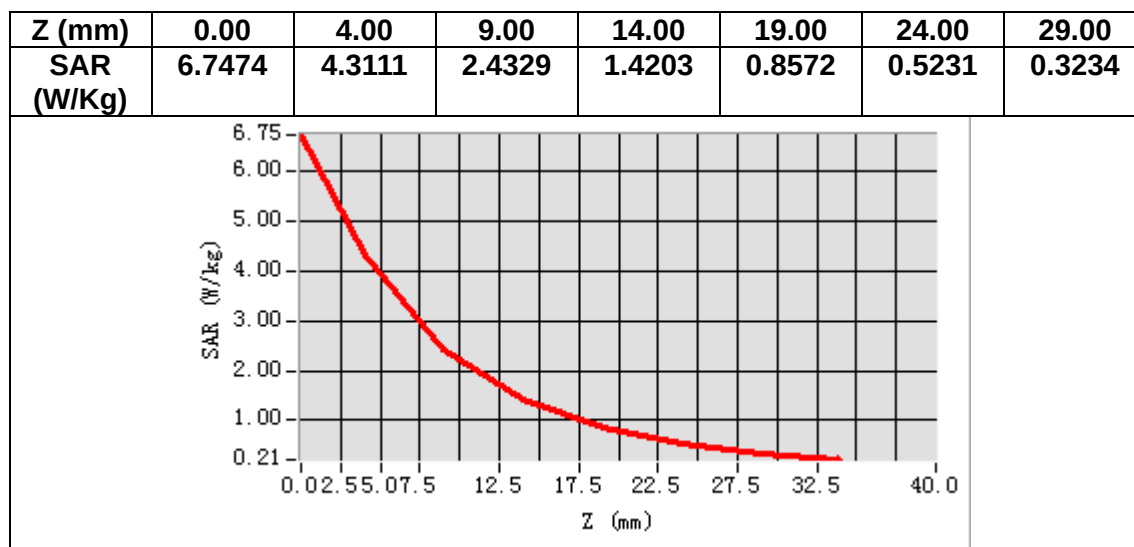
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	1.843307
SAR 1g (W/Kg)	4.008066



MEASUREMENT 4

Date of measurement: 26/4/2023

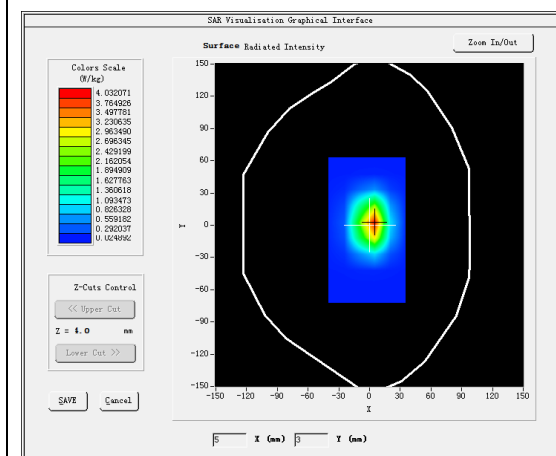
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.91</u>

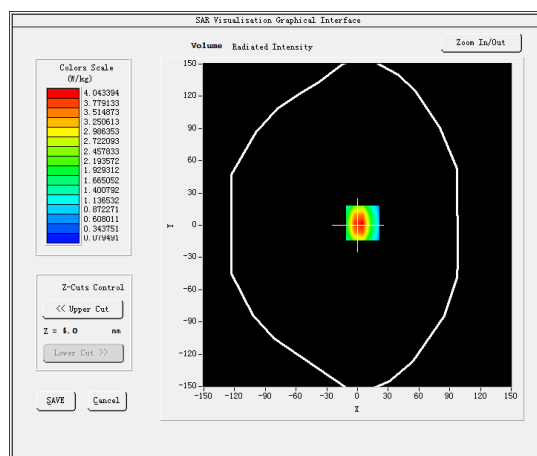
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.845711
Relative permittivity (imaginary part)	13.547294
Conductivity (S/m)	1.429992
Variation (%)	2.220000

SURFACE SAR



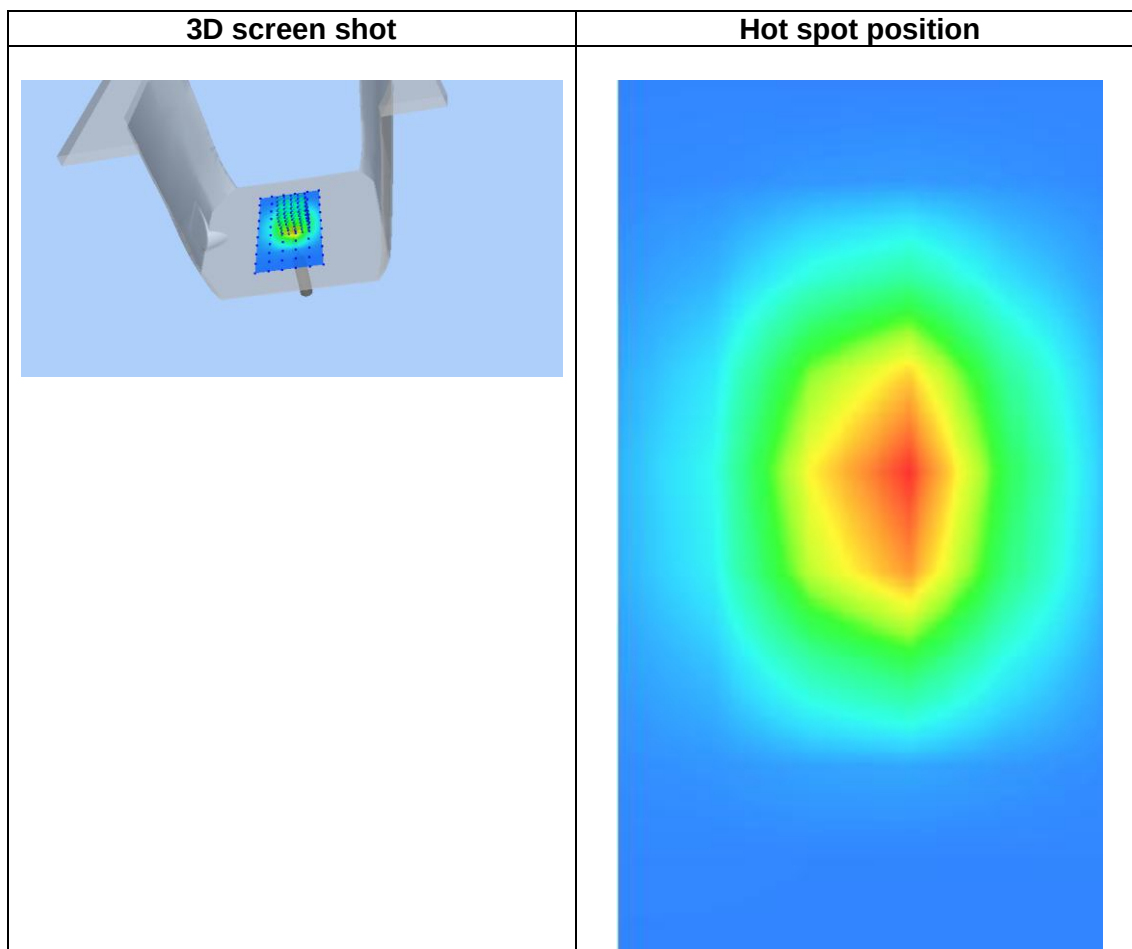
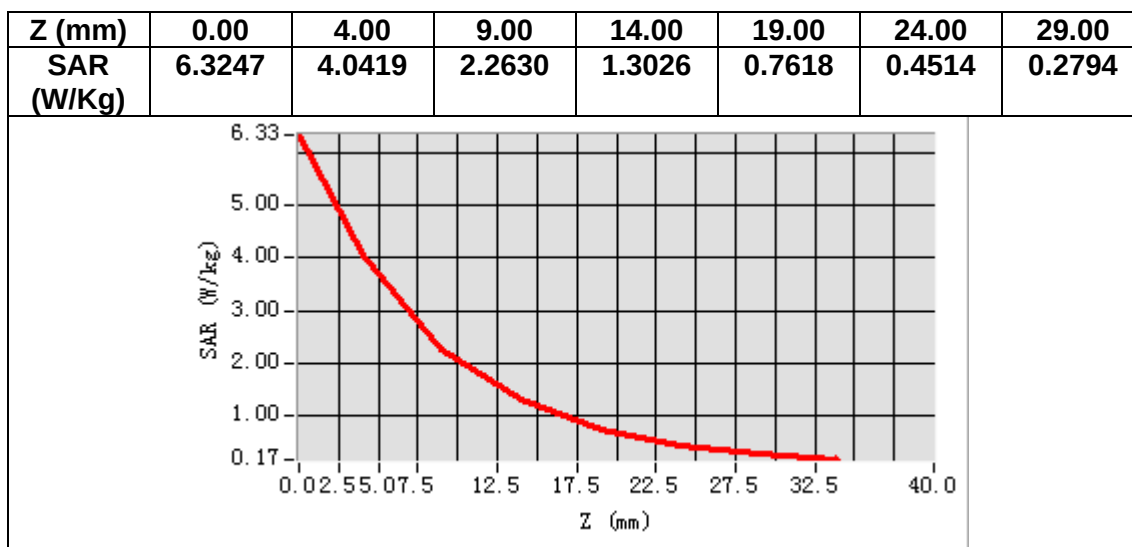
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	2.032347
SAR 1g (W/Kg)	4.079221



MEASUREMENT 5

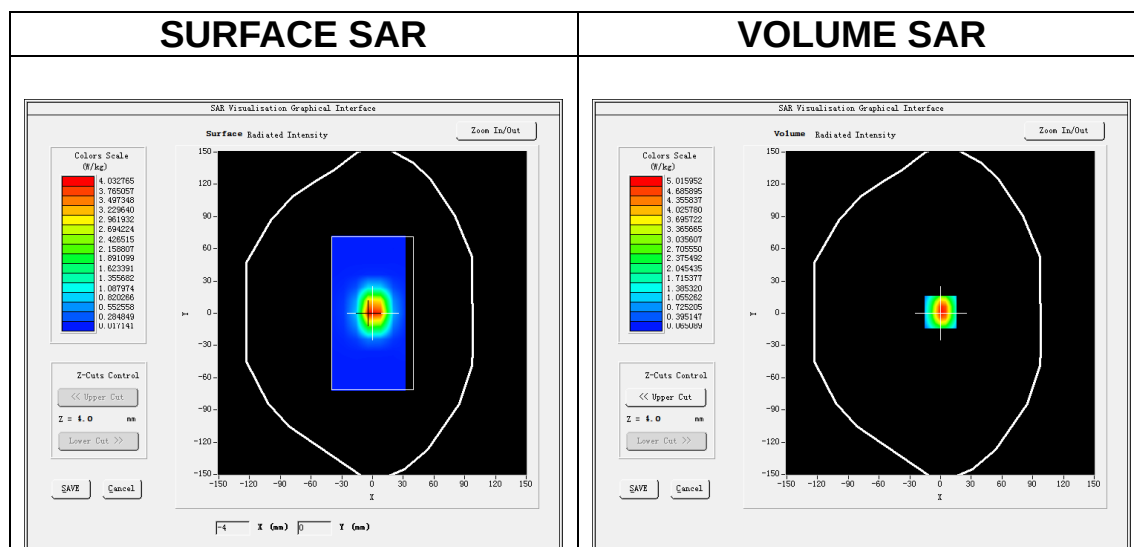
Date of measurement: 28/4/2023

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

B. SAR Measurement Results

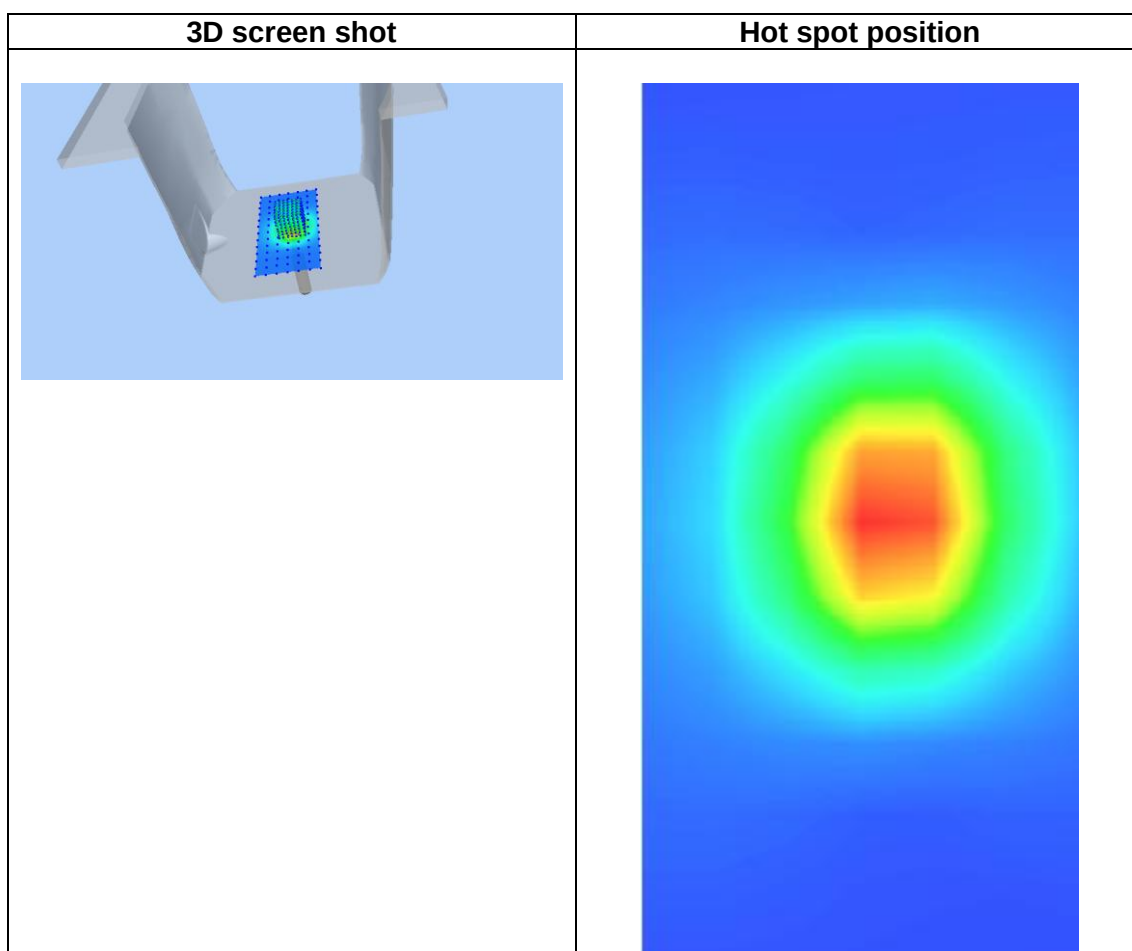
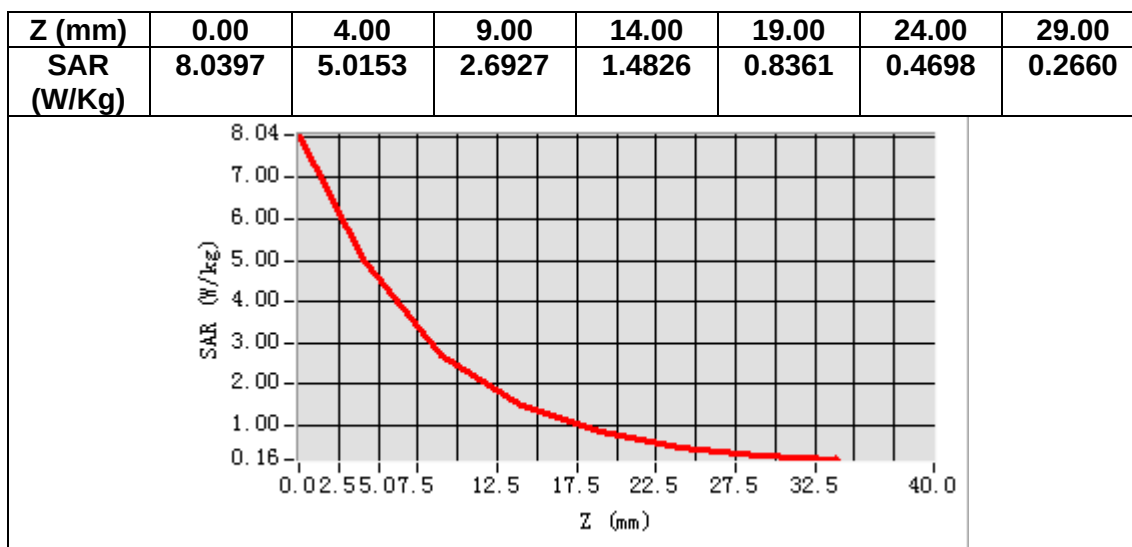
Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.188018
Relative permittivity (imaginary part)	12.965869
Conductivity (S/m)	1.764799
Variation (%)	1.290000



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.505106
SAR 1g (W/Kg)	5.422340



MEASUREMENT 6

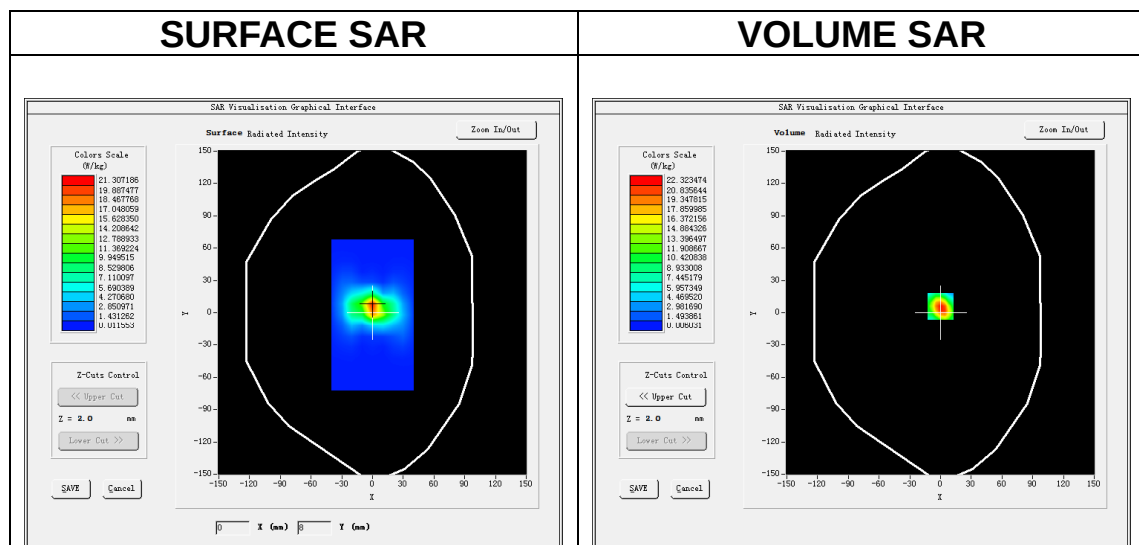
Date of measurement: 30/4/2023

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5200</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.80</u>

B. SAR Measurement Results

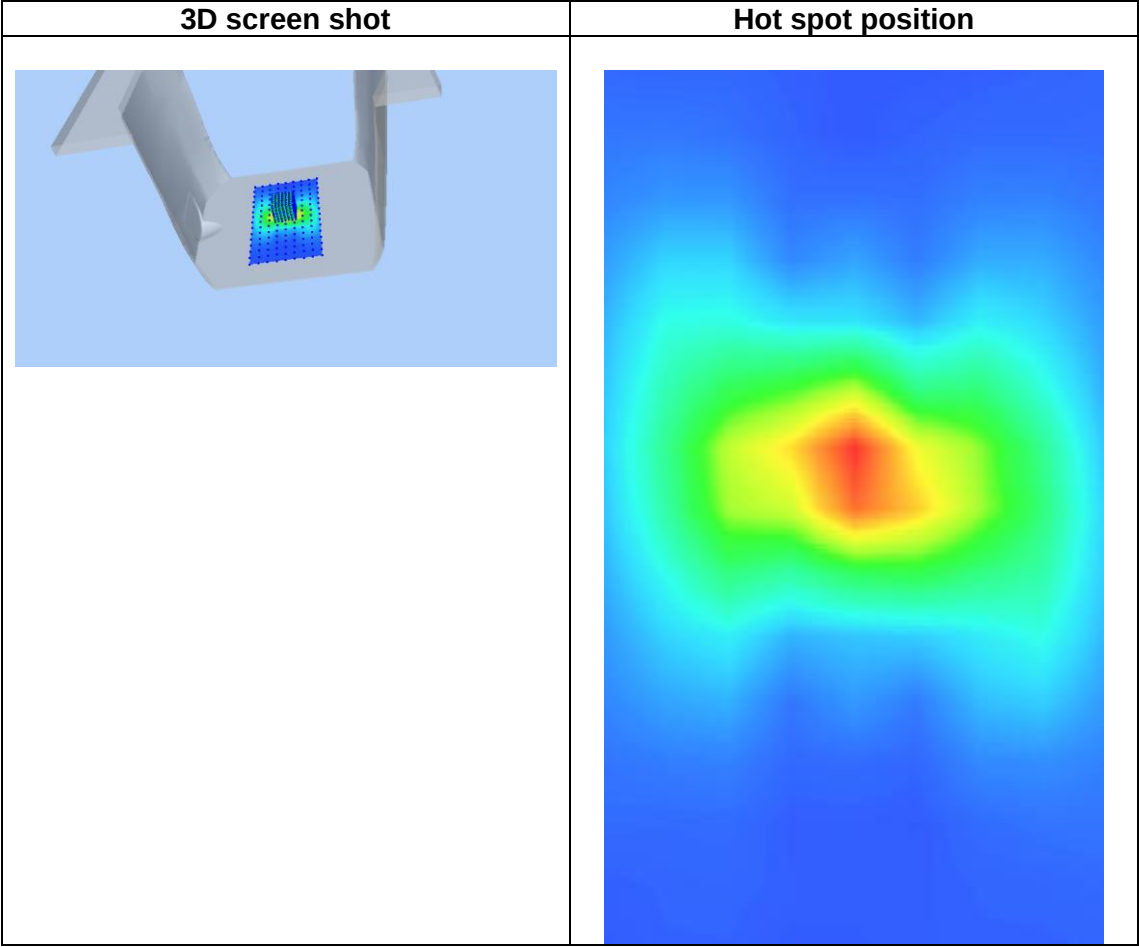
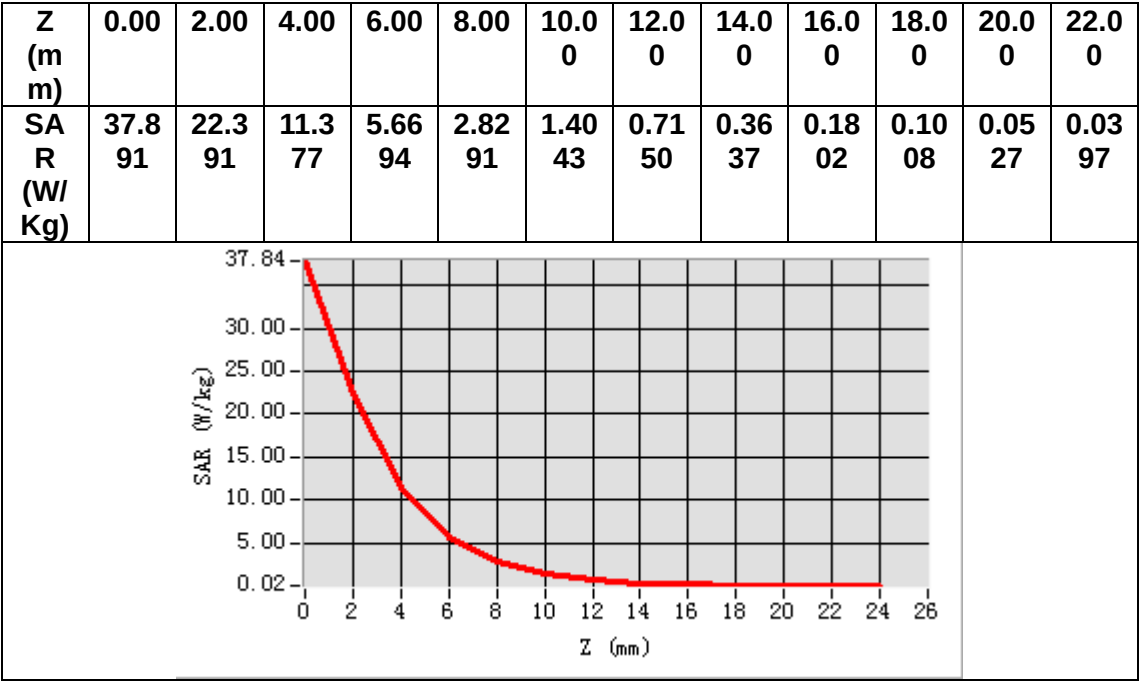
Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.129725
Relative permittivity (imaginary part)	16.514098
Conductivity (S/m)	4.770739
Variation (%)	2.800000



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.472162
SAR 1g (W/Kg)	17.394032



MEASUREMENT 7

Date of measurement: 10/5/2023

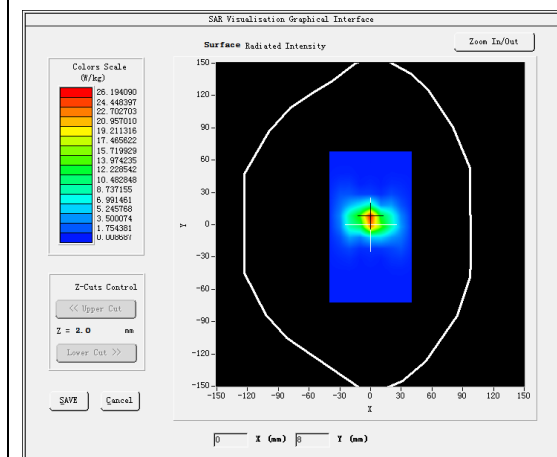
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5400</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.05</u>

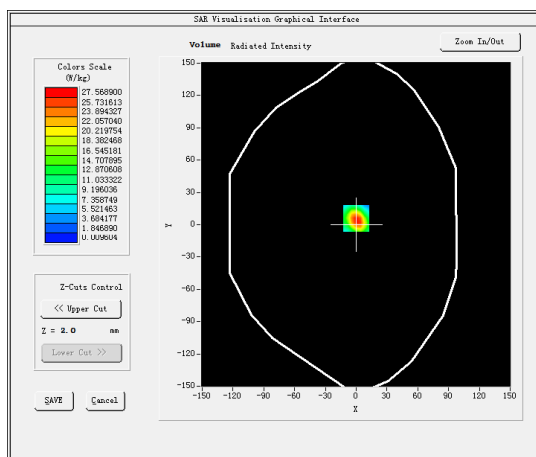
B. SAR Measurement Results

Frequency (MHz)	5400.000000
Relative permittivity (real part)	36.227219
Relative permittivity (imaginary part)	15.934159
Conductivity (S/m)	4.780247
Variation (%)	-1.550000

SURFACE SAR



VOLUME SAR

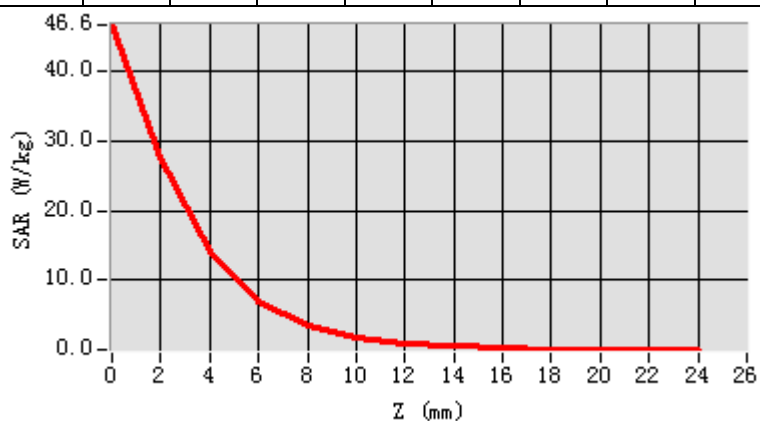


Maximum location: X=0.00, Y=6.00

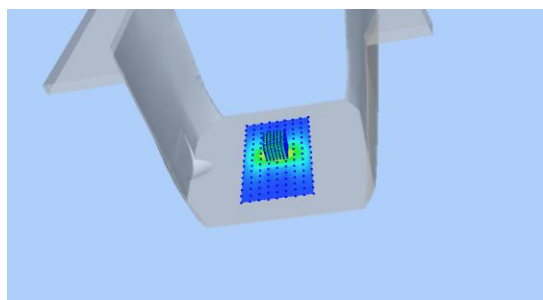
SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	6.070324
SAR 1g (W/Kg)	16.330202

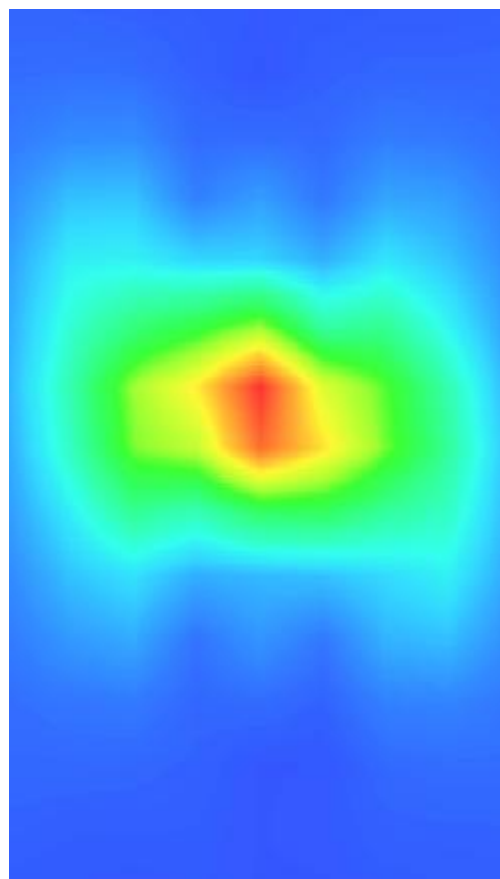
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	46.6 123	27.5 690	14.0 601	7.05 80	3.59 42	1.78 62	0.89 83	0.46 05	0.24 35	0.13 82	0.06 20	0.04 71



3D screen shot



Hot spot position



MEASUREMENT 8

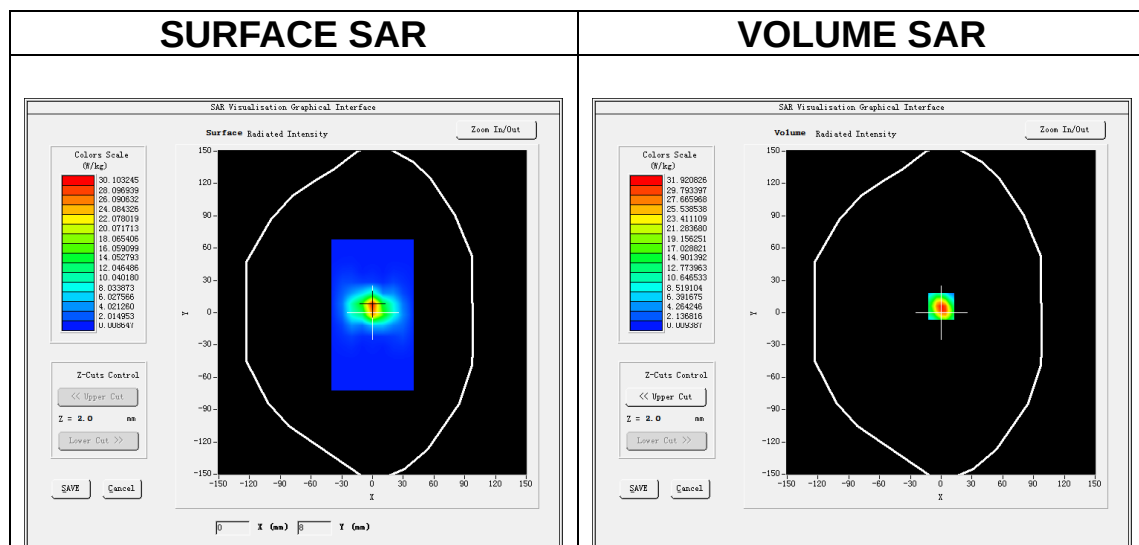
Date of measurement: 20/5/2023

A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Dipole</u>
<u>Band</u>	<u>CW5800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.07</u>

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.708642
Relative permittivity (imaginary part)	16.415659
Conductivity (S/m)	5.289490
Variation (%)	-0.500000

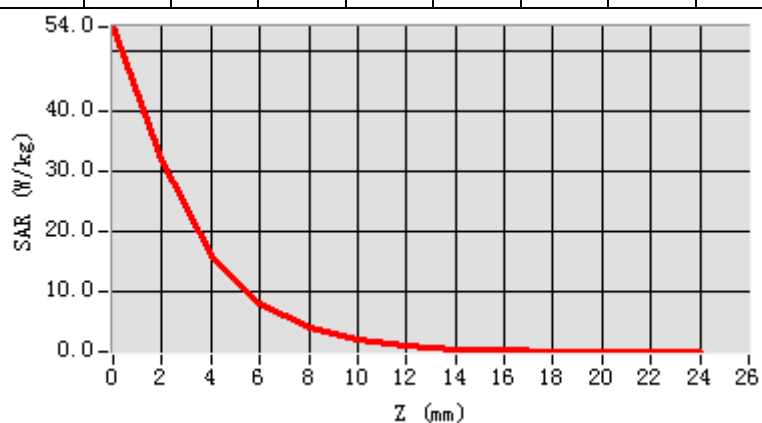


Maximum location: X=0.00, Y=6.00

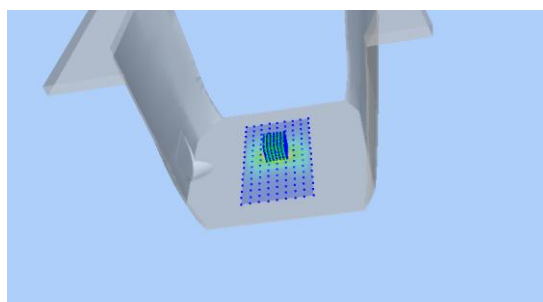
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	5.833228
SAR 1g (W/Kg)	16.162190

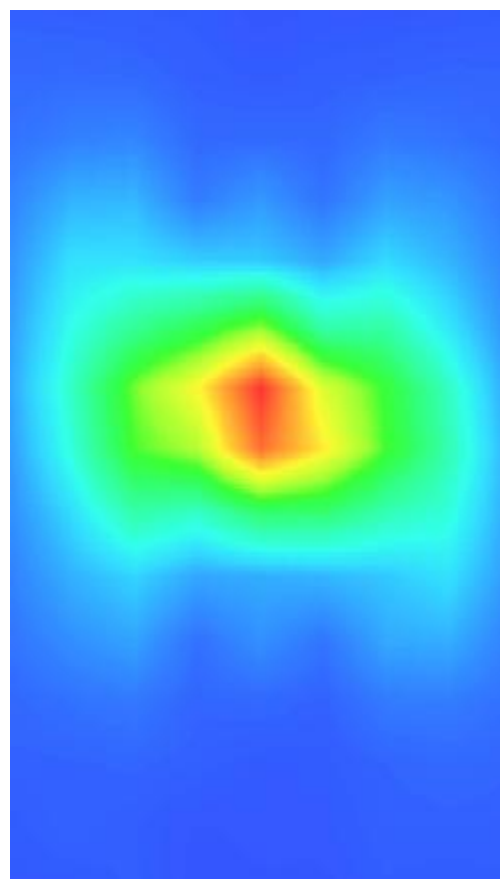
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SAR (W/ Kg)	54.0 36	31.9 48	16.1 44	8.17 66	4.08 90	2.05 50	1.03 61	0.51 44	0.27 95	0.15 72	0.07 88	0.04 38



3D screen shot



Hot spot position



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 14 WLAN 5.8G Body
MEASUREMENT 15 WLAN 2.4G Head
MEASUREMENT 16 WLAN 2.4G Body
MEASUREMENT 17 LTE Band 2 Head
MEASUREMENT 18 LTE Band 2 Body
MEASUREMENT 19 LTE Band 4 Head
MEASUREMENT 20 LTE Band 4 Body
MEASUREMENT 21 LTE Band 5 Head
MEASUREMENT 22 LTE Band 5 Body
MEASUREMENT 23 LTE Band 12 Head
MEASUREMENT 24 LTE Band 12 Body
MEASUREMENT 25 LTE Band 17 Head
MEASUREMENT 26 LTE Band 17 Body
MEASUREMENT 27 WLAN 5.3G Head
MEASUREMENT 28 WLAN 5.6G Head
MEASUREMENT 29 WLAN 5.3G Body
MEASUREMENT 30 WLAN 5.6G Body

MEASUREMENT 1

Date of measurement: 22/4/2023

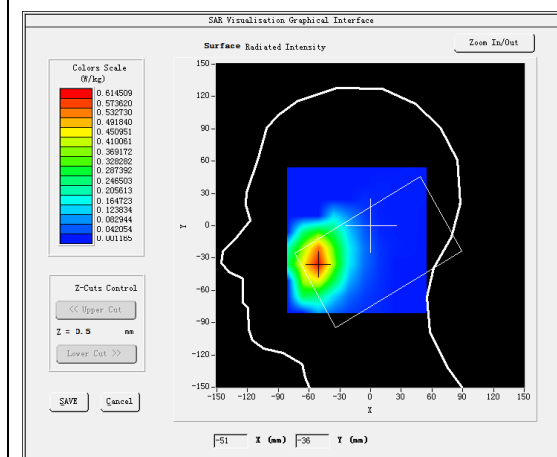
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>
<u>ConvF</u>	<u>1.50</u>

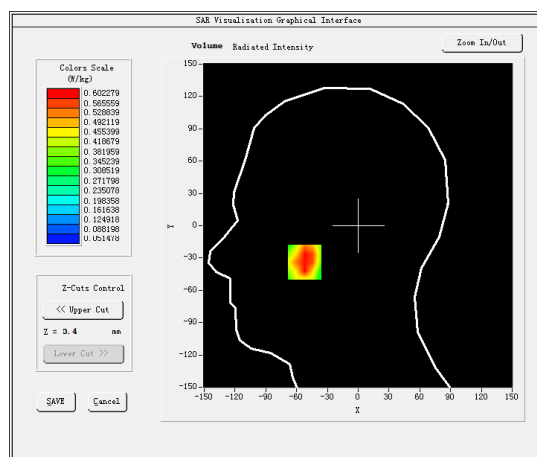
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.356758
Relative permittivity (imaginary part)	19.845680
Conductivity (S/m)	0.922163
Variation (%)	2.010000

SURFACE SAR



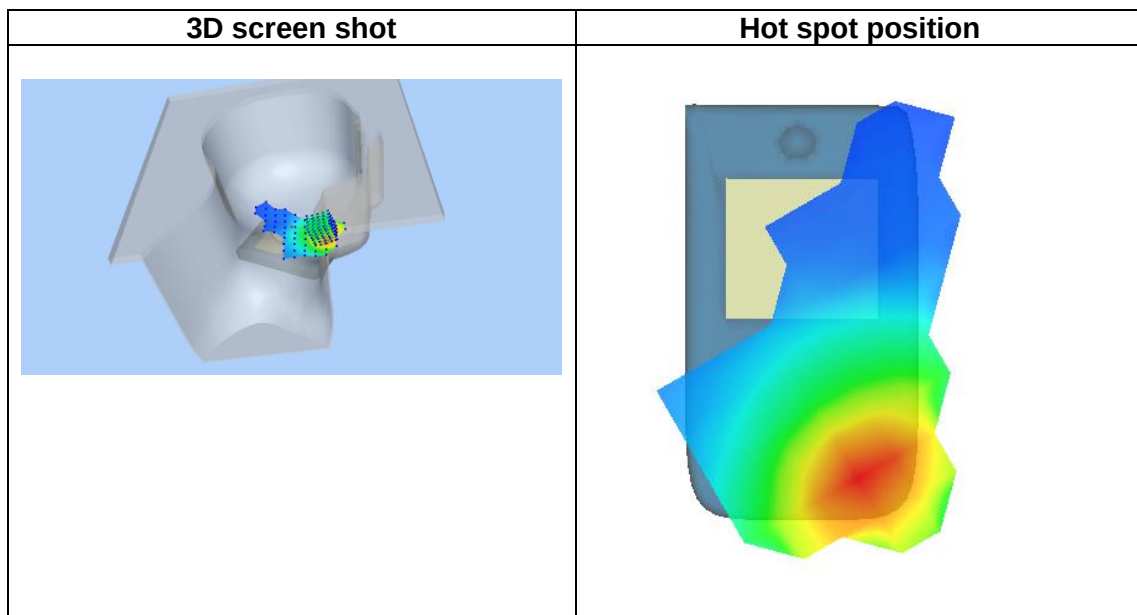
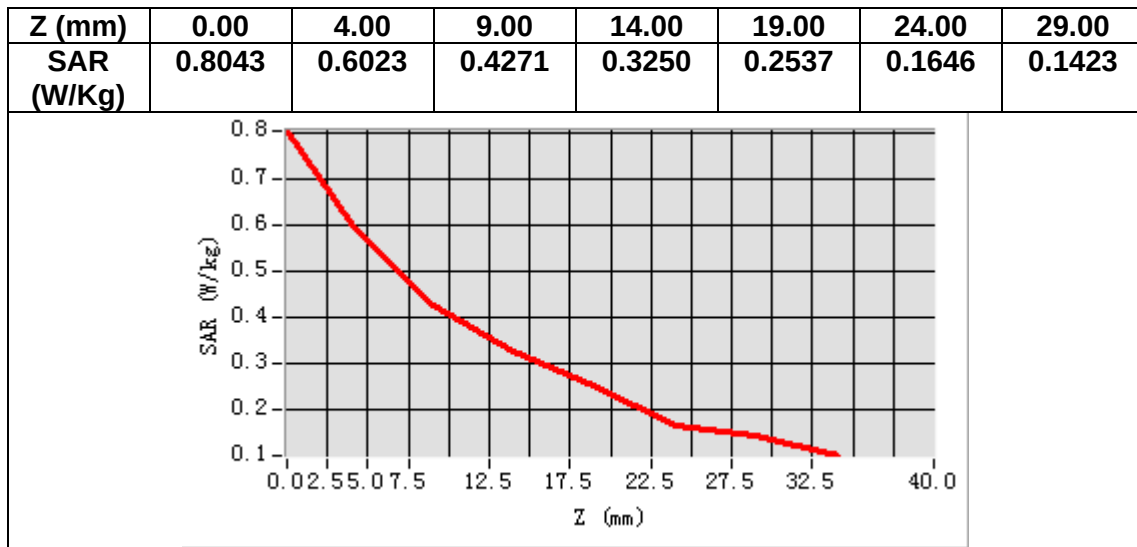
VOLUME SAR



Maximum location: X=-52.00, Y=-34.00

SAR Peak: 0.87 W/kg

SAR 10g (W/Kg)	0.401845
SAR 1g (W/Kg)	0.605652



MEASUREMENT 2

Date of measurement: 22/4/2023

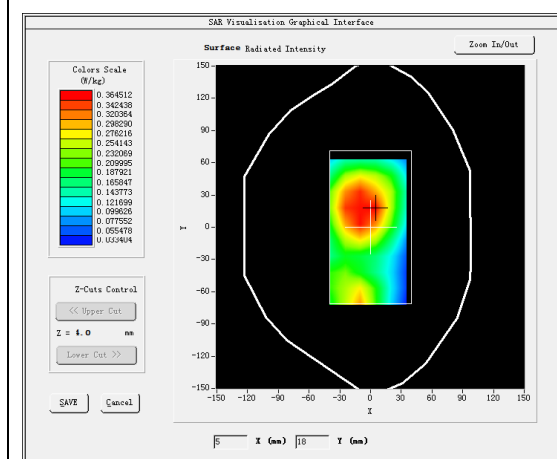
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>GSM850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 4.0)</u>
<u>ConvF</u>	<u>1.50</u>

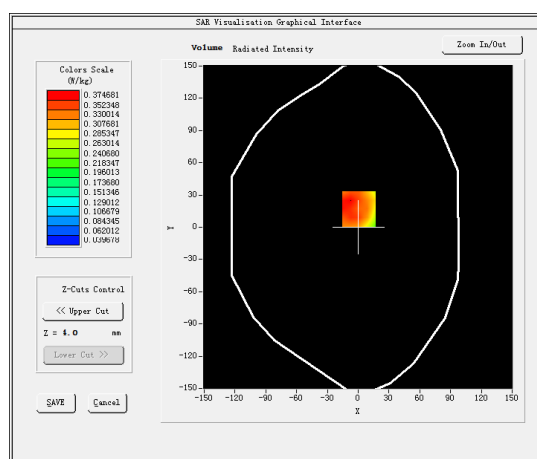
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.356758
Relative permittivity (imaginary part)	19.845680
Conductivity (S/m)	0.922163
Variation (%)	-2.590000

SURFACE SAR



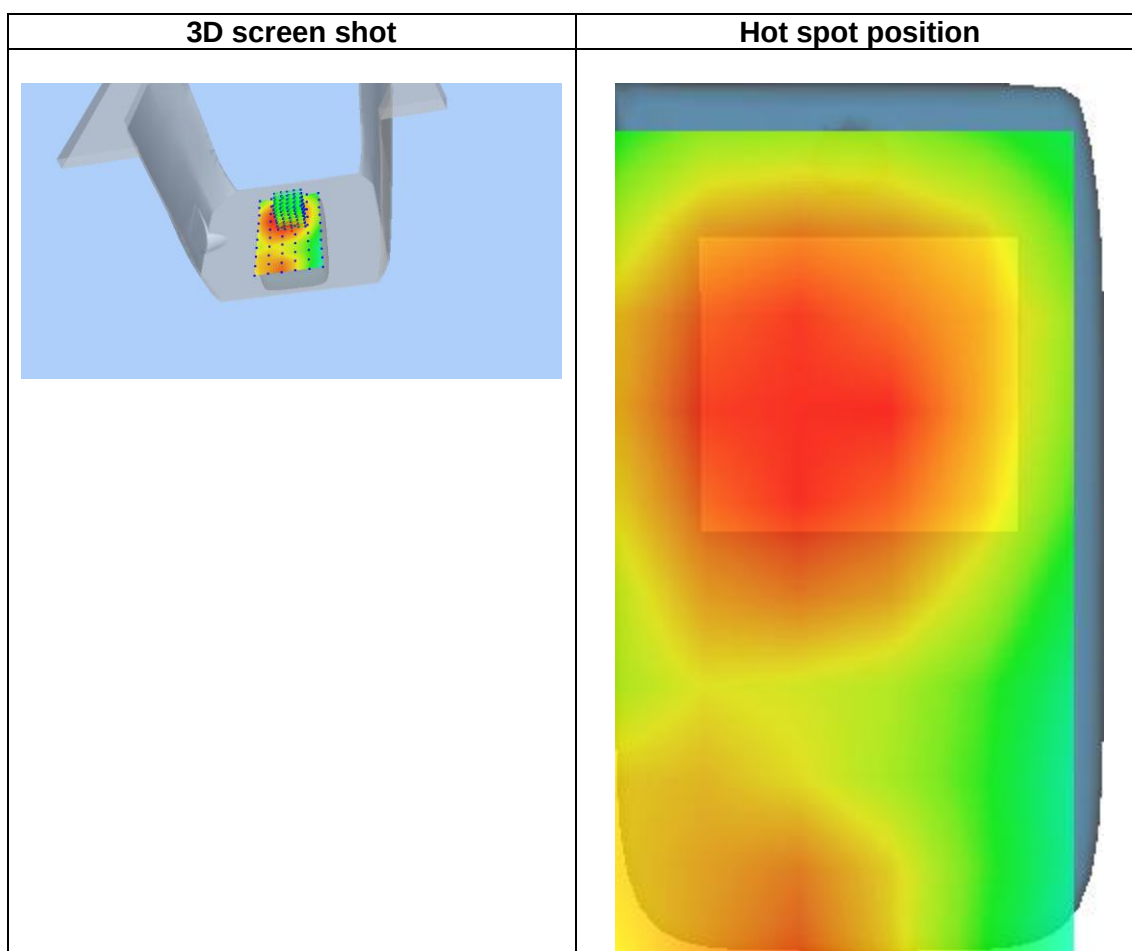
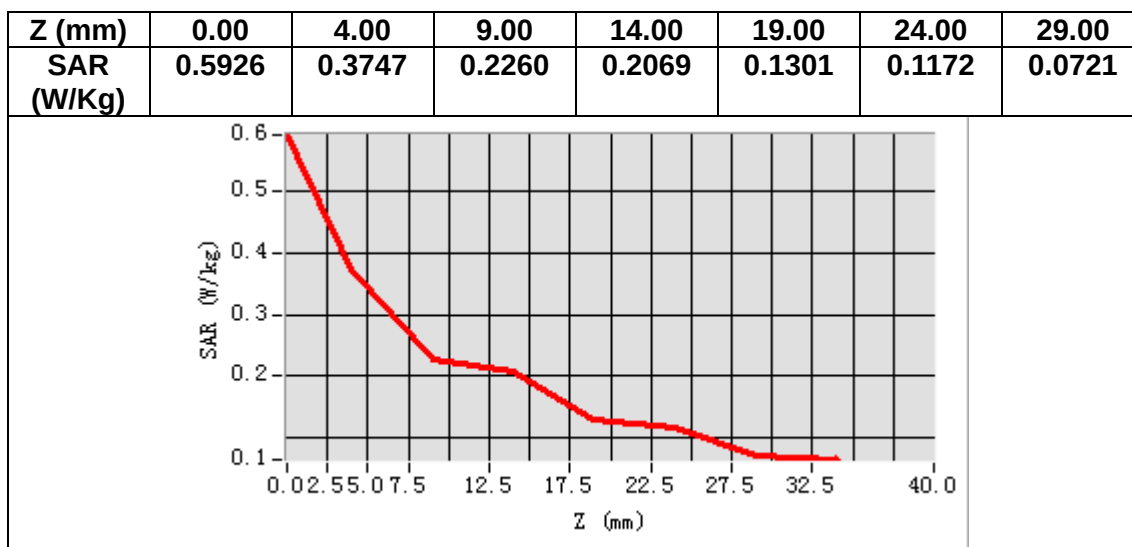
VOLUME SAR



Maximum location: X=1.00, Y=17.00

SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.261566
SAR 1g (W/Kg)	0.364050



MEASUREMENT 3

Date of measurement: 26/4/2023

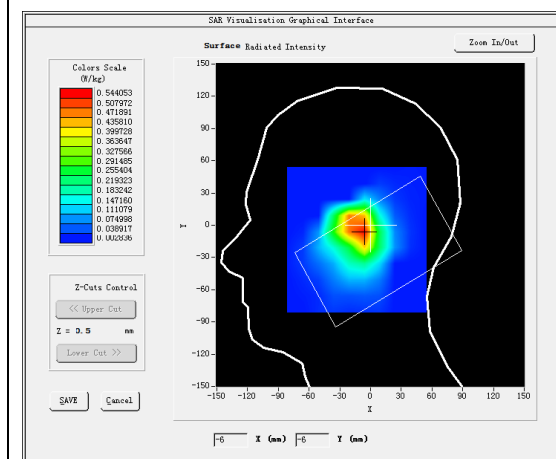
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>
<u>ConvF</u>	<u>1.91</u>

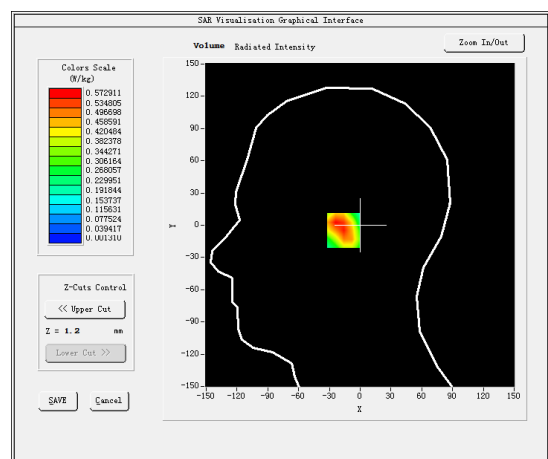
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.932110
Relative permittivity (imaginary part)	13.565094
Conductivity (S/m)	1.416799
Variation (%)	3.550000

SURFACE SAR



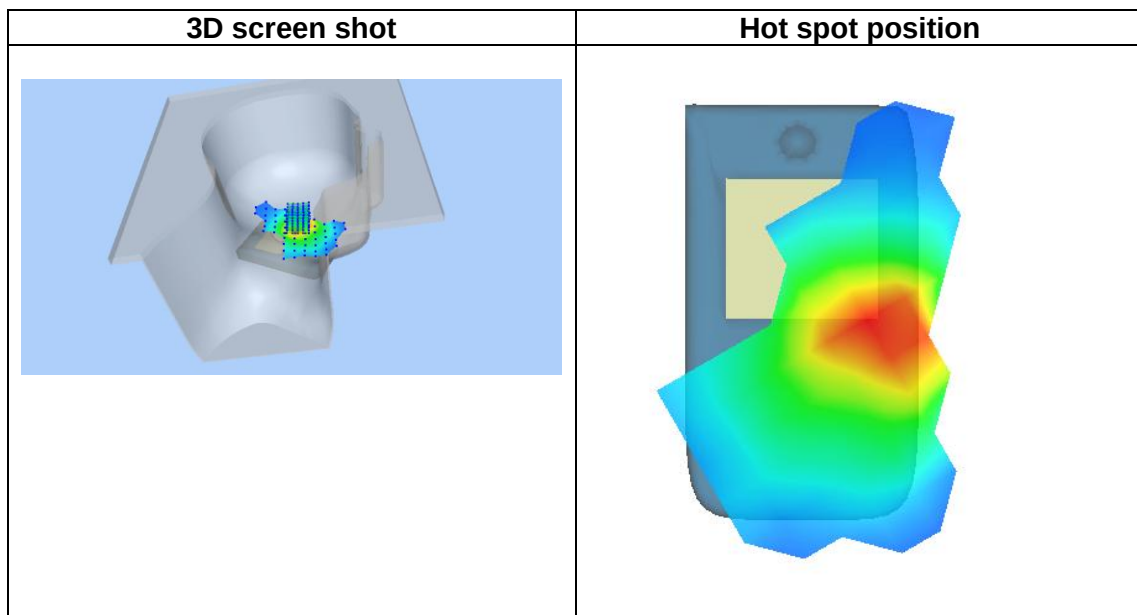
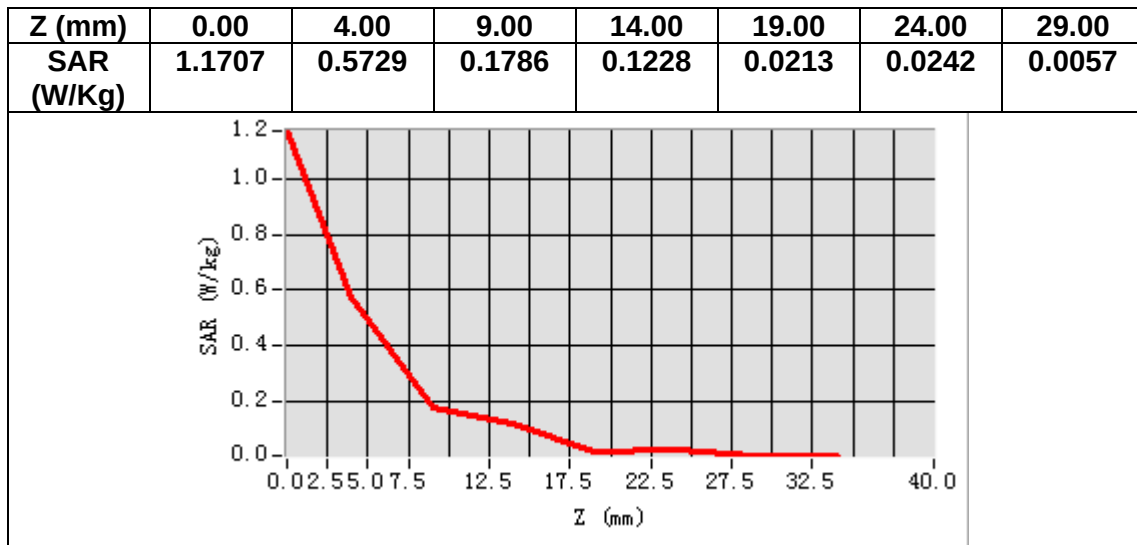
VOLUME SAR



Maximum location: X=-10.00, Y=-5.00

SAR Peak: 1.04 W/kg

SAR 10g (W/Kg)	0.264253
SAR 1g (W/Kg)	0.556819



MEASUREMENT 4

Date of measurement: 26/4/2023

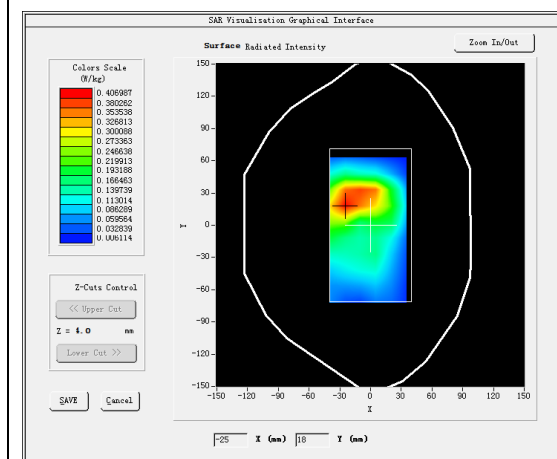
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>GSM1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>TDMA (Crest factor: 2.0)</u>
<u>ConvF</u>	<u>1.91</u>

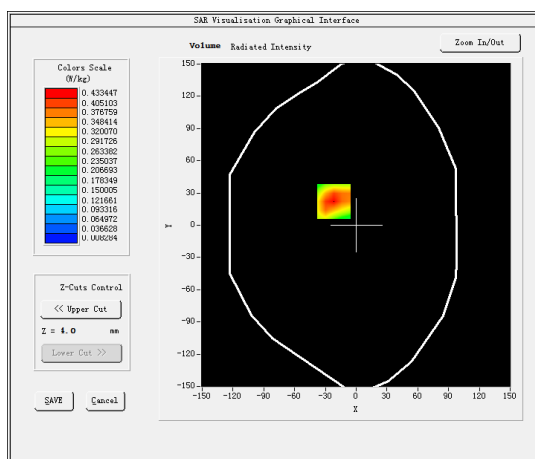
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.932110
Relative permittivity (imaginary part)	13.565094
Conductivity (S/m)	1.416799
Variation (%)	0.950000

SURFACE SAR



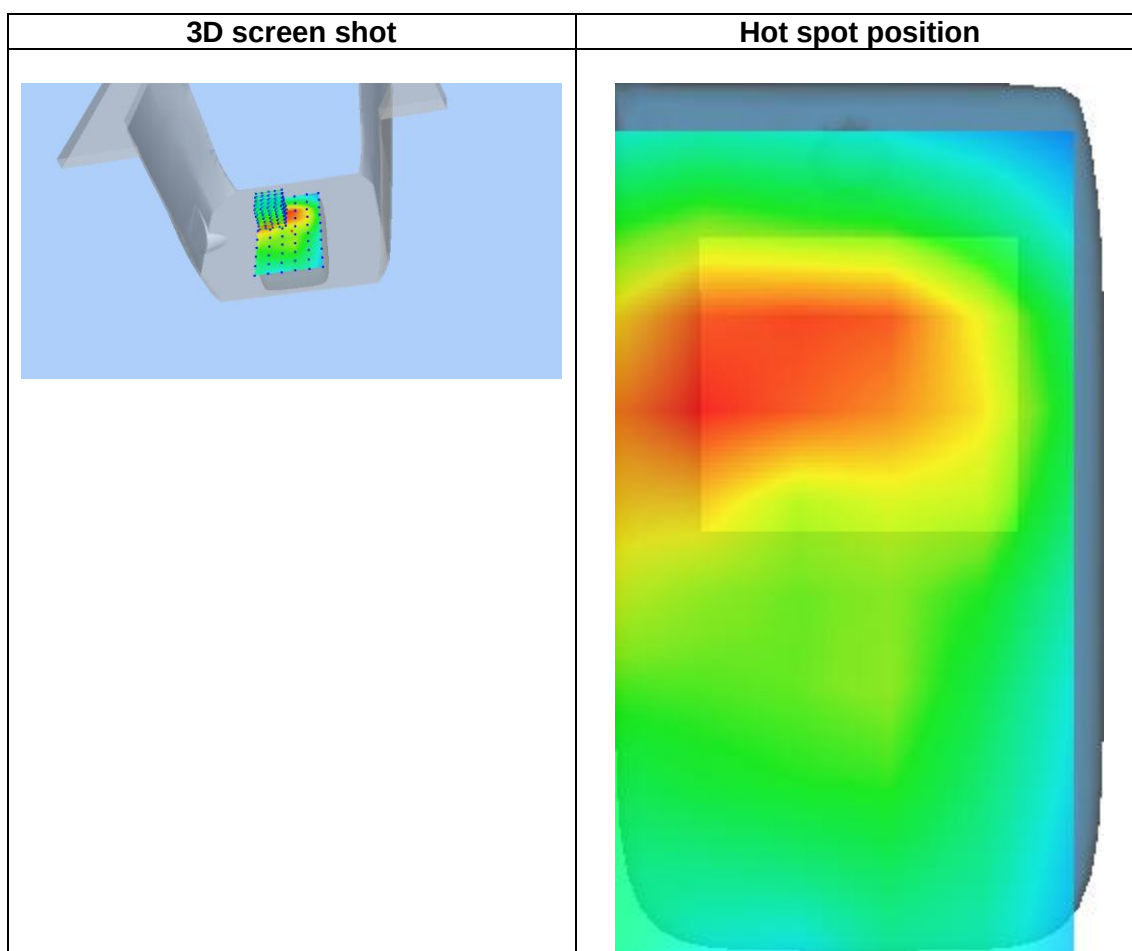
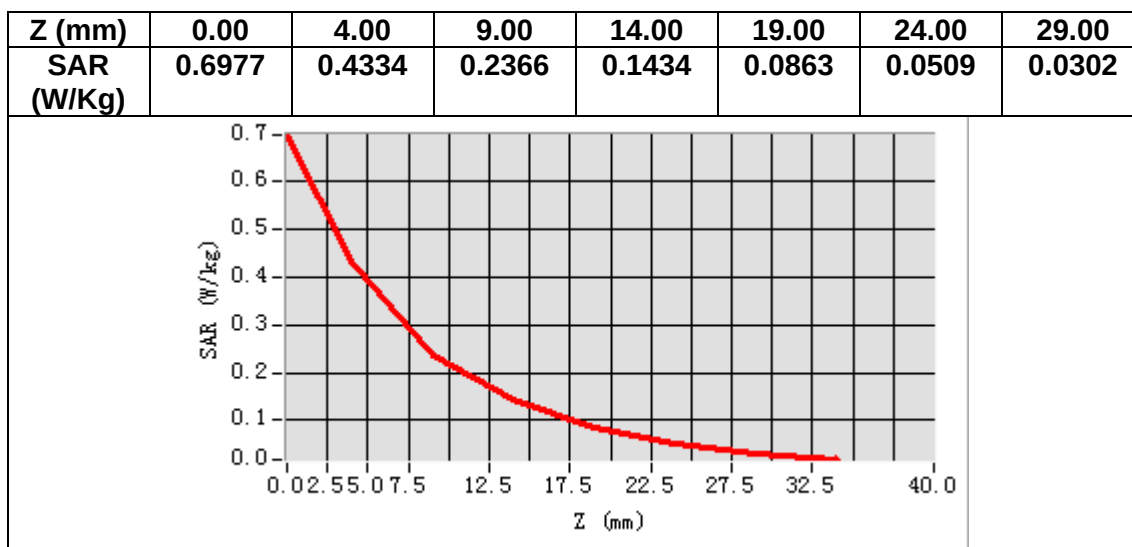
VOLUME SAR



Maximum location: X=-22.00, Y=22.00

SAR Peak: 0.71 W/kg

SAR 10g (W/Kg)	0.232564
SAR 1g (W/Kg)	0.425783



MEASUREMENT 5

Date of measurement: 26/4/2023

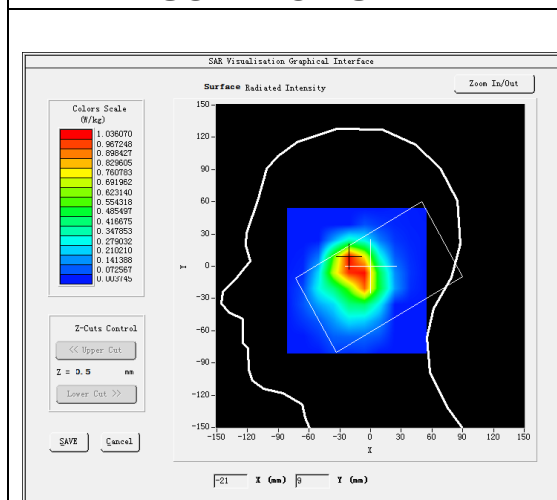
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band2 WCDMA1900</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.91</u>

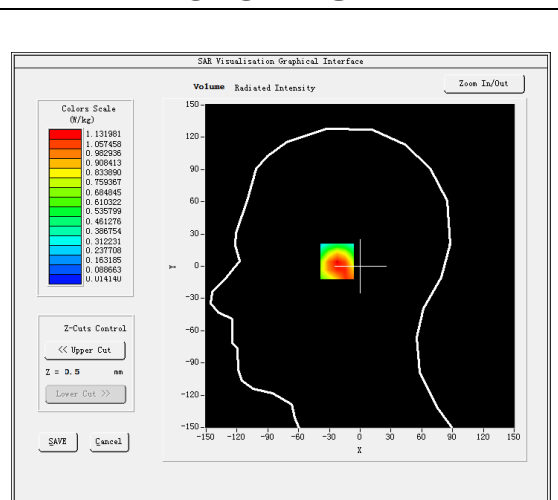
B. SAR Measurement Results

Frequency (MHz)	1907.600000
Relative permittivity (real part)	38.818470
Relative permittivity (imaginary part)	13.501594
Conductivity (S/m)	1.430869
Variation (%)	-0.680000

SURFACE SAR



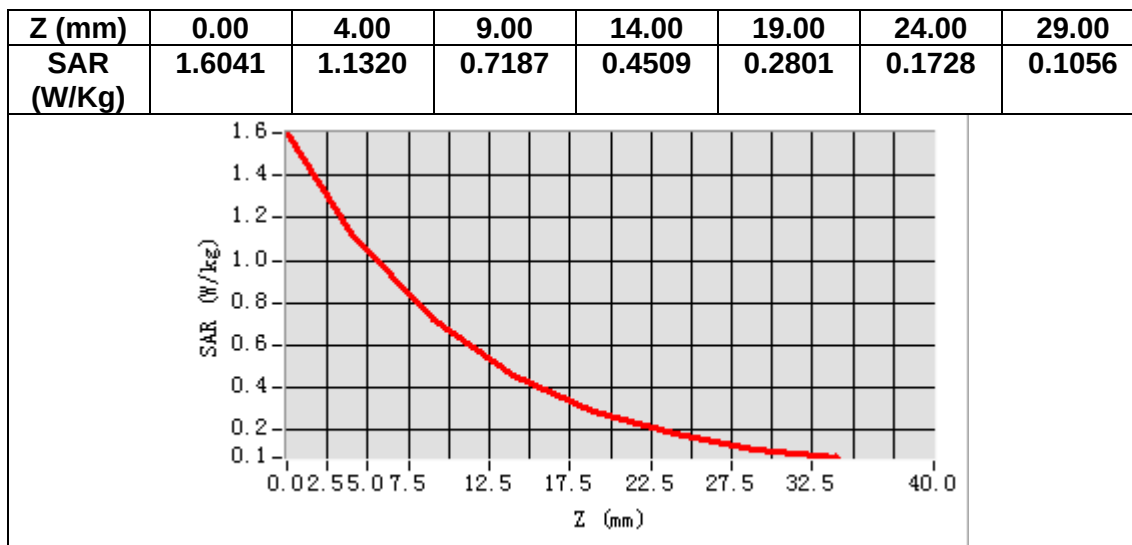
VOLUME SAR



Maximum location: X=-19.00, Y=5.00

SAR Peak: 1.67 W/kg

SAR 10g (W/Kg)	0.652806
SAR 1g (W/Kg)	1.005230



MEASUREMENT 6

Date of measurement: 26/4/2023

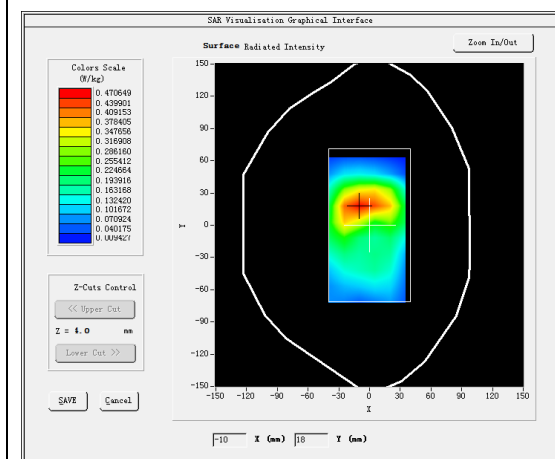
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band2 WCDMA1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.91</u>

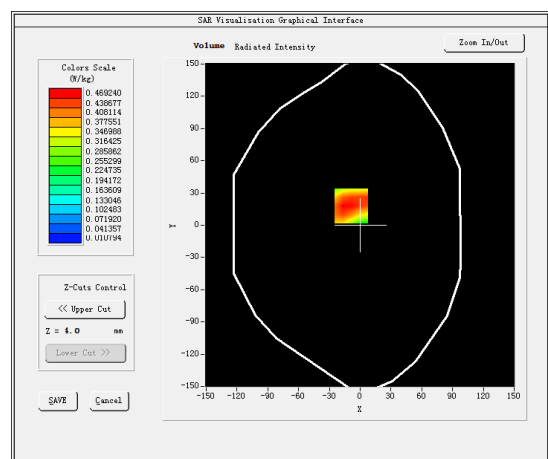
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.932110
Relative permittivity (imaginary part)	13.565094
Conductivity (S/m)	1.416799
Variation (%)	-1.180000

SURFACE SAR



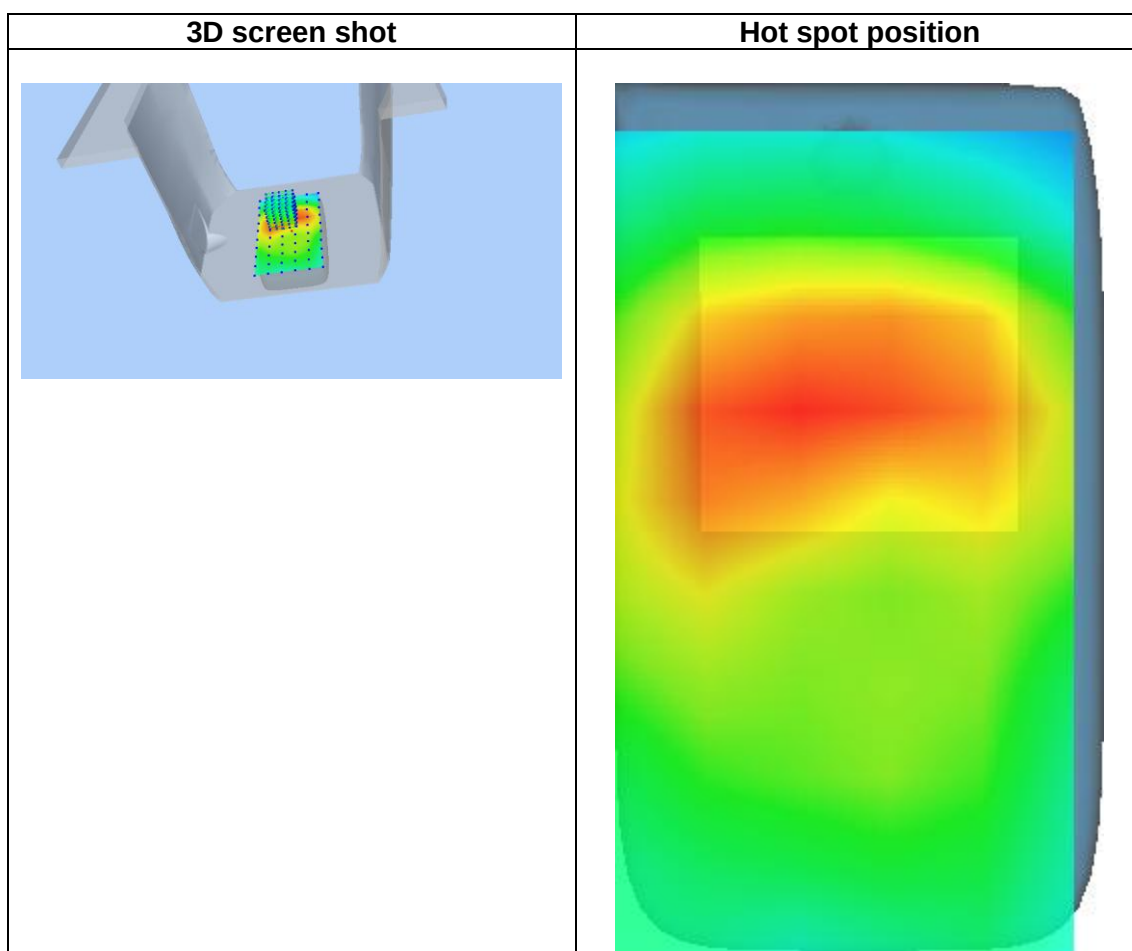
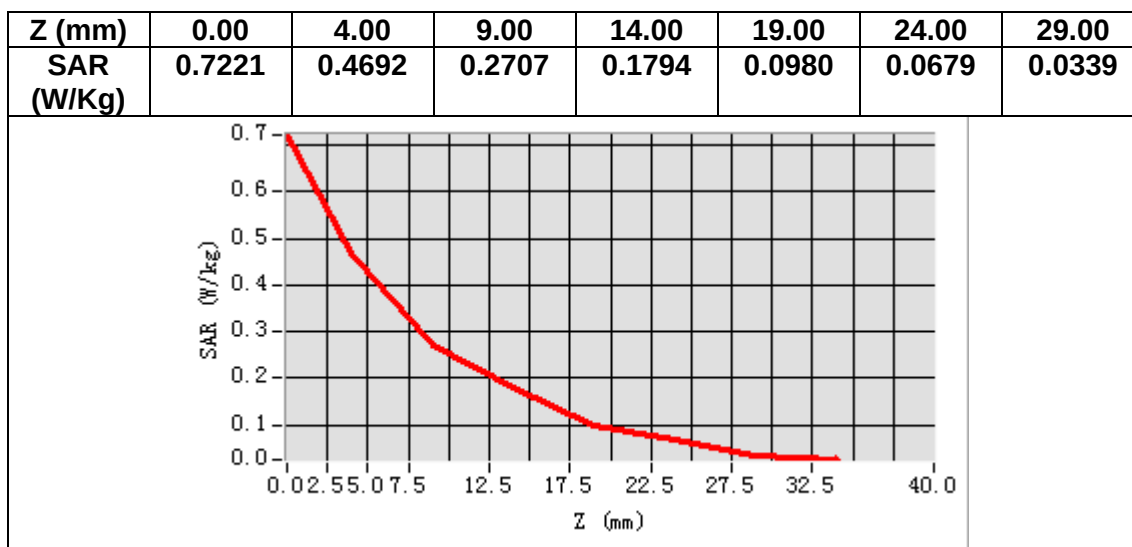
VOLUME SAR



Maximum location: X=-9.00, Y=18.00

SAR Peak: 0.70 W/kg

SAR 10g (W/Kg)	0.272872
SAR 1g (W/Kg)	0.460526



MEASUREMENT 7

Date of measurement: 24/4/2023

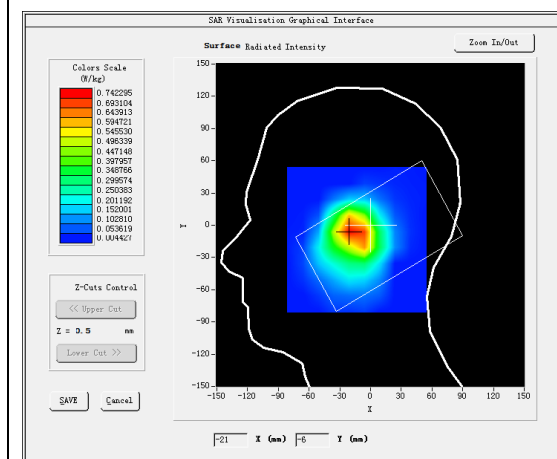
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.73</u>

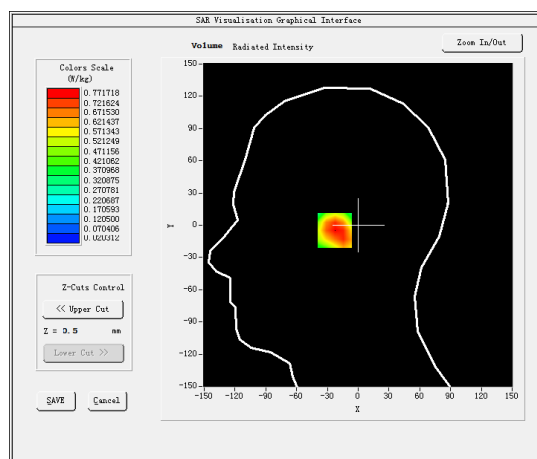
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.421825
Relative permittivity (imaginary part)	13.751579
Conductivity (S/m)	1.323207
Variation (%)	-1.230000

SURFACE SAR



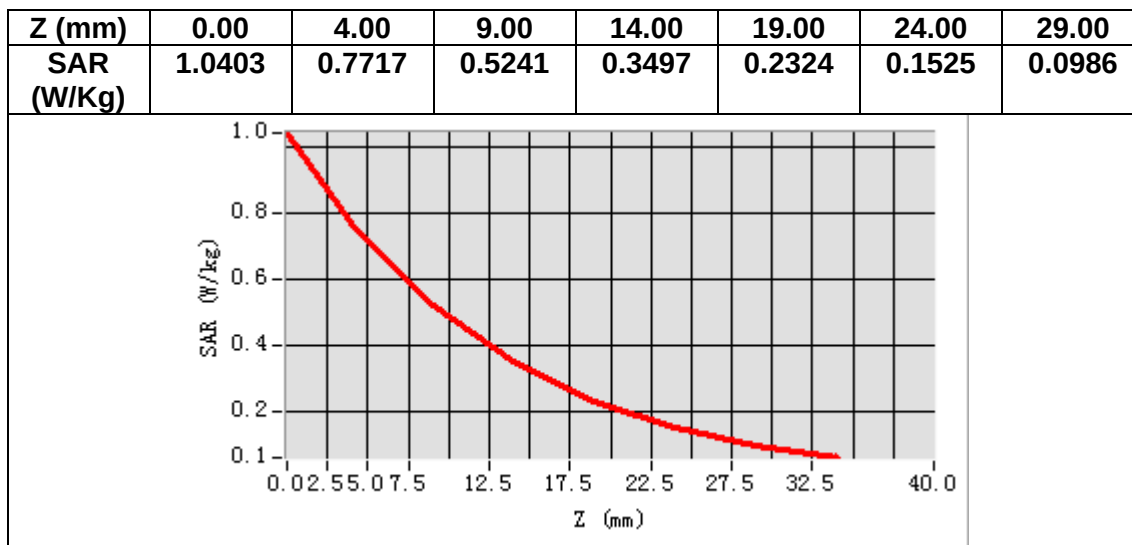
VOLUME SAR



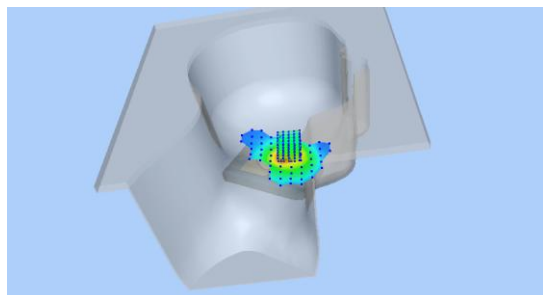
Maximum location: X=-18.00, Y=-5.00

SAR Peak: 1.09 W/kg

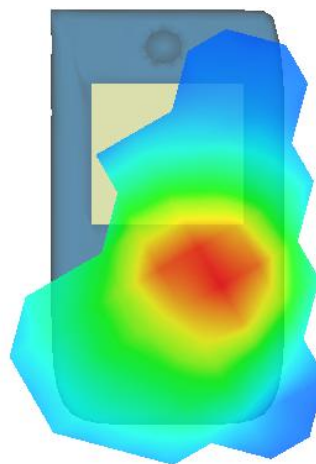
SAR 10g (W/Kg)	0.459774
SAR 1g (W/Kg)	0.745044



3D screen shot



Hot spot position



MEASUREMENT 8

Date of measurement: 24/4/2023

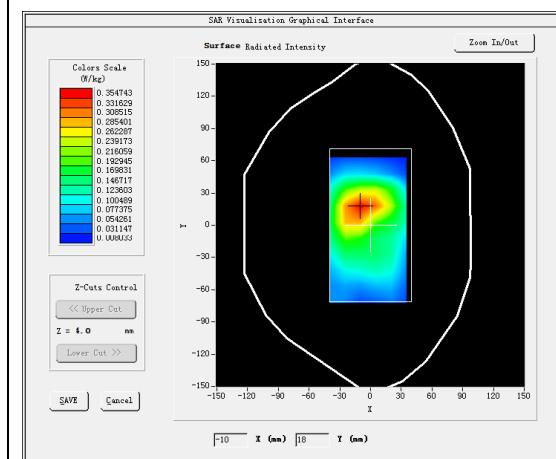
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.73</u>

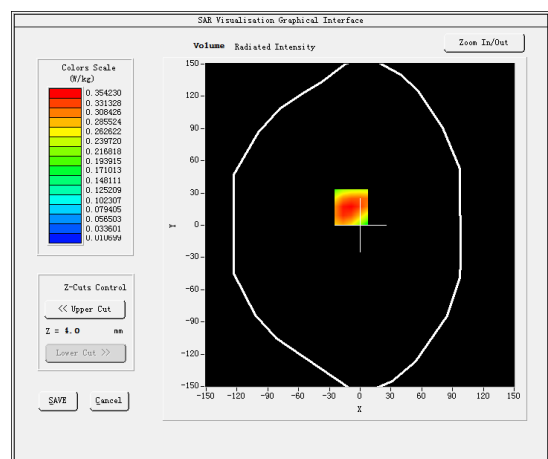
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.421825
Relative permittivity (imaginary part)	13.751579
Conductivity (S/m)	1.323207
Variation (%)	-0.960000

SURFACE SAR



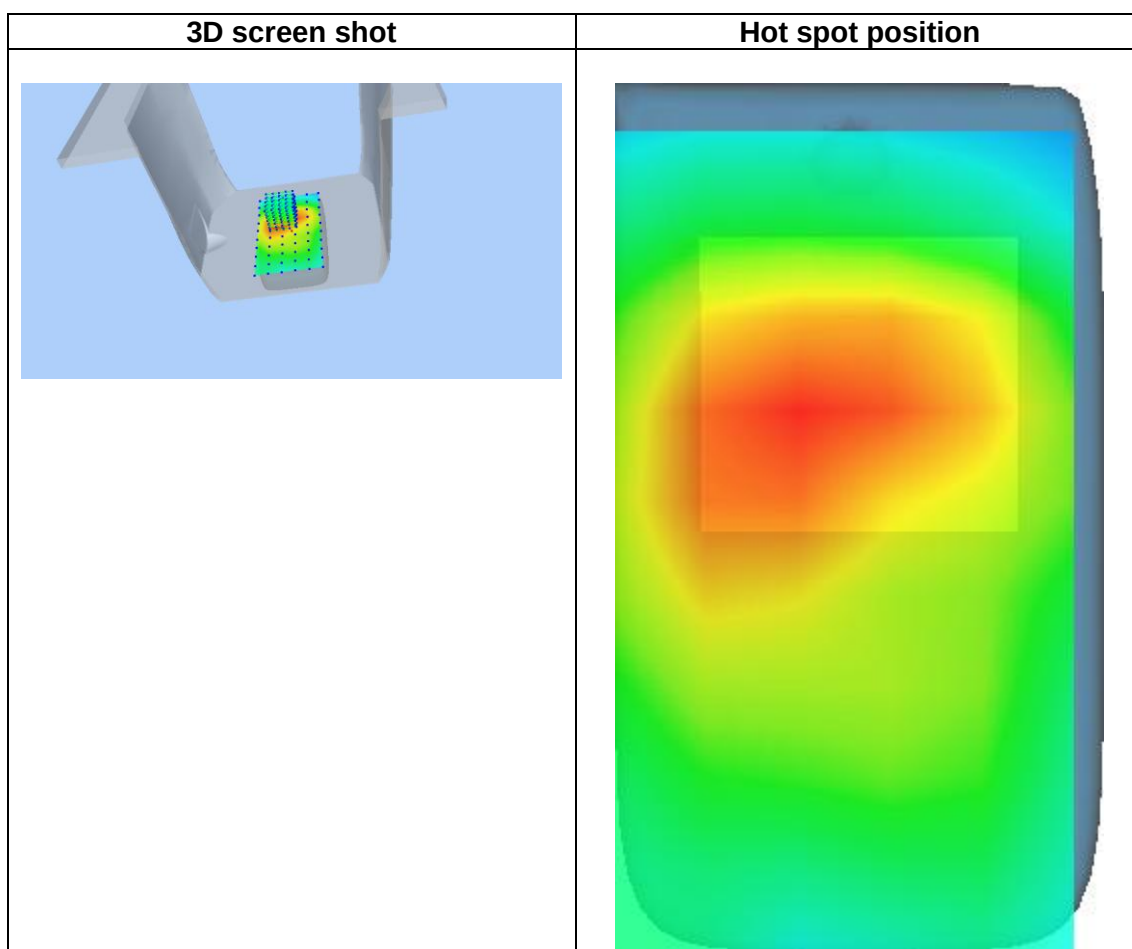
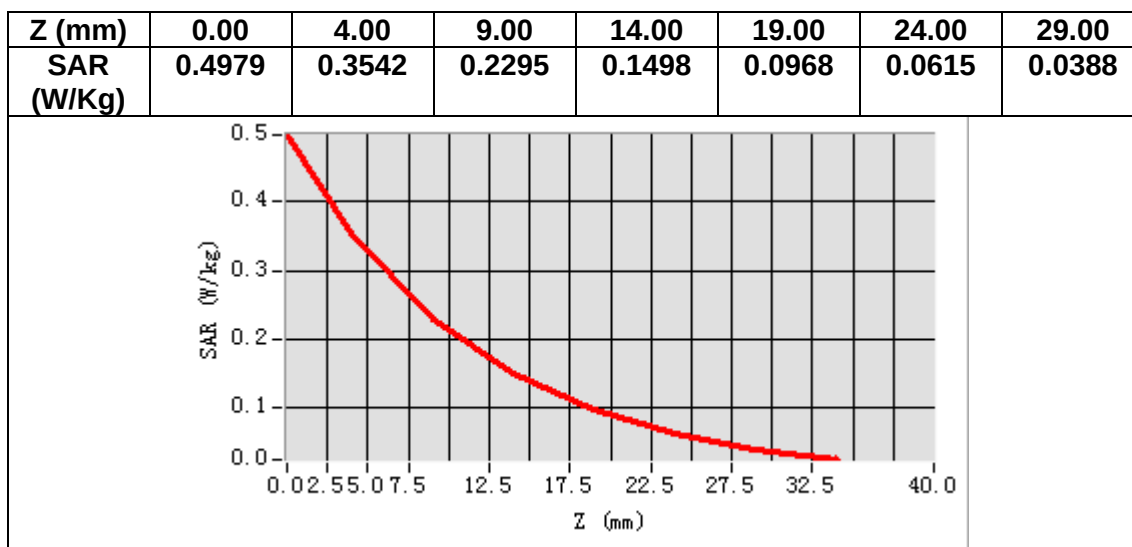
VOLUME SAR



Maximum location: X=-9.00, Y=17.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.212520
SAR 1g (W/Kg)	0.341977



MEASUREMENT 9

Date of measurement: 22/4/2023

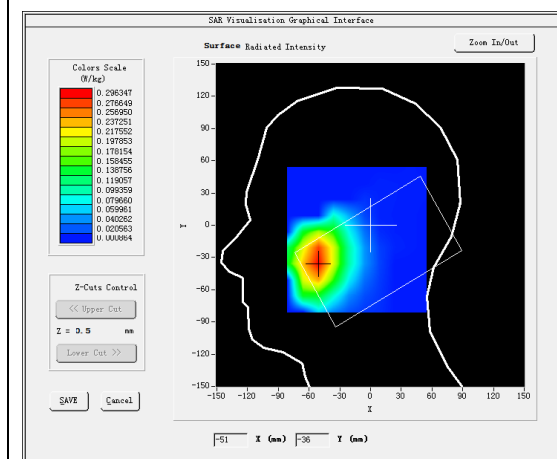
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.50</u>

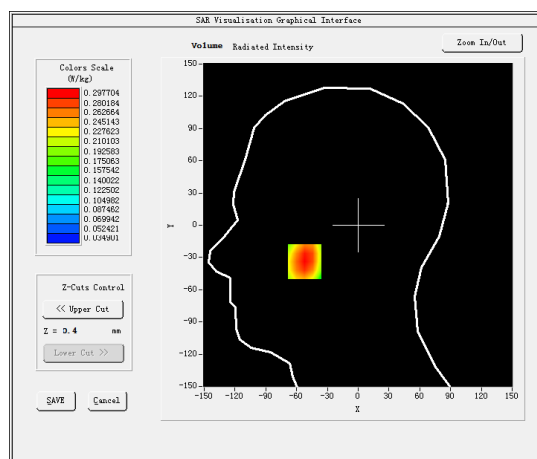
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.356758
Relative permittivity (imaginary part)	19.845680
Conductivity (S/m)	0.922163
Variation (%)	-2.070000

SURFACE SAR



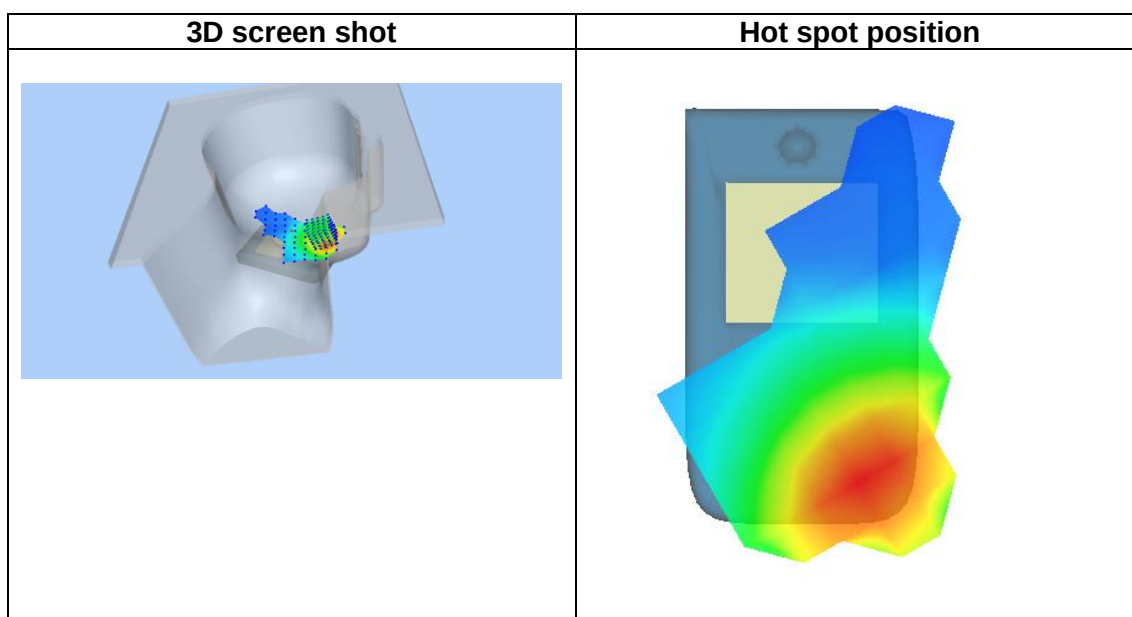
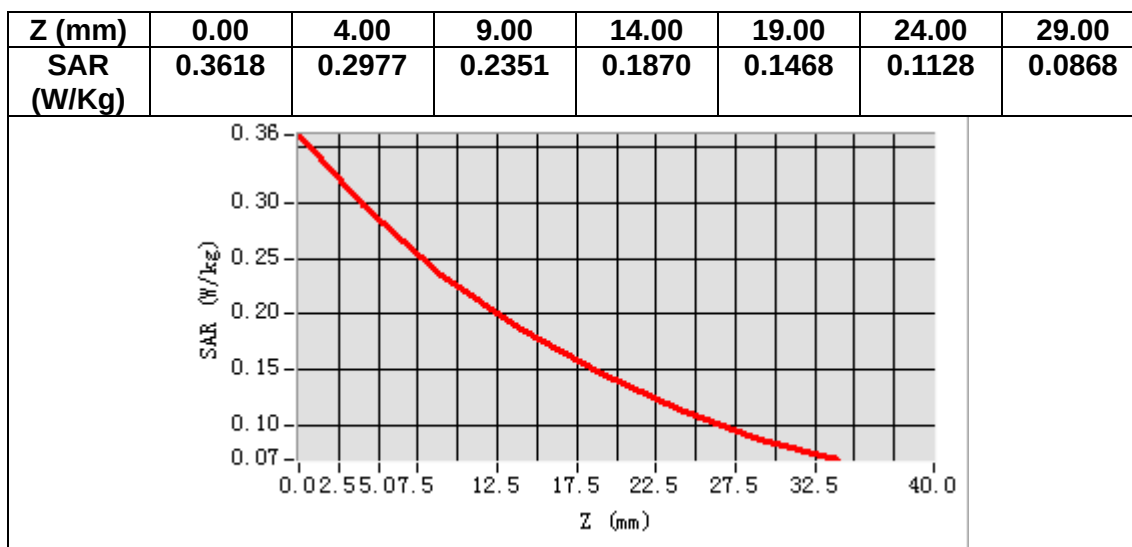
VOLUME SAR



Maximum location: X=-52.00, Y=-34.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.214352
SAR 1g (W/Kg)	0.293985



MEASUREMENT 10

Date of measurement: 22/4/2023

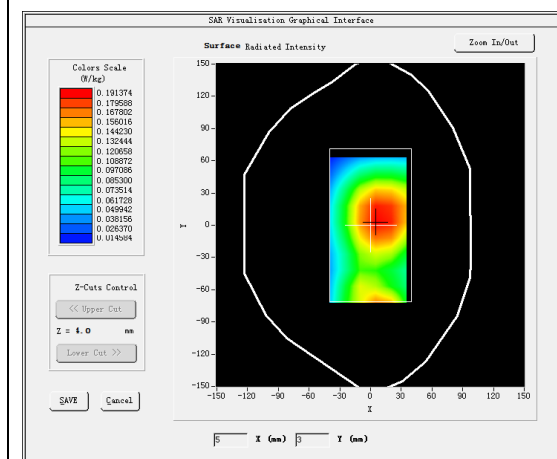
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>Band5 WCDMA850</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.50</u>

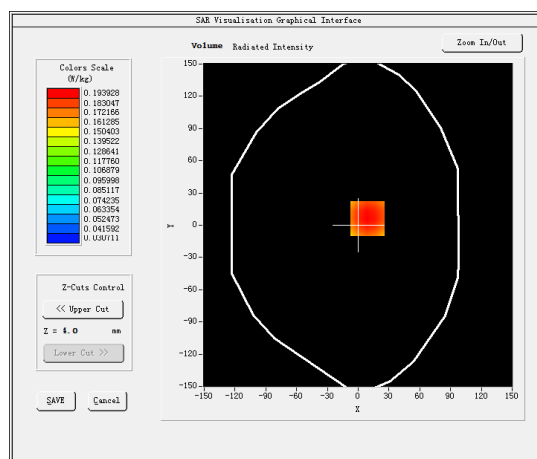
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.356758
Relative permittivity (imaginary part)	19.845680
Conductivity (S/m)	0.922163
Variation (%)	-0.560000

SURFACE SAR



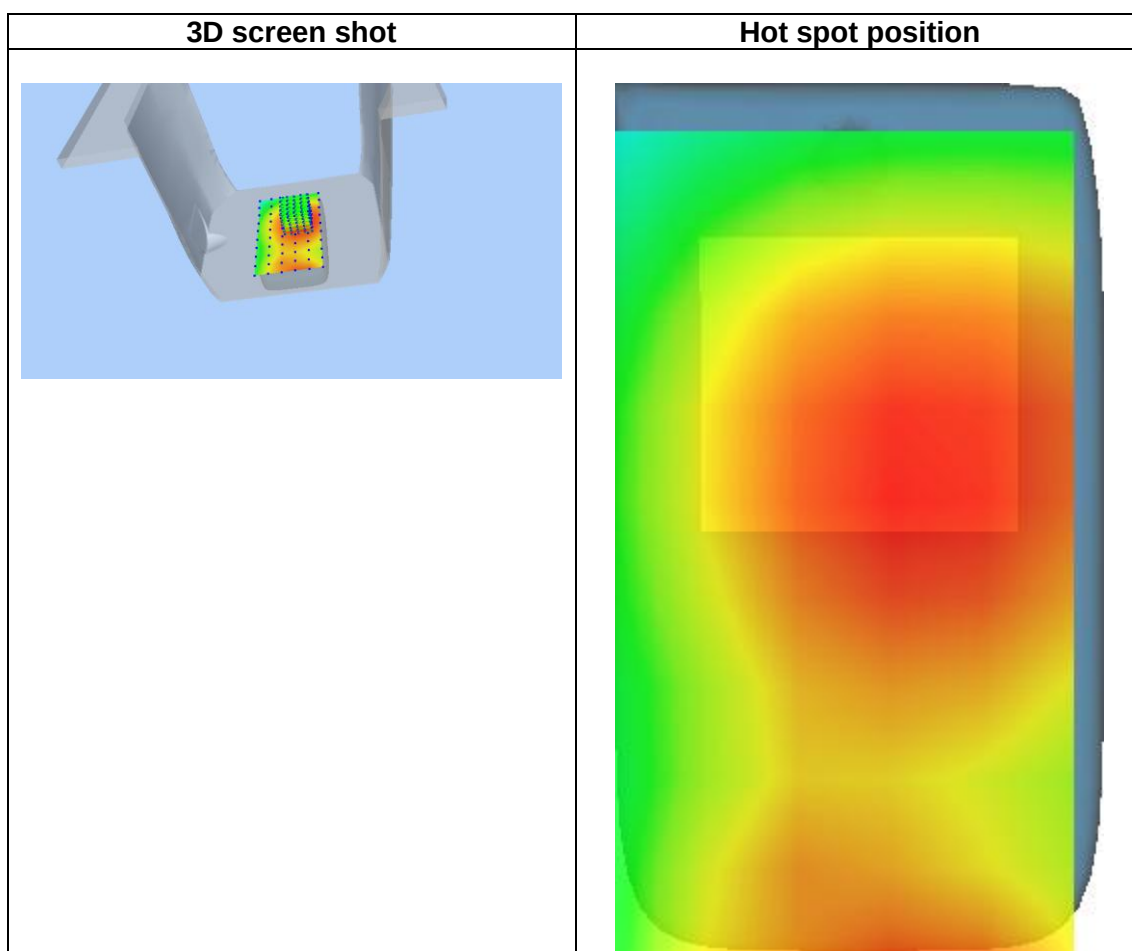
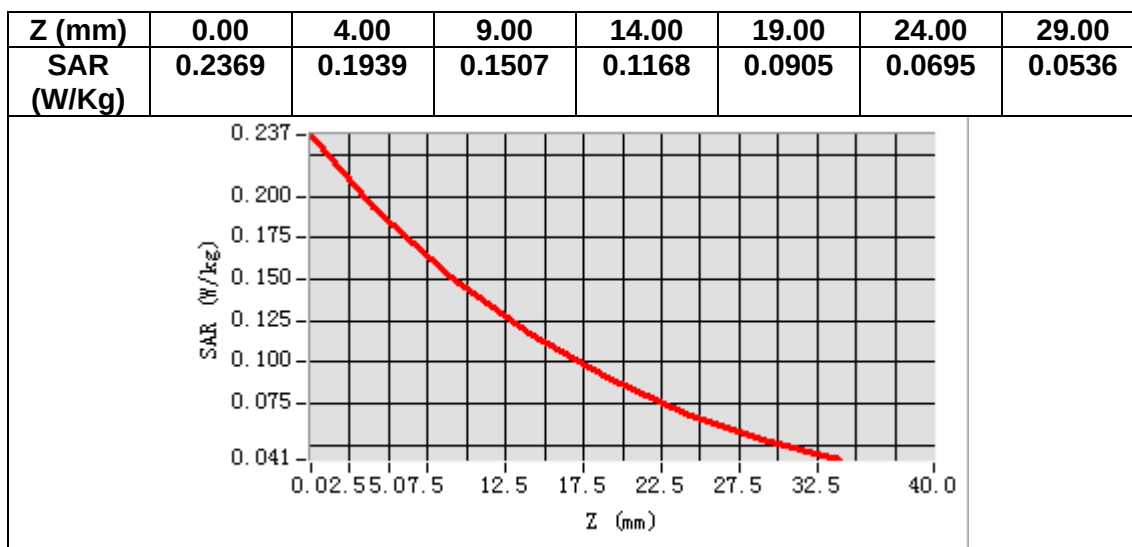
VOLUME SAR



Maximum location: X=9.00, Y=6.00

SAR Peak: 0.24 W/kg

SAR 10g (W/Kg)	0.142777
SAR 1g (W/Kg)	0.191612



MEASUREMENT 11

Date of measurement: 30/4/2023

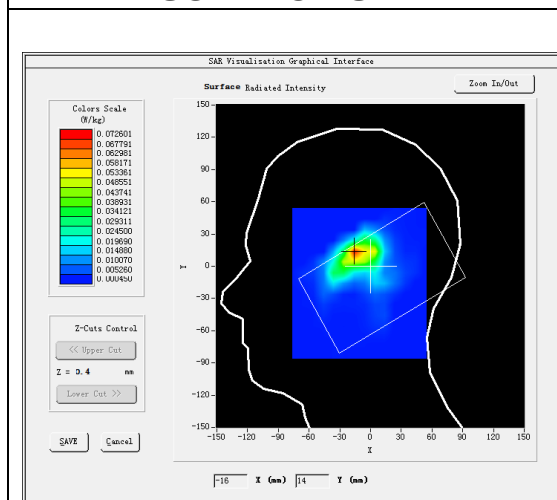
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11n U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.80</u>

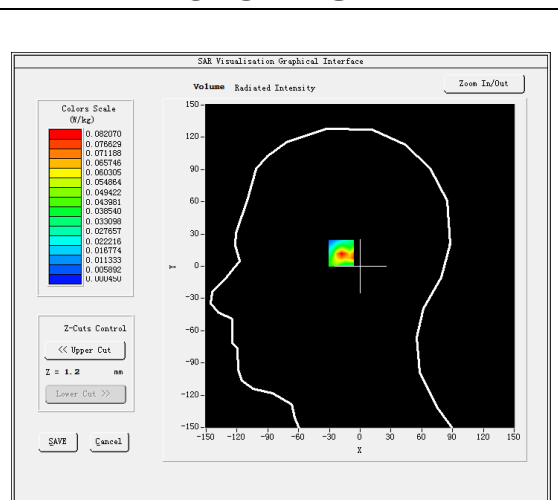
B. SAR Measurement Results

Frequency (MHz)	5180.000000
Relative permittivity (real part)	36.317606
Relative permittivity (imaginary part)	16.522012
Conductivity (S/m)	4.809741
Variation (%)	-0.840000

SURFACE SAR



VOLUME SAR

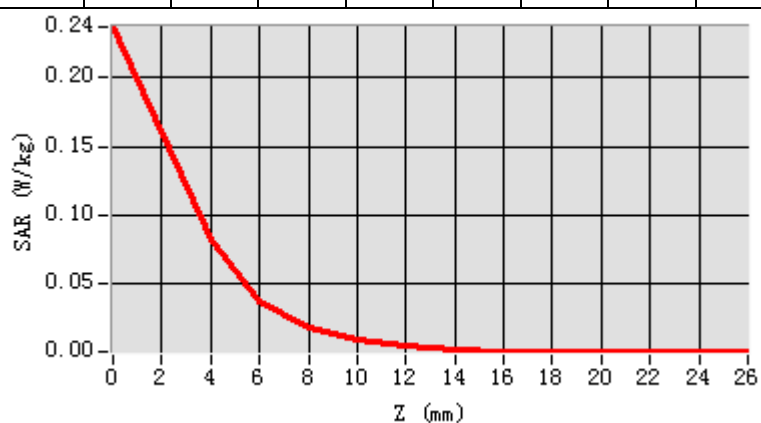


Maximum location: X=-15.00, Y=13.00

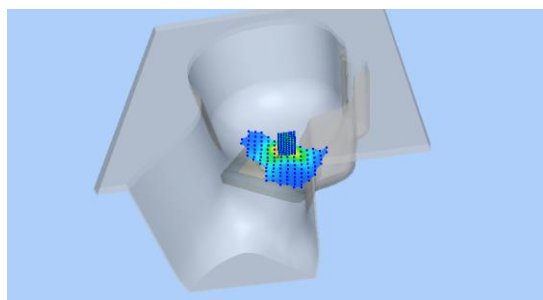
SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.026017
SAR 1g (W/Kg)	0.074546

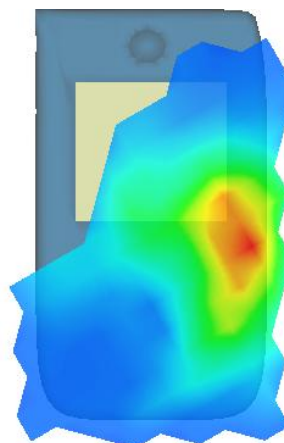
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.23 68	0.08 21	0.03 67	0.01 80	0.00 89	0.00 42	0.00 21	0.00 10	0.00 05	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 12

Date of measurement: 20/5/2023

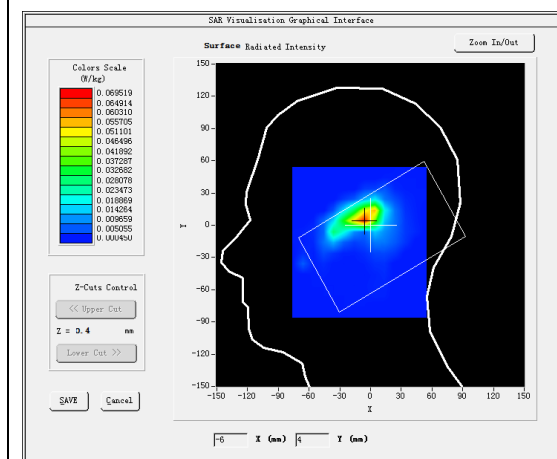
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11ac U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.07</u>

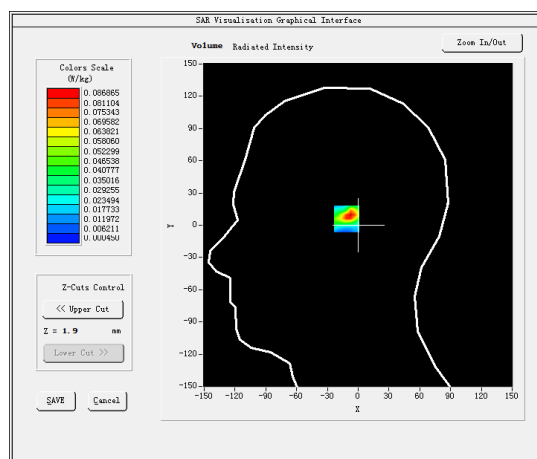
B. SAR Measurement Results

Frequency (MHz)	5755.000000
Relative permittivity (real part)	34.784593
Relative permittivity (imaginary part)	16.291216
Conductivity (S/m)	5.235816
Variation (%)	-2.150000

SURFACE SAR



VOLUME SAR

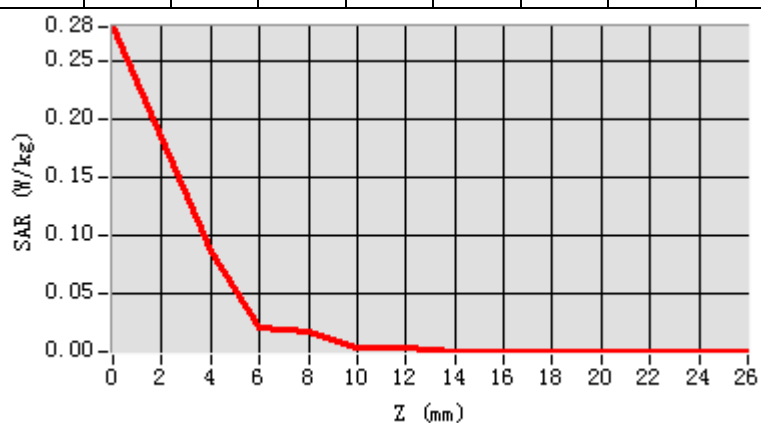


Maximum location: X=-7.00, Y=6.00

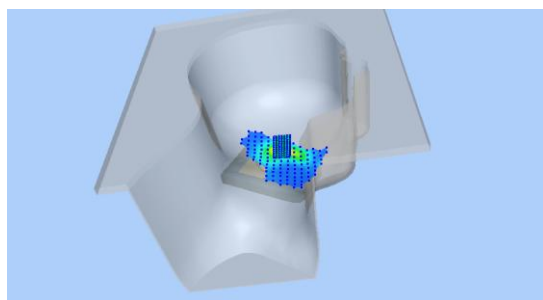
SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.025631
SAR 1g (W/Kg)	0.086725

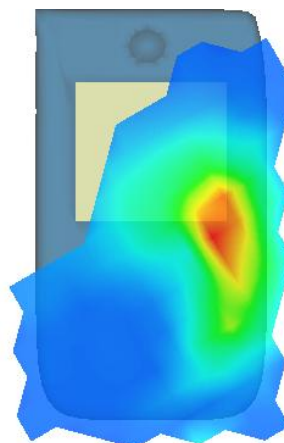
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.27 91	0.08 69	0.02 13	0.01 74	0.00 42	0.00 33	0.00 07	0.00 06	0.00 04	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 13

Date of measurement: 30/4/2023

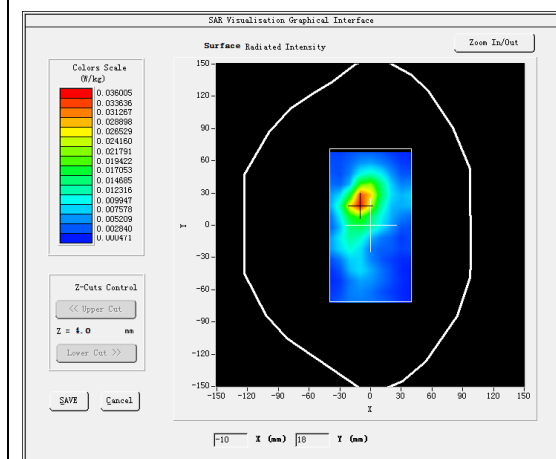
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11n U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.80</u>

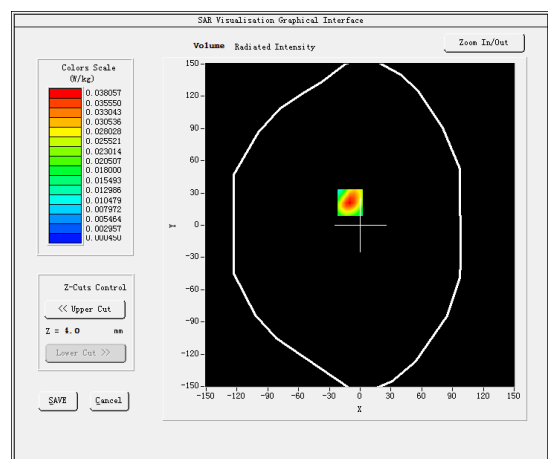
B. SAR Measurement Results

Frequency (MHz)	5180.000000
Relative permittivity (real part)	36.317606
Relative permittivity (imaginary part)	16.522012
Conductivity (S/m)	4.809741
Variation (%)	-0.620000

SURFACE SAR



VOLUME SAR

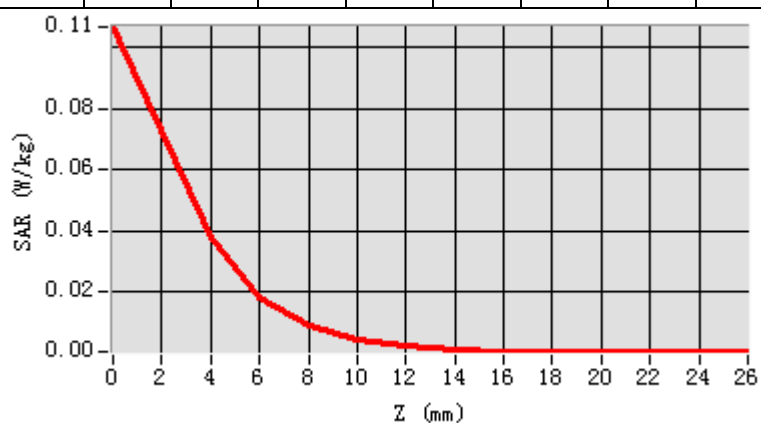


Maximum location: X=-10.00, Y=21.00

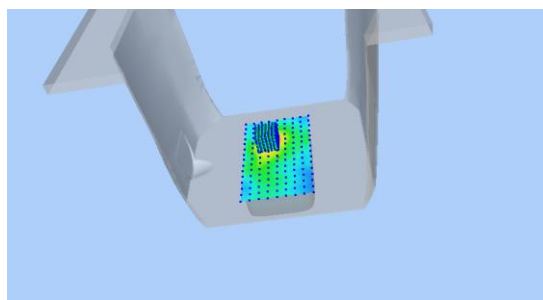
SAR Peak: 0.10 W/kg

SAR 10g (W/Kg)	0.014719
SAR 1g (W/Kg)	0.038743

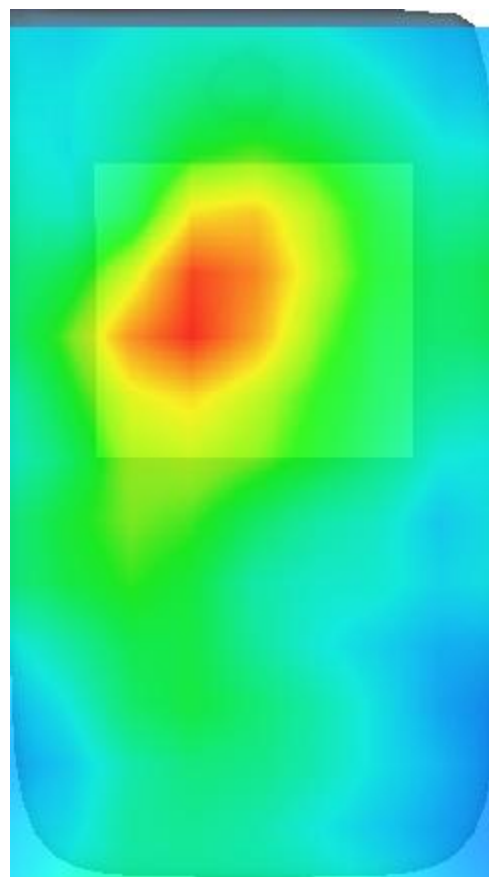
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.10 67	0.03 81	0.01 84	0.00 90	0.00 44	0.00 22	0.00 10	0.00 06	0.00 05	0.00 05	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 14

Date of measurement: 20/5/2023

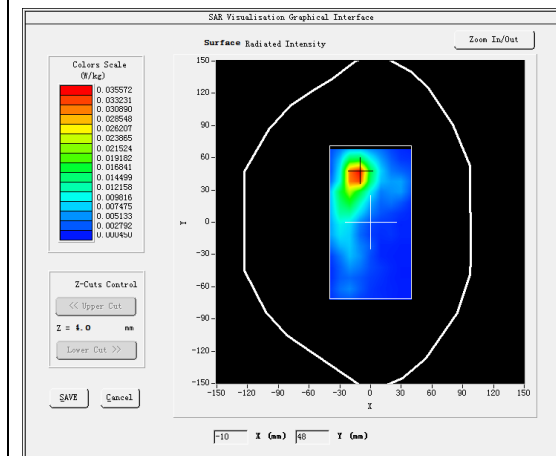
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11ac U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11ac (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.07</u>

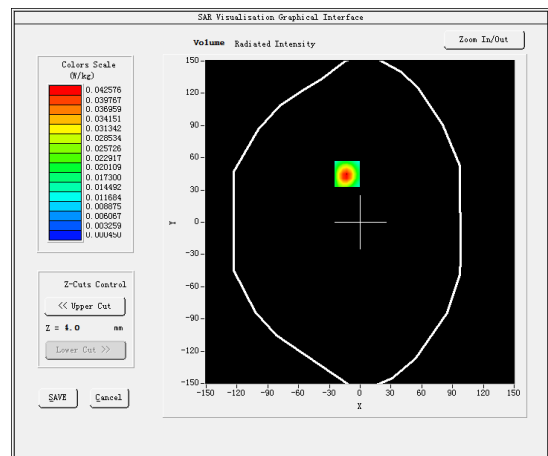
B. SAR Measurement Results

Frequency (MHz)	5755.000000
Relative permittivity (real part)	34.784593
Relative permittivity (imaginary part)	16.291216
Conductivity (S/m)	5.235816
Variation (%)	-1.120000

SURFACE SAR



VOLUME SAR

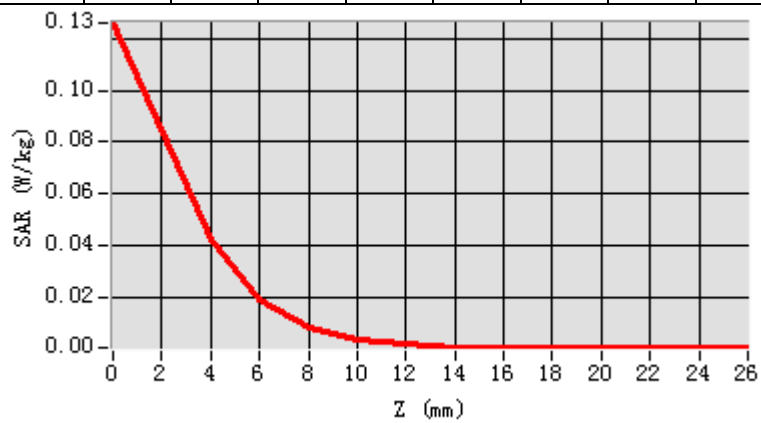


Maximum location: X=-13.00, Y=45.00

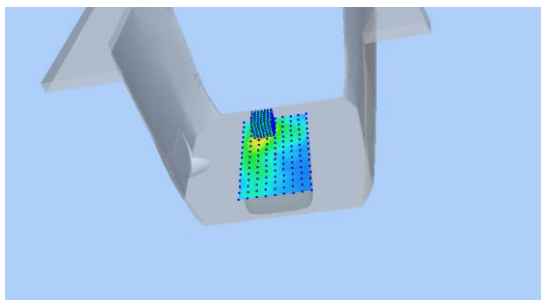
SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.015106
SAR 1g (W/Kg)	0.043652

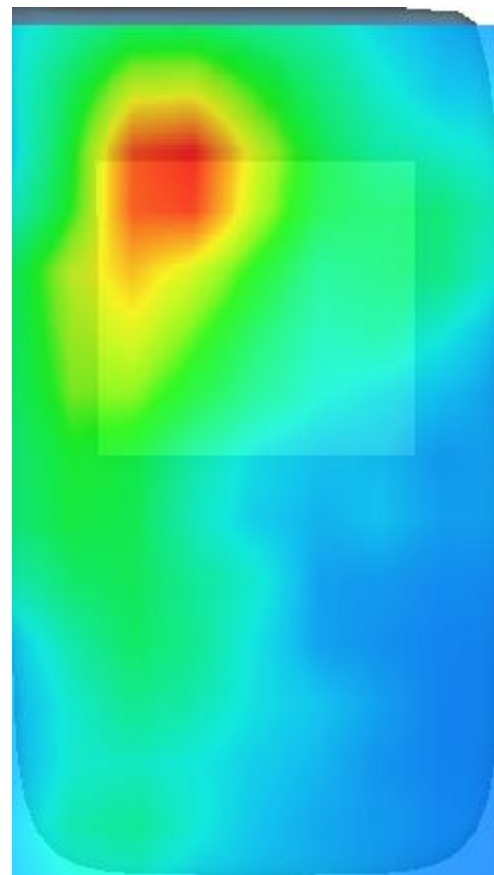
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.12 60	0.04 26	0.01 89	0.00 85	0.00 38	0.00 17	0.00 08	0.00 06	0.00 04	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 15

Date of measurement: 28/4/2023

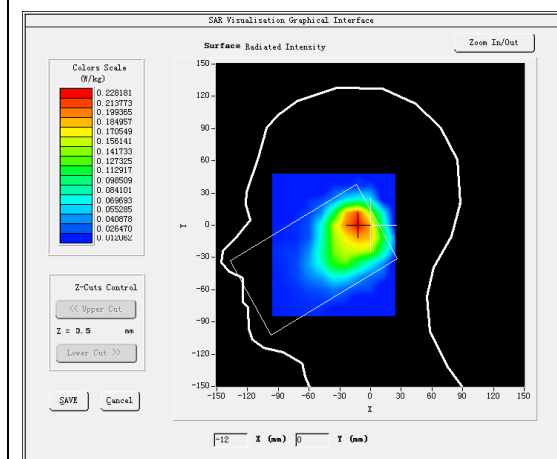
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7,dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

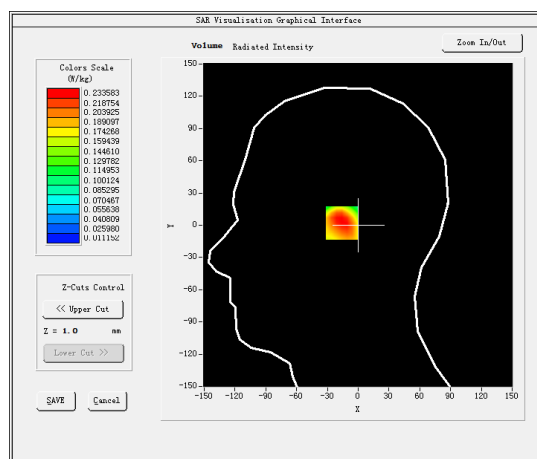
B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative permittivity (real part)	38.284718
Relative permittivity (imaginary part)	12.915069
Conductivity (S/m)	1.730619
Variation (%)	-1.070000

SURFACE SAR



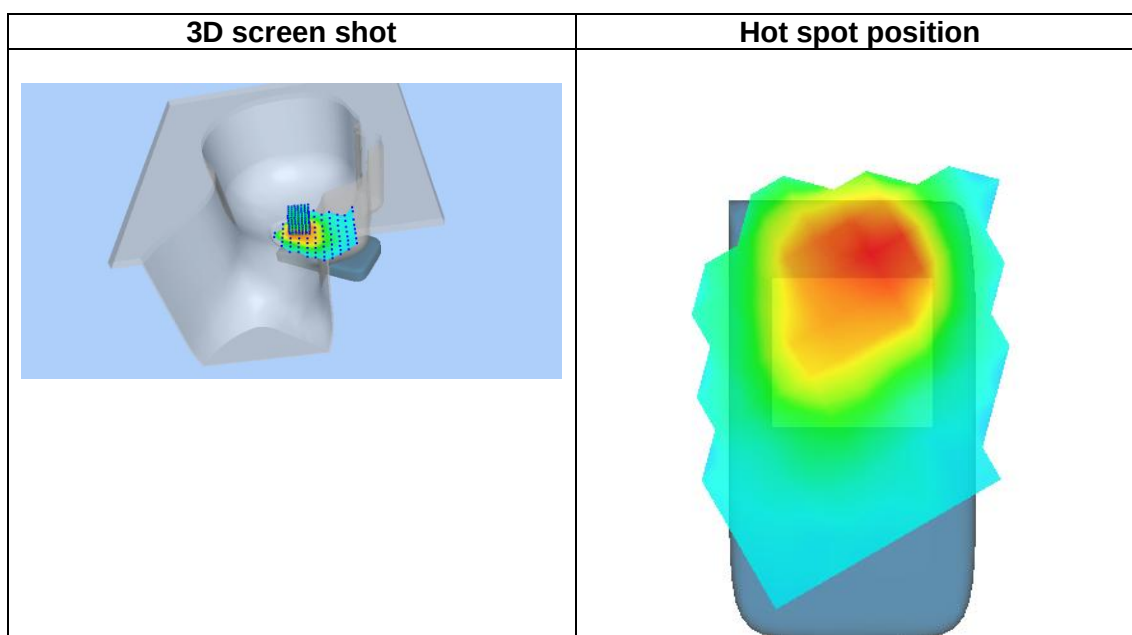
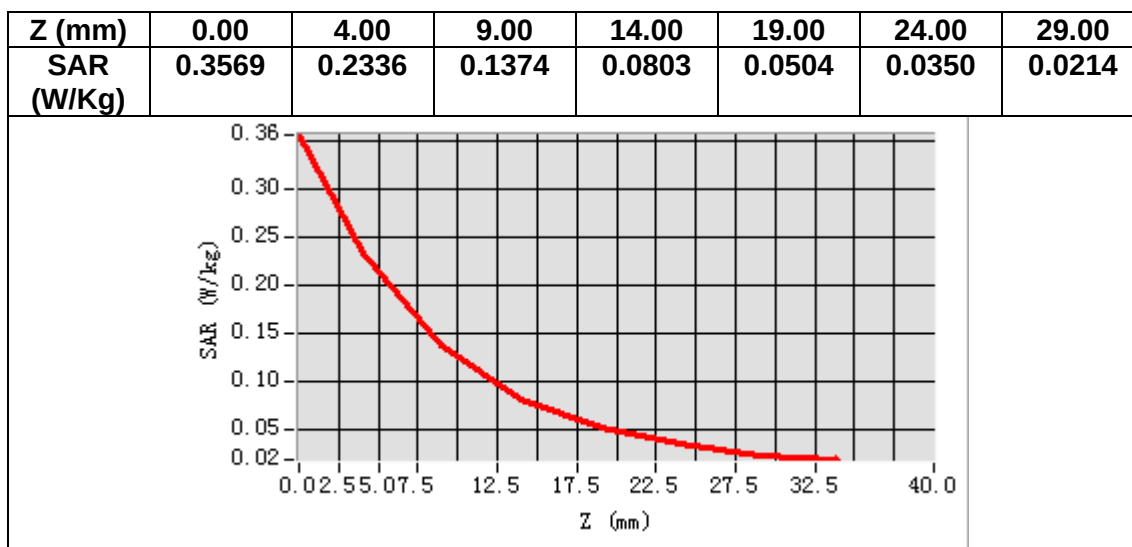
VOLUME SAR



Maximum location: X=-13.00, Y=2.00

SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.131974
SAR 1g (W/Kg)	0.228366



MEASUREMENT 16

Date of measurement: 28/4/2023

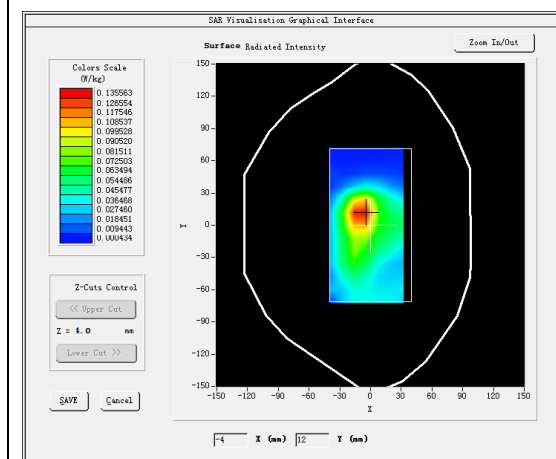
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11b ISM</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

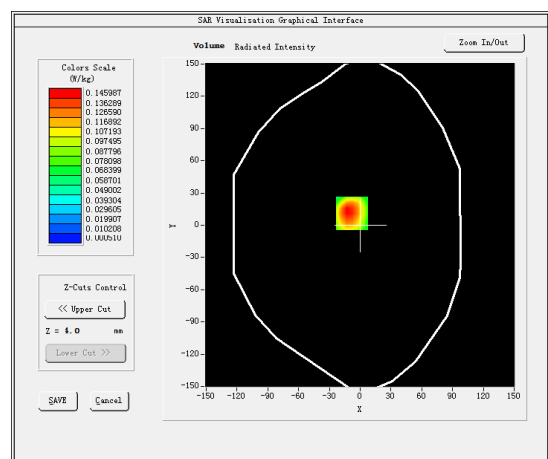
B. SAR Measurement Results

Frequency (MHz)	2462.000000
Relative permittivity (real part)	38.284718
Relative permittivity (imaginary part)	12.915069
Conductivity (S/m)	1.730619
Variation (%)	-2.340000

SURFACE SAR



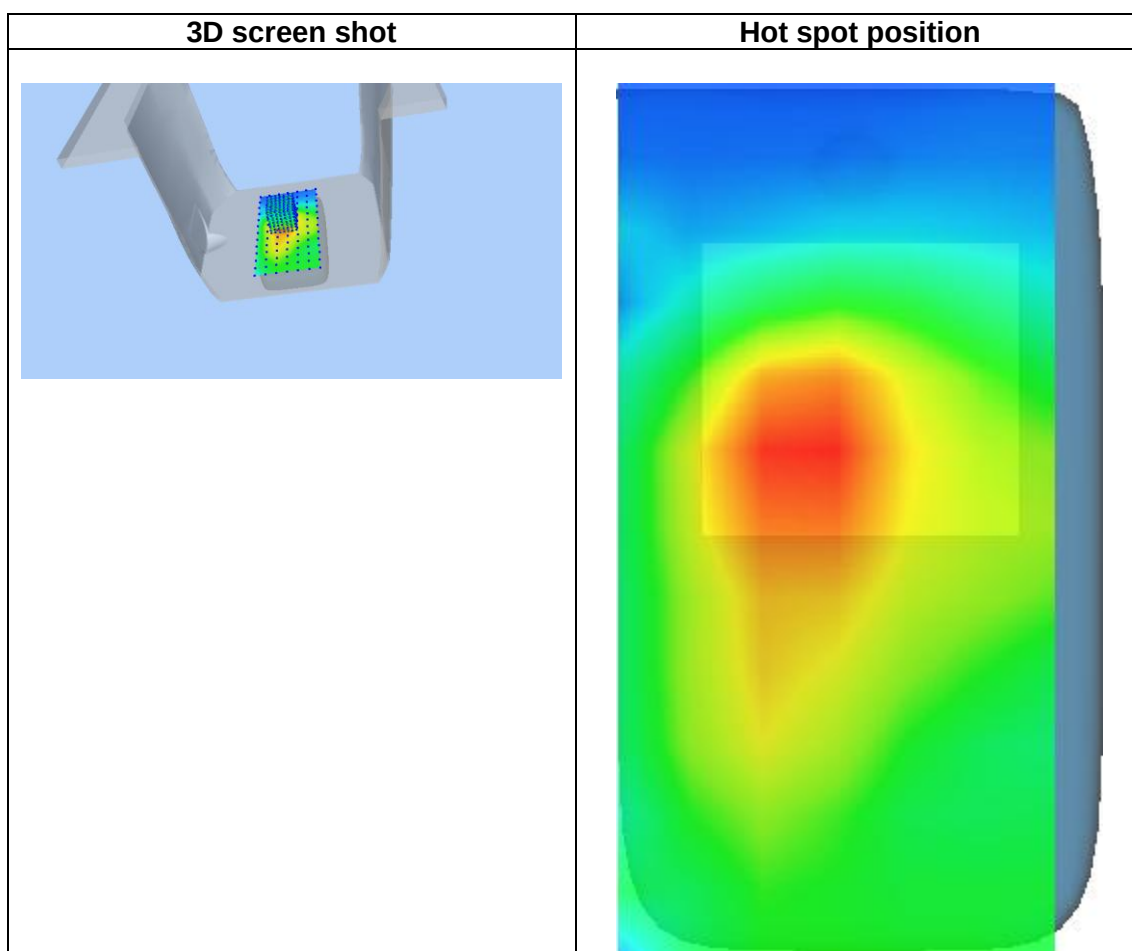
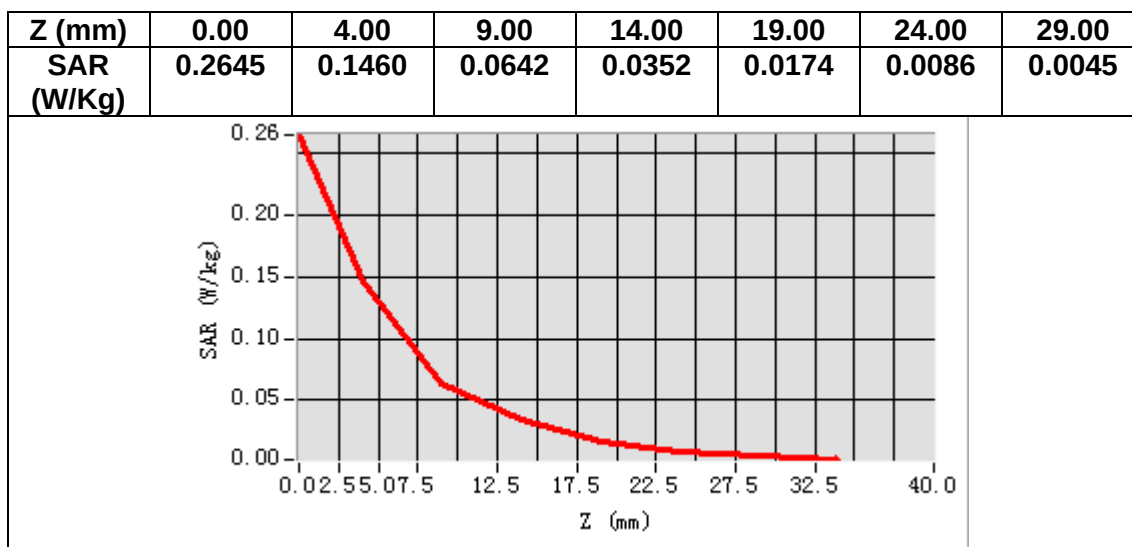
VOLUME SAR



Maximum location: X=-8.00, Y=11.00

SAR Peak: 0.24 W/kg

SAR 10g (W/Kg)	0.070161
SAR 1g (W/Kg)	0.138187



MEASUREMENT 17

Date of measurement: 26/4/2023

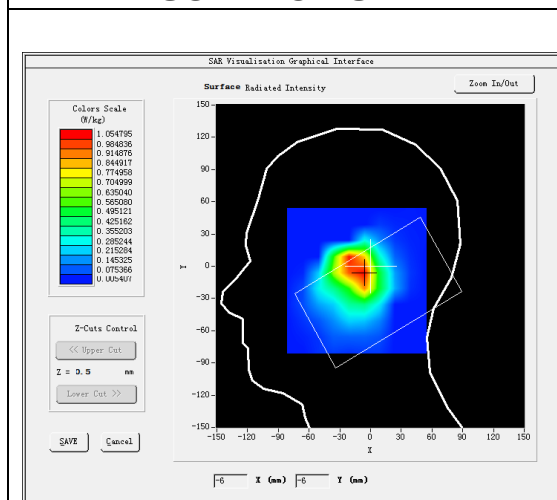
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 2</u>
<u>Channels</u>	<u>High</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.91</u>

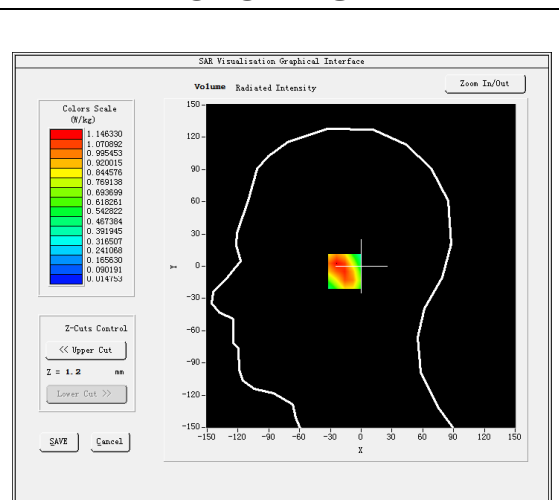
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.845711
Relative permittivity (imaginary part)	13.547294
Conductivity (S/m)	1.429992
Variation (%)	-0.800000

SURFACE SAR



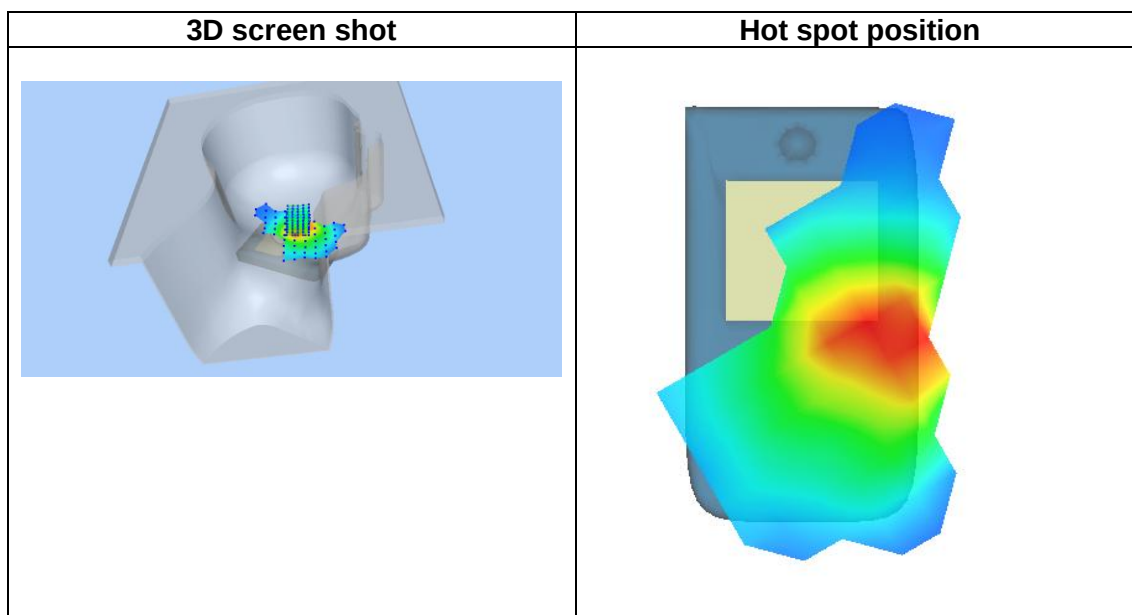
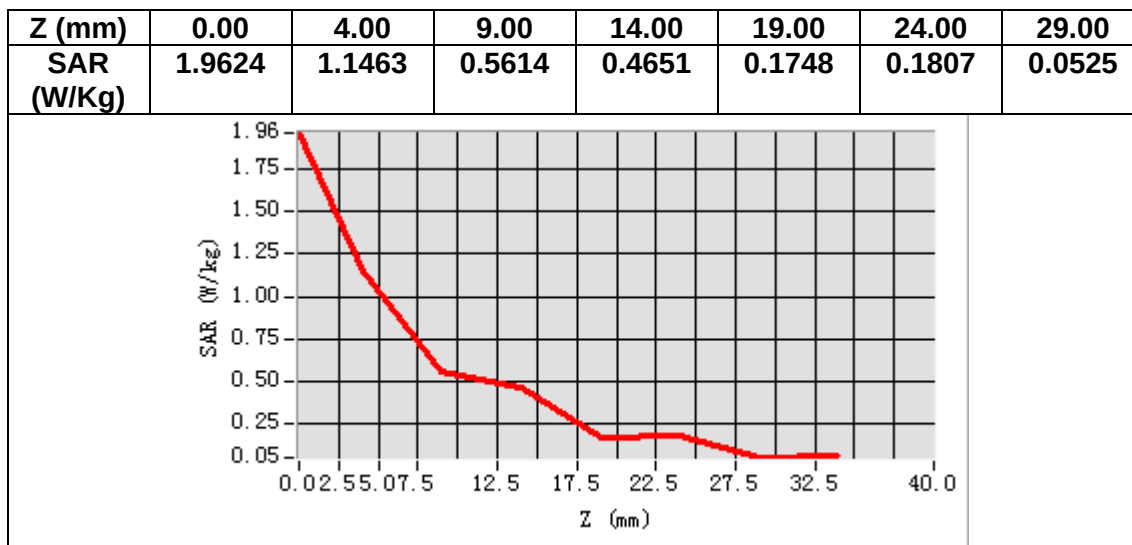
VOLUME SAR



Maximum location: X=-10.00, Y=-5.00

SAR Peak: 1.66 W/kg

SAR 10g (W/Kg)	0.650215
SAR 1g (W/Kg)	1.107035



MEASUREMENT 18

Date of measurement: 26/4/2023

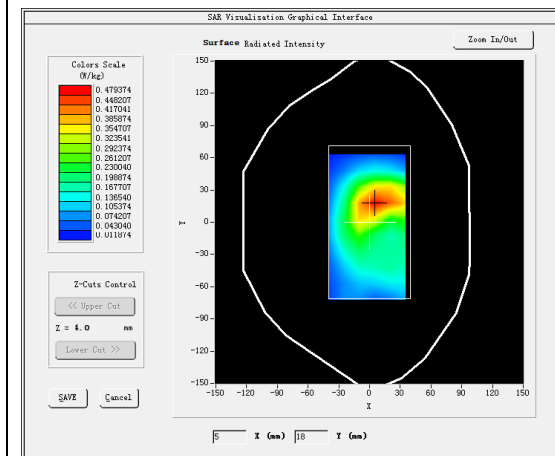
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.91</u>

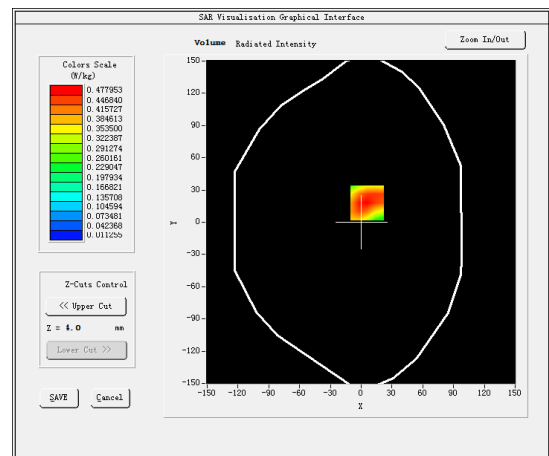
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.932110
Relative permittivity (imaginary part)	13.565094
Conductivity (S/m)	1.416799
Variation (%)	-0.430000

SURFACE SAR



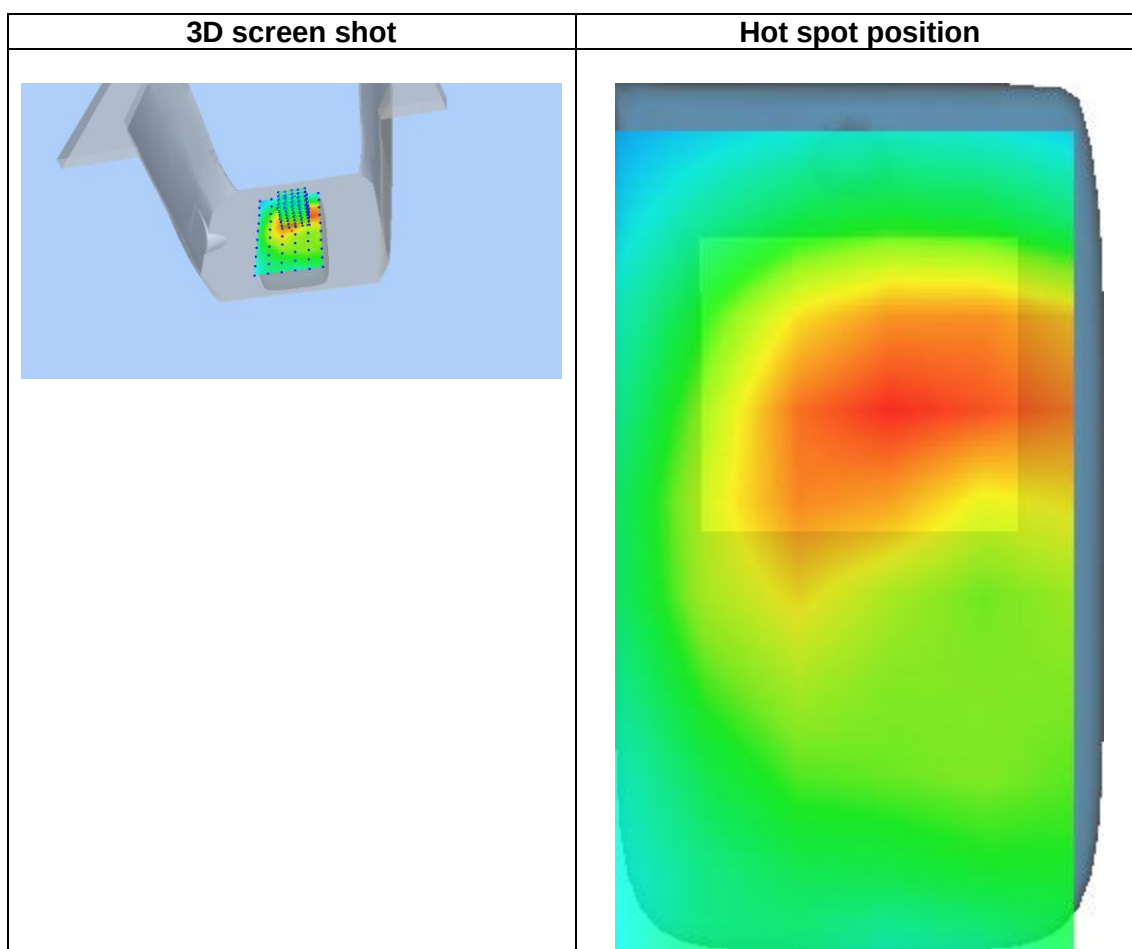
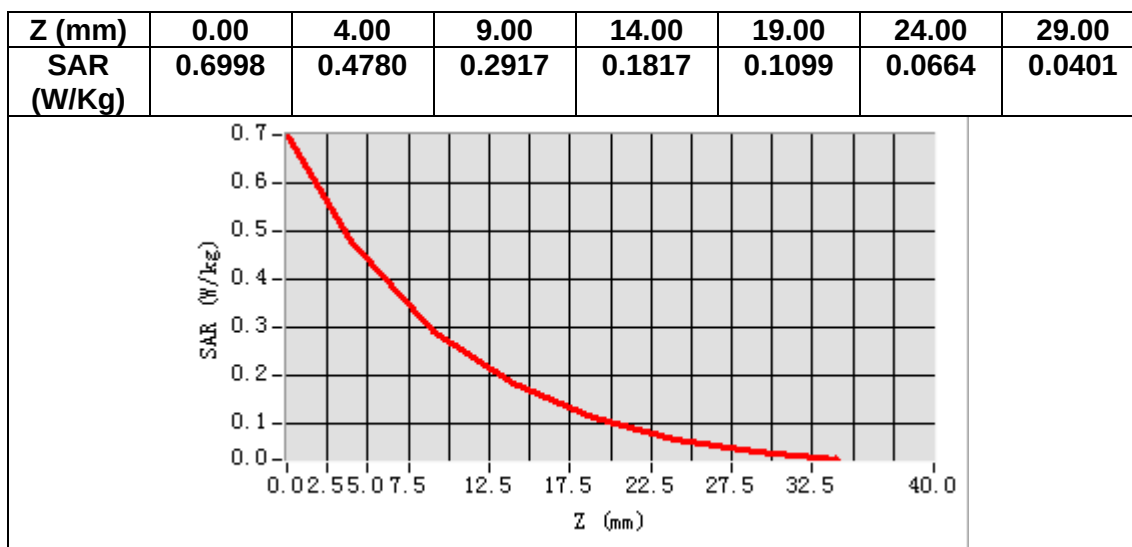
VOLUME SAR



Maximum location: X=6.00, Y=18.00

SAR Peak: 0.71 W/kg

SAR 10g (W/Kg)	0.276384
SAR 1g (W/Kg)	0.468078



MEASUREMENT 19

Date of measurement: 24/4/2023

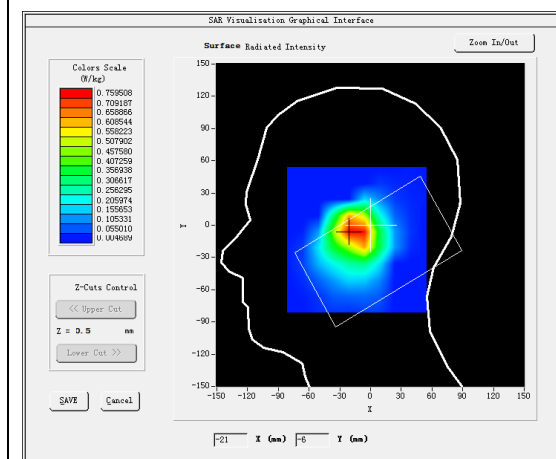
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.73</u>

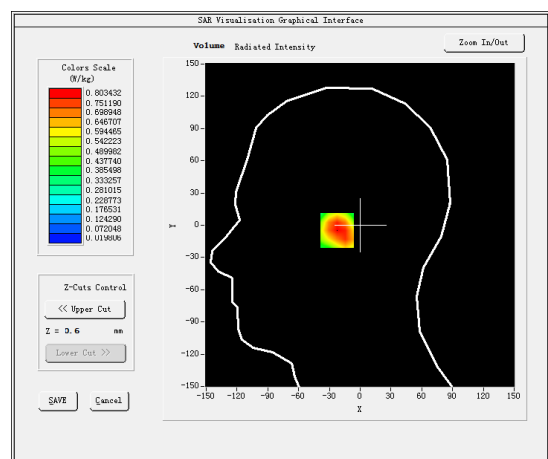
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.429726
Relative permittivity (imaginary part)	13.736429
Conductivity (S/m)	1.322131
Variation (%)	-1.280000

SURFACE SAR



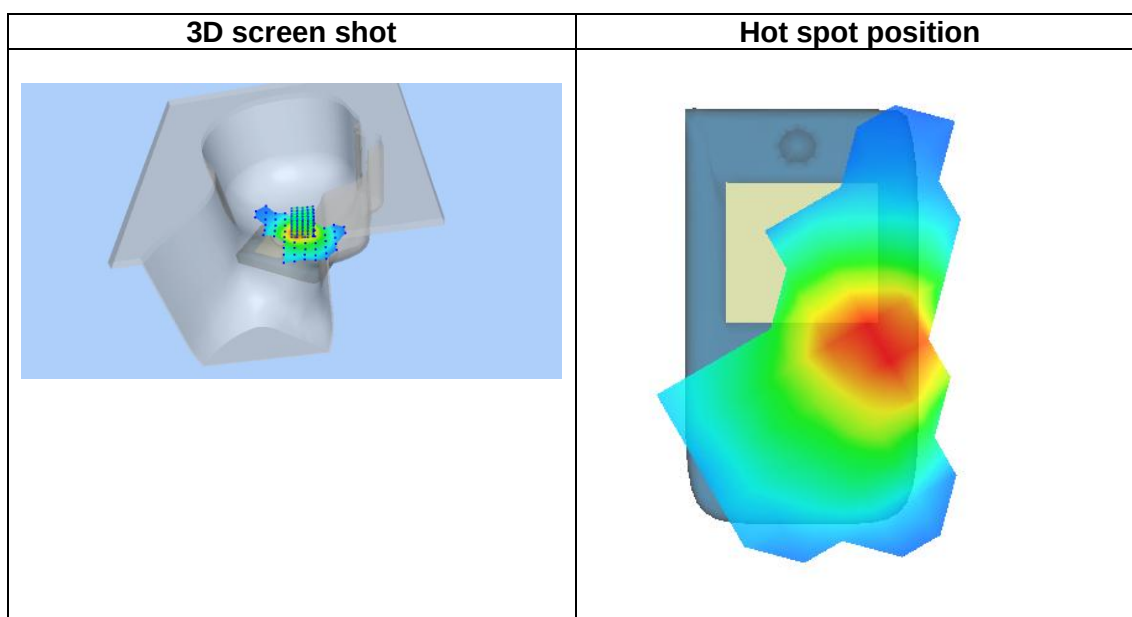
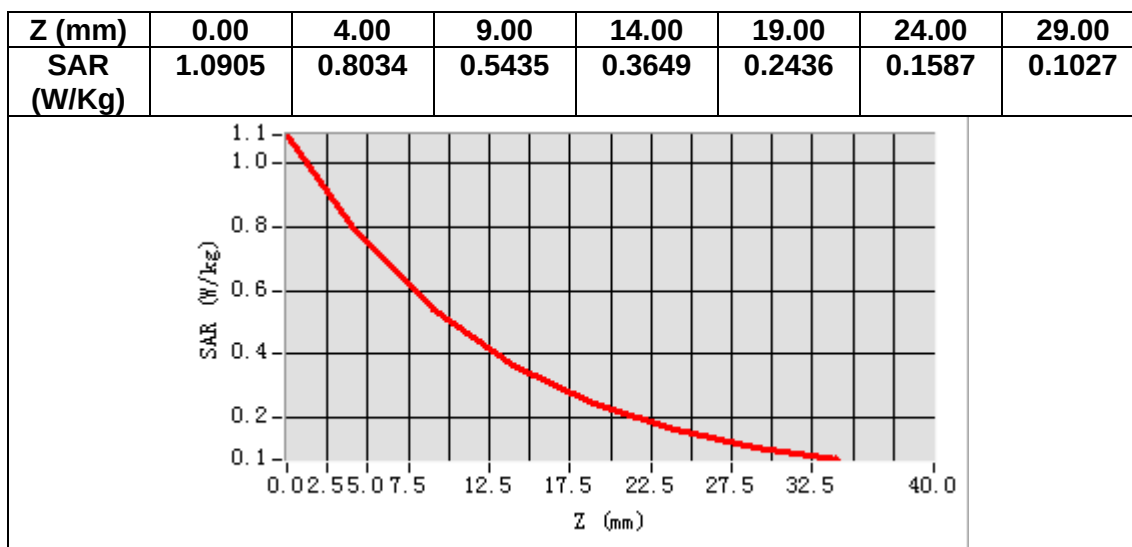
VOLUME SAR



Maximum location: X=-17.00, Y=-5.00

SAR Peak: 1.14 W/kg

SAR 10g (W/Kg)	0.478352
SAR 1g (W/Kg)	0.777754



MEASUREMENT 20

Date of measurement: 24/4/2023

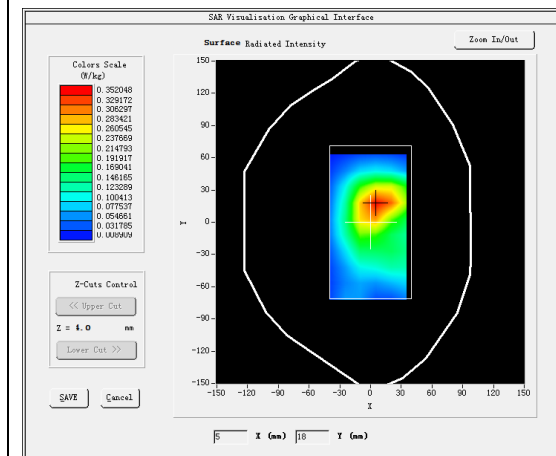
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 4</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.73</u>

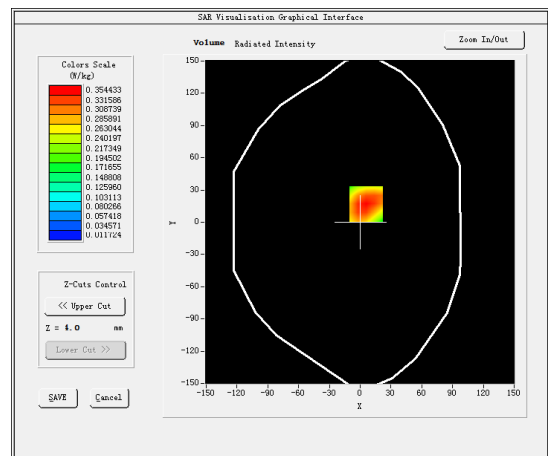
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.429726
Relative permittivity (imaginary part)	13.736429
Conductivity (S/m)	1.322131
Variation (%)	-1.040000

SURFACE SAR



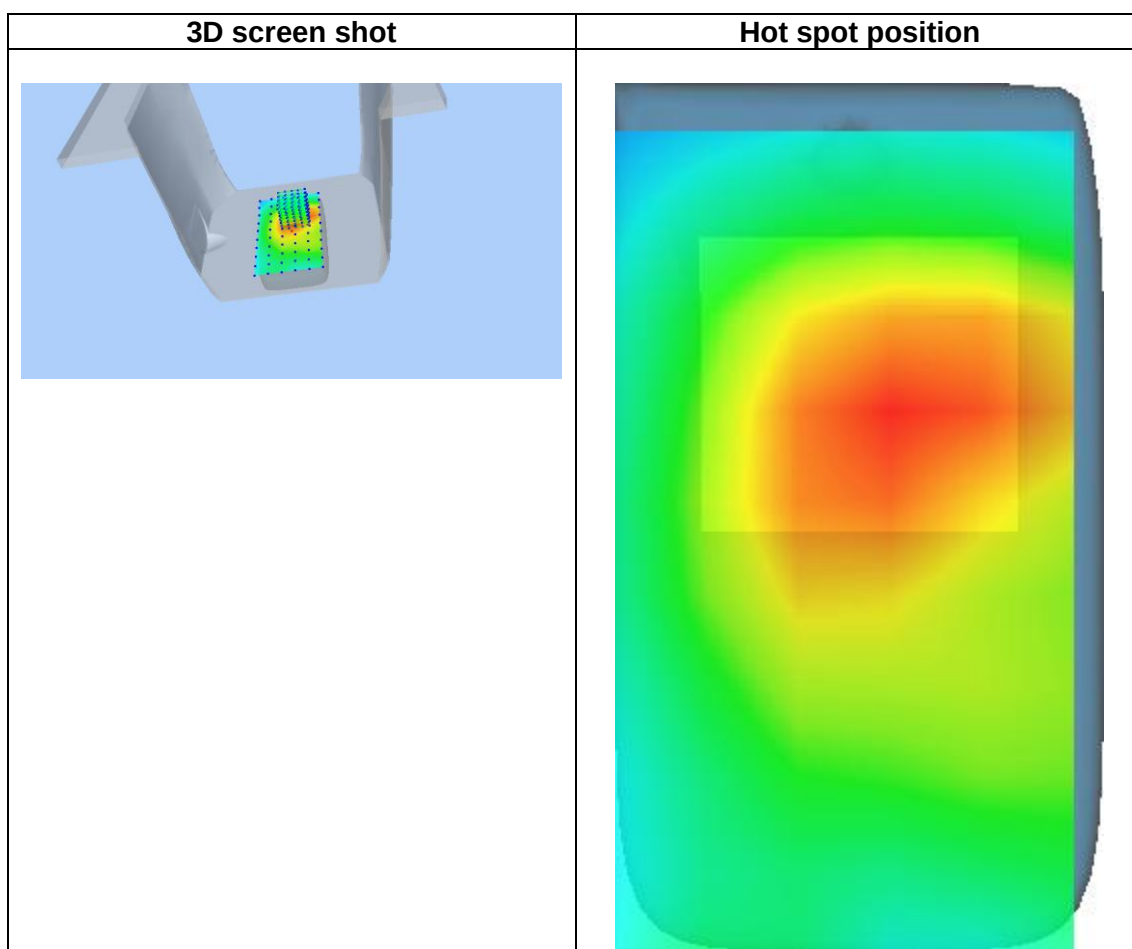
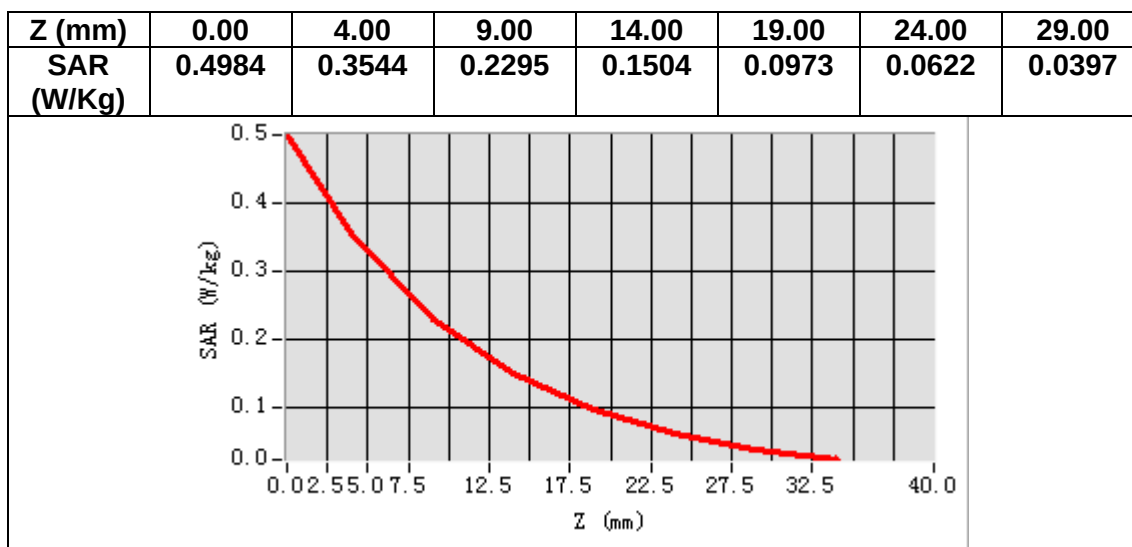
VOLUME SAR



Maximum location: X=6.00, Y=17.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.211937
SAR 1g (W/Kg)	0.340664



MEASUREMENT 21

Date of measurement: 22/4/2023

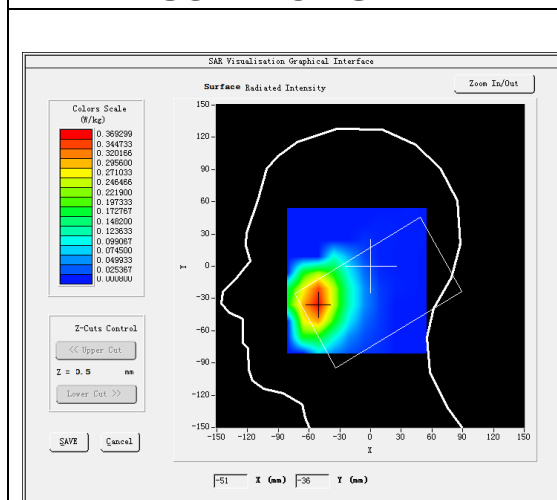
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.50</u>

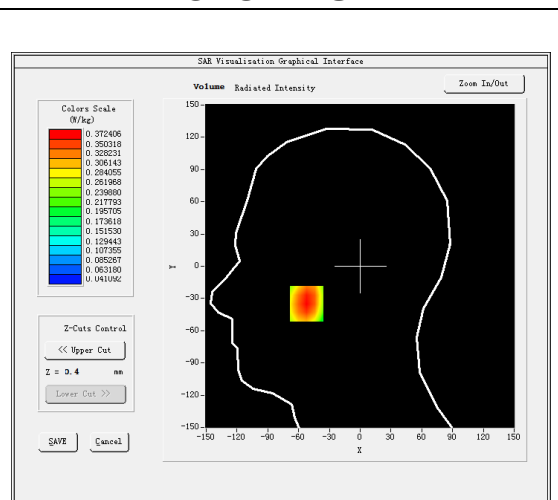
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.359348
Relative permittivity (imaginary part)	19.844341
Conductivity (S/m)	0.922211
Variation (%)	0.710000

SURFACE SAR



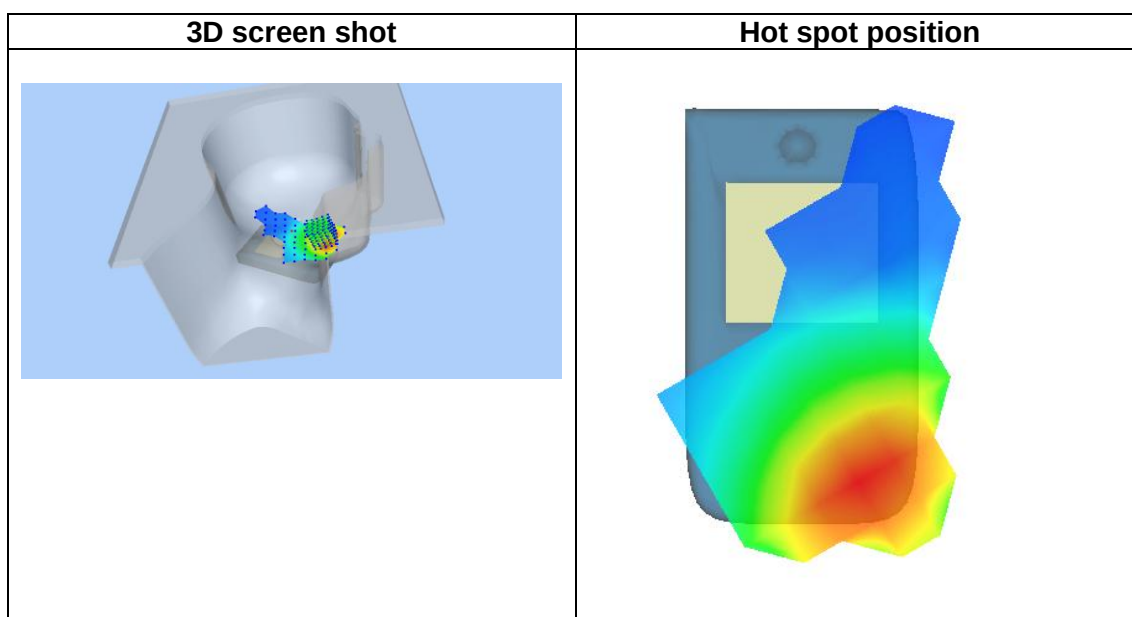
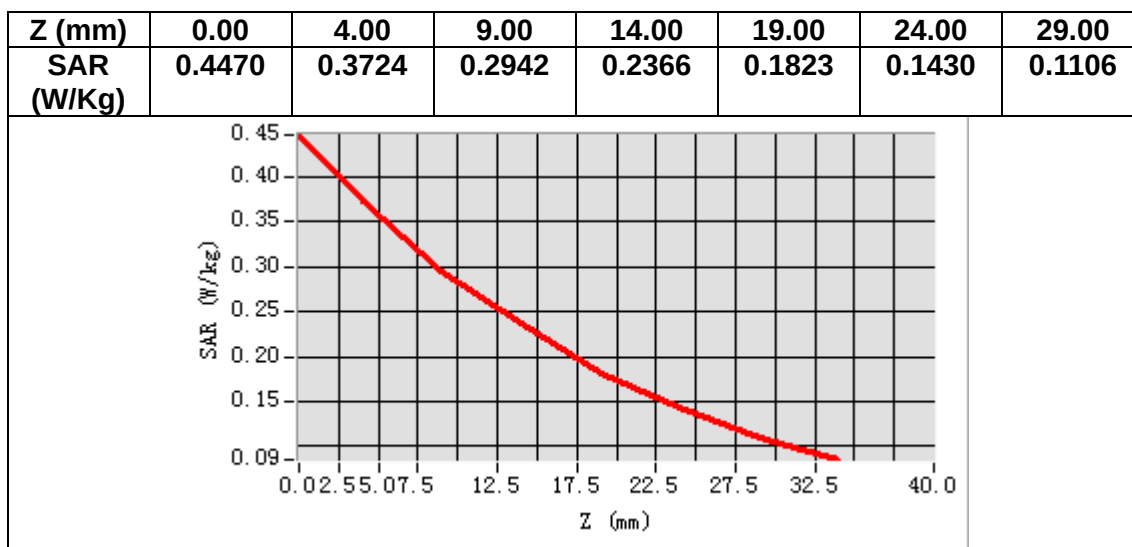
VOLUME SAR



Maximum location: X=-52.00, Y=-35.00

SAR Peak: 0.45 W/kg

SAR 10g (W/Kg)	0.268454
SAR 1g (W/Kg)	0.365473



MEASUREMENT 22

Date of measurement: 22/4/2023

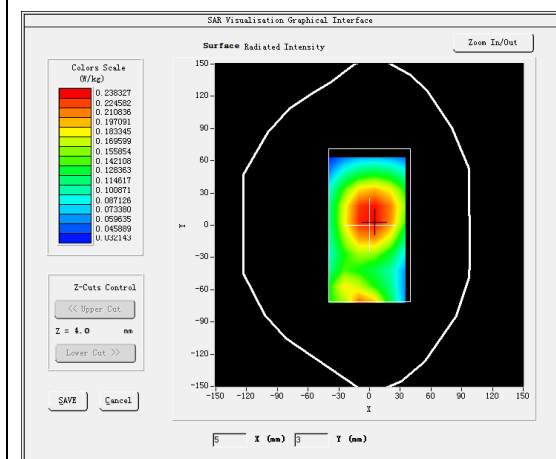
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.50</u>

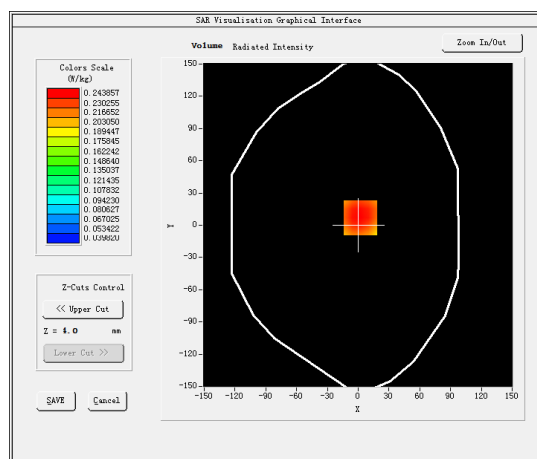
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.359348
Relative permittivity (imaginary part)	19.844341
Conductivity (S/m)	0.922211
Variation (%)	0.050000

SURFACE SAR



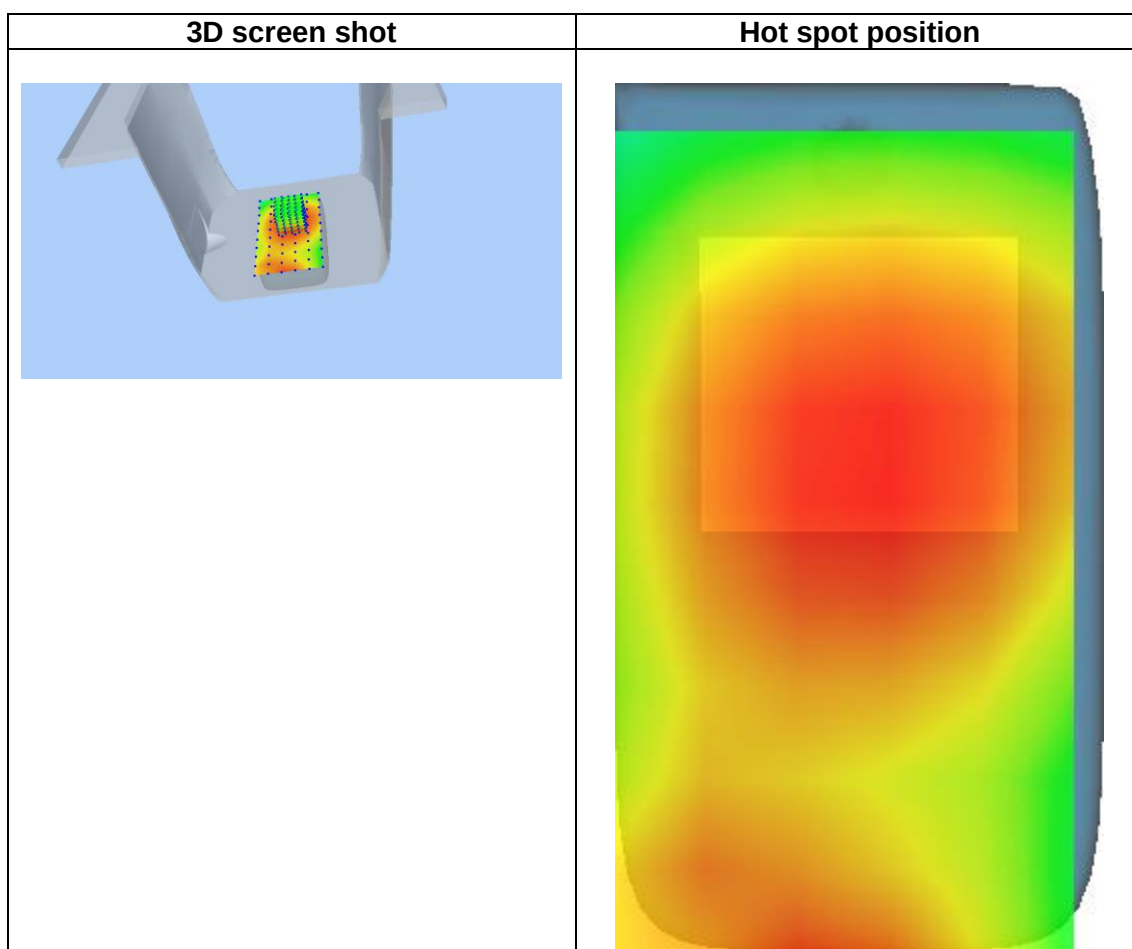
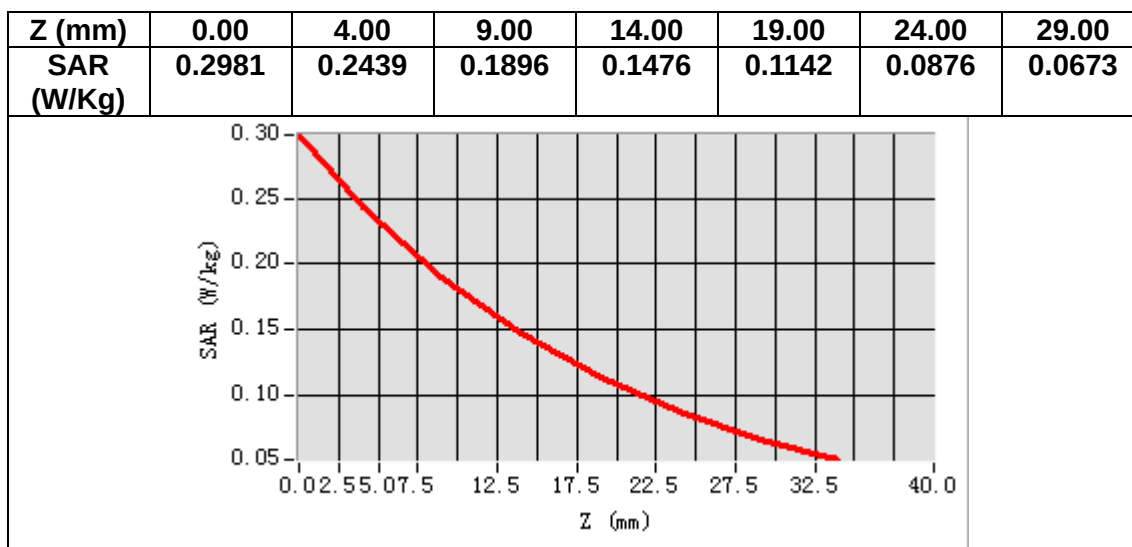
VOLUME SAR



Maximum location: X=2.00, Y=7.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.179943
SAR 1g (W/Kg)	0.241274



MEASUREMENT 23

Date of measurement: 20/4/2023

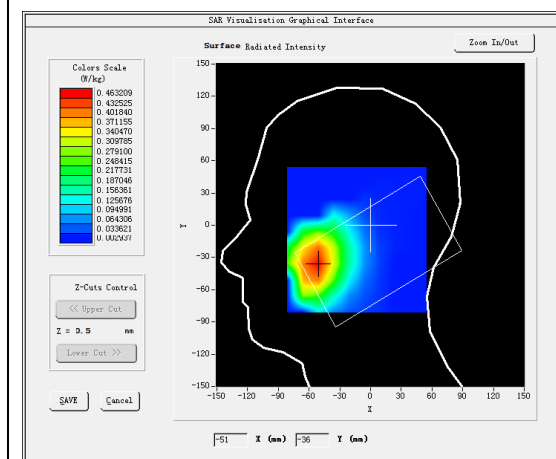
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7,dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.49</u>

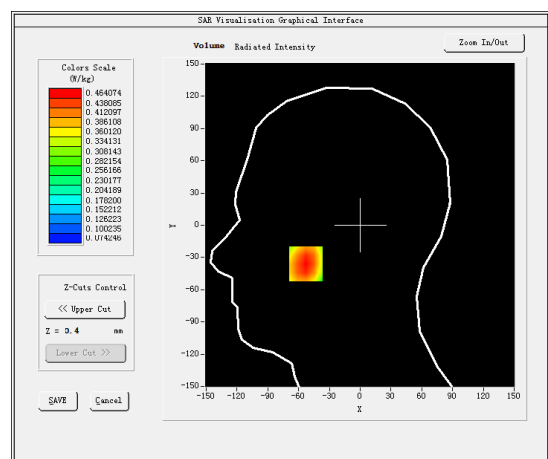
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.247990
Relative permittivity (imaginary part)	21.718025
Conductivity (S/m)	0.853639
Variation (%)	0.680000

SURFACE SAR



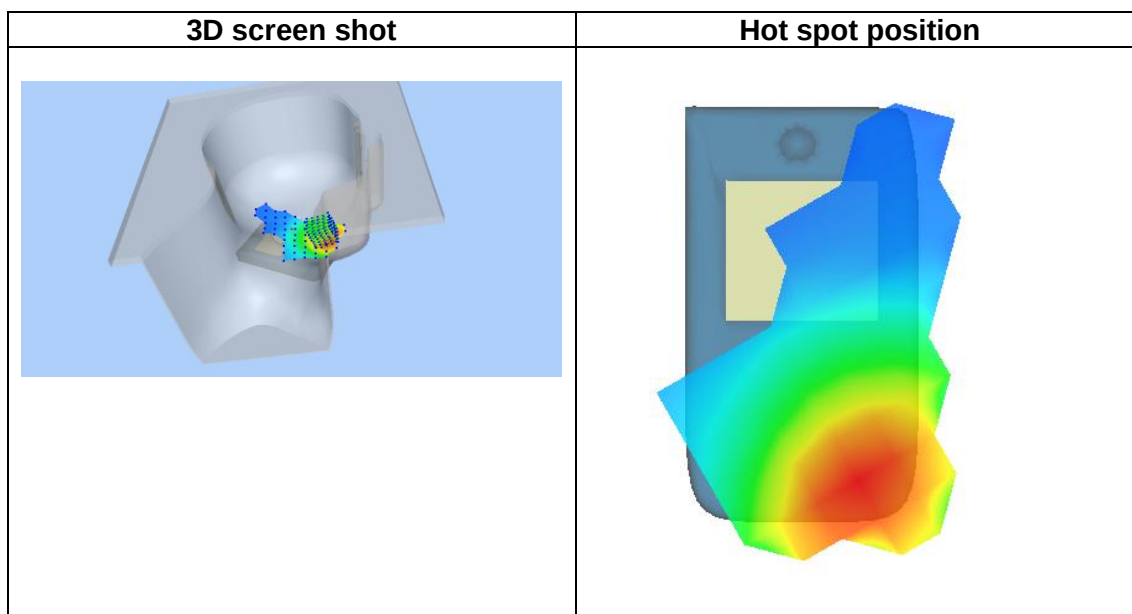
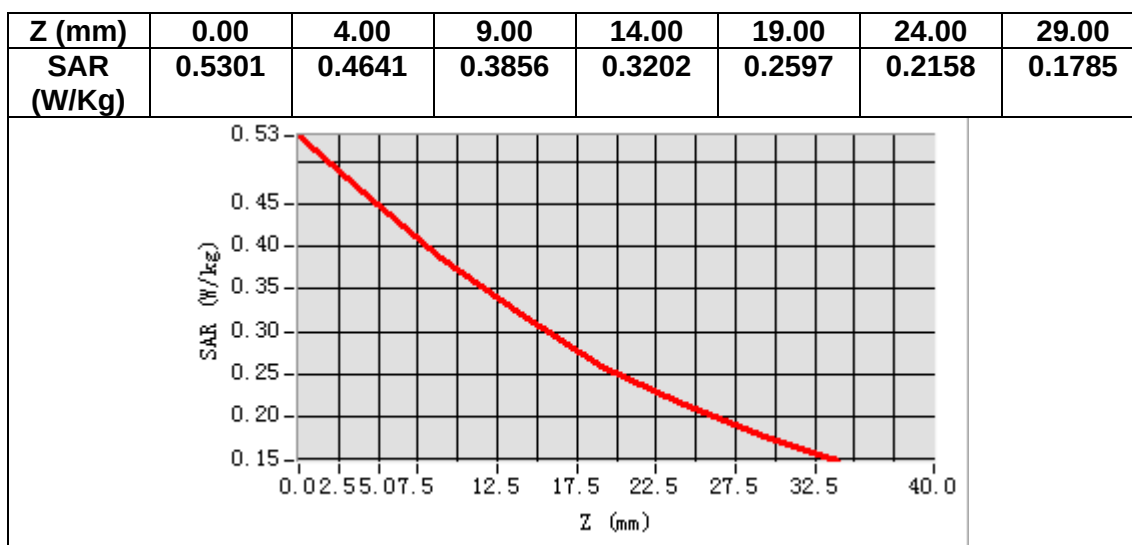
VOLUME SAR



Maximum location: X=-53.00, Y=-36.00

SAR Peak: 0.54 W/kg

SAR 10g (W/Kg)	0.347597
SAR 1g (W/Kg)	0.447117



MEASUREMENT 24

Date of measurement: 20/4/2023

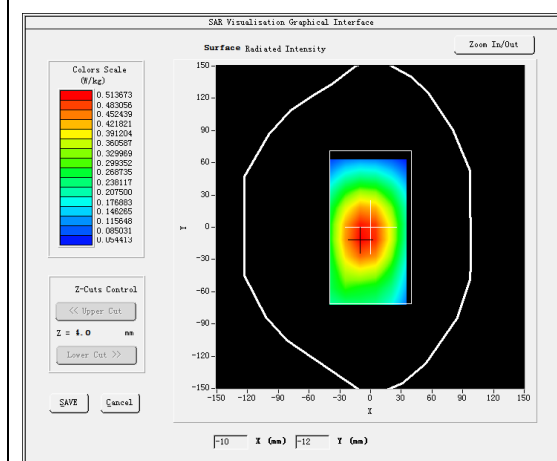
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 12</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.49</u>

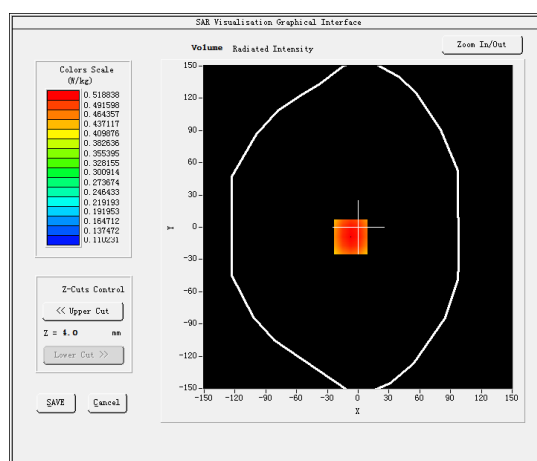
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.247990
Relative permittivity (imaginary part)	21.718025
Conductivity (S/m)	0.853639
Variation (%)	0.210000

SURFACE SAR



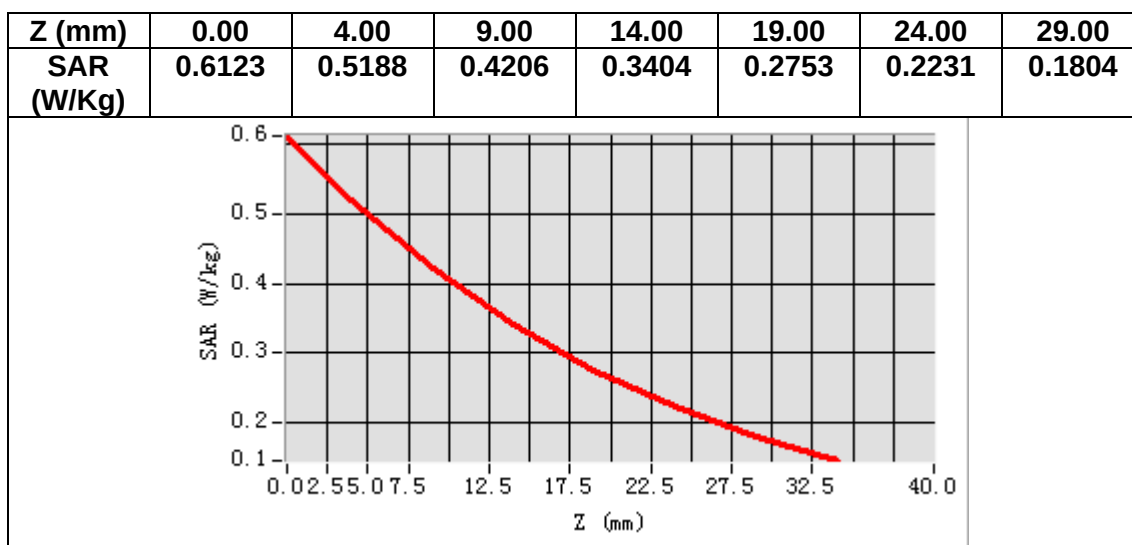
VOLUME SAR



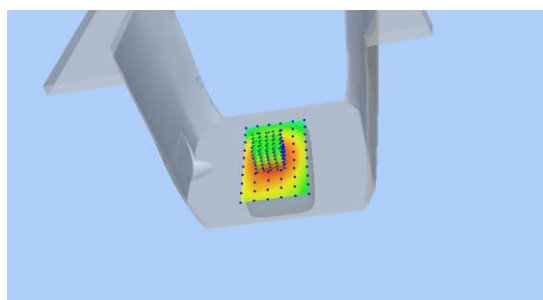
Maximum location: X=-7.00, Y=-9.00

SAR Peak: 0.61 W/kg

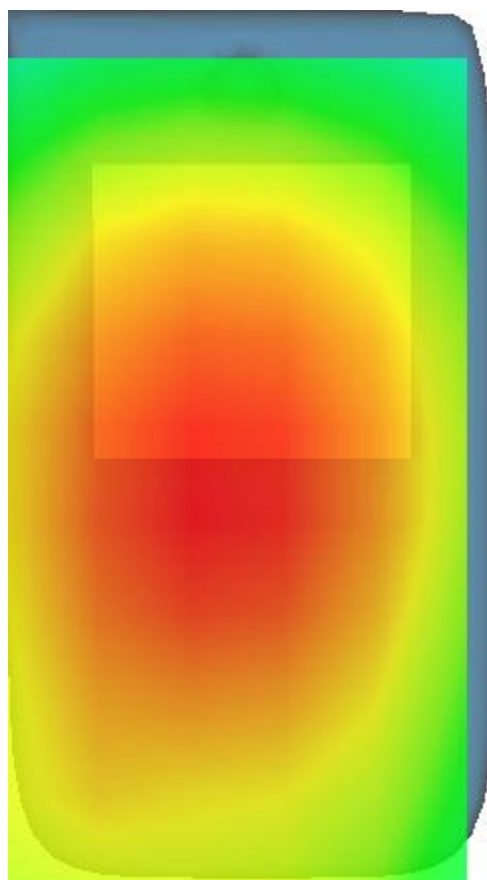
SAR 10g (W/Kg)	0.393869
SAR 1g (W/Kg)	0.504810



3D screen shot



Hot spot position



MEASUREMENT 25

Date of measurement: 20/4/2023

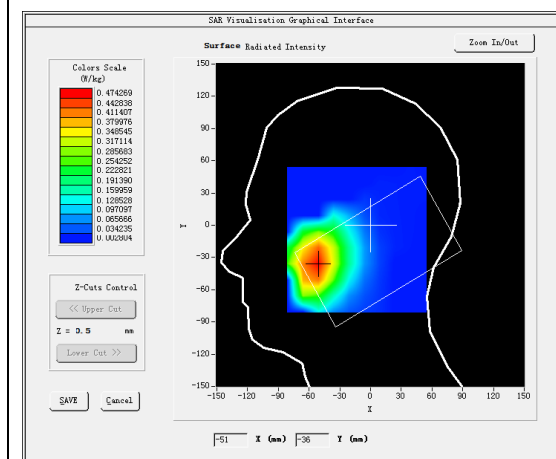
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>LTE band 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.49</u>

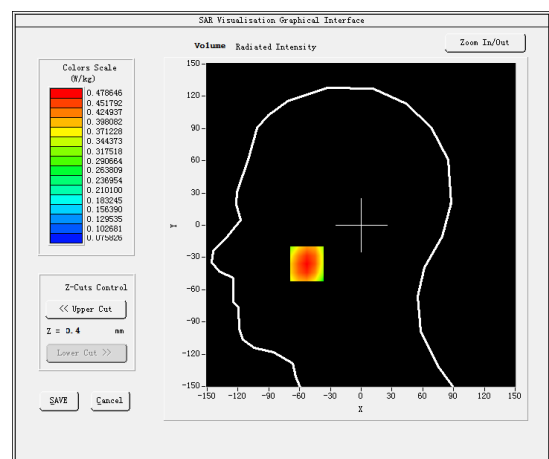
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.232639
Relative permittivity (imaginary part)	21.658476
Conductivity (S/m)	0.854307
Variation (%)	0.920000

SURFACE SAR



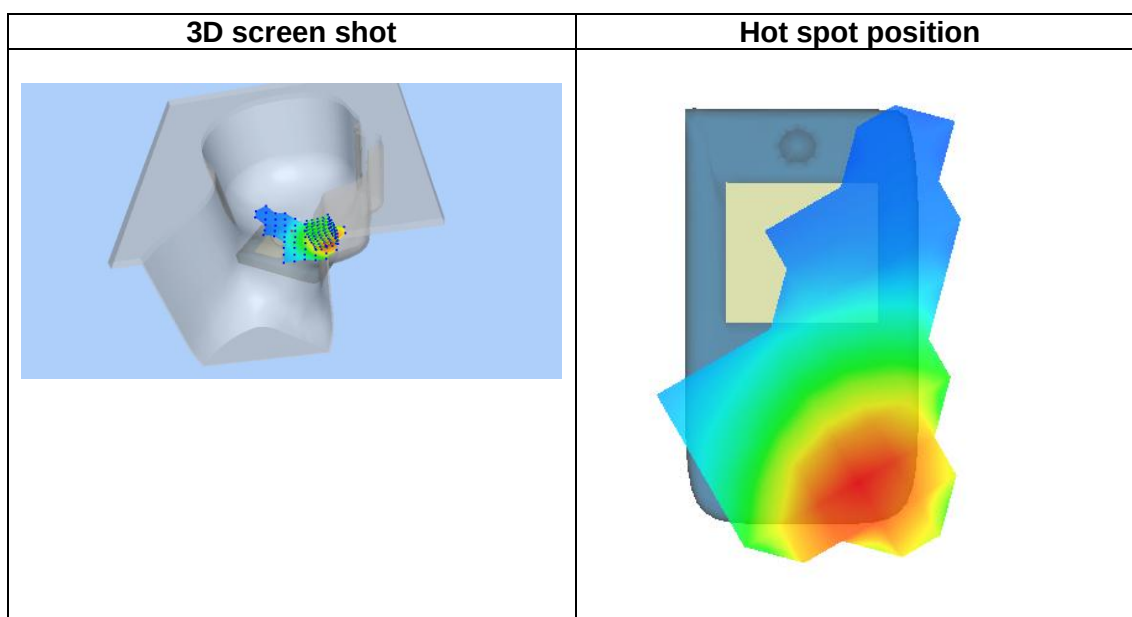
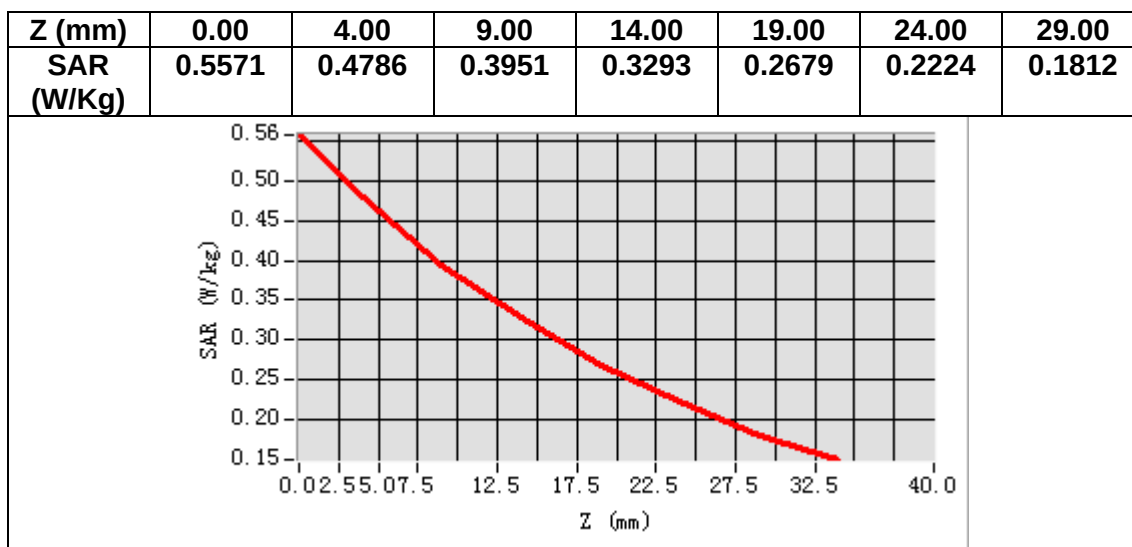
VOLUME SAR



Maximum location: X=-53.00, Y=-36.00

SAR Peak: 0.56 W/kg

SAR 10g (W/Kg)	0.358702
SAR 1g (W/Kg)	0.463317



MEASUREMENT 26

Date of measurement: 20/4/2023

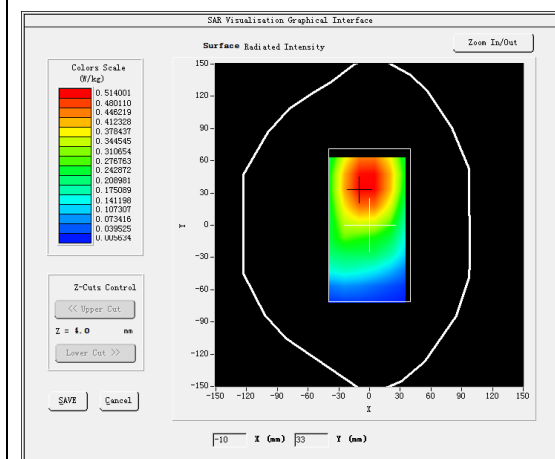
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
<u>ZoomScan</u>	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>LTE band 17</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.49</u>

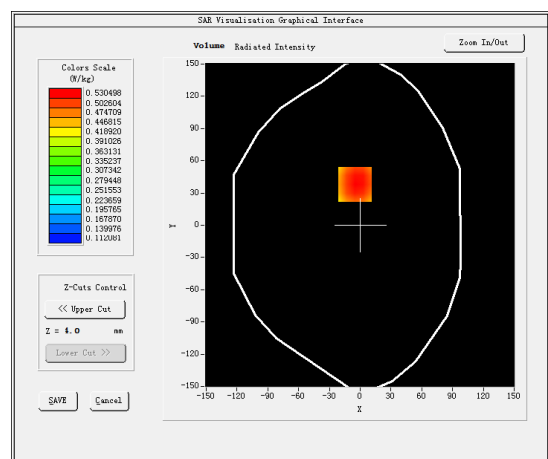
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.232639
Relative permittivity (imaginary part)	21.658476
Conductivity (S/m)	0.854307
Variation (%)	-0.180000

SURFACE SAR



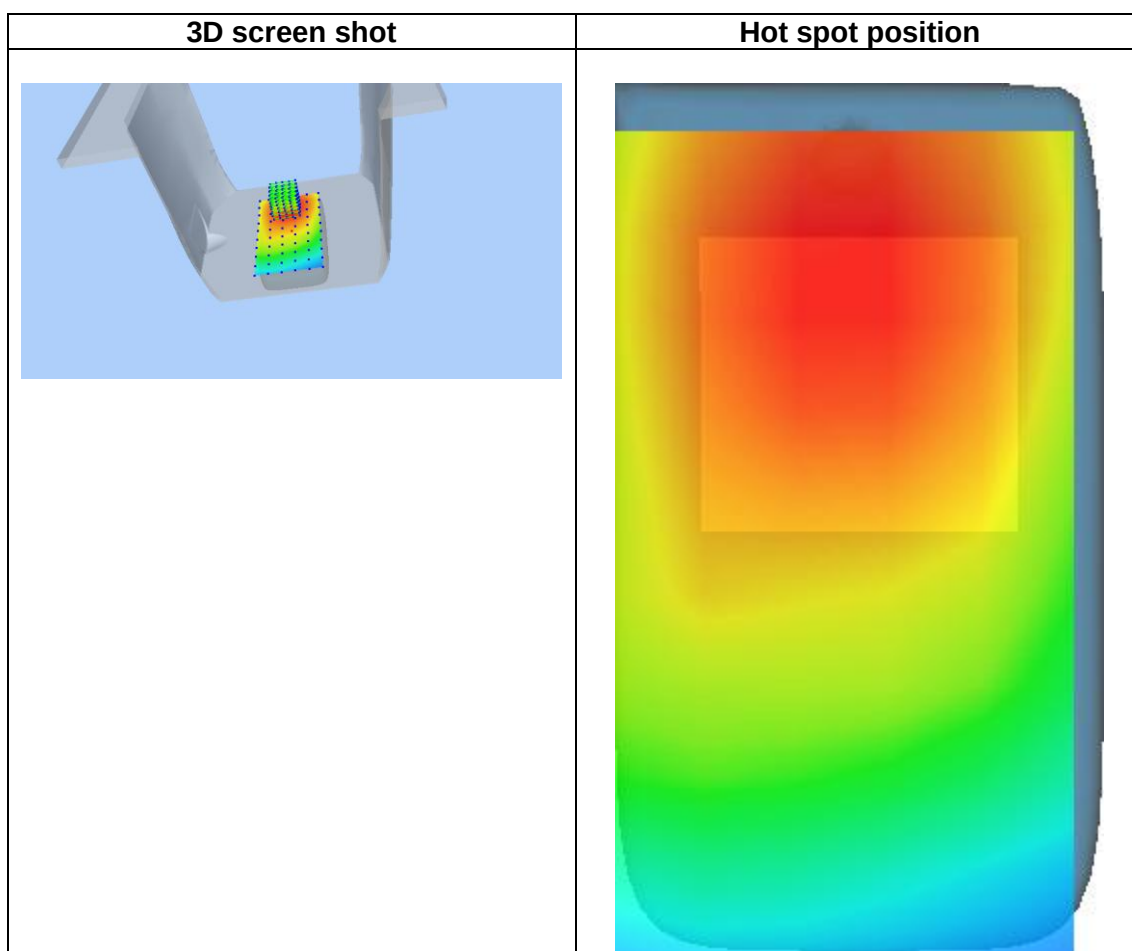
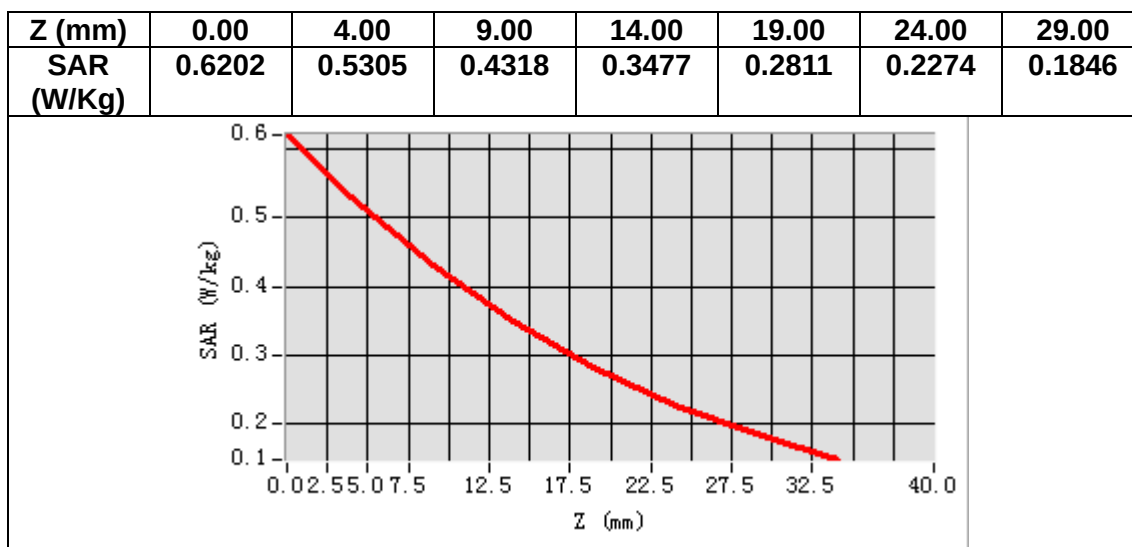
VOLUME SAR



Maximum location: X=-5.00, Y=38.00

SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.402096
SAR 1g (W/Kg)	0.514518



MEASUREMENT 27

Date of measurement: 30/4/2023

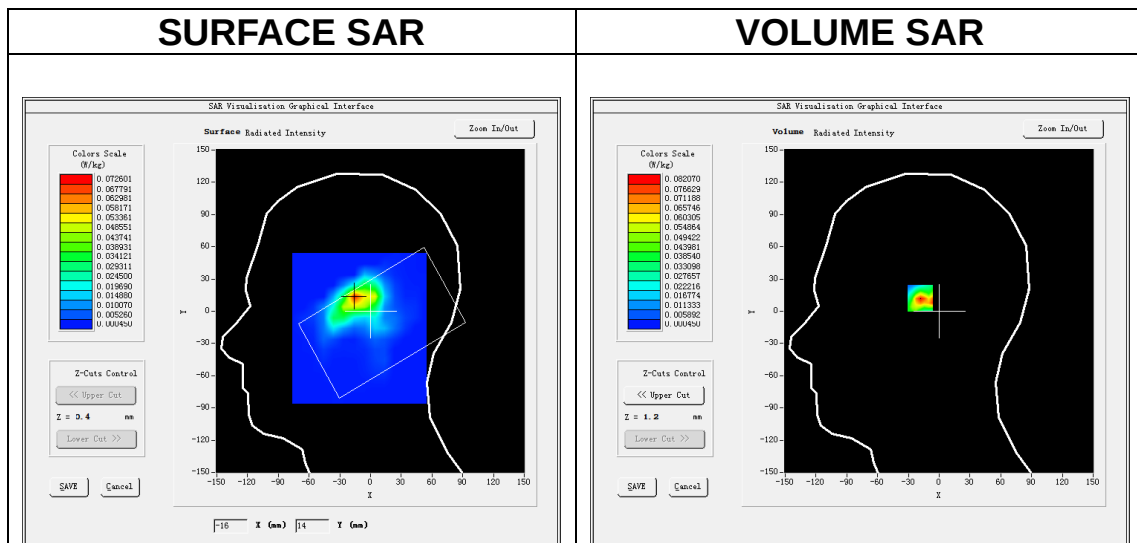
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.05</u>

B. SAR Measurement Results

Frequency (MHz)	5260.000000
Relative permittivity (real part)	36.321580
Relative permittivity (imaginary part)	16.515201
Conductivity (S/m)	4.800215
Variation (%)	1.020000

SURFACE SAR

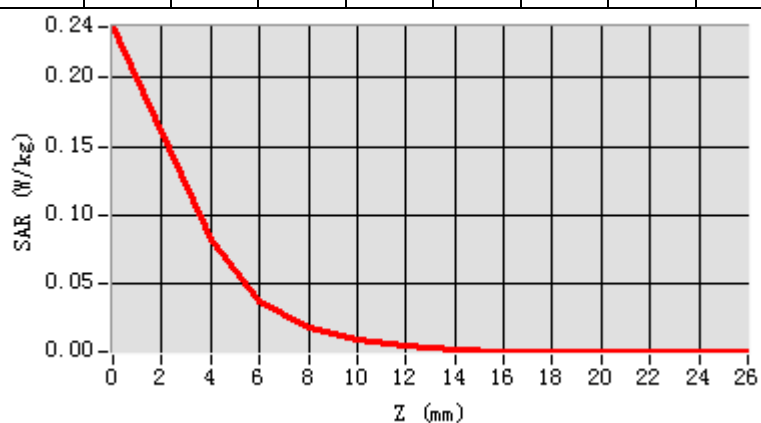


Maximum location: X=-15.00, Y=13.00

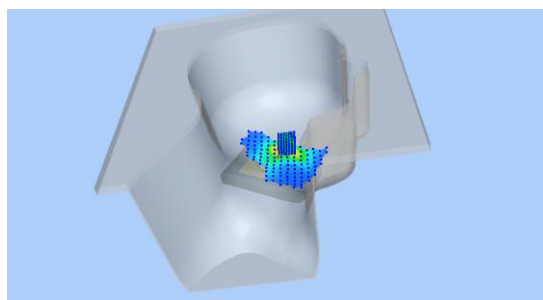
SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.023025
SAR 1g (W/Kg)	0.072015

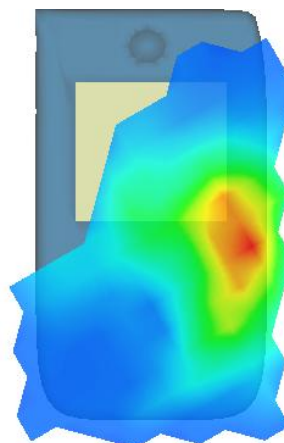
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.23 65	0.08 20	0.03 67	0.01 80	0.00 87	0.00 40	0.00 21	0.00 10	0.00 05	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 28

Date of measurement: 20/5/2023

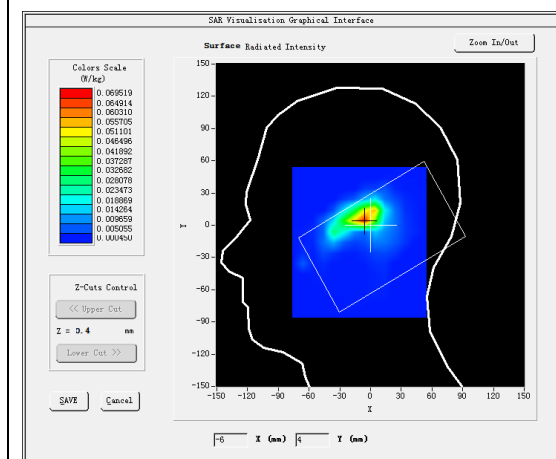
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11n U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.16</u>

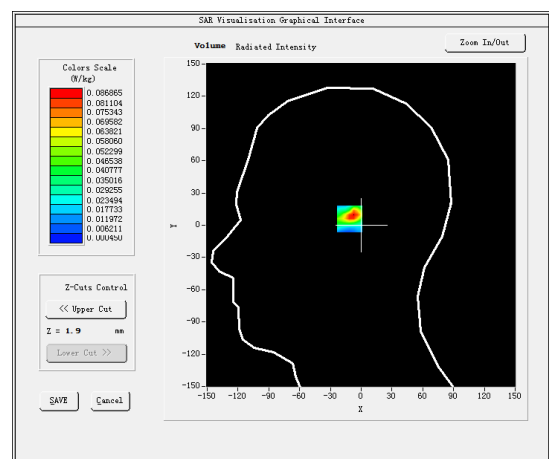
B. SAR Measurement Results

Frequency (MHz)	5500.000000
Relative permittivity (real part)	34.762010
Relative permittivity (imaginary part)	16.202151
Conductivity (S/m)	5.202561
Variation (%)	1.020000

SURFACE SAR



VOLUME SAR

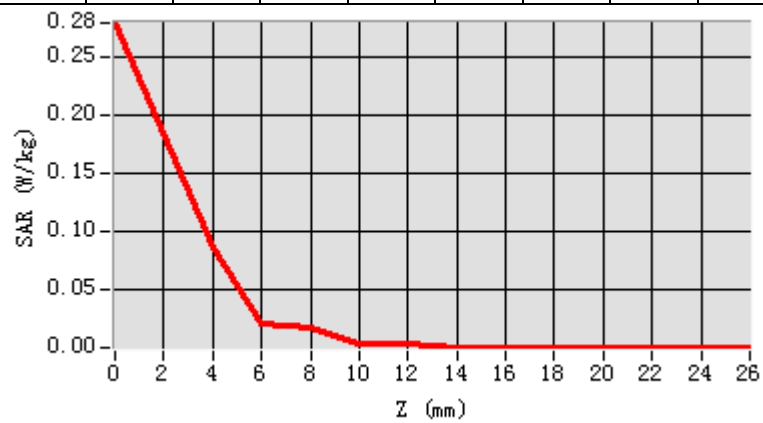


Maximum location: X=-7.00, Y=6.00

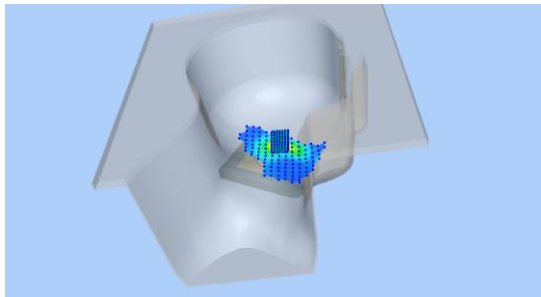
SAR Peak: 0.27 W/kg

SAR 10g (W/Kg)	0.022147
SAR 1g (W/Kg)	0.085239

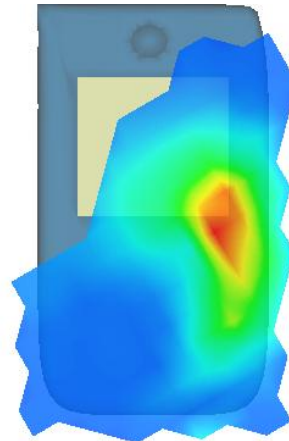
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.27 90	0.08 64	0.02 13	0.01 71	0.00 42	0.00 31	0.00 07	0.00 06	0.00 04	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 29

Date of measurement: 30/4/2023

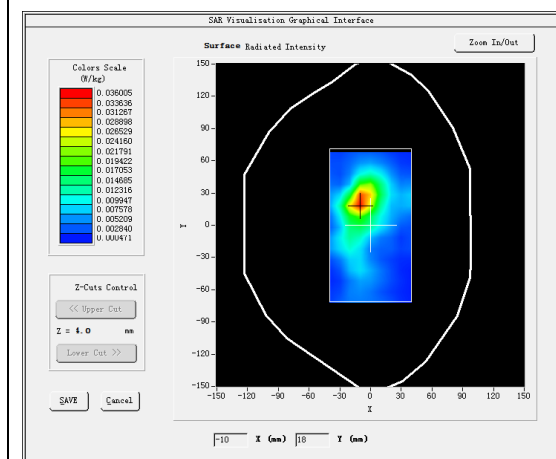
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.05</u>

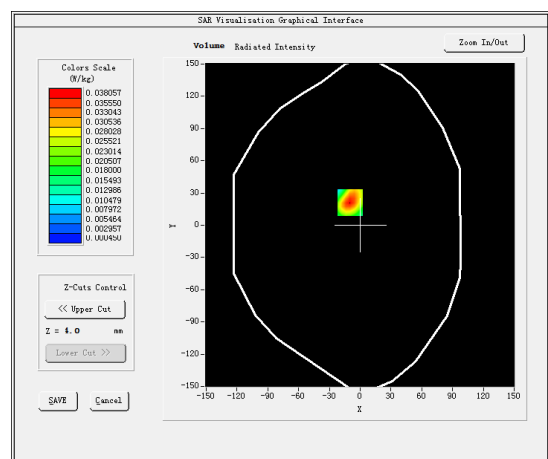
B. SAR Measurement Results

Frequency (MHz)	5260.000000
Relative permittivity (real part)	36.321580
Relative permittivity (imaginary part)	16.515201
Conductivity (S/m)	4.800215
Variation (%)	0.200000

SURFACE SAR



VOLUME SAR

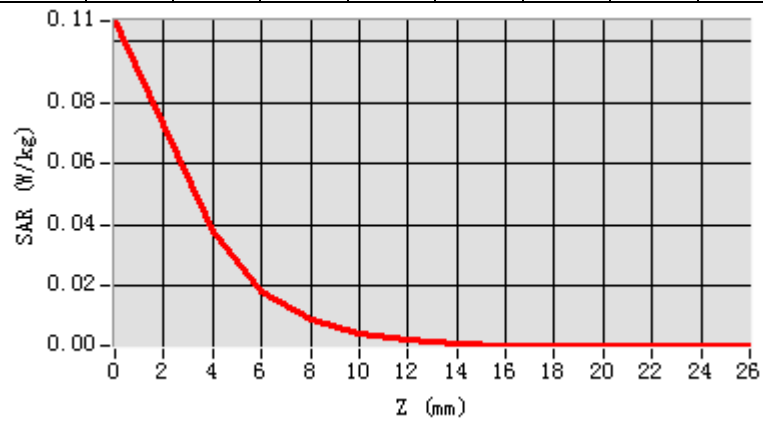


Maximum location: X=-10.00, Y=21.00

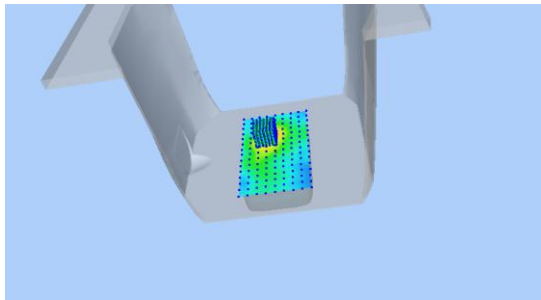
SAR Peak: 0.10 W/kg

SAR 10g (W/Kg)	0.012018
SAR 1g (W/Kg)	0.035201

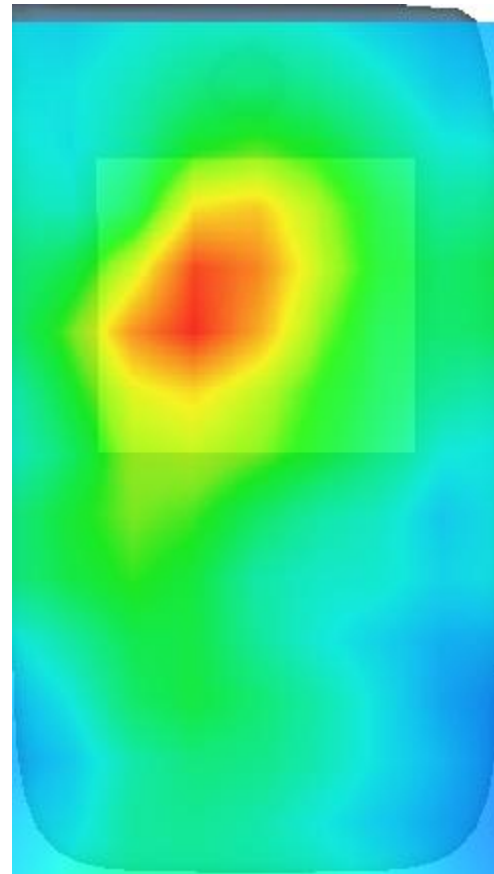
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.10 64	0.03 75	0.01 81	0.00 90	0.00 44	0.00 20	0.00 09	0.00 06	0.00 05	0.00 05	0.00 04	0.00 04



3D screen shot



Hot spot position



MEASUREMENT 30

Date of measurement: 20/5/2023

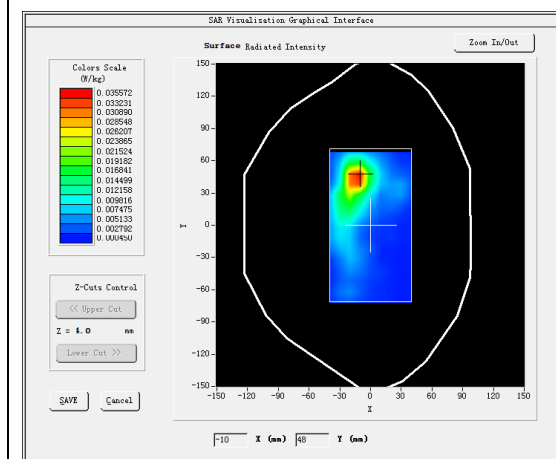
A. Experimental conditions.

<u>Area Scan</u>	<u>dx=10mm dy=10mm, h= 2.00 mm</u>
<u>ZoomScan</u>	<u>7x7x12,dx=4mm dy=4mm dz=2mm</u>
<u>Phantom</u>	<u>Validation plane</u>
<u>Device Position</u>	<u>Body</u>
<u>Band</u>	<u>IEEE 802.11n U-NII</u>
<u>Channels</u>	<u>Low</u>
<u>Signal</u>	<u>IEEE802.11n (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>2.16</u>

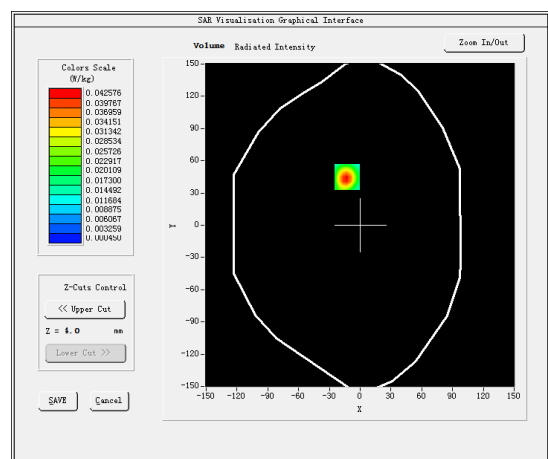
B. SAR Measurement Results

Frequency (MHz)	5500.000000
Relative permittivity (real part)	34.762010
Relative permittivity (imaginary part)	16.202151
Conductivity (S/m)	5.202561
Variation (%)	0.360000

SURFACE SAR



VOLUME SAR

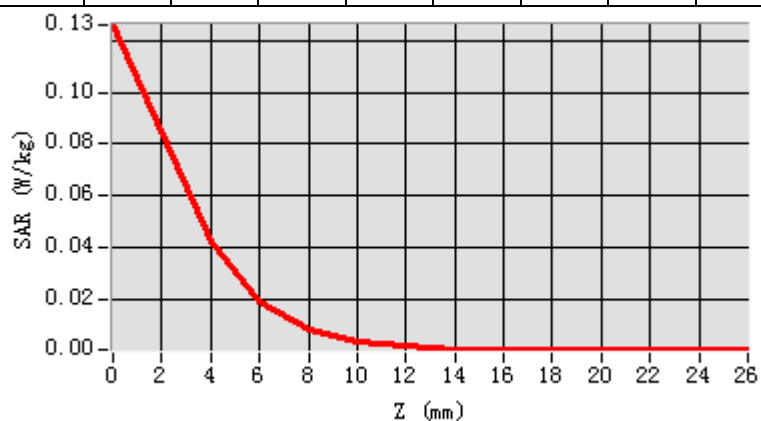


Maximum location: X=-13.00, Y=45.00

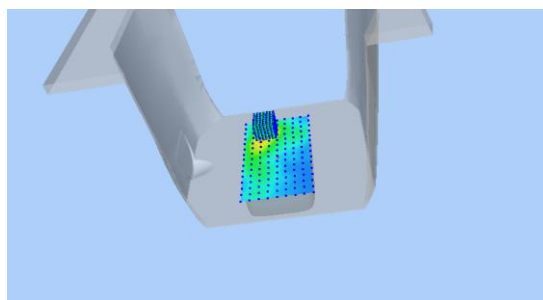
SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.012047
SAR 1g (W/Kg)	0.040125

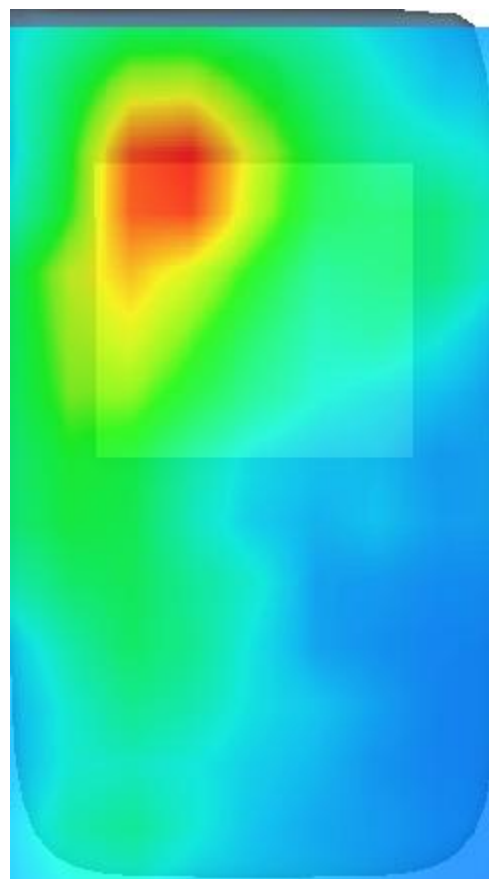
Z (m m)	0.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0	24.0 0
SAR (W/ Kg)	0.12 52	0.04 21	0.01 84	0.00 85	0.00 34	0.00 14	0.00 06	0.00 06	0.00 04	0.00 04	0.00 04	0.00 04



3D screen shot



Hot spot position



14. AAppendix D. Calibration Certificate

Table of contents
E Field Probe - SN 08/16 EPGO287
750 MHz Dipole - SN 03/15 DIP 0G750-355
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
5000-6000 MHz Dipole - SN 13/14 WGA 33
Extended Calibration Certificate



COMOSAR E-Field Probe Calibration Report

Ref : ACR.60.1.21.MVGB.A

SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.

BUILDING E, FENDA SCIENCE PARK, SANWEI
COMMUNITY, XIXIANG STREET,
BAO'AN DISTRICT, SHENZHEN GUANGDONG, CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 08/16 EPG0287

Calibrated at MVG

Z.I. de la pointe du diable

Technopôle Brest Iroise – 295 avenue Alexis de Rochon
29280 PLOUZANE - FRANCE

Calibration date: 01/10/2023



Accreditations #2-6789 and #2-6814
Scope available on www.cofrac.fr

Summary:

This document presents the method and results from an accredited COMOSAR 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).