

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 : Mobile Phone
Brand Name : ulefone
Model Name : GQ3060
Family Model : Armor 20WT, Armor 20W, Armor 20W Pro,
Armor 20 Pro, Armor 20W Lite, Armor 20 Lite
Report No. : STR221226002009E
FCC ID : 2AOWK-3060

Prepared for

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TEST RESULT CERTIFICATION

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Product description

Product name : Mobile Phone
Brand Name : ulefone
Model and/or type reference : GQ3060
Family Model : Armor 20WT, Armor 20W, Armor 20W Pro, Armor 20 Pro, Armor 20W Lite, Armor 20 Lite
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 : T221226001R003

Date of Test

Date (s) of performance of tests : Dec. 27, 2022 ~ Jan. 07, 2023

Date of Issue : Feb. 20, 2023

Test Result : Pass

Prepared By : Jacob Chen
(Test Engineer)

Approved By : Alex Li
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※ ※ **Revision History** ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Feb. 20, 2023	Jacob Chen

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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 GQ3060 are as follows.

RF Exposure Conditions		Equipment Class -Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
1-g Head		0.534	0.247	0.653	N/A
1-g Body-Worn (Separation distance of 10mm)		0.543	0.072	0.368	N/A
1-g Hotspot (Separation distance of 10mm)		0.543	0.072	0.368	N/A
Max Simultaneous Tx	Head	1.187	0.781	1.187	0.744
	Body-Worn	0.911	0.615	0.911	0.648
	Hotspot	0.911	0.615	0.911	0.648

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	Mobile Phone
Brand Name	ulefone
Model Name	GQ3060
Family Model	Armor 20WT, Armor 20W, Armor 20W Pro, Armor 20 Pro, Armor 20W Lite, Armor 20 Lite
Model Difference	All models are the same circuit and RF module, except the model name.
FCC ID	2AOWK-3060
Device Phase	Identical Prototype
Exposure Category	General population / Uncontrolled environment
Antenna Type	PIFA Antenna
Battery Information	DC 3.85V
HW Version	E7_02
SW Version	Armor 20WT_TF3_EEA_V10
Device Operating Configurations	
Supporting Mode(s)	GSM 850/1900, Band 2/4/5, LTE Band 2/4/5/7/12/13/17/25/41, 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 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 13	777-787	746-756
	LTE Band 17	704-716	734-746
	LTE Band 25	1850-1915	1930-1995
	LTE Band 41	2496-2690	
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	
NFC	13.56		
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 7)		
	3, tested with power control all Max.(LTE Band 12)		

	3, tested with power control all Max.(LTE Band 13)
	3, tested with power control all Max.(LTE Band 17)
	3, tested with power control all Max.(LTE Band 25)
	3, tested with power control all Max.(LTE Band 41)

1.4. Test specification(s)

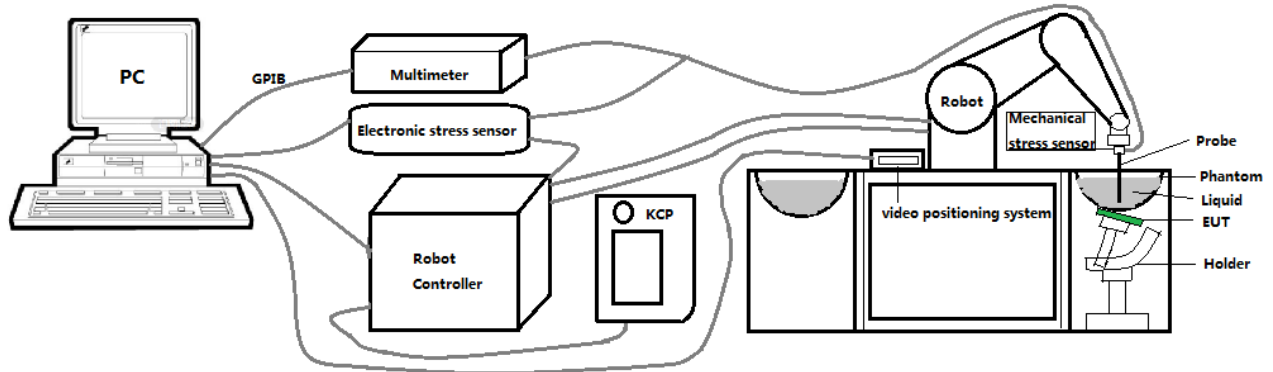
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 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 EPGO287 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

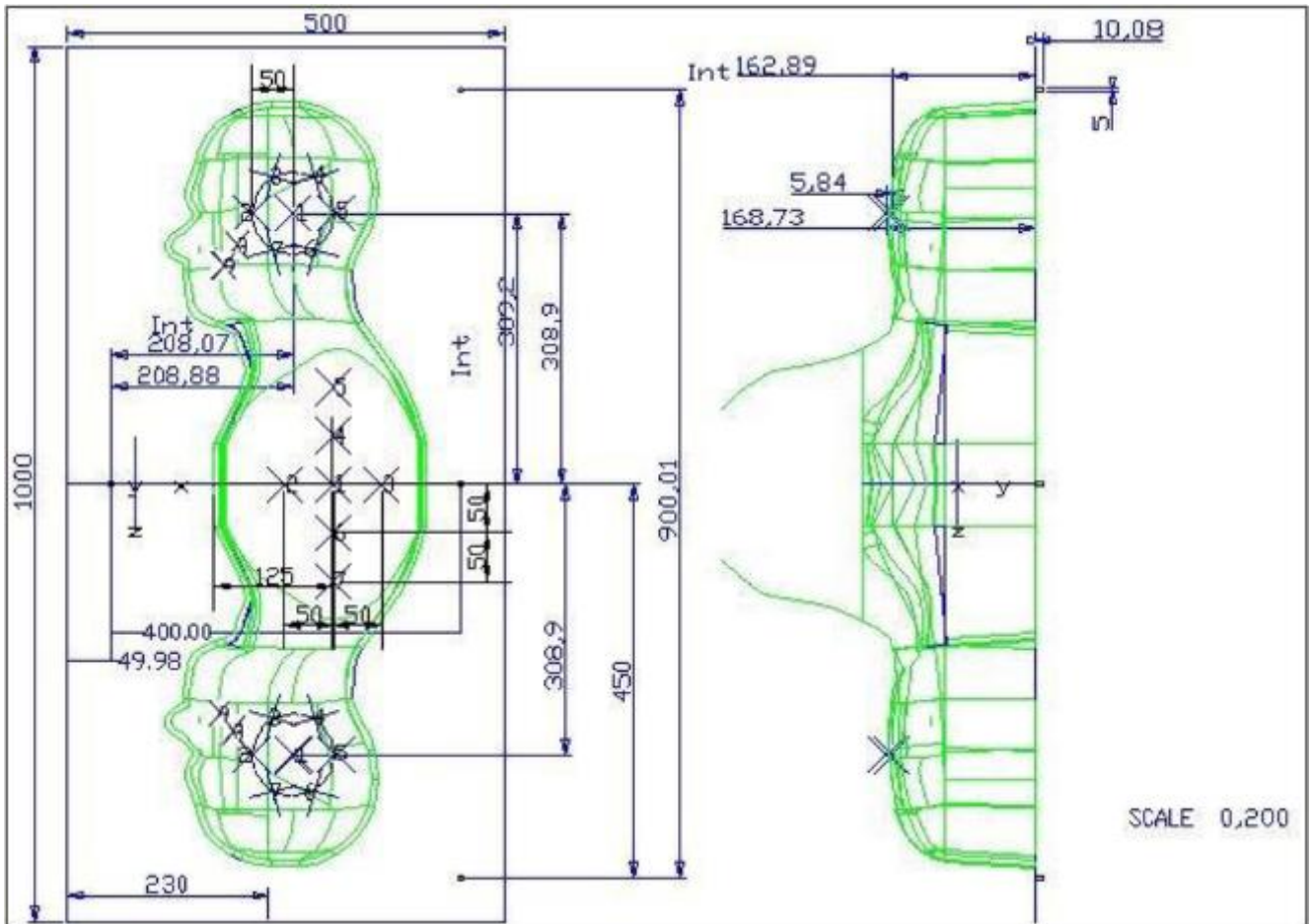
Photo of SAM phantom SN 16/15 SAM119



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

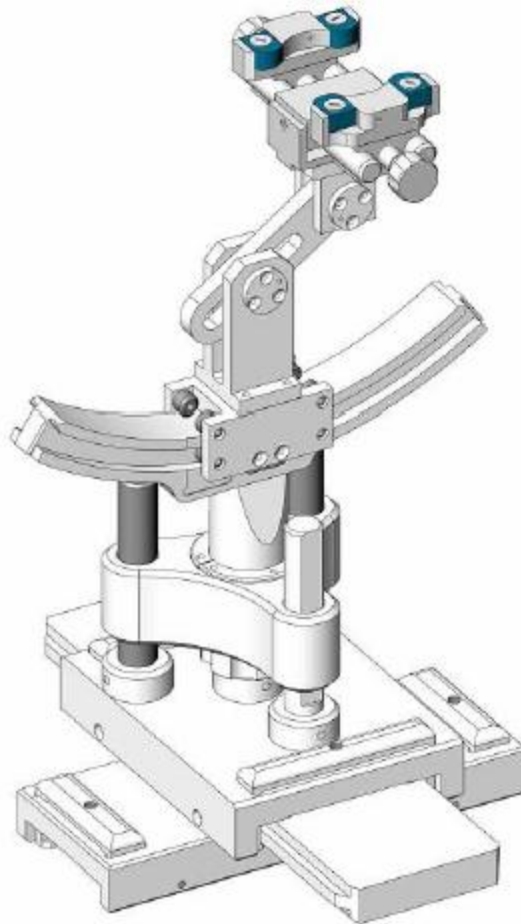


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
	1	2	1	2	1	2
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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
<input checked="" type="checkbox"/>	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Feb. 01, 2022	Jan. 31, 2023
<input checked="" type="checkbox"/>	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Mar. 01, 2021	Feb. 28, 2024
<input type="checkbox"/>	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Mar. 01, 2021	Feb. 28, 2024
<input type="checkbox"/>	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Mar. 01, 2021	Feb. 28, 2024
<input type="checkbox"/>	MVG	2300 MHz Dipole	SID2300	SN 03/16 DIP 2G300-358	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Mar. 01, 2021	Feb. 28, 2024
<input checked="" type="checkbox"/>	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
<input checked="" type="checkbox"/>	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
<input checked="" type="checkbox"/>	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
<input checked="" type="checkbox"/>	R&S	Universal radio communication tester	CMU200	117858	Jun. 17, 2022	Jun. 16, 2023
<input checked="" type="checkbox"/>	R&S	Wideband radio communication tester	CMW500	103917	Jun. 17, 2022	Jun. 16, 2023
<input checked="" type="checkbox"/>	HP	Network Analyzer	8753D	3410J01136	Jun. 17, 2022	Jun. 16, 2023

<input checked="" type="checkbox"/>	Agilent	MXG Vector Signal Generator	N5182A	MY47070317	Jun. 16, 2022	Jun. 15, 2023
<input checked="" type="checkbox"/>	Agilent	Power meter	E4419B	MY45102538	Jun. 17, 2022	Jun. 16, 2023
<input checked="" type="checkbox"/>	Agilent	Power sensor	E9301A	MY41495644	Jun. 17, 2022	Jun. 16, 2023
<input checked="" type="checkbox"/>	Agilent	Power sensor	E9301A	US39212148	Jun. 17, 2022	Jun. 16, 2023
<input checked="" type="checkbox"/>	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 17, 2020	Jul. 16, 2023

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	½·δ·ln(2) ± 0.5 mm	
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30° ± 1°	20° ± 1°	
Maximum area scan spatial resolution: Δx _{Area} , Δy _{Area}		≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm	
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.		
Maximum zoom scan spatial resolution: Δx _{Zoom} , Δy _{Zoom}		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: Δz _{Zoom} (n)	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm	
	graded grid	Δz _{Zoom} (1): between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		Δz _{Zoom} (n>1): between subsequent points	≤ 1.5·Δz _{Zoom} (n-1)	
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 used to determine these 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 for multi Tx SAR measurement. Indeed, it is possible with OpenSAR to add, point by point, several volumetric scans to calculate the SAR value of the combined measurement as it is defined 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.

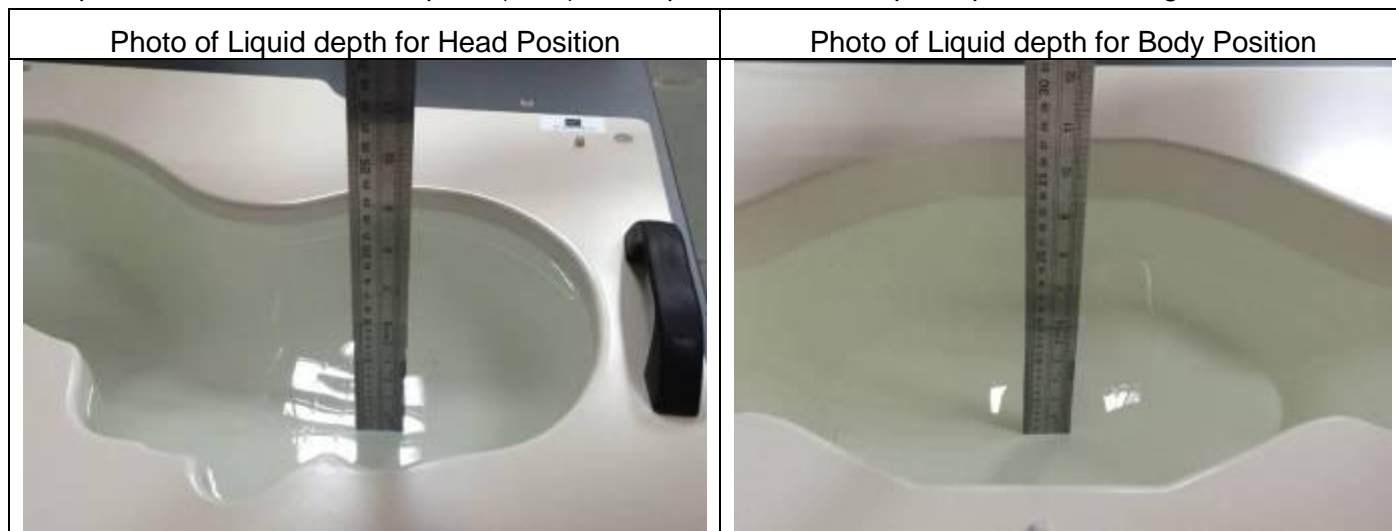
4. System Verification Procedure

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									
	750	835	900	1800	1900	2000	2450	2600	5200	5800
Frequency Band (MHz)										
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 of the dielectric parameter are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

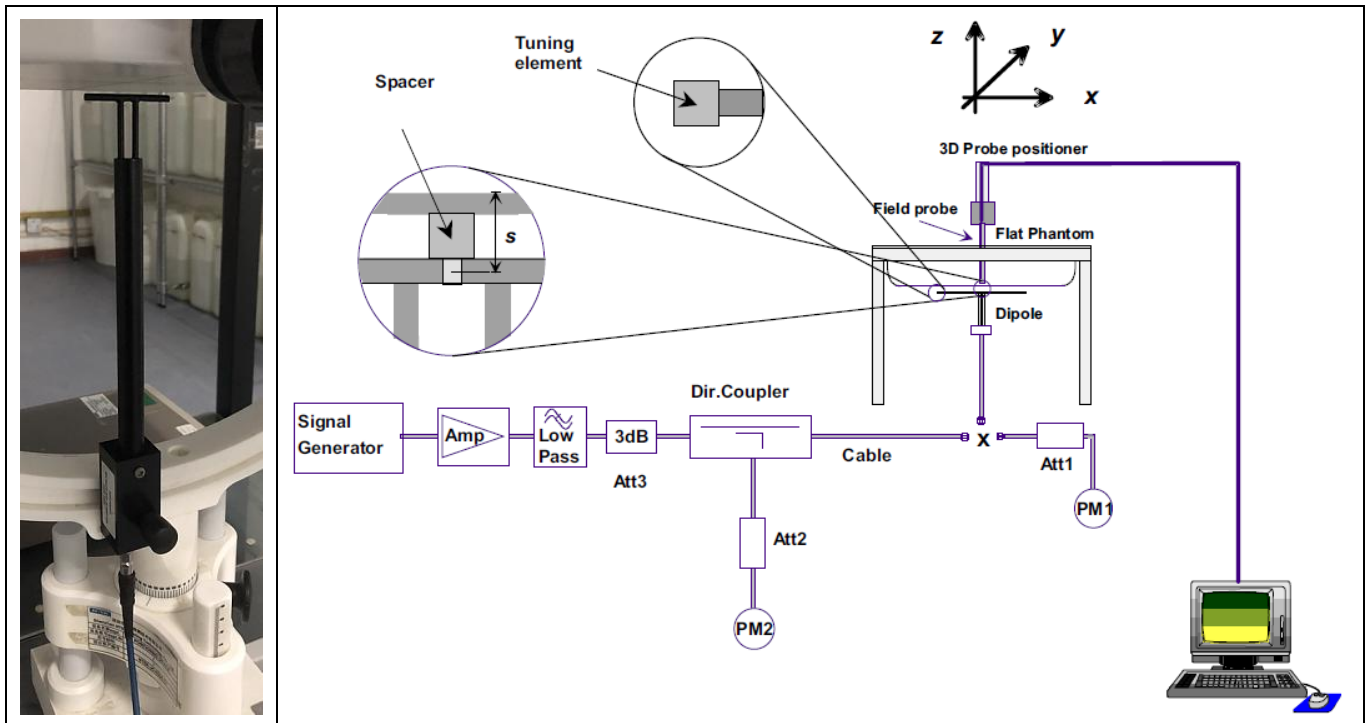
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	40.74	0.89	21.8 °C	Jan. 05, 2023
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.48	0.93	21.9 °C	Dec. 29, 2022
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.15	1.39	21.7 °C	Jan. 04, 2023
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.88	1.46	21.2 °C	Dec. 28, 2022
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.22	1.86	21.5 °C	Dec. 30, 2022
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.23	2.00	21.4 °C	Dec. 27, 2022
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	36.17	4.77	21.3 °C	Jan. 07, 2023
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.74	5.29	21.7 °C	Jan. 06, 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)	7.76	5.88	21.8 °C	Jan. 05, 2023
835MHz	9.84 (8.86~10.82)	6.22 (5.60~6.84)	9.27	6.24	21.9 °C	Dec. 29, 2022
1800MHz	37.96 (34.17~41.75)	19.81 (17.83~21.79)	35.84	21.51	21.7 °C	Jan. 04, 2023
1900MHz	40.37 (36.34~44.40)	20.48 (18.44~22.52)	40.25	19.98	21.2 °C	Dec. 28, 2022
2450MHz	53.69 (48.33~59.05)	23.94 (21.55~26.33)	49.55	24.85	21.5 °C	Dec. 30, 2022
2600MHz	55.83 (50.25~61.41)	24.19 (21.78~26.60)	59.84	21.99	21.4 °C	Dec. 27, 2022
5200MHz	162.34 (146.11~178.57)	55.42 (49.88~60.96)	159.22	52.43	21.3 °C	Jan. 07, 2023
5800MHz	178.89 (161.01~196.77)	59.32 (53.39~65.25)	189.27	58.14	21.7 °C	Jan. 06, 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 (~ 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.

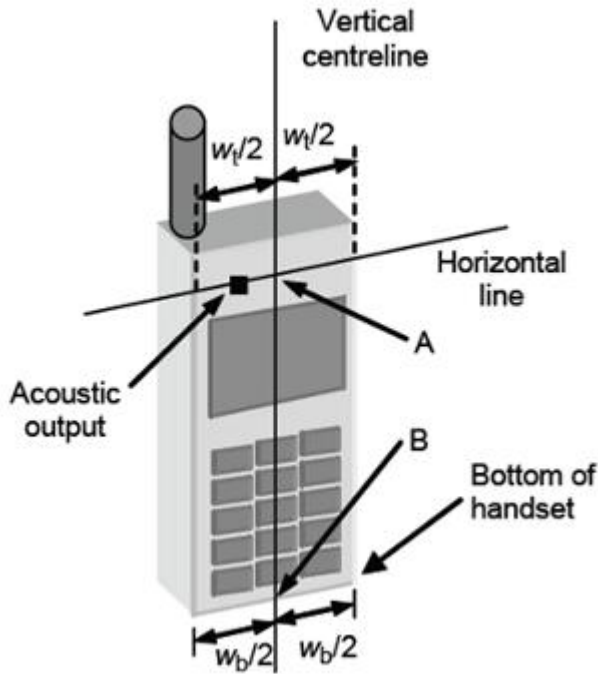


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

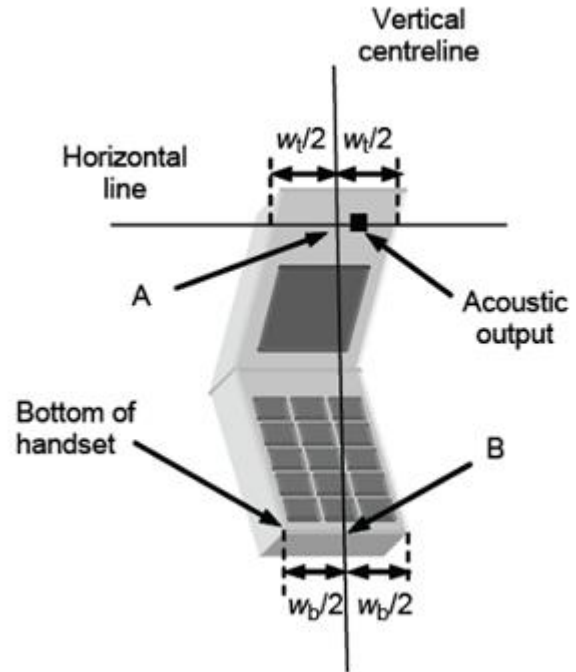


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

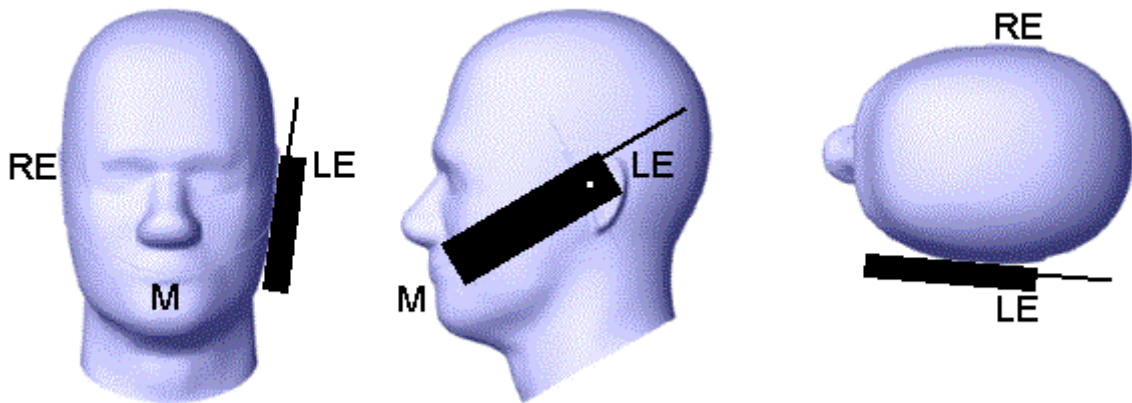


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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.

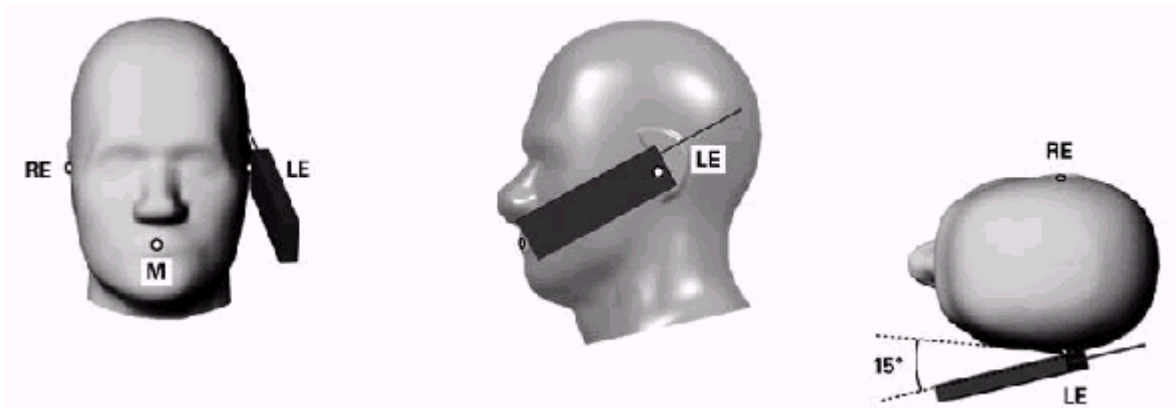


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

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 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.

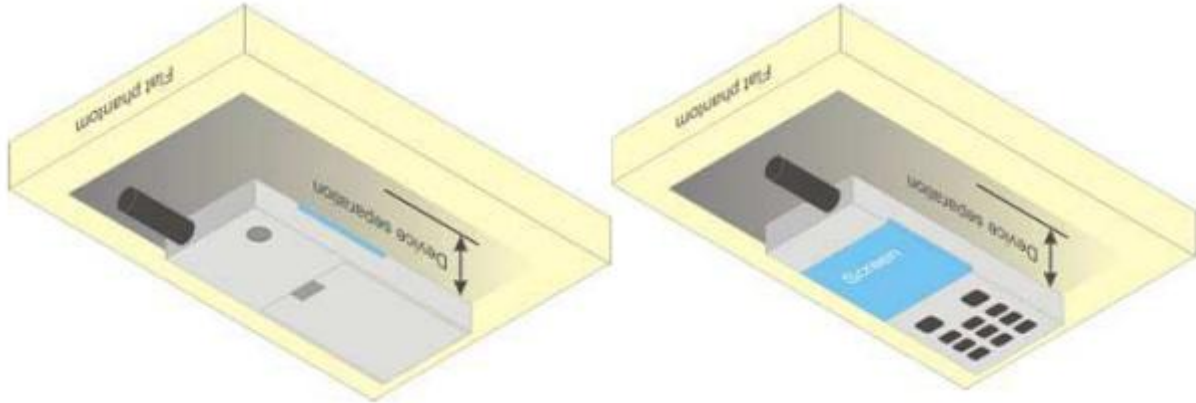


Figure 6.4.1 – Test positions for body-worn devices

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)	33.00	32.71	32.77	32.69	23.97	23.68	23.74	23.66
GPRS(GMSK,1 Tx slot)	33.00	32.70	32.75	32.66	23.97	23.67	23.72	23.63
GPRS(GMSK,2 Tx slot)	32.00	31.94	32.00	31.90	25.98	25.92	25.98	25.88
GPRS(GMSK,3 Tx slot)	30.50	30.19	30.21	30.12	26.24	25.93	25.95	25.86
GPRS(GMSK,4 Tx slot)	29.50	29.08	29.11	28.99	26.49	26.07	26.10	25.98
EGPRS(8PSK,1 Tx slot)	27.50	26.54	27.18	26.83	18.47	17.51	18.15	17.80
EGPRS(8PSK,2 Tx slot)	26.00	25.63	25.26	25.41	19.98	19.61	19.24	19.39
EGPRS(8PSK,3 Tx slot)	23.00	22.78	22.79	22.98	18.74	18.52	18.53	18.72
EGPRS(8PSK,4 Tx slot)	22.00	21.45	21.43	21.63	18.99	18.44	18.42	18.62
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)	30.00	29.98	30.00	29.92	20.97	20.95	20.97	20.89
GPRS(GMSK,1 Tx slot)	30.00	29.97	29.98	29.93	20.97	20.94	20.95	20.90
GPRS(GMSK,2 Tx slot)	29.50	29.23	29.23	29.20	23.48	23.21	23.21	23.18
GPRS(GMSK,3 Tx slot)	28.00	27.48	27.51	27.48	23.74	23.22	23.25	23.22
GPRS(GMSK,4 Tx slot)	26.50	26.38	26.41	26.38	23.49	23.37	23.40	23.37
EGPRS(8PSK,1 Tx slot)	27.50	27.11	27.33	26.91	18.47	18.08	18.30	17.88
EGPRS(8PSK,2 Tx slot)	26.50	26.41	26.47	26.46	20.48	20.39	20.45	20.44
EGPRS(8PSK,3 Tx slot)	25.00	24.53	24.32	24.25	20.74	20.27	20.06	19.99
EGPRS(8PSK,4 Tx slot)	23.50	23.16	23.35	23.39	20.49	20.15	20.34	20.38

7.2. WCDMA Conducted Power

WCDMA Band 2	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up	9262	9400	9538
Frequency (MHz)	(dBm)	1852.4	1880	1907.6
RMC12.2K	23.50	23.41	23.23	23.17
HSDPA Sub 1	22.50	22.46	22.27	22.18
HSDPA Sub 2	22.50	22.17	21.92	21.63

HSDPA Sub 3	21.00	20.59	20.80	20.81
HSDPA Sub 4	21.00	20.95	20.79	20.77
HSUPA Sub 1	22.50	21.35	22.08	21.97
HSUPA Sub 2	22.50	22.39	22.13	22.05
HSUPA Sub 3	21.50	20.64	21.12	21.11
HSUPA Sub 4	22.50	22.44	22.28	22.21
HSUPA Sub 5	22.00	21.02	21.58	21.29
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	23.50	23.09	23.01	23.02
HSDPA Sub 1	22.50	22.15	22.07	22.03
HSDPA Sub 2	22.00	21.92	21.76	21.71
HSDPA Sub 3	21.00	20.44	20.90	20.56
HSDPA Sub 4	21.00	20.66	20.69	20.28
HSUPA Sub 1	22.00	21.32	21.89	21.85
HSUPA Sub 2	22.50	22.12	21.86	22.02
HSUPA Sub 3	21.00	20.51	20.86	20.96
HSUPA Sub 4	22.50	22.18	22.05	22.03
HSUPA Sub 5	21.50	20.68	21.31	21.30
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	23.30	23.02	23.15
HSDPA Sub 1	22.50	22.36	22.05	22.18
HSDPA Sub 2	22.00	21.99	21.76	21.65
HSDPA Sub 3	21.00	20.89	20.49	20.44
HSDPA Sub 4	21.00	20.93	20.81	20.74
HSUPA Sub 1	22.00	20.79	21.90	22.00
HSUPA Sub 2	22.50	22.18	21.87	22.12
HSUPA Sub 3	21.00	20.55	20.61	20.76
HSUPA Sub 4	22.50	22.35	22.05	22.16
HSUPA Sub 5	21.50	20.93	21.33	21.16

7.3. LTE Conducted Power

Band	Band Width	Modulation	RB Configuration	Tune-up (dBm)	Channel/Frequency(MHz)
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2			1	24	25.00	24.28	24.43	24.40			
			12	0	24.00	23.32	23.53	23.59			
			12	6	24.00	23.42	23.60	23.63			
			12	11	24.00	23.39	23.54	23.46			
			25	0	24.00	23.39	23.56	23.58			
		16QAM	1	0	24.00	23.54	23.71	23.72			
			1	12	24.00	23.67	23.75	23.73			
			1	24	24.00	23.43	23.66	23.61			
			12	0	23.00	22.29	22.49	22.56			
			12	6	23.00	22.39	22.61	22.58			
			12	11	23.00	22.39	22.54	22.43			
			25	0	23.00	22.38	22.58	22.54			
			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	25.00	24.33	24.53	24.60			
			1	24	25.00	24.40	24.56	24.61			
			1	49	25.00	24.40	24.47	24.48			
			25	0	24.00	23.31	23.49	23.55			
			25	12	24.00	23.45	23.61	23.67			
			25	24	24.00	23.43	23.53	23.54			
			50	0	24.00	23.43	23.54	23.58			
		16QAM	1	0	24.00	23.58	23.84	23.79			
			1	24	24.00	23.71	23.74	23.77			
			1	49	24.00	23.61	23.75	23.61			
			25	0	23.00	22.33	22.49	22.54			
			25	12	23.00	22.49	22.62	22.67			
			25	24	23.00	22.44	22.55	22.53			
			50	0	23.00	22.39	22.51	22.55			
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 2	15MHz	QPSK	1	0	25.00	24.29	24.52	24.59			
			1	37	25.00	24.43	24.58	24.66			
			1	74	25.00	24.40	24.49	24.45			
			36	0	24.00	23.37	23.54	23.65			
			36	18	24.00	23.43	23.60	23.69			
			36	37	24.00	23.45	23.53	23.61			

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
		16QAM	75	0	24.00	23.43	23.58	23.66
			1	0	24.00	23.52	23.79	23.77
			1	37	24.00	23.65	23.78	23.94
			1	74	24.00	23.71	23.63	23.63
			36	0	23.00	22.34	22.53	22.65
			36	18	23.00	22.44	22.60	22.66
			36	37	23.00	22.45	22.52	22.59
			75	0	23.00	22.43	22.55	22.62
LTE Band 2	20MHz	QPSK	1	0	25.00	24.20	24.44	24.52
			1	49	25.00	24.47	24.56	24.67
			1	99	25.00	24.40	24.40	24.41
			50	0	24.00	23.38	23.54	23.81
			50	24	24.00	23.53	23.63	23.78
			50	49	24.00	23.53	23.60	23.73
			100	0	24.00	23.44	23.55	23.74
		16QAM	1	0	24.00	23.44	23.61	23.66
			1	49	24.00	23.72	23.82	23.96
			1	99	24.00	23.71	23.55	23.53
			50	0	23.00	22.35	22.51	22.75
			50	24	23.00	22.51	22.60	22.74
			50	49	23.00	22.51	22.56	22.68
			100	0	23.00	22.41	22.51	22.69

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	24.50	23.65	24.03	24.04
			1	2	24.50	23.74	24.09	24.08
			1	5	24.50	23.67	24.02	24.02
			3	0	24.50	23.79	24.15	24.14
			3	1	24.50	23.81	24.16	24.16
			3	2	24.50	23.81	24.14	24.14
			6	0	23.50	22.87	23.24	23.22
		16QAM	1	0	23.50	22.93	23.33	23.26
			1	2	23.50	22.95	23.38	23.47

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
			1	5	23.50	22.88	23.38	23.41
			3	0	23.50	22.81	23.06	23.20
			3	1	23.50	22.77	23.20	23.15
			3	2	23.50	22.80	23.16	23.15
			6	0	22.50	21.99	22.34	22.32
LTE Band 4	3MHz	QPSK	1	0	24.50	23.59	23.91	23.91
			1	7	24.50	23.64	24.00	24.03
			1	14	24.50	23.61	23.92	23.90
			8	0	23.50	22.78	23.13	23.11
			8	4	23.50	22.86	23.20	23.21
			8	7	23.50	22.79	23.17	23.14
			15	0	23.50	22.79	23.14	23.12
		16QAM	1	0	23.50	22.80	23.18	23.23
			1	7	23.50	22.92	23.21	23.19
			1	14	23.50	22.89	23.18	23.30
			8	0	22.50	21.85	22.18	22.18
			8	4	22.50	21.89	22.27	22.23
			8	7	22.50	21.82	22.20	22.20
			15	0	22.50	21.78	22.15	22.11
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	24.50	23.81	24.13	24.07
			1	12	24.50	23.96	24.27	24.18
			1	24	24.50	23.84	24.17	24.07
			12	0	23.50	22.88	23.15	23.08
			12	6	23.50	22.93	23.28	23.16
			12	11	23.50	22.87	23.23	23.12
			25	0	23.50	22.88	23.20	23.10
		16QAM	1	0	24.00	23.11	23.49	23.30
			1	12	24.00	23.26	23.51	23.48
			1	24	24.00	23.14	23.43	23.35
			12	0	22.50	21.85	22.15	22.06
			12	6	22.50	21.95	22.25	22.14
			12	11	22.50	21.87	22.24	22.12

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
			25	0		22.50	21.90	22.18
LTE Band 4	10MHz	QPSK	1	0	24.50	23.90	24.24	24.09
			1	24	24.50	23.99	24.28	24.21
			1	49	24.50	24.07	24.25	24.18
			25	0	23.50	22.92	23.16	23.08
			25	12	23.50	22.98	23.26	23.17
			25	24	23.50	23.01	23.24	23.12
			50	0	23.50	22.98	23.20	23.13
		16QAM	1	0	24.00	23.10	23.57	23.34
			1	24	24.00	23.22	23.64	23.42
			1	49	24.00	23.27	23.55	23.44
			25	0	22.50	21.94	22.16	22.10
			25	12	22.50	21.99	22.28	22.20
			25	24	22.50	22.01	22.23	22.15
			50	0	22.50	21.98	22.18	22.13
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
			25	0		22.50	21.90	22.18
LTE Band 4	15MHz	QPSK	1	0	24.50	23.86	24.17	24.06
			1	37	24.50	24.04	24.34	24.21
			1	74	24.50	24.14	24.23	24.16
			36	0	23.50	22.92	23.16	23.10
			36	18	23.50	23.04	23.26	23.13
			36	37	23.50	23.12	23.21	23.14
			75	0	23.50	23.04	23.20	23.11
		16QAM	1	0	24.00	23.14	23.42	23.26
			1	37	24.00	23.34	23.64	23.44
			1	74	24.00	23.36	23.46	23.38
			36	0	22.50	21.92	22.15	22.10
			36	18	22.50	22.02	22.25	22.16
			36	37	22.50	22.12	22.18	22.14
			75	0	22.50	22.02	22.18	22.09
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
			25	0		22.50	21.90	22.18

			Size	Offset				
LTE Band 4	20MHz	QPSK	1	0	24.50	23.74	24.08	23.95
			1	49	24.50	24.11	24.31	24.16
			1	99	24.50	24.06	24.18	24.06
			50	0	23.50	22.90	23.12	23.15
			50	24	23.50	23.11	23.30	23.19
			50	49	23.50	23.27	23.20	23.14
		16QAM	100	0	23.50	23.10	23.17	23.14
			1	0	24.00	23.06	23.40	23.14
			1	49	24.00	23.44	23.60	23.40
			1	99	24.00	23.25	23.45	23.43
			50	0	22.50	21.89	22.10	22.15
			50	24	22.50	22.10	22.26	22.18
			50	49	22.50	22.28	22.17	22.14
			100	0	22.50	22.07	22.14	22.13

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	24.50	23.81	24.07	23.91
			1	2	24.50	23.88	24.13	23.94
			1	5	24.50	23.88	24.08	23.87
			3	0	24.50	23.94	24.15	23.98
			3	1	24.50	23.98	24.19	24.01
			3	2	24.50	23.98	24.17	23.98
			6	0	23.50	23.05	23.28	23.10
		16QAM	1	0	23.50	23.13	23.37	23.11
			1	2	23.50	23.14	23.46	23.26
			1	5	23.50	23.12	23.22	23.11
			3	0	23.50	22.89	23.16	23.03
			3	1	23.50	22.92	23.24	22.96
			3	2	23.50	22.93	23.21	22.97
			6	0	22.50	22.14	22.34	22.20

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	3MHz	QPSK	1	0	24.50	23.72	23.98	23.88
			1	7	24.50	23.84	24.05	23.89

5			1	14	24.50	23.82	23.97	23.72
			8	0	23.50	22.91	23.19	23.04
			8	4	23.50	23.03	23.24	23.08
			8	7	23.50	22.97	23.17	23.00
			15	0	23.50	22.95	23.17	23.05
		16QAM	1	0	23.50	23.03	23.14	23.10
			1	7	23.50	23.11	23.36	23.16
			1	14	23.50	22.93	23.12	22.99
			8	0	22.50	22.01	22.22	22.10
			8	4	22.50	22.10	22.29	22.15
			8	7	22.50	22.02	22.23	22.06
			15	0	22.50	21.93	22.17	22.06
			Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)
RB Size	RB Offset	20425/826.5				20525/836.5	20625/846.5	
LTE Band 5	5MHz	QPSK	1	0	24.50	23.95	24.22	24.13
			1	12	24.50	24.15	24.30	24.17
			1	24	24.50	24.03	24.16	23.97
			12	0	23.50	23.03	23.22	23.12
			12	6	23.50	23.11	23.31	23.22
			12	11	23.50	23.06	23.25	23.11
			25	0	23.50	23.06	23.24	23.14
		16QAM	1	0	23.50	23.23	23.34	23.36
			1	12	23.50	23.34	23.45	23.43
			1	24	23.50	23.28	23.34	23.16
			12	0	22.50	22.02	22.26	22.13
			12	6	22.50	22.12	22.32	22.22
			12	11	22.50	22.06	22.22	22.11
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 5	10MHz	QPSK	1	0	24.50	24.01	24.21	24.24
			1	24	24.50	24.18	24.32	24.24
			1	49	24.50	24.21	24.24	24.05
			25	0	23.50	23.12	23.15	23.31
			25	12	23.50	23.22	23.34	23.28
			25	24	23.50	23.17	23.20	23.22

	16QAM	50	0	23.50	23.19	23.23	23.29
		1	0	24.00	23.26	23.41	23.57
		1	24	24.00	23.39	23.49	23.47
		1	49	24.00	23.48	23.54	23.33
		25	0	22.50	22.13	22.19	22.32
		25	12	22.50	22.20	22.33	22.30
		25	24	22.50	22.20	22.20	22.25
		50	0	22.50	22.18	22.21	22.29

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	25.00	24.78	24.85	24.72
			1	12	25.00	24.94	24.93	24.82
			1	24	25.00	24.83	24.82	24.71
			12	0	24.50	23.88	23.93	23.82
			12	6	24.50	23.98	24.01	23.88
			12	11	24.50	23.97	23.98	23.85
		16QAM	25	0	24.00	23.95	23.98	23.88
			1	0	24.50	24.03	24.13	23.92
			1	12	24.50	24.15	24.19	23.90
			1	24	24.50	24.13	24.01	23.91
			12	0	23.00	22.91	22.95	22.81
			12	6	23.00	22.99	22.99	22.87
			12	11	23.00	23.00	22.99	22.85
			25	0	23.00	23.00	22.99	22.89

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	25.00	24.91	24.96	24.90
			1	24	25.00	24.99	24.99	24.87
			1	49	25.00	24.91	24.91	24.78
			25	0	24.50	23.88	23.97	23.93
			25	12	24.50	24.02	24.05	23.98
			25	24	24.50	24.04	24.04	23.99
			50	0	24.50	24.01	24.05	24.01
		16QAM	1	0	24.50	24.16	24.20	24.07
			1	24	24.50	24.20	24.21	24.04

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
			1	49	24.50	24.08	24.12	24.01
			25	0	23.50	22.91	23.00	22.93
			25	12	23.50	23.05	23.06	22.97
			25	24	23.50	23.05	23.06	22.99
			50	0	23.50	23.02	23.05	22.96
LTE Band 7	15MHz	QPSK	1	0	25.00	24.84	24.90	24.89
			1	37	25.00	24.98	25.00	24.92
			1	74	25.00	24.83	24.85	24.73
			36	0	24.50	23.90	23.96	23.99
			36	18	24.50	23.99	24.03	23.99
			36	37	24.50	23.91	24.00	23.95
			75	0	24.50	23.93	24.01	23.99
		16QAM	1	0	24.50	24.04	24.10	24.00
			1	37	24.50	24.29	24.26	23.99
			1	74	24.50	24.05	24.14	23.91
			36	0	23.50	22.90	22.98	23.00
			36	18	23.50	23.00	23.03	22.96
			36	37	23.50	22.92	23.02	22.93
			75	0	23.50	22.93	23.02	22.97
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	25.00	24.78	24.79	24.81
			1	49	25.00	24.94	24.98	24.95
			1	99	25.00	24.67	24.76	24.68
			50	0	24.50	23.80	23.97	24.10
			50	24	24.50	23.98	24.10	24.09
			50	49	24.50	23.82	24.07	24.05
		16QAM	100	0	24.50	23.80	24.00	24.04
			1	0	24.50	23.96	23.96	24.03
			1	49	24.50	24.24	24.21	24.09
			1	99	24.50	24.00	23.97	23.76
			50	0	23.50	22.79	22.97	23.06
			50	24	23.50	23.00	23.09	23.04
50	49	23.50	22.83	23.06	23.00			

			100	0	23.50	22.78	22.99	23.02
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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	24.50	23.67	23.71	23.69
			1	2	24.50	23.85	23.74	23.73
			1	5	24.50	23.79	23.70	23.66
			3	0	24.00	23.84	23.79	23.76
			3	1	24.00	23.90	23.81	23.78
			3	2	24.00	23.93	23.82	23.78
		16QAM	6	0	23.50	23.01	22.95	22.91
			1	0	23.50	22.88	23.04	22.87
			1	2	23.50	23.13	22.98	22.90
			1	5	23.50	22.98	22.93	22.97
			3	0	23.00	22.82	22.82	22.79
			3	1	23.00	22.89	22.81	22.80
			3	2	23.00	22.86	22.78	22.81
			6	0	22.50	22.15	22.07	22.03

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	24.50	23.59	23.66	23.58
			1	7	24.50	23.80	23.69	23.72
			1	14	24.50	23.72	23.59	23.57
			8	0	23.50	22.94	22.86	22.84
			8	4	23.50	23.05	22.94	22.88
			8	7	23.50	22.97	22.86	22.84
			15	0	23.00	22.98	22.89	22.86
		16QAM	1	0	23.50	22.90	22.94	22.79
			1	7	23.50	23.12	22.84	22.87
			1	14	23.50	23.03	22.93	22.72
			8	0	22.50	22.03	21.97	21.92
			8	4	22.50	22.12	22.00	21.96
			8	7	22.50	22.07	21.95	21.88
			15	0	22.00	21.99	21.88	21.87

Band	Band Width	Modulation	RB Configuration	Tune-up (dBm)	Channel/Frequency(MHz)
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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	5MHz	QPSK	1	0	24.50	23035/701.5	23095/707.5	23155/713.5
			1	12	24.50	23.86	23.88	23.81
			1	24	24.50	24.04	23.94	23.91
			12	0	23.50	23.94	23.82	23.77
			12	6	23.50	23.05	23.01	22.92
			12	11	23.50	23.11	23.01	22.97
			25	0	23.50	23.04	22.94	22.91
		16QAM	1	0	23.50	23.06	22.99	22.93
			1	12	23.50	23.13	23.19	23.03
			1	24	23.50	23.27	23.20	23.20
			12	0	22.50	23.19	23.13	22.95
			12	6	22.50	22.06	21.96	21.90
			12	11	22.50	22.11	22.04	21.96
			25	0	22.50	22.05	21.99	21.87
25	0	22.50	22.09	22.01	21.99			

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23205/779.5	23230/782	23255/784.5
LTE	5MHz	QPSK	1	0	24.00	23.91	23.84	23.81

Band 13			1	12	24.00	23.99	23.93	23.88
			1	24	24.00	23.80	23.81	23.71
			12	0	23.00	22.91	22.93	22.86
			12	6	23.00	23.00	22.93	22.90
			12	11	23.00	22.86	22.89	22.82
			25	0	23.00	22.92	22.92	22.86
		16QAM	1	0	23.50	23.16	23.15	23.08
			1	12	23.50	23.29	23.22	23.26
			1	24	23.50	23.07	22.99	22.94
			12	0	22.00	21.90	21.94	21.88
			12	6	22.00	21.99	21.92	21.89
			12	11	22.00	21.85	21.91	21.84
			25	0	22.00	21.94	21.95	21.87
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		N/A	23230/782	N/A
LTE Band 13	10MHz	QPSK	1	0	24.00	N/A	24.00	N/A
			1	24	24.00	N/A	23.96	N/A
			1	49	24.00	N/A	23.82	N/A
			25	0	23.00	N/A	22.95	N/A
			25	12	23.00	N/A	22.96	N/A
			25	24	23.00	N/A	22.87	N/A
			50	0	23.00	N/A	22.92	N/A
		16QAM	1	0	23.50	N/A	23.32	N/A
			1	24	23.50	N/A	23.22	N/A
			1	49	23.50	N/A	23.08	N/A
			25	0	22.00	N/A	21.96	N/A
			25	12	22.00	N/A	21.98	N/A
			25	24	22.00	N/A	21.89	N/A
			50	0	22.00	N/A	21.89	N/A

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	24.50	23.91	23.89	23.86
			1	12	24.50	23.99	23.94	23.92
			1	24	24.50	23.83	23.80	23.81
			12	0	23.00	22.90	22.89	22.92

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
			12	6	23.00	23.00	22.95	22.95
			12	11	23.00	22.98	22.88	22.89
			25	0	23.00	22.98	22.90	22.91
		16QAM	1	0	23.50	23.21	23.12	23.10
			1	12	23.50	23.16	23.22	23.11
			1	24	23.50	23.14	23.11	23.11
			12	0	22.50	21.95	21.90	21.94
			12	6	22.50	22.02	21.96	21.95
			12	11	22.50	22.01	21.89	21.86
			25	0	22.00	22.00	21.93	21.91
LTE Band 17	10MHz	QPSK	1	0	24.50	24.02	24.01	23.97
			1	24	24.50	23.95	23.94	23.96
			1	49	24.50	23.87	23.88	23.88
			25	0	23.00	22.92	22.91	22.86
			25	12	23.00	22.98	22.96	22.97
			25	24	23.00	22.88	22.84	22.82
			50	0	23.00	22.93	22.90	22.91
		16QAM	1	0	23.50	23.22	23.28	23.25
			1	24	23.50	23.24	23.17	23.19
			1	49	23.50	23.24	23.11	23.14
			25	0	22.50	21.96	21.93	21.91
			25	12	22.50	22.01	22.04	21.99
			25	24	22.50	21.93	21.88	21.87
			50	0	22.00	21.94	21.90	21.89

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		26047/1850.7	26365/1882.5	26683/1914.3
LTE Band 25	1.4MHz	QPSK	1	0	25.00	24.07	24.34	24.34
			1	2	25.00	24.16	24.40	24.36
			1	5	25.00	24.12	24.32	24.36
			3	0	24.50	24.23	24.43	24.44
			3	1	24.50	24.24	24.43	24.49
			3	2	24.50	24.24	24.43	24.47
			6	0	24.00	23.35	23.58	23.60

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		26055/1851.5	26365/1882.5	26675/1913.5
16QAM			1	0	24.00	23.29	23.62	23.39
			1	2	24.00	23.42	23.60	23.51
			1	5	24.00	23.44	23.64	23.40
			3	0	23.50	23.27	23.48	23.29
			3	1	23.50	23.20	23.38	23.34
			3	2	23.50	23.14	23.40	23.31
			6	0	23.00	22.42	22.68	22.63
LTE Band 25	3MHz	QPSK	1	0	25.00	24.03	24.24	24.23
			1	7	25.00	24.13	24.35	24.33
			1	14	25.00	24.06	24.22	24.26
			8	0	24.00	23.24	23.48	23.48
			8	4	24.00	23.33	23.55	23.53
			8	7	24.00	23.28	23.50	23.46
			15	0	24.00	23.30	23.51	23.53
		16QAM	1	0	24.00	23.32	23.52	23.48
			1	7	24.00	23.43	23.49	23.50
			1	14	24.00	23.36	23.48	23.30
			8	0	23.00	22.34	22.53	22.53
			8	4	23.00	22.40	22.62	22.59
			8	7	23.00	22.31	22.55	22.48
			15	0	23.00	22.28	22.51	22.50
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		26065/1852.5	26365/1882.5	26665/1912.5
LTE Band 25	5MHz	QPSK	1	0	25.00	24.25	24.49	24.47
			1	12	25.00	24.42	24.62	24.57
			1	24	25.00	24.31	24.46	24.45
			12	0	24.00	23.33	23.57	23.65
			12	6	24.00	23.43	23.64	23.64
			12	11	24.00	23.44	23.58	23.54
			25	0	24.00	23.39	23.60	23.63
		16QAM	1	0	24.00	23.54	23.71	23.69
			1	12	24.00	23.66	23.81	23.78
			1	24	24.00	23.56	23.78	23.47
			12	0	23.00	22.32	22.57	22.63

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		26090/1855	26365/1882.5	26640/1910
			12	6	23.00	22.42	22.65	22.62
			12	11	23.00	22.44	22.54	22.52
			25	0	23.00	22.41	22.61	22.61
LTE Band 25	10MHz	QPSK	1	0	25.00	24.36	24.61	24.57
			1	24	25.00	24.44	24.64	24.63
			1	49	25.00	24.47	24.55	24.56
			25	0	24.00	23.32	23.57	23.72
			25	12	24.00	23.50	23.66	23.69
			25	24	24.00	23.49	23.59	23.50
			50	0	24.00	23.48	23.61	23.66
		16QAM	1	0	24.00	23.56	23.85	23.81
			1	24	24.00	23.78	23.92	23.79
			1	49	24.00	23.62	23.75	23.67
			25	0	23.00	22.35	22.60	22.70
			25	12	23.00	22.52	22.68	22.67
			25	24	23.00	22.53	22.59	22.49
			50	0	23.00	22.44	22.60	22.62
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		26115/1857.5	26365/1882.5	26615/1907.5
LTE Band 25	15MHz	QPSK	1	0	25.00	24.30	24.57	24.59
			1	37	25.00	24.48	24.64	24.61
			1	74	25.00	24.47	24.53	24.50
			36	0	24.00	23.37	23.58	23.58
			36	18	24.00	23.49	23.64	23.66
			36	37	24.00	23.50	23.58	23.50
			75	0	24.00	23.46	23.63	23.59
		16QAM	1	0	24.00	23.55	23.81	23.75
			1	37	24.00	23.72	23.84	23.76
			1	74	24.00	23.80	23.80	23.57
			36	0	23.00	22.36	22.57	22.58
			36	18	23.00	22.48	22.64	22.64
			36	37	23.00	22.48	22.60	22.50
			75	0	23.00	22.45	22.61	22.54
Band	Band	Modulation	RB		Tune-up	Channel/Frequency(MHz)		

	Width		Configuration		(dBm)			
			RB Size	RB Offset		26140/1860	26365/1882.5	26590/1905
LTE Band 25	20MHz	QPSK	1	0	25.00	24.21	24.47	24.53
			1	49	25.00	24.51	24.63	24.64
			1	99	25.00	24.46	24.49	24.40
			50	0	24.00	23.39	23.60	23.64
			50	24	24.00	23.57	23.72	23.75
			50	49	24.00	23.57	23.65	23.43
			100	0	24.00	23.44	23.59	23.53
		16QAM	1	0	24.00	23.53	23.66	23.70
			1	49	24.00	23.69	23.83	23.89
			1	99	24.00	23.79	23.75	23.51
			50	0	23.00	22.37	22.59	22.60
			50	24	23.00	22.53	22.71	22.69
			50	49	23.00	22.56	22.60	22.37
			100	0	23.00	22.43	22.58	22.46

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40315	40715	41115
LTE Band 41	5MHz	QPSK	1	0	25.50	25.25	25.23	25.24
			1	12	25.50	25.36	25.35	25.32
			1	24	25.50	25.22	25.26	25.22
			12	0	24.50	24.27	24.25	24.34
			12	6	24.50	24.34	24.28	24.39
			12	11	24.50	24.26	24.23	24.33
			25	0	24.50	24.27	24.27	24.31
		16QAM	1	0	25.00	24.45	24.42	24.42
			1	12	25.00	24.60	24.56	24.53
			1	24	25.00	24.46	24.44	24.40
			12	0	23.50	23.34	23.31	23.41
			12	6	23.50	23.41	23.34	23.46
			12	11	23.50	23.34	23.30	23.38
			25	0	23.50	23.37	23.37	23.43
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		40340	40715	41090
LTE Band 41	10MHz	QPSK	1	0	25.50	25.37	25.36	25.30
			1	24	25.50	25.38	25.37	25.35

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)					
			RB Size	RB Offset		40365	40715	41065			
			1	49	25.50	25.29	25.33	25.29			
			25	0	24.50	24.32	24.31	24.35			
			25	12	24.50	24.36	24.32	24.37			
			25	24	24.50	24.29	24.27	24.33			
			50	0	24.50	24.35	24.31	24.41			
		16QAM	1	0	25.00	24.60	24.56	24.51			
			1	24	25.00	24.61	24.57	24.55			
			1	49	25.00	24.52	24.55	24.48			
			25	0	23.50	23.41	23.39	23.46			
			25	12	23.50	23.43	23.40	23.48			
			25	24	23.50	23.37	23.36	23.43			
			50	0	23.50	23.42	23.37	23.48			
			LTE Band 41	15MHz	QPSK	1	0	25.50	25.31	25.35	25.27
						1	37	25.50	25.36	25.39	25.35
1	74	25.50				25.20	25.31	25.25			
36	0	24.50				24.29	24.25	24.35			
36	18	24.50				24.32	24.30	24.39			
36	37	24.50				24.19	24.24	24.36			
75	0	24.50				24.26	24.29	24.37			
16QAM	1	0	25.00	24.53	24.55	24.49					
	1	37	25.00	24.59	24.58	24.56					
	1	74	25.00	24.40	24.53	24.44					
	36	0	23.50	23.30	23.28	23.38					
	36	18	23.50	23.33	23.32	23.43					
	36	37	23.50	23.22	23.27	23.38					
	75	0	23.50	23.32	23.34	23.43					
LTE Band 41	20MHz	QPSK	1	0	25.50	25.26	25.31	25.23			
			1	49	25.50	25.36	25.38	25.33			
1	99		25.50	25.15	25.25	25.15					
50	0		24.50	24.32	24.29	24.35					
50	24		24.50	24.30	24.34	24.42					
50	49		24.50	24.18	24.23	24.33					
100	0		24.50	24.24	24.27	24.35					
16QAM	1	0	25.00	24.45	24.52	24.44					

			1	49	25.00	24.58	24.59	24.54
			1	99	25.00	24.37	24.45	24.36
			50	0	23.50	23.38	23.37	23.41
			50	24	23.50	23.37	23.40	23.49
			50	49	23.50	23.26	23.32	23.40
			100	0	23.50	23.28	23.33	23.39

7.4. WLAN & Bluetooth Output Power

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	16.00	14.86
	6	2437	16.00	15.86
	11	2462	16.00	14.19
802.11g	1	2412	14.50	13.91
	6	2437	14.50	14.45
	11	2462	14.50	12.99
802.11n HT20	1	2412	13.00	12.76
	6	2437	13.00	11.92
	11	2462	13.00	11.92
802.11n HT40	3	2422	13.00	12.75
	6	2437	13.00	11.72
	9	2452	13.00	12.02

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	36	5180	10.00	9.68
	40	5200	10.00	9.76
	48	5240	10.00	9.25
802.11n HT20	36	5180	10.00	9.56
	40	5200	10.00	9.62
	48	5240	10.00	9.92
802.11n HT40	38	5190	9.50	9.27
	46	5230	9.50	9.42
802.11ac VHT20	36	5180	10.00	9.58
	40	5200	10.00	9.59
	48	5240	10.00	9.58
802.11ac VHT40	38	5190	10.00	9.68

	46	5230	10.00	9.90
802.11ac VHT80	42	5210	10.00	9.91

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	149	5745	10.00	9.65
	157	5785	10.00	9.03
	165	5825	10.00	9.40
802.11n HT20	149	5745	10.00	9.17
	157	5785	10.00	9.34
	165	5825	10.00	9.68
802.11n HT40	151	5755	10.00	9.23
	159	5795	10.00	9.50
802.11ac VHT20	149	5745	10.00	9.60
	157	5785	10.00	9.42
	165	5825	10.00	9.76
802.11ac VHT40	151	5755	10.00	9.69
	159	5795	10.00	9.53
802.11ac VHT80	155	5775	9.50	9.35

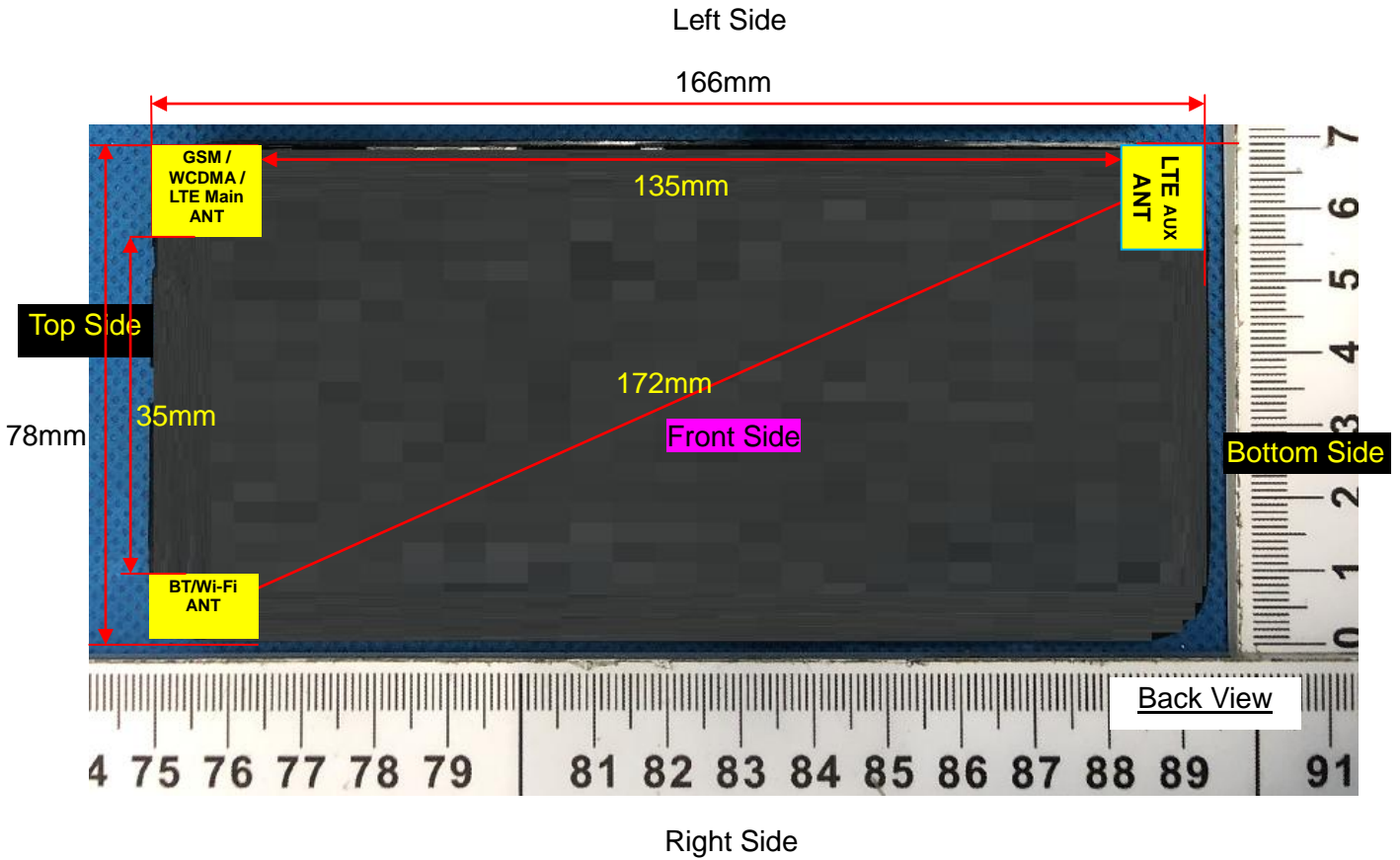
NOTE: Power measurement results of WLAN 5.8G.

BR+EDR	Output Power (dBm)				
	Data Rates	Tune-up (dBm)	Channel		
			0CH	39CH	78CH
1M	7.00	6.49	6.54	6.47	
2M	6.00	4.73	5.97	5.32	
3M	4.00	3.55	3.97	3.55	

BLE	Channel	Tune-up (dBm)	Output Power (dBm)	
			1M	2M
	0CH	-5.00	-5.33	-5.33
	19CH	-5.00	-5.57	-5.61
39CH	-7.00	-7.03	-7.04	

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 ANT	≤ 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 ANT	Yes	Yes	Yes	NO	Yes	NO
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:

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

- f_{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
Bluetooth	7.00	5.01	5	2.480	1.58	3	Yes

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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f_{\text{GHz}}/x}] \text{ W/kg}$ 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	7.00	5.01	5	2.48	7.5	0.210
Bluetooth	Body	7.00	5.01	10	2.48	7.5	0.105
Bluetooth	Hotspot	7.00	5.01	10	2.48	7.5	0.105

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)	0.421	0.276	-0.91	29.11	29.50	0.461	2022/12/29	1#
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.251	0.165	-0.36	29.11	29.50	0.275	2022/12/29	
Right Cheek	189/836.4	GPRS(GMSK 4TS)	0.373	0.237	-1.71	29.11	29.50	0.408	2022/12/29	
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.203	0.129	2.03	29.11	29.50	0.222	2022/12/29	

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)	0.294	0.167	-2.69	29.11	29.50	0.322	2022/12/29	
Back Side	189/836.4	GPRS(GMSK 4TS)	0.444	0.263	-0.54	29.11	29.50	0.486	2022/12/29	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)	0.294	0.167	-2.69	29.11	29.50	0.322	2022/12/29	
Back Side	189/836.4	GPRS(GMSK 4TS)	0.444	0.263	-0.54	29.11	29.50	0.486	2022/12/29	2#
Left Side	189/836.4	GPRS(GMSK 4TS)	0.147	0.084	-0.83	29.11	29.50	0.161	2022/12/29	
Top Side	189/836.4	GPRS(GMSK 4TS)	0.245	0.138	2.35	29.11	29.50	0.268	2022/12/29	

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 3TS)	0.320	0.181	-4.89	27.51	28.00	0.358	2022/12/28	3#
Left Tilt 15 Degree	661/1880	GPRS(GMSK 3TS)	0.173	0.098	-1.63	27.51	28.00	0.194	2022/12/28	
Right Cheek	661/1880	GPRS(GMSK 3TS)	0.289	0.163	-3.96	27.51	28.00	0.324	2022/12/28	
Right Tilt 15 Degree	661/1880	GPRS(GMSK 3TS)	0.133	0.074	0.75	27.51	28.00	0.149	2022/12/28	

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 3TS)	0.258	0.143	0.54	27.51	28.00	0.289	2022/12/28	
Back Side	661/1880	GPRS(GMSK 3TS)	0.387	0.215	0.10	27.51	28.00	0.433	2022/12/28	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 3TS)	0.258	0.143	0.54	27.51	28.00	0.289	2022/12/28	
Back Side	661/1880	GPRS(GMSK 3TS)	0.387	0.215	0.10	27.51	28.00	0.433	2022/12/28	4#
Left Side	661/1880	GPRS(GMSK 3TS)	0.126	0.070	-1.98	27.51	28.00	0.141	2022/12/28	
Top Side	661/1880	GPRS(GMSK 3TS)	0.200	0.108	2.41	27.51	28.00	0.224	2022/12/28	

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	0.346	0.199	-0.17	23.23	23.50	0.368	2022/12/28	5#
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.185	0.105	1.61	23.23	23.50	0.197	2022/12/28	
Right Cheek	9400/1880	RMC12.2K	0.320	0.175	2.77	23.23	23.50	0.341	2022/12/28	
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.164	0.091	0.57	23.23	23.50	0.175	2022/12/28	

NOTE: Head SAR test results of WCDMA Band 2

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	9400/1880	RMC12.2K	0.288	0.161	-3.28	23.23	23.50	0.306	2022/12/28	
Back Side	9400/1880	RMC12.2K	0.433	0.249	-0.21	23.23	23.50	0.461	2022/12/28	6#

NOTE: Body-Worn SAR test results of WCDMA 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						
Front Side	9400/1880	RMC12.2K	0.288	0.161	-3.28	23.23	23.50	0.306	2022/12/28	
Back Side	9400/1880	RMC12.2K	0.433	0.249	-0.21	23.23	23.50	0.461	2022/12/28	6#
Left Side	9400/1880	RMC12.2K	0.144	0.080	2.00	23.23	23.50	0.153	2022/12/28	
Top Side	9400/1880	RMC12.2K	0.240	0.138	-0.66	23.23	23.50	0.255	2022/12/28	

NOTE: Hotspot SAR test results of WCDMA Band 2

10.1.4. SAR measurement Result of WCDMA 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						
Left Cheek	1413/1732.6	RMC12.2K	0.385	0.233	0.82	23.01	23.50	0.431	2023/1/04	7#
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.229	0.136	-3.09	23.01	23.50	0.256	2023/1/04	
Right Cheek	1413/1732.6	RMC12.2K	0.351	0.202	-2.27	23.01	23.50	0.393	2023/1/04	
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.167	0.098	0.25	23.01	23.50	0.187	2023/1/04	

NOTE: Head SAR test results of WCDMA Band 4

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	1413/1732.6	RMC12.2K	0.270	0.160	-1.08	23.01	23.50	0.302	2023/1/04	
Back Side	1413/1732.6	RMC12.2K	0.449	0.278	0.17	23.01	23.50	0.503	2023/1/04	8#

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

Test Position	Test	Mode	SAR Value	Power	Conducted	Tune-up	Scaled	Date	Plot
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of Hotspot with 10mm	channel /Freq		SAR Value (W/kg)		Drift(%)	Power (dBm)	Power (dBm)	SAR 1-g (W/Kg)		
			1-g	10-g						
Front Side	1413/1732.6	RMC12.2K	0.270	0.160	-1.08	23.01	23.50	0.302	2023/1/04	
Back Side	1413/1732.6	RMC12.2K	0.449	0.278	0.17	23.01	23.50	0.503	2023/1/04	8#
Left Side	1413/1732.6	RMC12.2K	0.147	0.088	2.29	23.01	23.50	0.165	2023/1/04	
Top Side	1413/1732.6	RMC12.2K	0.225	0.134	0.28	23.01	23.50	0.252	2023/1/04	

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	0.210	0.160	-0.11	23.02	23.50	0.235	2022/12/29	9#
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.122	0.092	2.01	23.02	23.50	0.136	2022/12/29	
Right Cheek	4182/836.4	RMC12.2K	0.180	0.132	3.36	23.02	23.50	0.201	2022/12/29	
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.095	0.070	0.79	23.02	23.50	0.106	2022/12/29	

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	0.174	0.119	2.73	23.02	23.50	0.194	2022/12/29	
Back Side	4182/836.4	RMC12.2K	0.256	0.182	0.12	23.02	23.50	0.286	2022/12/29	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	0.174	0.119	2.73	23.02	23.50	0.194	2022/12/29	
Back Side	4182/836.4	RMC12.2K	0.256	0.182	0.12	23.02	23.50	0.286	2022/12/29	10#
Left Side	4182/836.4	RMC12.2K	0.087	0.060	3.36	23.02	23.50	0.097	2022/12/29	
Top Side	4182/836.4	RMC12.2K	0.135	0.093	3.81	23.02	23.50	0.151	2022/12/29	

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)	0.406	0.234	0.96	24.56	25.00	0.449	2022/12/28	17#
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.209	0.120	-3.44	24.56	25.00	0.231	2022/12/28	
Right Cheek	18900/1880	20M QPSK(1,49)	0.379	0.214	0.65	24.56	25.00	0.419	2022/12/28	
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.208	0.115	3.70	24.56	25.00	0.230	2022/12/28	
50%RB										
Left Cheek	18900/1880	20M QPSK(50,0)	0.223	0.140	4.95	23.54	24.00	0.248	2022/12/28	
Left Tilt 15 Degree	18900/1880	20M QPSK(50,0)	0.108	0.066	-0.48	23.54	24.00	0.120	2022/12/28	
Right Cheek	18900/1880	20M QPSK(50,0)	0.193	0.128	-1.18	23.54	24.00	0.215	2022/12/28	
Right Tilt 15 Degree	18900/1880	20M QPSK(50,0)	0.119	0.060	4.62	23.54	24.00	0.132	2022/12/28	

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	0.169	2.33	24.56	25.00	0.339	2022/12/28	
Back Side	18900/1880	20M QPSK(1,49)	0.491	0.286	-0.11	24.56	25.00	0.543	2022/12/28	18#
50%RB										

Front Side	18900/1880	20M QPSK(50,0)	0.181	0.086	3.53	23.54	24.00	0.201	2022/12/28	
Back Side	18900/1880	20M QPSK(50,0)	0.267	0.170	0.98	23.54	24.00	0.297	2022/12/28	

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	0.169	2.33	24.56	25.00	0.339	2022/12/28	
Back Side	18900/1880	20M QPSK(1,49)	0.491	0.286	-0.11	24.56	25.00	0.543	2022/12/28	18#
Left Side	18900/1880	20M QPSK(1,49)	0.156	0.088	3.27	24.56	25.00	0.173	2022/12/28	
Top Side	18900/1880	20M QPSK(1,49)	0.250	0.144	0.24	24.56	25.00	0.277	2022/12/28	
50%RB										
Front Side	18900/1880	20M QPSK(50,0)	0.181	0.086	3.53	23.54	24.00	0.201	2022/12/28	
Back Side	18900/1880	20M QPSK(50,0)	0.267	0.170	0.98	23.54	24.00	0.297	2022/12/28	
Left Side	18900/1880	20M QPSK(50,0)	0.085	0.047	1.42	23.54	24.00	0.094	2022/12/28	
Top Side	18900/1880	20M QPSK(50,0)	0.131	0.078	2.23	23.54	24.00	0.146	2022/12/28	

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)	0.511	0.309	-0.51	24.31	24.50	0.534	2023/1/04	19#
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.271	0.156	-0.58	24.31	24.50	0.283	2023/1/04	
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.451	0.270	2.42	24.31	24.50	0.471	2023/1/04	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.236	0.137	-3.98	24.31	24.50	0.247	2023/1/04	
50%RB										
Left Cheek	20175/1732.5	20M QPSK(50,24)	0.295	0.162	3.34	23.30	23.50	0.309	2023/1/04	
Left Tilt 15 Degree	20175/1732.5	20M QPSK(50,24)	0.137	0.091	1.26	23.30	23.50	0.143	2023/1/04	
Right Cheek	20175/1732.5	20M QPSK(50,24)	0.253	0.148	1.99	23.30	23.50	0.265	2023/1/04	
Right Tilt 15 Degree	20175/1732.5	20M QPSK(50,24)	0.132	0.073	1.63	23.30	23.50	0.138	2023/1/04	

NOTE: Head SAR test results of LTE 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						
1RB										
Front Side	20175/1732.5	20M QPSK(1,49)	0.318	0.193	2.35	24.31	24.50	0.332	2023/1/04	
Back Side	20175/1732.5	20M QPSK(1,49)	0.493	0.305	-0.54	24.31	24.50	0.515	2023/1/04	20#
50%RB										
Front Side	20175/1732.5	20M QPSK(50,24)	0.161	0.097	0.07	23.30	23.50	0.169	2023/1/04	
Back Side	20175/1732.5	20M QPSK(50,24)	0.275	0.172	1.38	23.30	23.50	0.288	2023/1/04	

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)	0.318	0.193	2.35	24.31	24.50	0.332	2023/1/04	
Back Side	20175/1732.5	20M QPSK(1,49)	0.493	0.305	-0.54	24.31	24.50	0.515	2023/1/04	20#
Left Side	20175/1732.5	20M QPSK(1,49)	0.162	0.100	2.70	24.31	24.50	0.169	2023/1/04	
Top Side	20175/1732.5	20M QPSK(1,49)	0.255	0.155	0.97	24.31	24.50	0.266	2023/1/04	
50%RB										
Front Side	20175/1732.5	20M QPSK(50,24)	0.161	0.097	0.07	23.30	23.50	0.169	2023/1/04	
Back Side	20175/1732.5	20M QPSK(50,24)	0.275	0.172	1.38	23.30	23.50	0.288	2023/1/04	
Left Side	20175/1732.5	20M QPSK(50,24)	0.095	0.056	-1.62	23.30	23.50	0.099	2023/1/04	
Top Side	20175/1732.5	20M QPSK(50,24)	0.149	0.088	-2.19	23.30	23.50	0.156	2023/1/04	

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)	0.197	0.152	-0.80	24.32	24.50	0.205	2022/12/29	21#
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.116	0.087	0.08	24.32	24.50	0.121	2022/12/29	

Right Cheek	20525/836.5	10M QPSK(1,24)	0.178	0.135	2.59	24.32	24.50	0.186	2022/12/29	
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.091	0.070	2.95	24.32	24.50	0.095	2022/12/29	
50%RB										
Left Cheek	20525/836.5	10M QPSK(25,12)	0.110	0.089	3.47	23.34	23.50	0.114	2022/12/29	
Left Tilt 15 Degree	20525/836.5	10M QPSK(25,12)	0.068	0.051	-4.09	23.34	23.50	0.071	2022/12/29	
Right Cheek	20525/836.5	10M QPSK(25,12)	0.096	0.070	0.09	23.34	23.50	0.100	2022/12/29	
Right Tilt 15 Degree	20525/836.5	10M QPSK(25,12)	0.050	0.039	-0.02	23.34	23.50	0.052	2022/12/29	

NOTE: Head SAR test results of LTE 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						
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.150	0.107	-2.04	24.32	24.50	0.156	2022/12/29	
Back Side	20525/836.5	10M QPSK(1,24)	0.243	0.173	-0.36	24.32	24.50	0.253	2022/12/29	22#
50%RB										
Front Side	20525/836.5	10M QPSK(25,12)	0.089	0.062	3.00	23.34	23.50	0.092	2022/12/29	
Back Side	20525/836.5	10M QPSK(25,12)	0.143	0.091	0.33	23.34	23.50	0.148	2022/12/29	

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

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

Hotspot with 10mm								(W/Kg)		
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.150	0.107	-2.04	24.32	24.50	0.156	2022/12/29	
Back Side	20525/836.5	10M QPSK(1,24)	0.243	0.173	-0.36	24.32	24.50	0.253	2022/12/29	22#
Left Side	20525/836.5	10M QPSK(1,24)	0.087	0.061	2.92	24.32	24.50	0.091	2022/12/29	
Top Side	20525/836.5	10M QPSK(1,24)	0.130	0.091	3.14	24.32	24.50	0.136	2022/12/29	
50%RB										
Front Side	20525/836.5	10M QPSK(25,12)	0.089	0.062	3.00	23.34	23.50	0.092	2022/12/29	
Back Side	20525/836.5	10M QPSK(25,12)	0.143	0.091	0.33	23.34	23.50	0.148	2022/12/29	
Left Side	20525/836.5	10M QPSK(25,12)	0.050	0.031	-3.94	23.34	23.50	0.052	2022/12/29	
Top Side	20525/836.5	10M QPSK(25,12)	0.066	0.054	-3.39	23.34	23.50	0.068	2022/12/29	

NOTE: Hotspot SAR test results of LTE Band 5

10.1.9. SAR measurement Result of LTE Band 7

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	21100/2535	20M QPSK(1,49)	0.252	0.132	-0.95	24.98	25.00	0.253	2022/12/27	23#
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.147	0.074	2.59	24.98	25.00	0.148	2022/12/27	
Right Cheek	21100/2535	20M QPSK(1,49)	0.222	0.112	0.05	24.98	25.00	0.223	2022/12/27	
Right Tilt 15	21100/2535	20M QPSK(1,49)	0.118	0.061	0.78	24.98	25.00	0.119	2022/12/27	

Degree										
50%RB										
Left Cheek	21100/2535	20M QPSK(50,0)	0.130	0.078	-1.02	23.97	24.50	0.147	2022/12/27	
Left Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.084	0.037	1.78	23.97	24.50	0.095	2022/12/27	
Right Cheek	21100/2535	20M QPSK(50,0)	0.125	0.064	-2.71	23.97	24.50	0.141	2022/12/27	
Right Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.070	0.035	-4.35	23.97	24.50	0.079	2022/12/27	

NOTE: Head SAR test results of LTE Band 7

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	21100/2535	20M QPSK(1,49)	0.264	0.131	-2.50	24.98	25.00	0.265	2022/12/27	
Back Side	21100/2535	20M QPSK(1,49)	0.422	0.212	-3.20	24.98	25.00	0.424	2022/12/27	24#
50%RB										
Front Side	21100/2535	20M QPSK(50,0)	0.142	0.078	3.93	23.97	24.50	0.160	2022/12/27	
Back Side	21100/2535	20M QPSK(50,0)	0.238	0.108	-0.99	23.97	24.50	0.269	2022/12/27	

NOTE: Body-Worn SAR test results of LTE Band 7

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	21100/2535	20M QPSK(1,49)	0.264	0.131	-2.50	24.98	25.00	0.265	2022/12/27	

Back Side	21100/2535	20M QPSK(1,49)	0.422	0.212	-3.20	24.98	25.00	0.424	2022/12/27	24#
Left Side	21100/2535	20M QPSK(1,49)	0.141	0.070	-1.05	24.98	25.00	0.142	2022/12/27	
Top Side	21100/2535	20M QPSK(1,49)	0.230	0.114	3.21	24.98	25.00	0.231	2022/12/27	
50%RB										
Front Side	21100/2535	20M QPSK(50,0)	0.142	0.078	3.93	23.97	24.50	0.160	2022/12/27	
Back Side	21100/2535	20M QPSK(50,0)	0.238	0.108	-0.99	23.97	24.50	0.269	2022/12/27	
Left Side	21100/2535	20M QPSK(50,0)	0.071	0.038	3.50	23.97	24.50	0.080	2022/12/27	
Top Side	21100/2535	20M QPSK(50,0)	0.128	0.060	-2.87	23.97	24.50	0.145	2022/12/27	

NOTE: Hotspot SAR test results of LTE Band 7

10.1.10. 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)	0.043	0.035	0.12	23.96	24.50	0.049	2023/1/05	25#
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.023	0.018	-0.67	23.96	24.50	0.026	2023/1/05	
Right Cheek	23095/707.5	10M QPSK(1,24)	0.037	0.030	-2.68	23.96	24.50	0.042	2023/1/05	
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.019	0.017	2.02	23.96	24.50	0.022	2023/1/05	
50%RB										
Left Cheek	23095/707.5	10M QPSK(25,0)	0.022	0.018	-1.07	23.04	23.50	0.024	2023/1/05	
Left Tilt 15 Degree	23095/707.5	10M QPSK(25,0)	0.012	0.010	-0.04	23.04	23.50	0.013	2023/1/05	

Right Cheek	23095/707.5	10M QPSK(25,0)	0.020	0.017	0.17	23.04	23.50	0.022	2023/1/05	
Right Tilt 15 Degree	23095/707.5	10M QPSK(25,0)	0.011	0.009	4.74	23.04	23.50	0.012	2023/1/05	

NOTE: Head SAR test results of LTE Band 12

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	23095/707.5	10M QPSK(1,24)	0.048	0.038	0.88	23.96	24.50	0.054	2023/1/05	
Back Side	23095/707.5	10M QPSK(1,24)	0.054	0.043	0.55	23.96	24.50	0.061	2023/1/05	26#
50%RB										
Front Side	23095/707.5	10M QPSK(25,0)	0.031	0.027	3.18	23.04	23.50	0.034	2023/1/05	
Back Side	23095/707.5	10M QPSK(25,0)	0.032	0.025	-3.41	23.04	23.50	0.036	2023/1/05	

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)	0.048	0.038	0.88	23.96	24.50	0.054	2023/1/05	
Back Side	23095/707.5	10M QPSK(1,24)	0.054	0.043	0.55	23.96	24.50	0.061	2023/1/05	26#
Left Side	23095/707.5	10M QPSK(1,24)	0.030	0.023	-1.04	23.96	24.50	0.034	2023/1/05	
Top Side	23095/707.5	10M QPSK(1,24)	0.050	0.038	1.71	23.96	24.50	0.057	2023/1/05	
50%RB										
Front	23095/707.5	10M	0.031	0.027	3.18	23.04	23.50	0.034	2023/1/05	

Side		QPSK(25,0)								
Back Side	23095/707.5	10M QPSK(25,0)	0.032	0.025	-3.41	23.04	23.50	0.036	2023/1/05	
Left Side	23095/707.5	10M QPSK(25,0)	0.017	0.012	3.17	23.04	23.50	0.019	2023/1/05	
Top Side	23095/707.5	10M QPSK(25,0)	0.020	0.016	1.55	23.04	23.50	0.022	2023/1/05	

NOTE: Hotspot SAR test results of LTE Band 12

10.1.11. SAR measurement Result of LTE Band 13

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	23230/782	10M QPSK(1,0)	0.098	0.077	-0.53	24.00	24.00	0.098	2023/1/05	27#
Left Tilt 15 Degree	23230/782	10M QPSK(1,0)	0.054	0.040	-2.88	24.00	24.00	0.054	2023/1/05	
Right Cheek	23230/782	10M QPSK(1,0)	0.086	0.065	-2.12	24.00	24.00	0.086	2023/1/05	
Right Tilt 15 Degree	23230/782	10M QPSK(1,0)	0.042	0.031	2.76	24.00	24.00	0.042	2023/1/05	
50%RB										
Left Cheek	23230/782	10M QPSK(25,12)	0.055	0.042	-3.18	22.96	23.00	0.056	2023/1/05	
Left Tilt 15 Degree	23230/782	10M QPSK(25,12)	0.029	0.023	-0.85	22.96	23.00	0.029	2023/1/05	
Right Cheek	23230/782	10M QPSK(25,12)	0.051	0.037	2.01	22.96	23.00	0.051	2023/1/05	
Right Tilt 15 Degree	23230/782	10M QPSK(25,12)	0.022	0.017	3.84	22.96	23.00	0.022	2023/1/05	

NOTE: Head SAR test results of LTE Band 13

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	23230/782	10M QPSK(1,0)	0.078	0.058	2.70	24.00	24.00	0.078	2023/1/05	
Back Side	23230/782	10M QPSK(1,0)	0.123	0.093	-0.18	24.00	24.00	0.123	2023/1/05	28#
50%RB										
Front Side	23230/782	10M QPSK(25,12)	0.042	0.030	-3.28	22.96	23.00	0.042	2023/1/05	
Back Side	23230/782	10M QPSK(25,12)	0.068	0.048	-2.61	22.96	23.00	0.069	2023/1/05	

NOTE: Body-Worn SAR test results of LTE Band 13

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	23230/782	10M QPSK(1,0)	0.078	0.058	2.70	24.00	24.00	0.078	2023/1/05	
Back Side	23230/782	10M QPSK(1,0)	0.123	0.093	-0.18	24.00	24.00	0.123	2023/1/05	28#
Left Side	23230/782	10M QPSK(1,0)	0.051	0.038	-2.85	24.00	24.00	0.051	2023/1/05	
Top Side	23230/782	10M QPSK(1,0)	0.075	0.057	3.54	24.00	24.00	0.075	2023/1/05	
50%RB										
Front Side	23230/782	10M QPSK(25,12)	0.042	0.030	-3.28	22.96	23.00	0.042	2023/1/05	
Back Side	23230/782	10M QPSK(25,12)	0.068	0.048	-2.61	22.96	23.00	0.069	2023/1/05	
Left Side	23230/782	10M QPSK(25,12)	0.027	0.020	1.35	22.96	23.00	0.027	2023/1/05	
Top Side	23230/782	10M QPSK(25,12)	0.040	0.031	-2.35	22.96	23.00	0.040	2023/1/05	

NOTE: Hotspot SAR test results of LTE Band 13

10.1.12. 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)	0.045	0.037	0.54	24.01	24.50	0.050	2023/1/05	29#
Left Tilt 15 Degree	23790/710	10M QPSK(1,0)	0.025	0.020	3.52	24.01	24.50	0.028	2023/1/05	
Right Cheek	23790/710	10M QPSK(1,0)	0.039	0.031	-1.80	24.01	24.50	0.044	2023/1/05	
Right Tilt 15 Degree	23790/710	10M QPSK(1,0)	0.021	0.017	-1.09	24.01	24.50	0.024	2023/1/05	
50%RB										
Left Cheek	23790/710	10M QPSK(25,12)	0.027	0.022	2.67	22.96	23.00	0.027	2023/1/05	
Left Tilt 15 Degree	23790/710	10M QPSK(25,12)	0.014	0.010	-2.35	22.96	23.00	0.014	2023/1/05	
Right Cheek	23790/710	10M QPSK(25,12)	0.021	0.017	-3.32	22.96	23.00	0.021	2023/1/05	
Right Tilt 15 Degree	23790/710	10M QPSK(25,12)	0.011	0.009	3.04	22.96	23.00	0.011	2023/1/05	

NOTE: Head SAR test results of LTE Band17

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)	0.054	0.042	3.70	24.01	24.50	0.060	2023/1/05	
Back Side	23790/710	10M QPSK(1,0)	0.058	0.046	-0.31	24.01	24.50	0.065	2023/1/05	30#

50%RB										
Front Side	23790/710	10M QPSK(25,12)	0.030	0.023	-0.82	22.96	23.00	0.030	2023/1/05	
Back Side	23790/710	10M QPSK(25,12)	0.034	0.024	-4.87	22.96	23.00	0.034	2023/1/05	

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)	0.054	0.042	3.70	24.01	24.50	0.060	2023/1/05	
Back Side	23790/710	10M QPSK(1,0)	0.058	0.046	-0.31	24.01	24.50	0.065	2023/1/05	30#
Left Side	23790/710	10M QPSK(1,0)	0.021	0.016	-2.96	24.01	24.50	0.024	2023/1/05	
Top Side	23790/710	10M QPSK(1,0)	0.040	0.031	3.89	24.01	24.50	0.045	2023/1/05	
50%RB										
Front Side	23790/710	10M QPSK(25,12)	0.030	0.023	-0.82	22.96	23.00	0.030	2023/1/05	
Back Side	23790/710	10M QPSK(25,12)	0.034	0.024	-4.87	22.96	23.00	0.034	2023/1/05	
Left Side	23790/710	10M QPSK(25,12)	0.012	0.008	-4.73	22.96	23.00	0.012	2023/1/05	
Top Side	23790/710	10M QPSK(25,12)	0.021	0.018	1.36	22.96	23.00	0.021	2023/1/05	

NOTE: Hotspot SAR test results of LTE Band 17

10.1.13. SAR measurement Result of LTE Band 25

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	26365/1882.5	20M QPSK(1,49)	0.298	0.173	3.14	24.63	25.00	0.325	2022/12/28	31#
Left Tilt 15 Degree	26365/1882.5	20M QPSK(1,49)	0.178	0.098	2.81	24.63	25.00	0.194	2022/12/28	
Right Cheek	26365/1882.5	20M QPSK(1,49)	0.279	0.160	0.04	24.63	25.00	0.304	2022/12/28	
Right Tilt 15 Degree	26365/1882.5	20M QPSK(1,49)	0.138	0.076	-2.92	24.63	25.00	0.150	2022/12/28	
50%RB										
Left Cheek	26365/1882.5	20M QPSK(50,24)	0.152	0.103	-2.80	23.72	24.00	0.162	2022/12/28	
Left Tilt 15 Degree	26365/1882.5	20M QPSK(50,24)	0.098	0.053	-1.98	23.72	24.00	0.105	2022/12/28	
Right Cheek	26365/1882.5	20M QPSK(50,24)	0.144	0.094	-0.50	23.72	24.00	0.154	2022/12/28	
Right Tilt 15 Degree	26365/1882.5	20M QPSK(50,24)	0.081	0.039	1.50	23.72	24.00	0.086	2022/12/28	

NOTE: Head SAR test results of LTE Band 25

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	26365/1882.5	20M QPSK(1,49)	0.270	0.156	0.29	24.63	25.00	0.294	2022/12/28	
Back Side	26365/1882.5	20M QPSK(1,49)	0.434	0.253	-1.11	24.63	25.00	0.473	2022/12/28	32#
50%RB										
Front Side	26365/1882.5	20M QPSK(50,24)	0.158	0.082	4.65	23.72	24.00	0.169	2022/12/28	
Back Side	26365/1882.5	20M QPSK(50,24)	0.233	0.151	-0.55	23.72	24.00	0.249	2022/12/28	

NOTE: Body-Worn SAR test results of LTE Band 25

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	26365/1882.5	20M QPSK(1,49)	0.270	0.156	0.29	24.63	25.00	0.294	2022/12/28	
Back Side	26365/1882.5	20M QPSK(1,49)	0.434	0.253	-1.11	24.63	25.00	0.473	2022/12/28	32#
Left Side	26365/1882.5	20M QPSK(1,49)	0.144	0.081	-3.83	24.63	25.00	0.157	2022/12/28	
Top Side	26365/1882.5	20M QPSK(1,49)	0.230	0.131	0.98	24.63	25.00	0.250	2022/12/28	
50%RB										
Front Side	26365/1882.5	20M QPSK(50,24)	0.158	0.082	4.65	23.72	24.00	0.169	2022/12/28	
Back Side	26365/1882.5	20M QPSK(50,24)	0.233	0.151	-0.55	23.72	24.00	0.249	2022/12/28	
Left Side	26365/1882.5	20M QPSK(50,24)	0.084	0.048	2.43	23.72	24.00	0.090	2022/12/28	
Top Side	26365/1882.5	20M QPSK(50,24)	0.122	0.067	-1.79	23.72	24.00	0.130	2022/12/28	

NOTE: Hotspot SAR test results of LTE Band 25

10.1.14. SAR measurement Result of LTE Band 41

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	40620/2593	20M QPSK(1,49)	0.138	0.072	0.60	25.38	25.50	0.142	2022/12/27	33#
Left Tilt 15 Degree	40620/2593	20M QPSK(1,49)	0.074	0.037	-0.59	25.38	25.50	0.076	2022/12/27	
Right	40620/2593	20M	0.119	0.060	-0.88	25.38	25.50	0.122	2022/12/27	

Cheek		QPSK(1,49)								
Right Tilt 15 Degree	40620/2593	20M QPSK(1,49)	0.062	0.031	2.26	25.38	25.50	0.064	2022/12/27	
50%RB										
Left Cheek	40620/2593	20M QPSK(50,24)	0.078	0.042	-0.40	24.34	24.50	0.081	2022/12/27	
Left Tilt 15 Degree	40620/2593	20M QPSK(50,24)	0.042	0.022	-2.69	24.34	24.50	0.044	2022/12/27	
Right Cheek	40620/2593	20M QPSK(50,24)	0.066	0.030	-3.38	24.34	24.50	0.068	2022/12/27	
Right Tilt 15 Degree	40620/2593	20M QPSK(50,24)	0.037	0.016	0.97	24.34	24.50	0.038	2022/12/27	

NOTE: Head SAR test results of LTE Band 41

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	40620/2593	20M QPSK(1,49)	0.108	0.052	-3.79	25.38	25.50	0.111	2022/12/27	
Back Side	40620/2593	20M QPSK(1,49)	0.174	0.087	0.07	25.38	25.50	0.179	2022/12/27	34#
50%RB										
Front Side	40620/2593	20M QPSK(50,24)	0.060	0.029	1.45	24.34	24.50	0.062	2022/12/27	
Back Side	40620/2593	20M QPSK(50,24)	0.101	0.046	2.41	24.34	24.50	0.105	2022/12/27	

NOTE: Body-Worn SAR test results of LTE Band 41

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	40620/2593	20M QPSK(1,49)	0.108	0.052	-3.79	25.38	25.50	0.111	2022/12/27	
Back Side	40620/2593	20M QPSK(1,49)	0.174	0.087	0.07	25.38	25.50	0.179	2022/12/27	34#
Left Side	40620/2593	20M QPSK(1,49)	0.054	0.026	3.96	25.38	25.50	0.056	2022/12/27	
Top Side	40620/2593	20M QPSK(1,49)	0.095	0.046	2.59	25.38	25.50	0.098	2022/12/27	
50%RB										
Front Side	40620/2593	20M QPSK(50,24)	0.060	0.029	1.45	24.34	24.50	0.062	2022/12/27	
Back Side	40620/2593	20M QPSK(50,24)	0.101	0.046	2.41	24.34	24.50	0.105	2022/12/27	
Left Side	40620/2593	20M QPSK(50,24)	0.030	0.013	-2.26	24.34	24.50	0.031	2022/12/27	
Top Side	40620/2593	20M QPSK(50,24)	0.053	0.028	4.04	24.34	24.50	0.055	2022/12/27	

NOTE: Hotspot SAR test results of LTE Band 41

10.1.15. SAR measurement Result of WLAN 2.4G

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 Cheek	6/2437	802.11b	0.239	0.124	-1.18	15.86	16.00	0.247	2022/12/30	15#
Left Tilt 15 Degree	6/2437	802.11b	0.134	0.069	-3.62	15.86	16.00	0.138	2022/12/30	
Right Cheek	6/2437	802.11b	0.216	0.109	-0.96	15.86	16.00	0.223	2022/12/30	
Right Tilt 15 Degree	6/2437	802.11b	0.118	0.061	-4.00	15.86	16.00	0.122	2022/12/30	

NOTE: Head SAR test results of WLAN 2.4G

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	6/2437	802.11b	0.060	0.028	-0.32	15.86	16.00	0.062	2022/12/30	
Back Side	6/2437	802.11b	0.070	0.034	1.30	15.86	16.00	0.072	2022/12/30	16#

NOTE: Body-Worn SAR test results of WLAN 2.4G

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	6/2437	802.11b	0.060	0.028	-0.32	15.86	16.00	0.062	2022/12/30	
Back Side	6/2437	802.11b	0.070	0.034	1.30	15.86	16.00	0.072	2022/12/30	16#
Right Side	6/2437	802.11b	0.027	0.013	-0.18	15.86	16.00	0.028	2022/12/30	
Top Side	6/2437	802.11b	0.033	0.015	1.63	15.86	16.00	0.034	2022/12/30	

NOTE: Hotspot SAR test results of WLAN 2.4G

10.1.16. SAR measurement Result of WLAN 5.2G

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 Cheek	48/5240	802.11n20	0.641	0.210	-3.22	9.92	10.00	0.653	2023/1/07	11#
Left Tilt 15 Degree	48/5240	802.11n20	0.327	0.103	-2.89	9.92	10.00	0.333	2023/1/07	
Right Cheek	48/5240	802.11n20	0.567	0.176	1.79	9.92	10.00	0.578	2023/1/07	
Right Tilt 15 Degree	48/5240	802.11n20	0.272	0.087	-3.87	9.92	10.00	0.277	2023/1/07	

NOTE: Head SAR test results of WLAN 5.2G

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	48/5240	802.11n20	0.084	0.038	-1.53	9.92	10.00	0.086	2023/1/07	
Back Side	48/5240	802.11n20	0.138	0.064	-0.85	9.92	10.00	0.141	2023/1/07	13#

NOTE: Body-Worn SAR test results of WLAN 5.2G

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	48/5240	802.11n20	0.084	0.038	-1.53	9.92	10.00	0.086	2023/1/07	
Back Side	48/5240	802.11n20	0.138	0.064	-0.85	9.92	10.00	0.141	2023/1/07	13#
Right Side	48/5240	802.11n20	0.054	0.025	-1.43	9.92	10.00	0.055	2023/1/07	
Top Side	48/5240	802.11n20	0.051	0.023	-2.23	9.92	10.00	0.052	2023/1/07	

NOTE: Hotspot SAR test results of WLAN 5.2G

10.1.17. SAR measurement Result of WLAN 5.8G

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	165/5825	802.11ac20	0.488	0.169	-1.44	9.76	10.00	0.516	2023/1/06	12#
Left Tilt 15 Degree	165/5825	802.11ac20	0.246	0.084	2.27	9.76	10.00	0.260	2023/1/06	
Right Cheek	165/5825	802.11ac20	0.459	0.159	1.97	9.76	10.00	0.485	2023/1/06	
Right Tilt 15 Degree	165/5825	802.11ac20	0.230	0.077	1.64	9.76	10.00	0.243	2023/1/06	

NOTE: Head SAR test results of WLAN 5.8G

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	165/5825	802.11ac20	0.216	0.079	2.92	9.76	10.00	0.228	2023/1/06	
Back Side	165/5825	802.11ac20	0.348	0.133	-1.05	9.76	10.00	0.368	2023/1/06	14#

NOTE: Body-Worn SAR test results of WLAN 5.8G

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	165/5825	802.11ac20	0.216	0.079	2.92	9.76	10.00	0.228	2023/1/06	
Back Side	165/5825	802.11ac20	0.348	0.133	-1.05	9.76	10.00	0.368	2023/1/06	14#
Right Side	165/5825	802.11ac20	0.114	0.042	3.57	9.76	10.00	0.120	2023/1/06	
Top Side	165/5825	802.11ac20	0.105	0.039	1.06	9.76	10.00	0.111	2023/1/06	

NOTE: Hotspot SAR test results of WLAN 5.8G

10.2. Simultaneous Transmission Analysis

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

- 1) Scalar SAR summation < 1.6W/kg.
- 2) $SPLSR = (SAR_1 + SAR_2)^{1.5} / (\text{min. separation distance, mm})$, 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 $SPLSR \leq 0.04$, 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	0.534	0.247	0.781	N/A	N/A
	Left Tilt 15 Degree	0.283	0.138	0.421	N/A	N/A
	Right Cheek	0.471	0.223	0.694	N/A	N/A
	Right Tilt 15 Degree	0.247	0.122	0.369	N/A	N/A
Body-Worn	Front Side	0.339	0.062	0.401	N/A	N/A
	Back Side	0.543	0.072	0.615	N/A	N/A
Hotspot	Front Side	0.339	0.062	0.401	N/A	N/A
	Back Side	0.543	0.072	0.615	N/A	N/A
	Left Side	0.173	N/A	0.173	N/A	N/A
	Right Side	N/A	0.028	0.028	N/A	N/A
	Top Side	0.277	0.034	0.311	N/A	N/A
	Bottom Side	N/A	N/A	N/A	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	NII			
Head	Left Cheek	0.534	0.653	1.187	N/A	N/A
	Left Tilt 15 Degree	0.283	0.333	0.616	N/A	N/A
	Right Cheek	0.471	0.578	1.049	N/A	N/A
	Right Tilt 15 Degree	0.247	0.277	0.524	N/A	N/A
Body-Worn	Front Side	0.339	0.228	0.567	N/A	N/A
	Back Side	0.543	0.368	0.911	N/A	N/A
Hotspot	Front Side	0.339	0.228	0.567	N/A	N/A
	Back Side	0.543	0.368	0.911	N/A	N/A
	Left Side	0.173	N/A	0.173	N/A	N/A
	Right Side	N/A	0.120	0.120	N/A	N/A
	Top Side	0.277	0.111	0.388	N/A	N/A
	Bottom Side	N/A	N/A	N/A	N/A	N/A

Test Position	Scaled SAR _{MAX}		Σ 1-g SAR	SPLSR	Remark
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		WWAN	DSS	(W/Kg)		
Head	Left Cheek	0.534	0.210	0.744	N/A	N/A
	Left Tilt 15 Degree	0.283	0.210	0.493	N/A	N/A
	Right Cheek	0.471	0.210	0.681	N/A	N/A
	Right Tilt 15 Degree	0.247	0.210	0.457	N/A	N/A
Body-Worn	Front Side	0.339	0.105	0.444	N/A	N/A
	Back Side	0.543	0.105	0.648	N/A	N/A
Hotspot	Front Side	0.339	0.105	0.444	N/A	N/A
	Back Side	0.543	0.105	0.648	N/A	N/A
	Left Side	0.173	0.105	0.278	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	0.277	0.105	0.382	N/A	N/A
	Bottom Side	N/A	0.105	0.105	N/A	N/A

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DMR			
Head	Left Cheek	0.27	0.39	0.66	N/A	N/A
	Left Tilt 15 Degree	0.14	0.39	0.53	N/A	N/A
	Right Cheek	0.24	0.39	0.63	N/A	N/A
	Right Tilt 15 Degree	0.12	0.39	0.51	N/A	N/A
Body-Worn	Front Side	0.17	0.43	0.60	N/A	N/A
	Back Side	0.27	0.43	0.70	N/A	N/A
Hotspot	Front Side	0.17	0.43	0.60	N/A	N/A
	Back Side	0.27	0.43	0.70	N/A	N/A
	Left Side	0.09	0.43	0.52	N/A	N/A
	Right Side	N/A	0.43	0.43	N/A	N/A
	Top Side	0.14	0.43	0.57	N/A	N/A
	Bottom Side	N/A	0.43	0.43	N/A	N/A

NOTE: The Simultaneous Tx employ [report SAR(WWAN Band)/ LIMIT 2.0 W/kg + report SAR(DMR) / LIMIT 8.0 W/kg ≤ 1], DMR report SAR on the basis of Report No: BTF230322R01501

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

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MEASUREMENT 1 System Performance Check - 750MHz
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MEASUREMENT 6 System Performance Check - 2600MHz
MEASUREMENT 7 System Performance Check - 5200MHz
MEASUREMENT 8 System Performance Check - 5800MHz

MEASUREMENT 1

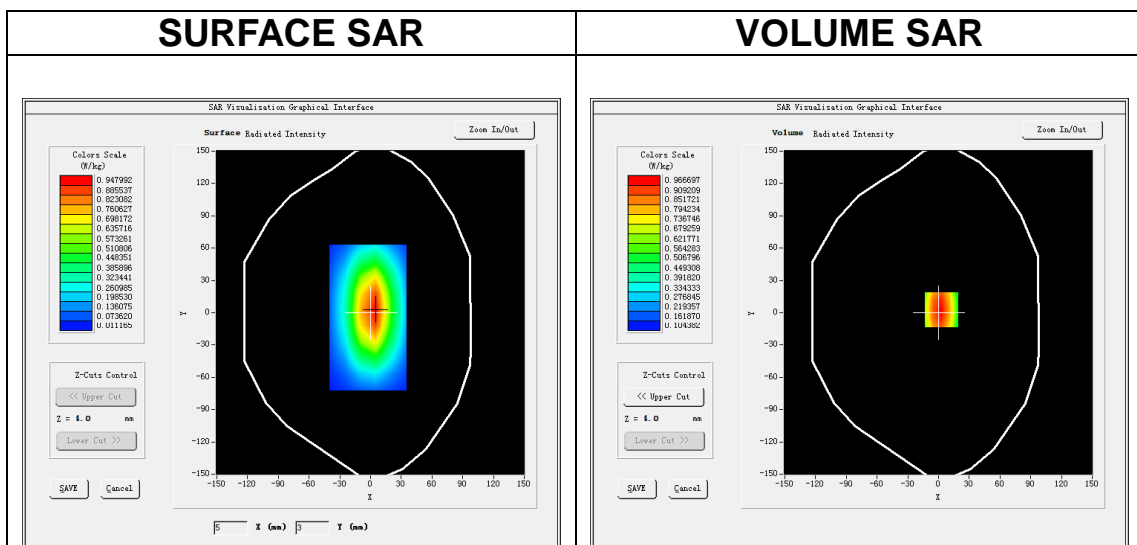
Date of measurement: 5/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

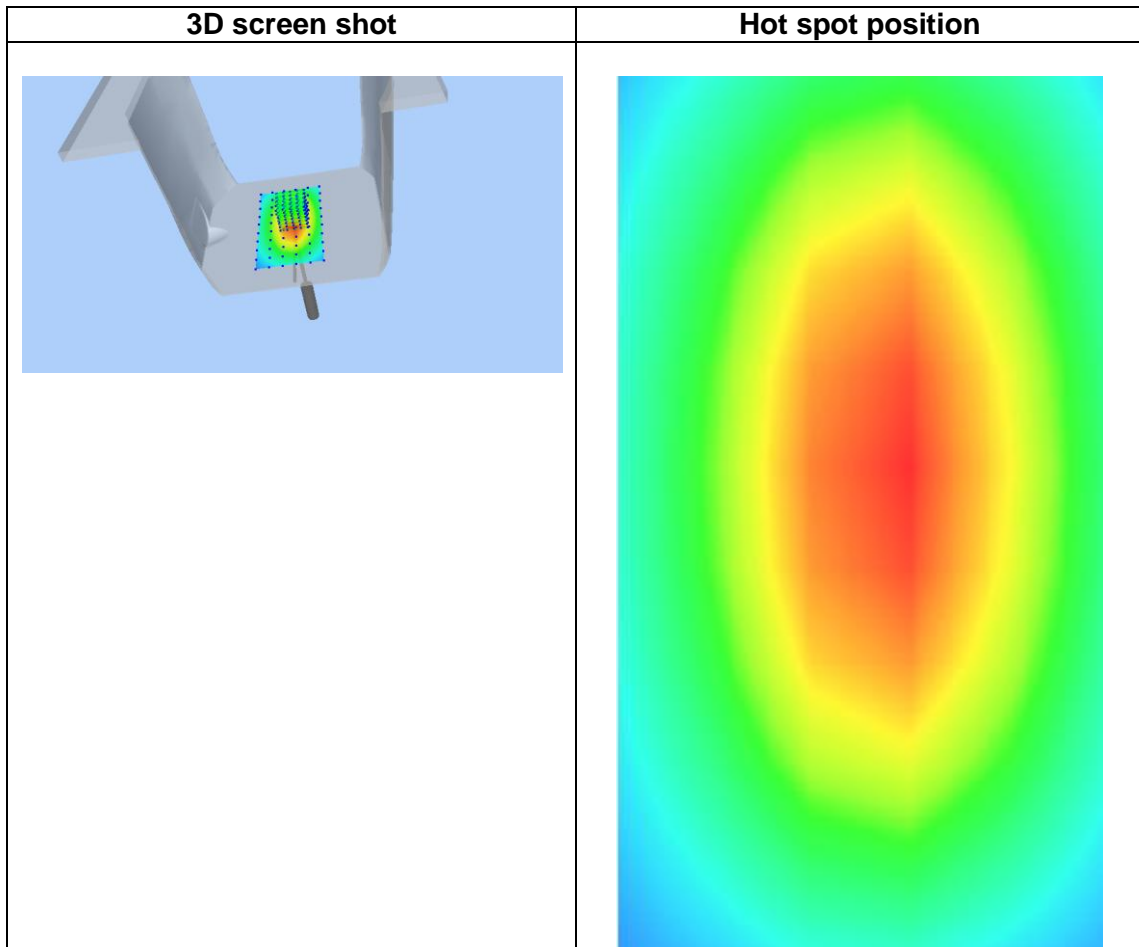
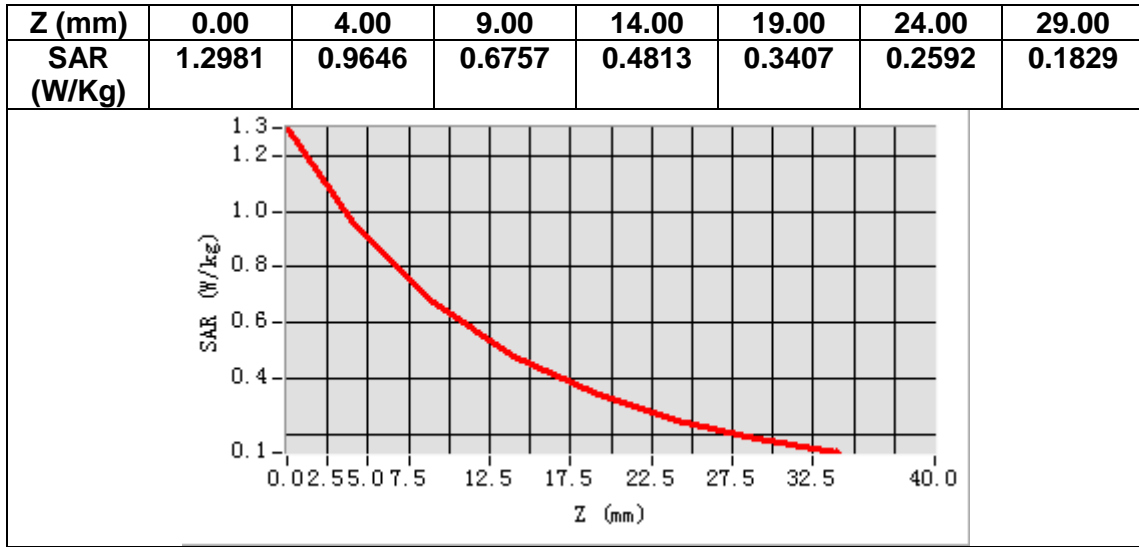
Frequency (MHz)	750.000000
Relative permittivity (real part)	40.740840
Relative permittivity (imaginary part)	21.403375
Conductivity (S/m)	0.891807
Variation (%)	-2.360000



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.588043
SAR 1g (W/Kg)	0.776195



MEASUREMENT 2

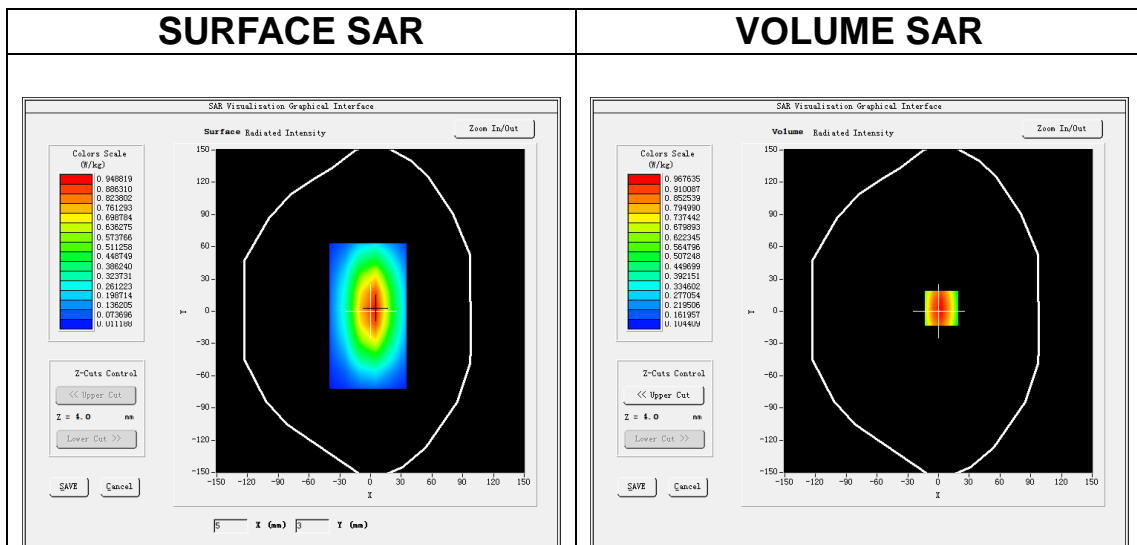
Date of measurement: 29/12/2022

A. Experimental conditions.

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

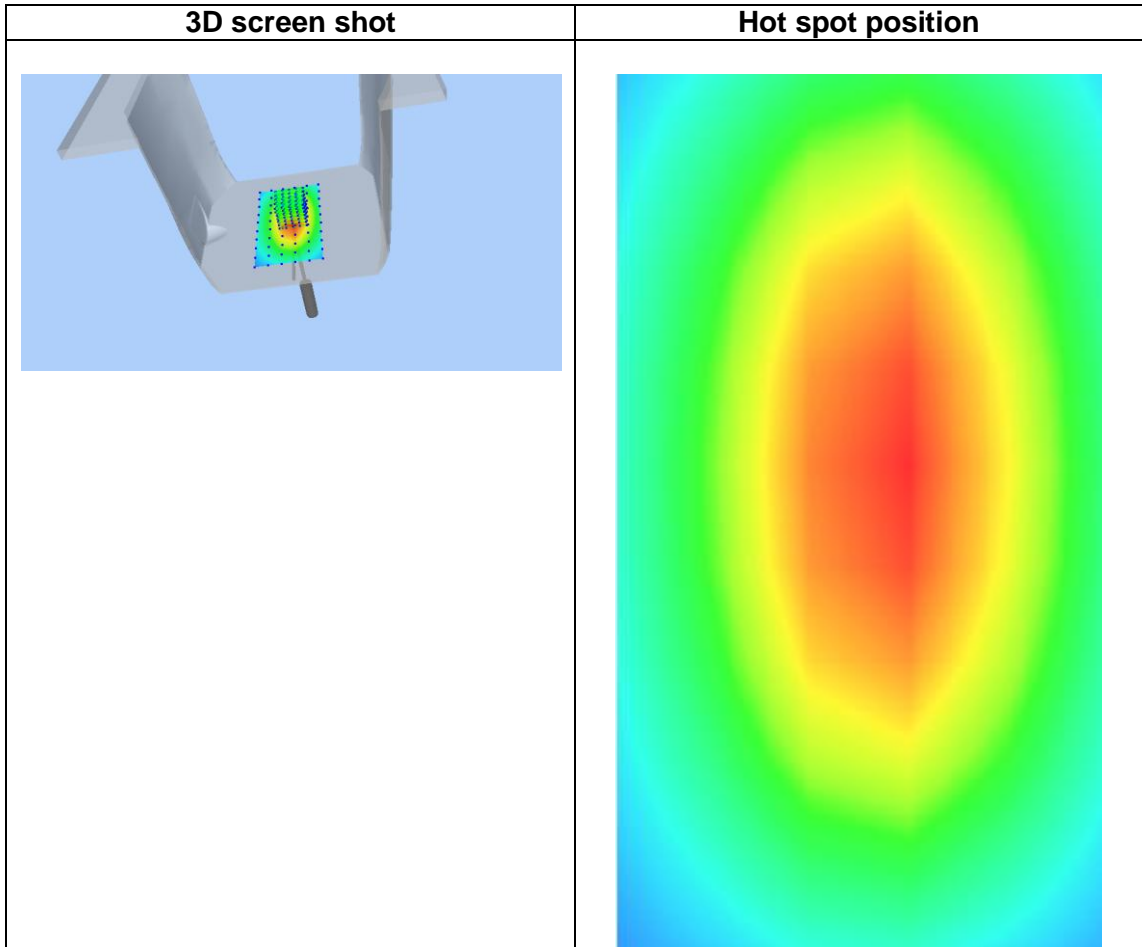
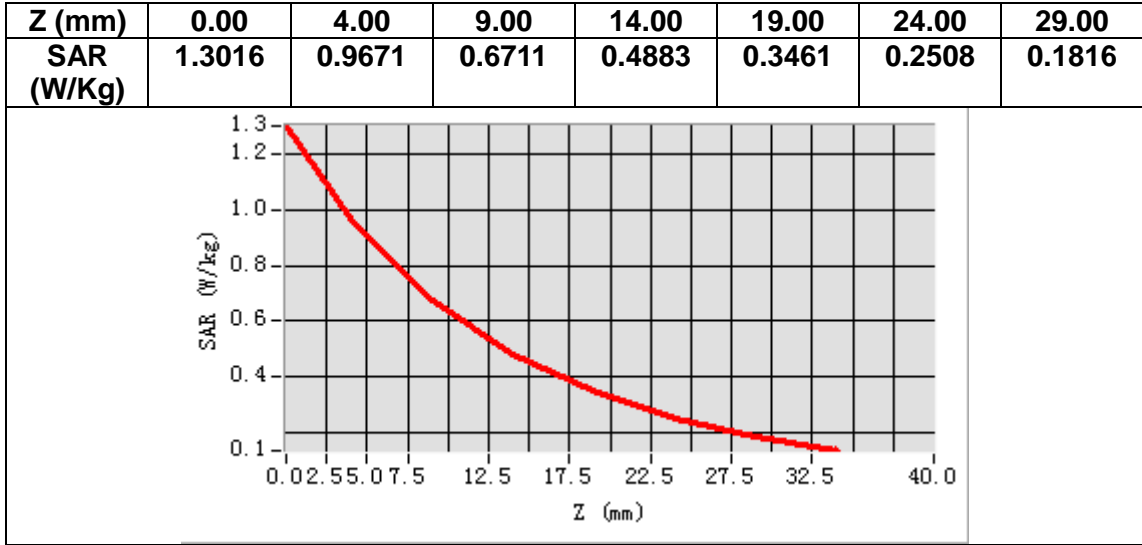
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.476597
Relative permittivity (imaginary part)	20.116940
Conductivity (S/m)	0.933202
Variation (%)	2.870000



Maximum location: X=3.00, Y=3.00
SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.624236
SAR 1g (W/Kg)	0.927179



MEASUREMENT 3

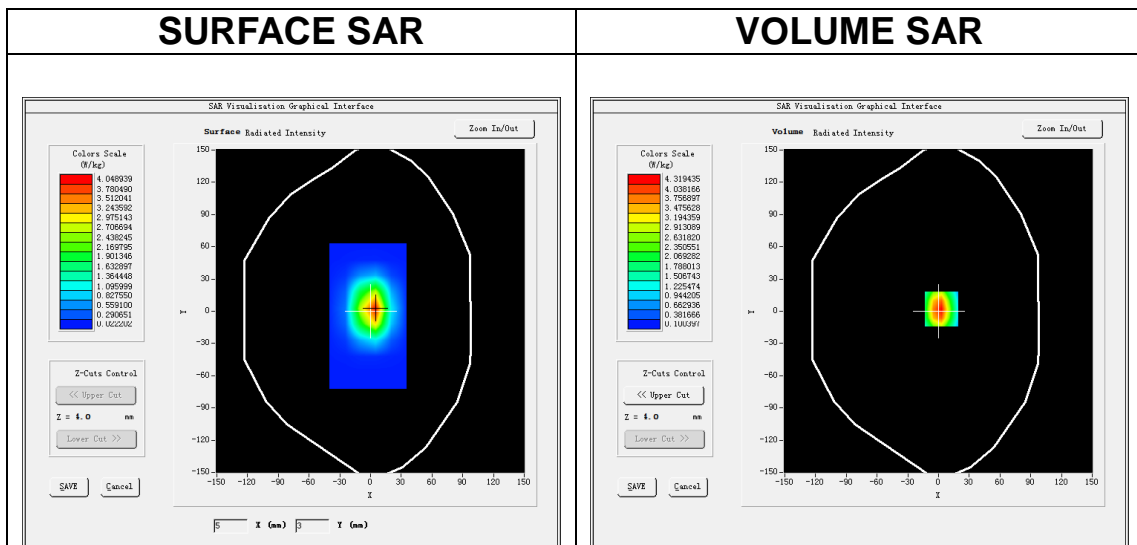
Date of measurement: 4/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

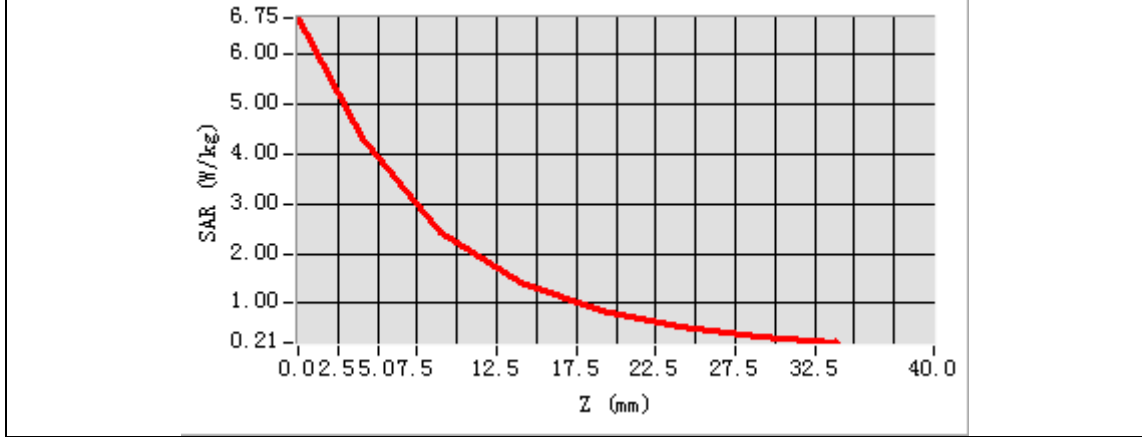
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.145147
Relative permittivity (imaginary part)	13.927737
Conductivity (S/m)	1.392774
Variation (%)	0.370000

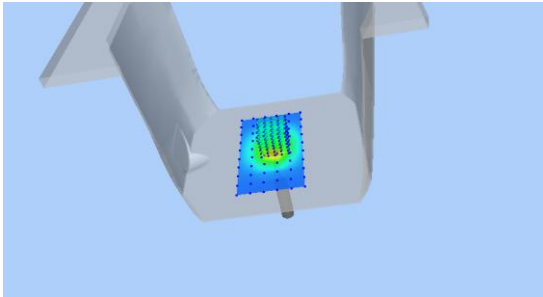
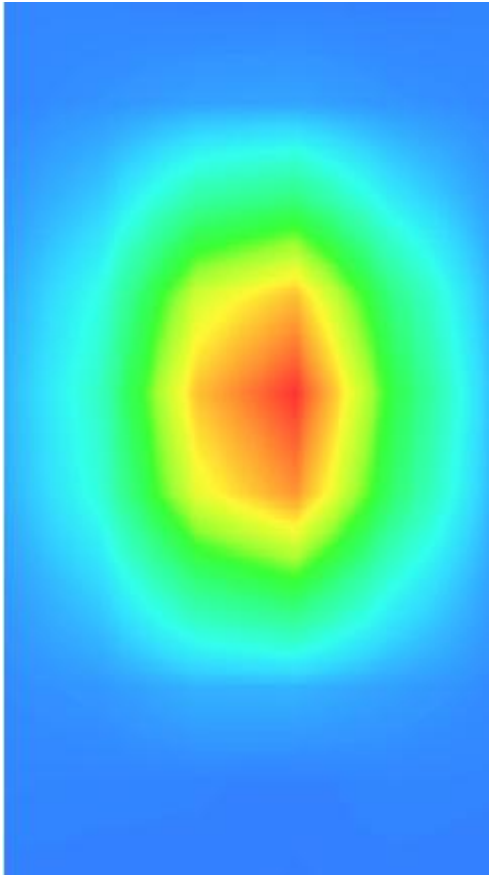


Maximum location: X=3.00, Y=2.00
SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.151269
SAR 1g (W/Kg)	3.584108

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.7492	4.3138	2.4342	1.4280	0.8519	0.5288	0.3292



3D screen shot	Hot spot position
	

MEASUREMENT 4

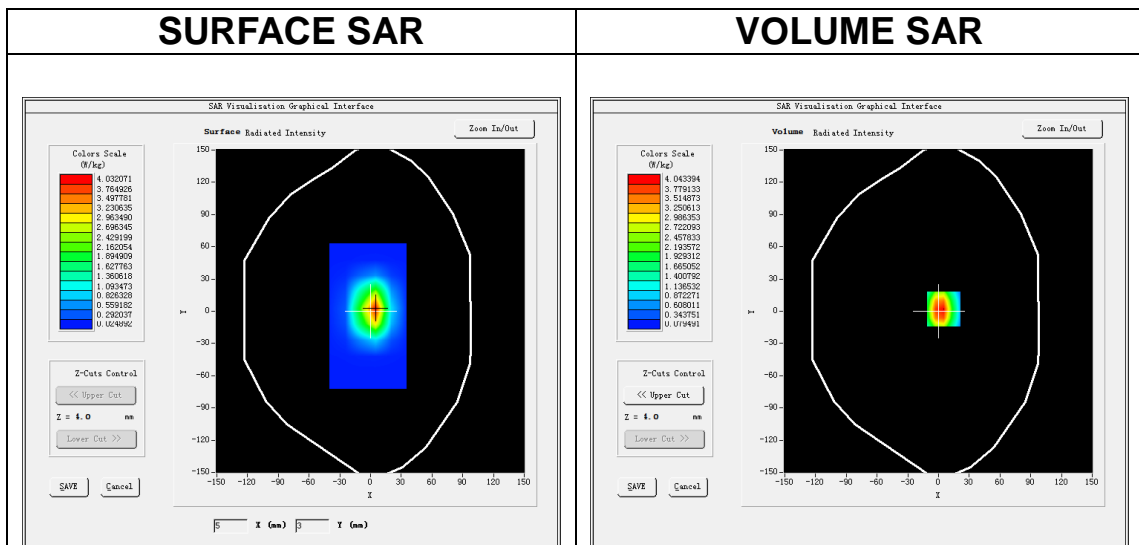
Date of measurement: 28/12/2022

A. Experimental conditions.

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

B. SAR Measurement Results

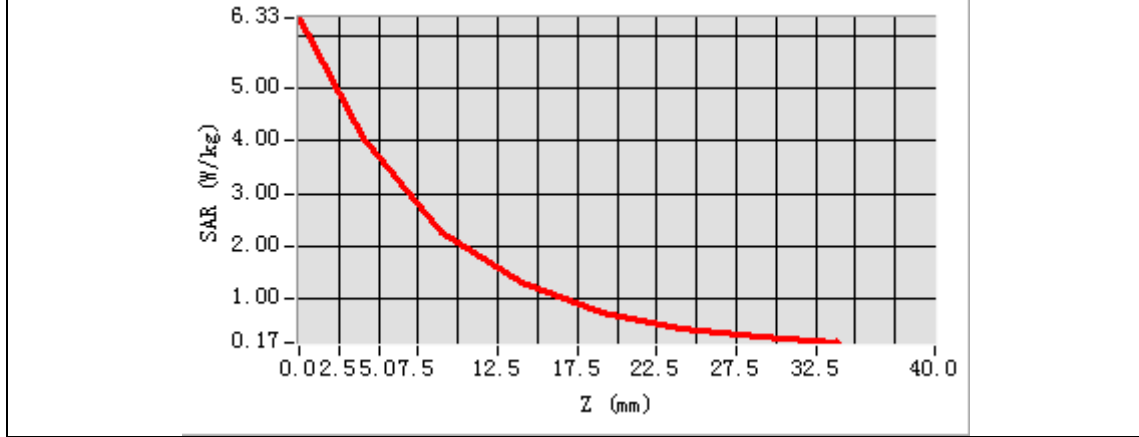
Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.881211
Relative permittivity (imaginary part)	13.862256
Conductivity (S/m)	1.463238
Variation (%)	2.010000

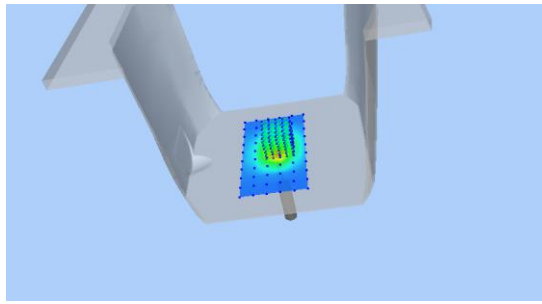
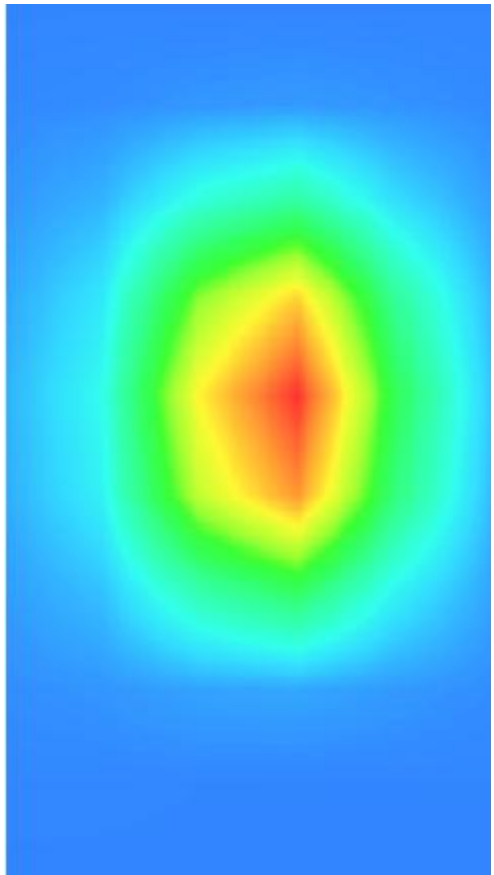


Maximum location: X=5.00, Y=2.00
SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	1.998265
SAR 1g (W/Kg)	4.025276

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.3266	4.0467	2.2619	1.3063	0.7690	0.4504	0.2773



3D screen shot	Hot spot position
	

MEASUREMENT 5

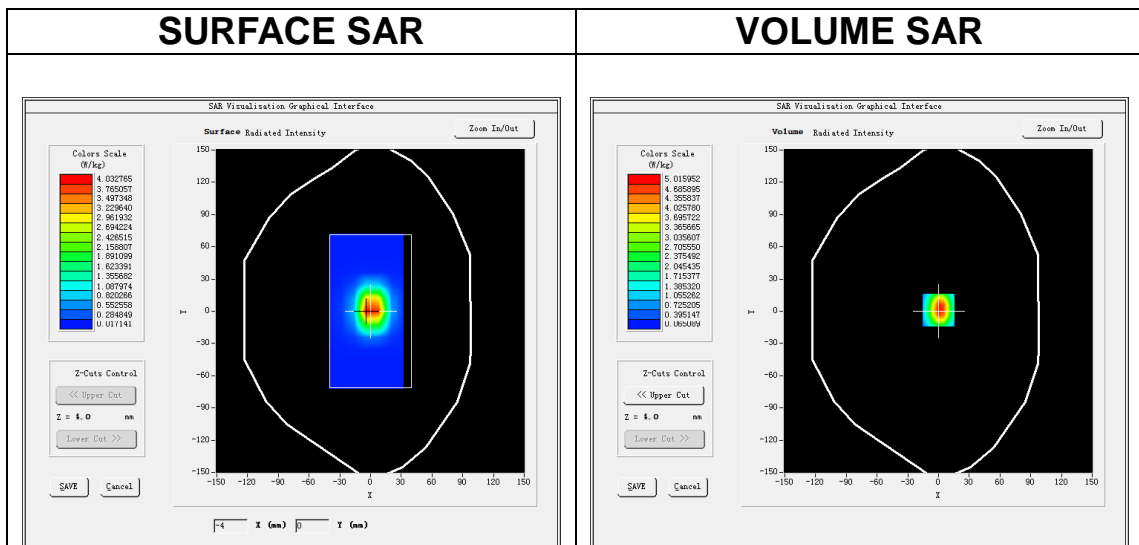
Date of measurement: 30/12/2022

A. Experimental conditions.

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

B. SAR Measurement Results

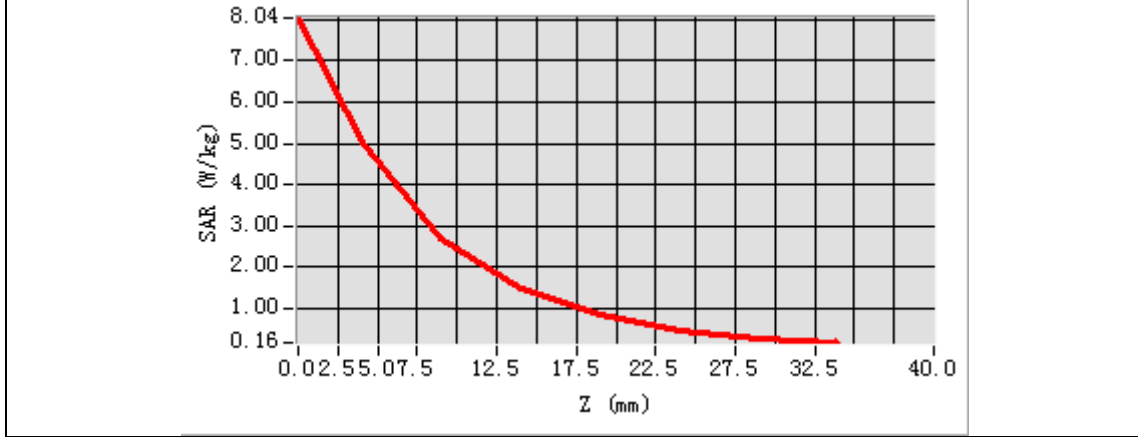
Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.223518
Relative permittivity (imaginary part)	13.652738
Conductivity (S/m)	1.858289
Variation (%)	-2.770000

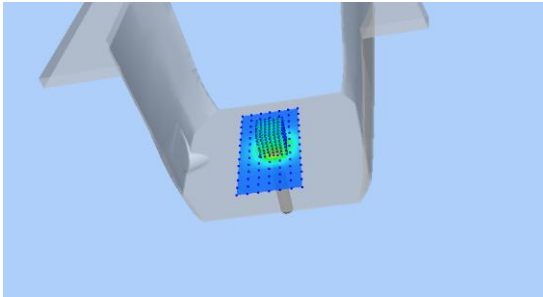
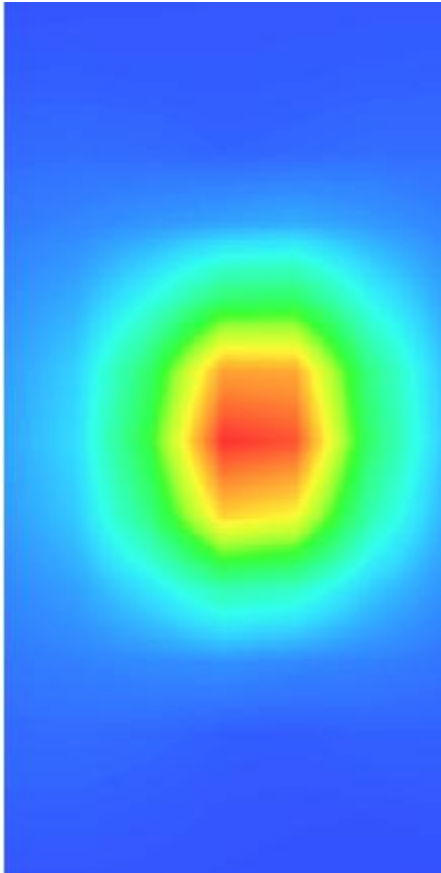


Maximum location: X=0.00, Y=1.00
SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.485195
SAR 1g (W/Kg)	4.955347

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.0376	5.0198	2.6977	1.4847	0.8351	0.4634	0.2688



3D screen shot	Hot spot position
	

MEASUREMENT 6

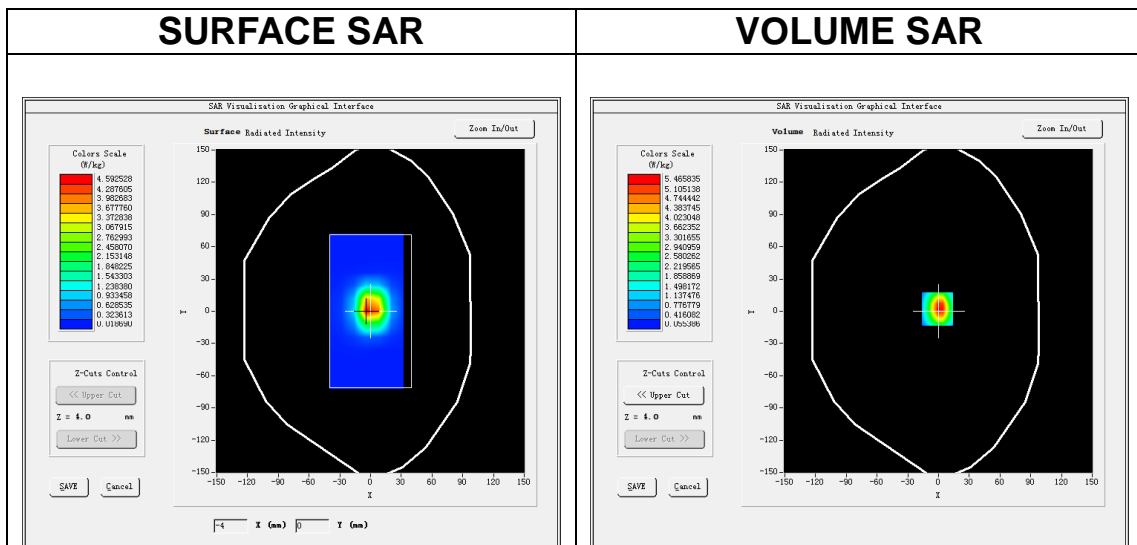
Date of measurement: 27/12/2022

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Dipole</u>
Band	<u>CW2600</u>
Channels	<u>Middle</u>
Signal	<u>CW (Crest factor: 1.0)</u>
ConvF	<u>1.87</u>

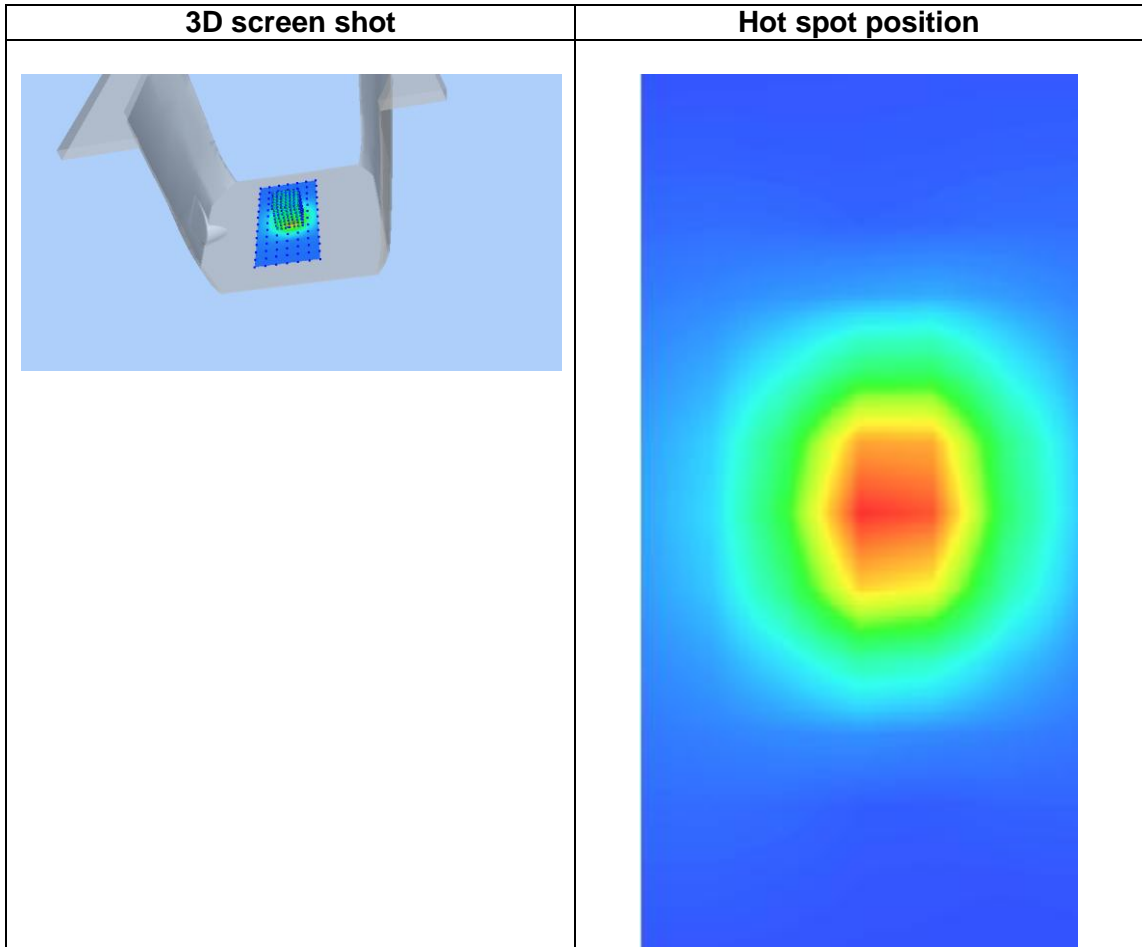
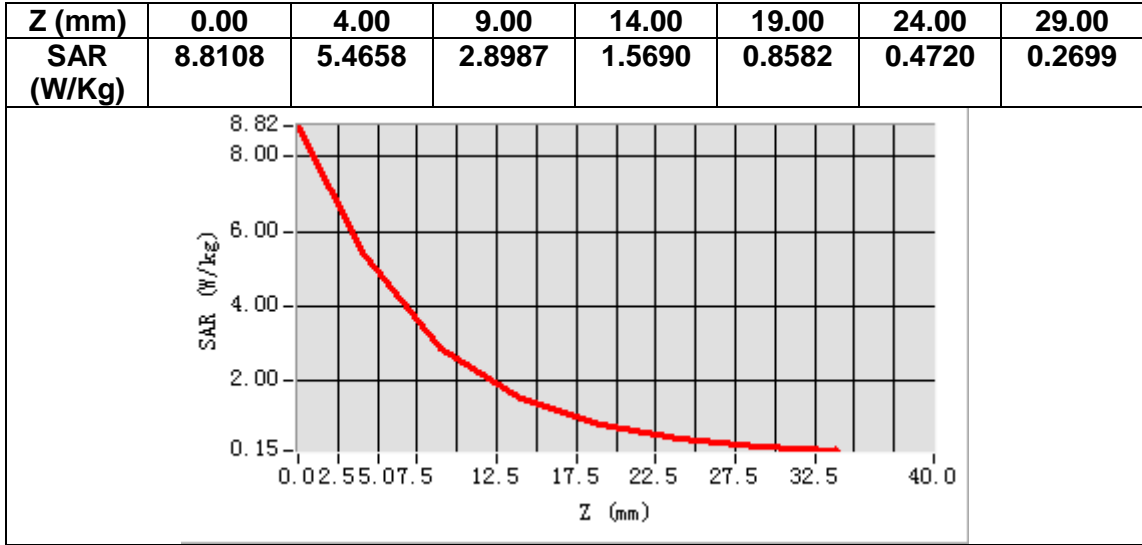
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.229326
Relative permittivity (imaginary part)	13.829380
Conductivity (S/m)	1.997577
Variation (%)	-1.530000



Maximum location: X=-1.00, Y=2.00
SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.199153
SAR 1g (W/Kg)	5.984021



MEASUREMENT 7

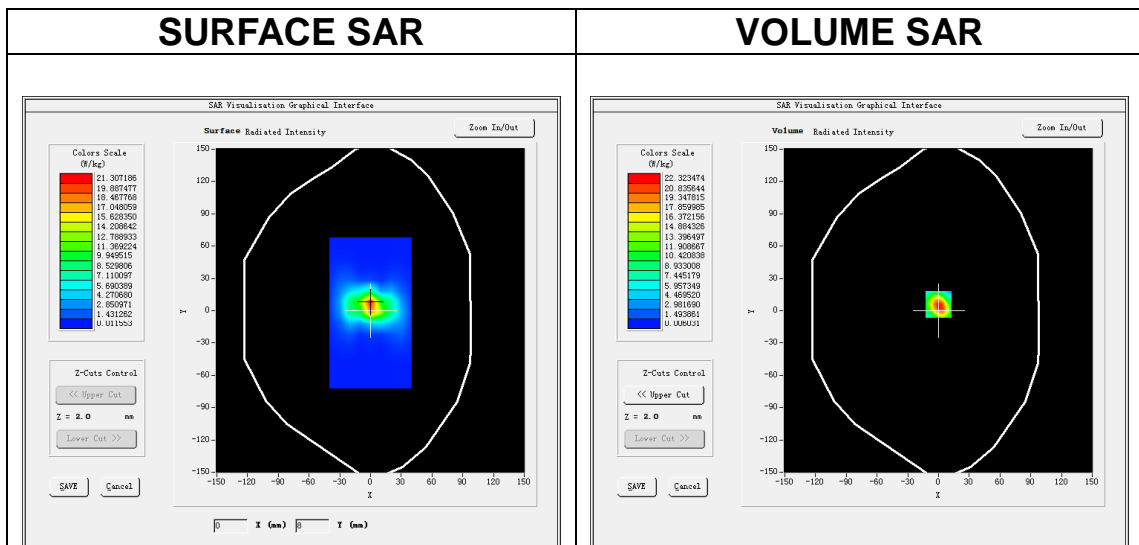
Date of measurement: 7/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	36.165225
Relative permittivity (imaginary part)	16.511197
Conductivity (S/m)	4.769901
Variation (%)	2.970000

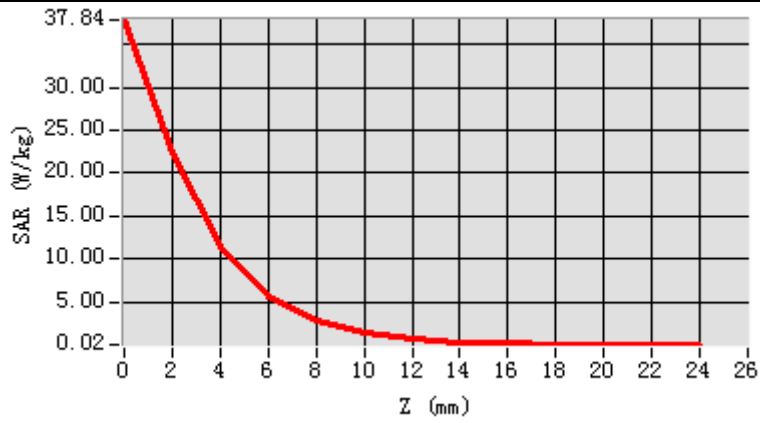


Maximum location: X=0.00, Y=6.00

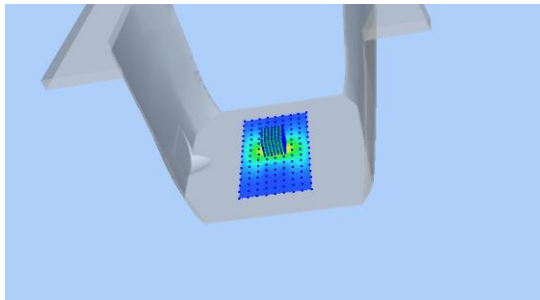
SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.243132
SAR 1g (W/Kg)	15.922285

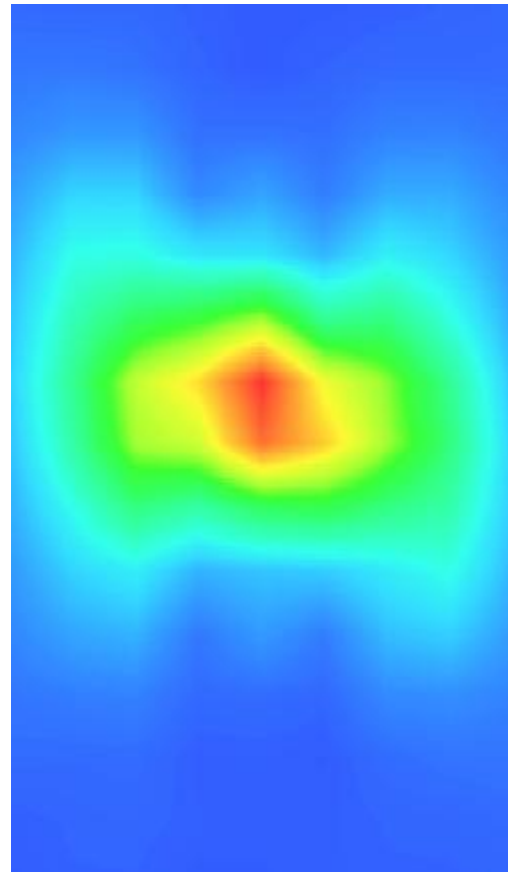
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	37.8 66	22.3 59	11.3 13	5.66 83	2.82 32	1.40 29	0.71 94	0.36 81	0.18 59	0.10 00	0.05 19	0.03 11



3D screen shot



Hot spot position



MEASUREMENT 8

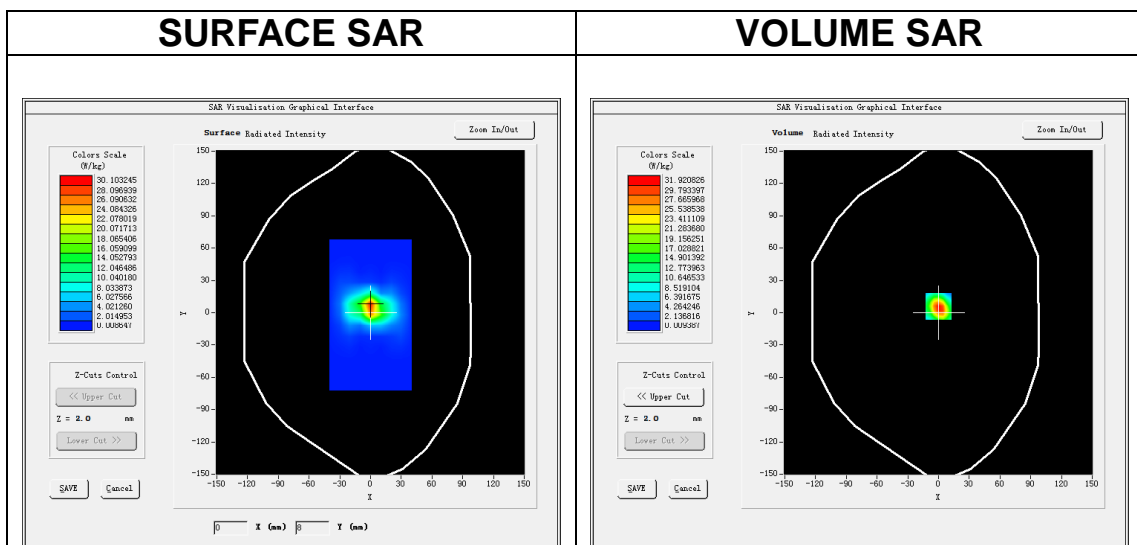
Date of measurement: 6/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.744142
Relative permittivity (imaginary part)	16.412758
Conductivity (S/m)	5.288555
Variation (%)	-2.080000

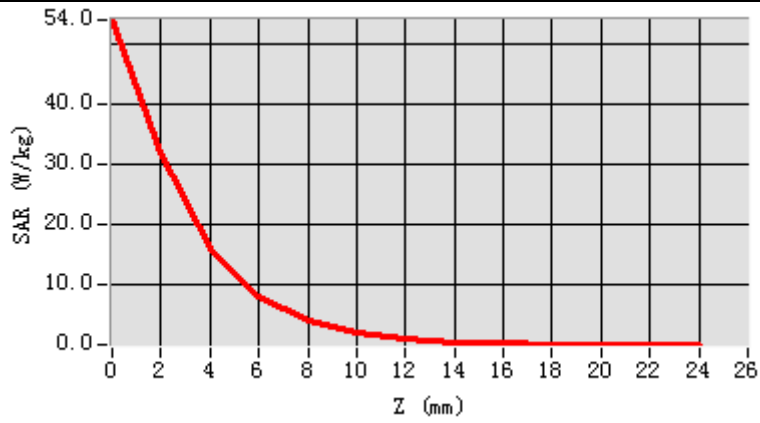


Maximum location: X=0.00, Y=6.00

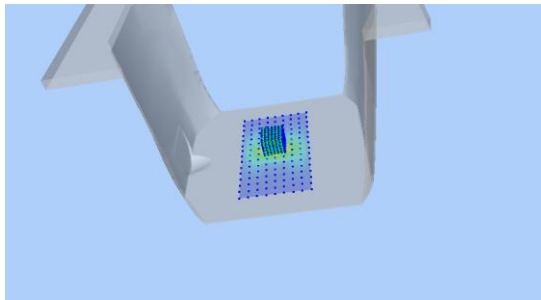
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	5.814153
SAR 1g (W/Kg)	18.927251

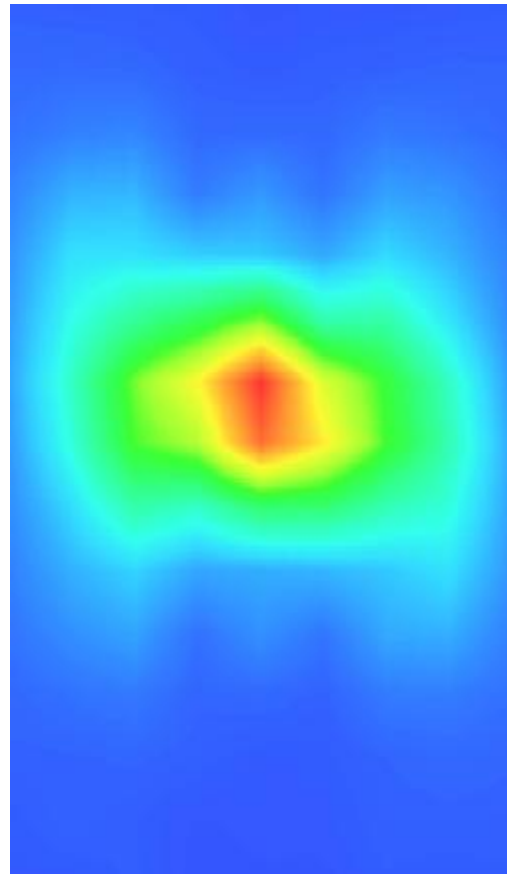
Z (m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	54.009	31.991	16.195	8.1786	4.0845	2.0519	1.0360	0.5187	0.2753	0.1525	0.0790	0.0454



3D screen shot



Hot spot position



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 1

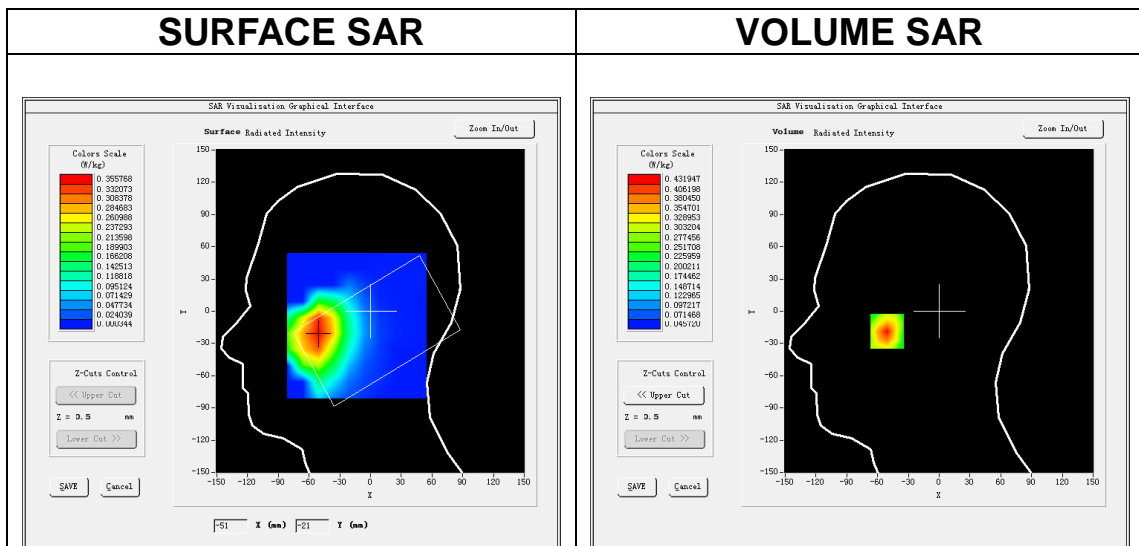
Date of measurement: 29/12/2022

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>GSM850</u>
Channels	<u>Middle</u>
Signal	<u>TDMA (Crest factor: 2.0)</u>
ConvF	<u>1.50</u>

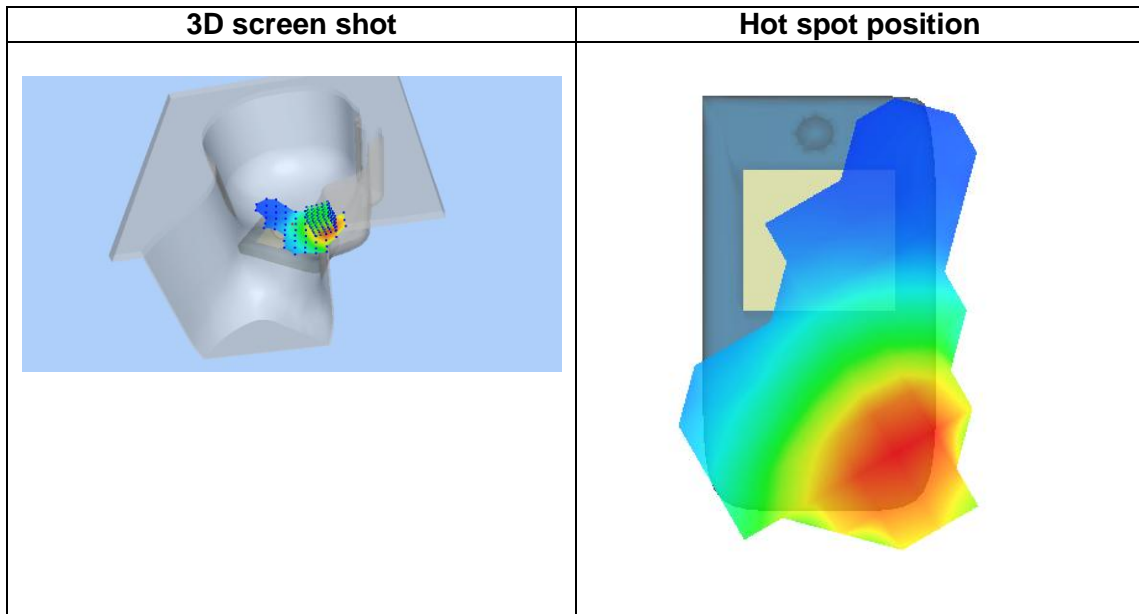
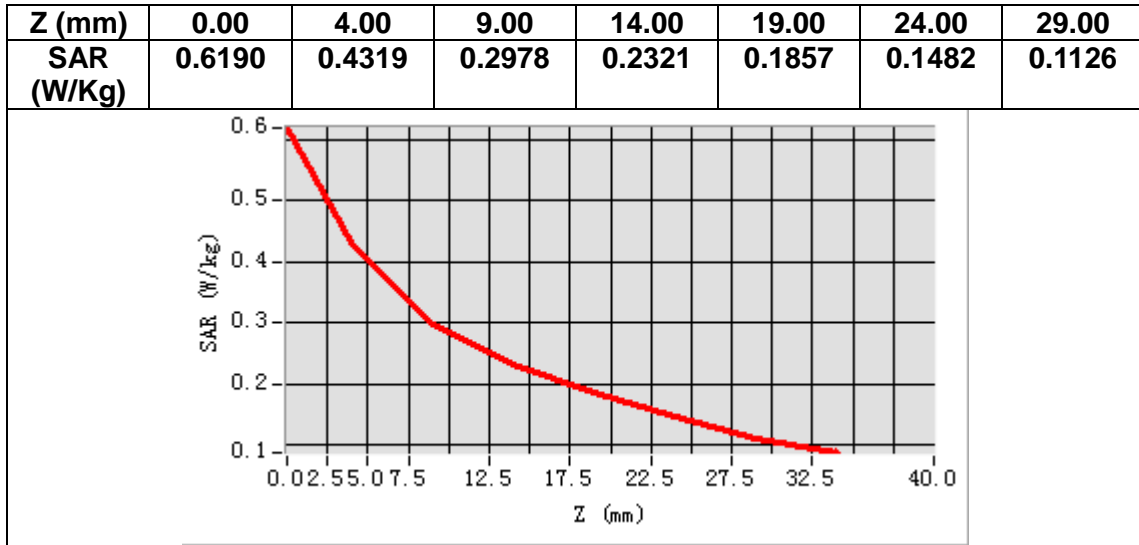
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.392258
Relative permittivity (imaginary part)	20.142780
Conductivity (S/m)	0.935968
Variation (%)	-0.910000



Maximum location: X=-51.00, Y=-18.00
SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.275512
SAR 1g (W/Kg)	0.421163



MEASUREMENT 2

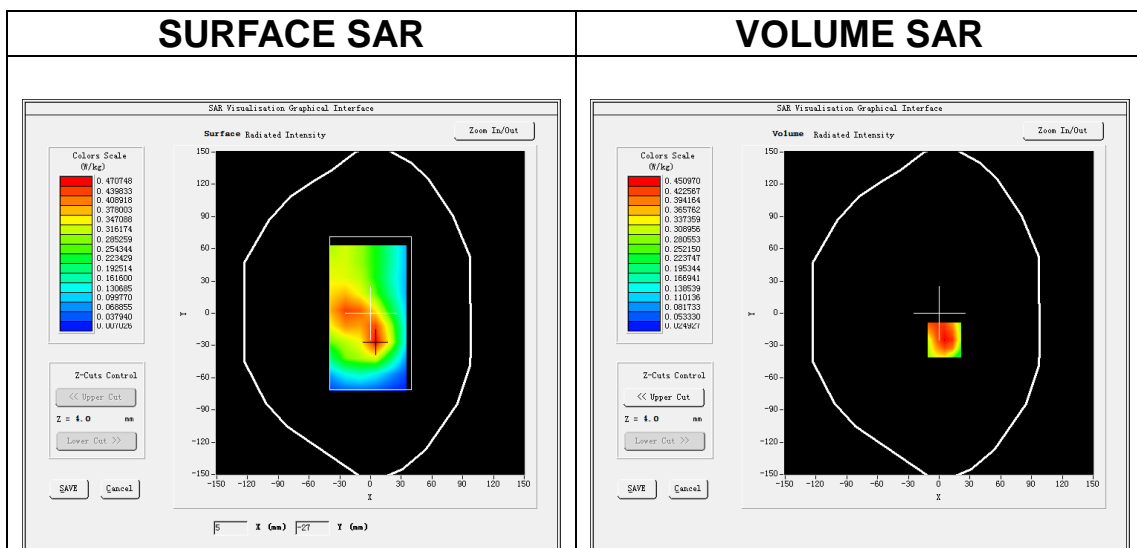
Date of measurement: 29/12/2022

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>GSM850</u>
Channels	<u>Middle</u>
Signal	<u>TDMA (Crest factor: 2.0)</u>
ConvF	<u>1.50</u>

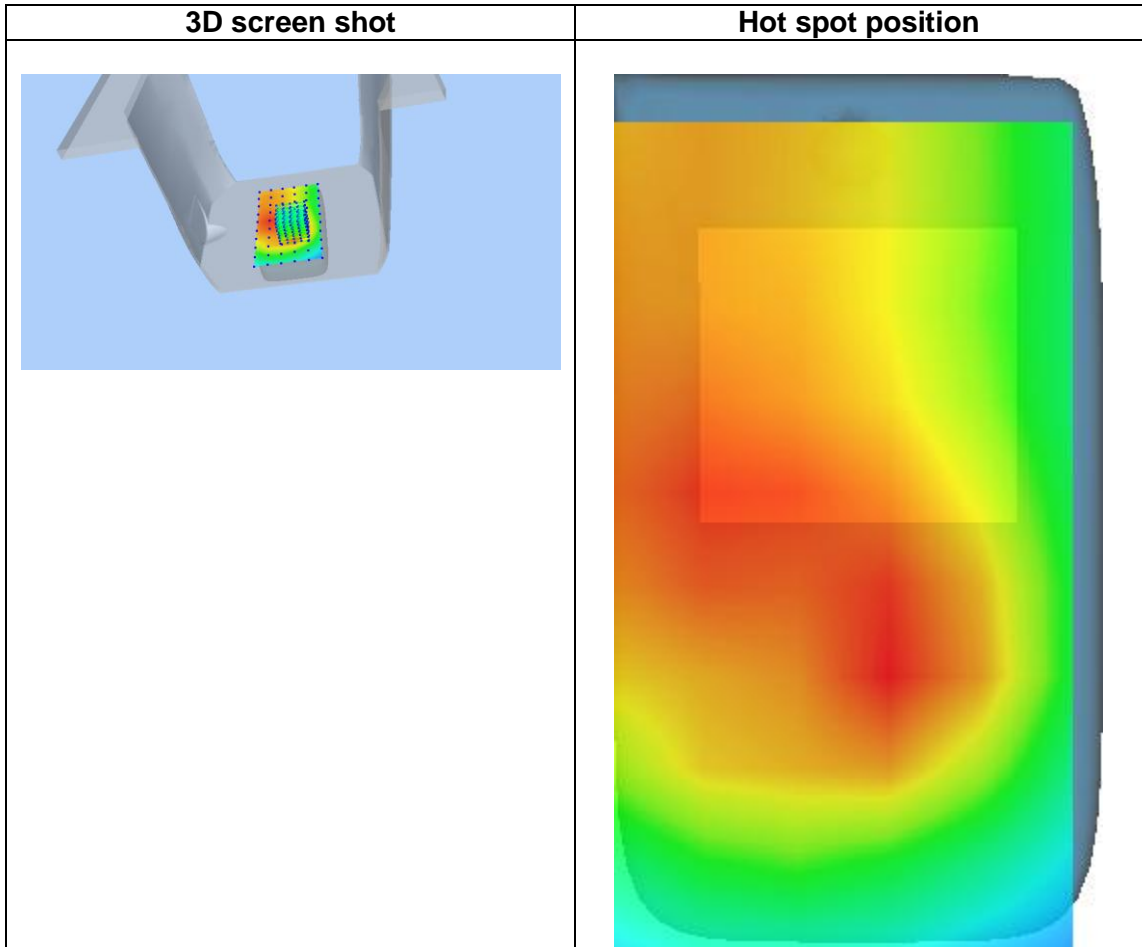
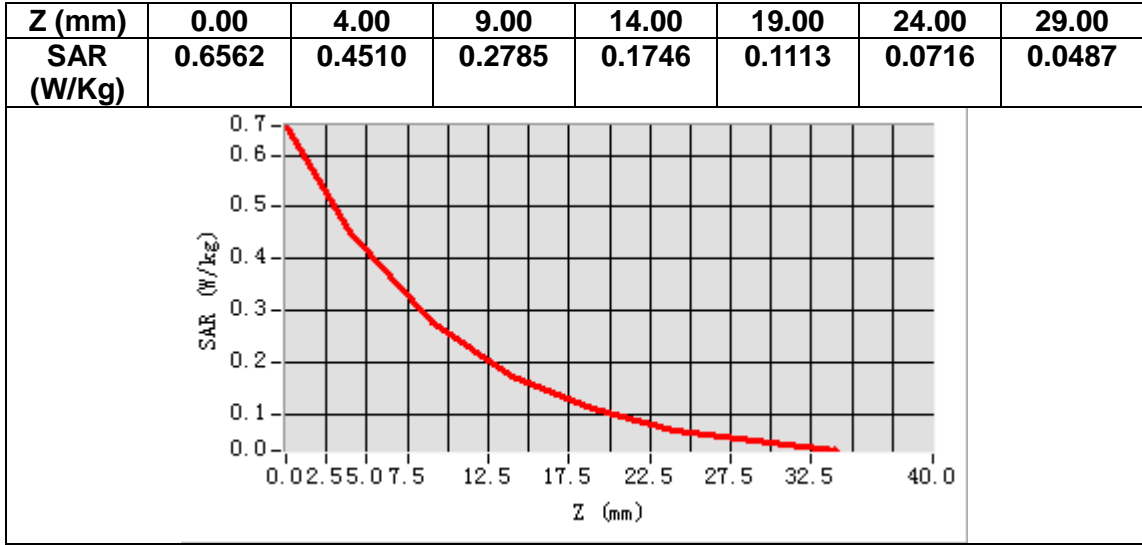
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.392258
Relative permittivity (imaginary part)	20.142780
Conductivity (S/m)	0.935968
Variation (%)	-0.540000



Maximum location: X=5.00, Y=-25.00
SAR Peak: 0.68 W/kg

SAR 10g (W/Kg)	0.263035
SAR 1g (W/Kg)	0.443934



MEASUREMENT 3

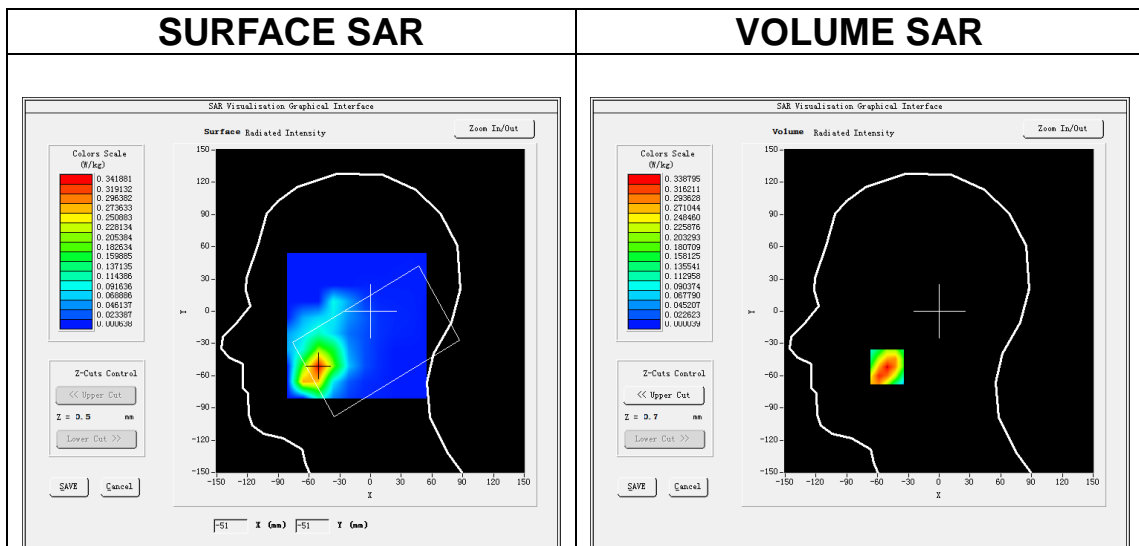
Date of measurement: 28/12/2022

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>GSM1900</u>
Channels	<u>Middle</u>
Signal	<u>TDMA (Crest factor: 2.7)</u>
ConvF	<u>1.91</u>

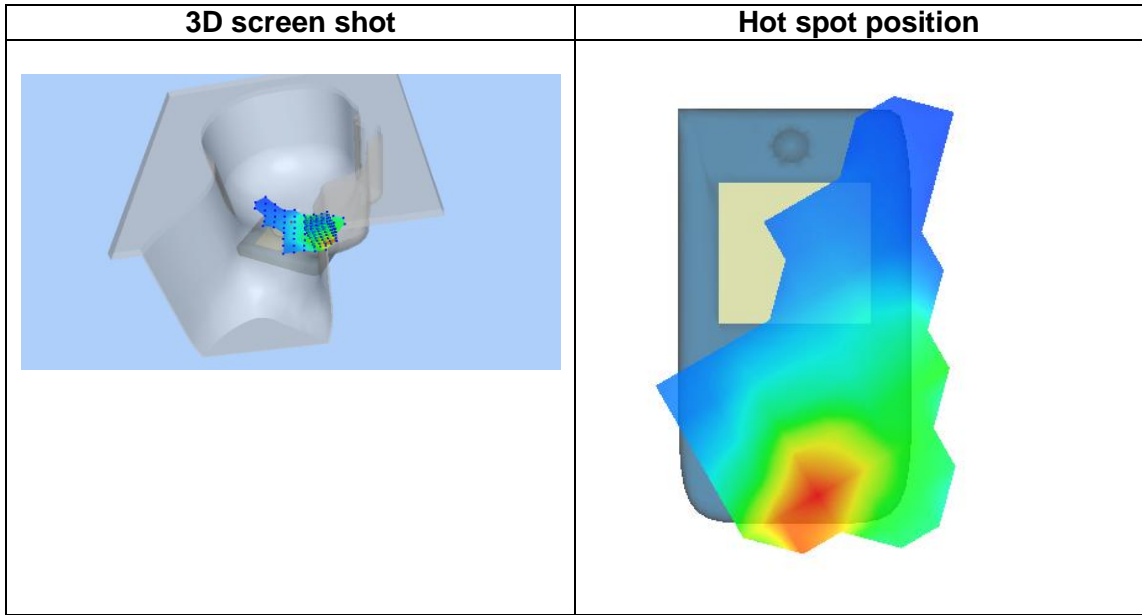
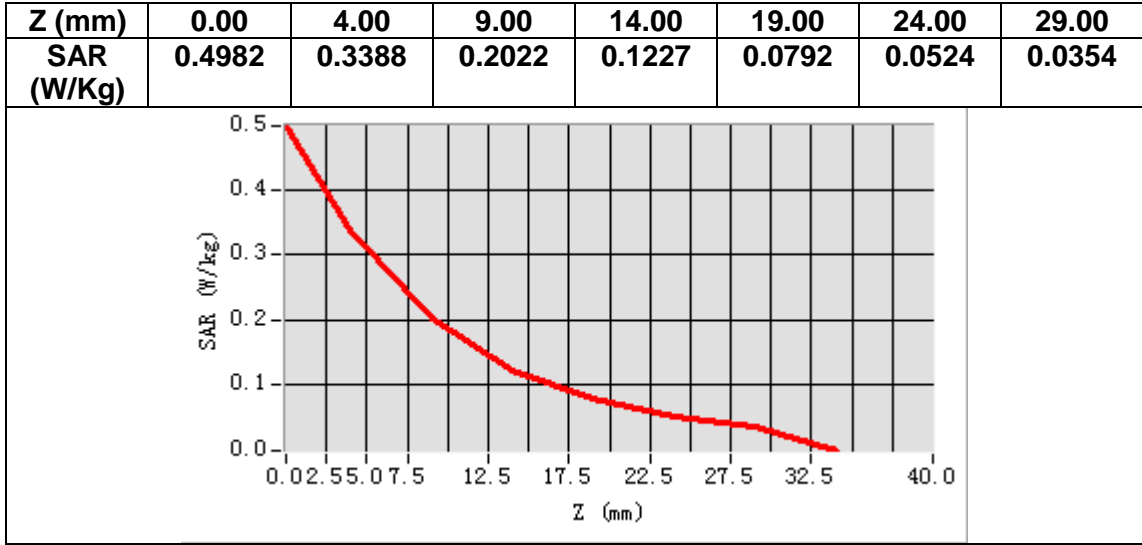
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.866089
Relative permittivity (imaginary part)	13.762598
Conductivity (S/m)	1.437427
Variation (%)	-4.889999



Maximum location: X=-51.00, Y=-52.00
SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.181199
SAR 1g (W/Kg)	0.319919



MEASUREMENT 4

Date of measurement: 28/12/2022

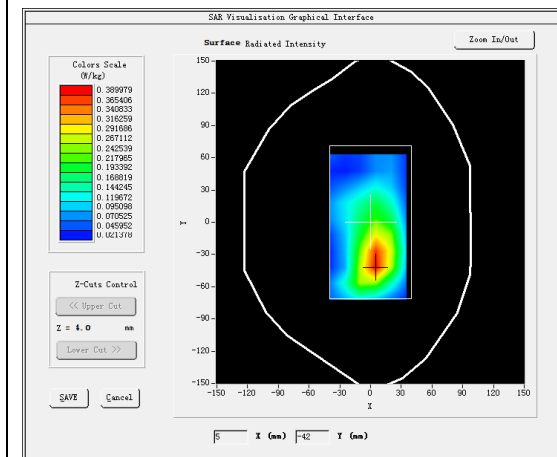
A. Experimental conditions.

<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: 2.7)</u>
<u>ConvF</u>	<u>1.91</u>

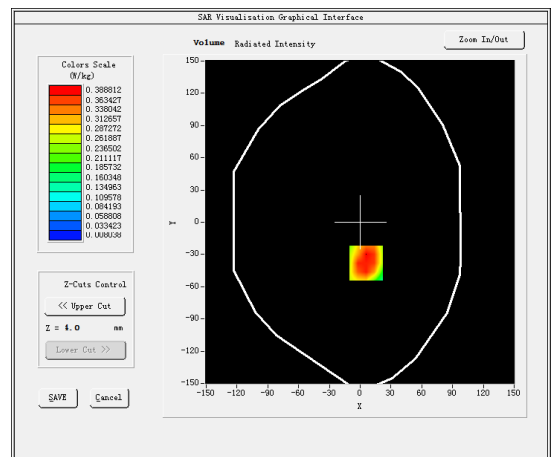
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.866089
Relative permittivity (imaginary part)	13.762598
Conductivity (S/m)	1.437427
Variation (%)	0.100000

SURFACE SAR



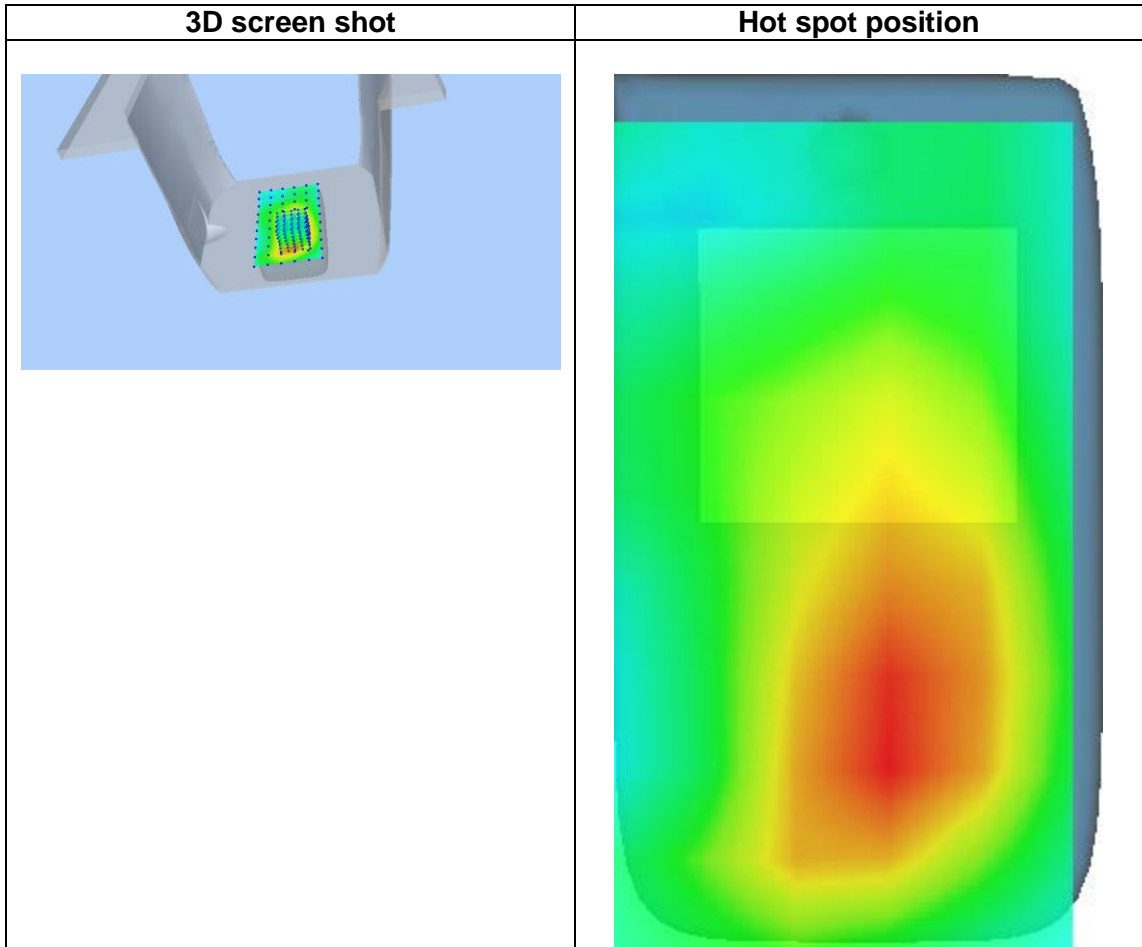
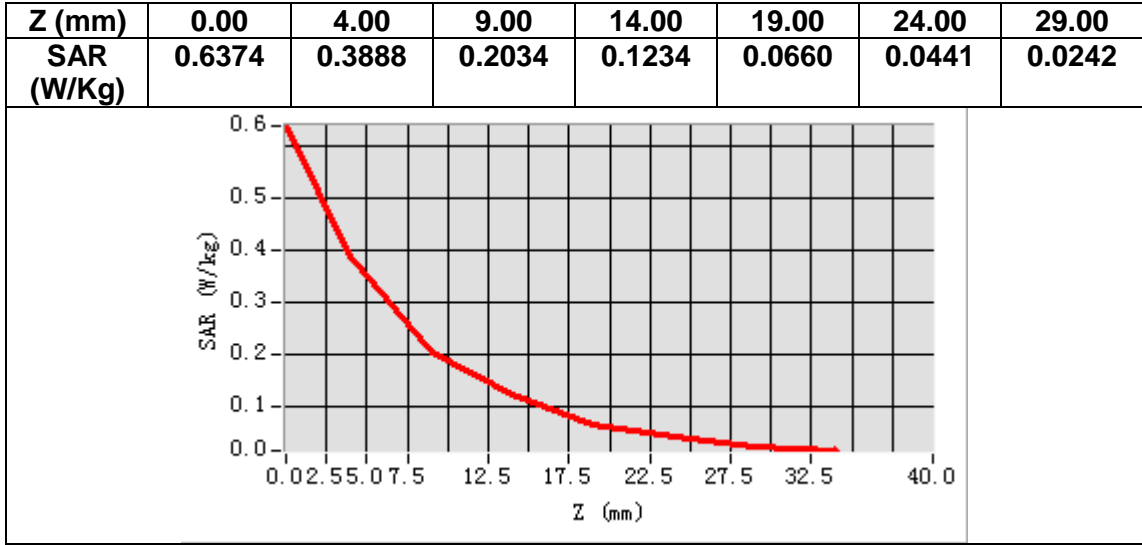
VOLUME SAR



Maximum location: X=6.00, Y=-38.00

SAR Peak: 0.65 W/kg

SAR 10g (W/Kg)	0.215311
SAR 1g (W/Kg)	0.386997



MEASUREMENT 5

Date of measurement: 28/12/2022

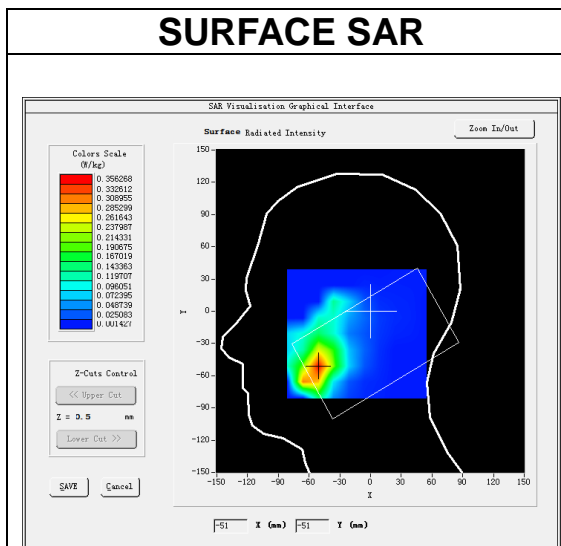
A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>Band2_WCDMA1900</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.91</u>

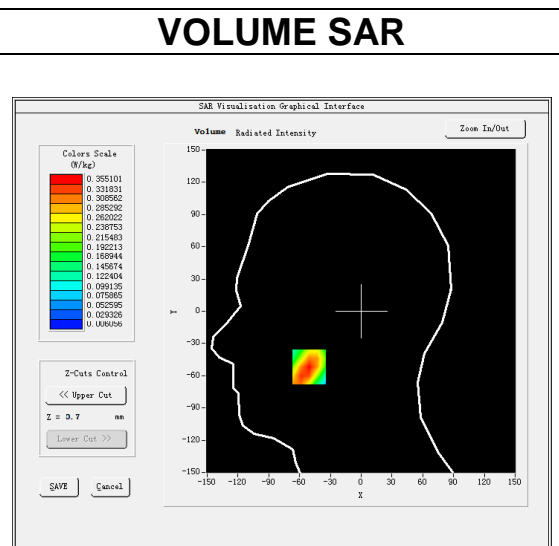
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.967609
Relative permittivity (imaginary part)	13.880056
Conductivity (S/m)	1.449695
Variation (%)	-0.170000

SURFACE SAR

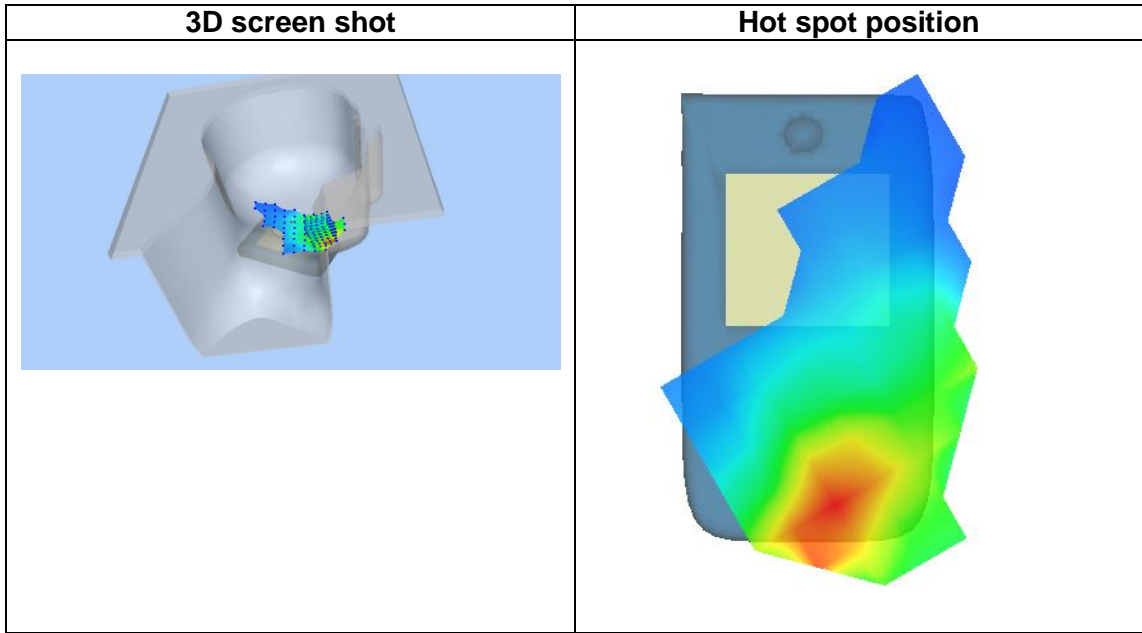
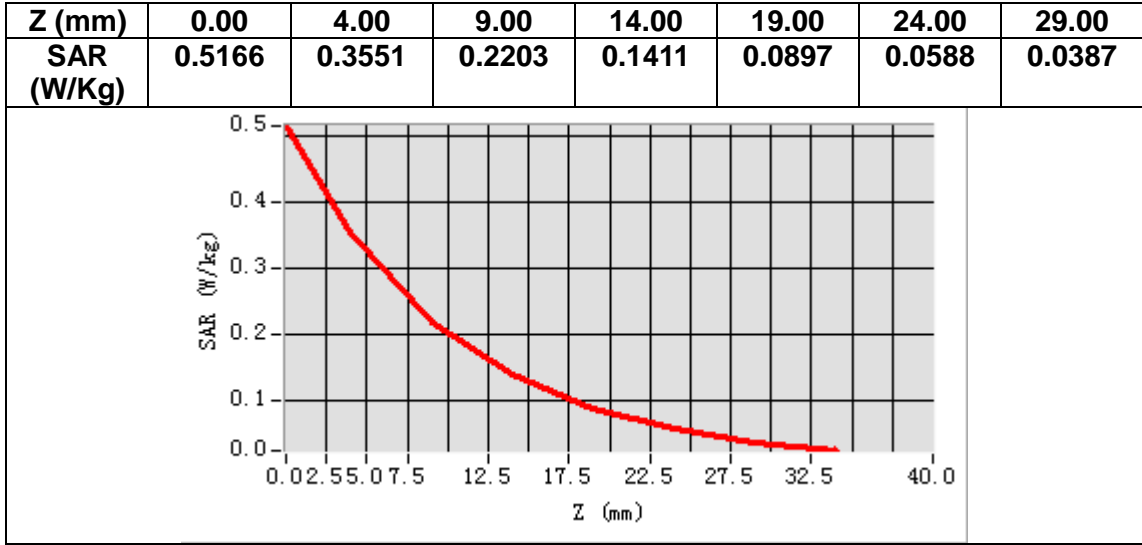


VOLUME SAR



Maximum location: X=-51.00, Y=-52.00
SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.198991
SAR 1g (W/Kg)	0.346181



MEASUREMENT 6

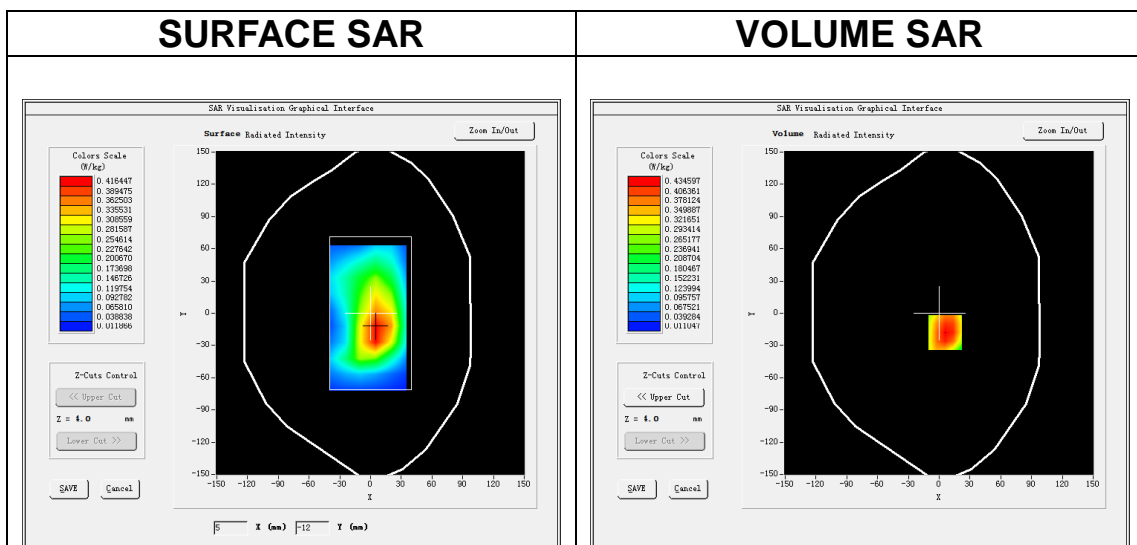
Date of measurement: 28/12/2022

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>Band2_WCDMA1900</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.91</u>

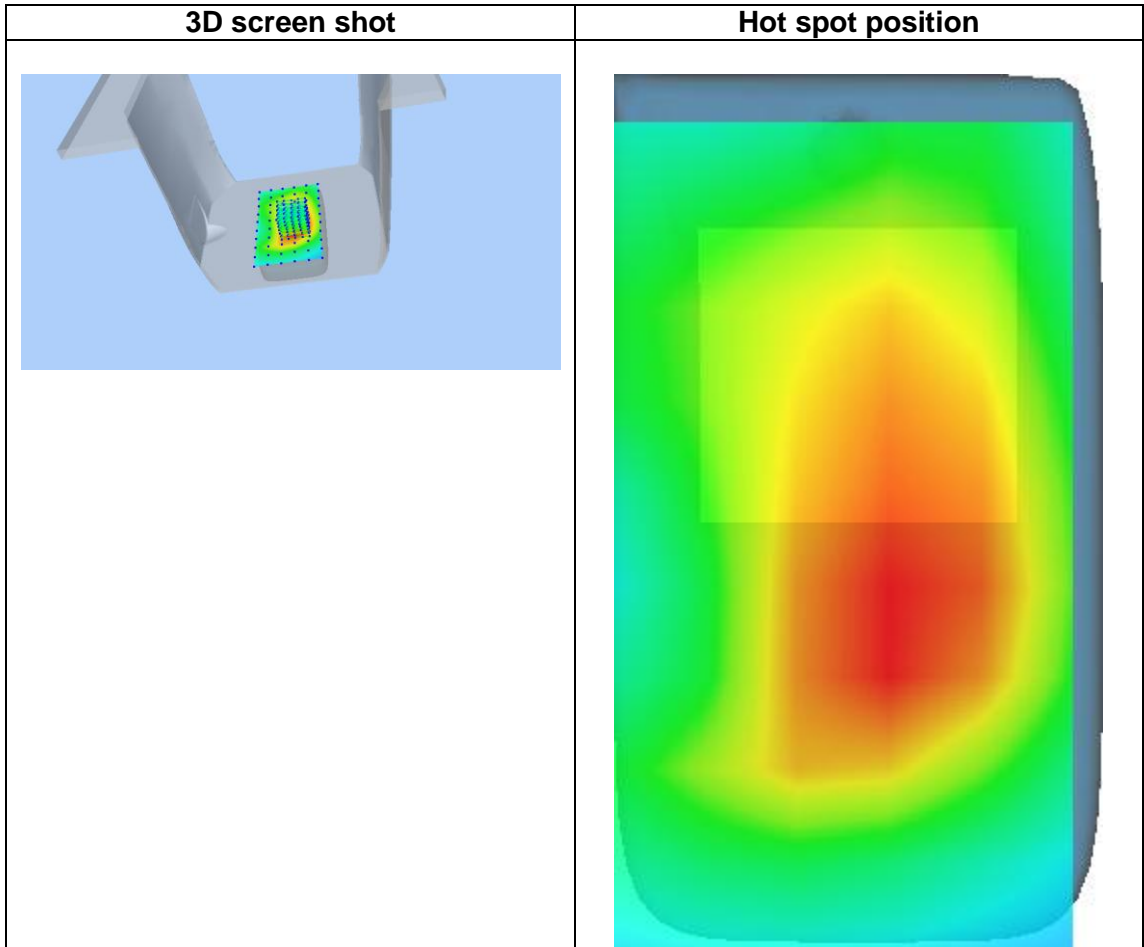
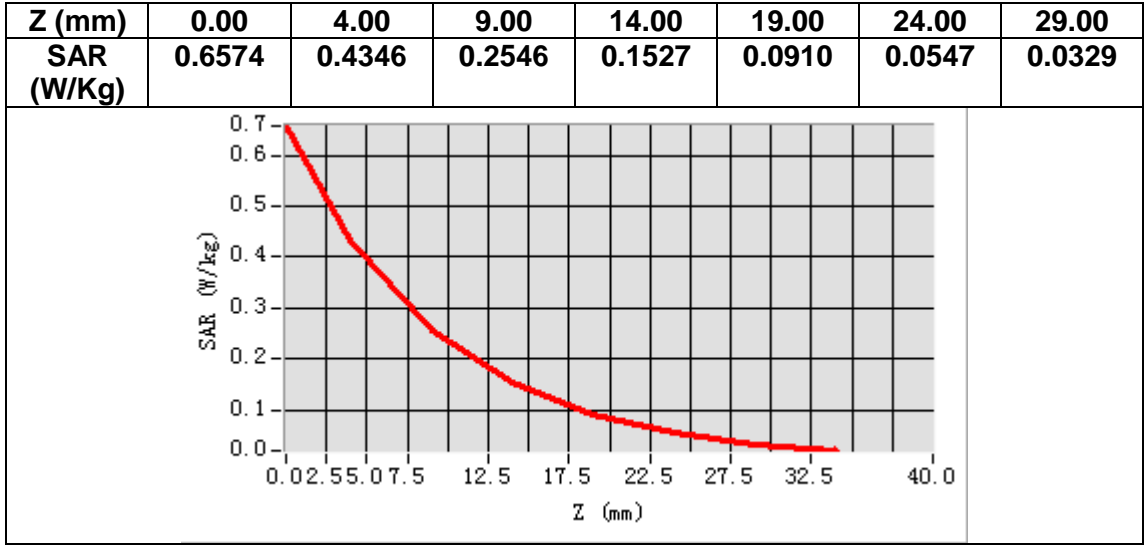
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.967609
Relative permittivity (imaginary part)	13.880056
Conductivity (S/m)	1.449695
Variation (%)	-0.210000



Maximum location: X=6.00, Y=-18.00
SAR Peak: 0.67 W/kg

SAR 10g (W/Kg)	0.248550
SAR 1g (W/Kg)	0.433342



MEASUREMENT 7

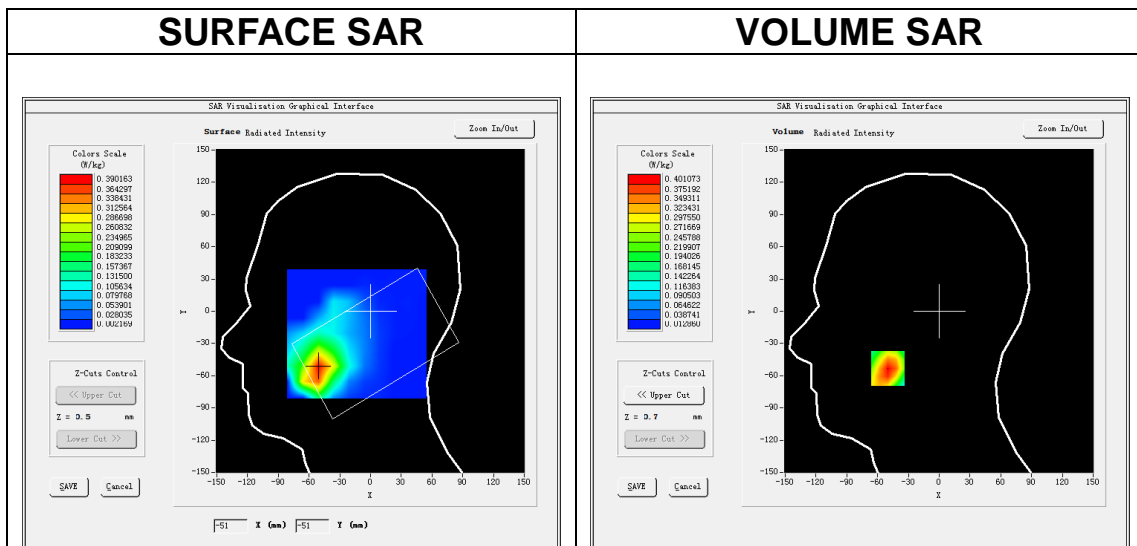
Date of measurement: 4/1/2023

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>Band4_WCDMA1700</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.73</u>

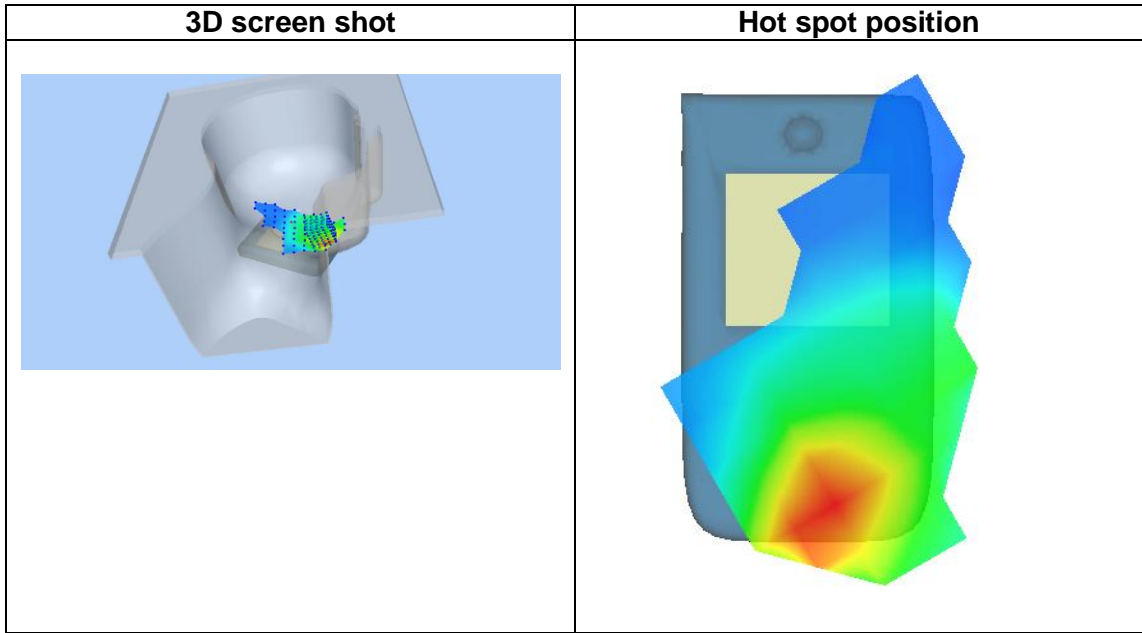
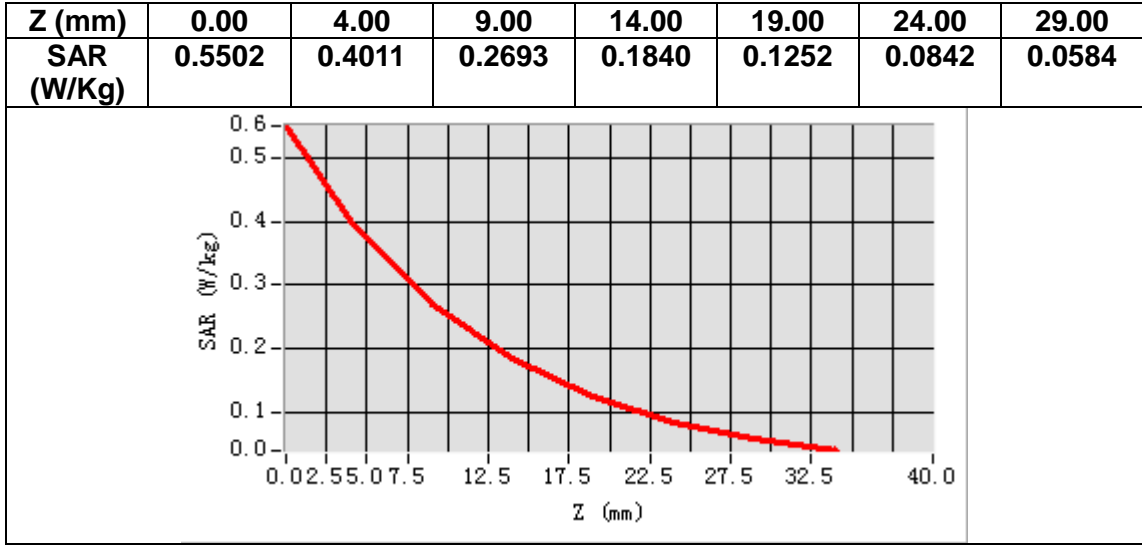
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.604847
Relative permittivity (imaginary part)	13.880037
Conductivity (S/m)	1.335568
Variation (%)	0.820000



Maximum location: X=-50.00, Y=-53.00
SAR Peak: 0.57 W/kg

SAR 10g (W/Kg)	0.232991
SAR 1g (W/Kg)	0.384845



MEASUREMENT 8

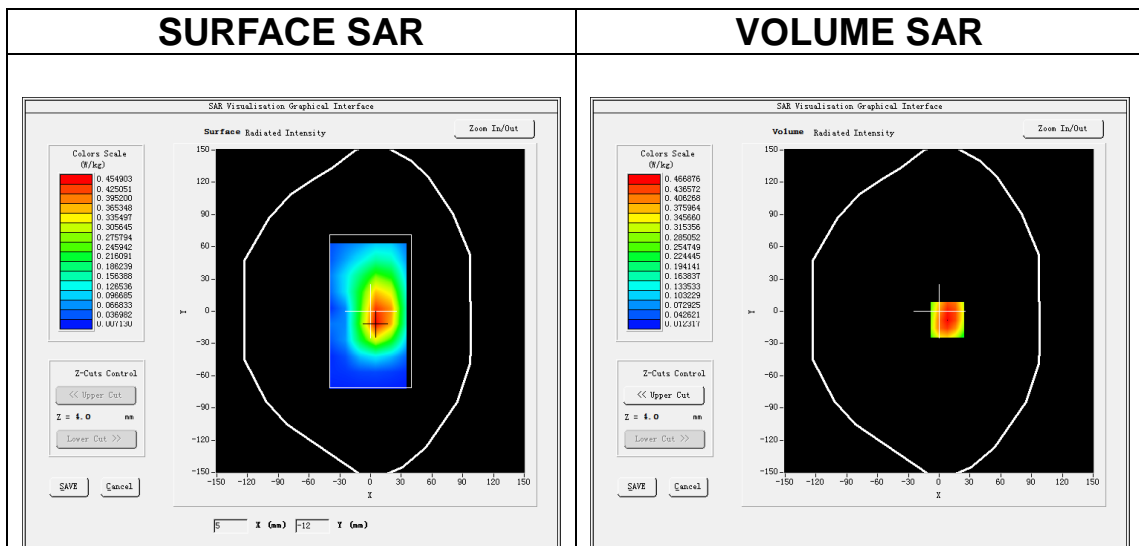
Date of measurement: 4/1/2023

A. Experimental conditions.

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

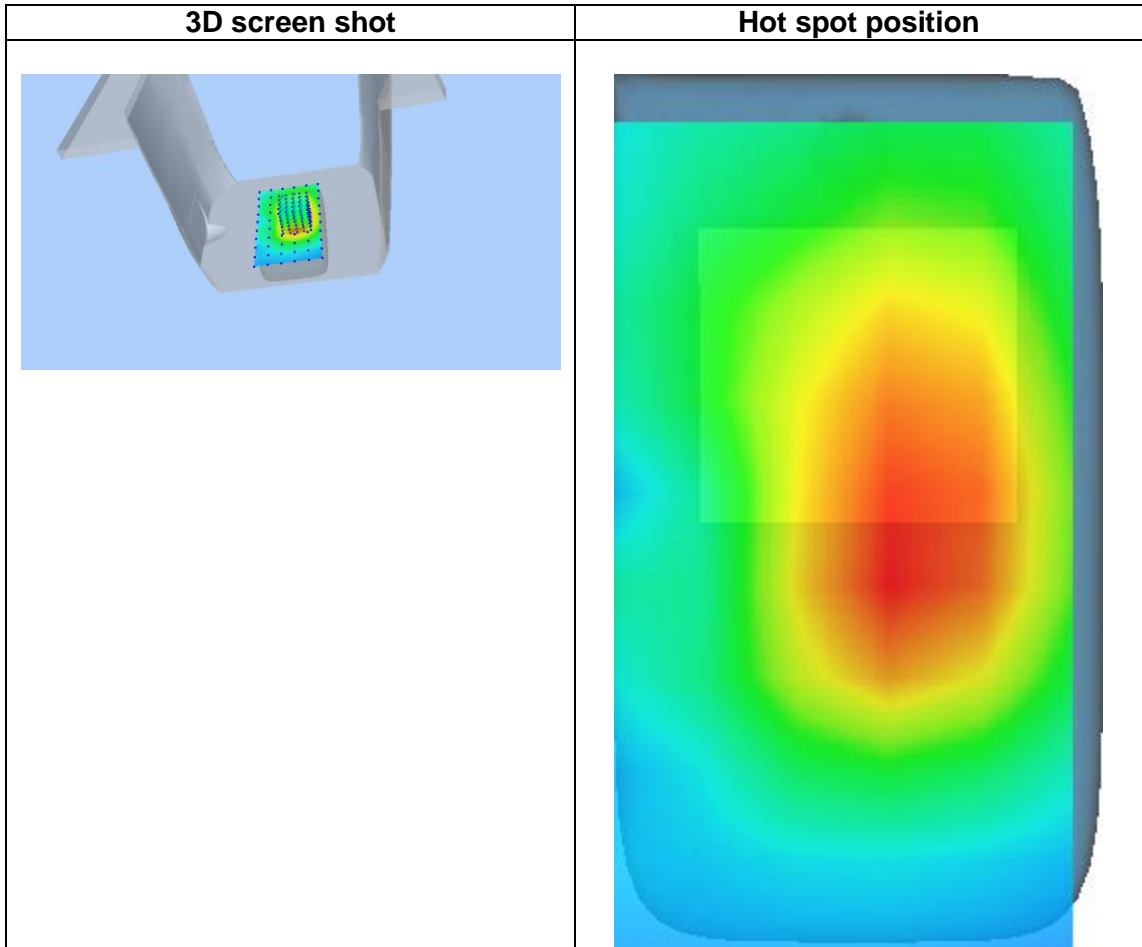
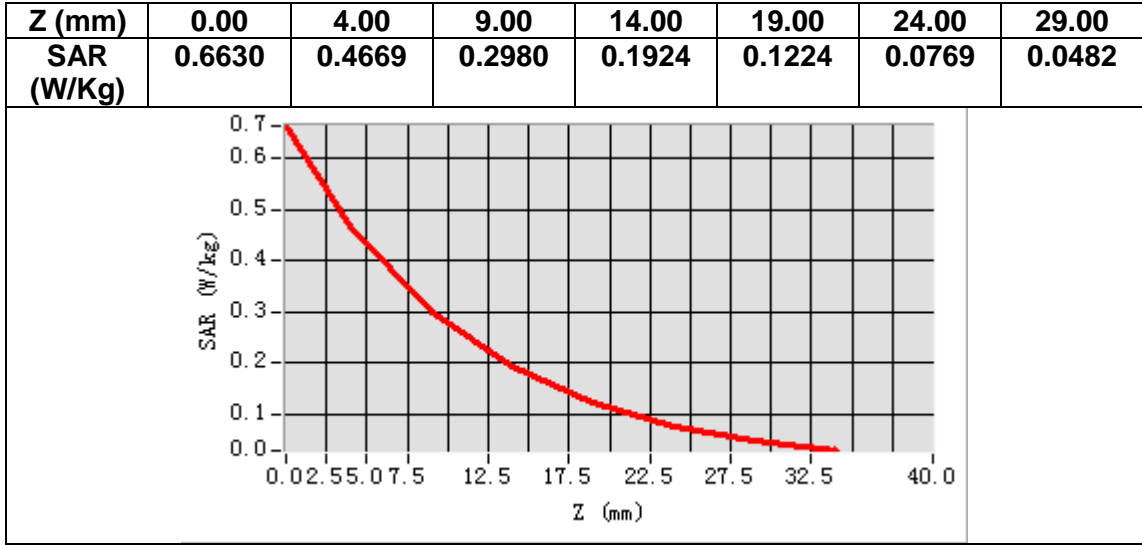
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.604847
Relative permittivity (imaginary part)	13.880037
Conductivity (S/m)	1.335568
Variation (%)	0.170000



Maximum location: X=8.00, Y=-8.00
SAR Peak: 0.66 W/kg

SAR 10g (W/Kg)	0.277730
SAR 1g (W/Kg)	0.448778



MEASUREMENT 9

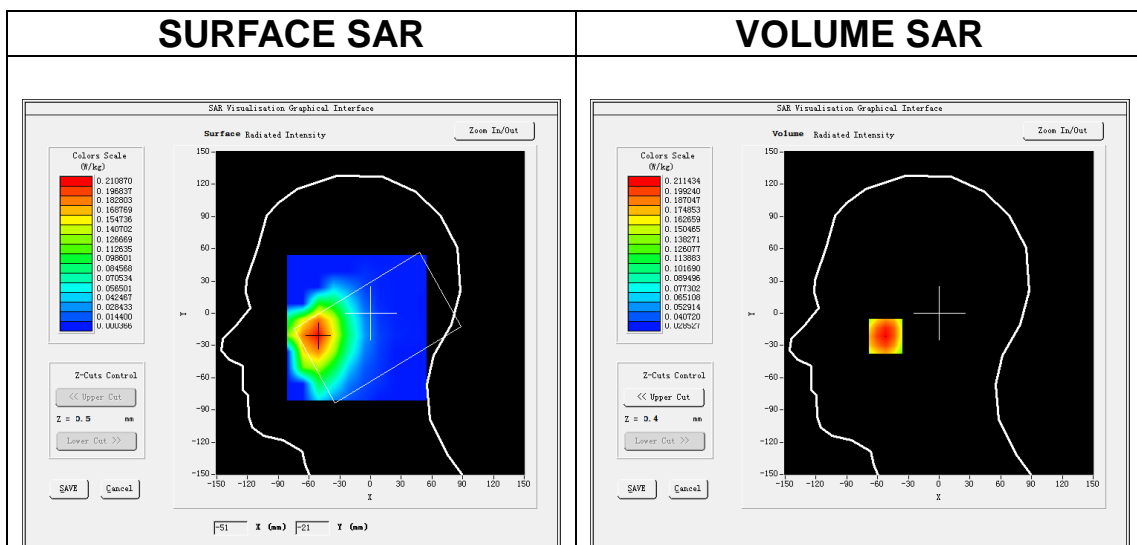
Date of measurement: 29/12/2022

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>Band5_WCDMA850</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.50</u>

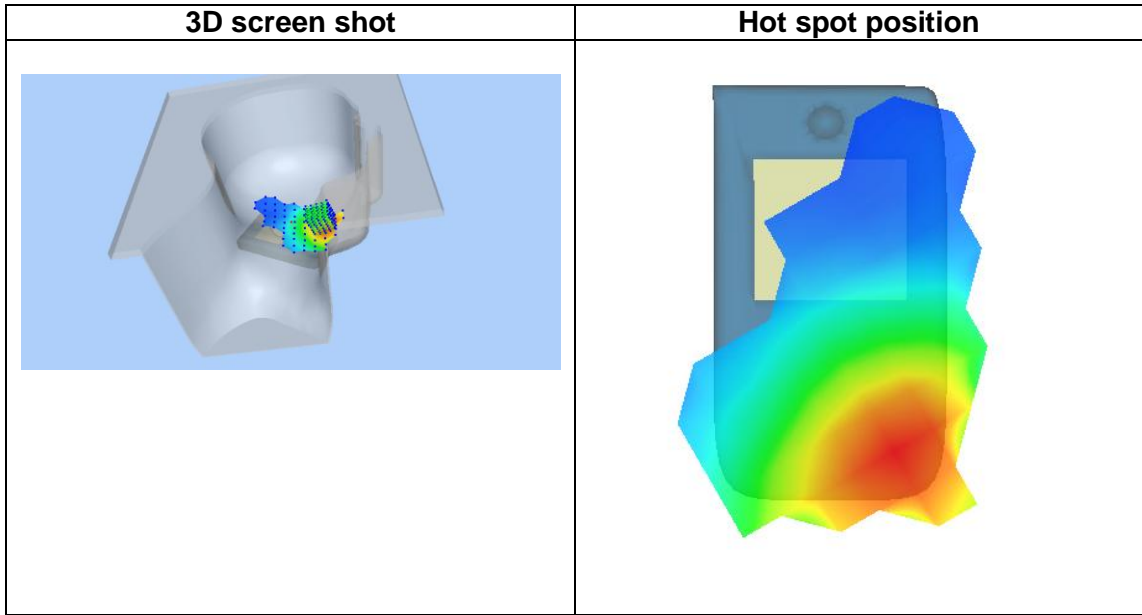
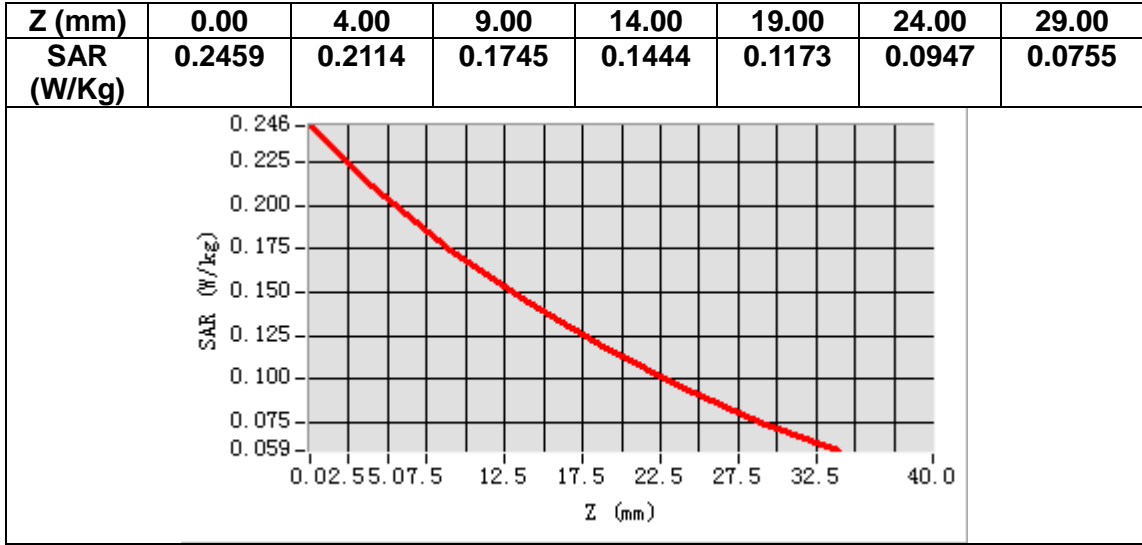
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.392258
Relative permittivity (imaginary part)	20.142780
Conductivity (S/m)	0.935968
Variation (%)	-0.110000



Maximum location: X=-52.00, Y=-21.00
SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.160003
SAR 1g (W/Kg)	0.210478



MEASUREMENT 10

Date of measurement: 29/12/2022

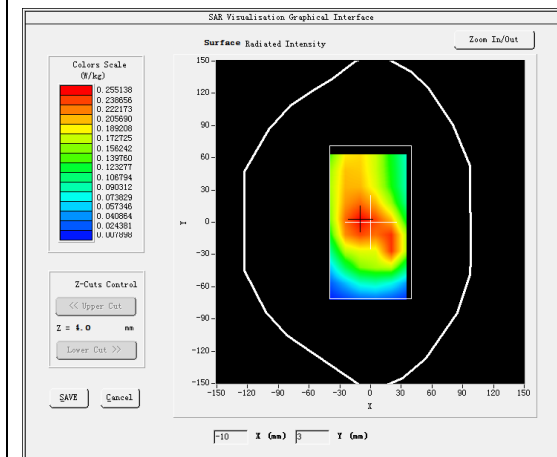
A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>Band5_WCDMA850</u>
Channels	<u>Middle</u>
Signal	<u>WCDMA (Crest factor: 1.0)</u>
ConvF	<u>1.50</u>

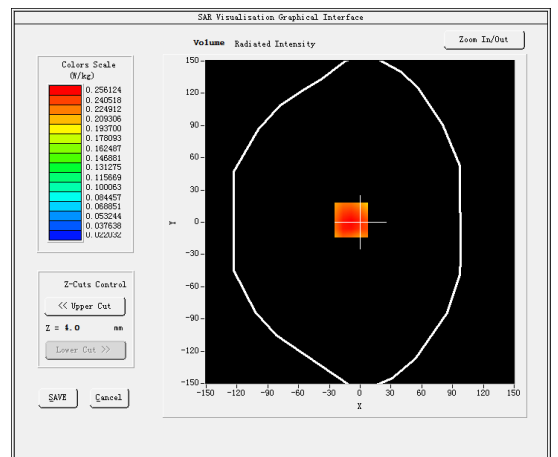
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.392258
Relative permittivity (imaginary part)	20.142780
Conductivity (S/m)	0.935968
Variation (%)	0.120000

SURFACE SAR



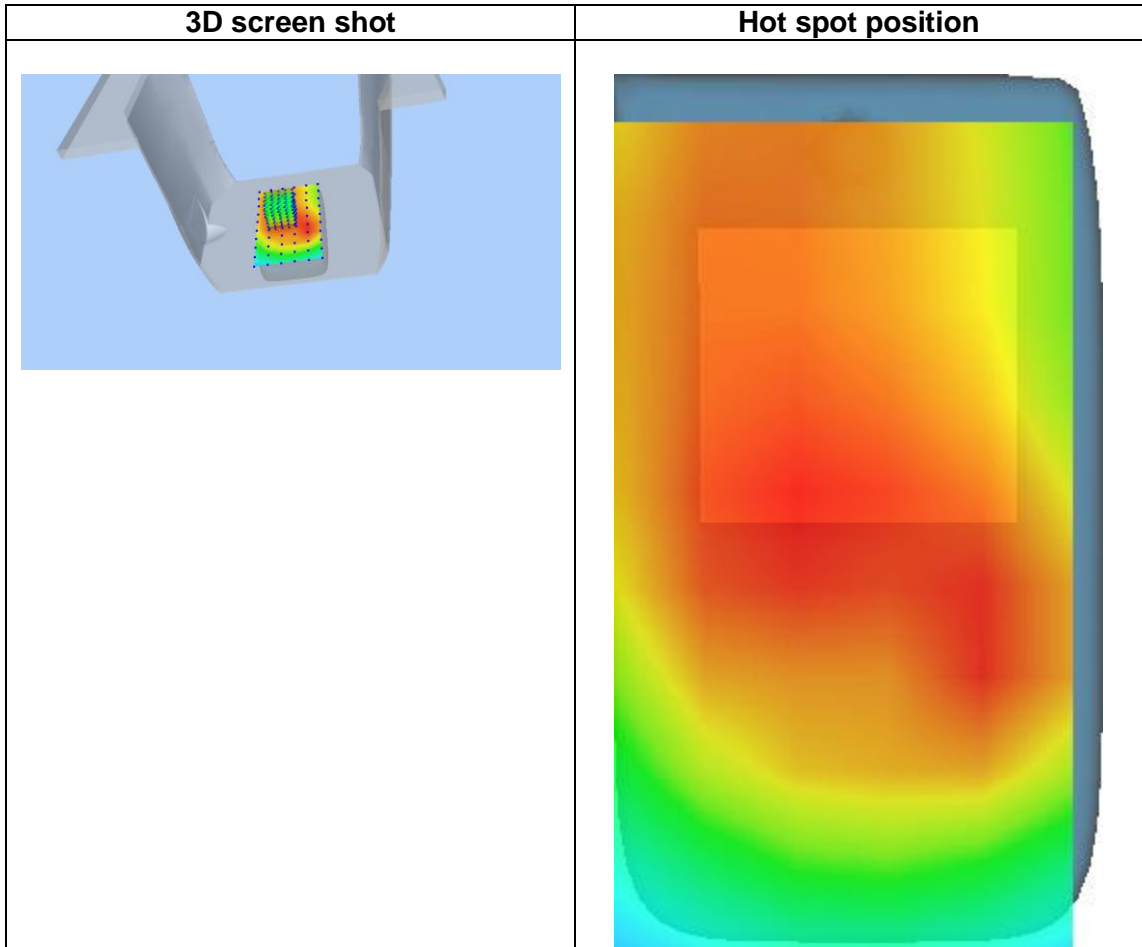
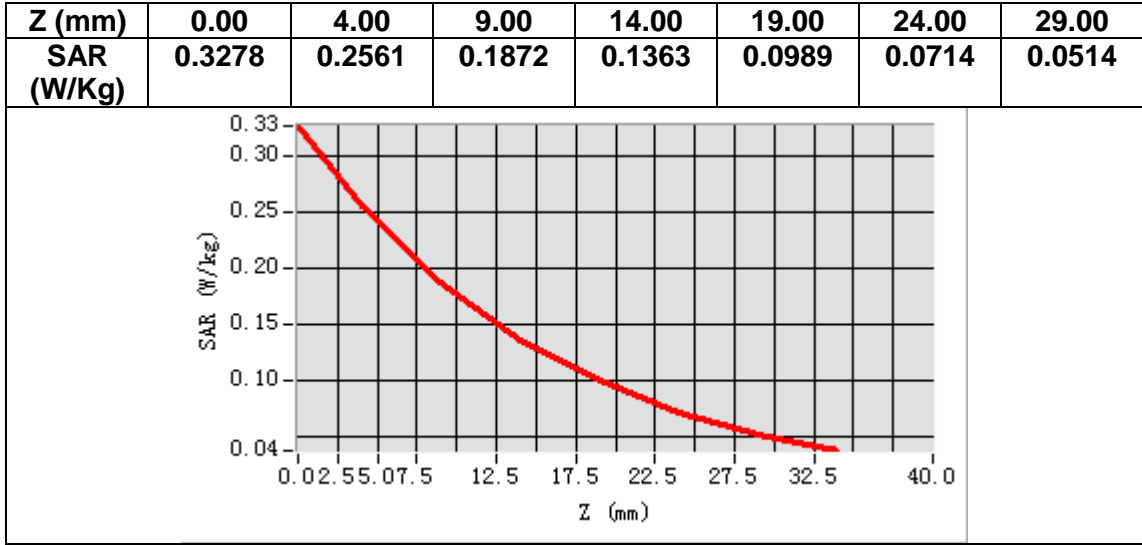
VOLUME SAR



Maximum location: X=-9.00, Y=2.00

SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.181664
SAR 1g (W/Kg)	0.256465



MEASUREMENT 11

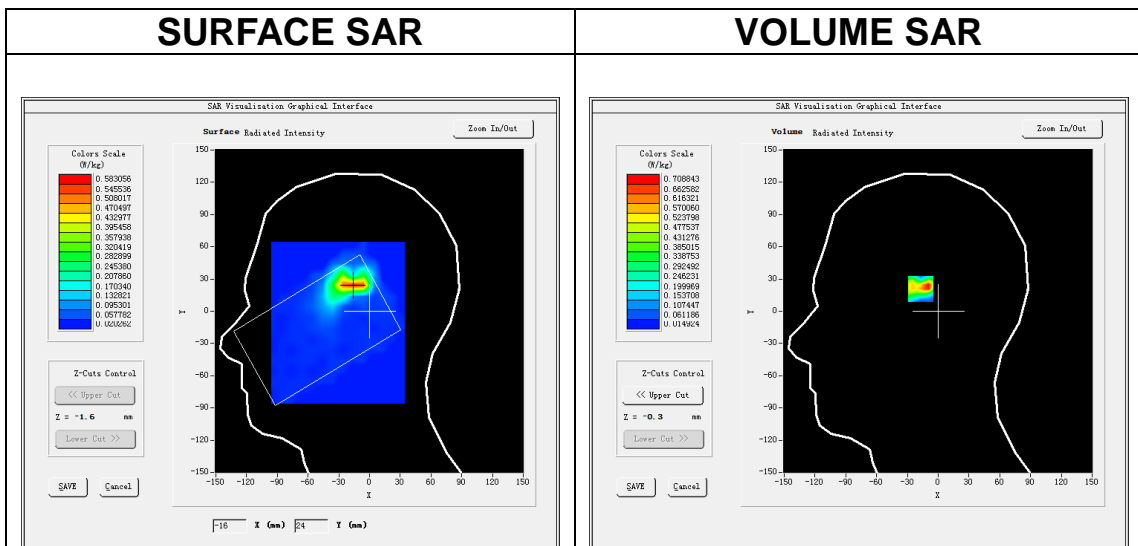
Date of measurement: 7/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

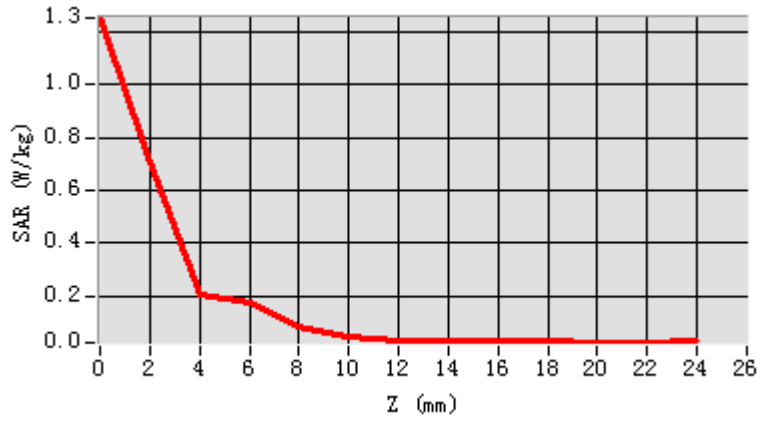
Frequency (MHz)	5240.000000
Relative permittivity (real part)	36.353106
Relative permittivity (imaginary part)	16.519111
Conductivity (S/m)	4.808896
Variation (%)	-3.220000



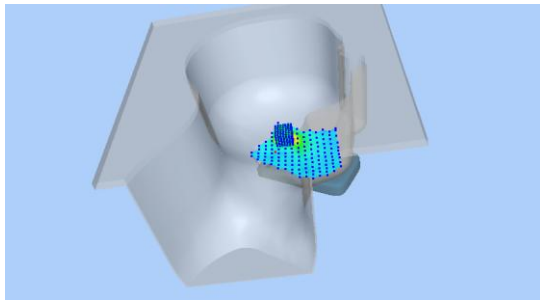
Maximum location: X=-16.00, Y=24.00
SAR Peak: 2.13 W/kg

SAR 10g (W/Kg)	0.210485
SAR 1g (W/Kg)	0.640566

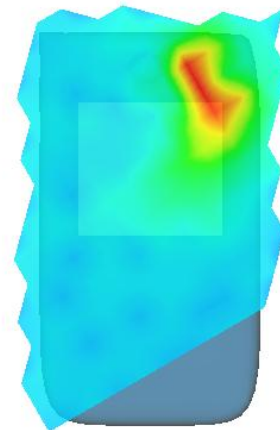
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/ Kg)	1.25	0.70	0.20	0.17	0.08	0.05	0.03	0.03	0.03	0.02	0.02	0.02
	12	88	52	88	57	03	46	32	25	94	42	38



3D screen shot



Hot spot position



MEASUREMENT 12

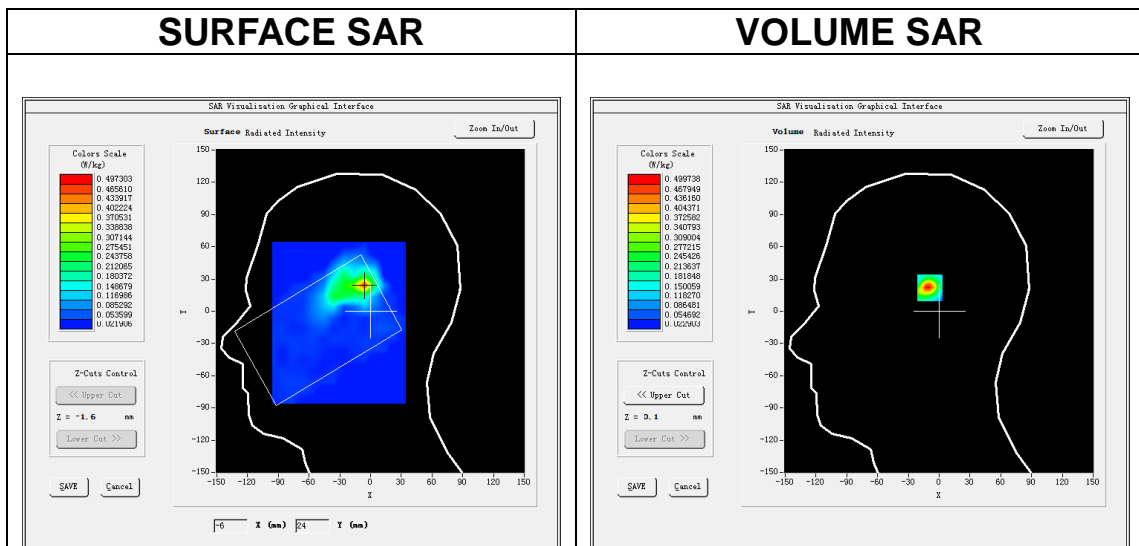
Date of measurement: 6/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

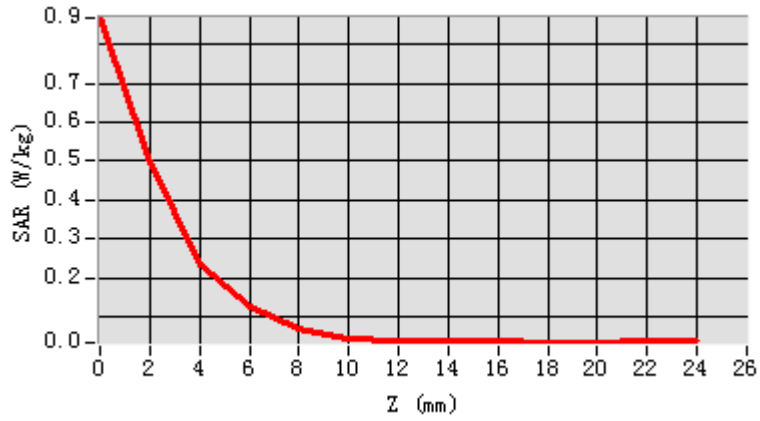
Frequency (MHz)	5825.000000
Relative permittivity (real part)	34.678053
Relative permittivity (imaginary part)	16.393689
Conductivity (S/m)	5.305179
Variation (%)	-1.440000



Maximum location: X=-6.00, Y=24.00
SAR Peak: 1.43 W/kg

SAR 10g (W/Kg)	0.168704
SAR 1g (W/Kg)	0.488421

Z (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)	0.8693	0.4997	0.2336	0.1259	0.0659	0.0440	0.0383	0.0365	0.0373	0.0325	0.0323	0.0360



3D screen shot	Hot spot position

MEASUREMENT 13

Date of measurement: 7/1/2023

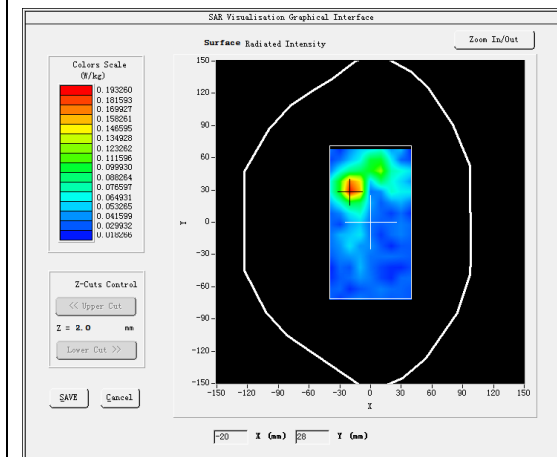
A. Experimental conditions.

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

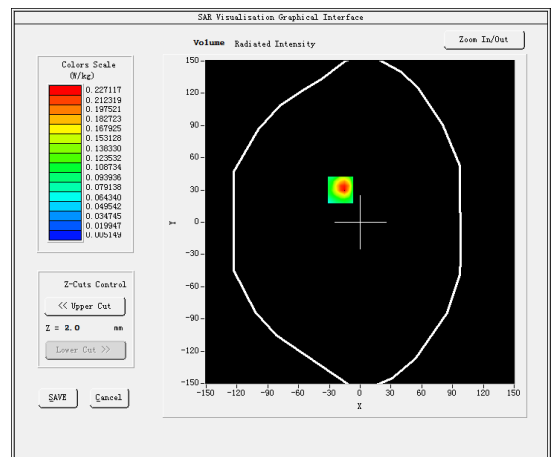
B. SAR Measurement Results

Frequency (MHz)	5240.000000
Relative permittivity (real part)	36.353106
Relative permittivity (imaginary part)	16.519111
Conductivity (S/m)	4.808896
Variation (%)	-0.850000

SURFACE SAR



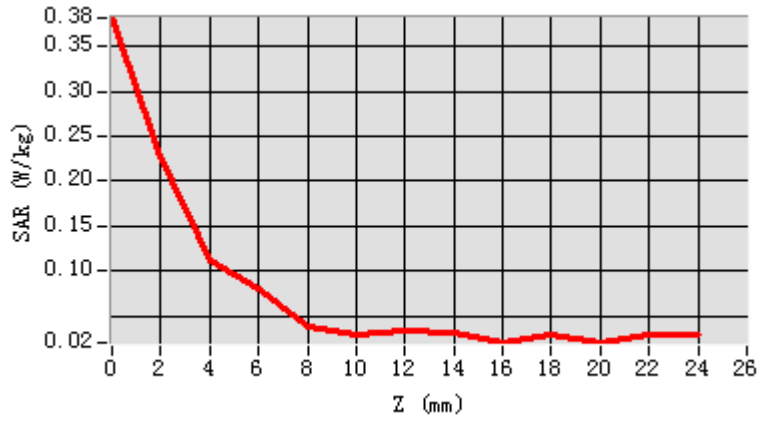
VOLUME SAR



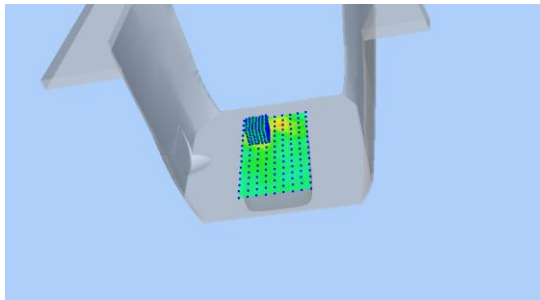
Maximum location: X=-19.00, Y=30.00
SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.063781
SAR 1g (W/Kg)	0.137555

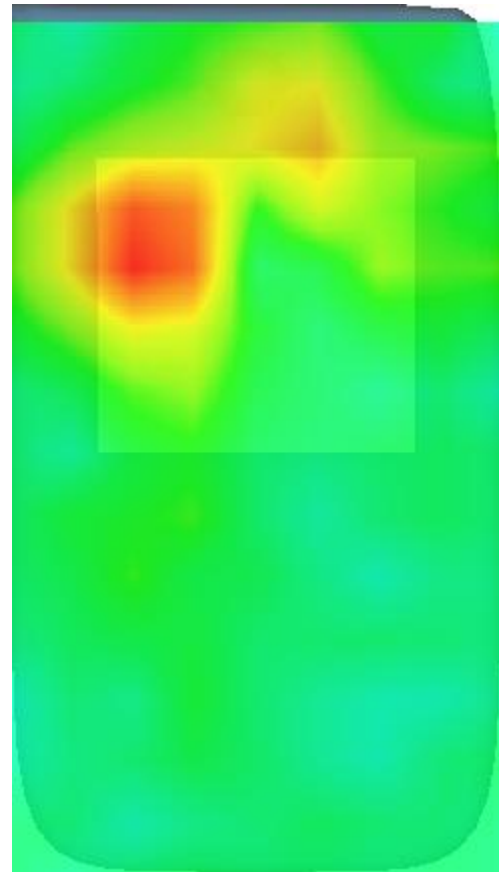
Z (m)	0.00	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0
SAR (W/Kg)	0.3815	0.2271	0.1106	0.0794	0.0373	0.0297	0.0341	0.0323	0.0210	0.0299	0.0201	0.0282



3D screen shot



Hot spot position



MEASUREMENT 14

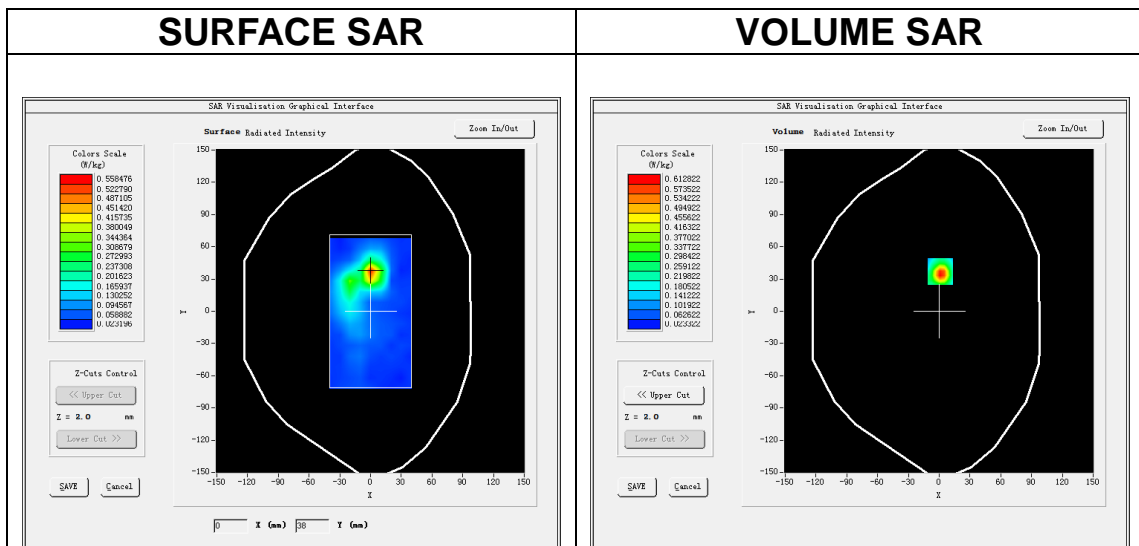
Date of measurement: 6/1/2023

A. Experimental conditions.

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

B. SAR Measurement Results

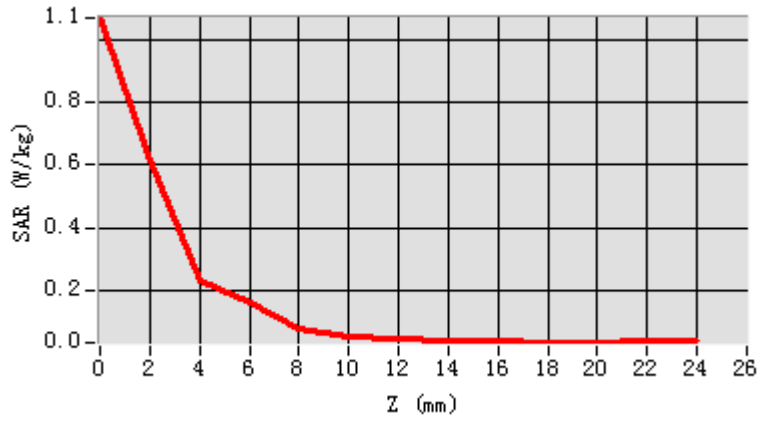
Frequency (MHz)	5825.000000
Relative permittivity (real part)	34.678053
Relative permittivity (imaginary part)	16.393689
Conductivity (S/m)	5.305179
Variation (%)	-1.050000



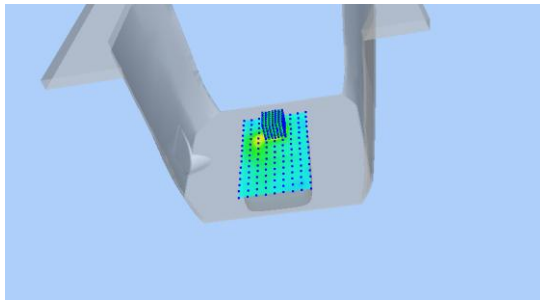
Maximum location: X=1.00, Y=37.00
SAR Peak: 1.12 W/kg

SAR 10g (W/Kg)	0.132669
SAR 1g (W/Kg)	0.348120

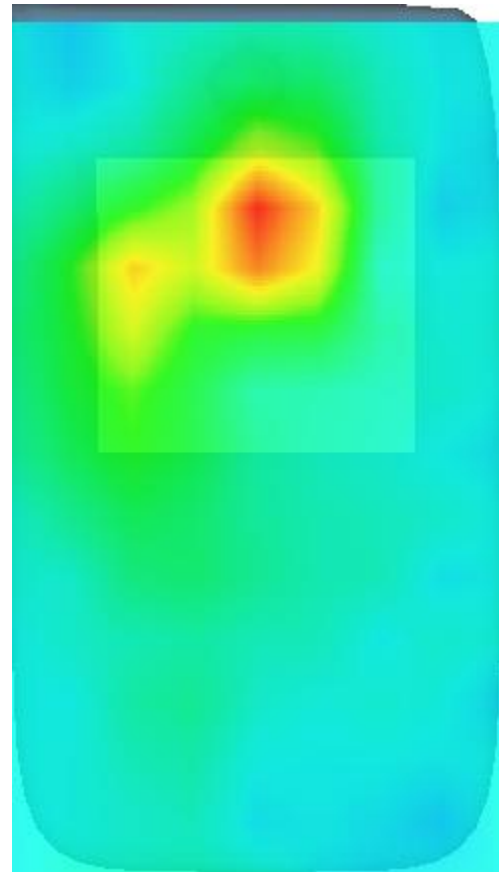
Z (m)	0.00	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00
SAR (W/Kg)	1.0705	0.6128	0.2330	0.1606	0.0749	0.0499	0.0451	0.0387	0.0366	0.0325	0.0326	0.0368



3D screen shot



Hot spot position



MEASUREMENT 15

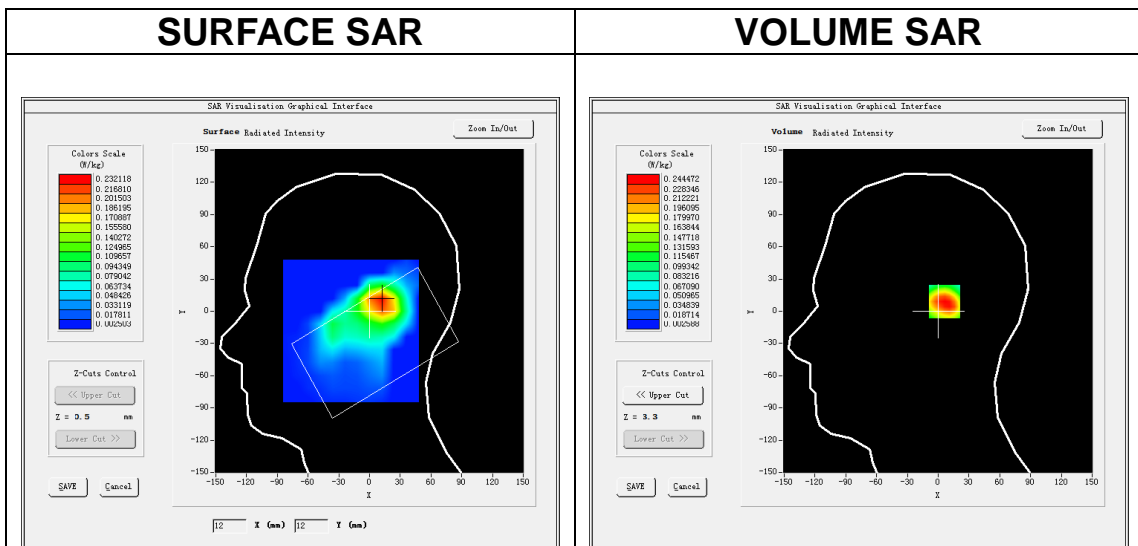
Date of measurement: 30/12/2022

A. Experimental conditions.

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

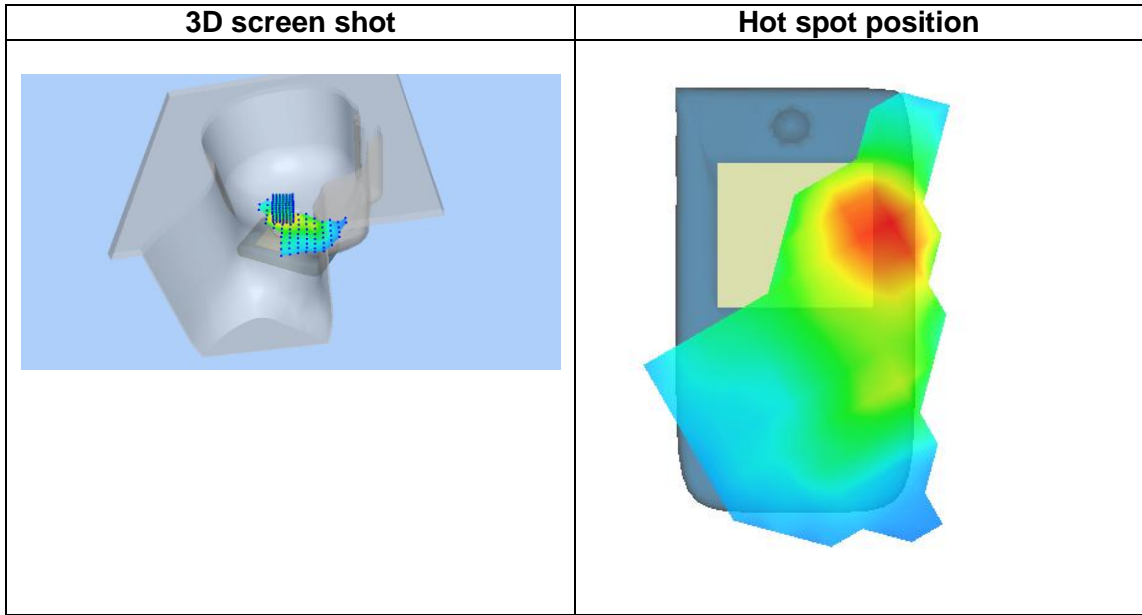
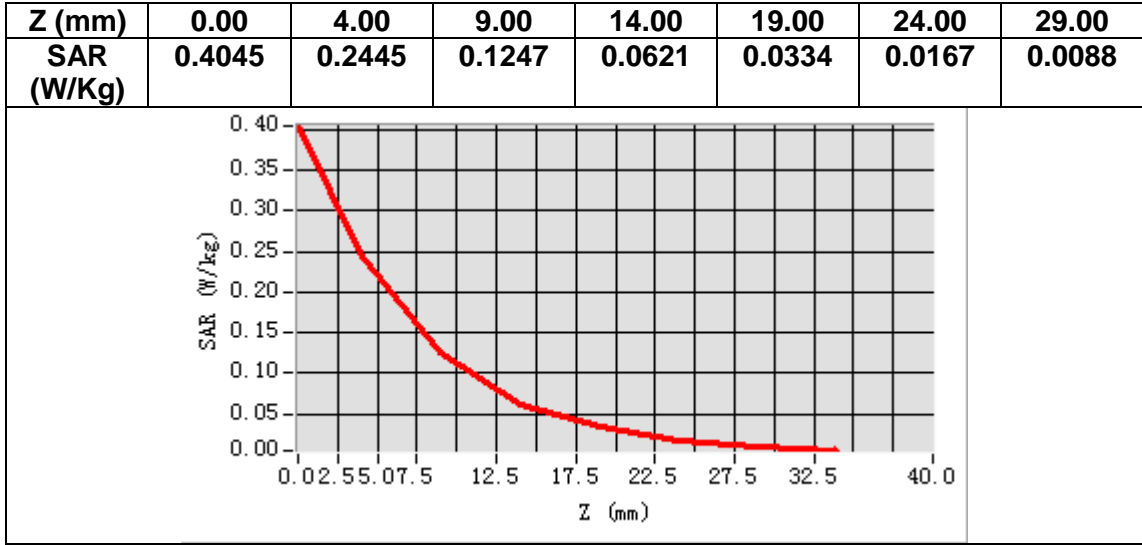
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.275620
Relative permittivity (imaginary part)	13.571238
Conductivity (S/m)	1.837395
Variation (%)	-1.180000



Maximum location: X=11.00, Y=9.00
SAR Peak: 0.40 W/kg

SAR 10g (W/Kg)	0.124095
SAR 1g (W/Kg)	0.238570



MEASUREMENT 16

Date of measurement: 30/12/2022

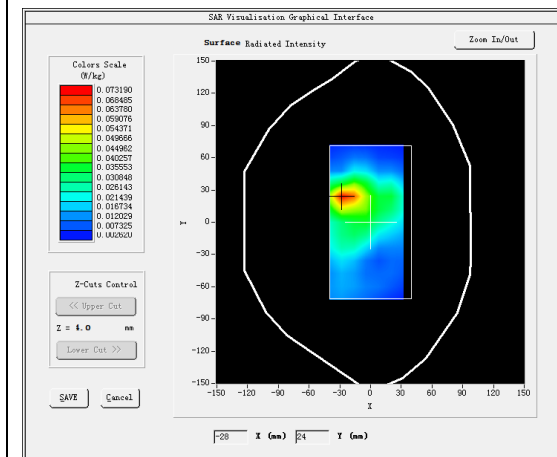
A. Experimental conditions.

<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>Middle</u>
<u>Signal</u>	<u>IEEE802.11b (Crest factor: 1.0)</u>
<u>ConvF</u>	<u>1.98</u>

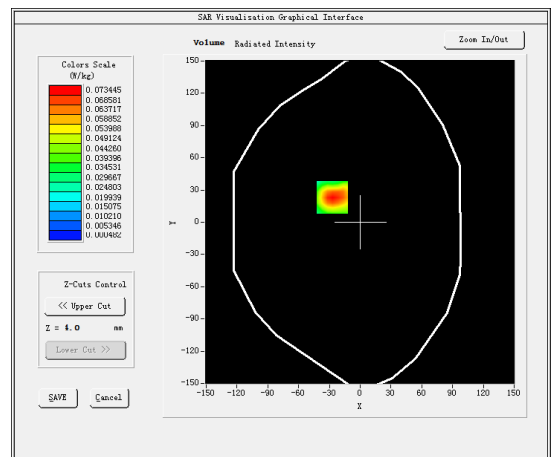
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.275620
Relative permittivity (imaginary part)	13.571238
Conductivity (S/m)	1.837395
Variation (%)	1.300000

SURFACE SAR



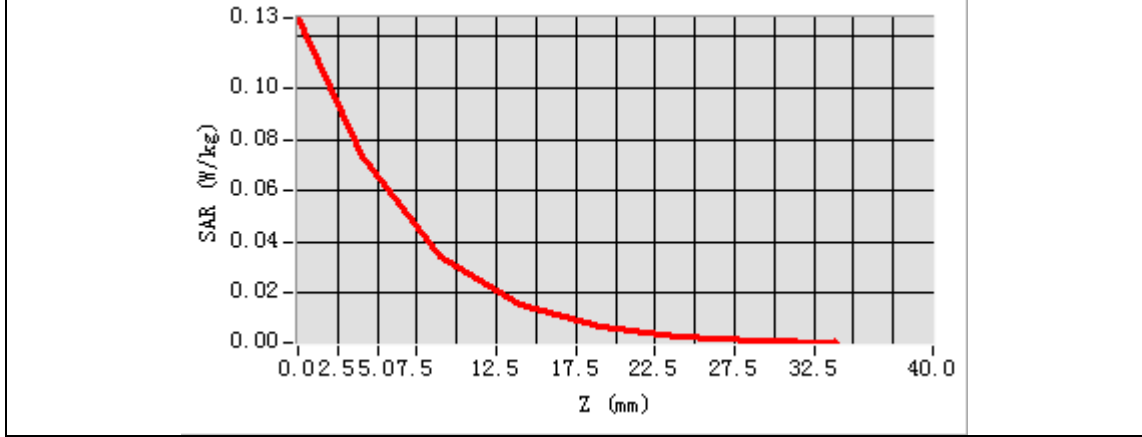
VOLUME SAR



Maximum location: X=-27.00, Y=23.00
SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.034008
SAR 1g (W/Kg)	0.070089

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.1272	0.0734	0.0342	0.0159	0.0071	0.0035	0.0015



3D screen shot	Hot spot position

MEASUREMENT 17

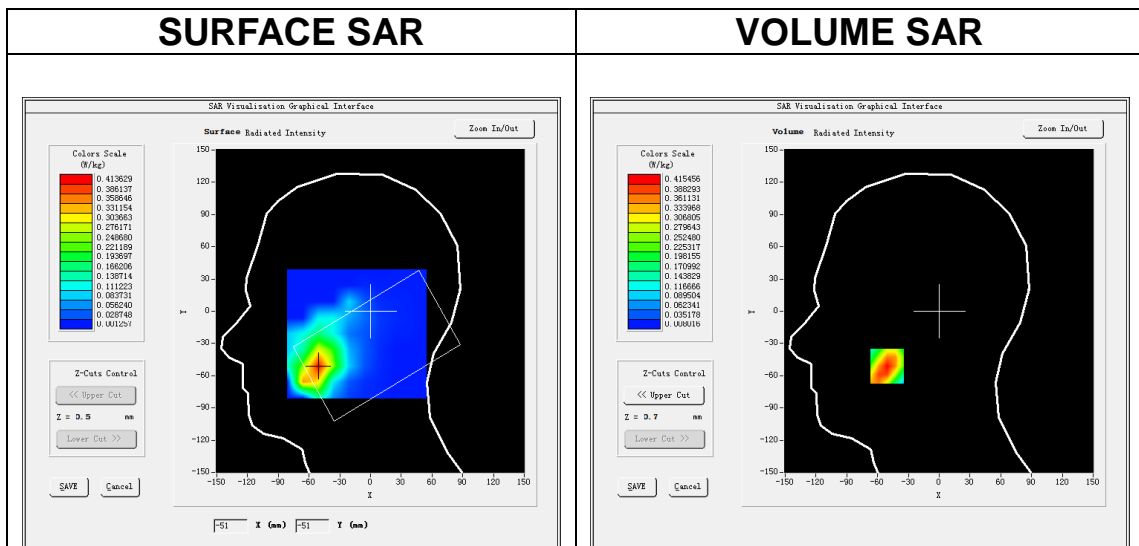
Date of measurement: 28/12/2022

A. Experimental conditions.

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

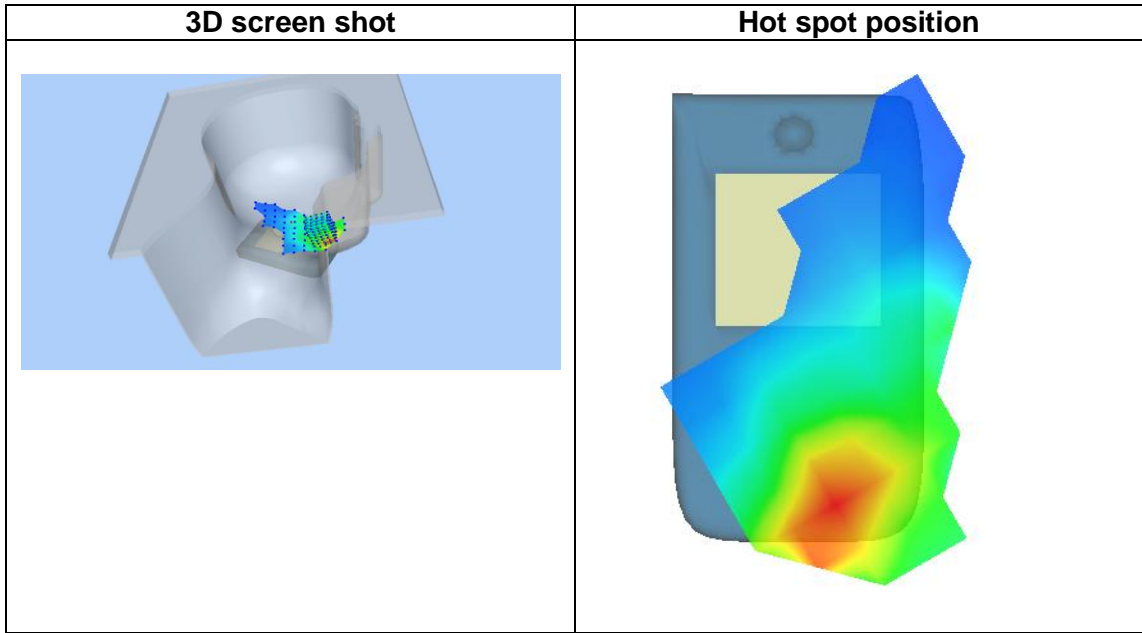
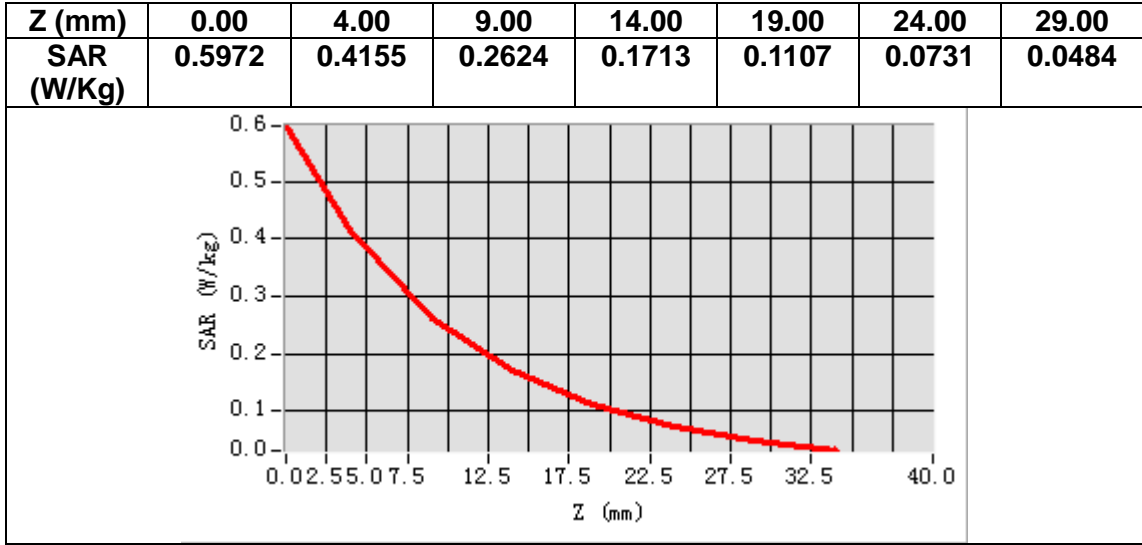
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.976112
Relative permittivity (imaginary part)	13.883806
Conductivity (S/m)	1.449701
Variation (%)	0.960000



Maximum location: X=-51.00, Y=-51.00
SAR Peak: 0.61 W/kg

SAR 10g (W/Kg)	0.234426
SAR 1g (W/Kg)	0.406396



MEASUREMENT 18

Date of measurement: 28/12/2022

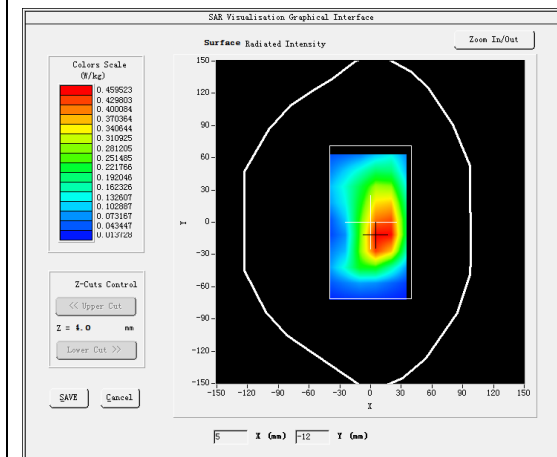
A. Experimental conditions.

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

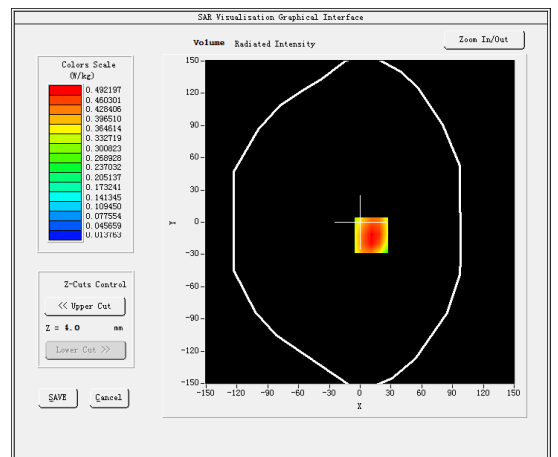
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.976112
Relative permittivity (imaginary part)	13.883806
Conductivity (S/m)	1.449701
Variation (%)	-0.110000

SURFACE SAR



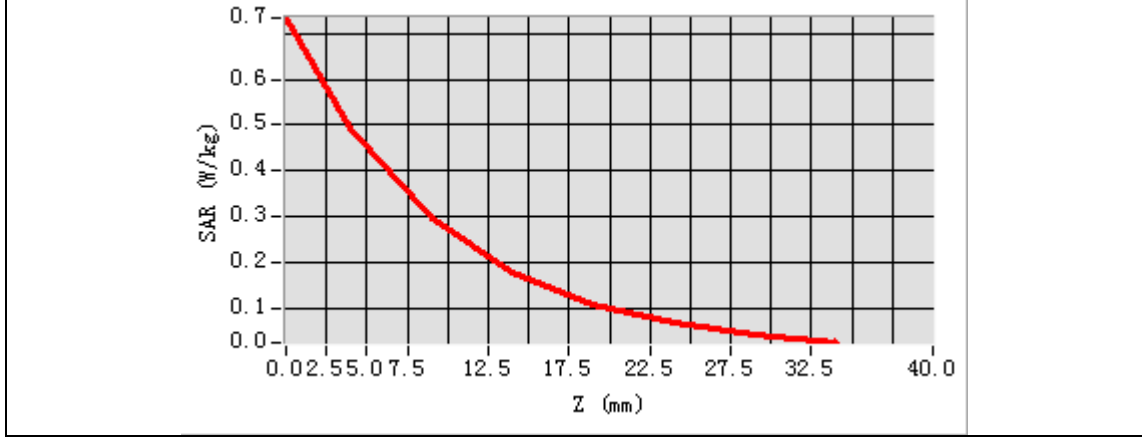
VOLUME SAR

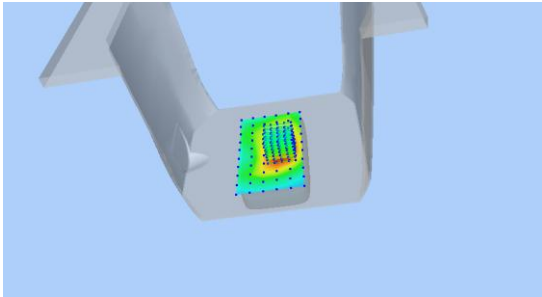
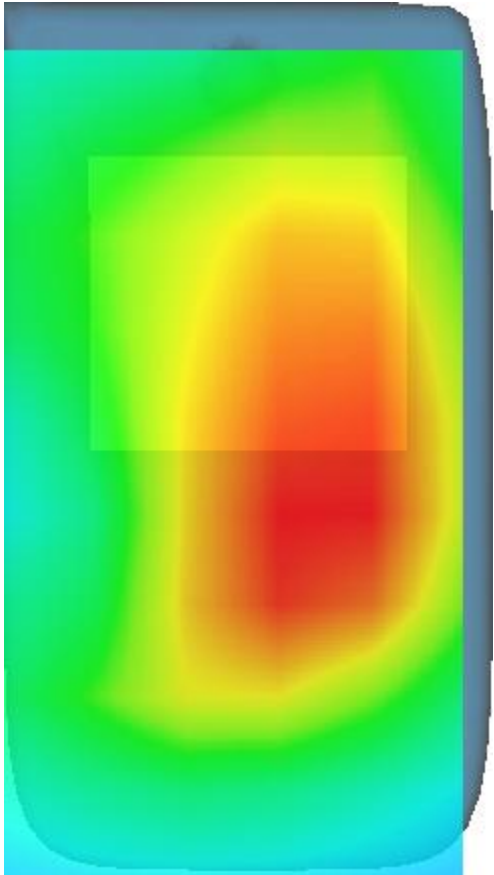


Maximum location: X=11.00, Y=-12.00
SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	0.286238
SAR 1g (W/Kg)	0.491456

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.7336	0.4922	0.2944	0.1789	0.1089	0.0664	0.0407



3D screen shot	Hot spot position
	

MEASUREMENT 19

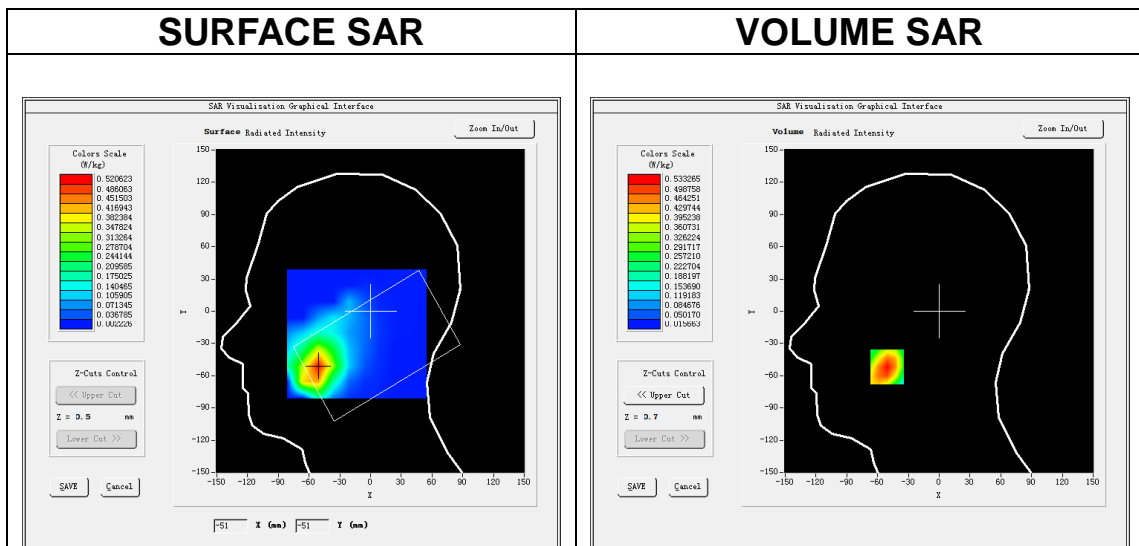
Date of measurement: 4/1/2023

A. Experimental conditions.

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

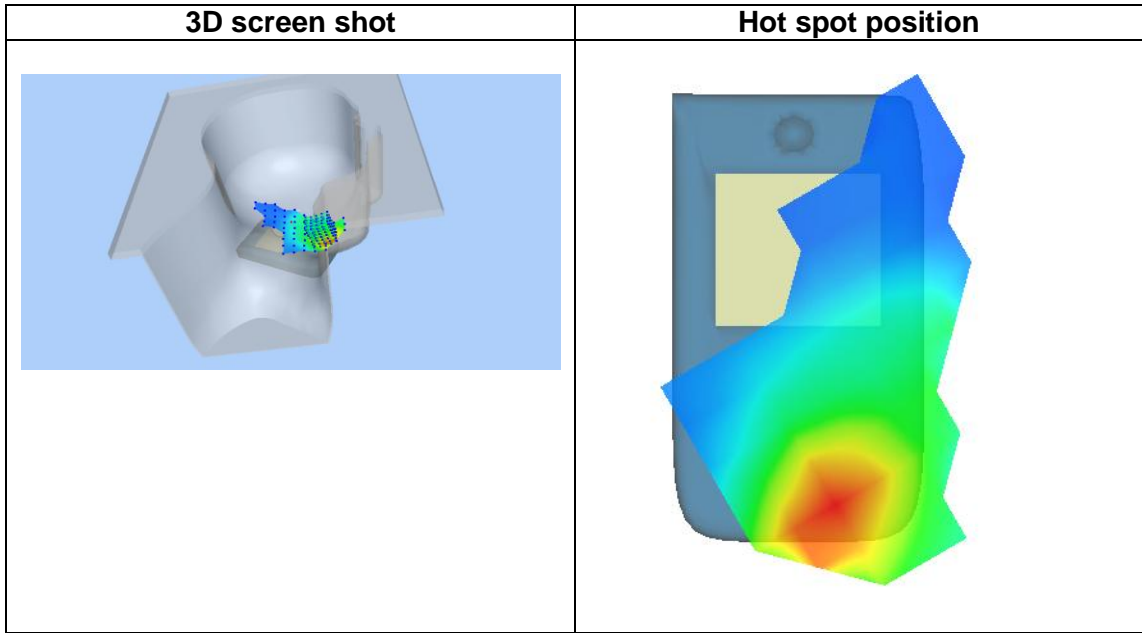
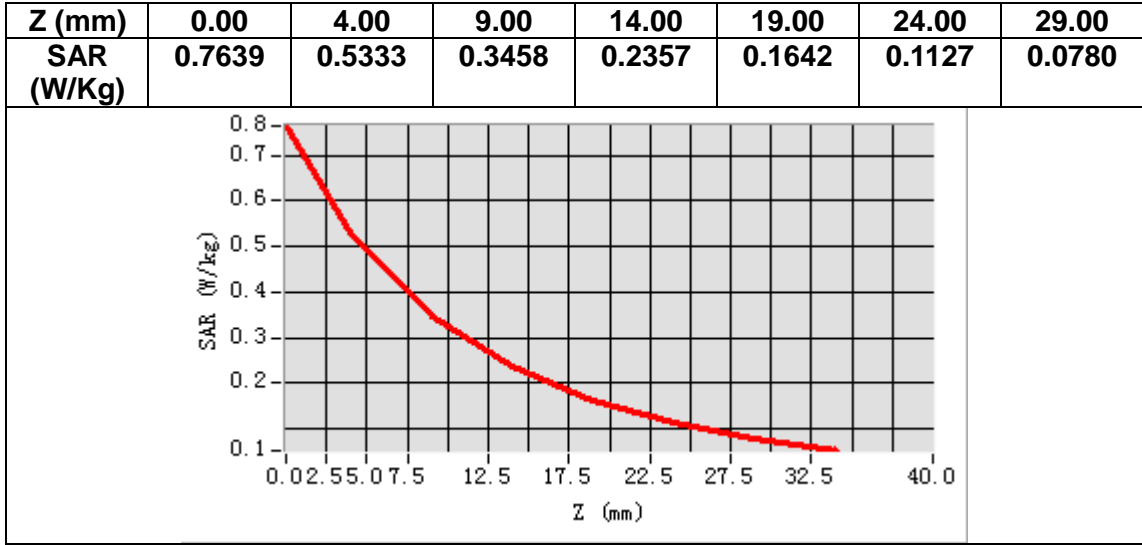
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.612747
Relative permittivity (imaginary part)	13.864887
Conductivity (S/m)	1.334495
Variation (%)	-0.510000



Maximum location: X=-51.00, Y=-52.00
SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	0.309067
SAR 1g (W/Kg)	0.510986



MEASUREMENT 20

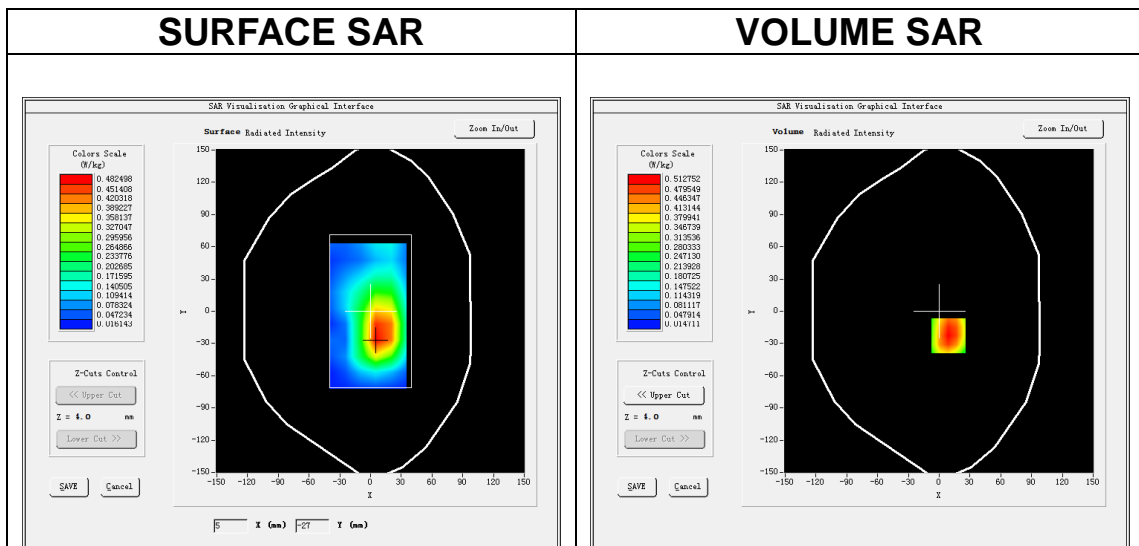
Date of measurement: 4/1/2023

A. Experimental conditions.

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

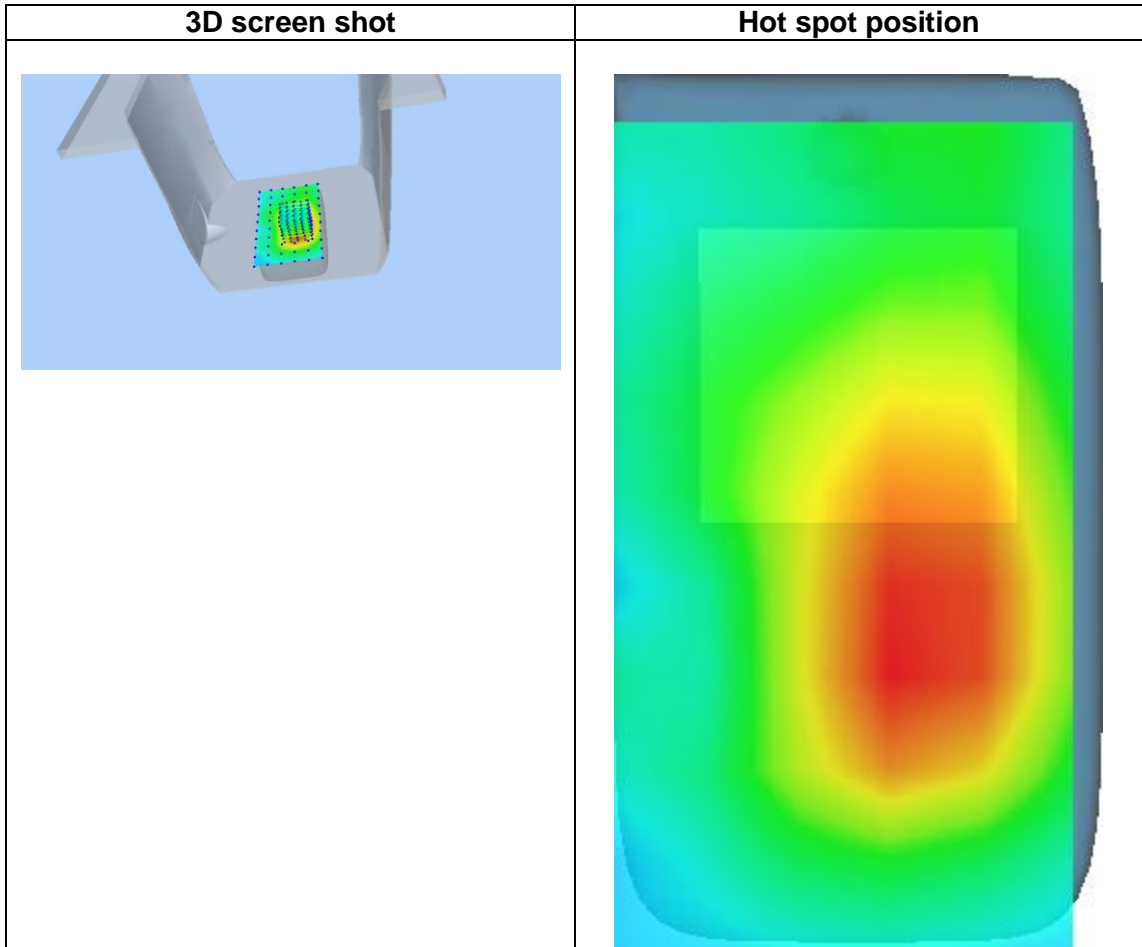
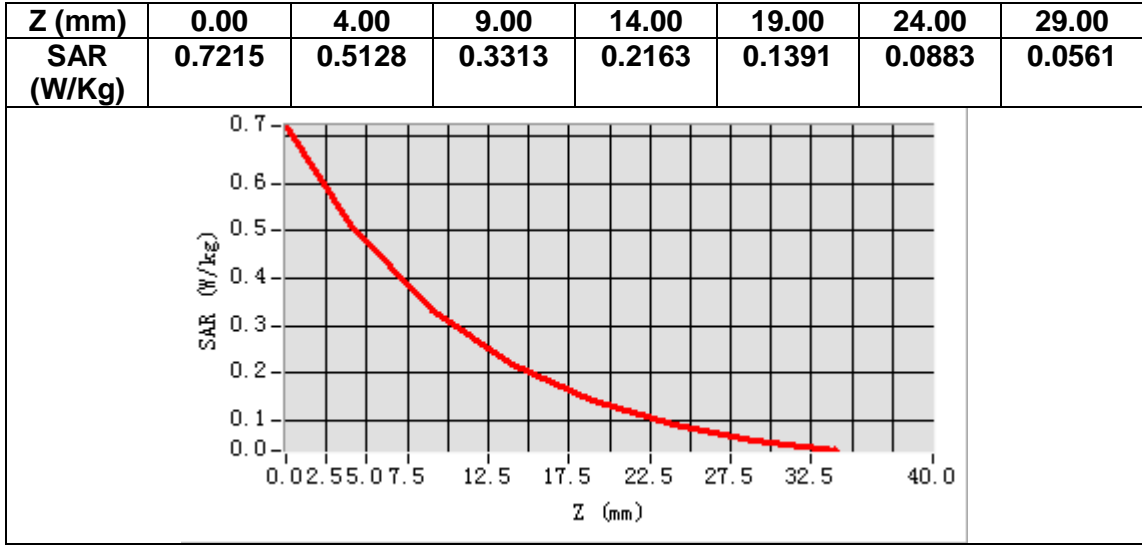
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.612747
Relative permittivity (imaginary part)	13.864887
Conductivity (S/m)	1.334495
Variation (%)	-0.540000



Maximum location: X=9.00, Y=-23.00
SAR Peak: 0.73 W/kg

SAR 10g (W/Kg)	0.304963
SAR 1g (W/Kg)	0.493066



MEASUREMENT 21

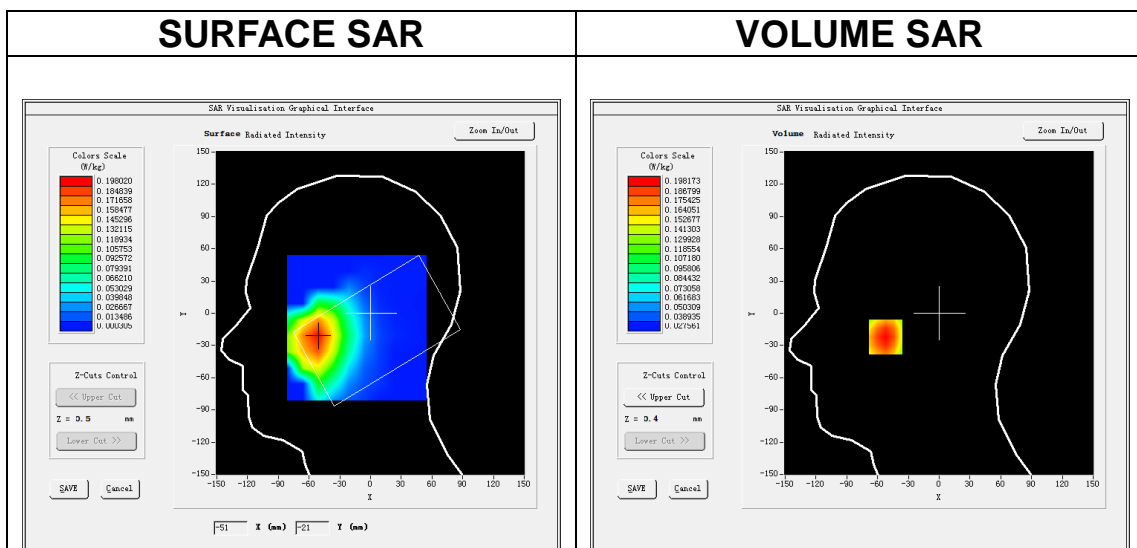
Date of measurement: 29/22/2022

A. Experimental conditions.

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

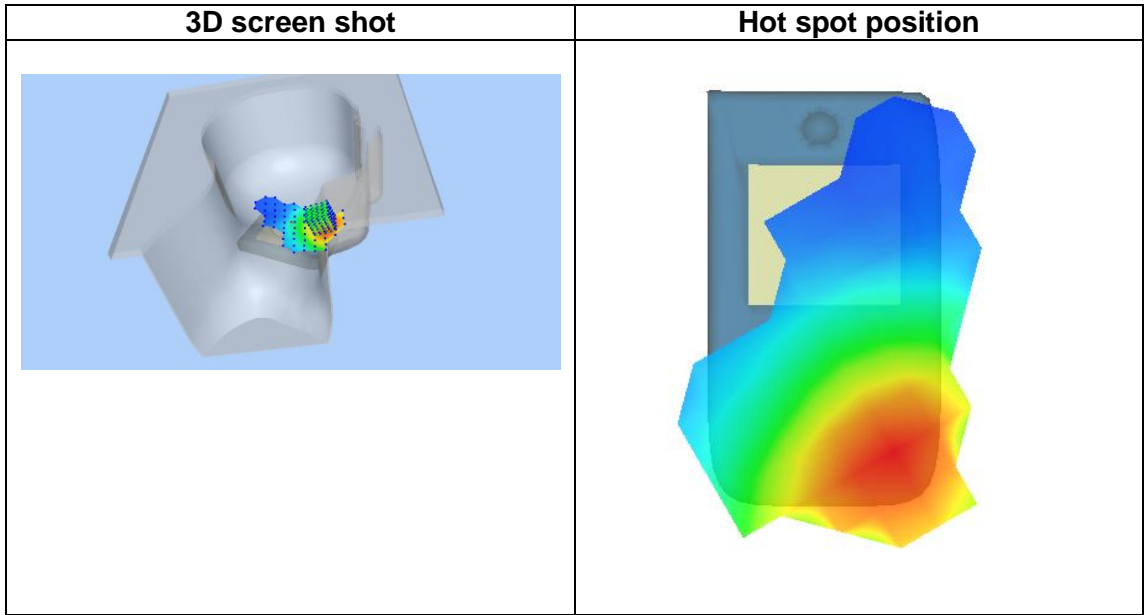
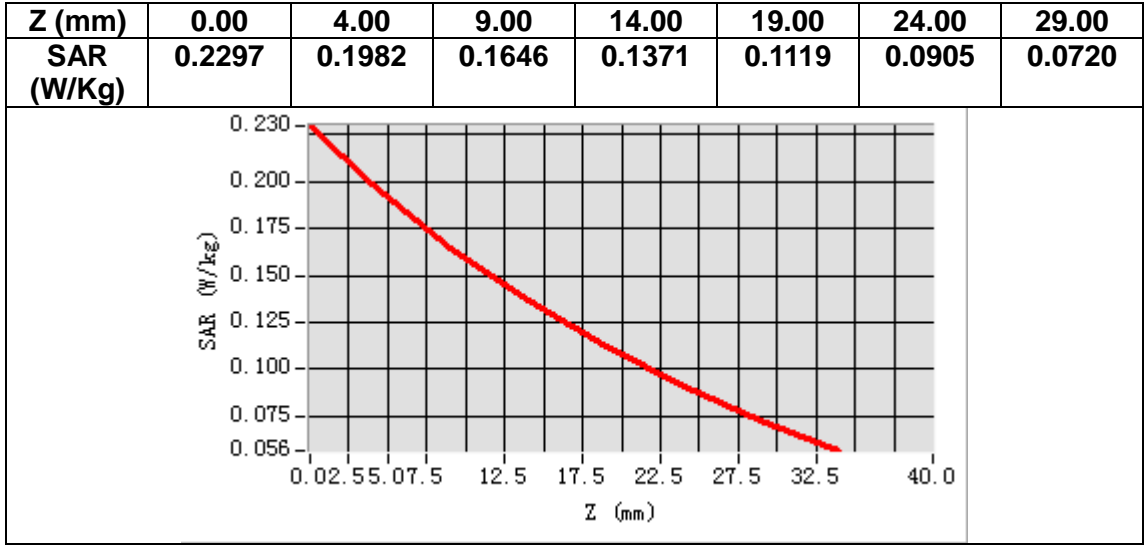
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.394848
Relative permittivity (imaginary part)	20.141439
Conductivity (S/m)	0.936017
Variation (%)	-0.800000



Maximum location: X=-52.00, Y=-22.00
SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.151544
SAR 1g (W/Kg)	0.197486



MEASUREMENT 22

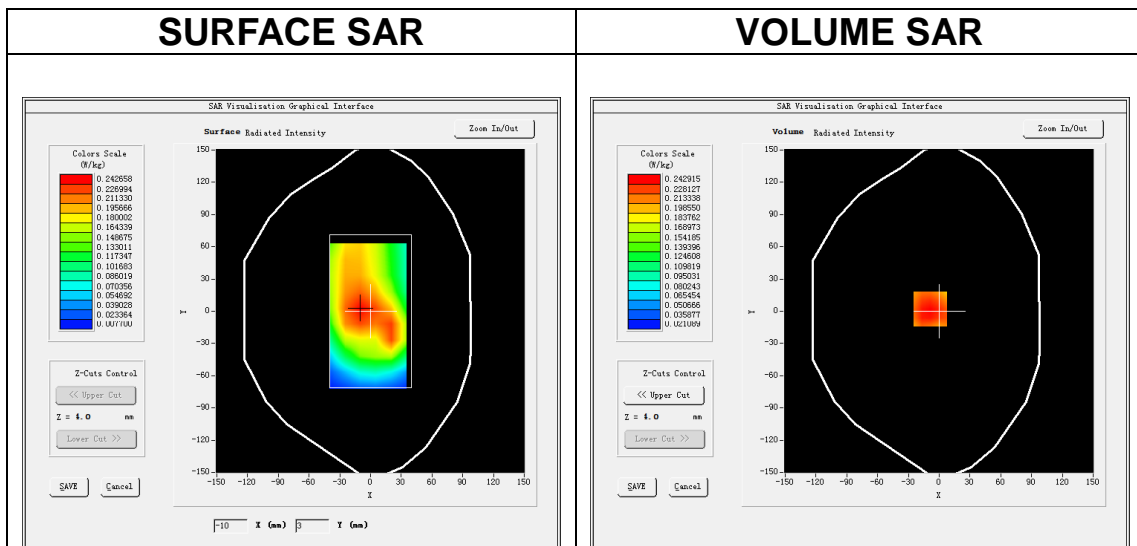
Date of measurement: 29/22/2022

A. Experimental conditions.

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

B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	41.394848
Relative permittivity (imaginary part)	20.141439
Conductivity (S/m)	0.936017
Variation (%)	-0.360000

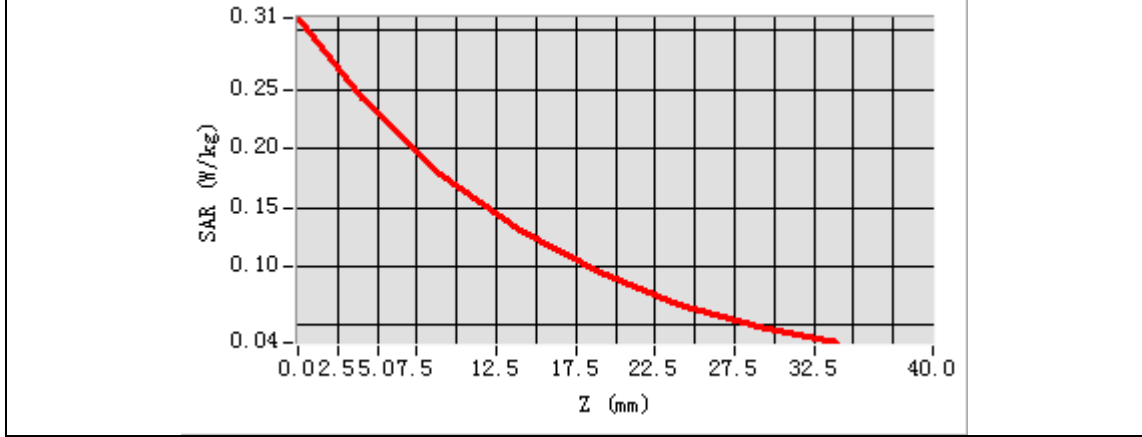


Maximum location: X=-9.00, Y=2.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.172946
SAR 1g (W/Kg)	0.243334

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3110	0.2429	0.1777	0.1300	0.0948	0.0685	0.0495



3D screen shot	Hot spot position

MEASUREMENT 23

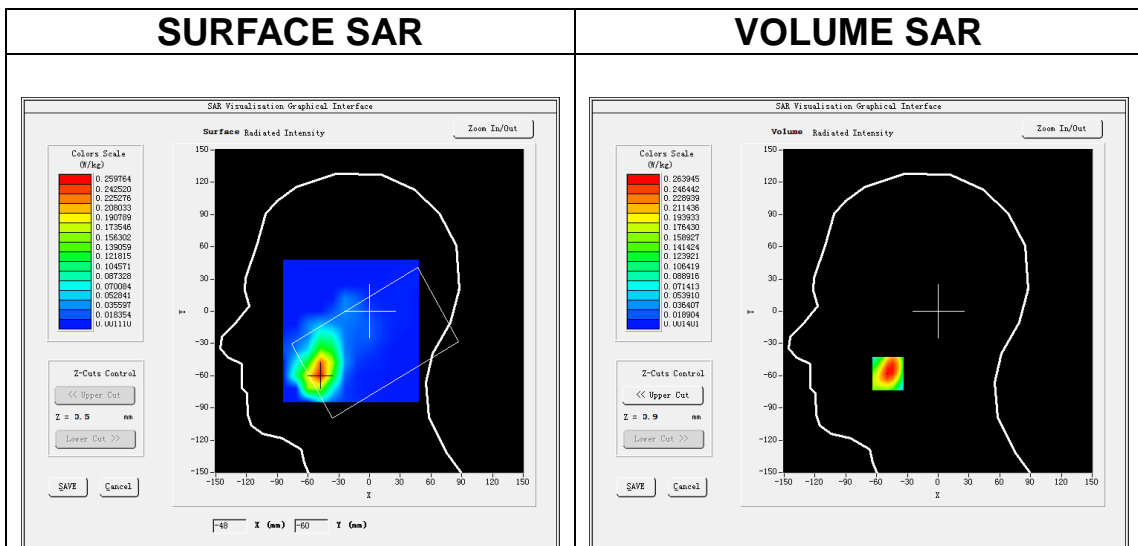
Date of measurement: 27/12/2022

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 7</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>1.87</u>

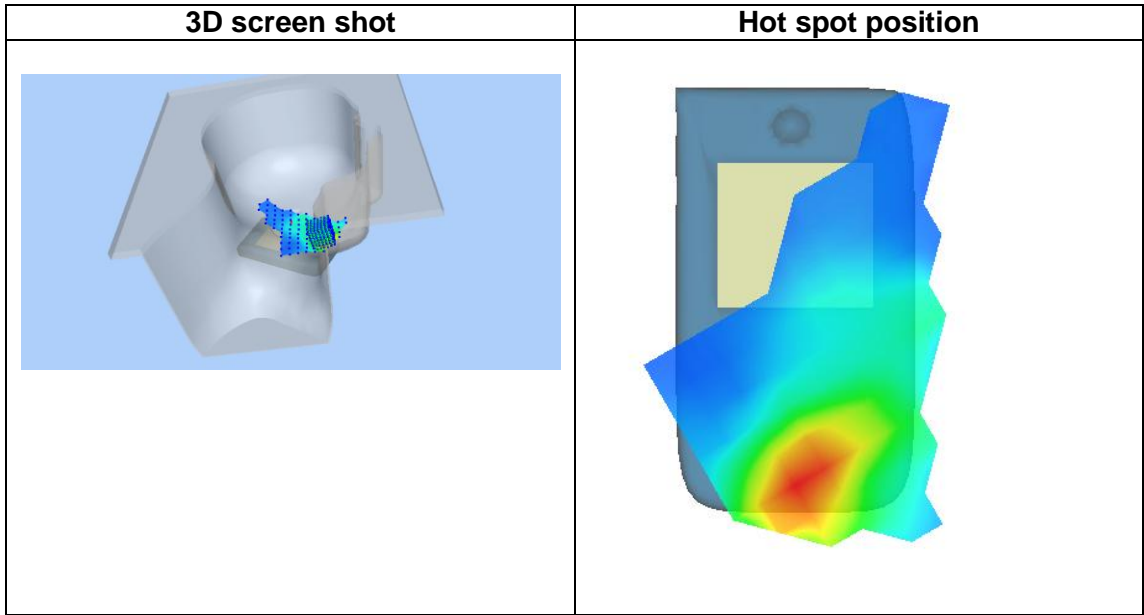
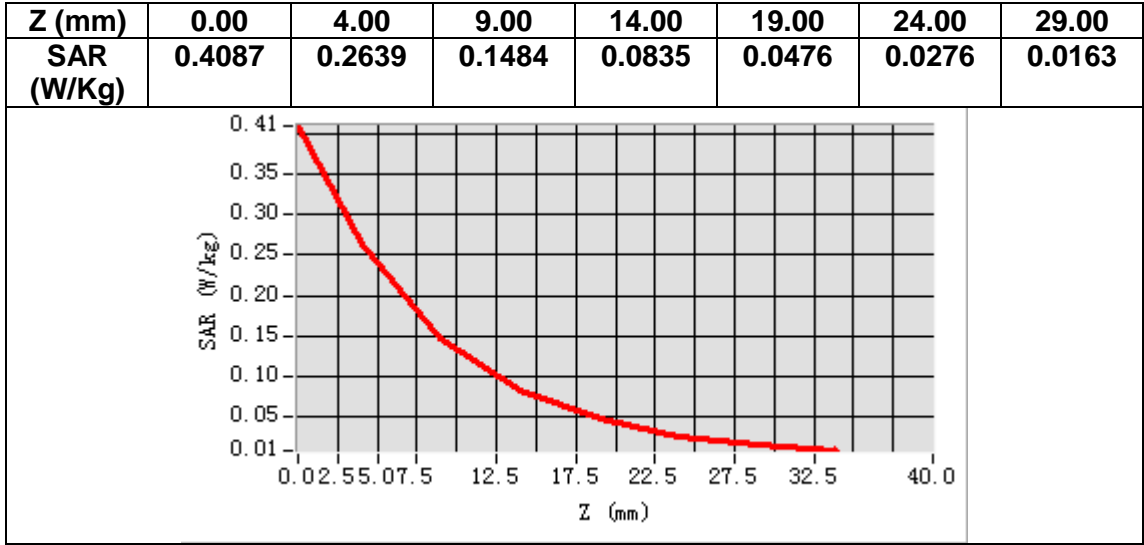
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.564625
Relative permittivity (imaginary part)	13.697280
Conductivity (S/m)	1.929034
Variation (%)	-0.950000



Maximum location: X=-49.00, Y=-58.00
SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.131620
SAR 1g (W/Kg)	0.252243



MEASUREMENT 24

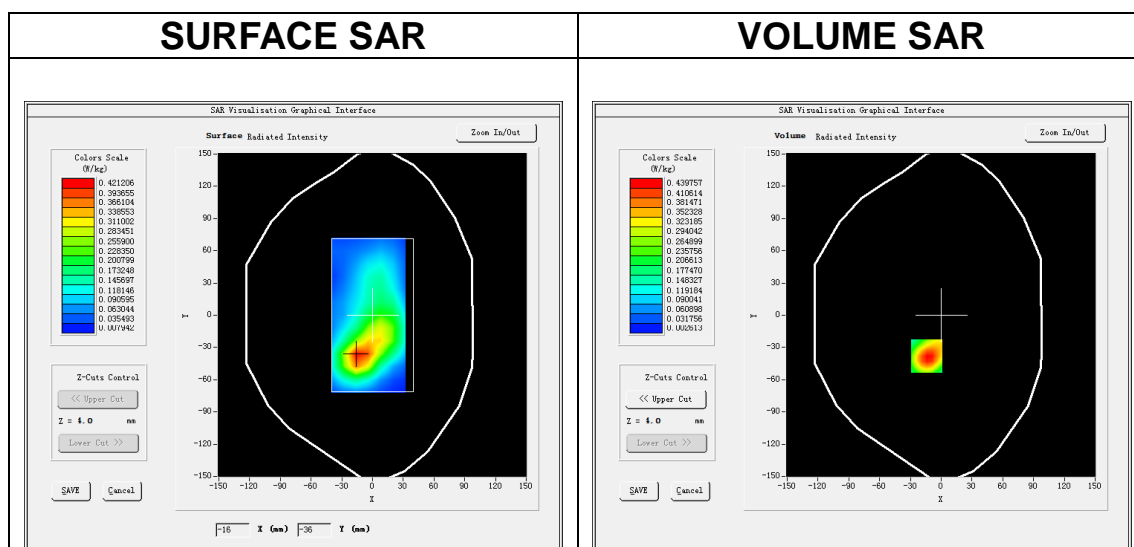
Date of measurement: 27/12/2022

A. Experimental conditions.

Area Scan	<u>dx=12mm dy=12mm, h= 5.00 mm</u>
ZoomScan	<u>7x7x7, dx=5mm dy=5mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>LTE band 7</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>1.87</u>

B. SAR Measurement Results

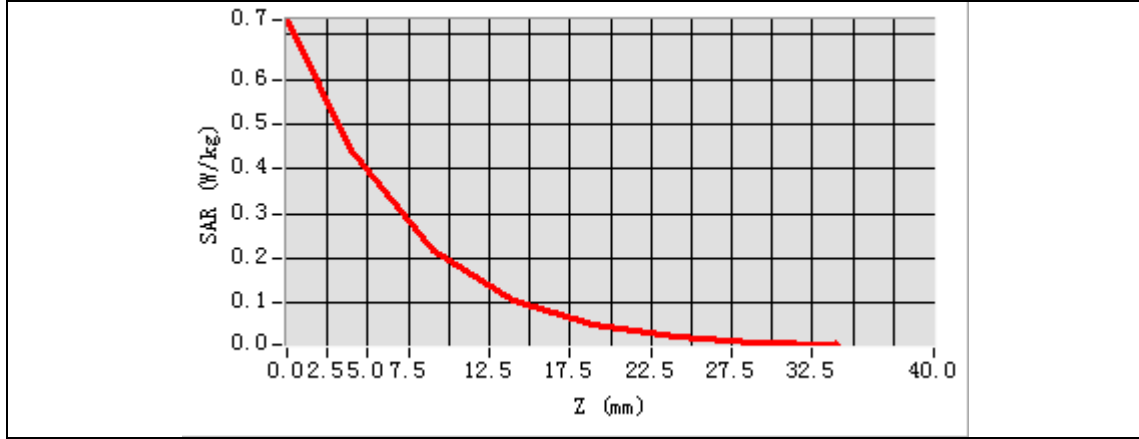
Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.564625
Relative permittivity (imaginary part)	13.697280
Conductivity (S/m)	1.929034
Variation (%)	-3.200000



Maximum location: X=-14.00, Y=-38.00
SAR Peak: 0.73 W/kg

SAR 10g (W/Kg)	0.211895
SAR 1g (W/Kg)	0.422160

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.7330	0.4398	0.2190	0.1071	0.0525	0.0257	0.0126



3D screen shot	Hot spot position

MEASUREMENT 25

Date of measurement: 5/1/2023

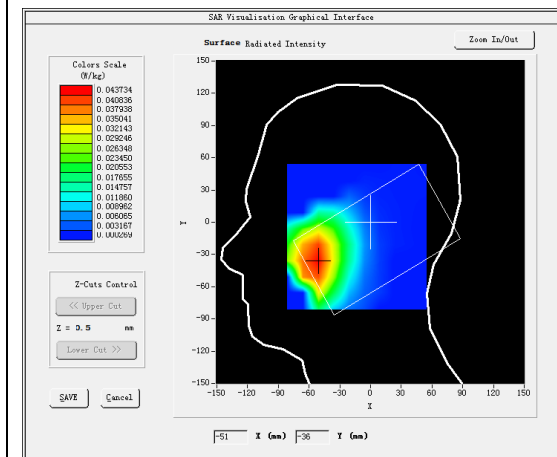
A. Experimental conditions.

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

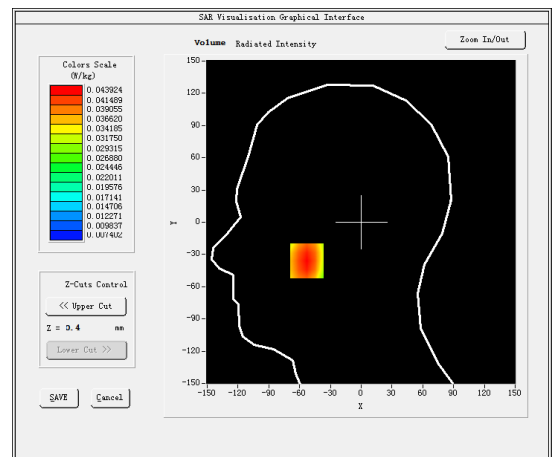
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.283489
Relative permittivity (imaginary part)	21.715124
Conductivity (S/m)	0.853525
Variation (%)	0.120000

SURFACE SAR

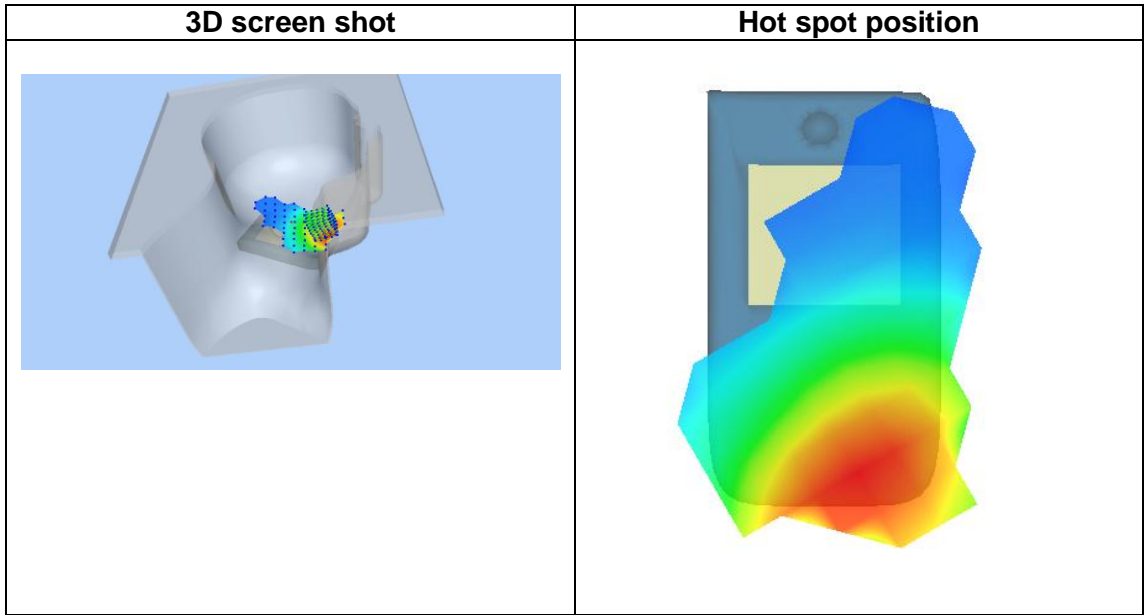
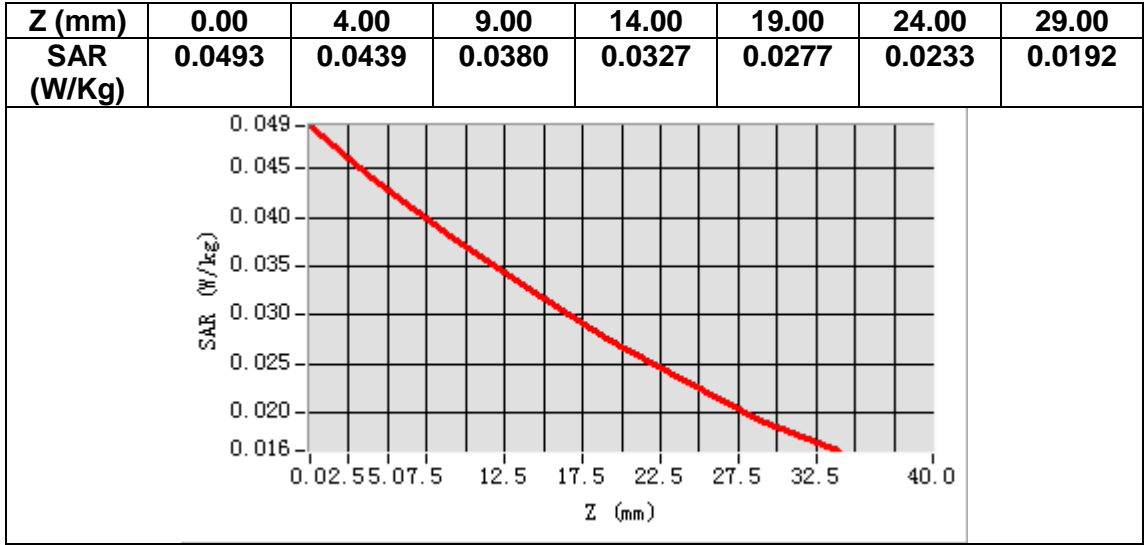


VOLUME SAR



Maximum location: X=-53.00, Y=-36.00
SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.034612
SAR 1g (W/Kg)	0.042782



MEASUREMENT 26

Date of measurement: 5/1/2023

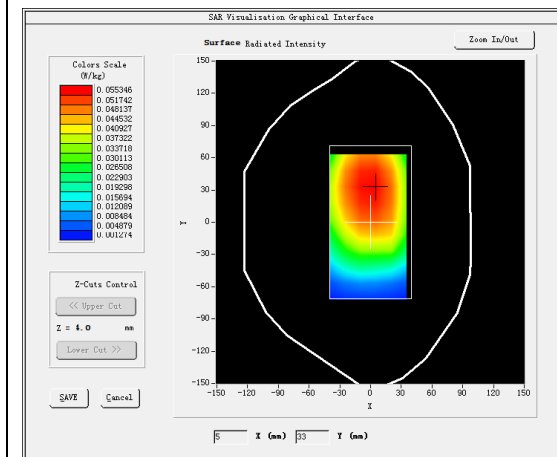
A. Experimental conditions.

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

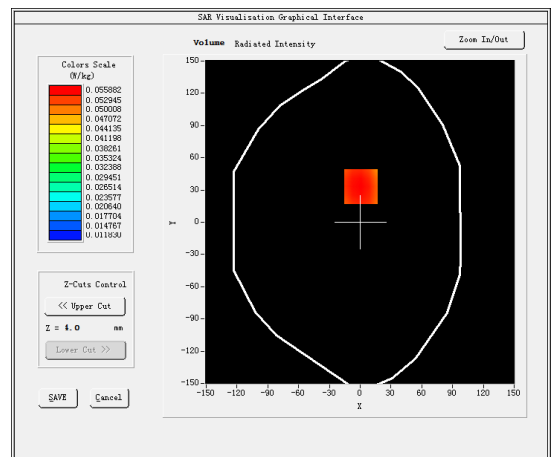
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.283489
Relative permittivity (imaginary part)	21.715124
Conductivity (S/m)	0.853525
Variation (%)	0.550000

SURFACE SAR



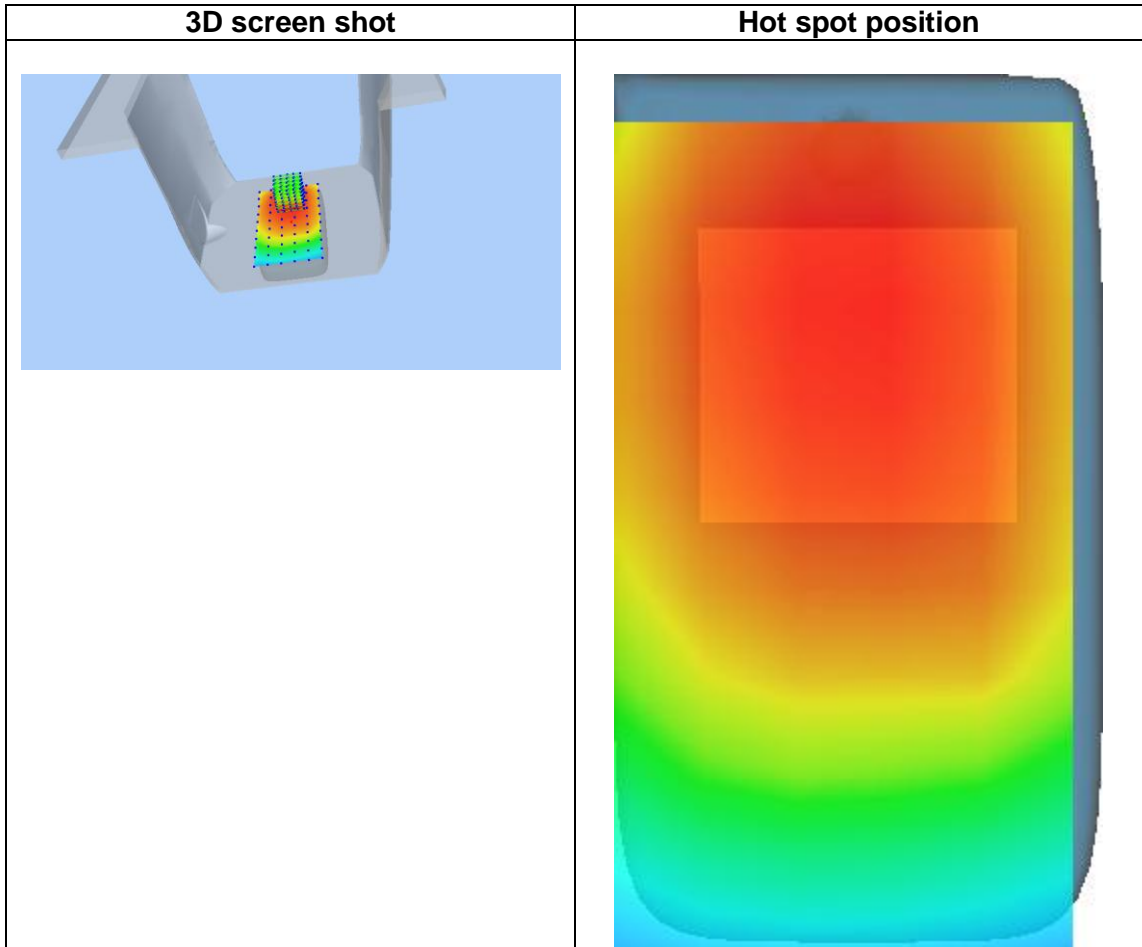
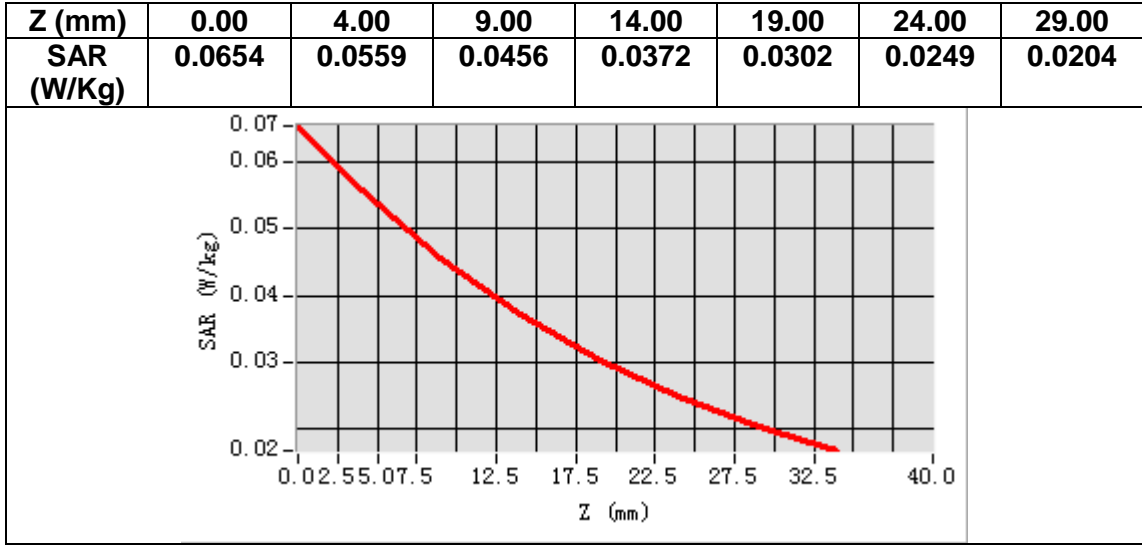
VOLUME SAR



Maximum location: X=1.00, Y=33.00

SAR Peak: 0.07 W/kg

SAR 10g (W/Kg)	0.043373
SAR 1g (W/Kg)	0.054466



MEASUREMENT 27

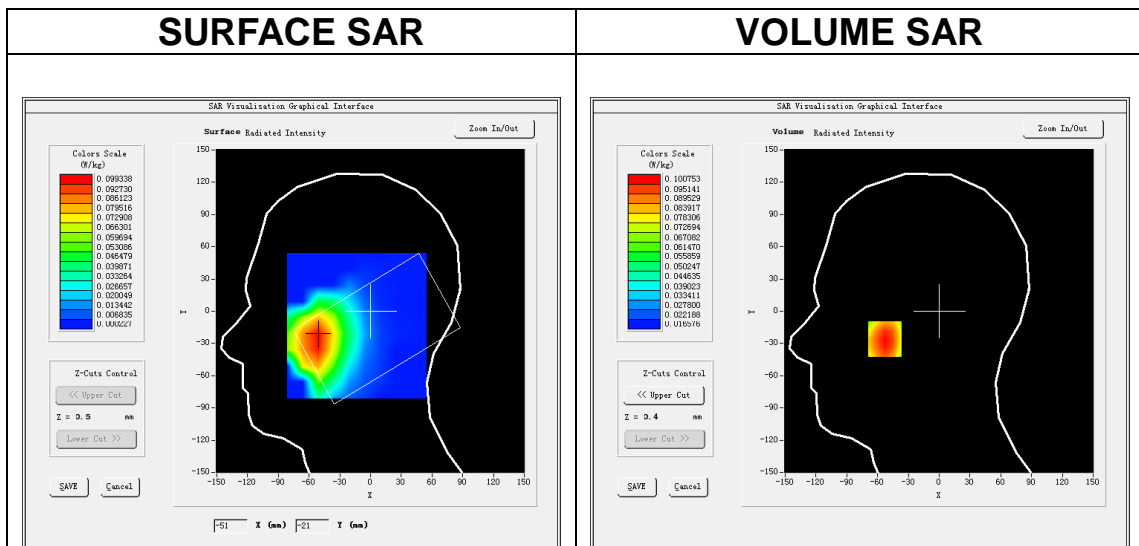
Date of measurement: 5/1/2023

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Left head</u>
Device Position	<u>Cheek</u>
Band	<u>LTE band 13</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>1.49</u>

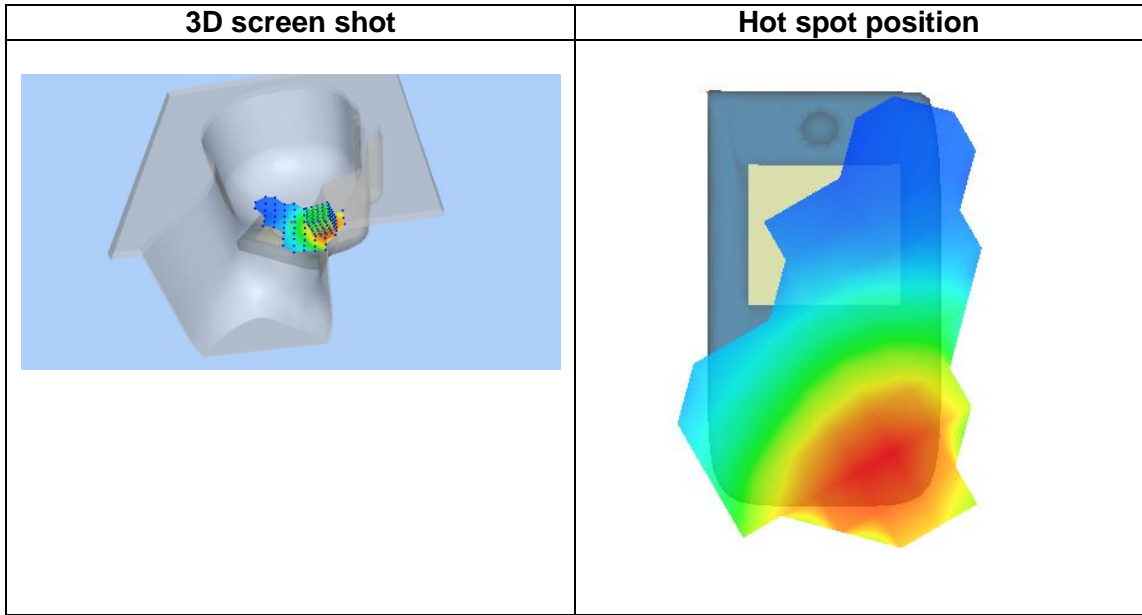
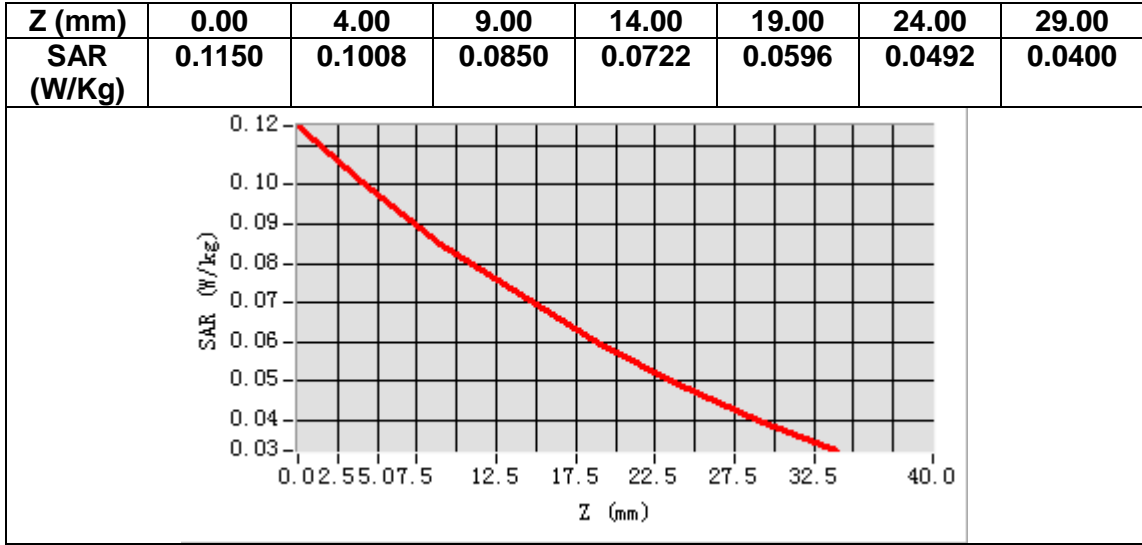
B. SAR Measurement Results

Frequency (MHz)	782.000000
Relative permittivity (real part)	40.449638
Relative permittivity (imaginary part)	20.507175
Conductivity (S/m)	0.890353
Variation (%)	-0.530000



Maximum location: X=-53.00, Y=-26.00
SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.077133
SAR 1g (W/Kg)	0.098160



MEASUREMENT 28

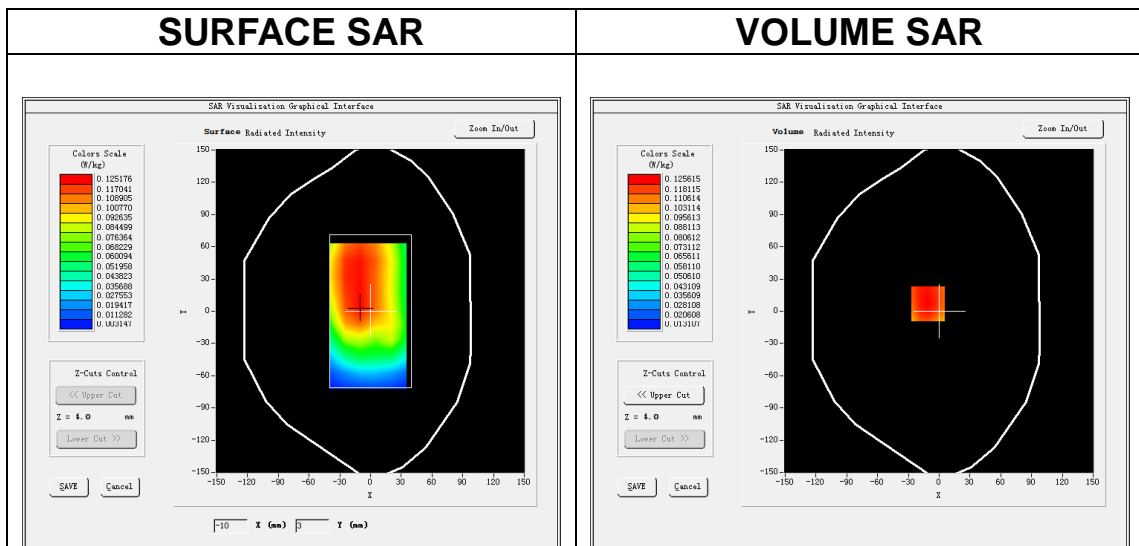
Date of measurement: 5/1/2023

A. Experimental conditions.

Area Scan	<u>dx=15mm dy=15mm, h= 5.00 mm</u>
ZoomScan	<u>5x5x7, dx=8mm dy=8mm dz=5mm</u>
Phantom	<u>Validation plane</u>
Device Position	<u>Body</u>
Band	<u>LTE band 13</u>
Channels	<u>Middle</u>
Signal	<u>LTE (Crest factor: 1.0)</u>
ConvF	<u>1.49</u>

B. SAR Measurement Results

Frequency (MHz)	782.000000
Relative permittivity (real part)	40.449638
Relative permittivity (imaginary part)	20.507175
Conductivity (S/m)	0.890353
Variation (%)	-0.180000



Maximum location: X=-11.00, Y=7.00
SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.093123
SAR 1g (W/Kg)	0.122975