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 : Tablet

Trademark : OUKITEL

Model Name : RT8

Family Model : RT8 S, RT8 Pro, RT8 Ultra, RT8 TITAN

FCC ID : 2ANMU-RT8

Report No. : S23112302715001

Prepared for

SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD

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TEST RESULT CERTIFICATION

Applicant's name	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
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Manufacturer's Name	SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD
Address	A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN, 518XXX China

Product description

Product name	Tablet
Trademark	OUKITEL
Model Name	RT8
Family Model	RT8 S, RT8 Pro, RT8 Ultra, RT8 TITAN
Standards	FCC 47 CFR Part 2(2.1093); ANSI/IEEE C95.1-1992 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.

Test Sample Number S231123027016

Date of Test

Date (s) of performance of tests ..... Dec. 05, 2023 ~ Dec. 16, 2023

Date of Issue ..... Jan. 04, 2024

Test Result ..... **Pass**

Prepared By :	Reviewed By :	Approved By :
Jack Li	Aaron Cheng	Alex Li
(Project Engineer)	(Supervisor)	(Manager)

※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Jan. 04, 2024	Jack Li

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1. General Information

1.1. RF exposure limits

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

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

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

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

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

Occupational/Controlled Environments:

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

General Population/Uncontrolled Environments:

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

NOTE

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 RT8 are as follows.

RF Exposure Conditions		Max Reported SAR Value(W/kg)
1-g Body-Worn (Separation distance of 0mm)		0.993
1-g Hotspot (Separation distance of 0mm)		0.993
Max Simultaneous Tx	Body-Worn	1.548
	Hotspot	1.548

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	Tablet		
Trade Name	OUKITEL		
Model Name	RT8		
Family Model	RT8 S, RT8 Pro, RT8 Ultra, RT8 TITAN		
Model Difference	All models are the same circuit and RF module, except the model name.		
FCC ID	2ANMU-RT8		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna	PIFA Antenna		
Battery	DC 3.87V/20000mAh from battery or DC 5V from Adapter.		
Hardware version	P556_MAIN_PCB_V1.1		
Software version	OUKITEL_RT8_EEA_V01_20231121		
Device Operating Configurations			
Supporting Mode(s)	GSM 850/1900, WCDMA Band 2/4/5, LTE Band 2/4/5/7/12/17, WLAN 2.4G/5G, Bluetooth, NFC		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, π/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 17	704-716	734-746
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	NFC	13.56	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink	4	
	Max Number of Timeslots in Downlink	4	
	Max Total Timeslot	5	
EGPRS Multislot Class(12)	Max Number of Timeslots in Uplink	4	
	Max Number of Timeslots in Downlink	4	
	Max Total Timeslot	5	
Power Class	4, tested with power level 5(GSM 850)		
	1, tested with power level 0(GSM 1900)		
	3, tested with power control “all 1”(WCDMA Band 2)		
	3, tested with power control “all 1”(WCDMA Band 4)		
	3, tested with power control “all 1”(WCDMA Band 5)		
	3, tested with power control all Max.(LTE Band 2)		
	3, tested with power control all Max.(LTE Band 4)		
	3, tested with power control all Max.(LTE Band 5)		
	3, tested with power control all Max.(LTE Band 7)		
	3, tested with power control all Max.(LTE Band 12)		
	3, tested with power control all Max.(LTE Band 17)		

1.4. Test specification(s)

FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance

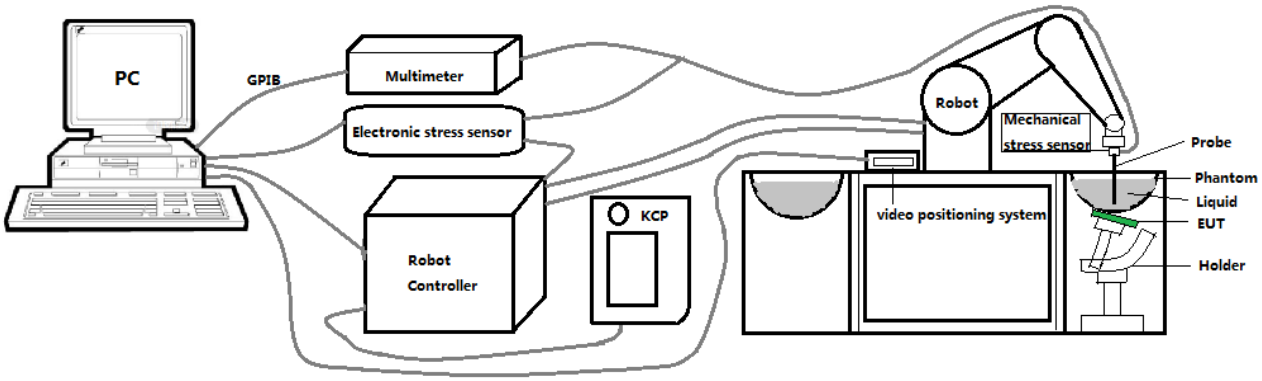
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 616217 D04 SAR for laptop and tablets

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 3423-EPGO-426 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: ±0.06 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 ±10%. The spherical isotropy shall be evaluated and within ±0.25dB. 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.

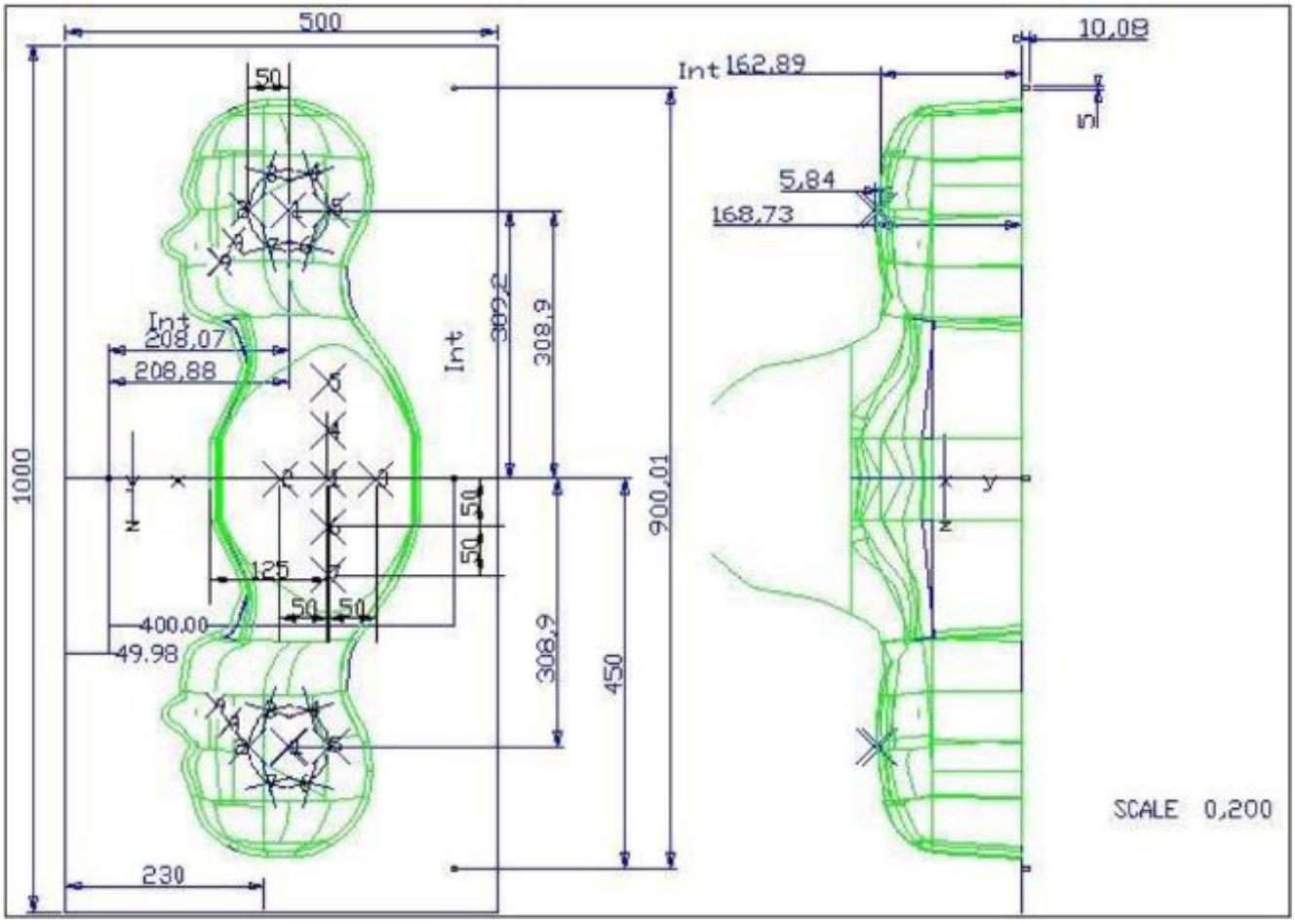
2.4. SAM phantoms

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

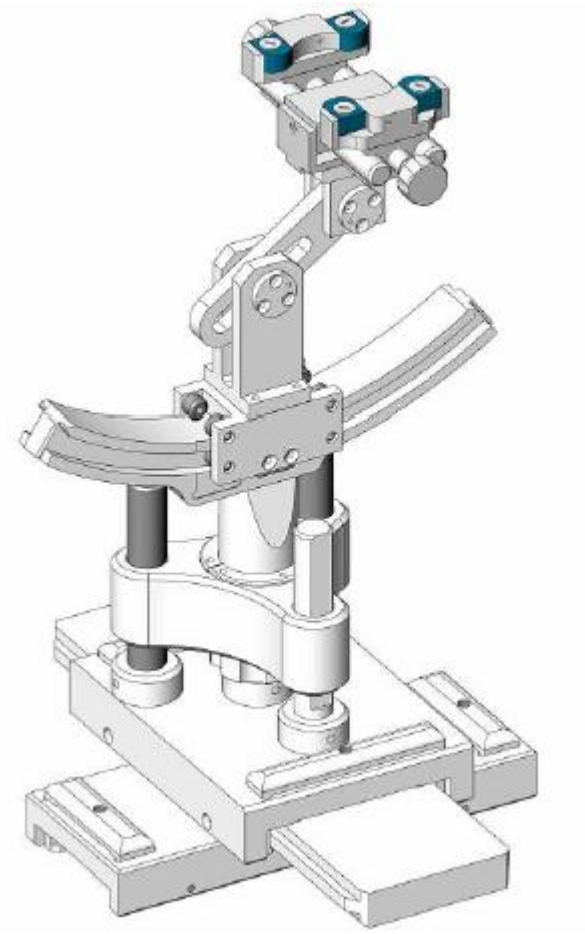


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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

2.5. Device Holder

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



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

2.6. Test Equipment List

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

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	3423-EPGO-426	Sep. 18, 2023	Sep. 17, 2024
☒	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	2300 MHz Dipole	SID2300	SN 03/16 DIP 2G300-358	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Mar. 01, 2021	Feb. 28, 2024
☐	MVG	3500 MHz Dipole	SID3500	SN 09/12 DIP 3G500-360	Oct. 15, 2022	Oct. 14, 2025
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Mar. 01, 2021	Feb. 28, 2024
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
☒	R&S	Universal radio communication tester	CMU200	117858	May 29, 2023	May 28, 2024
☒	R&S	Wideband radio communication tester	CMW500	103917	May 29, 2023	May 28, 2024

☒	HP	Network Analyzer	8753D	3410J01136	May 29, 2023	May 28, 2024
☒	Agilent	MXG Vector Signal Generator	N5182A	MY47070317	May 29, 2023	May 28, 2024
☒	Agilent	Power meter	E4419B	MY45102538	May 29, 2023	May 28, 2024
☒	Agilent	Power sensor	E9301A	MY41495644	May 29, 2023	May 28, 2024
☒	Agilent	Power sensor	E9301A	US39212148	May 29, 2023	May 28, 2024
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Jul. 04, 2023	Jul. 03, 2024
☒	N/A	Thermometer	N/A	LES-085	Mar. 27, 2023	Mar. 26, 2026
☒	MVG	SAM Phantom	SSM2	SN 16/15 SAM119	NCR	NCR
☒	MVG	Device Holder	SMPPD	SN 16/15 MSH100	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 750	Head 750	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 835	Head 835	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 1800	Head 1800	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 1900	Head 1900	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 2450	Head 2450	NCR	NCR

☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 2600	Head 2600	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 5200	Head 5200	NCR	NCR
☒	Shenzhen Tianxu Communication Technology Co., Ltd.	Human Simulating Liquid	Head 5800	Head 5800	NCR	NCR

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

(b) Read the WWAN RF power level from the base station simulator.

(c) For WLAN/Bluetooth power measurement, use engineering software to configure EUT WLAN/Bluetooth 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 WLAN/Bluetooth output power.

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/Bluetooth 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.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤ 15 mm
2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm
4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}</td><td>≤ 2 GHz: ≤ 8 mm
2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*
4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm
4 – 5 GHz: ≤ 3 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm
4 – 5 GHz: ≤ 2.5 mm
5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm
4 – 5 GHz: ≥ 25 mm
5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">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 <u>reported</u> 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.</td></tr>
</table>

3.3. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.
An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated from the liquid surface with a 1 mm step.
The measurements have to be performed over a limited time (due to the duration of the battery) so the step of measurement is high. It could vary between 5 and 8 mm. To obtain an accurate assessment of the maximum SAR averaged over 10 grams and 1 gram requires a very fine resolution in the three dimensional scanned data array.

3.4. Volumetric Scan

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

3.5. Power Drift

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

4. System Verification Procedure

4.1. Tissue Verification

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

Ingredients (% of weight)	Head Tissue								
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5000
Water	34.40	34.40	34.40	55.36	55.36	71.88	71.88	71.88	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00
1,2-Propanediol	64.81	64.81	64.81	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	17.24
DGBE	0.00	0.00	0.00	13.84	13.84	7.99	7.99	7.99	0.00

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.

Photo of Liquid depth for Head Position	Photo of Liquid depth for Body Position
	

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 ±5% of the target values.

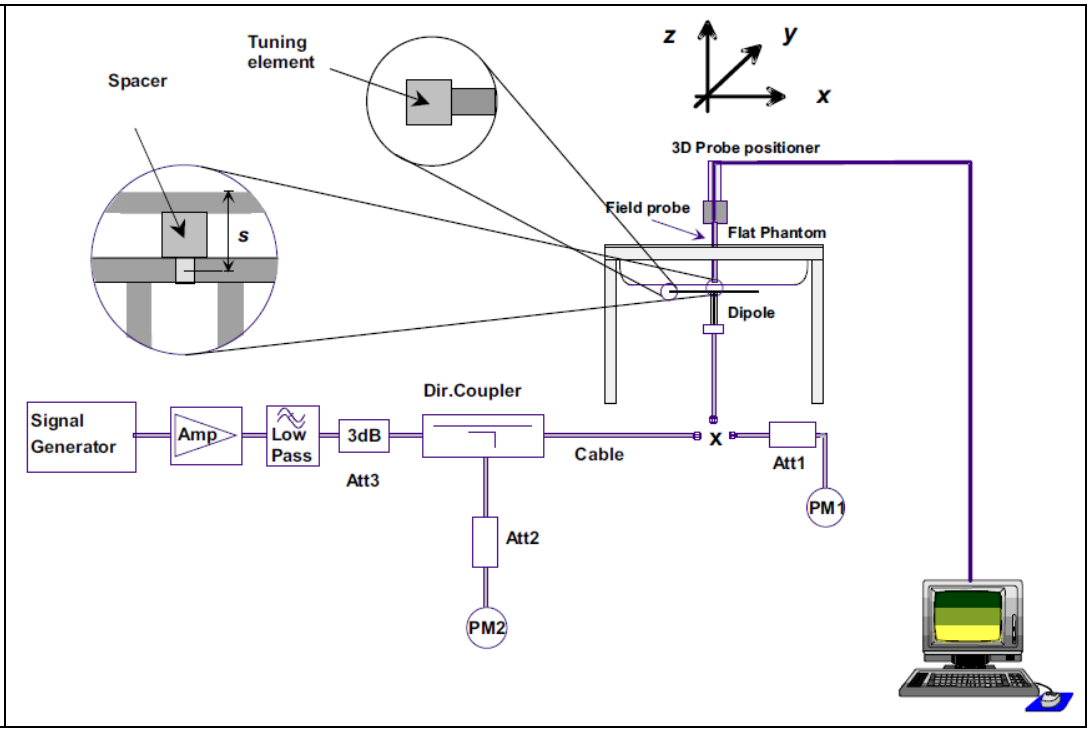
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		εr (±5%)	σ (S/m) (±5%)	εr	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	42.03	0.92	21.3 °C	Dec. 05, 2023
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	41.41	0.90	21.5 °C	Dec. 14, 2023
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.64	1.39	21.1 °C	Dec. 06, 2023
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.98	1.44	21.5 °C	Dec. 15, 2023
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.46	1.77	21.7 °C	Dec. 07, 2023
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.68	1.94	21.2 °C	Dec. 11, 2023
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	35.36	4.47	21.2 °C	Dec. 16, 2023
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.93	5.29	21.6 °C	Dec. 08, 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 ±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) (±10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Delta (%)		Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		1-g (±10%)	10-g (±10%)	
750MHz	8.53 (7.68~9.38)	5.56 (5.01~6.11)	8.08	5.16	21.3 °C	-5.28%	-7.19%	Dec. 05, 2023
835MHz	9.84 (8.86~10.82)	6.22 (5.60~6.84)	10.41	6.07	21.5 °C	5.79%	-2.41%	Dec. 14, 2023
1800MHz	37.96 (34.17~41.75)	19.81 (17.83~21.79)	35.56	18.88	21.1 °C	-6.32%	-4.69%	Dec. 06, 2023
1900MHz	40.37 (36.34~44.40)	20.48 (18.44~22.52)	37.59	20.75	21.5 °C	-6.89%	1.32%	Dec. 15, 2023
2450MHz	53.69 (48.33~59.05)	23.94 (21.55~26.33)	56.54	23.39	21.7 °C	5.31%	-0.68%	Dec. 07, 2023
2600MHz	55.83 (50.25~61.41)	24.19 (21.78~26.60)	52.04	22.80	21.2 °C	-6.79%	-5.75%	Dec. 11, 2023
5200MHz	162.34 (146.11~178.57)	55.42 (49.88~60.96)	150.06	52.77	21.2 °C	-7.56%	-4.78%	Dec. 16, 2023
5800MHz	178.89 (161.01~196.77)	59.32 (53.39~65.25)	164.49	62.99	21.6 °C	-8.05%	6.19%	Dec. 08, 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. Tablet host platform exposure conditions

Refer to KDB616217 D04, when the modular approach is used, transmitters and modules must be initially tested for standalone operations in generic host conditions according to the following minimum test separation distance and antenna installation requirements for incorporation in the tablet platform. The separation distance required for incorporation in qualified hosts is described in KDB 447498; item 5) of section 4.1 and item 1) of section 5.2.2 etc.

- ≤ 5 mm between the antenna and user for both back surface and edge exposure conditions
- the antennas used by the host must have been tested for equipment approval or qualify for SAR test exclusion
- the antenna polarization, physical orientation, rotation and installation configurations used by the host must have been tested for compliance or qualify for test exclusion
- when the *SAR Test Exclusion Threshold* in KDB 447498 applies, a *test separation distance* of 5 mm is required to determine test exclusion for the tablet platform

The antennas embedded in tablets are typically ≤ 5mm from the outer housing. The required antenna to user test separation distance is a “not to exceed test” distance required to apply the modular approach. Instead of the typical zero gap tablet edge test requirement between the edge of a tablet and the user, when an antenna has been tested at ≤ 5 mm according to the modular approach it can be incorporated into tablets with at least twice the tested distance from the outer housing of the tablet edge; otherwise, the tablet edge zero gap test requirement applies. When the dedicated host approach is applied, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom.

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 (dBm)	128	189	251	Tune - up (dBm)	128	189	251
Frequency (MHz)		824.2	836.4	848.8		824.2	836.4	848.8
GSM (GMSK)	34.00	33.53	33.37	33.71	24.97	24.50	24.34	24.68
GPRS(GMSK, 1 TS)	34.00	33.59	33.39	33.74	24.97	24.56	24.36	24.71
GPRS(GMSK, 2 TS)	33.00	32.64	32.42	32.79	26.98	26.62	26.40	26.77
GPRS(GMSK, 3 TS)	31.00	30.57	30.32	30.73	26.74	26.31	26.06	26.47
GPRS(GMSK, 4 TS)	30.00	29.41	29.15	29.56	26.99	26.40	26.14	26.55
EGPRS(8PSK, 1 TS)	26.50	26.29	26.19	26.27	17.47	17.26	17.16	17.24
EGPRS(8PSK, 2 TS)	25.50	25.40	25.22	25.25	19.48	19.38	19.20	19.23
EGPRS(8PSK, 3 TS)	24.00	23.32	22.84	23.52	19.74	19.06	18.58	19.26
EGPRS(8PSK, 4 TS)	22.50	21.64	22.12	21.90	19.49	18.63	19.11	18.89
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune - up (dBm)	512	661	810	Tune - up (dBm)	512	661	810
Frequency (MHz)		1850.2	1880	1909.8		1850.2	1880	1909.8
GSM (GMSK)	31.00	30.81	30.88	30.61	21.97	21.78	21.85	21.58
GPRS(GMSK, 1 TS)	31.00	30.78	30.84	30.57	21.97	21.75	21.81	21.54
GPRS(GMSK, 2 TS)	30.00	29.83	29.91	29.71	23.98	23.81	23.89	23.69
GPRS(GMSK, 3 TS)	28.00	27.71	27.88	27.77	23.74	23.45	23.62	23.51
GPRS(GMSK, 4 TS)	27.00	26.98	26.99	26.97	23.99	23.97	23.98	23.96
EGPRS(8PSK, 1 TS)	27.00	26.55	26.42	25.63	17.97	17.52	17.39	16.60
EGPRS(8PSK, 2 TS)	25.50	25.27	25.48	24.17	19.48	19.25	19.46	18.15
EGPRS(8PSK, 3 TS)	23.50	23.45	22.28	22.11	19.24	19.19	18.02	17.85
EGPRS(8PSK, 4 TS)	22.00	21.66	21.41	20.75	18.99	18.65	18.40	17.74

Note: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots. The calculated method are shown as below:

Frame-averaged power = Maximum burst averaged power (1 Tx Slot) - 9.03 dB

Frame-averaged power = Maximum burst averaged power (2 Tx Slots) - 6.02 dB

Frame-averaged power = Maximum burst averaged power (3 Tx Slots) - 4.26 dB

Frame-averaged power = Maximum burst averaged power (4 Tx Slots) - 3.01 dB

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	23.47	23.41	23.31
HSDPA Sub 1	23.00	22.50	22.46	22.37
HSDPA Sub 2	22.00	21.87	21.95	21.79
HSDPA Sub 3	21.00	20.89	20.86	20.78
HSDPA Sub 4	21.50	21.01	21.06	20.99
HSUPA Sub 1	22.50	21.23	22.25	22.02
HSUPA Sub 2	22.50	22.33	22.29	22.13
HSUPA Sub 3	21.50	20.54	21.04	20.97
HSUPA Sub 4	22.50	22.43	22.39	22.30
HSUPA Sub 5	22.00	20.93	21.69	21.64
WCDMA Band 4	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up	1312	1413	1513
Frequency (MHz)	(dBm)	1712.4	1732.6	1752.6
RMC12.2K	23.50	23.48	23.49	23.47
HSDPA Sub 1	23.00	22.67	22.58	22.53
HSDPA Sub 2	22.50	21.10	22.15	21.97
HSDPA Sub 3	21.00	20.93	20.71	20.66
HSDPA Sub 4	21.50	21.14	21.16	20.68
HSUPA Sub 1	22.50	21.13	22.42	22.29
HSUPA Sub 2	22.50	22.41	22.40	22.34
HSUPA Sub 3	21.50	20.94	21.28	21.15
HSUPA Sub 4	23.00	22.55	22.55	22.48
HSUPA Sub 5	22.00	20.89	21.86	21.81
WCDMA Band 5	Burst-Averaged output Power (dBm)			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)	(dBm)	826.4	836.4	846.6
RMC12.2K	23.50	23.16	23.18	23.18
HSDPA Sub 1	22.50	22.21	22.24	22.19
HSDPA Sub 2	22.00	21.76	21.91	21.66
HSDPA Sub 3	21.00	20.77	20.92	20.39
HSDPA Sub 4	21.00	20.73	20.79	20.39
HSUPA Sub 1	22.50	20.88	22.03	21.97

HSUPA Sub 2	22.50	22.05	22.11	21.97
HSUPA Sub 3	21.00	20.51	20.84	20.80
HSUPA Sub 4	22.50	22.19	22.24	22.19
HSUPA Sub 5	22.00	20.61	21.51	21.49

7.3. LTE Conducted Power

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	24.00	23.92	23.71	23.58
			1	2	24.00	23.96	23.75	23.65
			1	5	24.00	23.90	23.69	23.59
			3	0	24.50	24.00	23.80	23.68
			3	1	24.50	24.04	23.81	23.75
			3	2	24.50	24.00	23.81	23.73
			6	0	23.50	23.11	22.91	22.83
		16QAM	1	0	23.50	23.06	22.94	22.61
			1	2	23.50	23.05	23.00	22.72
			1	5	23.50	23.05	22.92	22.74
			3	0	23.00	22.95	22.77	22.57
			3	1	23.00	22.93	22.79	22.54
			3	2	23.00	22.86	22.70	22.63
			6	0	22.50	22.17	21.97	21.87
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	24.00	23.71	23.52	23.41
			1	7	24.00	23.81	23.63	23.52
			1	14	24.00	23.71	23.51	23.40
			8	0	23.00	22.95	22.73	22.65
			8	4	23.00	23.00	22.82	22.72
			8	7	23.00	22.95	22.75	22.65
			15	0	23.00	22.97	22.77	22.70
		16QAM	1	0	23.00	22.79	22.57	22.56
			1	7	23.00	22.97	22.71	22.65
			1	14	23.00	22.94	22.66	22.60
			8	0	22.50	21.97	21.73	21.68

			8	4	22.50	22.01	21.84	21.73
			8	7	22.50	21.95	21.78	21.64
			15	0	22.00	21.91	21.74	21.65
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	24.50	23.89	23.72	23.61
			1	12	24.50	24.03	23.88	23.73
			1	24	24.50	23.89	23.72	23.60
			12	0	23.50	23.01	22.78	22.73
			12	6	23.50	23.05	22.89	22.79
			12	11	23.50	23.01	22.83	22.64
			25	0	23.00	23.00	22.84	22.70
		16QAM	1	0	23.50	22.96	22.97	22.81
			1	12	23.50	23.20	23.03	22.78
			1	24	23.50	23.08	22.83	22.79
			12	0	22.50	21.98	21.77	21.66
			12	6	22.50	22.04	21.82	21.73
			12	11	22.50	21.98	21.79	21.57
			25	0	22.00	22.00	21.83	21.68
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	24.00	23.99	23.83	23.77
			1	24	24.00	23.99	23.88	23.74
			1	49	24.00	23.93	23.82	23.70
			25	0	23.50	23.02	22.75	22.59
			25	12	23.50	23.07	22.92	22.81
			25	24	23.50	22.97	22.85	22.68
			50	0	23.50	23.05	22.84	22.67
		16QAM	1	0	23.50	23.16	23.12	23.10
			1	24	23.50	23.24	22.99	22.84
			1	49	23.50	23.22	22.96	22.87
			25	0	22.50	21.99	21.76	21.61
			25	12	22.50	22.05	21.89	21.79
			25	24	22.50	21.97	21.83	21.65
			50	0	22.50	22.01	21.81	21.62
Band	Band	Modulation	RB		Tune-up	Channel/Frequency(MHz)		

	Width		Configuration		(dBm)			
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band 2	15MHz	QPSK	1	0	24.50	23.94	23.77	23.75
			1	37	24.50	24.01	23.89	23.80
			1	74	24.50	23.86	23.75	23.66
			36	0	23.50	22.99	22.74	22.72
			36	18	23.50	23.01	22.88	22.77
			36	37	23.50	22.94	22.85	22.74
			75	0	23.00	23.00	22.85	22.75
		16QAM	1	0	23.50	23.06	23.05	22.99
			1	37	23.50	23.23	23.09	23.09
			1	74	23.50	23.09	22.95	22.83
			36	0	22.00	21.99	21.73	21.74
			36	18	22.00	22.00	21.85	21.79
			36	37	22.00	21.97	21.80	21.69
			75	0	22.00	21.96	21.82	21.76
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	24.00	23.84	23.70	23.66
			1	49	24.00	23.95	23.88	23.83
			1	99	24.00	23.76	23.61	23.61
			50	0	23.50	23.07	22.72	22.96
			50	24	23.50	23.04	22.94	22.88
			50	49	23.50	22.95	22.83	22.92
			100	0	23.00	22.96	22.78	22.93
		16QAM	1	0	23.50	23.07	22.95	22.90
			1	49	23.50	23.24	23.10	23.10
			1	99	23.50	22.96	22.86	22.82
			50	0	22.50	22.02	21.68	21.96
			50	24	22.50	22.00	21.89	21.87
			50	49	22.50	21.94	21.78	21.92
			100	0	22.00	21.94	21.71	21.91

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB	RB		19957/1710.	20175/1732.	20393/1754.

			Size	Offset		7	5	3
LTE Band 4	1.4MHz	QPSK	1	0	24.00	23.81	23.88	23.73
			1	2	24.00	23.92	23.95	23.84
			1	5	24.00	23.80	23.88	23.75
			3	0	24.00	23.93	23.97	23.85
			3	1	24.00	23.99	23.96	23.88
			3	2	24.00	23.98	23.94	23.87
			6	0	23.50	23.06	23.06	22.98
		16QAM	1	0	23.50	23.11	23.17	22.98
			1	2	23.50	23.19	23.21	23.07
			1	5	23.50	23.11	23.20	22.96
			3	0	23.50	22.99	23.03	22.84
			3	1	23.50	23.01	23.03	22.88
			3	2	23.50	23.00	22.99	22.92
			6	0	22.50	22.18	22.19	22.11
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	24.00	23.72	23.72	23.59
			1	7	24.00	23.84	23.83	23.73
			1	14	24.00	23.73	23.76	23.64
			8	0	23.50	22.93	22.93	22.85
			8	4	23.50	23.00	23.01	22.93
			8	7	23.50	22.95	22.96	22.87
			15	0	23.00	22.93	22.96	22.83
		16QAM	1	0	23.50	22.86	22.89	22.72
			1	7	23.50	23.10	23.17	23.00
			1	14	23.50	22.96	23.06	22.88
			8	0	22.50	22.02	22.01	21.91
			8	4	22.50	22.06	22.09	21.99
			8	7	22.50	22.06	22.02	21.92
			15	0	22.00	21.97	21.98	21.88
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	5MHz	QPSK	1	0	24.50	23.95	23.95	23.86

Band 4			1	12	24.50	24.09	24.09	23.99
			1	24	24.50	23.96	24.02	23.87
			12	0	23.50	22.98	23.04	22.91
			12	6	23.50	23.07	23.08	22.98
			12	11	23.50	23.06	23.06	23.00
			25	0	23.50	23.02	23.06	22.94
		16QAM	1	0	23.50	23.29	23.18	23.13
			1	12	23.50	23.40	23.31	23.14
			1	24	23.50	23.20	23.28	23.14
			12	0	22.50	22.00	22.03	21.87
			12	6	22.50	22.10	22.10	21.99
			12	11	22.50	22.06	22.09	21.97
			25	0	22.50	22.07	22.10	21.97

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	24.50	24.05	24.04	24.01
			1	24	24.50	24.09	24.10	24.01
			1	49	24.50	24.06	24.08	23.98
			25	0	23.50	22.94	23.05	22.96
			25	12	23.50	23.08	23.09	23.01
			25	24	23.50	23.07	23.06	22.98
			50	0	23.50	23.05	23.06	22.98
		16QAM	1	0	23.50	23.26	23.25	23.31
			1	24	23.50	23.42	23.34	23.29
			1	49	23.50	23.37	23.28	23.28
			25	0	22.50	22.01	22.08	21.98
			25	12	22.50	22.12	22.14	22.03
			25	24	22.50	22.10	22.09	22.01
			50	0	22.50	22.07	22.07	21.99

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	24.50	23.97	23.95	23.92
			1	37	24.50	24.08	24.09	24.08
			1	74	24.50	24.05	24.02	23.95

			36	0	23.50	22.98	23.01	22.97
			36	18	23.50	23.06	23.09	23.04
			36	37	23.50	23.10	23.07	23.03
			75	0	23.50	23.06	23.06	23.02
		16QAM	1	0	23.50	23.27	23.16	23.24
			1	37	23.50	23.28	23.35	23.36
			1	74	23.50	23.31	23.20	23.25
			36	0	22.50	22.00	22.01	21.99
			36	18	22.50	22.06	22.13	22.07
			36	37	22.50	22.11	22.10	22.02
			75	0	22.50	22.09	22.07	22.01
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	24.50	23.87	23.88	23.88
			1	49	24.50	24.48	24.49	24.47
			1	99	24.50	23.99	23.93	23.87
			50	0	23.50	22.94	23.03	23.03
			50	24	23.50	23.10	23.11	23.05
			50	49	23.50	23.07	23.08	23.07
			100	0	23.50	22.99	23.04	23.02
		16QAM	1	0	23.50	23.17	23.15	23.14
			1	49	23.50	23.42	23.33	23.36
			1	99	23.50	23.22	23.13	23.05
			50	0	22.50	21.97	22.02	22.04
			50	24	22.50	22.12	22.12	22.07
			50	49	22.50	22.11	22.10	22.08
			100	0	22.50	22.00	22.04	22.01

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	24.00	23.40	23.43	23.41
			1	2	24.00	23.48	23.51	23.47
			1	5	24.00	23.39	23.44	23.39
			3	0	24.00	23.51	23.51	23.52
			3	1	24.00	23.52	23.56	23.52

			3	2	24.00	23.50	23.53	23.49
			6	0	23.00	22.60	22.65	22.62
		16QAM	1	0	23.00	22.73	22.68	22.68
			1	2	23.00	22.83	22.85	22.77
			1	5	23.00	22.74	22.76	22.58
			3	0	23.00	22.47	22.53	22.53
			3	1	23.00	22.46	22.53	22.55
			3	2	23.00	22.55	22.55	22.53
			6	0	22.00	21.71	21.75	21.73
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	23.50	23.28	23.29	23.32
			1	7	23.50	23.41	23.42	23.41
			1	14	23.50	23.23	23.32	23.28
			8	0	23.00	22.48	22.55	22.52
			8	4	23.00	22.54	22.60	22.59
			8	7	23.00	22.48	22.55	22.51
			15	0	23.00	22.47	22.55	22.55
		16QAM	1	0	23.00	22.50	22.57	22.55
			1	7	23.00	22.60	22.64	22.61
			1	14	23.00	22.56	22.55	22.56
			8	0	22.00	21.55	21.61	21.55
			8	4	22.00	21.61	21.66	21.66
			8	7	22.00	21.58	21.61	21.56
			15	0	22.00	21.49	21.55	21.54
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	24.00	23.50	23.54	23.55
			1	12	24.00	23.64	23.68	23.65
			1	24	24.00	23.48	23.55	23.50
			12	0	23.00	22.57	22.59	22.64
			12	6	23.00	22.62	22.66	22.67
			12	11	23.00	22.58	22.61	22.55
			25	0	23.00	22.60	22.63	22.60
		16QAM	1	0	23.00	22.80	22.79	22.73
			1	12	23.00	22.90	22.94	22.91

			1	24	23.00	22.73	22.78	22.79
			12	0	22.00	21.55	21.62	21.59
			12	6	22.00	21.65	21.65	21.63
			12	11	22.00	21.60	21.63	21.54
			25	0	22.00	21.64	21.64	21.60
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	24.00	23.66	23.60	23.68
			1	24	24.00	23.60	23.71	23.68
			1	49	24.00	23.58	23.66	23.60
			25	0	23.00	22.53	22.58	22.67
			25	12	23.00	22.65	22.69	22.69
			25	24	23.00	22.63	22.60	22.58
			50	0	23.00	22.61	22.61	22.64
		16QAM	1	0	23.00	22.83	22.75	23.00
			1	24	23.00	22.85	22.92	23.00
			1	49	23.00	22.79	22.89	22.84
			25	0	22.00	21.55	21.60	21.67
			25	12	22.00	21.68	21.69	21.70
			25	24	22.00	21.65	21.62	21.59
			50	0	22.00	21.60	21.59	21.65

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	23.46	24.35	24.73
			1	12	25.00	23.68	24.54	24.92
			1	24	25.00	23.58	24.39	24.82
			12	0	24.00	22.60	23.55	23.93
			12	6	24.00	22.73	23.62	23.96
			12	11	24.00	22.73	23.55	23.85
			25	0	24.00	22.65	23.57	23.93
		16QAM	1	0	24.00	22.64	23.58	23.71
			1	12	24.00	22.81	23.80	23.87
			1	24	24.00	22.81	23.64	23.75
			12	0	23.00	21.59	22.57	22.89
			12	6	23.00	21.73	22.62	22.92

			12	11	23.00	21.71	22.54	22.83
			25	0	23.00	21.69	22.61	22.90
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	23.56	24.45	24.89
			1	24	25.00	23.69	24.56	24.93
			1	49	25.00	23.71	24.51	24.89
			25	0	24.00	22.62	23.59	23.97
			25	12	24.00	22.77	23.63	23.99
			25	24	24.00	22.89	23.55	23.86
			50	0	24.00	22.79	23.60	23.96
		16QAM	1	0	24.00	22.69	23.70	23.88
			1	24	24.00	22.83	23.68	23.94
			1	49	24.00	22.93	23.67	23.83
			25	0	23.00	21.64	22.62	22.92
			25	12	23.00	21.82	22.68	22.95
			25	24	23.00	21.90	22.57	22.86
			50	0	23.00	21.75	22.60	22.89
Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band 7	15MHz	QPSK	1	0	25.00	23.49	24.35	24.88
			1	37	25.00	23.77	24.54	24.92
			1	74	25.00	23.71	24.49	24.88
			36	0	24.00	22.60	23.55	23.92
			36	18	24.00	22.80	23.61	23.99
			36	37	24.00	22.85	23.58	23.89
			75	0	24.00	22.77	23.60	23.94
		16QAM	1	0	24.00	22.74	23.60	23.94
			1	37	24.00	22.92	23.76	23.98
			1	74	24.00	22.82	23.72	23.84
			36	0	23.00	21.61	22.56	22.84
			36	18	23.00	21.78	22.64	22.95
			36	37	23.00	21.85	22.55	22.85
			75	0	23.00	21.78	22.61	22.87
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	23.43	24.19	24.67
			1	49	25.00	23.75	24.98	24.96
			1	99	25.00	23.74	24.47	24.77
			50	0	24.50	22.59	23.60	23.95
			50	24	24.50	22.88	23.67	24.10
			50	49	24.50	22.97	23.63	23.93
			100	0	24.00	22.75	23.57	23.90
		16QAM	1	0	24.50	22.63	23.41	23.86
			1	49	24.50	22.89	23.77	24.04
			1	99	24.50	22.89	23.58	23.73
			50	0	23.50	21.59	22.61	22.87
			50	24	23.50	21.87	22.66	23.01
			50	49	23.50	21.94	22.56	22.85
			100	0	23.00	21.74	22.55	22.80

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	23.50	23.26	23.35	23.39
			1	2	23.50	23.38	23.40	23.48
			1	5	23.50	23.30	23.35	23.39
			3	0	24.00	23.36	23.43	23.48
			3	1	24.00	23.38	23.48	23.50
			3	2	24.00	23.40	23.45	23.48
			6	0	23.00	22.44	22.55	22.57
		16QAM	1	0	23.00	22.54	22.62	22.57
			1	2	23.00	22.63	22.70	22.81
			1	5	23.00	22.57	22.72	22.72
			3	0	23.00	22.35	22.51	22.54
			3	1	23.00	22.34	22.51	22.51
			3	2	23.00	22.42	22.45	22.46
			6	0	22.00	21.54	21.71	21.69
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	3MHz	QPSK	1	0	23.50	23.06	23.21	23.18

Band 12			1	7	23.50	23.26	23.34	23.35
			1	14	23.50	23.19	23.22	23.25
			8	0	23.00	22.33	22.39	22.43
			8	4	23.00	22.43	22.52	22.51
			8	7	23.00	22.42	22.46	22.48
			15	0	22.50	22.34	22.42	22.45
		16QAM	1	0	23.00	22.41	22.43	22.46
			1	7	23.00	22.50	22.65	22.68
			1	14	23.00	22.43	22.50	22.53
			8	0	22.00	21.44	21.51	21.54
			8	4	22.00	21.52	21.62	21.60
			8	7	22.00	21.46	21.53	21.55
			15	0	21.50	21.36	21.45	21.48

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	24.00	23.28	23.47	23.43
			1	12	24.00	23.56	23.60	23.59
			1	24	24.00	23.45	23.45	23.47
			12	0	23.00	22.52	22.37	22.66
			12	6	23.00	22.58	22.59	22.56
			12	11	23.00	22.42	22.60	22.50
			25	0	23.00	22.48	22.51	22.57
		16QAM	1	0	23.00	22.67	22.72	22.71
			1	12	23.00	22.91	22.85	22.80
			1	24	23.00	22.76	22.83	22.77
			12	0	22.00	21.53	21.40	21.66
			12	6	22.00	21.61	21.63	21.55
			12	11	22.00	21.46	21.64	21.49
			25	0	22.00	21.53	21.58	21.64

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	24.00	23.43	23.59	23.56
			1	24	24.00	23.60	23.58	23.58
			1	49	24.00	23.52	23.53	23.58
			25	0	23.00	22.72	22.43	22.36
			25	12	23.00	22.60	22.59	22.58

			25	24	23.00	22.69	22.53	22.24
			50	0	23.00	22.73	22.51	22.32
		16QAM	1	0	23.00	22.75	22.93	22.81
			1	24	23.00	22.88	22.95	22.94
			1	49	23.00	22.70	22.81	22.81
			25	0	22.00	21.77	21.49	21.40
			25	12	22.00	21.66	21.64	21.61
			25	24	22.00	21.74	21.60	21.30
			50	0	22.00	21.75	21.52	21.35

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	24.00	23.64	23.56	23.53
			1	12	24.00	23.72	23.69	23.62
			1	24	24.00	23.55	23.51	23.54
			12	0	23.00	22.64	22.53	22.73
			12	6	23.00	22.70	22.65	22.63
			12	11	23.00	22.76	22.46	22.55
			25	0	23.00	22.70	22.52	22.67
		16QAM	1	0	23.50	22.98	22.77	22.86
			1	12	23.50	23.04	22.95	22.98
			1	24	23.50	22.90	22.82	22.85
			12	0	22.00	21.66	21.55	21.75
			12	6	22.00	21.73	21.66	21.66
			12	11	22.00	21.77	21.51	21.58
			25	0	22.00	21.74	21.57	21.72

Band	Band Width	Modulation	RB Configuration		Tune-up (dBm)	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	24.00	23.76	23.75	23.71
			1	24	24.00	23.66	23.67	23.65
			1	49	24.00	23.56	23.58	23.60
			25	0	23.00	22.38	22.39	22.45
			25	12	23.00	22.65	22.66	22.63
			25	24	23.00	22.39	22.33	22.35
			50	0	22.50	22.40	22.39	22.40
		16QAM	1	0	23.50	23.09	23.01	23.06

			1	24	23.50	22.98	23.04	23.00
			1	49	23.50	22.82	22.92	22.88
			25	0	22.00	21.43	21.44	21.48
			25	12	22.00	21.70	21.70	21.65
			25	24	22.00	21.42	21.36	21.40
			50	0	21.50	21.44	21.39	21.43

7.4. WLAN & Bluetooth Output Power

7.4.1. Output Power Results Of WLAN

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11b	1	2412	16.50	15.48
	6	2437	16.50	16.23
	11	2462	16.50	15.62
802.11g	1	2412	15.50	15.46
	6	2437	15.50	15.09
	11	2462	15.50	15.14
802.11n HT20	1	2412	15.00	14.61
	6	2437	15.00	14.95
	11	2462	15.00	14.39
802.11n HT40	3	2422	14.00	13.53
	6	2437	14.00	13.49
	9	2452	14.00	13.29

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	36	5180	13.00	12.76
	40	5200	13.00	12.33
	48	5240	13.00	12.27
802.11n HT20	36	5180	13.00	12.74
	40	5200	13.00	12.18
	48	5240	13.00	12.15
802.11n HT40	38	5190	12.00	11.03
	46	5230	12.00	11.75
802.11ac VHT20	36	5180	12.00	11.70
	40	5200	12.00	11.30
	48	5240	12.00	11.42

802.11ac VHT40	38	5190	12.00	11.07
	46	5230	12.00	11.53
802.11ac VHT80	42	5210	10.00	9.95

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up (dBm)	Output Power (dBm)
802.11a	149	5745	13.00	12.58
	157	5785	13.00	12.03
	165	5825	13.00	11.28
802.11n HT20	149	5745	12.50	12.39
	157	5785	12.50	11.88
	165	5825	12.50	11.48
802.11n HT40	151	5755	12.00	11.92
	159	5795	12.00	11.68
802.11ac VHT20	149	5745	12.50	12.05
	157	5785	12.50	11.43
	165	5825	12.50	11.04
802.11ac VHT40	151	5755	12.50	12.04
	159	5795	12.50	11.78
802.11ac VHT80	155	5775	12.00	11.99

NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

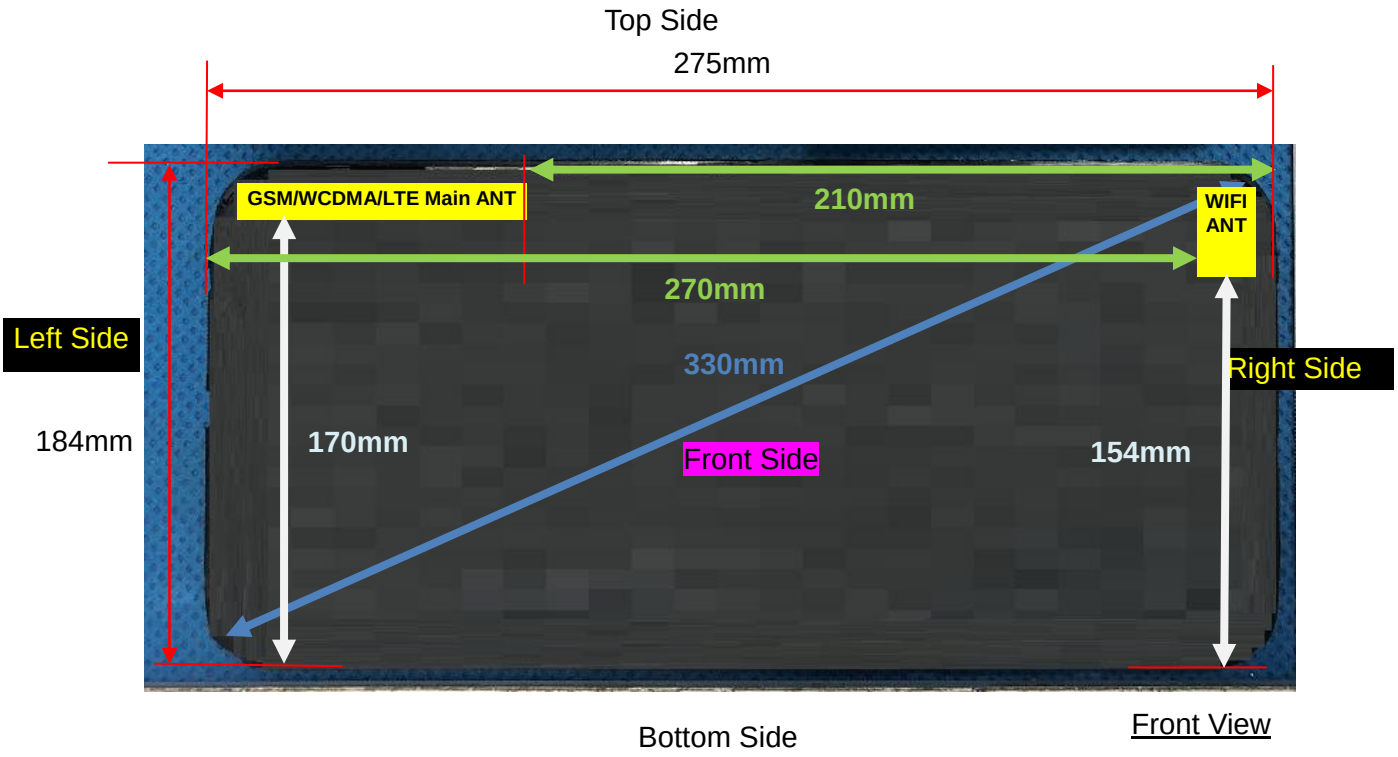
	Output Power (dBm)				
BR+EDR	Channel	Tune-up (dBm)	Data Rates		
			1M	2M	3M
	0CH	5.00	4.38	3.87	3.82
	39CH	5.00	4.31	4.48	4.45
	78CH	5.00	4.16	3.64	3.59

	Channel	Tune-up (dBm)	Output Power (dBm)
BLE			1M
	0CH	3.00	2.12
	19CH	1.00	0.34
	39CH	2.00	1.08

8. NFC

The power is too low, so there is no need to measure SAR.

9. 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
WLAN	5	5	270	5	5	154
WWAN	5	5	5	210	5	170

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

Positions for SAR tests		
Test separation distances ≤ 50 mm		
Exposure Positions	Tune-up Maximum power of WLAN 2.4G	
	16.50dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	14.02
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	14.02

	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold	14.02
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	14.02
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.2G	
	13.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.14
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.14
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.14
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.14
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WLAN 5.8G	
	13.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.63
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.63
	SAR testing required?	YES
Right Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.63
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	9.63
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of GSM 850	
	30.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	184.26
	SAR testing required?	YES

Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	184.26
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	184.26
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	184.26
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of GSM 1900	
	27.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	138.50
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	138.50
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	138.50
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	138.50
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WCDMA Band 2	
	23.50dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	61.85
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	61.85
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	61.85
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	61.85
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WCDMA Band 4	
	24.00dBm	
Front Side	Antenna to user(mm)	5

	SAR exclusion threshold	66.52
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	66.52
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	66.52
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	66.52
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of WCDMA Band 5	
	23.50dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	41.20
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	41.20
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	41.20
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	41.20
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 2	
	24.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	69.25
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	69.25
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	69.25
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	69.25
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 4	

	24.50dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	74.46
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	74.46
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	74.46
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	74.46
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 5	
	24.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	46.15
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	46.15
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	46.15
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	46.15
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 7	
	25.00 dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	101.19
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	101.19
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	101.19
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	101.19

	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 12	
	24.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of LTE Band 17	
	24.00dBm	
Front Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Back Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Left Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES
Top Side	Antenna to user(mm)	5
	SAR exclusion threshold	42.36
	SAR testing required?	YES

NOTE: Refer to section 4.3.1 of KDB 447498 D01.

Positions for SAR tests		
Test separation distances > 50 mm		
Exposure Positions	Tune-up Maximum power of WLAN 2.4G	
	16.50 dBm	44.67 mW
Left Side	Antenna to user(mm)	270
	SAR exclusion threshold(mW)	2296
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	154
	SAR exclusion threshold(mW)	1136

	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.2G	
	13.00 dBm	19.95 mW
Left Side	Antenna to user(mm)	270
	SAR exclusion threshold(mW)	2266
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	154
	SAR exclusion threshold(mW)	1106
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WLAN 5.8G	
	13.00 dBm	19.95 mW
Left Side	Antenna to user(mm)	270
	SAR exclusion threshold(mW)	2262
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	154
	SAR exclusion threshold(mW)	1102
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of GSM 850	
	30.00 dBm	1000.00 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1055
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	832
	SAR testing required?	YES
Exposure Positions	Tune-up Maximum power of GSM 1900	
	27.00 dBm	501.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	2309
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1149
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WCDMA Band 2	
	23.50 dBm	223.87 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	2309
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1149
	SAR testing required?	NO

Exposure Positions	Tune-up Maximum power of WCDMA Band 4	
	24.00 dBm	251.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	2309
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1149
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of WCDMA Band 5	
	23.50 dBm	223.87 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1055
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	832
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 2	
	24.00 dBm	251.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	2309
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1149
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 4	
	24.50 dBm	281.84 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	2309
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1149
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 5	
	24.00 dBm	251.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1055
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	832
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 7	

	25.00 dBm	316.23 mV
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1709
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	1309
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 12	
	24.00 dBm	251.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1055
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	832
	SAR testing required?	NO
Exposure Positions	Tune-up Maximum power of LTE Band 17	
	24.00 dBm	251.19 mW
Right Side	Antenna to user(mm)	210
	SAR exclusion threshold(mW)	1055
	SAR testing required?	NO
Bottom Side	Antenna to user(mm)	170
	SAR exclusion threshold(mW)	832
	SAR testing required?	NO

NOTE: Refer to section 4.3.1 of KDB 447498 D01.

10. 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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[$\sqrt{f_{(GHZ)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 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	5.00	3.16	5	2.480	1	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:

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

When the minimum test separation distance is < 5 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	Body	5.00	3.16	5	2.48	7.5	0.132
Bluetooth	Hotspot	5.00	3.16	5	2.48	7.5	0.132

NOTE: Estimated SAR calculation for Bluetooth

11. SAR Results

11.1. SAR measurement results

11.1.1. SAR measurement Result of GSM850

Test Position of Body-Worn with 0mm	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	189/836.4	GPRS(GMSK 4TS)	0.234	0.138	0.36	29.15	30.00	0.285	2023/12/14	1#
Back Side	189/836.4	GPRS(GMSK 4TS)	0.150	0.101	2.08	29.15	30.00	0.182	2023/12/14	

NOTE: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	189/836.4	GPRS(GMSK 4TS)	0.234	0.138	0.36	29.15	30.00	0.285	2023/12/14	1#
Back Side	189/836.4	GPRS(GMSK 4TS)	0.150	0.101	2.08	29.15	30.00	0.182	2023/12/14	
Left Side	189/836.4	GPRS(GMSK 4TS)	0.057	0.038	0.40	29.15	30.00	0.069	2023/12/14	

Top Side	189/836.4	GPRS(GMSK 4TS)	0.100	0.065	-0.09	29.15	30.00	0.122	2023/12/14	
Bottom Side	189/836.4	GPRS(GMSK 4TS)	0.022	0.016	3.21	29.15	30.00	0.027	2023/12/14	

NOTE: Hotspot SAR test results of GSM850

11.1.2. SAR measurement Result of GSM1900

Test Position of Body-Worn with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
Front Side	661/1880	GPRS(GMSK 4TS)	0.991	0.548	-3.07	26.99	27.00	0.993	2023/12/15	2#
Back Side	661/1880	GPRS(GMSK 4TS)	0.925	0.415	-0.06	26.99	27.00	0.927	2023/12/15	
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.956	0.433	1.51	26.98	27.00	0.960	2023/12/15	
Front Side	810/1909.8	GPRS(GMSK 4TS)	0.975	0.416	0.07	26.97	27.00	0.982	2023/12/15	
Front Side Repeated	661/1880	GPRS(GMSK 4TS)	0.987	0.542	1.25	26.99	27.00	0.989	2023/12/15	

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	661/1880	GPRS(GMSK 4TS)	0.991	0.548	-3.07	26.99	27.00	0.993	2023/12/15	2#
Back Side	661/1880	GPRS(GMSK 4TS)	0.925	0.415	-0.06	26.99	27.00	0.927	2023/12/15	
Left Side	661/1880	GPRS(GMSK 4TS)	0.309	0.129	1.42	26.99	27.00	0.310	2023/12/15	
Top Side	661/1880	GPRS(GMSK 4TS)	0.500	0.205	3.49	26.99	27.00	0.501	2023/12/15	
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.956	0.433	1.51	26.98	27.00	0.960	2023/12/15	
Front Side	810/1909.8	GPRS(GMSK 4TS)	0.975	0.416	0.07	26.97	27.00	0.982	2023/12/15	

Front Side Repeated	661/1880	GPRS(GMSK 4TS)	0.987	0.542	1.25	26.99	27.00	0.989	2023/12/15	

NOTE: Hotspot SAR test results of GSM1900

11.1.3. SAR measurement Result of WCDMA Band 2

Test Position of Body-Worn with 0mm	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	9400/1880	RMC12.2K	0.856	0.437	-1.78	23.41	23.50	0.874	2023/12/15	
Back Side	9400/1880	RMC12.2K	0.541	0.295	0.00	23.41	23.50	0.552	2023/12/15	
Front Side	9262/1852.4	RMC12.2K	0.893	0.458	-0.97	23.47	23.50	0.899	2023/12/15	3#
Front Side	9538/1907.6	RMC12.2K	0.772	0.392	-0.89	23.31	23.50	0.807	2023/12/15	
Front Side Repeated	9262/1852.4	RMC12.2K	0.887	0.455	2.36	23.47	23.50	0.893	2023/12/15	

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

Test Position of Hotspot with 0mm	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	0.856	0.437	-1.78	23.41	23.50	0.874	2023/12/15	
Back Side	9400/1880	RMC12.2K	0.541	0.295	0.00	23.41	23.50	0.552	2023/12/15	
Left Side	9400/1880	RMC12.2K	0.168	0.092	0.54	23.41	23.50	0.172	2023/12/15	
Top Side	9400/1880	RMC12.2K	0.275	0.147	-0.40	23.41	23.50	0.281	2023/12/15	
Front Side	9262/1852.4	RMC12.2K	0.893	0.458	-0.97	23.47	23.50	0.899	2023/12/15	3#
Front Side	9538/1907.6	RMC12.2K	0.772	0.392	-0.89	23.31	23.50	0.807	2023/12/15	
Front Side Repeated	9262/1852.4	RMC12.2K	0.887	0.455	2.36	23.47	23.50	0.893	2023/12/15	

NOTE: Hotspot SAR test results of WCDMA Band 2

11.1.4. SAR measurement Result of WCDMA Band 4

Test Position of Body-Worn with 0mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)	Date	Plot
			1g	10g						
Front Side	1413/1732.6	RMC12.2K	0.858	0.453	-0.63	23.49	23.50	0.860	2023/12/06	
Back Side	1413/1732.6	RMC12.2K	0.536	0.285	1.23	23.49	23.50	0.537	2023/12/06	
Front Side	1312/1712.4	RMC12.2K	0.793	0.423	-0.71	23.48	23.50	0.797	2023/12/06	
Front Side	1513/1752.6	RMC12.2K	0.909	0.478	-0.71	23.47	23.50	0.915	2023/12/06	3#
Front Side Repeated	1513/1752.6	RMC12.2K	0.902	0.470	2.54	23.47	23.50	0.908	2023/12/06	

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

Test Position of Hotspot with 0mm	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	0.858	0.453	-0.63	23.49	23.50	0.860	2023/12/06	
Back Side	1413/1732.6	RMC12.2K	0.536	0.285	1.23	23.49	23.50	0.537	2023/12/06	
Left Side	1413/1732.6	RMC12.2K	0.264	0.137	1.70	23.49	23.50	0.265	2023/12/06	
Top Side	9400/1880	RMC12.2K	0.430	0.218	-2.32	23.49	23.50	0.431	2023/12/06	
Front Side	1312/1712.4	RMC12.2K	0.793	0.423	-0.71	23.48	23.50	0.797	2023/12/06	
Front Side	1513/1752.6	RMC12.2K	0.909	0.478	-0.71	23.47	23.50	0.915	2023/12/06	3#
Front Side Repeated	1513/1752.6	RMC12.2K	0.902	0.470	2.54	23.47	23.50	0.908	2023/12/06	

NOTE: Hotspot SAR test results of WCDMA Band 4

11.1.5. SAR measurement Result of WCDMA Band 5

Test Position of Body-Worn with 0mm	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	0.161	0.102	1.29	23.18	23.50	0.173	2023/12/14	5#
Back Side	4182/836.4	RMC12.2K	0.123	0.085	-0.13	23.18	23.50	0.132	2023/12/14	

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

Test Position of Hotspot with	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						

0mm										
Front Side	4182/836.4	RMC12.2K	0.161	0.102	1.29	23.18	23.50	0.173	2023/12/14	5#
Back Side	4182/836.4	RMC12.2K	0.123	0.085	-0.13	23.18	23.50	0.132	2023/12/14	
Left Side	4182/836.4	RMC12.2K	0.048	0.033	3.23	23.18	23.50	0.052	2023/12/14	
Top Side	4182/836.4	RMC12.2K	0.080	0.054	-2.16	23.18	23.50	0.086	2023/12/14	

NOTE: Hotspot SAR test results of WCDMA Band 5

11.1.6. SAR measurement Result of LTE Band 2

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	18900/1880	20M QPSK(1,49)	0.912	0.469	-0.56	23.88	24.00	0.938	2023/12/15	
Back Side	18900/1880	20M QPSK(1,49)	0.602	0.320	1.54	23.88	24.00	0.619	2023/12/15	
Front Side	18700/1860	20M QPSK(1,49)	0.932	0.481	-0.27	23.95	24.00	0.943	2023/12/15	9#
Front Side	19100/1900	20M QPSK(1,49)	0.876	0.448	0.71	23.83	24.00	0.911	2023/12/15	
Front Side Repeated	18700/1860	20M QPSK(1,49)	0.925	0.475	2.22	23.95	24.00	0.936	2023/12/15	
50%RB										
Front Side	18900/1880	20M QPSK(50,0)	0.508	0.250	-3.48	22.72	23.50	0.608	2023/12/15	
Back Side	18900/1880	20M QPSK(50,0)	0.352	0.163	4.23	22.72	23.50	0.421	2023/12/15	

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

Test Position of Hotspot with 0mm	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	18900/1880	20M	0.912	0.469	-0.56	23.88	24.00	0.938	2023/12/15	

Side		QPSK(1,49)								
Back Side	18900/1880	20M QPSK(1,49)	0.602	0.320	1.54	23.88	24.00	0.619	2023/12/15	
Left Side	18900/1880	20M QPSK(1,49)	0.189	0.097	-0.13	23.88	24.00	0.194	2023/12/15	
Top Side	18900/1880	20M QPSK(1,49)	0.315	0.164	-2.32	23.88	24.00	0.324	2023/12/15	
Front Side	18700/1860	20M QPSK(1,49)	0.932	0.481	-0.27	23.95	24.00	0.943	2023/12/15	9#
Front Side	19100/1900	20M QPSK(1,49)	0.876	0.448	0.71	23.83	24.00	0.911	2023/12/15	
Front Side Repeated	18700/1860	20M QPSK(1,49)	0.925	0.475	2.22	23.95	24.00	0.936	2023/12/15	
50%RB										
Front Side	18900/1880	20M QPSK(50,0)	0.508	0.250	-3.48	22.72	23.50	0.608	2023/12/15	
Back Side	18900/1880	20M QPSK(50,0)	0.352	0.163	4.23	22.72	23.50	0.421	2023/12/15	
Left Side	18900/1880	20M QPSK(50,0)	0.099	0.051	0.19	22.72	23.50	0.118	2023/12/15	
Top Side	18900/1880	20M QPSK(50,0)	0.166	0.092	-1.04	22.72	23.50	0.199	2023/12/15	
100%RB										
Front Side	18900/1880	20M QPSK(100,0)	0.403	0.210	1.23	22.78	23.00	0.424	2023/12/15	

NOTE: Hotspot SAR test results of LTE Band 2

11.1.7. SAR measurement Result of LTE Band 4

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	20175/1732.5	20M QPSK(1,49)	0.869	0.464	-0.66	24.49	24.50	0.871	2023/12/06	
Back Side	20175/1732.5	20M QPSK(1,49)	0.623	0.329	1.10	24.49	24.50	0.624	2023/12/06	
Front Side	20050/1720	20M QPSK(1,49)	0.841	0.451	-0.18	24.48	24.50	0.845	2023/12/06	
Front Side	20300/1745	20M	0.922	0.490	-0.24	24.47	24.50	0.928	2023/12/06	10#

		QPSK(1,49)								
Front Side Repeated	20300/1745	20M QPSK(1,49)	0.910	0.480	1.39	24.47	24.50	0.916	2023/12/15	
50%RB										
Front Side	20175/1732.5	20M QPSK(50,24)	0.504	0.242	-4.86	23.11	23.50	0.551	2023/12/06	
Back Side	20175/1732.5	20M QPSK(50,24)	0.328	0.192	2.13	23.11	23.50	0.359	2023/12/06	

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

Test Position of Hotspot with 0mm	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)	0.869	0.464	-0.66	24.49	24.50	0.871	2023/12/06	
Back Side	20175/1732.5	20M QPSK(1,49)	0.623	0.329	1.10	24.49	24.50	0.624	2023/12/06	
Left Side	20175/1732.5	20M QPSK(1,49)	0.198	0.102	-0.25	24.49	24.50	0.198	2023/12/06	
Top Side	20175/1732.5	20M QPSK(1,49)	0.320	0.169	-1.11	24.49	24.50	0.321	2023/12/06	
Front Side	20050/1720	20M QPSK(1,49)	0.841	0.451	-0.18	24.48	24.50	0.845	2023/12/06	
Front Side	20300/1745	20M QPSK(1,49)	0.922	0.490	-0.24	24.47	24.50	0.928	2023/12/06	10#
Front Side Repeated	20300/1745	20M QPSK(1,49)	0.910	0.480	1.39	24.47	24.50	0.916	2023/12/15	
50%RB										
Front Side	20175/1732.5	20M QPSK(50,24)	0.504	0.242	-4.86	23.11	23.50	0.551	2023/12/06	
Back Side	20175/1732.5	20M QPSK(50,24)	0.328	0.192	2.13	23.11	23.50	0.359	2023/12/06	
Left Side	20175/1732.5	20M QPSK(50,24)	0.108	0.055	-4.12	23.11	23.50	0.118	2023/12/06	
Top Side	20175/1732.5	20M QPSK(50,24)	0.169	0.099	-1.12	23.11	23.50	0.185	2023/12/06	
100%RB										
Front Side	20175/1732.5	20M QPSK(100,0)	0.390	0.187	2.45	23.04	23.50	0.434	2023/12/06	

NOTE: Hotspot SAR test results of LTE Band 4

11.1.8. SAR measurement Result of LTE Band 5

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.188	0.119	0.79	23.71	24.00	0.201	2023/12/14	11#
Back Side	20525/836.5	10M QPSK(1,24)	0.109	0.065	3.54	23.71	24.00	0.117	2023/12/14	
50%RB										
Front Side	20525/836.5	10M QPSK(25,12)	0.107	0.070	0.43	22.69	23.00	0.115	2023/12/14	
Back Side	20525/836.5	10M QPSK(25,12)	0.063	0.039	4.06	22.69	23.00	0.068	2023/12/14	

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

Test Position of Hotspot with 0mm	Test channel /Freq.	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
1RB										
Front Side	20525/836.5	10M QPSK(1,24)	0.188	0.119	0.79	23.71	24.00	0.201	2023/12/14	11#
Back Side	20525/836.5	10M QPSK(1,24)	0.109	0.065	3.54	23.71	24.00	0.117	2023/12/14	
Left Side	20525/836.5	10M QPSK(1,24)	0.063	0.039	2.49	23.71	24.00	0.067	2023/12/14	
Top Side	20525/836.5	10M QPSK(1,24)	0.105	0.064	1.92	23.71	24.00	0.112	2023/12/14	
50%RB										
Front Side	20525/836.5	10M QPSK(25,12)	0.107	0.070	0.43	22.69	23.00	0.115	2023/12/14	
Back Side	20525/836.5	10M QPSK(25,12)	0.063	0.039	4.06	22.69	23.00	0.068	2023/12/14	
Left Side	20525/836.5	10M QPSK(25,12)	0.038	0.021	-4.17	22.69	23.00	0.041	2023/12/14	

Top Side	20525/836.5	10M QPSK(25,12)	0.062	0.038	-1.36	22.69	23.00	0.067	2023/12/14	

NOTE: Hotspot SAR test results of LTE Band 5

11.1.9. SAR measurement Result of LTE Band 7

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	21100/2535	20M QPSK(1,49)	0.462	0.243	2.88	24.98	25.00	0.464	2023/12/11	
Back Side	21100/2535	20M QPSK(1,49)	0.731	0.400	-1.80	24.98	25.00	0.734	2023/12/11	12#
50%RB										
Front Side	21100/2535	20M QPSK(50,24)	0.272	0.126	4.08	23.67	24.50	0.329	2023/12/11	
Back Side	21100/2535	20M QPSK(50,24)	0.419	0.206	2.81	23.67	24.50	0.507	2023/12/11	

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

Test Position of Hotspot with 0mm	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)	0.462	0.243	2.88	24.98	25.00	0.464	2023/12/11	
Back Side	21100/2535	20M QPSK(1,49)	0.731	0.400	-1.80	24.98	25.00	0.734	2023/12/11	12#
Left Side	21100/2535	20M QPSK(1,49)	0.234	0.124	3.32	24.98	25.00	0.235	2023/12/11	
Top Side	21100/2535	20M QPSK(1,49)	0.370	0.196	3.52	24.98	25.00	0.372	2023/12/11	
50%RB										
Front Side	21100/2535	20M QPSK(50,24)	0.272	0.126	4.08	23.67	24.50	0.329	2023/12/11	
Back	21100/2535	20M	0.419	0.206	2.81	23.67	24.50	0.507	2023/12/11	

Side		QPSK(50,24)								
Left Side	21100/2535	20M QPSK(50,24)	0.120	0.067	3.12	23.67	24.50	0.145	2023/12/11	
Top Side	21100/2535	20M QPSK(50,24)	0.208	0.108	-3.76	23.67	24.50	0.252	2023/12/11	

NOTE: Hotspot SAR test results of LTE Band 7

11.1.10. SAR measurement Result of LTE Band 12

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	23095/707.5	10M QPSK(1,24)	0.115	0.073	-0.12	23.58	24.00	0.127	2023/12/05	13#
Back Side	23095/707.5	10M QPSK(1,24)	0.084	0.068	1.24	23.58	24.00	0.093	2023/12/05	
50%RB										
Front Side	23095/707.5	10M QPSK(25,0)	0.059	0.037	-3.60	22.43	23.00	0.067	2023/12/05	
Back Side	23095/707.5	10M QPSK(25,0)	0.047	0.035	-2.85	22.43	23.00	0.054	2023/12/05	

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

Test Position of Hotspot with 0mm	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)	0.115	0.073	-0.12	23.58	24.00	0.127	2023/12/05	13#
Back Side	23095/707.5	10M QPSK(1,24)	0.084	0.068	1.24	23.58	24.00	0.093	2023/12/05	
Left Side	23095/707.5	10M QPSK(1,24)	0.048	0.030	1.37	23.58	24.00	0.053	2023/12/05	
Top Side	23095/707.5	10M QPSK(1,24)	0.070	0.044	-2.48	23.58	24.00	0.077	2023/12/05	
50%RB										

Front Side	23095/707.5	10M QPSK(25,0)	0.059	0.037	-3.60	22.43	23.00	0.067	2023/12/05	
Back Side	23095/707.5	10M QPSK(25,0)	0.047	0.035	-2.85	22.43	23.00	0.054	2023/12/05	
Left Side	23095/707.5	10M QPSK(25,0)	0.028	0.016	-4.87	22.43	23.00	0.032	2023/12/05	
Top Side	23095/707.5	10M QPSK(25,0)	0.037	0.023	-2.81	22.43	23.00	0.042	2023/12/05	

NOTE: Hotspot SAR test results of LTE Band 12

11.1.11. SAR measurement Result of LTE Band 17

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
1RB										
Front Side	23790/710	10M QPSK(1,0)	0.087	0.049	-3.63	23.75	24.00	0.092	2023/12/05	14#
Back Side	23790/710	10M QPSK(1,0)	0.057	0.032	3.10	23.75	24.00	0.060	2023/12/05	
50%RB										
Front Side	23790/710	10M QPSK(25,12)	0.051	0.028	3.46	22.66	23.00	0.055	2023/12/05	
Back Side	23790/710	10M QPSK(25,12)	0.031	0.019	1.65	22.66	23.00	0.034	2023/12/05	

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

Test Position of Hotspot with 0mm	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)	0.087	0.049	-3.63	23.75	24.00	0.092	2023/12/05	14#
Back Side	23790/710	10M QPSK(1,0)	0.057	0.032	3.10	23.75	24.00	0.060	2023/12/05	
Left Side	23790/710	10M QPSK(1,0)	0.027	0.015	2.39	23.75	24.00	0.029	2023/12/05	

Top Side	23790/710	10M QPSK(1,0)	0.045	0.024	-1.19	23.75	24.00	0.048	2023/12/05	
50%RB										
Front Side	23790/710	10M QPSK(25,12)	0.051	0.028	3.46	22.66	23.00	0.055	2023/12/05	
Back Side	23790/710	10M QPSK(25,12)	0.031	0.019	1.65	22.66	23.00	0.034	2023/12/05	
Left Side	23790/710	10M QPSK(25,12)	0.015	0.008	1.28	22.66	23.00	0.016	2023/12/05	
Top Side	23790/710	10M QPSK(25,12)	0.025	0.014	-0.12	22.66	23.00	0.027	2023/12/05	

NOTE: Hotspot SAR test results of LTE Band 17

11.1.12. SAR measurement Result of WLAN 2.4G

Test Position of Body-Worn with 0mm	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
			1-g	10-g						
Front Side	6/2437	802.11b	0.513	0.261	1.83	16.23	16.50	0.546	2023/12/07	5#
Back Side	6/2437	802.11b	0.325	0.194	-1.88	16.23	16.50	0.346	2023/12/07	

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

Test Position of Hotspot with 0mm	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	0.513	0.261	1.83	16.23	16.50	0.546	2023/12/07	5#
Back Side	6/2437	802.11b	0.325	0.194	-1.88	16.23	16.50	0.346	2023/12/07	
Right Side	6/2437	802.11b	0.102	0.058	-2.19	16.23	16.50	0.109	2023/12/07	
Top Side	6/2437	802.11b	0.111	0.066	-1.92	16.23	16.50	0.118	2023/12/07	

NOTE: Hotspot SAR test results of WLAN 2.4G

11.1.13. SAR measurement Result of WLAN 5.2G

Test Position of Body-Worn with 0mm	Test channel /Freq	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	36/5180	802.11a	0.459	0.355	0.38	12.76	13.00	0.485	2023/12/16	6#
Back Side	36/5180	802.11a	0.215	0.106	1.20	12.76	13.00	0.227	2023/12/16	

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

Test Position of Hotspot with 0mm	Test channel /Freq	Mode	SAR Value (W/kg)		Power Drift(%)	Conducted Power (dBm)	Tune-up Power (dBm)	Scaled SAR 1-g (W/Kg)	Date	Plot
			1-g	10-g						
Front Side	36/5180	802.11a	0.459	0.355	0.38	12.76	13.00	0.485	2023/12/16	6#
Back Side	36/5180	802.11a	0.215	0.106	1.20	12.76	13.00	0.227	2023/12/16	
Right Side	36/5180	802.11a	0.083	0.042	0.21	12.76	13.00	0.088	2023/12/16	
Top Side	36/5180	802.11a	0.096	0.050	1.17	12.76	13.00	0.101	2023/12/16	

NOTE: Hotspot SAR test results of WLAN 5.2G

11.1.14. SAR measurement Result of WLAN 5.8G

Test Position of Body-Worn with 0mm	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	149/5745	802.11a	0.504	0.421	1.33	12.58	13.00	0.555	2023/12/08	7#
Back Side	149/5745	802.11a	0.306	0.187	0.21	12.58	13.00	0.337	2023/12/08	

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

Test Position of Hotspot with 0mm	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	149/5745	802.11a	0.504	0.421	1.33	12.58	13.00	0.555	2023/12/08	7#
Back Side	149/5745	802.11a	0.306	0.187	0.21	12.58	13.00	0.337	2023/12/08	
Right Side	149/5745	802.11a	0.091	0.054	0.65	12.58	13.00	0.100	2023/12/08	
Top Side	149/5745	802.11a	0.100	0.061	1.47	12.58	13.00	0.110	2023/12/08	

NOTE: Hotspot SAR test results of WLAN 5.8G

11.2. SAR Summation Scenario

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

1) Scalar SAR summation < 1.6W/kg.

2) SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (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 ≤ 0.04, simultaneously transmission SAR measurement is not necessary.

Test Position		Scaled SARMAX		∑1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DTS			
Body-Worn	Front Side	0.993	0.546	1.539	N/A	N/A
	Back Side	0.927	0.346	1.273	N/A	N/A
Hotspot	Front Side	0.993	0.546	1.539	N/A	N/A
	Back Side	0.927	0.346	1.273	N/A	N/A
	Left Side	0.310	N/A	0.310	N/A	N/A
	Right Side	N/A	0.109	0.109	N/A	N/A
	Top Side	0.501	0.118	0.619	N/A	N/A
	Bottom Side	0.027	N/A	0.027	N/A	N/A

Test Position		Scaled SARMAX		∑1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	NII			
Body-Worn	Front Side	0.993	0.555	1.548	N/A	N/A
	Back Side	0.927	0.337	1.264	N/A	N/A
Hotspot	Front Side	0.993	0.555	1.548	N/A	N/A
	Back Side	0.927	0.337	1.264	N/A	N/A
	Left Side	0.310	N/A	0.310	N/A	N/A
	Right Side	N/A	0.100	0.100	N/A	N/A
	Top Side	0.501	0.110	0.611	N/A	N/A
	Bottom Side	0.027	N/A	0.027	N/A	N/A

Test Position		Scaled SARMAX		∑1-g SAR (W/Kg)	SPLSR	Remark
		WWAN	DSS			
Body-Worn	Front Side	0.993	0.132	1.125	N/A	N/A
	Back Side	0.927	0.132	1.059	N/A	N/A
Hotspot	Front Side	0.993	0.132	1.125	N/A	N/A

	Back Side	0.927	0.132	1.059	N/A	N/A
	Left Side	0.310	0.132	0.442	N/A	N/A
	Right Side	N/A	0.132	0.132	N/A	N/A
	Top Side	0.501	0.132	0.633	N/A	N/A
	Bottom Side	0.027	0.132	0.159	N/A	N/A

12. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

13. Appendix B. System Check Plots

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MEASUREMENT 1 System Performance Check - 750MHz
MEASUREMENT 2 System Performance Check - 835MHz
MEASUREMENT 3 System Performance Check - 1800MHz
MEASUREMENT 4 System Performance Check - 1900MHz
MEASUREMENT 5 System Performance Check - 2450MHz
MEASUREMENT 6 System Performance Check - 2600MHz
MEASUREMENT 7 System Performance Check - 5200MHz
MEASUREMENT 8 System Performance Check - 5800MHz

MEASUREMENT 1

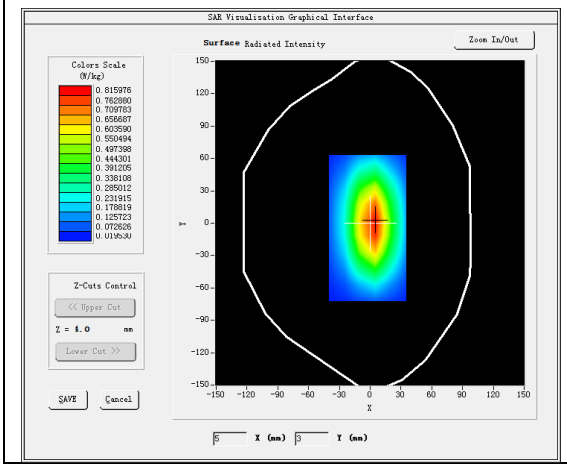
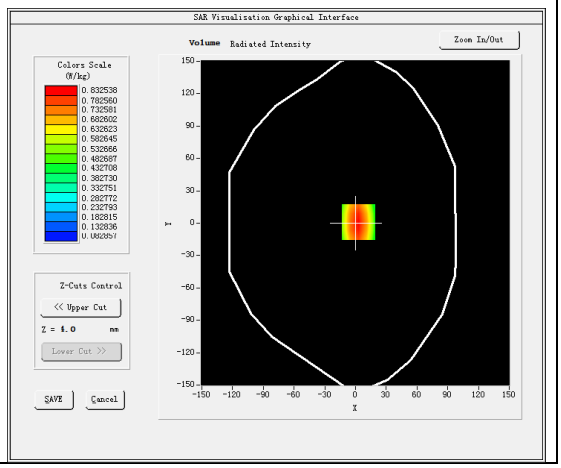
Date of measurement: 5/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW750
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.37

B. SAR Measurement Results

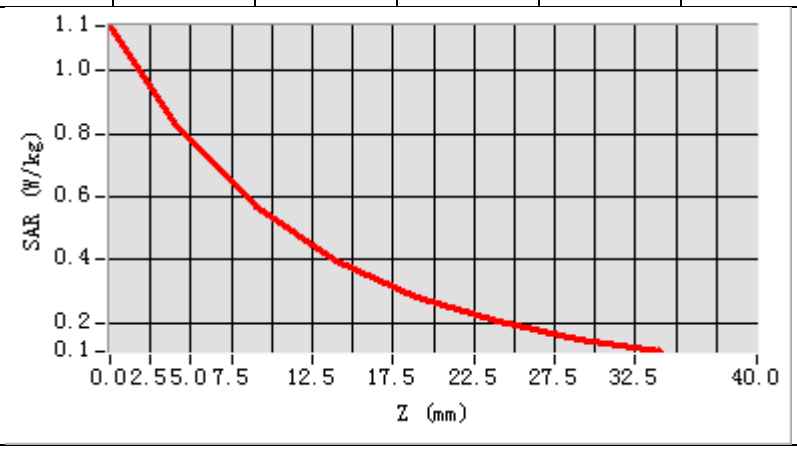
Frequency (MHz)	750.000000
Relative permittivity (real part)	42.032105
Relative permittivity (imaginary part)	21.999511
Conductivity (S/m)	0.916646
Variation (%)	2.730000

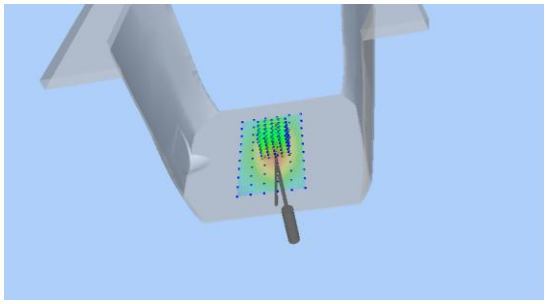
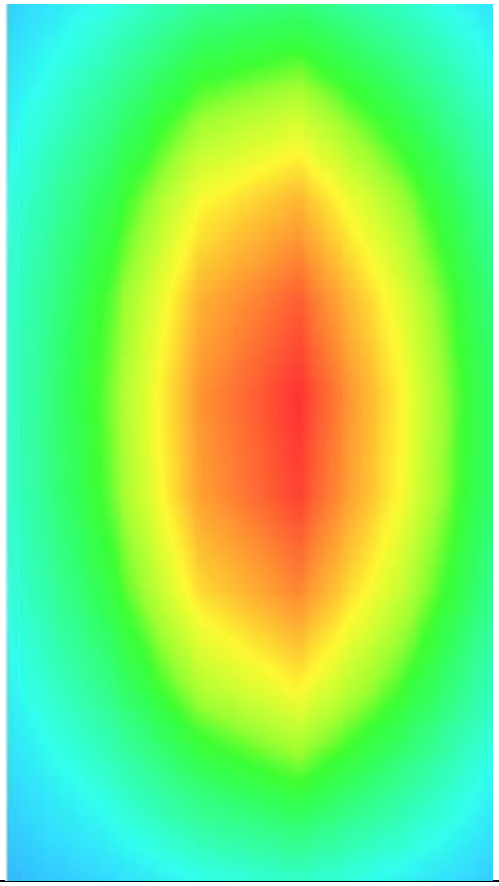
SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=1.00
SAR Peak: 1.14 W/kg

SAR 10g (W/Kg)	0.516332
SAR 1g (W/Kg)	0.808321

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.1492	0.8317	0.5683	0.3987	0.2835	0.2035	0.1445



3D screen shot	Hot spot position
	

MEASUREMENT 2

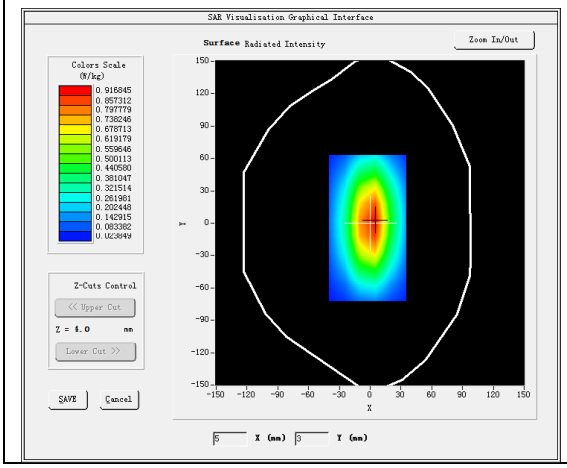
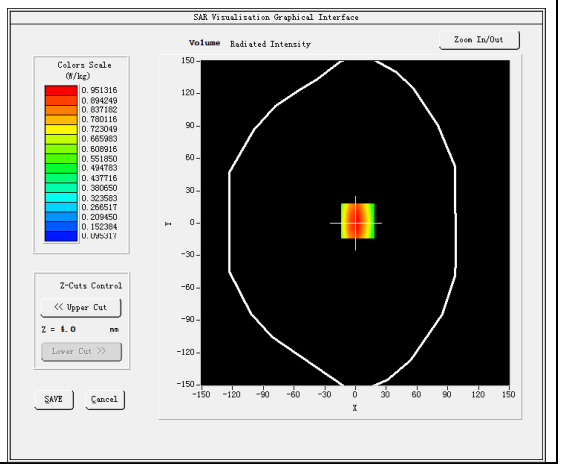
Date of measurement: 14/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW835
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.32

B. SAR Measurement Results

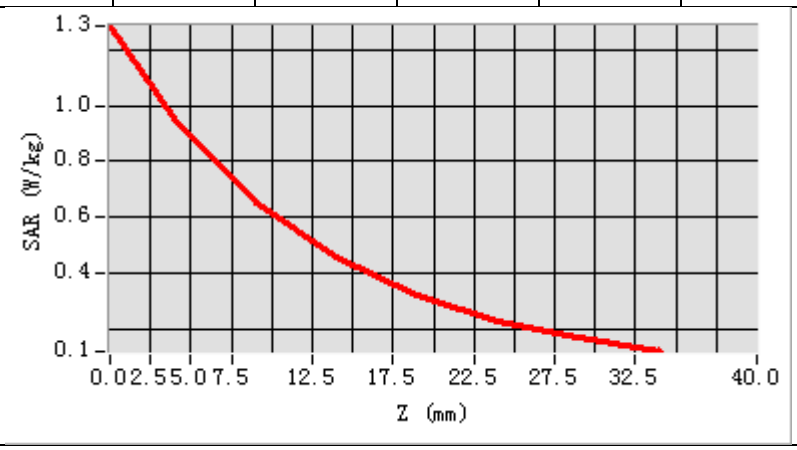
Frequency (MHz)	835.000000
Relative permittivity (real part)	41.406160
Relative permittivity (imaginary part)	19.316538
Conductivity (S/m)	0.896073
Variation (%)	-2.720000

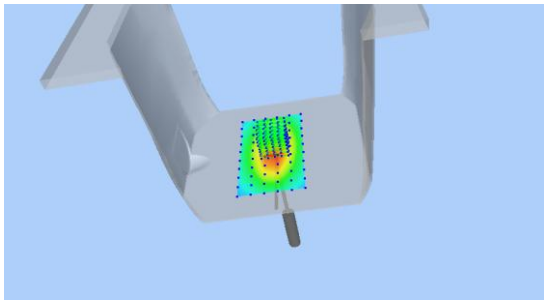
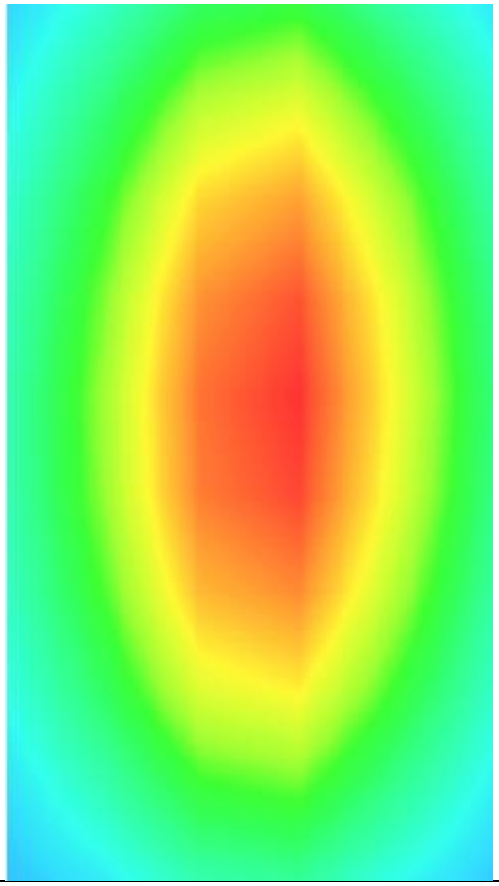
SURFACE SAR	VOLUME SAR
	

Maximum location: X=2.00, Y=2.00
SAR Peak: 1.29 W/kg

SAR 10g (W/Kg)	0.607333
SAR 1g (W/Kg)	1.041172

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.2821	0.9559	0.6532	0.4562	0.3263	0.2309	0.1726



3D screen shot	Hot spot position
	

MEASUREMENT 3

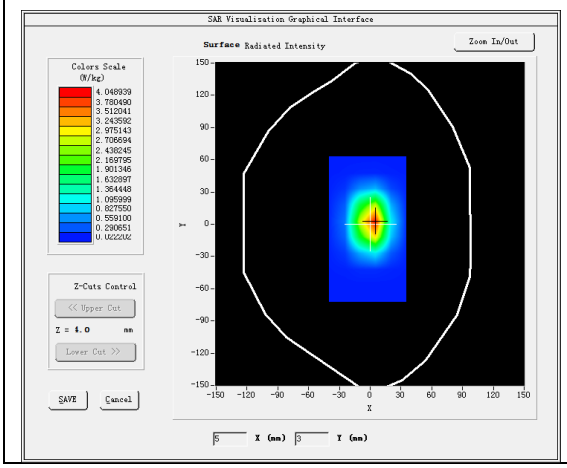
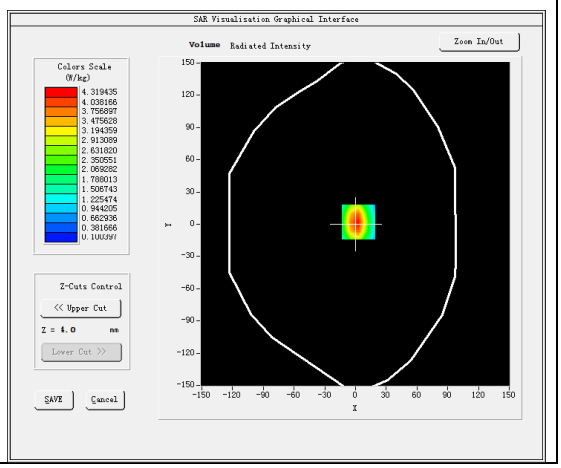
Date of measurement: 6/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1800
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.45

B. SAR Measurement Results

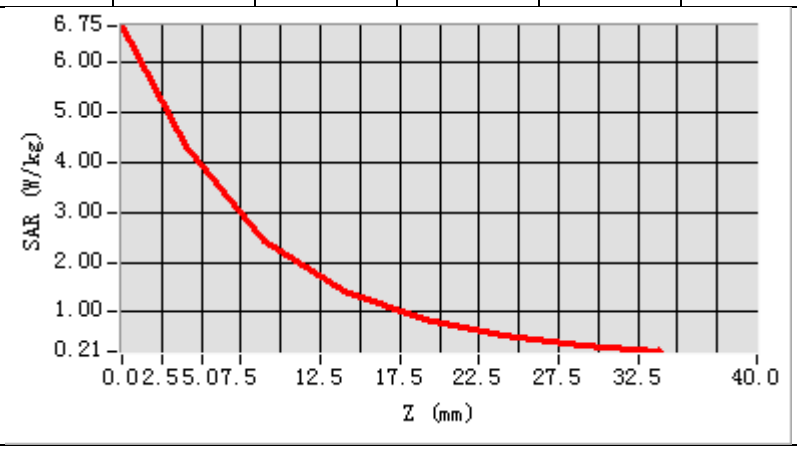
Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.639629
Relative permittivity (imaginary part)	13.926271
Conductivity (S/m)	1.392627
Variation (%)	2.980000

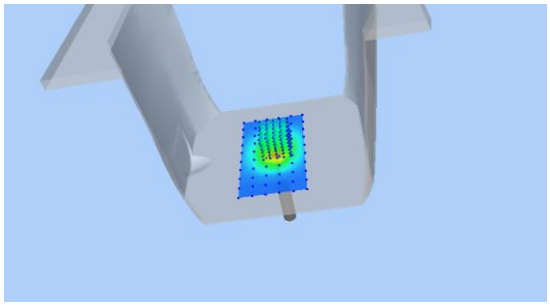
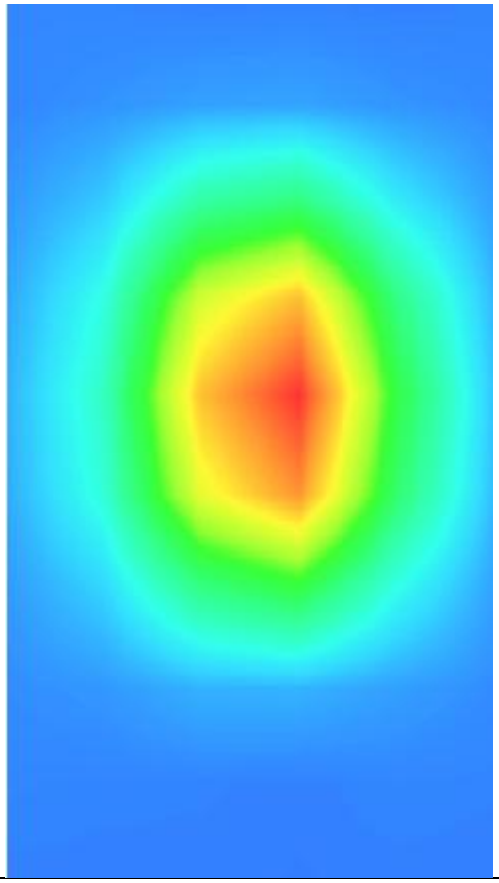
SURFACE SAR	**VOLUME SAR**
	

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

SAR 10g (W/Kg)	1.888307
SAR 1g (W/Kg)	3.556066

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.7474	4.3111	2.4329	1.4203	0.8572	0.5231	0.3234



3D screen shot	Hot spot position
	

MEASUREMENT 4

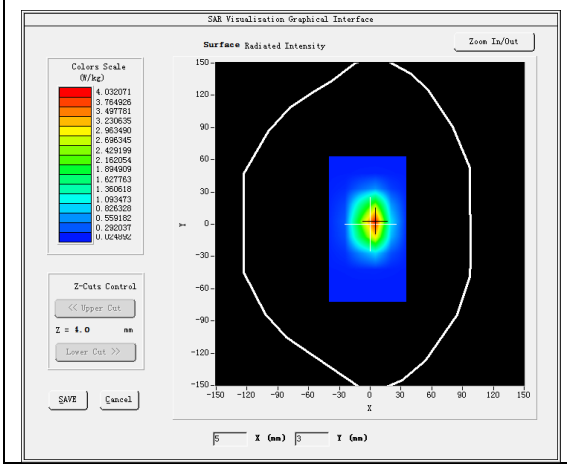
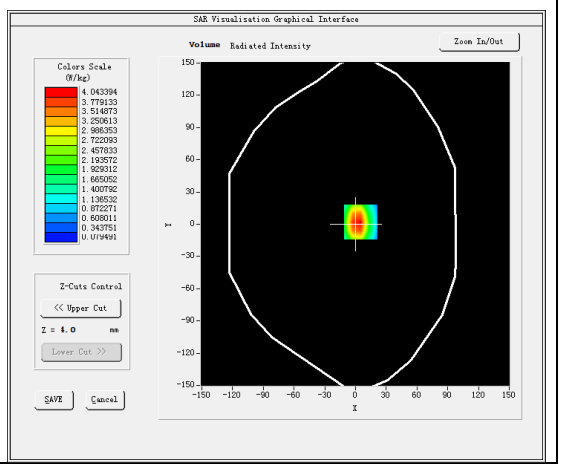
Date of measurement: 15/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW1900
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.63

B. SAR Measurement Results

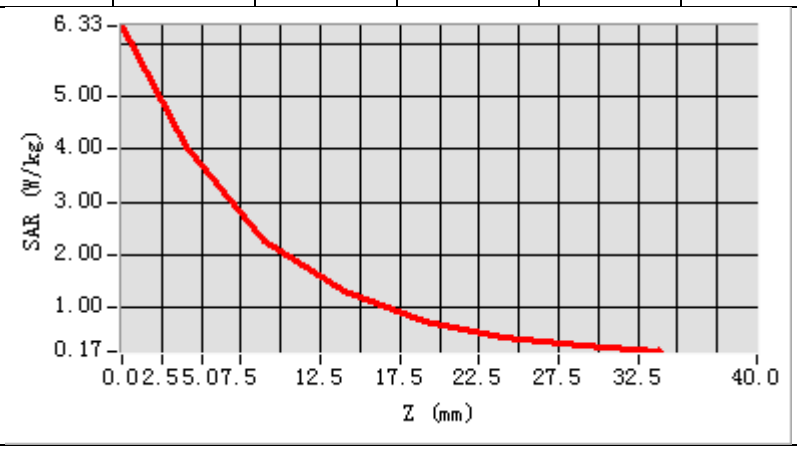
Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.977879
Relative permittivity (imaginary part)	13.674442
Conductivity (S/m)	1.443413
Variation (%)	2.220000

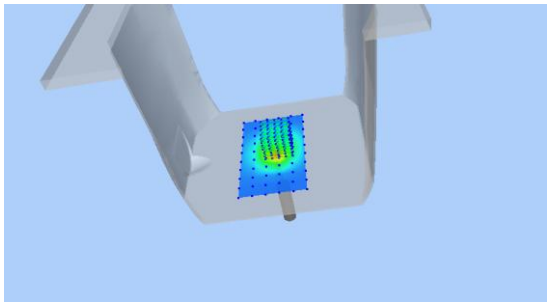
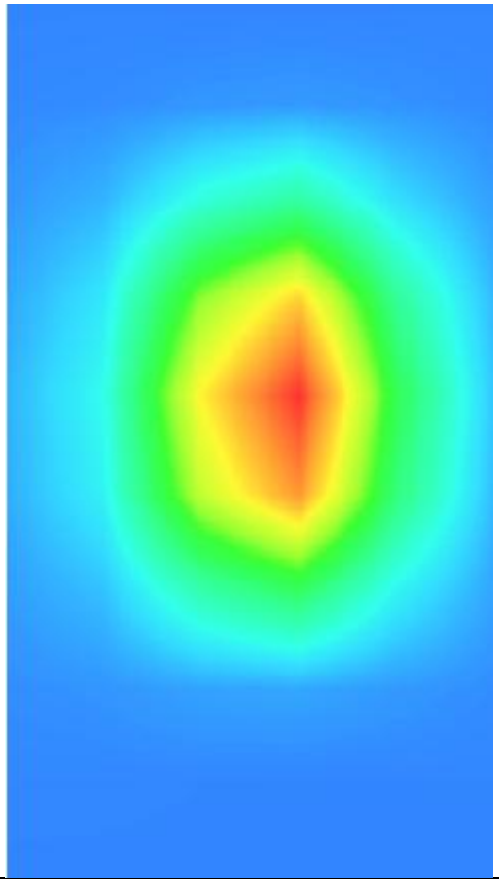
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	2.075347
SAR 1g (W/Kg)	3.759221

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	6.3247	4.0419	2.2630	1.3026	0.7618	0.4514	0.2794



3D screen shot	Hot spot position
	

MEASUREMENT 5

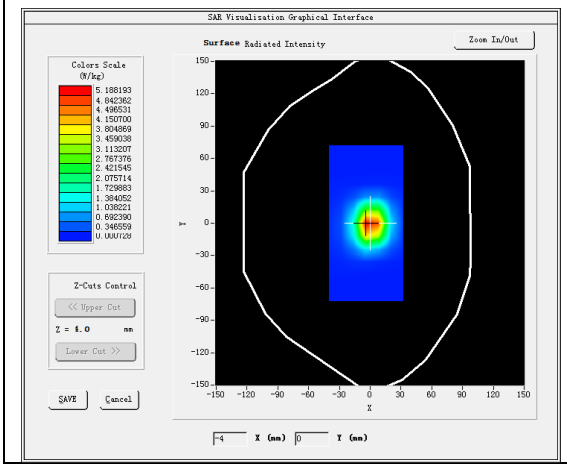
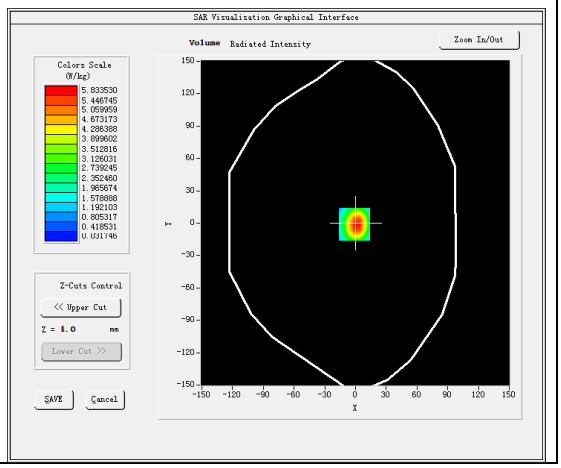
Date of measurement: 7/12/2023

A. Experimental conditions.

Area Scan	dx=12mm dy=12mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2450
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.85

B. SAR Measurement Results

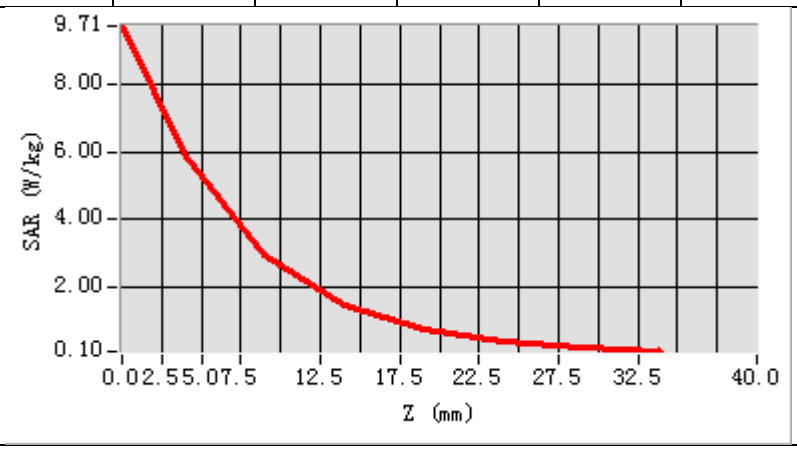
Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.459761
Relative permittivity (imaginary part)	12.980694
Conductivity (S/m)	1.766817
Variation (%)	1.290000

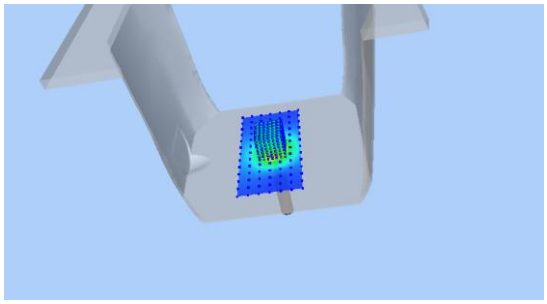
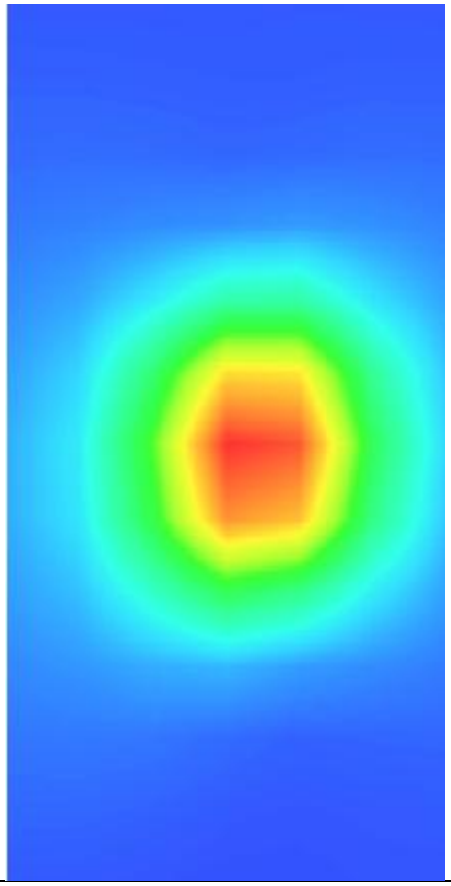
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-1.00
SAR Peak: 9.83 W/kg

SAR 10g (W/Kg)	2.339106
SAR 1g (W/Kg)	5.654340

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	9.7197	5.8353	2.9227	1.4626	0.7461	0.3798	0.1960



3D screen shot	Hot spot position
	

MEASUREMENT 6

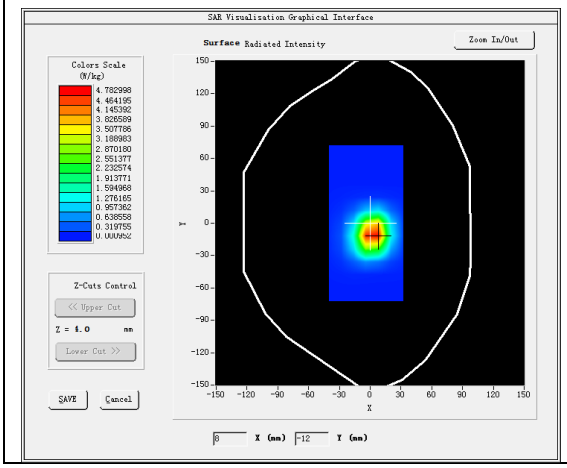
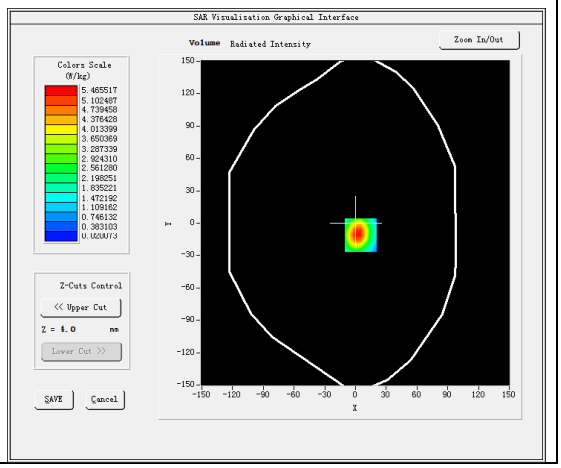
Date of measurement: 11/12/2023

A. Experimental conditions.

Area Scan	dx=12mm dy=12mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Dipole
Band	CW2600
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.65

B. SAR Measurement Results

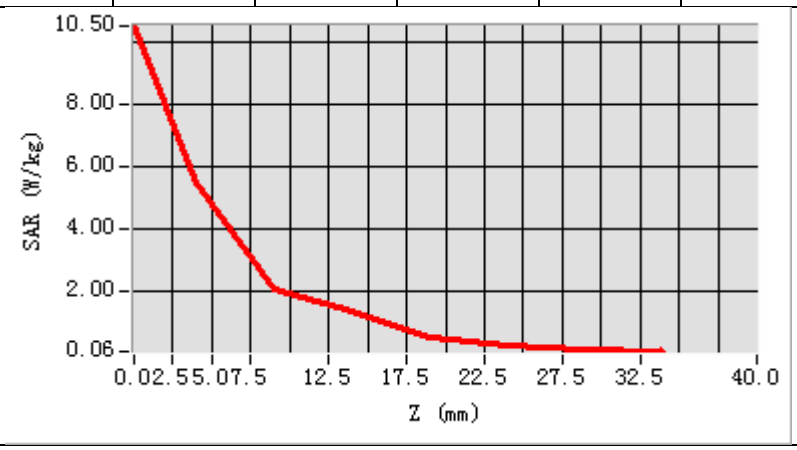
Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.680421
Relative permittivity (imaginary part)	13.400164
Conductivity (S/m)	1.935579
Variation (%)	0.250000

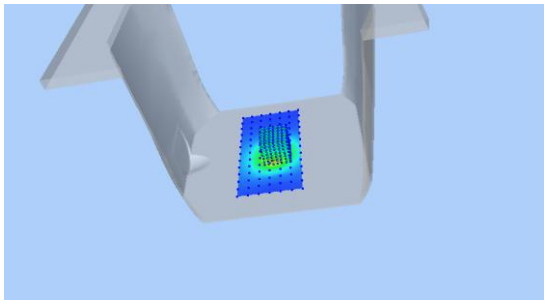
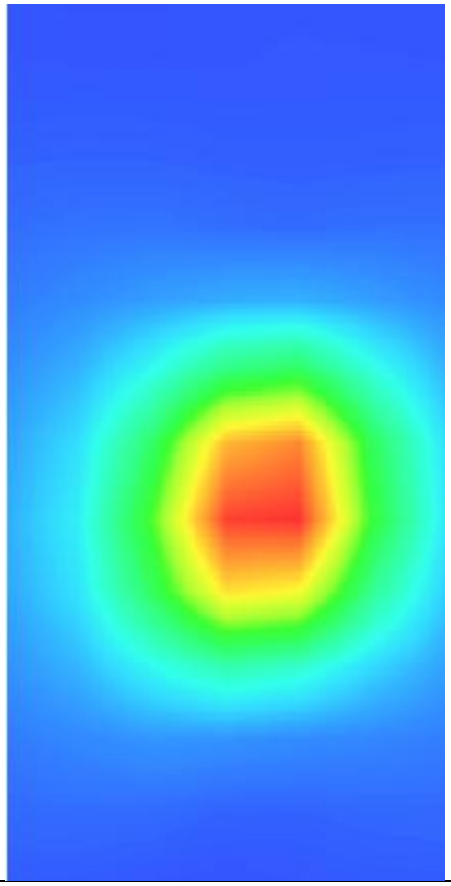
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-11.00
SAR Peak: 9.43 W/kg

SAR 10g (W/Kg)	2.280037
SAR 1g (W/Kg)	5.204199

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	10.568	5.4632	2.0863	1.3356	0.5061	0.2869	0.1279



3D screen shot	Hot spot position
	

MEASUREMENT 7

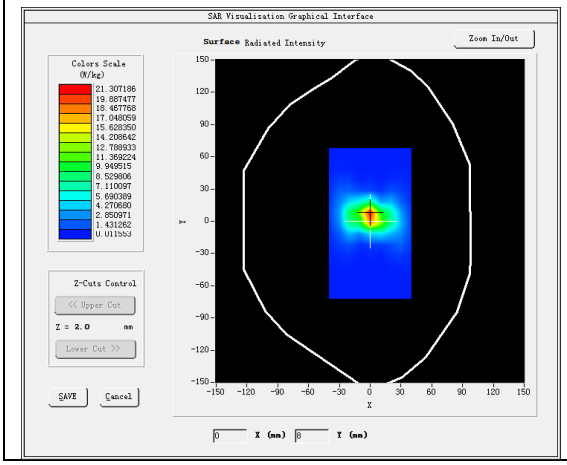
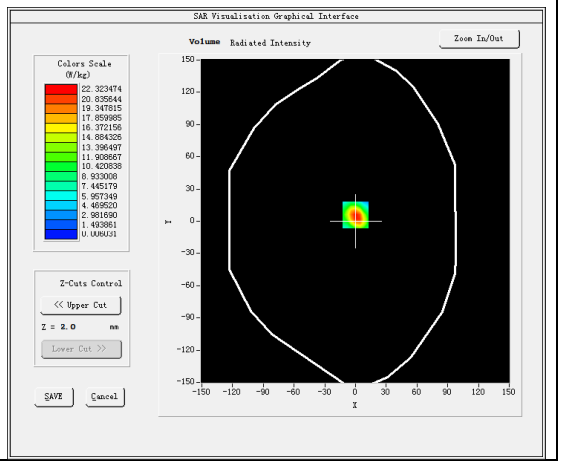
Date of measurement: 16/12/2023

A. Experimental conditions.

Area Scan	dx=10mm dy=10mm, h= 2.00 mm
ZoomScan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5200
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.07

B. SAR Measurement Results

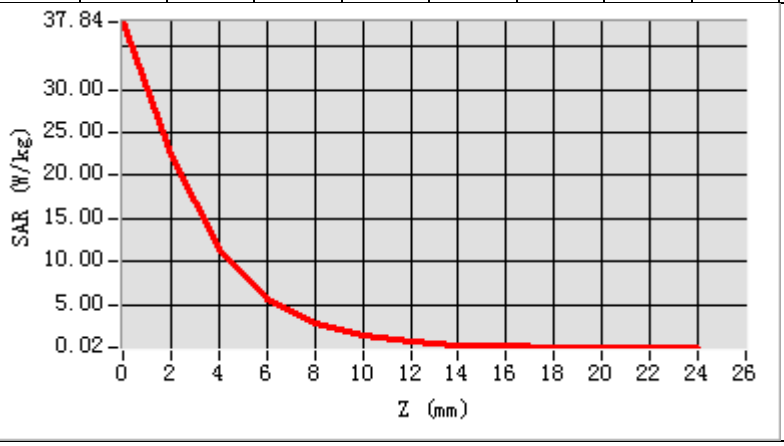
Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.363511
Relative permittivity (imaginary part)	15.461054
Conductivity (S/m)	4.466527
Variation (%)	2.800000

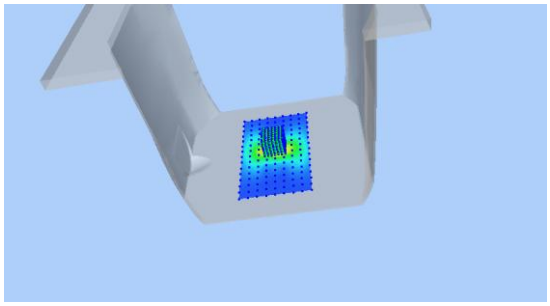
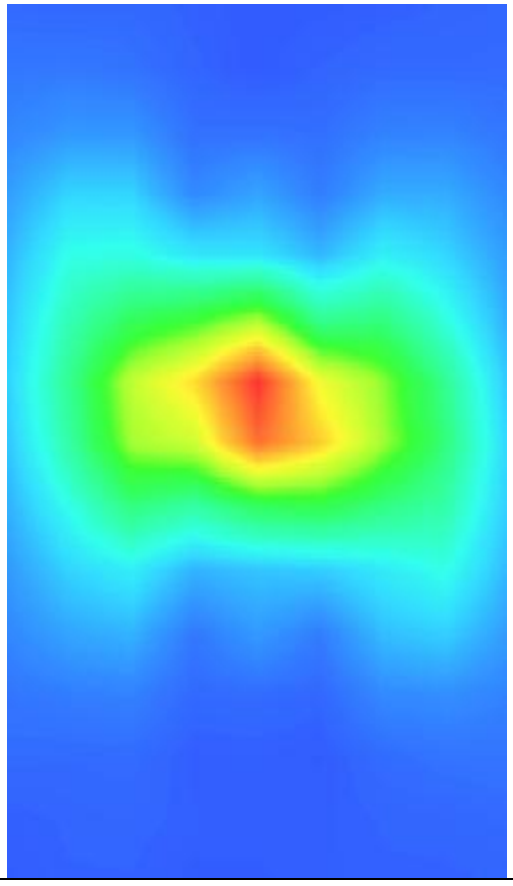
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=6.00
SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.277162
SAR 1g (W/Kg)	15.006032

Z (mm)	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)	37.891	22.391	11.377	5.6694	2.8291	1.4043	0.7150	0.3637	0.1802	0.1008	0.0527	0.0397



3D screen shot	Hot spot position
	

MEASUREMENT 8

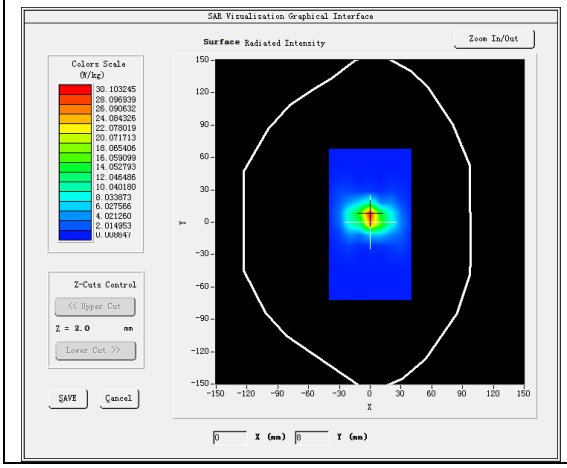
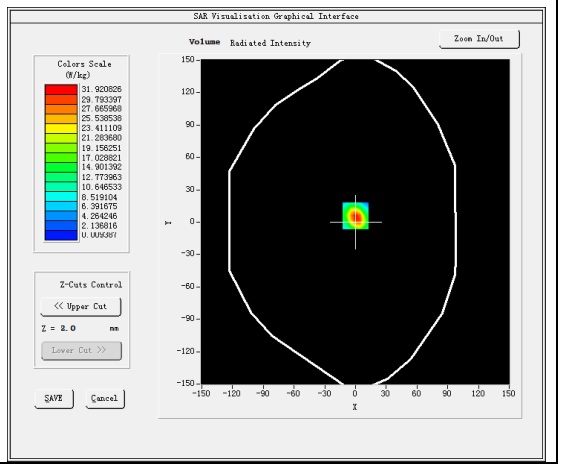
Date of measurement: 8/12/2023

A. Experimental conditions.

Area Scan	dx=10mm dy=10mm, h= 2.00 mm
ZoomScan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Dipole
Band	CW5800
Channels	Middle
Signal	CW (Crest factor: 1.0)
ConvF	2.04

B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.927182
Relative permittivity (imaginary part)	16.408457
Conductivity (S/m)	5.287169
Variation (%)	-0.500000

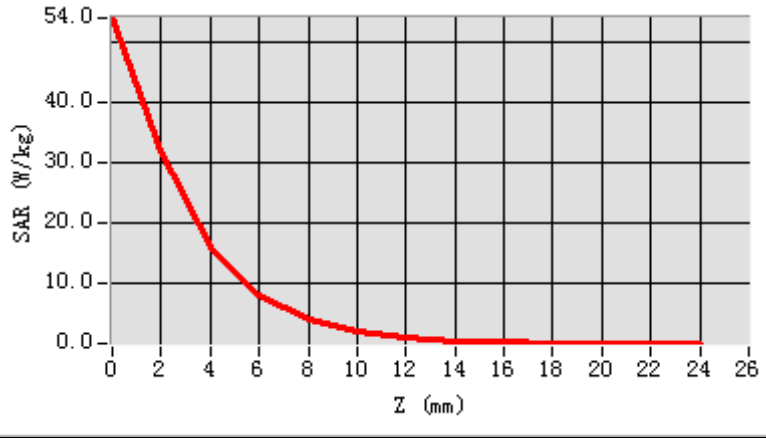
SURFACE SAR	VOLUME SAR
	

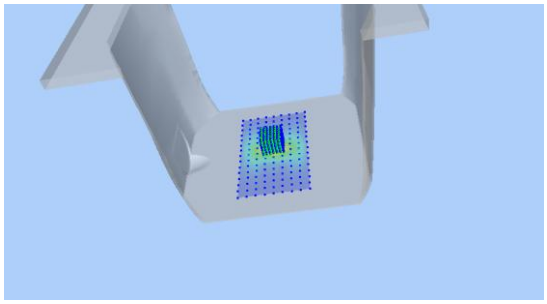
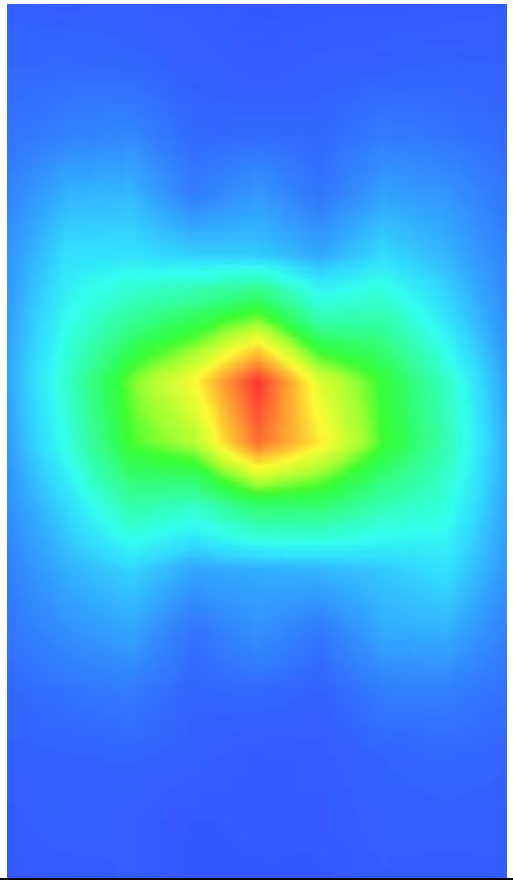
Maximum location: X=0.00, Y=6.00

SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.299228
SAR 1g (W/Kg)	16.449190

Z (mm)	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)	54.036	31.948	16.144	8.1766	4.0890	2.0550	1.0361	0.5144	0.2795	0.1572	0.0788	0.0438



3D screen shot	Hot spot position
	

14. Appendix C. Plots of High SAR Measurement

Table of contents
MEASUREMENT 1 GSM 850 Body
MEASUREMENT 2 GSM 1900 Body
MEASUREMENT 3 WCDMA Band 2 Body
MEASUREMENT 4 WCDMA Band 4 Body
MEASUREMENT 5 WCDMA Band 5 Body
MEASUREMENT 6 WLAN 5.2G Body
MEASUREMENT 7 WLAN 5.8G Body
MEASUREMENT 8 WLAN 2.4G Body
MEASUREMENT 9 LTE Band 2 Body
MEASUREMENT 10 LTE Band 4 Body
MEASUREMENT 11 LTE Band 5 Body
MEASUREMENT 12 LTE Band 7 Body
MEASUREMENT 13 LTE Band 12 Body
MEASUREMENT 14 LTE Band 17 Body

MEASUREMENT 1

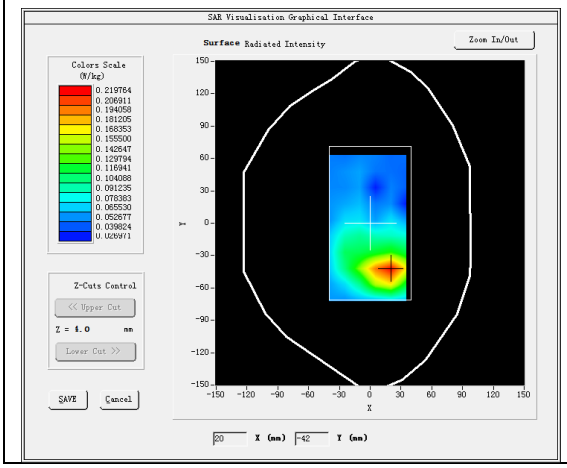
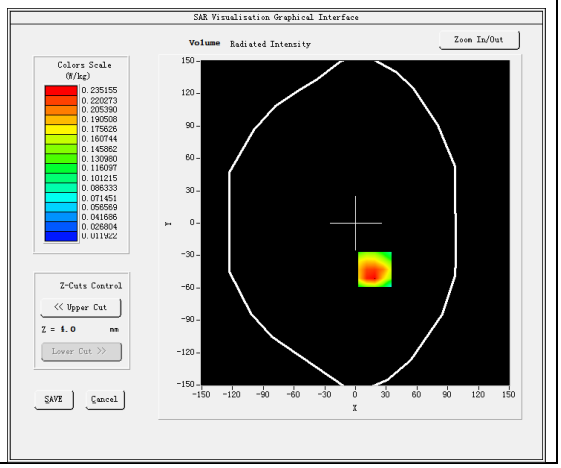
Date of measurement: 14/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	TDMA (Crest factor: 2.0)
ConvF	2.32

B. SAR Measurement Results

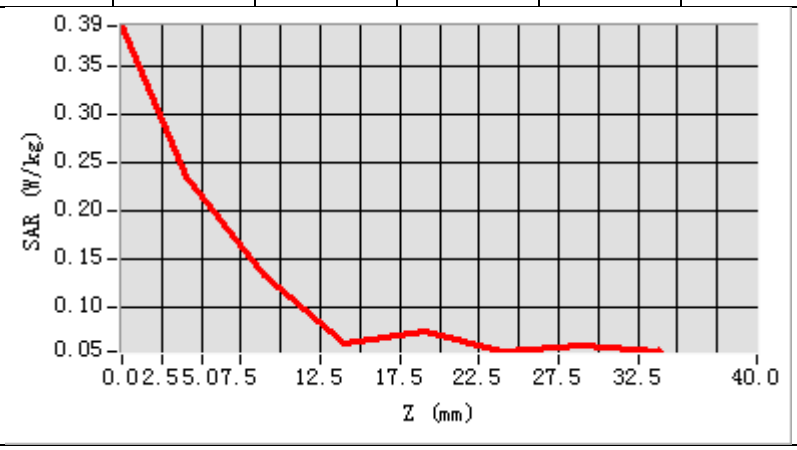
Frequency (MHz)	836.400000
Relative permittivity (real part)	41.415241
Relative permittivity (imaginary part)	19.323738
Conductivity (S/m)	0.897910
Variation (%)	0.360000

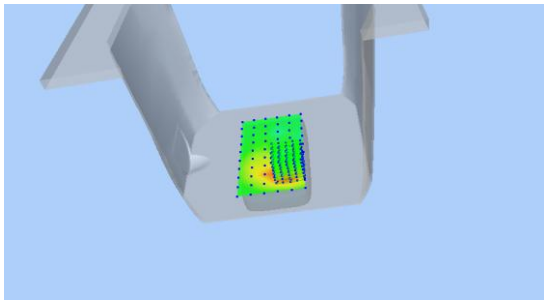
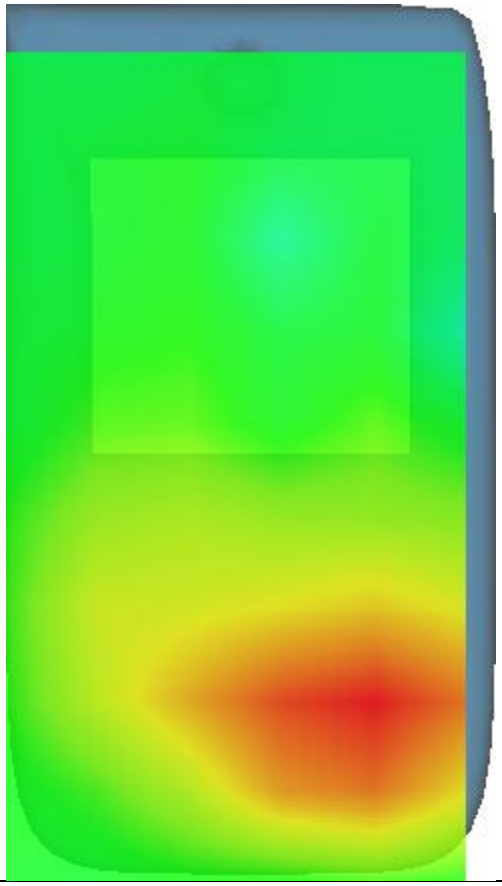
SURFACE SAR	VOLUME SAR
	

Maximum location: X=19.00, Y=-43.00
SAR Peak: 0.42 W/kg

SAR 10g (W/Kg)	0.137781
SAR 1g (W/Kg)	0.234259

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.3916	0.2352	0.1339	0.0631	0.0752	0.0540	0.0598



3D screen shot	Hot spot position
	

MEASUREMENT 2

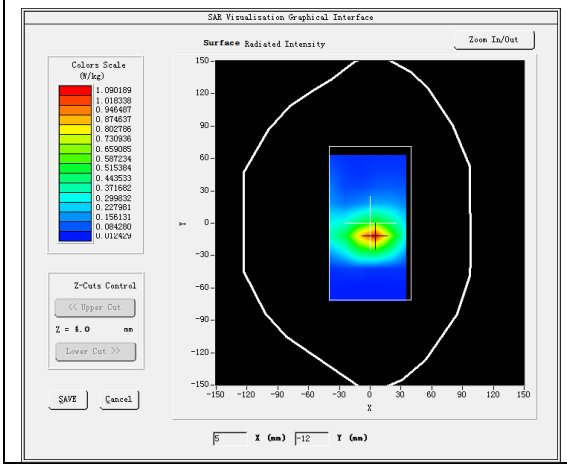
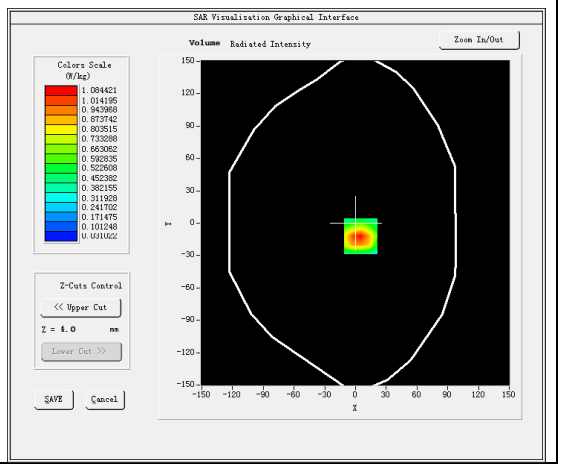
Date of measurement: 15/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	TDMA (Crest factor: 2.0)
ConvF	2.63

B. SAR Measurement Results

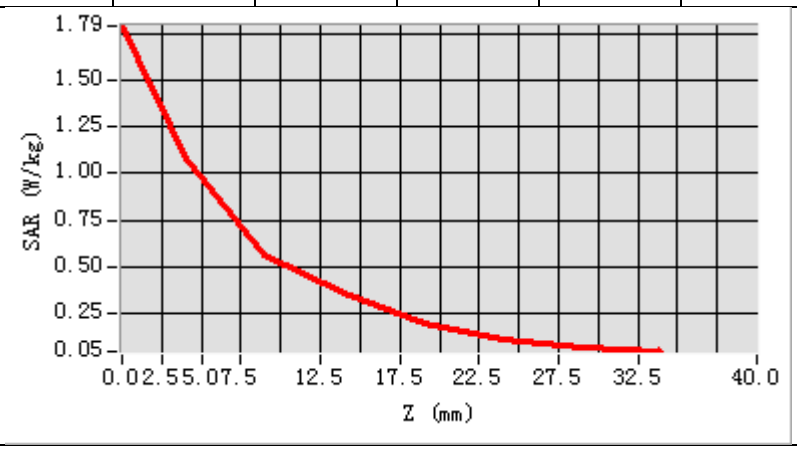
Frequency (MHz)	1880.000000
Relative permittivity (real part)	39.053181
Relative permittivity (imaginary part)	13.722342
Conductivity (S/m)	1.433222
Variation (%)	-3.070000

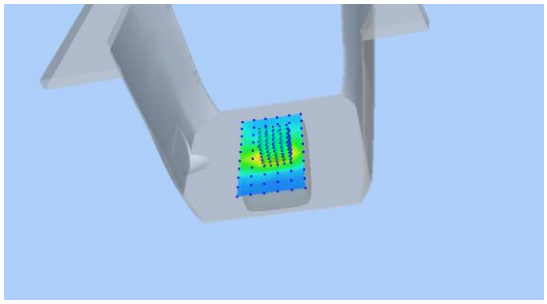
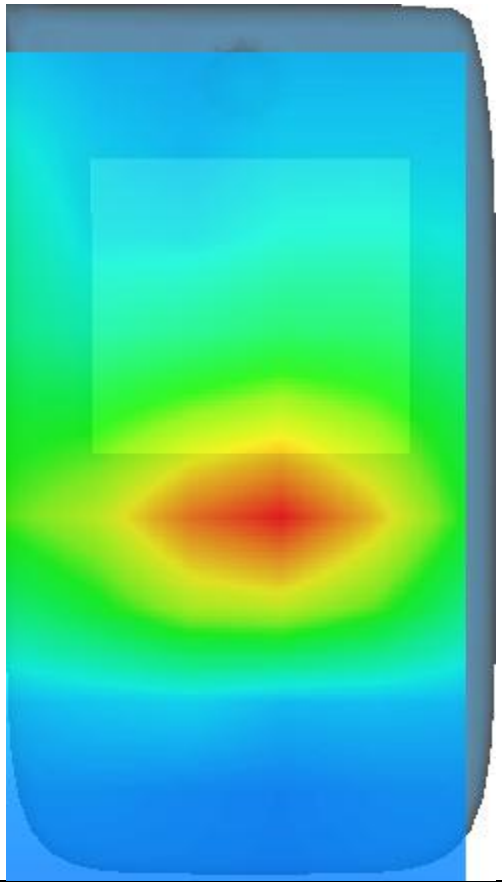
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-12.00
SAR Peak: 1.82 W/kg

SAR 10g (W/Kg)	0.548224
SAR 1g (W/Kg)	0.991354

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.7888	1.0844	0.5632	0.3568	0.1983	0.1158	0.0737



3D screen shot	Hot spot position
	

MEASUREMENT 3

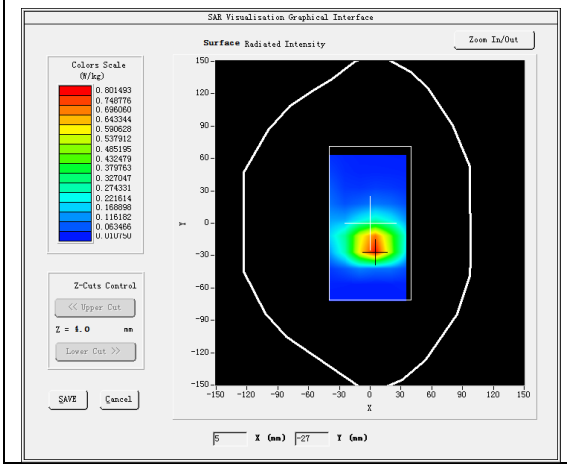
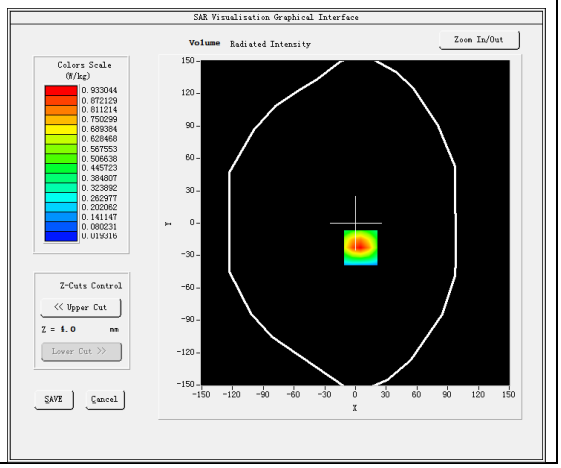
Date of measurement: 15/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	Band2_WCDMA1900
Channels	Low
Signal	WCDMA (Crest factor: 1.0)
ConvF	2.63

B. SAR Measurement Results

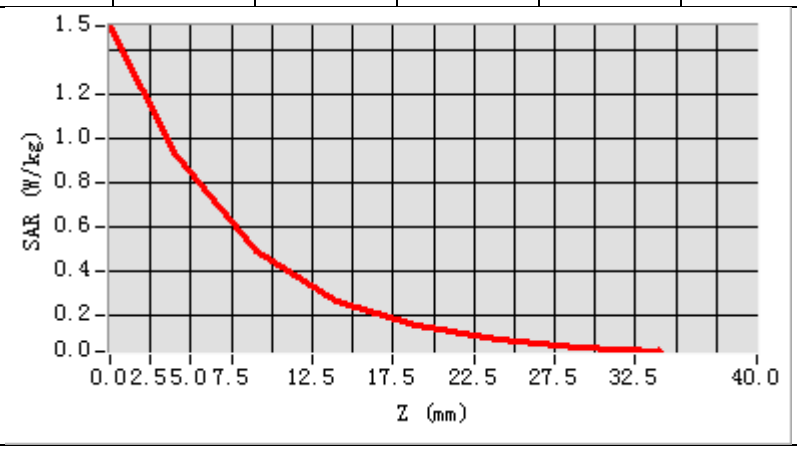
Frequency (MHz)	1852.400024
Relative permittivity (real part)	39.187798
Relative permittivity (imaginary part)	13.763622
Conductivity (S/m)	1.416430
Variation (%)	-0.970000

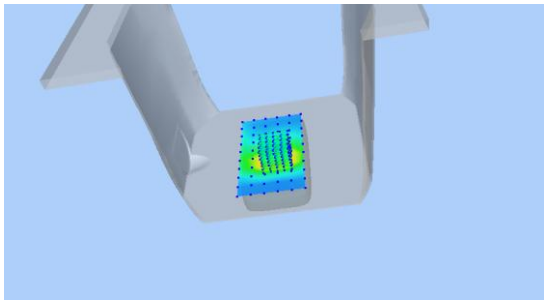
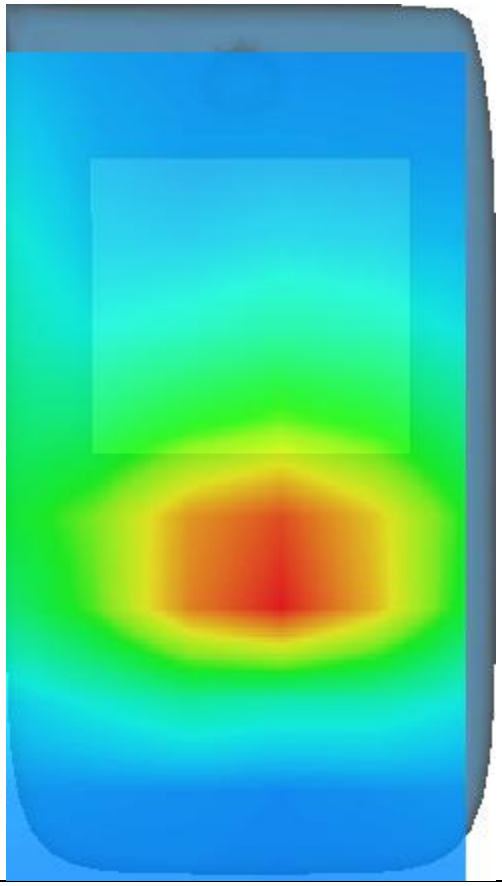
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-23.00
SAR Peak: 1.51 W/kg

SAR 10g (W/Kg)	0.458412
SAR 1g (W/Kg)	0.892993

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.5113	0.9330	0.4931	0.2640	0.1475	0.0843	0.0510



3D screen shot	Hot spot position
	

MEASUREMENT 4

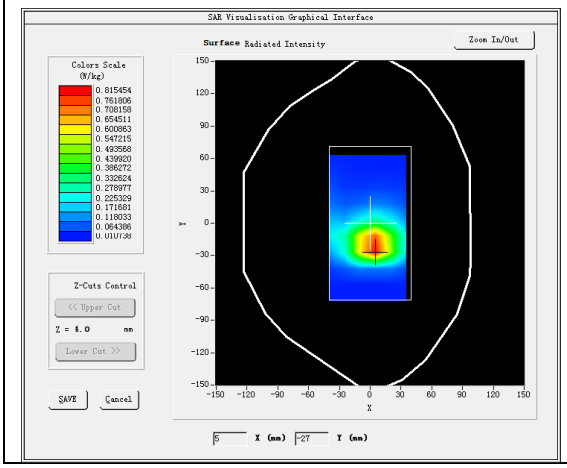
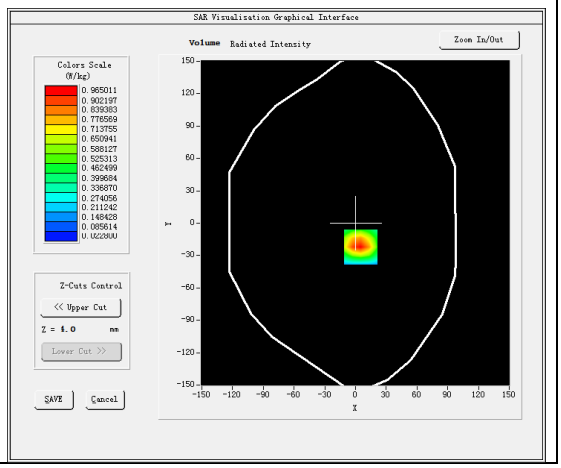
Date of measurement: 6/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	Band4_WCDMA1700
Channels	High
Signal	WCDMA (Crest factor: 1.0)
ConvF	2.45

B. SAR Measurement Results

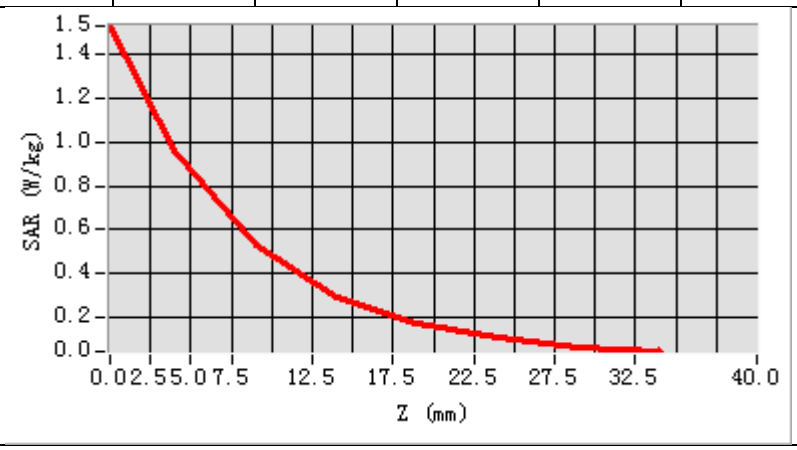
Frequency (MHz)	1752.600000
Relative permittivity (real part)	39.969028
Relative permittivity (imaginary part)	13.889271
Conductivity (S/m)	1.351889
Variation (%)	-0.710000

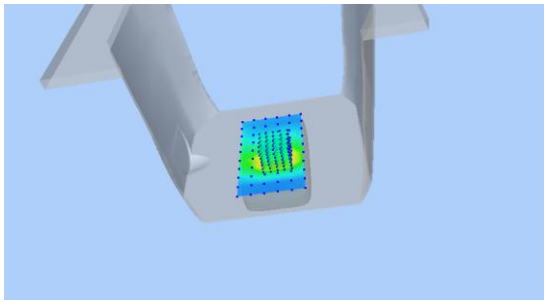
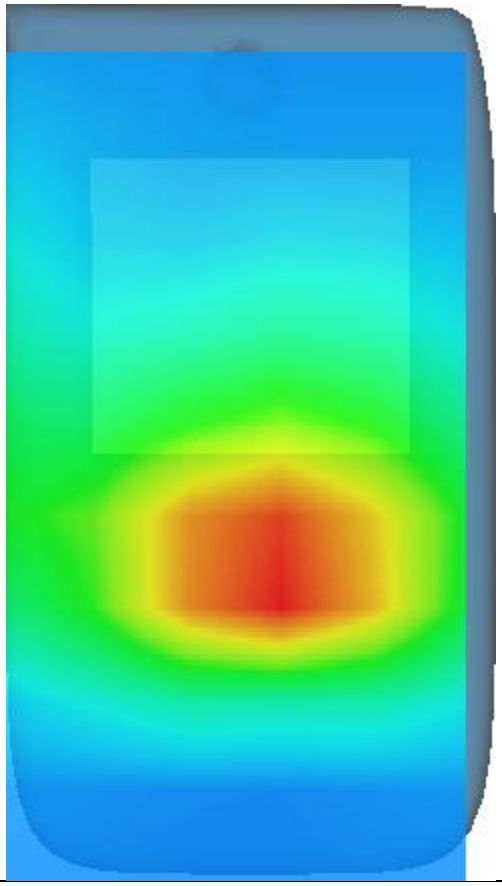
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=-22.00
SAR Peak: 1.53 W/kg

SAR 10g (W/Kg)	0.478262
SAR 1g (W/Kg)	0.909222

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.5334	0.9650	0.5271	0.2931	0.1688	0.1000	0.0604



3D screen shot	Hot spot position
	

MEASUREMENT 5

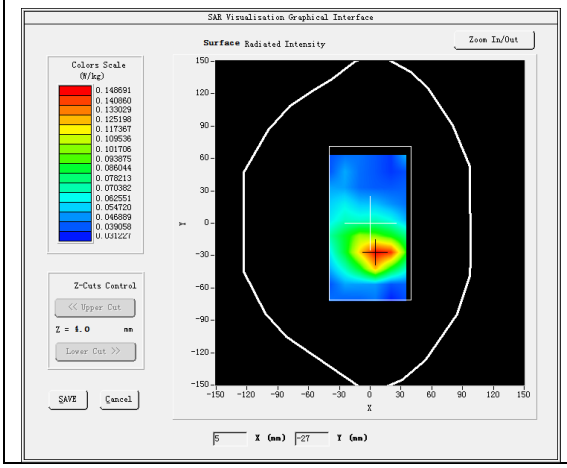
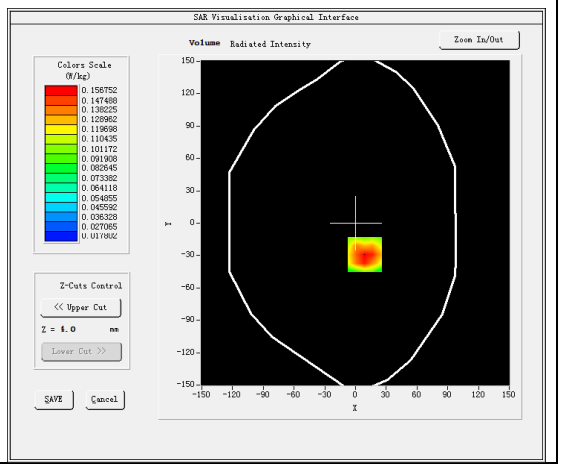
Date of measurement: 14/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	Band5_WCDMA850
Channels	Middle
Signal	WCDMA (Crest factor: 1.0)
ConvF	2.32

B. SAR Measurement Results

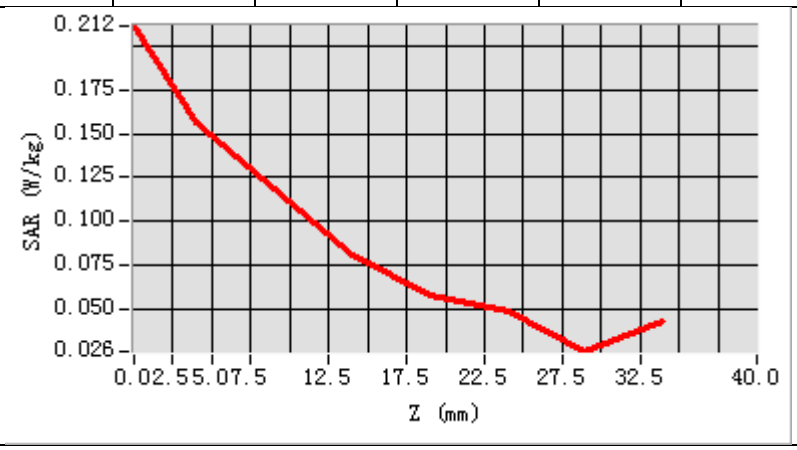
Frequency (MHz)	836.400000
Relative permittivity (real part)	41.415241
Relative permittivity (imaginary part)	19.323738
Conductivity (S/m)	0.897910
Variation (%)	1.290000

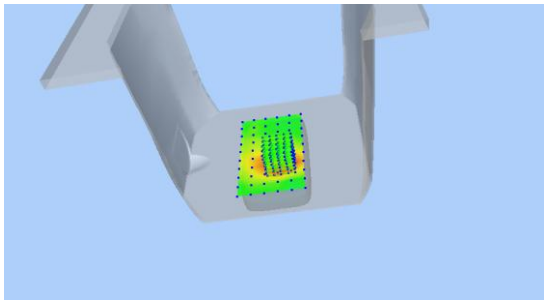
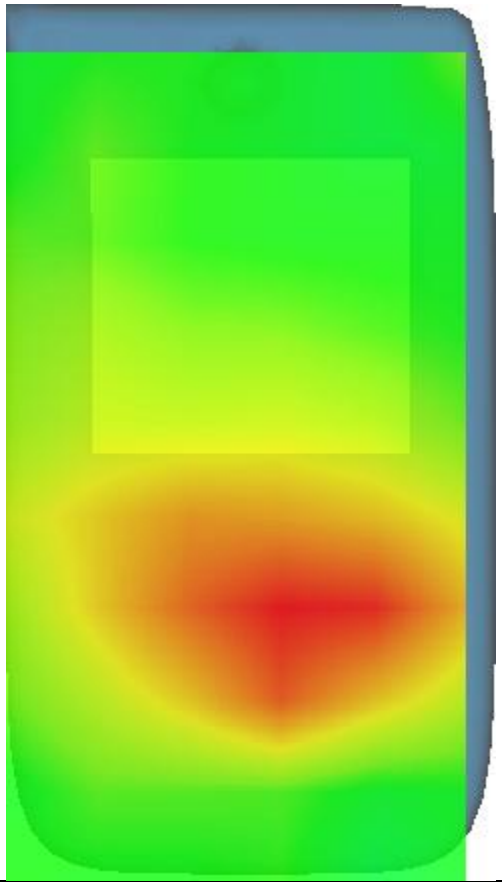
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=9.00, Y=-29.00
SAR Peak: 0.26 W/kg

SAR 10g (W/Kg)	0.102154
SAR 1g (W/Kg)	0.160927

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.2115	0.1568	0.1182	0.0802	0.0579	0.0489	0.0256



3D screen shot	Hot spot position
	

MEASUREMENT 6

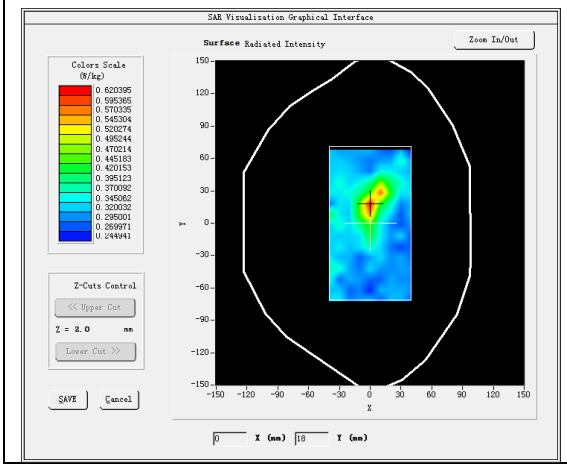
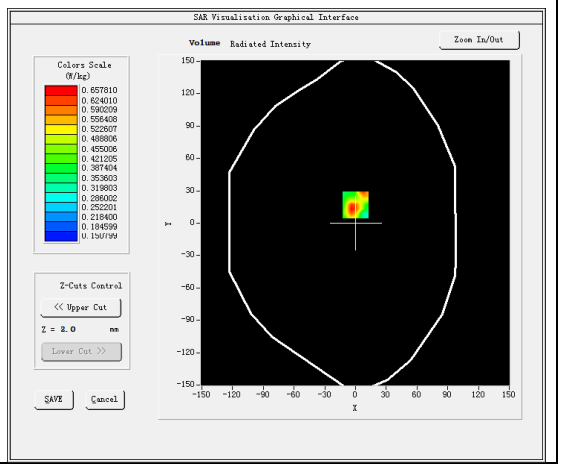
Date of measurement: 16/12/2023

A. Experimental conditions.

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

B. SAR Measurement Results

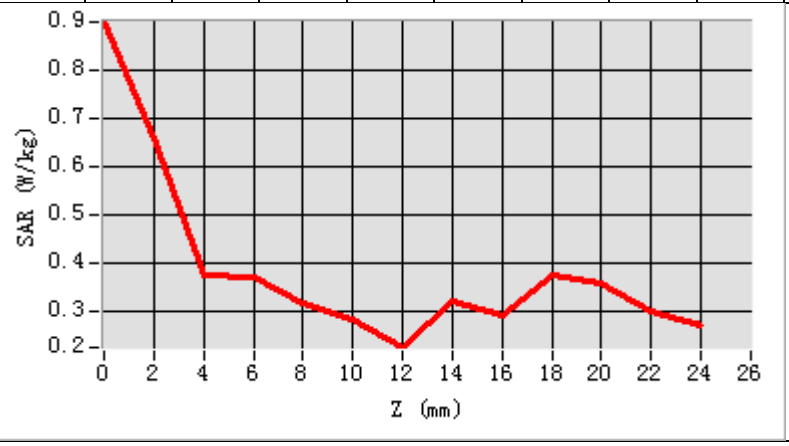
Frequency (MHz)	5180.000000
Relative permittivity (real part)	35.429664
Relative permittivity (imaginary part)	15.473104
Conductivity (S/m)	4.452815
Variation (%)	0.380000

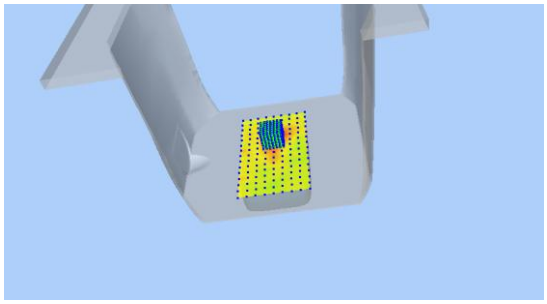
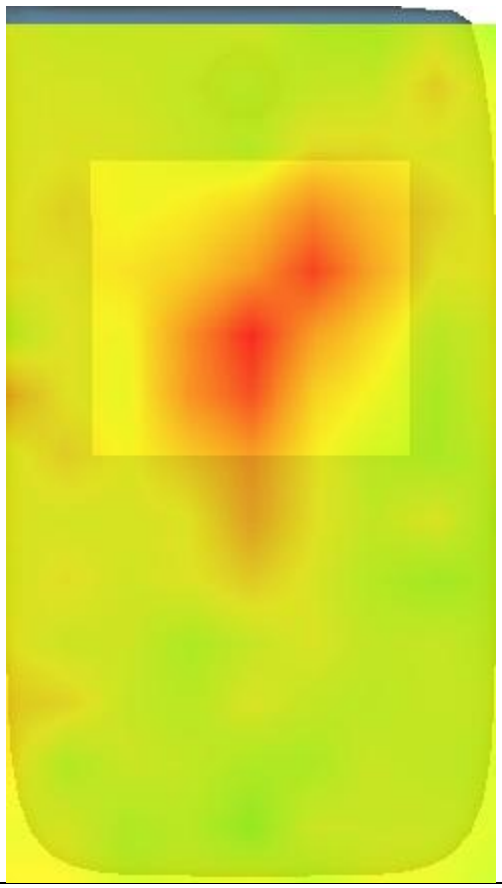
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=17.00
SAR Peak: 0.93 W/kg

SAR 10g (W/Kg)	0.355275
SAR 1g (W/Kg)	0.459452

Z (mm)	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)	0.9018	0.6578	0.3754	0.3721	0.3169	0.2816	0.2241	0.3218	0.2902	0.3743	0.3587	0.2989



3D screen shot	Hot spot position
	

MEASUREMENT 7

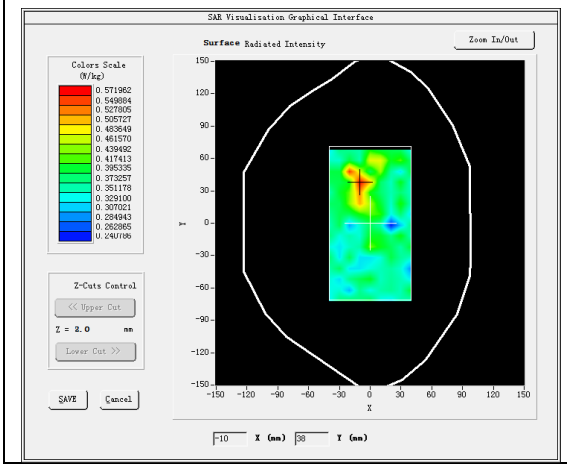
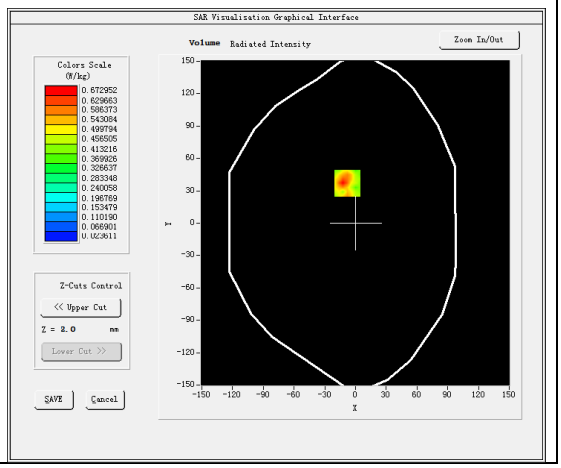
Date of measurement: 8/12/2023

A. Experimental conditions.

Area Scan	dx=10mm dy=10mm, h= 2.00 mm
ZoomScan	7x7x12,dx=4mm dy=4mm dz=2mm
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11a U-NII
Channels	Low
Signal	IEEE802.11a (Crest factor: 1.0)
ConvF	2.04

B. SAR Measurement Results

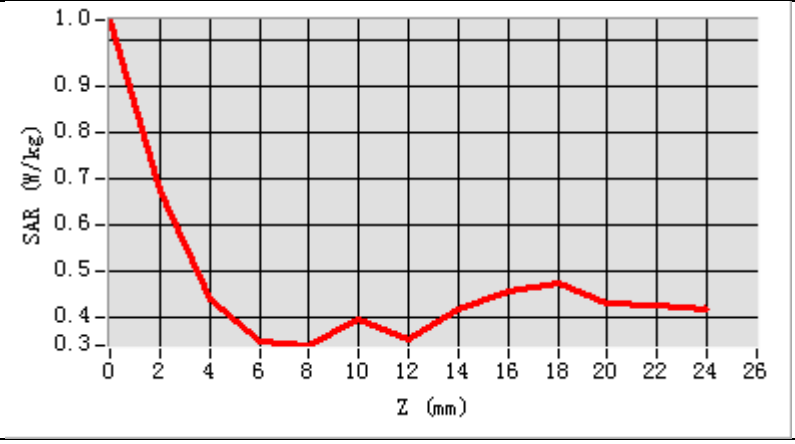
Frequency (MHz)	5745.000000
Relative permittivity (real part)	35.057404
Relative permittivity (imaginary part)	16.447814
Conductivity (S/m)	5.249594
Variation (%)	1.330000

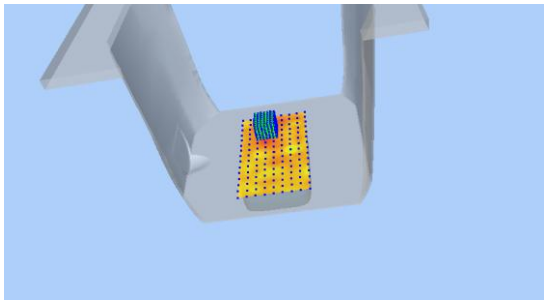
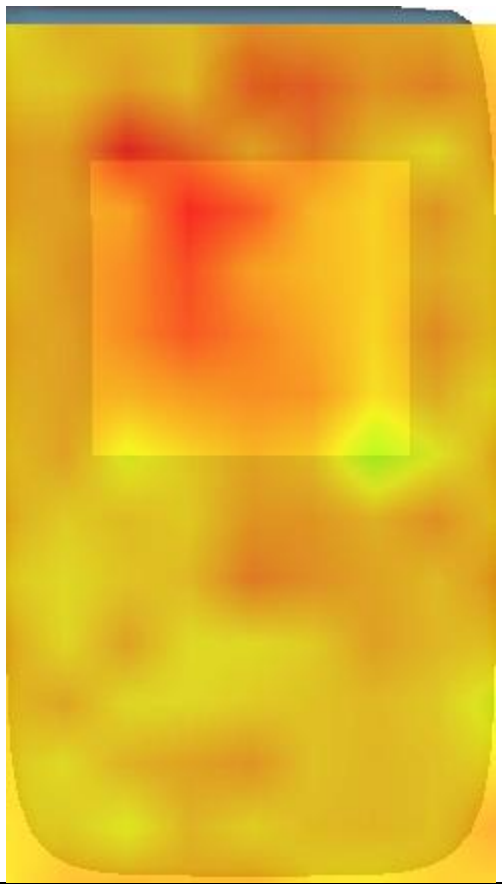
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-8.00, Y=37.00
SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.420595
SAR 1g (W/Kg)	0.504013

Z (mm)	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)	1.0415	0.6730	0.4400	0.3478	0.3408	0.3960	0.3545	0.4169	0.4577	0.4762	0.4326	0.4286



3D screen shot	Hot spot position
	

MEASUREMENT 8

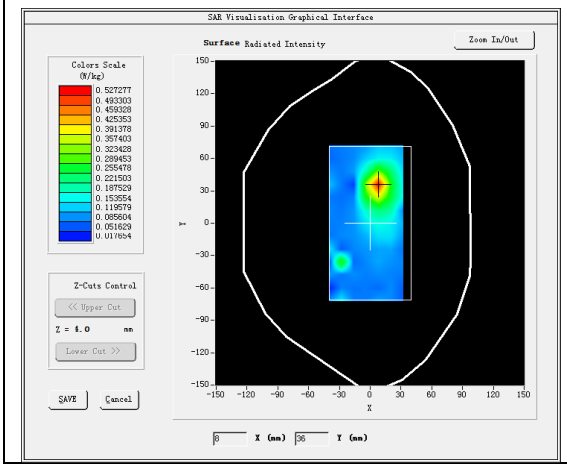
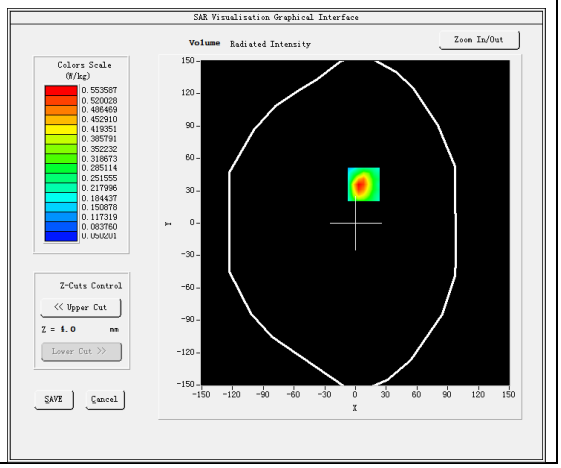
Date of measurement: 7/12/2023

A. Experimental conditions.

Area Scan	dx=12mm dy=12mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	IEEE 802.11b ISM
Channels	Middle
Signal	IEEE802.b (Crest factor: 1.0)
ConvF	2.85

B. SAR Measurement Results

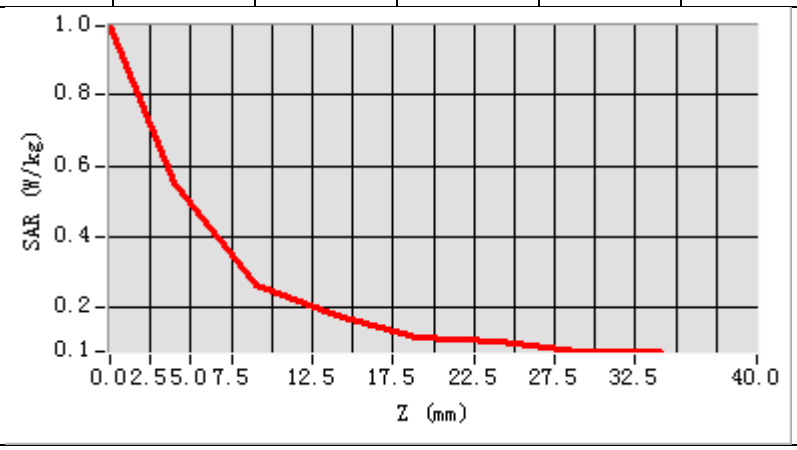
Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.511860
Relative permittivity (imaginary part)	12.899194
Conductivity (S/m)	1.746408
Variation (%)	1.830000

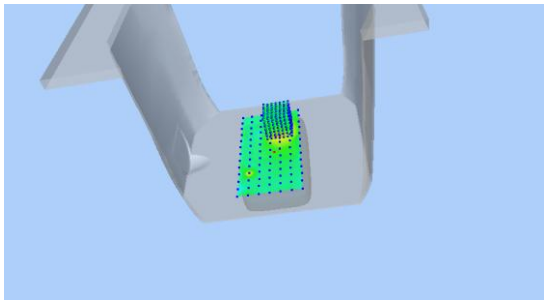
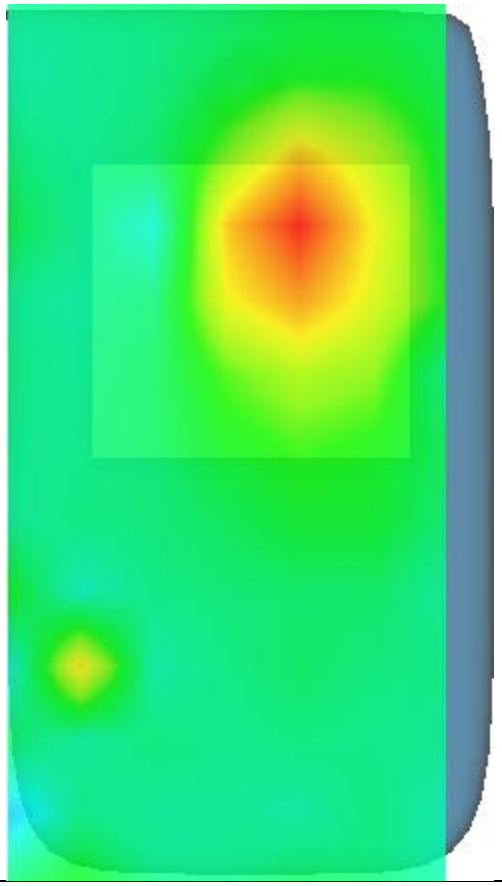
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=8.00, Y=36.00
SAR Peak: 0.95 W/kg

SAR 10g (W/Kg)	0.261273
SAR 1g (W/Kg)	0.512651

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.9929	0.5536	0.2670	0.1788	0.1178	0.1066	0.0781



3D screen shot	Hot spot position
	

MEASUREMENT 9

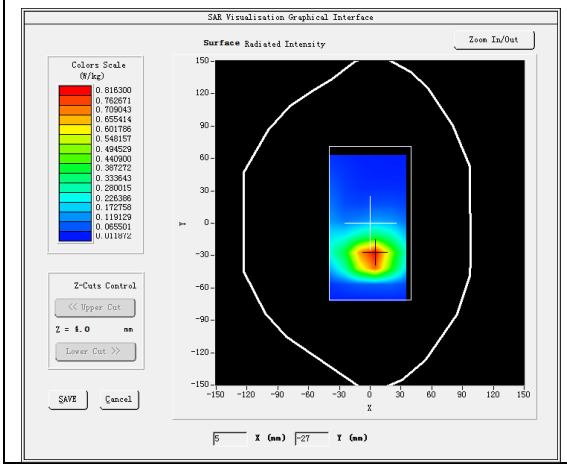
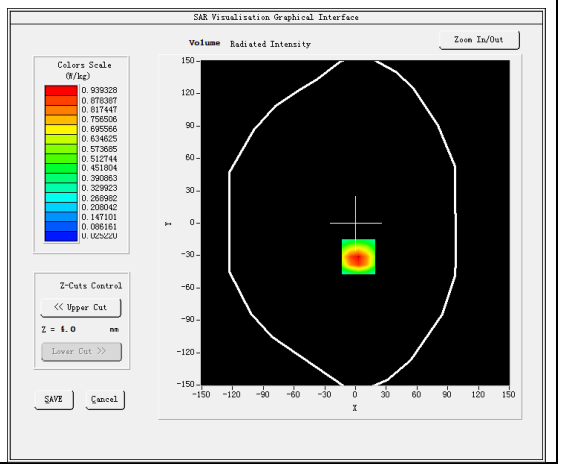
Date of measurement: 15/12/2024

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 2
Channels	Low
Signal	LTE (Crest factor: 1.0)
ConvF	2.63

B. SAR Measurement Results

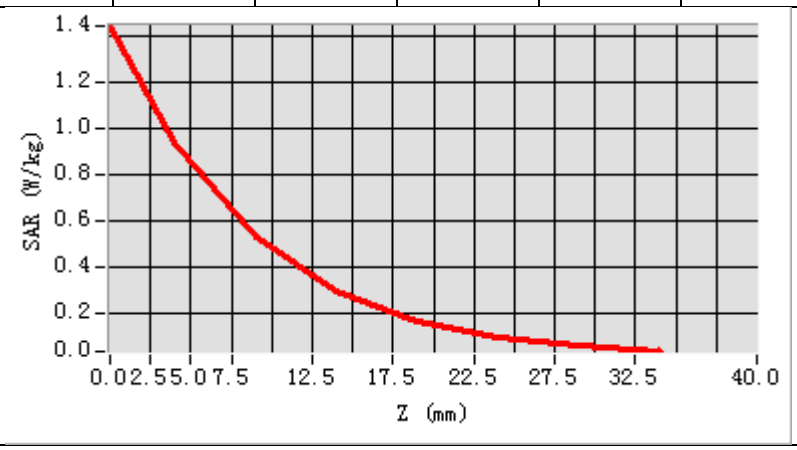
Frequency (MHz)	1860.000000
Relative permittivity (real part)	39.159428
Relative permittivity (imaginary part)	13.733992
Conductivity (S/m)	1.418798
Variation (%)	-0.270000

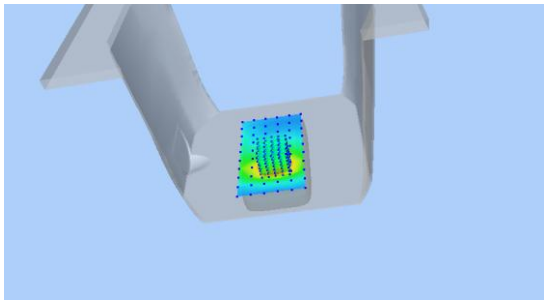
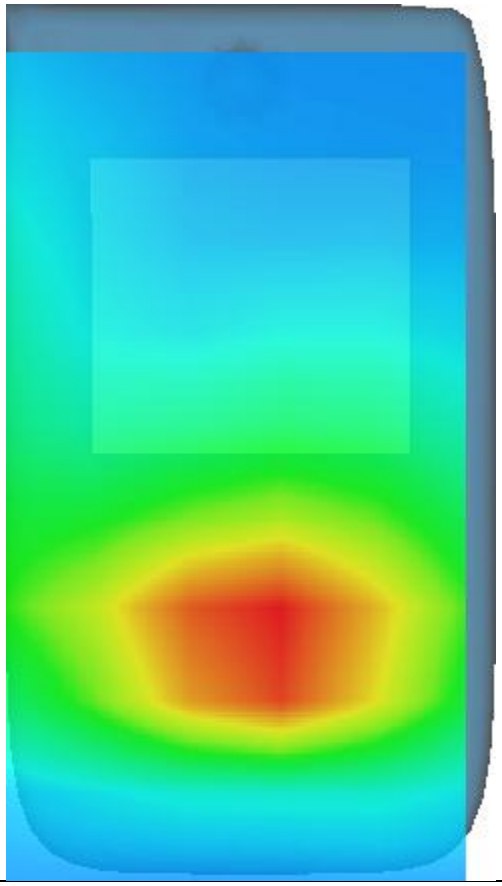
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=3.00, Y=-31.00
SAR Peak: 1.56 W/kg

SAR 10g (W/Kg)	0.481488
SAR 1g (W/Kg)	0.932118

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.4408	0.9393	0.5343	0.3015	0.1724	0.1019	0.0624



3D screen shot	Hot spot position
	

MEASUREMENT 10

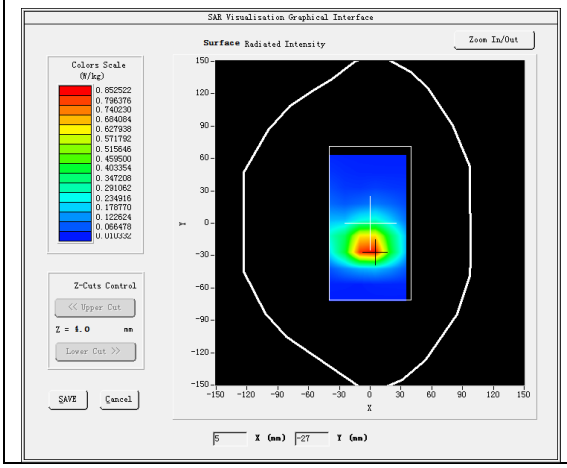
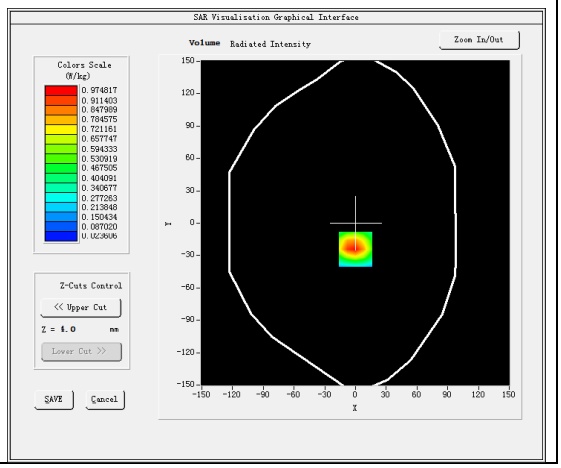
Date of measurement: 6/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 4
Channels	High
Signal	LTE (Crest factor: 1.0)
ConvF	2.45

B. SAR Measurement Results

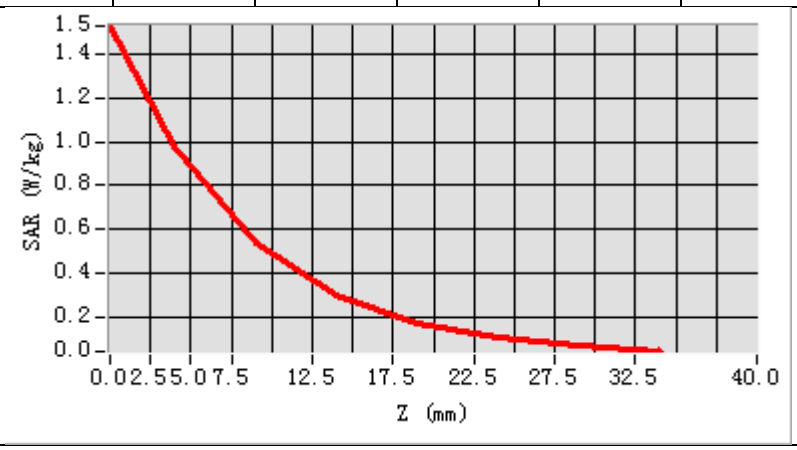
Frequency (MHz)	1745.000000
Relative permittivity (real part)	39.985279
Relative permittivity (imaginary part)	13.543642
Conductivity (S/m)	1.312605
Variation (%)	-0.240000

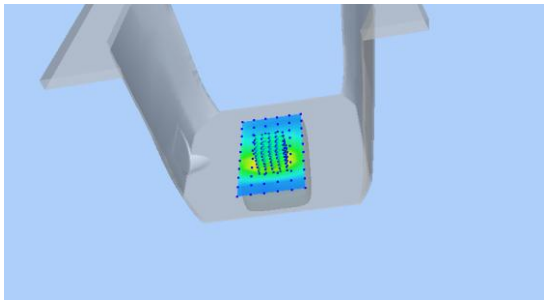
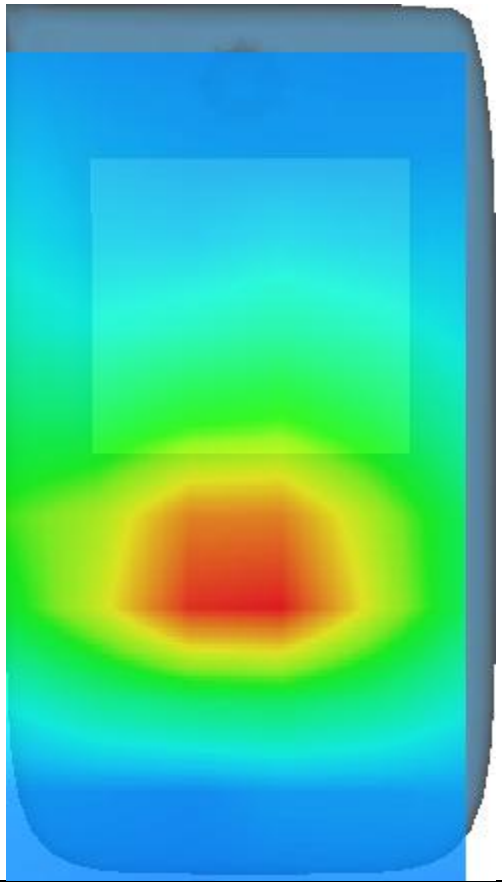
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-24.00
SAR Peak: 1.54 W/kg

SAR 10g (W/Kg)	0.490432
SAR 1g (W/Kg)	0.922495

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.5311	0.9748	0.5387	0.3016	0.1732	0.1024	0.0638



3D screen shot	Hot spot position
	

MEASUREMENT 11

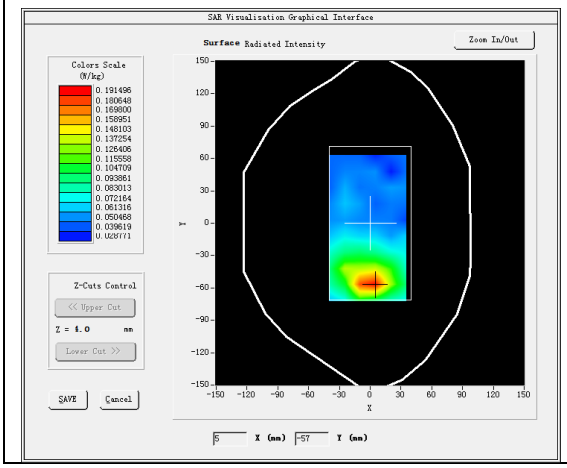
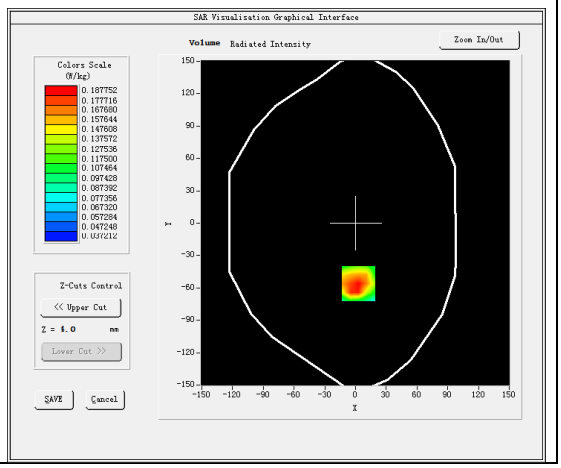
Date of measurement: 14/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 5
Channels	Middle
Signal	LTE (Crest factor: 1.0)
ConvF	2.32

B. SAR Measurement Results

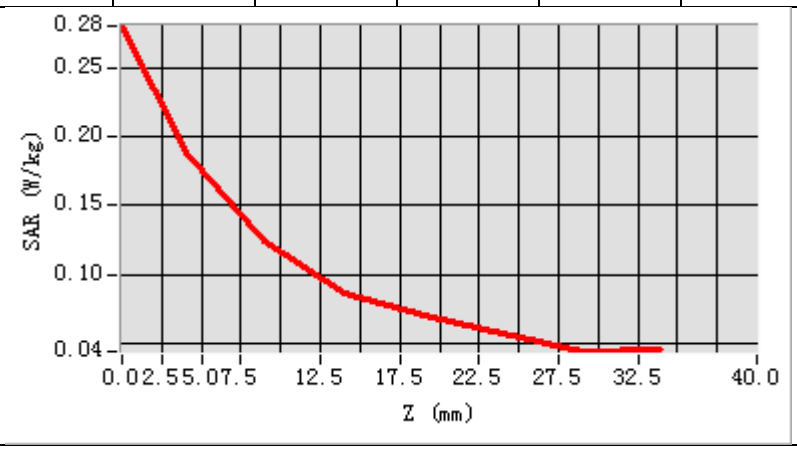
Frequency (MHz)	836.500000
Relative permittivity (real part)	41.417511
Relative permittivity (imaginary part)	19.325539
Conductivity (S/m)	0.898101
Variation (%)	0.790000

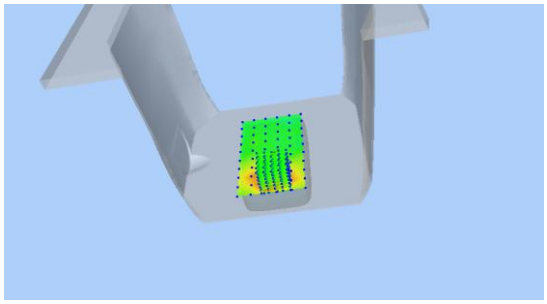
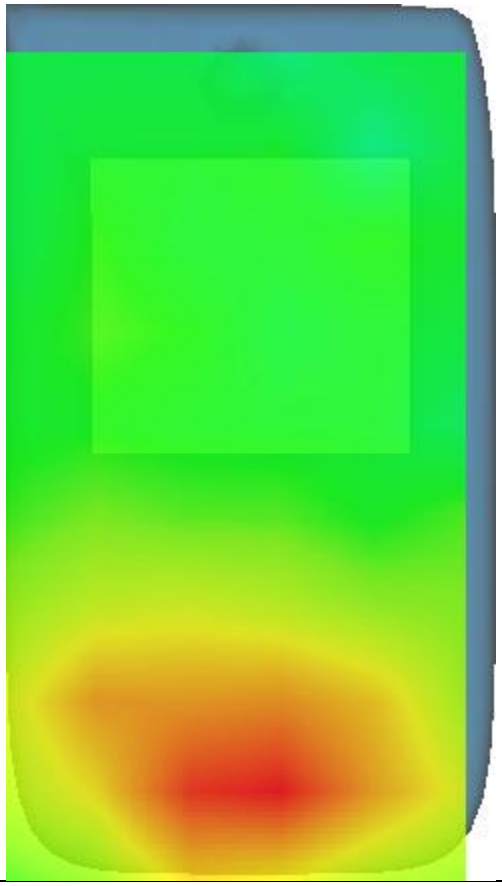
SURFACE SAR	VOLUME SAR
	

Maximum location: X=3.00, Y=-56.00
SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.119067
SAR 1g (W/Kg)	0.187621

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.2799	0.1878	0.1247	0.0867	0.0710	0.0570	0.0441



3D screen shot	Hot spot position
	

MEASUREMENT 12

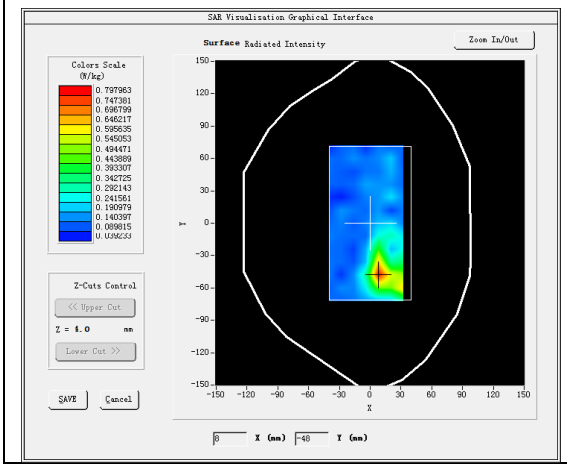
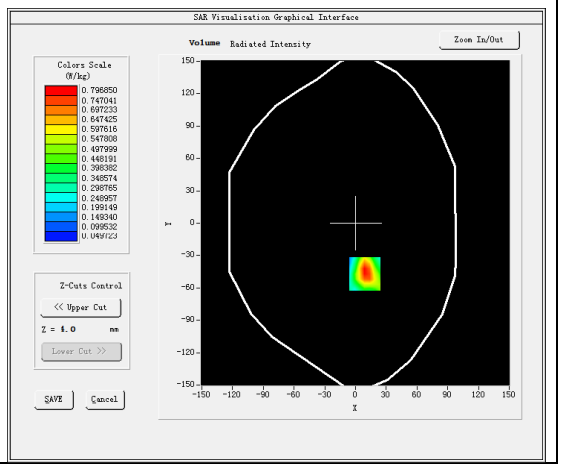
Date of measurement: 11/12/2023

A. Experimental conditions.

Area Scan	dx=12mm dy=12mm, h= 5.00 mm
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 7
Channels	Middle
Signal	LTE (Crest factor: 1.0)
ConvF	2.65

B. SAR Measurement Results

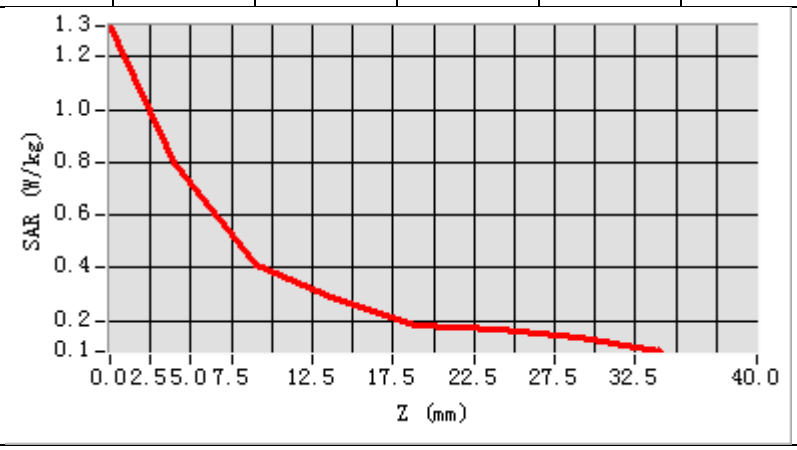
Frequency (MHz)	2535.000000
Relative permittivity (real part)	39.015720
Relative permittivity (imaginary part)	13.268064
Conductivity (S/m)	1.868586
Variation (%)	-1.799999

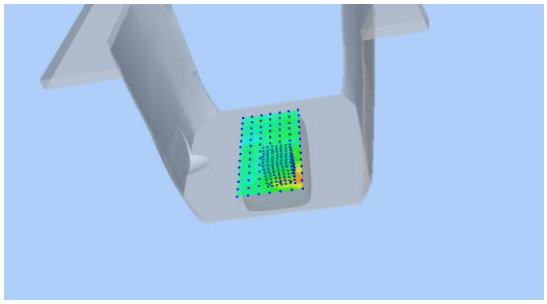
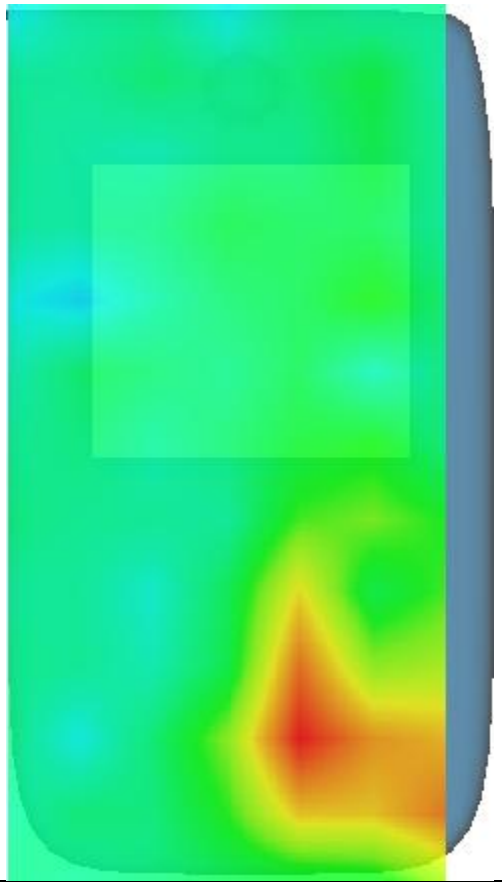
SURFACE SAR	VOLUME SAR
	

Maximum location: X=9.00, Y=-47.00
SAR Peak: 1.24 W/kg

SAR 10g (W/Kg)	0.399950
SAR 1g (W/Kg)	0.730867

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	1.3171	0.7968	0.4127	0.2771	0.1784	0.1629	0.1347



3D screen shot	Hot spot position
	

MEASUREMENT 13

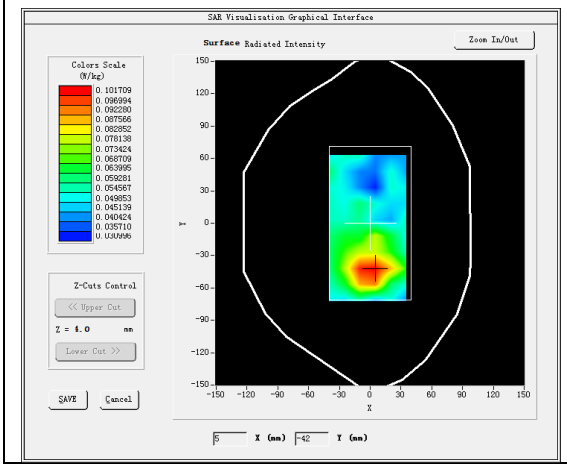
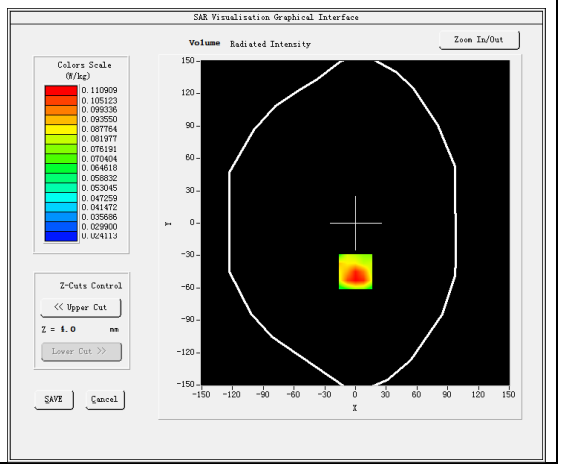
Date of measurement: 5/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 12
Channels	Middle
Signal	LTE (Crest factor: 1.0)
ConvF	2.37

B. SAR Measurement Results

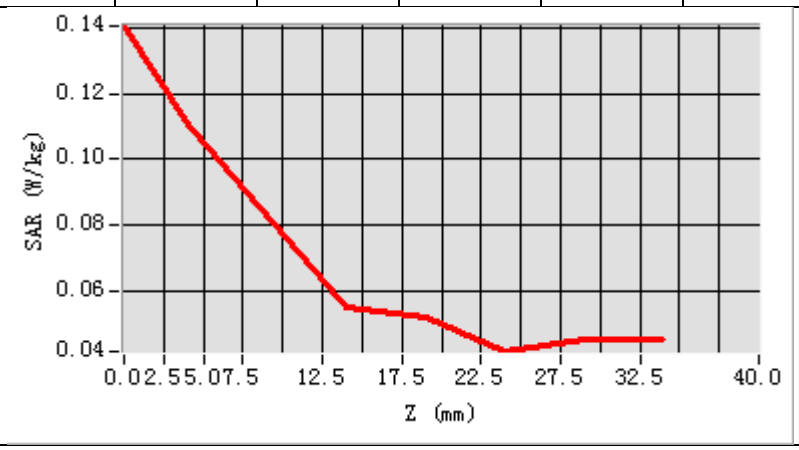
Frequency (MHz)	707.500000
Relative permittivity (real part)	42.544853
Relative permittivity (imaginary part)	21.803511
Conductivity (S/m)	0.856999
Variation (%)	-0.120000

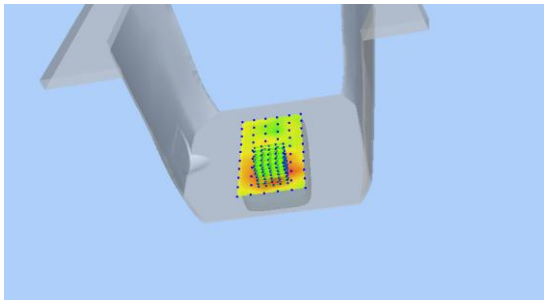
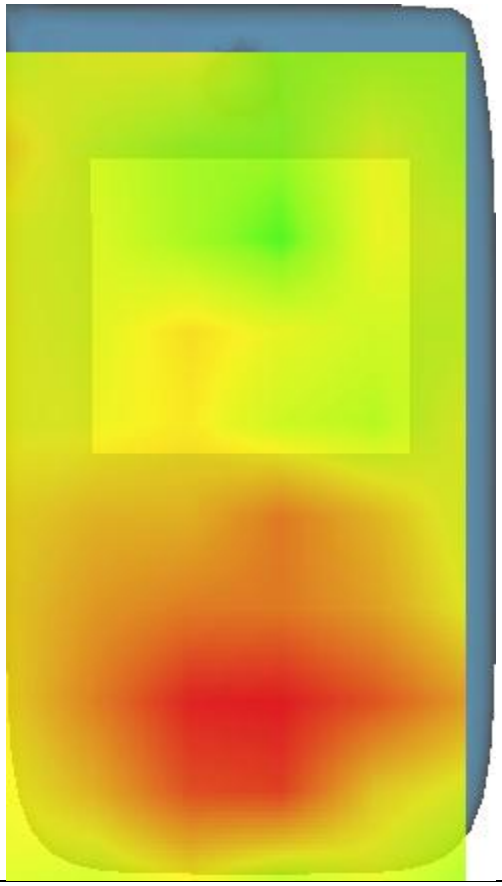
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=0.00, Y=-45.00
SAR Peak: 0.21 W/kg

SAR 10g (W/Kg)	0.072812
SAR 1g (W/Kg)	0.115104

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.1405	0.1109	0.0832	0.0549	0.0522	0.0418	0.0456



3D screen shot	Hot spot position
	

MEASUREMENT 14

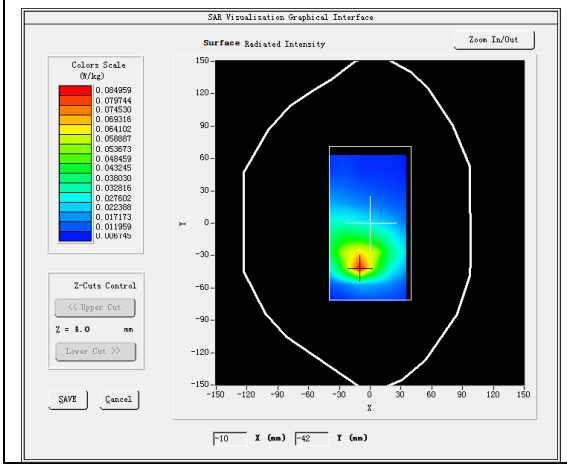
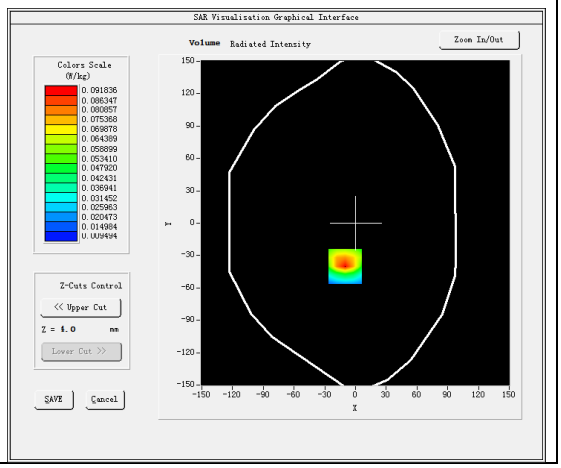
Date of measurement: 5/12/2023

A. Experimental conditions.

Area Scan	dx=15mm dy=15mm, h= 5.00 mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm
Phantom	Validation plane
Device Position	Body
Band	LTE band 17
Channels	Middle
Signal	LTE (Crest factor: 1.0)
ConvF	2.37

B. SAR Measurement Results

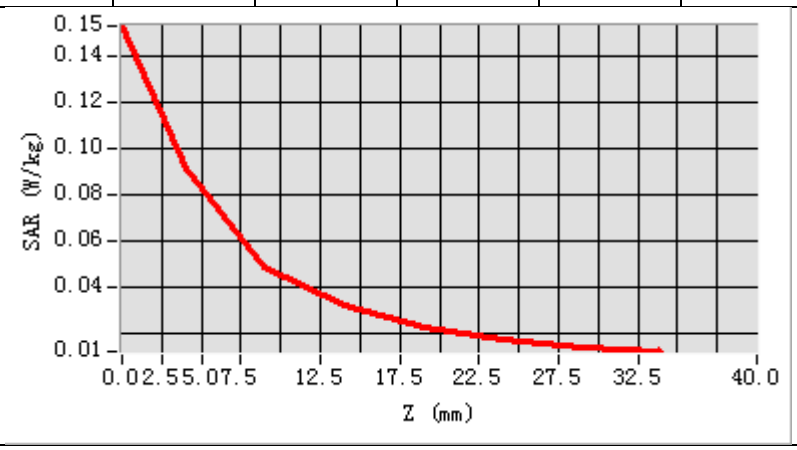
Frequency (MHz)	710.000000
Relative permittivity (real part)	42.523605
Relative permittivity (imaginary part)	21.831911
Conductivity (S/m)	0.861148
Variation (%)	-3.630000

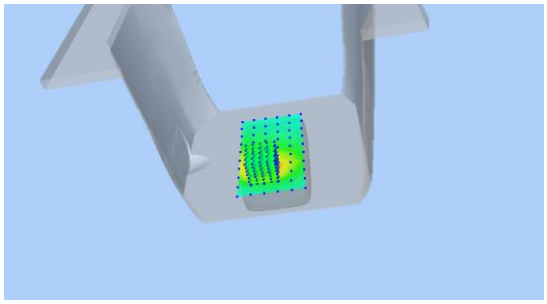
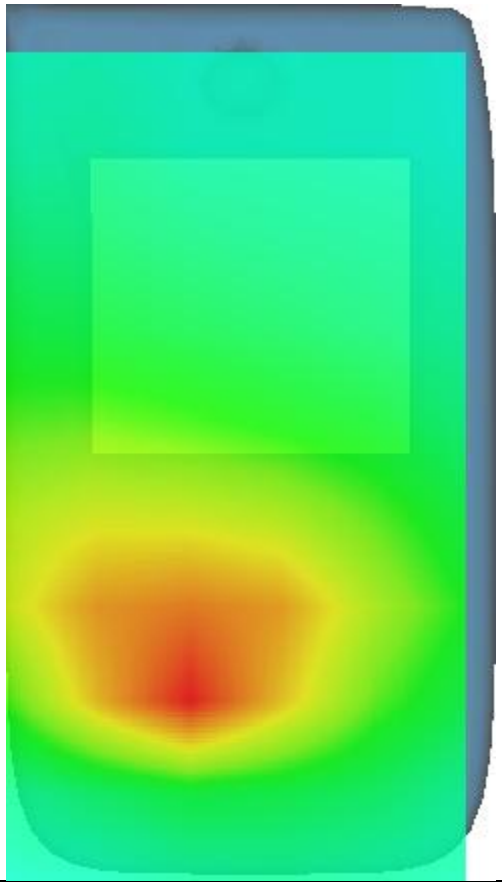
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-10.00, Y=-40.00
SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.048911
SAR 1g (W/Kg)	0.087440

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.1531	0.0918	0.0490	0.0323	0.0226	0.0178	0.0146



3D screen shot	Hot spot position
	

15. Appendix D. Calibration Certificate

Table of contents
E Field Probe - 3423-EPGO-426
750 MHz Dipole - SN 03/15 DIP 0G750-355
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
2600 MHz Dipole - SN 03/15 DIP 2G600-356
5000-6000 MHz Dipole - SN 13/14 WGA 33
Extended Calibration Certificate