

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 : Smart Phone

Trademark : KODAK

Model Name : Smartway F1

Family Model : N/A

Report No. : STR200710001008E

FCC ID : 2ALP3F1

Prepared for

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TEST RESULT CERTIFICATION

Applicant's name.....: INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA
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Product description

Product name.....: Smart Phone
Trademark: KODAK
Model Name: Smartway F1
Family Model.....: N/A

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.

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Date of Test

Date (s) of performance of tests.....: Jul. 15, 2020 ~ Jul. 22, 2020
Date of Issue: Aug. 11, 2020
Test Result: **Pass**

Prepared By : Cheng Jiawen
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※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Aug. 11, 2020	Cheng Jiawen

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1. General Information

1.1. RF exposure limits

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

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

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

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

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

Occupational/Controlled Environments:

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

General Population/Uncontrolled Environments:

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

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

1.2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Smartway F1 are as follows.

RF Exposure Conditions		Equipment Class - Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
1-g Head		0.467	0.111	0.410	N/A
1-g Body-Worn (Separation distance of 10mm)		1.048	0.102	0.541	N/A
1-g Hotspot (Separation distance of 10mm)		1.048	0.102	0.541	N/A
Max Simultaneous Tx	Head	0.877	0.578	0.877	0.677
	Body-Worn	1.589	1.150	1.589	1.153
	Hotspot	1.589	1.150	1.589	1.153

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	Smart Phone		
Trade Name	KODAK		
Model Name	Smartway F1		
Family Model	N/A		
FCC ID	2ALP3F1		
Device Phase	Identical Prototype		
Exposure Category	General population / Uncontrolled environment		
Antenna	PIFA Antenna		
Battery Information	DC 3.85V, 3950mAh		
Device Operating Configurations			
Supporting Mode(s)	GSM 850/1900, WCDMA Band 2/5, LTE Band 2/4/7, WLAN 2.4G/5.2G/5.8G, Bluetooth		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK)		
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 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 7	2500-2570	2620-2690
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
EDGE 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 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 7)		
Test Channels (low-mid-high)	128-189-251(GSM 850)		
	512-661-810(GSM 1900)		
	9262-9400-9538(WCDMA Band 2)		
	4132-4182-4233(WCDMA Band 5)		
	18607-18900-19193(LTE Band 2 BW=1.4MHz)		
	18615-18900-19185(LTE Band 2 BW=3MHz)		
	18625-18900-19175(LTE Band 2 BW=5MHz)		
	18650-18900-19150(LTE Band 2 BW=10MHz)		
	18675-18900-19125(LTE Band 2 BW=15MHz)		
	18700-18900-19100(LTE Band 2 BW=20MHz)		
	19957-20175-20393(LTE Band 4 BW=1.4MHz)		
	19965-20175-20385(LTE Band 4 BW=3MHz)		
	19975-20175-20375(LTE Band 4 BW=5MHz)		
	20000-20175-20350(LTE Band 4 BW=10MHz)		
	20025-20175-20325(LTE Band 4 BW=15MHz)		
	20050-20175-20300(LTE Band 4 BW=20MHz)		
	20775-21100-21425(LTE Band 7 BW=5MHz)		

	20800-21100-21400(LTE Band 7 BW=10MHz)
	20825-21100-21375(LTE Band 7 BW=15MHz)
	20850-21100-21350(LTE Band 7 BW=20MHz)
	1-3-6-9-11(WLAN 2.4G)
	36-38-40-42-46-48(WLAN 5.2G)
	149-151-155-157-159-165(WLAN 5.8G)

1.4. Test specification(s)

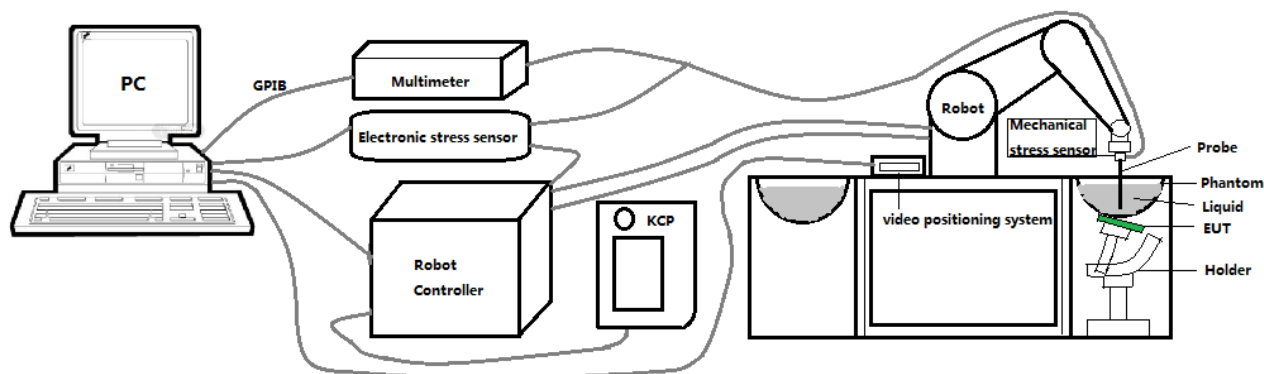
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 D06 Hotspot SAR
KDB 648474 D04 Handset SAR

1.5. Ambient Condition

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

2. SAR Measurement System

2.1. SATIMO SAR Measurement Set-up Diagram



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

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

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

2.2. Robot

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



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

2.3. E-Field Probe

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

For the measurements the Specific Dosimetric E-Field Probe SN 08/16 EPGO287 with following specifications is used



- Dynamic range: 0.01-100 W/kg
- Tip Diameter: 2.5 mm
- Distance between probe tip and sensor center: 1 mm
- Distance between sensor center and the inner phantom surface: 2 mm (repeatability better than ± 1 mm).
- Probe linearity: ± 0.08 dB
- Axial isotropy: 0.06 dB
- Hemispherical Isotropy: 0.08 dB
- Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
- Lower detection limit: 7mW/kg

Angle between probe axis (evaluation axis) and surface normal line: less than 30° .

2.3.1. E-Field Probe Calibration

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

2.4. SAM phantoms

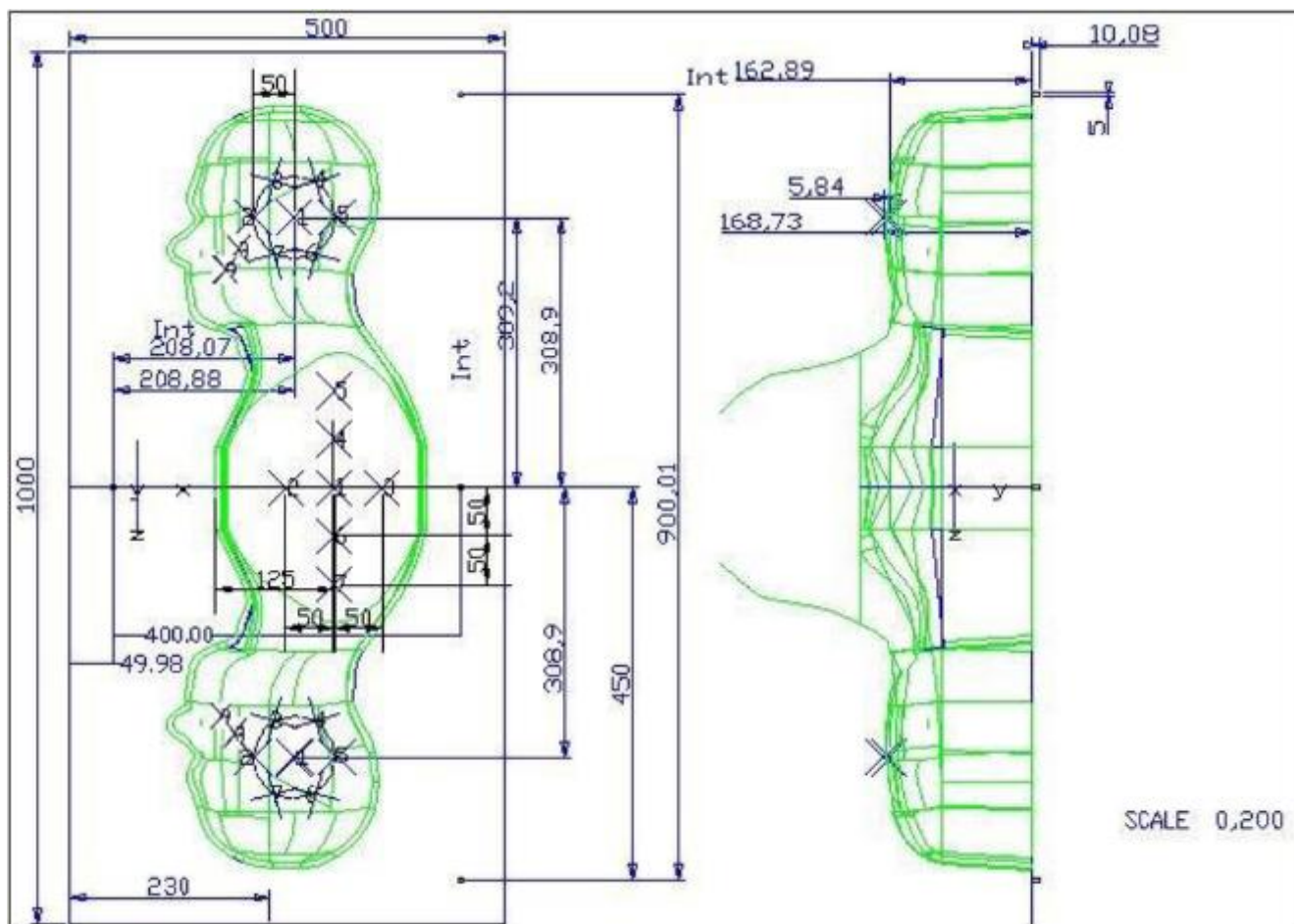
Photo of SAM phantom SN 16/15 SAM119



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

2.4.1. Technical Data

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

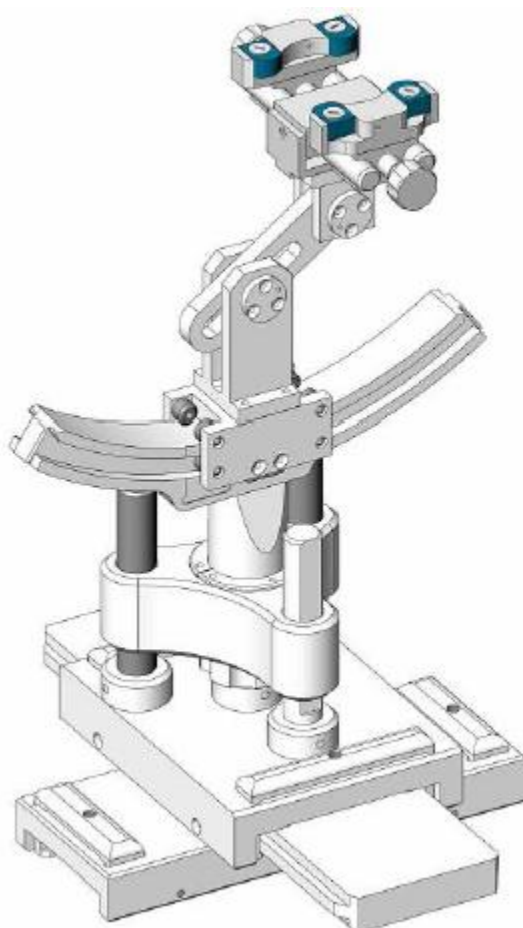


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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

2.5. Device Holder

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



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

2.6. Test Equipment List

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

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Dec. 27, 2019	Dec. 26, 2020
☐	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Apr. 19, 2018	Apr. 18, 2021
☒	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	Aug. 06, 2019	Aug. 05, 2020
☒	R&S	Wideband radio communication tester	CMW500	103917	Aug. 28, 2019	Aug. 27, 2020
☒	HP	Network Analyzer	8753D	3410J01136	Aug. 06, 2019	Aug. 05, 2020
☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Aug. 06, 2019	Aug. 05, 2020

☒	Agilent	Power meter	E4419B	MY45102538	Aug. 06, 2019	Aug. 05, 2020
☒	Agilent	Power sensor	E9301A	MY41495644	Aug. 06, 2019	Aug. 05, 2020
☒	Agilent	Power sensor	E9301A	US39212148	Aug. 06, 2019	Aug. 05, 2020
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Aug. 06, 2019	Aug. 05, 2020

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.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Zoom} , Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

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

3.3. Description of interpolation/extrapolation scheme

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

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

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

3.4. Volumetric Scan

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

3.5. Power Drift

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

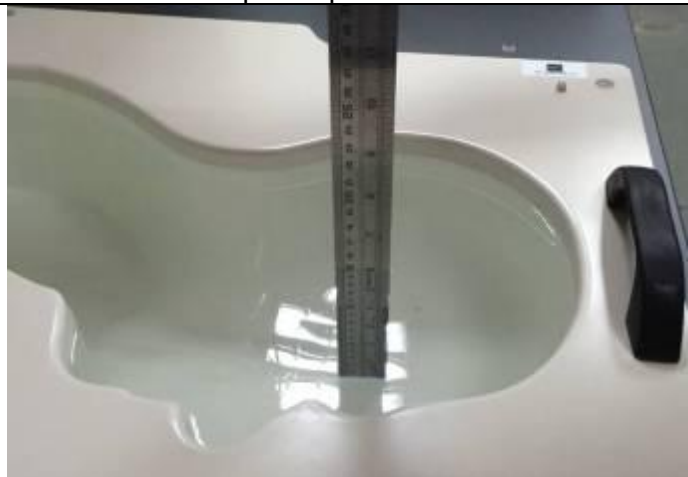
4. System Verification Procedure

4.1. Tissue Verification

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

Ingredients (% of weight)	Head Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	34.40	34.40	34.40	55.36	55.36	57.87	57.87	57.87	65.53	65.53
NaCl	0.79	0.79	0.79	0.35	0.35	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	64.81	64.81	64.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	30.45	30.45	19.97	19.97	19.97	24.24	24.24
DGBE	0.00	0.00	0.00	13.84	13.84	22.00	22.00	22.00	10.23	10.23
Ingredients (% of weight)	Body Tissue									
Frequency Band (MHz)	750	835	900	1800	1900	2000	2450	2600	5200	5800
Water	50.30	50.30	50.30	69.91	69.91	71.88	71.88	71.88	79.54	79.54
NaCl	0.60	0.60	0.60	0.13	0.13	0.16	0.16	0.16	0.00	0.00
1,2-Propanediol	49.10	49.10	49.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Triton X-100	0.00	0.00	0.00	9.99	9.99	19.97	19.97	19.97	11.24	11.24
DGBE	0.00	0.00	0.00	19.97	19.97	7.99	7.99	7.99	9.22	9.22

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 if the dielectric parameters are within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

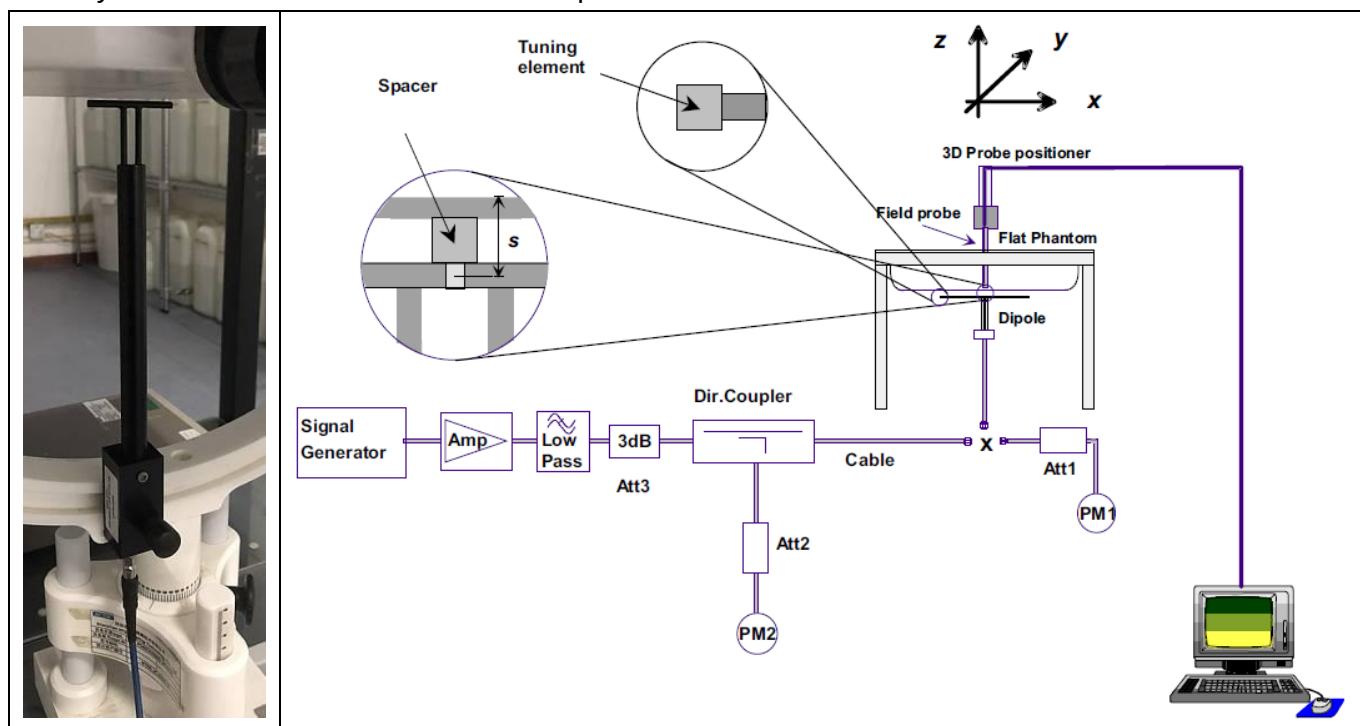
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.76	0.93	21.5 °C	Jul. 16, 2020
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.49	0.98	21.5 °C	Jul. 18, 2020
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.58	1.38	21.7 °C	Jul. 15, 2020
Body 1800	1800	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.06	1.51	21.5 °C	Jul. 19, 2020
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.60	1.44	21.5 °C	Jul. 19, 2020
Body 1900	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	54.23	1.53	21.5 °C	Jul. 17, 2020
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.51	1.85	21.5 °C	Jul. 17, 2020
Body 2450	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	51.49	1.89	21.5 °C	Jul. 19, 2020
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.10	2.02	21.4 °C	Jul. 18, 2020
Body 2600	2600	52.51 (49.88~55.14)	2.16 (2.05~2.27)	52.82	2.22	21.2 °C	Jul. 18, 2020
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	35.64	4.65	21.5 °C	Jul. 19, 2020
Body 5200	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	49.66	5.26	21.5 °C	Jul. 22, 2020
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.55	5.23	21.9 °C	Jul. 16, 2020
Body 5800	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.32	6.06	21.2 °C	Jul. 20, 2020

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

4.2. System Verification Procedure

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

The system verification is shown as below picture:



4.2.1. System Verification Results

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

System Verification	Target SAR (1W) ($\pm 10\%$)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		
835MHz Head	9.55 (8.60~10.51)	6.10 (5.49~6.71)	9.51	5.97	21.5 °C	Jul. 16, 2020
835MHz Body	9.83 (8.85~10.81)	6.45 (5.81~7.10)	9.79	6.15	21.5 °C	Jul. 18, 2020
1800MHz Head	38.11 (34.30~41.92)	20.05 (18.05~22.06)	39.86	19.02	21.7 °C	Jul. 15, 2020
1800MHz Body	38.13 (34.32~41.94)	20.65 (18.59~22.72)	40.24	21.77	21.5 °C	Jul. 19, 2020
1900MHz Head	38.92 (35.03~42.81)	20.09 (18.08~22.10)	37.31	19.32	21.5 °C	Jul. 19, 2020
1900MHz Body	39.02 (35.12~42.92)	20.57 (18.51~22.63)	39.55	20.17	21.5 °C	Jul. 17, 2020
2450MHz Head	53.76 (48.38~59.14)	24.12 (21.71~26.53)	56.50	23.29	21.5 °C	Jul. 17, 2020
2450MHz Body	52.90 (47.61~58.19)	24.09 (21.68~26.50)	53.36	23.21	21.5 °C	Jul. 19, 2020
2600MHz Head	55.60 (50.04~61.16)	24.60 (22.14~27.06)	56.43	25.81	21.4 °C	Jul. 18, 2020
2600MHz Body	52.49 (47.24~57.74)	23.74 (21.37~26.11)	50.13	23.59	21.2 °C	Jul. 18, 2020
5200MHz Head	160.94 (144.85~177.03)	55.97 (50.37~61.57)	154.34	56.82	21.5 °C	Jul. 19, 2020
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	153.00	53.09	21.5 °C	Jul. 22, 2020
5800MHz Head	184.13 (165.72~202.54)	62.74 (56.47~69.01)	184.96	62.70	21.9 °C	Jul. 16, 2020
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	167.53	55.26	21.2 °C	Jul. 20, 2020

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

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

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

5.2. SAR measurement uncertainty

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

6. RF Exposure Positions

6.1. Ear and handset reference point

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



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

6.2. Definition of the cheek position

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

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

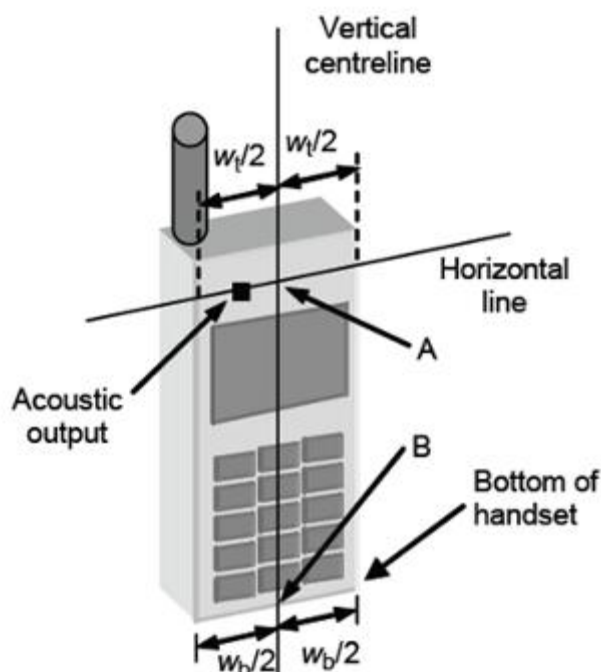


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

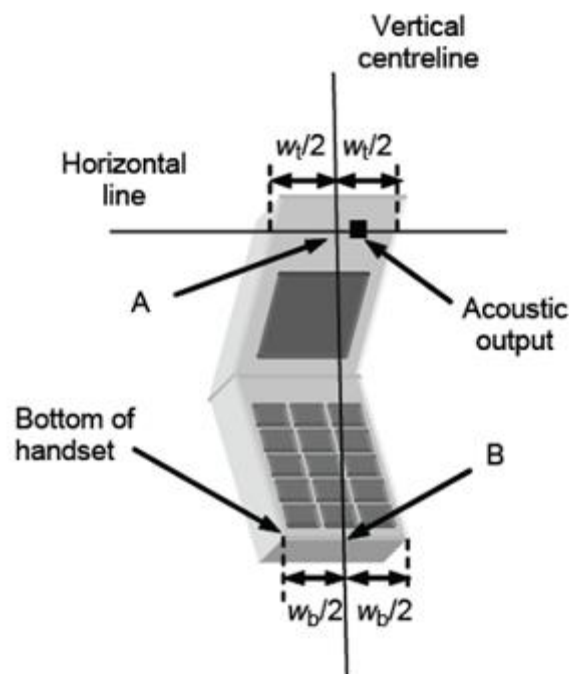


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

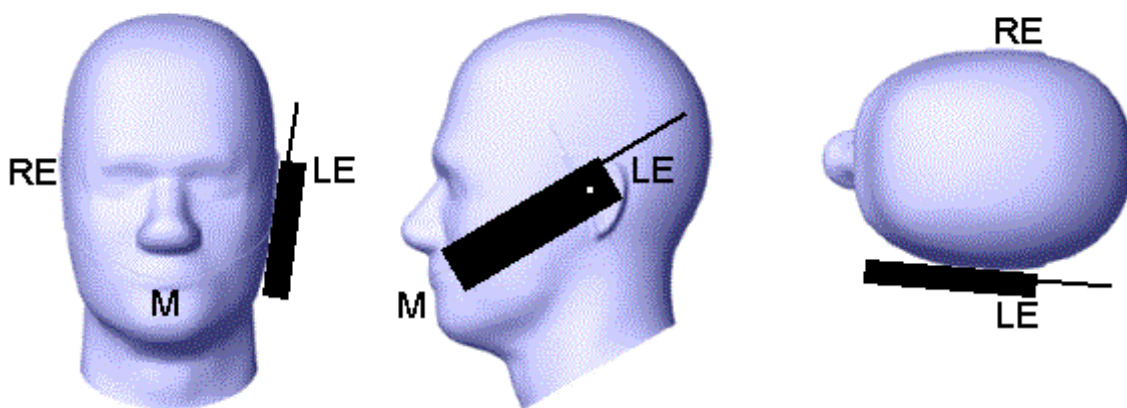


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

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

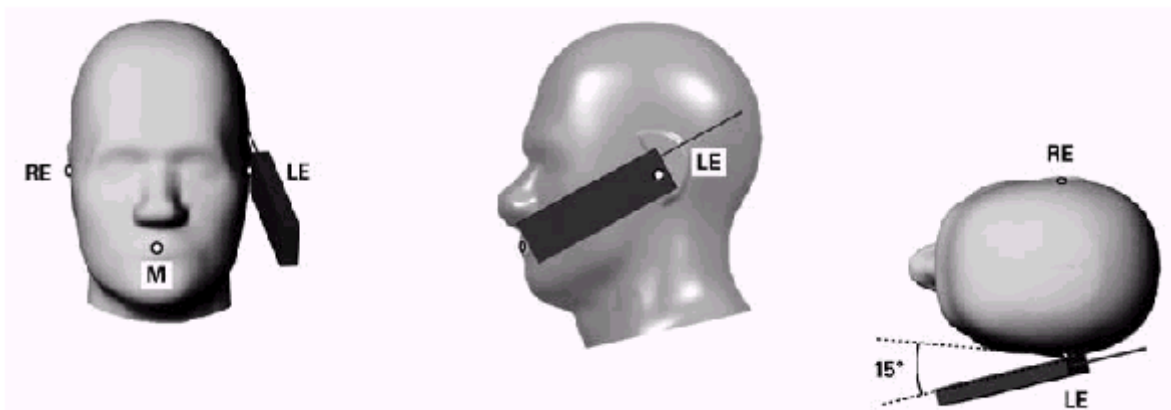


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

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

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

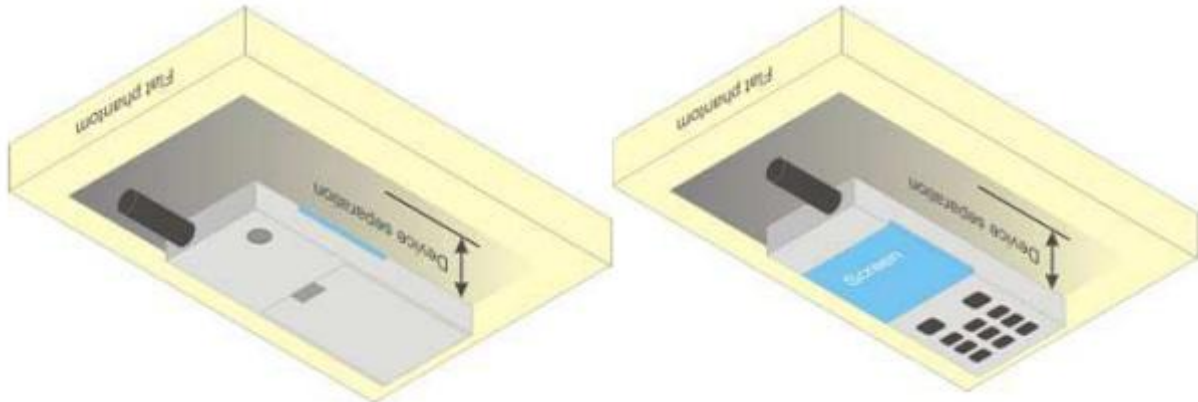


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WLAN simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06 where SAR test considerations for handsets ($L \times W \geq 9 \text{ cm} \times 5 \text{ cm}$) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined from general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WLAN transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WLAN transmitter according to FCC KDB Publication 447498 D01 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

7. RF Output Power

7.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	189	251	Tune-up	128	189	251
Frequency (MHz)	(dBm)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8
GSM (GMSK)	34.00	33.34	33.44	33.25	24.97	24.31	24.41	24.22
GPRS(GMSK, 1 TS)	34.00	33.28	33.38	33.23	24.97	24.25	24.35	24.20
GPRS(GMSK, 2 TS)	33.00	32.47	32.55	32.37	26.98	26.45	26.53	26.35
GPRS(GMSK, 3 TS)	31.00	30.14	30.30	30.12	26.74	25.88	26.04	25.86
GPRS(GMSK, 4 TS)	29.00	28.81	28.97	28.81	25.99	25.80	25.96	25.80
EDGE(8PSK, 1 TS)	29.00	27.77	28.05	28.10	19.97	18.74	19.02	19.07
EDGE(8PSK, 2 TS)	28.00	26.67	27.18	27.11	21.98	20.65	21.16	21.09
EDGE(8PSK, 3 TS)	25.00	24.33	24.48	24.44	20.74	20.07	20.22	20.18
EDGE(8PSK, 4 TS)	24.00	22.98	23.22	23.14	20.99	19.97	20.21	20.13
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880.0	1909.8	(dBm)	1850.2	1880.0	1909.8
GSM (GMSK)	31.00	30.36	30.38	30.41	21.97	21.33	21.35	21.38
GPRS(GMSK, 1 TS)	31.00	30.43	30.45	30.51	21.97	21.40	21.42	21.48
GPRS(GMSK, 2 TS)	30.00	29.45	29.47	29.55	23.98	23.43	23.45	23.53
GPRS(GMSK, 3 TS)	28.00	26.98	27.09	27.25	23.74	22.72	22.83	22.99
GPRS(GMSK, 4 TS)	26.00	25.67	25.77	25.90	22.99	22.66	22.76	22.89
EDGE(8PSK, 1 TS)	28.00	27.69	27.92	27.78	18.97	18.66	18.89	18.75
EDGE(8PSK, 2 TS)	27.00	26.20	26.45	26.63	20.98	20.18	20.43	20.61
EDGE(8PSK, 3 TS)	24.00	23.70	23.93	23.93	19.74	19.44	19.67	19.67
EDGE(8PSK, 4 TS)	23.00	22.40	22.58	22.61	19.99	19.39	19.57	19.60

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 TS) - 9.03 dB

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

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

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

7.2. WCDMA Conducted Power

Band	WCDMA Band 2			
Tx Channel	Tune-up	9262	9400	9538
Frequency (MHz)		1852.4	1880	1907.6
RMC 12.2Kbps	24.00	23.63	23.79	23.96
HSDPA Subtest-1	23.00	22.67	22.79	23.00
HSDPA Subtest-2	23.00	21.93	22.32	22.25
HSDPA Subtest-3	22.00	21.00	21.37	21.69
HSDPA Subtest-4	22.00	21.24	21.30	21.68
HSUPA Subtest-1	23.00	22.34	22.26	22.65
HSUPA Subtest-2	23.00	22.63	22.81	22.95
HSUPA Subtest-3	22.00	21.82	21.67	21.80
HSUPA Subtest-4	24.00	22.70	22.82	23.01
HSUPA Subtest-5	23.00	22.05	22.01	22.40
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	24.00	23.32	23.36	23.08
HSDPA Subtest-1	23.00	22.37	22.48	22.19
HSDPA Subtest-2	22.00	21.80	21.95	21.50
HSDPA Subtest-3	21.00	20.88	20.88	20.60
HSDPA Subtest-4	22.00	21.00	21.02	20.68
HSUPA Subtest-1	23.00	22.01	21.94	21.63
HSUPA Subtest-2	23.00	22.28	22.36	22.02
HSUPA Subtest-3	22.00	20.99	21.03	20.94
HSUPA Subtest-4	23.00	22.36	22.43	22.18
HSUPA Subtest-5	22.00	21.64	21.41	21.32

7.3. LTE Conducted Power

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18607/1850.7	18900/1880	19193/1909.3
LTE Band 2	1.4MHz	QPSK	1	0	25.00	23.74	23.80	23.98
			1	2	25.00	23.91	24.00	24.10
			1	5	25.00	23.73	23.83	23.98
			3	0	25.00	23.82	24.00	24.04
			3	1	25.00	23.86	24.01	24.05

			3	2	25.00	23.83	23.99	24.00
			6	0	24.00	22.80	22.91	23.04
		16QAM	1	0	24.00	22.83	23.10	22.80
			1	2	24.00	23.00	23.22	22.94
			1	5	24.00	22.85	23.03	22.76
			3	0	24.00	22.97	23.18	23.16
			3	1	24.00	22.98	23.20	23.14
			3	2	24.00	22.97	23.19	23.18
			6	0	23.00	22.00	22.13	22.20
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18615/1851.5	18900/1880	19185/1908.5
LTE Band 2	3MHz	QPSK	1	0	25.00	23.71	23.80	23.91
			1	7	25.00	24.01	24.13	24.22
			1	14	25.00	23.70	23.80	23.93
			8	0	24.00	22.73	22.83	22.97
			8	4	24.00	22.73	22.89	23.02
			8	7	24.00	22.70	22.87	22.97
			15	0	23.00	22.72	22.85	22.99
		16QAM	1	0	24.00	23.12	23.06	22.81
			1	7	24.00	23.40	23.38	23.07
			1	14	24.00	23.08	23.02	22.72
			8	0	22.00	21.75	21.88	21.97
			8	4	22.00	21.75	21.91	21.98
			8	7	22.00	21.74	21.86	21.98
			15	0	23.00	21.77	21.83	22.04
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18625/1852.5	18900/1880	19175/1907.5
LTE Band 2	5MHz	QPSK	1	0	25.00	23.54	23.75	23.88
			1	12	25.00	24.01	24.15	24.29
			1	24	25.00	23.54	23.73	23.82
			12	0	24.00	22.69	22.81	22.97
			12	6	24.00	22.78	22.94	23.02
			12	11	24.00	22.75	22.91	22.95
			25	0	24.00	22.70	22.90	23.01
		16QAM	1	0	24.00	22.85	23.30	23.17
			1	12	24.00	23.20	23.69	23.59

			1	24	24.00	22.88	23.26	23.14
			12	0	23.00	21.74	21.86	21.93
			12	6	23.00	21.80	21.95	22.03
			12	11	23.00	21.71	21.92	21.94
			25	0	23.00	21.67	21.91	22.08
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18650/1855	18900/1880	19150/1905
LTE Band 2	10MHz	QPSK	1	0	25.00	23.78	23.86	23.98
			1	24	25.00	23.35	23.94	24.03
			1	49	25.00	23.72	23.82	23.94
			25	0	24.00	22.74	22.95	23.11
			25	12	24.00	22.69	22.94	23.03
			25	24	24.00	22.72	22.92	23.05
			50	0	24.00	22.74	22.91	23.09
		16QAM	1	0	24.00	22.91	22.69	23.24
			1	24	24.00	22.98	22.88	23.39
			1	49	24.00	22.87	22.72	23.32
			25	0	23.00	21.74	21.99	22.14
			25	12	23.00	21.80	21.94	22.05
			25	24	23.00	21.77	21.94	22.13
			50	0	23.00	21.78	21.95	22.08
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band 2	15MHz	QPSK	1	0	25.00	23.73	23.69	23.79
			1	37	25.00	23.90	24.03	24.22
			1	74	25.00	23.67	23.65	23.78
			36	0	24.00	22.77	22.94	23.18
			36	18	24.00	22.80	22.93	23.14
			36	37	24.00	22.77	22.91	23.06
			75	0	24.00	22.76	22.94	23.14
		16QAM	1	0	24.00	22.85	22.84	23.13
			1	37	24.00	23.14	23.23	23.43
			1	74	24.00	22.83	22.84	23.21
			36	0	23.00	21.77	21.89	22.08
			36	18	23.00	21.81	21.87	22.04
			36	37	23.00	21.76	21.84	22.04

			75	0	23.00	21.76	21.95	22.07
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	25.00	23.46	23.58	23.69
			1	49	25.00	23.76	23.94	24.18
			1	99	25.00	23.50	23.57	23.76
			50	0	24.00	22.71	22.91	23.04
			50	24	24.00	22.79	22.92	23.01
			50	49	24.00	22.72	22.92	22.87
			100	0	23.00	22.71	22.94	22.99
		16QAM	1	0	24.00	22.84	22.85	22.93
			1	49	24.00	23.16	23.26	23.21
			1	99	24.00	22.82	22.83	22.94
			50	0	23.00	21.79	22.01	22.11
			50	24	23.00	21.84	21.94	22.02
			50	49	23.00	21.80	21.93	21.94
			100	0	23.00	21.76	21.97	22.04

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	24.00	23.65	23.66	23.33
			1	2	24.00	23.76	23.81	23.46
			1	5	24.00	23.66	23.66	23.34
			3	0	24.00	23.61	23.46	23.29
			3	1	24.00	23.62	23.51	23.31
			3	2	24.00	23.57	23.46	23.28
			6	0	23.00	22.74	22.62	22.45
		16QAM	1	0	23.00	22.42	22.44	22.40
			1	2	23.00	22.58	22.55	22.55
			1	5	23.00	22.40	22.44	22.37
			3	0	23.00	22.71	22.52	22.45
			3	1	23.00	22.71	22.50	22.48
			3	2	23.00	22.72	22.50	22.46
			6	0	22.00	21.87	21.60	21.49
Band	Band Width	Modulation	RB Configuration		Tune-up	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	23.62	23.50	23.36
			1	7	24.00	23.82	23.78	23.65
			1	14	24.00	23.50	23.49	23.35
			8	0	23.00	22.64	22.53	22.40
			8	4	23.00	22.65	22.52	22.44
			8	7	23.00	22.62	22.51	22.35
			15	0	23.00	22.59	22.45	22.35
		16QAM	1	0	24.00	22.96	22.46	22.16
			1	7	24.00	23.15	22.76	22.43
			1	14	24.00	22.81	22.48	22.04
			8	0	22.00	21.62	21.41	21.35
			8	4	22.00	21.62	21.42	21.32
			8	7	22.00	21.63	21.41	21.27
			15	0	22.00	21.57	21.33	21.36
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	24.00	23.49	23.42	23.20
			1	12	24.00	23.91	23.82	23.60
			1	24	24.00	23.49	23.36	23.17
			12	0	23.00	22.60	22.37	22.35
			12	6	23.00	22.61	22.45	22.38
			12	11	23.00	22.48	22.39	22.26
			25	0	23.00	22.54	22.42	22.33
		16QAM	1	0	24.00	22.91	22.46	22.50
			1	12	24.00	23.31	22.84	22.77
			1	24	24.00	22.77	22.51	22.33
			12	0	22.00	21.53	21.26	21.37
			12	6	22.00	21.59	21.31	21.38
			12	11	22.00	21.45	21.23	21.27
			25	0	22.00	21.48	21.34	21.27
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band	10MHz	QPSK	1	0	24.00	23.54	23.50	23.31
			1	24	24.00	23.58	23.53	23.41

4			1	49	24.00	23.47	23.38	23.26
			25	0	23.00	22.55	22.35	22.41
			25	12	23.00	22.48	22.36	22.33
			25	24	23.00	22.44	22.40	22.28
			50	0	23.00	22.47	22.38	22.34
		16QAM	1	0	23.00	22.86	22.41	22.21
			1	24	23.00	22.83	22.50	22.21
			1	49	23.00	22.64	22.47	22.01
			25	0	22.00	21.51	21.29	21.44
			25	12	22.00	21.44	21.31	21.35
			25	24	22.00	21.40	21.39	21.25
			50	0	22.00	21.41	21.36	21.31
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	24.00	23.43	23.39	23.29
			1	37	24.00	23.74	23.66	23.48
			1	74	24.00	23.38	23.25	23.14
			36	0	23.00	22.66	22.60	22.50
			36	18	23.00	22.65	22.59	22.42
			36	37	23.00	22.61	22.53	22.36
			75	0	23.00	22.63	22.54	22.48
		16QAM	1	0	23.00	22.57	22.48	22.47
			1	37	23.00	22.71	22.67	22.65
			1	74	23.00	22.38	22.62	22.22
			36	0	22.00	21.49	21.41	21.46
			36	18	22.00	21.42	21.42	21.49
			36	37	22.00	21.40	21.41	21.31
			75	0	22.00	21.52	21.39	21.42
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	24.00	23.32	23.27	23.21
			1	49	24.00	23.59	23.53	23.43
			1	99	24.00	23.20	23.09	23.06
			50	0	23.00	22.43	22.30	22.48
			50	24	23.00	22.37	22.39	22.34
			50	49	23.00	22.36	22.36	22.23

			100	0	23.00	22.39	22.30	22.29
		16QAM	1	0	23.00	22.54	22.19	22.31
			1	49	23.00	22.62	22.49	22.68
			1	99	23.00	22.31	22.36	22.15
			50	0	22.00	21.40	21.22	21.48
			50	24	22.00	21.36	21.32	21.45
			50	49	22.00	21.31	21.35	21.27
			100	0	22.00	21.33	21.27	21.34

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	25.00	24.56	24.01	24.07
			1	12	25.00	24.99	24.32	24.41
			1	24	25.00	24.45	24.01	24.10
			12	0	24.00	23.55	23.15	23.15
			12	6	24.00	23.60	23.16	23.21
			12	11	24.00	23.50	23.15	23.17
			25	0	24.00	23.52	23.14	23.17
		16QAM	1	0	25.00	23.62	23.17	23.28
			1	12	25.00	24.06	23.52	23.67
			1	24	25.00	23.48	23.23	23.33
			12	0	23.00	22.52	22.12	22.10
			12	6	23.00	22.57	22.21	22.17
			12	11	23.00	22.47	22.16	22.09
			25	0	23.00	22.56	22.12	22.13

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	25.00	24.55	24.08	24.17
			1	24	25.00	24.53	24.18	24.31
			1	49	25.00	24.37	24.05	24.23
			25	0	24.00	23.52	23.14	23.19
			25	12	24.00	23.49	23.20	23.14
			25	24	24.00	23.42	23.23	23.15
			50	0	24.00	23.46	23.18	23.15
		16QAM	1	0	24.00	23.72	23.06	22.77
			1	24	24.00	23.73	23.21	22.89

			1	49	24.00	23.49	23.18	22.82
			25	0	23.00	22.58	22.18	22.20
			25	12	23.00	22.57	22.21	22.17
			25	24	23.00	22.53	22.24	22.13
			50	0	23.00	22.50	22.25	22.18
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20825/2507.5	21100/2535	21375/2562.5
LTE Band 7	15MHz	QPSK	1	0	25.00	24.43	23.98	24.02
			1	37	25.00	24.68	24.30	24.41
			1	74	25.00	24.21	23.95	24.13
			36	0	24.00	23.63	23.28	23.40
			36	18	24.00	23.61	23.26	23.35
			36	37	24.00	23.52	23.27	23.34
			75	0	24.00	23.60	23.30	23.37
		16QAM	1	0	24.00	23.49	23.20	23.12
			1	37	24.00	23.65	23.53	23.24
			1	74	24.00	23.18	23.34	23.09
			36	0	23.00	22.53	22.19	22.33
			36	18	23.00	22.49	22.22	22.25
			36	37	23.00	22.39	22.28	22.24
			75	0	23.00	22.58	22.26	22.23
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	25.00	24.43	23.96	23.81
			1	49	25.00	24.68	24.24	24.24
			1	99	25.00	24.20	23.85	23.95
			50	0	24.00	23.41	23.15	23.29
			50	24	24.00	23.40	23.17	23.14
			50	49	24.00	23.18	23.29	23.06
			100	0	24.00	23.31	23.16	23.12
		16QAM	1	0	24.00	23.41	23.04	23.04
			1	49	24.00	23.53	23.43	23.23
			1	99	24.00	23.03	23.22	22.95
			50	0	23.00	22.50	22.18	22.27
			50	24	23.00	22.50	22.28	22.14
			50	49	23.00	22.22	22.36	22.01

			100	0	23.00	22.39	22.22	22.15
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7.4. WLAN & Bluetooth Output Power

7.4.1. Output Power Results Of WLAN

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11b	1	2412	12.50	12.17
	6	2437	12.50	11.75
	11	2462	12.50	10.72
802.11g	1	2412	12.00	11.89
	6	2437	12.00	11.66
	11	2462	12.00	10.72
802.11n HT20	1	2412	12.50	12.06
	6	2437	12.50	11.55
	11	2462	12.50	10.58
802.11n HT40	3	2422	12.50	12.43
	6	2437	12.50	11.48
	9	2452	12.50	11.99

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	9.00	8.10
	40	5200	9.00	8.39
	48	5240	9.00	8.60
802.11n HT20	36	5180	9.00	8.18
	40	5200	9.00	8.05
	48	5240	9.00	8.55
802.11n HT40	38	5190	9.00	8.76
	46	5230	9.00	8.78
802.11ac VHT20	36	5180	9.00	7.97
	40	5200	9.00	8.30
	48	5240	9.00	7.87
802.11ac VHT40	38	5190	9.00	8.78
	46	5230	9.00	8.69
802.11ac VHT80	42	5210	9.00	8.91

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	9.00	8.63
	157	5785	9.00	8.14

	165	5825	9.00	8.46
802.11n HT20	149	5745	9.00	8.71
	157	5785	9.00	7.97
	165	5825	9.00	7.47
802.11n HT40	151	5755	9.00	8.04
	159	5795	9.00	9.00
802.11ac VHT20	149	5745	9.00	8.40
	157	5785	9.00	9.00
	165	5825	9.00	7.45
802.11ac VHT40	151	5755	9.00	8.13
	159	5795	9.00	8.75
802.11ac VHT80	155	5775	9.00	8.30

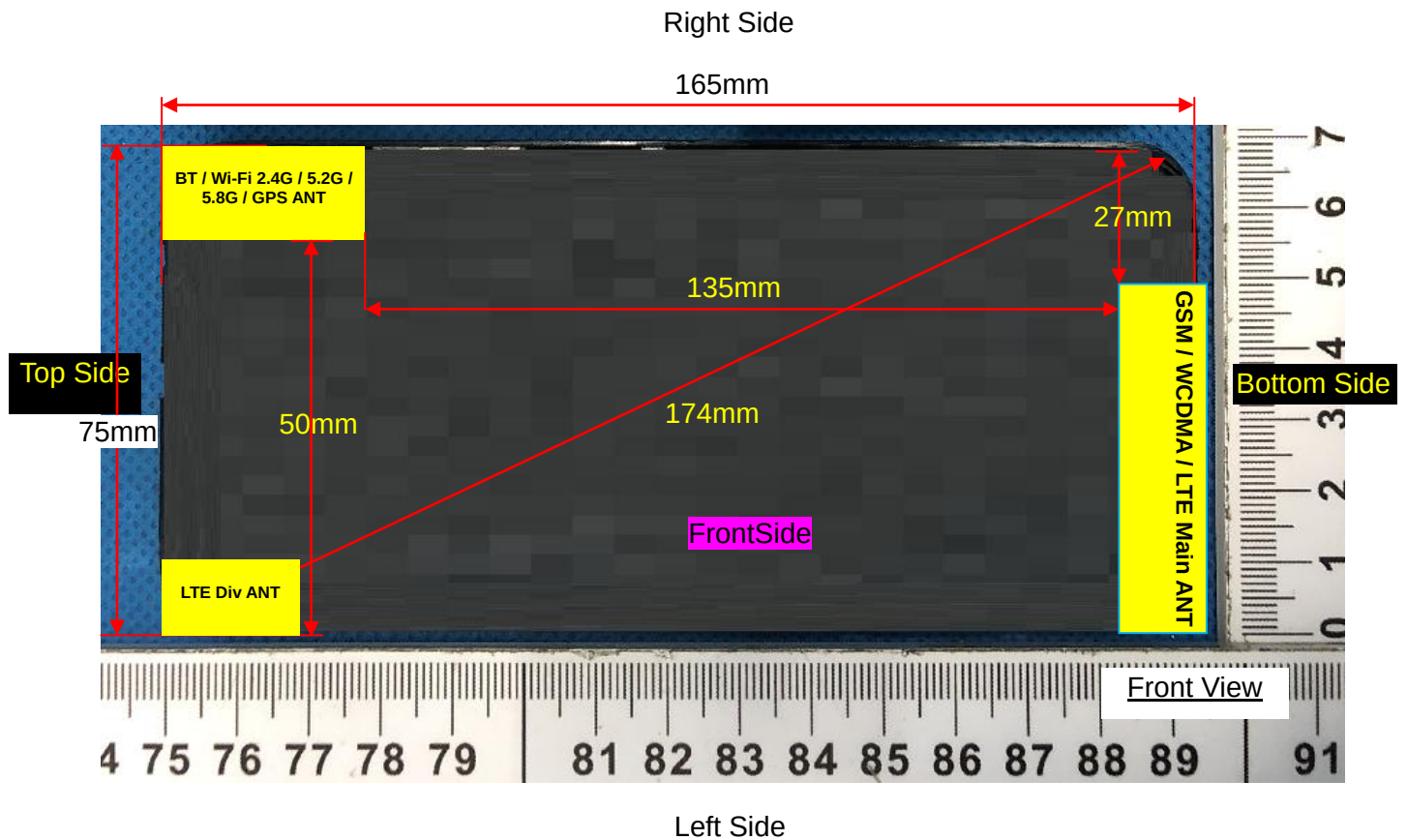
NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

BR+EDR	Output Power (dBm)				
	Channel	Tune-up	Data Rates		
			1M	2M	3M
	0CH	7.000	6.633	6.011	5.861
	39CH	7.000	6.517	6.210	6.129
	78CH	6.000	5.174	4.548	4.438

BLE	Channel	Tune-up	Output Power (dBm)	
			1M	2M
	0CH	-5.000	-6.277	-6.269
	19CH	-5.000	-5.928	-5.863
	39CH	-5.000	-5.635	-5.509

8. Antenna Location



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

9. Stand-alone SAR test exclusion

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

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

- $f_{\text{(GHz)}}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

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

Mode	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	Calculation Result	SAR Exclusion threshold	SAR test exclusion
Bluetooth	7.00	5.01	5	2.480	1.57	3.0	Yes

NOTE: Standalone SAR test exclusion for Bluetooth

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

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

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

Mode	Position	P_{max} (dBm)	P_{max} (mW)	Distance (mm)	f (GHz)	x	Estimated SAR (W/Kg)
Bluetooth	Head	7.00	5.01	5	2.480	7.5	0.210
Bluetooth	Body	7.00	5.01	10	2.480	7.5	0.105
Bluetooth	Hotspot	7.00	5.01	10	2.480	7.5	0.105

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement results

10.1.1. SAR measurement Result of GSM850

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

								(W/Kg)
Left Cheek	189/836.4	GPRS(GMSK 2TS)	0.260	0.196	4.38	32.55	33.00	0.288
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 2TS)	0.137	0.099	1.92	32.55	33.00	0.152
Right Cheek	189/836.4	GPRS(GMSK 2TS)	0.243	0.187	4.91	32.55	33.00	0.270
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 2TS)	0.125	0.098	-0.44	32.55	33.00	0.139

NOTE: Head SAR test results of GSM850.

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	189/836.4	GPRS(GMSK 2TS)	0.333	0.180	3.80	32.55	33.00	0.369
Back Side	189/836.4	GPRS(GMSK 2TS)	0.441	0.237	2.01	32.55	33.00	0.489

NOTE: Body-Worn SAR test results of GSM850

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	189/836.4	GPRS(GMSK 2TS)	0.333	0.180	3.80	32.55	33.00	0.369
Back Side	189/836.4	GPRS(GMSK 2TS)	0.441	0.237	2.01	32.55	33.00	0.489
Left Side	189/836.4	GPRS(GMSK 2TS)	0.342	0.188	-1.37	32.55	33.00	0.379
Bottom Side	189/836.4	GPRS(GMSK 2TS)	0.170	0.095	-4.43	32.55	33.00	0.189

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	661/1880	GPRS(GMSK 2TS)	0.125	0.078	-2.67	29.47	30.00	0.141
Left Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.065	0.039	4.37	29.47	30.00	0.073
Right Cheek	661/1880	GPRS(GMSK 2TS)	0.117	0.073	3.07	29.47	30.00	0.132
Right Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.055	0.035	0.26	29.47	30.00	0.062

NOTE: Head SAR test results of GSM1900

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

Front Side	661/1880	GPRS(GMSK 2TS)	0.379	0.193	-4.59	29.47	30.00	0.428
Back Side	661/1880	GPRS(GMSK 2TS)	0.453	0.231	2.61	29.47	30.00	0.512

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	661/1880	GPRS(GMSK 2TS)	0.379	0.193	-4.59	29.47	30.00	0.428
Back Side	661/1880	GPRS(GMSK 2TS)	0.453	0.231	2.61	29.47	30.00	0.512
Left Side	661/1880	GPRS(GMSK 2TS)	0.329	0.165	-2.07	29.47	30.00	0.372
Bottom Side	661/1880	GPRS(GMSK 2TS)	0.181	0.096	4.27	29.47	30.00	0.204

NOTE: Hotspot SAR test results of GSM1900

10.1.3. SAR measurement Result of WCDMA Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	9400/1880	RMC12.2K	0.199	0.121	-0.51	23.79	24.00	0.209
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.116	0.071	-1.81	23.79	24.00	0.122
Right Cheek	9400/1880	RMC12.2K	0.185	0.115	-2.16	23.79	24.00	0.194
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.097	0.059	4.86	23.79	24.00	0.102

NOTE: Head SAR test results of WCDMA Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9400/1880	RMC12.2K	0.482	0.252	0.19	23.79	24.00	0.506
Back Side	9400/1880	RMC12.2K	0.596	0.307	0.11	23.79	24.00	0.626

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9400/1880	RMC12.2K	0.482	0.252	0.19	23.79	24.00	0.506
Back Side	9400/1880	RMC12.2K	0.596	0.307	0.11	23.79	24.00	0.626
Left Side	9400/1880	RMC12.2K	0.437	0.227	4.45	23.79	24.00	0.459

Bottom Side	9400/1880	RMC12.2K	0.238	0.122	0.68	23.79	24.00	0.250
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NOTE: Hotspot SAR test results of WCDMA Band 2

10.1.4. SAR measurement Result of WCDMA Band 5

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	4182/836.4	RMC12.2K	0.181	0.141	-0.32	23.36	24.00	0.210
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.104	0.079	-1.78	23.36	24.00	0.121
Right Cheek	4182/836.4	RMC12.2K	0.168	0.126	1.16	23.36	24.00	0.195
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.080	0.066	3.49	23.36	24.00	0.093

NOTE: Head SAR test results of WCDMA Band 5

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	4182/836.4	RMC12.2K	0.255	0.137	1.94	23.36	24.00	0.295
Back Side	4182/836.4	RMC12.2K	0.316	0.175	-0.12	23.36	24.00	0.366

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	4182/836.4	RMC12.2K	0.255	0.137	1.94	23.36	24.00	0.295
Back Side	4182/836.4	RMC12.2K	0.316	0.175	-0.12	23.36	24.00	0.366
Left Side	4182/836.4	RMC12.2K	0.230	0.126	-3.39	23.36	24.00	0.267
Bottom Side	4182/836.4	RMC12.2K	0.121	0.069	4.31	23.36	24.00	0.140

NOTE: Hotspot SAR test results of WCDMA Band 5

10.1.5. SAR measurement Result of LTE Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	18900/1880	20M QPSK(1,49)	0.149	0.094	3.88	23.94	25.00	0.190
Left Tilt	18900/1880	20M QPSK(1,49)	0.088	0.058	-0.11	23.94	25.00	0.112

15 Degree								
Right Cheek	18900/1880	20M QPSK(1,49)	0.137	0.086	-0.81	23.94	25.00	0.175
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.065	0.043	-0.52	23.94	25.00	0.083
50%RB								
Left Cheek	18900/1880	1.4M QPSK(3,1)	0.139	0.083	1.55	24.01	25.00	0.175
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.076	0.051	-1.65	24.01	25.00	0.095
Right Cheek	18900/1880	1.4M QPSK(3,1)	0.117	0.080	-1.01	24.01	25.00	0.147
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.056	0.040	-2.49	24.01	25.00	0.070

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Wor n with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.425	0.221	3.25	23.94	25.00	0.542
Back Side	18900/1880	20M QPSK(1,49)	0.559	0.288	-0.75	23.94	25.00	0.714
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.378	0.189	4.38	24.01	25.00	0.475
Back Side	18900/1880	1.4M QPSK(3,1)	0.506	0.267	-0.87	24.01	25.00	0.636

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.425	0.221	3.25	23.94	25.00	0.542
Back Side	18900/1880	20M QPSK(1,49)	0.559	0.288	-0.75	23.94	25.00	0.714
Left Side	18900/1880	20M QPSK(1,49)	0.414	0.212	-2.63	23.94	25.00	0.528

Bottom Side	18900/1880	20M QPSK(1,49)	0.223	0.111	0.55	23.94	25.00	0.285
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.378	0.189	4.38	24.01	25.00	0.475
Back Side	18900/1880	1.4M QPSK(3,1)	0.506	0.267	-0.87	24.01	25.00	0.636
Left Side	18900/1880	1.4M QPSK(3,1)	0.361	0.198	-1.43	24.01	25.00	0.453
Bottom Side	18900/1880	1.4M QPSK(3,1)	0.195	0.099	4.71	24.01	25.00	0.245

NOTE: Hotspot SAR test results of LTE Band 2

10.1.6. SAR measurement Result of LTE Band 4

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	20175/1732.5	20M QPSK(1,49)	0.179	0.118	-1.02	23.53	24.00	0.199
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.096	0.063	-1.49	23.53	24.00	0.107
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.159	0.105	0.79	23.53	24.00	0.177
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.073	0.052	-1.58	23.53	24.00	0.081
50%RB								
Left Cheek	20175/1732.5	1.4M QPSK(3,1)	0.153	0.104	-0.71	23.51	24.00	0.171
Left Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.085	0.059	-4.75	23.51	24.00	0.095
Right Cheek	20175/1732.5	1.4M QPSK(3,1)	0.137	0.099	2.31	23.51	24.00	0.153
Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,1)	0.067	0.046	1.94	23.51	24.00	0.075

NOTE: Head SAR test results of LTE Band 4

Test	Test channel	Test Mode	SAR Value	Power	Conduc	Tune-u	Scaled
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Position of Body-Wor n with 10mm	/Freq.		(W/kg)		Drift (±5%)	ted power (dBm)	p power (dBm)	SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20175/1732.5	20M QPSK(1,49)	0.394	0.230	-2.86	23.53	24.00	0.439
Back Side	20175/1732.5	20M QPSK(1,49)	0.523	0.302	-1.95	23.53	24.00	0.583
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,1)	0.349	0.208	-1.33	23.51	24.00	0.391
Back Side	20175/1732.5	1.4M QPSK(3,1)	0.453	0.262	-1.78	23.51	24.00	0.507

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20175/1732.5	20M QPSK(1,49)	0.394	0.230	-2.86	23.53	24.00	0.439
Back Side	20175/1732.5	20M QPSK(1,49)	0.523	0.302	-1.95	23.53	24.00	0.583
Left Side	20175/1732.5	20M QPSK(1,49)	0.370	0.209	-3.22	23.53	24.00	0.412
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.183	0.109	1.14	23.53	24.00	0.204
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,2)	0.349	0.208	-1.33	23.51	24.00	0.391
Back Side	20175/1732.5	1.4M QPSK(3,2)	0.453	0.262	-1.78	23.51	24.00	0.507
Left Side	20175/1732.5	1.4M QPSK(3,2)	0.340	0.186	-2.39	23.51	24.00	0.381
Bottom Side	20175/1732.5	1.4M QPSK(3,2)	0.158	0.099	-1.58	23.51	24.00	0.177

NOTE: Hotspot SAR test results of LTE Band 4

10.1.7. SAR measurement Result of LTE Band 7

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	21100/2535	20M QPSK(1,49)	0.392	0.214	-1.11	24.24	25.00	0.467
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.198	0.110	-2.09	24.24	25.00	0.236
Right Cheek	21100/2535	20M QPSK(1,49)	0.359	0.200	0.66	24.24	25.00	0.428
Right Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.164	0.088	3.94	24.24	25.00	0.195
50%RB								
Left Cheek	21100/2535	20M QPSK(50,0)	0.357	0.195	-0.11	23.15	24.00	0.434
Left Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.177	0.100	-3.02	23.15	24.00	0.215
Right Cheek	21100/2535	20M QPSK(50,0)	0.312	0.188	-0.32	23.15	24.00	0.379
Right Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.150	0.078	3.39	23.15	24.00	0.182

NOTE: Head SAR test results of LTE Band 7

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21100/2535	20M QPSK(1,49)	0.516	0.244	2.20	24.24	25.00	0.615
Back Side	21100/2535	20M QPSK(1,49)	0.880	0.229	-4.67	24.24	25.00	1.048
Back Side Repeated	21100/2535	20M QPSK(1,49)	0.866	0.220	-4.67	24.24	25.00	1.032
Back Side	20850/2510	20M QPSK(1,49)	0.799	0.358	2.31	24.68	25.00	0.860
Back Side	21350/2560	20M QPSK(1,49)	0.789	0.352	1.45	24.24	25.00	0.940
50%RB								

Front Side	21100/2535	20M QPSK(50,0)	0.290	0.134	-0.96	23.15	24.00	0.353
Back Side	21100/2535	20M QPSK(50,0)	0.596	0.297	-2.82	23.15	24.00	0.725
100%RB								
Back Side	21100/2535	20M QPSK(100,0)	0.336	0.104	-2.82	23.16	24.00	0.408

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21100/2535	20M QPSK(1,49)	0.516	0.244	2.20	24.24	25.00	0.615
Back Side	21100/2535	20M QPSK(1,49)	0.880	0.229	-4.67	24.24	25.00	1.048
Back Side Repeated	21100/2535	20M QPSK(1,49)	0.866	0.220	-4.67	24.24	25.00	1.032
Left Side	21100/2535	20M QPSK(1,49)	0.626	0.158	4.62	24.24	25.00	0.746
Bottom Side	21100/2535	20M QPSK(1,49)	0.305	0.078	2.39	24.24	25.00	0.363
Back Side	20850/2510	20M QPSK(1,49)	0.799	0.358	2.31	24.68	25.00	0.860
Back Side	21350/2560	20M QPSK(1,49)	0.789	0.352	1.45	24.24	25.00	0.940
50%RB								
Front Side	21100/2535	20M QPSK(50,0)	0.290	0.134	-0.96	23.15	24.00	0.353
Back Side	21100/2535	20M QPSK(50,0)	0.596	0.297	-2.82	23.15	24.00	0.725
Left Side	21100/2535	20M QPSK(50,0)	0.269	0.147	1.34	23.15	24.00	0.327
Bottom Side	21100/2535	20M QPSK(50,0)	0.222	0.098	-4.67	23.15	24.00	0.270
100%RB								
Back Side	21100/2535	20M QPSK(100,0)	0.336	0.104	-2.82	23.16	24.00	0.408

NOTE: Hotspot SAR test results of LTE Band 7

10.1.8. SAR measurement Result of WLAN 2.4G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	6/2437	802.11 b	0.093	0.055	2.78	11.75	12.50	0.111
Left Tilt 15 Degree	6/2437	802.11 b	0.048	0.028	-4.60	11.75	12.50	0.057
Right Cheek	6/2437	802.11 b	0.086	0.055	-1.27	11.75	12.50	0.102
Right Tilt 15 Degree	6/2437	802.11 b	0.041	0.019	3.41	11.75	12.50	0.049

NOTE: Head SAR test results of WLAN 2.4G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	6/2437	802.11 b	0.054	0.032	-3.62	11.75	12.50	0.064
Back Side	6/2437	802.11 b	0.086	0.050	-0.58	11.75	12.50	0.102

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	6/2437	802.11 b	0.054	0.032	-3.62	11.75	12.50	0.064
Back Side	6/2437	802.11 b	0.086	0.050	-0.58	11.75	12.50	0.102
Right Side	6/2437	802.11 b	0.019	0.012	4.58	11.75	12.50	0.023
Top Side	6/2437	802.11 b	0.027	0.017	3.19	11.75	12.50	0.032

NOTE: Hotspot SAR test results of WLAN 2.4G

10.1.9. SAR measurement Result of WLAN 5.2G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	40/5200	802.11a	0.115	0.071	-2.34	8.39	9.00	0.132
Left Tilt 15 Degree	40/5200	802.11a	0.067	0.040	-4.54	8.39	9.00	0.077
Right Cheek	40/5200	802.11a	0.105	0.067	2.08	8.39	9.00	0.121

Right Tilt 15 Degree	40/5200	802.11a	0.053	0.037	-4.09	8.39	9.00	0.061
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NOTE: Head SAR test results of WLAN 5.2G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	40/5200	802.11a	0.102	0.058	-1.47	8.39	9.00	0.117
Back Side	40/5200	802.11a	0.158	0.093	3.06	8.39	9.00	0.182

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	40/5200	802.11a	0.102	0.058	-1.47	8.39	9.00	0.117
Back Side	40/5200	802.11a	0.158	0.093	3.06	8.39	9.00	0.182
Right Side	40/5200	802.11a	0.037	0.021	-0.36	8.39	9.00	0.043
Top Side	40/5200	802.11a	0.050	0.029	4.08	8.39	9.00	0.058

NOTE: Hotspot SAR test results of WLAN 5.2G

10.1.10. SAR measurement Result of WLAN 5.8G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	157/5785	802.11a	0.336	0.152	-1.64	8.14	9.00	0.410
Left Tilt 15 Degree	157/5785	802.11a	0.188	0.081	1.30	8.14	9.00	0.229
Right Cheek	157/5785	802.11a	0.297	0.133	3.87	8.14	9.00	0.362
Right Tilt 15 Degree	157/5785	802.11a	0.161	0.069	4.50	8.14	9.00	0.196

NOTE: Head SAR test results of WLAN 5.8G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	157/5785	802.11a	0.316	0.133	-4.69	8.14	9.00	0.385
Back Side	157/5785	802.11a	0.444	0.208	-2.10	8.14	9.00	0.541

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	157/5785	802.11a	0.316	0.133	-4.69	8.14	9.00	0.385
Back Side	157/5785	802.11a	0.444	0.208	-2.10	8.14	9.00	0.541
Right Side	157/5785	802.11a	0.117	0.043	-0.71	8.14	9.00	0.143
Top Side	157/5785	802.11a	0.167	0.071	-4.30	8.14	9.00	0.204

NOTE: Hotspot SAR test results of WLAN 5.8G

10.2. SAR Summation Scenario

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

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 2.4G			
Head	Left Cheek	0.288	0.111	0.399	N/A	N/A
	Left Tilt 15 Degree	0.152	0.057	0.209	N/A	N/A
	Right Cheek	0.270	0.102	0.372	N/A	N/A
	Right Tilt 15 Degree	0.139	0.049	0.188	N/A	N/A
Body-Worn	Front Side	0.369	0.064	0.433	N/A	N/A
	Back Side	0.489	0.102	0.591	N/A	N/A
Hotspot	Front Side	0.369	0.064	0.433	N/A	N/A
	Back Side	0.489	0.102	0.591	N/A	N/A
	Left Side	0.379	N/A	0.379	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.189	N/A	0.189	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	WLAN 2.4G			
Head	Left Cheek	0.141	0.111	0.252	N/A	N/A
	Left Tilt 15 Degree	0.073	0.057	0.130	N/A	N/A

	Right Cheek	0.132	0.102	0.234	N/A	N/A
	Right Tilt 15 Degree	0.062	0.049	0.111	N/A	N/A
Body-Worn	Front Side	0.428	0.064	0.492	N/A	N/A
	Back Side	0.512	0.102	0.614	N/A	N/A
Hotspot	Front Side	0.428	0.064	0.492	N/A	N/A
	Back Side	0.512	0.102	0.614	N/A	N/A
	Left Side	0.372	N/A	0.372	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 2	WLAN 2.4G			
Head	Left Cheek	0.209	0.111	0.320	N/A	N/A
	Left Tilt 15 Degree	0.122	0.057	0.179	N/A	N/A
	Right Cheek	0.194	0.102	0.296	N/A	N/A
	Right Tilt 15 Degree	0.102	0.049	0.151	N/A	N/A
Body-Worn	Front Side	0.506	0.064	0.570	N/A	N/A
	Back Side	0.626	0.102	0.728	N/A	N/A
Hotspot	Front Side	0.506	0.064	0.570	N/A	N/A
	Back Side	0.626	0.102	0.728	N/A	N/A
	Left Side	0.459	N/A	0.459	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.250	N/A	0.250	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 2 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 5	WLAN 2.4G			
Head	Left Cheek	0.210	0.111	0.321	N/A	N/A
	Left Tilt 15 Degree	0.121	0.057	0.178	N/A	N/A
	Right Cheek	0.195	0.102	0.297	N/A	N/A
	Right Tilt 15 Degree	0.093	0.049	0.142	N/A	N/A
Body-Worn	Front Side	0.295	0.064	0.359	N/A	N/A
	Back Side	0.366	0.102	0.468	N/A	N/A
Hotspot	Front Side	0.295	0.064	0.359	N/A	N/A

	Back Side	0.366	0.102	0.468	N/A	N/A
	Left Side	0.267	N/A	0.267	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.140	N/A	0.140	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 5 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 2	WLAN 2.4G			
Head	Left Cheek	0.190	0.111	0.301	N/A	N/A
	Left Tilt 15 Degree	0.112	0.057	0.169	N/A	N/A
	Right Cheek	0.175	0.102	0.277	N/A	N/A
	Right Tilt 15 Degree	0.083	0.049	0.132	N/A	N/A
Body-Worn	Front Side	0.542	0.064	0.606	N/A	N/A
	Back Side	0.714	0.102	0.816	N/A	N/A
Hotspot	Front Side	0.542	0.064	0.606	N/A	N/A
	Back Side	0.714	0.102	0.816	N/A	N/A
	Left Side	0.528	N/A	0.528	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.285	N/A	0.285	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 2 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 4	WLAN 2.4G			
Head	Left Cheek	0.199	0.111	0.310	N/A	N/A
	Left Tilt 15 Degree	0.107	0.057	0.164	N/A	N/A
	Right Cheek	0.177	0.102	0.279	N/A	N/A
	Right Tilt 15 Degree	0.081	0.049	0.130	N/A	N/A
Body-Worn	Front Side	0.439	0.064	0.503	N/A	N/A
	Back Side	0.583	0.102	0.685	N/A	N/A
Hotspot	Front Side	0.439	0.064	0.503	N/A	N/A
	Back Side	0.583	0.102	0.685	N/A	N/A
	Left Side	0.412	N/A	0.412	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 4 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 7	WLAN 2.4G			
Head	Left Cheek	0.467	0.111	0.578	N/A	N/A
	Left Tilt 15 Degree	0.236	0.057	0.293	N/A	N/A
	Right Cheek	0.428	0.102	0.530	N/A	N/A
	Right Tilt 15 Degree	0.195	0.049	0.244	N/A	N/A
Body-Worn	Front Side	0.615	0.064	0.679	N/A	N/A
	Back Side	1.048	0.102	1.150	N/A	N/A
Hotspot	Front Side	0.615	0.064	0.679	N/A	N/A
	Back Side	1.048	0.102	1.150	N/A	N/A
	Left Side	0.746	N/A	0.746	N/A	N/A
	Right Side	N/A	0.023	0.023	N/A	N/A
	Top Side	N/A	0.032	0.032	N/A	N/A
	Bottom Side	0.363	N/A	0.363	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 7 and WLAN 2.4G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 5.2G			
Head	Left Cheek	0.288	0.132	0.420	N/A	N/A
	Left Tilt 15 Degree	0.152	0.077	0.229	N/A	N/A
	Right Cheek	0.270	0.121	0.391	N/A	N/A
	Right Tilt 15 Degree	0.139	0.061	0.200	N/A	N/A
Body-Worn	Front Side	0.369	0.117	0.486	N/A	N/A
	Back Side	0.489	0.182	0.671	N/A	N/A
Hotspot	Front Side	0.369	0.117	0.486	N/A	N/A
	Back Side	0.489	0.182	0.671	N/A	N/A
	Left Side	0.379	N/A	0.379	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.189	N/A	0.189	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	WLAN 5.2G			
Head	Left Cheek	0.141	0.132	0.273	N/A	N/A
	Left Tilt 15 Degree	0.073	0.077	0.150	N/A	N/A
	Right Cheek	0.132	0.121	0.253	N/A	N/A
	Right Tilt 15 Degree	0.062	0.061	0.123	N/A	N/A

Body-Worn	Front Side	0.428	0.117	0.545	N/A	N/A
	Back Side	0.512	0.182	0.694	N/A	N/A
Hotspot	Front Side	0.428	0.117	0.545	N/A	N/A
	Back Side	0.512	0.182	0.694	N/A	N/A
	Left Side	0.372	N/A	0.372	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 2	WLAN 5.2G			
Head	Left Cheek	0.209	0.132	0.341	N/A	N/A
	Left Tilt 15 Degree	0.122	0.077	0.199	N/A	N/A
	Right Cheek	0.194	0.121	0.315	N/A	N/A
	Right Tilt 15 Degree	0.102	0.061	0.163	N/A	N/A
Body-Worn	Front Side	0.506	0.117	0.623	N/A	N/A
	Back Side	0.626	0.182	0.808	N/A	N/A
Hotspot	Front Side	0.506	0.117	0.623	N/A	N/A
	Back Side	0.626	0.182	0.808	N/A	N/A
	Left Side	0.459	N/A	0.459	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.250	N/A	0.250	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 2 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 5	WLAN 5.2G			
Head	Left Cheek	0.210	0.132	0.342	N/A	N/A
	Left Tilt 15 Degree	0.121	0.077	0.198	N/A	N/A
	Right Cheek	0.195	0.121	0.316	N/A	N/A
	Right Tilt 15 Degree	0.093	0.061	0.154	N/A	N/A
Body-Worn	Front Side	0.295	0.117	0.412	N/A	N/A
	Back Side	0.366	0.182	0.548	N/A	N/A
Hotspot	Front Side	0.295	0.117	0.412	N/A	N/A
	Back Side	0.366	0.182	0.548	N/A	N/A
	Left Side	0.267	N/A	0.267	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A

	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.140	N/A	0.140	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 5 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 2	WLAN 5.2G			
Head	Left Cheek	0.190	0.132	0.322	N/A	N/A
	Left Tilt 15 Degree	0.112	0.077	0.189	N/A	N/A
	Right Cheek	0.175	0.121	0.296	N/A	N/A
	Right Tilt 15 Degree	0.083	0.061	0.144	N/A	N/A
Body-Worn	Front Side	0.542	0.117	0.659	N/A	N/A
	Back Side	0.714	0.182	0.896	N/A	N/A
Hotspot	Front Side	0.542	0.117	0.659	N/A	N/A
	Back Side	0.714	0.182	0.896	N/A	N/A
	Left Side	0.528	N/A	0.528	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.285	N/A	0.285	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 2 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 4	WLAN 5.2G			
Head	Left Cheek	0.199	0.132	0.331	N/A	N/A
	Left Tilt 15 Degree	0.107	0.077	0.184	N/A	N/A
	Right Cheek	0.177	0.121	0.298	N/A	N/A
	Right Tilt 15 Degree	0.081	0.061	0.142	N/A	N/A
Body-Worn	Front Side	0.439	0.117	0.556	N/A	N/A
	Back Side	0.583	0.182	0.765	N/A	N/A
Hotspot	Front Side	0.439	0.117	0.556	N/A	N/A
	Back Side	0.583	0.182	0.765	N/A	N/A
	Left Side	0.412	N/A	0.412	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 4 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 7	WLAN 5.2G			

Head	Left Cheek	0.467	0.132	0.599	N/A	N/A
	Left Tilt 15 Degree	0.236	0.077	0.313	N/A	N/A
	Right Cheek	0.428	0.121	0.549	N/A	N/A
	Right Tilt 15 Degree	0.195	0.061	0.256	N/A	N/A
Body-Worn	Front Side	0.615	0.117	0.732	N/A	N/A
	Back Side	1.048	0.182	1.230	N/A	N/A
Hotspot	Front Side	0.615	0.117	0.732	N/A	N/A
	Back Side	1.048	0.182	1.230	N/A	N/A
	Left Side	0.746	N/A	0.746	N/A	N/A
	Right Side	N/A	0.043	0.043	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.363	N/A	0.363	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 7 and WLAN 5.2G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 5.8G			
Head	Left Cheek	0.288	0.410	0.698	N/A	N/A
	Left Tilt 15 Degree	0.152	0.229	0.381	N/A	N/A
	Right Cheek	0.270	0.362	0.632	N/A	N/A
	Right Tilt 15 Degree	0.139	0.196	0.335	N/A	N/A
Body-Worn	Front Side	0.369	0.385	0.754	N/A	N/A
	Back Side	0.489	0.541	1.030	N/A	N/A
Hotspot	Front Side	0.369	0.385	0.754	N/A	N/A
	Back Side	0.489	0.541	1.030	N/A	N/A
	Left Side	0.379	N/A	0.379	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.189	N/A	0.189	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	WLAN 5.8G			
Head	Left Cheek	0.141	0.410	0.551	N/A	N/A
	Left Tilt 15 Degree	0.073	0.229	0.302	N/A	N/A
	Right Cheek	0.132	0.362	0.494	N/A	N/A
	Right Tilt 15 Degree	0.062	0.196	0.258	N/A	N/A
Body-Worn	Front Side	0.428	0.385	0.813	N/A	N/A

	Back Side	0.512	0.541	1.053	N/A	N/A
Hotspot	Front Side	0.428	0.385	0.813	N/A	N/A
	Back Side	0.512	0.541	1.053	N/A	N/A
	Left Side	0.372	N/A	0.372	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 2	WLAN 5.8G			
Head	Left Cheek	0.209	0.410	0.619	N/A	N/A
	Left Tilt 15 Degree	0.122	0.229	0.351	N/A	N/A
	Right Cheek	0.194	0.362	0.556	N/A	N/A
	Right Tilt 15 Degree	0.102	0.196	0.298	N/A	N/A
Body-Worn	Front Side	0.506	0.385	0.891	N/A	N/A
	Back Side	0.626	0.541	1.167	N/A	N/A
Hotspot	Front Side	0.506	0.385	0.891	N/A	N/A
	Back Side	0.626	0.541	1.167	N/A	N/A
	Left Side	0.459	N/A	0.459	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.250	N/A	0.250	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 2 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 5	WLAN 5.8G			
Head	Left Cheek	0.210	0.410	0.620	N/A	N/A
	Left Tilt 15 Degree	0.121	0.229	0.350	N/A	N/A
	Right Cheek	0.195	0.362	0.557	N/A	N/A
	Right Tilt 15 Degree	0.093	0.196	0.289	N/A	N/A
Body-Worn	Front Side	0.295	0.385	0.680	N/A	N/A
	Back Side	0.366	0.541	0.907	N/A	N/A
Hotspot	Front Side	0.295	0.385	0.680	N/A	N/A
	Back Side	0.366	0.541	0.907	N/A	N/A
	Left Side	0.267	N/A	0.267	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A

	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.140	N/A	0.140	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 5 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 2	WLAN 5.8G			
Head	Left Cheek	0.190	0.410	0.600	N/A	N/A
	Left Tilt 15 Degree	0.112	0.229	0.341	N/A	N/A
	Right Cheek	0.175	0.362	0.537	N/A	N/A
	Right Tilt 15 Degree	0.083	0.196	0.279	N/A	N/A
Body-Worn	Front Side	0.542	0.385	0.927	N/A	N/A
	Back Side	0.714	0.541	1.255	N/A	N/A
Hotspot	Front Side	0.542	0.385	0.927	N/A	N/A
	Back Side	0.714	0.541	1.255	N/A	N/A
	Left Side	0.528	N/A	0.528	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.285	N/A	0.285	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 2 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 4	WLAN 5.8G			
Head	Left Cheek	0.199	0.410	0.609	N/A	N/A
	Left Tilt 15 Degree	0.107	0.229	0.336	N/A	N/A
	Right Cheek	0.177	0.362	0.539	N/A	N/A
	Right Tilt 15 Degree	0.081	0.196	0.277	N/A	N/A
Body-Worn	Front Side	0.439	0.385	0.824	N/A	N/A
	Back Side	0.583	0.541	1.124	N/A	N/A
Hotspot	Front Side	0.439	0.385	0.824	N/A	N/A
	Back Side	0.583	0.541	1.124	N/A	N/A
	Left Side	0.412	N/A	0.412	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 4 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 7	WLAN 5.8G			

Head	Left Cheek	0.467	0.410	0.877	N/A	N/A
	Left Tilt 15 Degree	0.236	0.229	0.465	N/A	N/A
	Right Cheek	0.428	0.362	0.790	N/A	N/A
	Right Tilt 15 Degree	0.195	0.196	0.391	N/A	N/A
Body-Worn	Front Side	0.615	0.385	1.000	N/A	N/A
	Back Side	1.048	0.541	1.589	N/A	N/A
Hotspot	Front Side	0.615	0.385	1.000	N/A	N/A
	Back Side	1.048	0.541	1.589	N/A	N/A
	Left Side	0.746	N/A	0.746	N/A	N/A
	Right Side	N/A	0.143	0.143	N/A	N/A
	Top Side	N/A	0.204	0.204	N/A	N/A
	Bottom Side	0.363	N/A	0.363	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 7 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	Bluetooth			
Head	Left Cheek	0.288	0.210	0.498	N/A	N/A
	Left Tilt 15 Degree	0.152	0.210	0.362	N/A	N/A
	Right Cheek	0.270	0.210	0.480	N/A	N/A
	Right Tilt 15 Degree	0.139	0.210	0.349	N/A	N/A
Body-Worn	Front Side	0.369	0.105	0.474	N/A	N/A
	Back Side	0.489	0.105	0.594	N/A	N/A
Hotspot	Front Side	0.369	0.105	0.474	N/A	N/A
	Back Side	0.489	0.105	0.594	N/A	N/A
	Left Side	0.379	N/A	0.379	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.189	N/A	0.189	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM850 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	Bluetooth			
Head	Left Cheek	0.141	0.210	0.351	N/A	N/A
	Left Tilt 15 Degree	0.073	0.210	0.283	N/A	N/A
	Right Cheek	0.132	0.210	0.342	N/A	N/A
	Right Tilt 15 Degree	0.062	0.210	0.272	N/A	N/A
Body-Worn	Front Side	0.428	0.105	0.533	N/A	N/A

	Back Side	0.512	0.105	0.617	N/A	N/A
Hotspot	Front Side	0.428	0.105	0.533	N/A	N/A
	Back Side	0.512	0.105	0.617	N/A	N/A
	Left Side	0.372	N/A	0.372	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of GSM1900 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 2	Bluetooth			
Head	Left Cheek	0.209	0.210	0.419	N/A	N/A
	Left Tilt 15 Degree	0.122	0.210	0.332	N/A	N/A
	Right Cheek	0.194	0.210	0.404	N/A	N/A
	Right Tilt 15 Degree	0.102	0.210	0.312	N/A	N/A
Body-Worn	Front Side	0.506	0.105	0.611	N/A	N/A
	Back Side	0.626	0.105	0.731	N/A	N/A
Hotspot	Front Side	0.506	0.105	0.611	N/A	N/A
	Back Side	0.626	0.105	0.731	N/A	N/A
	Left Side	0.459	N/A	0.459	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.250	N/A	0.250	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 2 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 5	Bluetooth			
Head	Left Cheek	0.210	0.210	0.420	N/A	N/A
	Left Tilt 15 Degree	0.121	0.210	0.331	N/A	N/A
	Right Cheek	0.195	0.210	0.405	N/A	N/A
	Right Tilt 15 Degree	0.093	0.210	0.303	N/A	N/A
Body-Worn	Front Side	0.295	0.105	0.400	N/A	N/A
	Back Side	0.366	0.105	0.471	N/A	N/A
Hotspot	Front Side	0.295	0.105	0.400	N/A	N/A
	Back Side	0.366	0.105	0.471	N/A	N/A
	Left Side	0.267	N/A	0.267	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A

	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.140	N/A	0.140	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 5 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 2	Bluetooth			
Head	Left Cheek	0.190	0.210	0.400	N/A	N/A
	Left Tilt 15 Degree	0.112	0.210	0.322	N/A	N/A
	Right Cheek	0.175	0.210	0.385	N/A	N/A
	Right Tilt 15 Degree	0.083	0.210	0.293	N/A	N/A
Body-Worn	Front Side	0.542	0.105	0.647	N/A	N/A
	Back Side	0.714	0.105	0.819	N/A	N/A
Hotspot	Front Side	0.542	0.105	0.647	N/A	N/A
	Back Side	0.714	0.105	0.819	N/A	N/A
	Left Side	0.528	N/A	0.528	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.285	N/A	0.285	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 2 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 4	Bluetooth			
Head	Left Cheek	0.199	0.210	0.409	N/A	N/A
	Left Tilt 15 Degree	0.107	0.210	0.317	N/A	N/A
	Right Cheek	0.177	0.210	0.387	N/A	N/A
	Right Tilt 15 Degree	0.081	0.210	0.291	N/A	N/A
Body-Worn	Front Side	0.439	0.105	0.544	N/A	N/A
	Back Side	0.583	0.105	0.688	N/A	N/A
Hotspot	Front Side	0.439	0.105	0.544	N/A	N/A
	Back Side	0.583	0.105	0.688	N/A	N/A
	Left Side	0.412	N/A	0.412	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.204	N/A	0.204	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 4 and Bluetooth.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 7	Bluetooth			
Head	Left Cheek	0.467	0.210	0.677	N/A	N/A

	Left Tilt 15 Degree	0.236	0.210	0.446	N/A	N/A
	Right Cheek	0.428	0.210	0.638	N/A	N/A
	Right Tilt 15 Degree	0.195	0.210	0.405	N/A	N/A
Body-Worn	Front Side	0.615	0.105	0.720	N/A	N/A
	Back Side	1.048	0.105	1.153	N/A	N/A
Hotspot	Front Side	0.615	0.105	0.720	N/A	N/A
	Back Side	1.048	0.105	1.153	N/A	N/A
	Left Side	0.746	N/A	0.746	N/A	N/A
	Right Side	N/A	0.105	0.105	N/A	N/A
	Top Side	N/A	0.105	0.105	N/A	N/A
	Bottom Side	0.363	N/A	0.363	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 7 and Bluetooth.

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

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MEASUREMENT 1

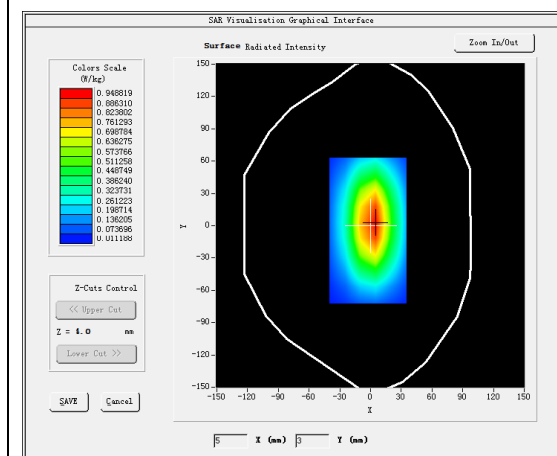
A. Experimental conditions.

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

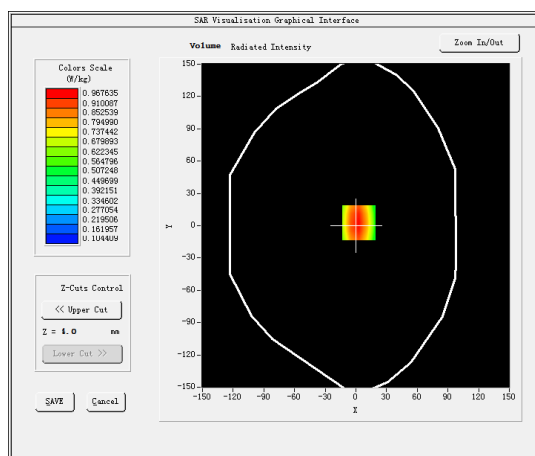
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.763541
Relative permittivity (imaginary part)	19.959613
Conductivity (S/m)	0.930542
Variation (%)	1.870000

SURFACE SAR



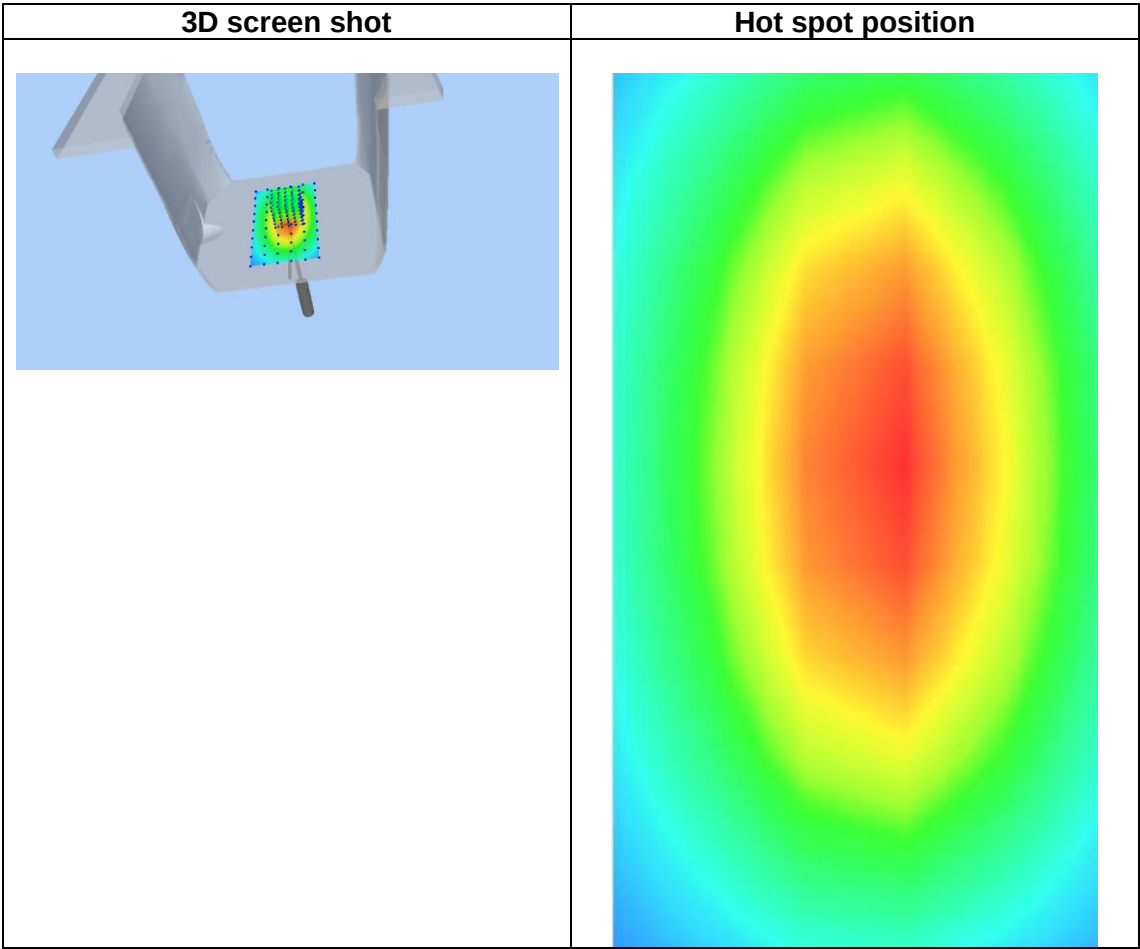
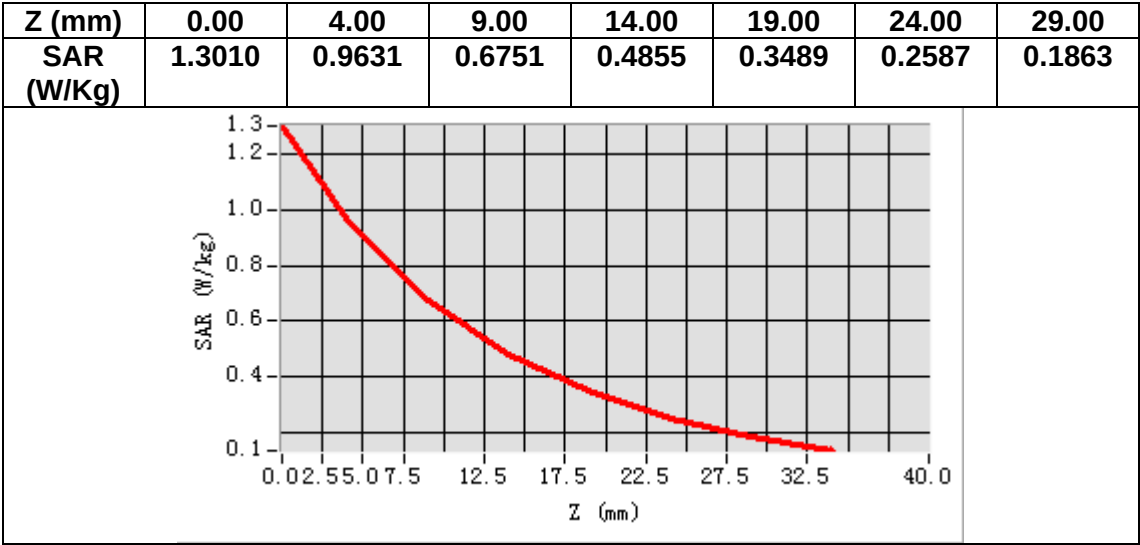
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.597466
SAR 1g (W/Kg)	0.951035



MEASUREMENT 2

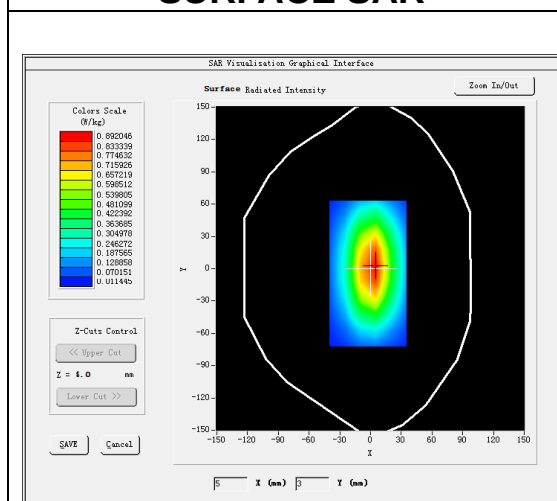
A. Experimental conditions.

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

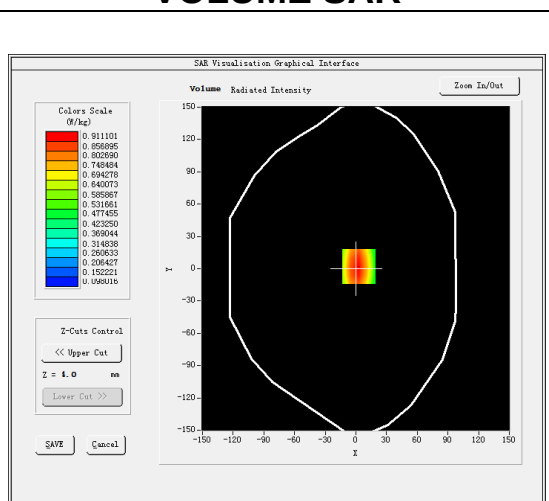
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	54.491101
Relative permittivity (imaginary part)	21.203359
Conductivity (S/m)	0.981236
Variation (%)	4.260000

SURFACE SAR



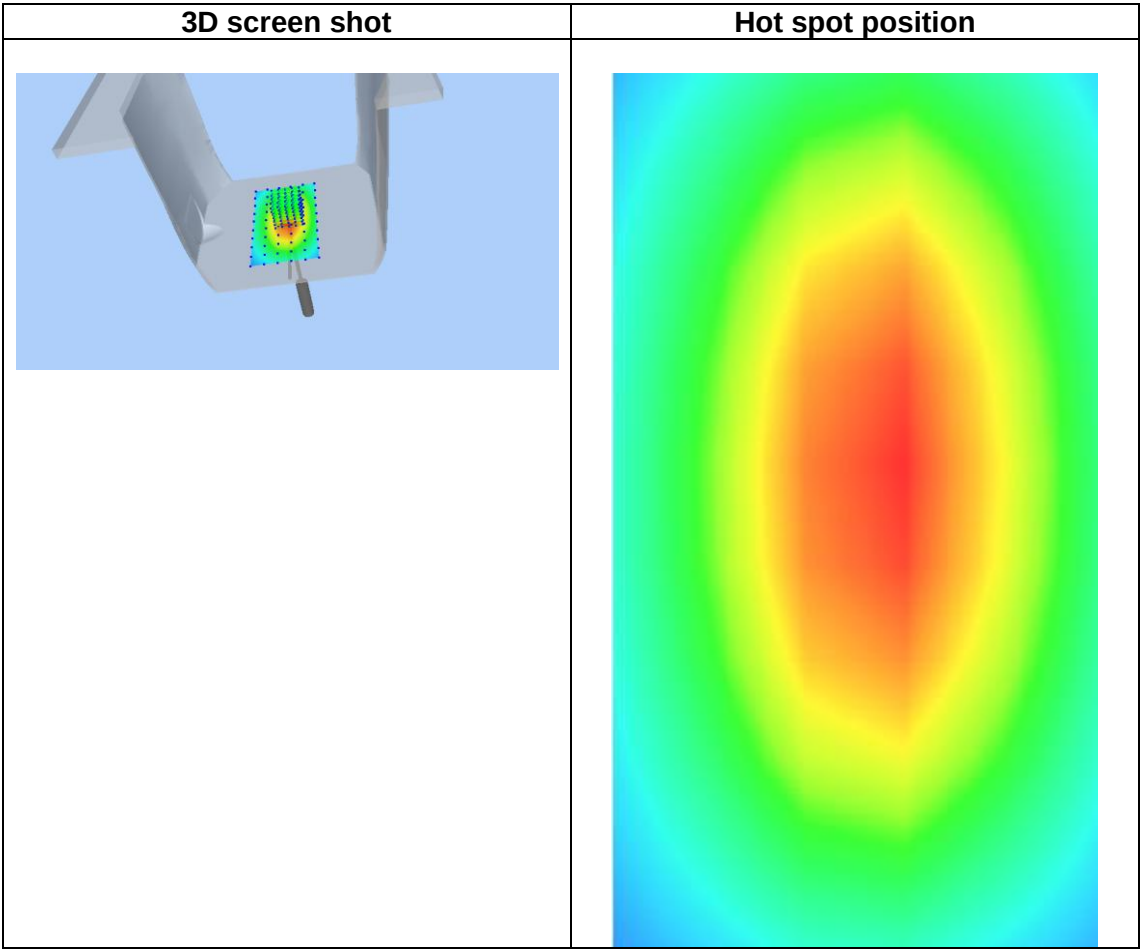
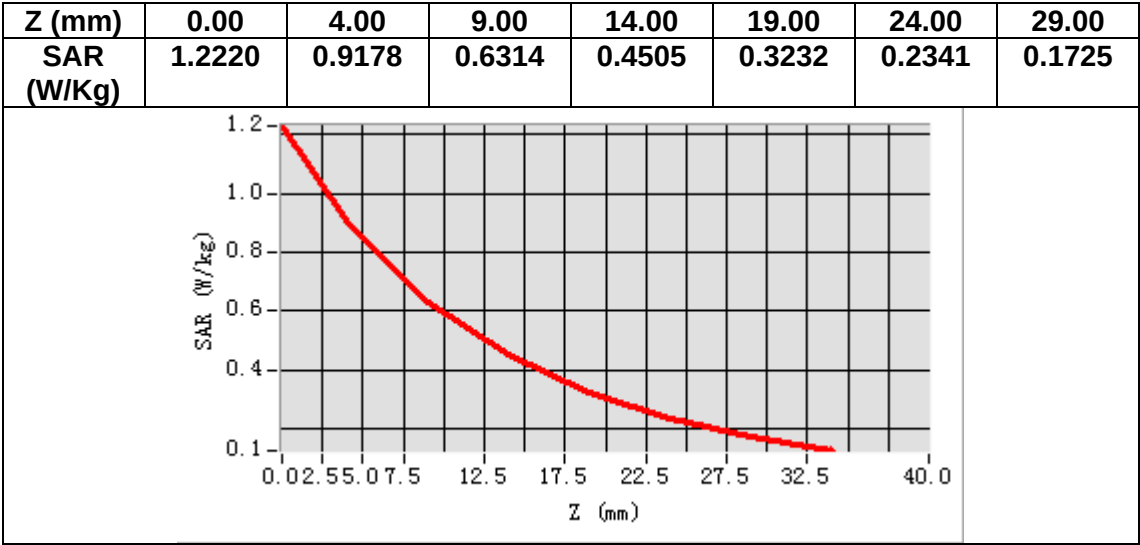
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.615123
SAR 1g (W/Kg)	0.979356



MEASUREMENT 3

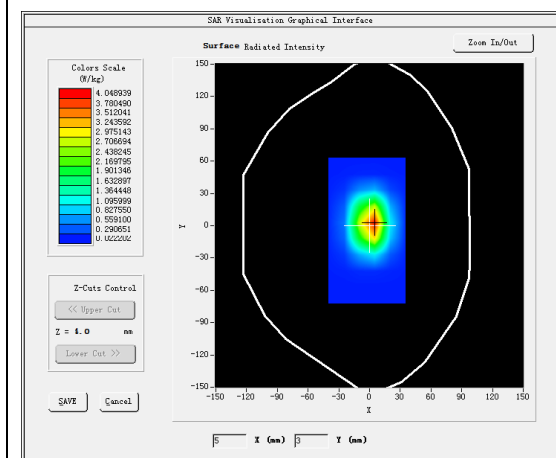
A. Experimental conditions.

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

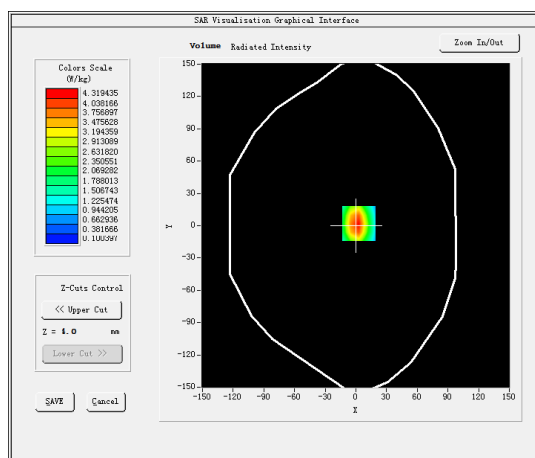
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.581237
Relative permittivity (imaginary part)	13.833229
Conductivity (S/m)	1.381367
Variation (%)	-2.113000

SURFACE SAR



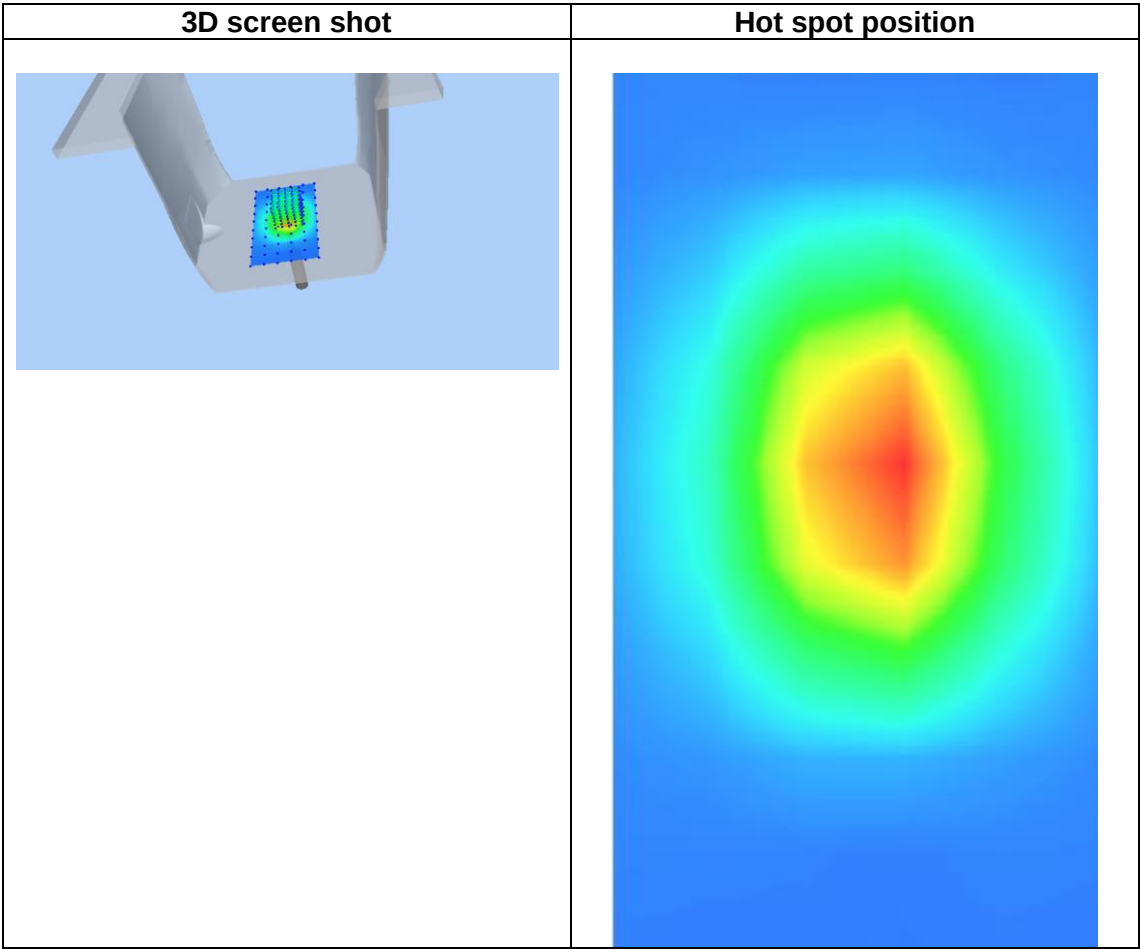
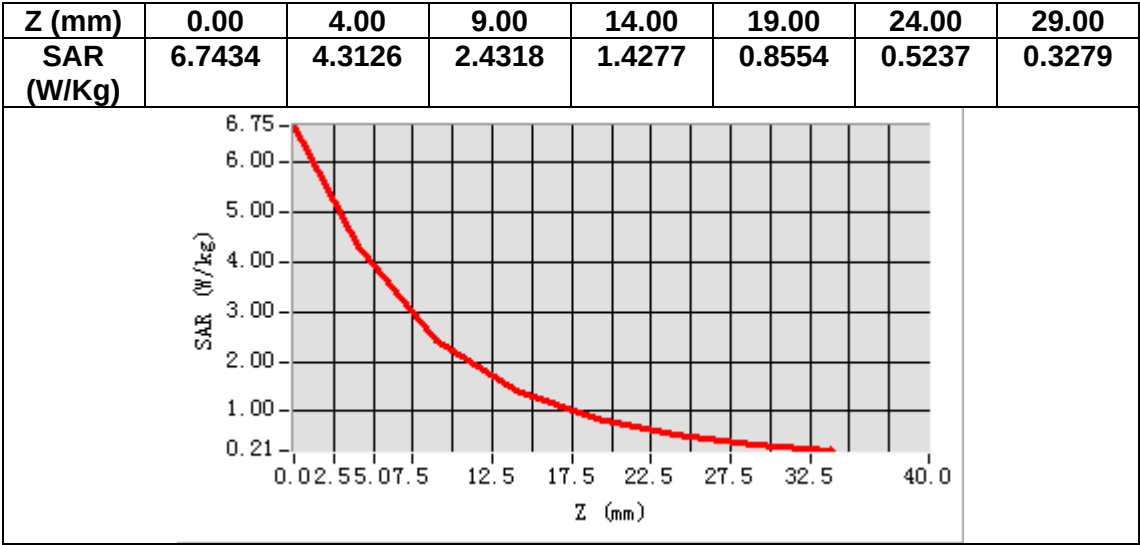
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	1.902397
SAR 1g (W/Kg)	3.986451



MEASUREMENT 4

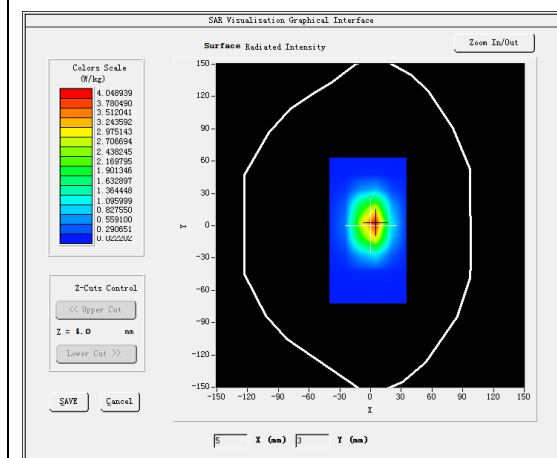
A. Experimental conditions.

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

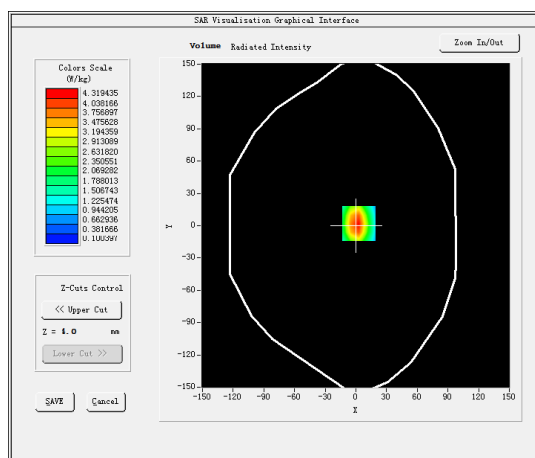
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	54.063510
Relative permittivity (imaginary part)	15.134016
Conductivity (S/m)	1.513096
Variation (%)	2.020000

SURFACE SAR



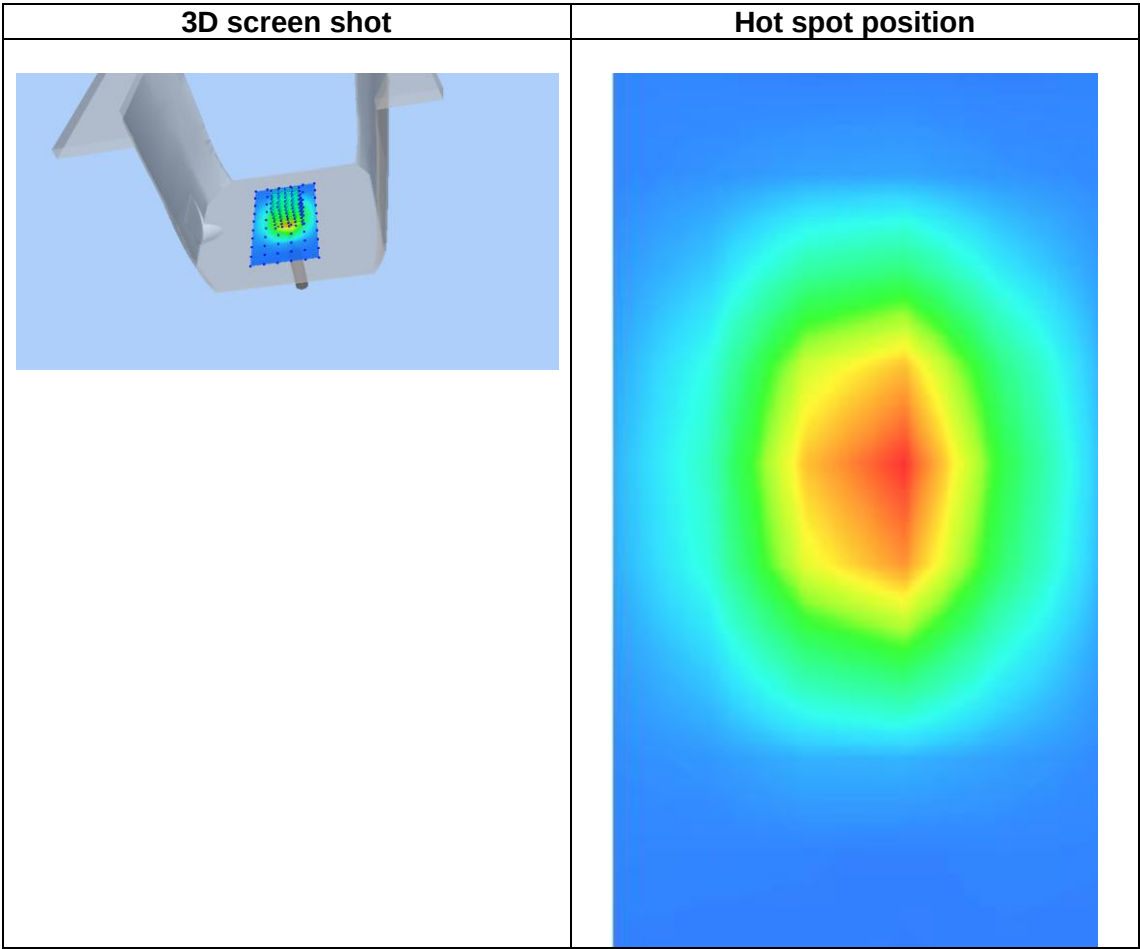
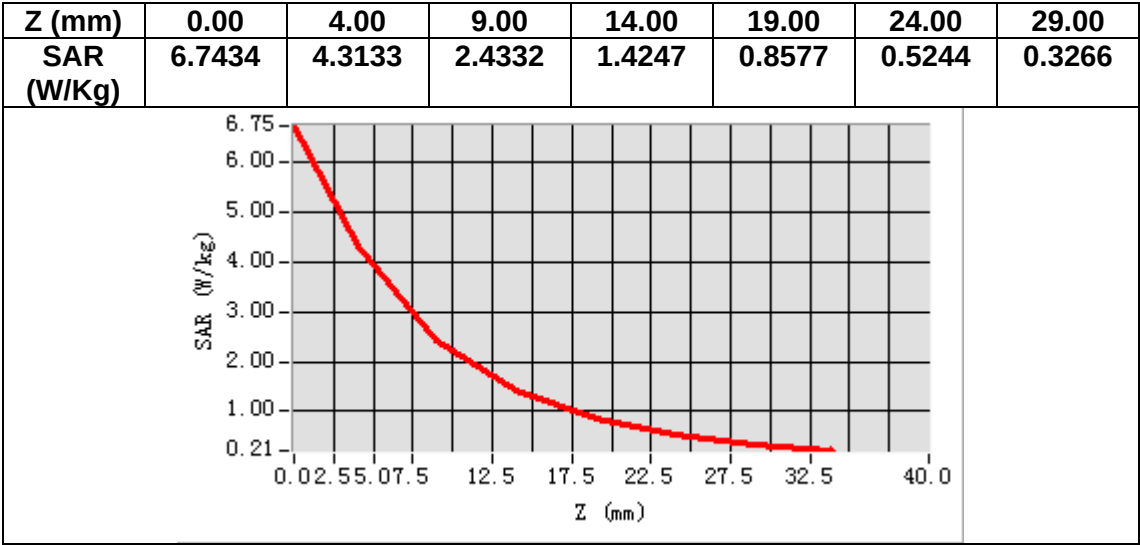
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.177379
SAR 1g (W/Kg)	4.024268



MEASUREMENT 5

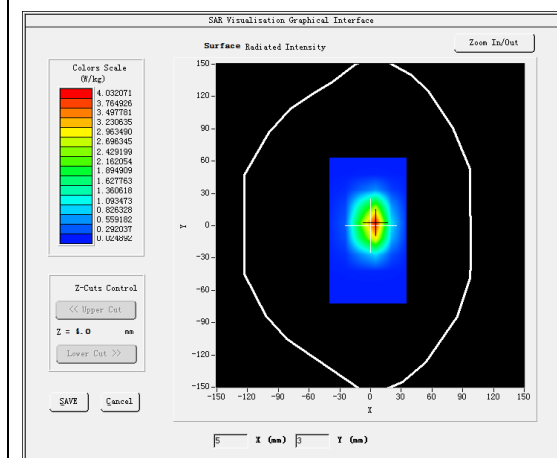
A. Experimental conditions.

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

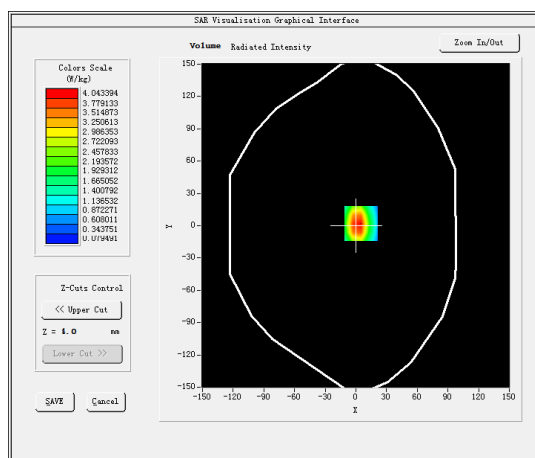
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.601287
Relative permittivity (imaginary part)	13.633008
Conductivity (S/m)	1.440336
Variation (%)	-1.430000

SURFACE SAR



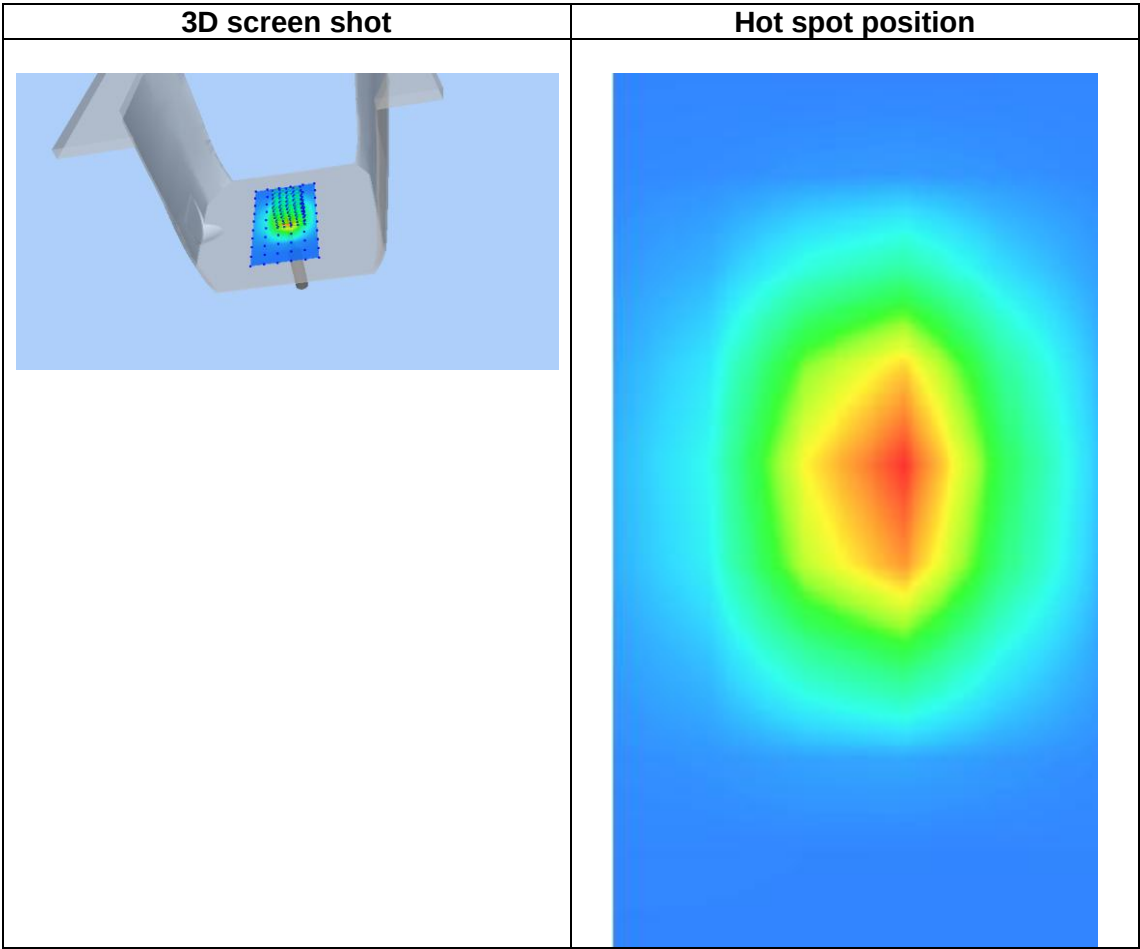
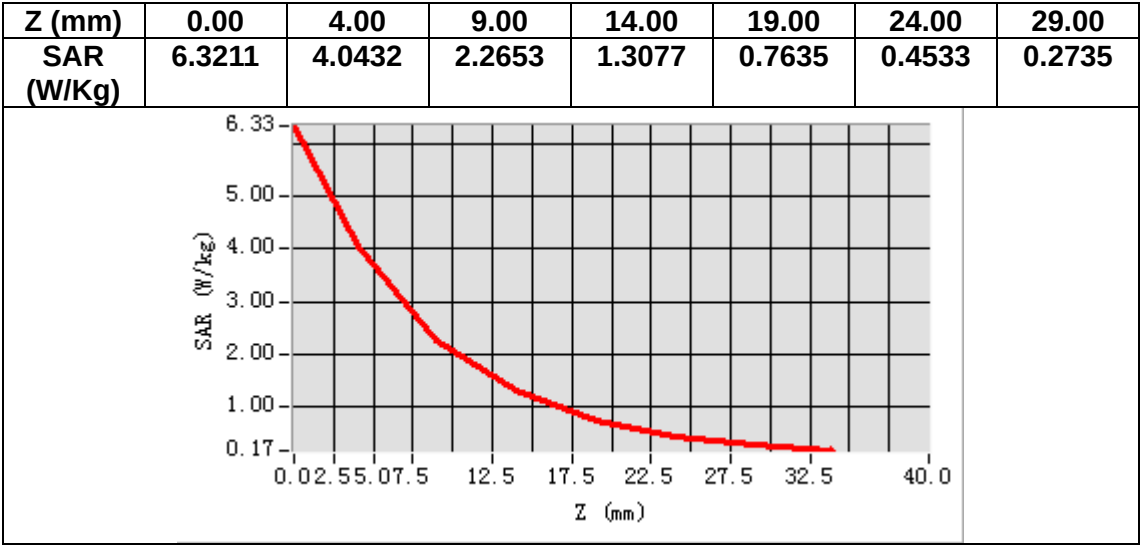
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	1.932456
SAR 1g (W/Kg)	3.731365



MEASUREMENT 6

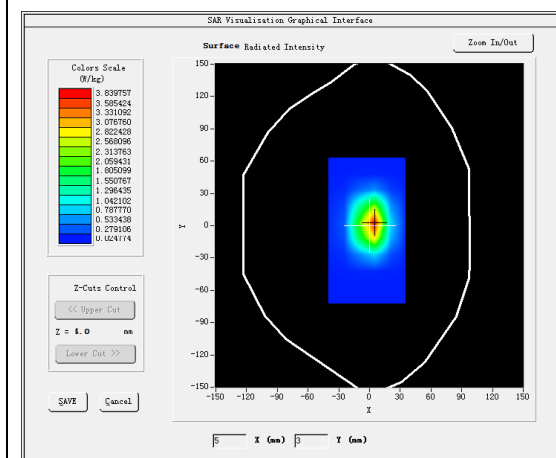
A. Experimental conditions.

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

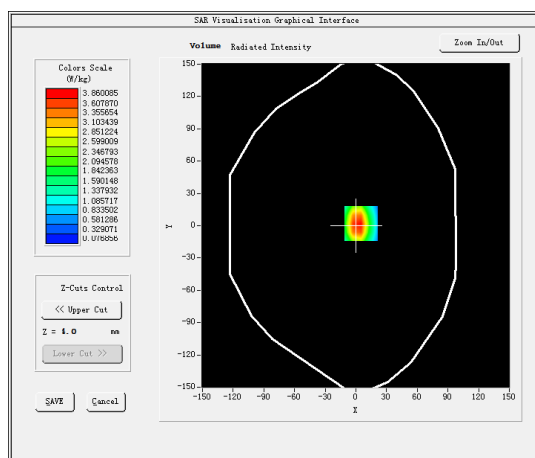
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	54.233335
Relative permittivity (imaginary part)	14.503503
Conductivity (S/m)	1.533566
Variation (%)	-4.460000

SURFACE SAR



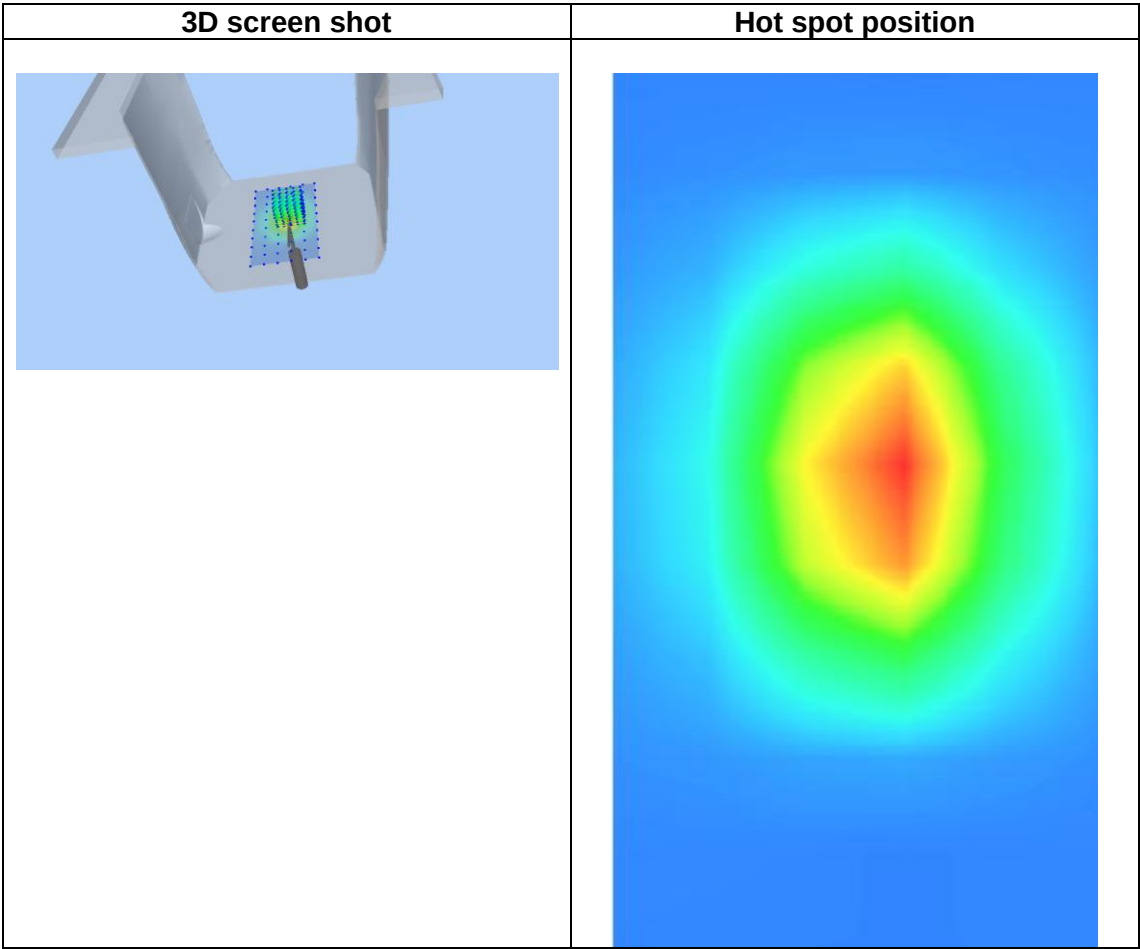
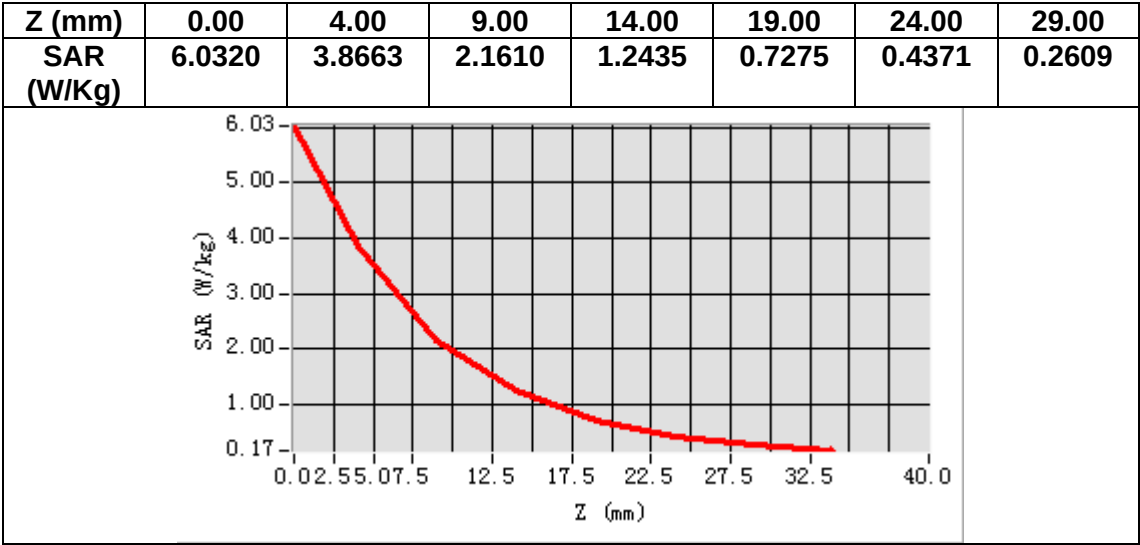
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.017329
SAR 1g (W/Kg)	3.955402



MEASUREMENT 7

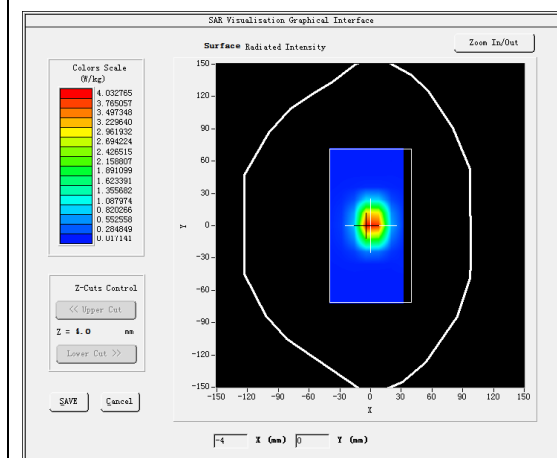
A. Experimental conditions.

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

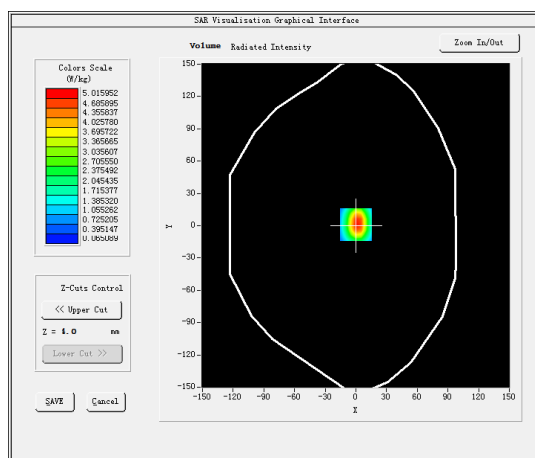
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.511421
Relative permittivity (imaginary part)	13.572631
Conductivity (S/m)	1.850663
Variation (%)	0.350000

SURFACE SAR



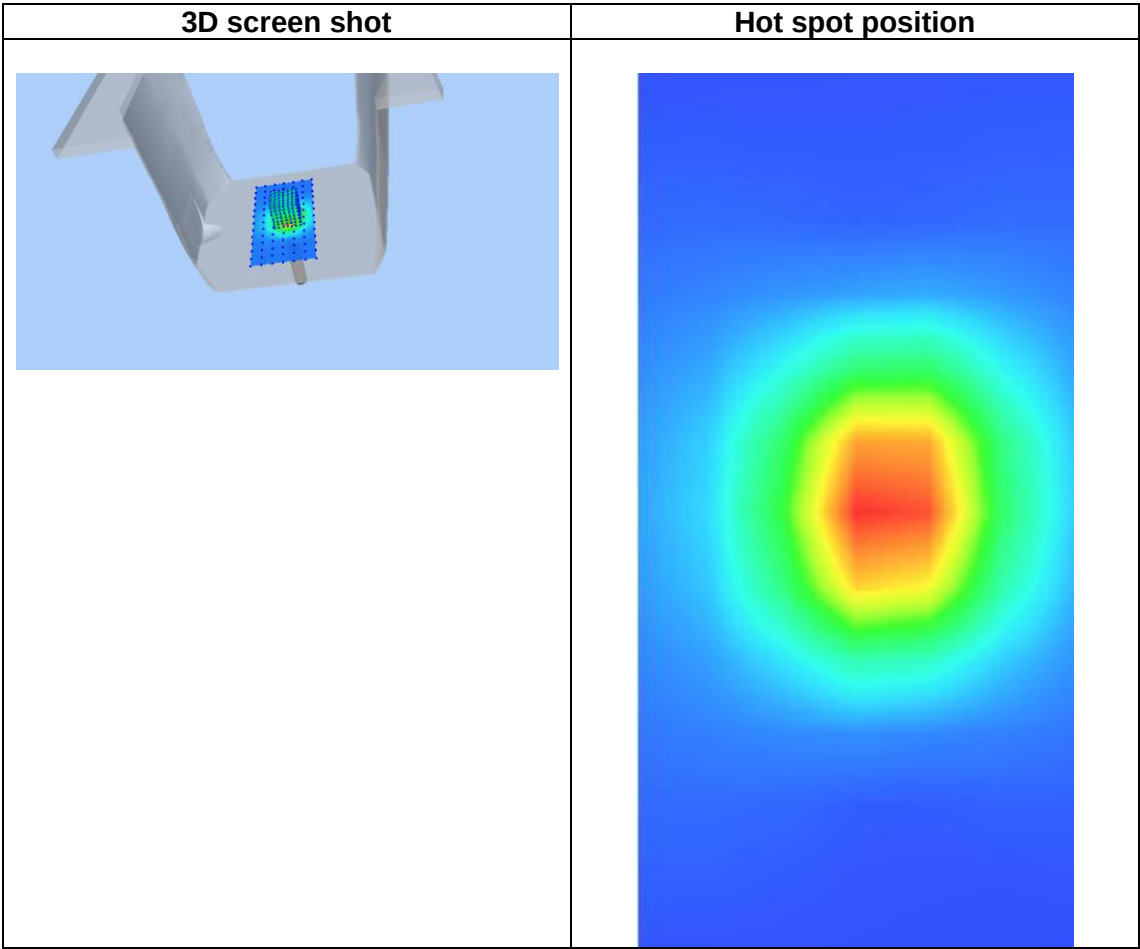
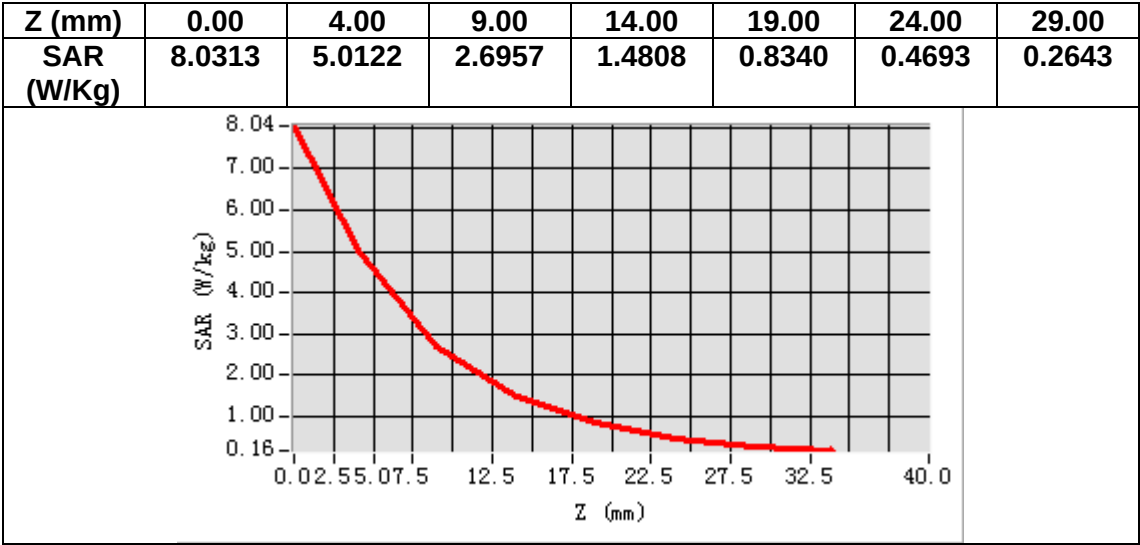
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.329375
SAR 1g (W/Kg)	5.650435



MEASUREMENT 8

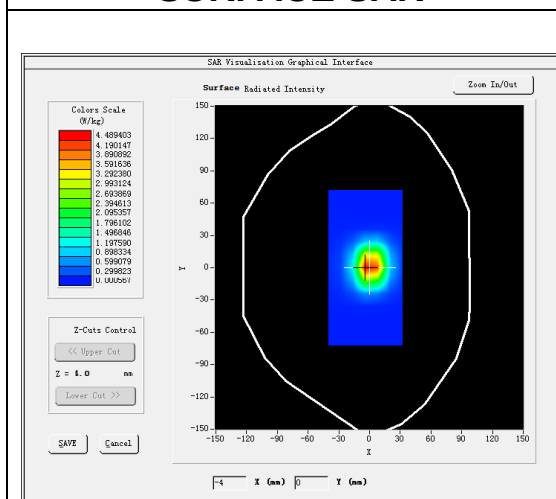
A. Experimental conditions.

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

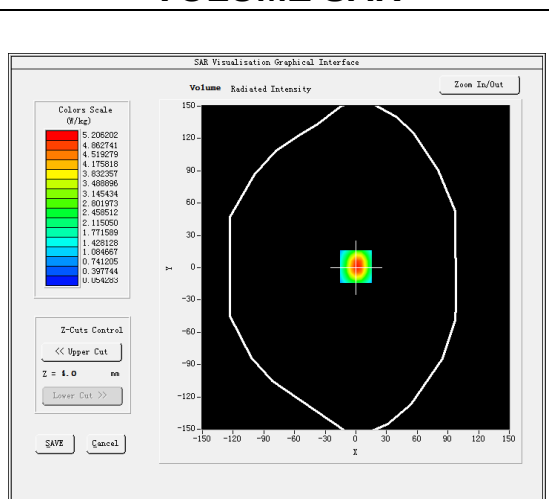
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	51.491497
Relative permittivity (imaginary part)	13.853566
Conductivity (S/m)	1.892816
Variation (%)	1.420000

SURFACE SAR



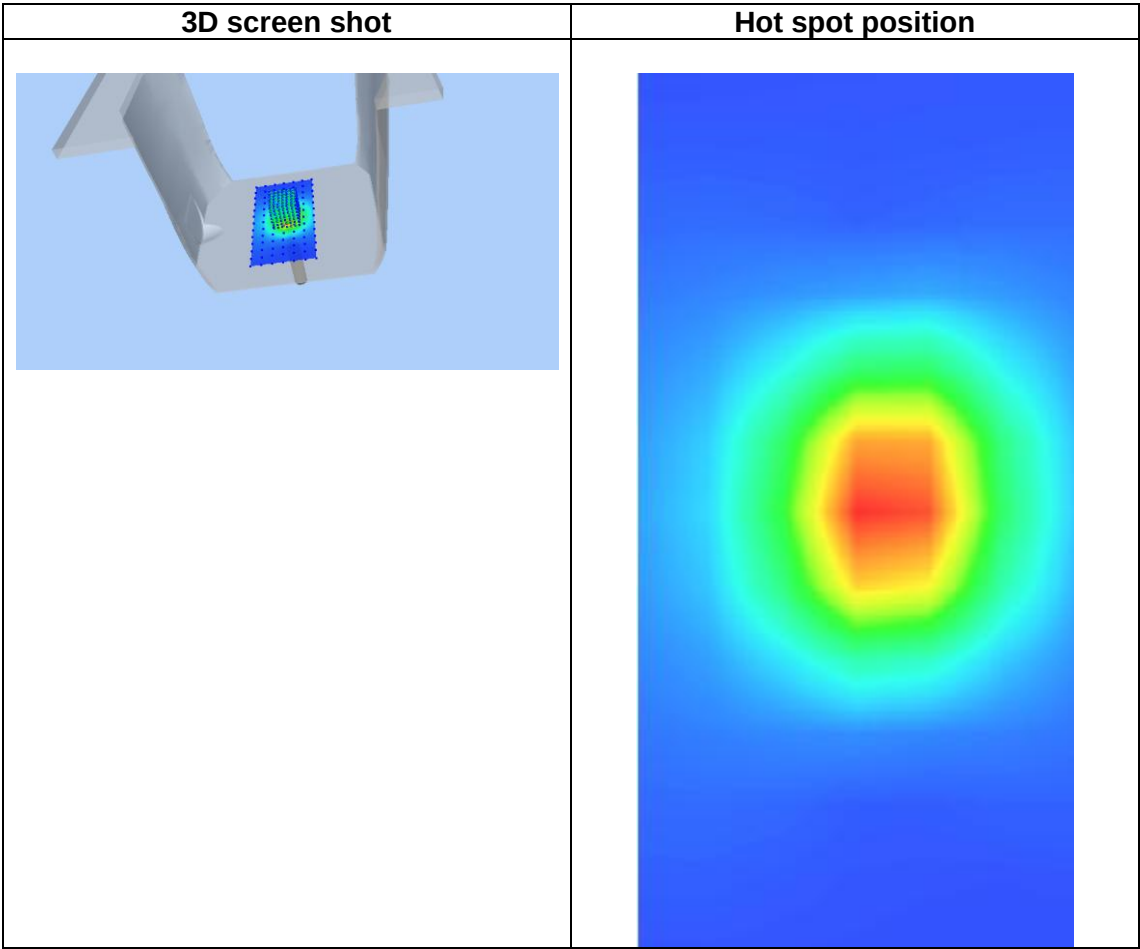
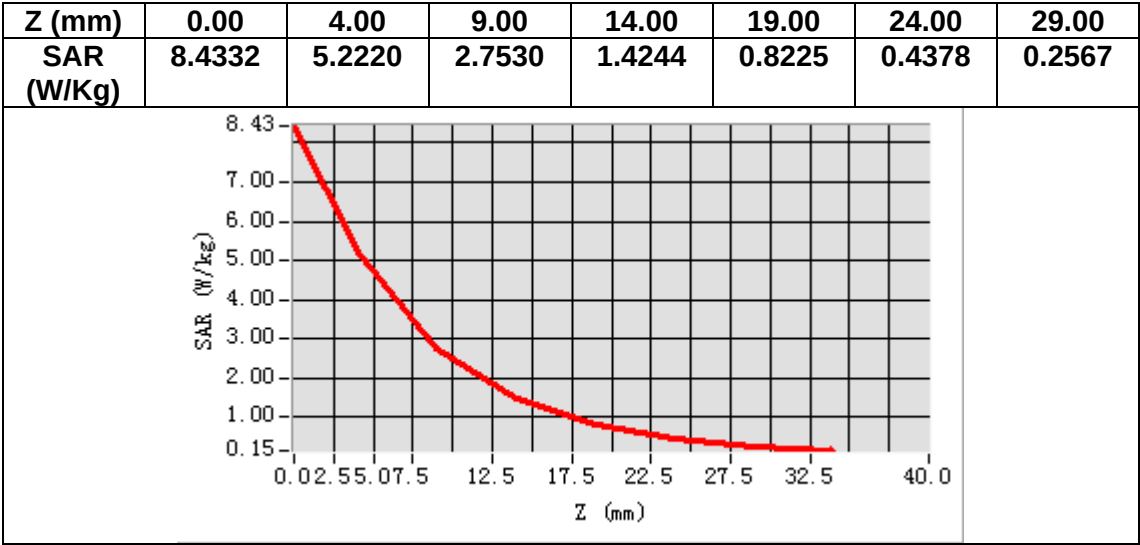
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.321285
SAR 1g (W/Kg)	5.336270



MEASUREMENT 9

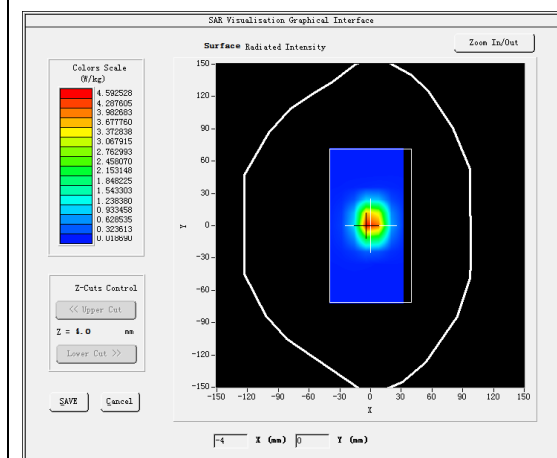
A. Experimental conditions.

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

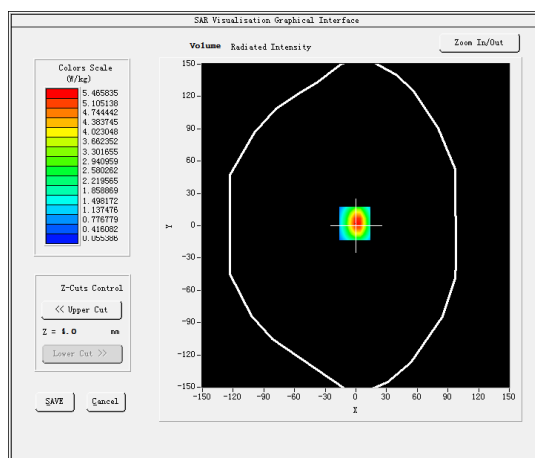
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.102638
Relative permittivity (imaginary part)	14.013997
Conductivity (S/m)	2.023631
Variation (%)	-0.040000

SURFACE SAR



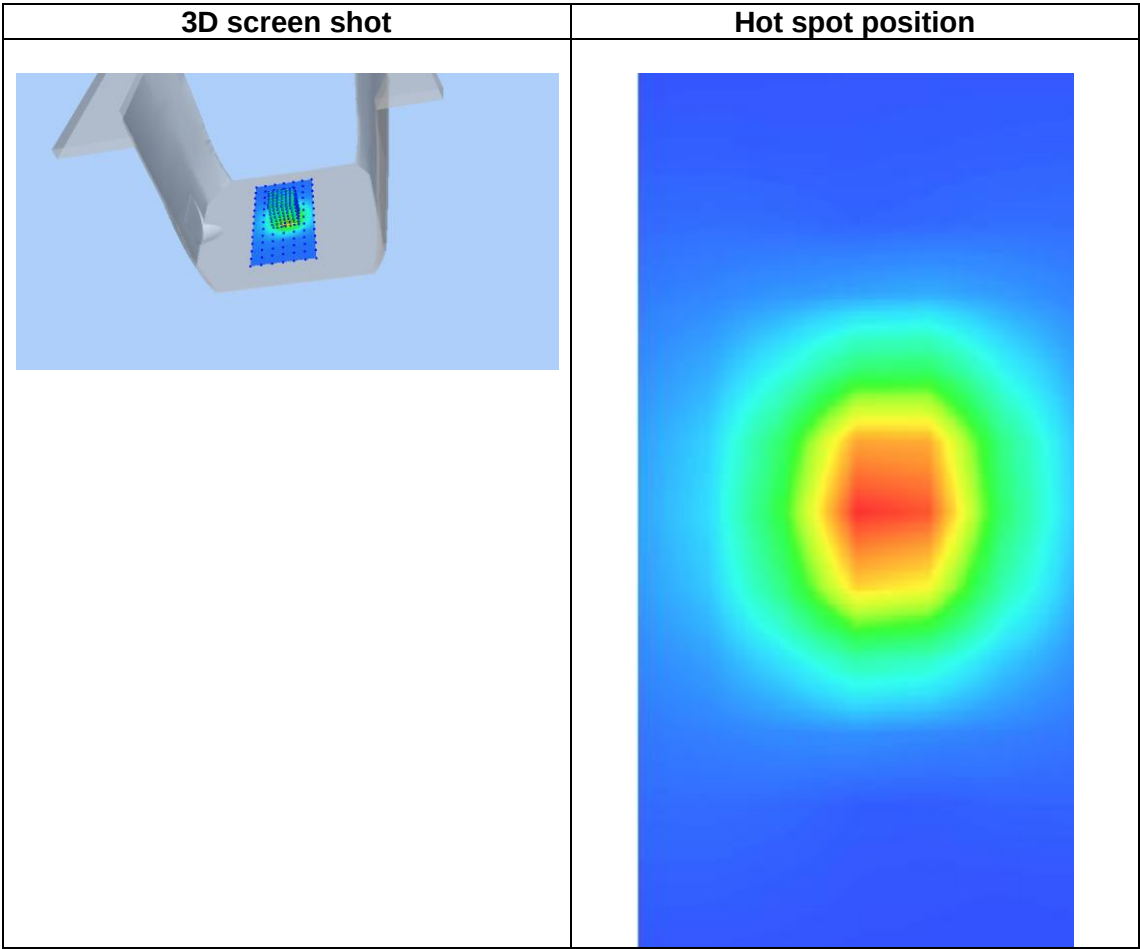
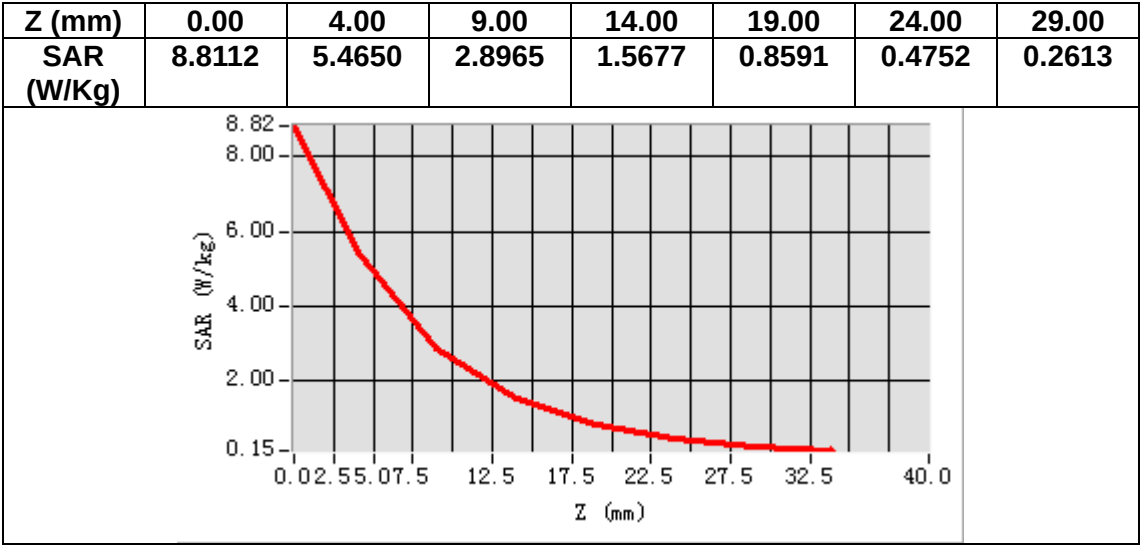
VOLUME SAR



Maximum location: X=-1.00, Y=2.00

SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.581205
SAR 1g (W/Kg)	5.643267



MEASUREMENT 10

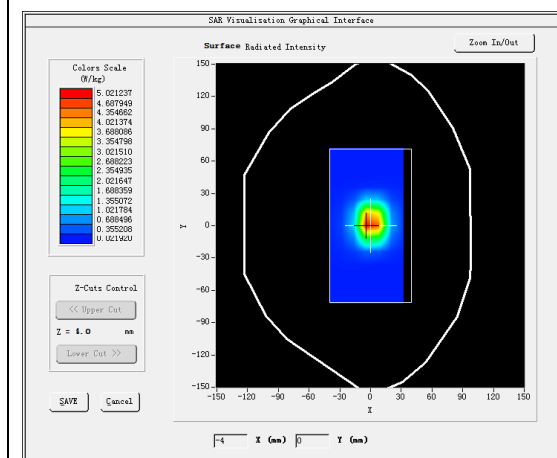
A. Experimental conditions.

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

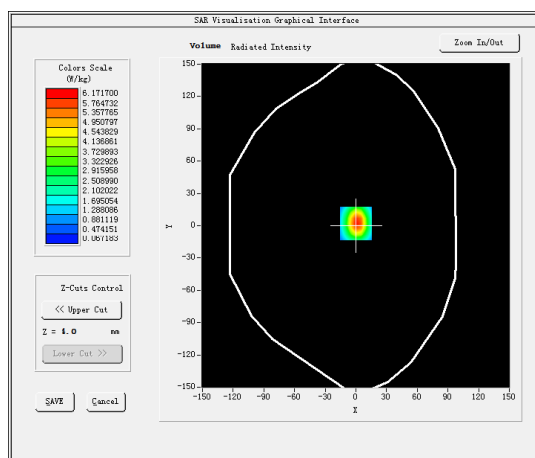
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	52.822866
Relative permittivity (imaginary part)	15.350101
Conductivity (S/m)	2.223465
Variation (%)	-3.220000

SURFACE SAR



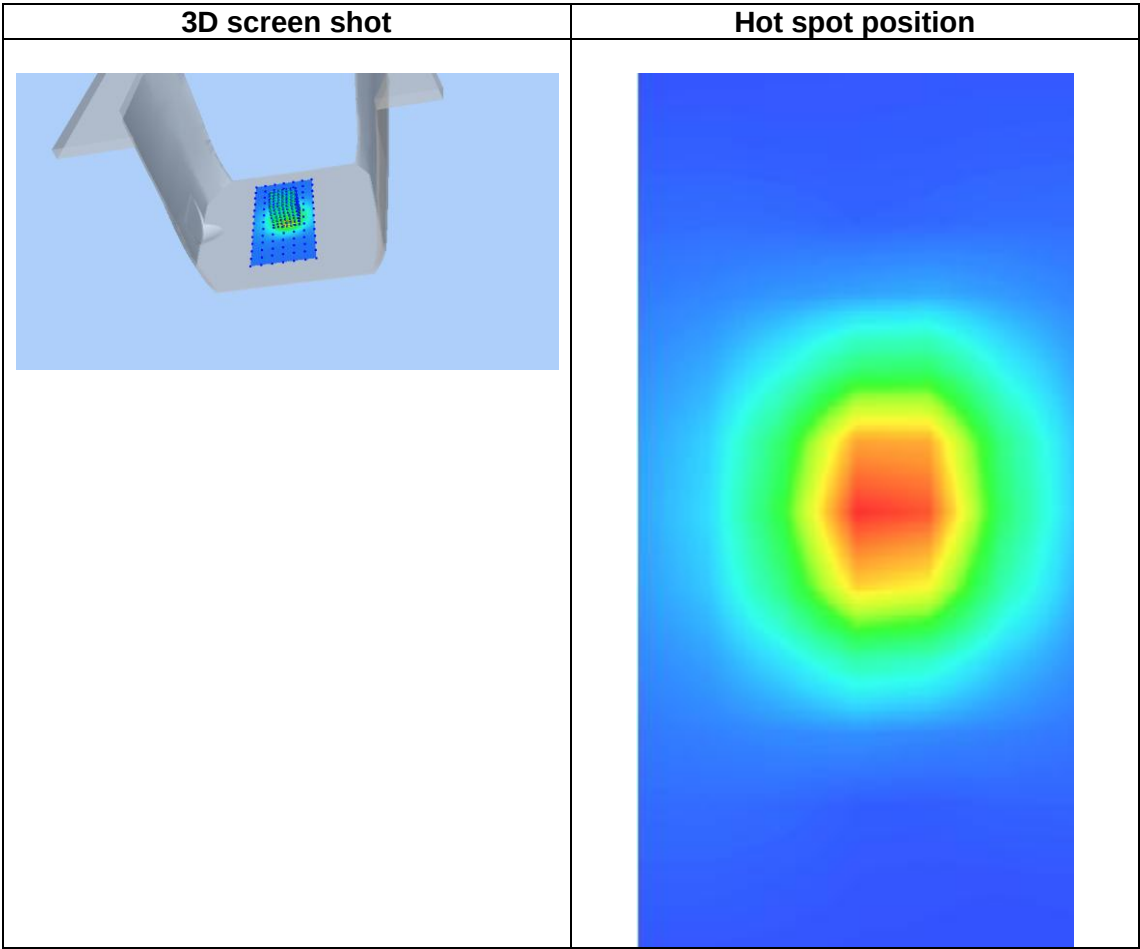
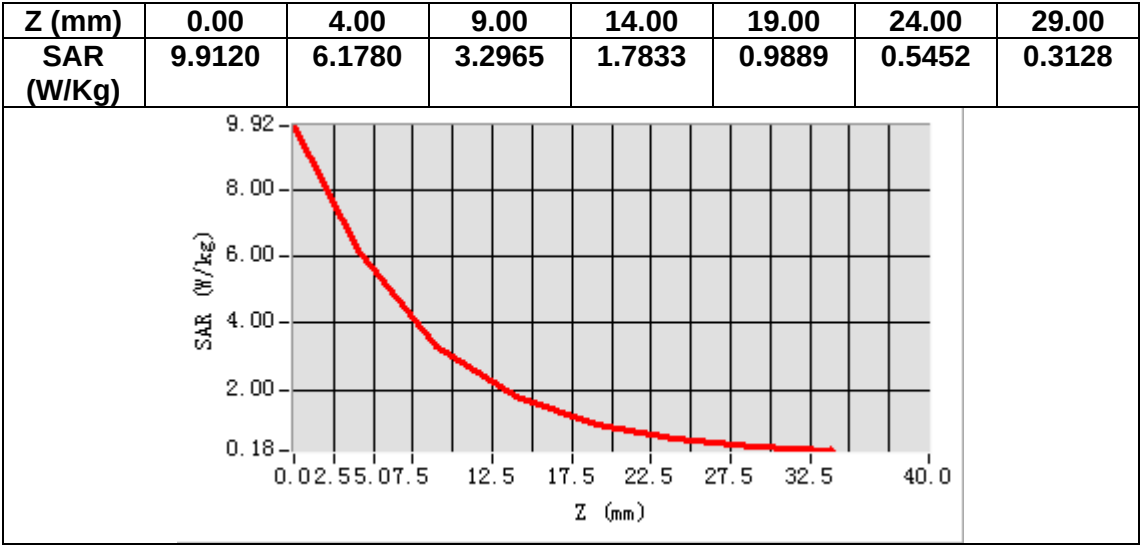
VOLUME SAR



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.359324
SAR 1g (W/Kg)	5.013188



MEASUREMENT 11

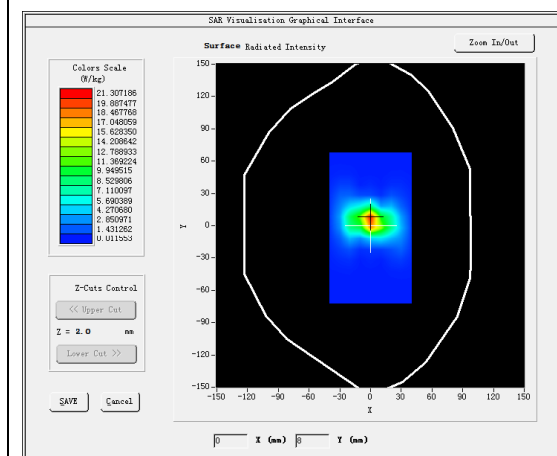
A. Experimental conditions.

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

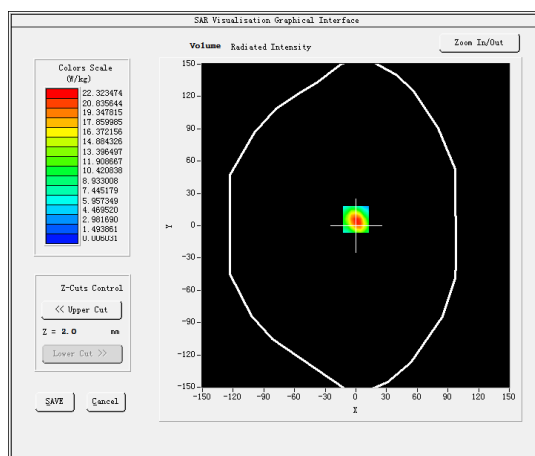
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.639980
Relative permittivity (imaginary part)	16.081619
Conductivity (S/m)	4.645801
Variation (%)	1.660000

SURFACE SAR



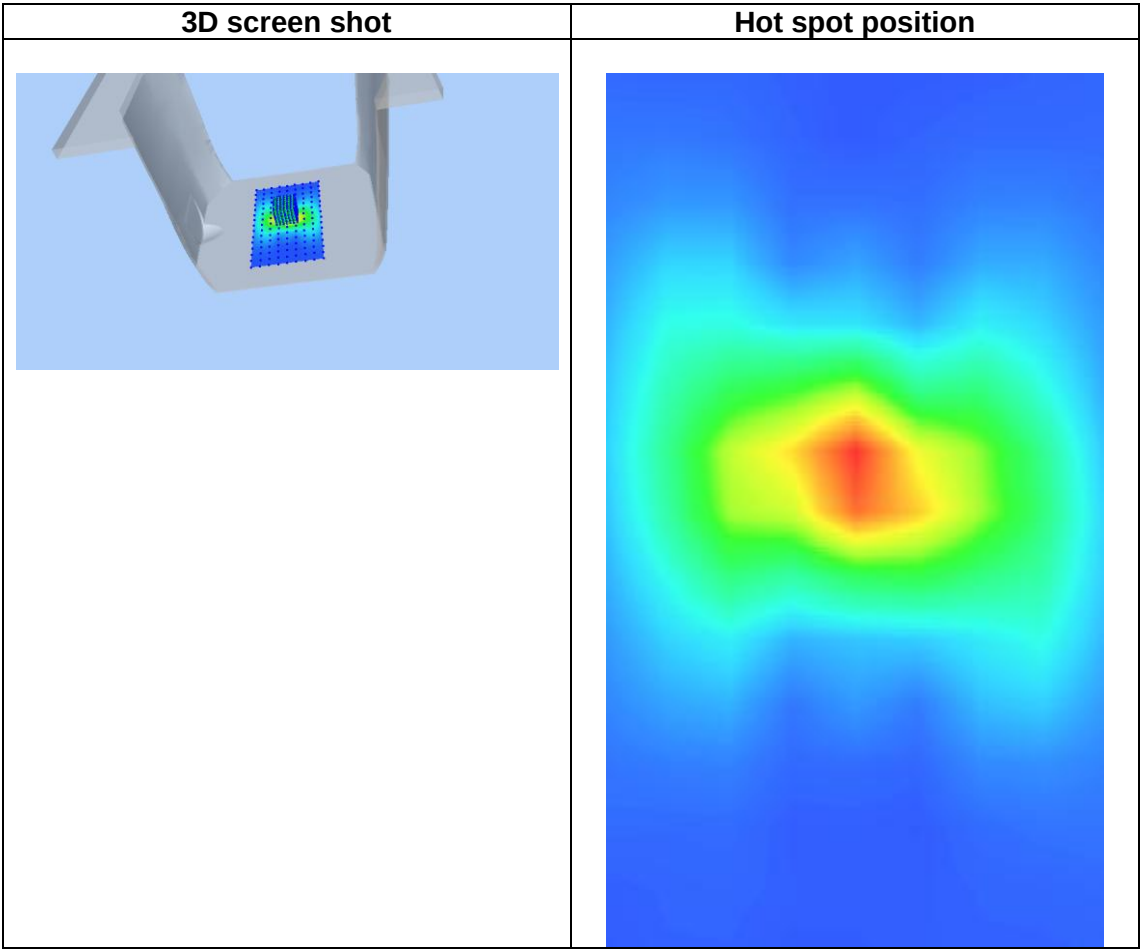
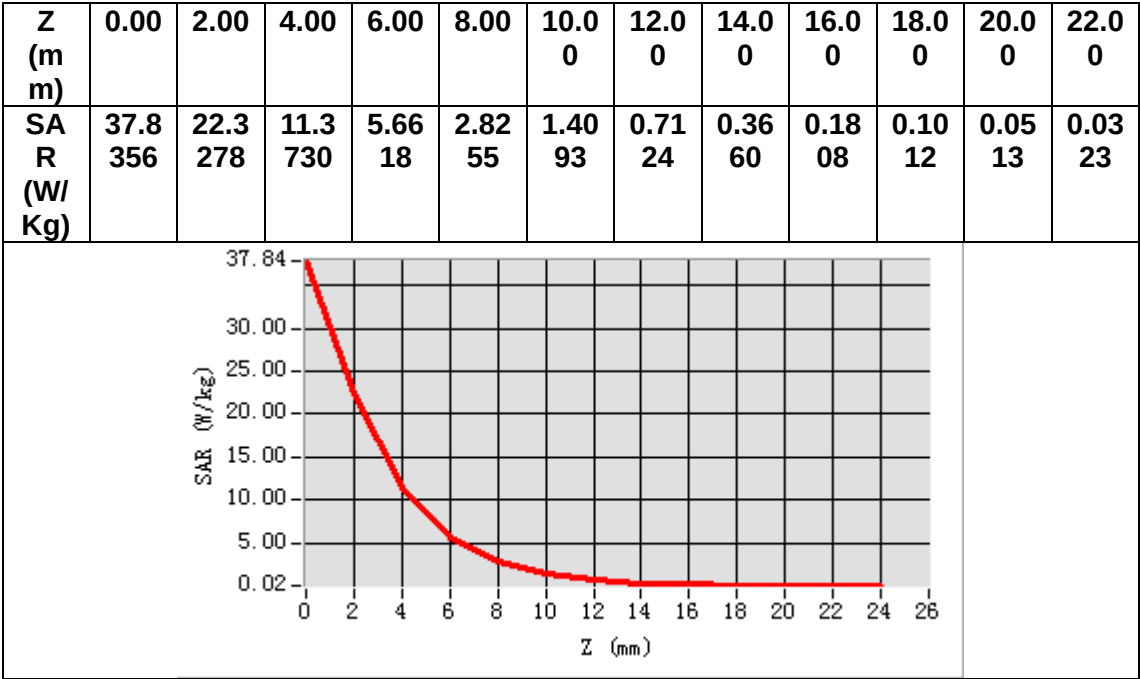
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.682495
SAR 1g (W/Kg)	15.434221



MEASUREMENT 12

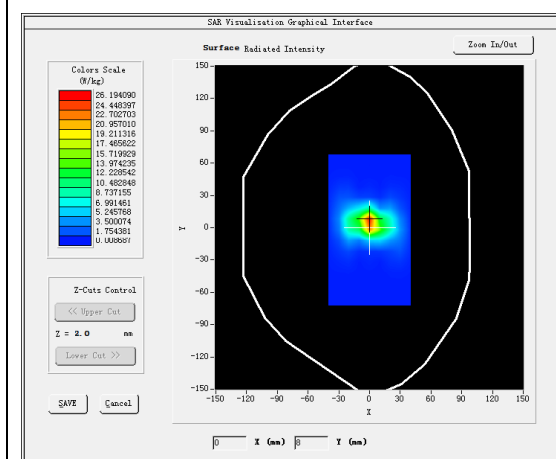
A. Experimental conditions.

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

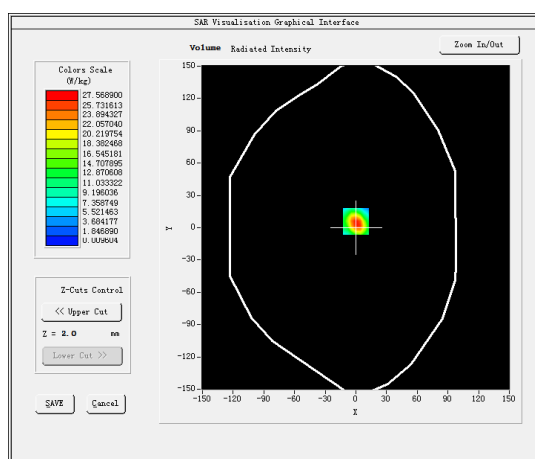
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.661539
Relative permittivity (imaginary part)	18.204510
Conductivity (S/m)	5.264258
Variation (%)	4.490000

SURFACE SAR



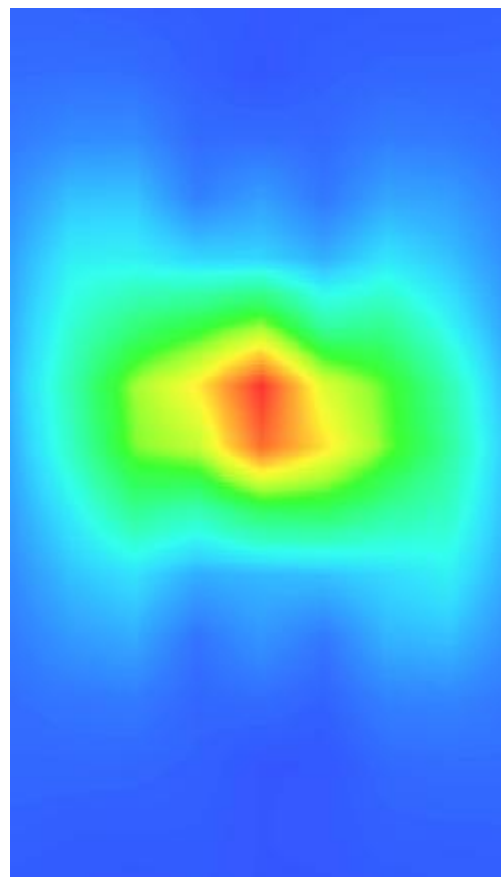
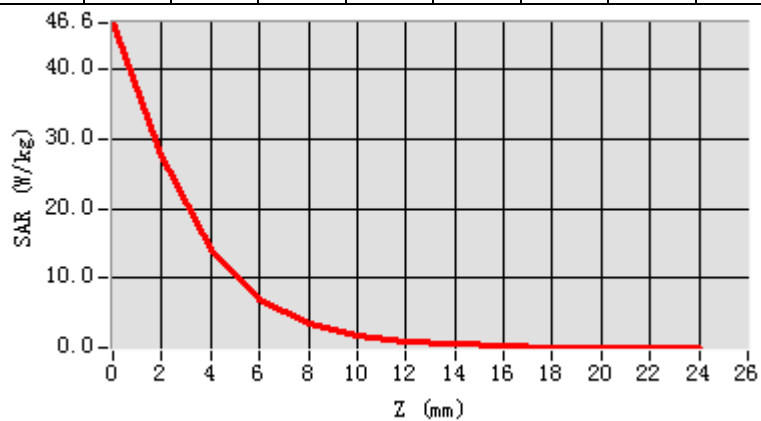
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.309184
SAR 1g (W/Kg)	15.300246



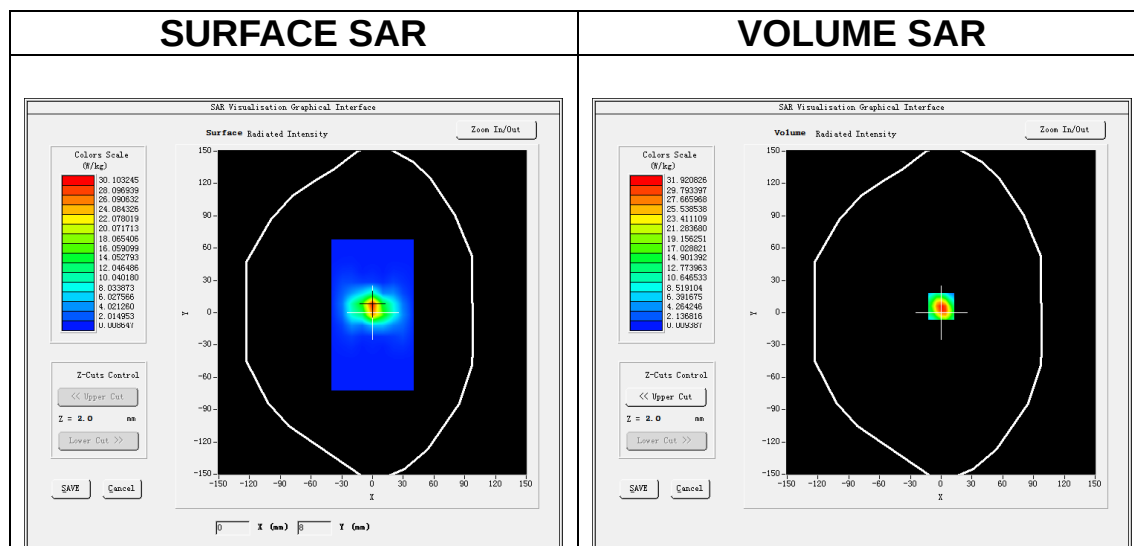
MEASUREMENT 13

A. Experimental conditions.

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

B. SAR Measurement Results

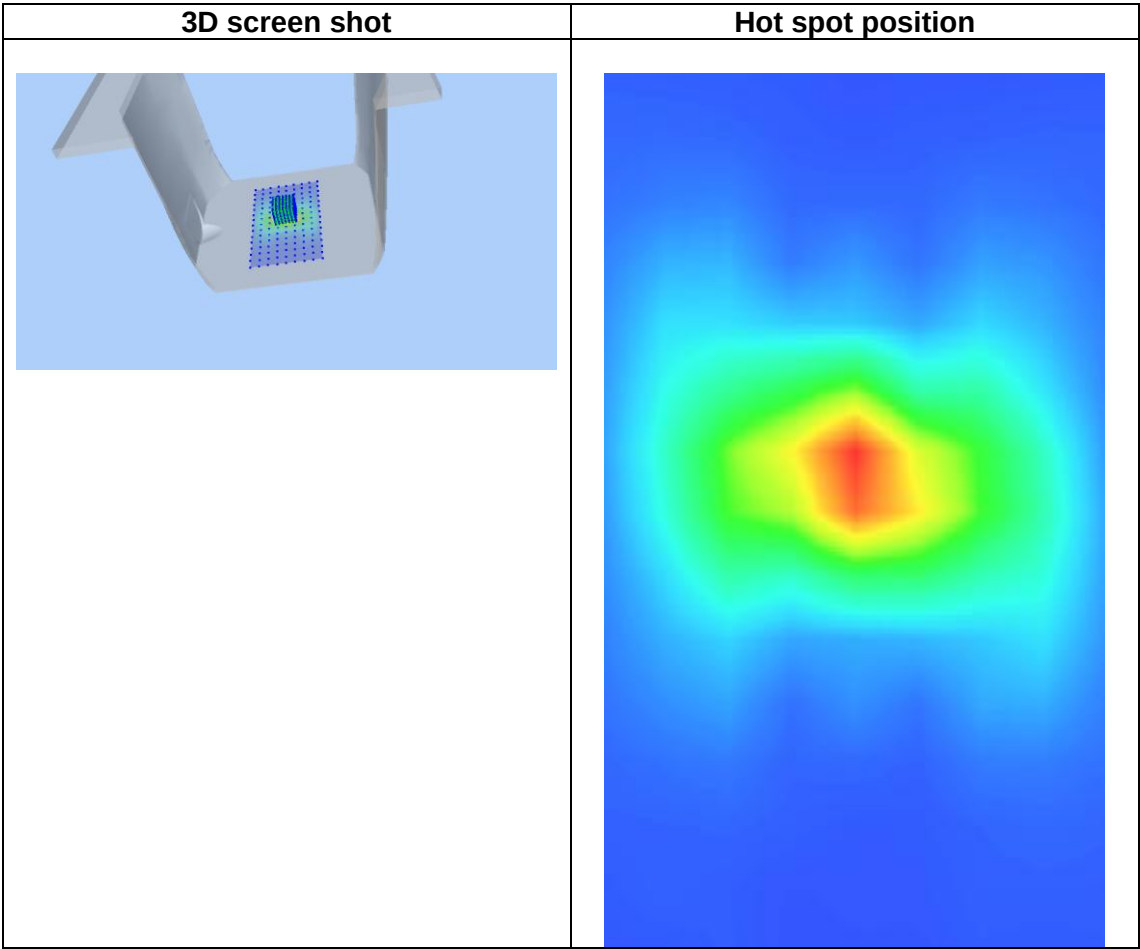
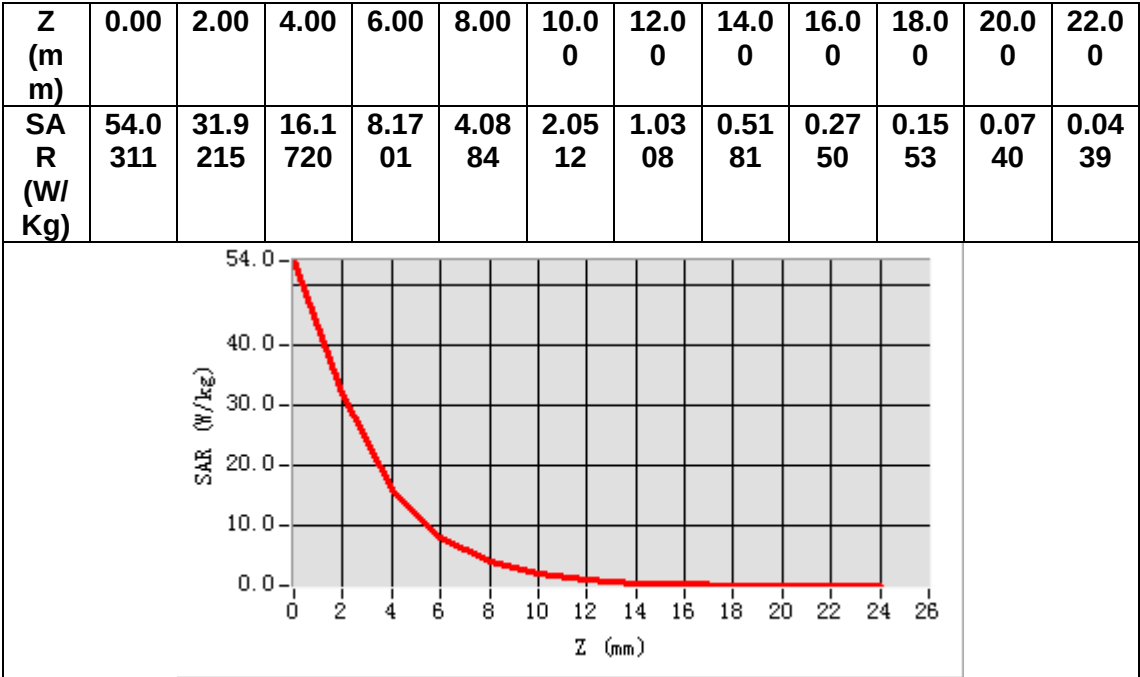
Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.551512
Relative permittivity (imaginary part)	16.223082
Conductivity (S/m)	5.234981
Variation (%)	-1.880000



Maximum location: X=0.00, Y=6.00

SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.270095
SAR 1g (W/Kg)	18.496093



MEASUREMENT 14

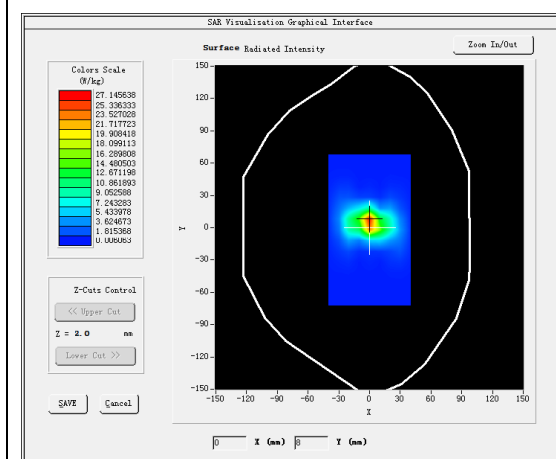
A. Experimental conditions.

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

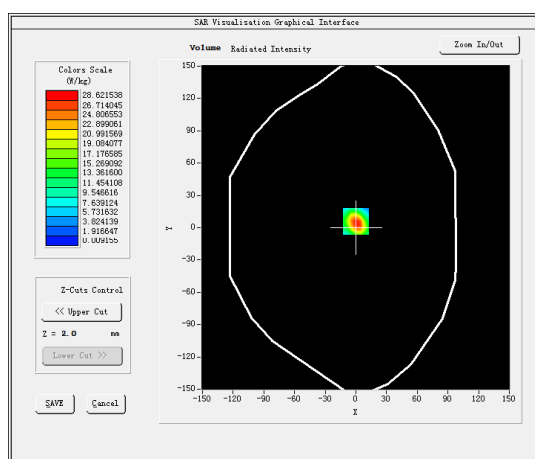
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.319538
Relative permittivity (imaginary part)	16.815509
Conductivity (S/m)	6.056480
Variation (%)	1.340000

SURFACE SAR



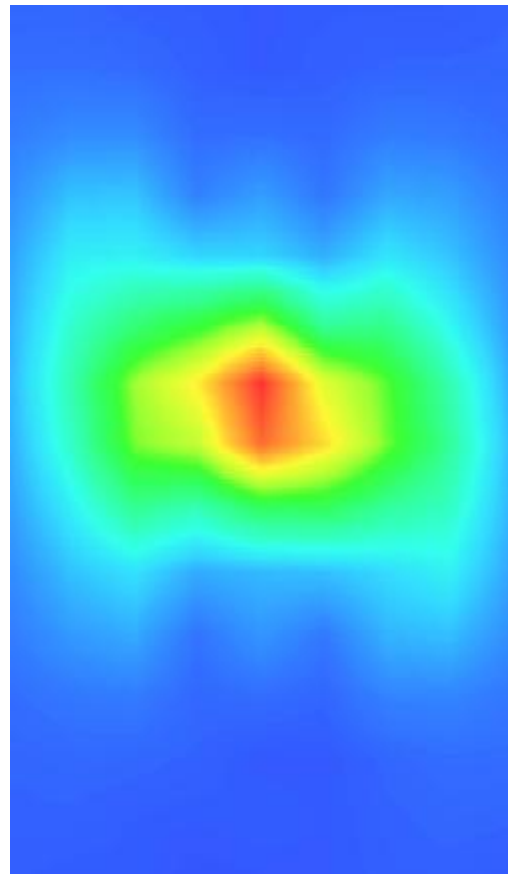
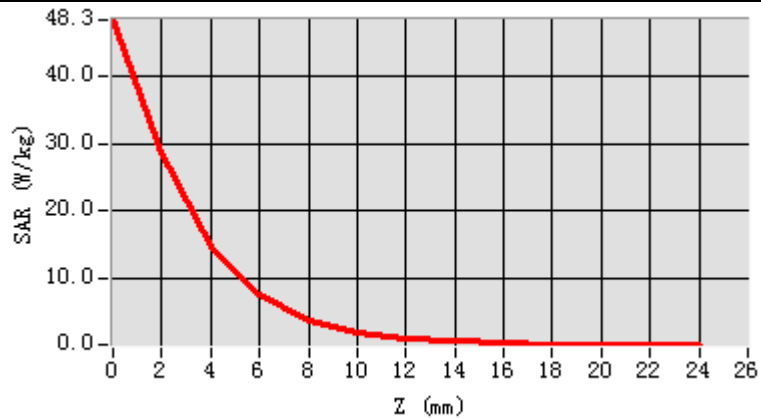
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.526184
SAR 1g (W/Kg)	16.753052



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 1

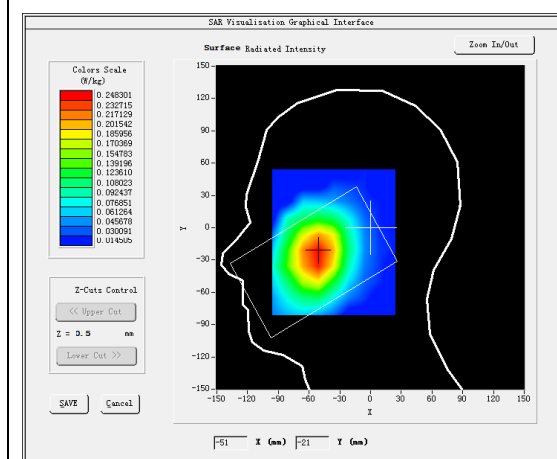
A. Experimental conditions.

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

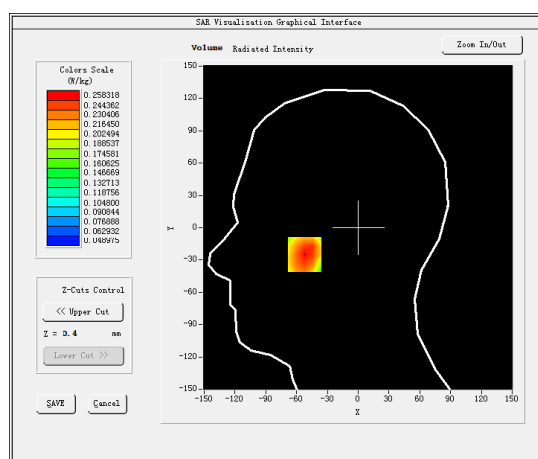
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.670959
Relative permittivity (imaginary part)	19.981541
Conductivity (S/m)	0.928476
Variation (%)	4.380000

SURFACE SAR



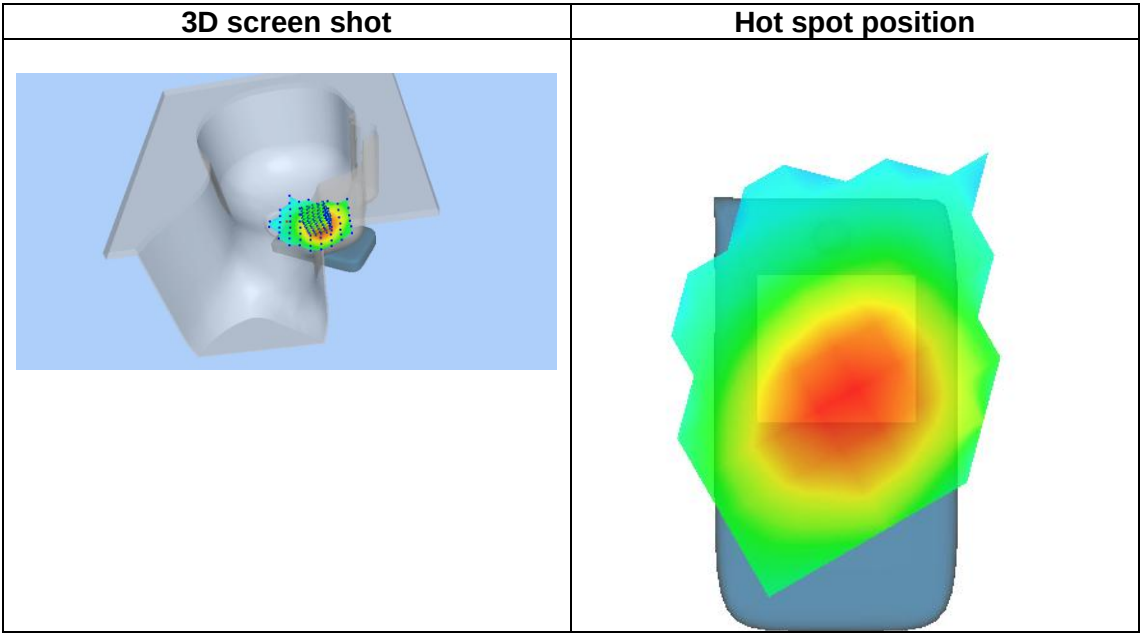
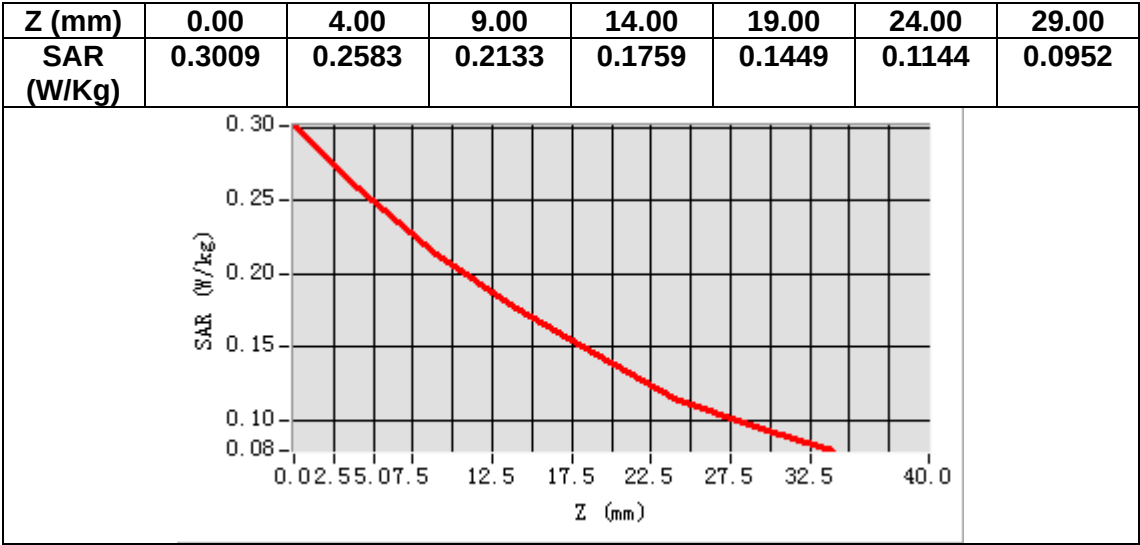
VOLUME SAR



Maximum location: X=-52.00, Y=-25.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.195836
SAR 1g (W/Kg)	0.260083



MEASUREMENT 2

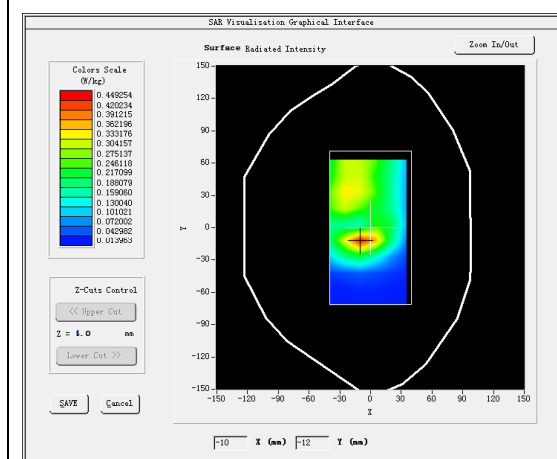
A. Experimental conditions.

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

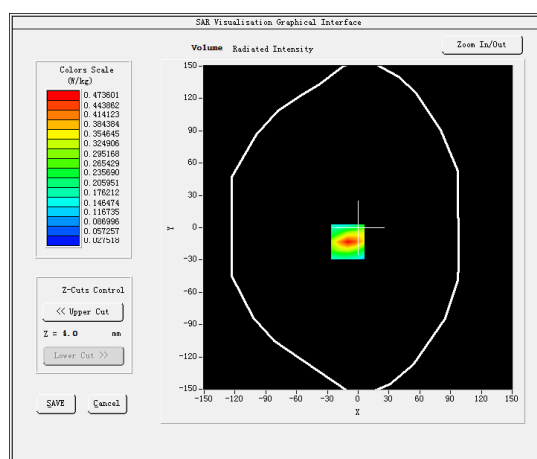
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.499580
Relative permittivity (imaginary part)	21.182739
Conductivity (S/m)	0.984291
Variation (%)	2.010000

SURFACE SAR



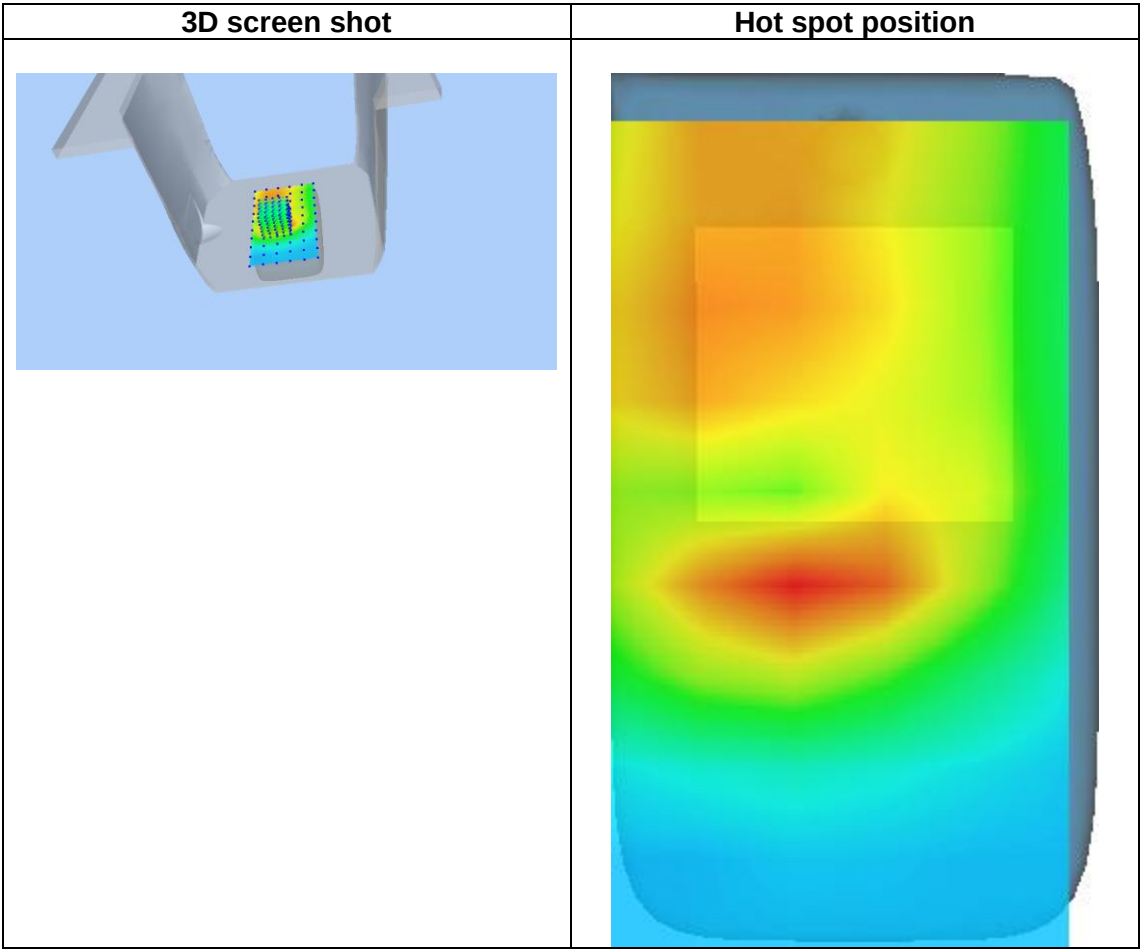
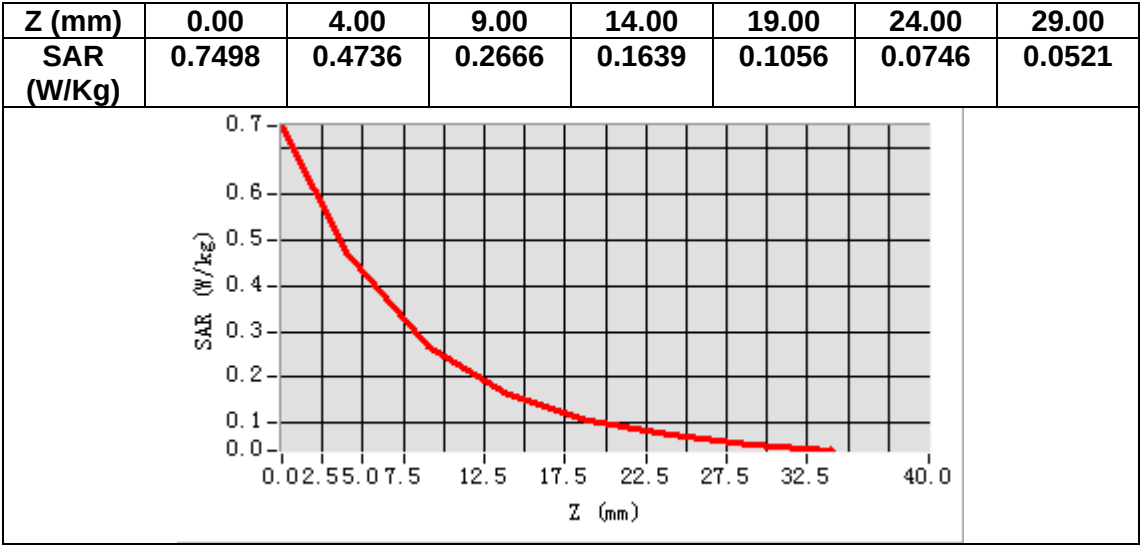
VOLUME SAR



Maximum location: X=-10.00, Y=-13.00

SAR Peak: 0.74 W/kg

SAR 10g (W/Kg)	0.237214
SAR 1g (W/Kg)	0.441345



MEASUREMENT 3

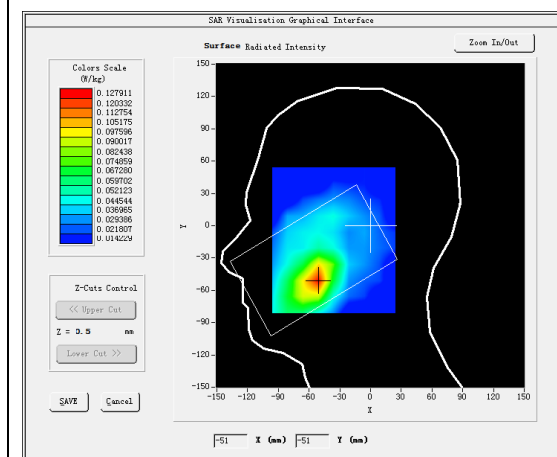
A. Experimental conditions.

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

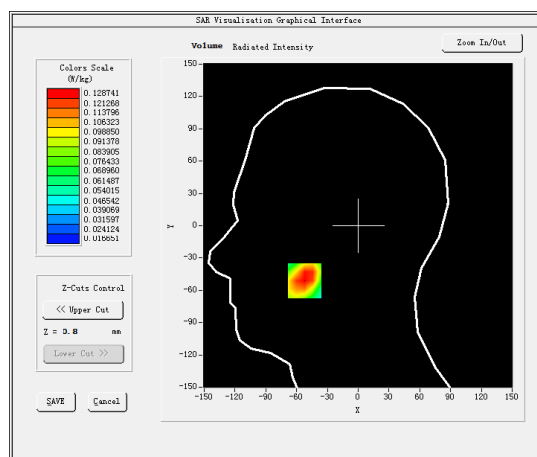
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.997002
Relative permittivity (imaginary part)	13.270200
Conductivity (S/m)	1.385999
Variation (%)	-2.670000

SURFACE SAR



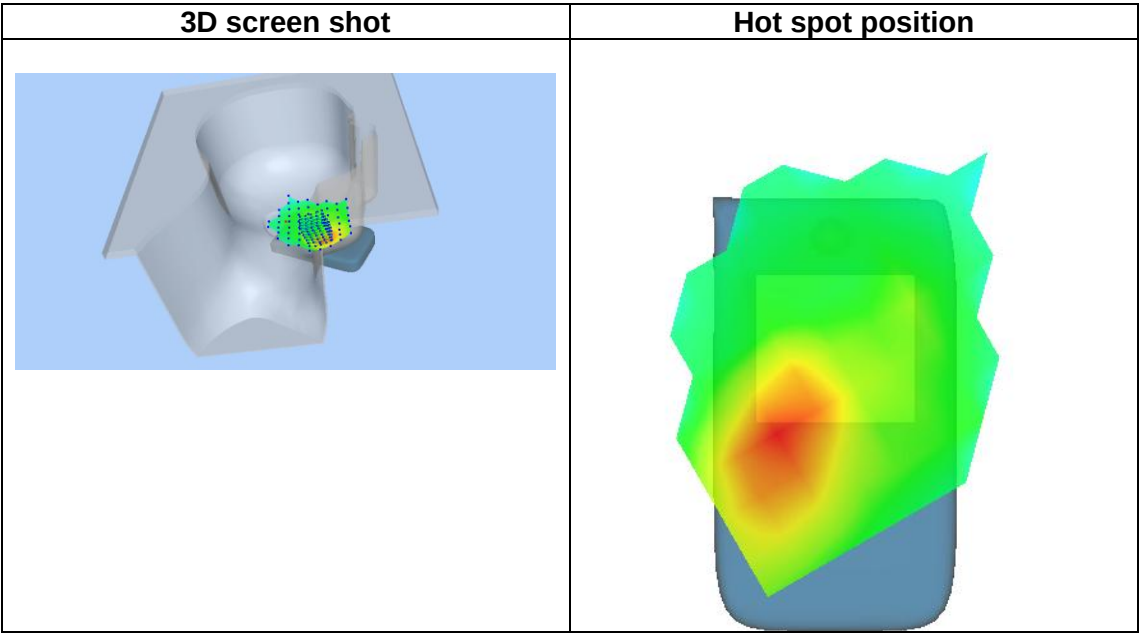
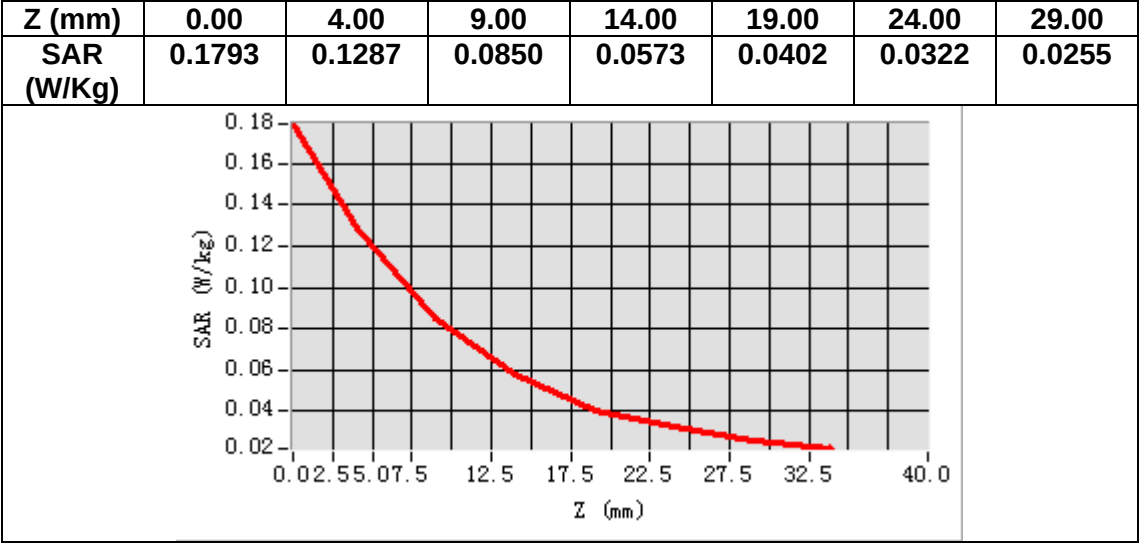
VOLUME SAR



Maximum location: X=-52.00, Y=-51.00

SAR Peak: 0.19 W/kg

SAR 10g (W/Kg)	0.077663
SAR 1g (W/Kg)	0.125159



MEASUREMENT 4

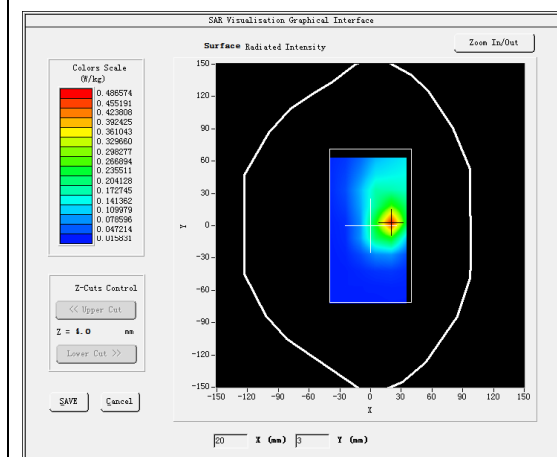
A. Experimental conditions.

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

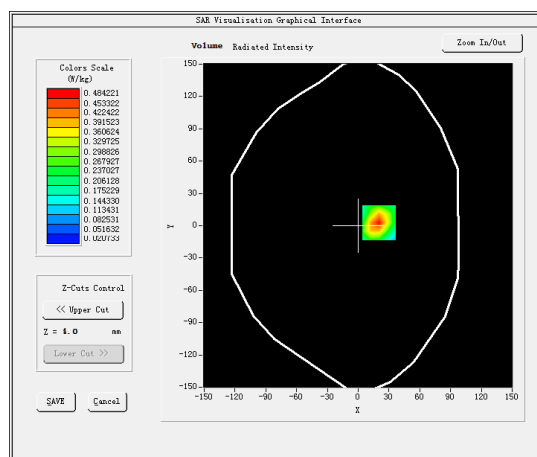
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.303902
Relative permittivity (imaginary part)	14.587700
Conductivity (S/m)	1.523604
Variation (%)	2.610000

SURFACE SAR



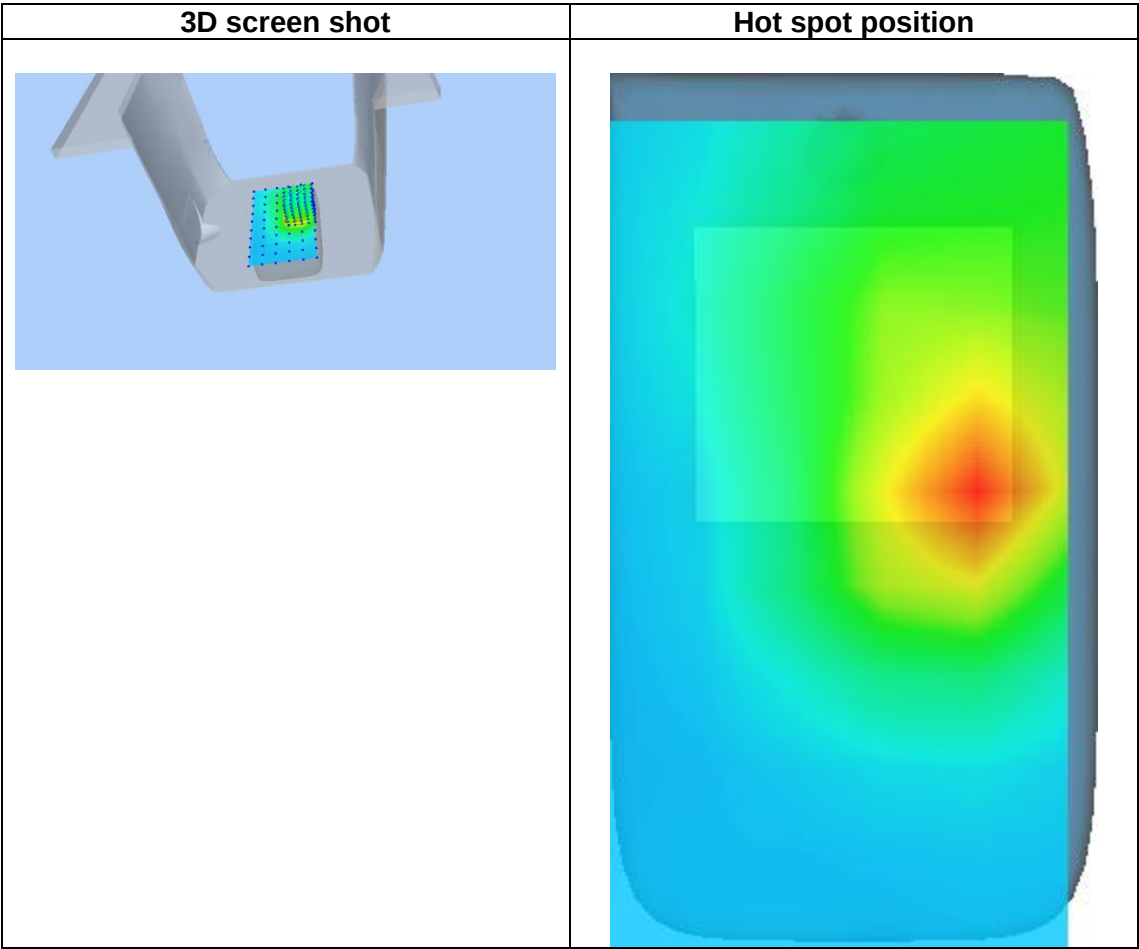
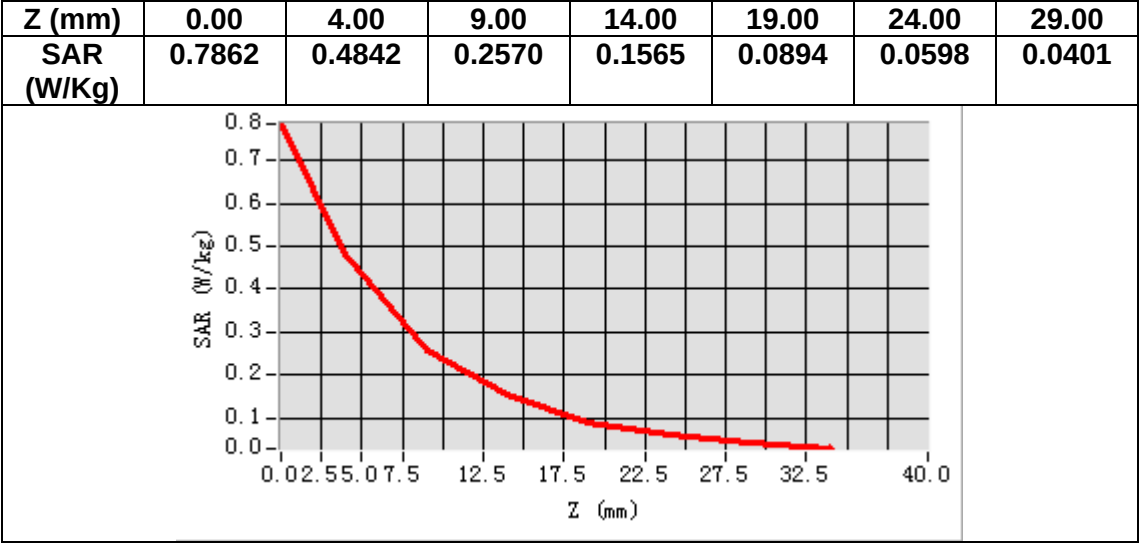
VOLUME SAR



Maximum location: X=20.00, Y=3.00

SAR Peak: 0.79 W/kg

SAR 10g (W/Kg)	0.231445
SAR 1g (W/Kg)	0.452951



MEASUREMENT 5

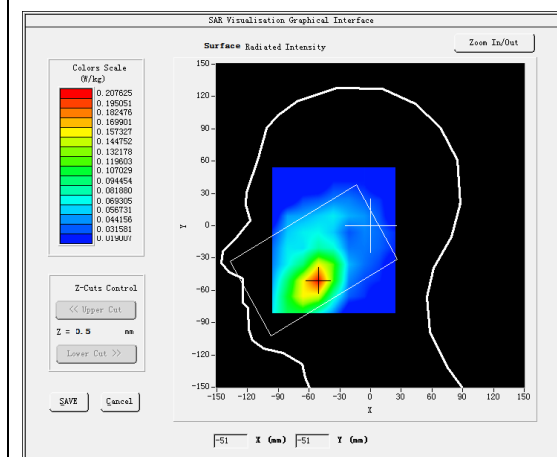
A. Experimental conditions.

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

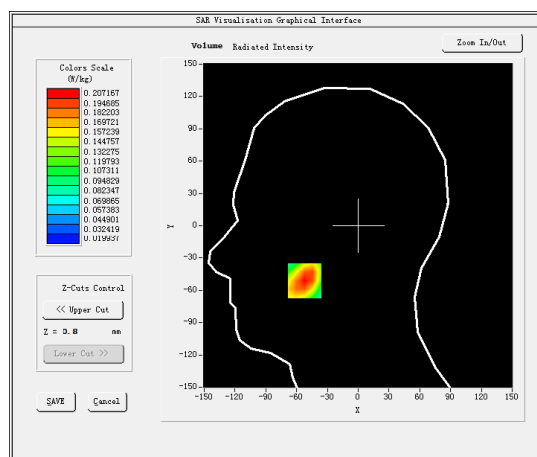
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.997002
Relative permittivity (imaginary part)	13.270200
Conductivity (S/m)	1.385999
Variation (%)	-0.510000

SURFACE SAR



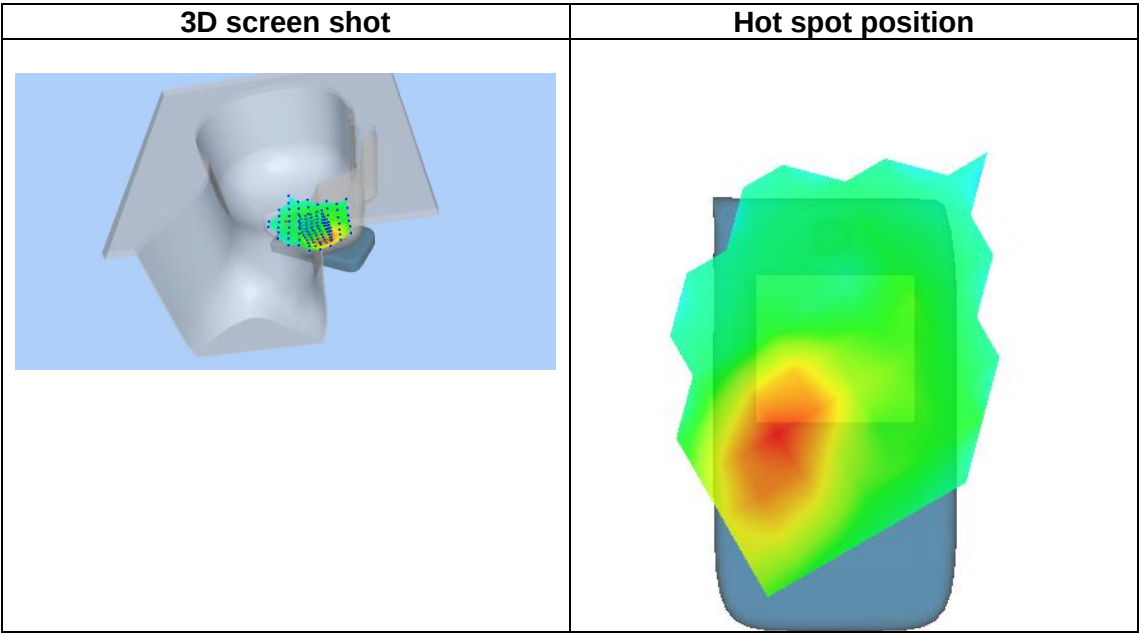
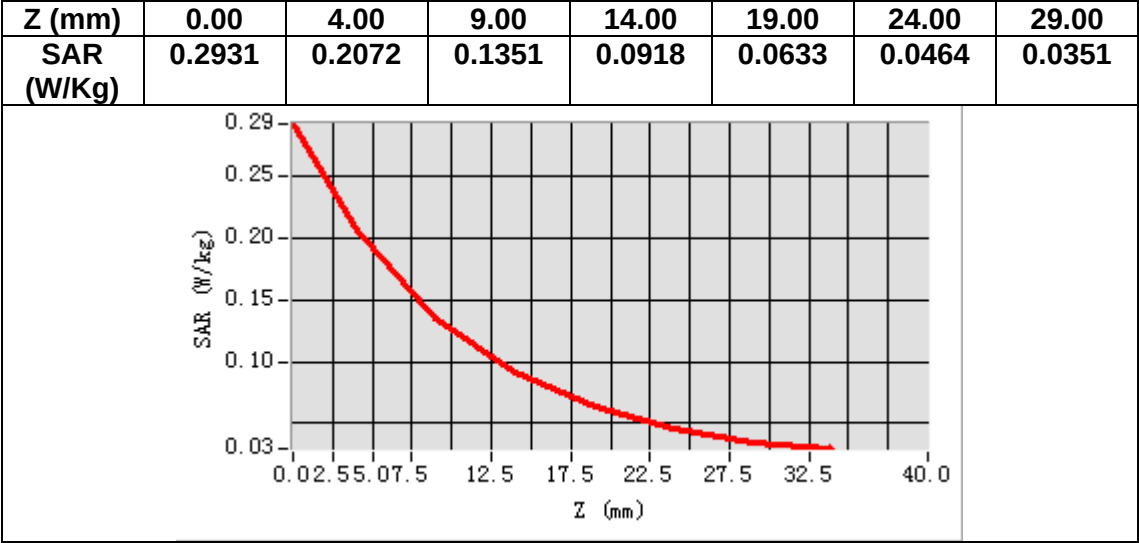
VOLUME SAR



Maximum location: X=-52.00, Y=-51.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.121478
SAR 1g (W/Kg)	0.198518



MEASUREMENT 6

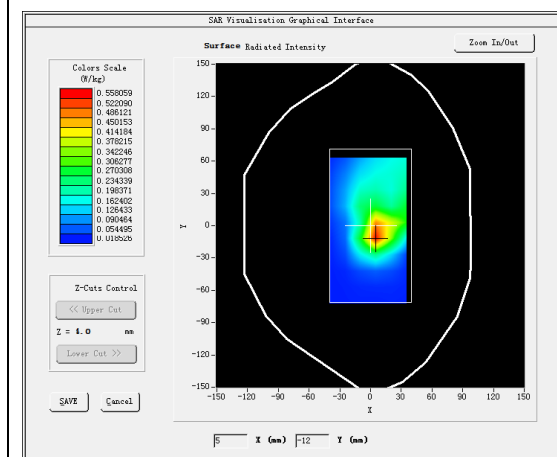
A. Experimental conditions.

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

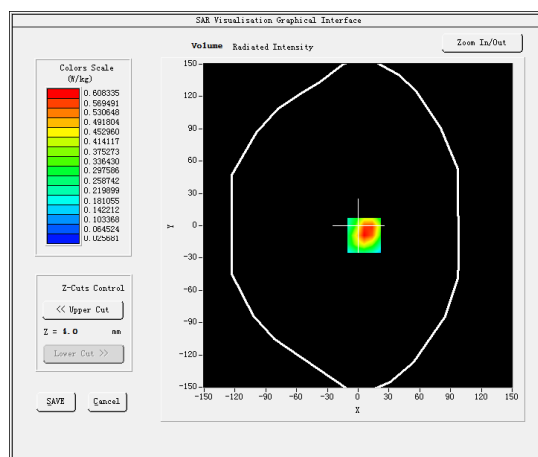
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.303902
Relative permittivity (imaginary part)	14.587700
Conductivity (S/m)	1.523604
Variation (%)	0.110000

SURFACE SAR



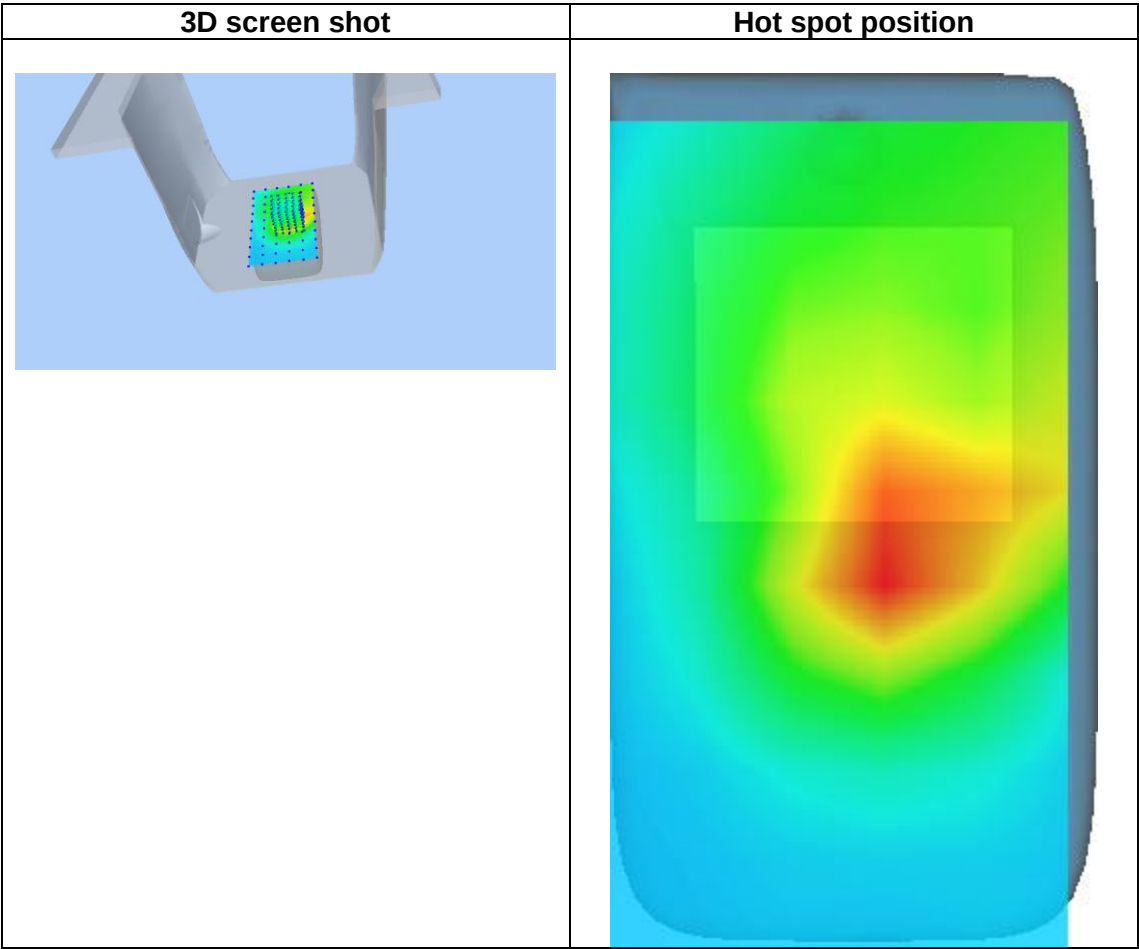
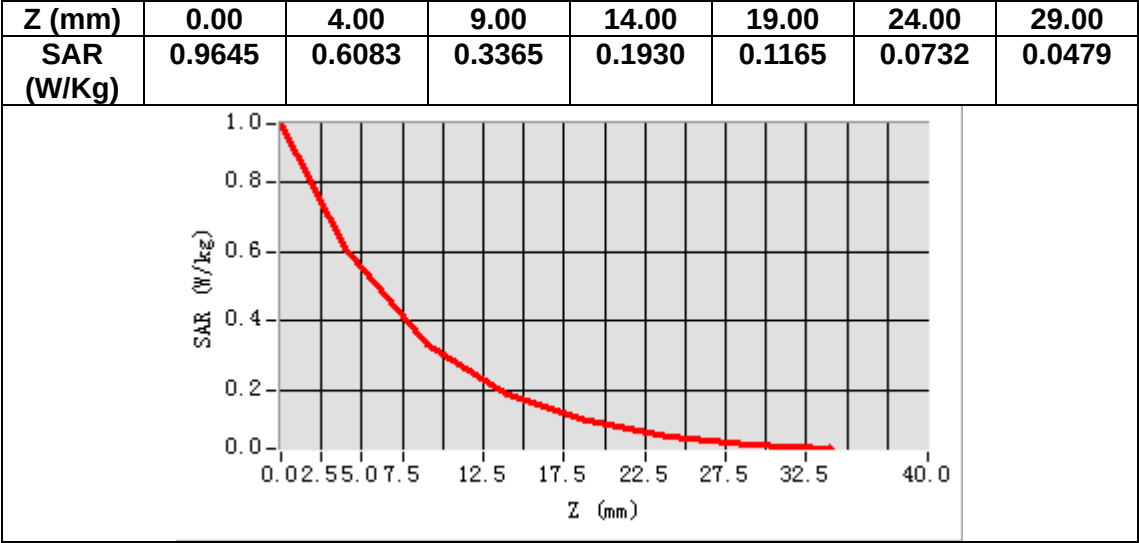
VOLUME SAR



Maximum location: X=6.00, Y=-9.00

SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.306859
SAR 1g (W/Kg)	0.596113



MEASUREMENT 7

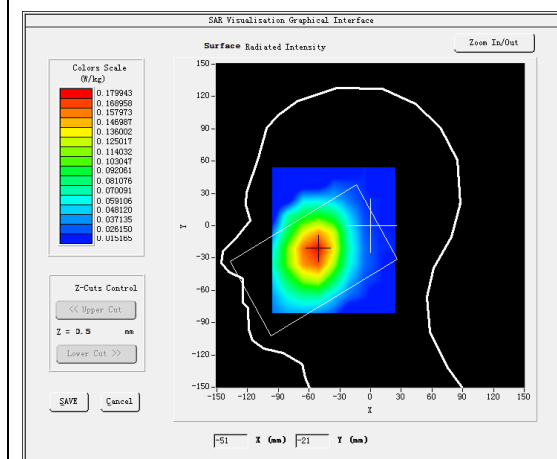
A. Experimental conditions.

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

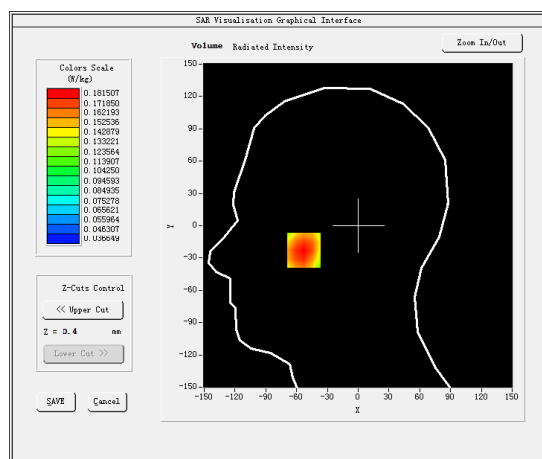
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.670959
Relative permittivity (imaginary part)	19.981541
Conductivity (S/m)	0.928476
Variation (%)	-0.320000

SURFACE SAR



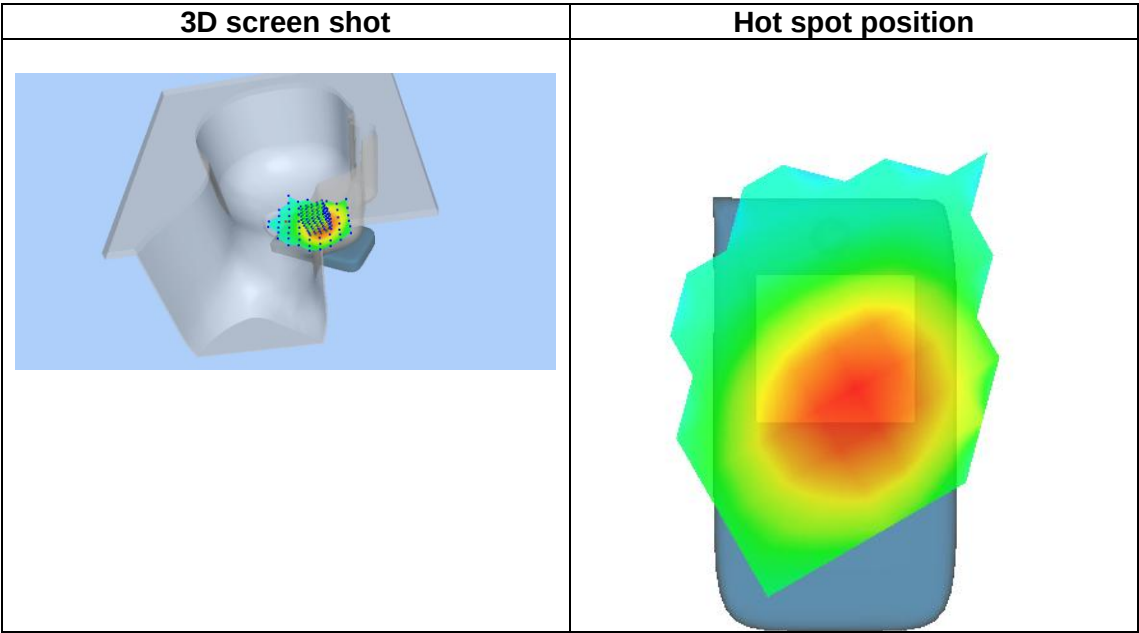
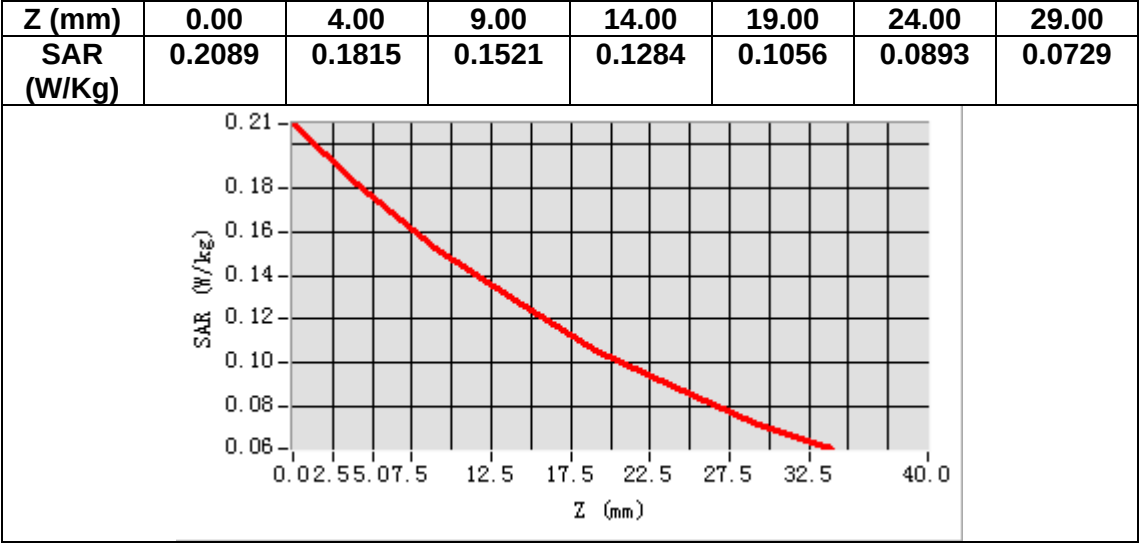
VOLUME SAR



Maximum location: X=-53.00, Y=-23.00

SAR Peak: 0.21 W/kg

SAR 10g (W/Kg)	0.141463
SAR 1g (W/Kg)	0.180813



MEASUREMENT 8

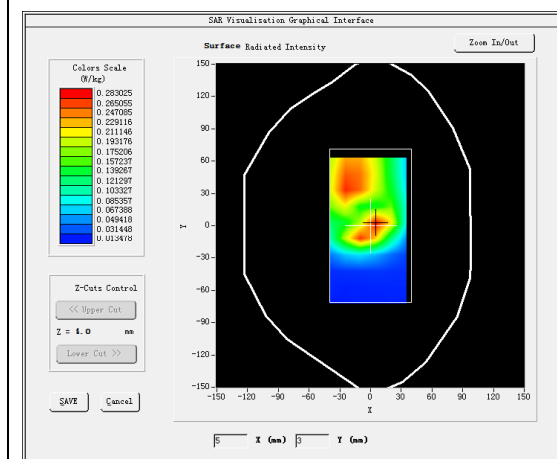
A. Experimental conditions.

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

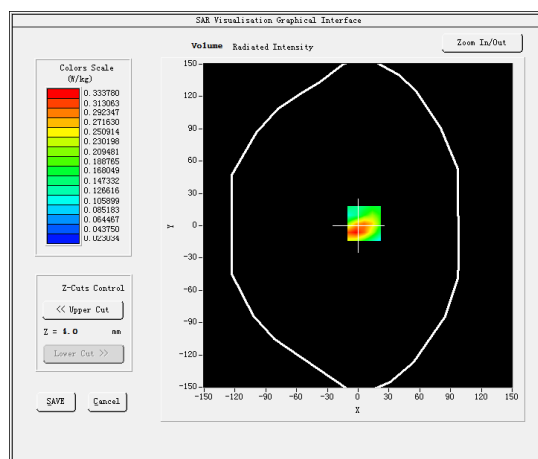
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.499580
Relative permittivity (imaginary part)	21.182739
Conductivity (S/m)	0.984291
Variation (%)	-0.120000

SURFACE SAR



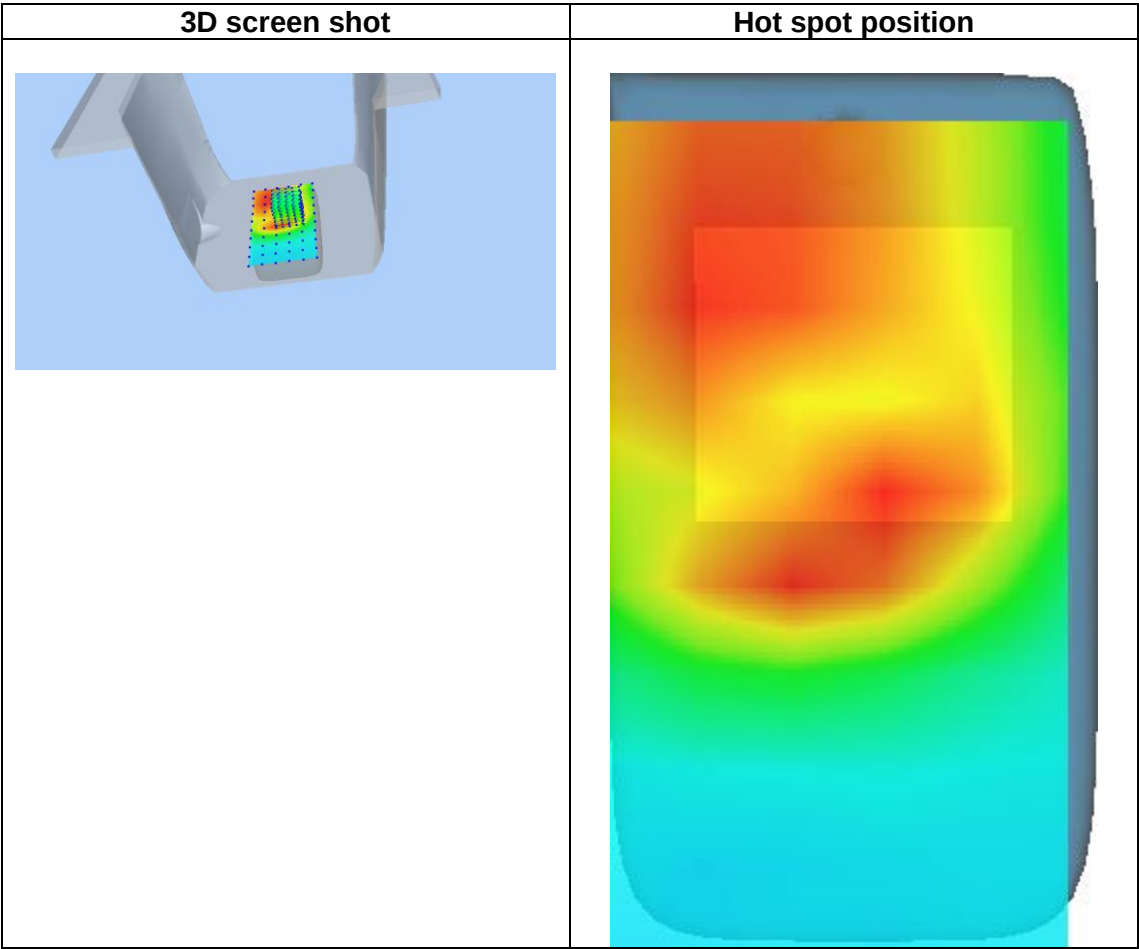
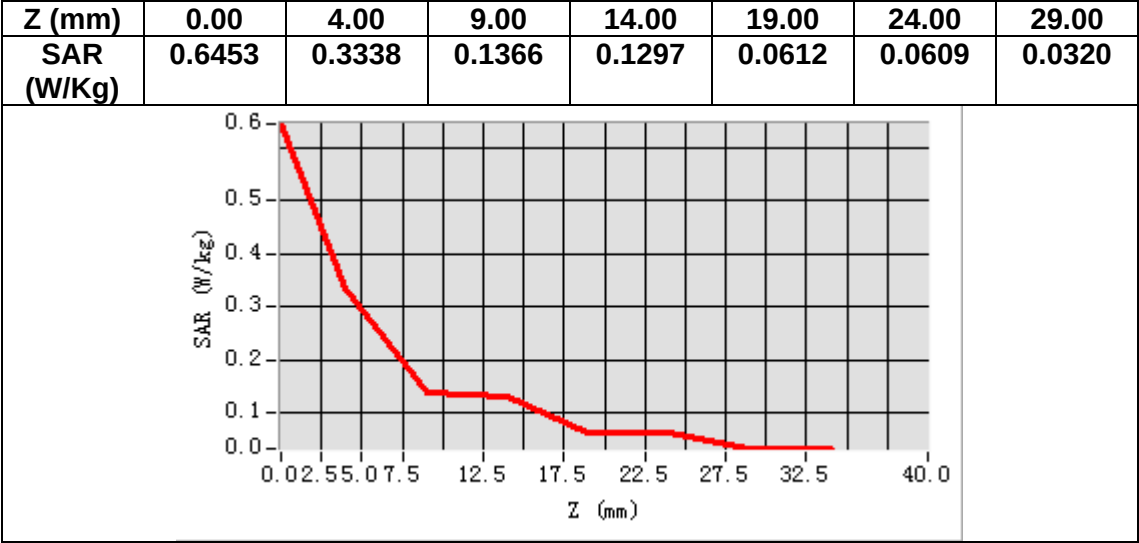
VOLUME SAR



Maximum location: X=6.00, Y=2.00

SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)	0.175350
SAR 1g (W/Kg)	0.316284



MEASUREMENT 9

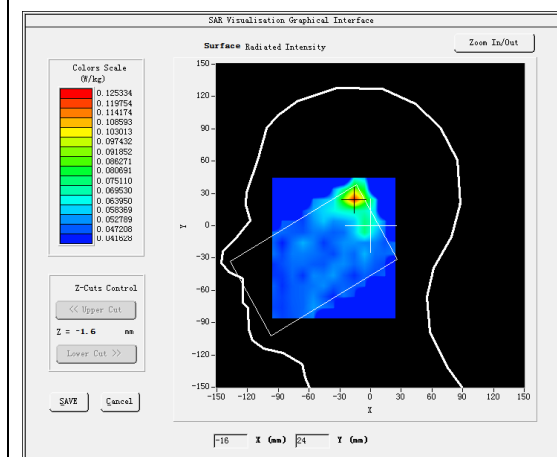
A. Experimental conditions.

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

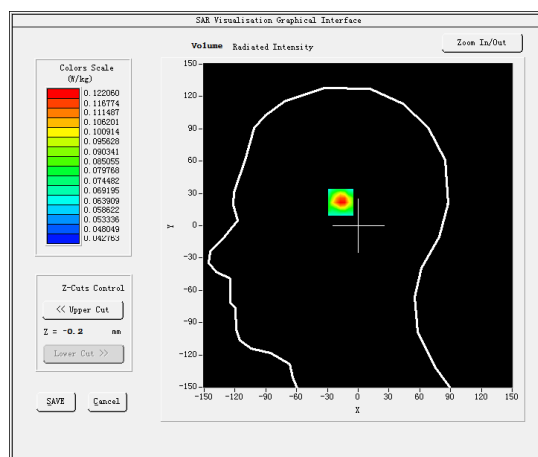
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.639980
Relative permittivity (imaginary part)	16.081619
Conductivity (S/m)	4.645801
Variation (%)	-2.340000

SURFACE SAR



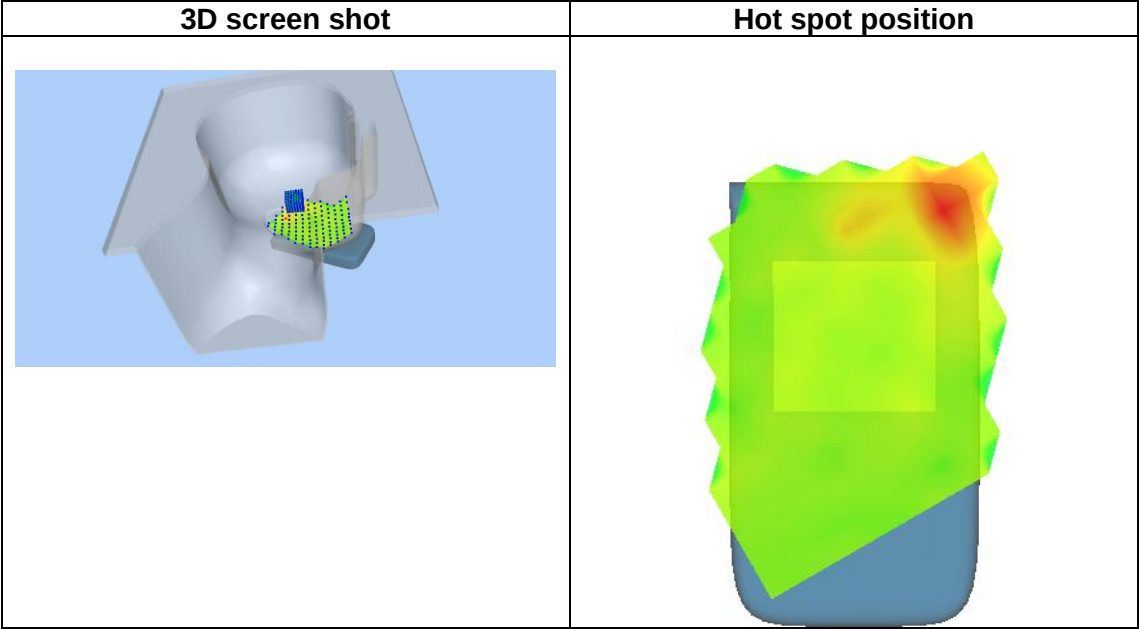
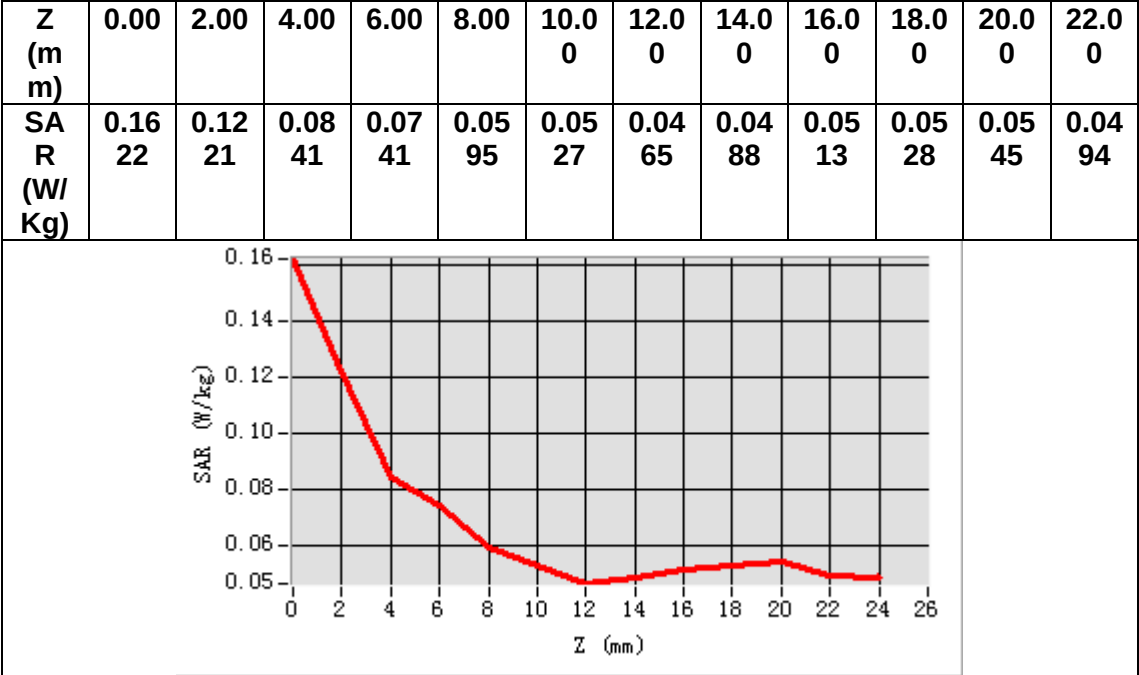
VOLUME SAR



Maximum location: X=-16.00, Y=25.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.071477
SAR 1g (W/Kg)	0.114840



MEASUREMENT 10

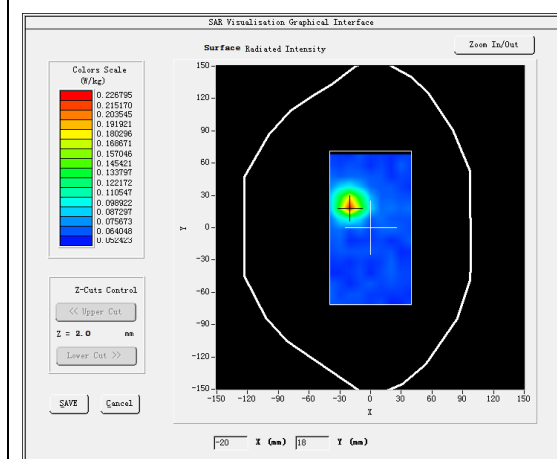
A. Experimental conditions.

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

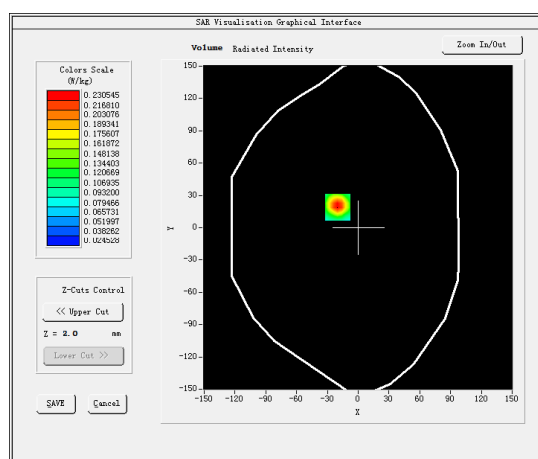
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.659538
Relative permittivity (imaginary part)	18.195509
Conductivity (S/m)	5.256480
Variation (%)	3.060000

SURFACE SAR



VOLUME SAR

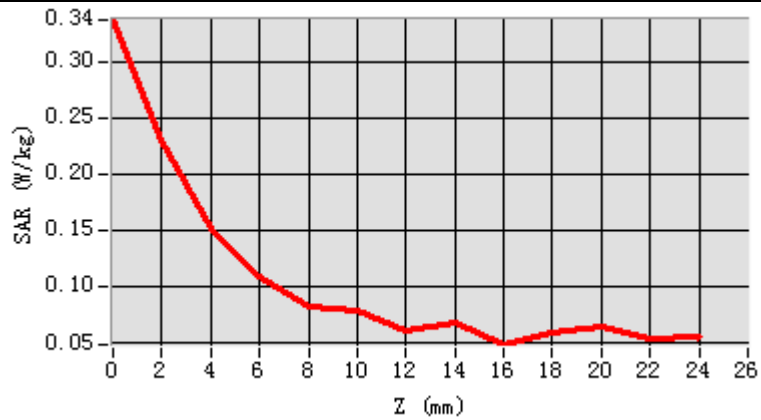


Maximum location: X=-20.00, Y=19.00

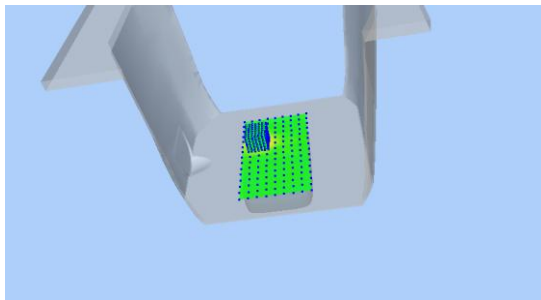
SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.092950
SAR 1g (W/Kg)	0.158177

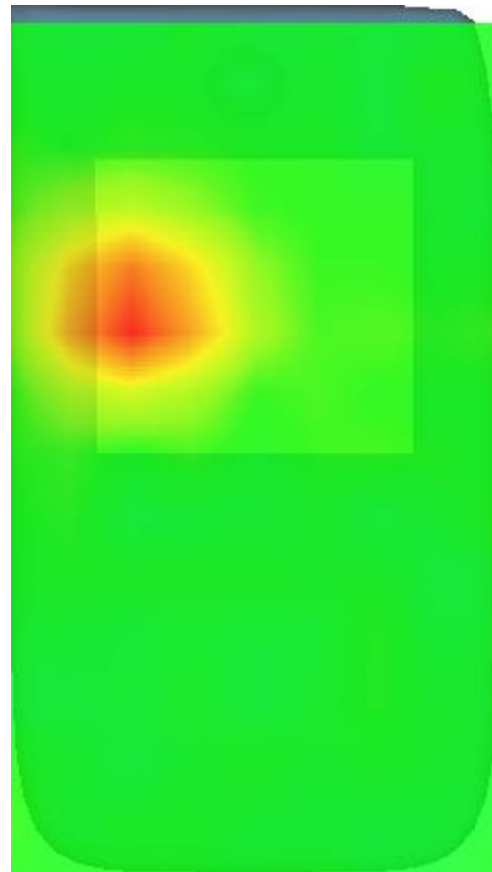
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SA R (W/ Kg)	0.33 72	0.23 05	0.15 16	0.10 90	0.08 29	0.07 81	0.06 14	0.06 83	0.04 87	0.05 97	0.06 45	0.05 45



3D screen shot



Hot spot position



MEASUREMENT 11

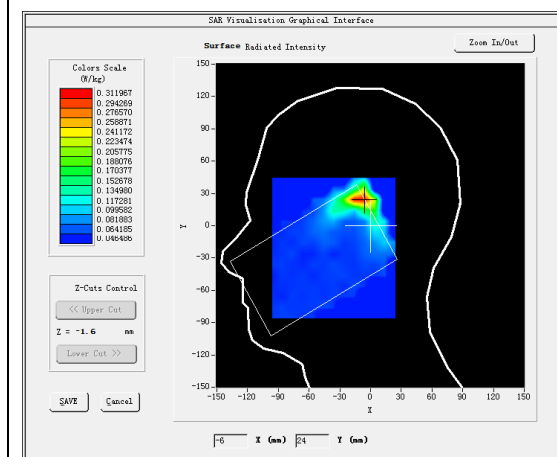
A. Experimental conditions.

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

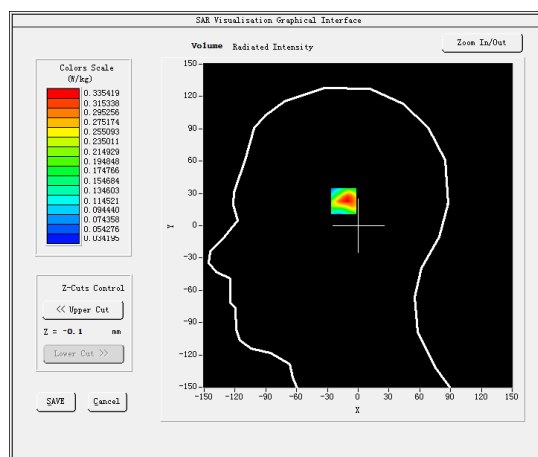
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	34.621788
Relative permittivity (imaginary part)	16.095266
Conductivity (S/m)	5.172840
Variation (%)	-1.640000

SURFACE SAR



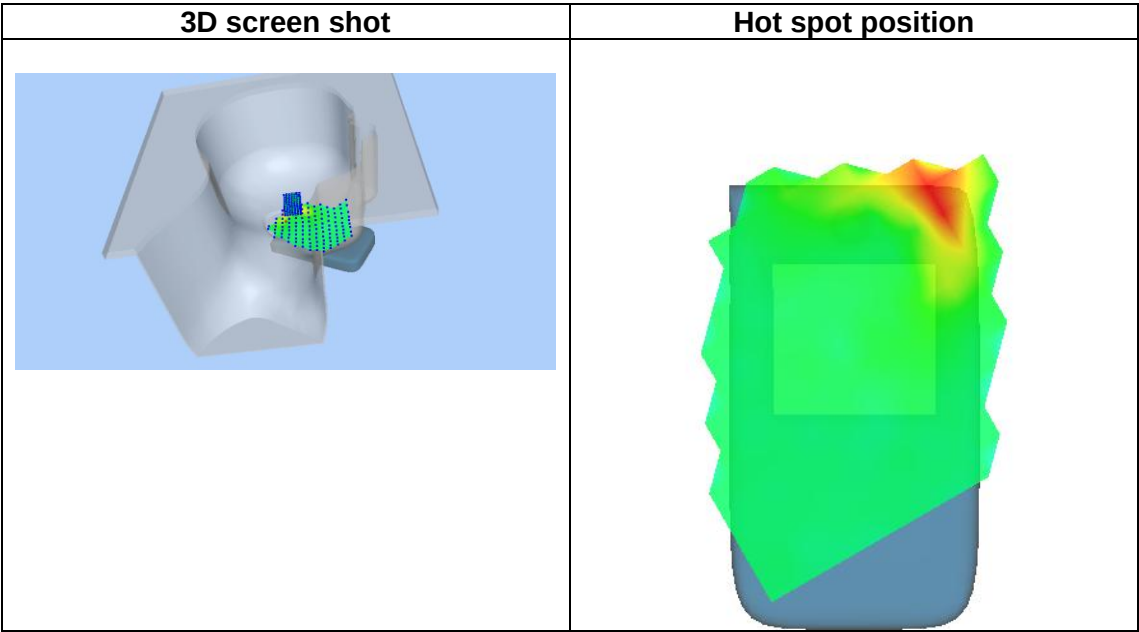
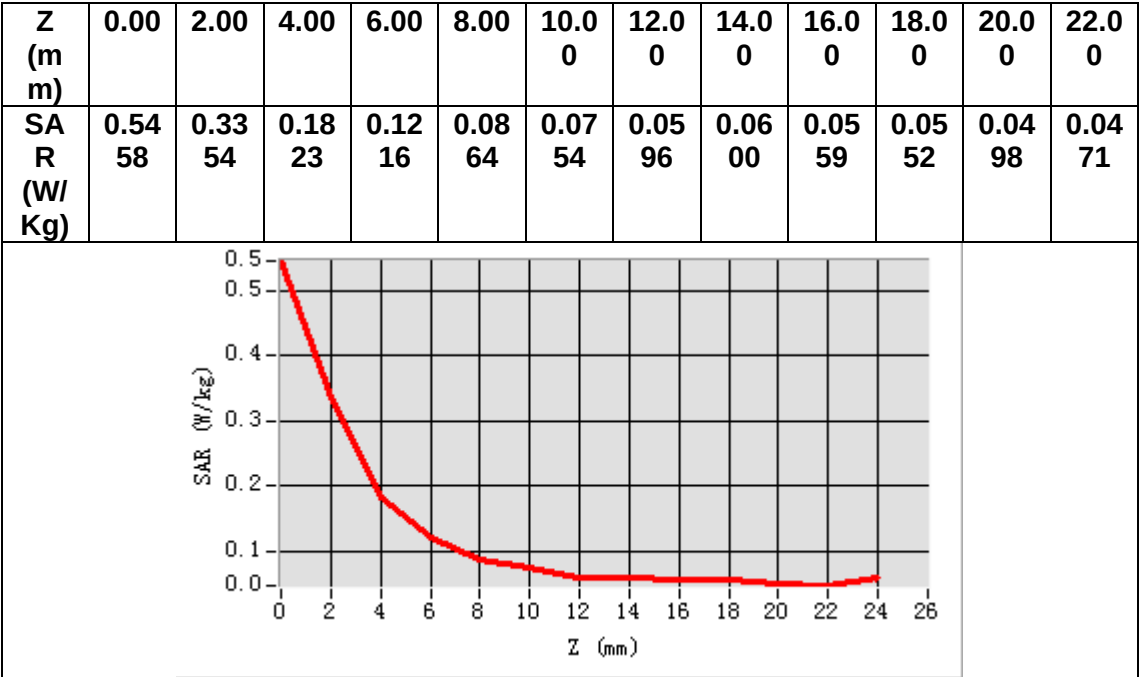
VOLUME SAR



Maximum location: X=-12.00, Y=25.00

SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	0.151735
SAR 1g (W/Kg)	0.335529



MEASUREMENT 12

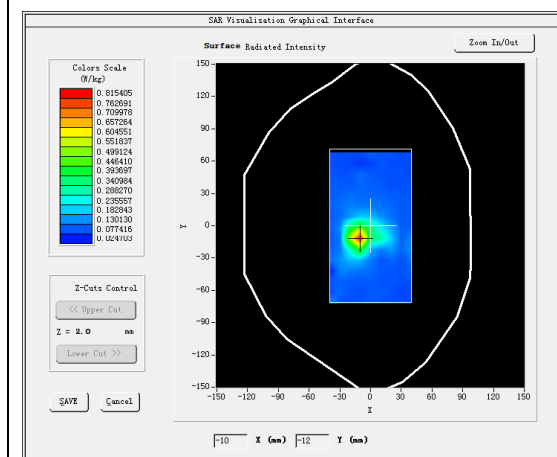
A. Experimental conditions.

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

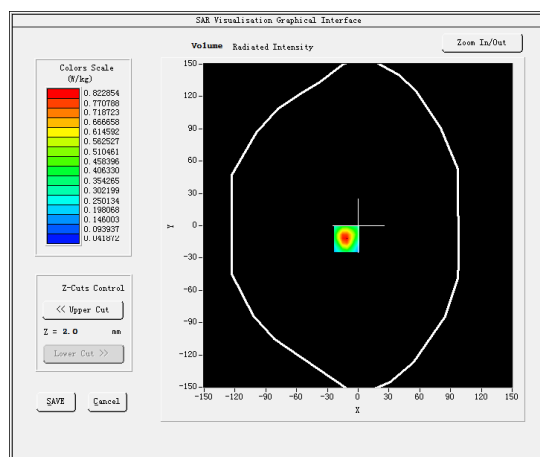
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.398701
Relative permittivity (imaginary part)	18.696766
Conductivity (S/m)	6.008933
Variation (%)	-2.100000

SURFACE SAR



VOLUME SAR



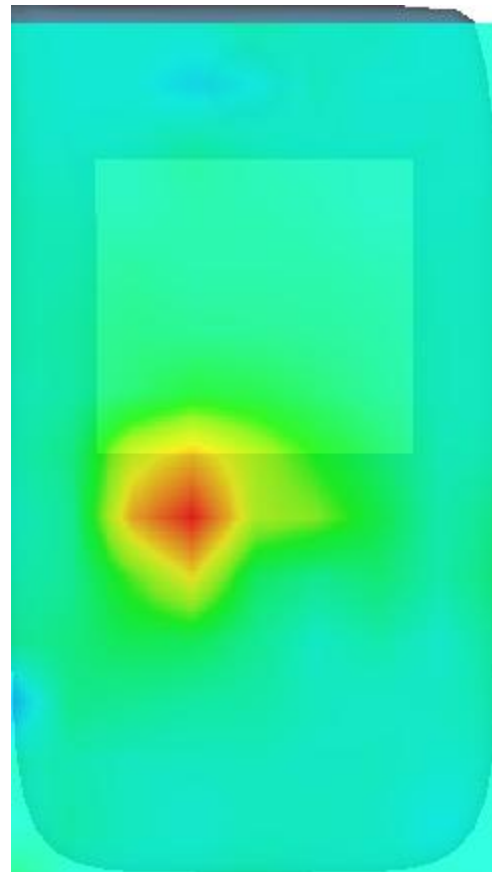
Maximum location: X=-11.00, Y=-12.00

SAR Peak: 1.42 W/kg

SAR 10g (W/Kg)	0.208175
SAR 1g (W/Kg)	0.444062

Z (mm)	SAR (W/kg)
0	1.30
2	0.85
4	0.45
6	0.25
8	0.18
10	0.14
12	0.12
14	0.11
16	0.10
18	0.10
20	0.10
22	0.10
24	0.10
26	0.10

Hot spot position



MEASUREMENT 13

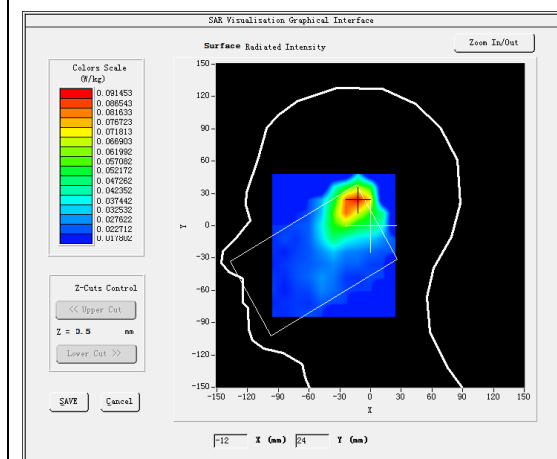
A. Experimental conditions.

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

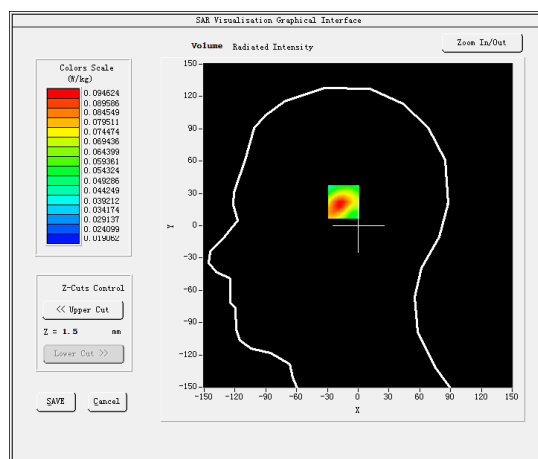
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.557999
Relative permittivity (imaginary part)	13.490300
Conductivity (S/m)	1.826437
Variation (%)	2.780000

SURFACE SAR



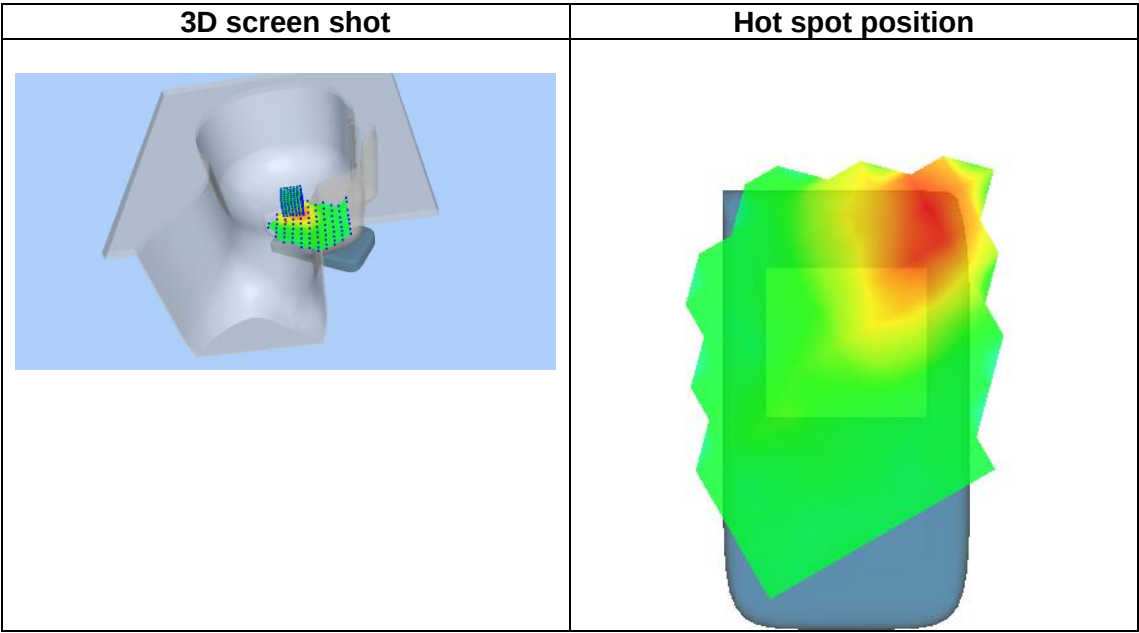
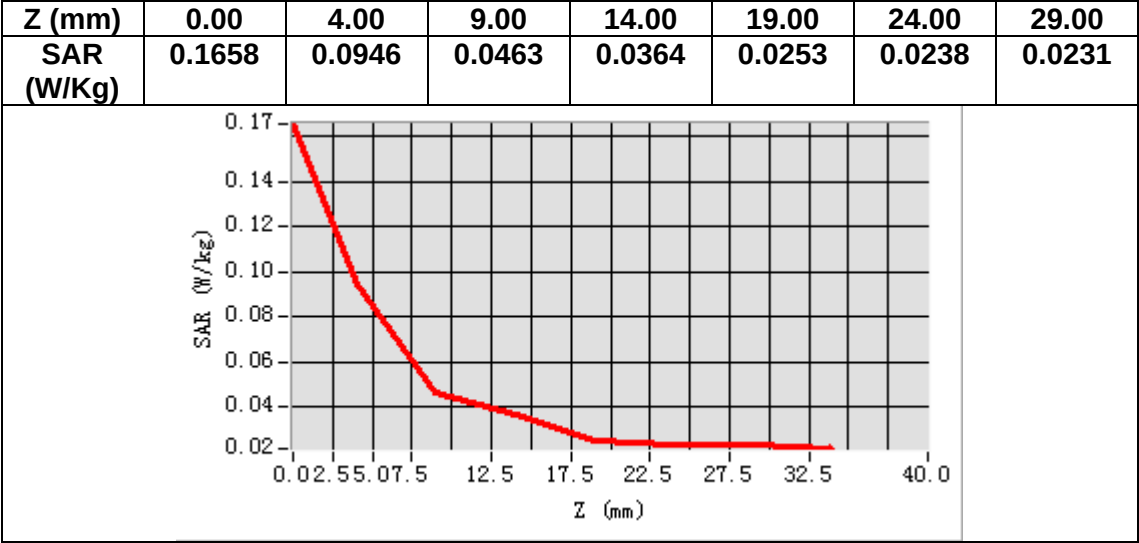
VOLUME SAR



Maximum location: X=-13.00, Y=24.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.054781
SAR 1g (W/Kg)	0.092709



MEASUREMENT 14

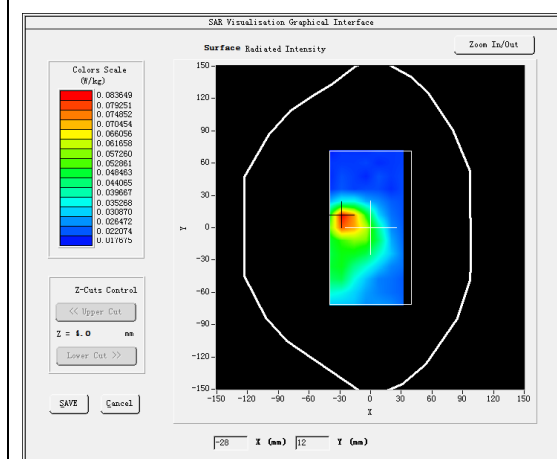
A. Experimental conditions.

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

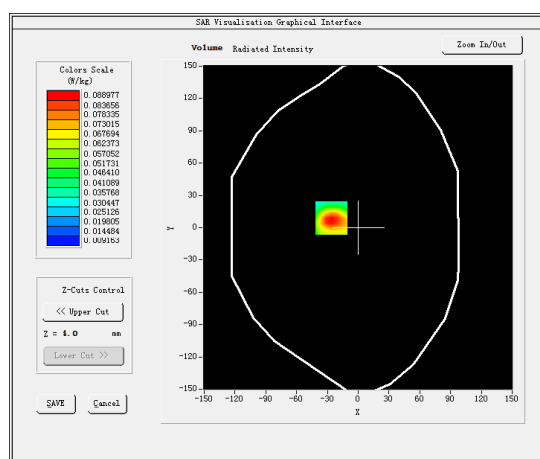
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.623699
Relative permittivity (imaginary part)	13.924400
Conductivity (S/m)	1.885209
Variation (%)	-0.580000

SURFACE SAR



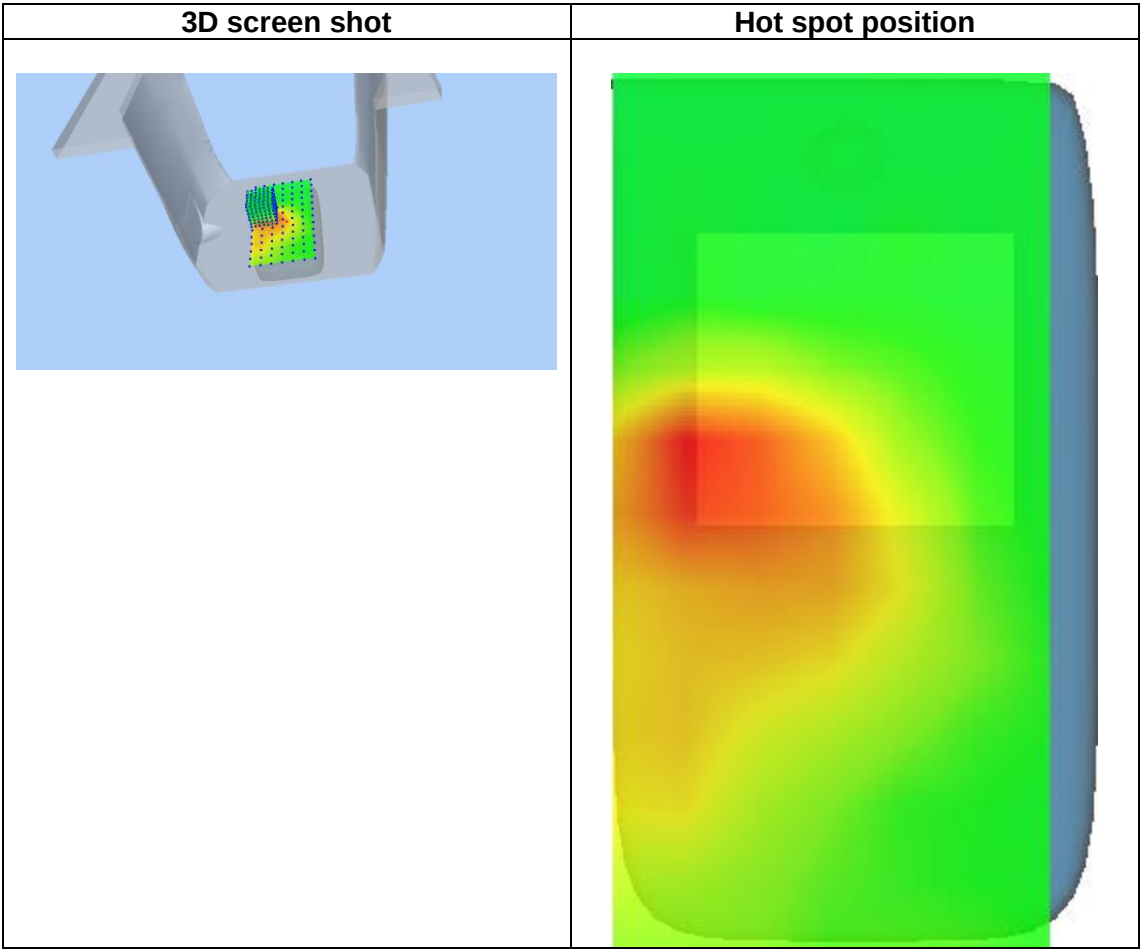
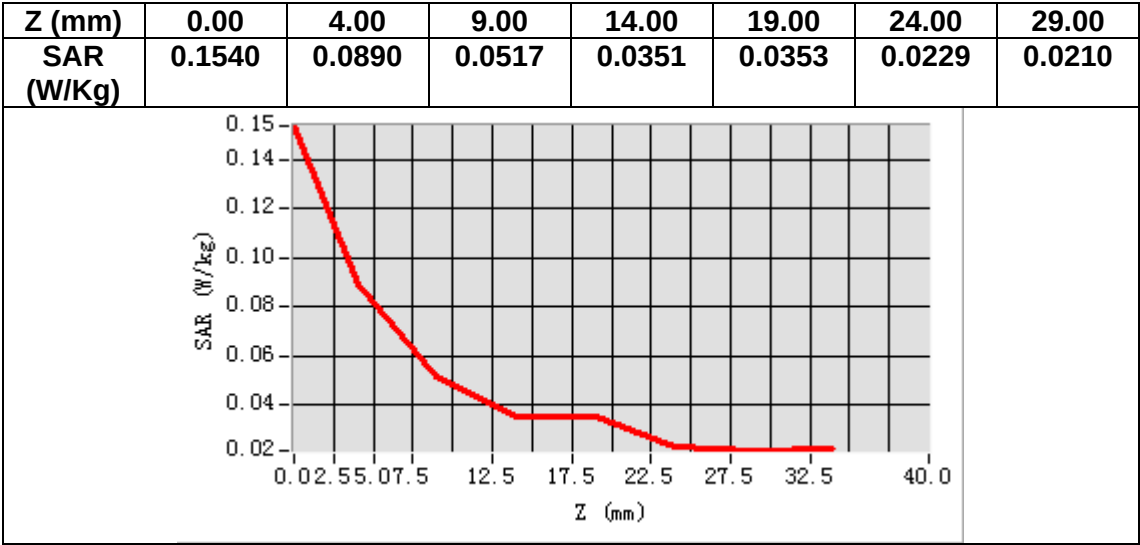
VOLUME SAR



Maximum location: X=-26.00, Y=9.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.049788
SAR 1g (W/Kg)	0.086014



MEASUREMENT 15

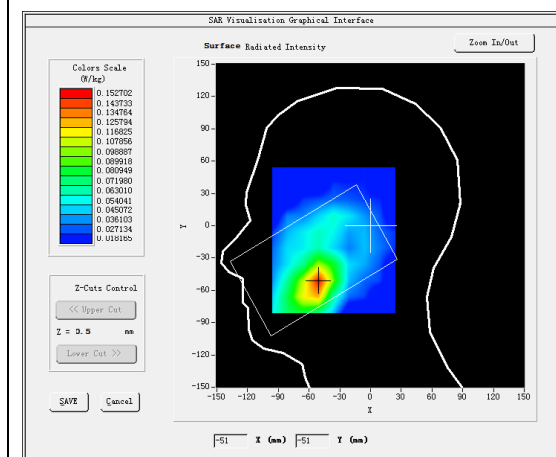
A. Experimental conditions.

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

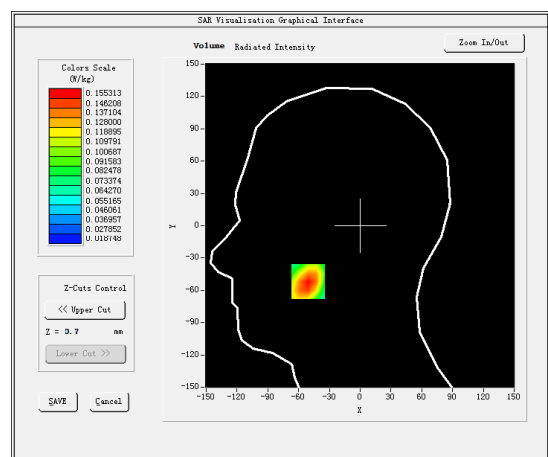
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.997101
Relative permittivity (imaginary part)	13.279800
Conductivity (S/m)	1.386632
Variation (%)	3.880000

SURFACE SAR



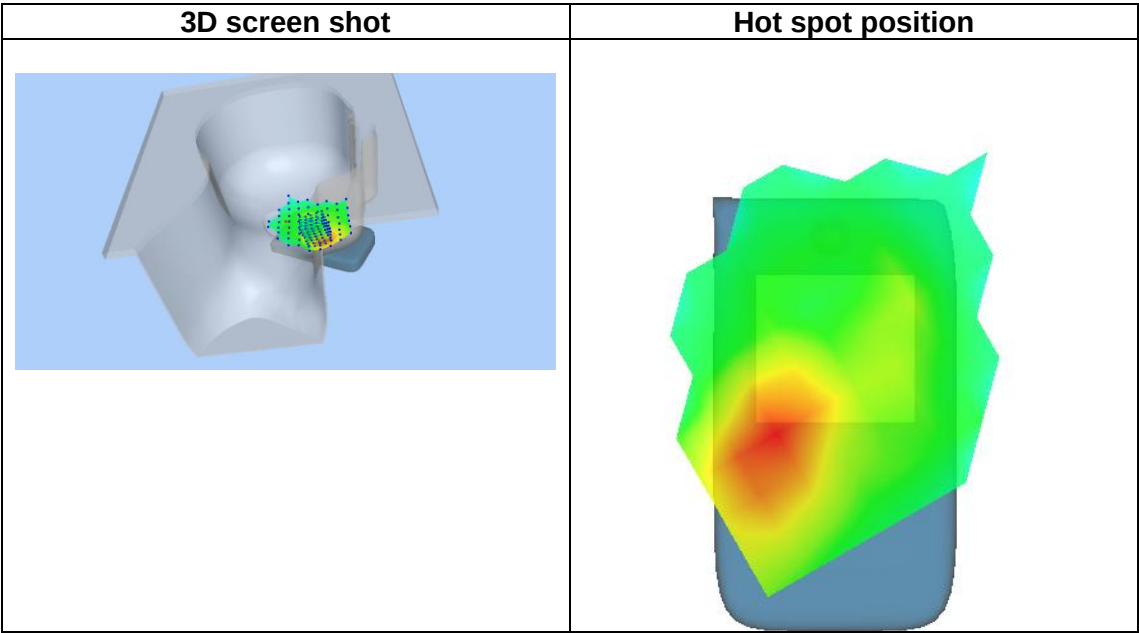
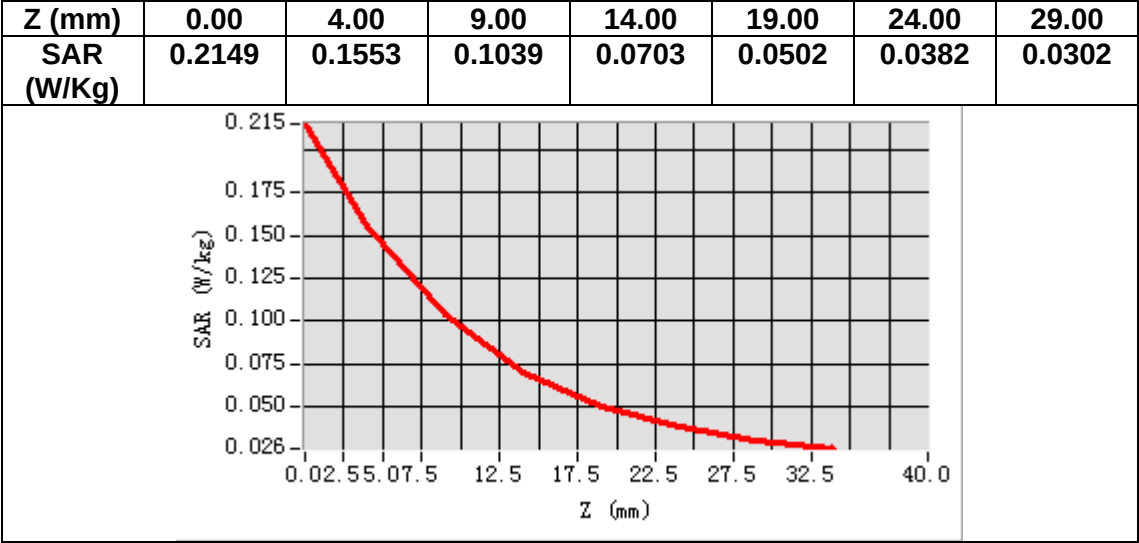
VOLUME SAR



Maximum location: X=-51.00, Y=-52.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.093641
SAR 1g (W/Kg)	0.148511



MEASUREMENT 16

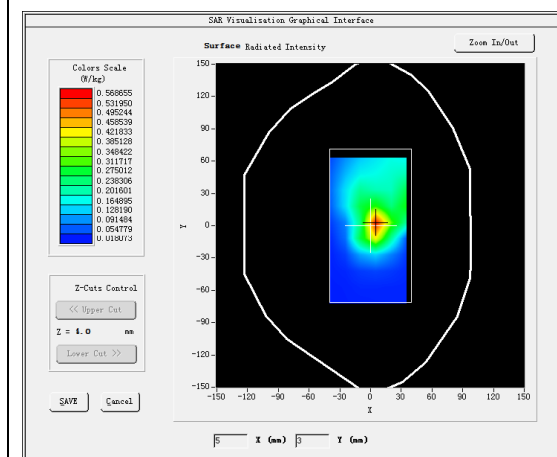
A. Experimental conditions.

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

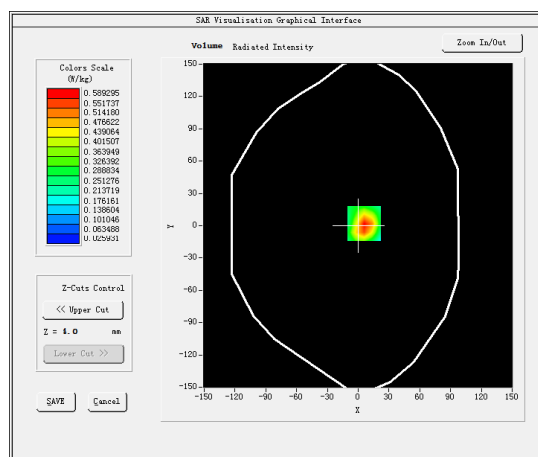
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	54.310951
Relative permittivity (imaginary part)	14.596150
Conductivity (S/m)	1.524081
Variation (%)	-0.750000

SURFACE SAR



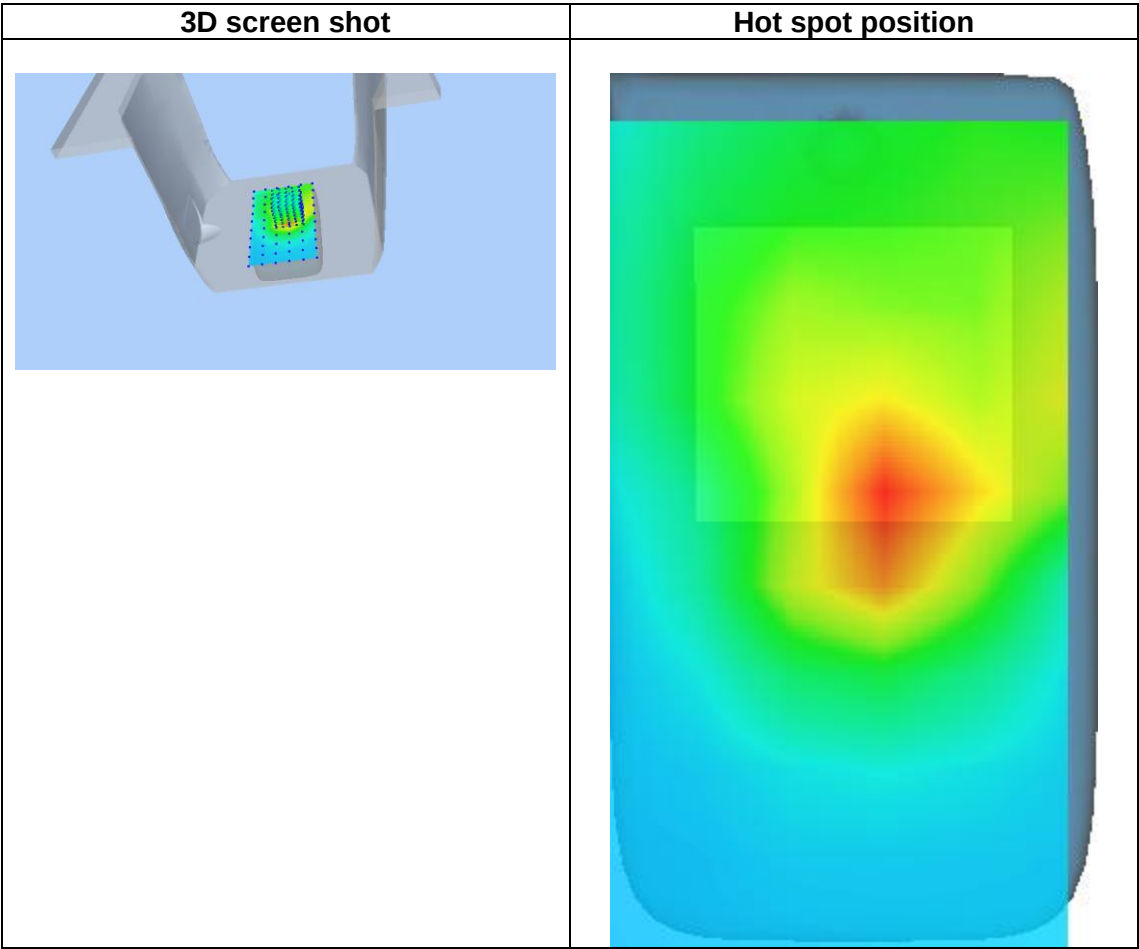
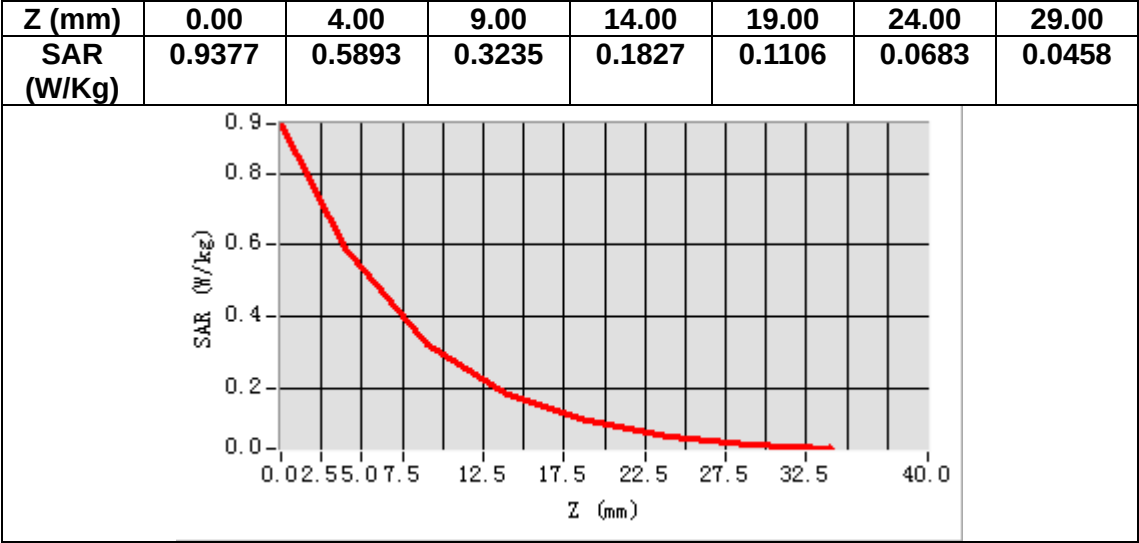
VOLUME SAR



Maximum location: X=6.00, Y=2.00

SAR Peak: 0.95 W/kg

SAR 10g (W/Kg)	0.287728
SAR 1g (W/Kg)	0.559222



MEASUREMENT 17

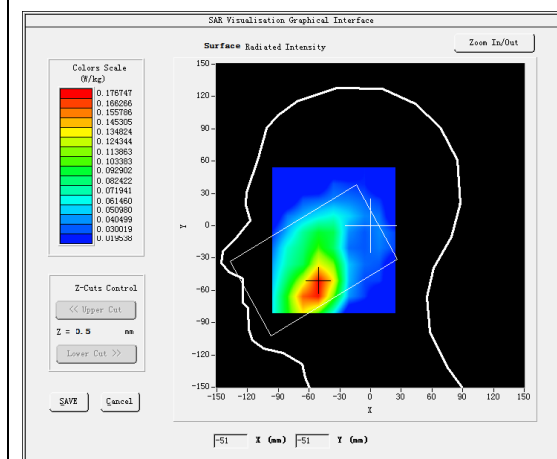
A. Experimental conditions.

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

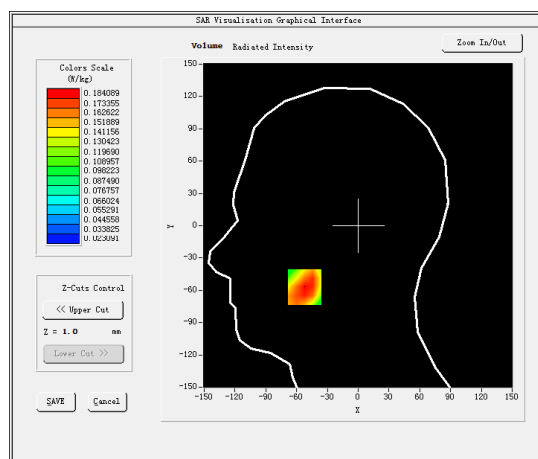
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	40.034752
Relative permittivity (imaginary part)	13.117650
Conductivity (S/m)	1.262574
Variation (%)	-1.020000

SURFACE SAR



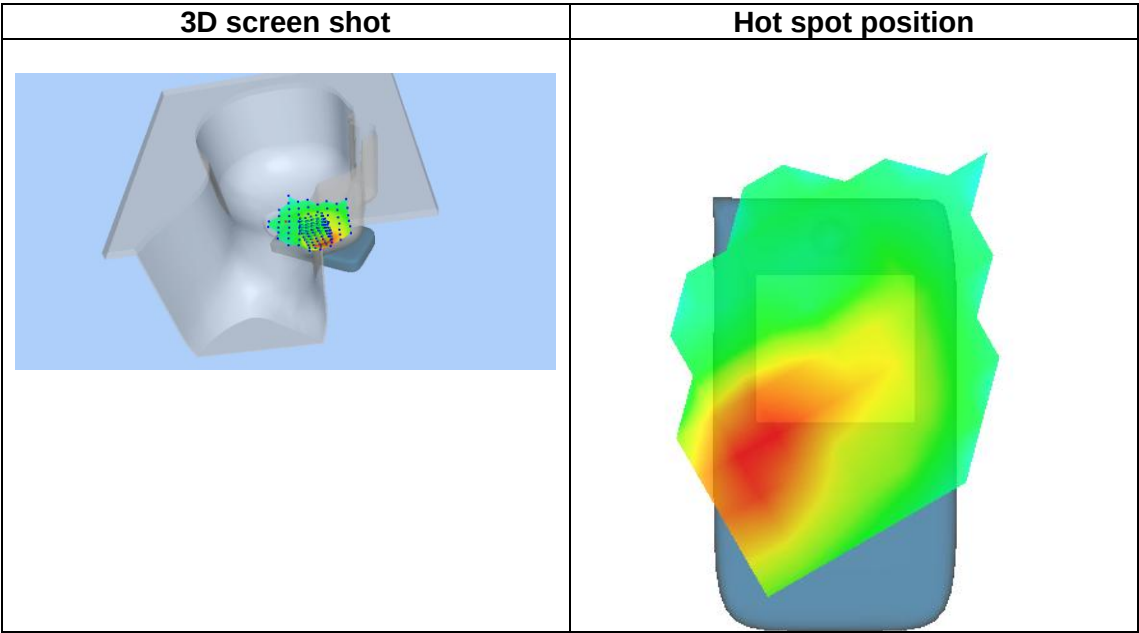
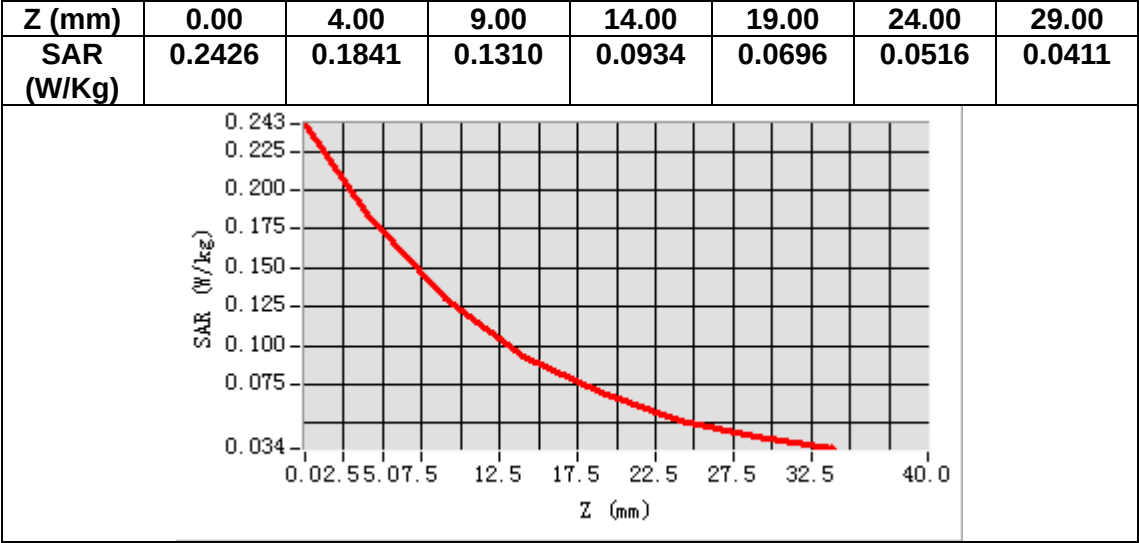
VOLUME SAR



Maximum location: X=-52.00, Y=-57.00

SAR Peak: 0.26 W/kg

SAR 10g (W/Kg)	0.117983
SAR 1g (W/Kg)	0.179443



MEASUREMENT 18

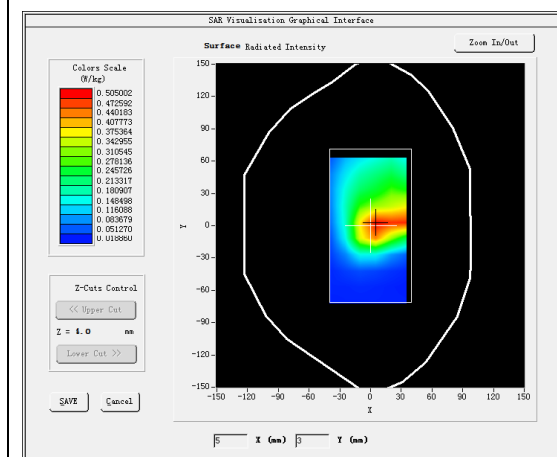
A. Experimental conditions.

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

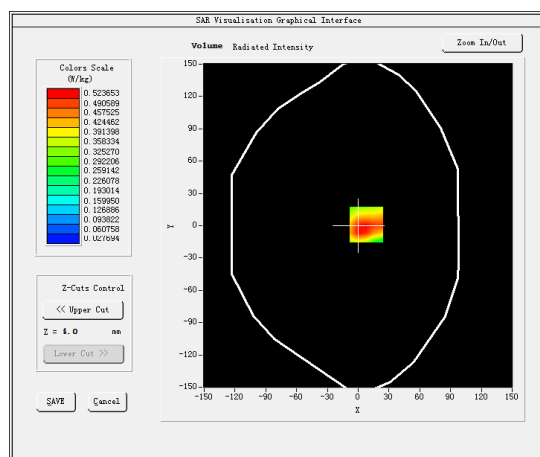
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	54.448364
Relative permittivity (imaginary part)	15.158220
Conductivity (S/m)	1.458979
Variation (%)	-1.950000

SURFACE SAR



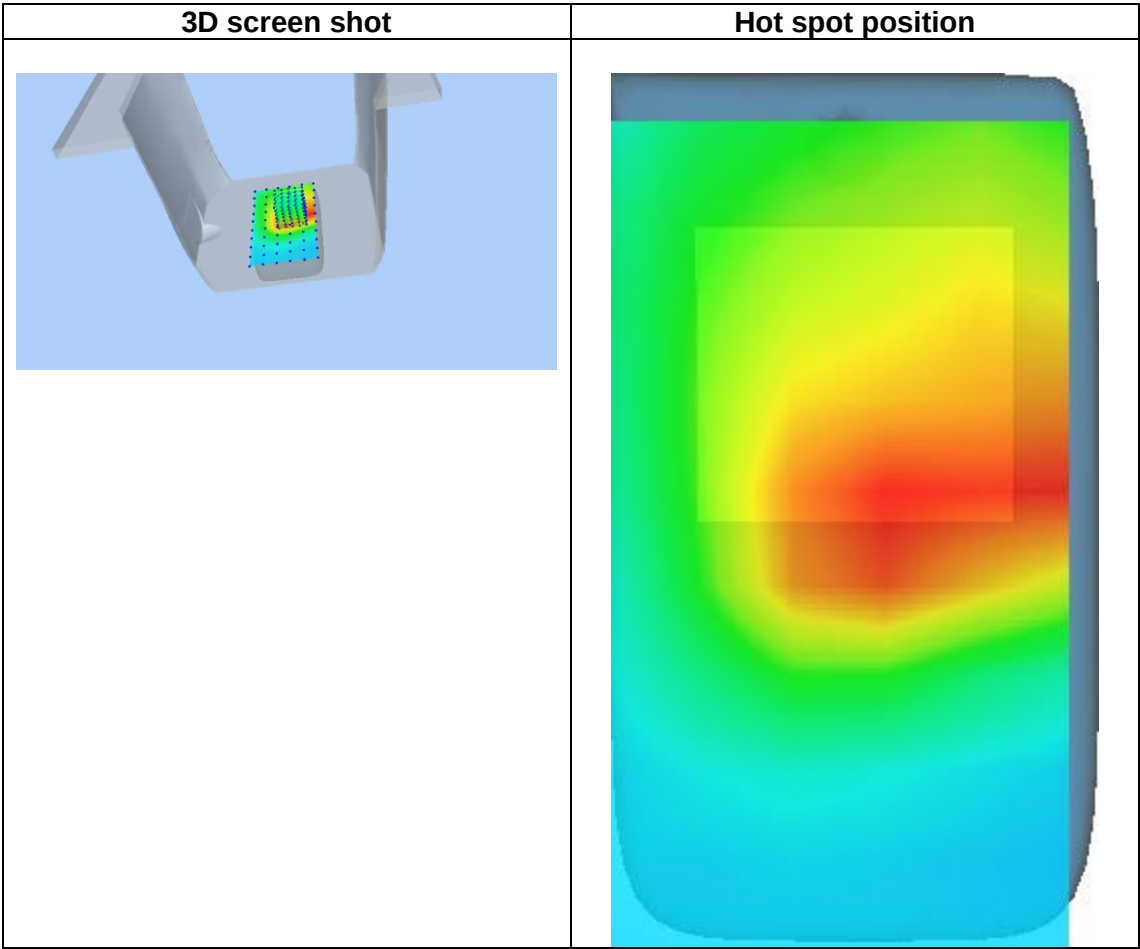
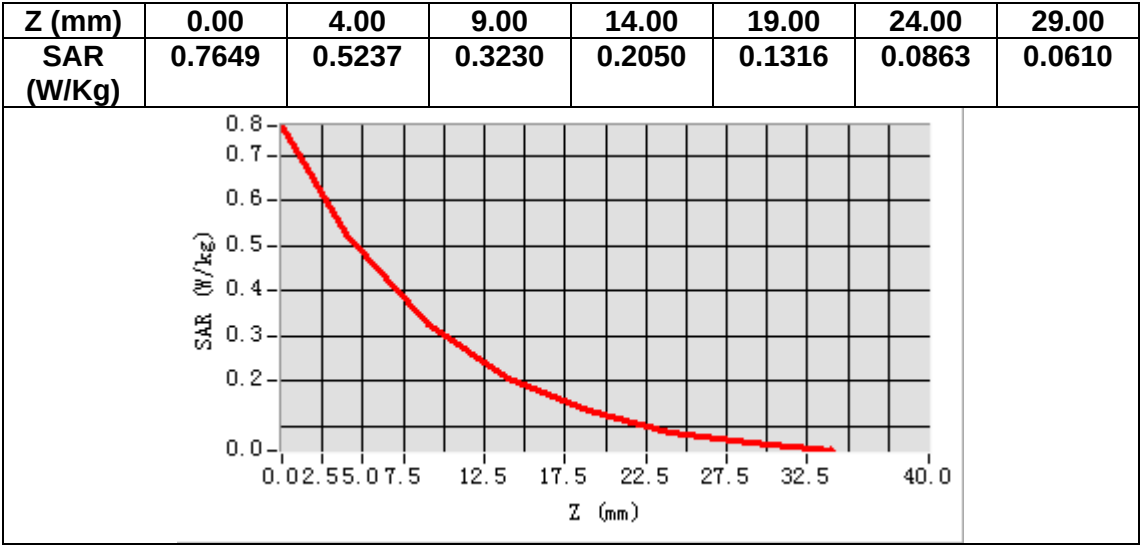
VOLUME SAR



Maximum location: X=8.00, Y=1.00

SAR Peak: 0.82 W/kg

SAR 10g (W/Kg)	0.302221
SAR 1g (W/Kg)	0.522923



MEASUREMENT 19

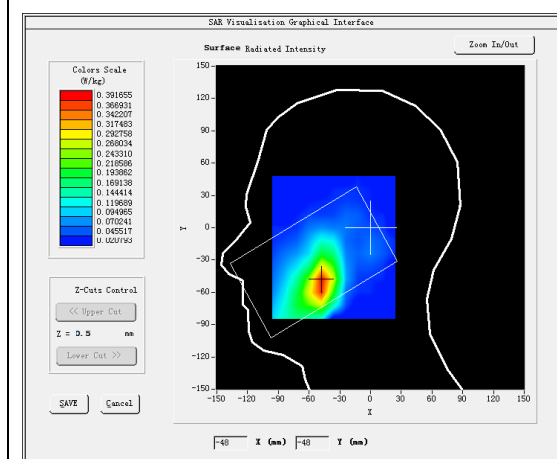
A. Experimental conditions.

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

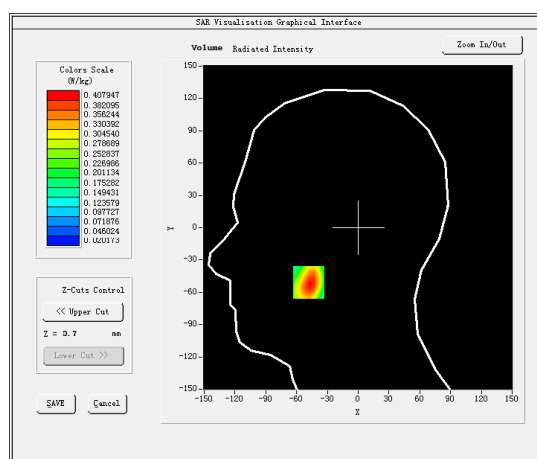
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.432487
Relative permittivity (imaginary part)	13.881160
Conductivity (S/m)	1.954930
Variation (%)	-1.110000

SURFACE SAR



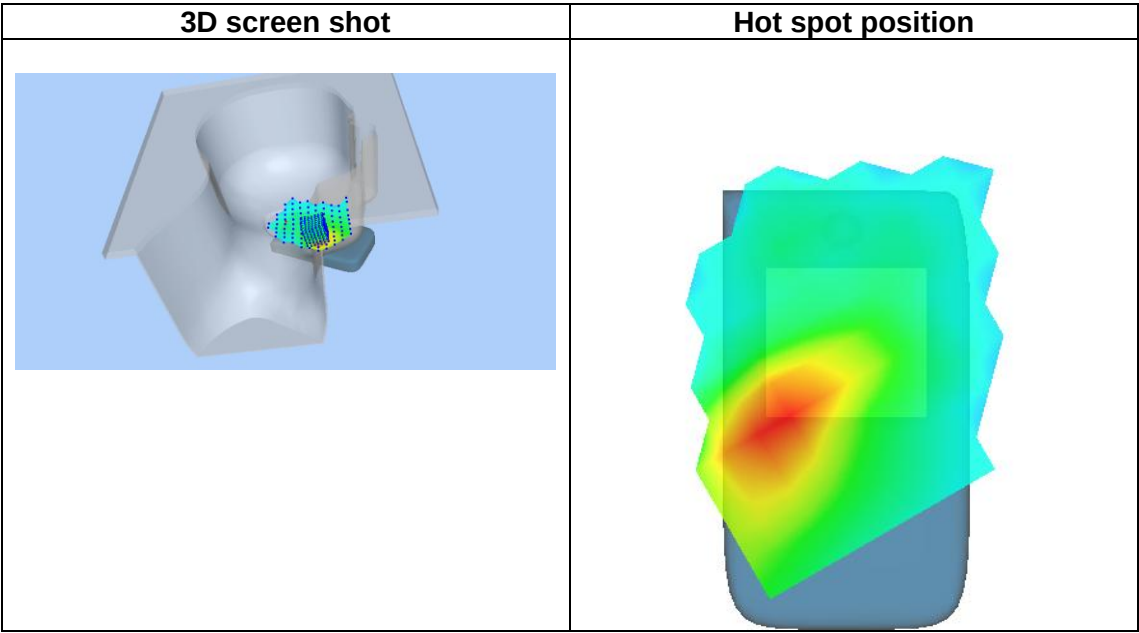
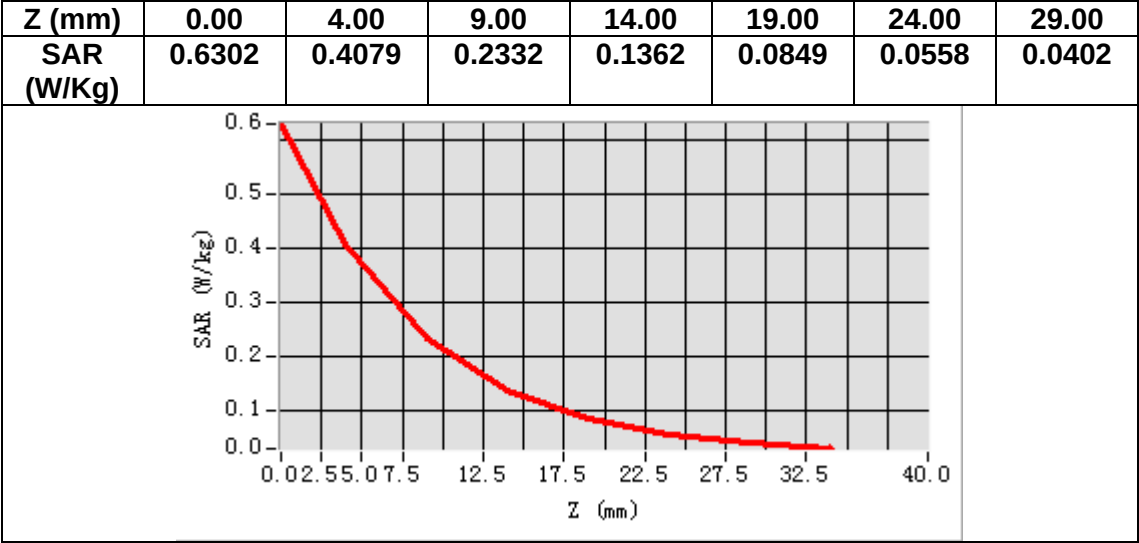
VOLUME SAR



Maximum location: X=-48.00, Y=-51.00

SAR Peak: 0.64 W/kg

SAR 10g (W/Kg)	0.213752
SAR 1g (W/Kg)	0.392066



MEASUREMENT 20

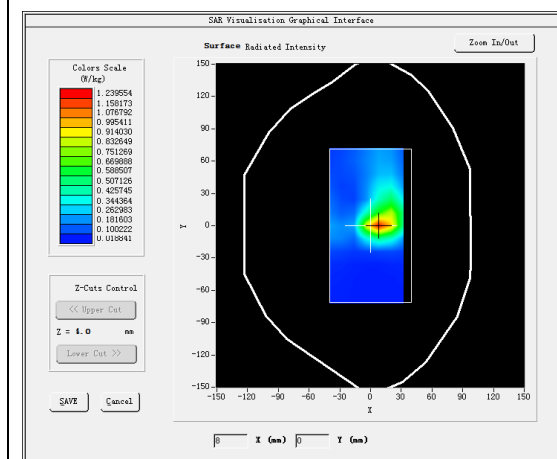
A. Experimental conditions.

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

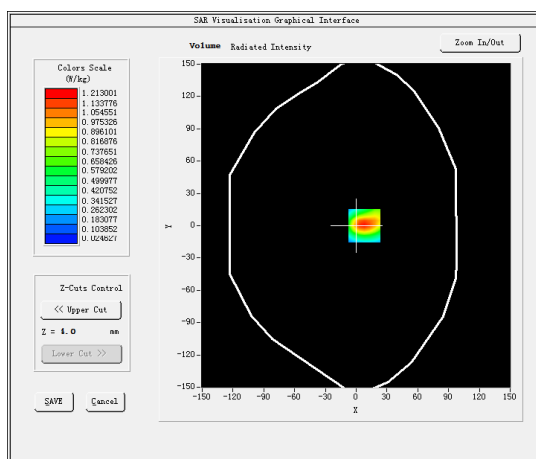
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	53.156944
Relative permittivity (imaginary part)	15.217840
Conductivity (S/m)	2.143179
Variation (%)	-4.670000

SURFACE SAR



VOLUME SAR



Maximum location: X=8.00, Y=0.00

SAR Peak: 2.09 W/kg

SAR 10g (W/Kg)	0.229156
SAR 1g (W/Kg)	0.880231

