

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 : 4G Smart Phone

Trademark : CloudMosa

Model Name : Puffin OS Phone Founder's Edition M5502B

Family Model : N/A

Report No. : STR191022002008E

FCC ID : 2AU5L-M5502B

Prepared for

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China**Product description**

Product name.....: 4G Smart Phone

Trademark: CloudMosa

Model Name: Puffin OS Phone Founder's Edition M5502B

Family Model.....: N/A

FCC 47 CFR Part 2(2.1093)

ANSI/IEEE C95.1-1992

Standards: IEEE Std 1528-2013

Published RF exposure KDB procedures

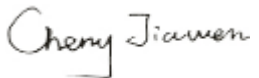
This device described above has been tested by Shenzhen NTEK. In accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 and KDB 865664 D01. Testing has shown that this device is capable of compliance with localized specific absorption rate (SAR) specified in FCC 47 CFR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

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Date of Test

Date (s) of performance of tests: Oct. 25, 2019 ~ Nov. 03, 2019

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Test Result: **Pass**Prepared By
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(Cheng Jiawen)Approved By
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※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
Rev.1.0	Initial Test Report Release	Nov. 13, 2019	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 Puffin OS Phone Founder's Edition M5502B are as follows.

Band	Max Reported SAR Value(W/kg)			
	1-g Head	1-g Body-Worn (Separation distance of 10mm)	1-g Hotspot (Separation distance of 10mm)	Max Simultaneous Tx
GSM 850	0.145	0.546	0.546	1.366
GSM 1900	0.271	0.603	0.603	
WCDMA Band 2	0.366	0.798	0.798	
WCDMA Band 5	0.117	0.466	0.466	
LTE Band 2	0.376	0.722	0.722	
LTE Band 4	0.254	0.663	0.663	
LTE Band 7	0.052	0.274	0.274	
LTE Band 17	0.136	0.312	0.312	
WLAN 2.4G	0.142	0.147	0.147	
WLAN 5.2G	0.679	0.697	1.291	
WLAN 5.8G	0.451	0.503	0.862	

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	4G Smart Phone
Trade Name	CloudMosa
Model Name	Puffin OS Phone Founder's Edition M5502B
Family Model	N/A
FCC ID	2AU5L-M5502B
Device Phase	Identical Prototype
Exposure Category	General population / Uncontrolled environment
Antenna	PIFA Antenna
Battery Information	DC 3.8V, 2600mAh, 9.88Wh
Device Operating Configurations	
Supporting Mode(s)	GSM 850/1900, WCDMA Band 2/5, LTE Band 2/4/7/17, WLAN 2.4G/5.2G/5.8G, Bluetooth V4.0

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
	LTE Band 17	704-716	734-746
	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)		
	3, tested with power control all Max.(LTE Band 17)		
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)
23755-23790-23825(LTE Band 17 BW=5MHz)
23780-23790-23800(LTE Band 17 BW=10MHz)
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)

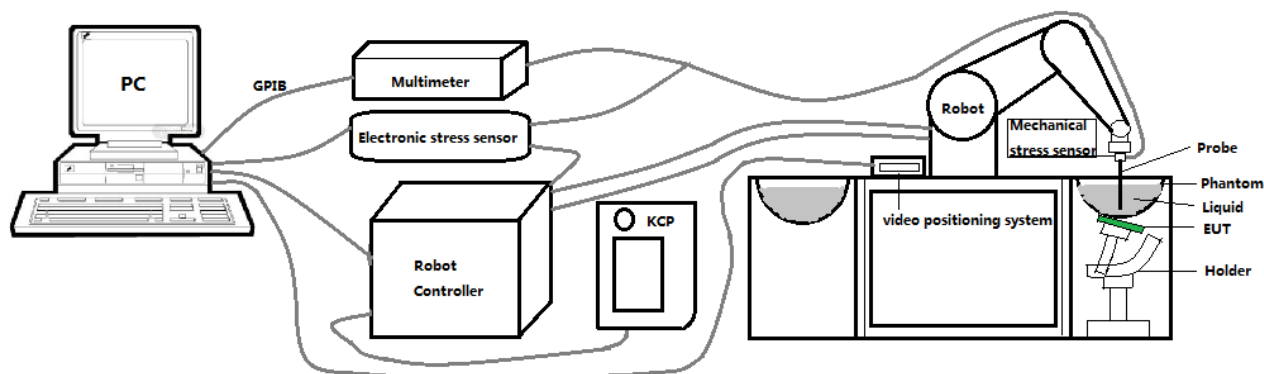
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 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 41/18 EPGO330 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: ± 0.10 dB
 - Axial isotropy: 0.06 dB
 - Hemispherical Isotropy: 0.09 dB
 - Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
 - Lower detection limit: 9mW/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

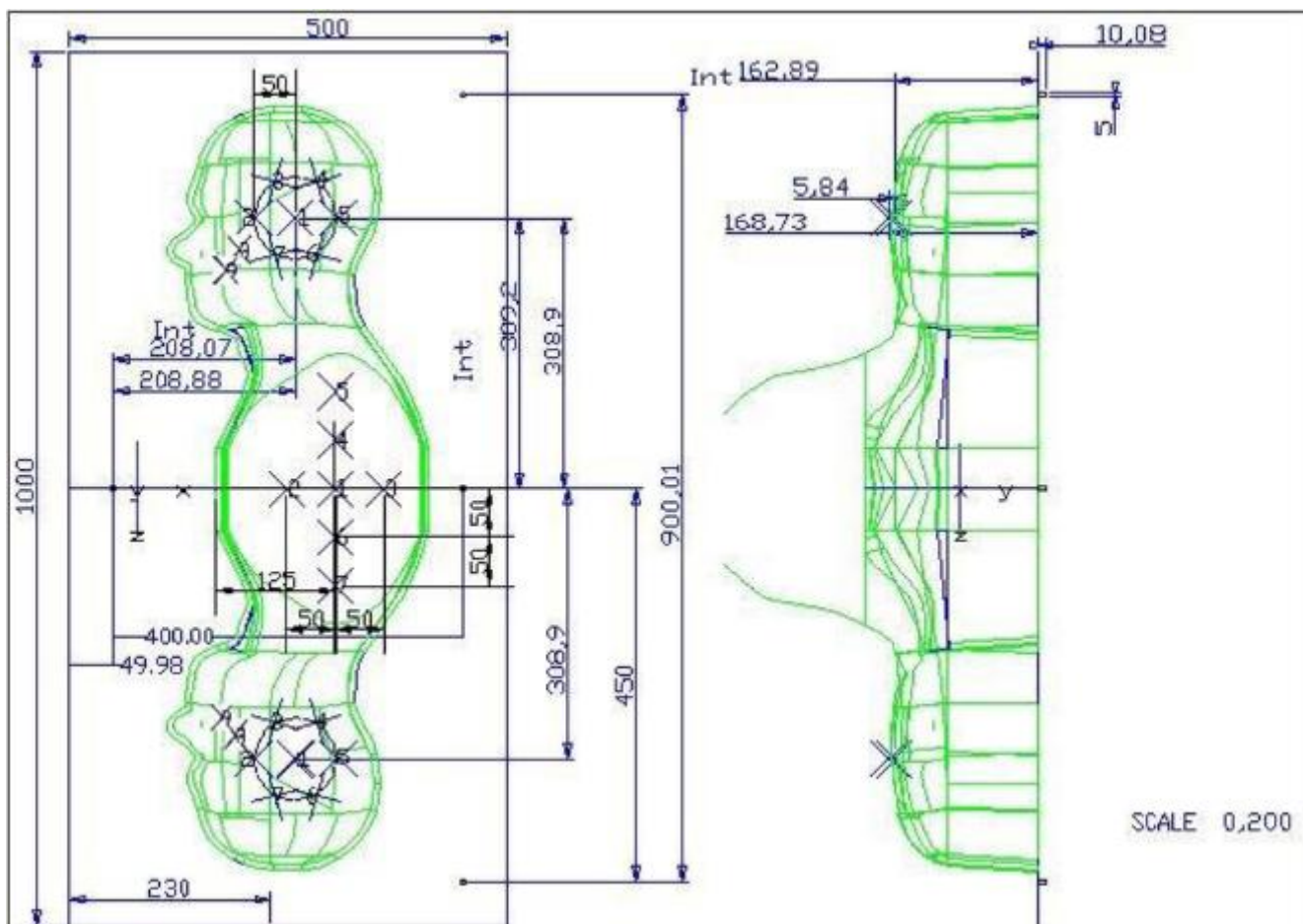
Photo of SAM phantom SN 16/15 SAM119



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

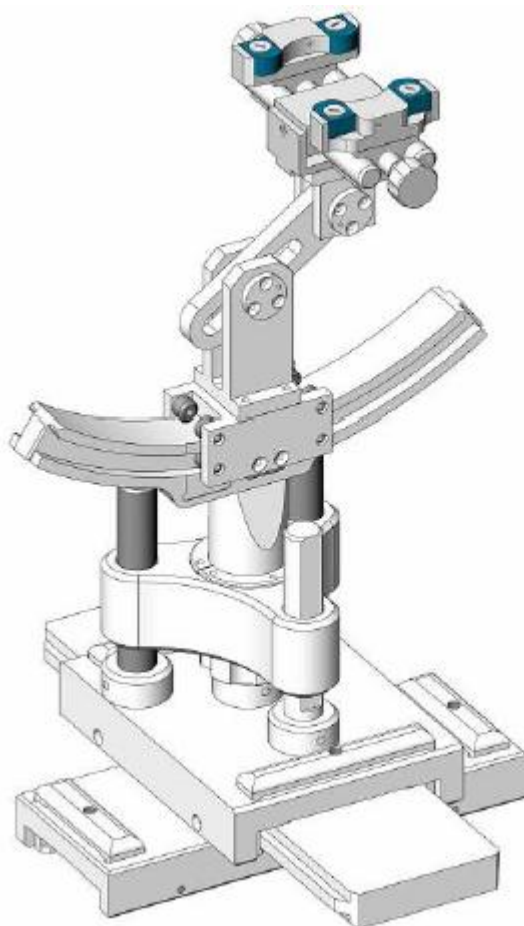


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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 41/18 EPG0330	May 21, 2019	May 20, 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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5 \text{ mm}$
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	≤ 1.5 · $\Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

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

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

3.3. Description of interpolation/extrapolation scheme

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

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

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

3.4. Volumetric Scan

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

3.5. Power Drift

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

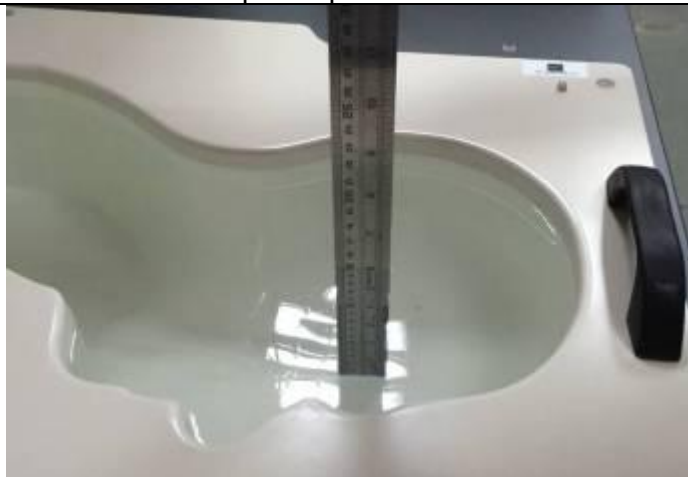
4. System Verification Procedure

4.1. Tissue Verification

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

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

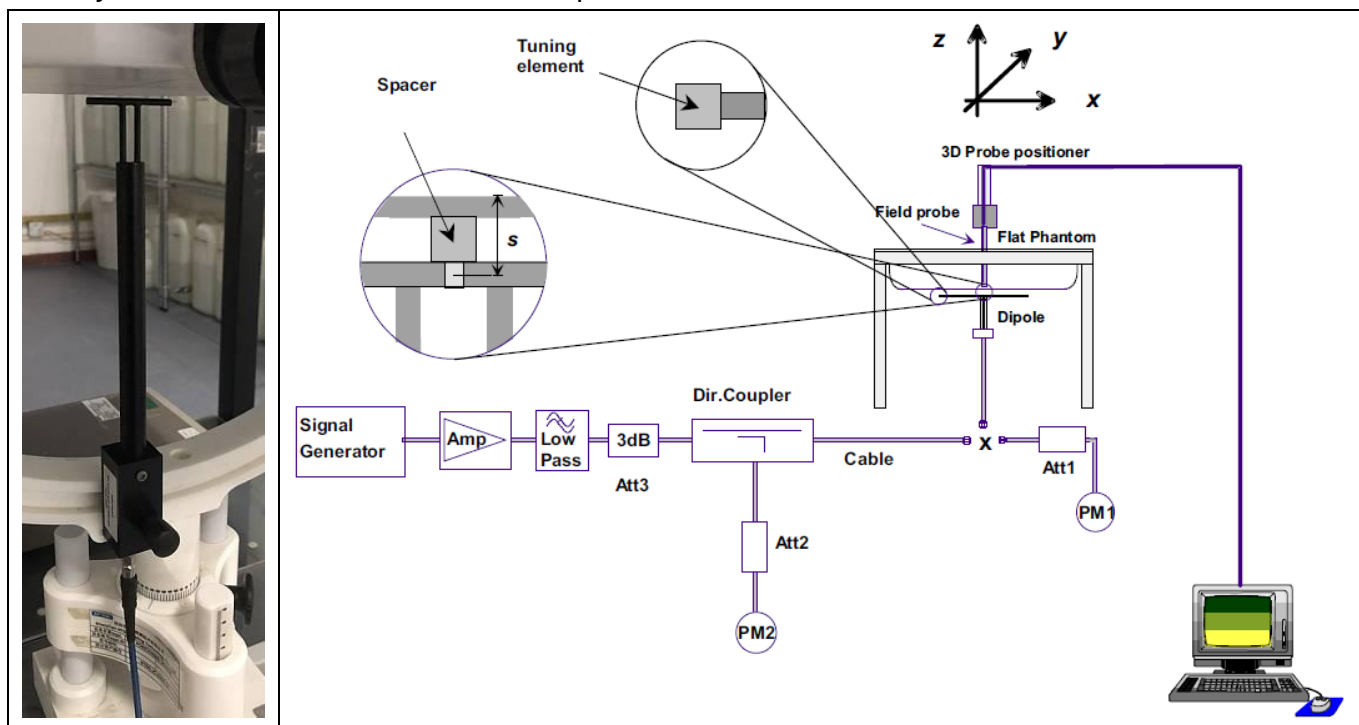
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	41.08	0.91	21.3 °C	Oct. 25, 2019
Body 750	750	55.55 (52.77~58.33)	0.96 (0.91~1.01)	55.25	0.97	21.7 °C	Nov. 03, 2019
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.55	0.93	21.8 °C	Oct. 26, 2019
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.28	1.01	21.1 °C	Oct. 26, 2019
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.65	1.40	21.3 °C	Oct. 26, 2019
Body 1800	1800	53.30 (50.64~55.97)	1.52 (1.44~1.60)	53.24	1.56	21.2 °C	Oct. 26, 2019
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.98	1.45	21.4 °C	Oct. 27, 2019
Body 1900	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.57	1.57	21.7 °C	Oct. 27, 2019
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.78	1.85	21.6 °C	Oct. 25, 2019
Body 2450	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	52.09	2.04	21.5 °C	Oct. 25, 2019
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.46	2.02	21.5 °C	Oct. 27, 2019
Body 2600	2600	52.51 (49.88~55.14)	2.16 (2.05~2.27)	52.67	2.22	21.3 °C	Oct. 27, 2019
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	35.74	4.66	21.6 °C	Nov. 02, 2019
Body 5200	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	49.57	5.31	21.5 °C	Nov. 02, 2019
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.65	5.21	21.4 °C	Nov. 02, 2019
Body 5800	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.26	6.09	21.2 °C	Nov. 02, 2019

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) (±10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		
750MHz Head	8.56 (7.70~9.42)	5.55 (5.00~6.11)	8.52	5.53	21.3 °C	Oct. 25, 2019
750MHz Body	8.85 (7.97~9.74)	5.91 (5.32~6.50)	8.84	5.90	21.7°C	Nov. 03, 2019
835MHz Head	9.55 (8.60~10.51)	6.10 (5.49~6.71)	9.51	6.08	21.8°C	Oct. 26, 2019
835MHz Body	9.83 (8.85~10.81)	6.45 (5.81~7.10)	9.81	6.41	21.1°C	Oct. 26, 2019
1800MHz Head	38.11 (34.30~41.92)	20.05 (18.05~22.06)	38.09	20.01	21.3 °C	Oct. 26, 2019
1800MHz Body	38.13 (34.32~41.94)	20.65 (18.59~22.72)	38.15	20.07	21.2 °C	Oct. 26, 2019
1900MHz Head	38.92 (35.03~42.81)	20.09 (18.08~22.10)	38.95	20.63	21.4 °C	Oct.27, 2019
1900MHz Body	39.02 (35.12~42.92)	20.57 (18.51~22.63)	39.08	20.52	21.7 °C	Oct. 27, 2019
2450MHz Head	53.76 (48.38~59.14)	24.12 (21.71~26.53)	53.71	24.09	21.6 °C	Oct. 25, 2019
2450MHz Body	52.90 (47.61~58.19)	24.09 (21.68~26.50)	52.93	24.03	21.5 °C	Oct. 25, 2019
2600MHz Head	55.60 (50.04~61.16)	24.60 (22.14~27.06)	55.65	24.55	21.5 °C	Oct. 27, 2019
2600MHz Body	52.49 (47.24~57.74)	23.74 (21.37~26.11)	52.43	23.78	21.3°C	Oct. 27, 2019
5200MHz Head	160.94 (144.85~177.03)	55.97 (50.37~61.57)	160.84	55.99	21.6 °C	Nov. 02, 2019
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	156.90	55.19	21.5 °C	Nov. 02, 2019
5800MHz Head	184.13 (165.72~202.54)	62.74 (56.47~69.01)	184.01	62.78	21.4 °C	Nov. 02, 2019
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	169.27	58.43	21.2 °C	Nov. 02, 2019

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.

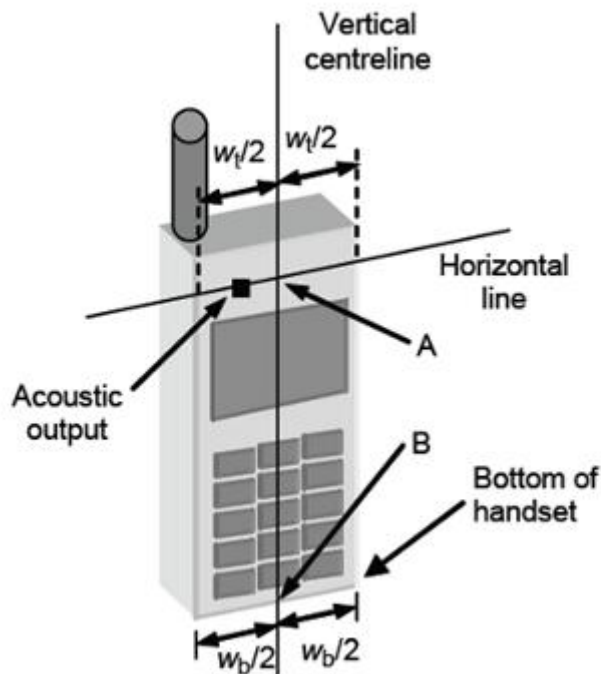


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

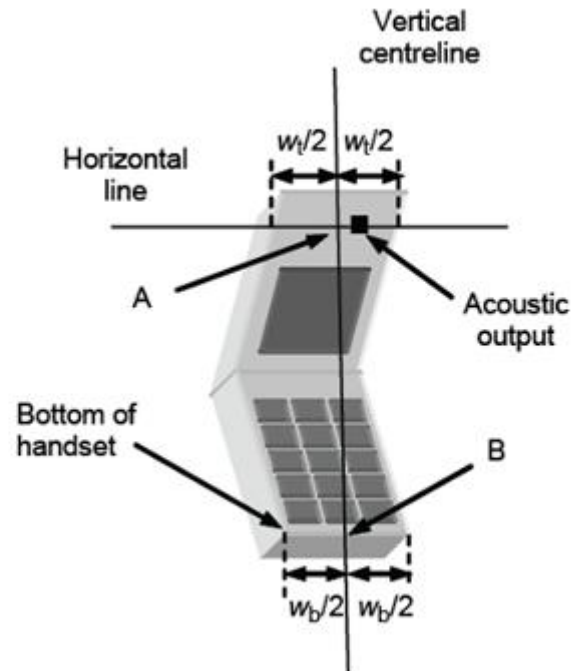


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

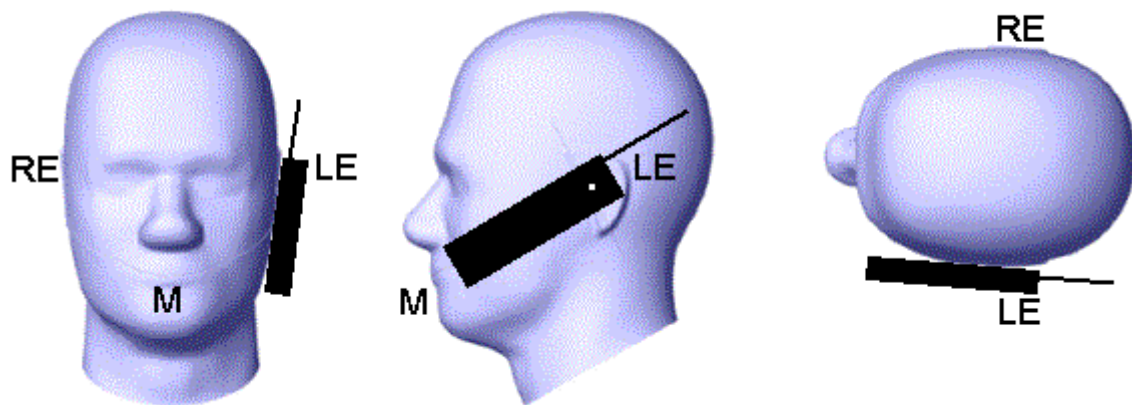


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

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.

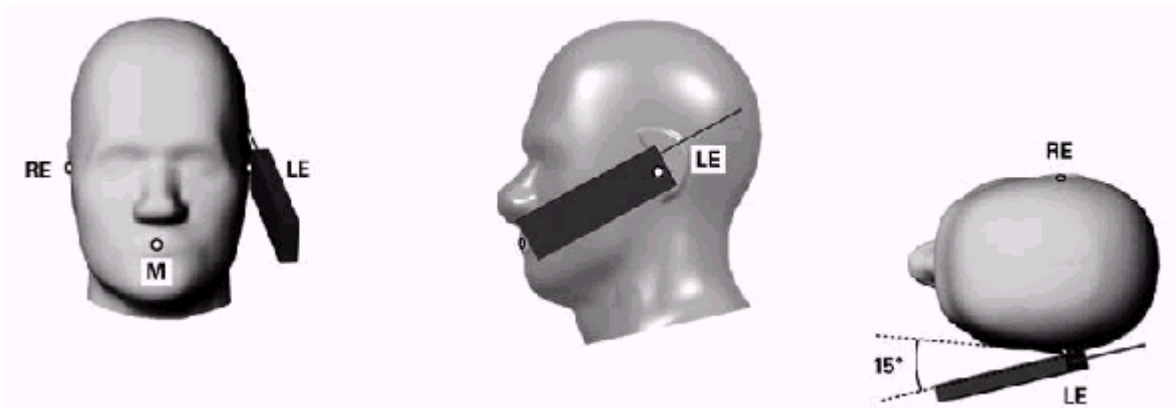


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

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-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

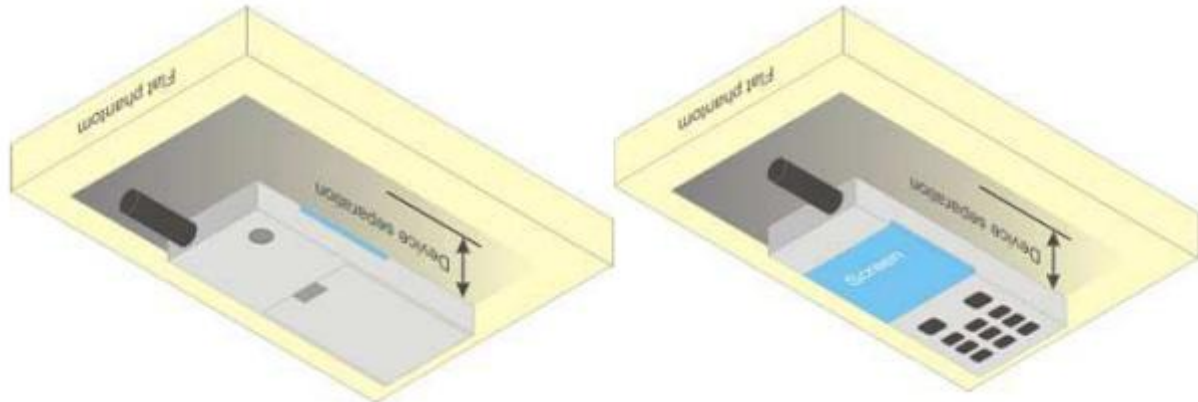


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

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

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

7. RF Output Power

7.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	189	251	Tune-up	128	189	251
Frequency (MHz)	(dBm)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8
GSM (GMSK)	33.00	32.35	32.42	32.09	23.97	23.32	23.39	23.06
GPRS(GMSK, 1 TS)	33.00	32.28	32.48	32.18	23.97	23.25	23.45	23.15
GPRS(GMSK, 2 TS)	32.00	31.67	31.86	31.58	25.98	25.65	25.84	25.56
GPRS(GMSK, 3 TS)	31.00	30.06	30.26	30.01	26.74	25.80	26.00	25.75
GPRS(GMSK, 4 TS)	30.00	28.99	29.21	28.95	26.99	25.98	26.20	25.94
EDGE(8PSK, 1 TS)	28.00	26.59	27.11	27.47	18.97	17.56	18.08	18.44
EDGE(8PSK, 2 TS)	26.00	25.46	25.64	25.95	19.98	19.44	19.62	19.93
EDGE(8PSK, 3 TS)	24.00	22.90	23.01	23.43	19.74	18.64	18.75	19.17
EDGE(8PSK, 4 TS)	23.00	21.58	21.76	22.11	19.99	18.57	18.75	19.10
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)	30.00	29.33	29.13	29.15	20.97	20.30	20.10	20.12
GPRS(GMSK, 1 TS)	30.00	29.35	29.14	29.17	20.97	20.32	20.11	20.14
GPRS(GMSK, 2 TS)	29.00	28.62	28.42	28.44	22.98	22.60	22.40	22.42
GPRS(GMSK, 3 TS)	27.00	26.87	26.66	26.69	22.74	22.61	22.40	22.43
GPRS(GMSK, 4 TS)	26.00	25.79	25.59	25.62	22.99	22.78	22.58	22.61
EDGE(8PSK, 1 TS)	31.00	30.76	30.68	30.66	21.97	21.73	21.65	21.63
EDGE(8PSK, 2 TS)	31.00	30.45	30.38	30.31	24.98	24.43	24.36	24.29
EDGE(8PSK, 3 TS)	30.00	29.44	29.48	29.42	25.74	25.18	25.22	25.16
EDGE(8PSK, 4 TS)	29.00	28.71	28.84	28.75	25.99	25.70	25.83	25.74

Note: The frame-averaged power is linearly scaled the maximum burst averaged power over 8 time slots.

The calculated method are shown as below:

Frame-averaged power = Maximum burst averaged power (1 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	23.00	22.90	22.79	22.80
HSDPA Subtest-1	22.00	21.97	21.85	21.91
HSDPA Subtest-2	22.00	21.08	20.93	21.28
HSDPA Subtest-3	21.00	20.48	20.34	20.63
HSDPA Subtest-4	21.00	20.09	20.65	20.62
HSUPA Subtest-1	22.00	21.74	21.35	21.43
HSUPA Subtest-2	22.00	21.95	21.74	21.72
HSUPA Subtest-3	21.00	20.68	20.29	20.63
HSUPA Subtest-4	22.00	22.00	21.83	21.90
HSUPA Subtest-5	22.00	21.14	20.96	20.98
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	24.00	23.43	23.48	23.18
HSDPA Subtest-1	23.00	22.47	22.51	22.21
HSDPA Subtest-2	23.00	22.05	21.98	21.48
HSDPA Subtest-3	22.00	21.29	20.86	20.81
HSDPA Subtest-4	22.00	20.81	21.16	20.59
HSUPA Subtest-1	23.00	21.93	22.16	21.80
HSUPA Subtest-2	23.00	22.37	22.40	22.09
HSUPA Subtest-3	22.00	21.16	21.22	21.01
HSUPA Subtest-4	23.00	22.43	22.50	22.20
HSUPA Subtest-5	22.00	21.71	21.79	21.34

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	23.00	22.54	22.42	22.47
			1	2	23.00	22.68	22.54	22.24
			1	5	23.00	22.52	22.42	21.98
			3	0	23.00	22.65	22.47	22.05
			3	1	23.00	22.68	22.47	22.04
			3	2	23.00	22.64	22.46	22.05
			6	0	22.00	21.55	21.45	21.00
		16QAM	1	0	22.00	21.71	21.23	21.15
			1	2	22.00	21.80	21.37	21.32
			1	5	22.00	21.68	21.21	21.20
			3	0	22.00	21.82	21.58	21.27
			3	1	22.00	21.83	21.63	21.29
			3	2	22.00	21.82	21.62	21.26
			6	0	21.00	20.74	20.59	20.20
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	23.00	22.61	21.90	22.02
			1	7	23.00	22.81	22.32	22.42
			1	14	23.00	22.14	21.87	22.07
			8	0	22.00	21.52	21.03	21.06
			8	4	22.00	21.51	20.99	21.07
			8	7	22.00	21.15	21.04	21.03
			15	0	22.00	21.12	20.93	21.00
		16QAM	1	0	22.00	21.56	21.16	20.93
			1	7	22.00	21.82	21.48	21.27
			1	14	22.00	21.42	21.06	20.94
			8	0	21.00	20.13	19.97	20.00
			8	4	21.00	20.14	20.01	20.02
			8	7	21.00	20.11	19.99	20.00
			15	0	21.00	20.09	19.91	20.07
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	23.00	22.31	21.80	21.93
			1	12	23.00	22.29	22.25	22.39
			1	24	23.00	21.92	21.80	21.94
			12	0	22.00	21.11	20.93	21.05
			12	6	22.00	21.14	21.01	21.09
			12	11	22.00	21.04	20.90	20.97
			25	0	22.00	21.15	20.95	21.06
		16QAM	1	0	22.00	21.33	21.21	21.48
			1	12	22.00	21.69	21.57	21.90
			1	24	22.00	21.26	21.13	21.48
			12	0	21.00	20.07	19.96	20.10
			12	6	21.00	20.09	20.02	20.08
			12	11	21.00	20.01	19.91	19.97
			25	0	21.00	20.10	19.89	20.02
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	23.00	22.08	21.92	21.93
			1	24	23.00	22.09	22.01	22.11
			1	49	23.00	21.90	21.85	22.02
			25	0	22.00	21.10	21.06	21.12
			25	12	22.00	21.04	20.99	21.02
			25	24	22.00	21.15	21.04	21.05
			50	0	22.00	21.13	21.08	21.07
		16QAM	1	0	22.00	21.46	21.14	20.79
			1	24	22.00	21.51	21.23	21.01
			1	49	22.00	21.37	21.08	20.93
			25	0	21.00	20.15	20.07	20.06
			25	12	21.00	20.07	19.99	20.02
			25	24	21.00	20.17	19.99	20.06
			50	0	21.00	20.11	20.07	20.02
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	15MHz	QPSK	1	0	23.00	21.99	21.91	21.77
			1	37	23.00	22.21	22.21	22.20

2			1	74	23.00	21.72	21.78	21.89
			36	0	22.00	21.12	21.07	21.02
			36	18	22.00	21.09	21.06	21.03
			36	37	22.00	21.03	20.97	21.01
			75	0	22.00	21.17	21.04	21.04
		16QAM	1	0	22.00	21.17	21.32	21.03
			1	37	22.00	21.39	21.65	21.47
			1	74	22.00	20.97	21.21	21.09
			36	0	21.00	20.09	20.04	20.06
			36	18	21.00	20.04	20.05	20.06
			36	37	21.00	20.02	20.00	20.06
			75	0	21.00	20.11	19.97	19.97
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	23.00	21.85	21.72	21.63
			1	49	23.00	22.15	22.08	22.03
			1	99	23.00	21.61	21.56	21.69
			50	0	22.00	21.02	21.05	20.98
			50	24	22.00	21.05	21.05	21.01
			50	49	22.00	21.04	20.98	20.93
			100	0	22.00	21.05	21.00	20.98
		16QAM	1	0	22.00	21.10	21.04	20.94
			1	49	22.00	21.36	21.43	21.31
			1	99	22.00	20.92	20.94	21.02
			50	0	21.00	20.00	20.08	19.96
			50	24	21.00	20.04	20.05	19.93
			50	49	21.00	20.03	19.99	19.84
			100	0	21.00	20.02	20.02	19.92

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	23.00	22.56	22.20	21.95
			1	2	23.00	22.72	22.22	22.10
			1	5	23.00	22.57	21.99	21.95
			3	0	23.00	22.59	22.03	21.98
			3	1	23.00	22.56	22.03	21.99

			3	2	23.00	22.52	22.02	21.99
			6	0	22.00	21.53	21.03	21.06
		16QAM	1	0	22.00	21.60	21.13	20.75
			1	2	22.00	21.67	21.28	20.93
			1	5	22.00	21.54	21.20	20.77
			3	0	22.00	21.65	21.29	21.13
			3	1	22.00	21.66	21.30	21.08
			3	2	22.00	21.64	21.31	21.15
			6	0	21.00	20.69	20.15	20.13
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	23.00	22.56	22.00	21.98
			1	7	23.00	22.60	22.28	22.23
			1	14	23.00	22.32	21.94	21.97
			8	0	22.00	21.19	21.04	21.06
			8	4	22.00	21.07	21.04	21.08
			8	7	22.00	21.10	21.03	21.04
			15	0	22.00	21.05	21.01	21.01
		16QAM	1	0	22.00	20.90	21.39	21.17
			1	7	22.00	21.28	21.74	21.49
			1	14	22.00	20.87	21.43	21.08
			8	0	21.00	20.02	20.04	20.02
			8	4	21.00	20.02	20.07	20.02
			8	7	21.00	20.00	20.03	19.95
			15	0	21.00	20.04	20.01	19.87
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	23.00	22.03	21.87	21.92
			1	12	23.00	22.36	22.35	22.51
			1	24	23.00	21.89	21.90	21.89
			12	0	22.00	20.99	21.00	20.98
			12	6	22.00	21.14	21.09	21.05
			12	11	22.00	21.02	20.97	20.91
			25	0	22.00	21.03	21.09	20.97
		16QAM	1	0	22.00	21.24	21.20	21.42
			1	12	22.00	21.64	21.67	21.68

			1	24	22.00	21.17	21.23	21.35
			12	0	21.00	19.94	20.02	20.01
			12	6	21.00	20.05	20.10	20.04
			12	11	21.00	19.95	20.00	19.89
			25	0	20.00	20.00	19.97	19.94
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20000/1715	20175/1732.5	20350/1750
LTE Band 4	10MHz	QPSK	1	0	23.00	22.00	21.89	21.96
			1	24	23.00	22.14	22.11	22.07
			1	49	23.00	22.01	22.01	21.91
			25	0	22.00	20.99	21.08	21.00
			25	12	22.00	21.07	21.06	21.01
			25	24	22.00	21.04	21.11	20.98
			50	0	22.00	20.98	21.11	20.99
		16QAM	1	0	22.00	20.85	21.30	21.17
			1	24	22.00	20.93	21.55	21.25
			1	49	22.00	20.78	21.38	21.07
			25	0	21.00	19.94	20.08	20.00
			25	12	21.00	19.95	20.05	19.99
			25	24	21.00	19.99	20.01	19.92
			50	0	21.00	19.93	20.07	19.99
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	23.00	21.90	21.79	21.93
			1	37	23.00	22.23	22.14	22.19
			1	74	23.00	21.94	21.81	21.80
			36	0	22.00	21.02	21.07	21.09
			36	18	22.00	21.07	21.06	21.10
			36	37	22.00	20.98	21.12	20.99
			75	0	22.00	21.05	21.11	21.08
		16QAM	1	0	22.00	21.08	20.99	21.38
			1	37	22.00	21.38	21.41	21.61
			1	74	22.00	20.97	21.07	21.16
			36	0	21.00	20.01	20.06	20.06
			36	18	21.00	20.06	20.03	20.09
			36	37	21.00	20.02	19.99	19.94

			75	0	21.00	19.94	20.06	20.01
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	23.00	21.71	21.67	21.70
			1	49	23.00	22.08	22.09	22.16
			1	99	23.00	21.67	21.78	21.67
			50	0	22.00	20.92	21.14	20.99
			50	24	22.00	21.03	21.07	21.10
			50	49	22.00	20.85	21.10	20.97
			100	0	22.00	20.86	21.14	20.97
		16QAM	1	0	22.00	20.97	20.99	20.99
			1	49	22.00	21.29	21.46	21.32
			1	99	22.00	20.97	21.10	20.90
			50	0	21.00	19.94	20.16	19.98
			50	24	21.00	20.01	20.13	20.06
			50	49	21.00	19.84	20.14	19.92
			100	0	21.00	19.83	20.10	19.97

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	23.00	22.00	21.88	21.82
			1	12	23.00	22.49	22.11	22.30
			1	24	23.00	21.98	21.82	21.87
			12	0	22.00	21.01	20.90	20.90
			12	6	22.00	21.09	20.91	20.96
			12	11	22.00	21.15	20.93	20.92
			25	0	22.00	21.09	20.92	20.95
		16QAM	1	0	22.00	21.29	21.32	21.14
			1	12	22.00	21.58	21.73	21.56
			1	24	22.00	21.29	21.28	21.15
			12	0	21.00	20.06	19.89	19.87
			12	6	21.00	20.12	19.96	19.92
			12	11	21.00	20.17	19.91	19.88
			25	0	21.00	20.04	19.88	19.94
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	23.00	22.08	21.92	21.84
			1	24	23.00	22.23	22.12	22.01
			1	49	23.00	22.04	21.93	21.92
			25	0	22.00	21.00	20.92	20.96
			25	12	22.00	21.13	20.94	20.95
			25	24	22.00	21.22	21.07	21.08
			50	0	22.00	21.18	21.03	20.99
		16QAM	1	0	22.00	21.23	20.80	21.26
			1	24	22.00	21.31	20.92	21.41
			1	49	22.00	21.16	20.75	21.29
			25	0	21.00	19.99	19.96	20.00
			25	12	21.00	20.10	19.94	19.97
			25	24	21.00	20.25	20.06	20.06
			50	0	21.00	20.17	20.01	20.02
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	23.00	22.04	21.87	21.81
			1	37	23.00	22.31	22.14	22.21
			1	74	23.00	21.93	21.75	21.83
			36	0	22.00	21.00	20.94	20.99
			36	18	22.00	21.13	20.98	20.95
			36	37	22.00	21.13	21.06	20.98
			75	0	22.00	21.15	21.06	21.01
		16QAM	1	0	22.00	21.13	20.99	21.24
			1	37	22.00	21.53	21.25	21.60
			1	74	22.00	21.12	20.88	21.20
			36	0	21.00	20.03	19.96	20.04
			36	18	21.00	20.20	19.97	19.99
			36	37	21.00	20.15	20.00	20.04
			75	0	21.00	20.04	20.06	19.96
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band	20MHz	QPSK	1	0	23.00	21.84	21.64	21.53
			1	49	23.00	22.18	22.05	22.02

7			1	99	23.00	21.73	21.61	21.68
			50	0	22.00	20.86	20.98	21.14
			50	24	22.00	21.08	21.02	20.98
			50	49	22.00	20.86	21.17	20.90
			100	0	22.00	20.85	21.04	21.09
		16QAM	1	0	22.00	21.04	20.92	20.94
			1	49	22.00	21.40	21.28	21.35
			1	99	22.00	21.07	20.83	20.98
			50	0	21.00	19.74	20.02	20.21
			50	24	21.00	20.05	20.06	20.06
			50	49	21.00	19.88	20.17	19.98
			100	0	21.00	19.88	20.05	20.08

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	23.00	22.34	22.31	22.21
			1	12	23.00	22.53	22.41	22.77
			1	24	23.00	22.31	22.26	22.14
			12	0	22.00	21.40	21.35	21.32
			12	6	22.00	21.42	21.37	21.33
			12	11	22.00	21.38	21.23	21.32
			25	0	22.00	21.44	21.35	21.36
		16QAM	1	0	23.00	21.85	21.60	21.46
			1	12	23.00	22.25	21.76	21.88
			1	24	23.00	21.80	21.50	21.46
			12	0	21.00	20.38	20.31	20.29
			12	6	21.00	20.43	20.31	20.36
			12	11	21.00	20.40	20.17	20.34
			25	0	21.00	20.35	20.36	20.27
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	23.00	22.47	22.43	22.39
			1	24	23.00	22.61	22.52	22.45
			1	49	23.00	22.36	22.34	22.25
			25	0	22.00	21.43	21.38	21.48
			25	12	22.00	21.39	21.39	21.39

			25	24	22.00	21.33	21.32	21.35
			50	0	22.00	21.41	21.37	21.42
		16QAM	1	0	22.00	21.60	21.20	21.74
			1	24	22.00	21.63	21.31	21.75
			1	49	22.00	21.45	21.16	21.69
			25	0	21.00	20.41	20.40	20.44
			25	12	21.00	20.35	20.34	20.40
			25	24	21.00	20.30	20.30	20.36
			50	0	21.00	20.39	20.31	20.40

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	14.00	13.42
	6	2437	15.00	14.11
	11	2462	15.00	13.90
802.11g	1	2412	14.00	13.31
	6	2437	16.00	15.75
	11	2462	16.00	15.86
802.11n HT20	1	2412	14.00	13.45
	6	2437	16.00	15.75
	11	2462	16.00	15.72
802.11n HT40	3	2422	16.00	15.08
	6	2437	16.00	15.02
	9	2452	16.00	14.96

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	10.00	8.96
	40	5200	10.00	8.94
	48	5240	10.00	9.33
802.11n HT20	36	5180	10.00	9.06
	40	5200	10.00	8.85
	48	5240	10.00	9.37
802.11n HT40	38	5190	10.00	9.03
	46	5230	10.00	9.52
802.11ac VHT20	36	5180	10.00	9.05
	40	5200	10.00	8.86
	48	5240	10.00	9.47

802.11ac	38	5190	10.00	8.97
VHT40	46	5230	10.00	9.53

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	10.00	9.10
	157	5785	10.00	9.53
	165	5825	11.00	10.77
802.11n HT20	149	5745	10.00	8.64
	157	5785	10.00	9.38
	165	5825	11.00	10.66
802.11n HT40	151	5755	10.00	9.08
	159	5795	11.00	10.02
802.11ac VHT20	149	5745	10.00	8.68
	157	5785	10.00	9.45
	165	5825	11.00	10.82
802.11ac VHT40	151	5755	10.00	9.00
	159	5795	11.00	10.15

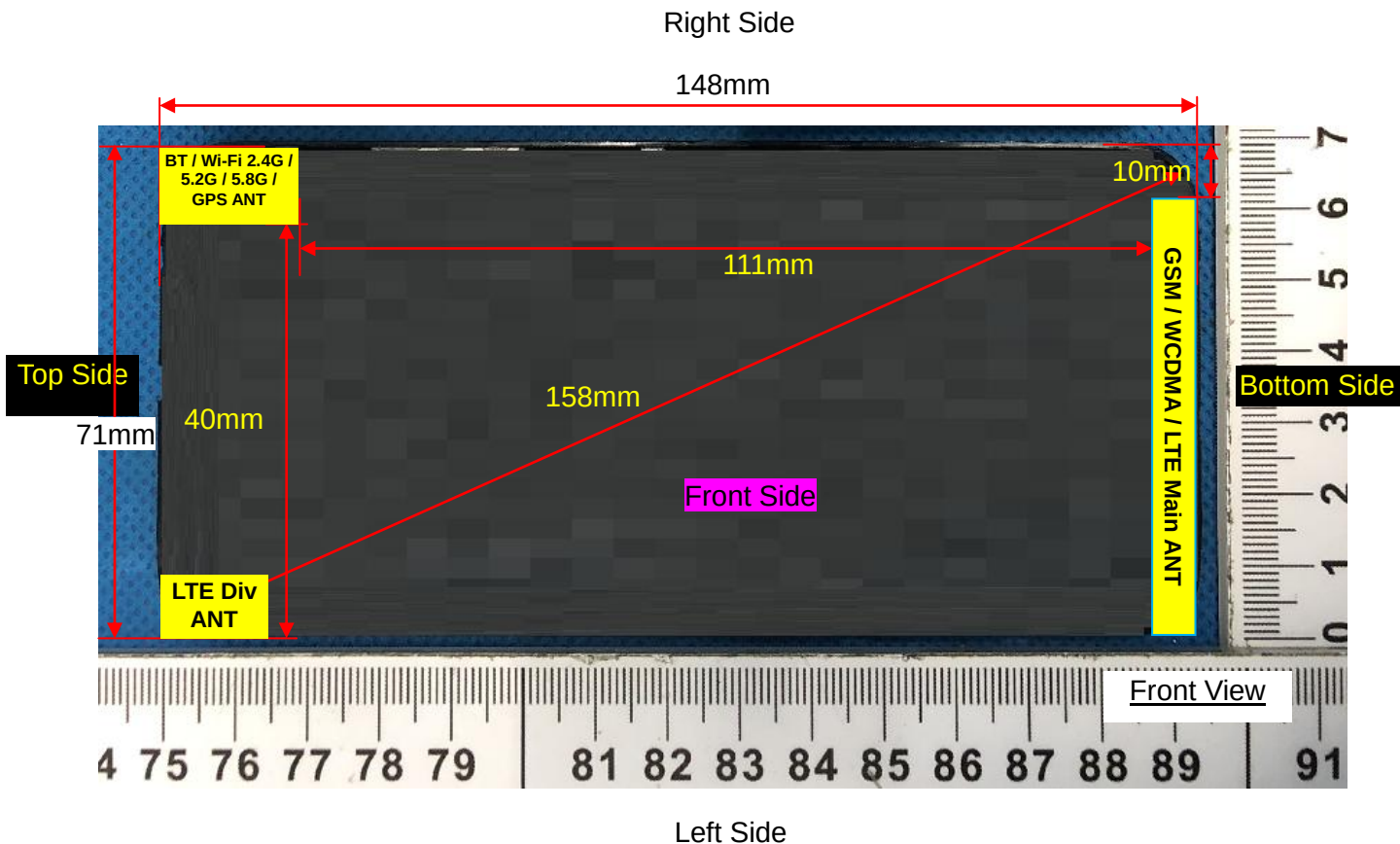
NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

BR+EDR	Output Power (dBm)				
	Channel	Tune-up	Data Rates		
			1M	2M	3M
	0CH	3.000	2.249	1.665	1.752
	39CH	3.000	1.840	1.256	1.429
	78CH	3.000	1.875	1.165	1.327

BLE	Channel	Tune-up	Output Power (dBm)
	0CH	3.000	2.239
	19CH	3.000	1.954
	39CH	3.000	1.877

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	Yes	NO	Yes
WLAN & Bluetooth	Yes	Yes	NO	Yes	Yes	NO

9. Stand-alone SAR test exclusion

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

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0$ 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	3.000	1.995	5	2.48	0.6	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	3.000	1.995	5	2.48	7.5	0.084
Bluetooth	Body	3.000	1.995	10	2.48	7.5	0.042
Bluetooth	Hotspot	3.000	1.995	10	2.48	7.5	0.042

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 (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	189/836.4	GPRS(GMSK 4TS)	0.121	0.091	2.96	29.21	30.00	0.145
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.063	0.047	0.21	29.21	30.00	0.076
Right Cheek	189/836.4	GPRS(GMSK 4TS)	0.087	0.065	4.69	29.21	30.00	0.104
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.051	0.038	1.97	29.21	30.00	0.061

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 4TS)	0.231	0.118	-0.69	29.21	30.00	0.277
Back Side	189/836.4	GPRS(GMSK 4TS)	0.455	0.234	-3.49	29.21	30.00	0.546

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 4TS)	0.231	0.118	-0.69	29.21	30.00	0.277
Back Side	189/836.4	GPRS(GMSK 4TS)	0.455	0.234	-3.49	29.21	30.00	0.546
Left Side	189/836.4	GPRS(GMSK 4TS)	0.254	0.133	-1.12	29.21	30.00	0.305
Right Side	189/836.4	GPRS(GMSK 4TS)	0.244	0.125	2.91	29.21	30.00	0.293
Bottom Side	189/836.4	GPRS(GMSK 4TS)	0.231	0.114	1.24	29.21	30.00	0.277

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	EDGE(8PSK	0.261	0.160	-4.90	28.84	29.00	0.271

		4TS)						
Left Tilt 15 Degree	661/1880	EDGE(8PSK 4TS)	0.121	0.071	4.98	28.84	29.00	0.126
Right Cheek	661/1880	EDGE(8PSK 4TS)	0.231	0.142	0.48	28.84	29.00	0.240
Right Tilt 15 Degree	661/1880	EDGE(8PSK 4TS)	0.110	0.067	-0.43	28.84	29.00	0.114

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	EDGE(8PSK 4TS)	0.201	0.104	2.45	28.84	29.00	0.209
Back Side	661/1880	EDGE(8PSK 4TS)	0.581	0.299	0.22	28.84	29.00	0.603

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	EDGE(8PSK 4TS)	0.201	0.104	2.45	28.84	29.00	0.209
Back Side	661/1880	EDGE(8PSK 4TS)	0.581	0.299	0.22	28.84	29.00	0.603
Left Side	661/1880	EDGE(8PSK 4TS)	0.211	0.103	0.72	28.84	29.00	0.219
Right Side	661/1880	EDGE(8PSK 4TS)	0.221	0.115	-2.17	28.84	29.00	0.229
Bottom Side	661/1880	EDGE(8PSK 4TS)	0.243	0.124	3.87	28.84	29.00	0.252

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	0.349	0.211	-0.32	22.79	23.00	0.366
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.164	0.091	0.72	22.79	23.00	0.172
Right Cheek	9400/1880	RMC12.2K	0.305	0.182	-2.17	22.79	23.00	0.320
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.149	0.091	3.87	22.79	23.00	0.156

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	0.502	0.263	3.19	22.79	23.00	0.527
Back Side	9400/1880	RMC12.2K	0.760	0.401	-0.26	22.79	23.00	0.798

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	0.502	0.263	3.19	22.79	23.00	0.527
Back Side	9400/1880	RMC12.2K	0.760	0.401	-0.26	22.79	23.00	0.798
Left Side	9400/1880	RMC12.2K	0.458	0.233	2.50	22.79	23.00	0.481
Right Side	9400/1880	RMC12.2K	0.463	0.243	0.75	22.79	23.00	0.486
Bottom Side	9400/1880	RMC12.2K	0.667	0.347	-4.31	22.79	23.00	0.700

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	0.104	0.082	0.66	23.48	24.00	0.117
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.054	0.042	-4.23	23.48	24.00	0.061
Right Cheek	4182/836.4	RMC12.2K	0.087	0.064	2.75	23.48	24.00	0.098
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.043	0.038	-2.10	23.48	24.00	0.048

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	0.223	0.125	0.47	23.48	24.00	0.251
Back Side	4182/836.4	RMC12.2K	0.413	0.216	-0.38	23.48	24.00	0.466

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	0.223	0.125	0.47	23.48	24.00	0.251
Back Side	4182/836.4	RMC12.2K	0.413	0.216	-0.38	23.48	24.00	0.466
Left Side	4182/836.4	RMC12.2K	0.221	0.116	2.90	23.48	24.00	0.249
Right Side	4182/836.4	RMC12.2K	0.209	0.109	1.62	23.48	24.00	0.236
Bottom Side	4182/836.4	RMC12.2K	0.254	0.131	1.57	23.48	24.00	0.286

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)	0.304	0.187	0.82	22.08	23.00	0.376
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.211	0.124	3.59	22.08	23.00	0.261
Right Cheek	18900/1880	20M QPSK(1,49)	0.287	0.181	-1.60	22.08	23.00	0.355
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.154	0.089	-1.74	22.08	23.00	0.190
50%RB								
Left Cheek	18900/1880	1.4M QPSK(3,1)	0.208	0.135	-2.10	22.47	23.00	0.235
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.201	0.115	-4.22	22.47	23.00	0.227
Right Cheek	18900/1880	1.4M QPSK(3,1)	0.303	0.173	2.67	22.47	23.00	0.342
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.150	0.082	-4.93	22.47	23.00	0.169

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tuned power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.299	0.172	0.460	22.08	23.00	0.370
Back Side	18900/1880	20M QPSK(1,49)	0.584	0.338	-0.57	22.08	23.00	0.722
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.254	0.146	-3.35	22.47	23.00	0.287
Back Side	18900/1880	1.4M QPSK(3,1)	0.504	0.292	-0.20	22.47	23.00	0.569

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)	0.299	0.172	0.460	22.08	23.00	0.370
Back Side	18900/1880	20M QPSK(1,49)	0.584	0.338	-0.57	22.08	23.00	0.722
Left Side	18900/1880	20M QPSK(1,49)	0.255	0.143	0.43	22.08	23.00	0.315
Right Side	18900/1880	20M QPSK(1,49)	0.249	0.142	4.57	22.08	23.00	0.308
Bottom Side	18900/1880	20M QPSK(1,49)	0.354	0.205	-2.02	22.08	23.00	0.438
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.254	0.146	-3.35	22.47	23.00	0.287
Back Side	18900/1880	1.4M QPSK(3,1)	0.504	0.292	-0.20	22.47	23.00	0.569
Left Side	18900/1880	1.4M QPSK(3,1)	0.209	0.122	2.29	22.47	23.00	0.236
Right Side	18900/1880	1.4M QPSK(3,1)	0.240	0.132	-0.37	22.47	23.00	0.271
Bottom Side	18900/1880	1.4M QPSK(3,1)	0.328	0.182	1.14	22.47	23.00	0.371

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)	0.206	0.133	3.84	22.09	23.00	0.254
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.101	0.065	-1.34	22.09	23.00	0.125
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.187	0.121	-2.53	22.09	23.00	0.231
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.087	0.056	-3.42	22.09	23.00	0.107
50%RB								
Left Cheek	20175/1732.5	1.4M QPSK(3,0)	0.201	0.130	3.97	22.03	23.00	0.251
Left Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,0)	0.098	0.063	-3.35	22.03	23.00	0.123
Right Cheek	20175/1732.5	1.4M QPSK(3,0)	0.153	0.099	-0.20	22.03	23.00	0.191
Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,0)	0.057	0.037	2.29	22.03	23.00	0.071

NOTE: Head SAR test results of LTE Band 4

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20175/1732.5	20M QPSK(1,49)	0.248	0.151	1.97	22.09	23.00	0.306
Back Side	20175/1732.5	20M QPSK(1,49)	0.538	0.332	-0.04	22.09	23.00	0.663
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,0)	0.241	0.145	4.91	22.03	23.00	0.301

	5							
Back Side	20175/1732. 5	1.4M QPSK(3,0)	0.520	0.321	-4.82	22.03	23.00	0.650

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)	0.248	0.151	1.97	22.09	23.00	0.306
Back Side	20175/1732.5	20M QPSK(1,49)	0.538	0.332	-0.04	22.09	23.00	0.663
Left Side	20175/1732.5	20M QPSK(1,49)	0.267	0.162	-1.14	22.09	23.00	0.329
Right Side	20175/1732.5	20M QPSK(1,49)	0.248	0.153	3.82	22.09	23.00	0.306
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.277	0.177	-1.98	22.09	23.00	0.342
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,0)	0.241	0.145	4.91	22.03	23.00	0.301
Back Side	20175/1732.5	1.4M QPSK(3,0)	0.520	0.321	-4.82	22.03	23.00	0.650
Left Side	20175/1732.5	1.4M QPSK(3,0)	0.248	0.153	-4.16	22.03	23.00	0.310
Right Side	20175/1732.5	1.4M QPSK(3,0)	0.234	0.147	0.72	22.03	23.00	0.293
Bottom Side	20175/1732.5	1.4M QPSK(3,0)	0.260	0.168	-1.30	22.03	23.00	0.325

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	21100/2535	20M QPSK(1,49)	0.042	0.031	-1.50	22.05	23.00	0.052

Cheek								
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.021	0.014	1.40	22.05	23.00	0.026
Right Cheek	21100/2535	20M QPSK(1,49)	0.038	0.024	-0.53	22.05	23.00	0.047
Right Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.019	0.016	2.62	22.05	23.00	0.024
50%RB								
Left Cheek	21100/2535	20M QPSK(50,49)	0.038	0.025	2.23	21.17	22.00	0.046
Left Tilt 15 Degree	21100/2535	20M QPSK(50,49)	0.018	0.015	-0.68	21.17	22.00	0.022
Right Cheek	21100/2535	20M QPSK(50,49)	0.034	0.021	1.14	21.17	22.00	0.041
Right Tilt 15 Degree	21100/2535	20M QPSK(50,49)	0.017	0.012	4.89	21.17	22.00	0.021

NOTE: Head SAR test results of LTE Band 7

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	21100/2535	20M QPSK(1,49)	0.154	0.088	4.44	22.05	23.00	0.192
Back Side	21100/2535	20M QPSK(1,49)	0.220	0.124	-2.48	22.05	23.00	0.274
50%RB								
Front Side	21100/2535	20M QPSK(50,49)	0.144	0.085	4.23	21.17	22.00	0.174
Back Side	21100/2535	20M QPSK(50,49)	0.180	0.101	-1.29	21.17	22.00	0.218

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)	0.154	0.088	4.44	22.05	23.00	0.192
Back Side	21100/2535	20M QPSK(1,49)	0.220	0.124	-2.48	22.05	23.00	0.274
Left Side	21100/2535	20M QPSK(1,49)	0.145	0.088	1.79	22.05	23.00	0.180
Right Side	21100/2535	20M QPSK(1,49)	0.134	0.075	-2.48	22.05	23.00	0.167
Bottom Side	21100/2535	20M QPSK(1,49)	0.176	0.093	-3.87	22.05	23.00	0.219
50%RB								
Front Side	21100/2535	20M QPSK(50,49)	0.144	0.085	4.23	21.17	22.00	0.174
Back Side	21100/2535	20M QPSK(50,49)	0.180	0.101	-1.29	21.17	22.00	0.218
Left Side	21100/2535	20M QPSK(50,49)	0.134	0.076	-1.79	21.17	22.00	0.162
Right Side	21100/2535	20M QPSK(50,49)	0.127	0.073	-2.61	21.17	22.00	0.154
Bottom Side	21100/2535	20M QPSK(50,49)	0.146	0.082	3.11	21.17	22.00	0.177

NOTE: Hotspot SAR test results of LTE Band 7

10.1.8. SAR measurement Result of LTE Band 17

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	23790/710	10M QPSK(1,24)	0.122	0.096	-1.10	22.52	23.00	0.136
Left Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.058	0.044	1.41	22.52	23.00	0.065
Right Cheek	23790/710	10M QPSK(1,24)	0.089	0.071	3.35	22.52	23.00	0.099
Right Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.041	0.032	-4.74	22.52	23.00	0.046

50%RB								
Left Cheek	23790/710	10M QPSK(25,0)	0.105	0.082	-3.88	21.38	22.00	0.121
Left Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.048	0.037	3.77	21.38	22.00	0.055
Right Cheek	23790/710	10M QPSK(25,0)	0.078	0.062	4.30	21.38	22.00	0.090
Right Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.034	0.026	1.97	21.38	22.00	0.039

NOTE: Head SAR test results of LTE Band 17

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	23790/710	10M QPSK(1,24)	0.109	0.081	-2.18	22.52	23.00	0.122
Back Side	23790/710	10M QPSK(1,24)	0.279	0.219	-0.55	22.52	23.00	0.312
50%RB								
Front Side	23790/710	10M QPSK(25,0)	0.101	0.073	-3.44	21.38	22.00	0.116
Back Side	23790/710	10M QPSK(25,0)	0.257	0.204	0.30	21.38	22.00	0.296

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

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				
1RB								
Front Side	23790/710	10M QPSK(1,24)	0.109	0.081	-2.18	22.52	23.00	0.122
Back Side	23790/710	10M QPSK(1,24)	0.279	0.219	-0.55	22.52	23.00	0.312
Left Side	23790/710	10M QPSK(1,24)	0.112	0.082	-1.93	22.52	23.00	0.125
Right Side	23790/710	10M QPSK(1,24)	0.124	0.093	-3.36	22.52	23.00	0.138
Bottom Side	23790/710	10M QPSK(1,24)	0.178	0.134	-4.77	22.52	23.00	0.199

50%RB								
Front Side	23790/710	10M QPSK(25,0)	0.101	0.073	-3.44	21.38	22.00	0.116
Back Side	23790/710	10M QPSK(25,0)	0.257	0.204	0.30	21.38	22.00	0.296
Left Side	23790/710	10M QPSK(25,0)	0.102	0.083	0.82	21.38	22.00	0.118
Right Side	23790/710	10M QPSK(25,0)	0.113	0.085	1.78	21.38	22.00	0.130
Bottom Side	23790/710	10M QPSK(25,0)	0.148	0.114	2.93	21.38	22.00	0.171

NOTE: Hotspot SAR test results of LTE Band 17

10.1.9. 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	802.11g	0.134	0.068	-1.90	15.75	16.00	0.142
Left Tilt 15 Degree	6/2437	802.11g	0.066	0.034	-3.47	15.75	16.00	0.070
Right Cheek	6/2437	802.11g	0.124	0.062	3.59	15.75	16.00	0.131
Right Tilt 15 Degree	6/2437	802.11g	0.054	0.027	-0.21	15.75	16.00	0.057

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	802.11g	0.078	0.041	-4.74	15.75	16.00	0.083
Back Side	6/2437	802.11g	0.139	0.075	-0.03	15.75	16.00	0.147

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	802.11g	0.078	0.041	-4.74	15.75	16.00	0.083
Back Side	6/2437	802.11g	0.139	0.075	-0.03	15.75	16.00	0.147
Right Side	6/2437	802.11g	0.067	0.036	2.65	15.75	16.00	0.071

Top Side	6/2437	802.11g	0.108	0.058	0.57	15.75	16.00	0.114
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NOTE: Hotspot SAR test results of WLAN 2.4G

10.1.10. 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	0.451	0.174	-0.73	8.94	10.00	0.576
Left Tilt 15 Degree	40/5200	802.11a	0.278	0.102	3.92	8.94	10.00	0.355
Right Cheek	40/5200	802.11a	0.532	0.206	-0.81	8.94	10.00	0.679
Right Tilt 15 Degree	40/5200	802.11a	0.289	0.113	-2.18	8.94	10.00	0.369

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	0.546	0.232	-3.41	8.94	10.00	0.697
Back Side	40/5200	802.11a	0.445	0.187	-4.76	8.94	10.00	0.568

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	0.546	0.232	-3.41	8.94	10.00	0.697
Back Side	40/5200	802.11a	0.445	0.187	-4.76	8.94	10.00	0.568
Right Side	40/5200	802.11a	0.459	0.193	0.47	8.94	10.00	0.586
Top Side	40/5200	802.11a	0.974	0.412	-0.75	8.94	10.00	1.243
Top Side	36/5180	802.11a	1.016	0.430	0.46	8.96	10.00	1.291
Top Side Repeated	36/5180	802.11a	0.993	0.419	0.13	8.96	10.00	1.262
Top Side	48/5240	802.11a	0.932	0.396	-1.96	9.33	10.00	1.087

NOTE: Hotspot SAR test results of WLAN 5.2G

10.1.11. SAR measurement Result of WLAN 5.8G

Test Position of	Test	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled
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Head	channel /Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g (W/Kg)
			1g	10g				
Left Cheek	157/5785	802.11a	0.357	0.144	2.99	9.53	10.00	0.398
Left Tilt 15 Degree	157/5785	802.11a	0.167	0.063	1.41	9.53	10.00	0.186
Right Cheek	157/5785	802.11a	0.405	0.164	0.35	9.53	10.00	0.451
Right Tilt 15 Degree	157/5785	802.11a	0.188	0.076	-2.94	9.53	10.00	0.209

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	0.431	0.186	-0.86	9.53	10.00	0.480
Back Side	157/5785	802.11a	0.451	0.193	-4.76	9.53	10.00	0.503

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	0.431	0.186	-0.86	9.53	10.00	0.480
Back Side	157/5785	802.11a	0.451	0.193	-4.76	9.53	10.00	0.503
Right Side	157/5785	802.11a	0.369	0.156	0.47	9.53	10.00	0.411
Top Side	157/5785	802.11a	0.743	0.322	2.17	9.53	10.00	0.828
Top Side	149/5745	802.11a	0.701	0.309	0.02	9.10	10.00	0.862
Top Side	165/5825	802.11a	0.725	0.315	0.73	10.77	11.00	0.764

NOTE: Hotspot SAR test results of WLAN 5.8G

10.2. SAR Summation Scenario

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

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

Test Position	Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
	GSM 850	WLAN 2.4G			

Head	Left Cheek	0.145	0.142	0.287	N/A	N/A
	Left Tilt 15 Degree	0.076	0.070	0.145	N/A	N/A
	Right Cheek	0.104	0.131	0.236	N/A	N/A
	Right Tilt 15 Degree	0.061	0.057	0.118	N/A	N/A
Body-Worn	Front Side	0.277	0.083	0.360	N/A	N/A
	Back Side	0.546	0.147	0.693	N/A	N/A
Hotspot	Front Side	0.277	0.083	0.360	N/A	N/A
	Back Side	0.546	0.147	0.693	N/A	N/A
	Left Side	0.305	N/A	0.305	N/A	N/A
	Right Side	0.293	0.071	0.364	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.277	N/A	0.277	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	0.271	0.142	0.413	N/A	N/A
	Left Tilt 15 Degree	0.126	0.070	0.195	N/A	N/A
	Right Cheek	0.240	0.131	0.371	N/A	N/A
	Right Tilt 15 Degree	0.114	0.057	0.171	N/A	N/A
Body-Worn	Front Side	0.209	0.083	0.291	N/A	N/A
	Back Side	0.603	0.147	0.750	N/A	N/A
Hotspot	Front Side	0.209	0.083	0.291	N/A	N/A
	Back Side	0.603	0.147	0.750	N/A	N/A
	Left Side	0.219	N/A	0.219	N/A	N/A
	Right Side	0.229	0.071	0.300	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.252	N/A	0.252	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	0.366	0.142	0.508	N/A	N/A
	Left Tilt 15 Degree	0.172	0.070	0.242	N/A	N/A
	Right Cheek	0.320	0.131	0.451	N/A	N/A
	Right Tilt 15 Degree	0.156	0.057	0.214	N/A	N/A
Body-Worn	Front Side	0.527	0.083	0.609	N/A	N/A
	Back Side	0.798	0.147	0.945	N/A	N/A

Hotspot	Front Side	0.527	0.083	0.609	N/A	N/A
	Back Side	0.798	0.147	0.945	N/A	N/A
	Left Side	0.481	N/A	0.481	N/A	N/A
	Right Side	0.486	0.071	0.557	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.700	N/A	0.700	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	0.117	0.142	0.259	N/A	N/A
	Left Tilt 15 Degree	0.061	0.070	0.131	N/A	N/A
	Right Cheek	0.098	0.131	0.229	N/A	N/A
	Right Tilt 15 Degree	0.048	0.057	0.106	N/A	N/A
Body-Worn	Front Side	0.251	0.083	0.334	N/A	N/A
	Back Side	0.466	0.147	0.613	N/A	N/A
Hotspot	Front Side	0.251	0.083	0.334	N/A	N/A
	Back Side	0.466	0.147	0.613	N/A	N/A
	Left Side	0.249	N/A	0.249	N/A	N/A
	Right Side	0.236	0.071	0.307	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.286	N/A	0.286	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	0.376	0.142	0.518	N/A	N/A
	Left Tilt 15 Degree	0.261	0.070	0.331	N/A	N/A
	Right Cheek	0.355	0.131	0.486	N/A	N/A
	Right Tilt 15 Degree	0.190	0.057	0.248	N/A	N/A
Body-Worn	Front Side	0.370	0.083	0.452	N/A	N/A
	Back Side	0.722	0.147	0.869	N/A	N/A
Hotspot	Front Side	0.370	0.083	0.452	N/A	N/A
	Back Side	0.722	0.147	0.869	N/A	N/A
	Left Side	0.315	N/A	0.315	N/A	N/A
	Right Side	0.308	0.071	0.379	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.438	N/A	0.438	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	0.254	0.142	0.396	N/A	N/A
	Left Tilt 15 Degree	0.125	0.070	0.194	N/A	N/A
	Right Cheek	0.231	0.131	0.362	N/A	N/A
	Right Tilt 15 Degree	0.107	0.057	0.164	N/A	N/A
Body-Worn	Front Side	0.306	0.083	0.388	N/A	N/A
	Back Side	0.663	0.147	0.811	N/A	N/A
Hotspot	Front Side	0.306	0.083	0.388	N/A	N/A
	Back Side	0.663	0.147	0.811	N/A	N/A
	Left Side	0.329	N/A	0.329	N/A	N/A
	Right Side	0.306	0.071	0.377	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.342	N/A	0.342	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	0.052	0.142	0.194	N/A	N/A
	Left Tilt 15 Degree	0.026	0.070	0.096	N/A	N/A
	Right Cheek	0.047	0.131	0.179	N/A	N/A
	Right Tilt 15 Degree	0.024	0.057	0.081	N/A	N/A
Body-Worn	Front Side	0.192	0.083	0.274	N/A	N/A
	Back Side	0.274	0.147	0.421	N/A	N/A
Hotspot	Front Side	0.192	0.083	0.274	N/A	N/A
	Back Side	0.274	0.147	0.421	N/A	N/A
	Left Side	0.180	N/A	0.180	N/A	N/A
	Right Side	0.167	0.071	0.238	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.219	N/A	0.219	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
		LTE Band 17	WLAN 2.4G			
Head	Left Cheek	0.136	0.142	0.278	N/A	N/A
	Left Tilt 15 Degree	0.065	0.070	0.135	N/A	N/A
	Right Cheek	0.099	0.131	0.231	N/A	N/A

	Right Tilt 15 Degree	0.046	0.057	0.103	N/A	N/A
Body-Worn	Front Side	0.122	0.083	0.204	N/A	N/A
	Back Side	0.312	0.147	0.459	N/A	N/A
Hotspot	Front Side	0.122	0.083	0.204	N/A	N/A
	Back Side	0.312	0.147	0.459	N/A	N/A
	Left Side	0.125	N/A	0.125	N/A	N/A
	Right Side	0.138	0.071	0.209	N/A	N/A
	Top Side	N/A	0.114	0.114	N/A	N/A
	Bottom Side	0.199	N/A	0.199	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 17 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	0.145	0.576	0.721	N/A	N/A
	Left Tilt 15 Degree	0.076	0.355	0.430	N/A	N/A
	Right Cheek	0.104	0.679	0.783	N/A	N/A
	Right Tilt 15 Degree	0.061	0.369	0.430	N/A	N/A
Body-Worn	Front Side	0.277	0.697	0.974	N/A	N/A
	Back Side	0.546	0.568	1.114	N/A	N/A
Hotspot	Front Side	0.277	0.697	0.974	N/A	N/A
	Back Side	0.546	0.568	1.114	N/A	N/A
	Left Side	0.305	N/A	0.305	N/A	N/A
	Right Side	0.293	0.586	0.879	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.277	N/A	0.277	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	0.271	0.576	0.846	N/A	N/A
	Left Tilt 15 Degree	0.126	0.355	0.480	N/A	N/A
	Right Cheek	0.240	0.679	0.919	N/A	N/A
	Right Tilt 15 Degree	0.114	0.369	0.483	N/A	N/A
Body-Worn	Front Side	0.209	0.697	0.905	N/A	N/A
	Back Side	0.603	0.568	1.171	N/A	N/A
Hotspot	Front Side	0.209	0.697	0.905	N/A	N/A
	Back Side	0.603	0.568	1.171	N/A	N/A
	Left Side	0.219	N/A	0.219	N/A	N/A
	Right Side	0.229	0.586	0.815	N/A	N/A

	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.252	N/A	0.252	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	0.366	0.576	0.942	N/A	N/A
	Left Tilt 15 Degree	0.172	0.355	0.527	N/A	N/A
	Right Cheek	0.320	0.679	0.999	N/A	N/A
	Right Tilt 15 Degree	0.156	0.369	0.525	N/A	N/A
Body-Worn	Front Side	0.527	0.697	1.224	N/A	N/A
	Back Side	0.798	0.568	1.366	N/A	N/A
Hotspot	Front Side	0.527	0.697	1.224	N/A	N/A
	Back Side	0.798	0.568	1.366	N/A	N/A
	Left Side	0.481	N/A	0.481	N/A	N/A
	Right Side	0.486	0.586	1.072	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.700	N/A	0.700	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	0.117	0.576	0.693	N/A	N/A
	Left Tilt 15 Degree	0.061	0.355	0.416	N/A	N/A
	Right Cheek	0.098	0.679	0.777	N/A	N/A
	Right Tilt 15 Degree	0.048	0.369	0.417	N/A	N/A
Body-Worn	Front Side	0.251	0.697	0.948	N/A	N/A
	Back Side	0.466	0.568	1.034	N/A	N/A
Hotspot	Front Side	0.251	0.697	0.948	N/A	N/A
	Back Side	0.466	0.568	1.034	N/A	N/A
	Left Side	0.249	N/A	0.249	N/A	N/A
	Right Side	0.236	0.586	0.821	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.286	N/A	0.286	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	0.376	0.576	0.951	N/A	N/A
	Left Tilt 15 Degree	0.261	0.355	0.616	N/A	N/A
	Right Cheek	0.355	0.679	1.034	N/A	N/A
	Right Tilt 15 Degree	0.190	0.369	0.559	N/A	N/A
Body-Worn	Front Side	0.370	0.697	1.066	N/A	N/A
	Back Side	0.722	0.568	1.290	N/A	N/A
Hotspot	Front Side	0.370	0.697	1.066	N/A	N/A
	Back Side	0.722	0.568	1.290	N/A	N/A
	Left Side	0.315	N/A	0.315	N/A	N/A
	Right Side	0.308	0.586	0.894	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.438	N/A	0.438	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	0.254	0.576	0.830	N/A	N/A
	Left Tilt 15 Degree	0.125	0.355	0.479	N/A	N/A
	Right Cheek	0.231	0.679	0.910	N/A	N/A
	Right Tilt 15 Degree	0.107	0.369	0.476	N/A	N/A
Body-Worn	Front Side	0.306	0.697	1.003	N/A	N/A
	Back Side	0.663	0.568	1.231	N/A	N/A
Hotspot	Front Side	0.306	0.697	1.003	N/A	N/A
	Back Side	0.663	0.568	1.231	N/A	N/A
	Left Side	0.329	N/A	0.329	N/A	N/A
	Right Side	0.306	0.586	0.892	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.342	N/A	0.342	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	0.052	0.576	0.628	N/A	N/A
	Left Tilt 15 Degree	0.026	0.355	0.381	N/A	N/A
	Right Cheek	0.047	0.679	0.726	N/A	N/A
	Right Tilt 15 Degree	0.024	0.369	0.393	N/A	N/A
Body-Worn	Front Side	0.192	0.697	0.889	N/A	N/A

	Back Side	0.274	0.568	0.842	N/A	N/A
Hotspot	Front Side	0.192	0.697	0.889	N/A	N/A
	Back Side	0.274	0.568	0.842	N/A	N/A
	Left Side	0.180	N/A	0.180	N/A	N/A
	Right Side	0.167	0.586	0.753	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.219	N/A	0.219	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
		LTE Band 17	WLAN 5.2G			
Head	Left Cheek	0.136	0.576	0.712	N/A	N/A
	Left Tilt 15 Degree	0.065	0.355	0.420	N/A	N/A
	Right Cheek	0.099	0.679	0.778	N/A	N/A
	Right Tilt 15 Degree	0.046	0.369	0.415	N/A	N/A
Body-Worn	Front Side	0.122	0.697	0.819	N/A	N/A
	Back Side	0.312	0.568	0.880	N/A	N/A
Hotspot	Front Side	0.122	0.697	0.819	N/A	N/A
	Back Side	0.312	0.568	0.880	N/A	N/A
	Left Side	0.125	N/A	0.125	N/A	N/A
	Right Side	0.138	0.586	0.724	N/A	N/A
	Top Side	N/A	1.291	1.291	N/A	N/A
	Bottom Side	0.199	N/A	0.199	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 17 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	0.145	0.398	0.543	N/A	N/A
	Left Tilt 15 Degree	0.076	0.186	0.262	N/A	N/A
	Right Cheek	0.104	0.451	0.556	N/A	N/A
	Right Tilt 15 Degree	0.061	0.209	0.271	N/A	N/A
Body-Worn	Front Side	0.277	0.480	0.757	N/A	N/A
	Back Side	0.546	0.503	1.048	N/A	N/A
Hotspot	Front Side	0.277	0.480	0.757	N/A	N/A
	Back Side	0.546	0.503	1.048	N/A	N/A
	Left Side	0.305	N/A	0.305	N/A	N/A
	Right Side	0.293	0.411	0.704	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A

	Bottom Side	0.277	N/A	0.277	N/A	N/A
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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	0.271	0.398	0.669	N/A	N/A
	Left Tilt 15 Degree	0.126	0.186	0.312	N/A	N/A
	Right Cheek	0.240	0.451	0.691	N/A	N/A
	Right Tilt 15 Degree	0.114	0.209	0.324	N/A	N/A
Body-Worn	Front Side	0.209	0.480	0.689	N/A	N/A
	Back Side	0.603	0.503	1.105	N/A	N/A
Hotspot	Front Side	0.209	0.480	0.689	N/A	N/A
	Back Side	0.603	0.503	1.105	N/A	N/A
	Left Side	0.219	N/A	0.219	N/A	N/A
	Right Side	0.229	0.411	0.640	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.252	N/A	0.252	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	0.366	0.398	0.764	N/A	N/A
	Left Tilt 15 Degree	0.172	0.186	0.358	N/A	N/A
	Right Cheek	0.320	0.451	0.771	N/A	N/A
	Right Tilt 15 Degree	0.156	0.209	0.366	N/A	N/A
Body-Worn	Front Side	0.527	0.480	1.007	N/A	N/A
	Back Side	0.798	0.503	1.300	N/A	N/A
Hotspot	Front Side	0.527	0.480	1.007	N/A	N/A
	Back Side	0.798	0.503	1.300	N/A	N/A
	Left Side	0.481	N/A	0.481	N/A	N/A
	Right Side	0.486	0.411	0.897	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.700	N/A	0.700	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	0.117	0.398	0.515	N/A	N/A

	Left Tilt 15 Degree	0.061	0.186	0.247	N/A	N/A
	Right Cheek	0.098	0.451	0.549	N/A	N/A
	Right Tilt 15 Degree	0.048	0.209	0.258	N/A	N/A
Body-Worn	Front Side	0.251	0.480	0.732	N/A	N/A
	Back Side	0.466	0.503	0.968	N/A	N/A
Hotspot	Front Side	0.251	0.480	0.732	N/A	N/A
	Back Side	0.466	0.503	0.968	N/A	N/A
	Left Side	0.249	N/A	0.249	N/A	N/A
	Right Side	0.236	0.411	0.647	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.286	N/A	0.286	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	0.376	0.398	0.774	N/A	N/A
	Left Tilt 15 Degree	0.261	0.186	0.447	N/A	N/A
	Right Cheek	0.355	0.451	0.806	N/A	N/A
	Right Tilt 15 Degree	0.190	0.209	0.400	N/A	N/A
Body-Worn	Front Side	0.370	0.480	0.850	N/A	N/A
	Back Side	0.722	0.503	1.224	N/A	N/A
Hotspot	Front Side	0.370	0.480	0.850	N/A	N/A
	Back Side	0.722	0.503	1.224	N/A	N/A
	Left Side	0.315	N/A	0.315	N/A	N/A
	Right Side	0.308	0.411	0.719	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.438	N/A	0.438	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	0.254	0.398	0.652	N/A	N/A
	Left Tilt 15 Degree	0.125	0.186	0.311	N/A	N/A
	Right Cheek	0.231	0.451	0.682	N/A	N/A
	Right Tilt 15 Degree	0.107	0.209	0.317	N/A	N/A
Body-Worn	Front Side	0.306	0.480	0.786	N/A	N/A
	Back Side	0.663	0.503	1.166	N/A	N/A
Hotspot	Front Side	0.306	0.480	0.786	N/A	N/A

	Back Side	0.663	0.503	1.166	N/A	N/A
	Left Side	0.329	N/A	0.329	N/A	N/A
	Right Side	0.306	0.411	0.717	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.342	N/A	0.342	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	0.052	0.398	0.450	N/A	N/A
	Left Tilt 15 Degree	0.026	0.186	0.212	N/A	N/A
	Right Cheek	0.047	0.451	0.499	N/A	N/A
	Right Tilt 15 Degree	0.024	0.209	0.233	N/A	N/A
Body-Worn	Front Side	0.192	0.480	0.672	N/A	N/A
	Back Side	0.274	0.503	0.776	N/A	N/A
Hotspot	Front Side	0.192	0.480	0.672	N/A	N/A
	Back Side	0.274	0.503	0.776	N/A	N/A
	Left Side	0.180	N/A	0.180	N/A	N/A
	Right Side	0.167	0.411	0.578	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.219	N/A	0.219	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
		LTE Band 17	WLAN 5.8G			
Head	Left Cheek	0.136	0.398	0.534	N/A	N/A
	Left Tilt 15 Degree	0.065	0.186	0.251	N/A	N/A
	Right Cheek	0.099	0.451	0.551	N/A	N/A
	Right Tilt 15 Degree	0.046	0.209	0.255	N/A	N/A
Body-Worn	Front Side	0.122	0.480	0.602	N/A	N/A
	Back Side	0.312	0.503	0.814	N/A	N/A
Hotspot	Front Side	0.122	0.480	0.602	N/A	N/A
	Back Side	0.312	0.503	0.814	N/A	N/A
	Left Side	0.125	N/A	0.125	N/A	N/A
	Right Side	0.138	0.411	0.550	N/A	N/A
	Top Side	N/A	0.862	0.862	N/A	N/A
	Bottom Side	0.199	N/A	0.199	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 17 and WLAN 5.8G.

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	Bluetooth			
Head	Left Cheek	0.145	0.084	0.229	N/A	N/A
	Left Tilt 15 Degree	0.076	0.084	0.159	N/A	N/A
	Right Cheek	0.104	0.084	0.188	N/A	N/A
	Right Tilt 15 Degree	0.061	0.084	0.145	N/A	N/A
Body-Worn	Front Side	0.277	0.042	0.319	N/A	N/A
	Back Side	0.546	0.042	0.588	N/A	N/A
Hotspot	Front Side	0.277	0.042	0.319	N/A	N/A
	Back Side	0.546	0.042	0.588	N/A	N/A
	Left Side	0.305	N/A	0.305	N/A	N/A
	Right Side	0.293	0.042	0.335	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.277	N/A	0.277	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	0.271	0.084	0.355	N/A	N/A
	Left Tilt 15 Degree	0.126	0.084	0.209	N/A	N/A
	Right Cheek	0.240	0.084	0.323	N/A	N/A
	Right Tilt 15 Degree	0.114	0.084	0.198	N/A	N/A
Body-Worn	Front Side	0.209	0.042	0.250	N/A	N/A
	Back Side	0.603	0.042	0.645	N/A	N/A
Hotspot	Front Side	0.209	0.042	0.250	N/A	N/A
	Back Side	0.603	0.042	0.645	N/A	N/A
	Left Side	0.219	N/A	0.219	N/A	N/A
	Right Side	0.229	0.042	0.271	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.252	N/A	0.252	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	0.366	0.084	0.450	N/A	N/A
	Left Tilt 15 Degree	0.172	0.084	0.256	N/A	N/A
	Right Cheek	0.320	0.084	0.404	N/A	N/A

	Right Tilt 15 Degree	0.156	0.084	0.240	N/A	N/A
Body-Worn	Front Side	0.527	0.042	0.569	N/A	N/A
	Back Side	0.798	0.042	0.840	N/A	N/A
Hotspot	Front Side	0.527	0.042	0.569	N/A	N/A
	Back Side	0.798	0.042	0.840	N/A	N/A
	Left Side	0.481	N/A	0.481	N/A	N/A
	Right Side	0.486	0.042	0.528	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.700	N/A	0.700	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	0.117	0.084	0.201	N/A	N/A
	Left Tilt 15 Degree	0.061	0.084	0.145	N/A	N/A
	Right Cheek	0.098	0.084	0.182	N/A	N/A
	Right Tilt 15 Degree	0.048	0.084	0.132	N/A	N/A
Body-Worn	Front Side	0.251	0.042	0.293	N/A	N/A
	Back Side	0.466	0.042	0.507	N/A	N/A
Hotspot	Front Side	0.251	0.042	0.293	N/A	N/A
	Back Side	0.466	0.042	0.507	N/A	N/A
	Left Side	0.249	N/A	0.249	N/A	N/A
	Right Side	0.236	0.042	0.277	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.286	N/A	0.286	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	0.376	0.084	0.460	N/A	N/A
	Left Tilt 15 Degree	0.261	0.084	0.345	N/A	N/A
	Right Cheek	0.355	0.084	0.439	N/A	N/A
	Right Tilt 15 Degree	0.190	0.084	0.274	N/A	N/A
Body-Worn	Front Side	0.370	0.042	0.411	N/A	N/A
	Back Side	0.722	0.042	0.764	N/A	N/A
Hotspot	Front Side	0.370	0.042	0.411	N/A	N/A
	Back Side	0.722	0.042	0.764	N/A	N/A
	Left Side	0.315	N/A	0.315	N/A	N/A

	Right Side	0.308	0.042	0.350	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.438	N/A	0.438	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	0.254	0.084	0.338	N/A	N/A
	Left Tilt 15 Degree	0.125	0.084	0.208	N/A	N/A
	Right Cheek	0.231	0.084	0.314	N/A	N/A
	Right Tilt 15 Degree	0.107	0.084	0.191	N/A	N/A
Body-Worn	Front Side	0.306	0.042	0.348	N/A	N/A
	Back Side	0.663	0.042	0.705	N/A	N/A
Hotspot	Front Side	0.306	0.042	0.348	N/A	N/A
	Back Side	0.663	0.042	0.705	N/A	N/A
	Left Side	0.329	N/A	0.329	N/A	N/A
	Right Side	0.306	0.042	0.348	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.342	N/A	0.342	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	0.052	0.084	0.136	N/A	N/A
	Left Tilt 15 Degree	0.026	0.084	0.110	N/A	N/A
	Right Cheek	0.047	0.084	0.131	N/A	N/A
	Right Tilt 15 Degree	0.024	0.084	0.107	N/A	N/A
Body-Worn	Front Side	0.192	0.042	0.234	N/A	N/A
	Back Side	0.274	0.042	0.316	N/A	N/A
Hotspot	Front Side	0.192	0.042	0.234	N/A	N/A
	Back Side	0.274	0.042	0.316	N/A	N/A
	Left Side	0.180	N/A	0.180	N/A	N/A
	Right Side	0.167	0.042	0.209	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.219	N/A	0.219	N/A	N/A

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 17	Bluetooth			
Head	Left Cheek	0.136	0.084	0.220	N/A	N/A
	Left Tilt 15 Degree	0.065	0.084	0.149	N/A	N/A
	Right Cheek	0.099	0.084	0.183	N/A	N/A
	Right Tilt 15 Degree	0.046	0.084	0.130	N/A	N/A
Body-Worn	Front Side	0.122	0.042	0.164	N/A	N/A
	Back Side	0.312	0.042	0.354	N/A	N/A
Hotspot	Front Side	0.122	0.042	0.164	N/A	N/A
	Back Side	0.312	0.042	0.354	N/A	N/A
	Left Side	0.125	N/A	0.125	N/A	N/A
	Right Side	0.138	0.042	0.180	N/A	N/A
	Top Side	N/A	0.042	0.042	N/A	N/A
	Bottom Side	0.199	N/A	0.199	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 17 and Bluetooth.

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

Table of contents
MEASUREMENT 1 System Performance Check - SID750 - Head
MEASUREMENT 2 System Performance Check - SID750 - Body
MEASUREMENT 3 System Performance Check - SID835 - Head
MEASUREMENT 4 System Performance Check - SID835 - Body
MEASUREMENT 5 System Performance Check - SID1800 - Head
MEASUREMENT 6 System Performance Check - SID1800 - Body
MEASUREMENT 7 System Performance Check - SID1900 - Head
MEASUREMENT 8 System Performance Check - SID1900 - Body
MEASUREMENT 9 System Performance Check - SID2450 - Head
MEASUREMENT 10 System Performance Check - SID2450 - Body
MEASUREMENT 11 System Performance Check - SID2600 - Head
MEASUREMENT 12 System Performance Check - SID2600 - Body
MEASUREMENT 13 System Performance Check - SID5200 - Head
MEASUREMENT 14 System Performance Check - SID5200 - Body
MEASUREMENT 15 System Performance Check - SID5800 - Head
MEASUREMENT 16 System Performance Check - SID5800 - Body

MEASUREMENT 1

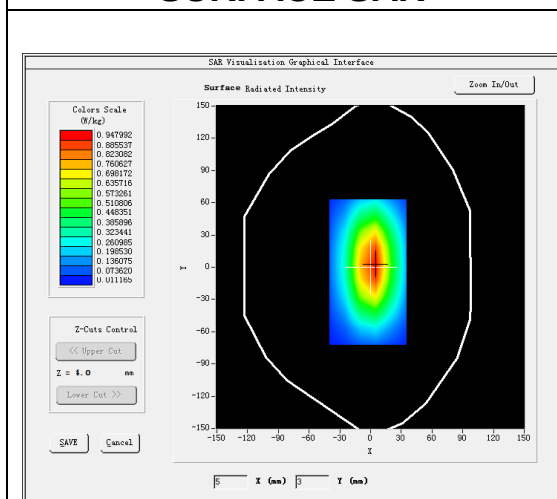
A. Experimental conditions.

<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>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

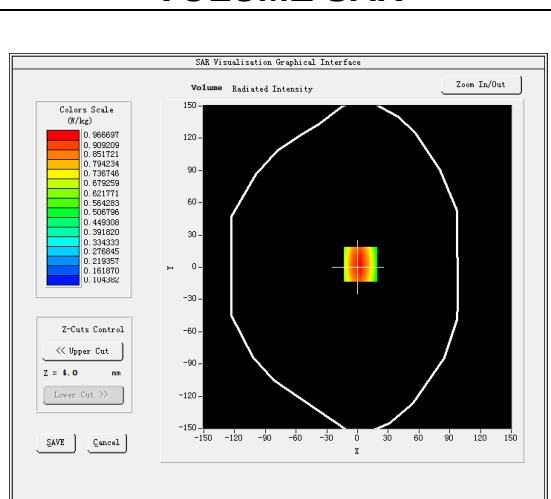
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	41.083162
Relative permittivity (imaginary part)	22.071263
Conductivity (S/m)	0.919583
Variation (%)	-3.910000

SURFACE SAR



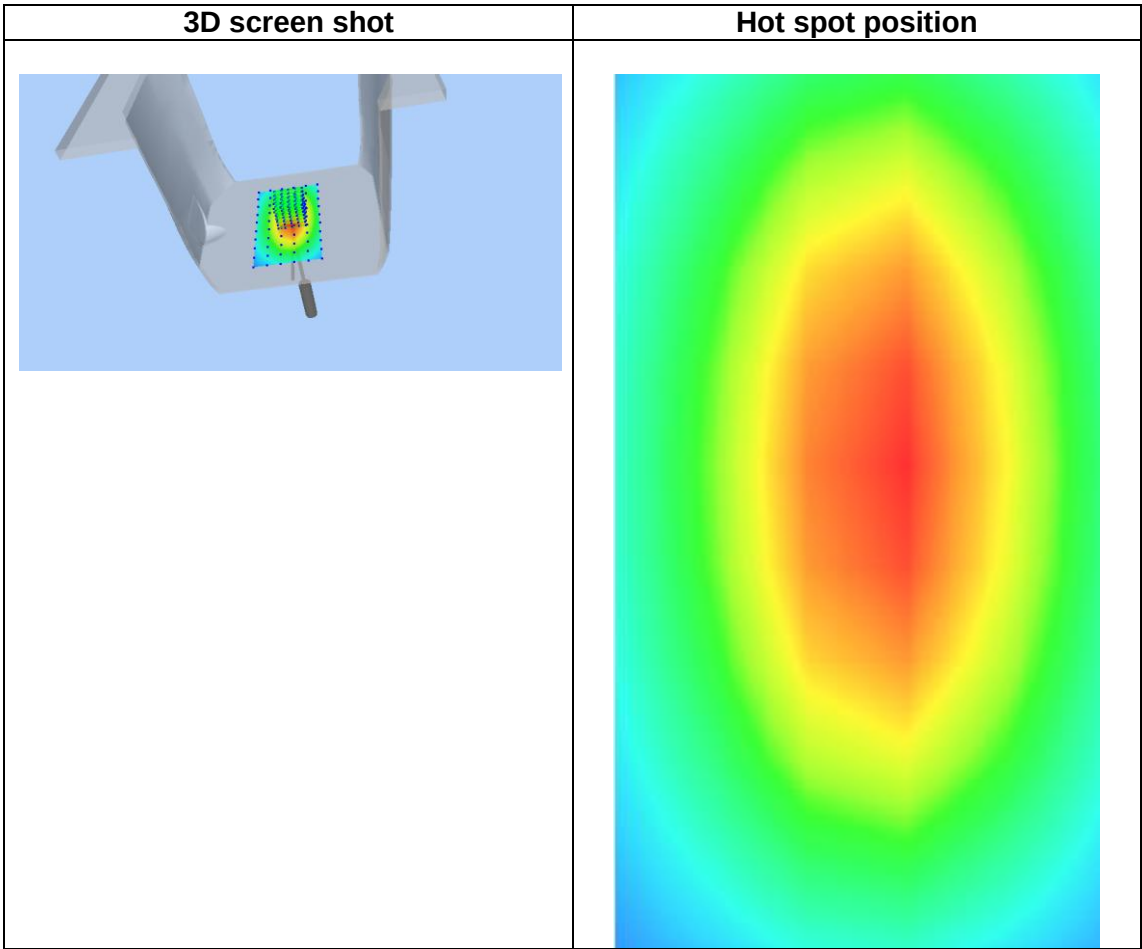
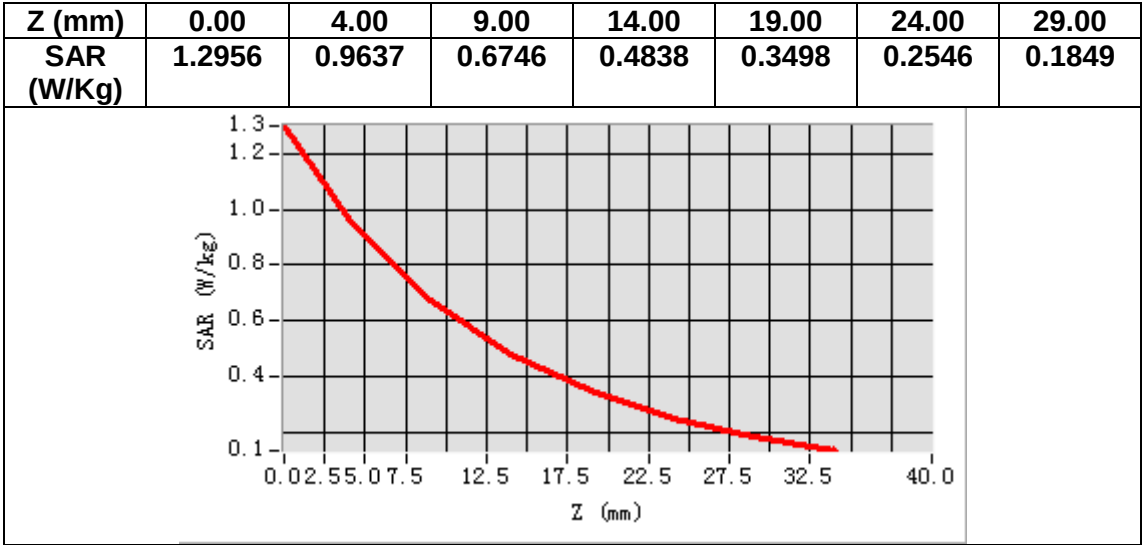
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/Kg

SAR 10g (W/Kg)	0.553218
SAR 1g (W/Kg)	0.851962



MEASUREMENT 2

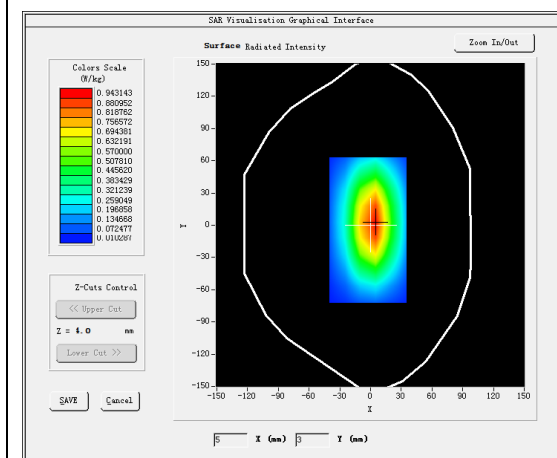
A. Experimental conditions.

<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>CW750</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

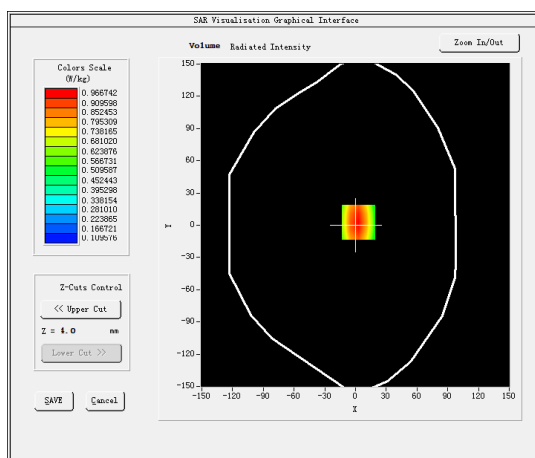
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	55.250248
Relative permittivity (imaginary part)	23.353842
Conductivity (S/m)	0.971318
Variation (%)	-1.560000

SURFACE SAR



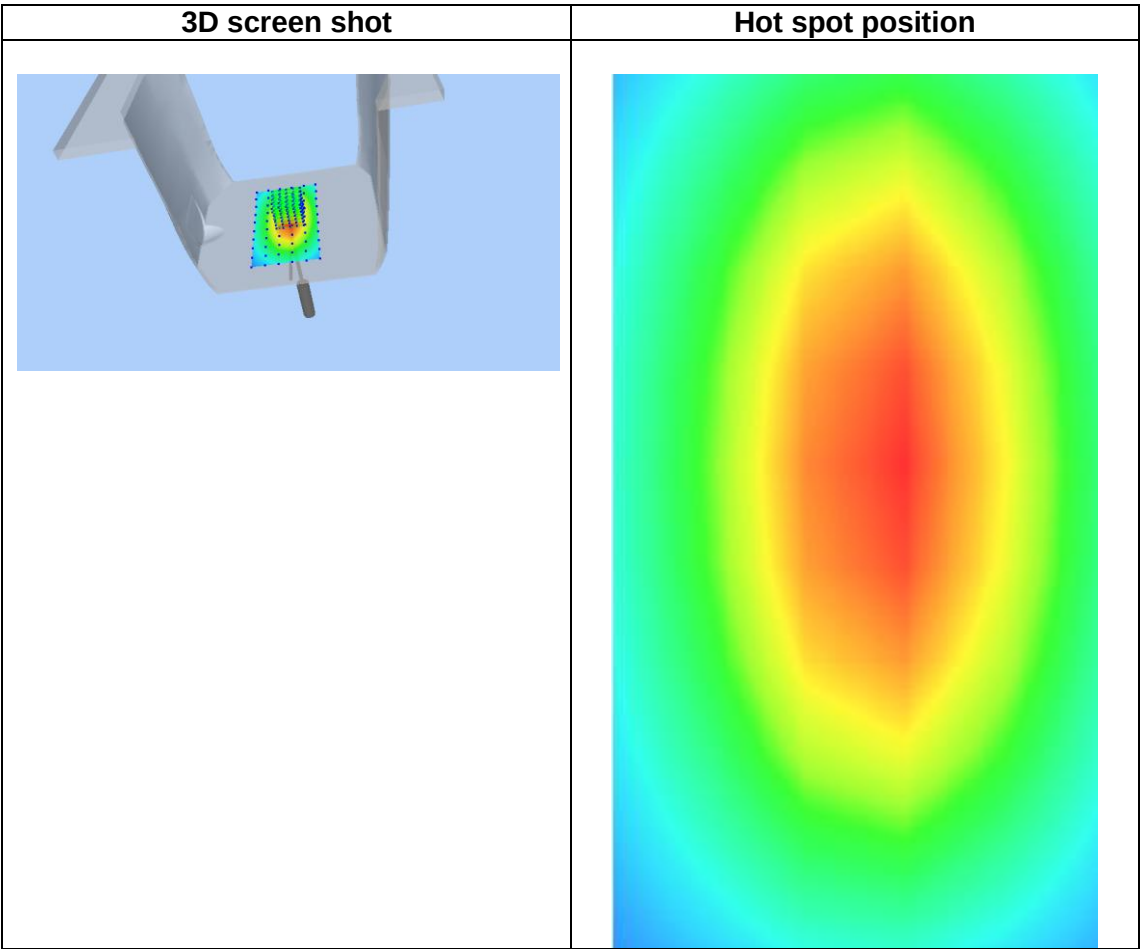
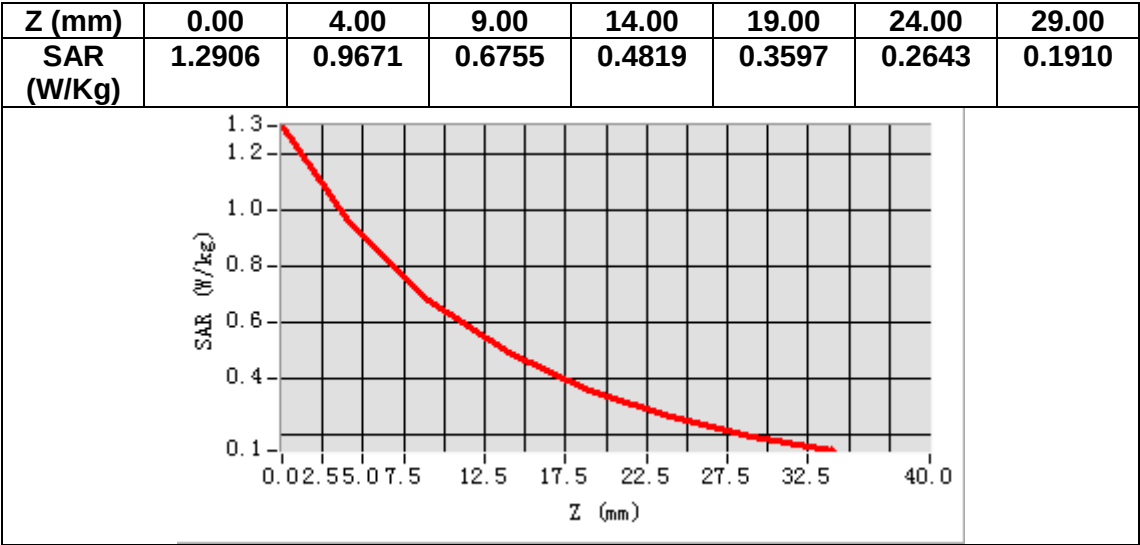
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.590281
SAR 1g (W/Kg)	0.884263



MEASUREMENT 3

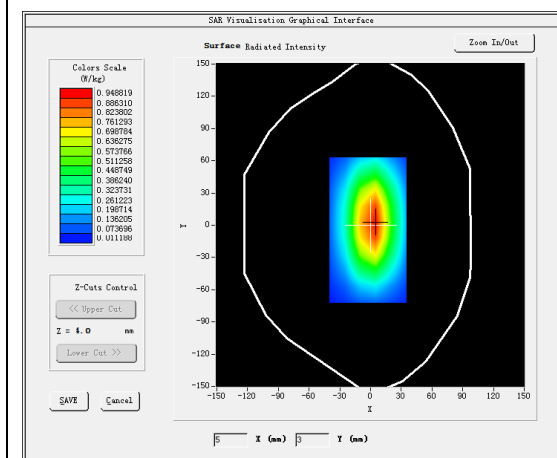
A. Experimental conditions.

<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>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

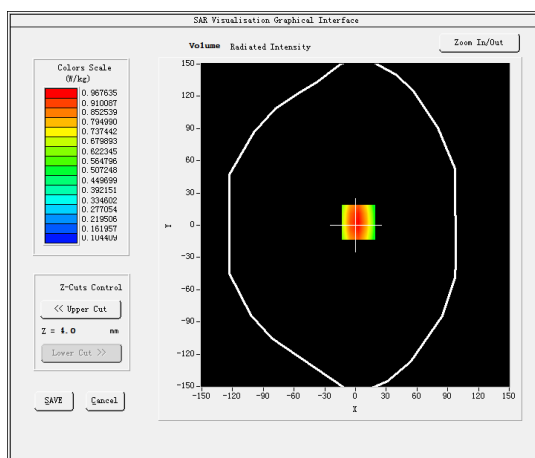
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.553541
Relative permittivity (imaginary part)	20.110613
Conductivity (S/m)	0.931742
Variation (%)	3.190000

SURFACE SAR



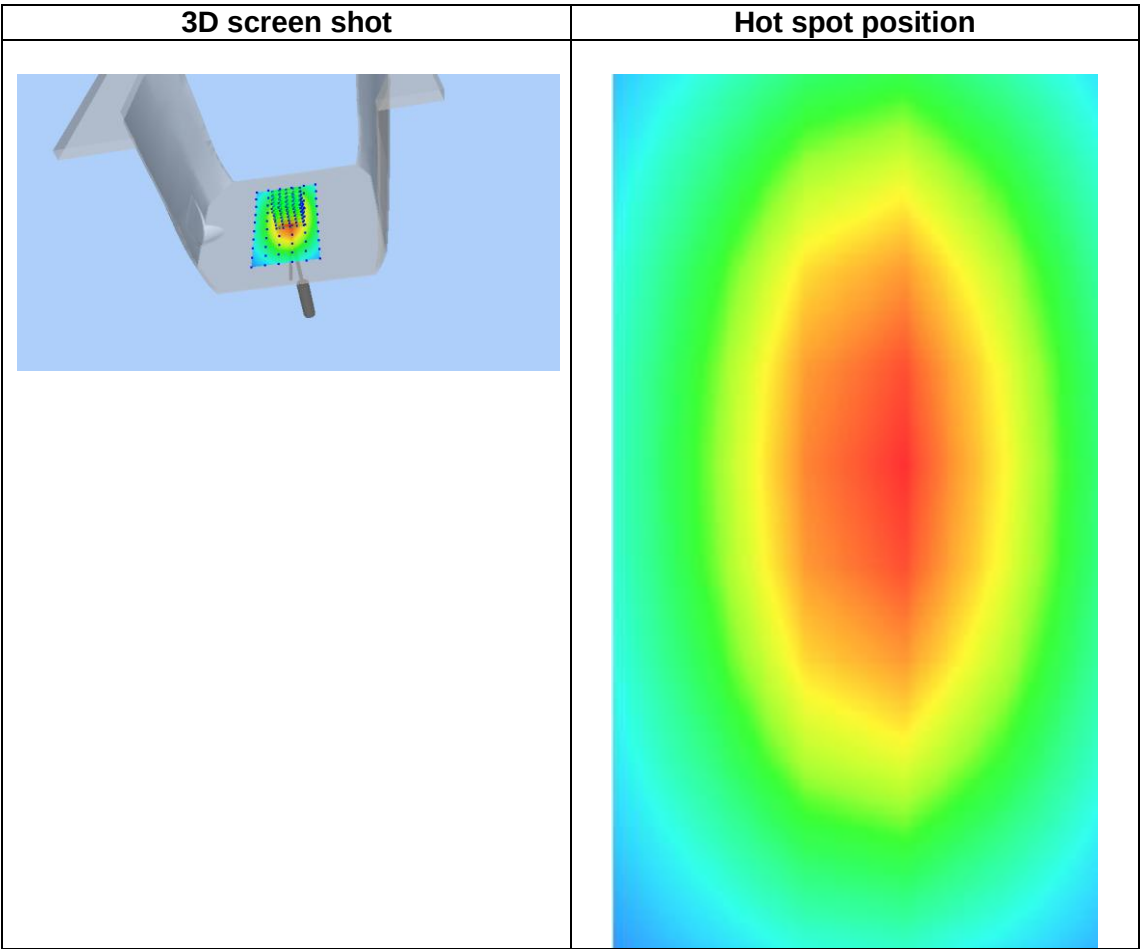
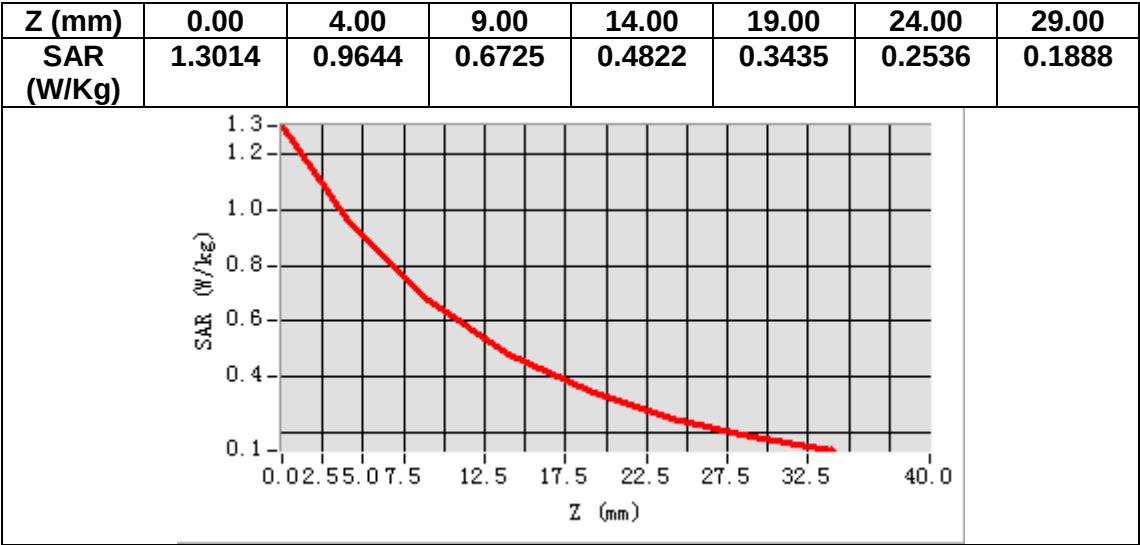
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.607966
SAR 1g (W/Kg)	0.951235



MEASUREMENT 4

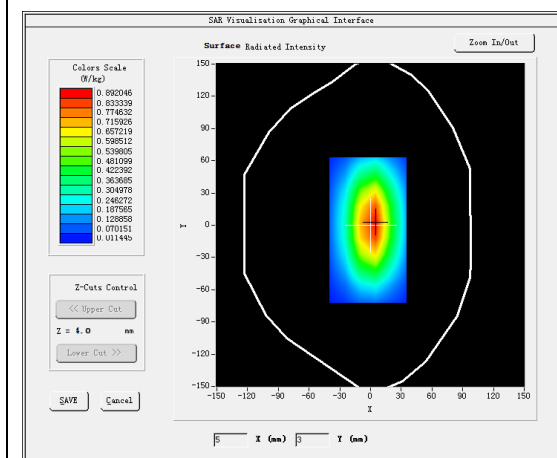
A. Experimental conditions.

<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>CW835</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

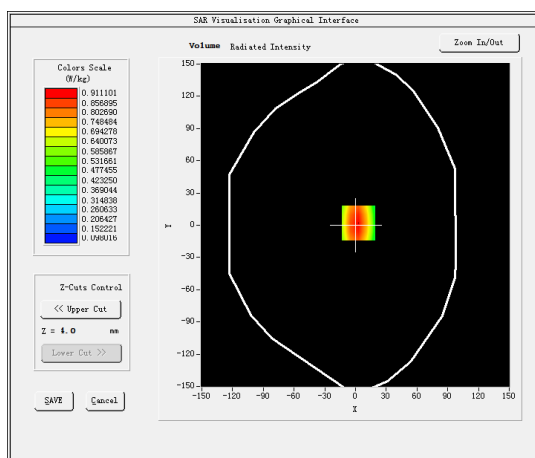
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	54.281111
Relative permittivity (imaginary part)	21.783359
Conductivity (S/m)	1.011236
Variation (%)	-4.330000

SURFACE SAR



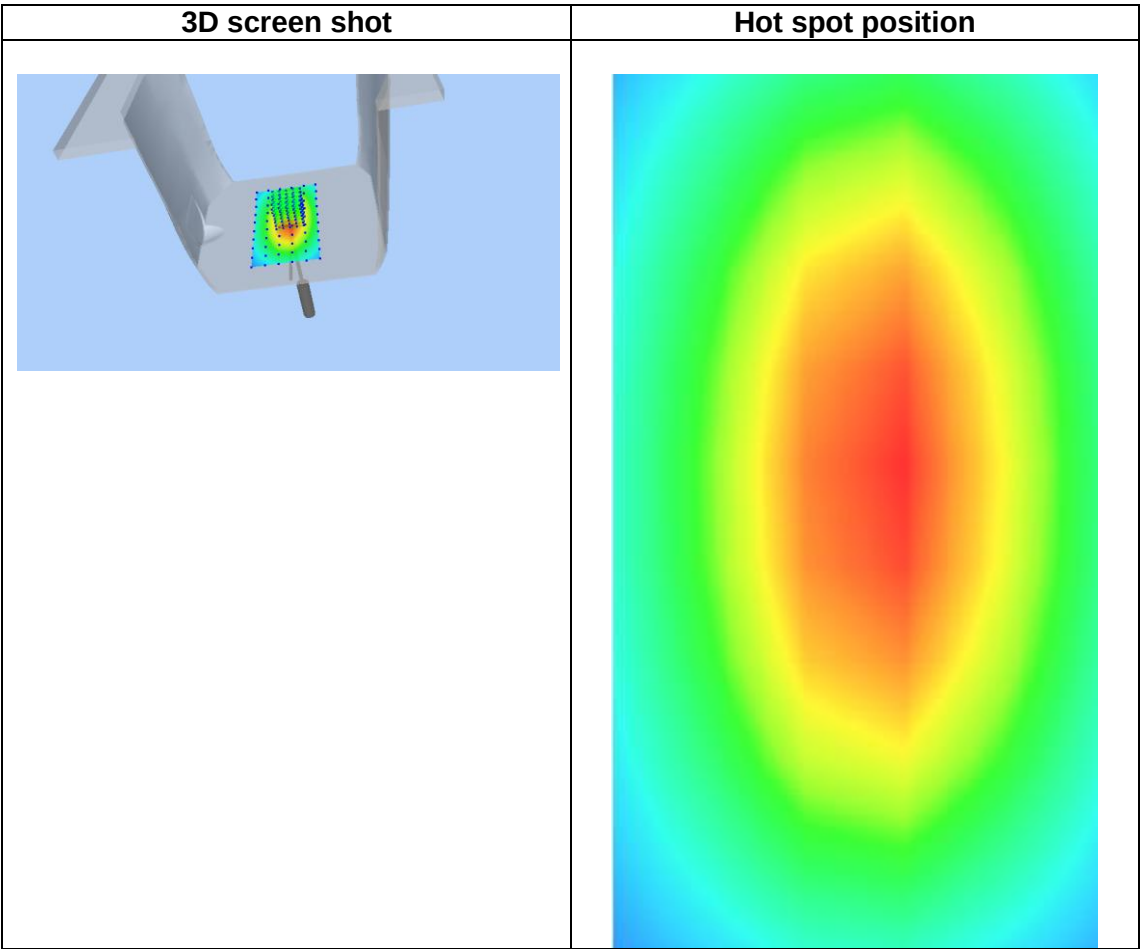
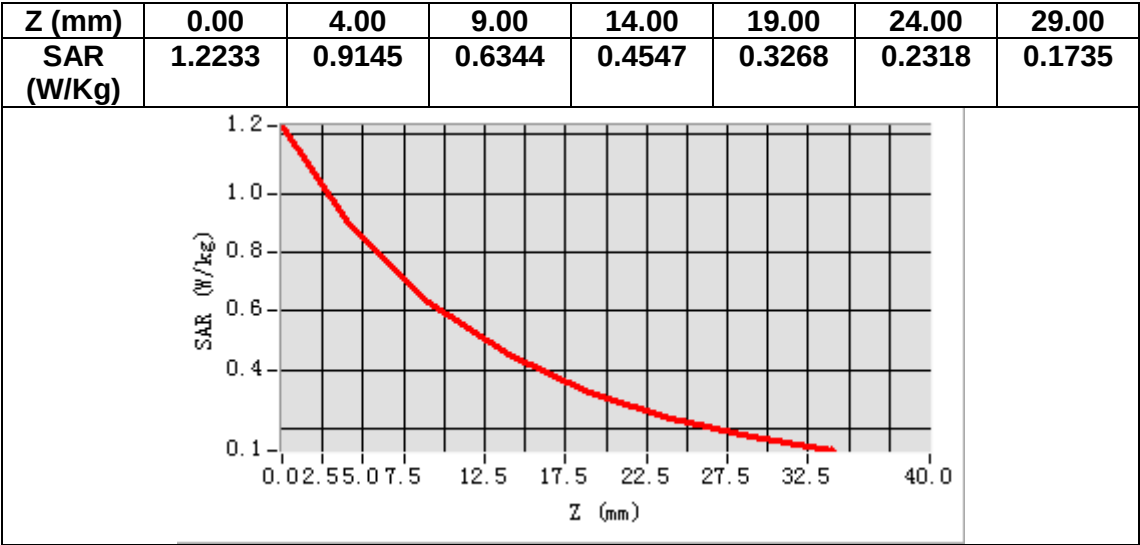
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.641123
SAR 1g (W/Kg)	0.981356



MEASUREMENT 5

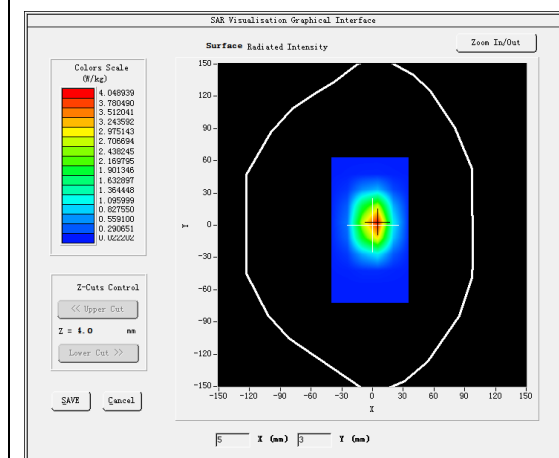
A. Experimental conditions.

<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>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

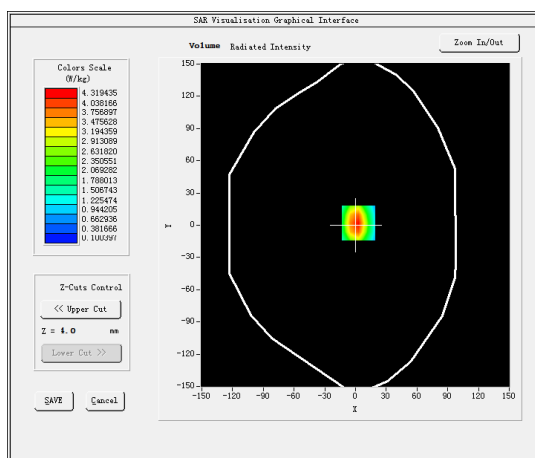
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.651237
Relative permittivity (imaginary part)	13.963229
Conductivity (S/m)	1.402367
Variation (%)	-3.16000

SURFACE SAR



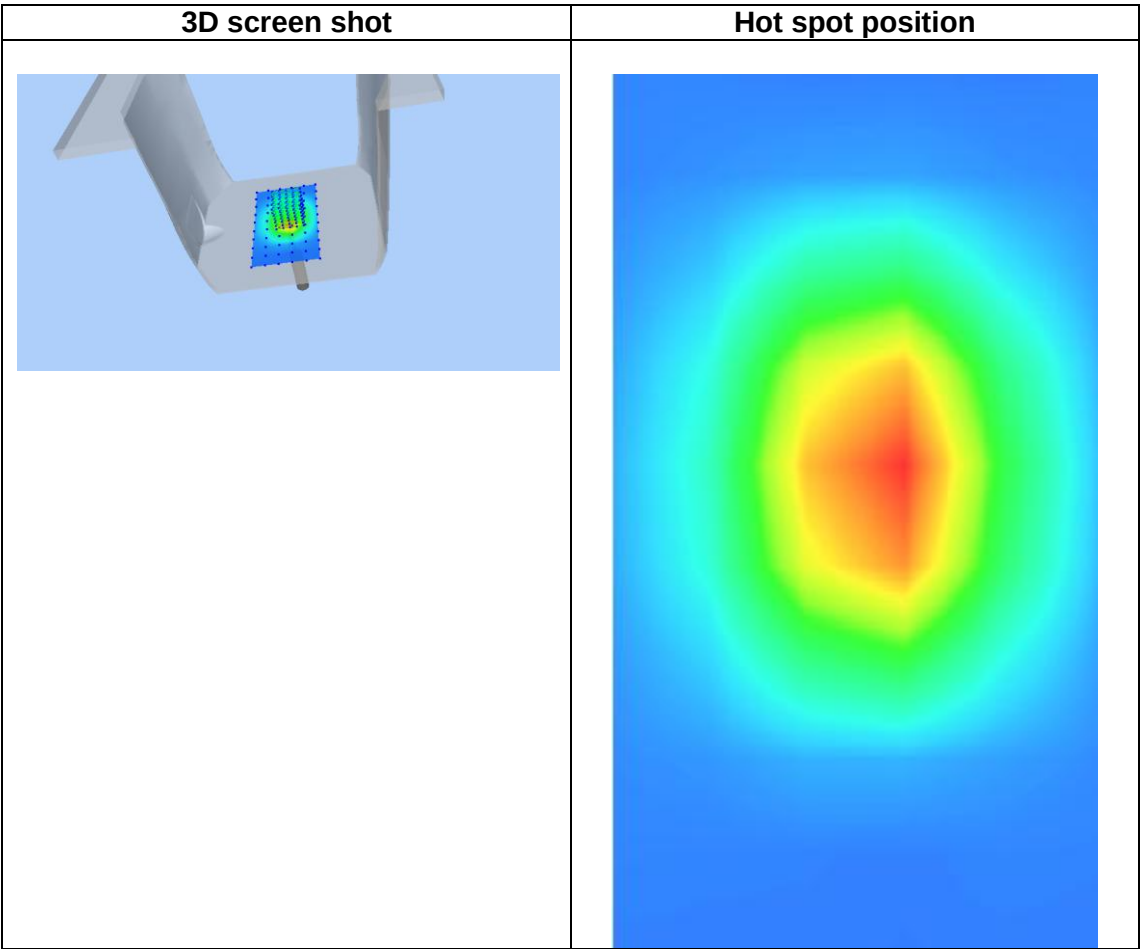
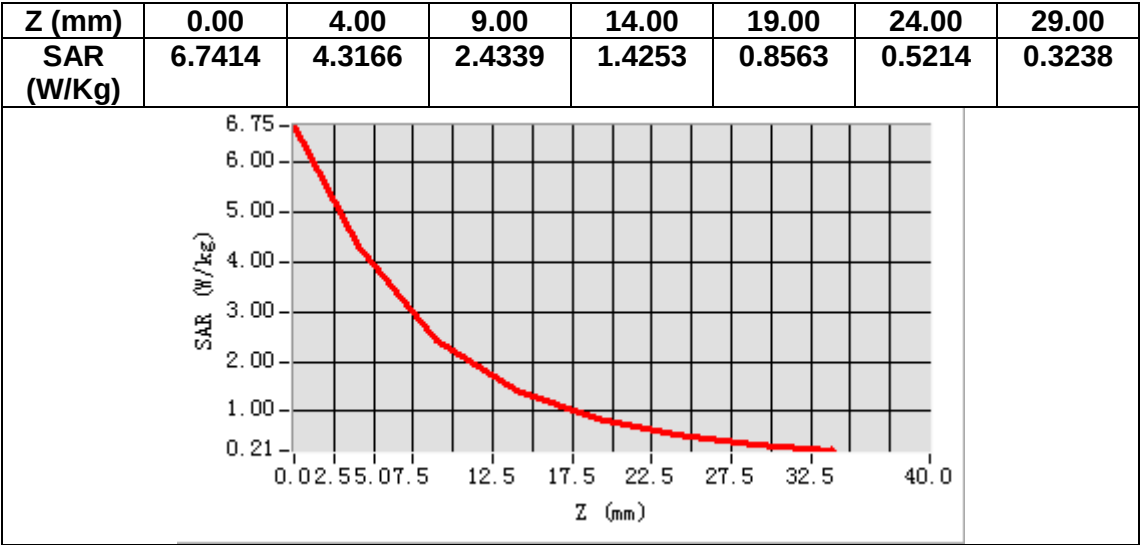
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.001397
SAR 1g (W/Kg)	3.809551



MEASUREMENT 6

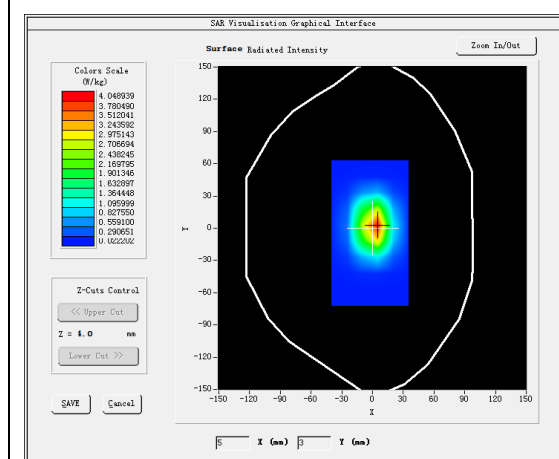
A. Experimental conditions.

<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>CW1800</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

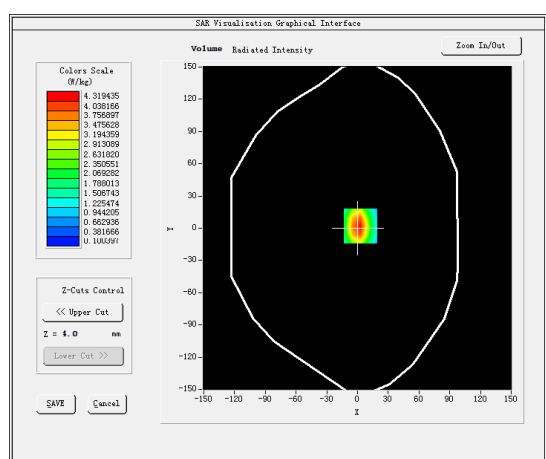
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	53.243510
Relative permittivity (imaginary part)	15.604016
Conductivity (S/m)	1.563096
Variation (%)	3.220000

SURFACE SAR



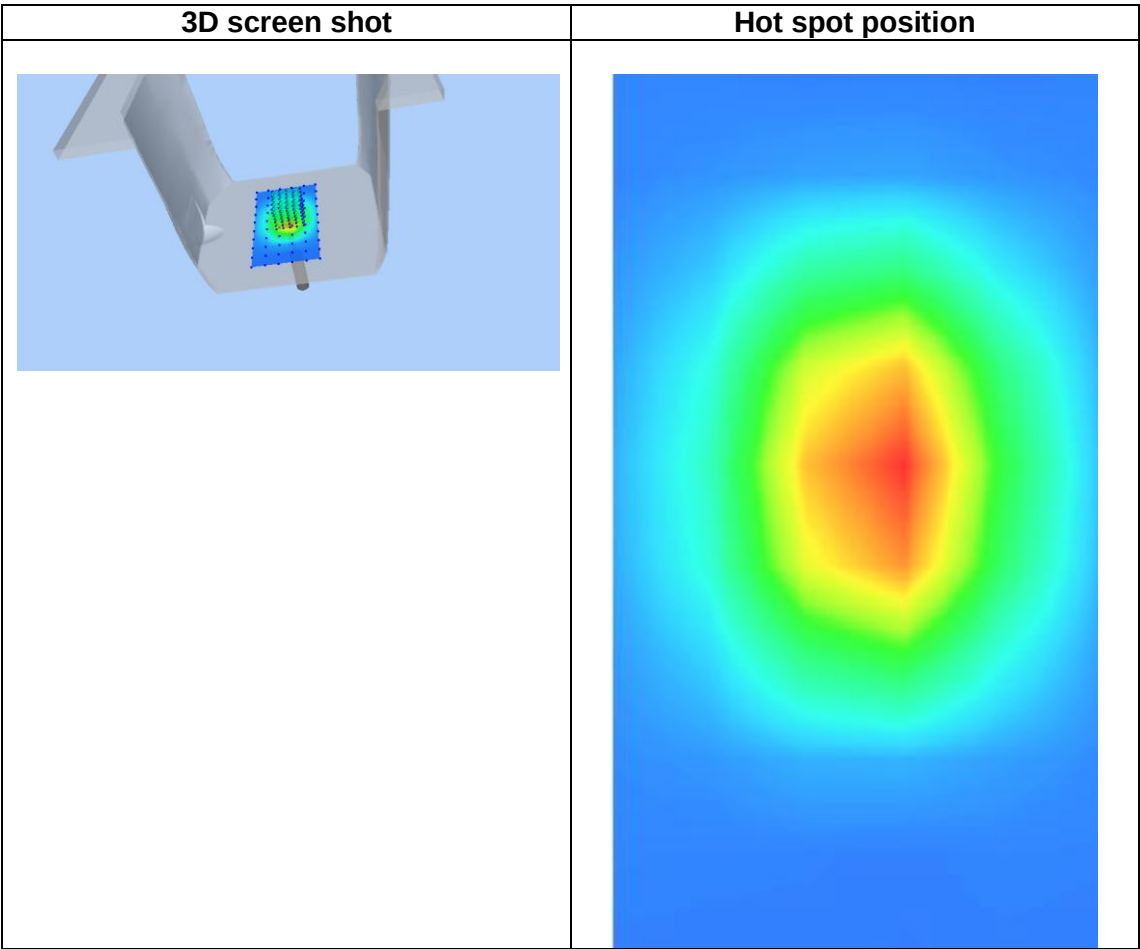
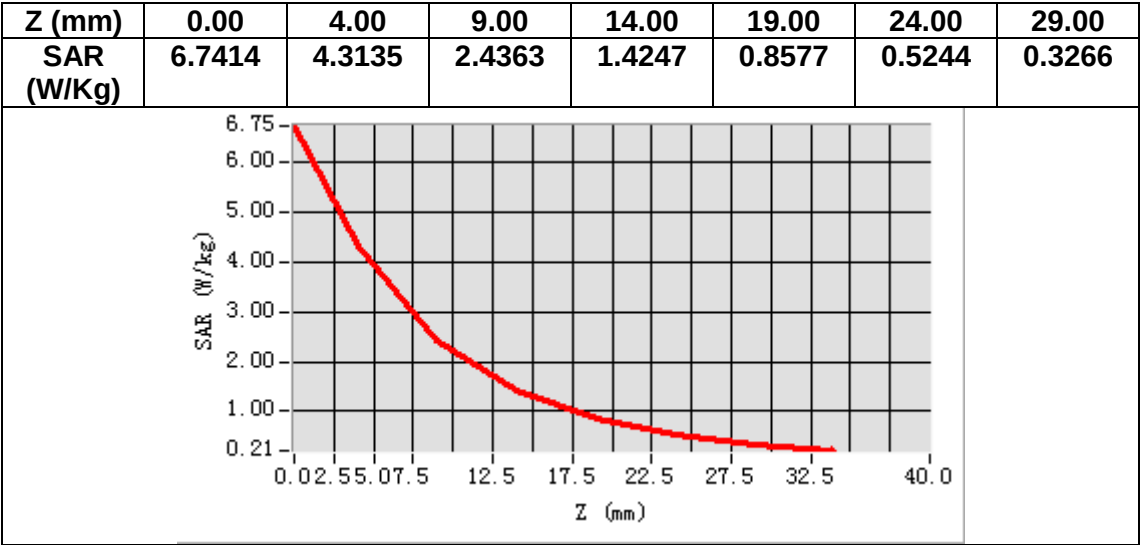
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.007379
SAR 1g (W/Kg)	3.815268



MEASUREMENT 7

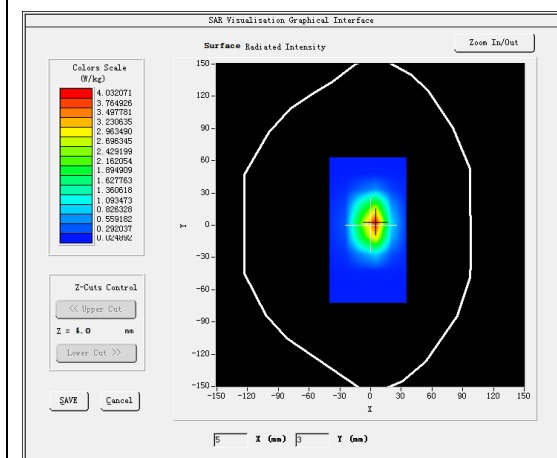
A. Experimental conditions.

<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>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>

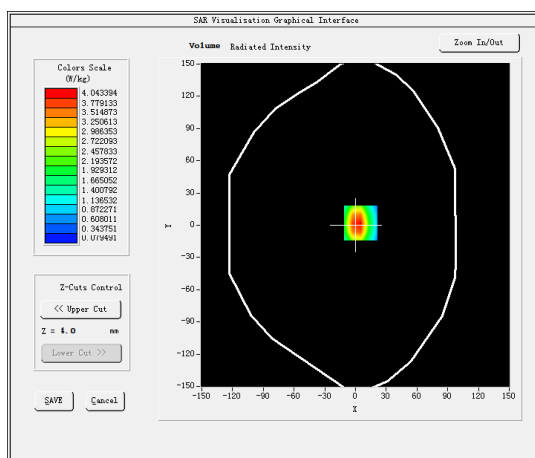
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.981287
Relative permittivity (imaginary part)	13.773008
Conductivity (S/m)	1.450336
Variation (%)	-1.430000

SURFACE SAR



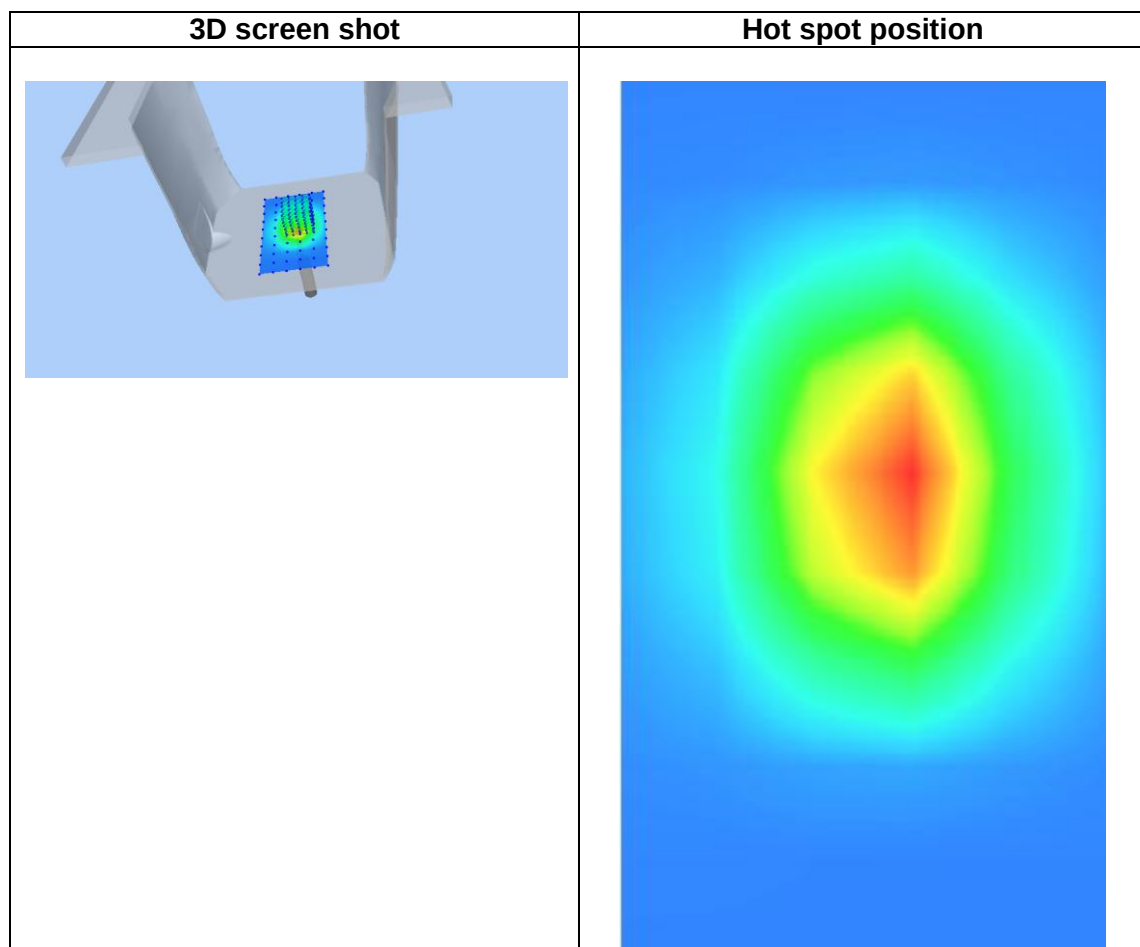
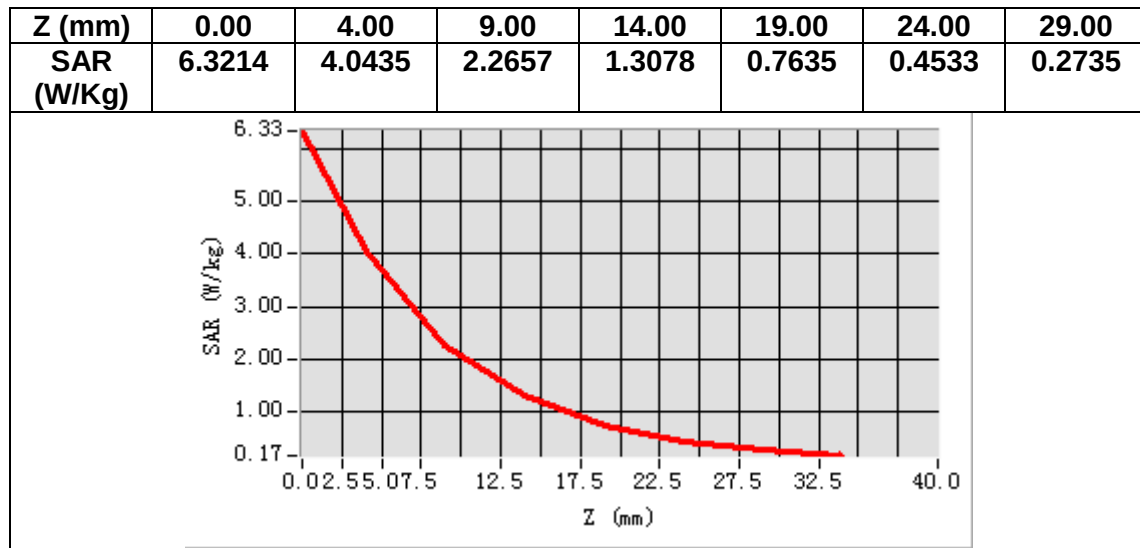
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	2.063456
SAR 1g (W/Kg)	3.895365



MEASUREMENT 8

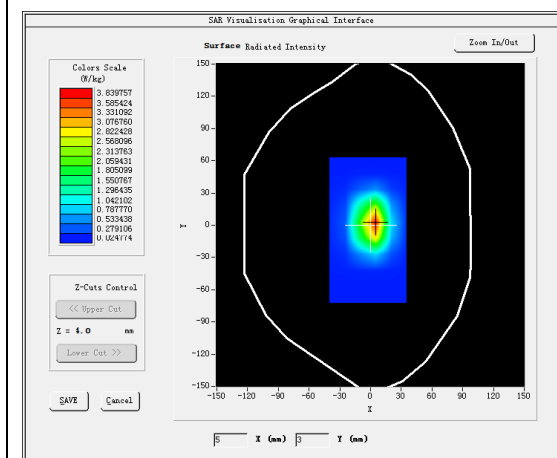
A. Experimental conditions.

<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>Dipole</u>
<u>Band</u>	<u>CW1900</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

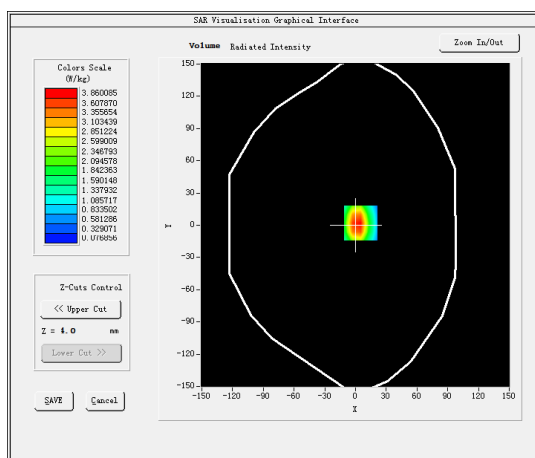
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	52.573335
Relative permittivity (imaginary part)	14.873503
Conductivity (S/m)	1.572566
Variation (%)	2.660000

SURFACE SAR



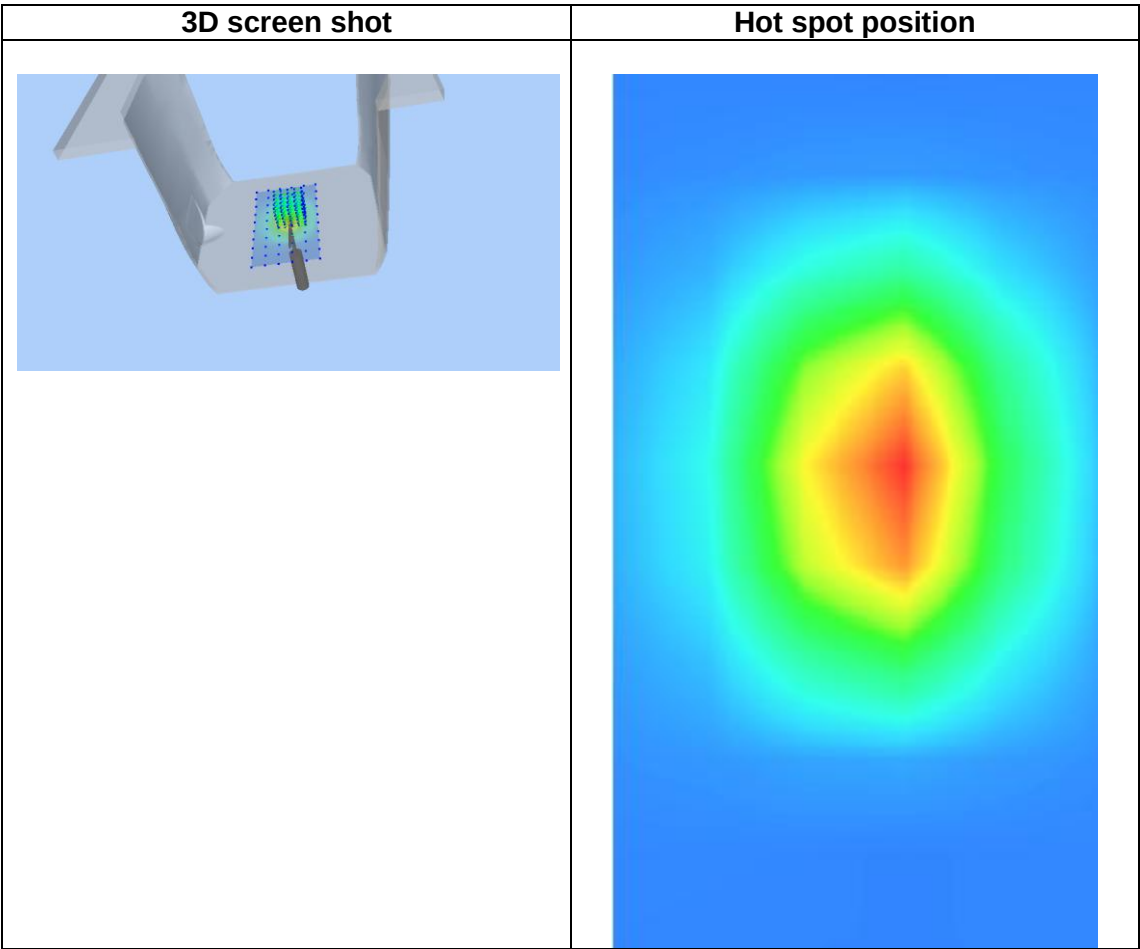
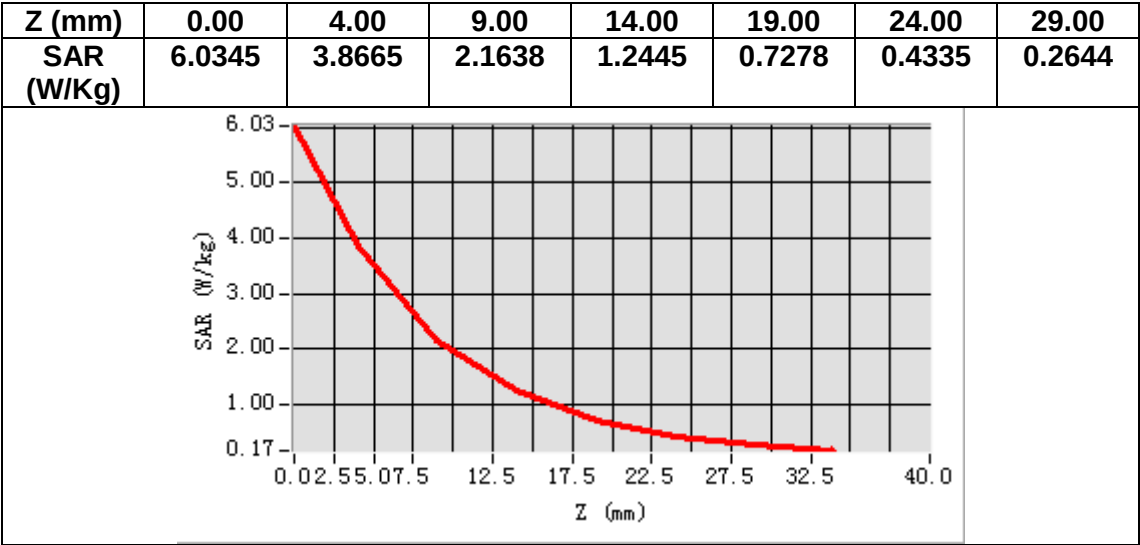
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.052329
SAR 1g (W/Kg)	3.908402



MEASUREMENT 9

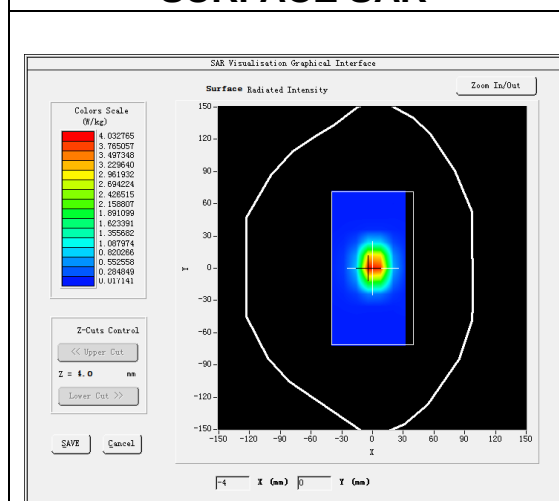
A. Experimental conditions.

<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>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

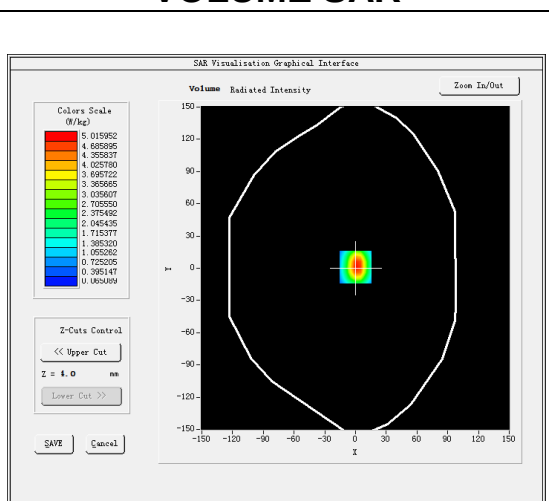
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.781421
Relative permittivity (imaginary part)	13.612631
Conductivity (S/m)	1.852663
Variation (%)	-3.350000

SURFACE SAR



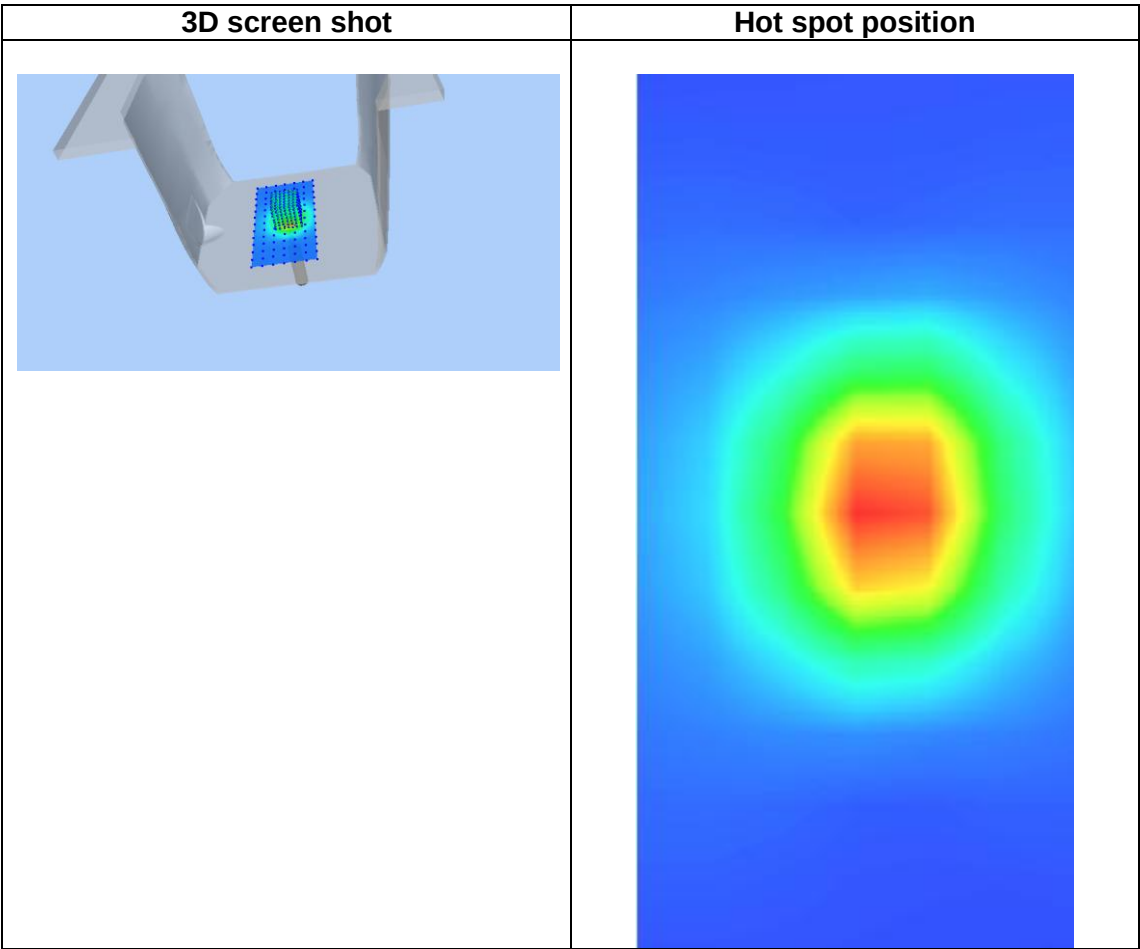
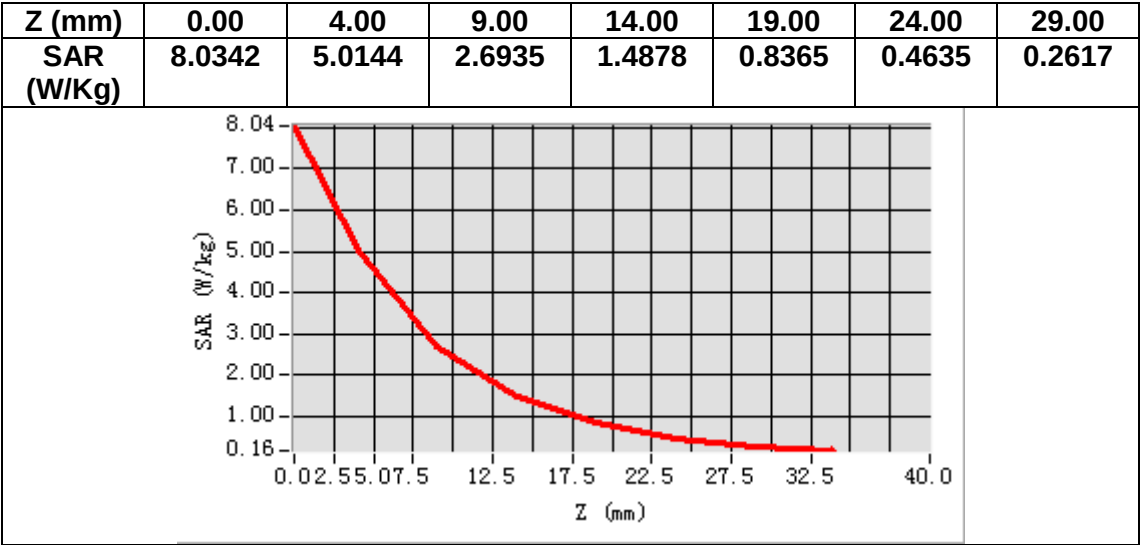
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.409375
SAR 1g (W/Kg)	5.371435



MEASUREMENT 10

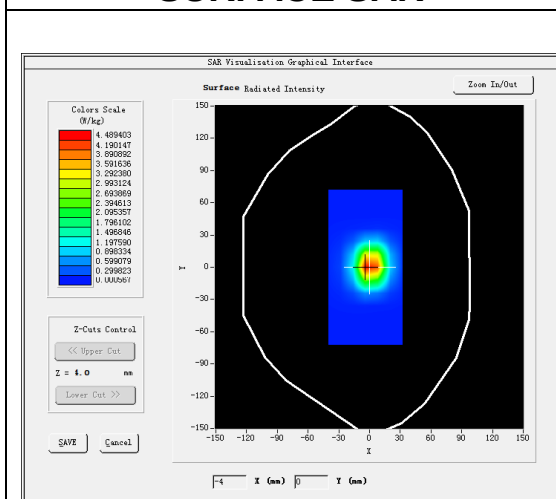
A. Experimental conditions.

<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>CW2450</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

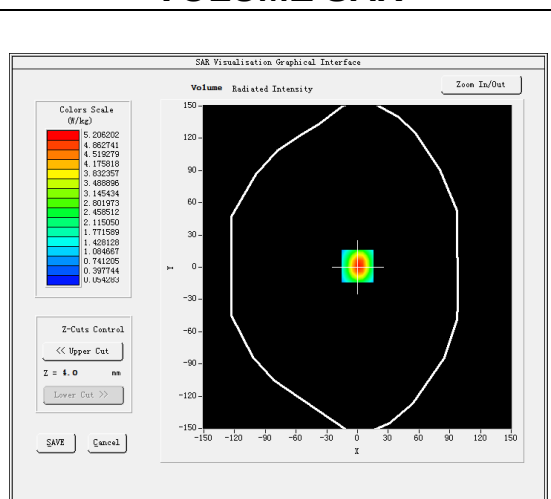
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.091497
Relative permittivity (imaginary part)	14.993566
Conductivity (S/m)	2.039816
Variation (%)	3.420000

SURFACE SAR



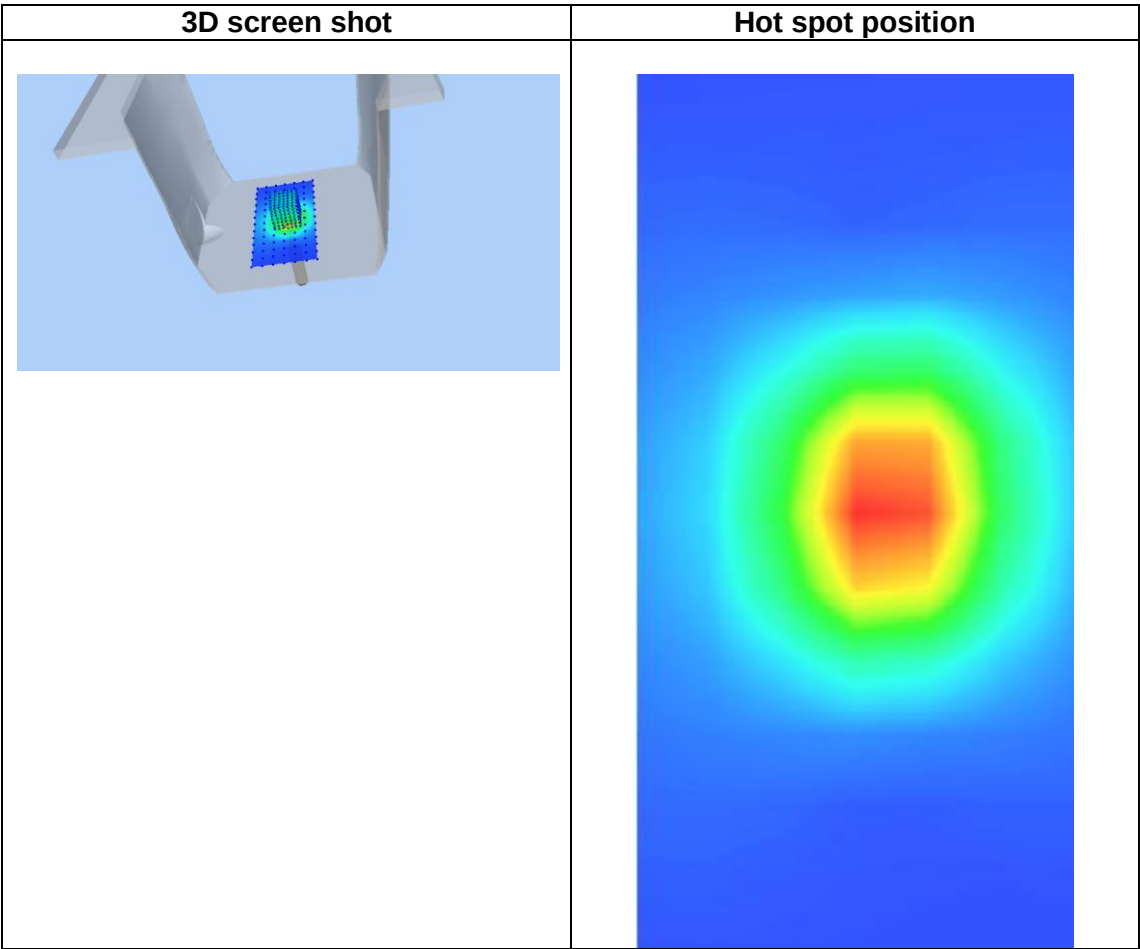
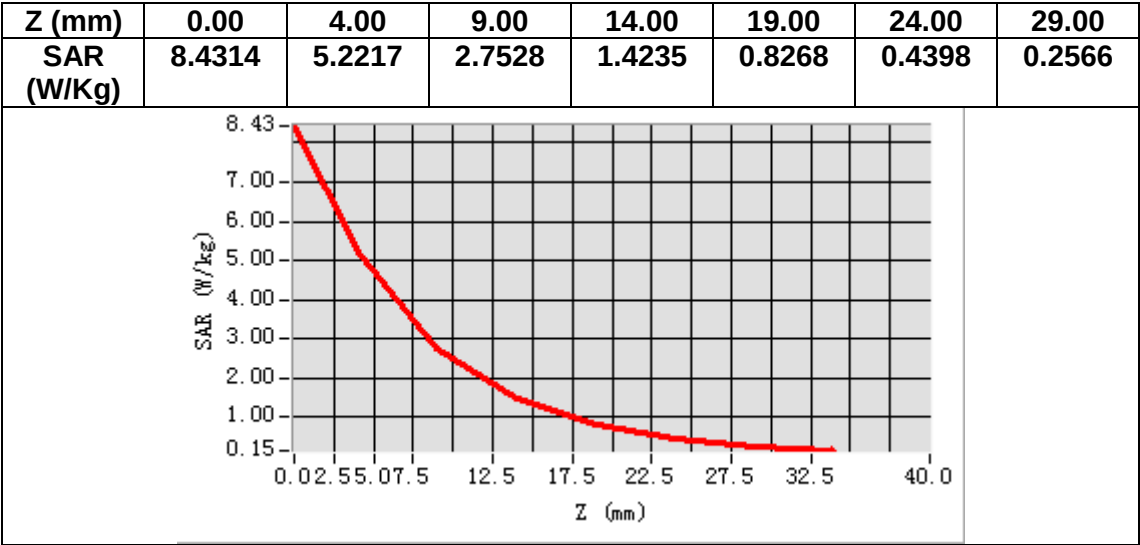
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.403285
SAR 1g (W/Kg)	5.293270



MEASUREMENT 11

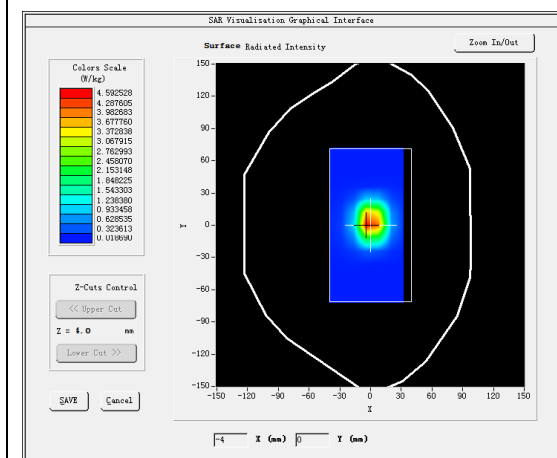
A. Experimental conditions.

<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>

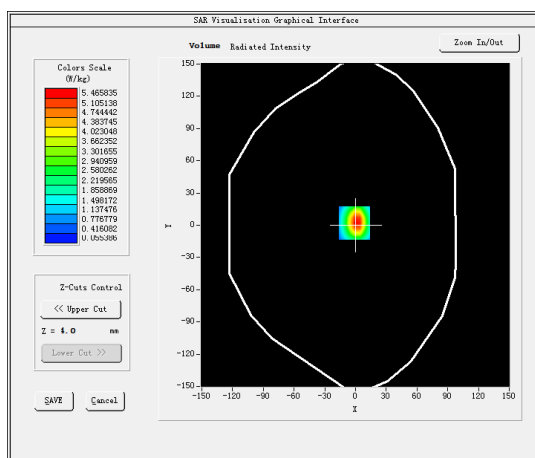
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.462638
Relative permittivity (imaginary part)	13.983997
Conductivity (S/m)	2.023631
Variation (%)	-4.040000

SURFACE SAR



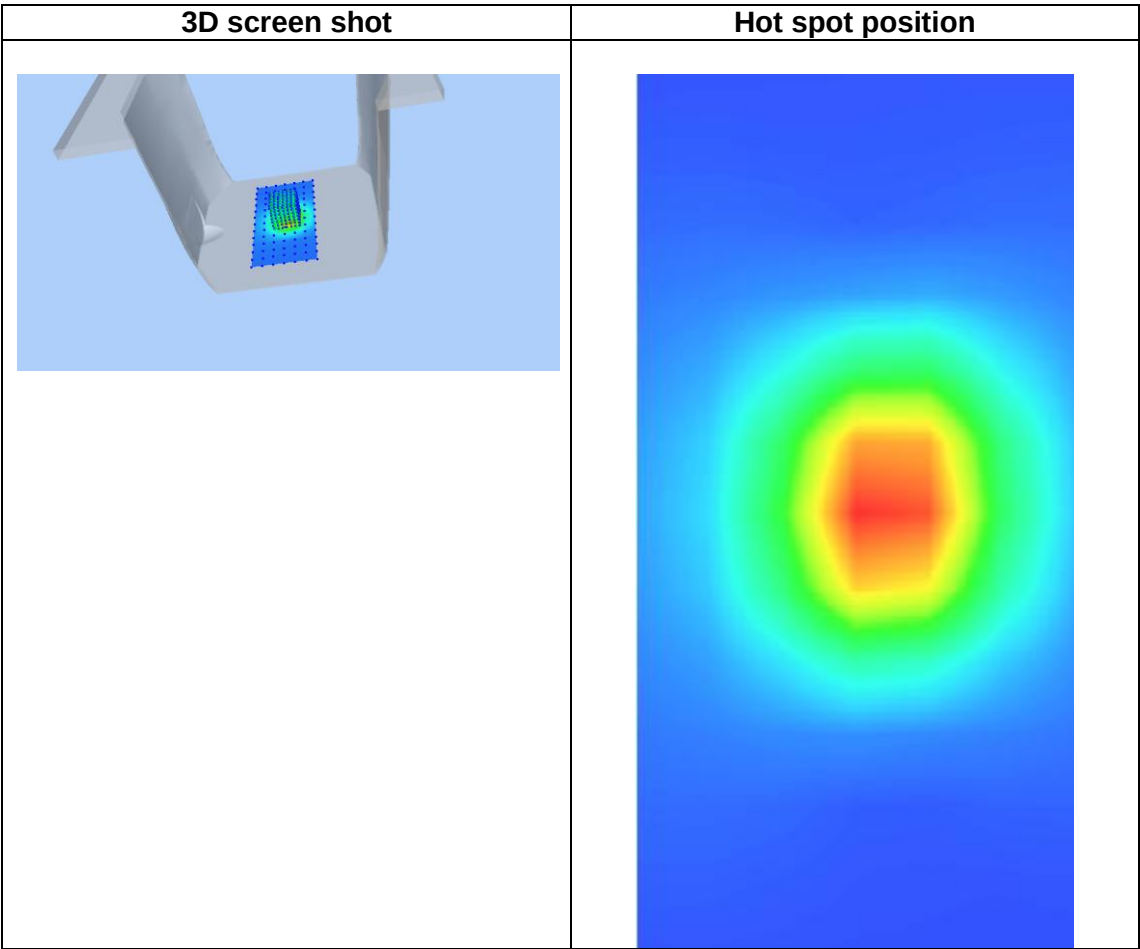
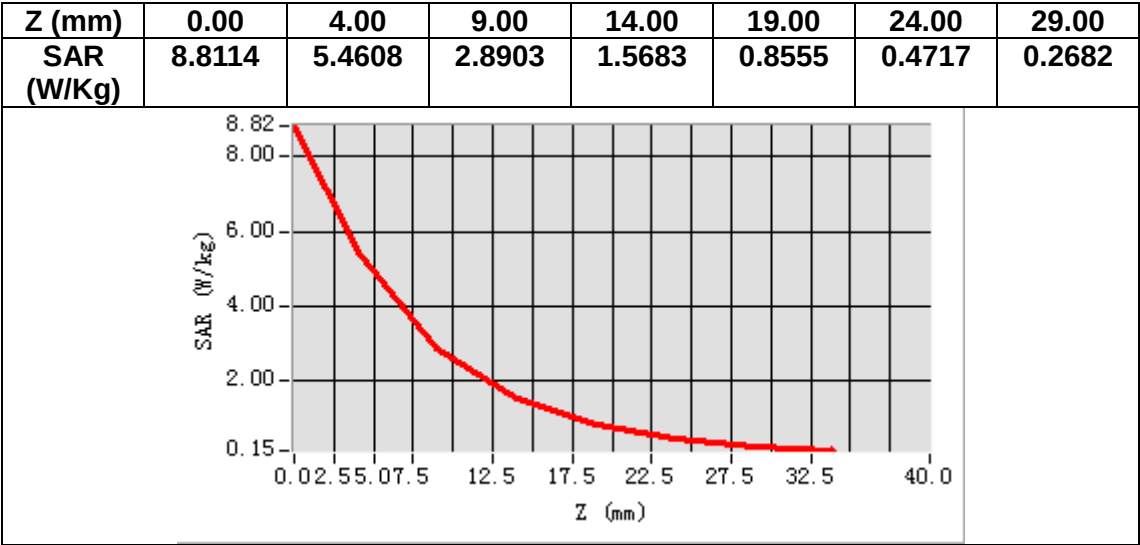
VOLUME SAR



Maximum location: X=-1.00, Y=2.00

SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.455205
SAR 1g (W/Kg)	5.564867



MEASUREMENT 12

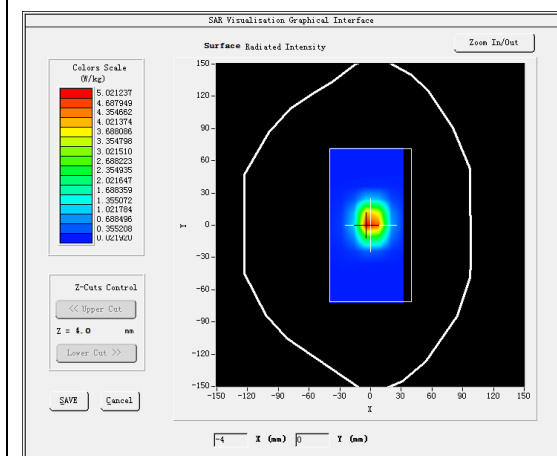
A. Experimental conditions.

<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>

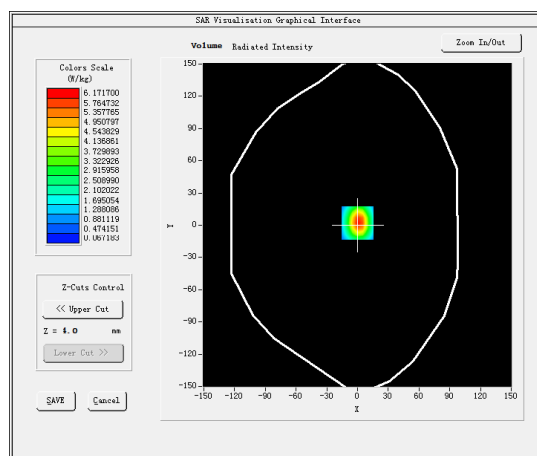
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	52.672866
Relative permittivity (imaginary part)	15.340101
Conductivity (S/m)	2.223465
Variation (%)	-1.220000

SURFACE SAR



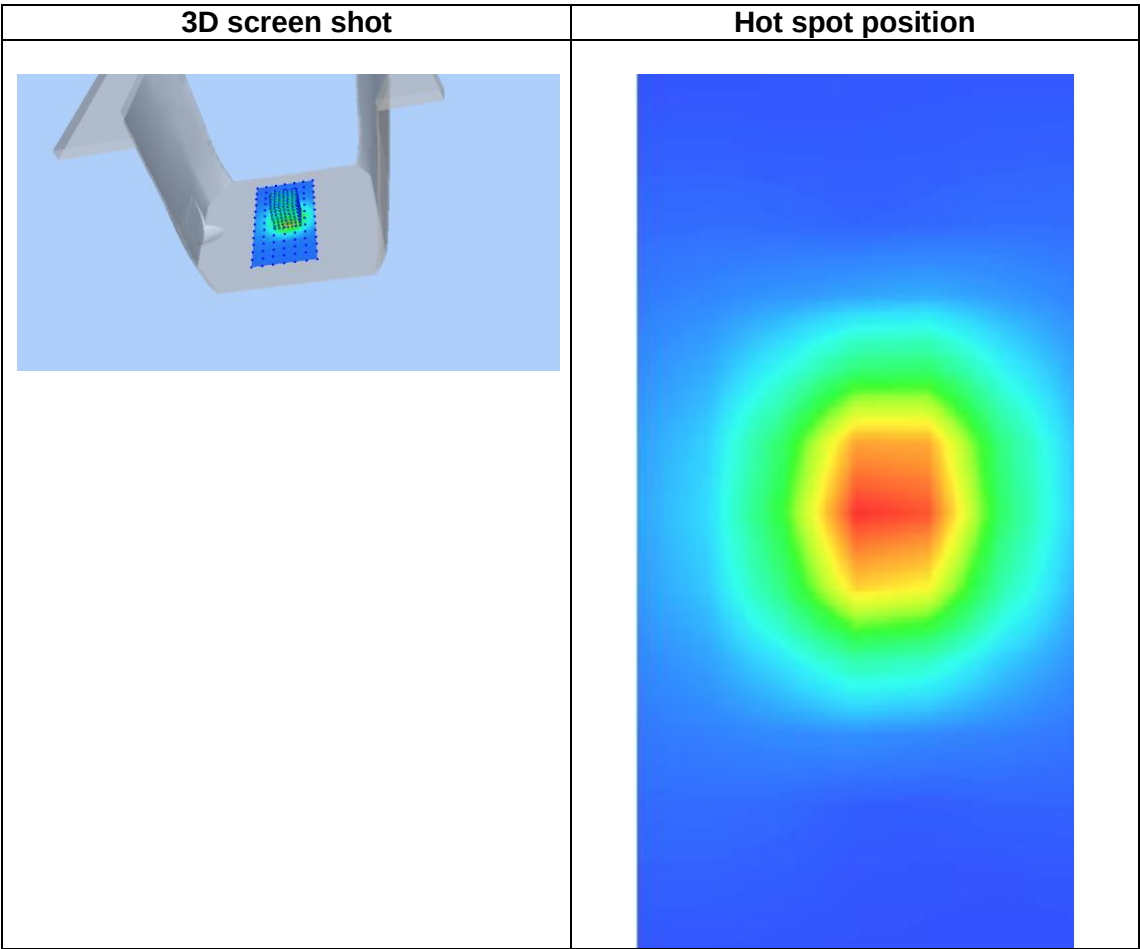
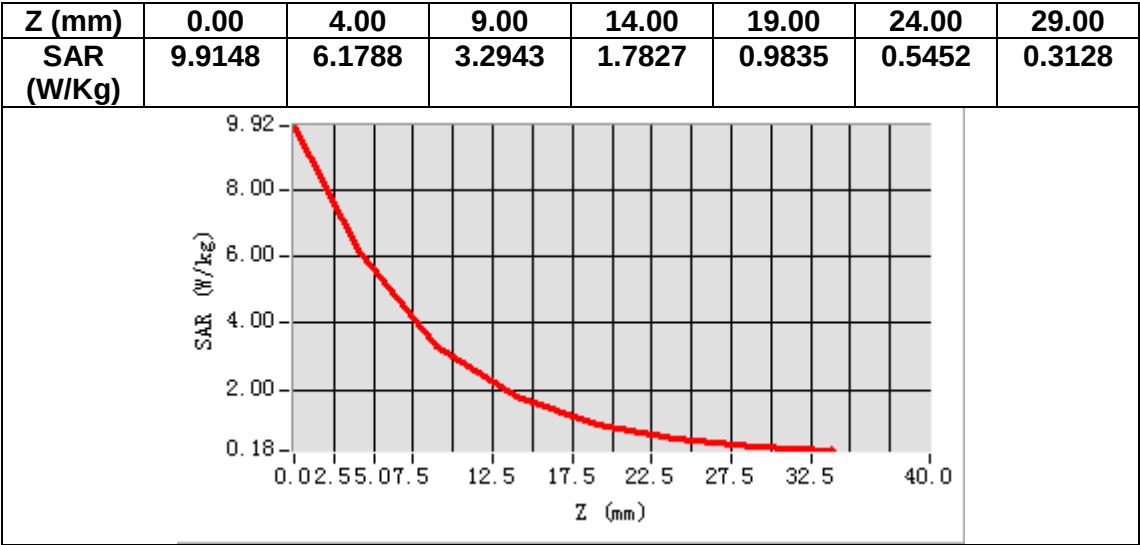
VOLUME SAR



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.378324
SAR 1g (W/Kg)	5.243188



MEASUREMENT 13

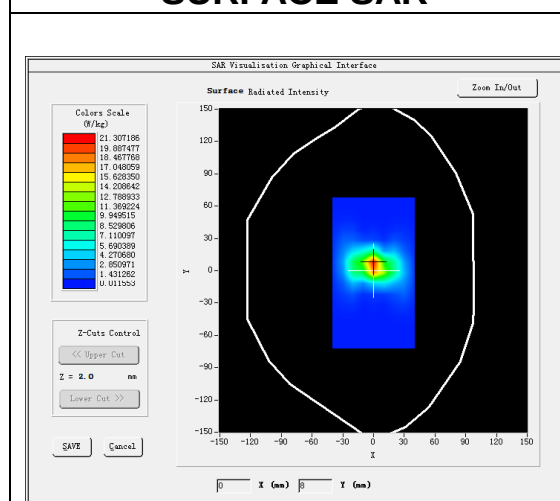
A. Experimental conditions.

<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>CW5200</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

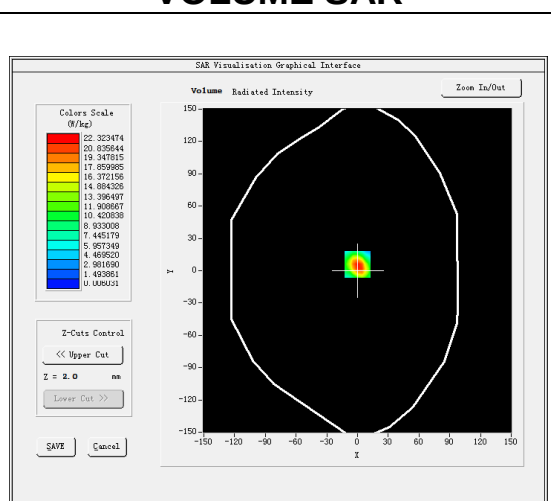
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.742204
Relative permittivity (imaginary part)	16.123542
Conductivity (S/m)	4.662321
Variation (%)	3.790000

SURFACE SAR



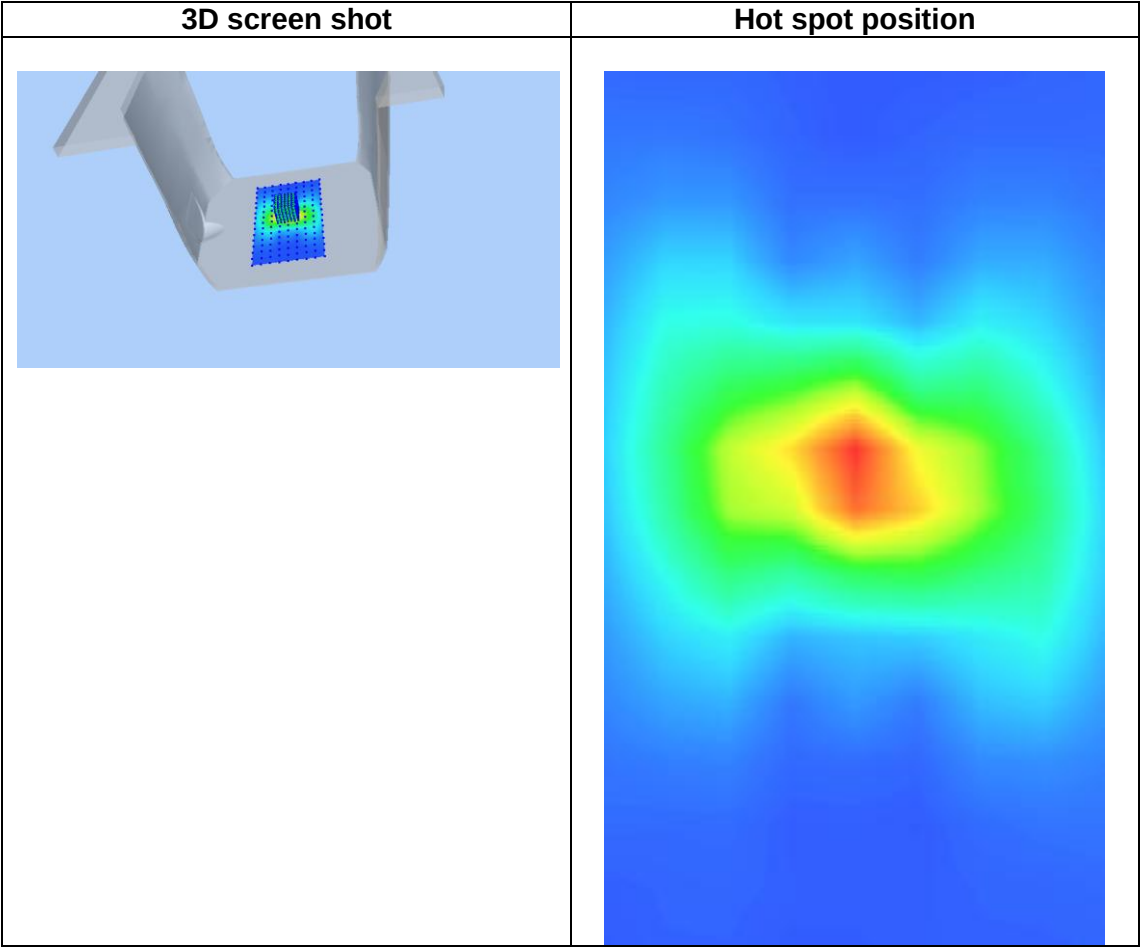
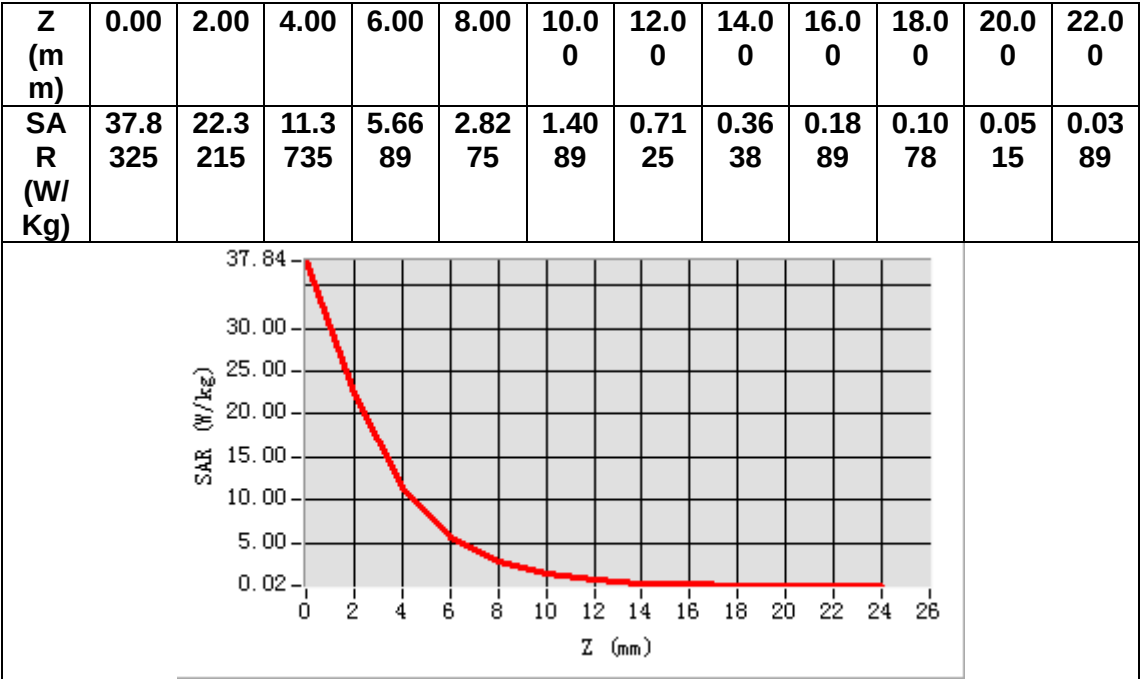
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.599495
SAR 1g (W/Kg)	16.084221



MEASUREMENT 14

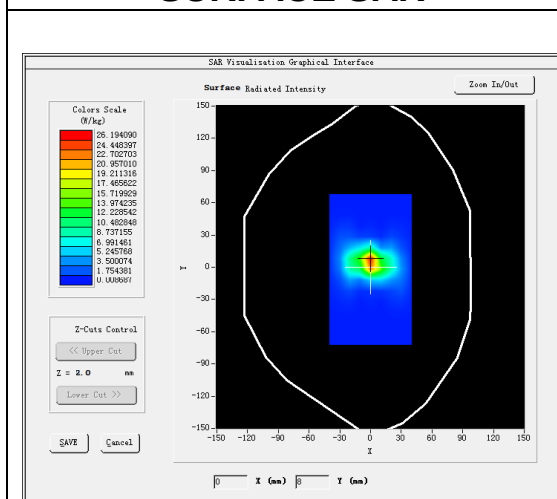
A. Experimental conditions.

<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>CW5200</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>CW (Crest factor: 1.0)</u>

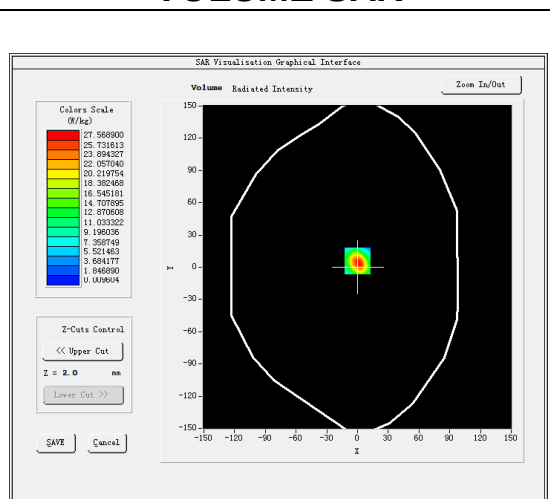
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.572845
Relative permittivity (imaginary part)	18.381441
Conductivity (S/m)	5.313842
Variation (%)	2.480000

SURFACE SAR



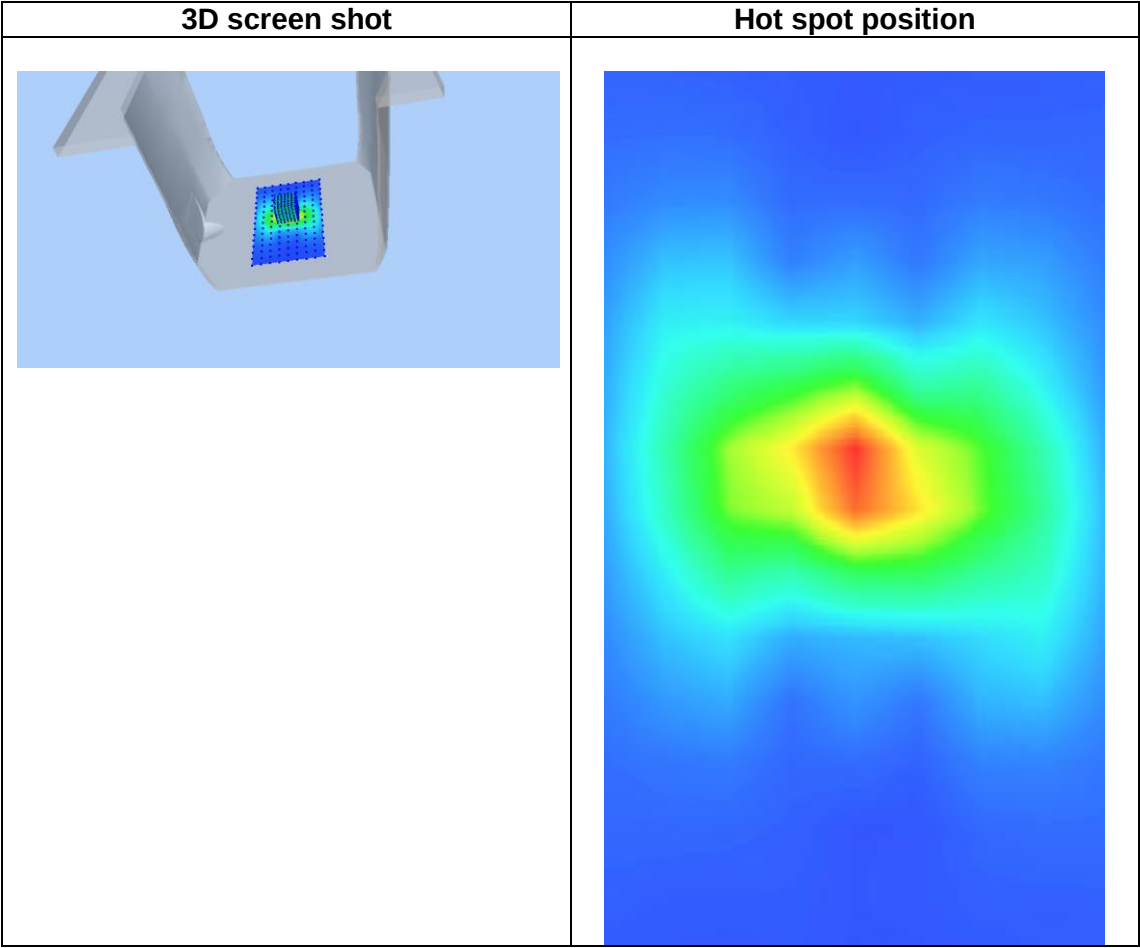
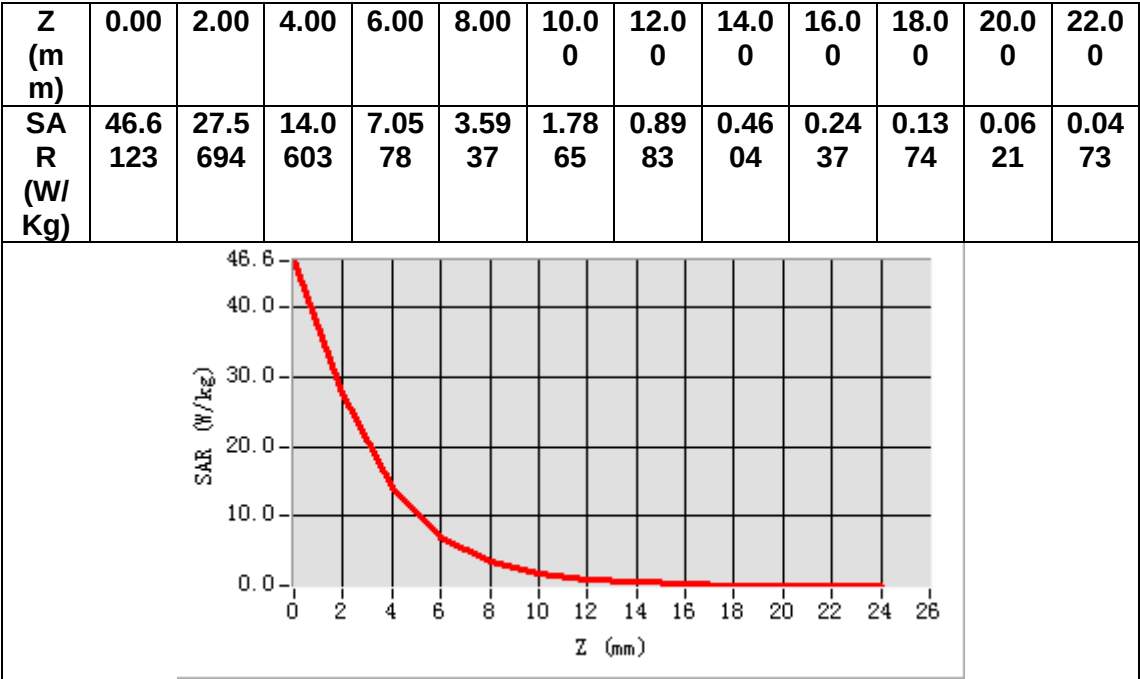
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.519184
SAR 1g (W/Kg)	15.690246



MEASUREMENT 15

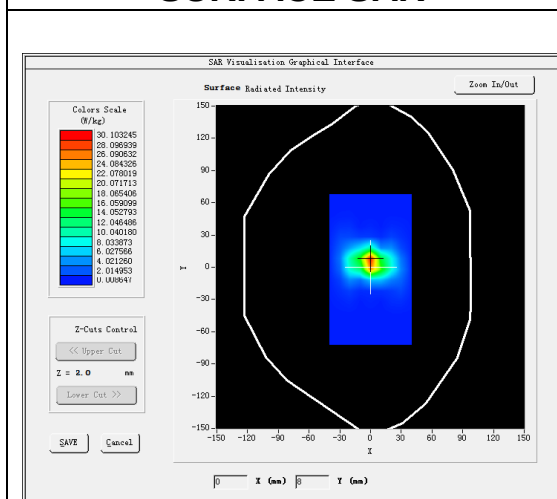
A. Experimental conditions.

<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>

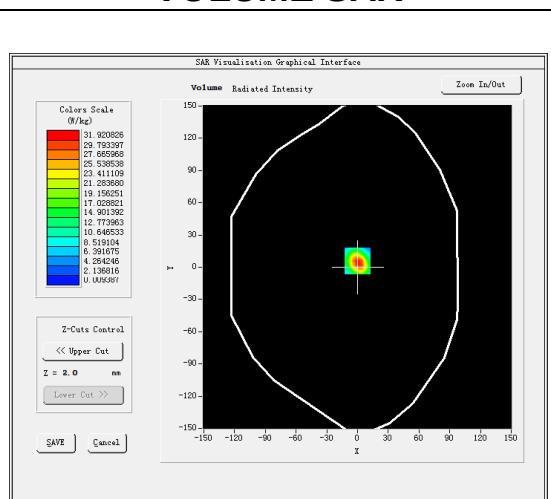
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.651512
Relative permittivity (imaginary part)	16.163082
Conductivity (S/m)	5.214981
Variation (%)	1.880000

SURFACE SAR



VOLUME SAR

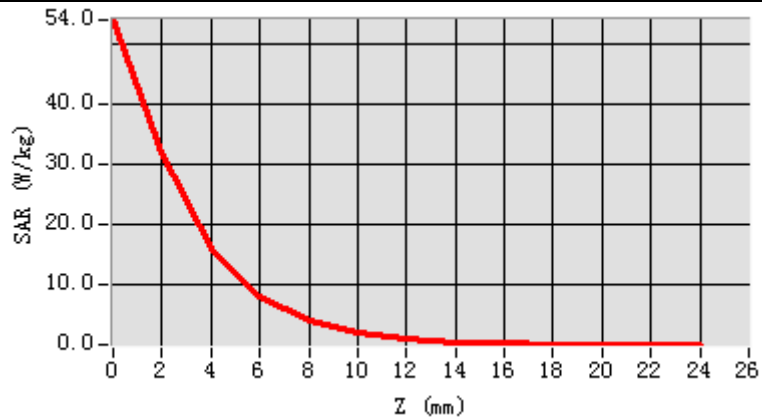


Maximum location: X=0.00, Y=6.00

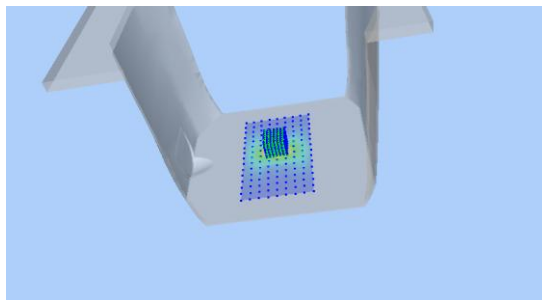
SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.278095
SAR 1g (W/Kg)	18.401093

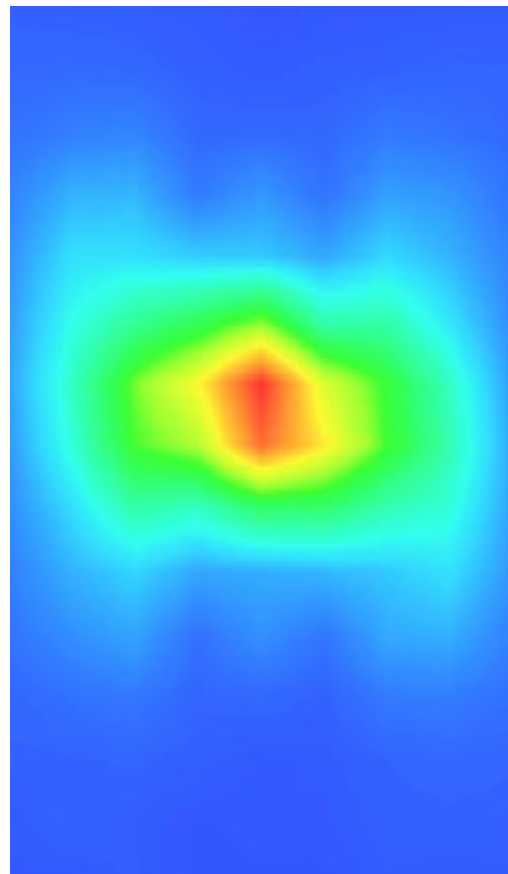
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SAR (W/ Kg)	54.0 314	31.9 255	16.1 778	8.17 36	4.08 78	2.05 89	1.03 25	0.51 36	0.27 78	0.15 89	0.07 25	0.04 46



3D screen shot



Hot spot position



MEASUREMENT 16

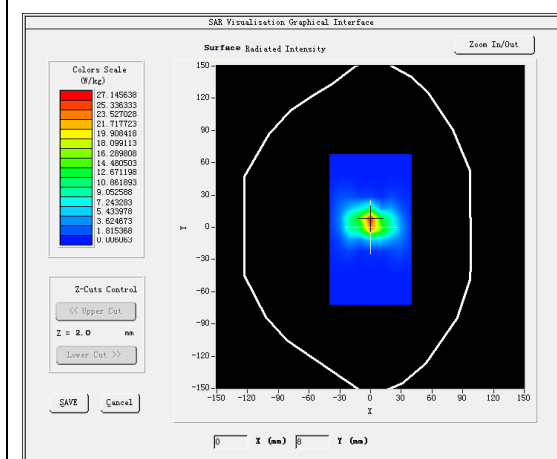
A. Experimental conditions.

<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>

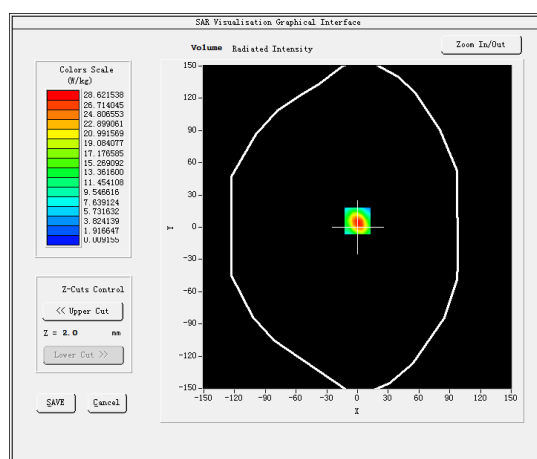
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.260523
Relative permittivity (imaginary part)	18.900043
Conductivity (S/m)	6.091524
Variation (%)	-3.340000

SURFACE SAR



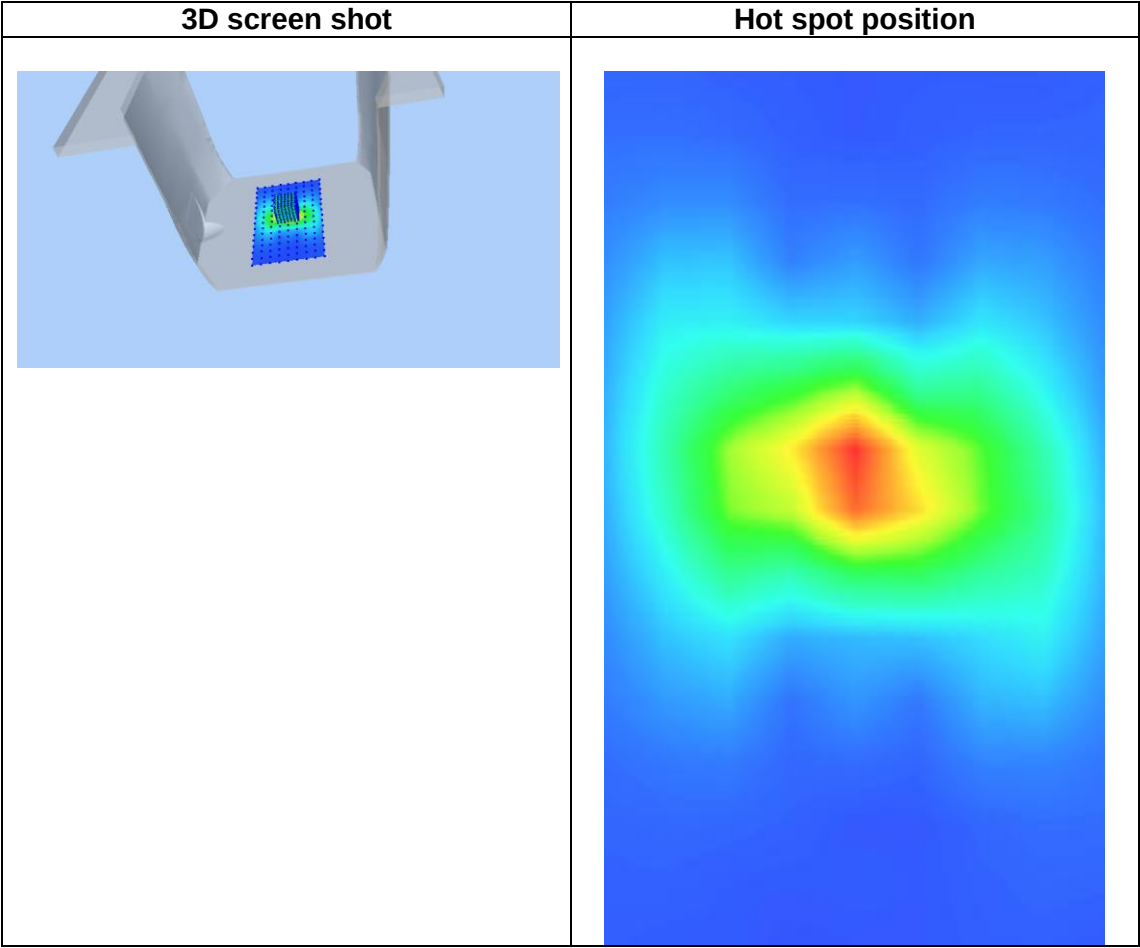
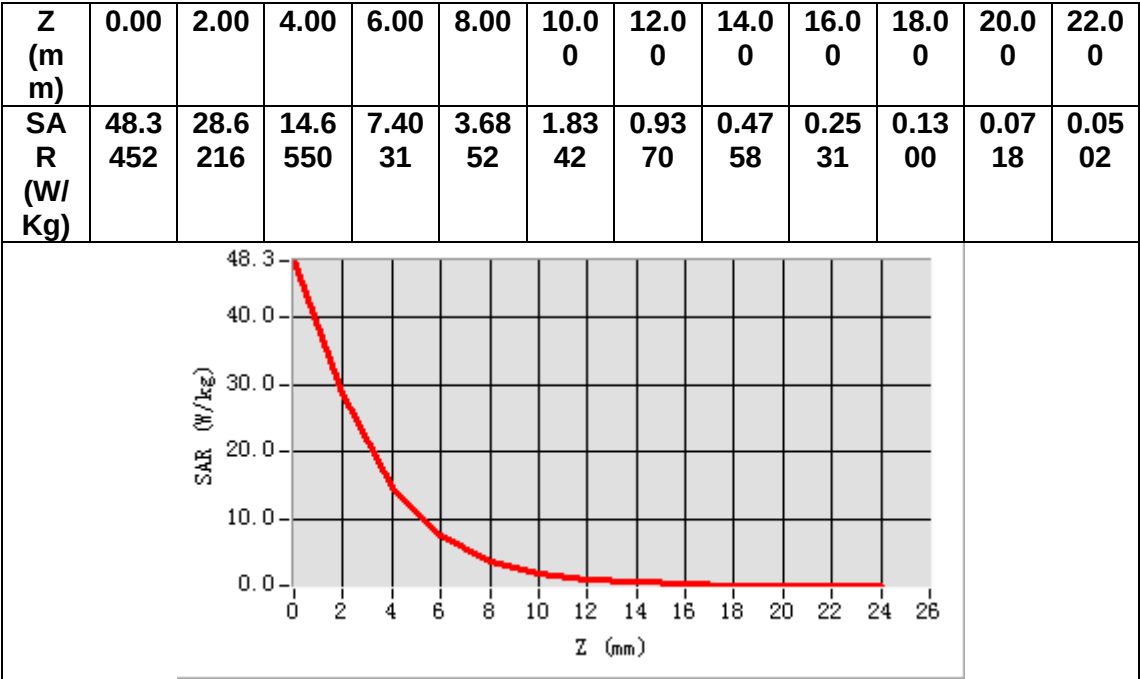
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.843184
SAR 1g (W/Kg)	16.927052



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 1

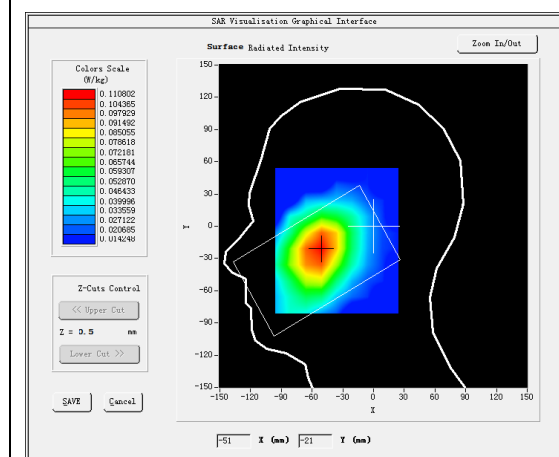
A. Experimental conditions.

<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>

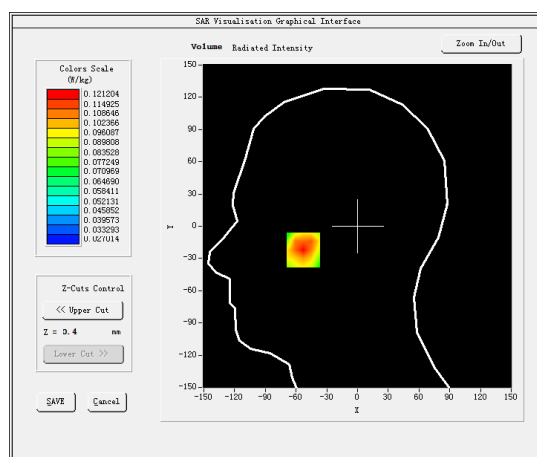
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.460960
Relative permittivity (imaginary part)	20.131540
Conductivity (S/m)	0.935446
Variation (%)	2.960000

SURFACE SAR



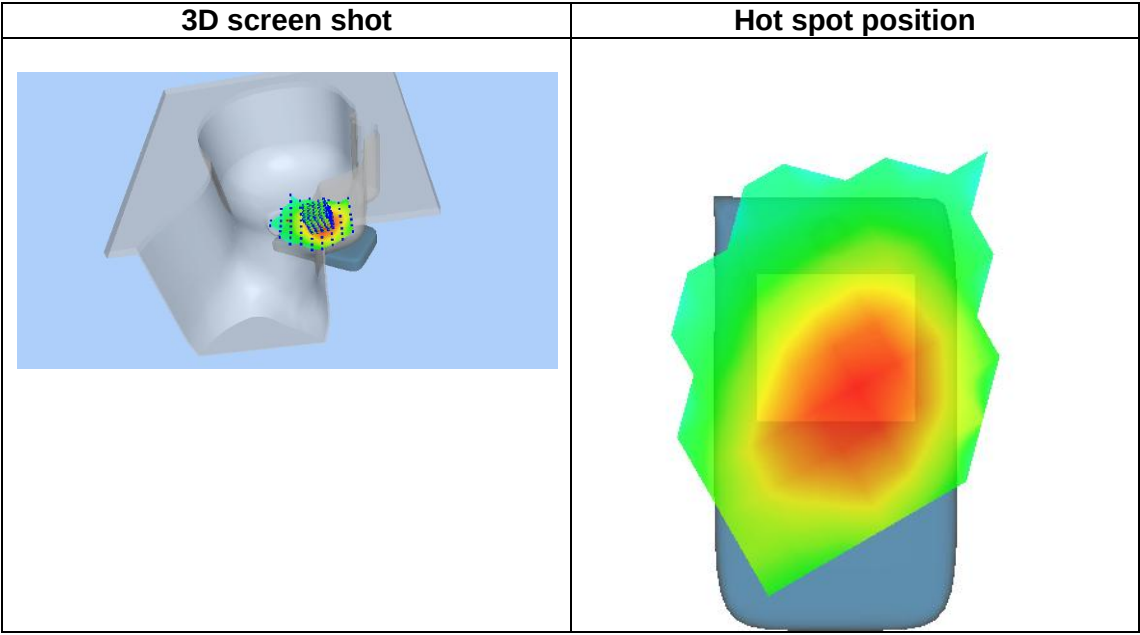
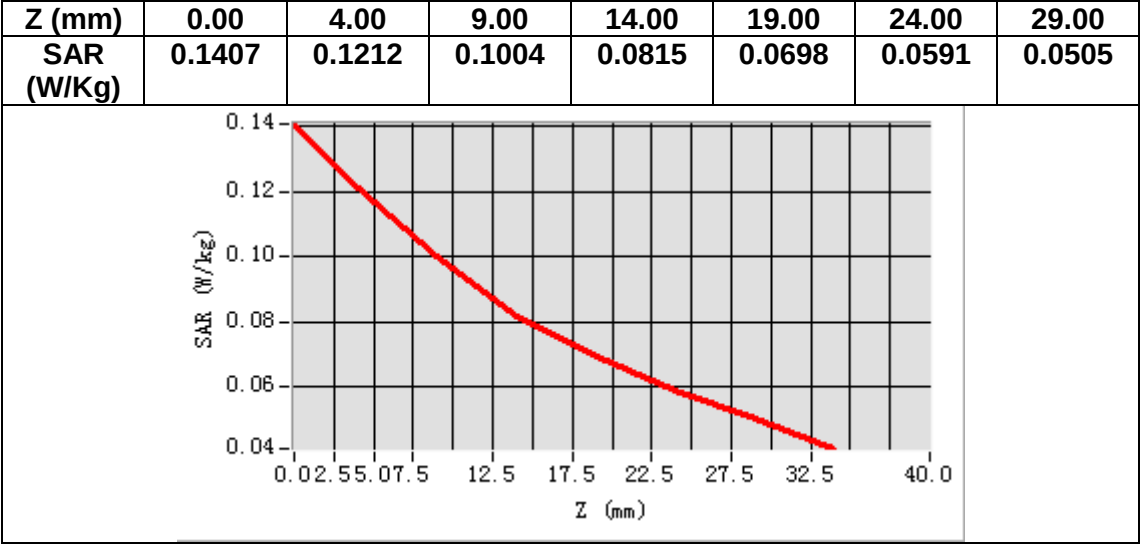
VOLUME SAR



Maximum location: X=-53.00, Y=-22.00

SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.090705
SAR 1g (W/Kg)	0.120896



MEASUREMENT 2

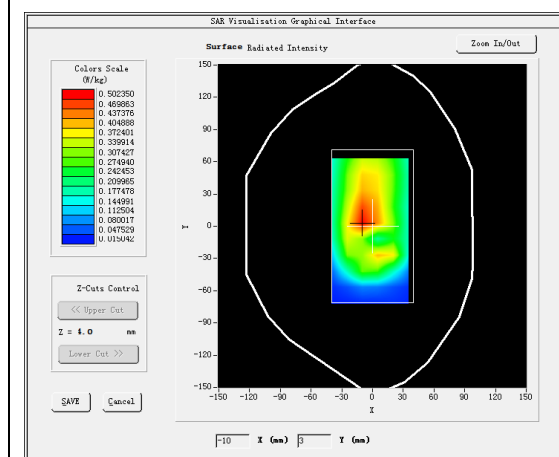
A. Experimental conditions.

<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>

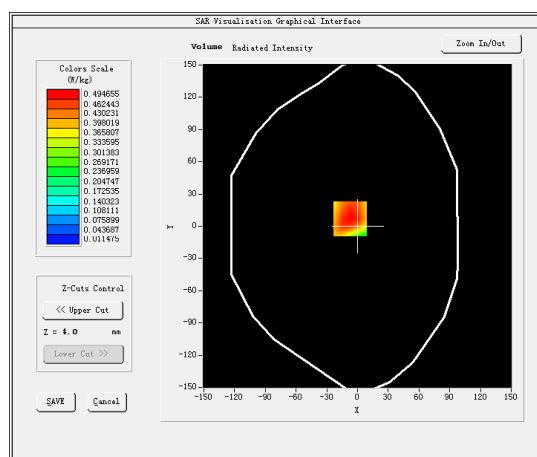
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.289581
Relative permittivity (imaginary part)	21.772739
Conductivity (S/m)	1.011707
Variation (%)	-3.489998

SURFACE SAR



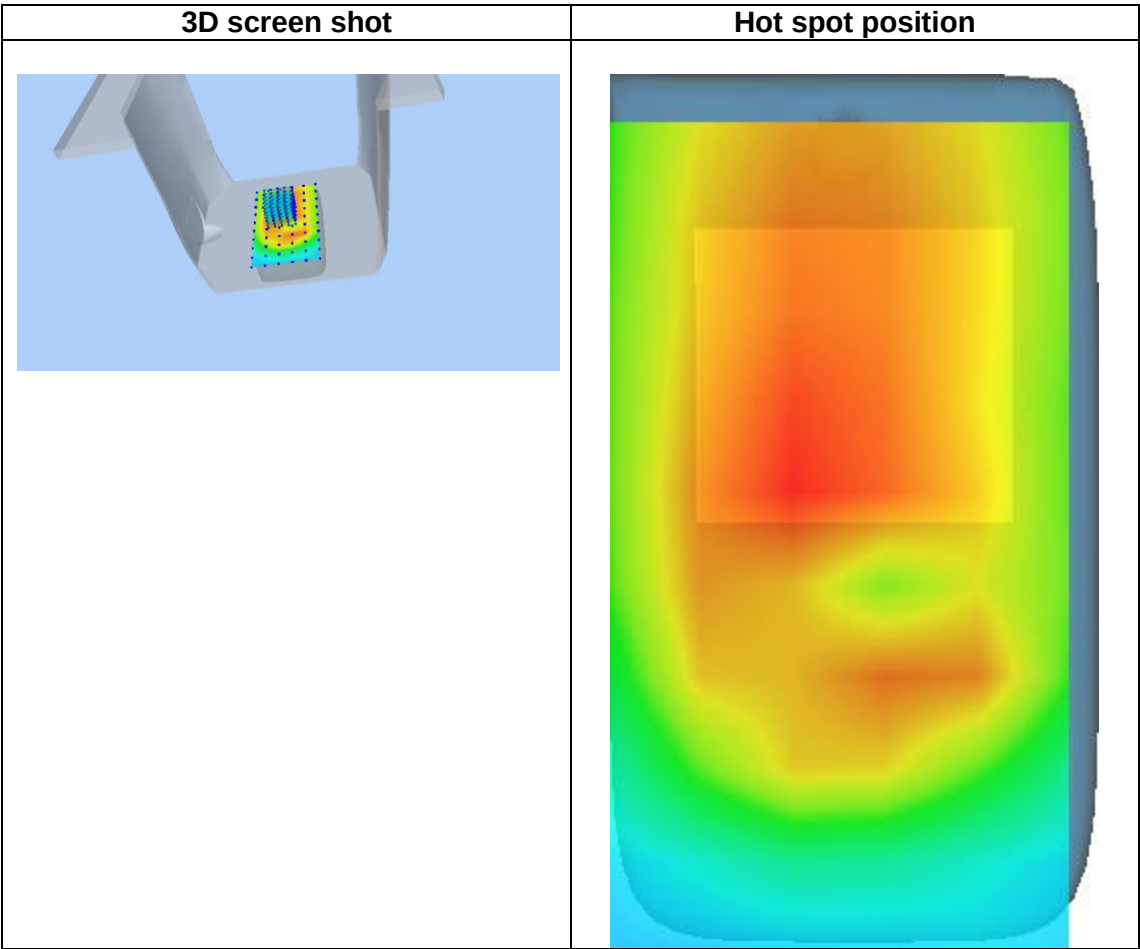
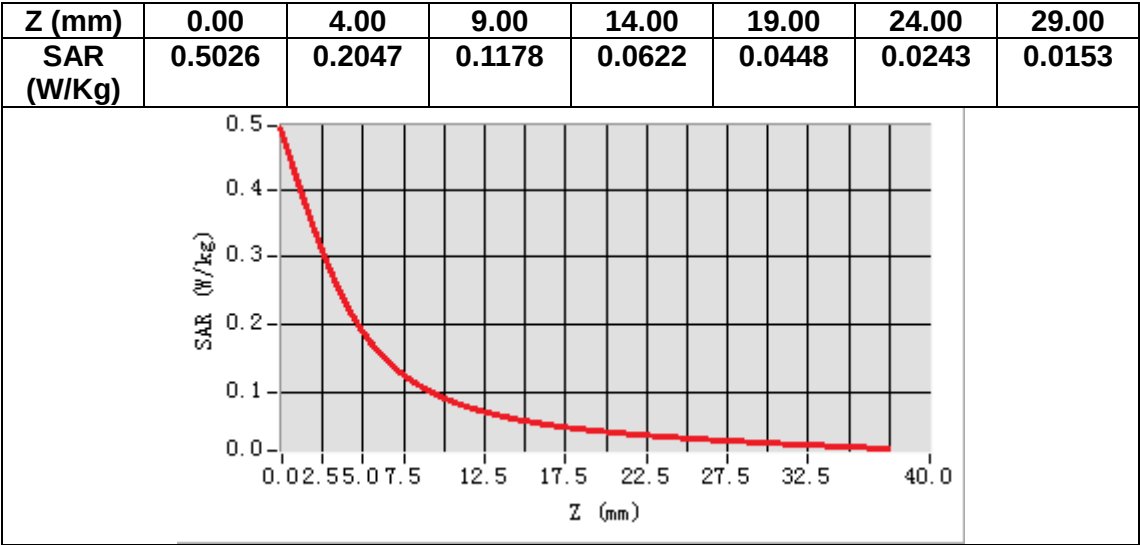
VOLUME SAR



Maximum location: X=-7.00, Y=7.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.234424
SAR 1g (W/Kg)	0.455334



MEASUREMENT 3

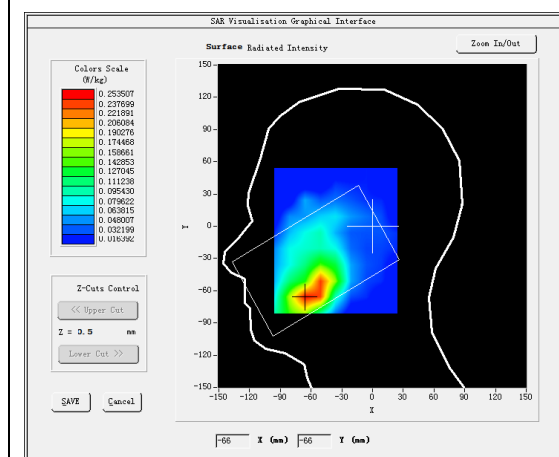
A. Experimental conditions.

<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>

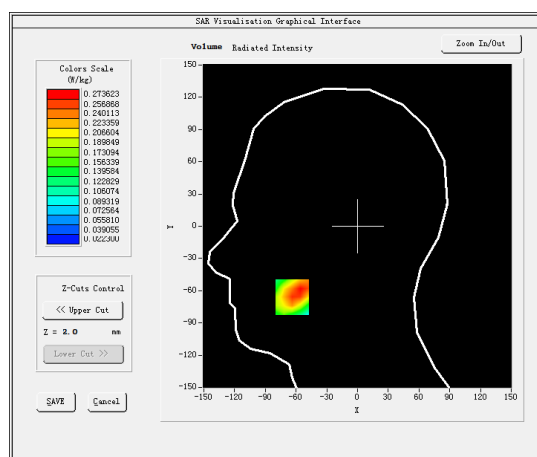
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.018200
Relative permittivity (imaginary part)	13.714300
Conductivity (S/m)	1.432382
Variation (%)	-4.900000

SURFACE SAR



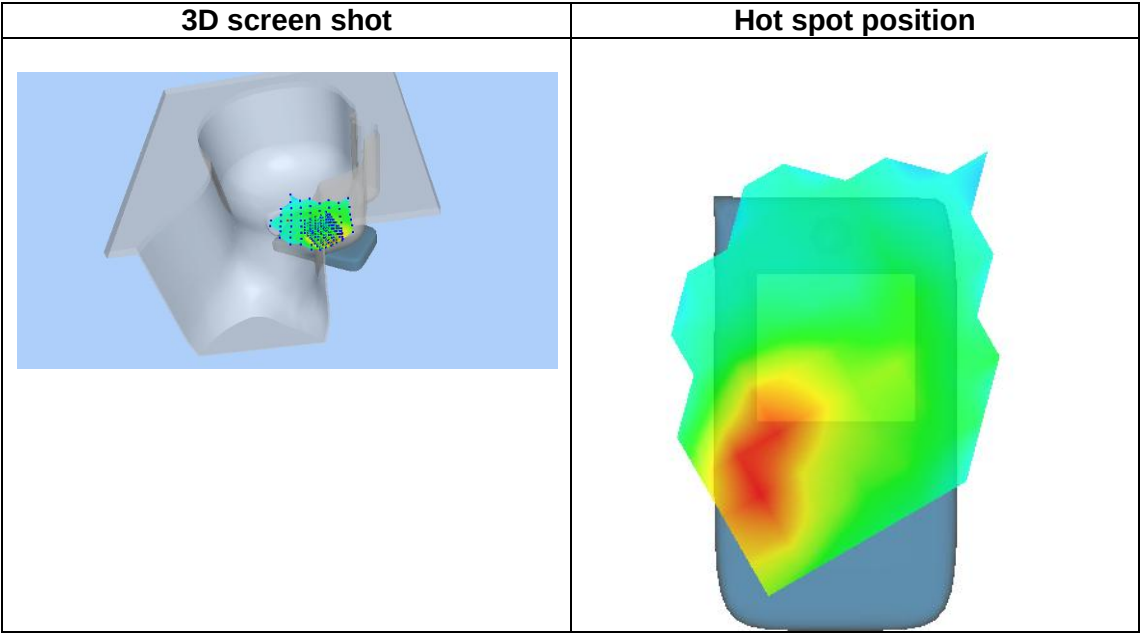
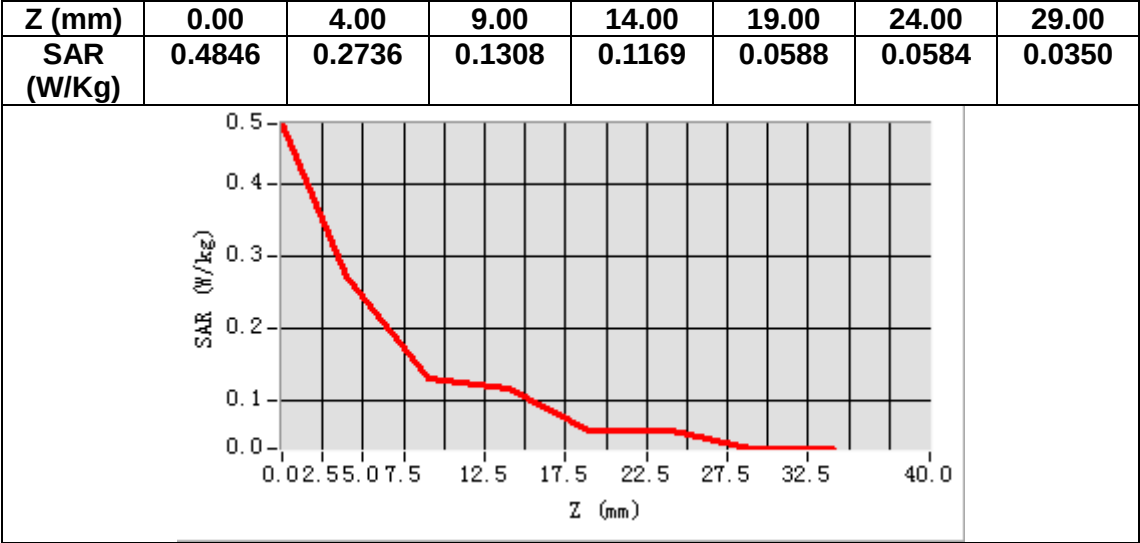
VOLUME SAR



Maximum location: X=-64.00, Y=-66.00

SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.159794
SAR 1g (W/Kg)	0.260984



MEASUREMENT 4

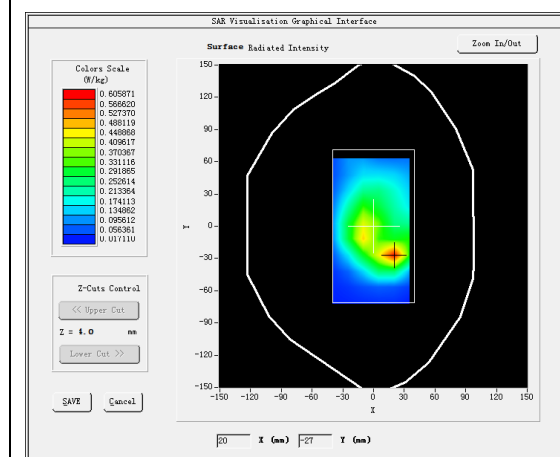
A. Experimental conditions.

<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>

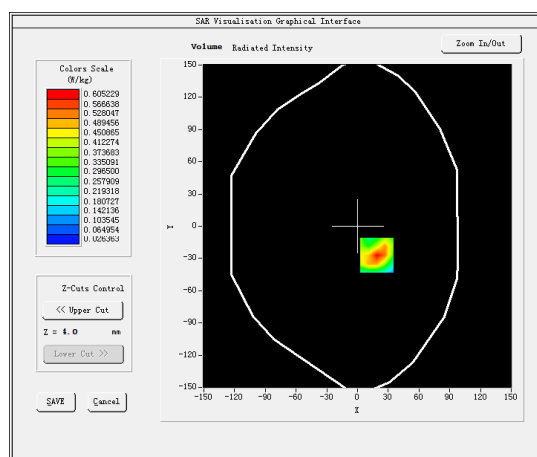
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.648899
Relative permittivity (imaginary part)	14.957700
Conductivity (S/m)	1.562249
Variation (%)	0.220000

SURFACE SAR



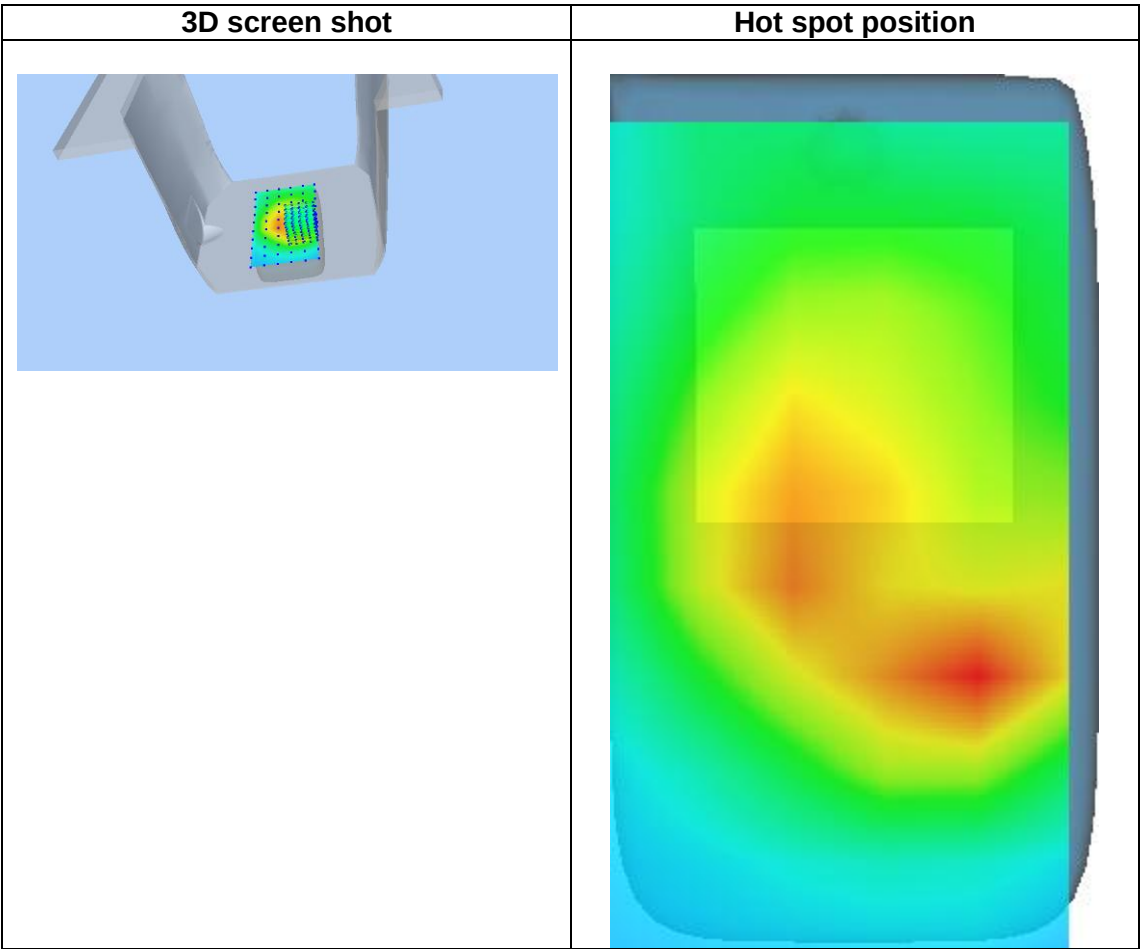
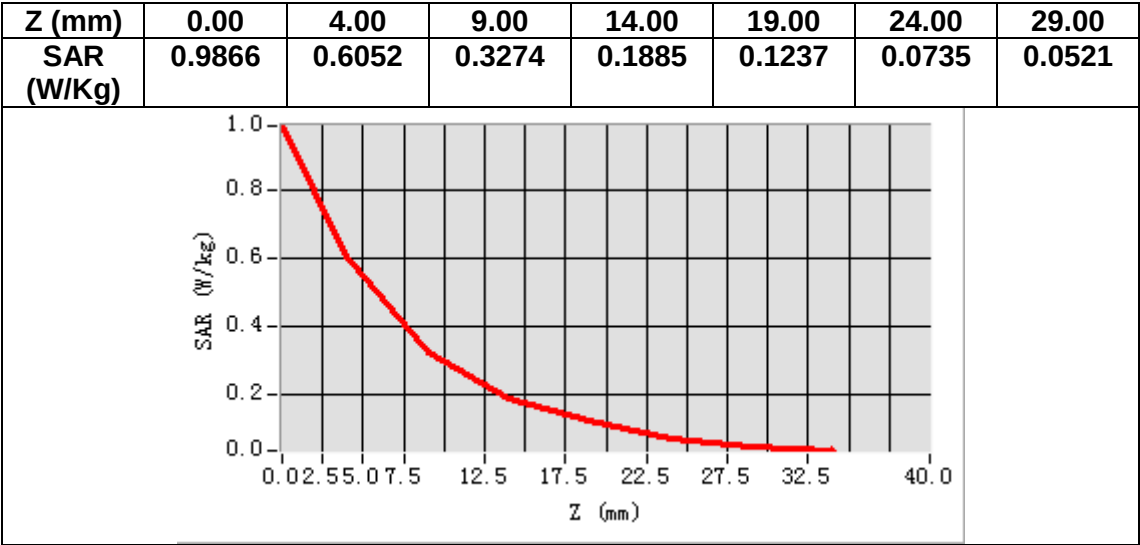
VOLUME SAR



Maximum location: X=19.00, Y=-27.00

SAR Peak: 1.00 W/kg

SAR 10g (W/Kg)	0.298659
SAR 1g (W/Kg)	0.581020



MEASUREMENT 5

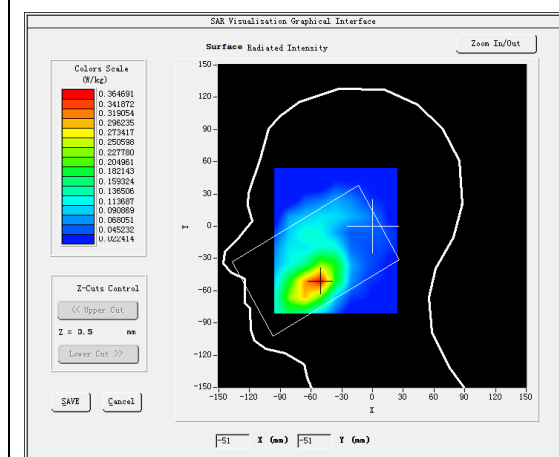
A. Experimental conditions.

<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>LOW</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

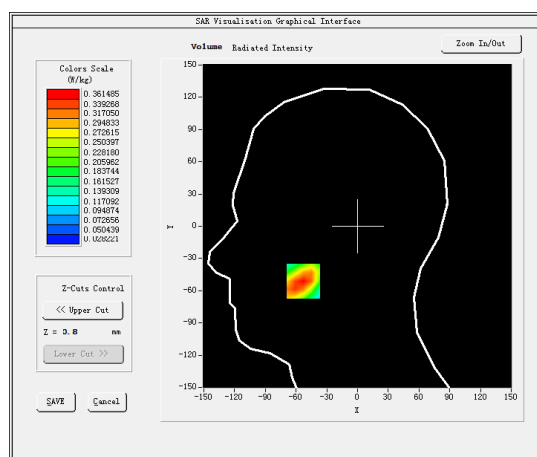
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.018200
Relative permittivity (imaginary part)	13.714300
Conductivity (S/m)	1.432382
Variation (%)	-0.320000

SURFACE SAR



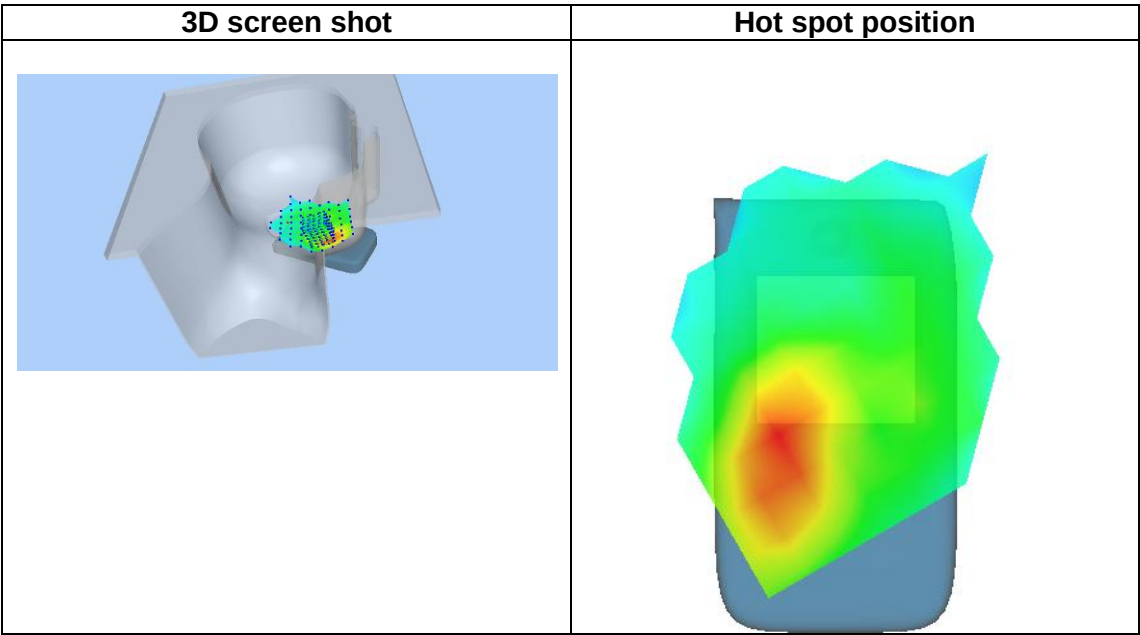
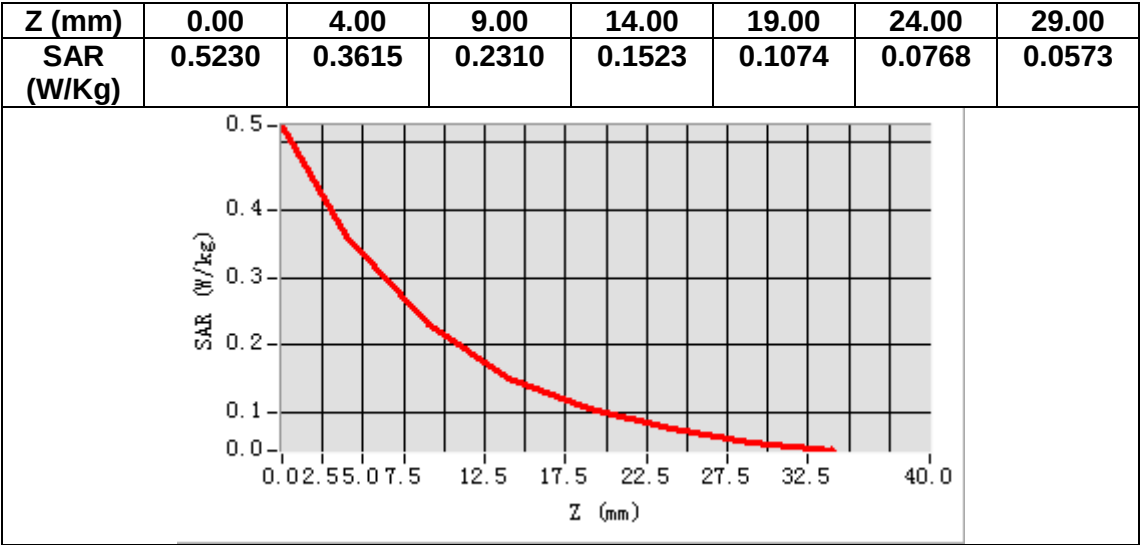
VOLUME SAR



Maximum location: X=-53.00, Y=-51.00

SAR Peak: 0.53 W/kg

SAR 10g (W/Kg)	0.210578
SAR 1g (W/Kg)	0.348794



MEASUREMENT 6

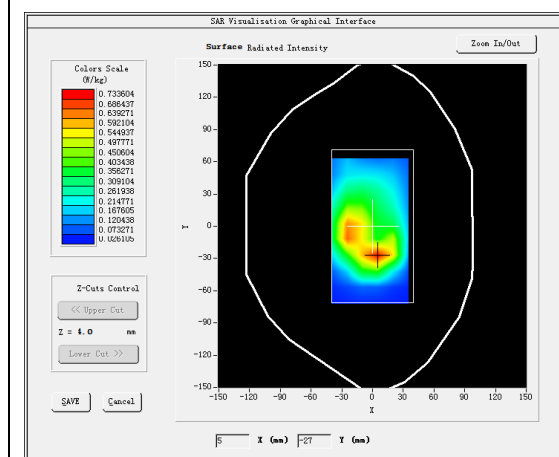
A. Experimental conditions.

<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>

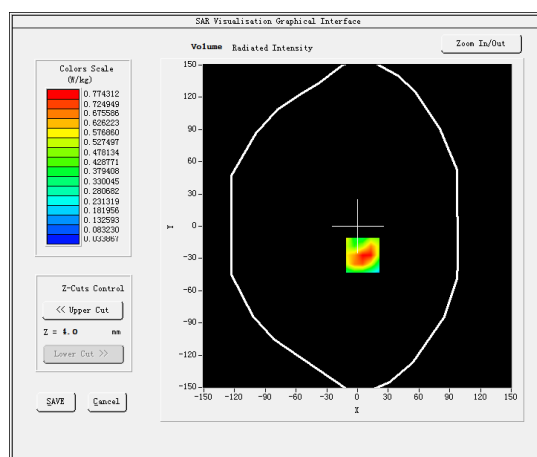
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.648899
Relative permittivity (imaginary part)	14.957700
Conductivity (S/m)	1.562249
Variation (%)	-0.260000

SURFACE SAR



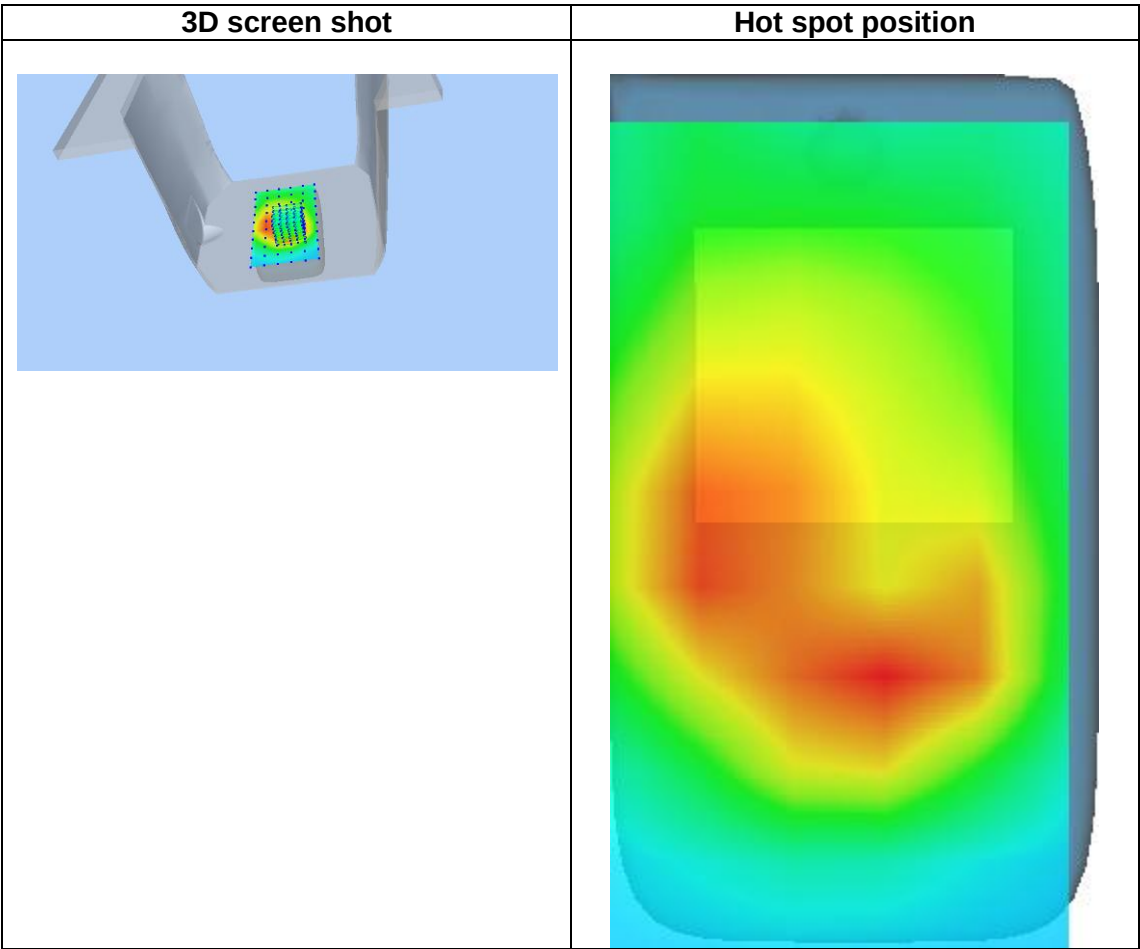
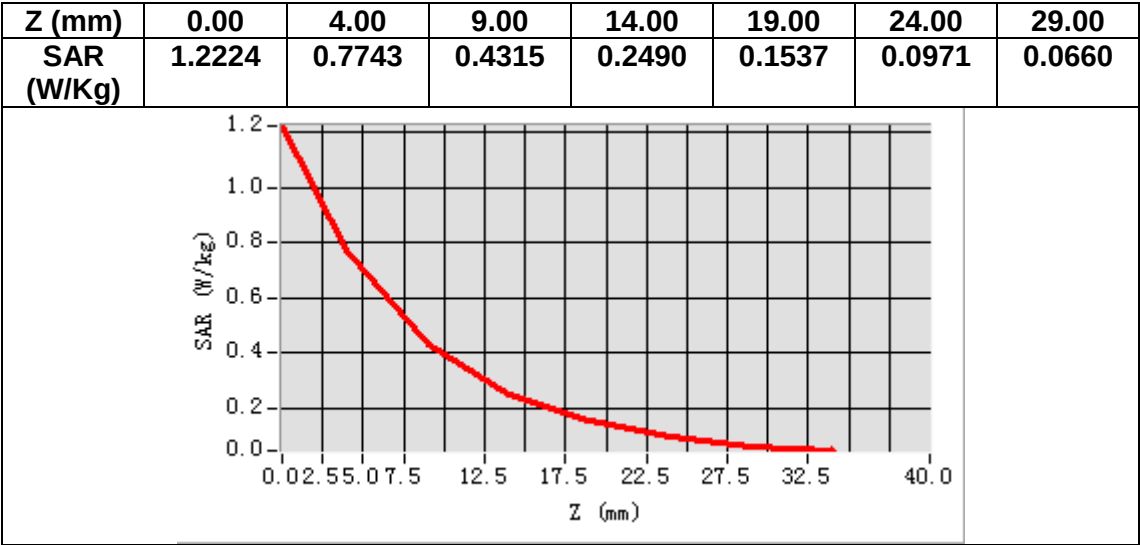
VOLUME SAR



Maximum location: X=5.00, Y=-27.00

SAR Peak: 1.29 W/kg

SAR 10g (W/Kg)	0.401177
SAR 1g (W/Kg)	0.760027



MEASUREMENT 7

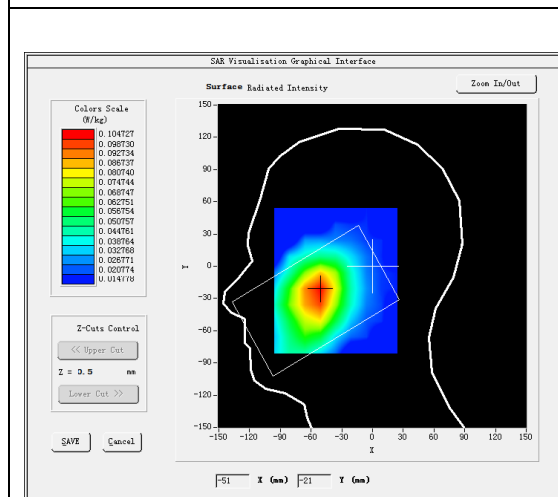
A. Experimental conditions.

<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>

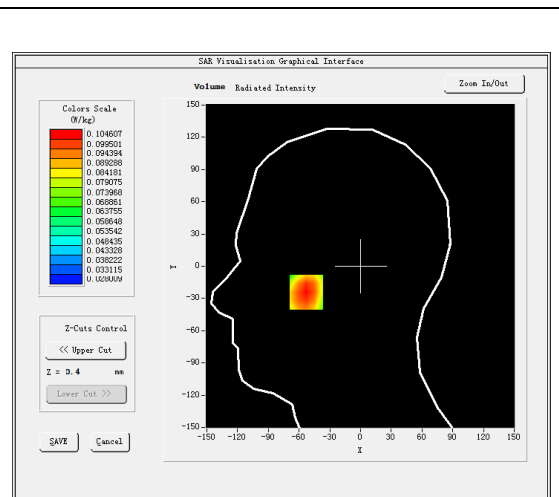
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.630959
Relative permittivity (imaginary part)	20.001539
Conductivity (S/m)	0.929405
Variation (%)	0.660000

SURFACE SAR



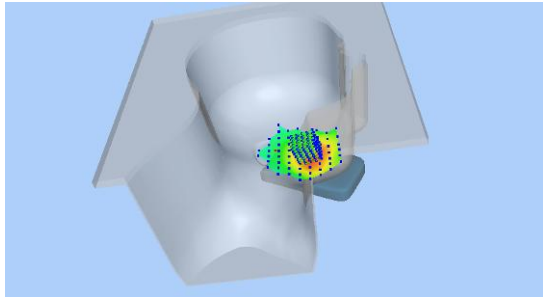
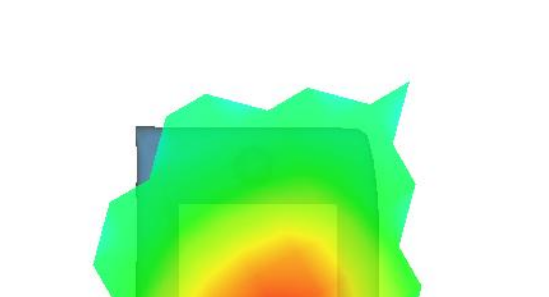
VOLUME SAR



Maximum location: X=-53.00, Y=-24.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.082114
SAR 1g (W/Kg)	0.103550

3D screen shot	Hot spot position
 A 3D rendering of a dental model, likely a maxillary arch, showing a blue and white structure. A small, irregularly shaped area on the right side of the model is highlighted with a color gradient from green to yellow to red, indicating a hot spot. A small, light blue rectangular box is overlaid on this area.	 A 3D rendering of a dental model, likely a maxillary arch, showing a blue and white structure. A large, irregularly shaped area on the right side of the model is highlighted with a color gradient from green to yellow to red, indicating a hot spot. A small, light blue rectangular box is overlaid on this area.

MEASUREMENT 8

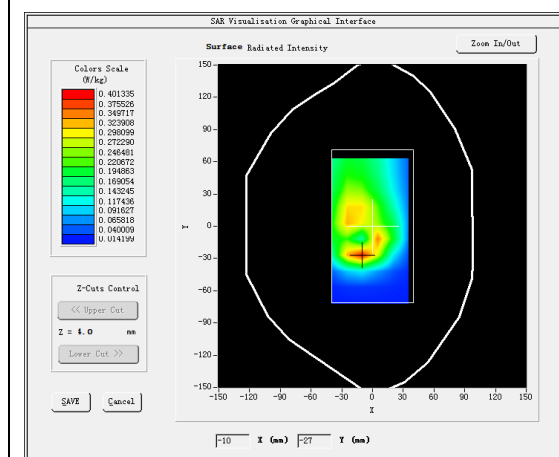
A. Experimental conditions.

<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>

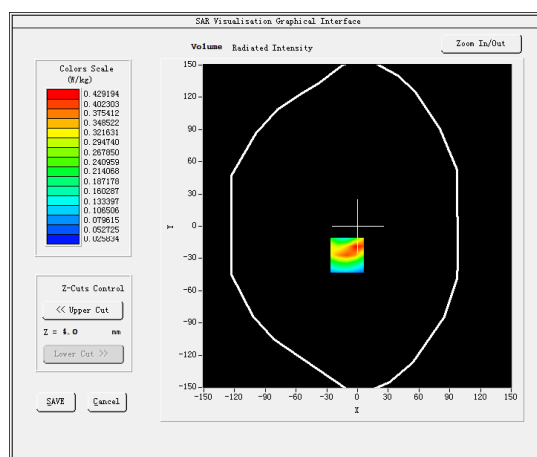
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.459579
Relative permittivity (imaginary part)	21.642740
Conductivity (S/m)	1.005666
Variation (%)	-0.380000

SURFACE SAR



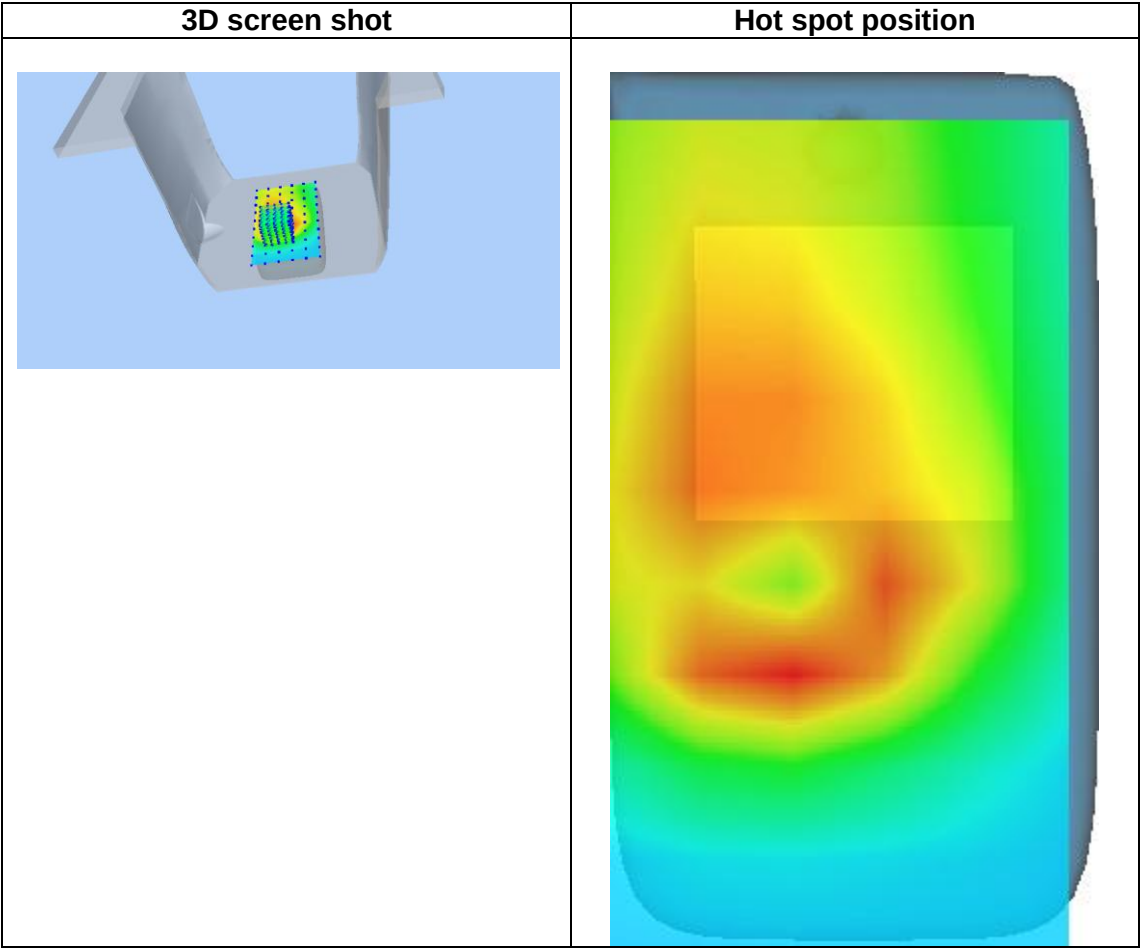
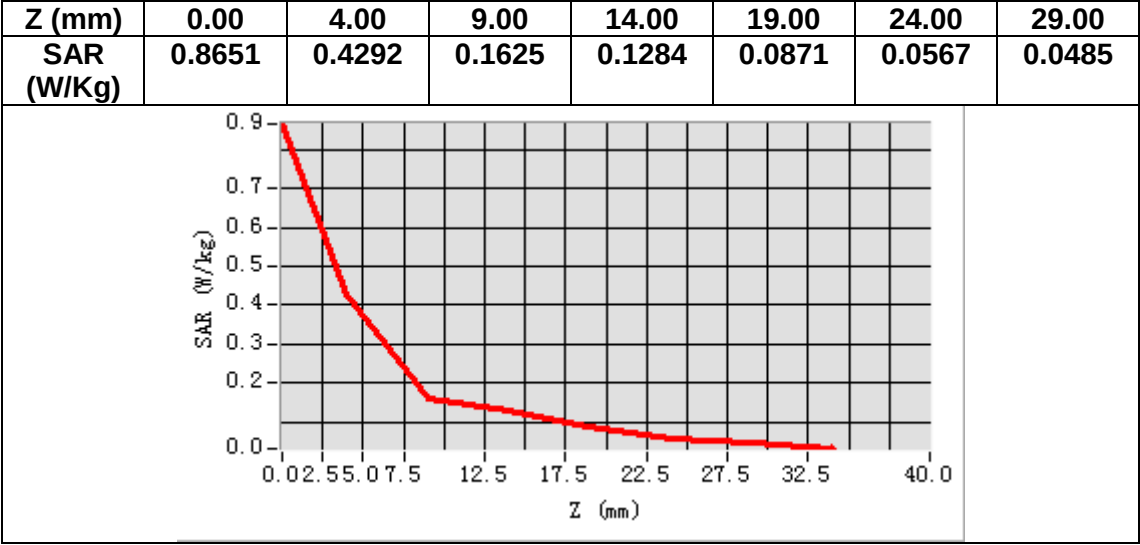
VOLUME SAR



Maximum location: X=-10.00, Y=-27.00

SAR Peak: 0.73 W/kg

SAR 10g (W/Kg)	0.216253
SAR 1g (W/Kg)	0.412880



MEASUREMENT 9

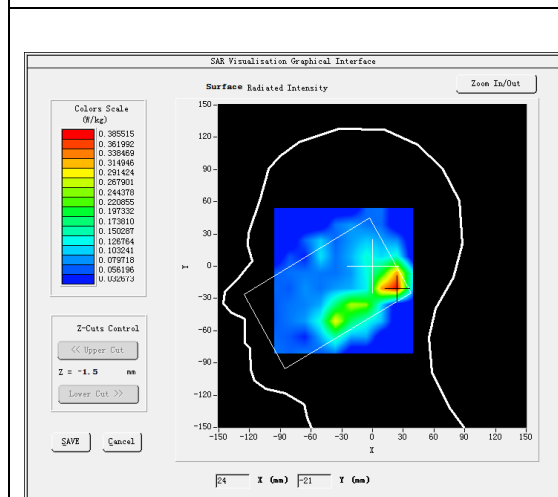
A. Experimental conditions.

<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>Right 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>

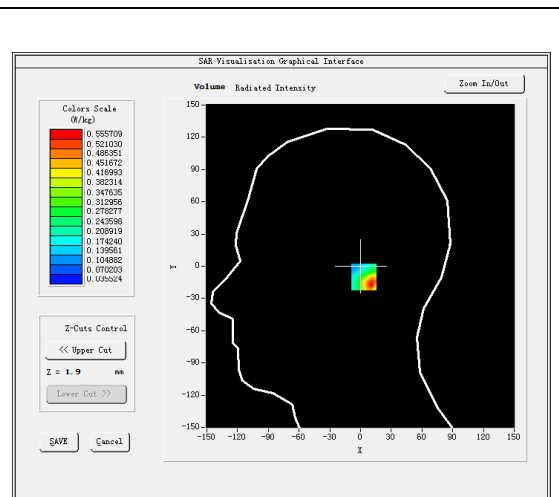
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.741534
Relative permittivity (imaginary part)	16.125509
Conductivity (S/m)	4.658480
Variation (%)	-0.810000

SURFACE SAR



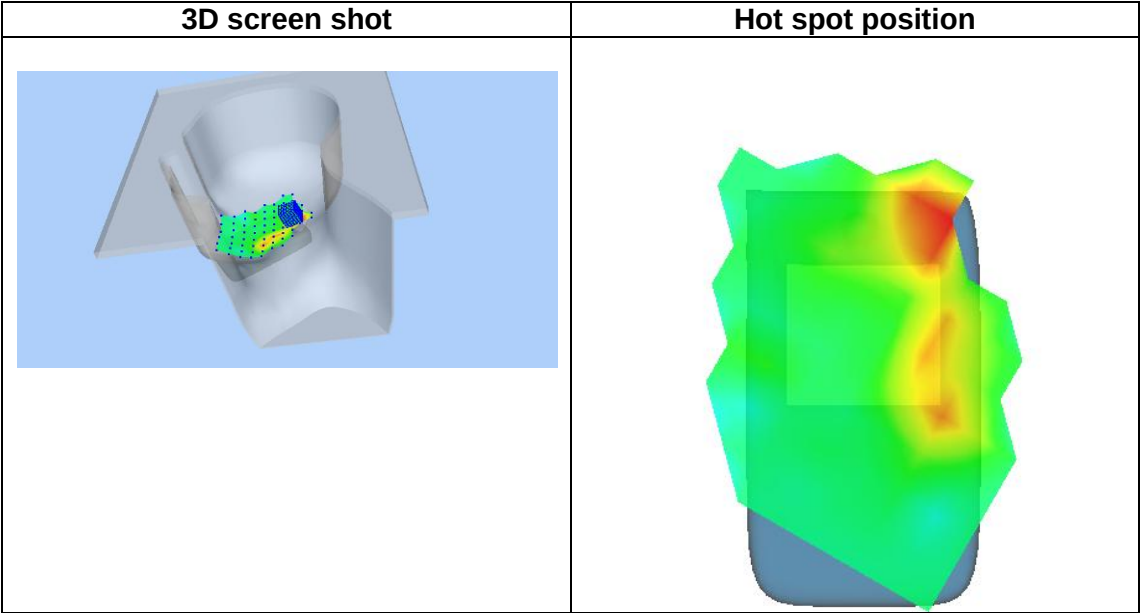
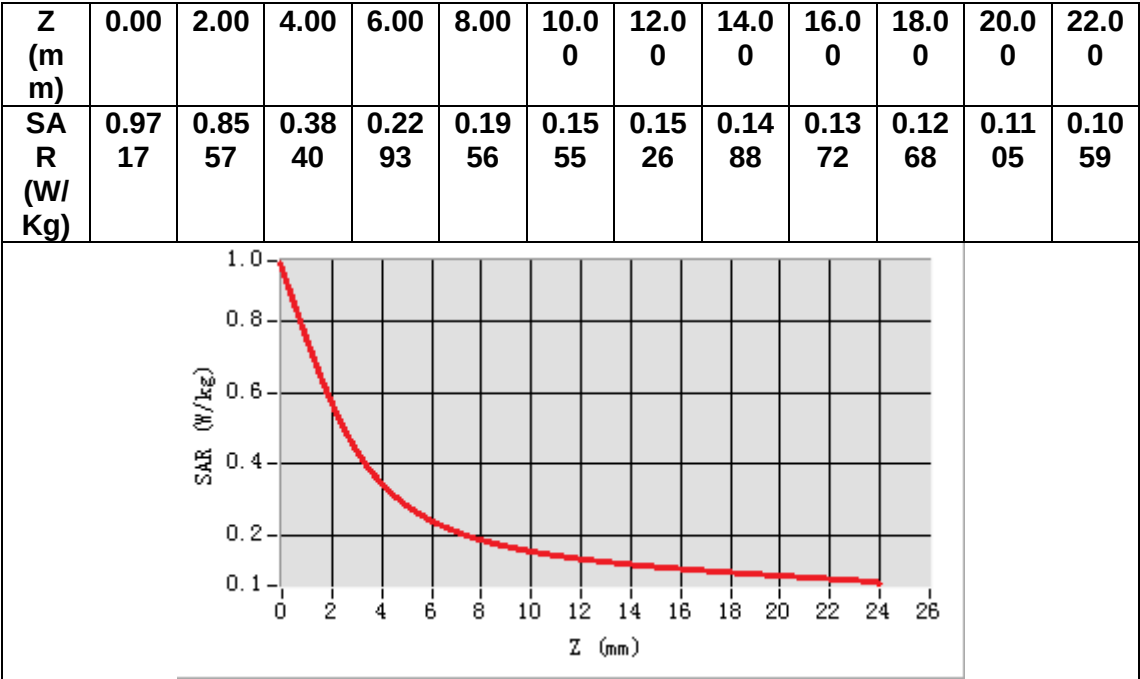
VOLUME SAR



Maximum location: X=12.00, Y=-10.00

SAR Peak: 1.05 W/kg

SAR 10g (W/Kg)	0.205517
SAR 1g (W/Kg)	0.532312



MEASUREMENT 10

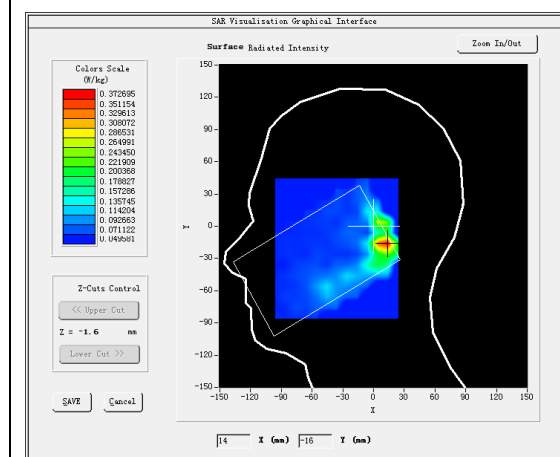
A. Experimental conditions.

<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>Right 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>

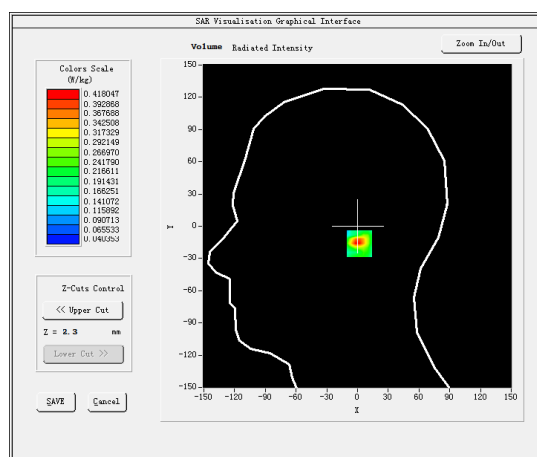
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	34.724789
Relative permittivity (imaginary part)	16.035267
Conductivity (S/m)	5.153556
Variation (%)	0.350000

SURFACE SAR



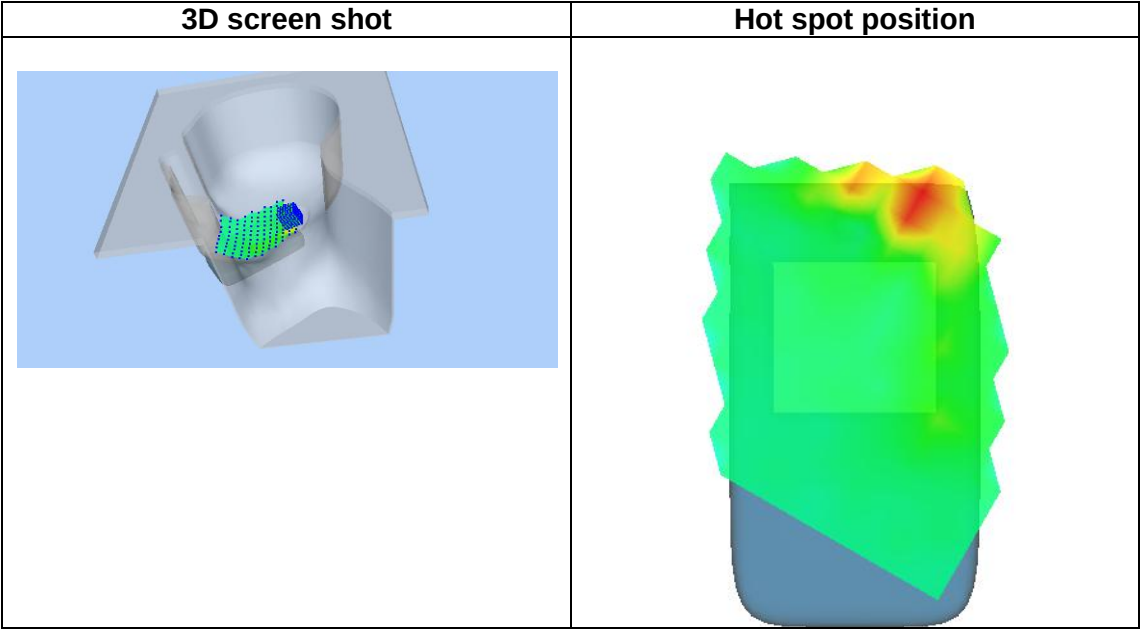
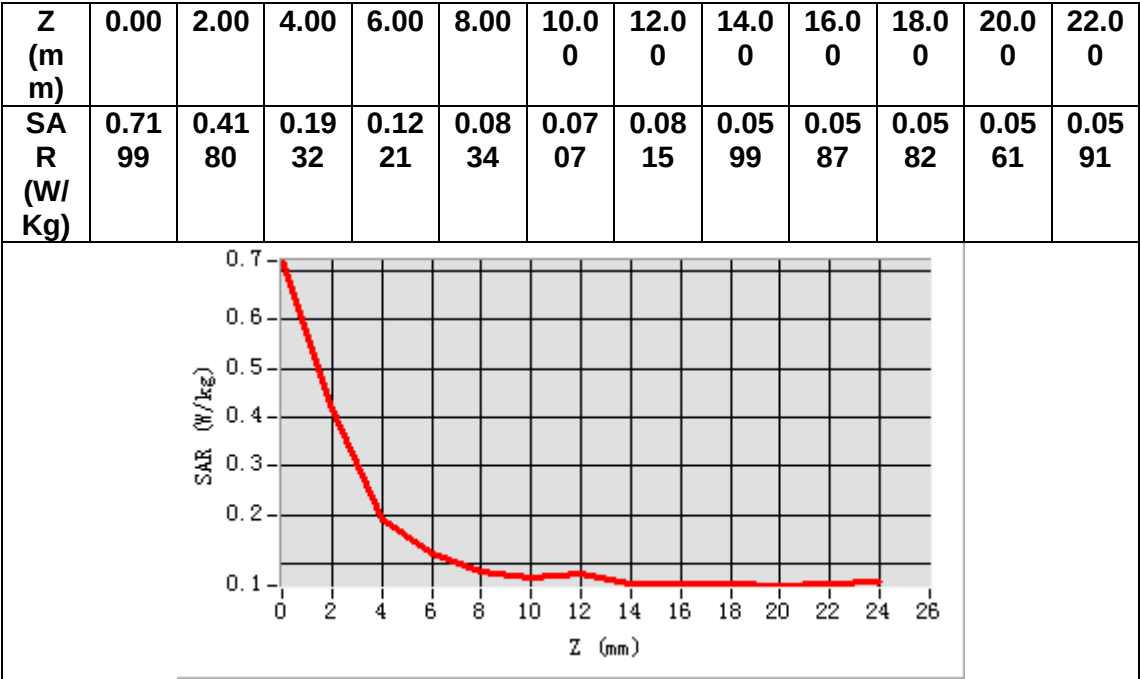
VOLUME SAR



Maximum location: X=12.00, Y=-16.00

SAR Peak: 0.71 W/kg

SAR 10g (W/Kg)	0.163876
SAR 1g (W/Kg)	0.405057



MEASUREMENT 11

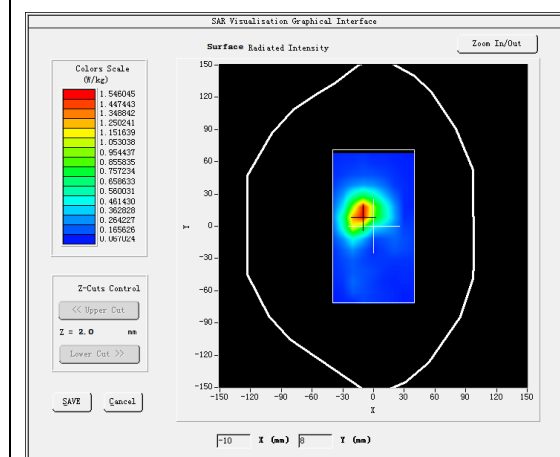
A. Experimental conditions.

<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>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>

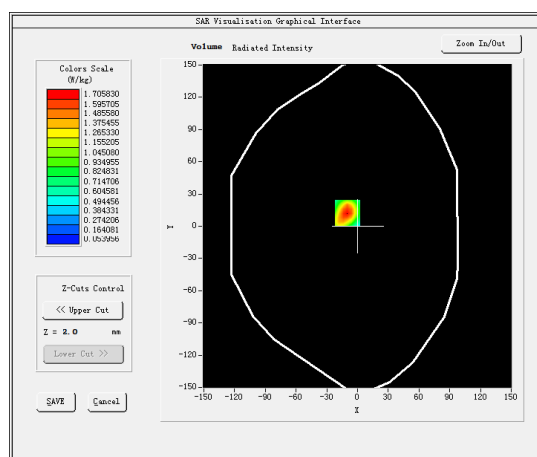
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.569534
Relative permittivity (imaginary part)	18.375509
Conductivity (S/m)	5.308480
Variation (%)	0.460000

SURFACE SAR



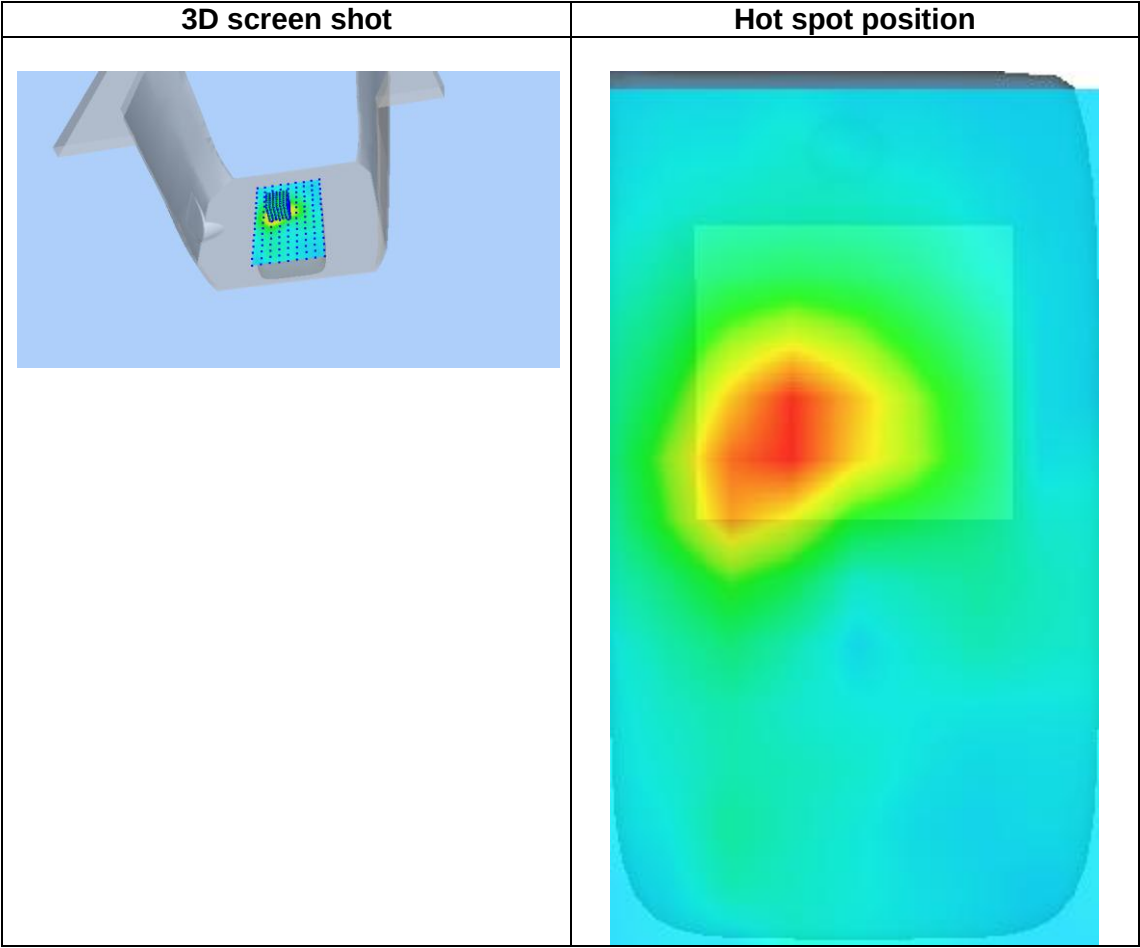
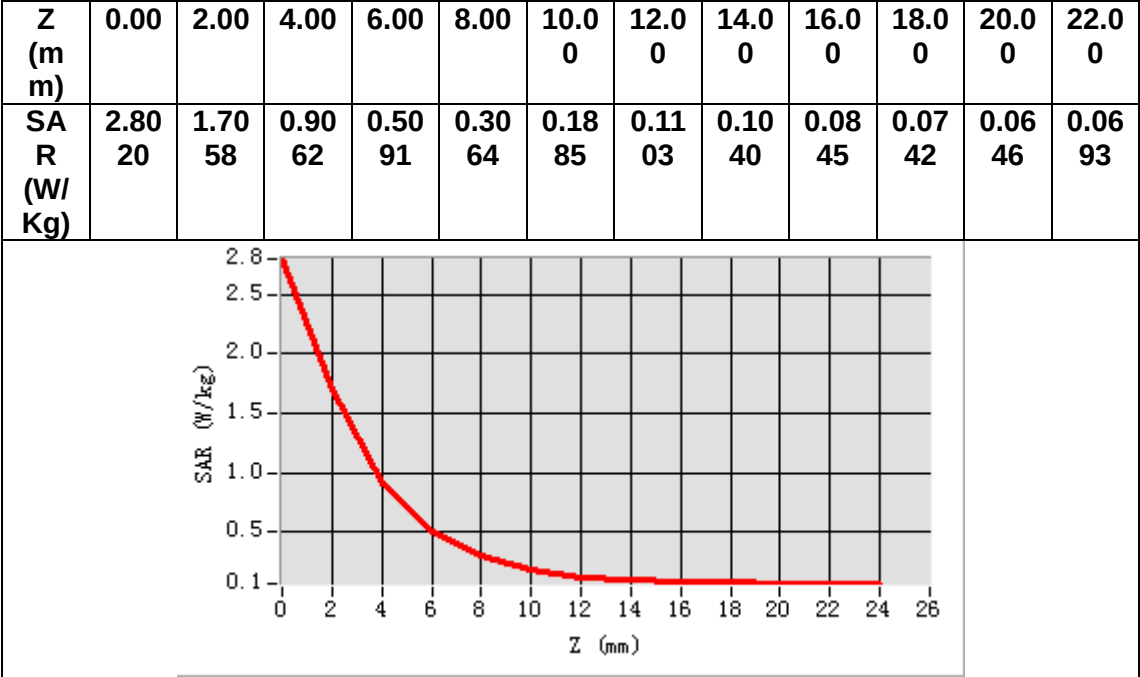
VOLUME SAR



Maximum location: X=-10.00, Y=12.00

SAR Peak: 2.92 W/kg

SAR 10g (W/Kg)	0.429975
SAR 1g (W/Kg)	1.016077



MEASUREMENT 12

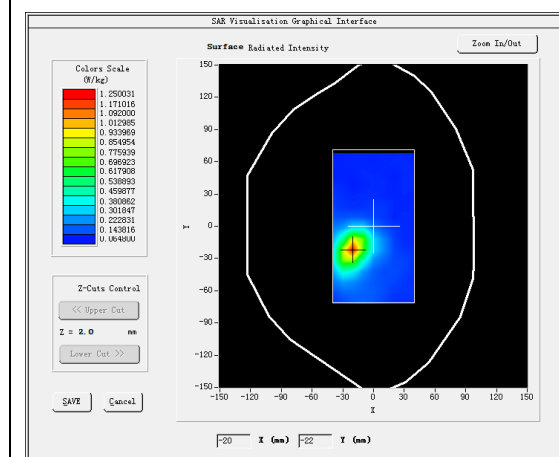
A. Experimental conditions.

<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>

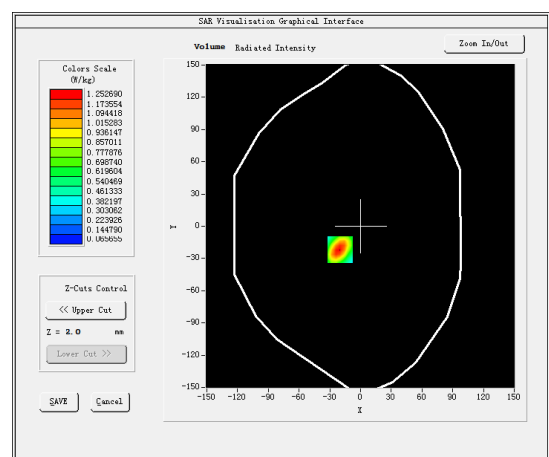
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.338703
Relative permittivity (imaginary part)	18.776766
Conductivity (S/m)	6.034644
Variation (%)	2.170000

SURFACE SAR



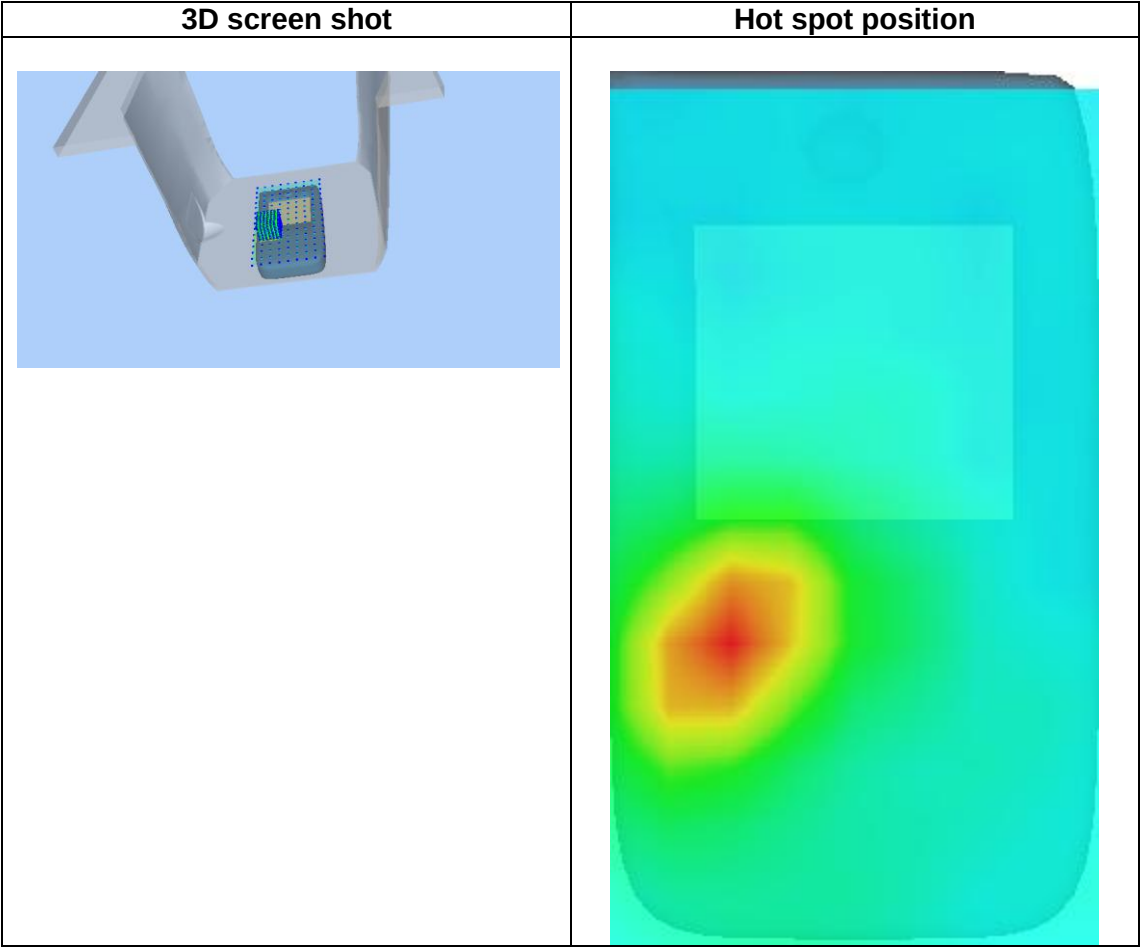
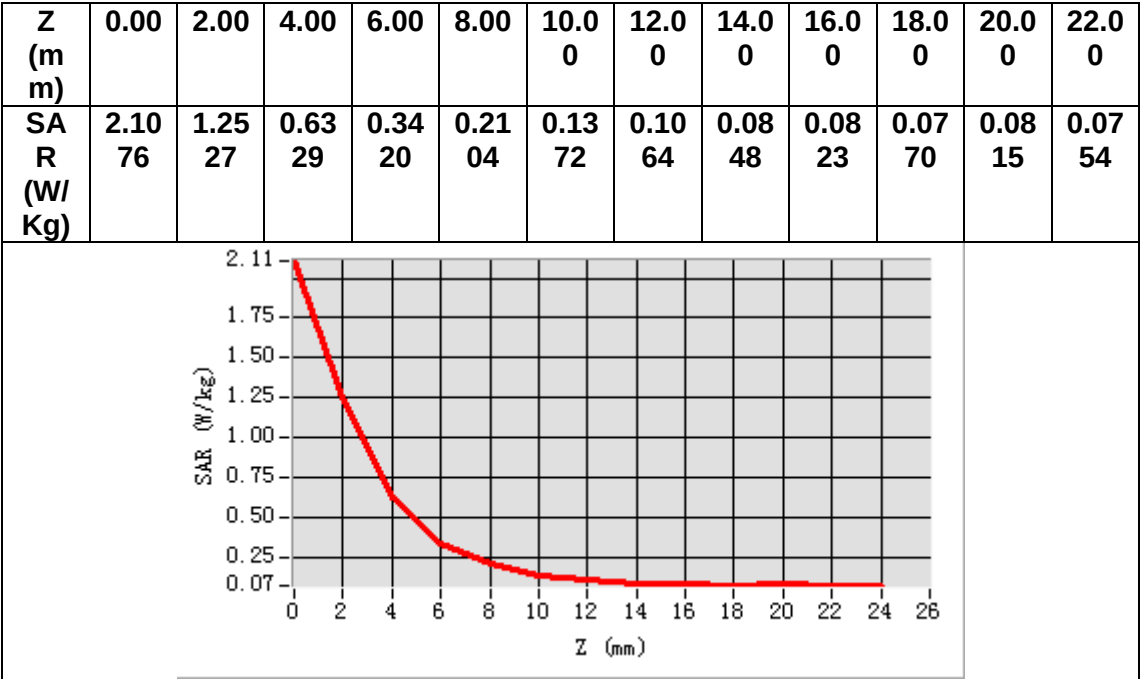
VOLUME SAR



Maximum location: X=-20.00, Y=-22.00

SAR Peak: 2.23 W/kg

SAR 10g (W/Kg)	0.321801
SAR 1g (W/Kg)	0.742879



MEASUREMENT 13

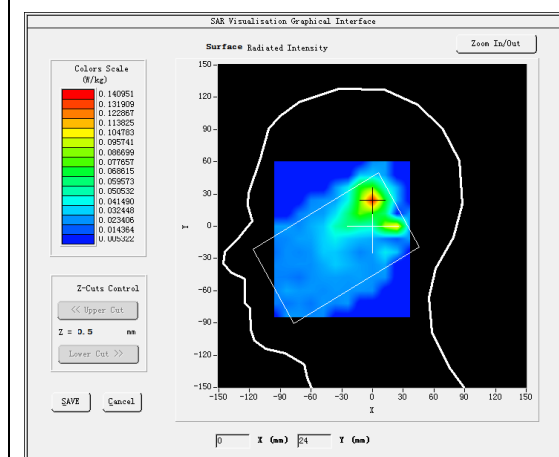
A. Experimental conditions.

<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>

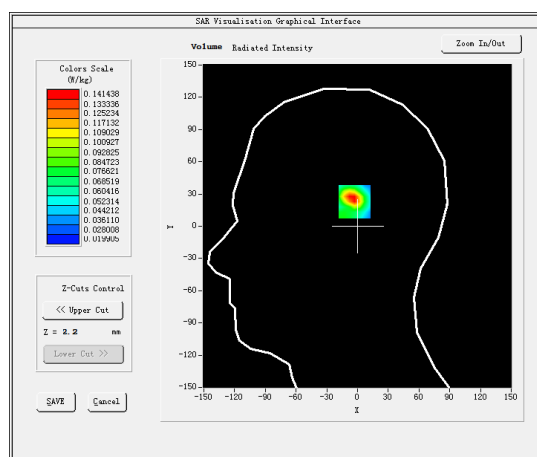
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.854198
Relative permittivity (imaginary part)	13.605300
Conductivity (S/m)	1.845786
Variation (%)	-1.900000

SURFACE SAR



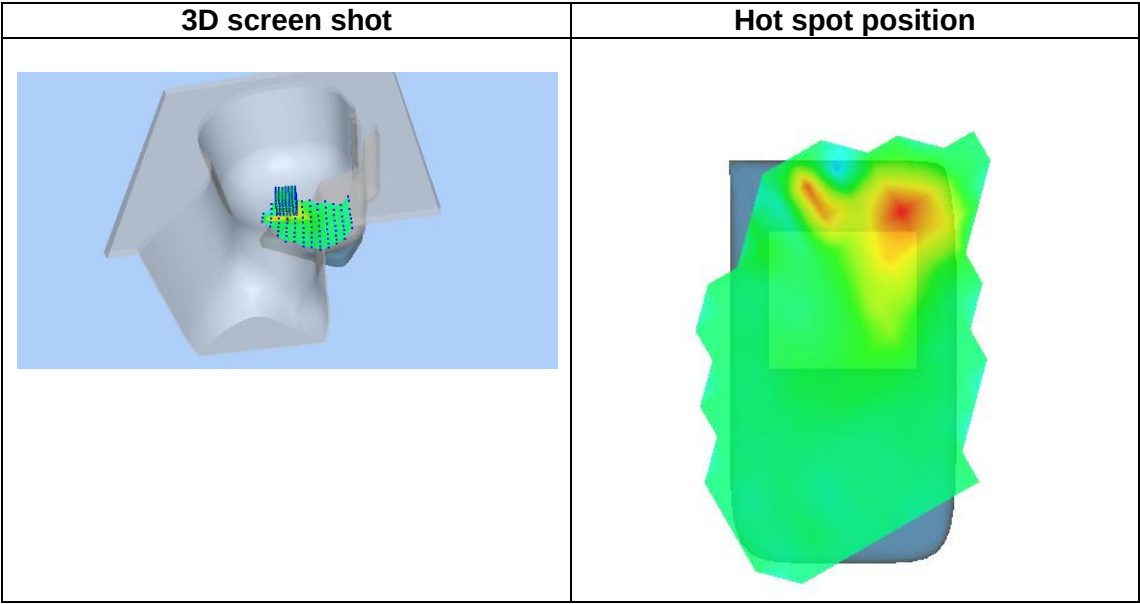
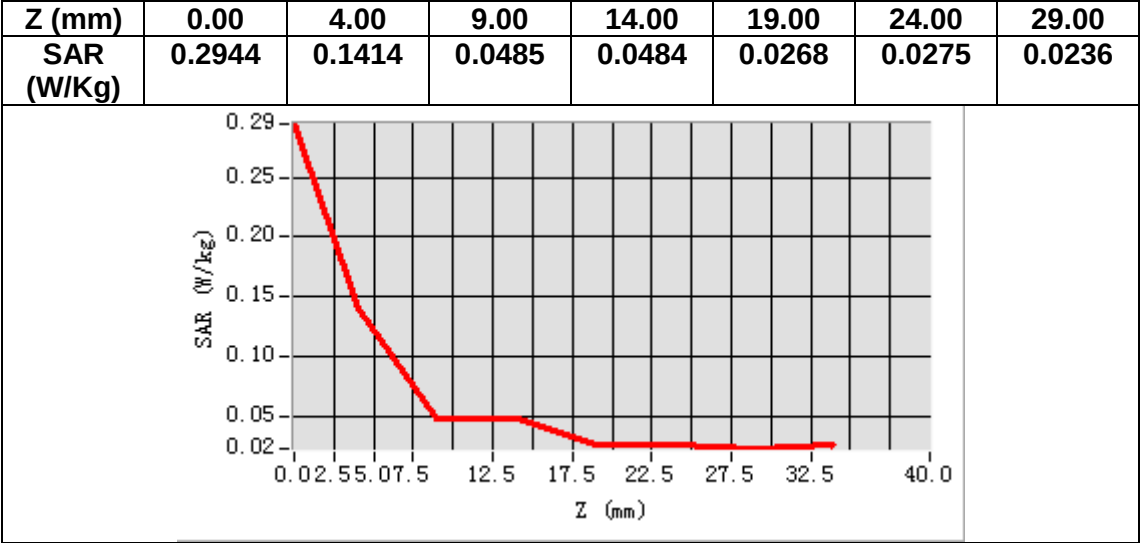
VOLUME SAR



Maximum location: X=0.00, Y=24.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.067663
SAR 1g (W/Kg)	0.134468



MEASUREMENT 14

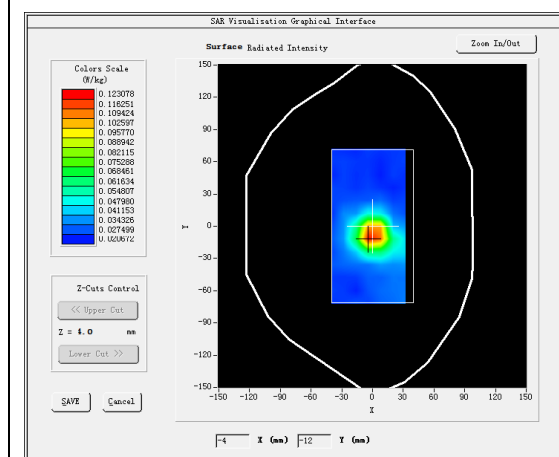
A. Experimental conditions.

<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>

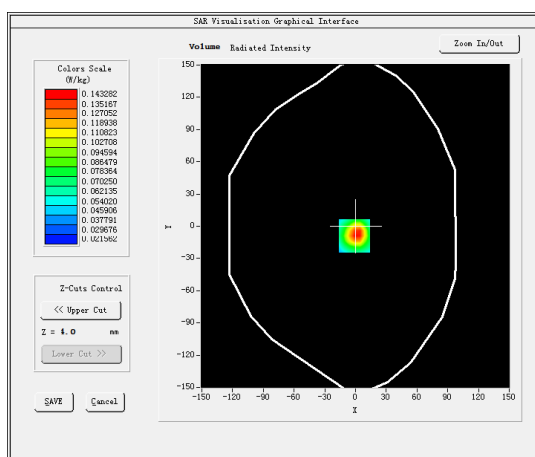
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	52.151600
Relative permittivity (imaginary part)	14.945620
Conductivity (S/m)	2.023471
Variation (%)	-0.030000

SURFACE SAR



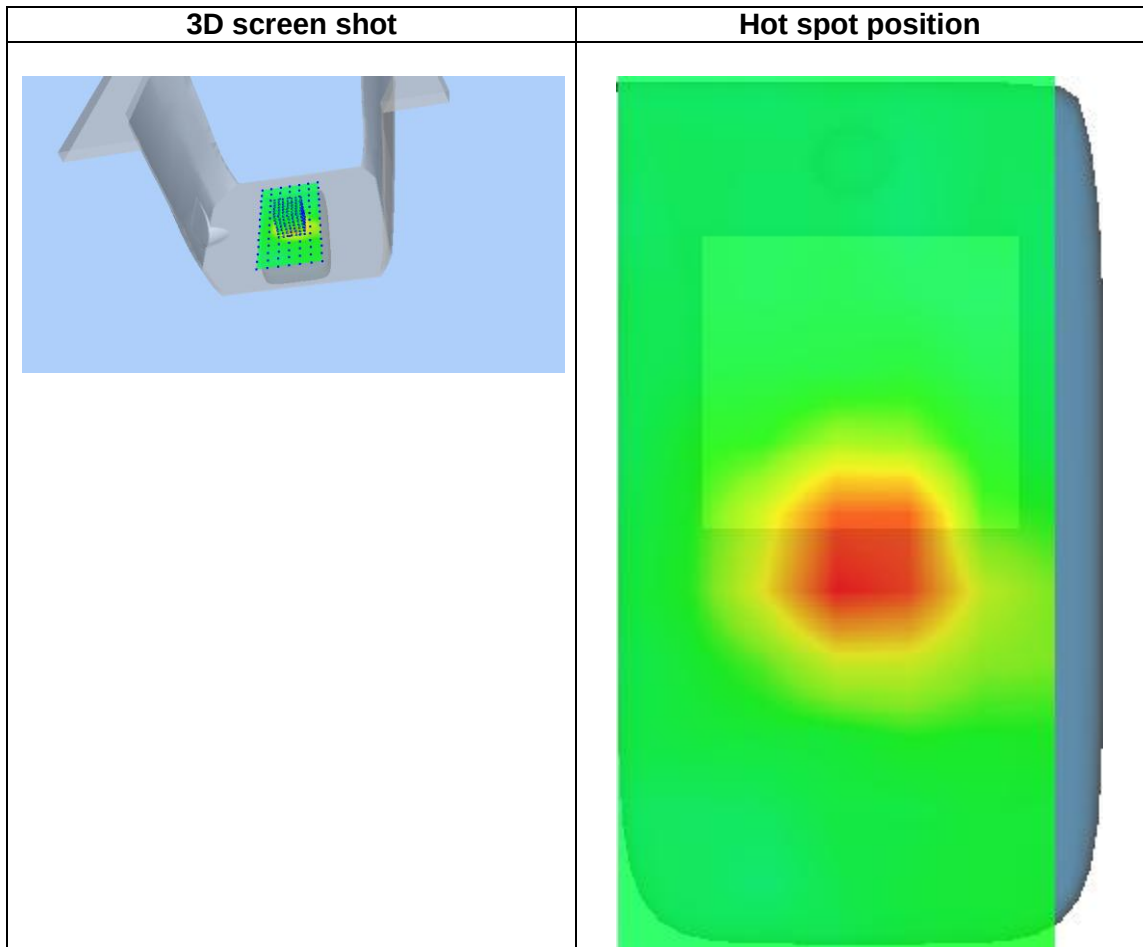
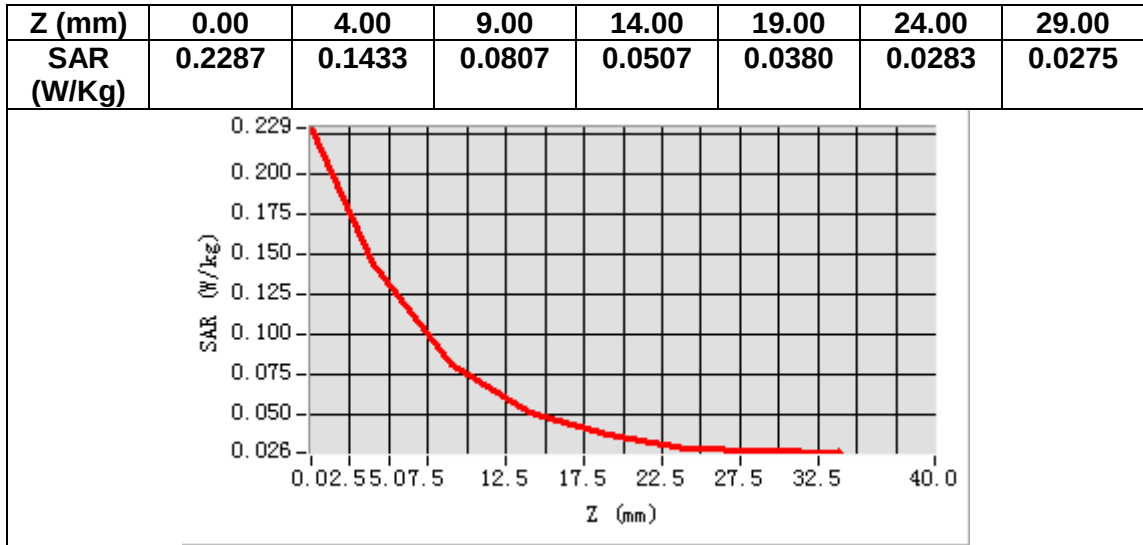
VOLUME SAR



Maximum location: X=-1.00, Y=-9.00

SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.074614
SAR 1g (W/Kg)	0.139030



MEASUREMENT 15

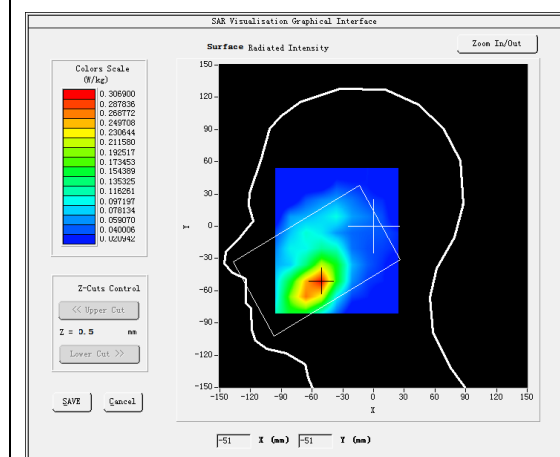
A. Experimental conditions.

<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>

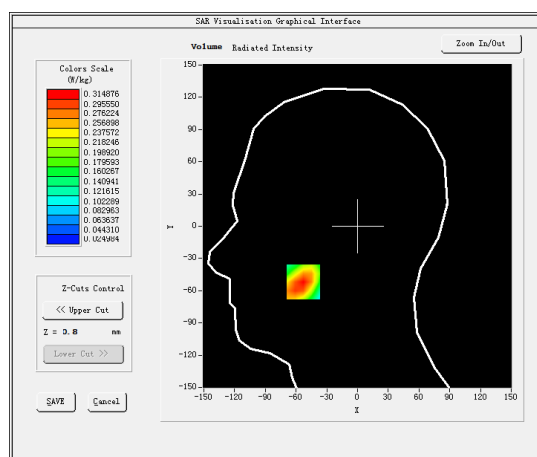
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.063801
Relative permittivity (imaginary part)	13.708100
Conductivity (S/m)	1.431354
Variation (%)	0.820000

SURFACE SAR



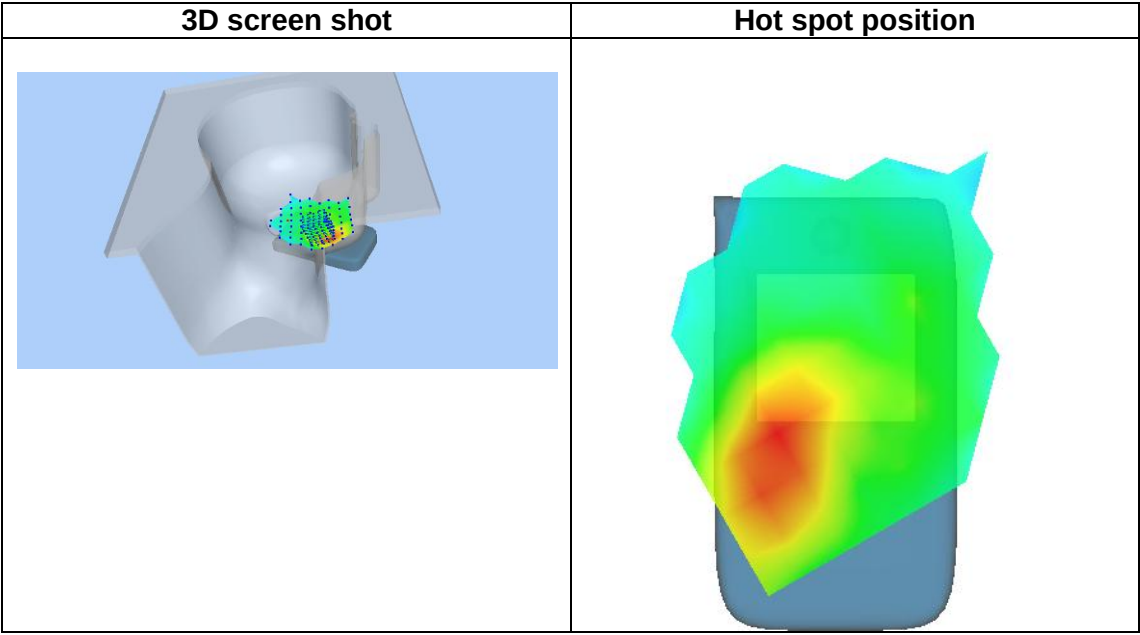
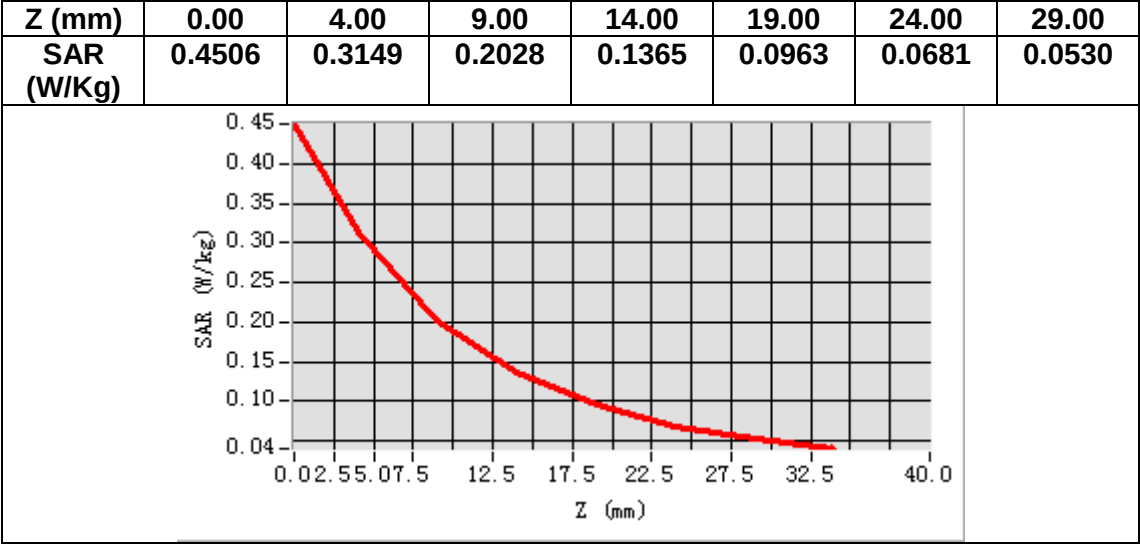
VOLUME SAR



Maximum location: X=-53.00, Y=-52.00

SAR Peak: 0.46 W/kg

SAR 10g (W/Kg)	0.186709
SAR 1g (W/Kg)	0.304437



MEASUREMENT 16

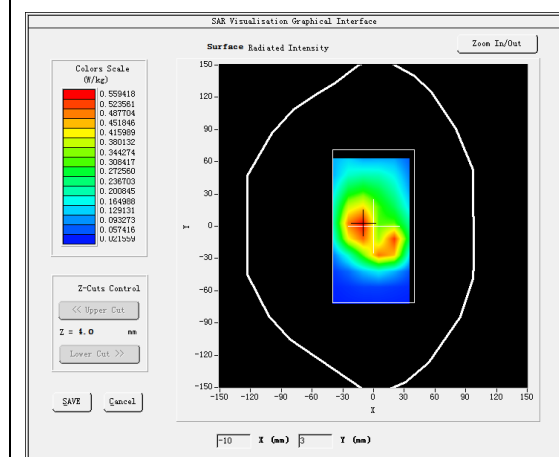
A. Experimental conditions.

<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>

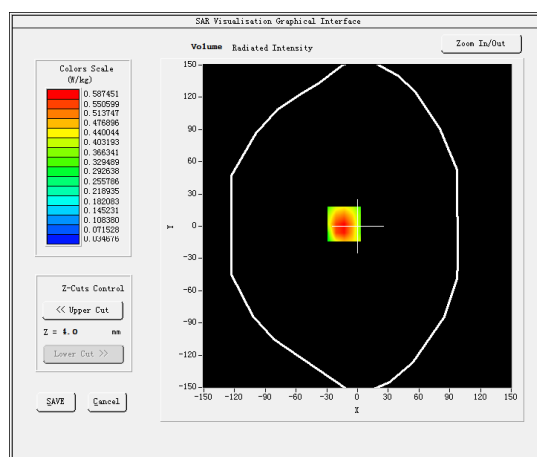
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.655949
Relative permittivity (imaginary part)	14.966150
Conductivity (S/m)	1.562715
Variation (%)	-0.570000

SURFACE SAR



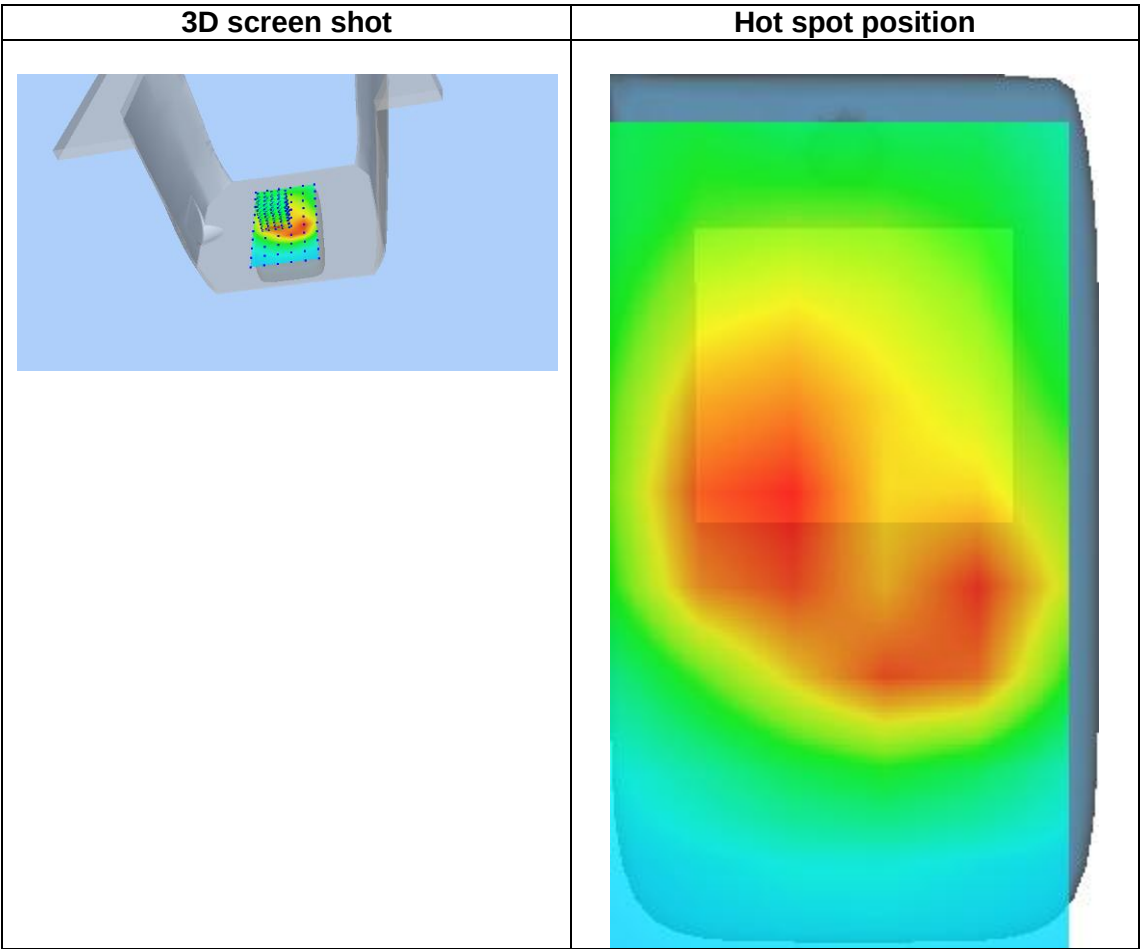
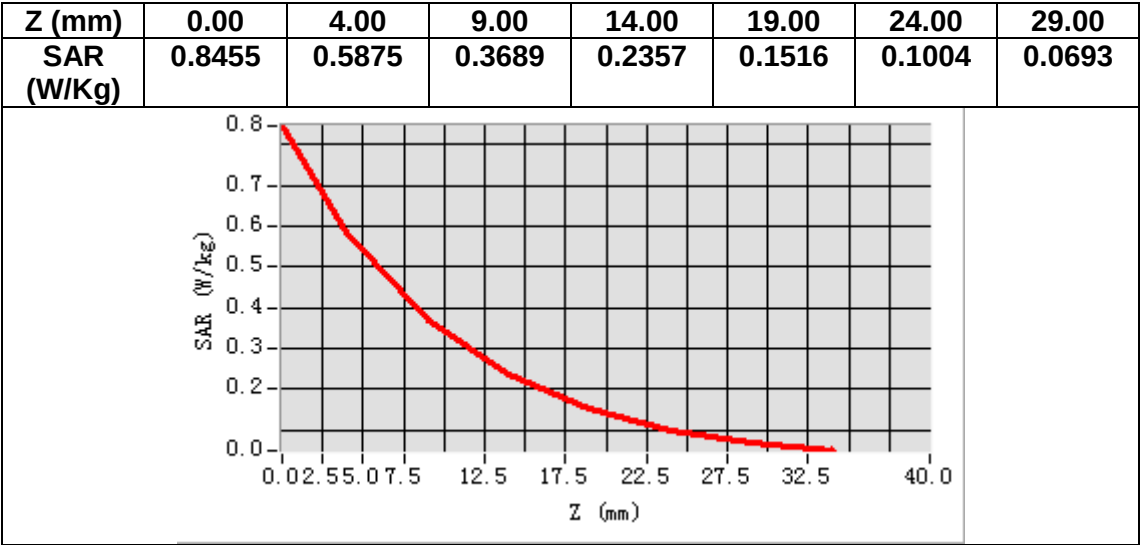
VOLUME SAR



Maximum location: X=-13.00, Y=2.00

SAR Peak: 0.89 W/kg

SAR 10g (W/Kg)	0.338467
SAR 1g (W/Kg)	0.584000



MEASUREMENT 17

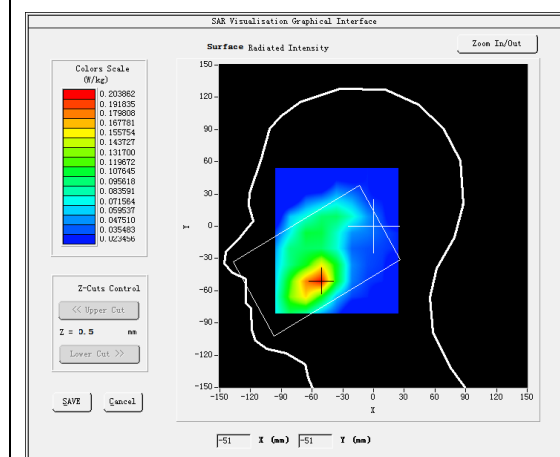
A. Experimental conditions.

<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>

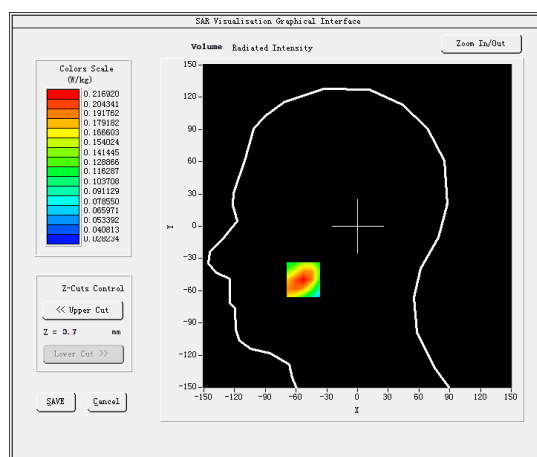
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	38.935291
Relative permittivity (imaginary part)	14.040592
Conductivity (S/m)	1.351407
Variation (%)	3.840000

SURFACE SAR



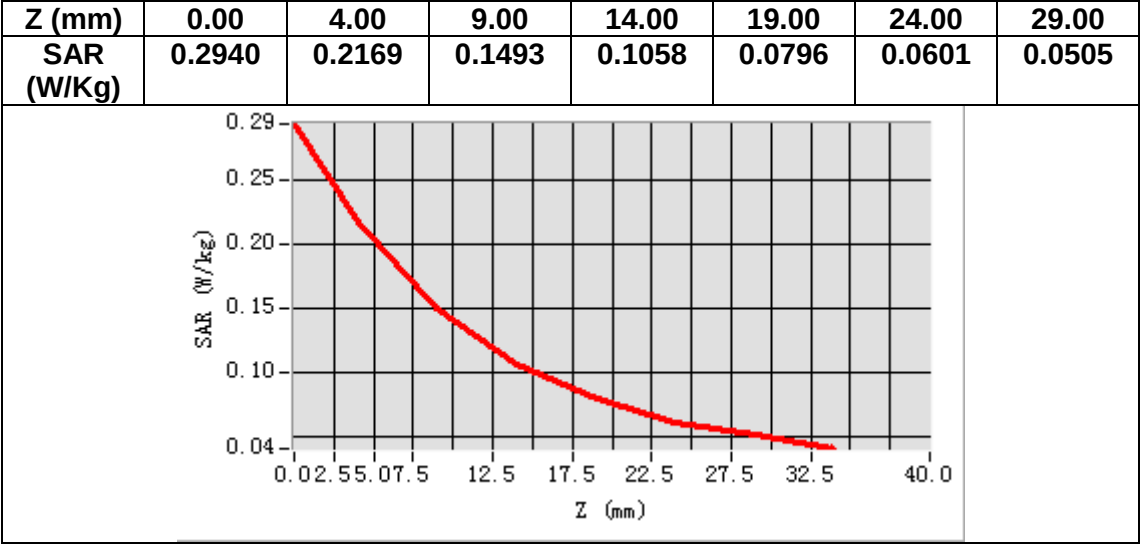
VOLUME SAR



Maximum location: X=-53.00, Y=-50.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.133268
SAR 1g (W/Kg)	0.205973



MEASUREMENT 18

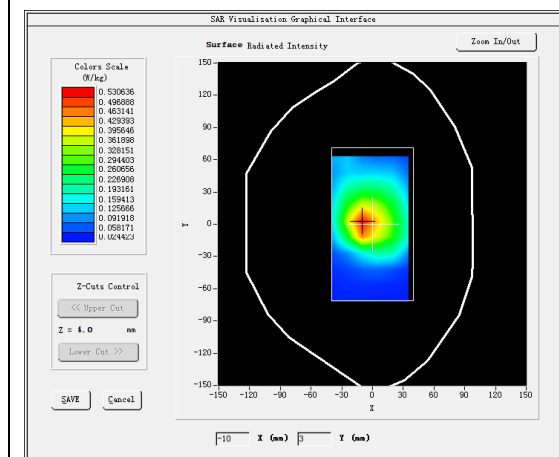
A. Experimental conditions.

<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>

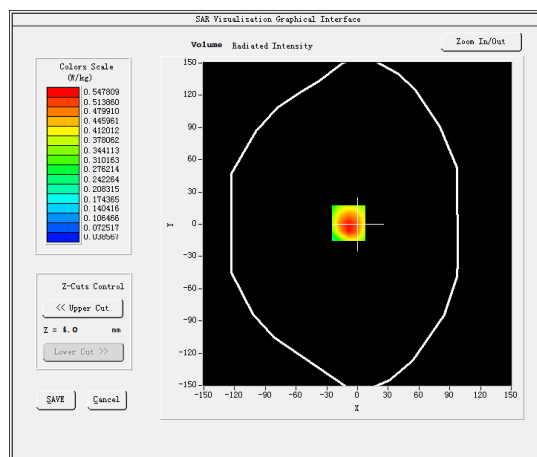
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	53.623367
Relative permittivity (imaginary part)	15.623220
Conductivity (S/m)	1.503735
Variation (%)	-0.040000

SURFACE SAR



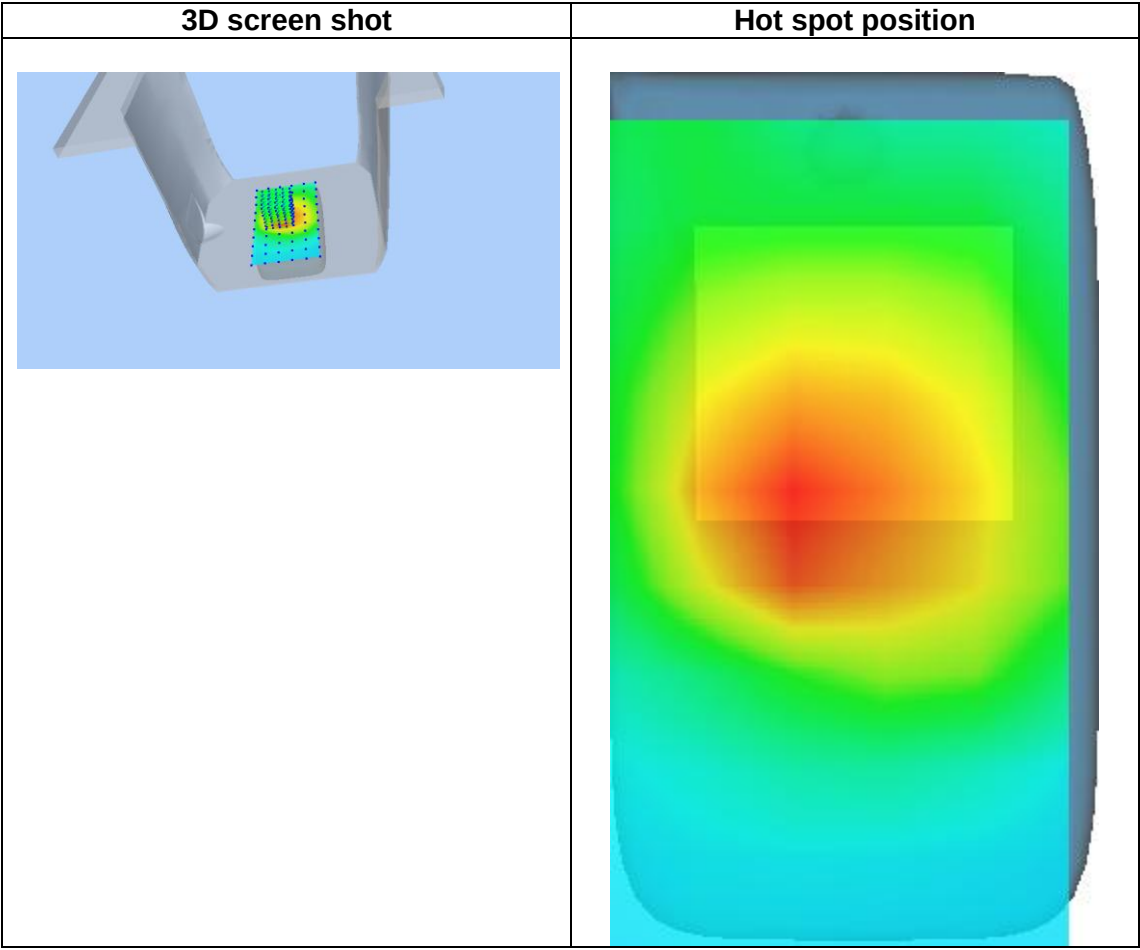
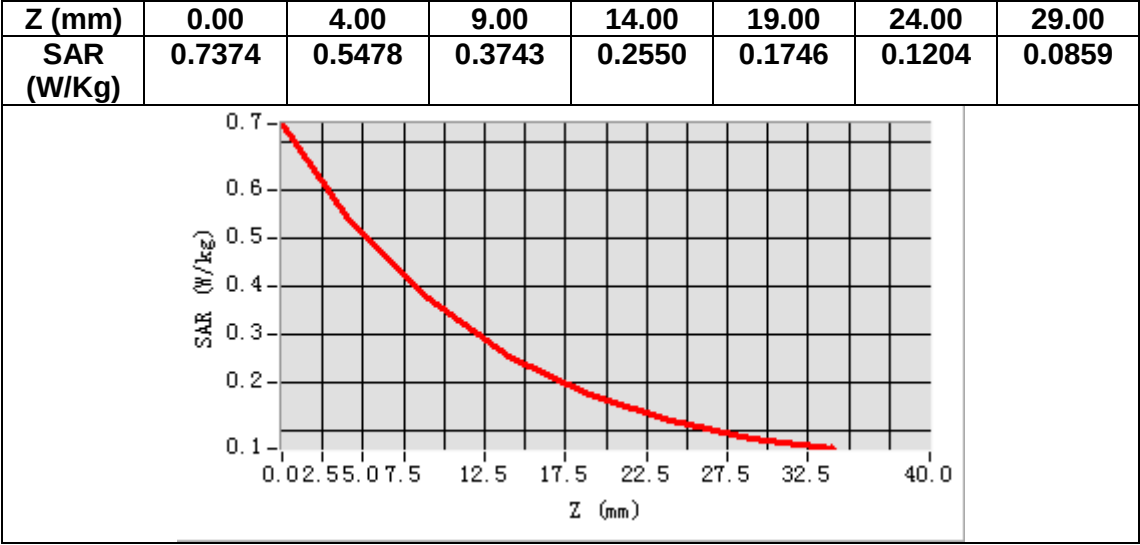
VOLUME SAR



Maximum location: X=-9.00, Y=1.00

SAR Peak: 0.78 W/kg

SAR 10g (W/Kg)	0.331524
SAR 1g (W/Kg)	0.537522



MEASUREMENT 19

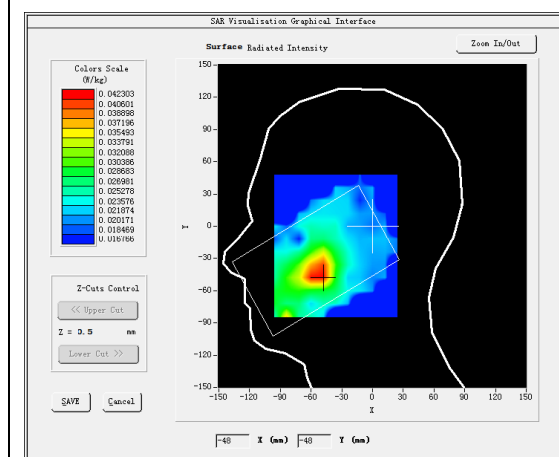
A. Experimental conditions.

<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>

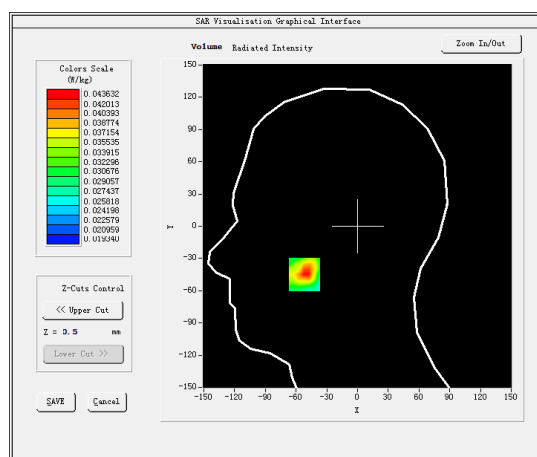
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.795486
Relative permittivity (imaginary part)	13.851160
Conductivity (S/m)	1.950705
Variation (%)	-1.500000

SURFACE SAR



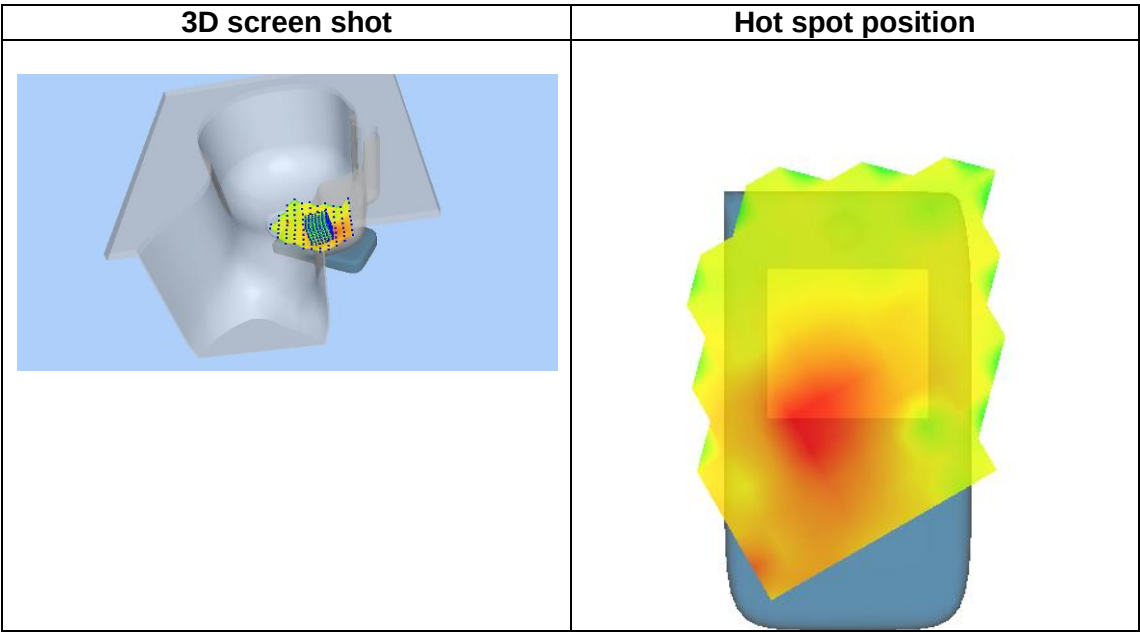
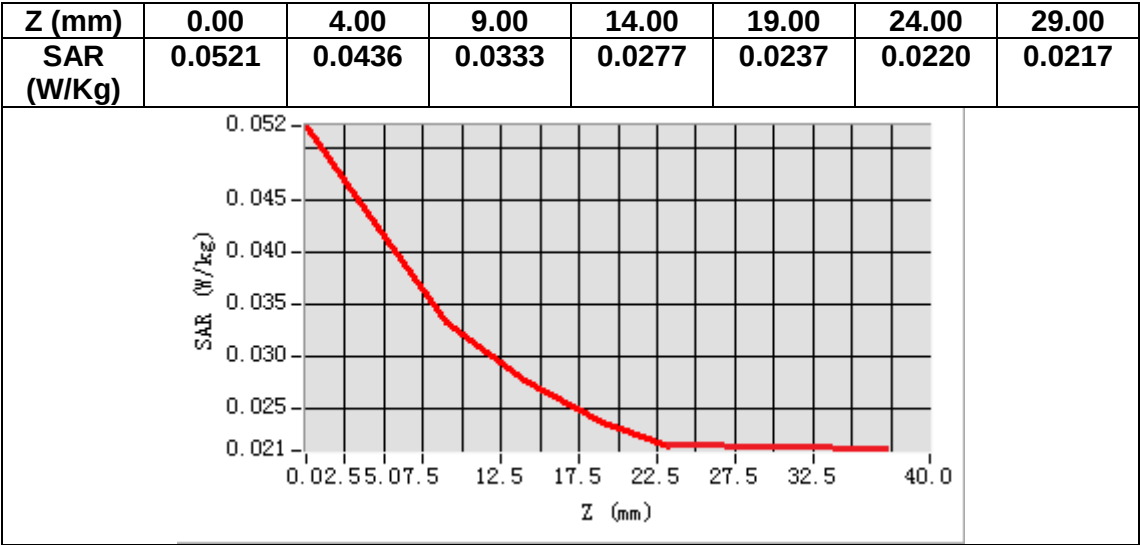
VOLUME SAR



Maximum location: X=-52.00, Y=-45.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.031226
SAR 1g (W/Kg)	0.041763



MEASUREMENT 20

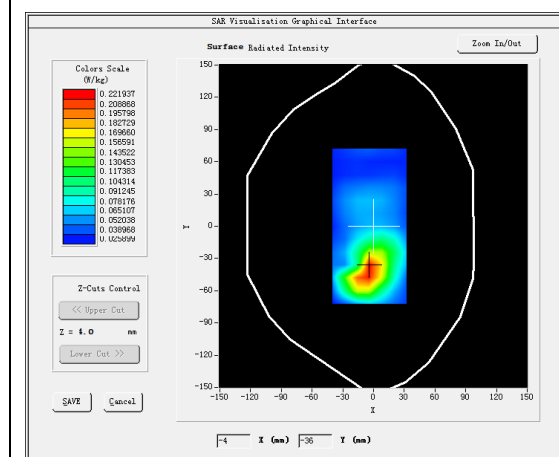
A. Experimental conditions.

<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>

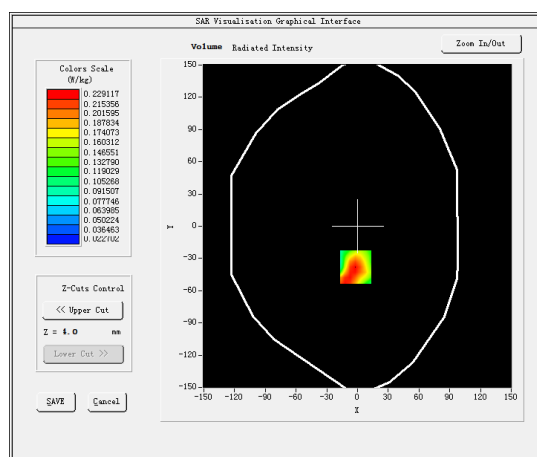
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	53.006947
Relative permittivity (imaginary part)	15.207840
Conductivity (S/m)	2.141771
Variation (%)	-2.480000

SURFACE SAR



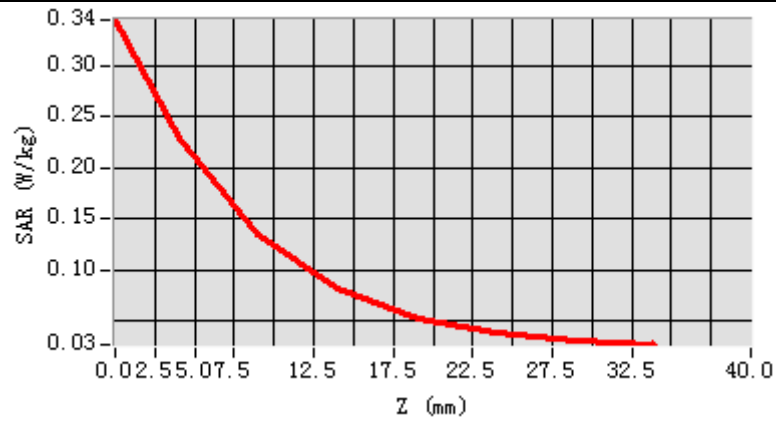
VOLUME SAR

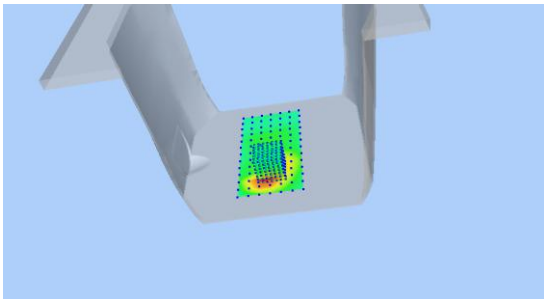
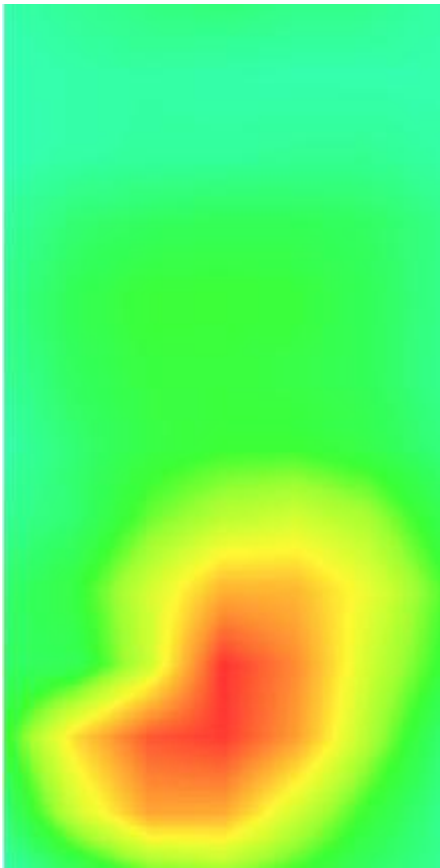


Maximum location: X=-2.00, Y=-38.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.124238
SAR 1g (W/Kg)	0.219727



3D screen shot	Hot spot position
	

MEASUREMENT 21

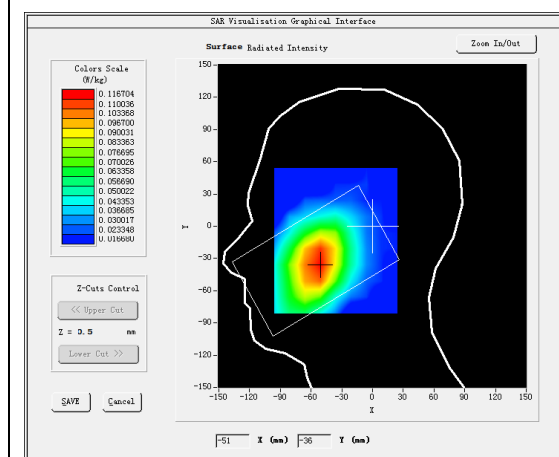
A. Experimental conditions.

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

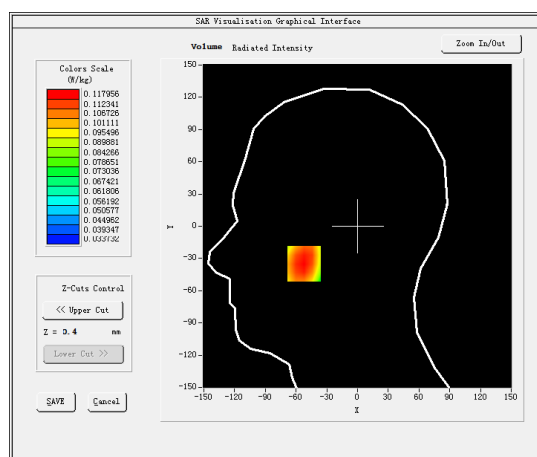
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.586311
Relative permittivity (imaginary part)	22.267380
Conductivity (S/m)	0.878324
Variation (%)	-1.100000

SURFACE SAR



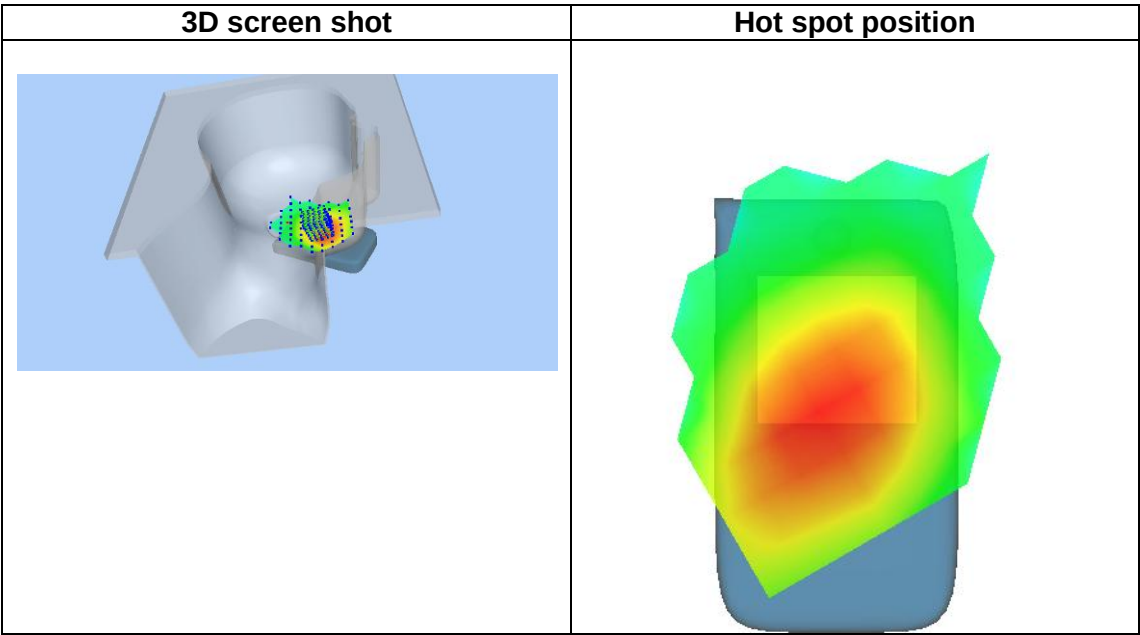
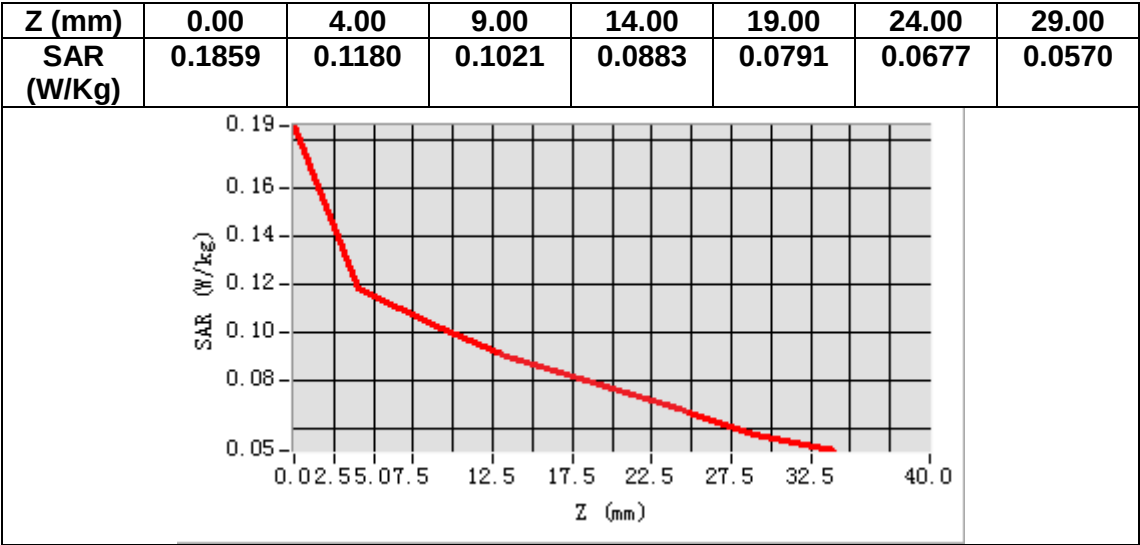
VOLUME SAR



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

SAR Peak: 0.18 W/kg

SAR 10g (W/Kg)	0.096044
SAR 1g (W/Kg)	0.122007



MEASUREMENT 22

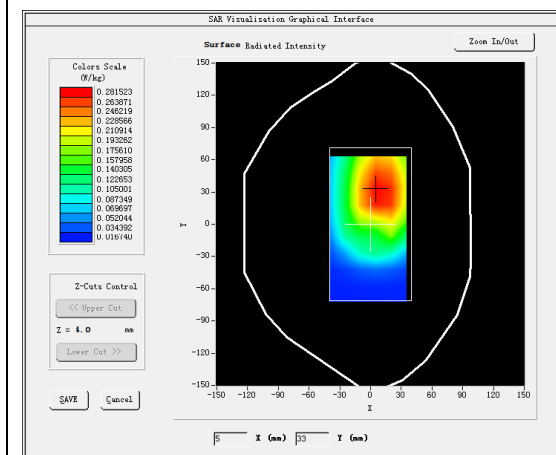
A. Experimental conditions.

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

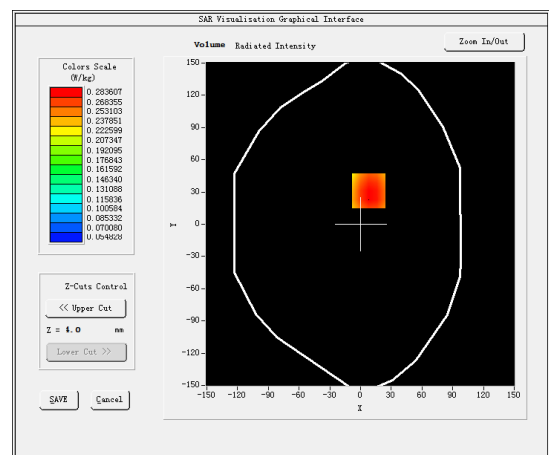
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	55.736710
Relative permittivity (imaginary part)	23.730499
Conductivity (S/m)	0.936036
Variation (%)	-0.550000

SURFACE SAR



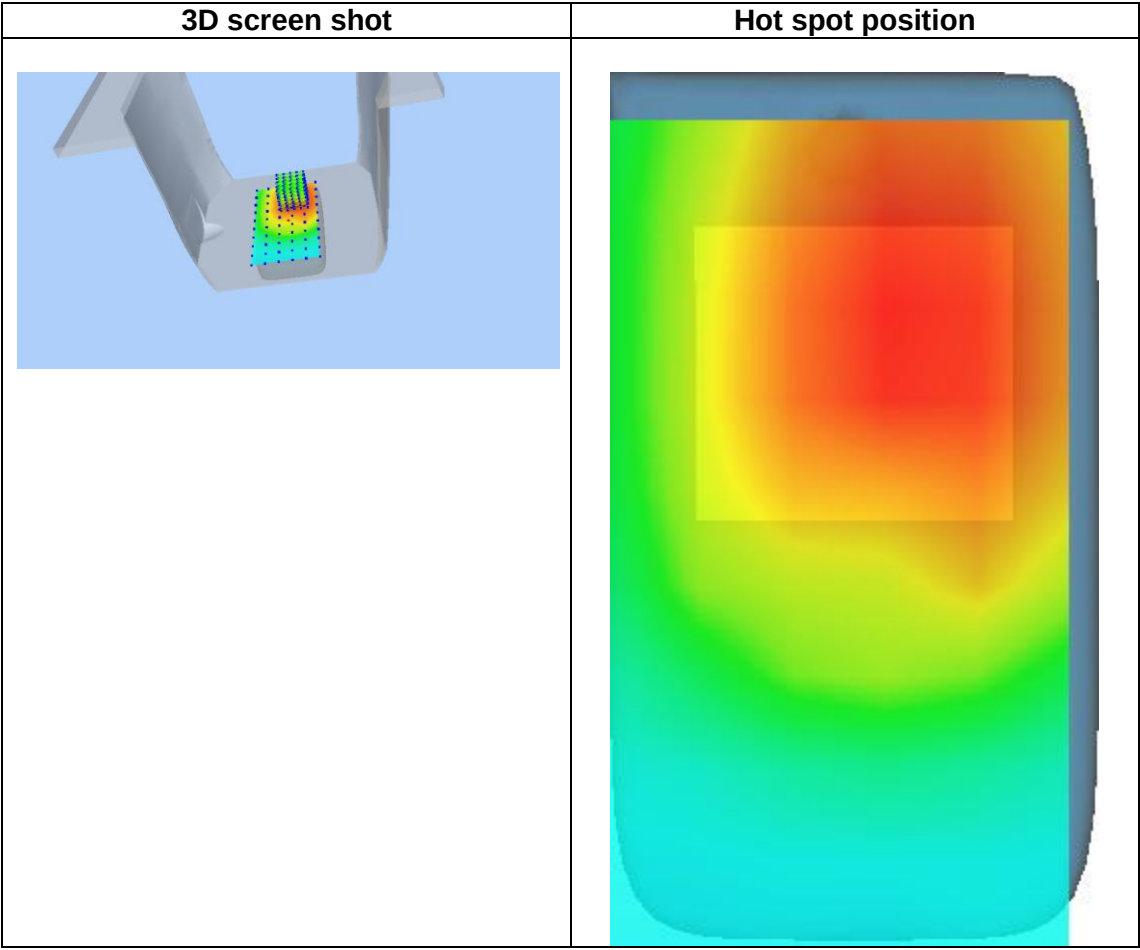
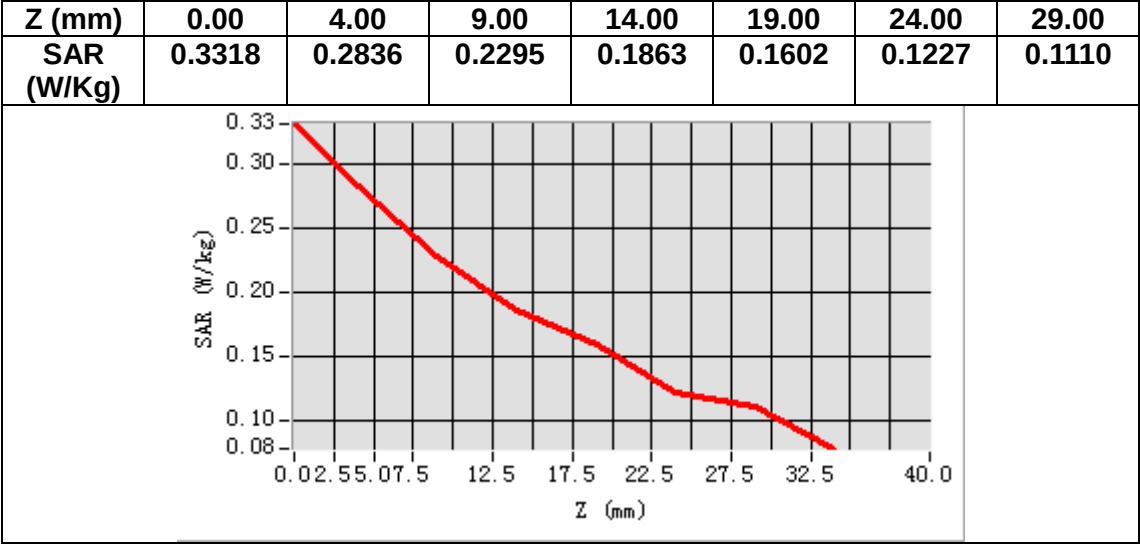
VOLUME SAR



Maximum location: X=8.00, Y=31.00

SAR Peak: 0.34 W/kg

SAR 10g (W/Kg)	0.219247
SAR 1g (W/Kg)	0.278515



14. Appendix D. Calibration Certificate

Table of contents
E Field Probe - SN 41/18 EPGO330
750 MHz Dipole - SN 03/15 DIP 0G750-355
835 MHz Dipole - SN 03/15 DIP 0G835-347
1800 MHz Dipole - SN 03/15 DIP 1G800-349
1900 MHz Dipole - SN 03/15 DIP 1G900-350
2450 MHz Dipole - SN 03/15 DIP 2G450-352
2600 MHz Dipole - SN 03/15 DIP 2G600-356
5000-6000 MHz Dipole - SN 13/14 WGA 33



COMOSAR E-Field Probe Calibration Report

Ref : ACR.142.2.19.SATU.B

SHENZHEN NTEK TESTING TECHNOLOGY CO., LTD.
BUILDING E, FENDA SCIENCE PARK, SANWEI
COMMUNITY, XIXIANG STREET,
BAO'AN DISTRICT, SHENZHEN GUANGDONG, CHINA
MVG COMOSAR DOSIMETRIC E-FIELD PROBE
SERIAL NO.: SN 41/18 EPG0330

Calibrated at MVG US
2105 Barrett Park Dr. - Kennesaw, GA 30144



Calibration Date: 05/21/19

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed in MVG USA using the CALISAR / CALIBAIR test bench, for use with a COMOSAR system only. All calibration results are traceable to national metrology institutions.



COMOSAR E-FIELD PROBE CALIBRATION REPORT

Ref: ACR.142.2.19.SATU.B

	<i>Name</i>	<i>Function</i>	<i>Date</i>	<i>Signature</i>
<i>Prepared by :</i>	Jérôme LUC	Product Manager	5/22/2019	<i>JS</i>
<i>Checked by :</i>	Jérôme LUC	Product Manager	5/22/2019	<i>JS</i>
<i>Approved by :</i>	Kim RUTKOWSKI	Quality Manager	5/22/2019	<i>Kim Rutkowski</i>

	<i>Customer Name</i>
<i>Distribution :</i>	CCIC SOUTHERN TESTING CO., LTD

<i>Issue</i>	<i>Date</i>	<i>Modifications</i>
A	5/22/2019	Initial release
B	5/27/2019	Change customer name and address