

FCC SAR EVALUATION REPORT

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

Product Name : Mobile Phone

Trademark : ulefone

Model Name : GQ3092

Family Model : Note 9, Note 9P, Note 9 Pro, Note 9 Lite, Note
9 Plus, Note 9T, Note 9E, Note 9S

Report No. : STR200514002001E

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Shenzhen 518057 P.R.China**Manufacturer's Name**.....: Shenzhen Gotron Electronic CO.,LTD.Address.....: 518, 5F, R&D building, Tsinghua Hi-Tech park, Nanshan district,
Shenzhen 518057 P.R.China**Product description**

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9E, Note 9S

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

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Test Result.....: **Pass**Prepared By
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※ ※ Revision History ※ ※

REV.	DESCRIPTION	ISSUED DATE	REMARK
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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 GQ3092 are as follows.

RF Exposure Conditions		Equipment Class - Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
1-g Head		0.339	0.103	0.486	N/A
1-g Body-Worn (Separation distance of 10mm)		1.009	0.040	0.186	N/A
1-g Hotspot (Separation distance of 10mm)		1.009	0.040	0.186	N/A
Max Simultaneous Tx	Head	0.825	0.442	0.825	0.444
	Body-Worn	1.195	1.049	1.195	1.062
	Hotspot	1.195	1.049	1.195	1.062

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

1.3. EUT Description

Device Information	
Product Name	Mobile Phone
Trade Name	ulefone
Model Name	GQ3092
Family Model	Note 9, Note 9P, Note 9 Pro, Note 9 Lite, Note 9 Plus, Note 9T, Note 9E, Note 9S
FCC ID	2AOWK-GQ3092
Device Phase	Identical Prototype
Exposure Category	General population / Uncontrolled environment
Antenna	FPC Antenna
Battery Information	DC 3.85V, 4500mAh
Device Operating Configurations	
Supporting Mode(s)	GSM 850/1900, WCDMA Band 2/4/5, LTE Band 2/4/5/7/12/17, WLAN 2.4G/5.2G/5.8G, Bluetooth, NFC
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK), NFC(ASK)
Device Class	B

Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 4	1710-1755	2110-2155
	WCDMA Band 5	824-849	869-894
	LTE Band 2	1850-1910	1930-1990
	LTE Band 4	1710-1755	2110-2155
	LTE Band 5	824-849	869-894
	LTE Band 7	2500-2570	2620-2690
	LTE Band 12	699-716	729-746
	LTE Band 17	704-716	734-746
	WLAN 2.4G	2412-2462	
	WLAN 5.2G	5180-5240	
	WLAN 5.8G	5745-5825	
	Bluetooth	2402-2480	
	NFC	13.56	
GPRS Multislot Class(12)	Max Number of Timeslots in Uplink		4
	Max Number of Timeslots in Downlink		4
	Max Total Timeslot		5
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 4)		
	3, tested with power control "all 1"(WCDMA Band 5)		
	3, tested with power control all Max.(LTE Band 2)		
	3, tested with power control all Max.(LTE Band 4)		
	3, tested with power control all Max.(LTE Band 5)		
	3, tested with power control all Max.(LTE Band 7)		
	3, tested with power control all Max.(LTE Band 12)		
	3, tested with power control all Max.(LTE Band 17)		
Test Channels (low-mid-high)	128-189-251(GSM 850)		
	512-661-810(GSM 1900)		
	9262-9400-9538(WCDMA Band 2)		
	1312-1413-1513(WCDMA Band 4)		
	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)
20407-20525-20643(LTE Band 5 BW=1.4MHz)
20415-20525-20635(LTE Band 5 BW=3MHz)
20425-20525-20625(LTE Band 5 BW=5MHz)
20450-20525-20600(LTE Band 5 BW=10MHz)
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)
23017-23095-23173 (LTE Band 12 BW=1.4MHz)
23025-23095-23165 (LTE Band 12 BW=3MHz)
23035-23095-23155 (LTE Band 12 BW=5MHz)
23060-23095-23130 (LTE Band 12 BW=10MHz)
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)

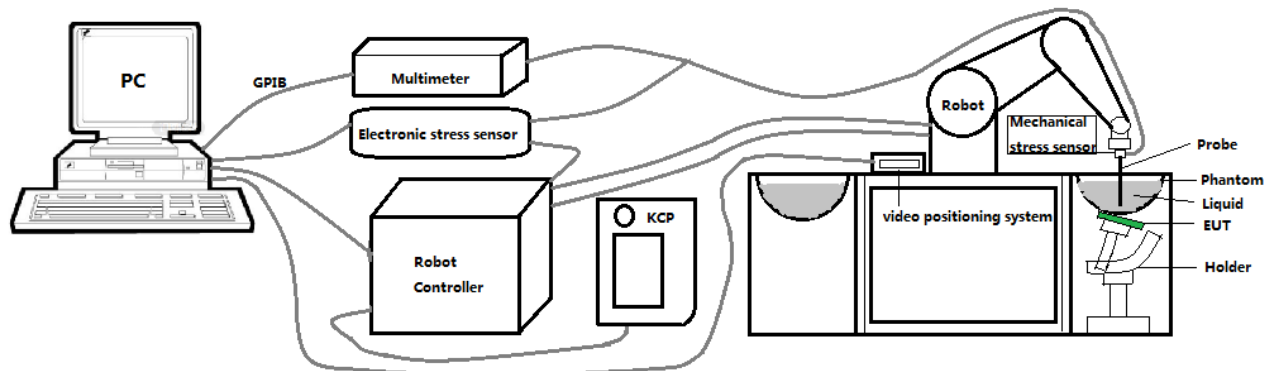
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225 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 08/16 EPGO287 with following specifications is used



- Dynamic range: 0.01-100 W/kg
 - Tip Diameter: 2.5 mm
 - Distance between probe tip and sensor center: 1 mm
 - Distance between sensor center and the inner phantom surface: 2 mm (repeatability better than ± 1 mm).
 - Probe linearity: ± 0.08 dB
 - Axial isotropy: 0.06 dB
 - Hemispherical Isotropy: 0.08 dB
 - Calibration range: 650MHz to 5900MHz for head & body simulating liquid.
 - Lower detection limit: 7mW/kg
- Angle between probe axis (evaluation axis) and surface normal line: less than 30° .

2.3.1. E-Field Probe Calibration

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

2.4. SAM phantoms

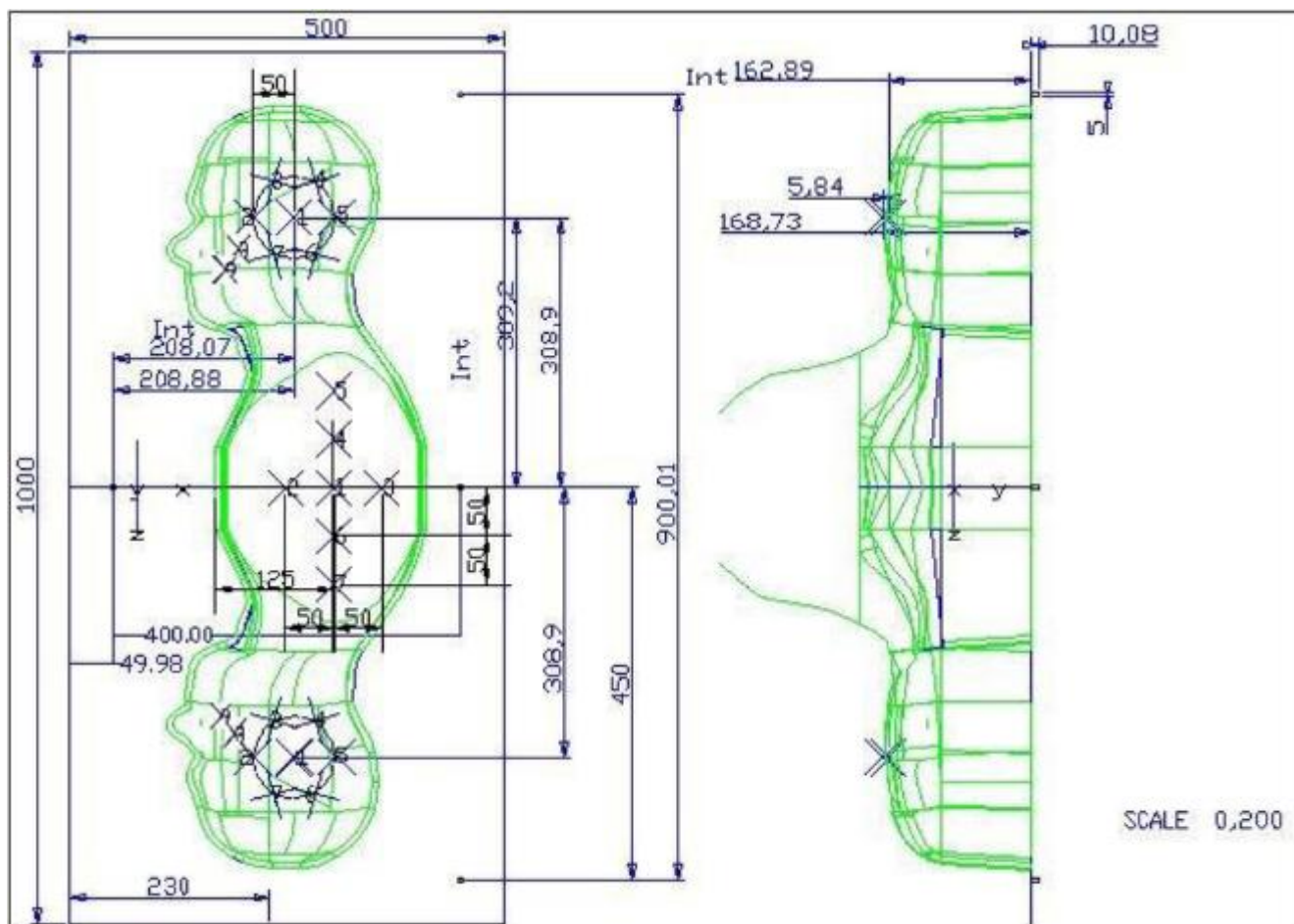
Photo of SAM phantom SN 16/15 SAM119



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

2.4.1. Technical Data

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

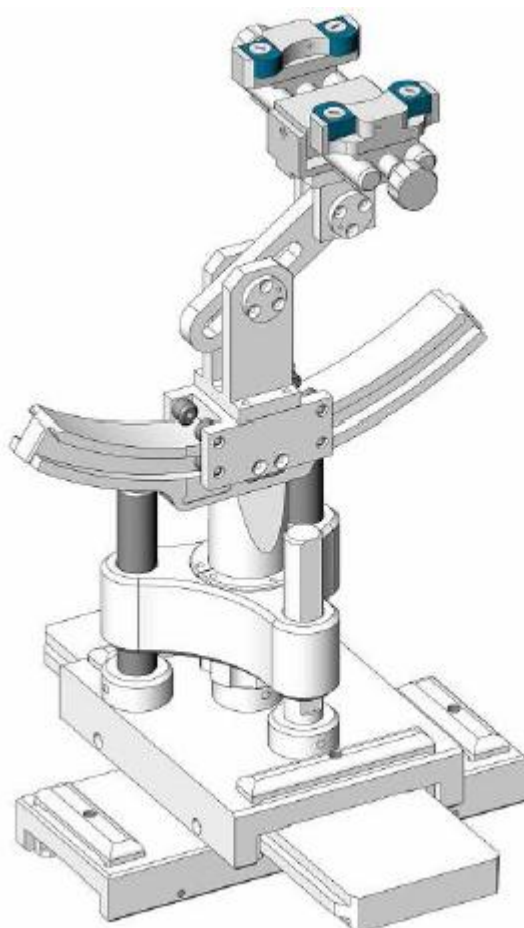


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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

2.5. Device Holder

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



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

2.6. Test Equipment List

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

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Dec. 27, 2019	Dec. 26, 2020
☒	MVG	750 MHz Dipole	SID750	SN 03/15 DIP 0G750-355	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	835 MHz Dipole	SID835	SN 03/15 DIP 0G835-347	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	900 MHz Dipole	SID900	SN 03/15 DIP 0G900-348	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1800 MHz Dipole	SID1800	SN 03/15 DIP 1G800-349	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	1900 MHz Dipole	SID1900	SN 03/15 DIP 1G900-350	Apr. 19, 2018	Apr. 18, 2021
☐	MVG	2000 MHz Dipole	SID2000	SN 03/15 DIP 2G000-351	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2450 MHz Dipole	SID2450	SN 03/15 DIP 2G450-352	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	2600 MHz Dipole	SID2600	SN 03/15 DIP 2G600-356	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	5000 MHz Dipole	SWG5500	SN 13/14 WGA 33	Apr. 19, 2018	Apr. 18, 2021
☒	MVG	Liquid measurement Kit	SCLMP	SN 21/15 OCPG 72	NCR	NCR
☒	MVG	Power Amplifier	N.A	AMPLISAR_28/14_003	NCR	NCR
☒	KEITHLEY	Millivoltmeter	2000	4072790	NCR	NCR
☒	R&S	Universal radio communication tester	CMU200	117858	Aug. 06, 2019	Aug. 05, 2020
☒	R&S	Wideband radio communication tester	CMW500	103917	Aug. 28, 2019	Aug. 27, 2020
☒	HP	Network Analyzer	8753D	3410J01136	Aug. 06, 2019	Aug. 05, 2020
☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Aug. 06, 2019	Aug. 05, 2020

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

3. SAR Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

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

<SAR measurement>

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/Bluetooth continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix A demonstrates.
- (c) Set scan area, grid size and other setting on the OPENSAR software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band.
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg.

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

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

3.1. Power Reference

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

3.2. Area scan & Zoom scan

The area scan is a 2D scan to find the hot spot location on the DUT. The zoom scan is a 3D scan above the hot spot to calculate the 1g and 10g SAR value.

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

From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks; additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g., 1 W/kg for 1,6 W/kg 1 g limit, or 1,26 W/kg for 2 W/kg, 10 g limit).

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

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$			≤ 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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 parameter is within the tolerances of the specified target values. The measured conductivity and relative permittivity should be within $\pm 5\%$ of the target values.

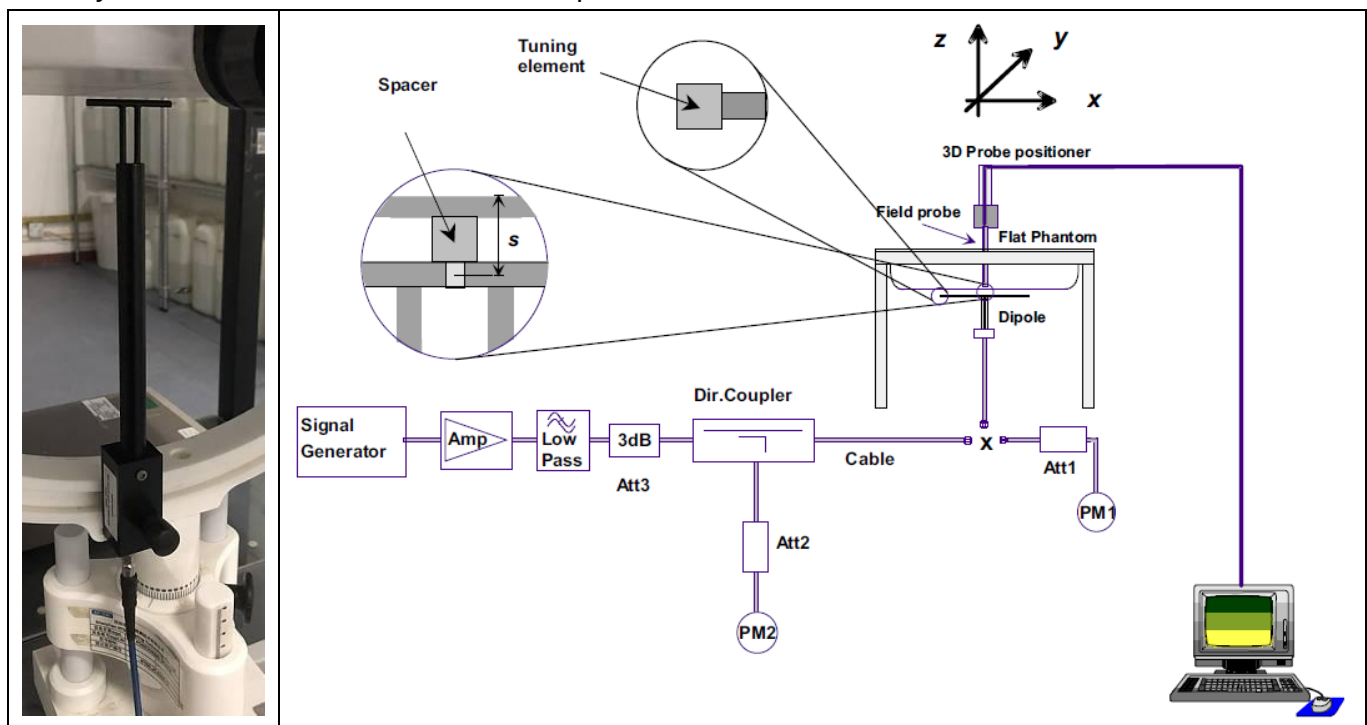
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.96 (39.86~44.06)	0.89 (0.85~0.93)	41.58	0.92	21.5 °C	May. 20, 2020
Body 750	750	55.55 (52.77~58.33)	0.96 (0.91~1.01)	55.36	0.97	21.5 °C	May. 20, 2020
Head 850	835	41.50 (39.43~43.58)	0.90 (0.86~0.95)	40.42	0.93	21.5 °C	May. 22, 2020
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.02)	54.45	0.98	21.5 °C	May. 22, 2020
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	38.38	1.40	21.7 °C	May. 24, 2020
Body 1800	1800	53.30 (50.64~55.97)	1.52 (1.44~1.60)	53.06	1.54	21.5 °C	May. 24, 2020
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	40.96	1.44	21.5 °C	May. 26, 2020
Body 1900	1900	53.30 (50.64~55.97)	1.52 (1.44~1.60)	52.56	1.52	21.5 °C	May. 26, 2020
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	38.48	1.85	21.5 °C	May. 28, 2020
Body 2450	2450	52.70 (50.07~55.34)	1.95 (1.85~2.05)	52.73	1.94	21.5 °C	May. 28, 2020
Head 2600	2600	39.01 (37.06~40.96)	1.96 (1.86~2.06)	38.07	2.02	21.4 °C	May. 30, 2020
Body 2600	2600	52.51 (49.88~55.14)	2.16 (2.05~2.27)	52.56	2.20	21.2 °C	May. 30, 2020
Head 5200	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	35.61	4.64	21.5 °C	May. 31, 2020
Body 5200	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	49.62	5.26	21.5 °C	May. 31, 2020
Head 5800	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	35.54	5.22	21.9 °C	May. 31, 2020
Body 5800	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.28	6.07	21.2 °C	May. 31, 2020

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

4.2. System Verification Procedure

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

The system verification is shown as below picture:



4.2.1. System Verification Results

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

System Verification	Target SAR (1W) (±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)	8.87	5.91	21.5 °C	May. 20, 2020
750MHz Body	8.85 (7.97~9.74)	5.91 (5.32~6.50)	9.19	5.68	21.5 °C	May. 20, 2020
835MHz Head	9.55 (8.60~10.51)	6.10 (5.49~6.71)	9.04	6.13	21.5 °C	May. 22, 2020
835MHz Body	9.83 (8.85~10.81)	6.45 (5.81~7.10)	10.44	6.70	21.5 °C	May. 22, 2020
1800MHz Head	38.11 (34.30~41.92)	20.05 (18.05~22.06)	39.61	18.71	21.7 °C	May. 24, 2020
1800MHz Body	38.13 (34.32~41.94)	20.65 (18.59~22.72)	36.82	22.00	21.5 °C	May. 24, 2020
1900MHz Head	38.92 (35.03~42.81)	20.09 (18.08~22.10)	40.00	19.04	21.5 °C	May. 26, 2020
1900MHz Body	39.02 (35.12~42.92)	20.57 (18.51~22.63)	37.17	20.09	21.5 °C	May. 26, 2020
2450MHz Head	53.76 (48.38~59.14)	24.12 (21.71~26.53)	50.57	24.39	21.5 °C	May. 28, 2020
2450MHz Body	52.90 (47.61~58.19)	24.09 (21.68~26.50)	50.27	24.74	21.5 °C	May. 28, 2020
2600MHz Head	55.60 (50.04~61.16)	24.60 (22.14~27.06)	54.10	24.69	21.4 °C	May. 30, 2020
2600MHz Body	52.49 (47.24~57.74)	23.74 (21.37~26.11)	52.44	24.29	21.2 °C	May. 30, 2020
5200MHz Head	160.94 (144.85~177.03)	55.97 (50.37~61.57)	152.36	53.70	21.5 °C	May. 31, 2020
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	153.58	56.83	21.5 °C	May. 31, 2020
5800MHz Head	184.13 (165.72~202.54)	62.74 (56.47~69.01)	186.44	60.45	21.9 °C	May. 31, 2020
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	170.27	58.59	21.2 °C	May. 31, 2020

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

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

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

5.2. SAR measurement uncertainty

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

6. RF Exposure Positions

6.1. Ear and handset reference point

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



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

6.2. Definition of the cheek position

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

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

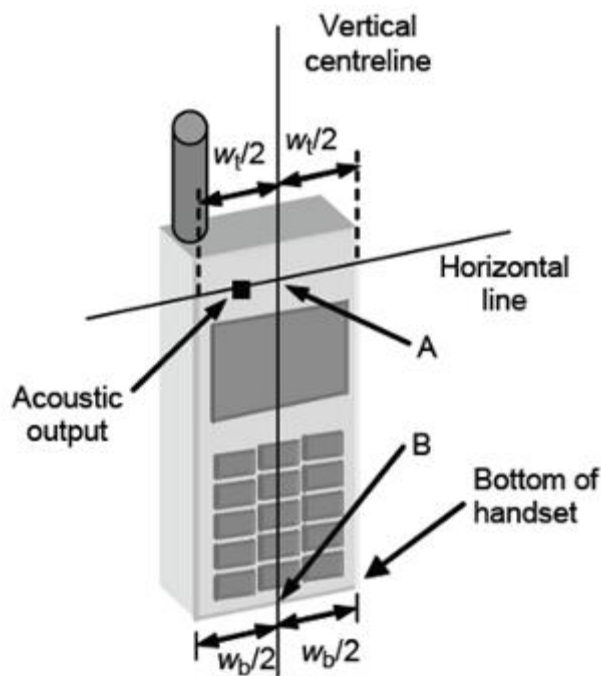


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

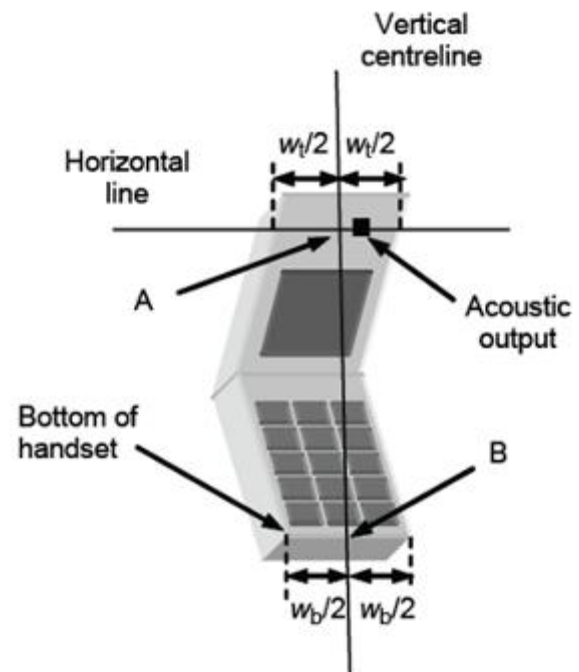


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

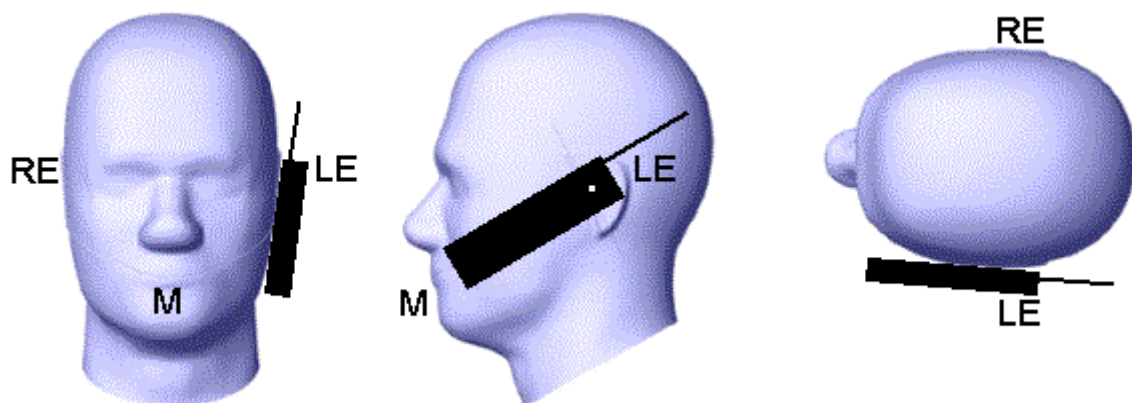


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

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

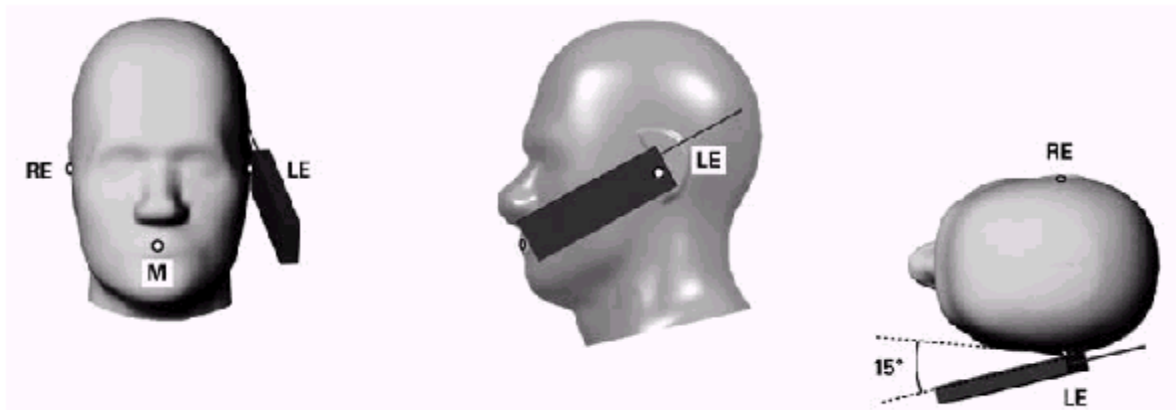


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

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

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

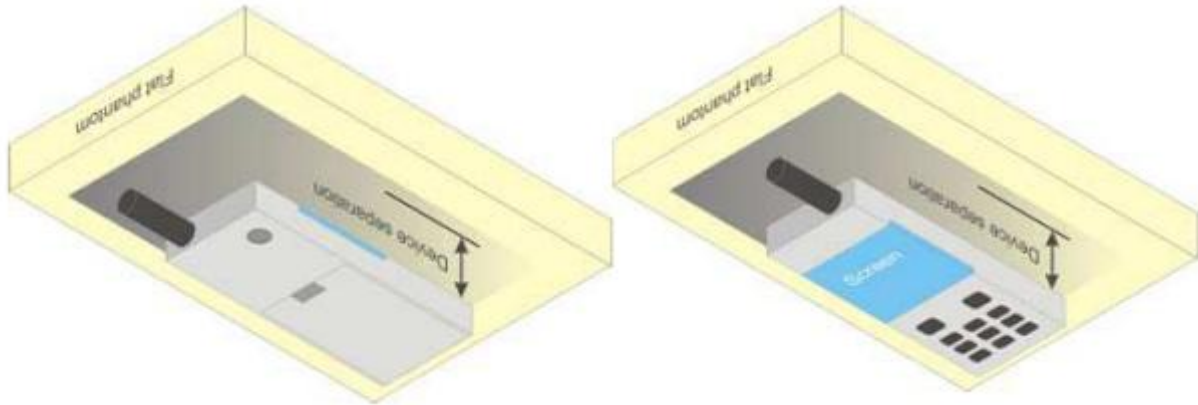


Figure 6.4.1 – Test positions for body-worn devices

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)	32.00	31.25	31.32	31.42	22.97	22.22	22.29	22.39
GPRS(GMSK, 1 TS)	32.00	31.37	31.32	31.45	22.97	22.34	22.29	22.42
GPRS(GMSK, 2 TS)	31.00	30.72	30.65	30.77	24.98	24.70	24.63	24.75
GPRS(GMSK, 3 TS)	30.00	29.49	29.43	29.57	25.74	25.23	25.17	25.31
GPRS(GMSK, 4 TS)	30.00	28.92	28.87	29.02	26.99	25.91	25.86	26.01
EDGE(8PSK, 1 TS)	29.00	28.67	28.50	28.64	19.97	19.64	19.47	19.61
EDGE(8PSK, 2 TS)	28.00	27.98	27.95	27.71	21.98	21.96	21.93	21.69
EDGE(8PSK, 3 TS)	27.00	26.44	26.28	26.16	22.74	22.18	22.02	21.90
EDGE(8PSK, 4 TS)	26.00	25.59	25.35	25.23	22.99	22.58	22.34	22.22
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880.0	1909.8	(dBm)	1850.2	1880.0	1909.8
GSM (GMSK)	31.00	30.39	30.47	30.36	21.97	21.36	21.44	21.33
GPRS(GMSK, 1 TS)	31.00	30.53	30.49	30.38	21.97	21.50	21.46	21.35
GPRS(GMSK, 2 TS)	30.00	29.65	29.62	29.51	23.98	23.63	23.60	23.49
GPRS(GMSK, 3 TS)	29.00	28.20	28.19	28.10	24.74	23.94	23.93	23.84
GPRS(GMSK, 4 TS)	28.00	27.70	27.68	27.59	24.99	24.69	24.67	24.58
EDGE(8PSK, 1 TS)	27.00	26.44	26.51	26.40	17.97	17.41	17.48	17.37
EDGE(8PSK, 2 TS)	26.00	25.64	25.77	25.44	19.98	19.62	19.75	19.42
EDGE(8PSK, 3 TS)	25.00	24.54	23.99	23.73	20.74	20.28	19.73	19.47
EDGE(8PSK, 4 TS)	24.00	22.95	23.07	22.78	20.99	19.94	20.06	19.77

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	27.00	26.73	26.66	26.49
HSDPA Subtest-1	26.00	25.67	25.85	25.23
HSDPA Subtest-2	26.00	25.62	25.81	25.19
HSDPA Subtest-3	26.00	24.97	25.24	24.61
HSDPA Subtest-4	26.00	24.94	25.19	24.35
HSUPA Subtest-1	26.00	25.65	25.87	25.26
HSUPA Subtest-2	26.00	25.69	25.89	25.27
HSUPA Subtest-3	26.00	25.49	25.72	25.11
HSUPA Subtest-4	26.00	25.67	25.86	25.25
HSUPA Subtest-5	26.00	25.59	25.80	25.17
Band	WCDMA Band 4			
Tx Channel	Tune-up	1312	1413	1512
Frequency (MHz)		1712.4	1732.6	1752.6
RMC 12.2Kbps	24.00	23.21	23.21	23.29
HSDPA Subtest-1	24.00	23.47	22.76	23.23
HSDPA Subtest-2	24.00	23.45	22.68	23.17
HSDPA Subtest-3	24.00	23.30	22.34	22.99
HSDPA Subtest-4	24.00	23.17	22.32	22.93
HSUPA Subtest-1	24.00	23.51	22.68	23.20
HSUPA Subtest-2	24.00	23.49	22.75	23.22
HSUPA Subtest-3	24.00	23.30	22.39	23.01
HSUPA Subtest-4	24.00	23.41	22.75	23.19
HSUPA Subtest-5	24.00	23.34	22.54	23.10
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	29.00	28.73	28.75	28.77
HSDPA Subtest-1	28.00	27.08	27.01	26.79
HSDPA Subtest-2	27.00	26.89	26.80	26.61
HSDPA Subtest-3	27.00	26.10	26.01	25.83
HSDPA Subtest-4	27.00	26.28	25.97	25.79
HSUPA Subtest-1	28.00	27.02	26.90	26.69
HSUPA Subtest-2	28.00	27.05	26.96	26.76
HSUPA Subtest-3	27.00	26.52	26.50	26.27

HSUPA Subtest-4	28.00	27.05	26.96	26.76
HSUPA Subtest-5	27.00	26.72	26.66	26.47

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	22.14	21.87	21.66
			1	2	23.00	22.23	22.03	21.78
			1	5	23.00	22.11	21.88	21.65
			3	0	23.00	22.16	22.05	21.70
			3	1	23.00	22.20	22.05	21.74
			3	2	23.00	22.17	22.06	21.71
			6	0	22.00	21.14	20.94	20.75
		16QAM	1	0	22.00	21.10	21.08	20.48
			1	2	22.00	21.21	21.20	20.61
			1	5	22.00	21.12	21.09	20.42
			3	0	22.00	21.26	21.19	20.86
			3	1	22.00	21.30	21.24	20.84
			3	2	22.00	21.27	21.29	20.93
			6	0	21.00	20.28	20.16	19.88
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	22.24	22.03	21.78
			1	7	23.00	22.63	22.32	22.15
			1	14	23.00	22.20	22.00	21.75
			8	0	22.00	21.22	21.05	20.79
			8	4	22.00	21.23	21.07	20.79
			8	7	22.00	21.20	21.02	20.76
			15	0	22.00	21.15	21.03	20.77
		16QAM	1	0	22.00	21.48	21.18	20.66
			1	7	22.00	21.87	21.42	20.89
			1	14	22.00	21.46	21.12	20.54
			8	0	21.00	20.27	20.13	19.82
			8	4	21.00	20.27	20.15	19.82
			8	7	21.00	20.24	20.12	19.80

			15	0	21.00	20.24	20.02	19.86
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	22.08	21.84	21.64
			1	12	23.00	22.52	22.36	22.00
			1	24	23.00	22.03	21.77	21.60
			12	0	22.00	21.00	20.93	20.69
			12	6	22.00	21.12	21.05	20.75
			12	11	22.00	21.07	20.94	20.71
			25	0	22.00	21.10	20.97	20.69
		16QAM	1	0	22.00	21.24	21.16	21.17
			1	12	22.00	21.64	21.51	21.34
			1	24	22.00	21.28	21.07	21.03
			12	0	21.00	20.05	19.99	19.77
			12	6	21.00	20.16	20.09	19.81
			12	11	21.00	20.06	20.02	19.73
			25	0	21.00	20.19	19.99	19.74
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	22.12	21.94	21.74
			1	24	23.00	22.29	22.09	21.85
			1	49	23.00	22.07	21.88	21.63
			25	0	22.00	21.15	21.03	20.80
			25	12	22.00	21.14	21.00	20.78
			25	24	22.00	21.16	20.99	20.82
			50	0	22.00	21.19	21.02	20.81
		16QAM	1	0	22.00	21.36	21.13	20.56
			1	24	22.00	21.56	21.25	20.76
			1	49	22.00	21.42	21.01	20.45
			25	0	21.00	20.24	20.09	19.88
			25	12	21.00	20.25	20.08	19.90
			25	24	21.00	20.24	20.06	19.88
			50	0	21.00	20.23	20.12	19.85
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB	RB		18675/1857.5	18900/1880	19125/1902.5

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	15MHz	QPSK	1	0	23.00	21.96	21.80	21.66
			1	37	23.00	22.42	22.22	21.90
			1	74	23.00	21.86	21.68	21.42
			36	0	22.00	21.22	21.05	20.94
			36	18	22.00	21.21	21.01	20.83
			36	37	22.00	21.14	20.97	20.71
			75	0	22.00	21.23	21.02	20.92
		16QAM	1	0	22.00	21.02	21.21	20.78
			1	37	22.00	21.52	21.61	21.16
			1	74	22.00	20.96	21.05	20.63
			36	0	21.00	20.15	20.07	19.99
			36	18	21.00	20.20	20.06	19.94
			36	37	21.00	20.09	20.00	19.82
			75	0	21.00	20.25	20.05	19.90
LTE Band 2	20MHz	QPSK	1	0	23.00	21.79	21.74	21.67
			1	49	23.00	22.20	22.05	21.95
			1	99	23.00	21.66	21.58	21.37
			50	0	22.00	21.11	21.01	21.01
			50	24	22.00	21.11	20.96	20.79
			50	49	22.00	21.08	20.90	20.77
			100	0	22.00	21.08	20.95	20.90
		16QAM	1	0	22.00	21.07	20.94	20.82
			1	49	22.00	21.44	21.28	21.08
			1	99	22.00	21.01	20.75	20.57
			50	0	21.00	20.26	20.06	20.15
			50	24	21.00	20.23	20.05	19.95
			50	49	21.00	20.23	19.97	19.85
			100	0	21.00	20.20	20.01	20.03

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	1.4MHz	QPSK	1	0	24.00	23.38	23.20	23.24
			1	2	24.00	23.55	23.31	23.39

4			1	5	24.00	23.41	23.26	23.26
			3	0	24.00	23.43	23.31	23.32
			3	1	24.00	23.43	23.34	23.29
			3	2	24.00	23.44	23.29	23.29
			6	0	23.00	22.35	22.26	22.31
		16QAM	1	0	23.00	22.46	22.39	22.08
			1	2	23.00	22.58	22.50	22.28
			1	5	23.00	22.48	22.40	22.08
			3	0	23.00	22.58	22.53	22.41
			3	1	23.00	22.54	22.54	22.44
			3	2	23.00	22.56	22.51	22.45
			6	0	22.00	21.57	21.48	21.50
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	24.00	23.37	23.26	23.18
			1	7	24.00	23.64	23.48	23.47
			1	14	24.00	23.28	23.17	23.21
			8	0	23.00	22.32	22.25	22.20
			8	4	23.00	22.33	22.25	22.30
			8	7	23.00	22.33	22.20	22.26
			15	0	23.00	22.29	22.21	22.21
		16QAM	1	0	23.00	22.25	22.66	22.39
			1	7	23.00	22.39	22.91	22.75
			1	14	23.00	22.15	22.59	22.38
			8	0	22.00	21.34	21.30	21.29
			8	4	22.00	21.34	21.33	21.31
			8	7	22.00	21.36	21.29	21.28
			15	0	22.00	21.40	21.31	21.19
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	24.00	23.24	23.15	23.13
			1	12	24.00	23.56	23.59	23.58
			1	24	24.00	23.19	23.14	23.19
			12	0	23.00	22.27	22.19	22.21
			12	6	23.00	22.34	22.29	22.28
			12	11	23.00	22.27	22.18	22.26

			25	0	23.00	22.31	22.17	22.25
		16QAM	1	0	23.00	22.55	22.65	22.42
			1	12	23.00	22.75	22.98	22.81
			1	24	23.00	22.53	22.61	22.50
			12	0	22.00	21.37	21.21	21.15
			12	6	22.00	21.41	21.31	21.24
			12	11	22.00	21.36	21.22	21.21
			25	0	22.00	21.32	21.20	21.34
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	24.00	23.33	23.32	23.17
			1	24	24.00	23.40	23.37	23.28
			1	49	24.00	23.30	23.19	23.21
			25	0	23.00	22.33	22.28	22.26
			25	12	23.00	22.33	22.19	22.23
			25	24	23.00	22.37	22.25	22.24
			50	0	23.00	22.33	22.19	22.23
		16QAM	1	0	23.00	22.49	22.14	22.56
			1	24	23.00	22.52	22.16	22.67
			1	49	23.00	22.49	22.03	22.59
			25	0	22.00	21.39	21.32	21.34
			25	12	22.00	21.38	21.26	21.28
			25	24	22.00	21.43	21.27	21.31
			50	0	22.00	21.43	21.26	21.30
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	24.00	23.27	23.19	23.07
			1	37	24.00	23.55	23.45	23.49
			1	74	24.00	23.17	23.00	23.13
			36	0	23.00	22.38	22.29	22.27
			36	18	23.00	22.43	22.31	22.30
			36	37	23.00	22.39	22.31	22.24
			75	0	23.00	22.45	22.28	22.27
		16QAM	1	0	23.00	22.45	22.39	22.50
			1	37	23.00	22.93	22.60	22.79
			1	74	23.00	22.39	22.16	22.57

			36	0	22.00	21.45	21.28	21.31
			36	18	22.00	21.50	21.31	21.37
			36	37	22.00	21.51	21.25	21.29
			75	0	22.00	21.40	21.33	21.33
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	24.00	23.13	23.06	22.91
			1	49	24.00	23.45	23.37	23.32
			1	99	24.00	23.04	22.92	22.97
			50	0	23.00	22.28	22.21	22.24
			50	24	23.00	22.41	22.27	22.23
			50	49	23.00	22.37	22.22	22.19
			100	0	23.00	22.32	22.18	22.23
		16QAM	1	0	23.00	22.34	22.43	22.14
			1	49	23.00	22.76	22.69	22.48
			1	99	23.00	22.31	22.21	22.21
			50	0	22.00	21.33	21.31	21.21
			50	24	22.00	21.47	21.37	21.31
			50	49	22.00	21.45	21.27	21.21
			100	0	22.00	21.38	21.24	21.26

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20407/824.7	20525/836.5	20643/848.3
LTE Band 5	1.4MHz	QPSK	1	0	25.00	23.63	23.85	24.45
			1	2	25.00	24.02	24.01	24.56
			1	5	25.00	23.86	23.41	23.97
			3	0	25.00	23.75	23.87	24.55
			3	1	25.00	23.88	23.89	24.55
			3	2	25.00	23.86	23.61	24.26
			6	0	25.00	23.80	23.69	24.37
		16QAM	1	0	25.00	23.21	23.74	24.44
			1	2	25.00	23.63	23.83	24.49
			1	5	25.00	23.51	23.39	24.01
			3	0	25.00	23.69	23.88	24.55
			3	1	25.00	23.80	23.86	24.53
			3	2	25.00	23.87	23.63	24.29

			6	0	25.00	23.80	23.75	24.36
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20415/825.5	20525/836.5	20635/847.5
LTE Band 5	3MHz	QPSK	1	0	25.00	23.49	23.87	24.43
			1	7	25.00	24.24	23.71	24.75
			1	14	25.00	24.20	23.02	23.81
			8	0	25.00	23.74	23.79	24.65
			8	4	25.00	24.00	23.68	24.67
			8	7	25.00	24.11	23.32	24.29
			15	0	25.00	23.90	23.55	24.46
		16QAM	1	0	25.00	23.57	23.93	24.12
			1	7	25.00	24.29	23.72	24.35
			1	14	25.00	24.36	23.05	23.51
			8	0	25.00	23.64	23.71	24.47
			8	4	25.00	23.86	23.55	24.46
			8	7	25.00	24.01	23.24	24.15
			15	0	25.00	23.81	23.43	24.38
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20425/826.5	20525/836.5	20625/846.5
LTE Band 5	5MHz	QPSK	1	0	25.00	23.21	24.05	23.57
			1	12	25.00	24.01	23.25	24.23
			1	24	25.00	24.39	23.11	23.54
			12	0	25.00	23.56	23.67	24.03
			12	6	25.00	23.92	23.28	24.27
			12	11	25.00	24.20	23.03	24.07
			25	0	25.00	23.87	23.24	24.08
		16QAM	1	0	25.00	23.44	24.17	23.71
			1	12	25.00	24.26	23.41	24.31
			1	24	25.00	24.64	23.03	23.69
			12	0	25.00	23.39	23.50	23.92
			12	6	25.00	23.77	23.12	24.14
			12	11	25.00	24.04	23.02	23.94
			25	0	24.00	23.73	23.19	23.90
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB	RB		20450/829	20525/836.5	20600/844

			Size	Offset				
LTE Band 5	10MHz	QPSK	1	0	25.00	23.68	24.88	23.02
			1	24	25.00	24.81	23.25	23.27
			1	49	25.00	24.35	23.05	23.60
			25	0	25.00	24.24	24.13	23.02
			25	12	25.00	24.68	23.30	23.42
			25	24	25.00	24.70	23.01	23.89
			50	0	25.00	24.46	23.41	23.43
		16QAM	1	0	25.00	23.51	24.51	23.01
			1	24	25.00	24.60	23.02	23.52
			1	49	25.00	24.19	23.02	23.83
			25	0	25.00	24.07	24.00	23.02
			25	12	25.00	24.47	23.21	23.35
			25	24	25.00	24.49	23.01	23.80
			50	0	25.00	24.30	23.32	23.34

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20775/2502.5	21100/2535	21425/2567.5
LTE Band 7	5MHz	QPSK	1	0	23.00	21.59	21.59	22.04
			1	12	23.00	21.85	21.32	21.40
			1	24	23.00	22.09	21.07	21.75
			12	0	22.00	21.70	21.48	21.75
			12	6	22.00	21.83	21.35	21.43
			12	11	22.00	21.93	21.20	21.04
			25	0	22.00	21.81	21.32	21.39
		16QAM	1	0	23.00	21.33	21.51	22.17
			1	12	23.00	21.60	21.25	21.54
			1	24	23.00	21.86	21.01	21.03
			12	0	22.00	21.34	21.24	21.53
			12	6	22.00	21.47	21.12	21.22
			12	11	22.00	21.59	20.97	20.83
			25	0	22.00	21.46	21.06	21.18
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band	10MHz	QPSK	1	0	23.00	21.55	21.80	22.42
			1	24	23.00	22.10	21.01	21.86

7			1	49	23.00	22.54	21.82	21.60
			25	0	23.00	21.78	21.44	22.75
			25	12	23.00	22.17	21.13	21.96
			25	24	23.00	22.83	21.05	21.21
			50	0	23.00	22.32	21.19	22.04
		16QAM	1	0	23.00	21.93	21.85	22.31
			1	24	23.00	21.54	21.07	21.81
			1	49	23.00	22.99	21.87	21.53
			25	0	23.00	21.48	21.24	22.56
			25	12	23.00	21.88	21.94	21.80
			25	24	23.00	22.54	21.76	21.04
			50	0	22.00	21.99	20.99	21.91
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	21.46	22.18	22.06
			1	37	23.00	22.72	21.89	22.49
			1	74	23.00	22.66	21.88	21.47
			36	0	23.00	22.00	21.55	22.65
			36	18	23.00	22.00	21.01	22.66
			36	37	23.00	22.01	21.82	21.45
			75	0	23.00	23.00	21.16	22.66
		16QAM	1	0	23.00	21.37	22.03	22.97
			1	37	23.00	22.67	21.76	22.49
			1	74	23.00	22.76	21.74	21.47
			36	0	23.00	22.00	21.38	22.41
			36	18	23.00	22.00	21.84	22.46
			36	37	23.00	22.81	21.64	21.27
			75	0	23.00	22.70	21.96	22.50
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20850/2510	21100/2535	21350/2560
LTE Band 7	20MHz	QPSK	1	0	24.00	22.66	22.95	23.22
			1	49	24.00	23.62	22.89	23.23
			1	99	24.00	23.48	23.32	22.63
			50	0	24.00	22.48	23.55	23.78
			50	24	24.00	23.66	22.98	23.21
			50	49	24.00	23.62	22.85	22.88

			100	0	24.00	23.55	22.31	22.93
		16QAM	1	0	24.00	22.35	22.73	23.06
			1	49	24.00	23.38	22.74	23.26
			1	99	24.00	23.61	22.09	22.67
			50	0	24.00	22.15	22.58	23.13
			50	24	24.00	22.50	22.81	23.09
			50	49	24.00	22.60	22.67	22.79
			100	0	23.00	22.40	21.13	22.76

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23017/699.7	23095/707.5	23173/715.3
LTE Band 12	1.4MHz	QPSK	1	0	24.00	23.46	23.47	23.38
			1	2	24.00	23.54	23.61	23.52
			1	5	24.00	23.46	23.45	23.41
			3	0	24.00	23.46	23.44	23.47
			3	1	24.00	23.50	23.41	23.52
			3	2	24.00	23.47	23.42	23.46
			6	0	23.00	22.60	22.49	22.56
		16QAM	1	0	23.00	22.32	22.54	22.58
			1	2	23.00	22.45	22.65	22.72
			1	5	23.00	22.30	22.54	22.61
			3	0	23.00	22.61	22.60	22.66
			3	1	23.00	22.60	22.56	22.67
			3	2	23.00	22.64	22.60	22.67
			6	0	22.00	21.69	21.64	21.65

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23025/700.5	23095/707.5	23165/714.5
LTE Band 12	3MHz	QPSK	1	0	24.00	23.47	23.46	23.47
			1	7	24.00	23.71	23.68	23.71
			1	14	24.00	23.49	23.45	23.46
			8	0	23.00	22.50	22.48	22.51
			8	4	23.00	22.58	22.53	22.51
			8	7	23.00	22.49	22.46	22.50
			15	0	23.00	22.47	22.44	22.44
		16QAM	1	0	24.00	22.66	22.33	22.82
			1	7	24.00	22.97	22.61	23.06

			1	14	24.00	22.61	22.30	22.83
			8	0	22.00	21.50	21.43	21.49
			8	4	22.00	21.51	21.44	21.48
			8	7	22.00	21.48	21.41	21.46
			15	0	22.00	21.39	21.47	21.43
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23035/701.5	23095/707.5	23155/713.5
LTE Band 12	5MHz	QPSK	1	0	24.00	23.43	23.32	23.39
			1	12	24.00	23.84	23.62	23.75
			1	24	24.00	23.39	23.34	23.43
			12	0	23.00	22.53	22.46	22.51
			12	6	23.00	22.54	22.51	22.53
			12	11	23.00	22.55	22.51	22.41
			25	0	23.00	22.49	22.47	22.48
		16QAM	1	0	24.00	22.71	22.66	22.85
			1	12	24.00	23.04	22.95	23.12
			1	24	24.00	22.72	22.63	22.90
			12	0	22.00	21.42	21.41	21.49
			12	6	22.00	21.43	21.50	21.48
			12	11	22.00	21.43	21.45	21.40
			25	0	22.00	21.49	21.41	21.40
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23060/704	23095/707.5	23130/711
LTE Band 12	10MHz	QPSK	1	0	24.00	23.44	23.43	23.47
			1	24	24.00	23.55	23.55	23.60
			1	49	24.00	23.44	23.44	23.50
			25	0	23.00	22.51	22.49	22.49
			25	12	23.00	22.51	22.53	22.52
			25	24	23.00	22.57	22.53	22.41
			50	0	23.00	22.51	22.52	22.41
		16QAM	1	0	23.00	22.84	22.65	22.32
			1	24	23.00	22.92	22.74	22.42
			1	49	23.00	22.81	22.64	22.35
			25	0	22.00	21.48	21.46	21.45
			25	12	22.00	21.48	21.48	21.45
			25	24	22.00	21.56	21.52	21.34

			50	0	22.00	21.49	21.52	21.37
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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	22.00	20.79	20.45	21.30
			1	12	22.00	20.53	20.98	21.16
			1	24	22.00	20.52	21.19	20.05
			12	0	22.00	20.64	20.67	21.35
			12	6	22.00	20.50	20.93	21.17
			12	11	22.00	20.40	21.16	20.62
			25	0	21.00	20.51	20.90	21.00
		16QAM	1	0	22.00	21.26	20.73	21.57
			1	12	22.00	21.00	21.25	21.40
			1	24	22.00	21.02	21.43	20.33
			12	0	22.00	20.60	20.57	21.31
			12	6	22.00	20.47	20.83	21.14
			12	11	22.00	20.37	21.05	20.60
			25	0	21.00	20.46	20.87	20.94
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	22.00	21.11	20.79	20.64
			1	24	22.00	20.83	20.96	21.25
			1	49	22.00	21.22	20.79	20.32
			25	0	22.00	20.75	20.70	20.82
			25	12	22.00	20.85	21.00	21.18
			25	24	22.00	21.22	21.20	21.07
			50	0	21.00	20.95	20.95	20.94
		16QAM	1	0	22.00	21.36	20.94	20.47
			1	24	22.00	21.13	21.11	21.07
			1	49	22.00	21.49	20.91	20.12
			25	0	22.00	20.69	20.67	20.80
			25	12	22.00	20.81	20.97	21.13
			25	24	22.00	21.17	21.15	21.04
			50	0	21.00	20.90	20.93	20.90

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	13.62
	6	2437	14.00	13.90
	11	2462	14.00	13.98
802.11g	1	2412	14.00	12.87
	6	2437	14.00	13.61
	11	2462	14.00	13.21
802.11n HT20	1	2412	14.00	12.61
	6	2437	14.00	12.72
	11	2462	14.00	13.95
802.11n HT40	3	2422	14.00	12.94
	6	2437	14.00	13.12
	9	2452	14.00	13.63

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	10.00	9.59
	40	5200	10.00	9.01
	48	5240	10.00	9.64
802.11n HT20	36	5180	10.00	9.39
	40	5200	10.00	9.45
	48	5240	10.00	9.47
802.11n HT40	38	5190	10.00	9.00
	46	5230	10.00	9.51
802.11ac VHT20	36	5180	10.00	9.34
	40	5200	10.00	9.31
	48	5240	10.00	9.61
802.11ac VHT40	38	5190	10.00	9.56
	46	5230	10.00	9.48
802.11ac VHT80	42	5210	10.00	9.18

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	10.00	9.47
	157	5785	10.00	9.30
	165	5825	10.00	9.07

802.11n HT20	149	5745	10.00	9.83
	157	5785	10.00	9.23
	165	5825	10.00	9.92
802.11n HT40	151	5755	10.00	9.88
	159	5795	10.00	8.57
802.11ac VHT20	149	5745	10.00	9.98
	157	5785	10.00	9.18
	165	5825	10.00	8.86
802.11ac VHT40	151	5755	10.00	9.34
	159	5795	10.00	9.14
802.11ac VHT80	155	5775	10.00	9.66

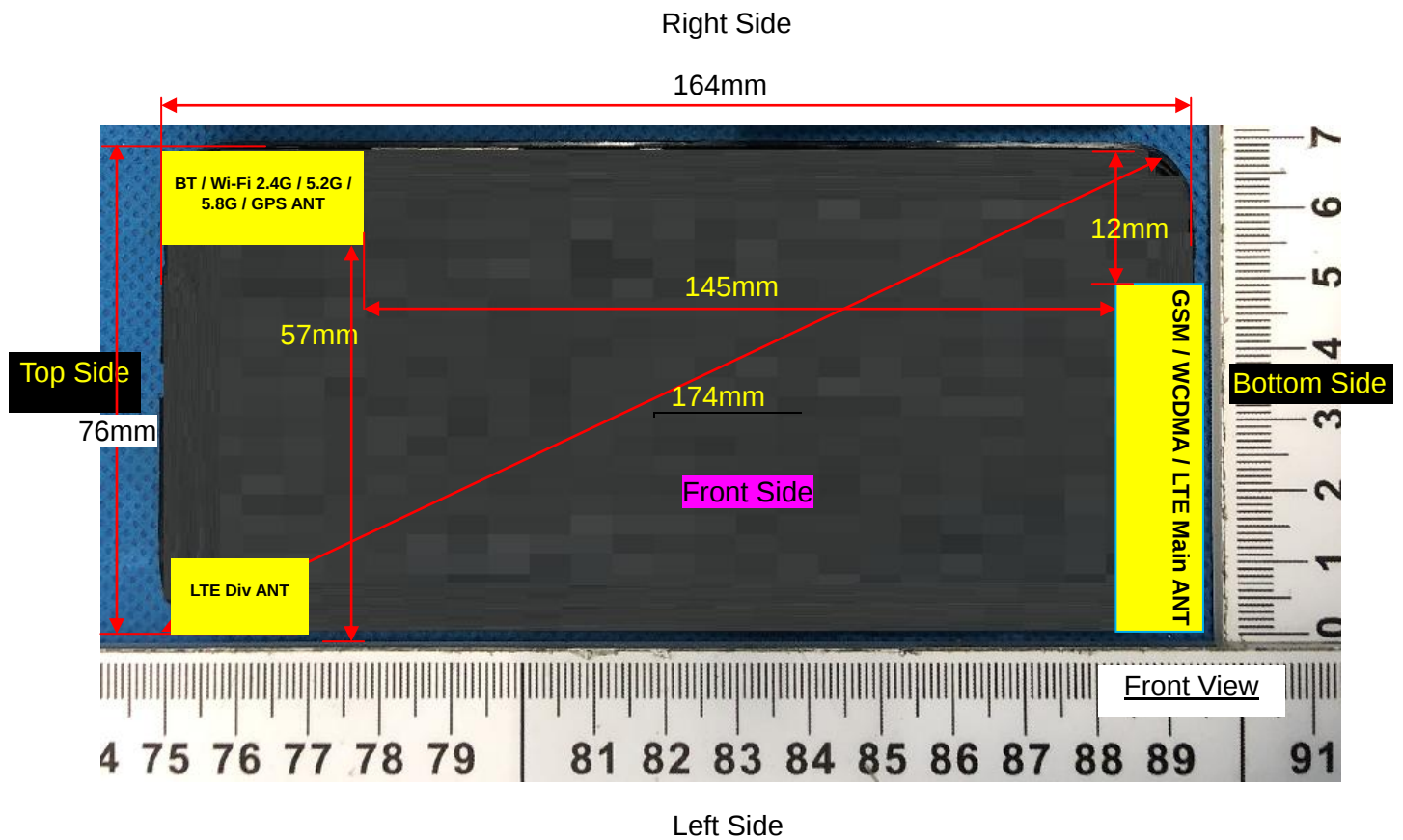
NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

BR+EDR	Output Power (dBm)				
	Channel	Tune-up	Data Rates		
			1M	2M	3M
	0CH	3.000	2.841	1.908	1.866
	39CH	4.000	3.305	2.865	2.853
	78CH	3.000	2.827	1.728	2.107

BLE	Channel	Tune-up	Output Power (dBm)
	0CH	-5.000	-6.214
	19CH	-5.000	-5.618
	39CH	-5.000	-6.207

8. Antenna Location



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

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

9. Stand-alone SAR test exclusion

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

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f_{\text{(GHz)}}}] \leq 3.0$ 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	4.000	2.512	5	2.480	0.79	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	4.000	2.512	5	2.480	7.5	0.105
Bluetooth	Body	4.000	2.512	10	2.480	7.5	0.053
Bluetooth	Hotspot	4.000	2.512	10	2.480	7.5	0.053

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement results

10.1.1. SAR measurement Result of GSM850

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

Left Cheek	189/836.4	GPRS(GMSK 4TS)	0.137	0.103	-1.95	28.87	30.00	0.178
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.073	0.052	-1.46	28.87	30.00	0.095
Right Cheek	189/836.4	GPRS(GMSK 4TS)	0.118	0.089	2.82	28.87	30.00	0.153
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.054	0.044	-1.05	28.87	30.00	0.070

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)	0.223	0.160	-1.44	28.87	30.00	0.289
Back Side	189/836.4	GPRS(GMSK 4TS)	0.169	0.126	-2.36	28.87	30.00	0.219

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)	0.223	0.160	-1.44	28.87	30.00	0.289
Back Side	189/836.4	GPRS(GMSK 4TS)	0.169	0.126	-2.36	28.87	30.00	0.219
Left Side	189/836.4	GPRS(GMSK 4TS)	0.061	0.041	4.26	28.87	30.00	0.079
Right Side	189/836.4	GPRS(GMSK 4TS)	0.080	0.064	4.46	28.87	30.00	0.104
Bottom Side	189/836.4	GPRS(GMSK 4TS)	0.128	0.095	-2.65	28.87	30.00	0.166

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	661/1880	GPRS(GMSK 4TS)	0.221	0.140	-0.27	27.68	28.00	0.238
Left Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.131	0.088	-3.68	27.68	28.00	0.141
Right Cheek	661/1880	GPRS(GMSK 4TS)	0.196	0.128	1.26	27.68	28.00	0.211
Right Tilt 15 Degree	661/1880	GPRS(GMSK 4TS)	0.093	0.063	2.80	27.68	28.00	0.100

NOTE: Head SAR test results of GSM1900

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

with 10mm								(W/Kg)
Front Side	661/1880	GPRS(GMSK 4TS)	0.791	0.432	-3.21	27.68	28.00	0.851
Back Side	661/1880	GPRS(GMSK 4TS)	0.502	0.283	-0.64	27.68	28.00	0.540
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.754	0.422	0.18	27.70	28.00	0.808
Front Side	810/1909.8	GPRS(GMSK 4TS)	0.750	0.421	-1.10	27.59	28.00	0.824

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	661/1880	GPRS(GMSK 4TS)	0.791	0.432	-3.21	27.68	28.00	0.851
Back Side	661/1880	GPRS(GMSK 4TS)	0.502	0.283	-0.64	27.68	28.00	0.540
Left Side	661/1880	GPRS(GMSK 4TS)	0.243	0.133	1.02	27.68	28.00	0.262
Right Side	661/1880	GPRS(GMSK 4TS)	0.283	0.160	1.50	27.68	28.00	0.305
Bottom Side	661/1880	GPRS(GMSK 4TS)	0.488	0.272	-0.24	27.68	28.00	0.525
Front Side	512/1850.2	GPRS(GMSK 4TS)	0.754	0.422	0.18	27.70	28.00	0.808
Front Side	810/1909.8	GPRS(GMSK 4TS)	0.750	0.421	-1.10	27.59	28.00	0.824

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	9400/1880	RMC12.2K	0.240	0.152	0.41	26.66	27.00	0.260
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.121	0.073	-2.15	26.66	27.00	0.131
Right Cheek	9400/1880	RMC12.2K	0.215	0.133	4.07	26.66	27.00	0.233
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.099	0.067	-4.05	26.66	27.00	0.107

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 ($\pm 5\%$)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9400/1880	RMC12.2K	0.644	0.364	3.98	26.66	27.00	0.696
Back Side	9400/1880	RMC12.2K	0.520	0.296	4.49	26.66	27.00	0.562

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	0.644	0.364	3.98	26.66	27.00	0.696
Back Side	9400/1880	RMC12.2K	0.520	0.296	4.49	26.66	27.00	0.562
Left Side	9400/1880	RMC12.2K	0.256	0.141	4.76	26.66	27.00	0.277
Right Side	9400/1880	RMC12.2K	0.300	0.166	1.47	26.66	27.00	0.324
Bottom Side	9400/1880	RMC12.2K	0.458	0.254	-3.30	26.66	27.00	0.495

NOTE: Hotspot SAR test results of WCDMA Band 2

10.1.4. SAR measurement Result of WCDMA Band 4

Test Position of Head	Test channel /Freq.	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	1413/1732.6	RMC12.2K	0.210	0.139	-3.26	23.21	24.00	0.252
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.116	0.081	-0.04	23.21	24.00	0.139
Right Cheek	1413/1732.6	RMC12.2K	0.199	0.131	-0.11	23.21	24.00	0.239
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.098	0.062	2.97	23.21	24.00	0.118

NOTE: Head SAR test results of WCDMA Band 4

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	1413/1732.6	RMC12.2K	0.841	0.483	-2.70	23.21	24.00	1.009
Front Side Repeated	1413/1732.6	RMC12.2K	0.840	0.482	-1.01	23.21	24.00	1.008
Back Side	1413/1732.6	RMC12.2K	0.661	0.383	1.59	23.21	24.00	0.793
Front Side	1312/1712.4	RMC12.2K	0.799	0.462	0.02	23.21	24.00	0.958
Front Side	1513/1752.6	RMC12.2K	0.798	0.451	0.28	23.29	24.00	0.940

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

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	1413/1732.6	RMC12.2K	0.841	0.483	-2.70	23.21	24.00	1.009
Front Side Repeated	1413/1732.6	RMC12.2K	0.840	0.482	-1.01	23.21	24.00	1.008

Back Side	1413/1732.6	RMC12.2K	0.661	0.383	1.59	23.21	24.00	0.793
Left Side	1413/1732.6	RMC12.2K	0.413	0.242	-1.34	23.21	24.00	0.495
Right Side	1413/1732.6	RMC12.2K	0.328	0.187	2.67	23.21	24.00	0.393
Bottom Side	1413/1732.6	RMC12.2K	0.637	0.367	0.05	23.21	24.00	0.764
Front Side	1312/1712.4	RMC12.2K	0.799	0.462	0.02	23.21	24.00	0.958
Front Side	1513/1752.6	RMC12.2K	0.798	0.451	0.28	23.29	24.00	0.940

NOTE: Hotspot SAR test results of WCDMA Band 4

10.1.5. SAR measurement Result of WCDMA Band 5

Test Position of Head	Test channel /Freq.	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	0.320	0.246	-3.52	28.75	29.00	0.339
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.179	0.134	3.32	28.75	29.00	0.190
Right Cheek	4182/836.4	RMC12.2K	0.300	0.232	2.45	28.75	29.00	0.318
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.157	0.124	0.78	28.75	29.00	0.166

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	0.480	0.345	-0.92	28.75	29.00	0.508
Back Side	4182/836.4	RMC12.2K	0.393	0.282	3.87	28.75	29.00	0.416

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	0.480	0.345	-0.92	28.75	29.00	0.508
Back Side	4182/836.4	RMC12.2K	0.393	0.282	3.87	28.75	29.00	0.416
Left Side	4182/836.4	RMC12.2K	0.191	0.137	3.73	28.75	29.00	0.202
Right Side	4182/836.4	RMC12.2K	0.219	0.156	1.15	28.75	29.00	0.232
Bottom Side	4182/836.4	RMC12.2K	0.350	0.255	2.95	28.75	29.00	0.371

NOTE: Hotspot SAR test results of WCDMA Band 5

10.1.6. SAR measurement Result of LTE Band 2

Test Position	Test channel /Freq.	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR
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of Head			1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)
1RB								
Left Cheek	18900/1880	20M QPSK(1,49)	0.082	0.056	0.74	22.05	23.00	0.102
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.046	0.029	1.00	22.05	23.00	0.057
Right Cheek	18900/1880	20M QPSK(1,49)	0.070	0.051	0.90	22.05	23.00	0.087
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.035	0.025	-2.43	22.05	23.00	0.044
50%RB								
Left Cheek	18900/1880	1.4M QPSK(3,1)	0.076	0.052	2.55	22.05	23.00	0.095
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.040	0.026	-4.39	22.05	23.00	0.050
Right Cheek	18900/1880	1.4M QPSK(3,1)	0.065	0.045	2.32	22.05	23.00	0.081
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,1)	0.032	0.023	-2.06	22.05	23.00	0.040

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.275	0.159	-0.26	22.05	23.00	0.342
Back Side	18900/1880	20M QPSK(1,49)	0.208	0.125	-1.74	22.05	23.00	0.259
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.246	0.137	2.79	22.05	23.00	0.306
Back Side	18900/1880	1.4M QPSK(3,1)	0.179	0.110	-0.14	22.05	23.00	0.223

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%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								

Front Side	18900/1880	20M QPSK(1,49)	0.275	0.159	-0.26	22.05	23.00	0.342
Back Side	18900/1880	20M QPSK(1,49)	0.208	0.125	-1.74	22.05	23.00	0.259
Left Side	18900/1880	20M QPSK(1,49)	0.216	0.128	-3.98	22.05	23.00	0.269
Right Side	18900/1880	20M QPSK(1,49)	0.119	0.072	0.24	22.05	23.00	0.148
Bottom Side	18900/1880	20M QPSK(1,49)	0.107	0.058	-0.04	22.05	23.00	0.133
50%RB								
Front Side	18900/1880	1.4M QPSK(3,1)	0.246	0.137	2.79	22.05	23.00	0.306
Back Side	18900/1880	1.4M QPSK(3,1)	0.179	0.110	-0.14	22.05	23.00	0.223
Left Side	18900/1880	1.4M QPSK(3,1)	0.195	0.116	-4.70	22.05	23.00	0.243
Right Side	18900/1880	1.4M QPSK(3,1)	0.112	0.062	2.75	22.05	23.00	0.139
Bottom Side	18900/1880	1.4M QPSK(3,1)	0.094	0.052	0.82	22.05	23.00	0.117

NOTE: Hotspot SAR test results of LTE Band 2

10.1.7. SAR measurement Result of LTE Band 4

Test Position of Head	Test channel /Freq.	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)	0.135	0.091	-4.21	23.37	24.00	0.156
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.072	0.049	0.86	23.37	24.00	0.083
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.125	0.083	2.93	23.37	24.00	0.145
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.065	0.043	4.88	23.37	24.00	0.075
50%RB								
Left Cheek	20175/1732.5	1.4M QPSK(3,2)	0.126	0.085	-4.88	23.29	24.00	0.148
Left Tilt 15	20175/1732.5	1.4M QPSK(3,2)	0.068	0.042	-2.41	23.29	24.00	0.080

Degree								
Right Cheek	20175/1732.5	1.4M QPSK(3,2)	0.113	0.076	1.05	23.29	24.00	0.133
Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,2)	0.058	0.040	0.98	23.29	24.00	0.068

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)	0.506	0.301	-1.44	23.37	24.00	0.585
Back Side	20175/1732.5	20M QPSK(1,49)	0.382	0.229	-4.82	23.37	24.00	0.442
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,2)	0.433	0.260	-1.54	23.29	24.00	0.510
Back Side	20175/1732.5	1.4M QPSK(3,2)	0.337	0.213	4.69	23.29	24.00	0.397

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)	0.506	0.301	-1.44	23.37	24.00	0.585
Back Side	20175/1732.5	20M QPSK(1,49)	0.382	0.229	-4.82	23.37	24.00	0.442
Left Side	20175/1732.5	20M QPSK(1,49)	0.361	0.218	-2.57	23.37	24.00	0.417
Right Side	20175/1732.5	20M QPSK(1,49)	0.218	0.126	4.62	23.37	24.00	0.252
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.199	0.114	-0.95	23.37	24.00	0.230
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,2)	0.433	0.260	-1.54	23.29	24.00	0.510

Back Side	20175/1732.5	1.4M QPSK(3,2)	0.337	0.213	4.69	23.29	24.00	0.397
Left Side	20175/1732.5	1.4M QPSK(3,2)	0.312	0.190	1.97	23.29	24.00	0.367
Right Side	20175/1732.5	1.4M QPSK(3,2)	0.195	0.116	1.31	23.29	24.00	0.230
Bottom Side	20175/1732.5	1.4M QPSK(3,2)	0.173	0.103	-2.24	23.29	24.00	0.204

NOTE: Hotspot SAR test results of LTE Band 4

10.1.8. SAR measurement Result of LTE Band 5

Test Position of Head	Test channel /Freq.	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	20525/836.5	10M QPSK(1,0)	0.104	0.081	3.21	24.88	25.00	0.107
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,0)	0.054	0.045	3.57	24.88	25.00	0.056
Right Cheek	20525/836.5	10M QPSK(1,0)	0.095	0.071	-4.73	24.88	25.00	0.098
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,0)	0.044	0.039	-4.43	24.88	25.00	0.045
50%RB								
Left Cheek	20525/836.5	10M QPSK(25,24)	0.093	0.075	4.71	23.01	25.00	0.147
Left Tilt 15 Degree	20525/836.5	10M QPSK(25,24)	0.046	0.042	0.34	23.01	25.00	0.073
Right Cheek	20525/836.5	10M QPSK(25,24)	0.089	0.067	4.98	23.01	25.00	0.141
Right Tilt 15 Degree	20525/836.5	10M QPSK(25,24)	0.041	0.036	-3.69	23.01	25.00	0.065

NOTE: Head SAR test results of LTE Band 5

Test Position of	Test channel	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR
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Body-Worn with 10mm	/Freq.		1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)
1RB								
Front Side	20525/836.5	10M QPSK(1,0)	0.266	0.160	-0.62	24.88	25.00	0.273
Back Side	20525/836.5	10M QPSK(1,0)	0.201	0.120	-3.69	24.88	25.00	0.207
50%RB								
Front Side	20525/836.5	10M QPSK(25,24)	0.240	0.145	-3.45	23.01	25.00	0.379
Back Side	20525/836.5	10M QPSK(25,24)	0.173	0.105	-1.14	23.01	25.00	0.274

NOTE: Body-Worn SAR test results of LTE 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				
1RB								
Front Side	20525/836.5	10M QPSK(1,0)	0.266	0.160	-0.62	24.88	25.00	0.273
Back Side	20525/836.5	10M QPSK(1,0)	0.201	0.120	-3.69	24.88	25.00	0.207
Left Side	20525/836.5	10M QPSK(1,0)	0.203	0.118	-2.20	24.88	25.00	0.209
Right Side	20525/836.5	10M QPSK(1,0)	0.120	0.071	4.44	24.88	25.00	0.123
Bottom Side	20525/836.5	10M QPSK(1,0)	0.101	0.059	-0.90	24.88	25.00	0.104
50%RB								
Front Side	20525/836.5	10M QPSK(25,24)	0.240	0.145	-3.45	23.01	25.00	0.379
Back Side	20525/836.5	10M QPSK(25,24)	0.173	0.105	-1.14	23.01	25.00	0.274
Left Side	20525/836.5	10M QPSK(25,24)	0.175	0.104	-0.38	23.01	25.00	0.277
Right Side	20525/836.5	10M QPSK(25,24)	0.108	0.062	2.89	23.01	25.00	0.171
Bottom Side	20525/836.5	10M QPSK(25,24)	0.086	0.051	-3.57	23.01	25.00	0.136

NOTE: Hotspot SAR test results of LTE Band 5

10.1.9. SAR measurement Result of LTE Band 7

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	21100/2535	20M QPSK(1,0)	0.088	0.056	1.04	22.95	24.00	0.112
Left Tilt 15 Degree	21100/2535	20M QPSK(1,0)	0.047	0.032	-0.15	22.95	24.00	0.060
Right Cheek	21100/2535	20M QPSK(1,0)	0.077	0.049	3.92	22.95	24.00	0.098
Right Tilt 15 Degree	21100/2535	20M QPSK(1,0)	0.038	0.026	4.10	22.95	24.00	0.048
50%RB								
Left Cheek	21100/2535	20M QPSK(50,0)	0.082	0.049	-1.59	23.55	24.00	0.091
Left Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.044	0.030	1.80	23.55	24.00	0.049
Right Cheek	21100/2535	20M QPSK(50,0)	0.070	0.044	-2.00	23.55	24.00	0.078
Right Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.034	0.023	4.36	23.55	24.00	0.038

NOTE: Head SAR test results of LTE Band 7

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21100/2535	20M QPSK(1,0)	0.416	0.210	-0.24	22.95	24.00	0.530
Back Side	21100/2535	20M QPSK(1,0)	0.351	0.182	-1.19	22.95	24.00	0.447
50%RB								
Front Side	21100/2535	20M QPSK(50,0)	0.384	0.182	2.16	23.55	24.00	0.426
Back Side	21100/2535	20M QPSK(50,0)	0.316	0.162	-3.08	23.55	24.00	0.350

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(1,0)	0.416	0.210	-0.24	22.95	24.00	0.530
Back Side	21100/2535	20M QPSK(1,0)	0.351	0.182	-1.19	22.95	24.00	0.447
Left Side	21100/2535	20M QPSK(1,0)	0.294	0.145	4.79	22.95	24.00	0.374
Right Side	21100/2535	20M QPSK(1,0)	0.201	0.099	-4.45	22.95	24.00	0.256
Bottom Side	21100/2535	20M QPSK(1,0)	0.142	0.076	-1.74	22.95	24.00	0.181
50%RB								
Front Side	21100/2535	20M QPSK(50,0)	0.384	0.182	2.16	23.55	24.00	0.426
Back Side	21100/2535	20M QPSK(50,0)	0.316	0.162	-3.08	23.55	24.00	0.350
Left Side	21100/2535	20M QPSK(50,0)	0.275	0.130	-0.85	23.55	24.00	0.305
Right Side	21100/2535	20M QPSK(50,0)	0.187	0.085	-2.65	23.55	24.00	0.207
Bottom Side	21100/2535	20M QPSK(50,0)	0.121	0.068	-0.24	23.55	24.00	0.134

NOTE: Hotspot SAR test results of LTE Band 7

10.1.10. SAR measurement Result of LTE Band 12

Test Position of Head	Test channel /Freq.	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	23095/707.5	10M QPSK(1,24)	0.040	0.035	0.40	23.55	24.00	0.044
Left Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.023	0.017	-4.42	23.55	24.00	0.026
Right Cheek	23095/707.5	10M QPSK(1,24)	0.037	0.031	1.52	23.55	24.00	0.041
Right Tilt	23095/707.5	10M QPSK(1,24)	0.017	0.011	-3.60	23.55	24.00	0.019

15 Degree								
50%RB								
Left Cheek	23095/707.5	1.4M QPSK(3,1)	0.038	0.032	2.49	23.41	24.00	0.044
Left Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.020	0.016	0.91	23.41	24.00	0.023
Right Cheek	23095/707.5	1.4M QPSK(3,1)	0.032	0.028	-3.37	23.41	24.00	0.037
Right Tilt 15 Degree	23095/707.5	1.4M QPSK(3,1)	0.016	0.011	-4.32	23.41	24.00	0.018

NOTE: Head SAR test results of LTE Band 12

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	23095/707.5	10M QPSK(1,24)	0.071	0.058	-2.05	23.55	24.00	0.079
Back Side	23095/707.5	10M QPSK(1,24)	0.053	0.045	-0.76	23.55	24.00	0.059
50%RB								
Front Side	23095/707.5	1.4M QPSK(3,1)	0.063	0.055	-2.45	23.41	24.00	0.072
Back Side	23095/707.5	1.4M QPSK(3,1)	0.049	0.042	0.69	23.41	24.00	0.056

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

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	23095/707.5	10M QPSK(1,24)	0.071	0.058	-2.05	23.55	24.00	0.079
Back Side	23095/707.5	10M QPSK(1,24)	0.053	0.045	-0.76	23.55	24.00	0.059
Left Side	23095/707.5	10M QPSK(1,24)	0.054	0.049	4.15	23.55	24.00	0.060
Right Side	23095/707.5	10M QPSK(1,24)	0.033	0.026	0.19	23.55	24.00	0.037

Bottom Side	23095/707.5	10M QPSK(1,24)	0.025	0.023	4.50	23.55	24.00	0.028
50%RB								
Front Side	23095/707.5	1.4M QPSK(3,1)	0.063	0.055	-2.45	23.41	24.00	0.072
Back Side	23095/707.5	1.4M QPSK(3,1)	0.049	0.042	0.69	23.41	24.00	0.056
Left Side	23095/707.5	1.4M QPSK(3,1)	0.047	0.046	-1.49	23.41	24.00	0.054
Right Side	23095/707.5	1.4M QPSK(3,1)	0.030	0.023	0.41	23.41	24.00	0.034
Bottom Side	23095/707.5	1.4M QPSK(3,1)	0.024	0.021	-4.07	23.41	24.00	0.027

NOTE: Hotspot SAR test results of LTE Band 12

10.1.11. 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)	0.025	0.022	0.27	20.96	22.00	0.032
Left Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.013	0.009	3.74	20.96	22.00	0.017
Right Cheek	23790/710	10M QPSK(1,24)	0.022	0.018	3.58	20.96	22.00	0.028
Right Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.011	0.006	-3.04	20.96	22.00	0.014
50%RB								
Left Cheek	23790/710	10M QPSK(25,24)	0.023	0.020	1.68	21.20	22.00	0.028
Left Tilt 15 Degree	23790/710	10M QPSK(25,24)	0.012	0.008	0.68	21.20	22.00	0.014
Right Cheek	23790/710	10M QPSK(25,24)	0.021	0.016	4.99	21.20	22.00	0.025
Right Tilt 15	23790/710	10M QPSK(25,24)	0.009	0.007	-3.34	21.20	22.00	0.011

Degree

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)	0.177	0.098	0.70	20.96	22.00	0.225
Back Side	23790/710	10M QPSK(1,24)	0.141	0.074	1.02	20.96	22.00	0.179
50%RB								
Front Side	23790/710	10M QPSK(25,24)	0.153	0.086	-4.96	21.20	22.00	0.184
Back Side	23790/710	10M QPSK(25,24)	0.131	0.065	-1.70	21.20	22.00	0.157

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)	0.177	0.098	0.70	20.96	22.00	0.225
Back Side	23790/710	10M QPSK(1,24)	0.141	0.074	1.02	20.96	22.00	0.179
Left Side	23790/710	10M QPSK(1,24)	0.135	0.072	3.94	20.96	22.00	0.172
Right Side	23790/710	10M QPSK(1,24)	0.083	0.048	-1.51	20.96	22.00	0.105
Bottom Side	23790/710	10M QPSK(1,24)	0.070	0.042	-4.91	20.96	22.00	0.089
50%RB								
Front Side	23790/710	10M QPSK(25,24)	0.153	0.086	-4.96	21.20	22.00	0.184
Back Side	23790/710	10M QPSK(25,24)	0.131	0.065	-1.70	21.20	22.00	0.157
Left Side	23790/710	10M QPSK(25,24)	0.117	0.062	-2.02	21.20	22.00	0.141
Right	23790/710	10M	0.072	0.043	-3.65	21.20	22.00	0.087

Side		QPSK(25,24)						
Bottom Side	23790/710	10M QPSK(25,24)	0.062	0.038	2.04	21.20	22.00	0.075

NOTE: Hotspot SAR test results of LTE Band 17

10.1.12. SAR measurement Result of WLAN 2.4G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	6/2437	802.11 b	0.101	0.054	2.43	13.90	14.00	0.103
Left Tilt 15 Degree	6/2437	802.11 b	0.059	0.027	3.82	13.90	14.00	0.060
Right Cheek	6/2437	802.11 b	0.091	0.053	3.64	13.90	14.00	0.093
Right Tilt 15 Degree	6/2437	802.11 b	0.041	0.026	-2.04	13.90	14.00	0.042

NOTE: Head SAR test results of WLAN 2.4G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	6/2437	802.11 b	0.039	0.028	-0.76	13.90	14.00	0.040
Back Side	6/2437	802.11 b	0.025	0.017	3.12	13.90	14.00	0.026

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	6/2437	802.11 b	0.039	0.028	-0.76	13.90	14.00	0.040
Back Side	6/2437	802.11 b	0.025	0.017	3.12	13.90	14.00	0.026
Right Side	6/2437	802.11 b	0.009	0.007	-4.24	13.90	14.00	0.009
Top Side	6/2437	802.11 b	0.013	0.009	-4.64	13.90	14.00	0.013

NOTE: Hotspot SAR test results of WLAN 2.4G

10.1.13. 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
			1g	10g				

								(W/Kg)
Left Cheek	40/5200	802.11a	0.387	0.149	1.74	9.01	10.00	0.486
Left Tilt 15 Degree	40/5200	802.11a	0.215	0.079	-3.83	9.01	10.00	0.270
Right Cheek	40/5200	802.11a	0.340	0.128	3.01	9.01	10.00	0.427
Right Tilt 15 Degree	40/5200	802.11a	0.177	0.070	0.91	9.01	10.00	0.222

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	0.148	0.090	0.26	9.01	10.00	0.186
Back Side	40/5200	802.11a	0.090	0.057	3.40	9.01	10.00	0.113

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	0.148	0.090	0.26	9.01	10.00	0.186
Back Side	40/5200	802.11a	0.090	0.057	3.40	9.01	10.00	0.113
Right Side	40/5200	802.11a	0.033	0.019	-2.02	9.01	10.00	0.041
Top Side	40/5200	802.11a	0.046	0.029	-2.86	9.01	10.00	0.058

NOTE: Hotspot SAR test results of WLAN 5.2G

10.1.14. SAR measurement Result of WLAN 5.8G

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	157/5785	802.11a	0.385	0.151	1.26	9.30	10.00	0.452
Left Tilt 15 Degree	157/5785	802.11a	0.199	0.074	2.30	9.30	10.00	0.234
Right Cheek	157/5785	802.11a	0.348	0.136	2.51	9.30	10.00	0.409
Right Tilt 15 Degree	157/5785	802.11a	0.178	0.075	2.59	9.30	10.00	0.209

NOTE: Head SAR test results of WLAN 5.8G

Test	Test	Test Mode	SAR Value	Power	Conducted	Tune-up	Scaled
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Position of Body-Worn with 10mm	channel /Freq.		(W/kg)		Drift (±5%)	power (dBm)	power (dBm)	SAR 1g (W/Kg)
			1g	10g				
Front Side	157/5785	802.11a	0.140	0.092	0.78	9.30	10.00	0.164
Back Side	157/5785	802.11a	0.088	0.058	2.93	9.30	10.00	0.103

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	0.140	0.092	0.78	9.30	10.00	0.164
Back Side	157/5785	802.11a	0.088	0.058	2.93	9.30	10.00	0.103
Right Side	157/5785	802.11a	0.028	0.021	-4.89	9.30	10.00	0.033
Top Side	157/5785	802.11a	0.048	0.031	-3.67	9.30	10.00	0.056

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	0.178	0.103	0.281	N/A	N/A
	Left Tilt 15 Degree	0.095	0.060	0.155	N/A	N/A
	Right Cheek	0.153	0.093	0.246	N/A	N/A
	Right Tilt 15 Degree	0.070	0.042	0.112	N/A	N/A
Body-Worn	Front Side	0.289	0.040	0.329	N/A	N/A
	Back Side	0.219	0.026	0.245	N/A	N/A
Hotspot	Front Side	0.289	0.040	0.329	N/A	N/A
	Back Side	0.219	0.026	0.245	N/A	N/A
	Left Side	0.079	N/A	0.079	N/A	N/A
	Right Side	0.104	0.009	0.113	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.166	N/A	0.166	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	0.238	0.103	0.341	N/A	N/A
	Left Tilt 15 Degree	0.141	0.060	0.201	N/A	N/A
	Right Cheek	0.211	0.093	0.304	N/A	N/A
	Right Tilt 15 Degree	0.100	0.042	0.142	N/A	N/A
Body-Worn	Front Side	0.851	0.040	0.891	N/A	N/A
	Back Side	0.540	0.026	0.566	N/A	N/A
Hotspot	Front Side	0.851	0.040	0.891	N/A	N/A
	Back Side	0.540	0.026	0.566	N/A	N/A
	Left Side	0.262	N/A	0.262	N/A	N/A
	Right Side	0.305	0.009	0.314	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.525	N/A	0.525	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	0.260	0.103	0.363	N/A	N/A
	Left Tilt 15 Degree	0.131	0.060	0.191	N/A	N/A
	Right Cheek	0.233	0.093	0.326	N/A	N/A
	Right Tilt 15 Degree	0.107	0.042	0.149	N/A	N/A
Body-Worn	Front Side	0.696	0.040	0.736	N/A	N/A
	Back Side	0.562	0.026	0.588	N/A	N/A
Hotspot	Front Side	0.696	0.040	0.736	N/A	N/A
	Back Side	0.562	0.026	0.588	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.324	0.009	0.333	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.495	N/A	0.495	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 4	WLAN 2.4G			
Head	Left Cheek	0.252	0.103	0.355	N/A	N/A
	Left Tilt 15 Degree	0.139	0.060	0.199	N/A	N/A

	Right Cheek	0.239	0.093	0.332	N/A	N/A
	Right Tilt 15 Degree	0.118	0.042	0.160	N/A	N/A
Body-Worn	Front Side	1.009	0.040	1.049	N/A	N/A
	Back Side	0.793	0.026	0.819	N/A	N/A
Hotspot	Front Side	1.009	0.040	1.049	N/A	N/A
	Back Side	0.793	0.026	0.819	N/A	N/A
	Left Side	0.495	N/A	0.495	N/A	N/A
	Right Side	0.393	0.009	0.402	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.764	N/A	0.764	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 4 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	0.339	0.103	0.442	N/A	N/A
	Left Tilt 15 Degree	0.190	0.060	0.250	N/A	N/A
	Right Cheek	0.318	0.093	0.411	N/A	N/A
	Right Tilt 15 Degree	0.166	0.042	0.208	N/A	N/A
Body-Worn	Front Side	0.508	0.040	0.548	N/A	N/A
	Back Side	0.416	0.026	0.442	N/A	N/A
Hotspot	Front Side	0.508	0.040	0.548	N/A	N/A
	Back Side	0.416	0.026	0.442	N/A	N/A
	Left Side	0.202	N/A	0.202	N/A	N/A
	Right Side	0.232	0.009	0.241	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.371	N/A	0.371	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	0.102	0.103	0.205	N/A	N/A
	Left Tilt 15 Degree	0.057	0.060	0.117	N/A	N/A
	Right Cheek	0.087	0.093	0.180	N/A	N/A
	Right Tilt 15 Degree	0.044	0.042	0.086	N/A	N/A
Body-Worn	Front Side	0.342	0.040	0.382	N/A	N/A
	Back Side	0.259	0.026	0.285	N/A	N/A
Hotspot	Front Side	0.342	0.040	0.382	N/A	N/A

	Back Side	0.259	0.026	0.285	N/A	N/A
	Left Side	0.269	N/A	0.269	N/A	N/A
	Right Side	0.148	0.009	0.157	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.133	N/A	0.133	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	0.156	0.103	0.259	N/A	N/A
	Left Tilt 15 Degree	0.083	0.060	0.143	N/A	N/A
	Right Cheek	0.145	0.093	0.238	N/A	N/A
	Right Tilt 15 Degree	0.075	0.042	0.117	N/A	N/A
Body-Worn	Front Side	0.585	0.040	0.625	N/A	N/A
	Back Side	0.442	0.026	0.468	N/A	N/A
Hotspot	Front Side	0.585	0.040	0.625	N/A	N/A
	Back Side	0.442	0.026	0.468	N/A	N/A
	Left Side	0.417	N/A	0.417	N/A	N/A
	Right Side	0.252	0.009	0.261	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.230	N/A	0.230	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 5	WLAN 2.4G			
Head	Left Cheek	0.147	0.103	0.250	N/A	N/A
	Left Tilt 15 Degree	0.073	0.060	0.133	N/A	N/A
	Right Cheek	0.141	0.093	0.234	N/A	N/A
	Right Tilt 15 Degree	0.065	0.042	0.107	N/A	N/A
Body-Worn	Front Side	0.379	0.040	0.419	N/A	N/A
	Back Side	0.274	0.026	0.300	N/A	N/A
Hotspot	Front Side	0.379	0.040	0.419	N/A	N/A
	Back Side	0.274	0.026	0.300	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.171	0.009	0.180	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.136	N/A	0.136	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 5 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	0.112	0.103	0.215	N/A	N/A
	Left Tilt 15 Degree	0.060	0.060	0.120	N/A	N/A
	Right Cheek	0.098	0.093	0.191	N/A	N/A
	Right Tilt 15 Degree	0.048	0.042	0.090	N/A	N/A
Body-Worn	Front Side	0.530	0.040	0.570	N/A	N/A
	Back Side	0.447	0.026	0.473	N/A	N/A
Hotspot	Front Side	0.530	0.040	0.570	N/A	N/A
	Back Side	0.447	0.026	0.473	N/A	N/A
	Left Side	0.374	N/A	0.374	N/A	N/A
	Right Side	0.256	0.009	0.265	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.181	N/A	0.181	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 12	WLAN 2.4G			
Head	Left Cheek	0.044	0.103	0.147	N/A	N/A
	Left Tilt 15 Degree	0.026	0.060	0.086	N/A	N/A
	Right Cheek	0.041	0.093	0.134	N/A	N/A
	Right Tilt 15 Degree	0.019	0.042	0.061	N/A	N/A
Body-Worn	Front Side	0.079	0.040	0.119	N/A	N/A
	Back Side	0.059	0.026	0.085	N/A	N/A
Hotspot	Front Side	0.079	0.040	0.119	N/A	N/A
	Back Side	0.059	0.026	0.085	N/A	N/A
	Left Side	0.060	N/A	0.060	N/A	N/A
	Right Side	0.037	0.009	0.046	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.028	N/A	0.028	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 12 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	0.032	0.103	0.135	N/A	N/A
	Left Tilt 15 Degree	0.017	0.060	0.077	N/A	N/A
	Right Cheek	0.028	0.093	0.121	N/A	N/A

	Right Tilt 15 Degree	0.014	0.042	0.056	N/A	N/A
Body-Worn	Front Side	0.225	0.040	0.265	N/A	N/A
	Back Side	0.179	0.026	0.205	N/A	N/A
Hotspot	Front Side	0.225	0.040	0.265	N/A	N/A
	Back Side	0.179	0.026	0.205	N/A	N/A
	Left Side	0.172	N/A	0.172	N/A	N/A
	Right Side	0.105	0.009	0.114	N/A	N/A
	Top Side	N/A	0.013	0.013	N/A	N/A
	Bottom Side	0.089	N/A	0.089	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	0.178	0.486	0.664	N/A	N/A
	Left Tilt 15 Degree	0.095	0.270	0.365	N/A	N/A
	Right Cheek	0.153	0.427	0.580	N/A	N/A
	Right Tilt 15 Degree	0.070	0.222	0.292	N/A	N/A
Body-Worn	Front Side	0.289	0.186	0.475	N/A	N/A
	Back Side	0.219	0.113	0.332	N/A	N/A
Hotspot	Front Side	0.289	0.186	0.475	N/A	N/A
	Back Side	0.219	0.113	0.332	N/A	N/A
	Left Side	0.079	N/A	0.079	N/A	N/A
	Right Side	0.104	0.041	0.145	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.166	N/A	0.166	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	0.238	0.486	0.724	N/A	N/A
	Left Tilt 15 Degree	0.141	0.270	0.411	N/A	N/A
	Right Cheek	0.211	0.427	0.638	N/A	N/A
	Right Tilt 15 Degree	0.100	0.222	0.322	N/A	N/A
Body-Worn	Front Side	0.851	0.186	1.037	N/A	N/A
	Back Side	0.540	0.113	0.653	N/A	N/A
Hotspot	Front Side	0.851	0.186	1.037	N/A	N/A
	Back Side	0.540	0.113	0.653	N/A	N/A
	Left Side	0.262	N/A	0.262	N/A	N/A

	Right Side	0.305	0.041	0.346	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.525	N/A	0.525	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	0.260	0.486	0.746	N/A	N/A
	Left Tilt 15 Degree	0.131	0.270	0.401	N/A	N/A
	Right Cheek	0.233	0.427	0.660	N/A	N/A
	Right Tilt 15 Degree	0.107	0.222	0.329	N/A	N/A
Body-Worn	Front Side	0.696	0.186	0.882	N/A	N/A
	Back Side	0.562	0.113	0.675	N/A	N/A
Hotspot	Front Side	0.696	0.186	0.882	N/A	N/A
	Back Side	0.562	0.113	0.675	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.324	0.041	0.365	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.495	N/A	0.495	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 4	WLAN 5.2G			
Head	Left Cheek	0.252	0.486	0.738	N/A	N/A
	Left Tilt 15 Degree	0.139	0.270	0.409	N/A	N/A
	Right Cheek	0.239	0.427	0.666	N/A	N/A
	Right Tilt 15 Degree	0.118	0.222	0.340	N/A	N/A
Body-Worn	Front Side	1.009	0.186	1.195	N/A	N/A
	Back Side	0.793	0.113	0.906	N/A	N/A
Hotspot	Front Side	1.009	0.186	1.195	N/A	N/A
	Back Side	0.793	0.113	0.906	N/A	N/A
	Left Side	0.495	N/A	0.495	N/A	N/A
	Right Side	0.393	0.041	0.434	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.764	N/A	0.764	N/A	N/A

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

Test Position	Scaled SAR _{MAX}		Σ 1-g SAR	SPLSR	Remark
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		WCDMA Band 5	WLAN 5.2G	(W/Kg)		
Head	Left Cheek	0.339	0.486	0.825	N/A	N/A
	Left Tilt 15 Degree	0.190	0.270	0.460	N/A	N/A
	Right Cheek	0.318	0.427	0.745	N/A	N/A
	Right Tilt 15 Degree	0.166	0.222	0.388	N/A	N/A
Body-Worn	Front Side	0.508	0.186	0.694	N/A	N/A
	Back Side	0.416	0.113	0.529	N/A	N/A
Hotspot	Front Side	0.508	0.186	0.694	N/A	N/A
	Back Side	0.416	0.113	0.529	N/A	N/A
	Left Side	0.202	N/A	0.202	N/A	N/A
	Right Side	0.232	0.041	0.273	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.371	N/A	0.371	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	0.102	0.486	0.588	N/A	N/A
	Left Tilt 15 Degree	0.057	0.270	0.327	N/A	N/A
	Right Cheek	0.087	0.427	0.514	N/A	N/A
	Right Tilt 15 Degree	0.044	0.222	0.266	N/A	N/A
Body-Worn	Front Side	0.342	0.186	0.528	N/A	N/A
	Back Side	0.259	0.113	0.372	N/A	N/A
Hotspot	Front Side	0.342	0.186	0.528	N/A	N/A
	Back Side	0.259	0.113	0.372	N/A	N/A
	Left Side	0.269	N/A	0.269	N/A	N/A
	Right Side	0.148	0.041	0.189	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.133	N/A	0.133	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	0.156	0.486	0.642	N/A	N/A
	Left Tilt 15 Degree	0.083	0.270	0.353	N/A	N/A
	Right Cheek	0.145	0.427	0.572	N/A	N/A
	Right Tilt 15	0.075	0.222	0.297	N/A	N/A

	Degree					
Body-Worn	Front Side	0.585	0.186	0.771	N/A	N/A
	Back Side	0.442	0.113	0.555	N/A	N/A
Hotspot	Front Side	0.585	0.186	0.771	N/A	N/A
	Back Side	0.442	0.113	0.555	N/A	N/A
	Left Side	0.417	N/A	0.417	N/A	N/A
	Right Side	0.252	0.041	0.293	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.230	N/A	0.230	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 5	WLAN 5.2G			
Head	Left Cheek	0.147	0.486	0.633	N/A	N/A
	Left Tilt 15 Degree	0.073	0.270	0.343	N/A	N/A
	Right Cheek	0.141	0.427	0.568	N/A	N/A
	Right Tilt 15 Degree	0.065	0.222	0.287	N/A	N/A
Body-Worn	Front Side	0.379	0.186	0.565	N/A	N/A
	Back Side	0.274	0.113	0.387	N/A	N/A
Hotspot	Front Side	0.379	0.186	0.565	N/A	N/A
	Back Side	0.274	0.113	0.387	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.171	0.041	0.212	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.136	N/A	0.136	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 5 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	0.112	0.486	0.598	N/A	N/A
	Left Tilt 15 Degree	0.060	0.270	0.330	N/A	N/A
	Right Cheek	0.098	0.427	0.525	N/A	N/A
	Right Tilt 15 Degree	0.048	0.222	0.270	N/A	N/A
Body-Worn	Front Side	0.530	0.186	0.716	N/A	N/A
	Back Side	0.447	0.113	0.560	N/A	N/A
Hotspot	Front Side	0.530	0.186	0.716	N/A	N/A
	Back Side	0.447	0.113	0.560	N/A	N/A
	Left Side	0.374	N/A	0.374	N/A	N/A

	Right Side	0.256	0.041	0.297	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.181	N/A	0.181	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 12	WLAN 5.2G			
Head	Left Cheek	0.044	0.486	0.530	N/A	N/A
	Left Tilt 15 Degree	0.026	0.270	0.296	N/A	N/A
	Right Cheek	0.041	0.427	0.468	N/A	N/A
	Right Tilt 15 Degree	0.019	0.222	0.241	N/A	N/A
Body-Worn	Front Side	0.079	0.186	0.265	N/A	N/A
	Back Side	0.059	0.113	0.172	N/A	N/A
Hotspot	Front Side	0.079	0.186	0.265	N/A	N/A
	Back Side	0.059	0.113	0.172	N/A	N/A
	Left Side	0.060	N/A	0.060	N/A	N/A
	Right Side	0.037	0.041	0.078	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.028	N/A	0.028	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 12 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	0.032	0.486	0.518	N/A	N/A
	Left Tilt 15 Degree	0.017	0.270	0.287	N/A	N/A
	Right Cheek	0.028	0.427	0.455	N/A	N/A
	Right Tilt 15 Degree	0.014	0.222	0.236	N/A	N/A
Body-Worn	Front Side	0.225	0.186	0.411	N/A	N/A
	Back Side	0.179	0.113	0.292	N/A	N/A
Hotspot	Front Side	0.225	0.186	0.411	N/A	N/A
	Back Side	0.179	0.113	0.292	N/A	N/A
	Left Side	0.172	N/A	0.172	N/A	N/A
	Right Side	0.105	0.041	0.146	N/A	N/A
	Top Side	N/A	0.058	0.058	N/A	N/A
	Bottom Side	0.089	N/A	0.089	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	0.178	0.452	0.630	N/A	N/A
	Left Tilt 15 Degree	0.095	0.234	0.329	N/A	N/A
	Right Cheek	0.153	0.409	0.562	N/A	N/A
	Right Tilt 15 Degree	0.070	0.209	0.279	N/A	N/A
Body-Worn	Front Side	0.289	0.164	0.453	N/A	N/A
	Back Side	0.219	0.103	0.322	N/A	N/A
Hotspot	Front Side	0.289	0.164	0.453	N/A	N/A
	Back Side	0.219	0.103	0.322	N/A	N/A
	Left Side	0.079	N/A	0.079	N/A	N/A
	Right Side	0.104	0.033	0.137	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.166	N/A	0.166	N/A	N/A

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 1900	WLAN 5.8G			
Head	Left Cheek	0.238	0.452	0.690	N/A	N/A
	Left Tilt 15 Degree	0.141	0.234	0.375	N/A	N/A
	Right Cheek	0.211	0.409	0.620	N/A	N/A
	Right Tilt 15 Degree	0.100	0.209	0.309	N/A	N/A
Body-Worn	Front Side	0.851	0.164	1.015	N/A	N/A
	Back Side	0.540	0.103	0.643	N/A	N/A
Hotspot	Front Side	0.851	0.164	1.015	N/A	N/A
	Back Side	0.540	0.103	0.643	N/A	N/A
	Left Side	0.262	N/A	0.262	N/A	N/A
	Right Side	0.305	0.033	0.338	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.525	N/A	0.525	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	0.260	0.452	0.712	N/A	N/A
	Left Tilt 15	0.131	0.234	0.365	N/A	N/A

	Degree					
	Right Cheek	0.233	0.409	0.642	N/A	N/A
	Right Tilt 15 Degree	0.107	0.209	0.316	N/A	N/A
Body-Worn	Front Side	0.696	0.164	0.860	N/A	N/A
	Back Side	0.562	0.103	0.665	N/A	N/A
Hotspot	Front Side	0.696	0.164	0.860	N/A	N/A
	Back Side	0.562	0.103	0.665	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.324	0.033	0.357	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.495	N/A	0.495	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 4	WLAN 5.8G			
Head	Left Cheek	0.252	0.452	0.704	N/A	N/A
	Left Tilt 15 Degree	0.139	0.234	0.373	N/A	N/A
	Right Cheek	0.239	0.409	0.648	N/A	N/A
	Right Tilt 15 Degree	0.118	0.209	0.327	N/A	N/A
Body-Worn	Front Side	1.009	0.164	1.173	N/A	N/A
	Back Side	0.793	0.103	0.896	N/A	N/A
Hotspot	Front Side	1.009	0.164	1.173	N/A	N/A
	Back Side	0.793	0.103	0.896	N/A	N/A
	Left Side	0.495	N/A	0.495	N/A	N/A
	Right Side	0.393	0.033	0.426	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.764	N/A	0.764	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of WCDMA Band 4 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	0.339	0.452	0.791	N/A	N/A
	Left Tilt 15 Degree	0.190	0.234	0.424	N/A	N/A
	Right Cheek	0.318	0.409	0.727	N/A	N/A
	Right Tilt 15 Degree	0.166	0.209	0.375	N/A	N/A
Body-Worn	Front Side	0.508	0.164	0.672	N/A	N/A
	Back Side	0.416	0.103	0.519	N/A	N/A

Hotspot	Front Side	0.508	0.164	0.672	N/A	N/A
	Back Side	0.416	0.103	0.519	N/A	N/A
	Left Side	0.202	N/A	0.202	N/A	N/A
	Right Side	0.232	0.033	0.265	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.371	N/A	0.371	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	0.102	0.452	0.554	N/A	N/A
	Left Tilt 15 Degree	0.057	0.234	0.291	N/A	N/A
	Right Cheek	0.087	0.409	0.496	N/A	N/A
	Right Tilt 15 Degree	0.044	0.209	0.253	N/A	N/A
Body-Worn	Front Side	0.342	0.164	0.506	N/A	N/A
	Back Side	0.259	0.103	0.362	N/A	N/A
Hotspot	Front Side	0.342	0.164	0.506	N/A	N/A
	Back Side	0.259	0.103	0.362	N/A	N/A
	Left Side	0.269	N/A	0.269	N/A	N/A
	Right Side	0.148	0.033	0.181	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.133	N/A	0.133	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	0.156	0.452	0.608	N/A	N/A
	Left Tilt 15 Degree	0.083	0.234	0.317	N/A	N/A
	Right Cheek	0.145	0.409	0.554	N/A	N/A
	Right Tilt 15 Degree	0.075	0.209	0.284	N/A	N/A
Body-Worn	Front Side	0.585	0.164	0.749	N/A	N/A
	Back Side	0.442	0.103	0.545	N/A	N/A
Hotspot	Front Side	0.585	0.164	0.749	N/A	N/A
	Back Side	0.442	0.103	0.545	N/A	N/A
	Left Side	0.417	N/A	0.417	N/A	N/A
	Right Side	0.252	0.033	0.285	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.230	N/A	0.230	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 5	WLAN 5.8G			
Head	Left Cheek	0.147	0.452	0.599	N/A	N/A
	Left Tilt 15 Degree	0.073	0.234	0.307	N/A	N/A
	Right Cheek	0.141	0.409	0.550	N/A	N/A
	Right Tilt 15 Degree	0.065	0.209	0.274	N/A	N/A
Body-Worn	Front Side	0.379	0.164	0.543	N/A	N/A
	Back Side	0.274	0.103	0.377	N/A	N/A
Hotspot	Front Side	0.379	0.164	0.543	N/A	N/A
	Back Side	0.274	0.103	0.377	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.171	0.033	0.204	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.136	N/A	0.136	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 5 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	0.112	0.452	0.564	N/A	N/A
	Left Tilt 15 Degree	0.060	0.234	0.294	N/A	N/A
	Right Cheek	0.098	0.409	0.507	N/A	N/A
	Right Tilt 15 Degree	0.048	0.209	0.257	N/A	N/A
Body-Worn	Front Side	0.530	0.164	0.694	N/A	N/A
	Back Side	0.447	0.103	0.550	N/A	N/A
Hotspot	Front Side	0.530	0.164	0.694	N/A	N/A
	Back Side	0.447	0.103	0.550	N/A	N/A
	Left Side	0.374	N/A	0.374	N/A	N/A
	Right Side	0.256	0.033	0.289	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.181	N/A	0.181	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 12	WLAN 5.8G			
Head	Left Cheek	0.044	0.452	0.496	N/A	N/A
	Left Tilt 15 Degree	0.026	0.234	0.260	N/A	N/A

	Right Cheek	0.041	0.409	0.450	N/A	N/A
	Right Tilt 15 Degree	0.019	0.209	0.228	N/A	N/A
Body-Worn	Front Side	0.079	0.164	0.243	N/A	N/A
	Back Side	0.059	0.103	0.162	N/A	N/A
Hotspot	Front Side	0.079	0.164	0.243	N/A	N/A
	Back Side	0.059	0.103	0.162	N/A	N/A
	Left Side	0.060	N/A	0.060	N/A	N/A
	Right Side	0.037	0.033	0.070	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.028	N/A	0.028	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 12 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	0.032	0.452	0.484	N/A	N/A
	Left Tilt 15 Degree	0.017	0.234	0.251	N/A	N/A
	Right Cheek	0.028	0.409	0.437	N/A	N/A
	Right Tilt 15 Degree	0.014	0.209	0.223	N/A	N/A
Body-Worn	Front Side	0.225	0.164	0.389	N/A	N/A
	Back Side	0.179	0.103	0.282	N/A	N/A
Hotspot	Front Side	0.225	0.164	0.389	N/A	N/A
	Back Side	0.179	0.103	0.282	N/A	N/A
	Left Side	0.172	N/A	0.172	N/A	N/A
	Right Side	0.105	0.033	0.138	N/A	N/A
	Top Side	N/A	0.056	0.056	N/A	N/A
	Bottom Side	0.089	N/A	0.089	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	0.178	0.105	0.283	N/A	N/A
	Left Tilt 15 Degree	0.095	0.105	0.200	N/A	N/A
	Right Cheek	0.153	0.105	0.258	N/A	N/A
	Right Tilt 15 Degree	0.070	0.105	0.175	N/A	N/A
Body-Worn	Front Side	0.289	0.053	0.342	N/A	N/A
	Back Side	0.219	0.053	0.272	N/A	N/A
Hotspot	Front Side	0.289	0.053	0.342	N/A	N/A

	Back Side	0.219	0.053	0.272	N/A	N/A
	Left Side	0.079	N/A	0.079	N/A	N/A
	Right Side	0.104	0.053	0.157	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.166	N/A	0.166	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	0.238	0.105	0.343	N/A	N/A
	Left Tilt 15 Degree	0.141	0.105	0.246	N/A	N/A
	Right Cheek	0.211	0.105	0.316	N/A	N/A
	Right Tilt 15 Degree	0.100	0.105	0.205	N/A	N/A
Body-Worn	Front Side	0.851	0.053	0.904	N/A	N/A
	Back Side	0.540	0.053	0.593	N/A	N/A
Hotspot	Front Side	0.851	0.053	0.904	N/A	N/A
	Back Side	0.540	0.053	0.593	N/A	N/A
	Left Side	0.262	N/A	0.262	N/A	N/A
	Right Side	0.305	0.053	0.358	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.525	N/A	0.525	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	0.260	0.105	0.365	N/A	N/A
	Left Tilt 15 Degree	0.131	0.105	0.236	N/A	N/A
	Right Cheek	0.233	0.105	0.338	N/A	N/A
	Right Tilt 15 Degree	0.107	0.105	0.212	N/A	N/A
Body-Worn	Front Side	0.696	0.053	0.749	N/A	N/A
	Back Side	0.562	0.053	0.615	N/A	N/A
Hotspot	Front Side	0.696	0.053	0.749	N/A	N/A
	Back Side	0.562	0.053	0.615	N/A	N/A
	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.324	0.053	0.377	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.495	N/A	0.495	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 4	Bluetooth			
Head	Left Cheek	0.252	0.105	0.357	N/A	N/A
	Left Tilt 15 Degree	0.139	0.105	0.244	N/A	N/A
	Right Cheek	0.239	0.105	0.344	N/A	N/A
	Right Tilt 15 Degree	0.118	0.105	0.223	N/A	N/A
Body-Worn	Front Side	1.009	0.053	1.062	N/A	N/A
	Back Side	0.793	0.053	0.846	N/A	N/A
Hotspot	Front Side	1.009	0.053	1.062	N/A	N/A
	Back Side	0.793	0.053	0.846	N/A	N/A
	Left Side	0.495	N/A	0.495	N/A	N/A
	Right Side	0.393	0.053	0.446	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.764	N/A	0.764	N/A	N/A

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		WCDMA Band 5	Bluetooth			
Head	Left Cheek	0.339	0.105	0.444	N/A	N/A
	Left Tilt 15 Degree	0.190	0.105	0.295	N/A	N/A
	Right Cheek	0.318	0.105	0.423	N/A	N/A
	Right Tilt 15 Degree	0.166	0.105	0.271	N/A	N/A
Body-Worn	Front Side	0.508	0.053	0.561	N/A	N/A
	Back Side	0.416	0.053	0.469	N/A	N/A
Hotspot	Front Side	0.508	0.053	0.561	N/A	N/A
	Back Side	0.416	0.053	0.469	N/A	N/A
	Left Side	0.202	N/A	0.202	N/A	N/A
	Right Side	0.232	0.053	0.285	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.371	N/A	0.371	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	0.102	0.105	0.207	N/A	N/A
	Left Tilt 15 Degree	0.057	0.105	0.162	N/A	N/A

	Right Cheek	0.087	0.105	0.192	N/A	N/A
	Right Tilt 15 Degree	0.044	0.105	0.149	N/A	N/A
Body-Worn	Front Side	0.342	0.053	0.395	N/A	N/A
	Back Side	0.259	0.053	0.312	N/A	N/A
Hotspot	Front Side	0.342	0.053	0.395	N/A	N/A
	Back Side	0.259	0.053	0.312	N/A	N/A
	Left Side	0.269	N/A	0.269	N/A	N/A
	Right Side	0.148	0.053	0.201	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.133	N/A	0.133	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	0.156	0.105	0.261	N/A	N/A
	Left Tilt 15 Degree	0.083	0.105	0.188	N/A	N/A
	Right Cheek	0.145	0.105	0.250	N/A	N/A
	Right Tilt 15 Degree	0.075	0.105	0.180	N/A	N/A
Body-Worn	Front Side	0.585	0.053	0.638	N/A	N/A
	Back Side	0.442	0.053	0.495	N/A	N/A
Hotspot	Front Side	0.585	0.053	0.638	N/A	N/A
	Back Side	0.442	0.053	0.495	N/A	N/A
	Left Side	0.417	N/A	0.417	N/A	N/A
	Right Side	0.252	0.053	0.305	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.230	N/A	0.230	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 5	Bluetooth			
Head	Left Cheek	0.147	0.105	0.252	N/A	N/A
	Left Tilt 15 Degree	0.073	0.105	0.178	N/A	N/A
	Right Cheek	0.141	0.105	0.246	N/A	N/A
	Right Tilt 15 Degree	0.065	0.105	0.170	N/A	N/A
Body-Worn	Front Side	0.379	0.053	0.432	N/A	N/A
	Back Side	0.274	0.053	0.327	N/A	N/A
Hotspot	Front Side	0.379	0.053	0.432	N/A	N/A
	Back Side	0.274	0.053	0.327	N/A	N/A

	Left Side	0.277	N/A	0.277	N/A	N/A
	Right Side	0.171	0.053	0.224	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.136	N/A	0.136	N/A	N/A

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		LTE Band 7	Bluetooth			
Head	Left Cheek	0.112	0.105	0.217	N/A	N/A
	Left Tilt 15 Degree	0.060	0.105	0.165	N/A	N/A
	Right Cheek	0.098	0.105	0.203	N/A	N/A
	Right Tilt 15 Degree	0.048	0.105	0.153	N/A	N/A
Body-Worn	Front Side	0.530	0.053	0.583	N/A	N/A
	Back Side	0.447	0.053	0.500	N/A	N/A
Hotspot	Front Side	0.530	0.053	0.583	N/A	N/A
	Back Side	0.447	0.053	0.500	N/A	N/A
	Left Side	0.374	N/A	0.374	N/A	N/A
	Right Side	0.256	0.053	0.309	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.181	N/A	0.181	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 12	Bluetooth			
Head	Left Cheek	0.044	0.105	0.149	N/A	N/A
	Left Tilt 15 Degree	0.026	0.105	0.131	N/A	N/A
	Right Cheek	0.041	0.105	0.146	N/A	N/A
	Right Tilt 15 Degree	0.019	0.105	0.124	N/A	N/A
Body-Worn	Front Side	0.079	0.053	0.132	N/A	N/A
	Back Side	0.059	0.053	0.112	N/A	N/A
Hotspot	Front Side	0.079	0.053	0.132	N/A	N/A
	Back Side	0.059	0.053	0.112	N/A	N/A
	Left Side	0.060	N/A	0.060	N/A	N/A
	Right Side	0.037	0.053	0.090	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.028	N/A	0.028	N/A	N/A

NOTE: 1-g SAR Simultaneous Tx Combination of LTE Band 12 and Bluetooth.

Test Position	Scaled SAR _{MAX}		Σ 1-g SAR	SPLSR	Remark
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		LTE Band 17	Bluetooth	(W/Kg)		
Head	Left Cheek	0.032	0.105	0.137	N/A	N/A
	Left Tilt 15 Degree	0.017	0.105	0.122	N/A	N/A
	Right Cheek	0.028	0.105	0.133	N/A	N/A
	Right Tilt 15 Degree	0.014	0.105	0.119	N/A	N/A
Body-Worn	Front Side	0.225	0.053	0.278	N/A	N/A
	Back Side	0.179	0.053	0.232	N/A	N/A
Hotspot	Front Side	0.225	0.053	0.278	N/A	N/A
	Back Side	0.179	0.053	0.232	N/A	N/A
	Left Side	0.172	N/A	0.172	N/A	N/A
	Right Side	0.105	0.053	0.158	N/A	N/A
	Top Side	N/A	0.053	0.053	N/A	N/A
	Bottom Side	0.089	N/A	0.089	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

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MEASUREMENT 1

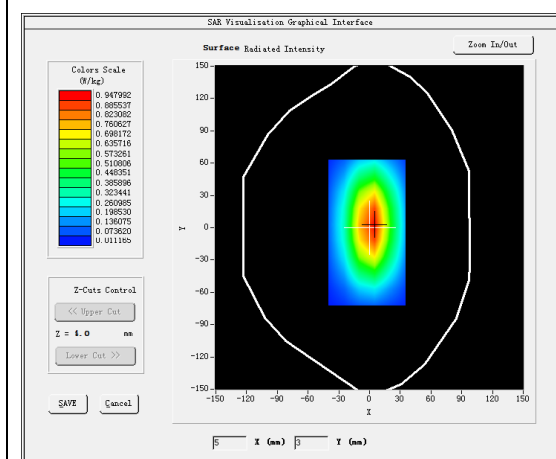
A. Experimental conditions.

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

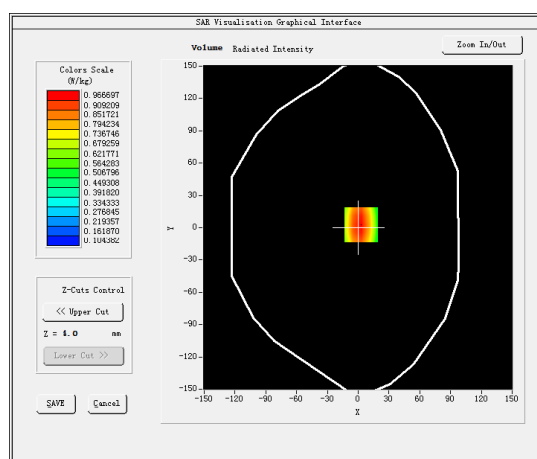
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	41.583162
Relative permittivity (imaginary part)	22.271263
Conductivity (S/m)	0.922262
Variation (%)	-1.810000

SURFACE SAR



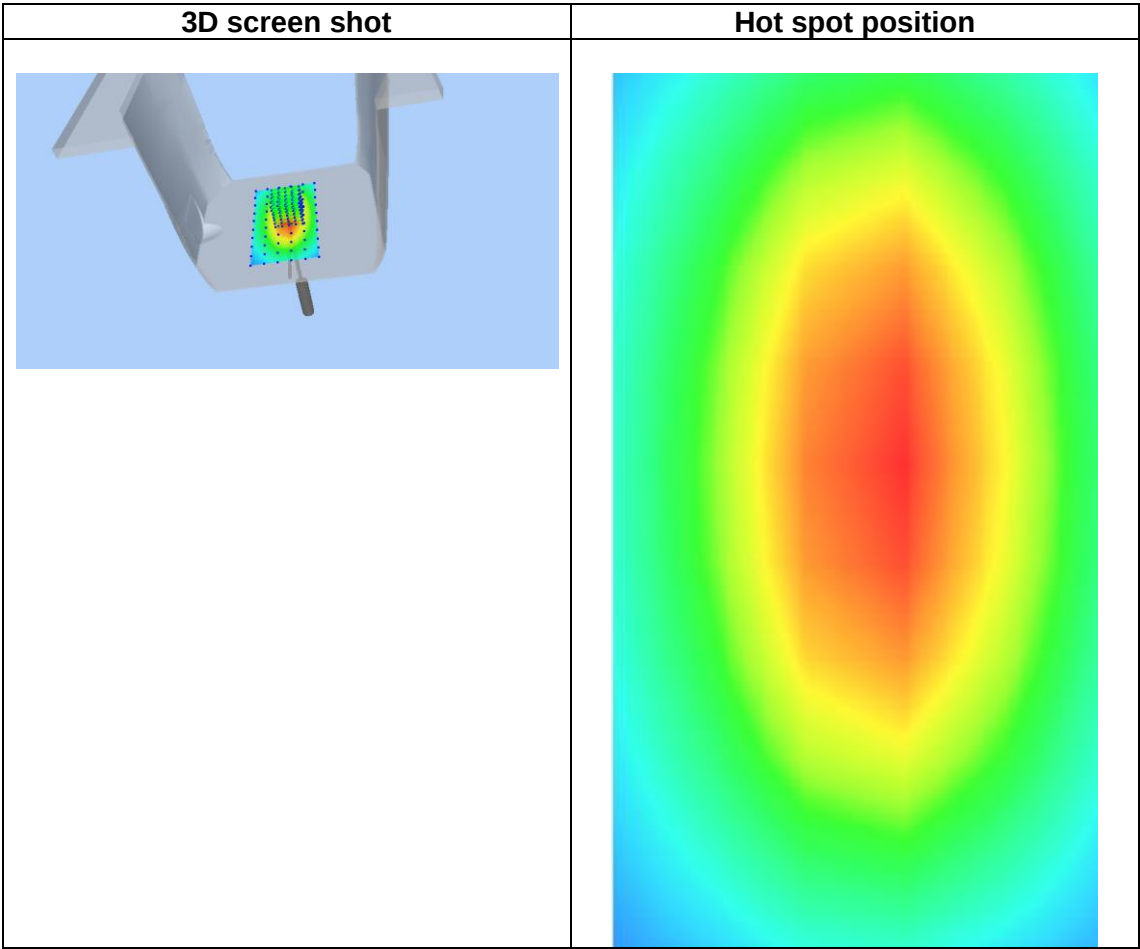
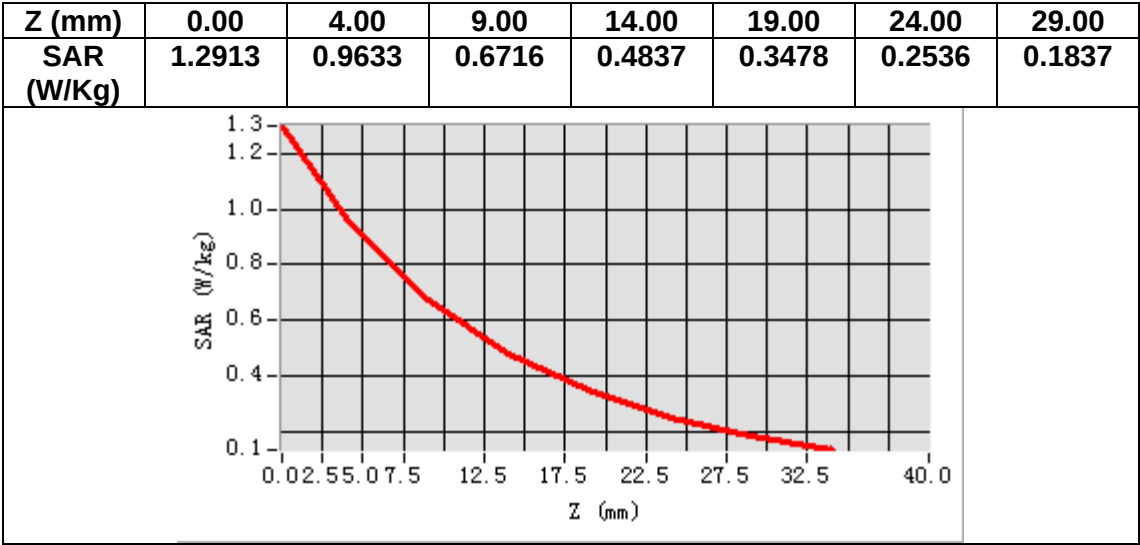
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/Kg

SAR 10g (W/Kg)	0.591218
SAR 1g (W/Kg)	0.887362



MEASUREMENT 2

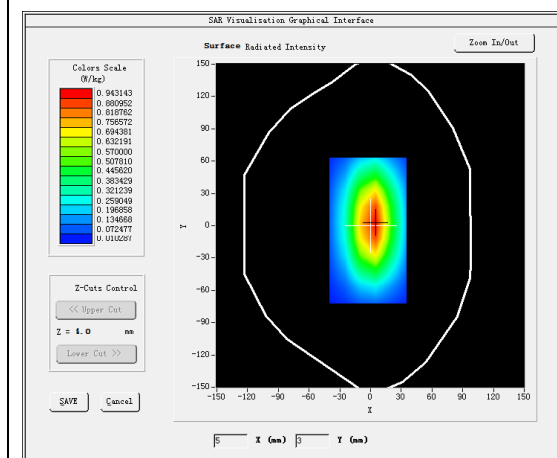
A. Experimental conditions.

<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>

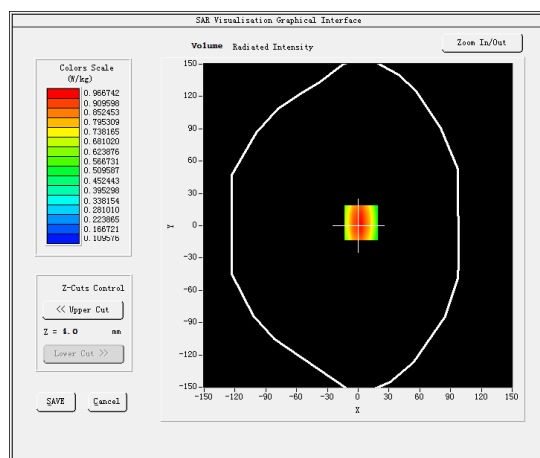
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	55.360248
Relative permittivity (imaginary part)	23.213842
Conductivity (S/m)	0.970318
Variation (%)	-0.490000

SURFACE SAR



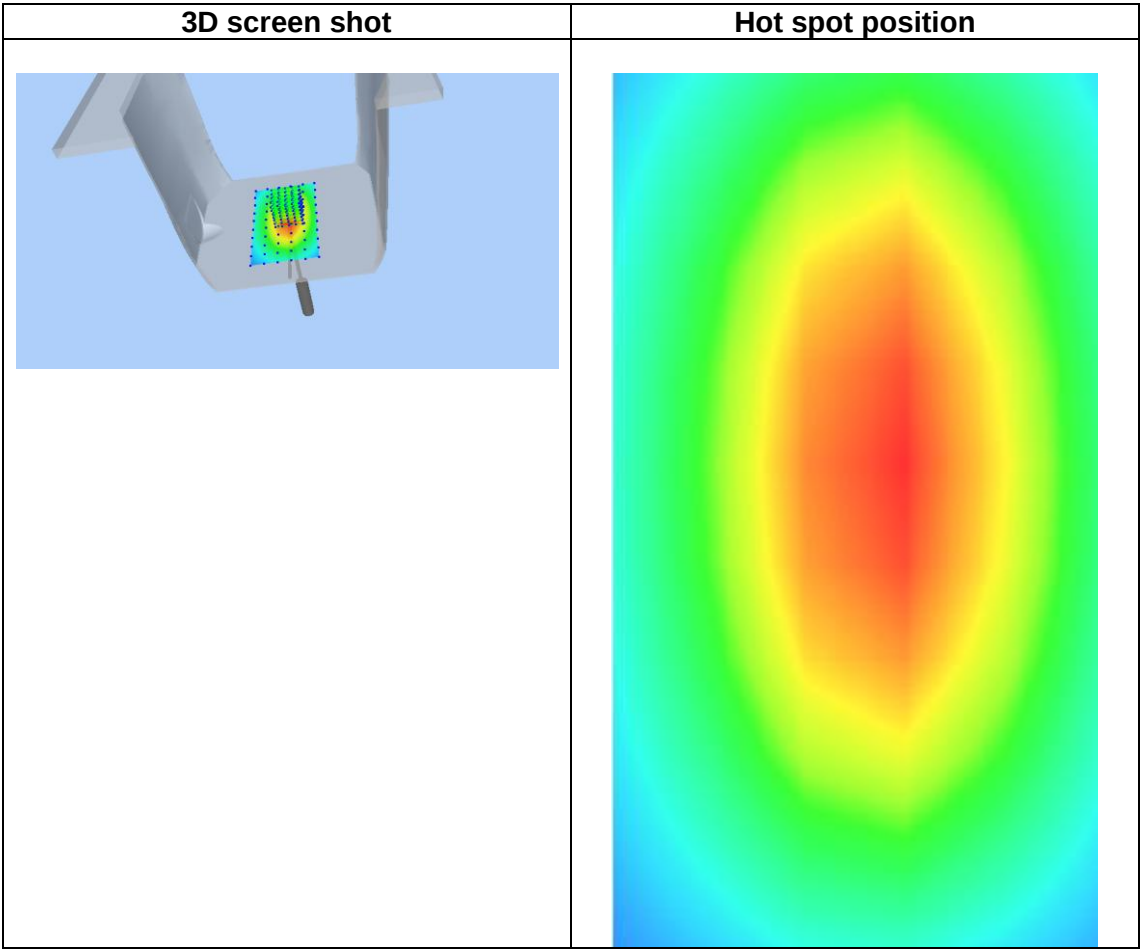
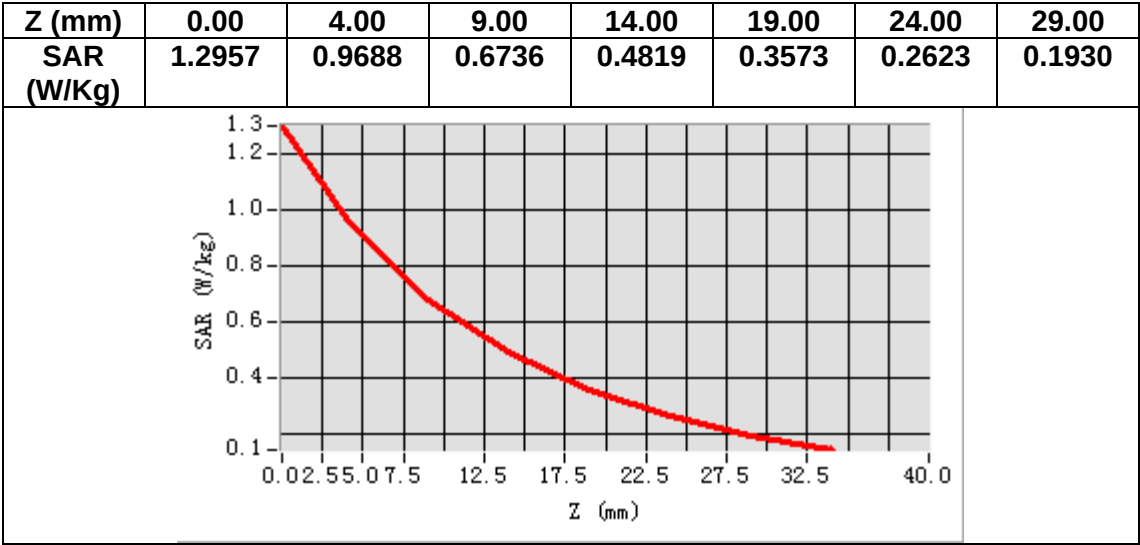
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.568281
SAR 1g (W/Kg)	0.919263



MEASUREMENT 3

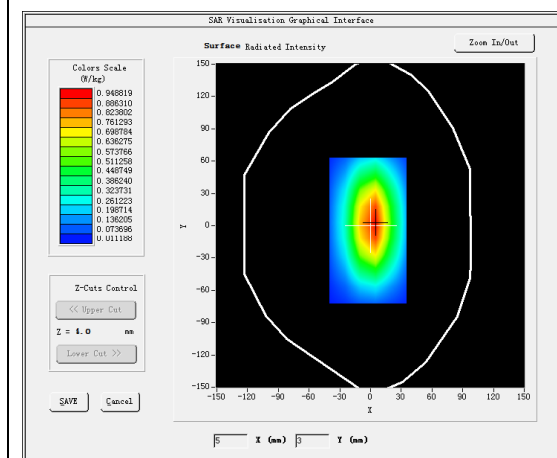
A. Experimental conditions.

<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>

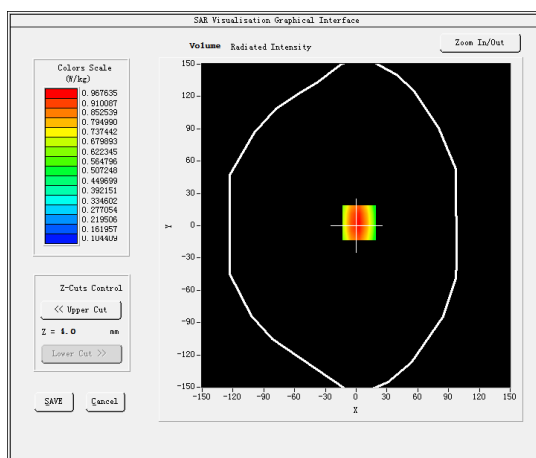
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.423541
Relative permittivity (imaginary part)	20.061613
Conductivity (S/m)	0.930542
Variation (%)	1.870000

SURFACE SAR



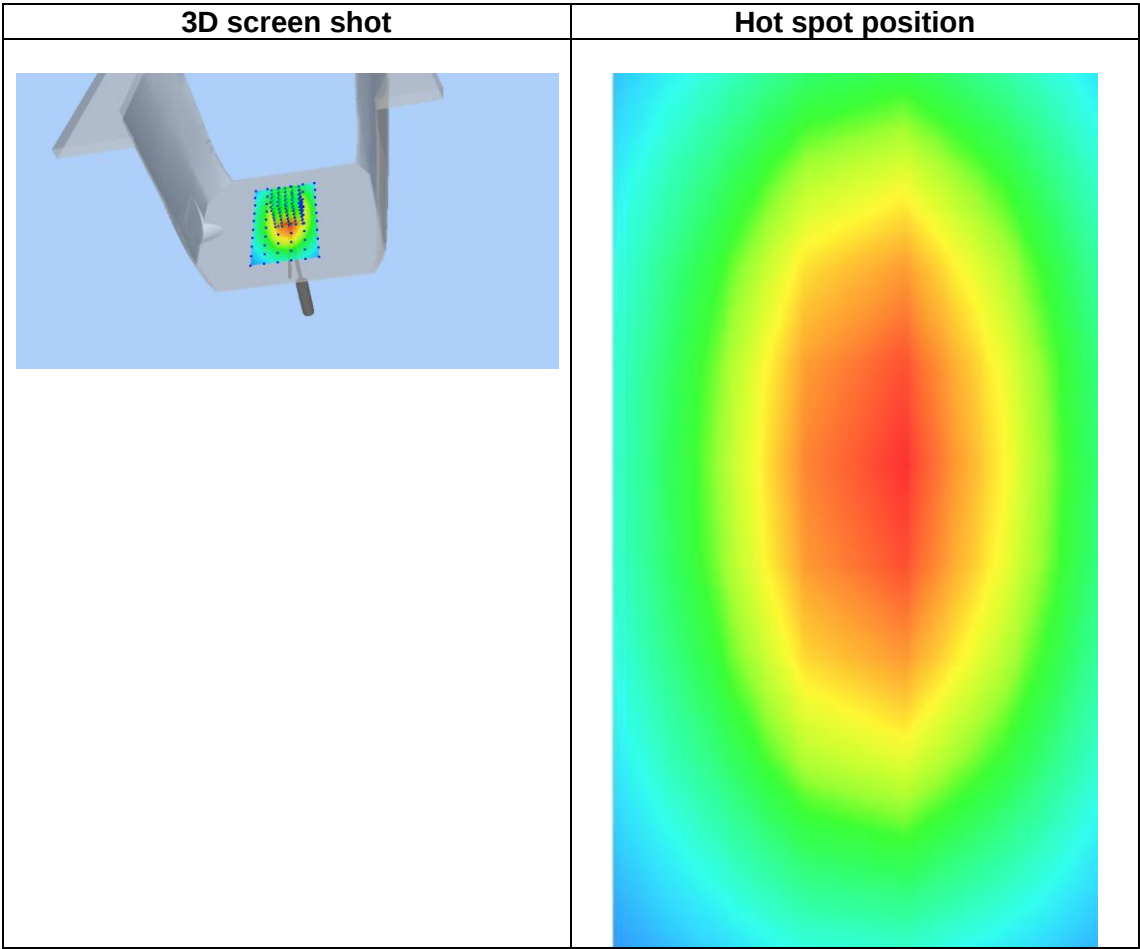
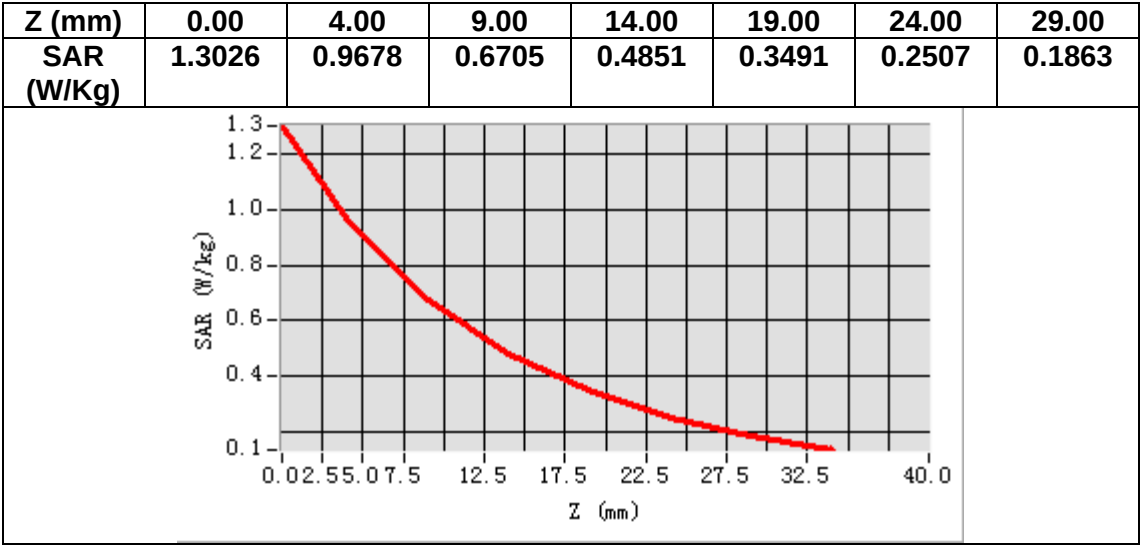
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.613466
SAR 1g (W/Kg)	0.904035



MEASUREMENT 4

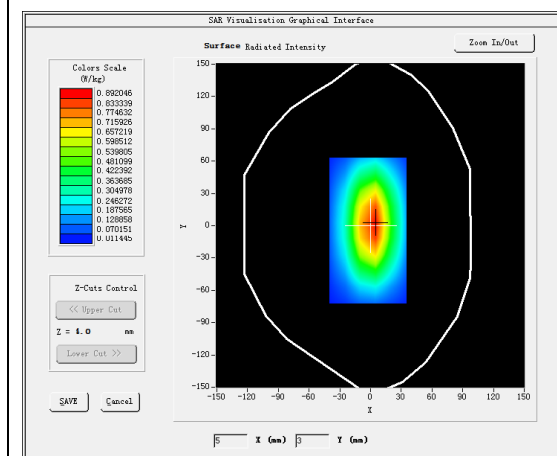
A. Experimental conditions.

<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>

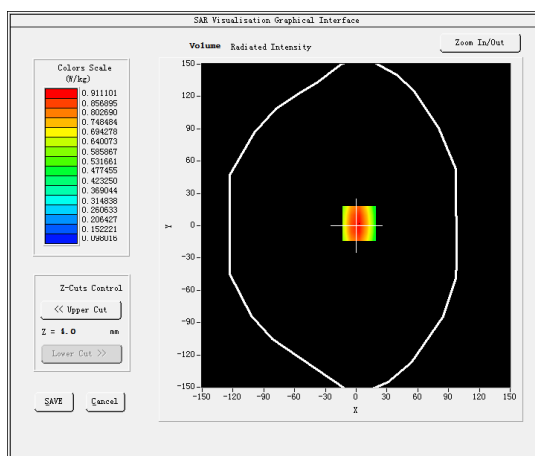
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	54.451101
Relative permittivity (imaginary part)	21.223359
Conductivity (S/m)	0.981236
Variation (%)	-1.210000

SURFACE SAR



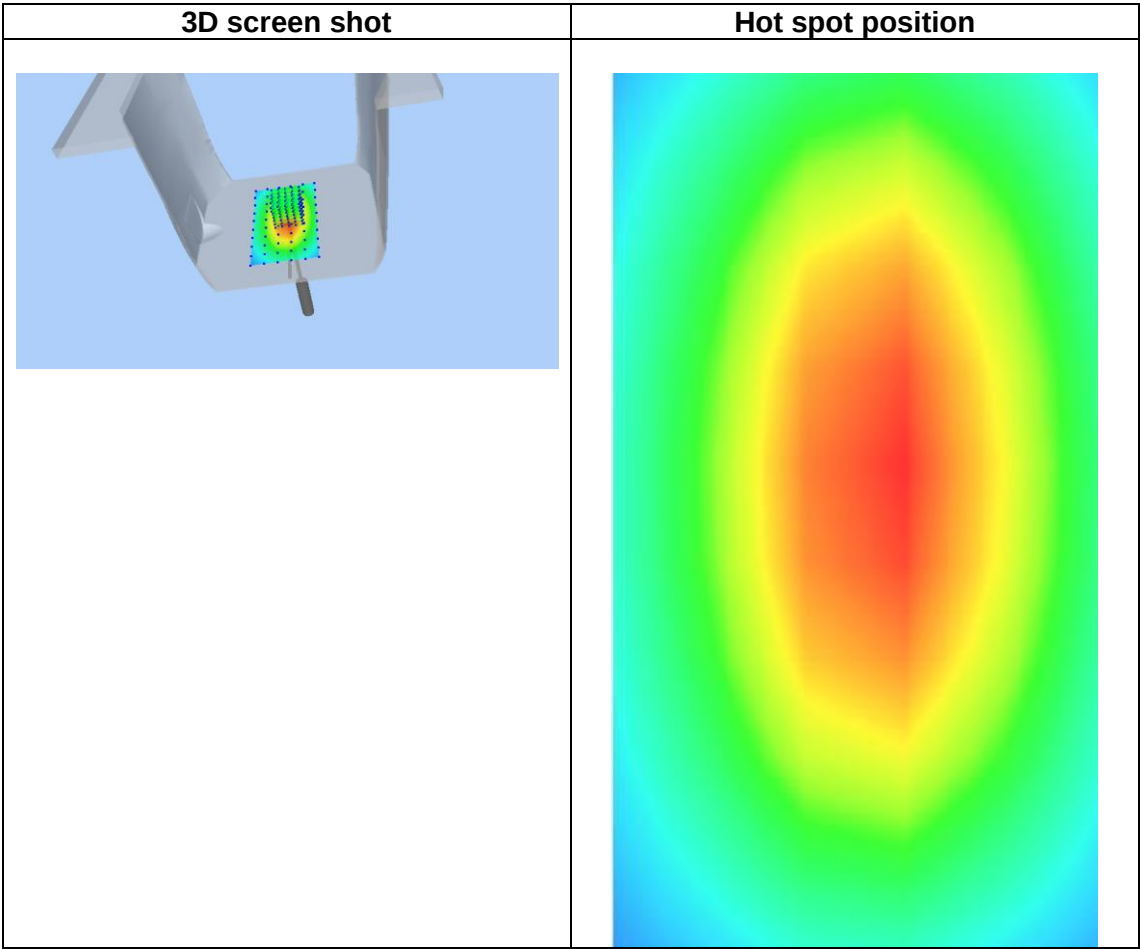
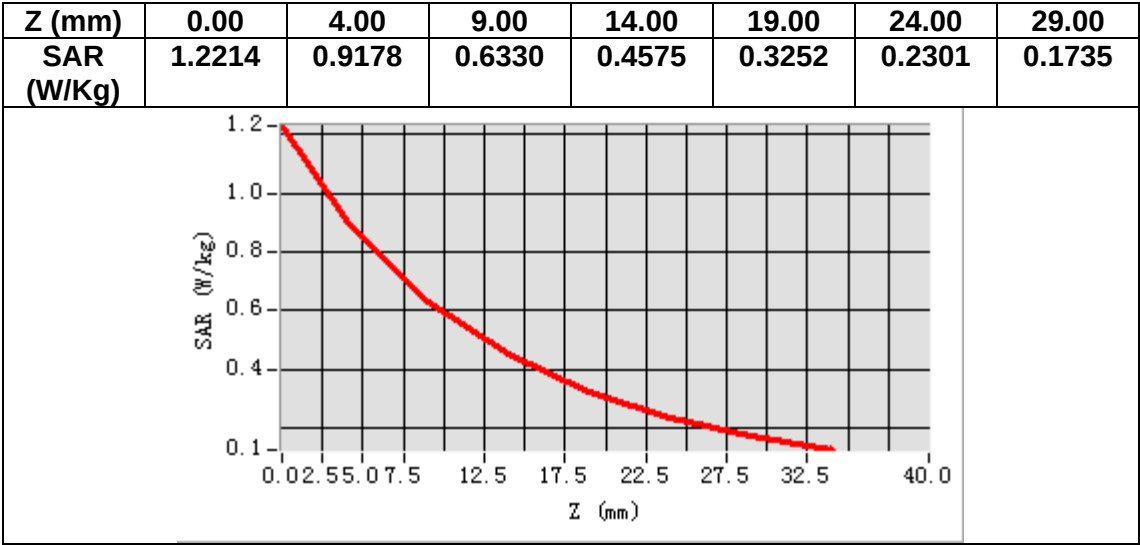
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.670123
SAR 1g (W/Kg)	1.044356



MEASUREMENT 5

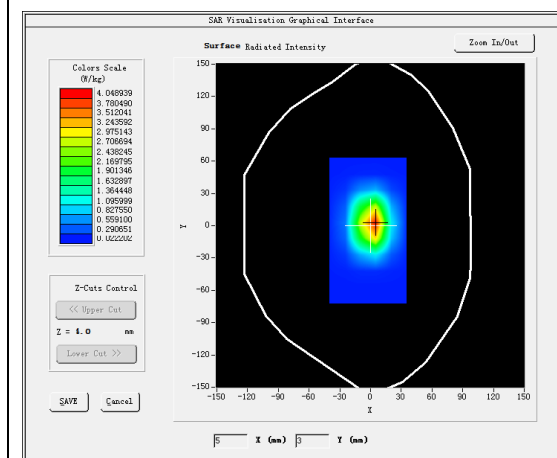
A. Experimental conditions.

<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>

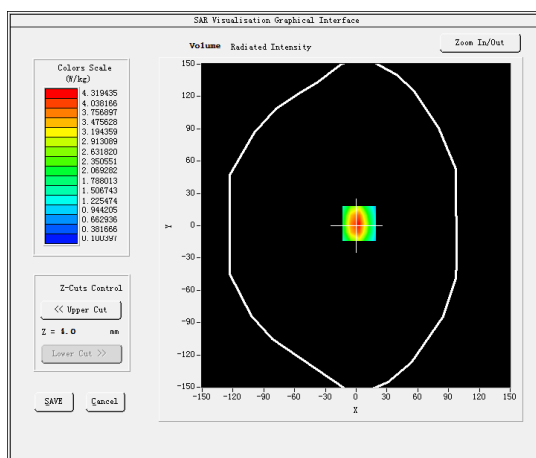
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.381237
Relative permittivity (imaginary part)	14.023229
Conductivity (S/m)	1.401367
Variation (%)	-2.113000

SURFACE SAR



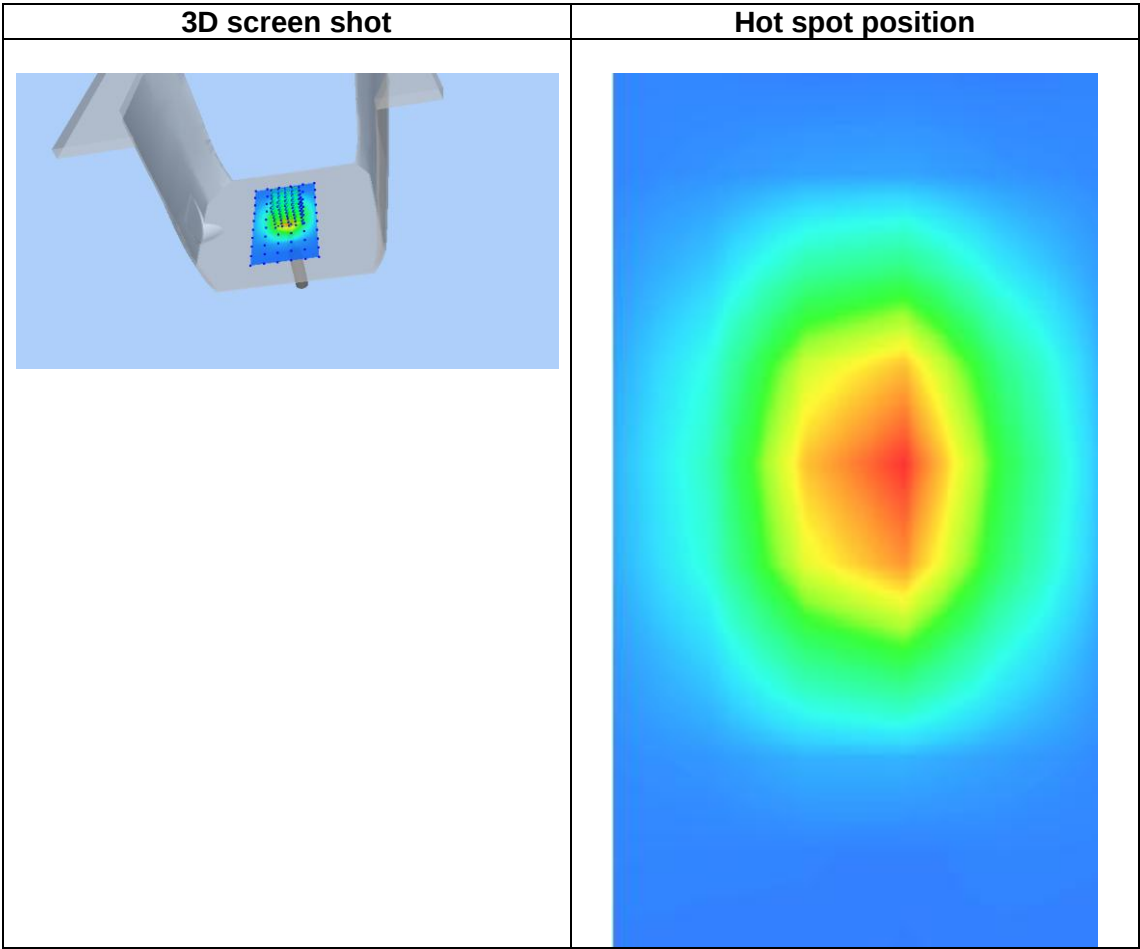
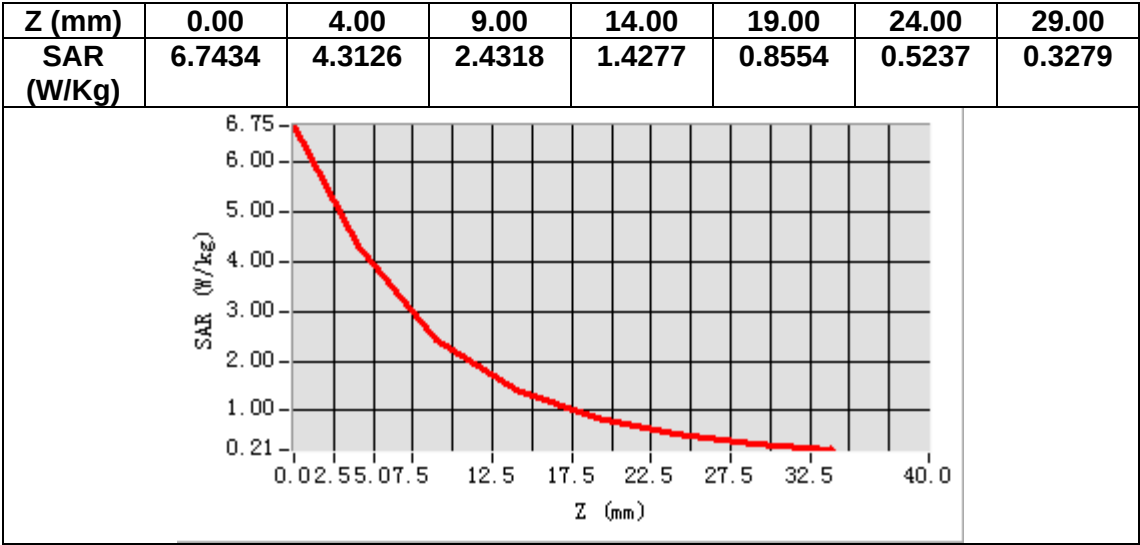
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	1.871397
SAR 1g (W/Kg)	3.961451



MEASUREMENT 6

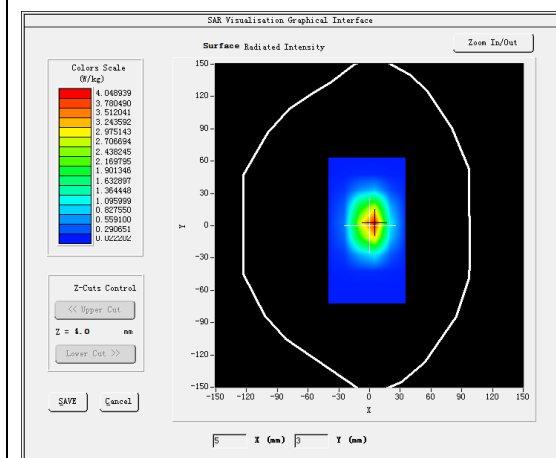
A. Experimental conditions.

<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>

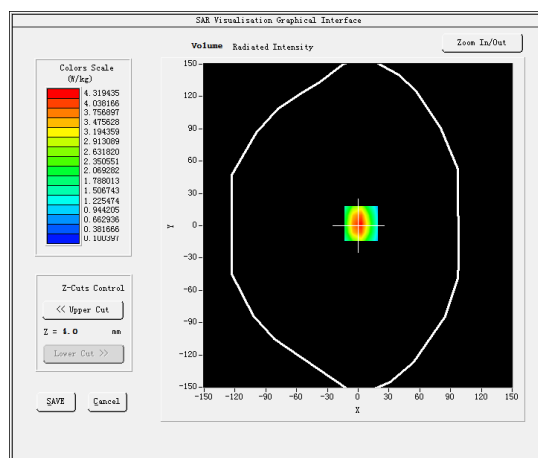
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	53.063510
Relative permittivity (imaginary part)	15.404016
Conductivity (S/m)	1.543096
Variation (%)	2.020000

SURFACE SAR



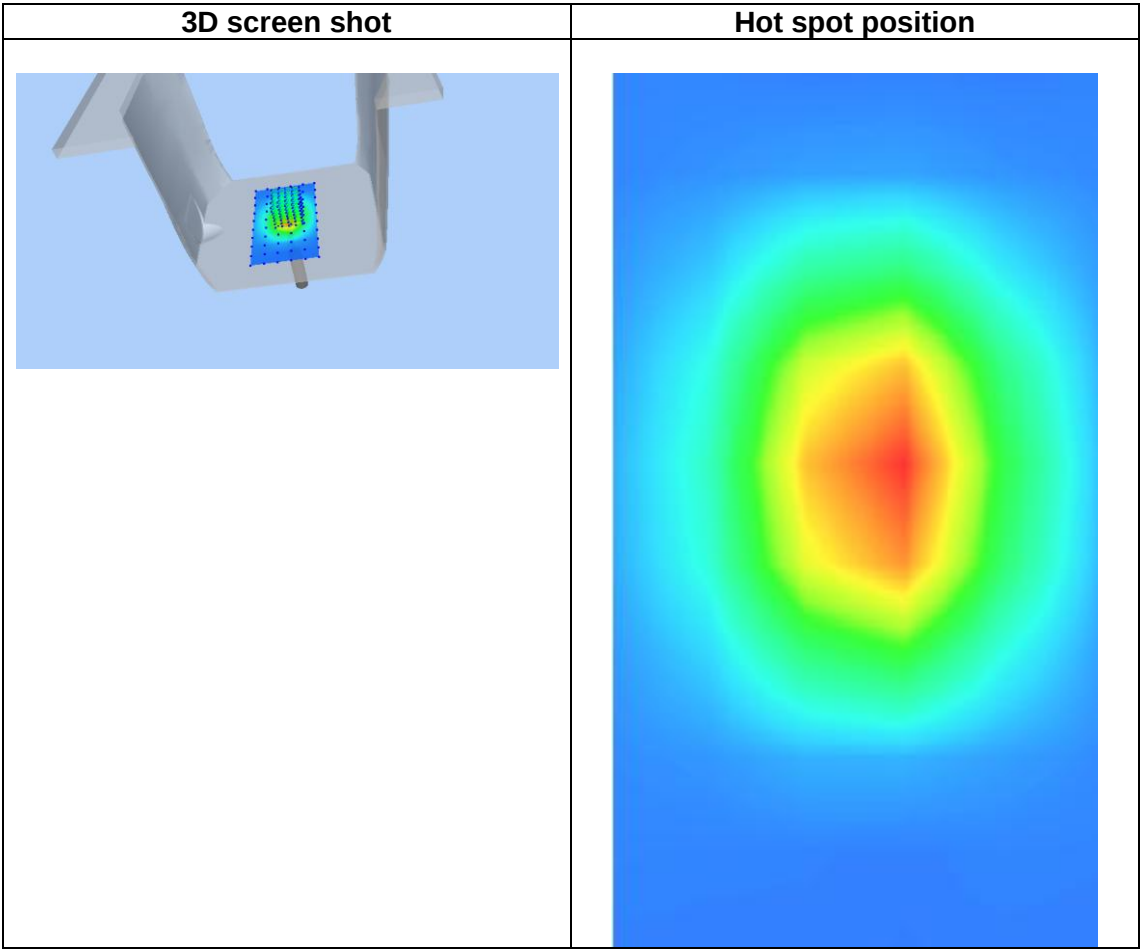
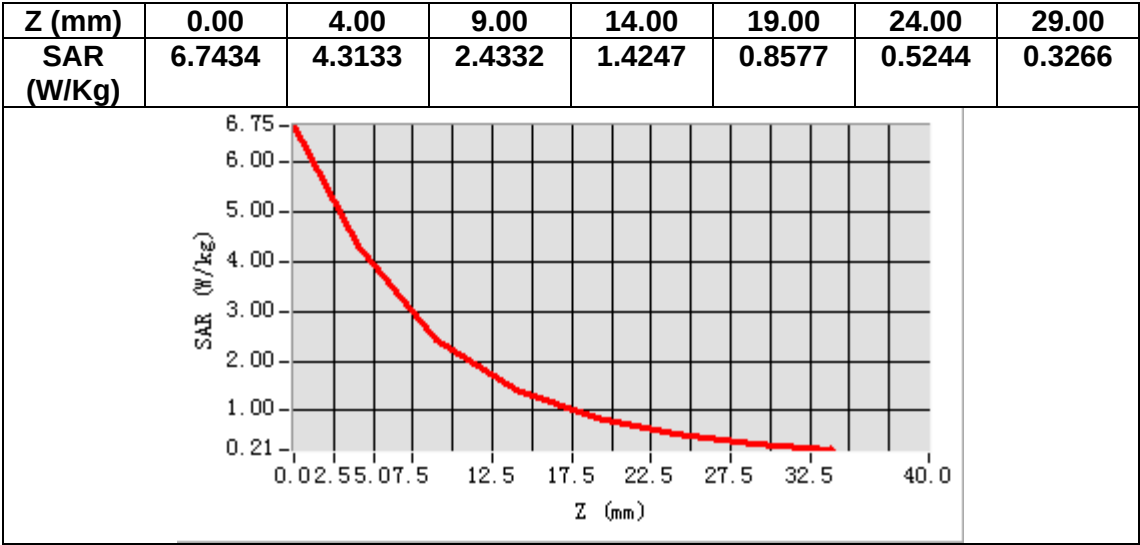
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.200379
SAR 1g (W/Kg)	3.682268



MEASUREMENT 7

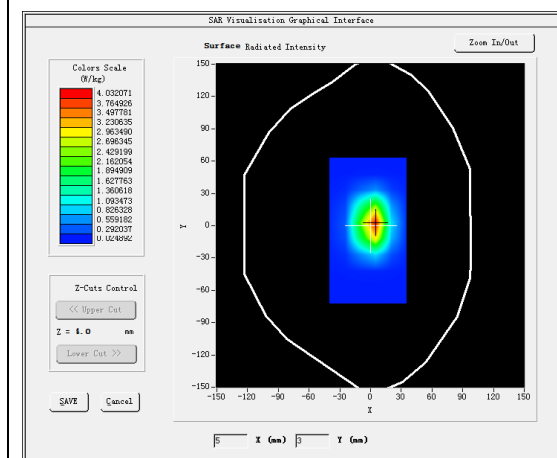
A. Experimental conditions.

<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>

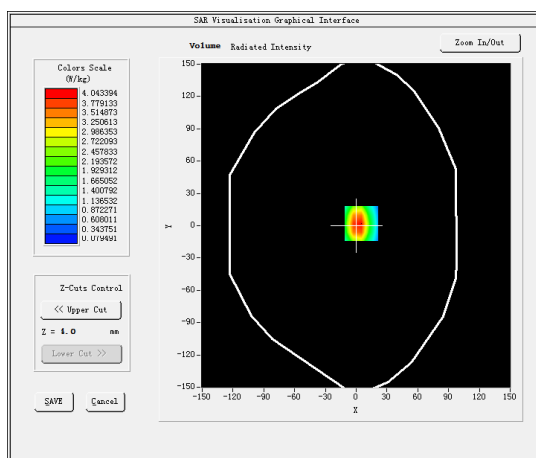
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	40.961287
Relative permittivity (imaginary part)	13.623008
Conductivity (S/m)	1.440336
Variation (%)	-1.430000

SURFACE SAR



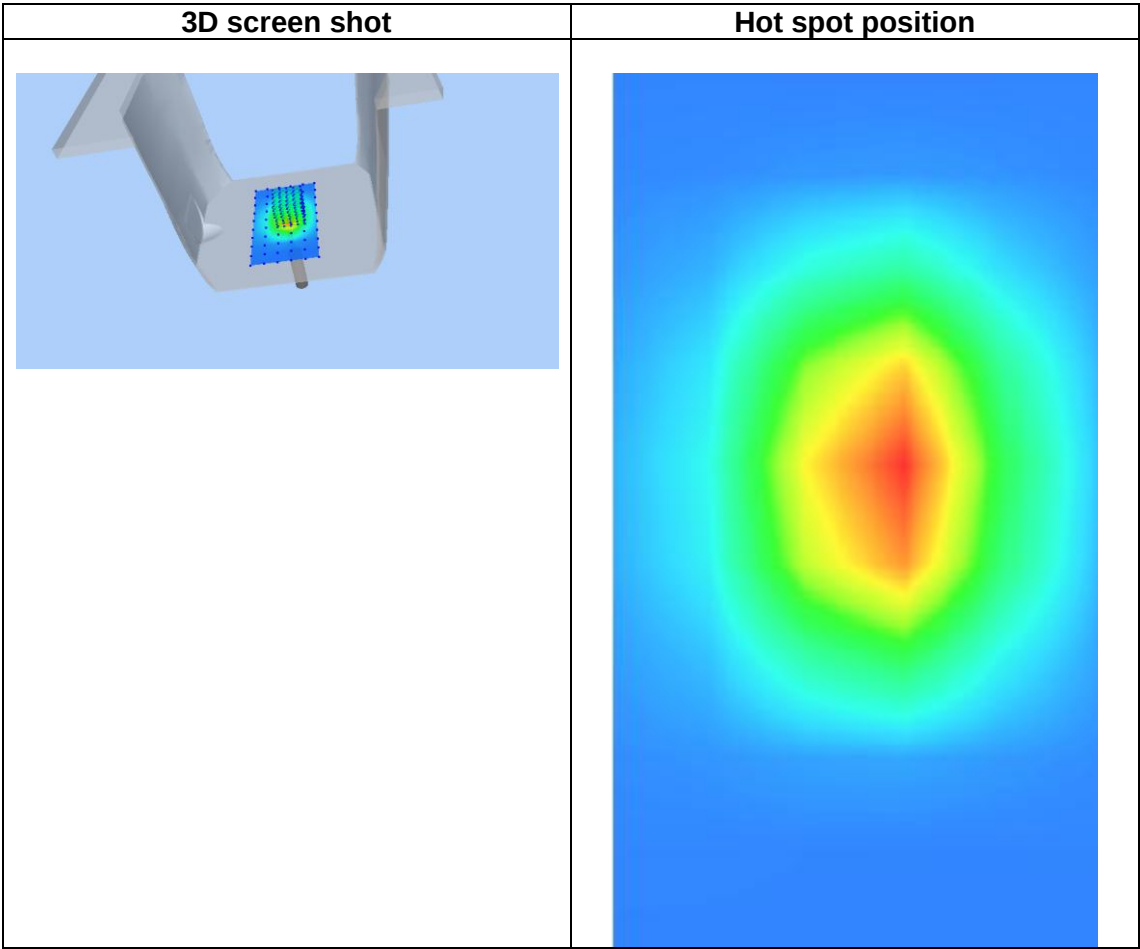
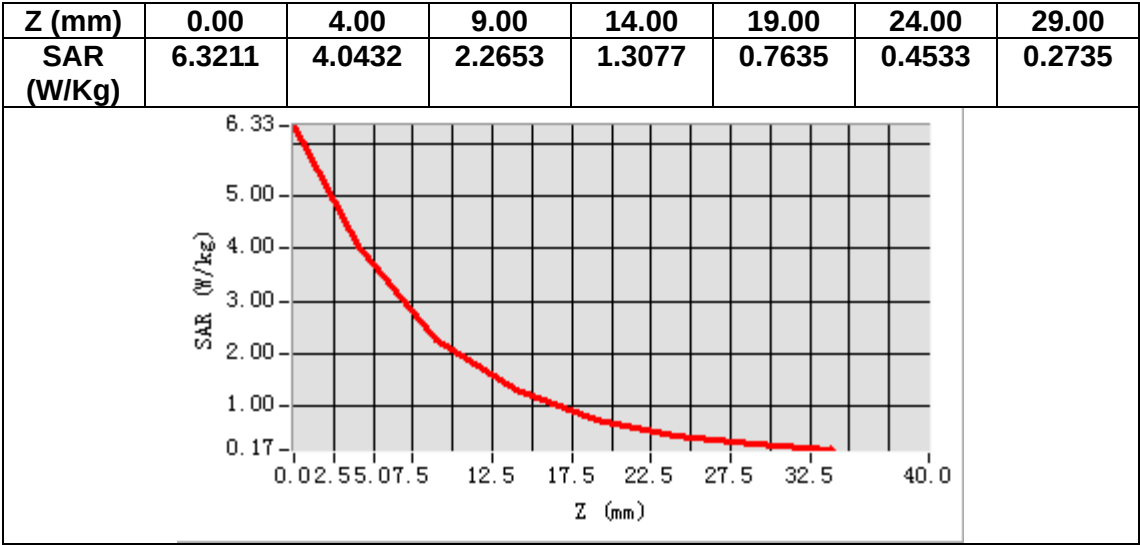
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	1.904456
SAR 1g (W/Kg)	4.000365



MEASUREMENT 8

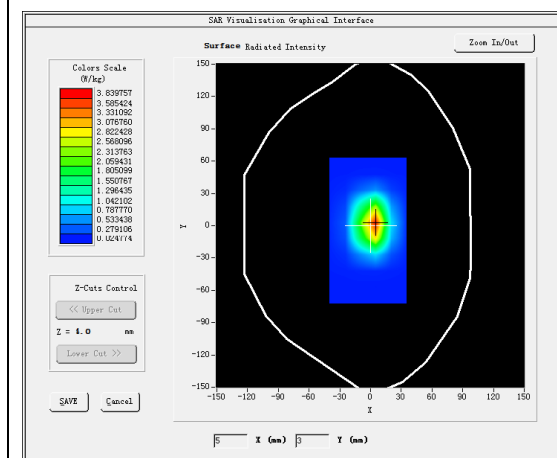
A. Experimental conditions.

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

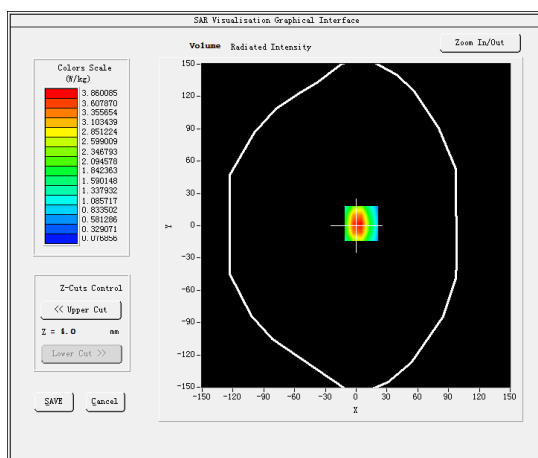
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	52.563335
Relative permittivity (imaginary part)	14.393503
Conductivity (S/m)	1.523566
Variation (%)	0.120000

SURFACE SAR



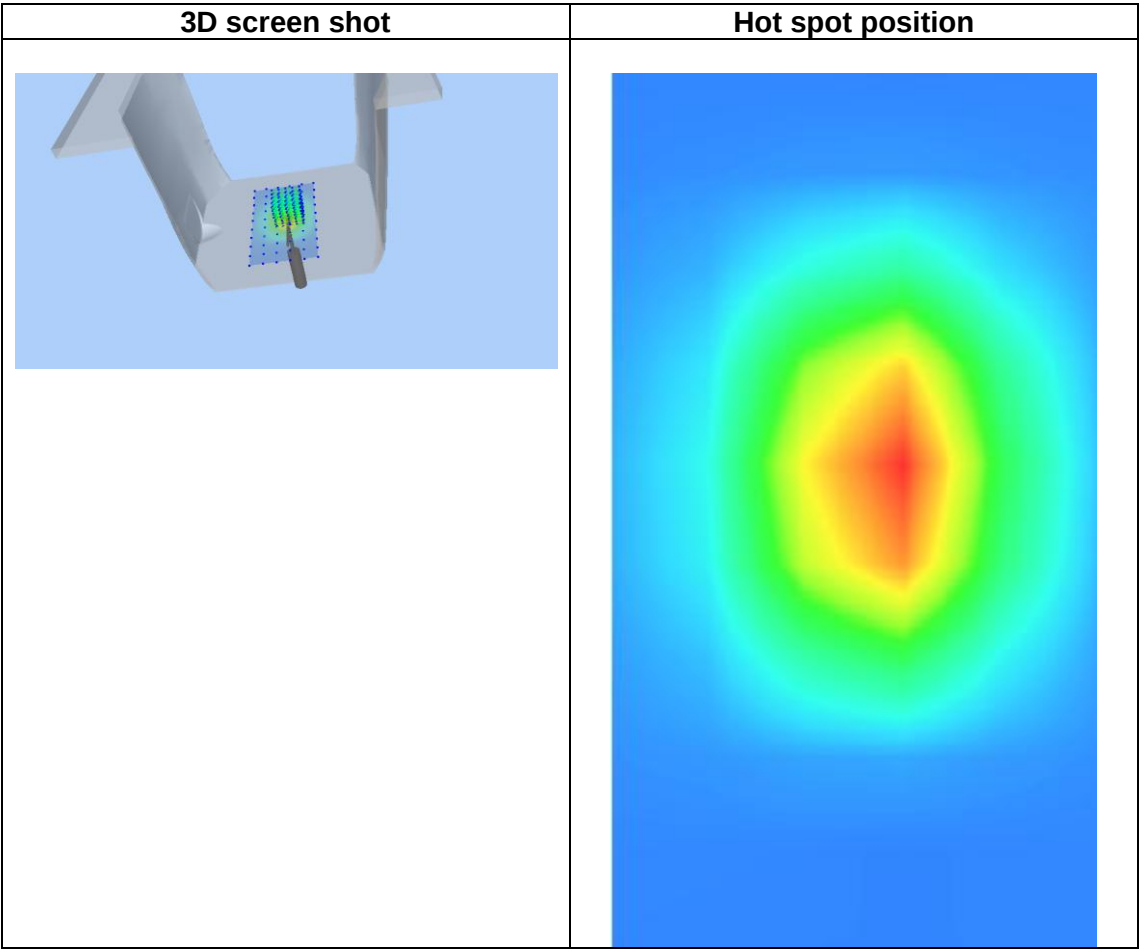
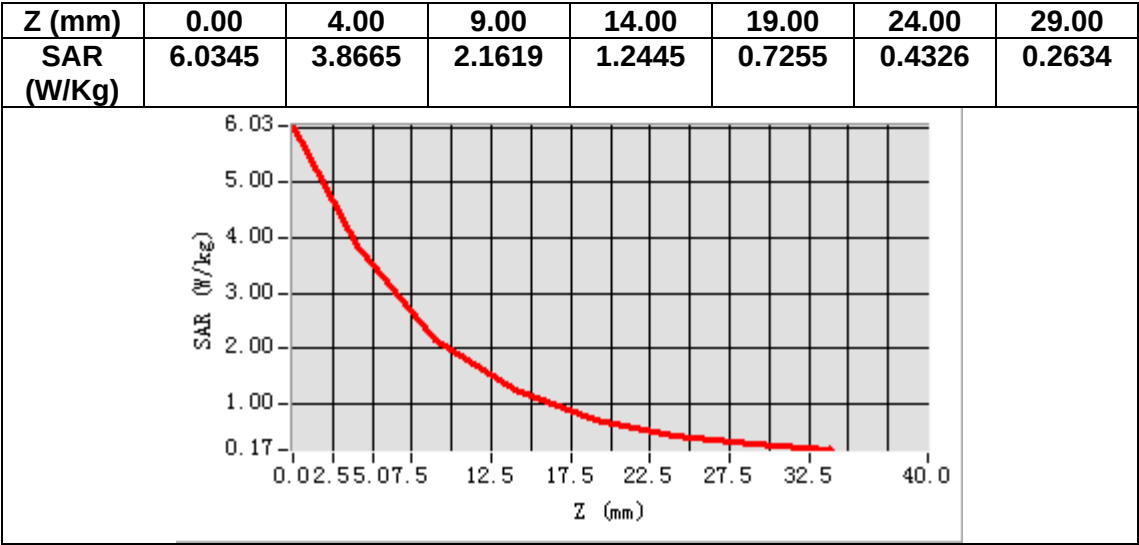
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.009329
SAR 1g (W/Kg)	3.717402



MEASUREMENT 9

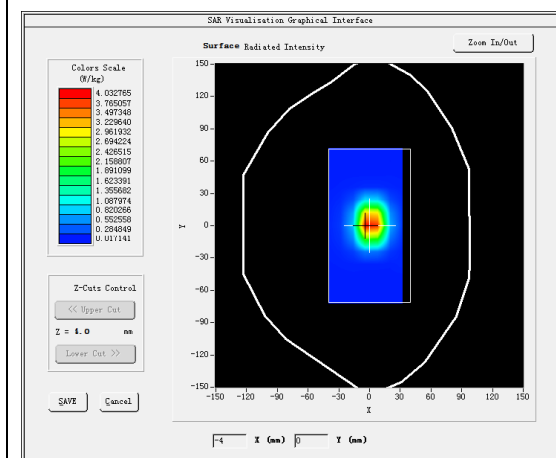
A. Experimental conditions.

<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>

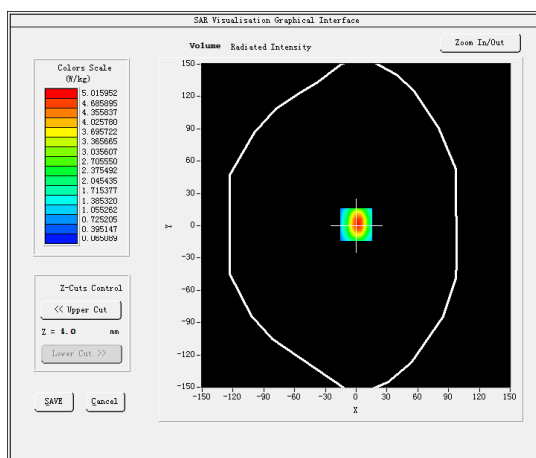
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.481421
Relative permittivity (imaginary part)	13.562631
Conductivity (S/m)	1.850663
Variation (%)	-3.350000

SURFACE SAR



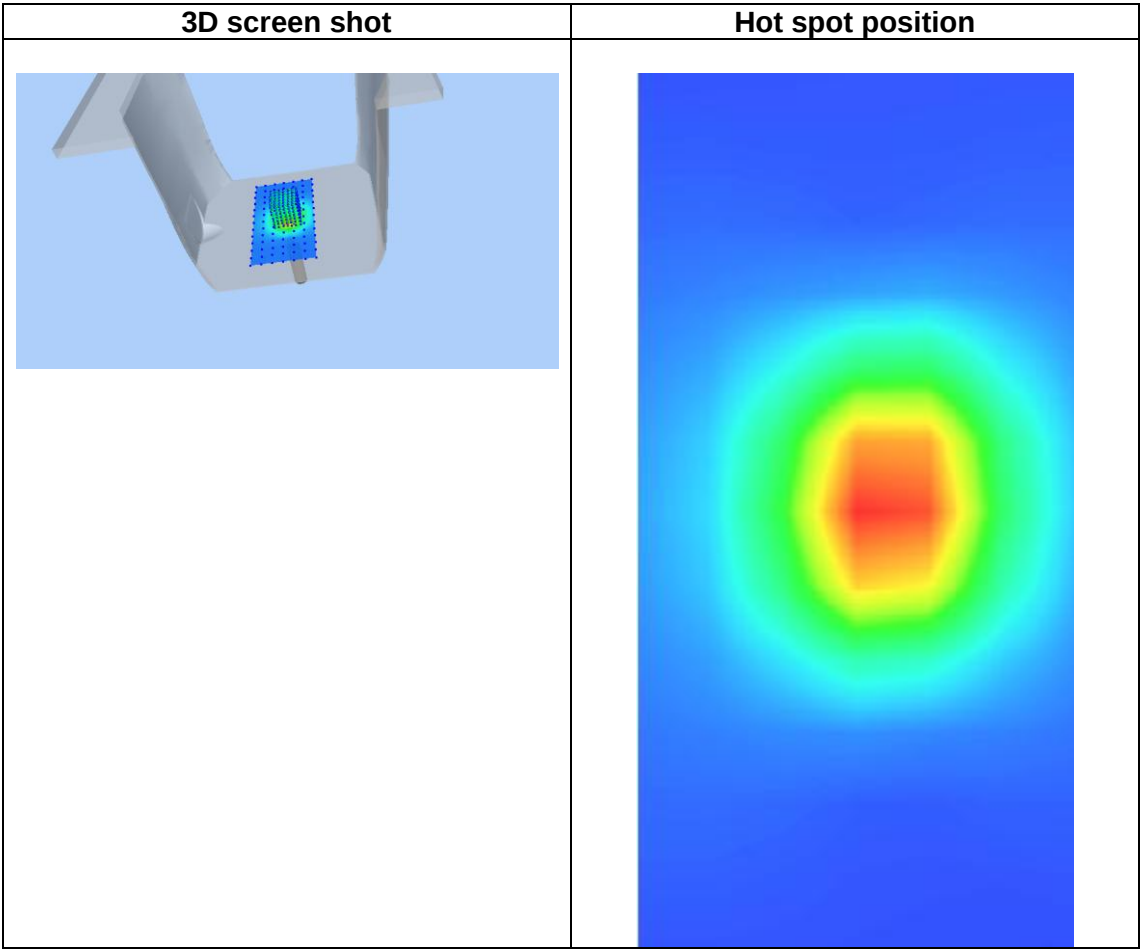
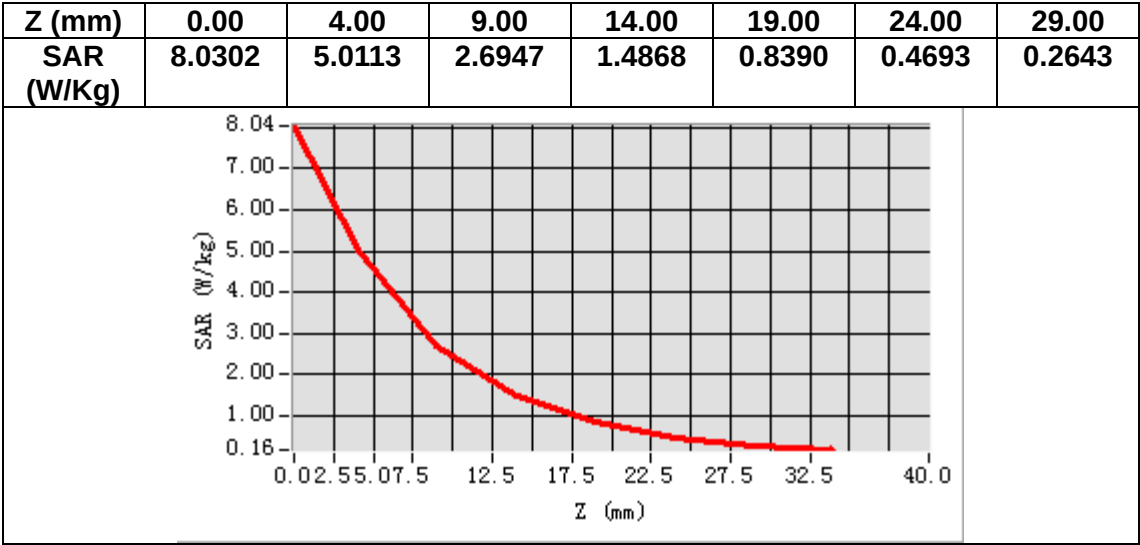
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.439375
SAR 1g (W/Kg)	5.057435



MEASUREMENT 10

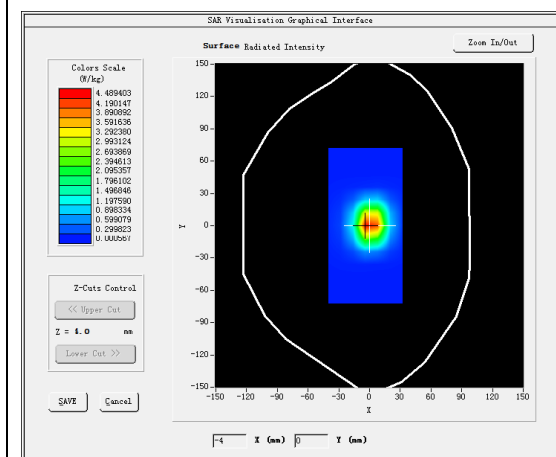
A. Experimental conditions.

<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>

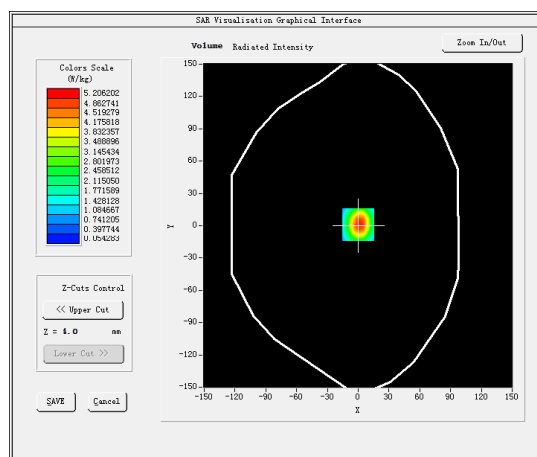
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.731497
Relative permittivity (imaginary part)	14.233566
Conductivity (S/m)	1.942816
Variation (%)	0.420000

SURFACE SAR



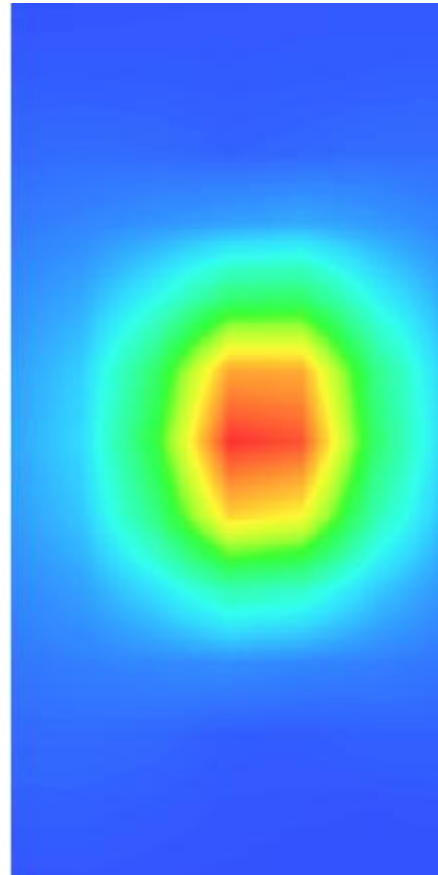
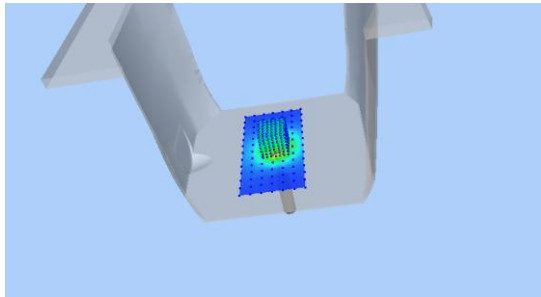
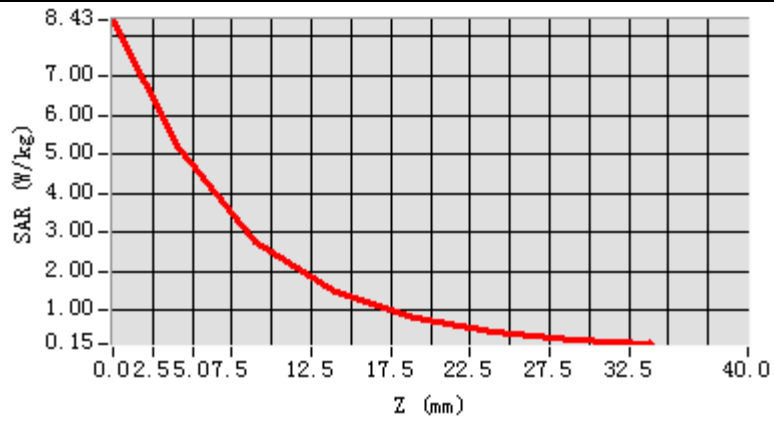
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.474285
SAR 1g (W/Kg)	5.027270



MEASUREMENT 11

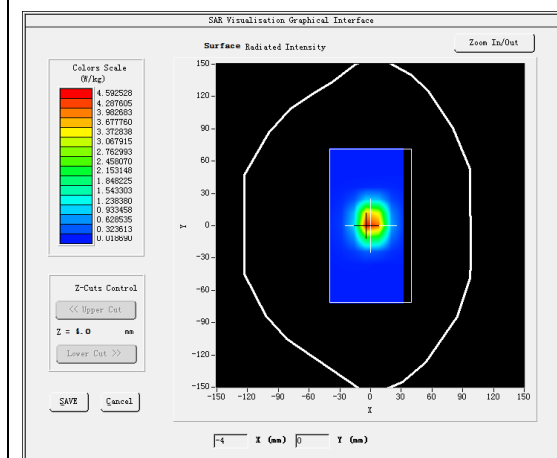
A. Experimental conditions.

<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>

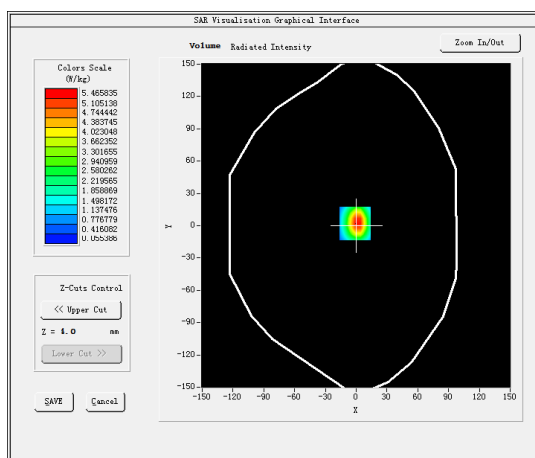
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.072638
Relative permittivity (imaginary part)	14.003997
Conductivity (S/m)	2.023631
Variation (%)	-0.040000

SURFACE SAR



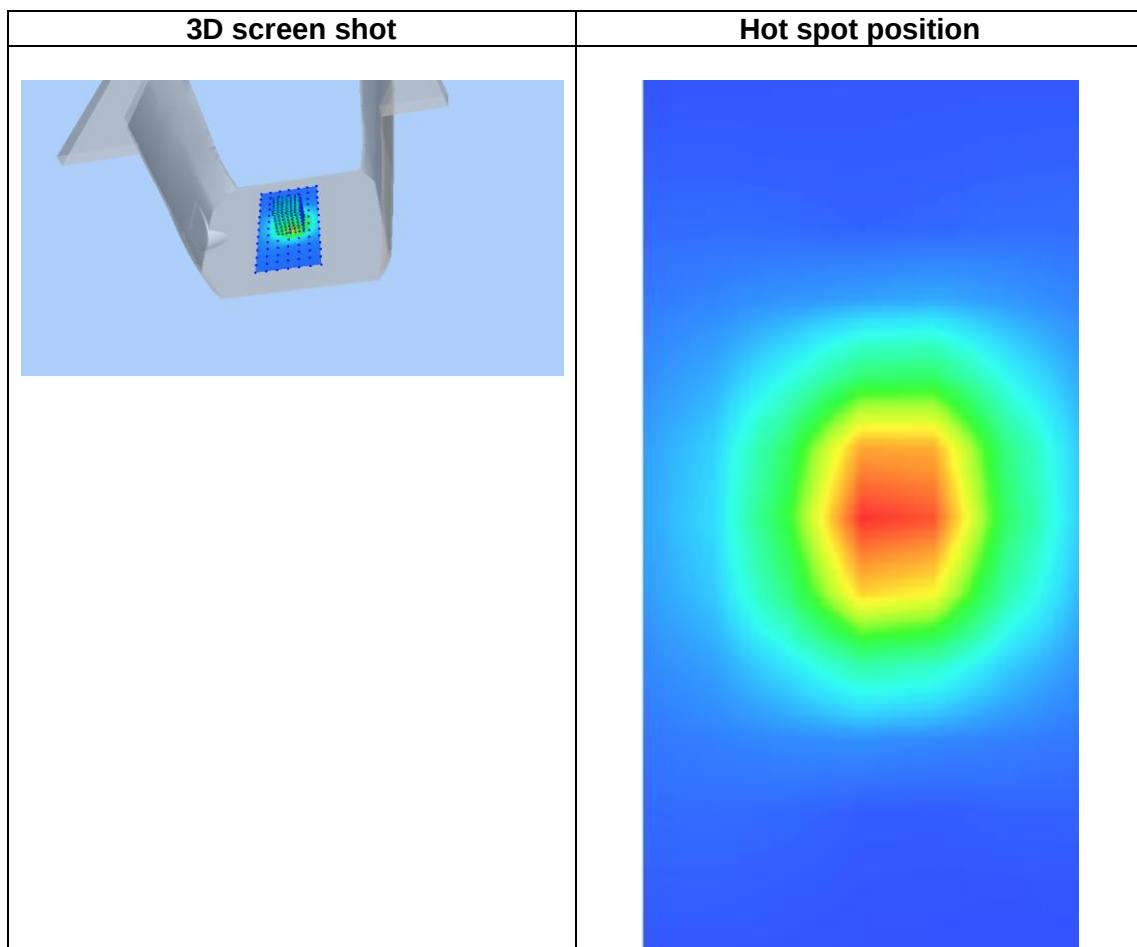
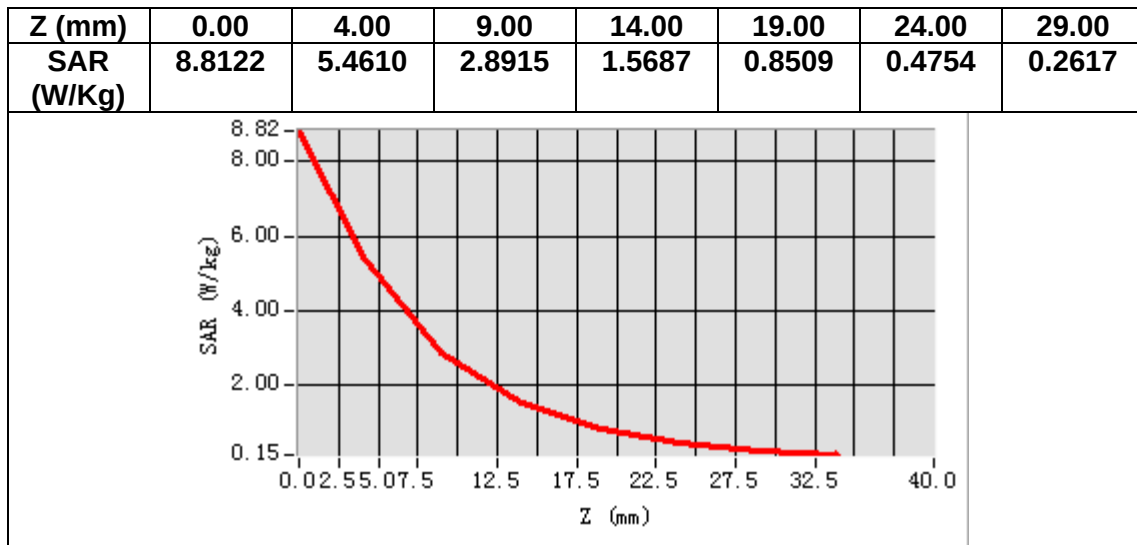
VOLUME SAR



Maximum location: X=-1.00, Y=2.00

SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.469205
SAR 1g (W/Kg)	5.410267



MEASUREMENT 12

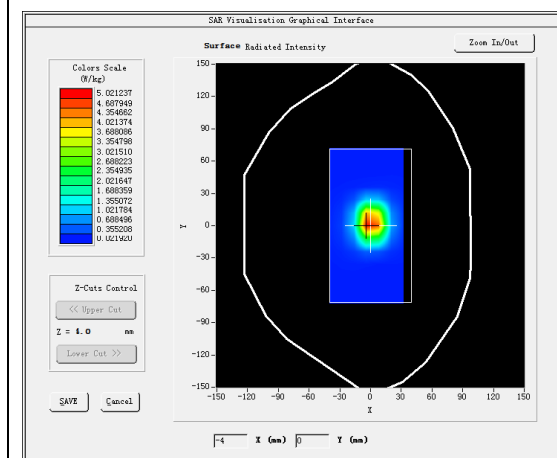
A. Experimental conditions.

<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>

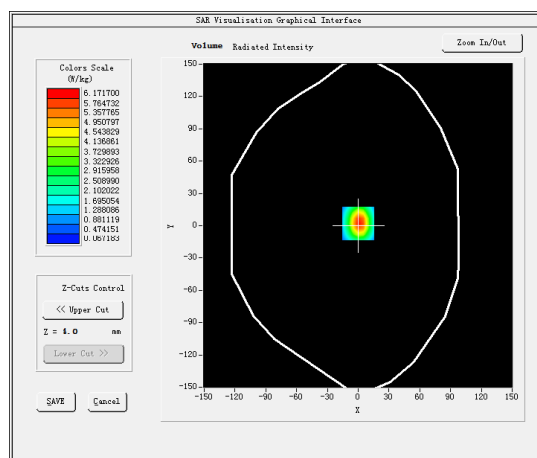
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	52.562866
Relative permittivity (imaginary part)	15.200101
Conductivity (S/m)	2.203465
Variation (%)	-1.220000

SURFACE SAR



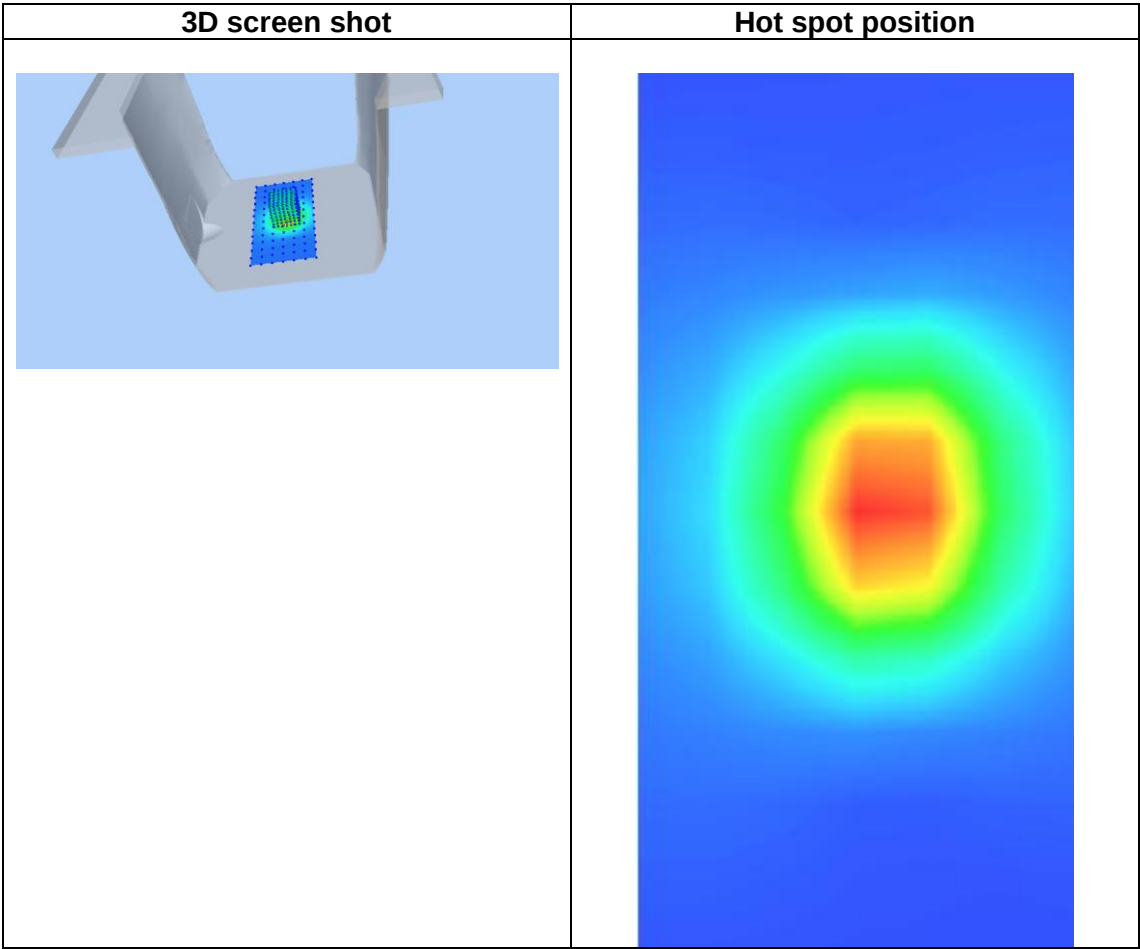
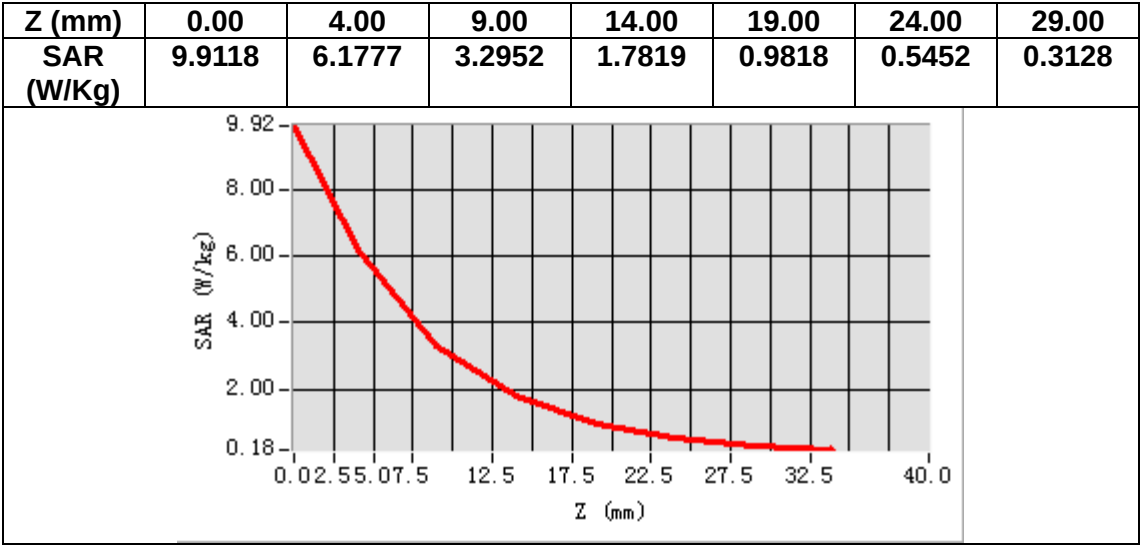
VOLUME SAR



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.429324
SAR 1g (W/Kg)	5.244188



MEASUREMENT 13

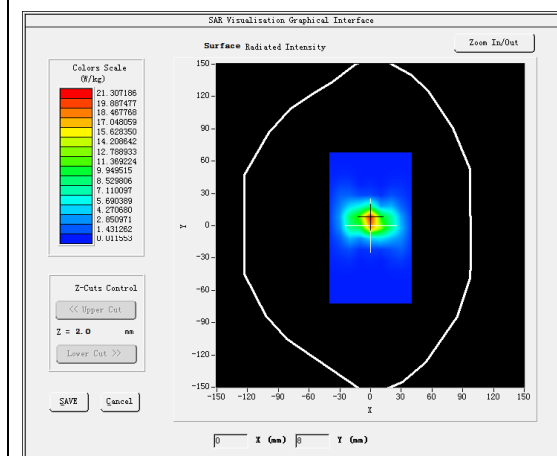
A. Experimental conditions.

<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>

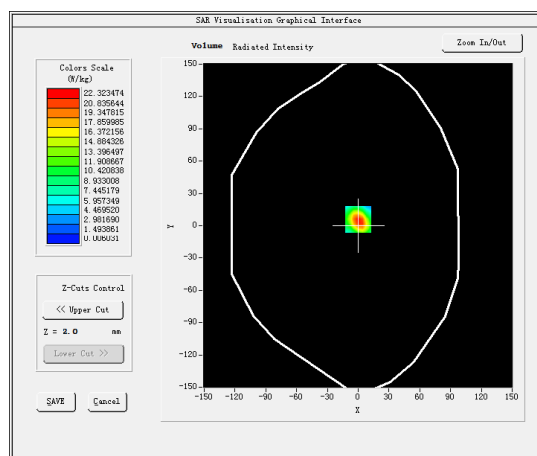
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.609980
Relative permittivity (imaginary part)	16.071619
Conductivity (S/m)	4.643246
Variation (%)	1.660000

SURFACE SAR



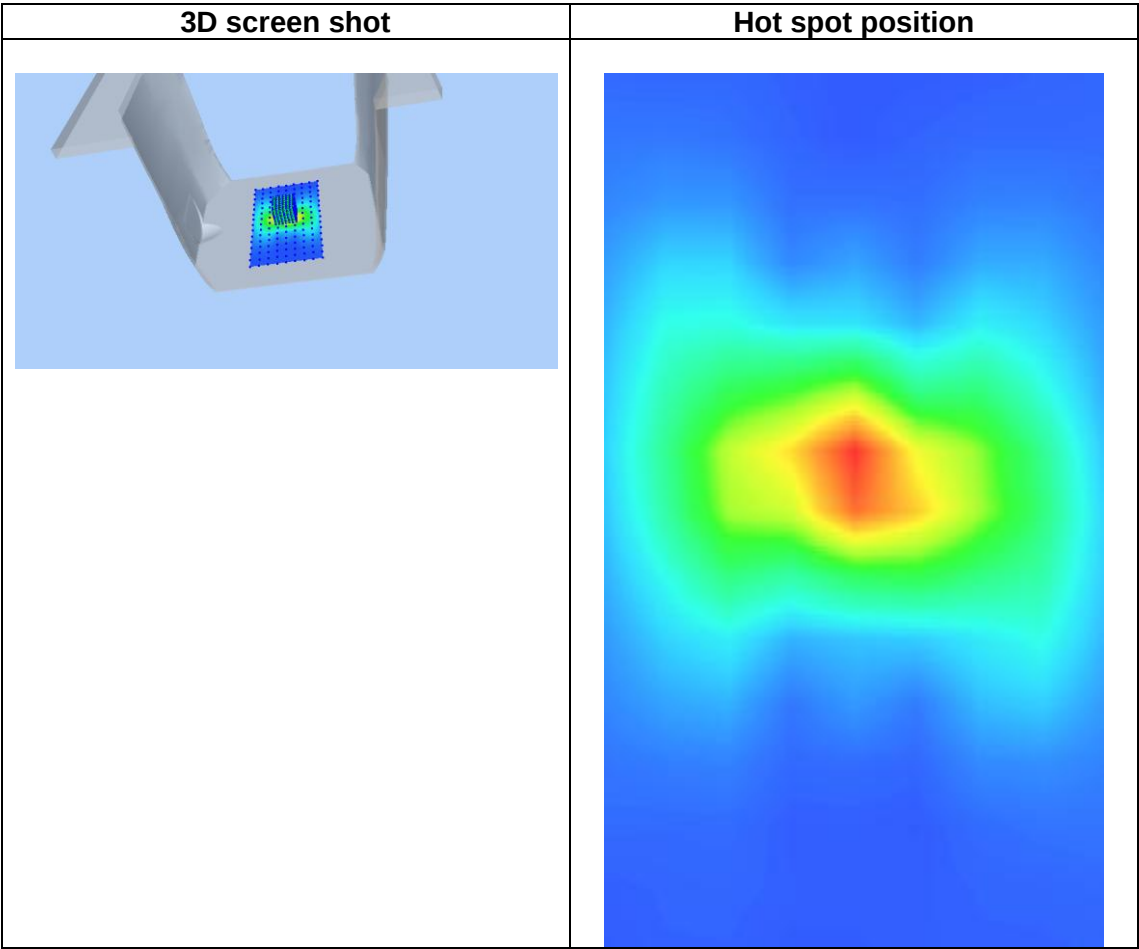
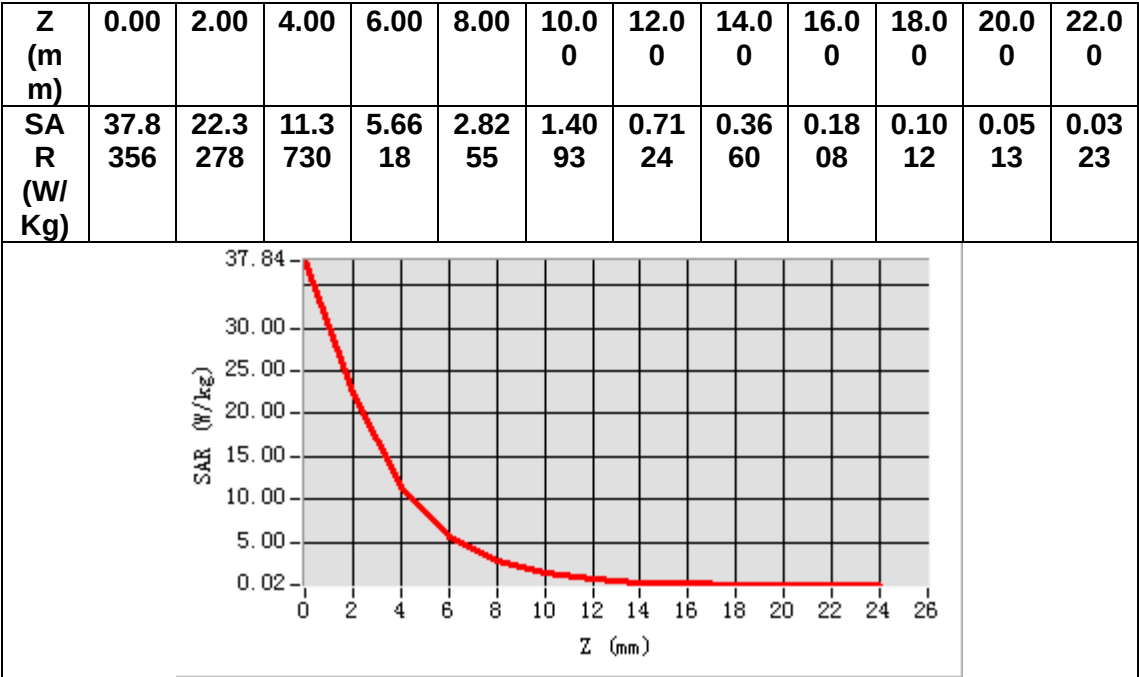
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.370495
SAR 1g (W/Kg)	15.236221



MEASUREMENT 14

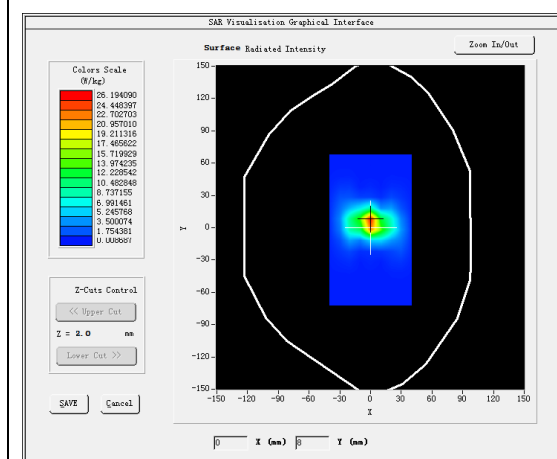
A. Experimental conditions.

<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>

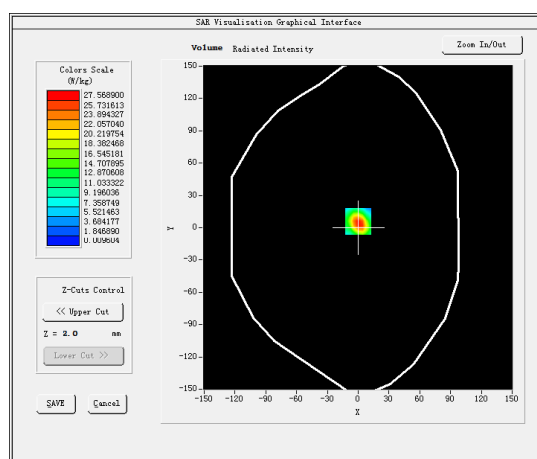
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.619539
Relative permittivity (imaginary part)	18.215510
Conductivity (S/m)	5.264258
Variation (%)	4.490000

SURFACE SAR



VOLUME SAR

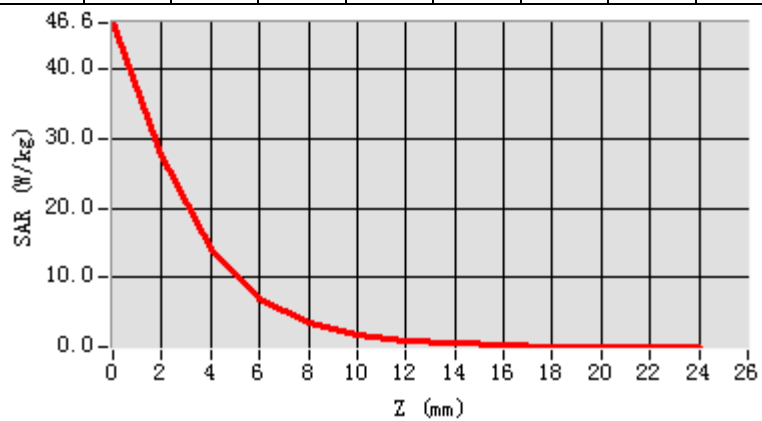


Maximum location: X=0.00, Y=6.00

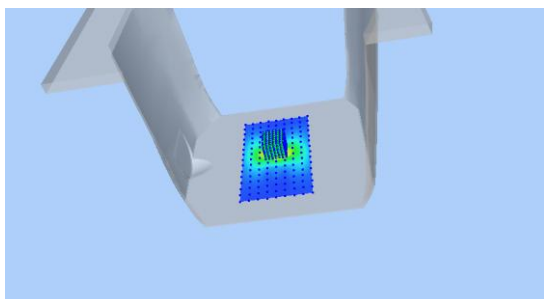
SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.683184
SAR 1g (W/Kg)	15.358246

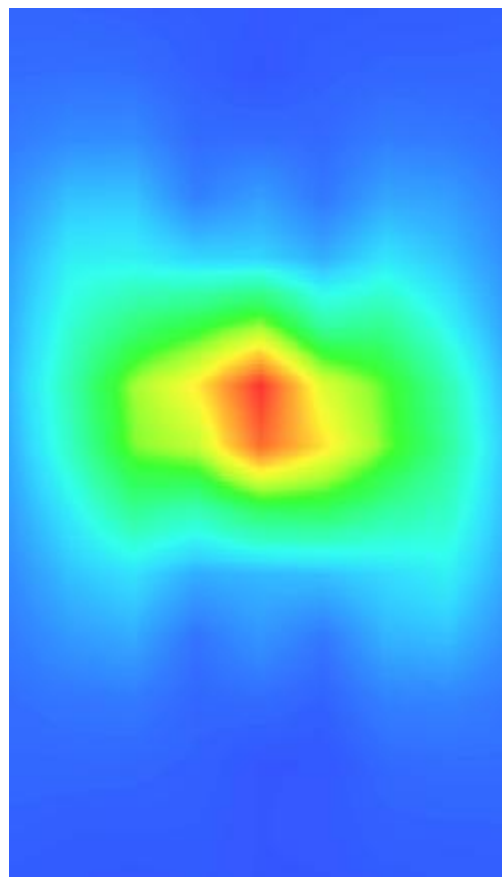
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SA R (W/ Kg)	46.6 150	27.5 644	14.0 668	7.05 91	3.59 28	1.78 02	0.89 38	0.46 70	0.24 75	0.13 53	0.06 50	0.04 000



3D screen shot



Hot spot position



MEASUREMENT 15

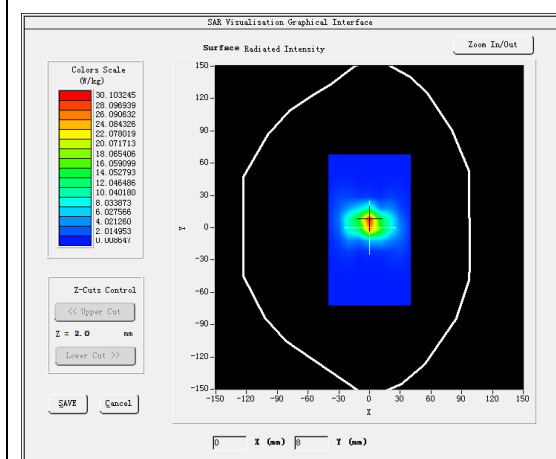
A. Experimental conditions.

<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>

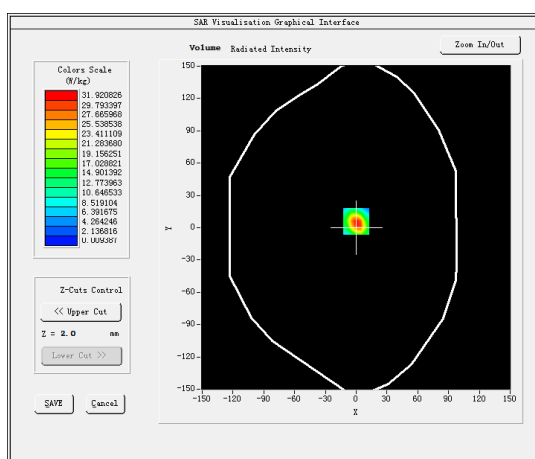
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	35.541512
Relative permittivity (imaginary part)	16.203082
Conductivity (S/m)	5.220981
Variation (%)	1.880000

SURFACE SAR



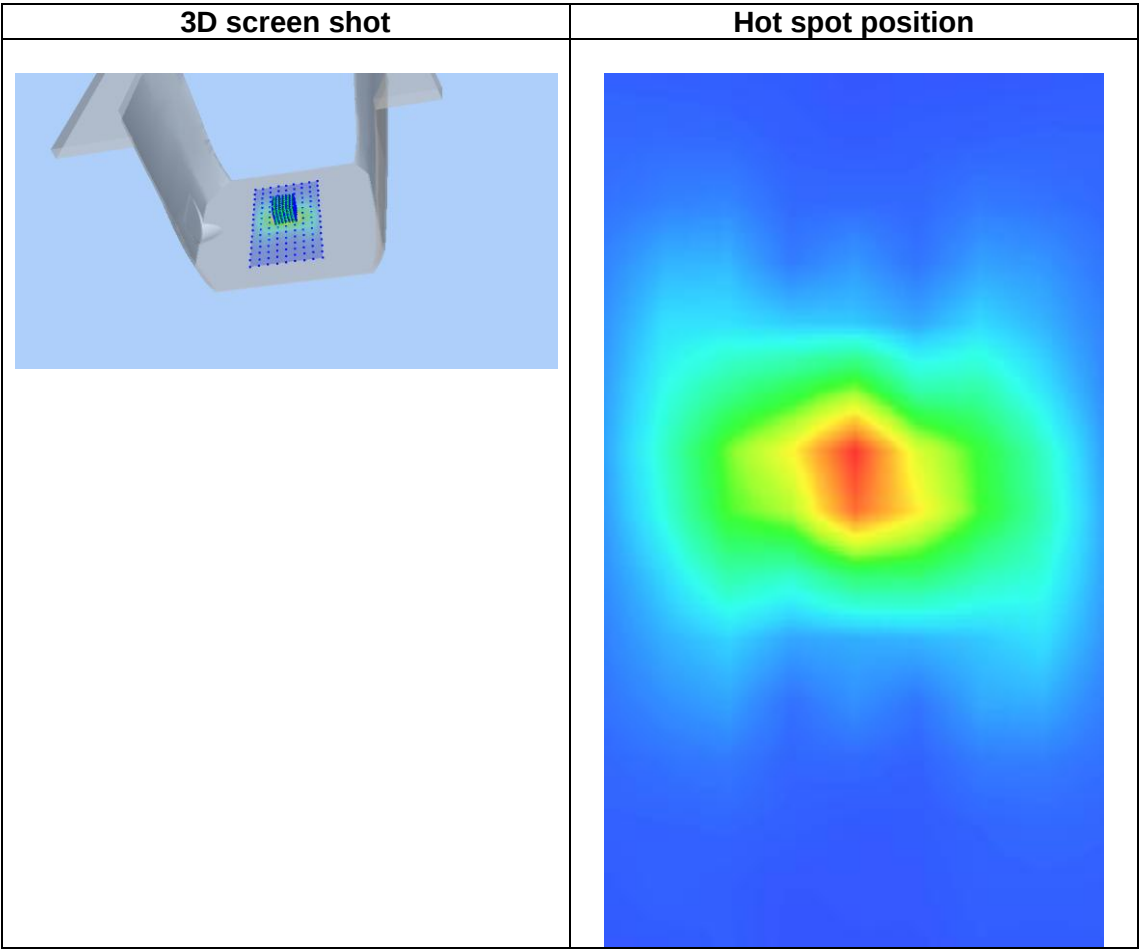
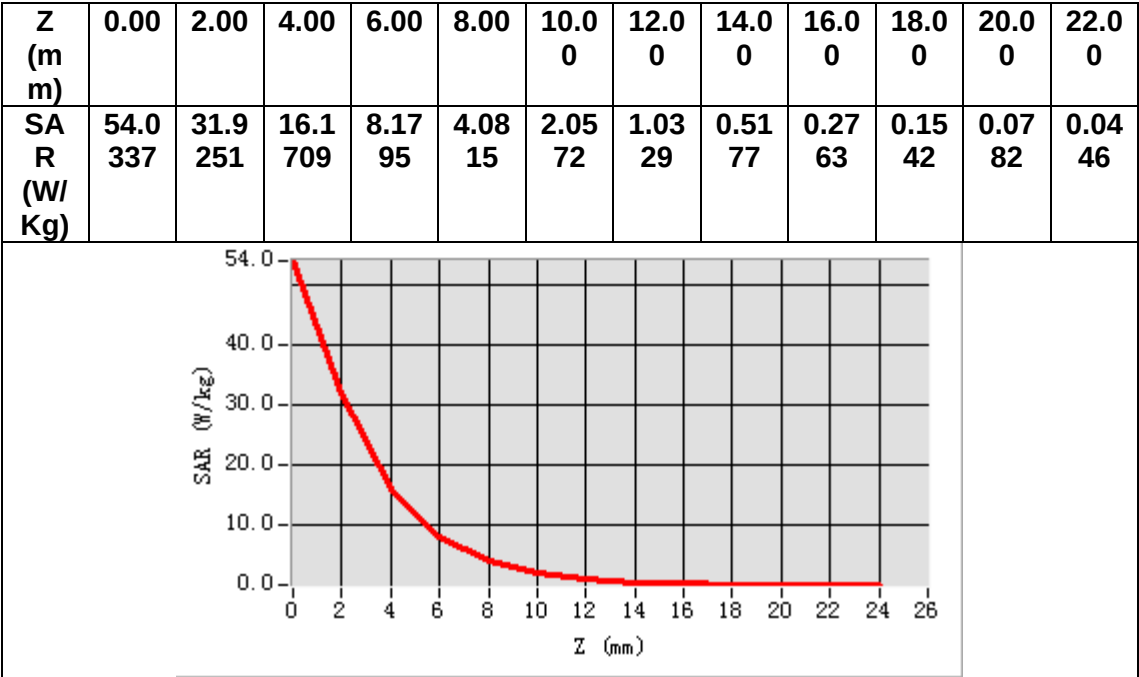
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.045095
SAR 1g (W/Kg)	18.644093



MEASUREMENT 16

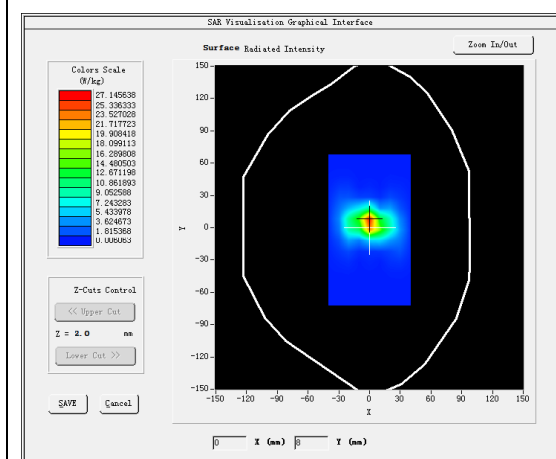
A. Experimental conditions.

<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>

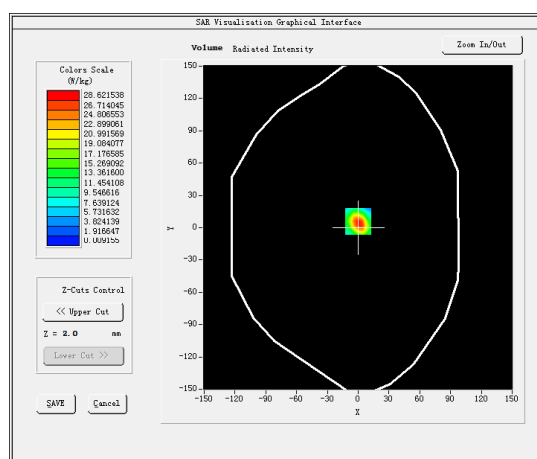
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.280523
Relative permittivity (imaginary part)	18.840043
Conductivity (S/m)	6.071524
Variation (%)	1.340000

SURFACE SAR



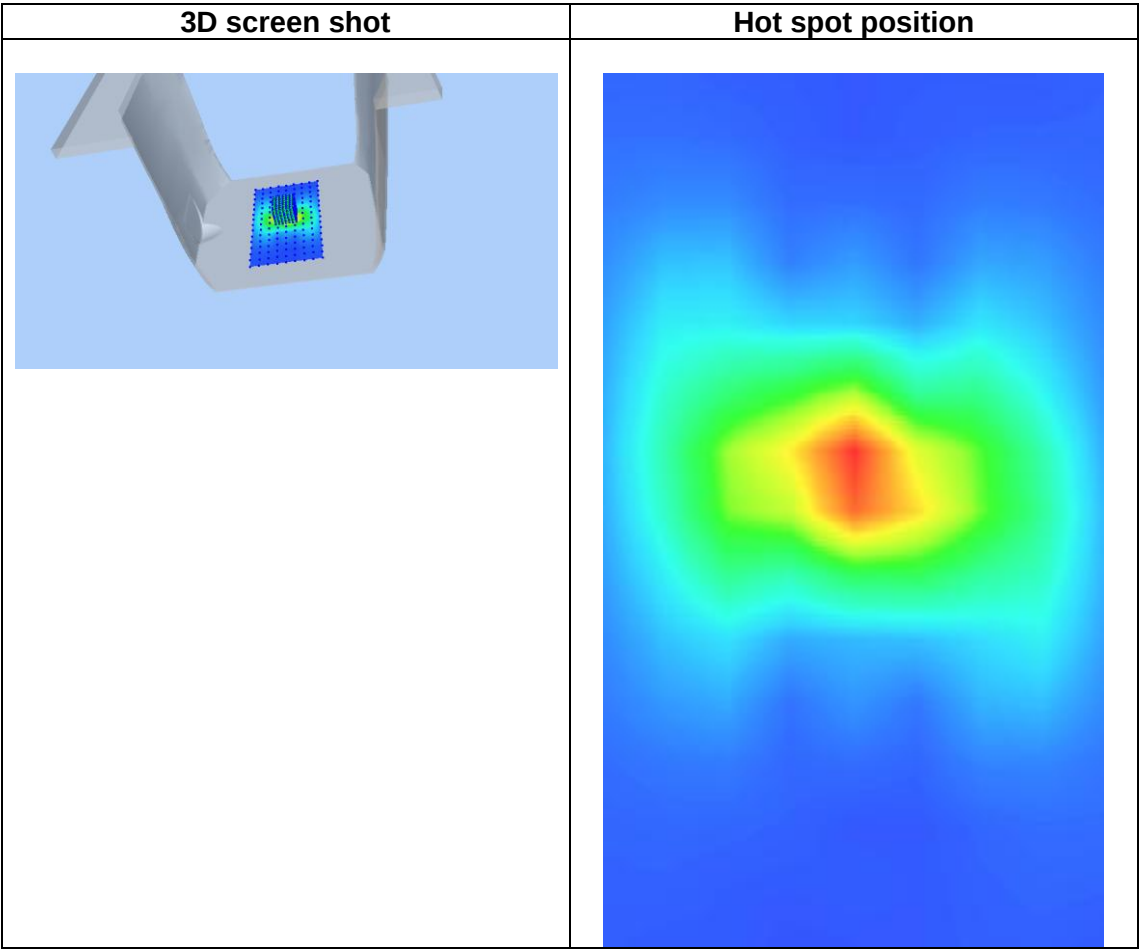
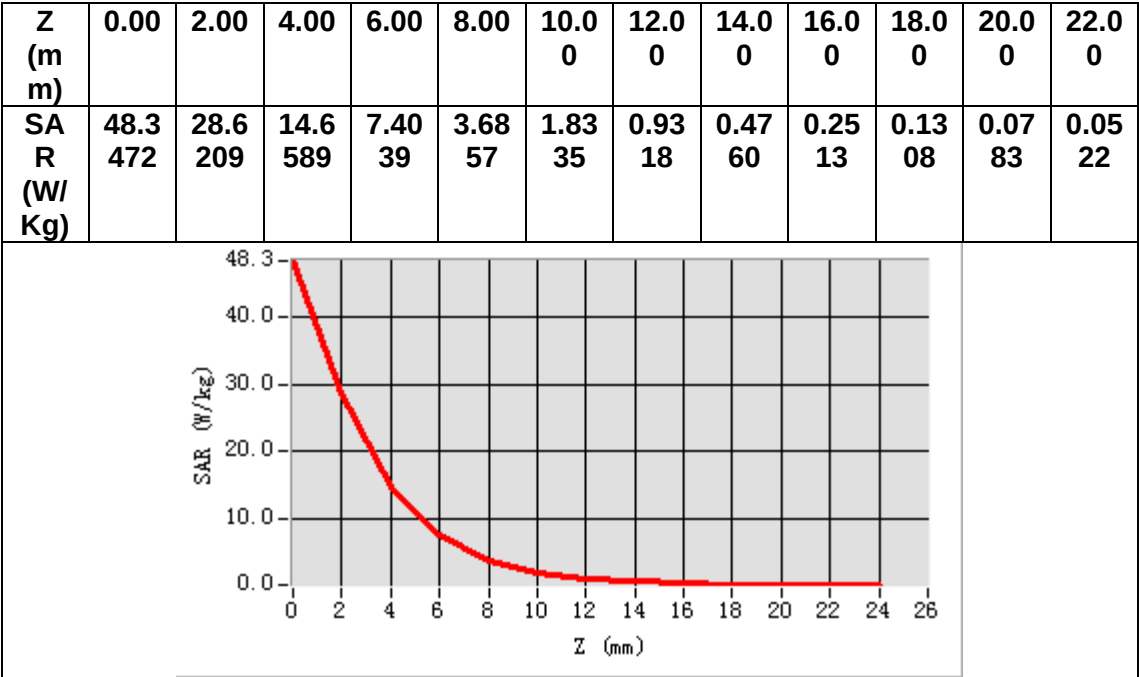
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.859184
SAR 1g (W/Kg)	17.027052



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 25 LTE Band 12 Head
MEASUREMENT 26 LTE Band 12 Body
MEASUREMENT 27 LTE Band 17 Head
MEASUREMENT 28 LTE Band 17 Body

MEASUREMENT 1

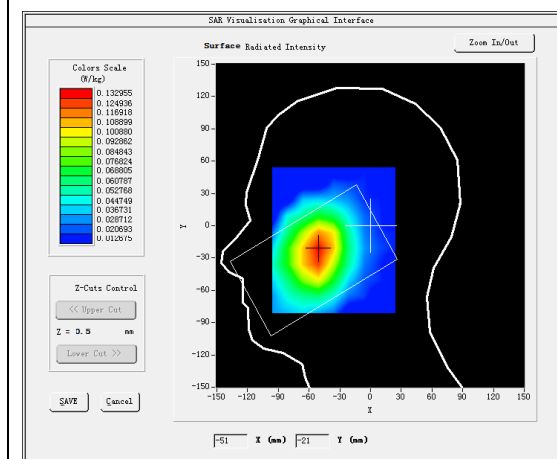
A. Experimental conditions.

<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>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>

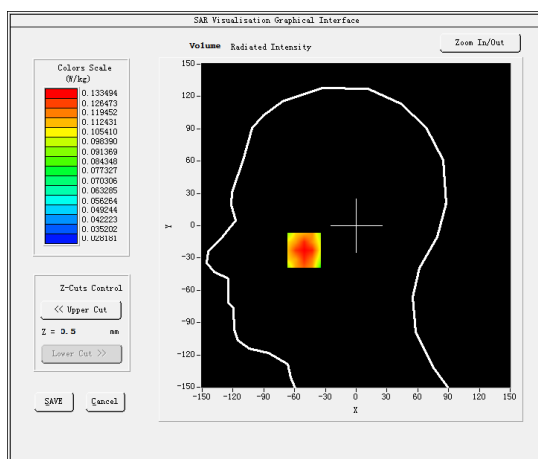
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.330959
Relative permittivity (imaginary part)	20.081539
Conductivity (S/m)	0.933122
Variation (%)	-1.950000

SURFACE SAR



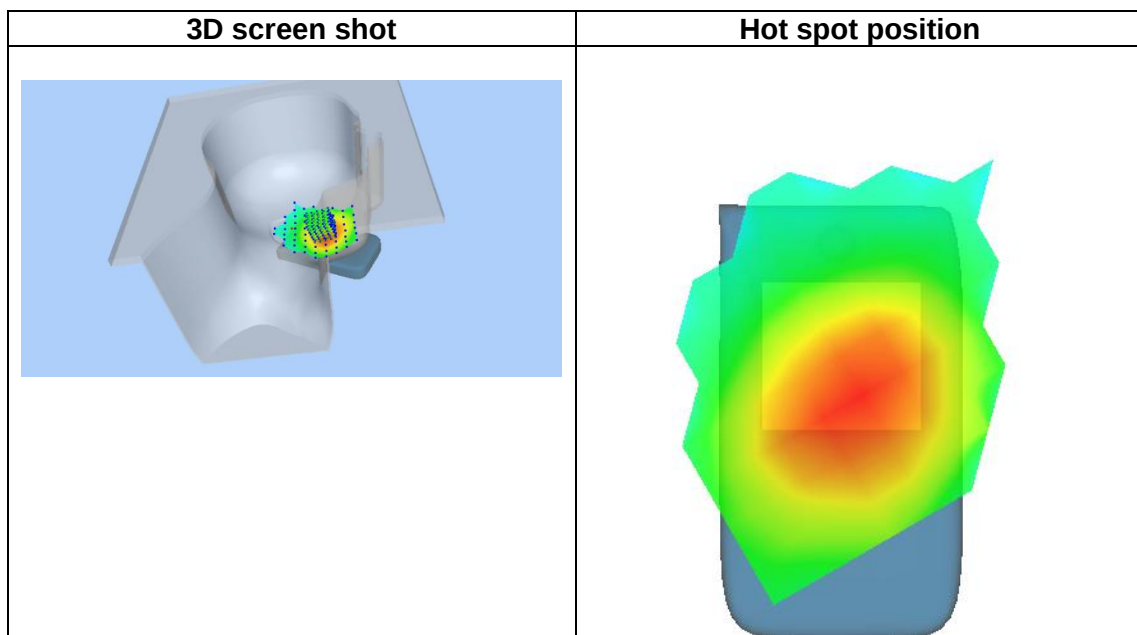
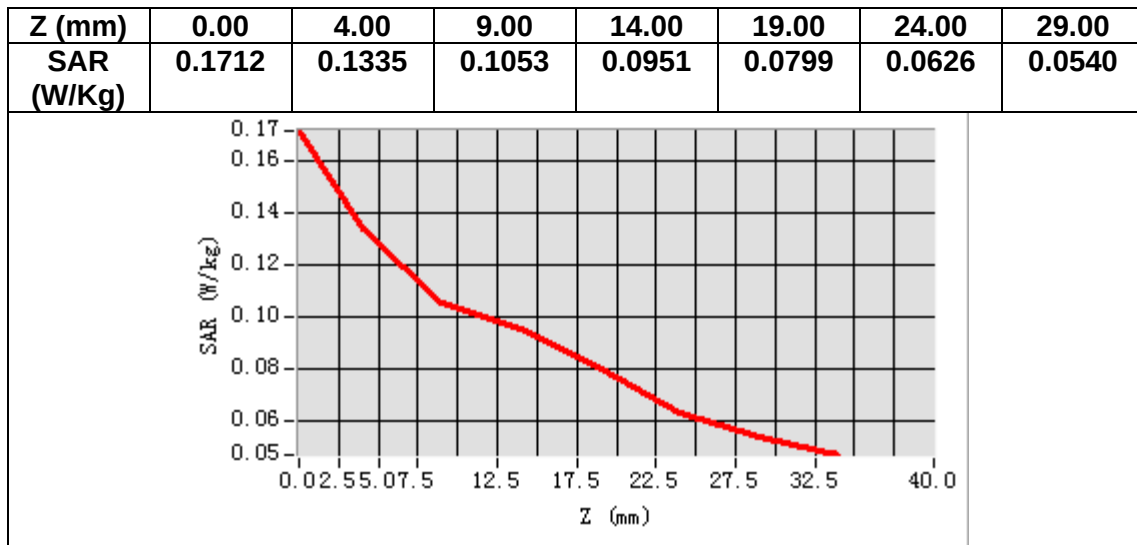
VOLUME SAR



Maximum location: X=-51.00, Y=-23.00

SAR Peak: 0.17 W/kg

SAR 10g (W/Kg)	0.102798
SAR 1g (W/Kg)	0.136575



MEASUREMENT 2

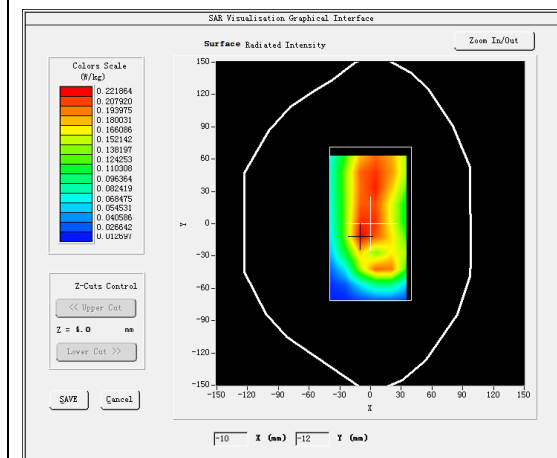
A. Experimental conditions.

<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>

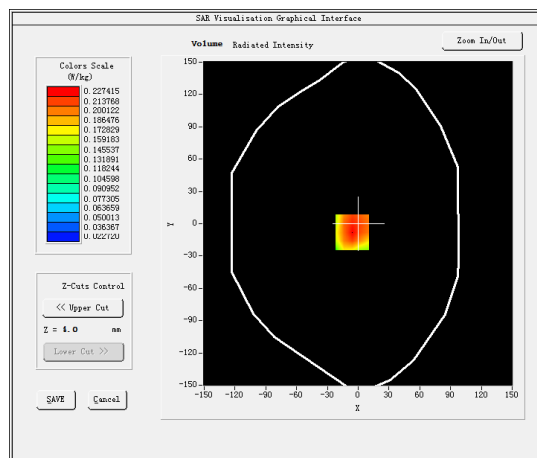
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.459579
Relative permittivity (imaginary part)	21.202740
Conductivity (S/m)	0.985221
Variation (%)	-1.440000

SURFACE SAR



VOLUME SAR

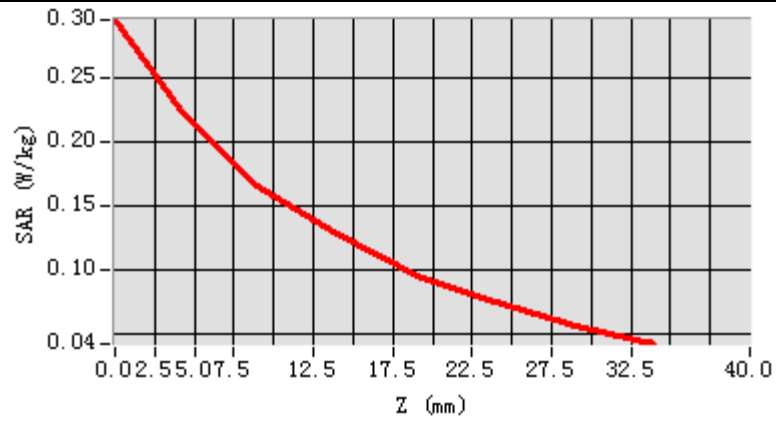


Maximum location: X=-6.00, Y=-8.00

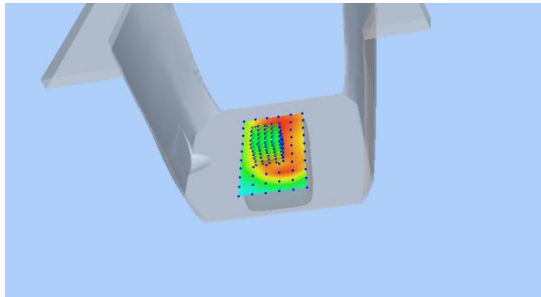
SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.159636
SAR 1g (W/Kg)	0.222706

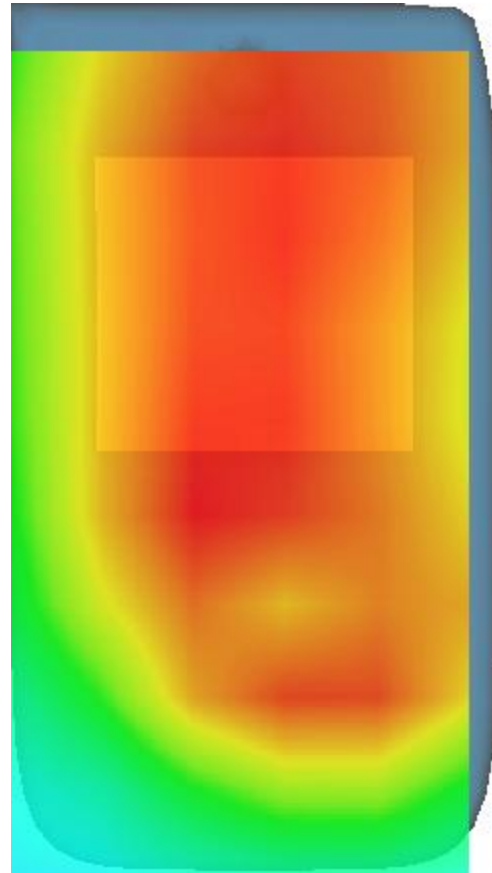
Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.2956	0.2274	0.1665	0.1285	0.0959	0.0752	0.0563



3D screen shot



Hot spot position



MEASUREMENT 3

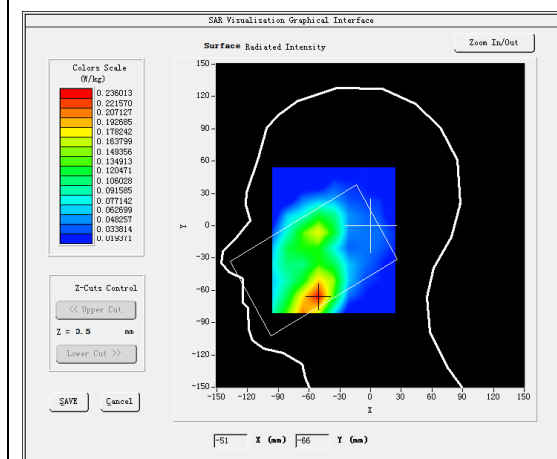
A. Experimental conditions.

<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>

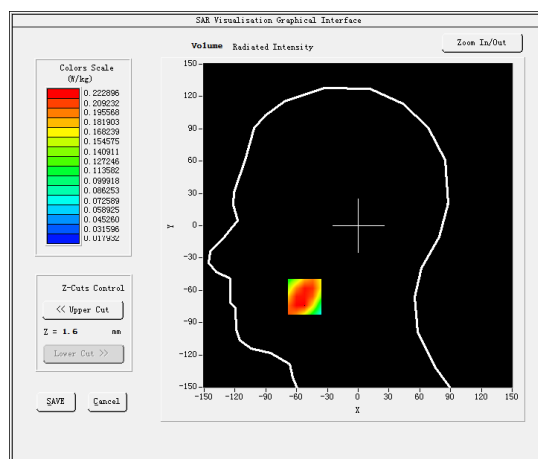
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.998199
Relative permittivity (imaginary part)	13.564300
Conductivity (S/m)	1.416716
Variation (%)	-0.270000

SURFACE SAR



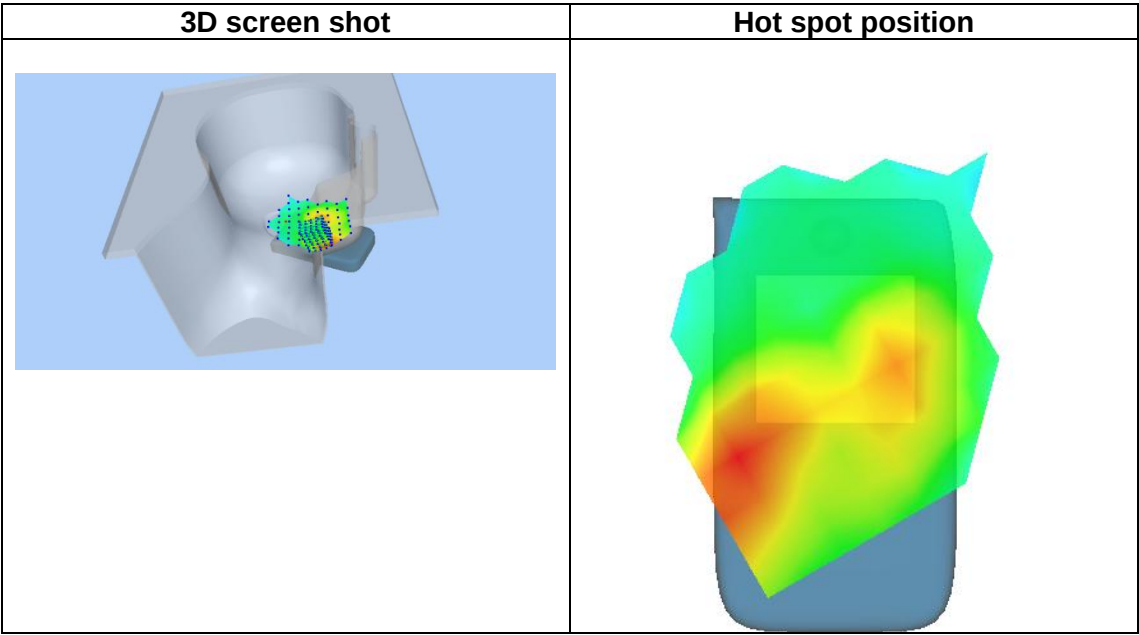
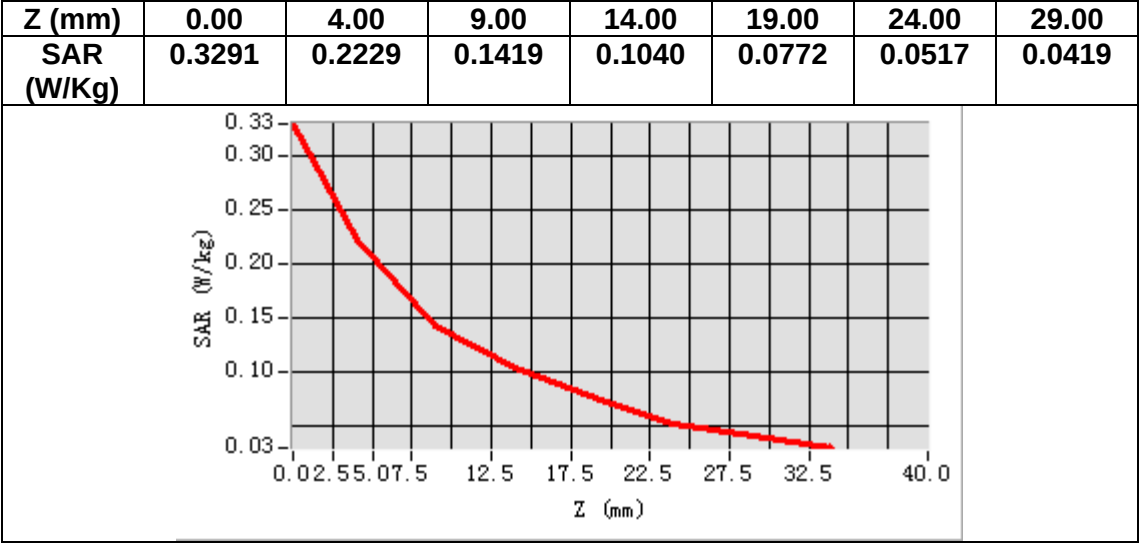
VOLUME SAR



Maximum location: X=-52.00, Y=-66.00

SAR Peak: 0.33 W/kg

SAR 10g (W/Kg)	0.140056
SAR 1g (W/Kg)	0.221233



MEASUREMENT 4

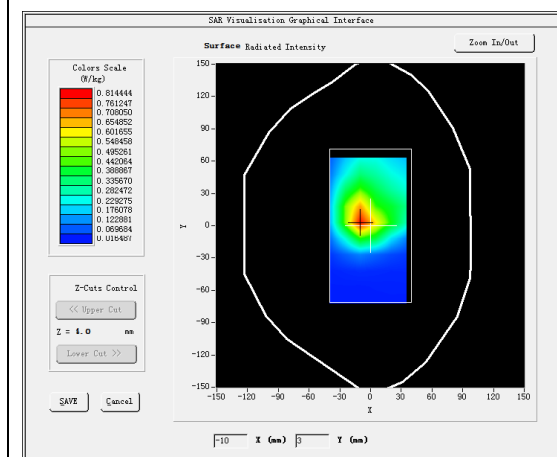
A. Experimental conditions.

<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>

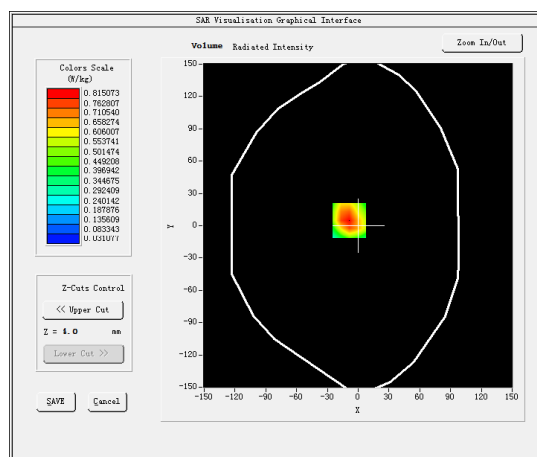
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.998199
Relative permittivity (imaginary part)	13.564300
Conductivity (S/m)	1.416716
Variation (%)	-3.210000

SURFACE SAR



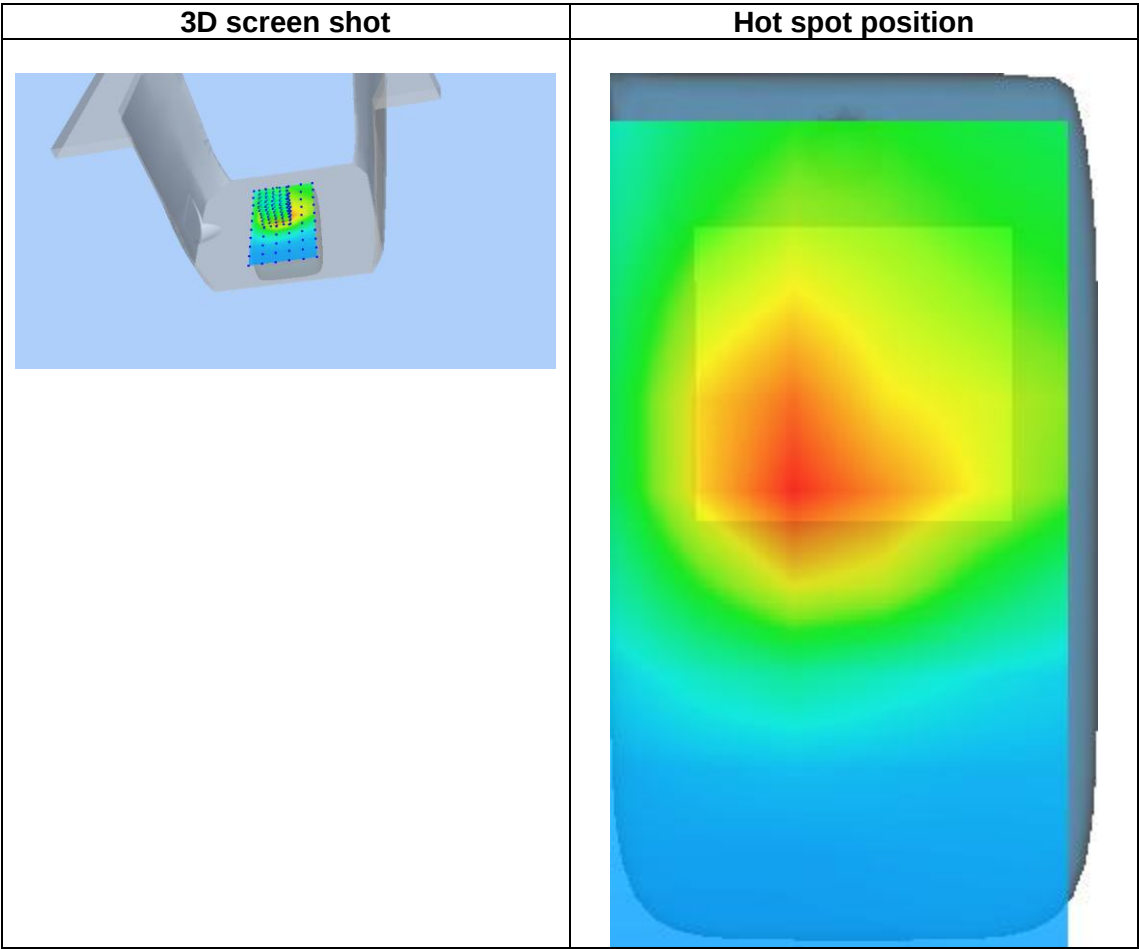
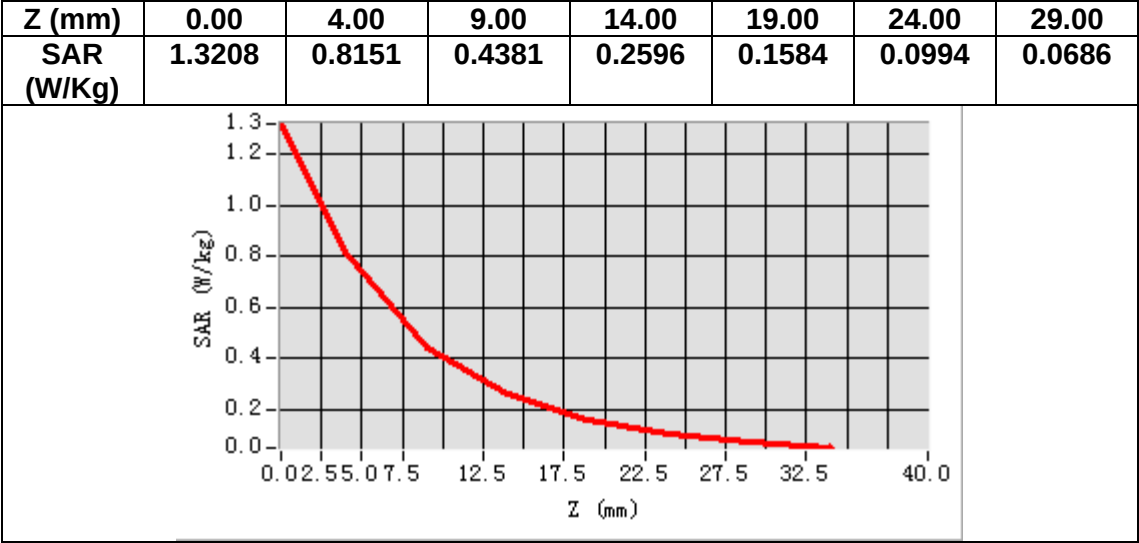
VOLUME SAR



Maximum location: X=-9.00, Y=5.00

SAR Peak: 1.33 W/kg

SAR 10g (W/Kg)	0.432430
SAR 1g (W/Kg)	0.791365



MEASUREMENT 5

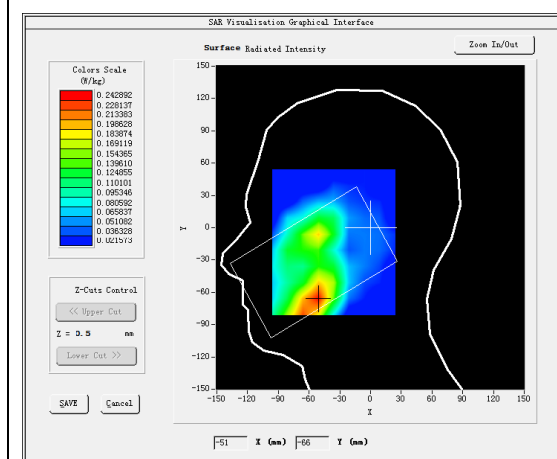
A. Experimental conditions.

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

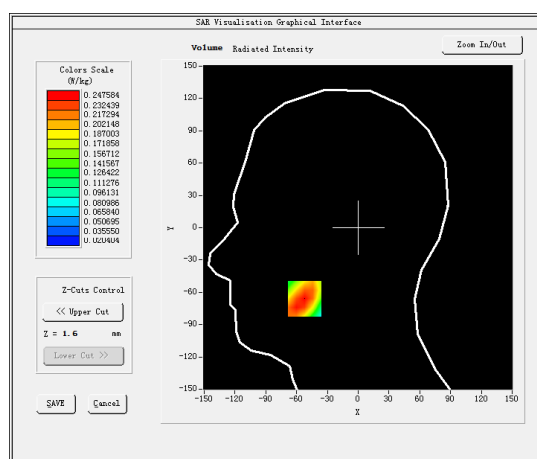
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.998199
Relative permittivity (imaginary part)	13.564300
Conductivity (S/m)	1.416716
Variation (%)	0.410000

SURFACE SAR



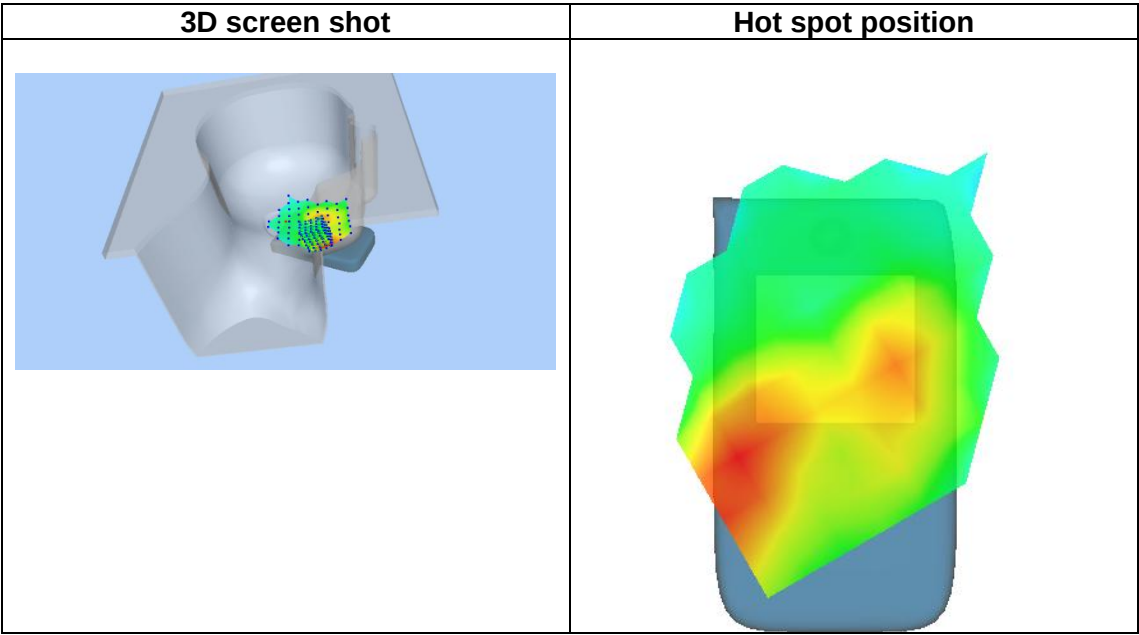
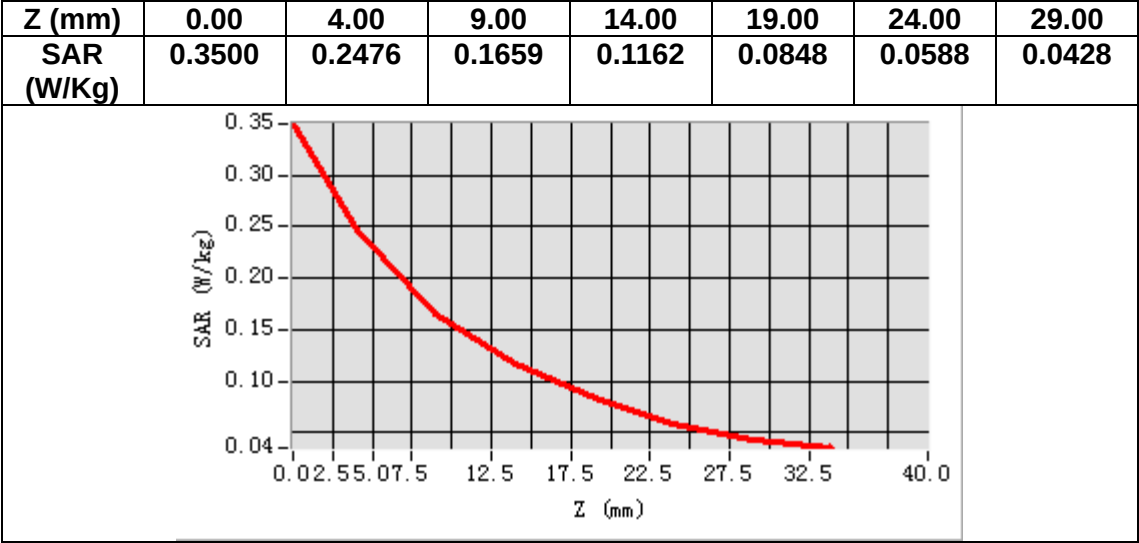
VOLUME SAR



Maximum location: X=-52.00, Y=-66.00

SAR Peak: 0.35 W/kg

SAR 10g (W/Kg)	0.152337
SAR 1g (W/Kg)	0.240211



MEASUREMENT 6

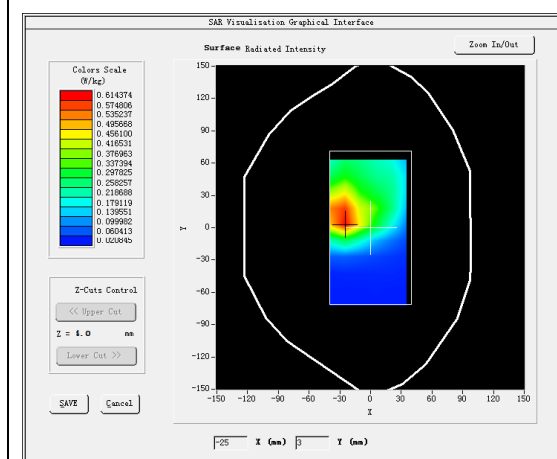
A. Experimental conditions.

<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>

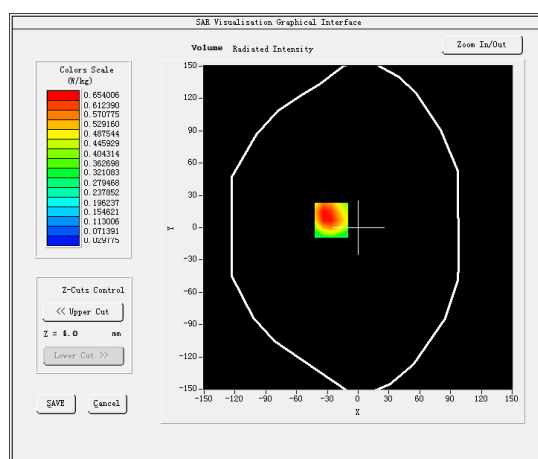
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.638901
Relative permittivity (imaginary part)	14.477700
Conductivity (S/m)	1.512115
Variation (%)	3.980000

SURFACE SAR



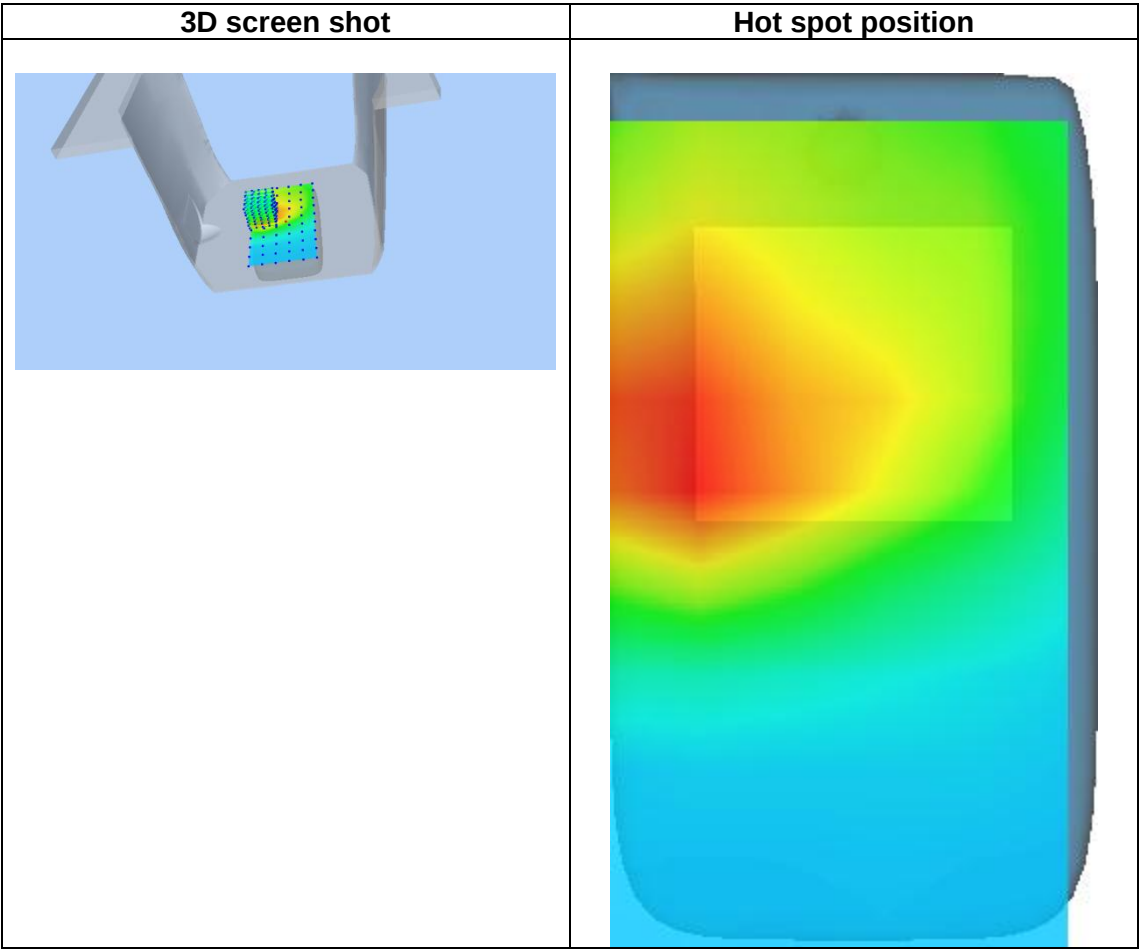
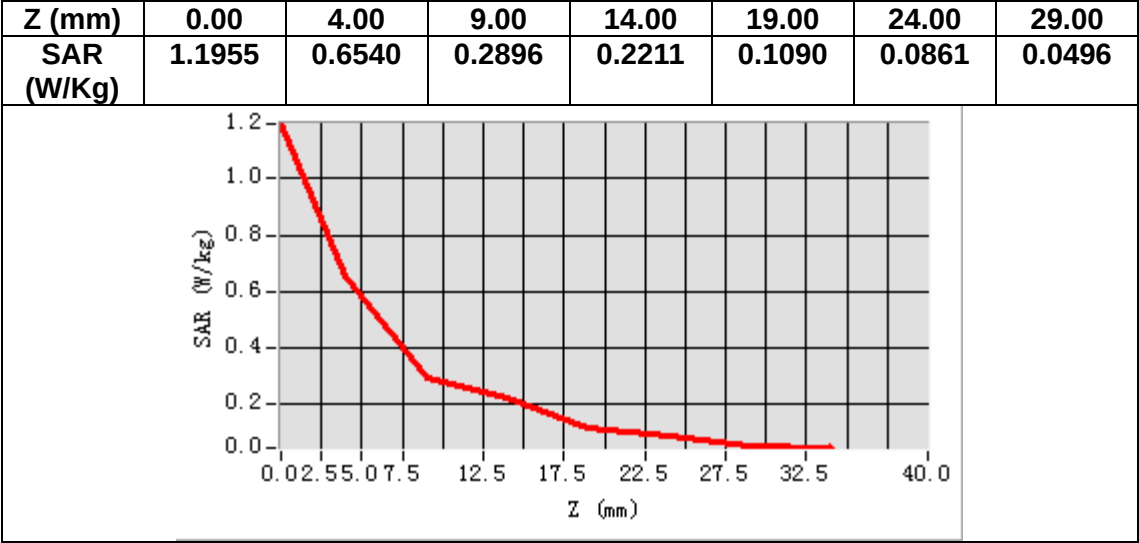
VOLUME SAR



Maximum location: X=-26.00, Y=7.00

SAR Peak: 1.05 W/kg

SAR 10g (W/Kg)	0.364353
SAR 1g (W/Kg)	0.643718



MEASUREMENT 7

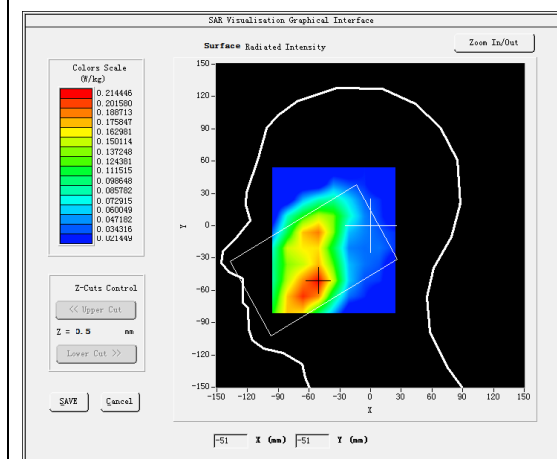
A. Experimental conditions.

<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>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

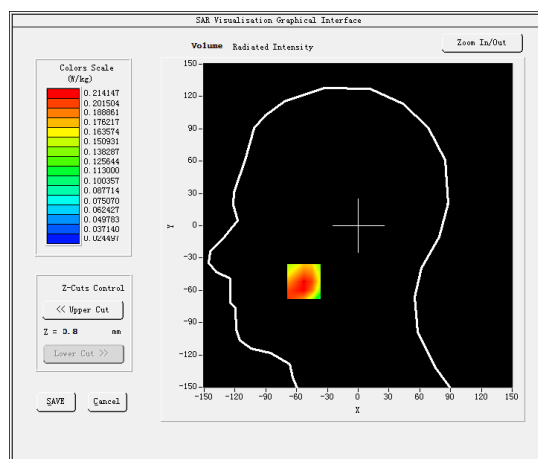
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	38.837391
Relative permittivity (imaginary part)	13.975742
Conductivity (S/m)	1.344777
Variation (%)	-3.260000

SURFACE SAR



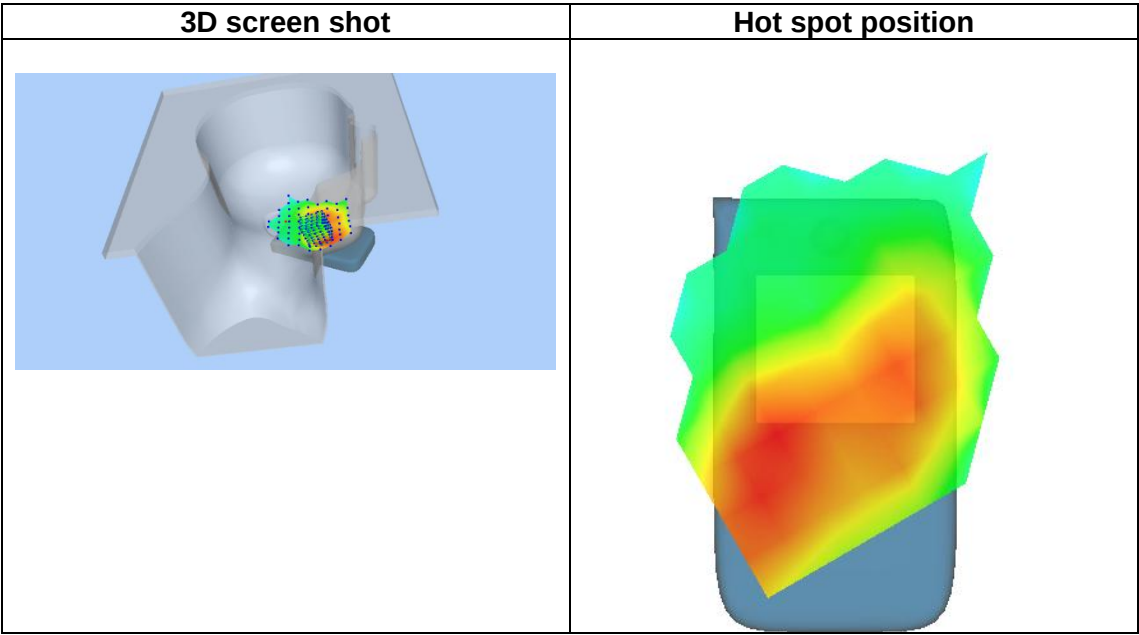
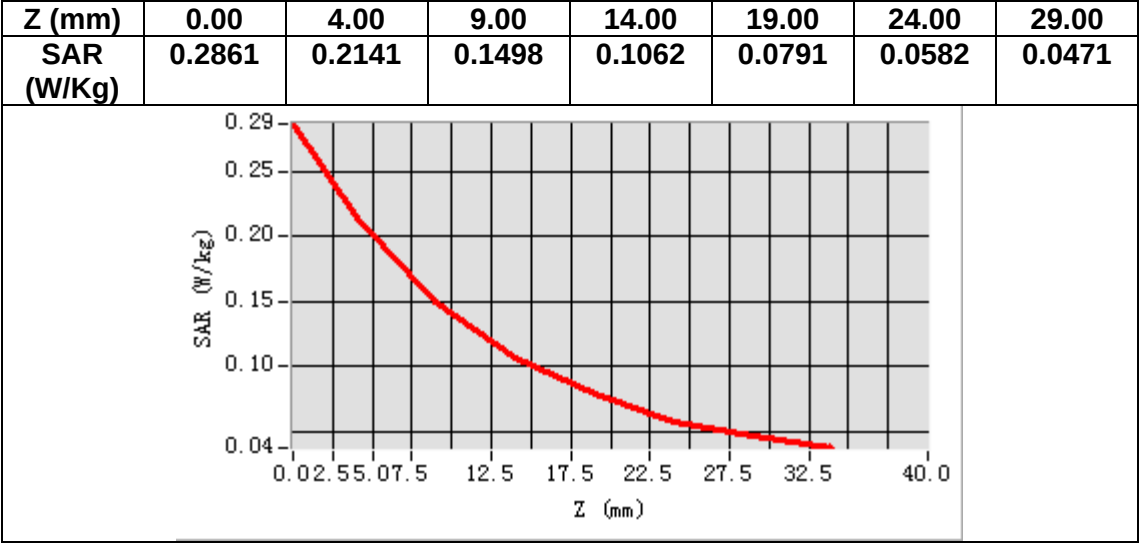
VOLUME SAR



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

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.138700
SAR 1g (W/Kg)	0.209883



MEASUREMENT 8

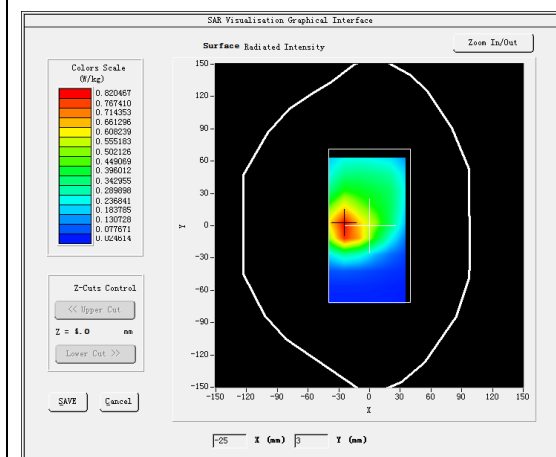
A. Experimental conditions.

<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>Band4 WCDMA1700</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>WCDMA (Crest factor: 1.0)</u>

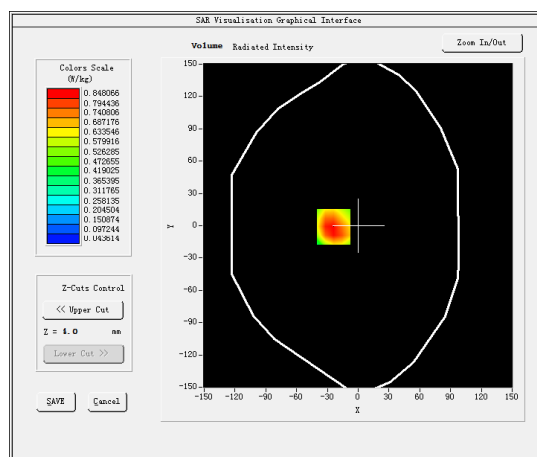
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	53.456165
Relative permittivity (imaginary part)	15.441370
Conductivity (S/m)	1.485803
Variation (%)	-2.700000

SURFACE SAR



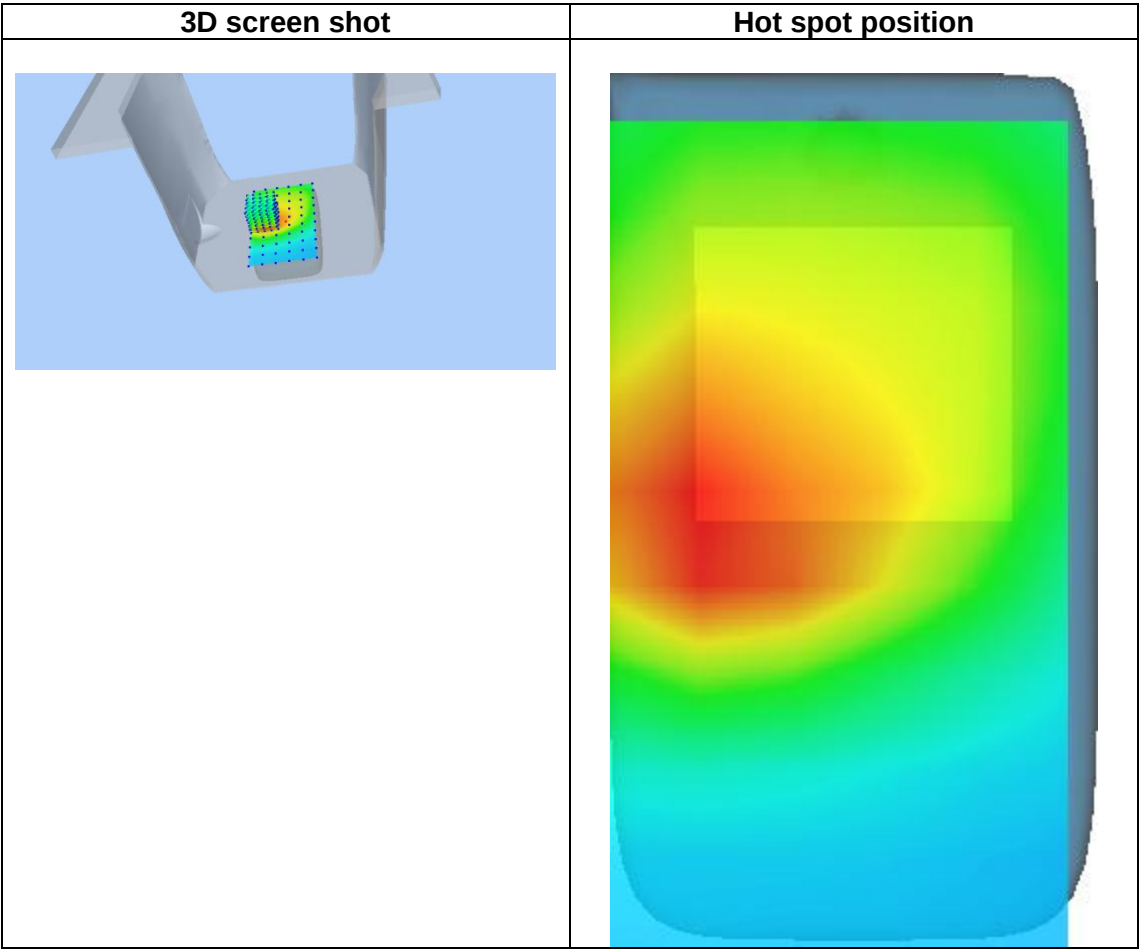
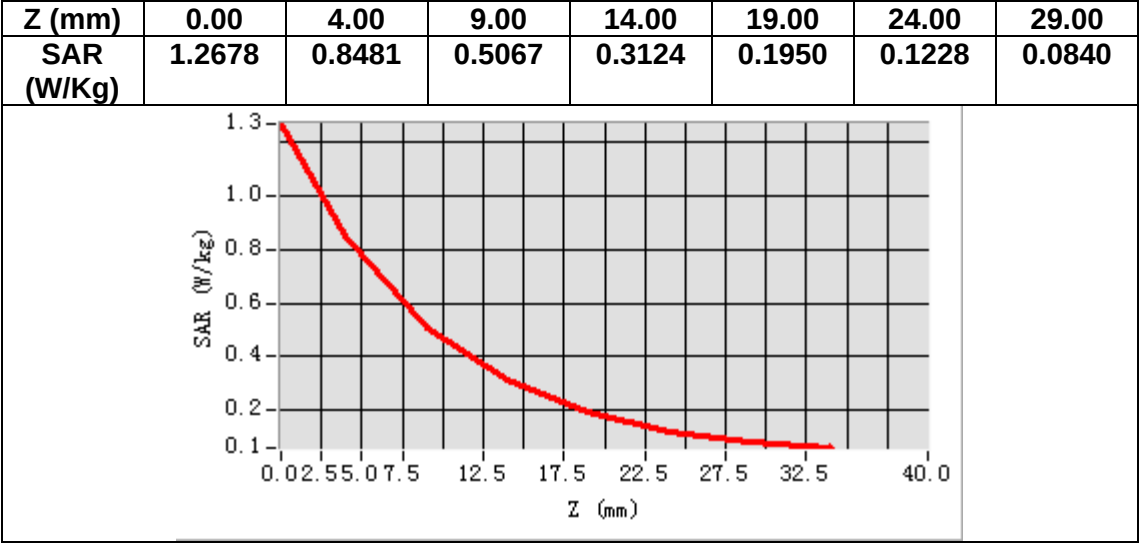
VOLUME SAR



Maximum location: X=-24.00, Y=-1.00

SAR Peak: 1.34 W/kg

SAR 10g (W/Kg)	0.482914
SAR 1g (W/Kg)	0.841249



MEASUREMENT 9

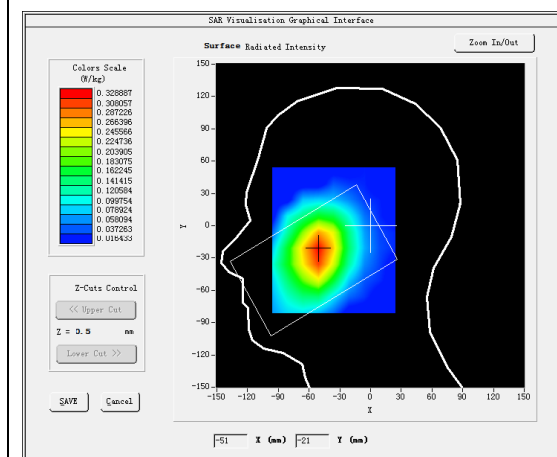
A. Experimental conditions.

<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>

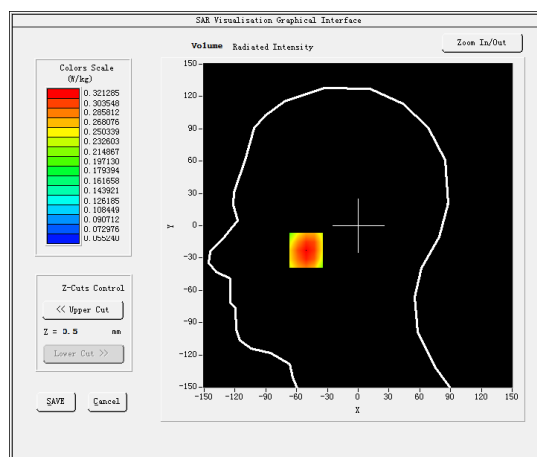
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.330959
Relative permittivity (imaginary part)	20.081539
Conductivity (S/m)	0.933122
Variation (%)	-3.520000

SURFACE SAR



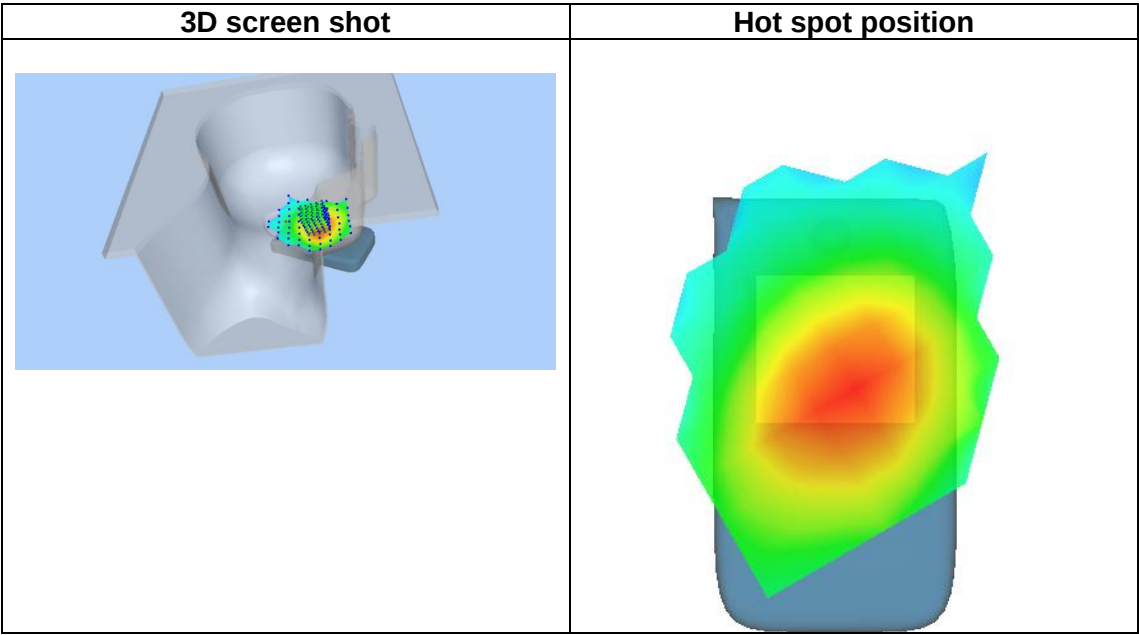
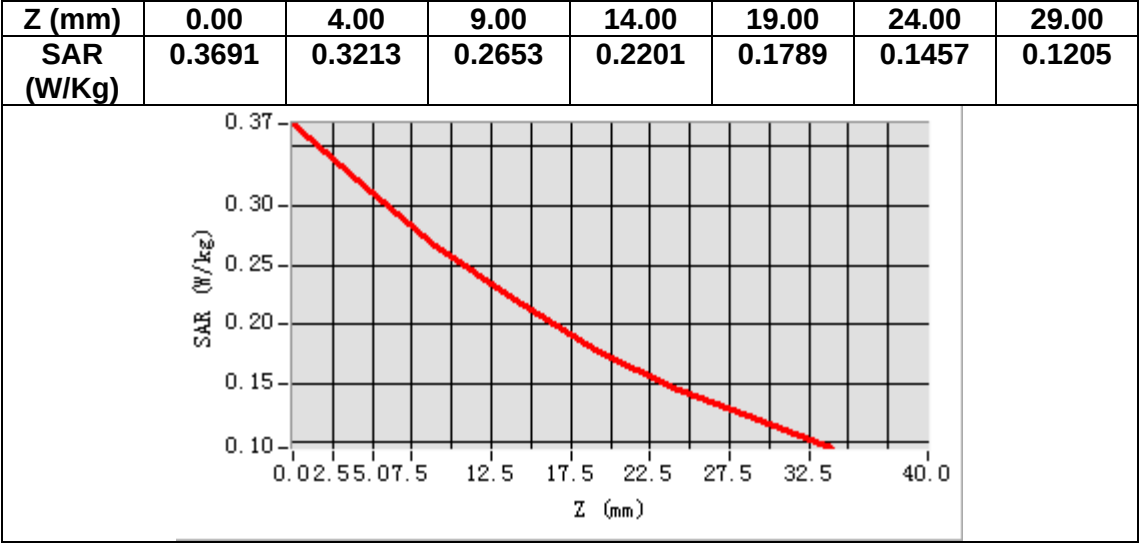
VOLUME SAR



Maximum location: X=-51.00, Y=-23.00

SAR Peak: 0.38 W/kg

SAR 10g (W/Kg)	0.245878
SAR 1g (W/Kg)	0.320329



MEASUREMENT 10

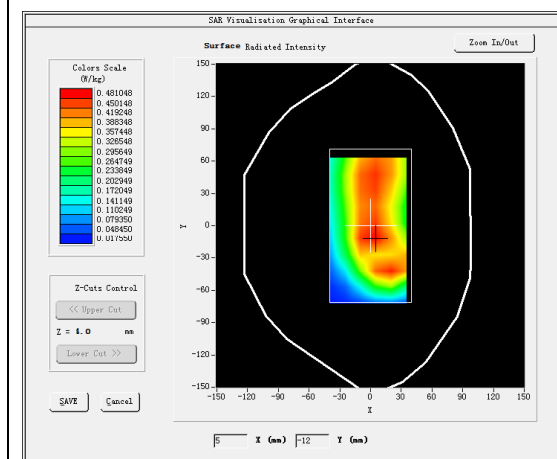
A. Experimental conditions.

<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>

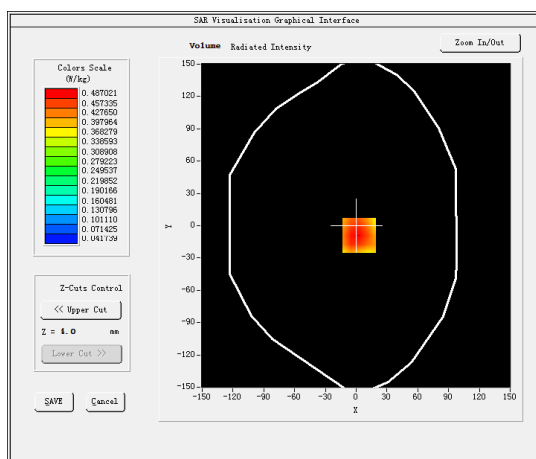
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.459579
Relative permittivity (imaginary part)	21.202740
Conductivity (S/m)	0.985221
Variation (%)	-0.920000

SURFACE SAR



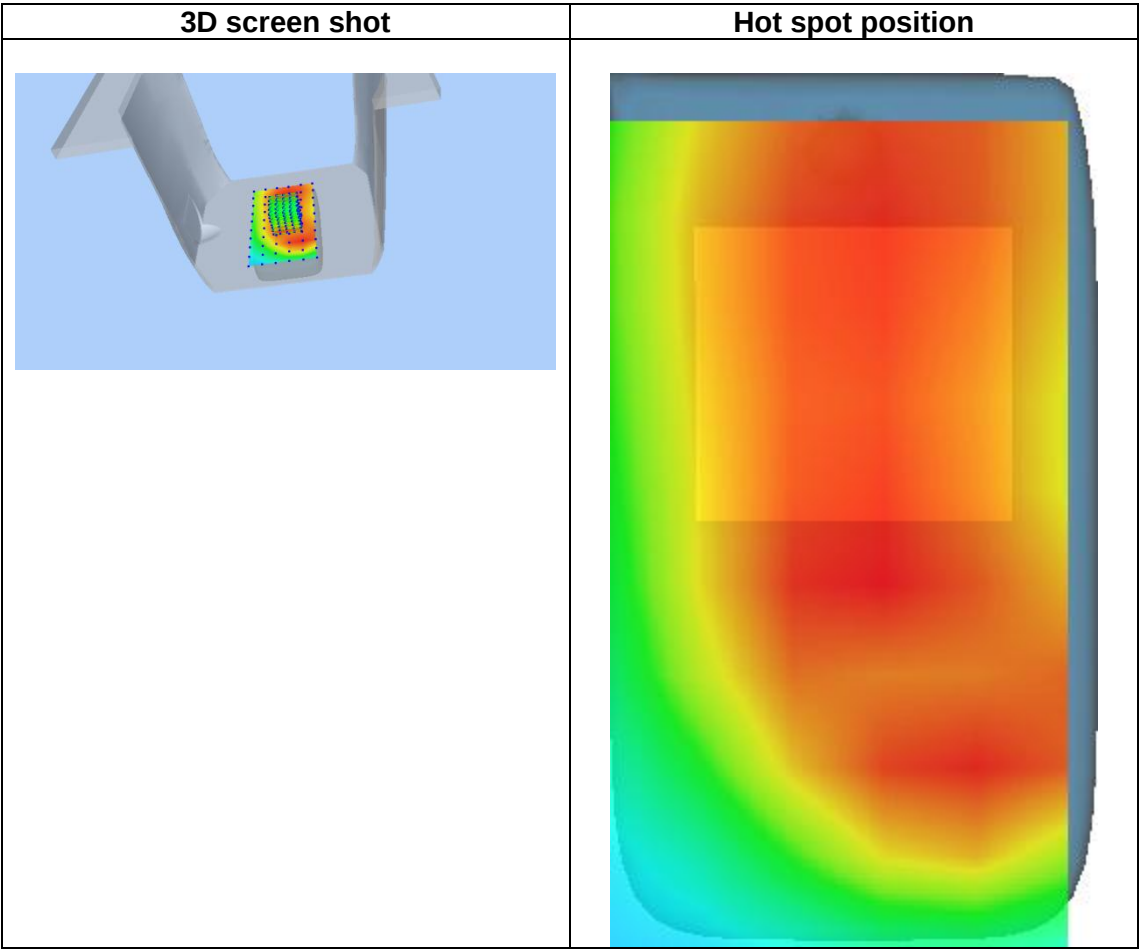
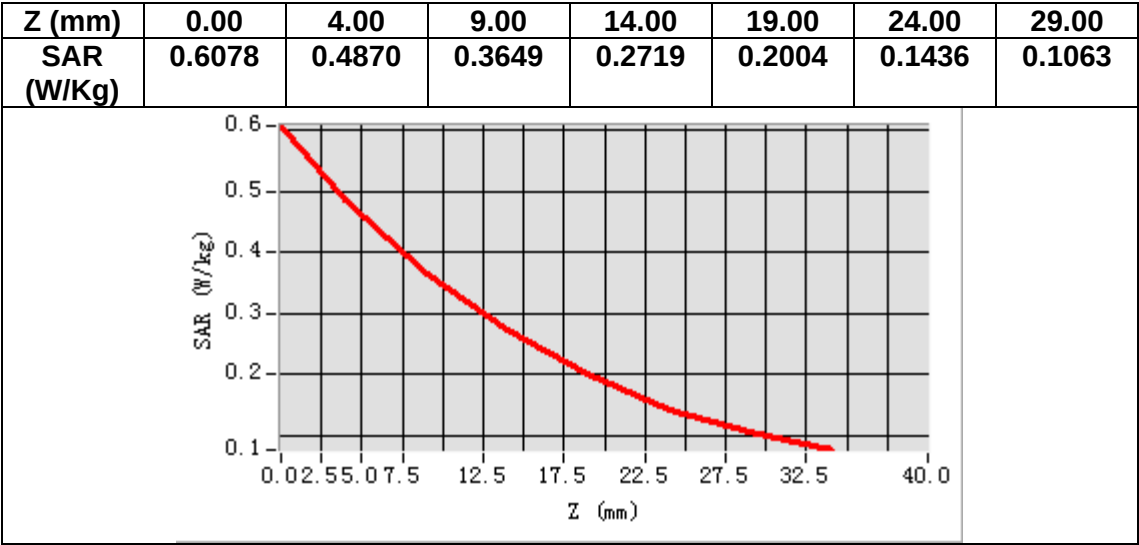
VOLUME SAR



Maximum location: X=3.00, Y=-9.00

SAR Peak: 0.62 W/kg

SAR 10g (W/Kg)	0.345344
SAR 1g (W/Kg)	0.479536



MEASUREMENT 11

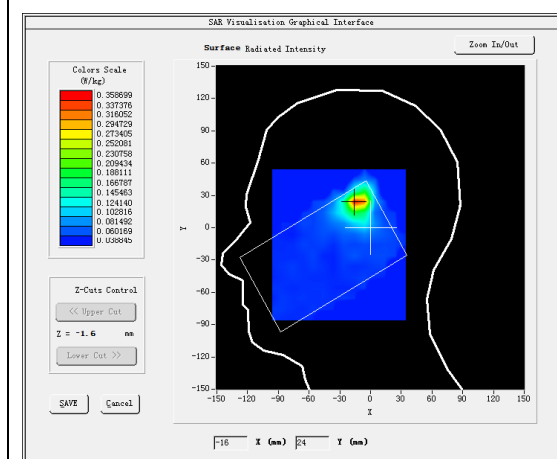
A. Experimental conditions.

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

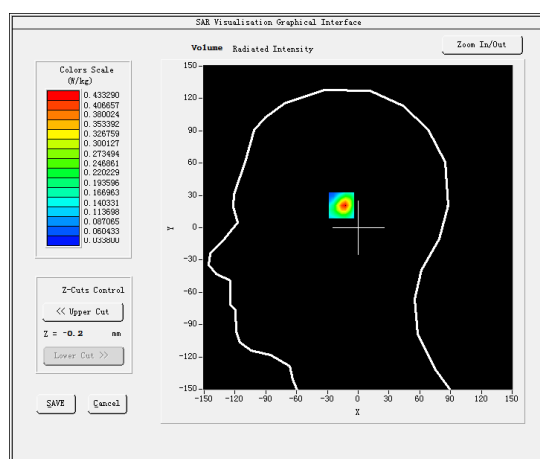
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.609982
Relative permittivity (imaginary part)	16.071619
Conductivity (S/m)	4.642912
Variation (%)	1.740000

SURFACE SAR



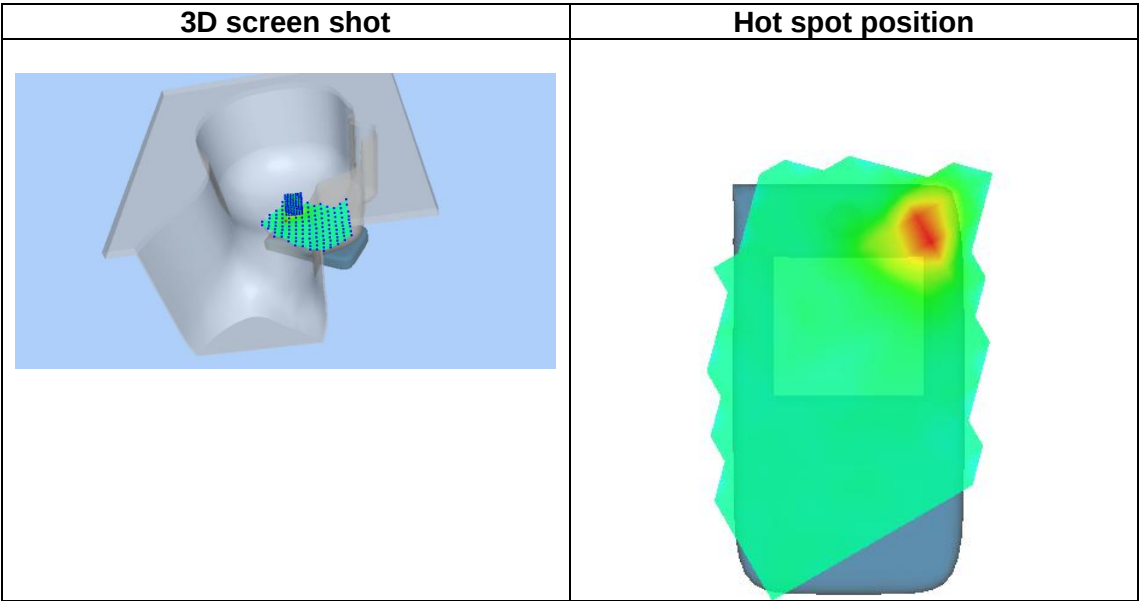
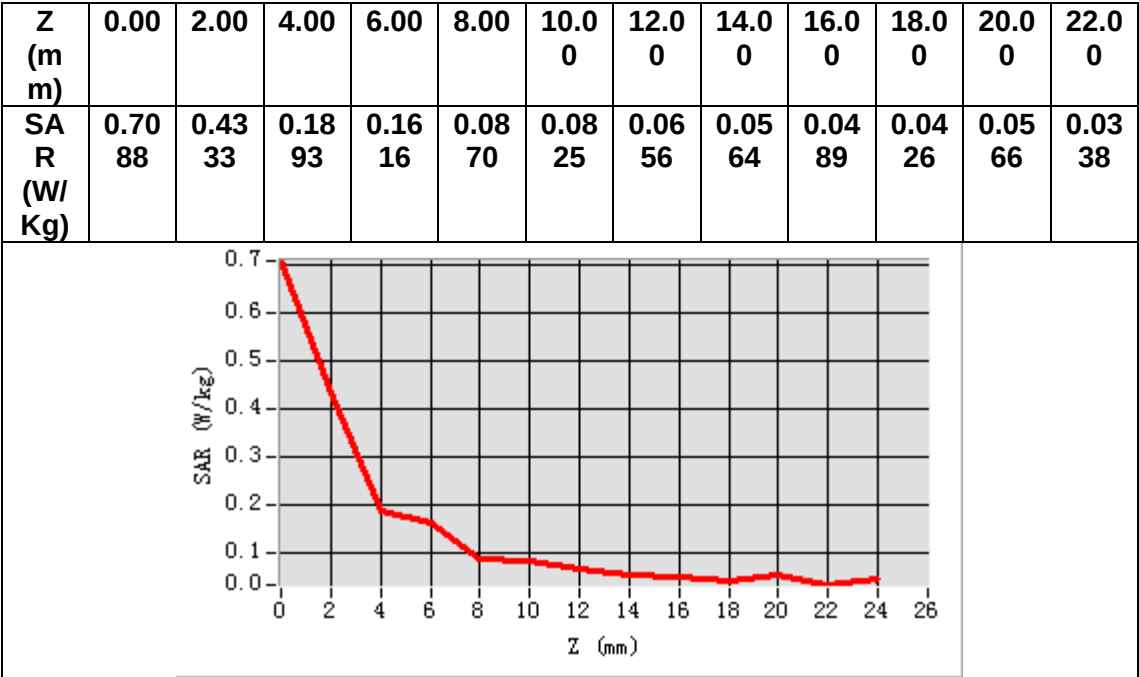
VOLUME SAR



Maximum location: X=-14.00, Y=24.00

SAR Peak: 1.06 W/kg

SAR 10g (W/Kg)	0.149176
SAR 1g (W/Kg)	0.387018



MEASUREMENT 12

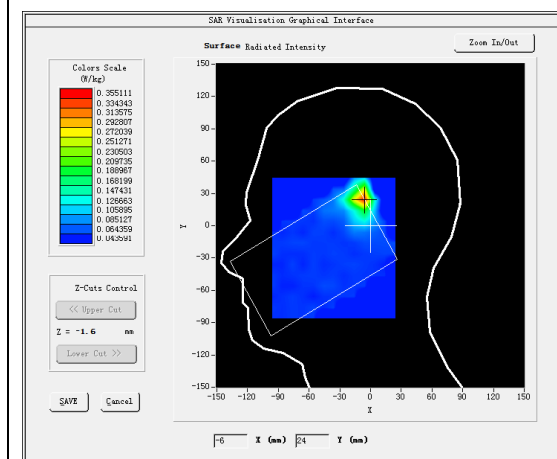
A. Experimental conditions.

<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>Left head</u>
<u>Device Position</u>	<u>Cheek</u>
<u>Band</u>	<u>IEEE 802.11a U-NII</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>IEEE802.11a (Crest factor: 1.0)</u>

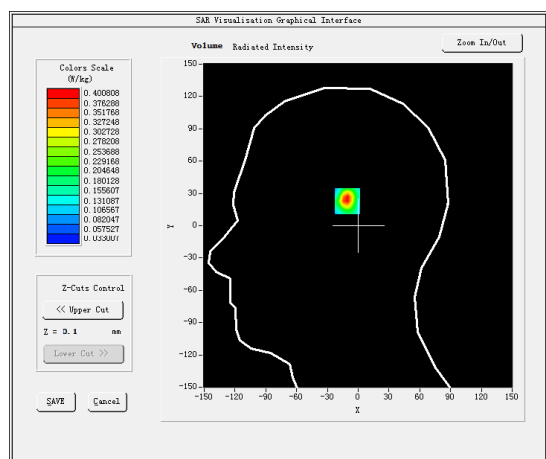
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	34.611790
Relative permittivity (imaginary part)	16.075266
Conductivity (S/m)	5.166412
Variation (%)	1.260000

SURFACE SAR



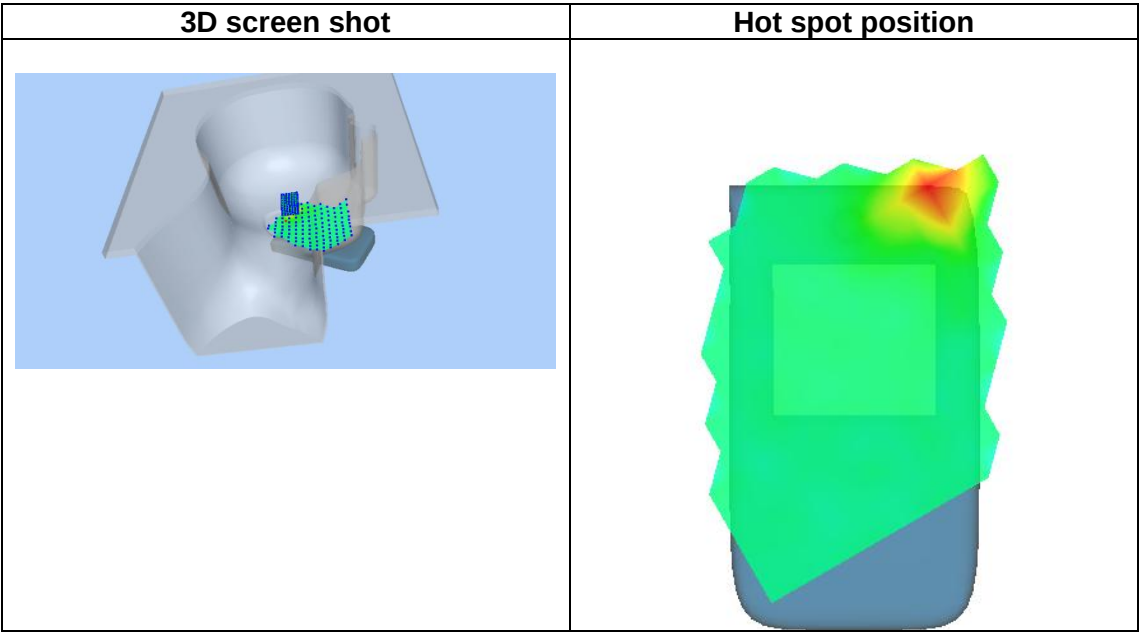
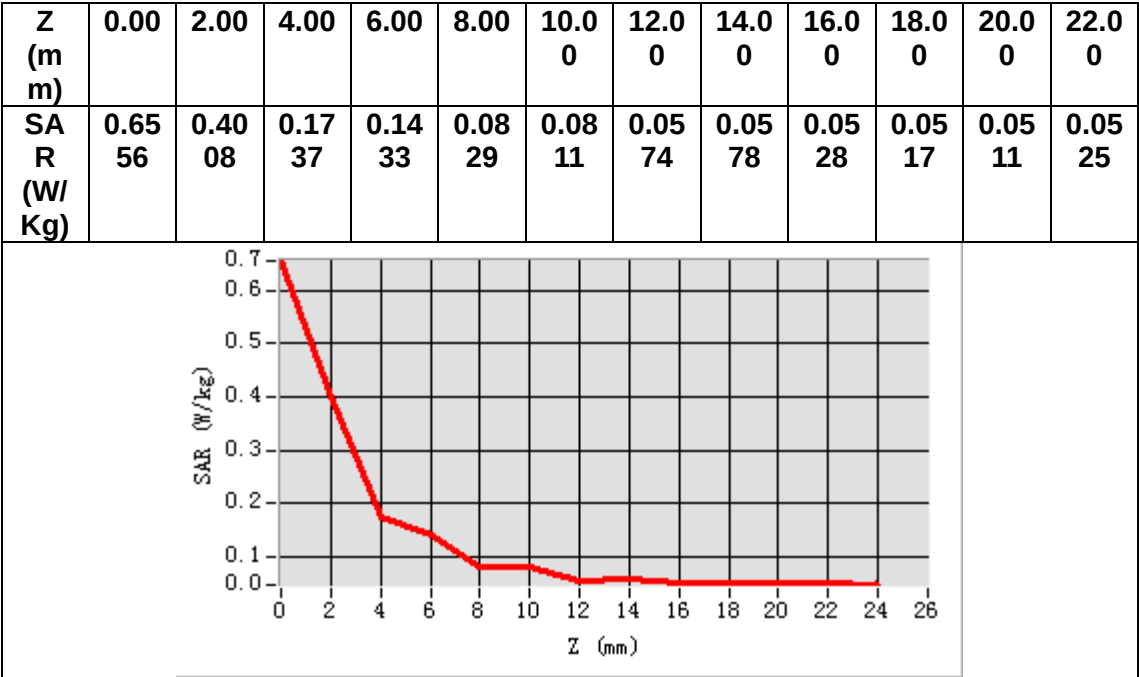
VOLUME SAR



Maximum location: X=-8.00, Y=25.00

SAR Peak: 1.02 W/kg

SAR 10g (W/Kg)	0.151415
SAR 1g (W/Kg)	0.384733



MEASUREMENT 13

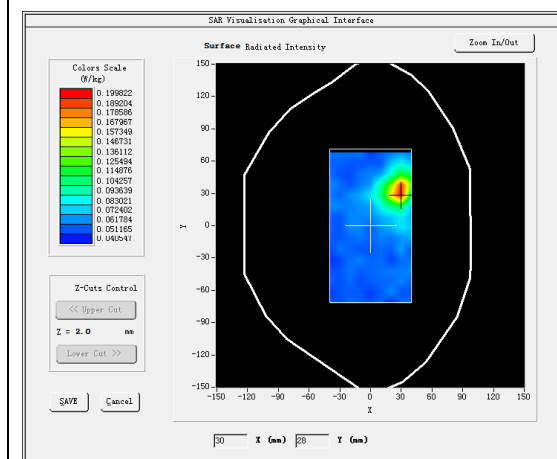
A. Experimental conditions.

<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>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>

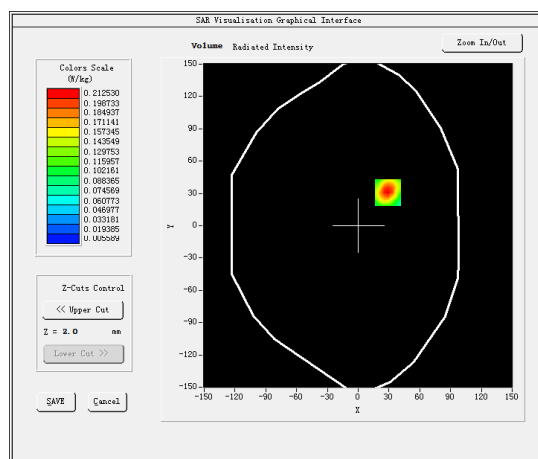
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.014286
Relative permittivity (imaginary part)	18.139999
Conductivity (S/m)	5.240444
Variation (%)	0.260000

SURFACE SAR



VOLUME SAR

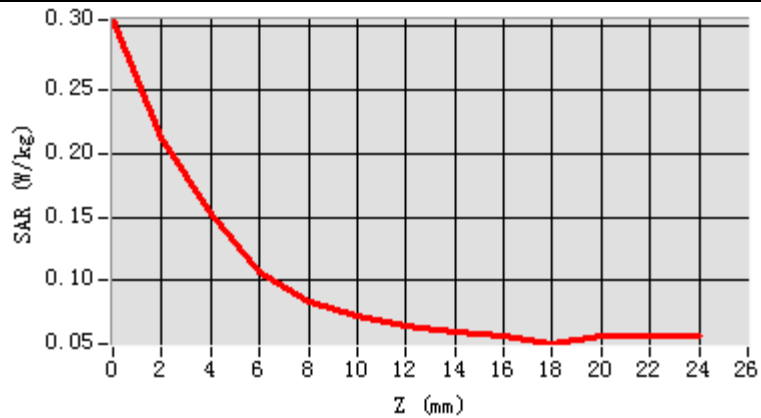


Maximum location: X=29.00, Y=31.00

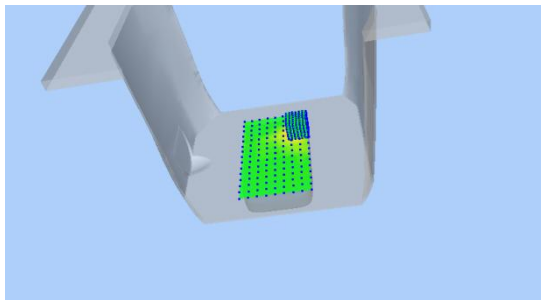
SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.089760
SAR 1g (W/Kg)	0.148414

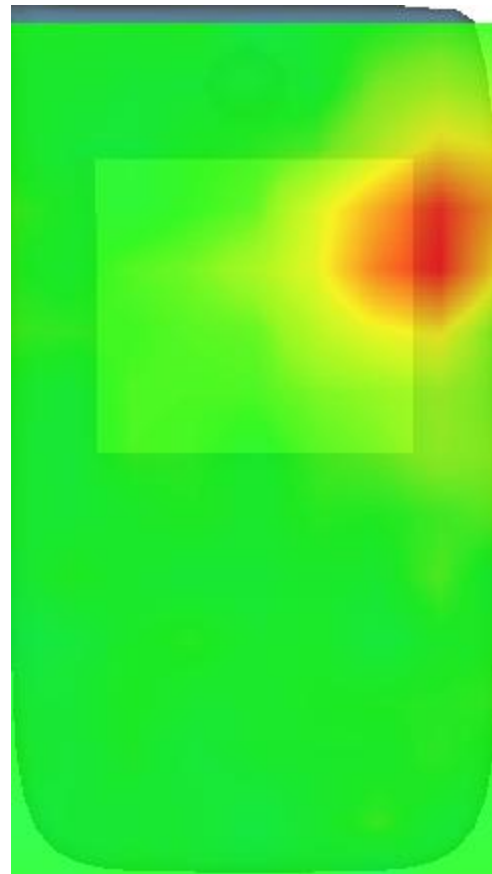
Z (m m)	0.00	2.00	4.00	6.00	8.00	10.0 0	12.0 0	14.0 0	16.0 0	18.0 0	20.0 0	22.0 0
SA R (W/ Kg)	0.30 42	0.21 25	0.15 22	0.10 63	0.08 41	0.07 32	0.06 49	0.05 96	0.05 69	0.05 07	0.05 76	0.05 65



3D screen shot



Hot spot position



MEASUREMENT 14

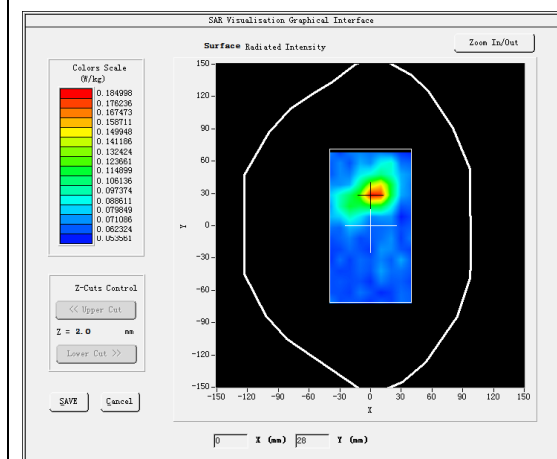
A. Experimental conditions.

<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>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>

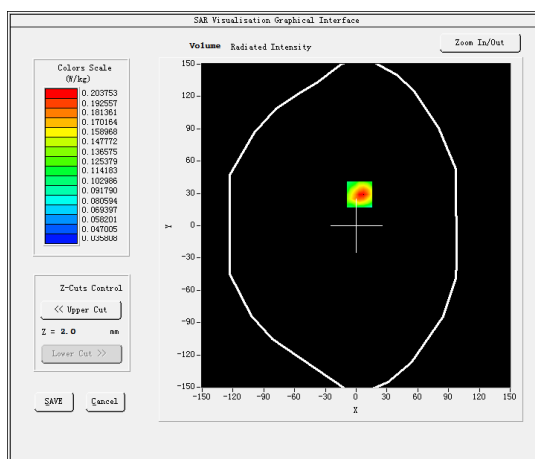
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.358704
Relative permittivity (imaginary part)	18.716766
Conductivity (S/m)	6.015361
Variation (%)	0.780000

SURFACE SAR



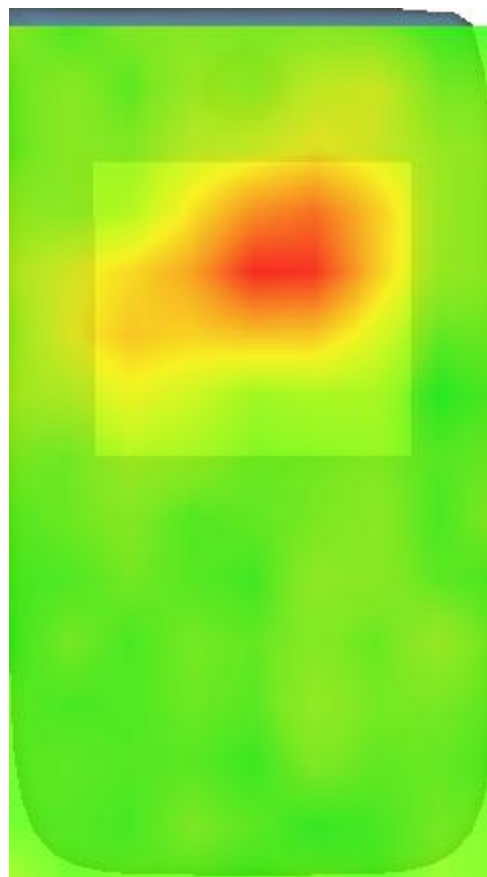
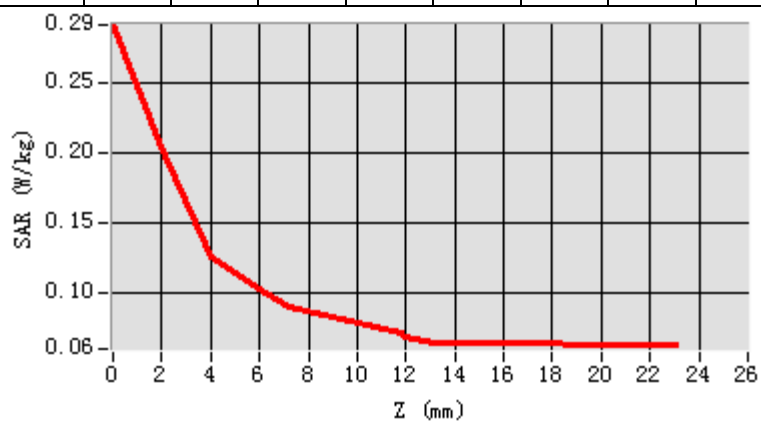
VOLUME SAR



Maximum location: X=3.00, Y=29.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.091815
SAR 1g (W/Kg)	0.140396



MEASUREMENT 15

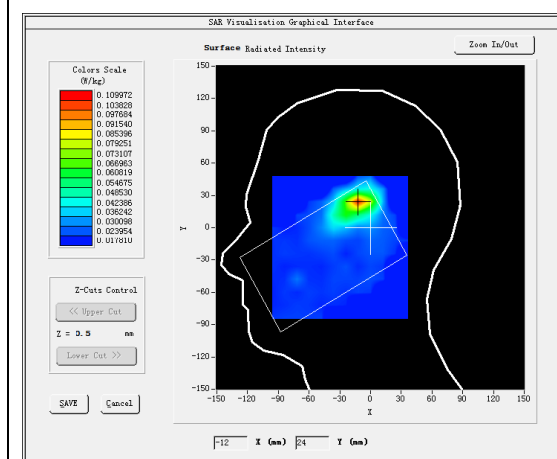
A. Experimental conditions.

<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>

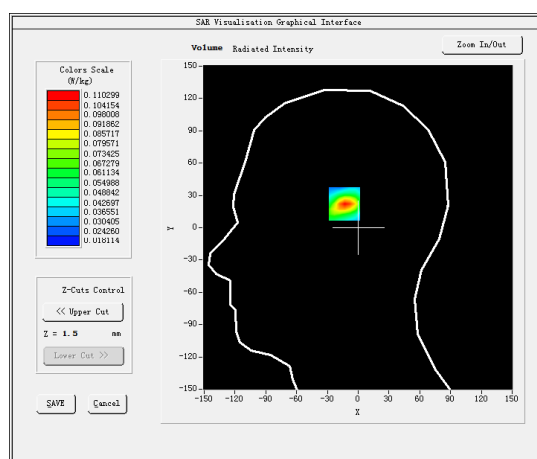
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	38.528000
Relative permittivity (imaginary part)	13.480300
Conductivity (S/m)	1.825083
Variation (%)	2.430000

SURFACE SAR



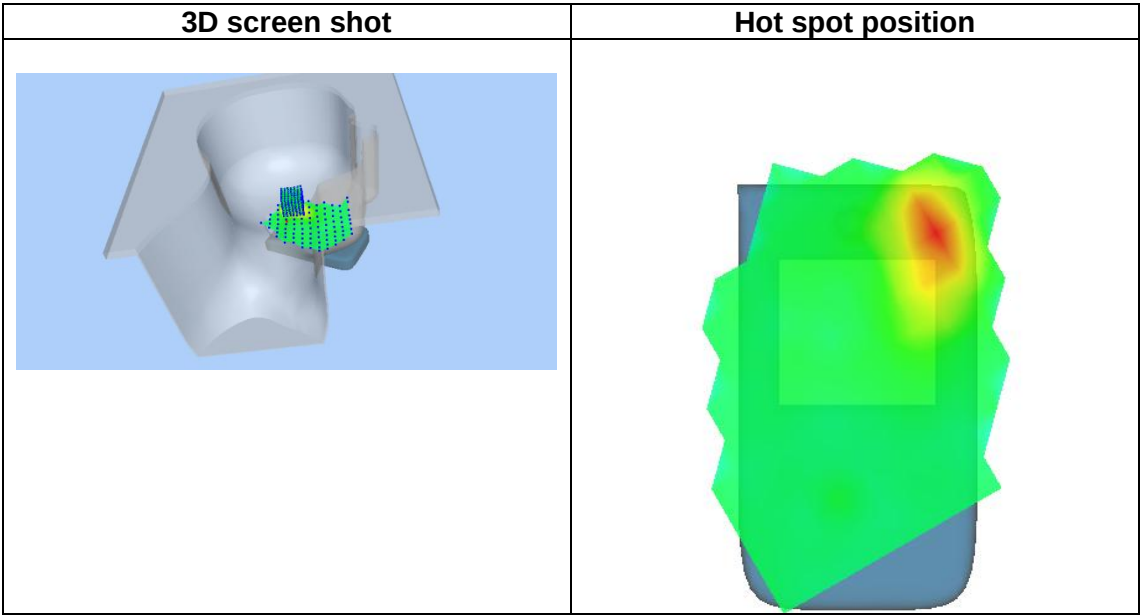
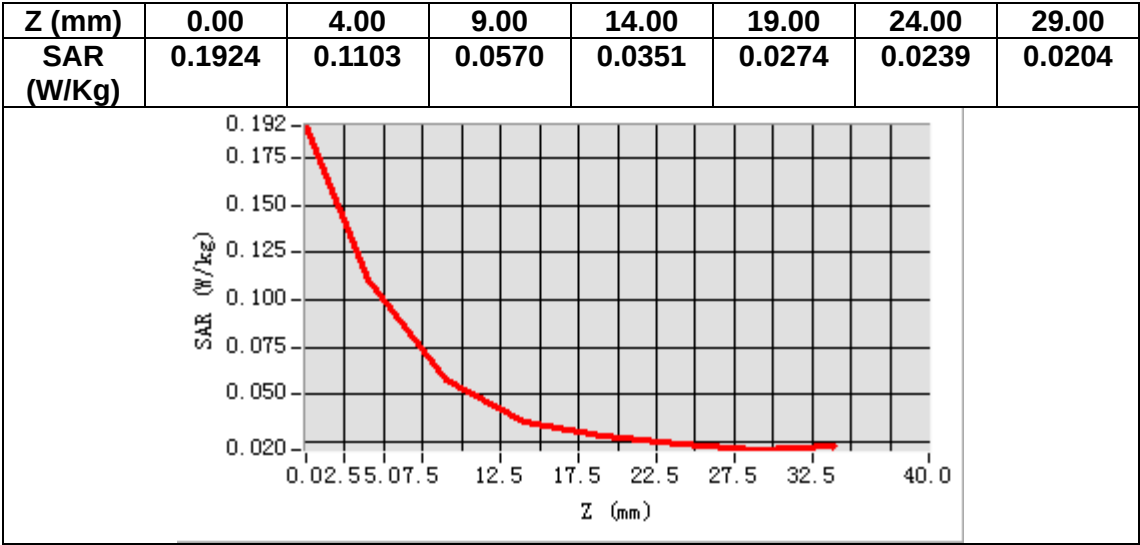
VOLUME SAR



Maximum location: X=-12.00, Y=24.00

SAR Peak: 0.19 W/kg

SAR 10g (W/Kg)	0.053697
SAR 1g (W/Kg)	0.101203



MEASUREMENT 16

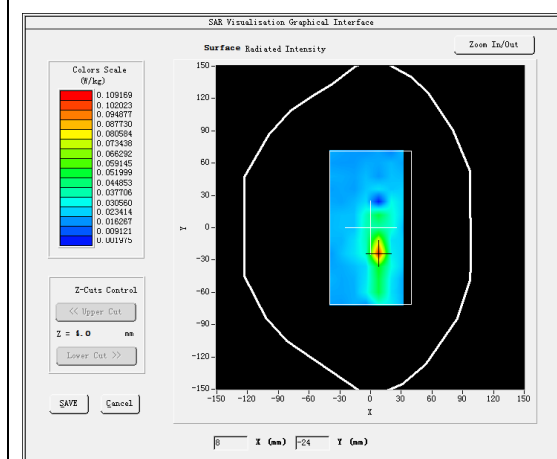
A. Experimental conditions.

<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>

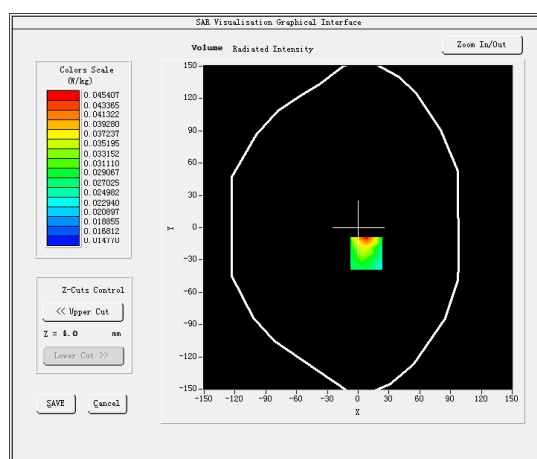
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	52.791302
Relative permittivity (imaginary part)	14.185120
Conductivity (S/m)	1.920508
Variation (%)	-0.760000

SURFACE SAR



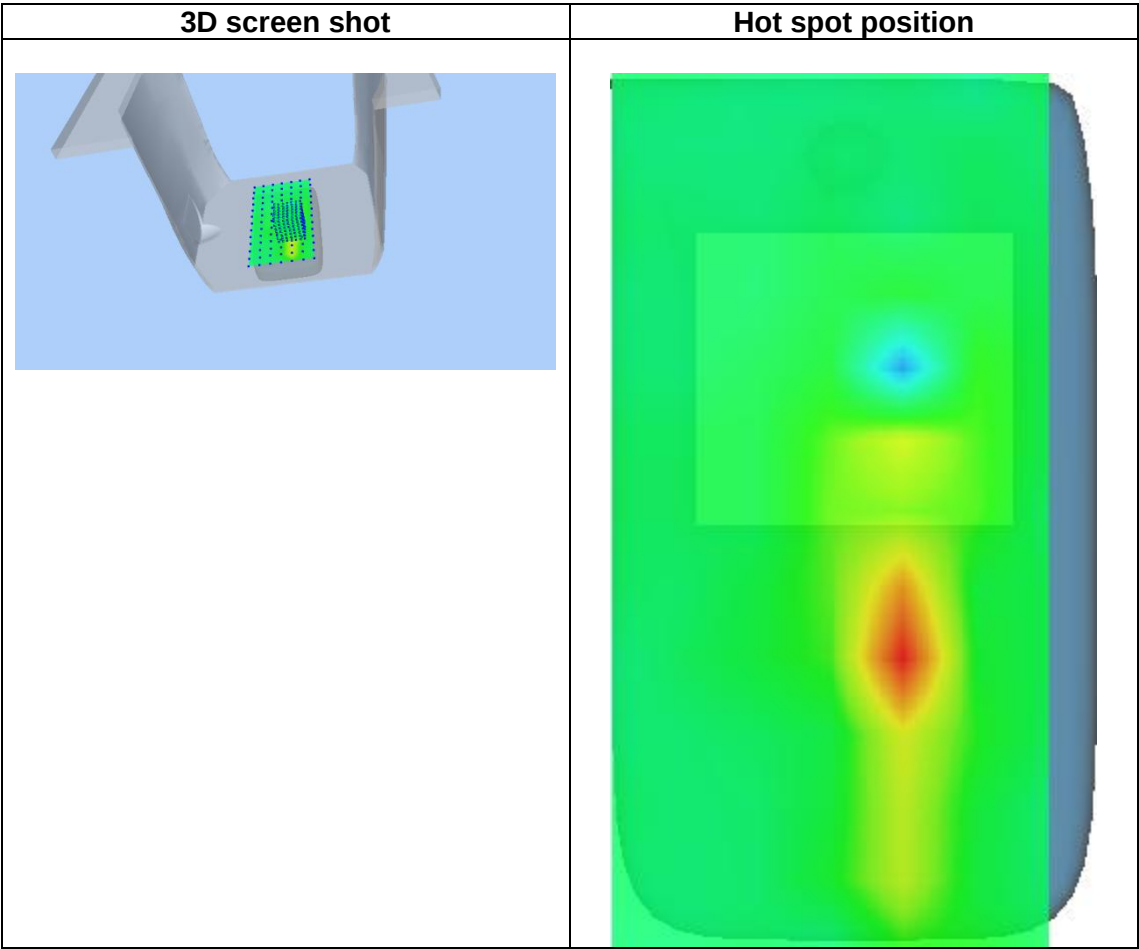
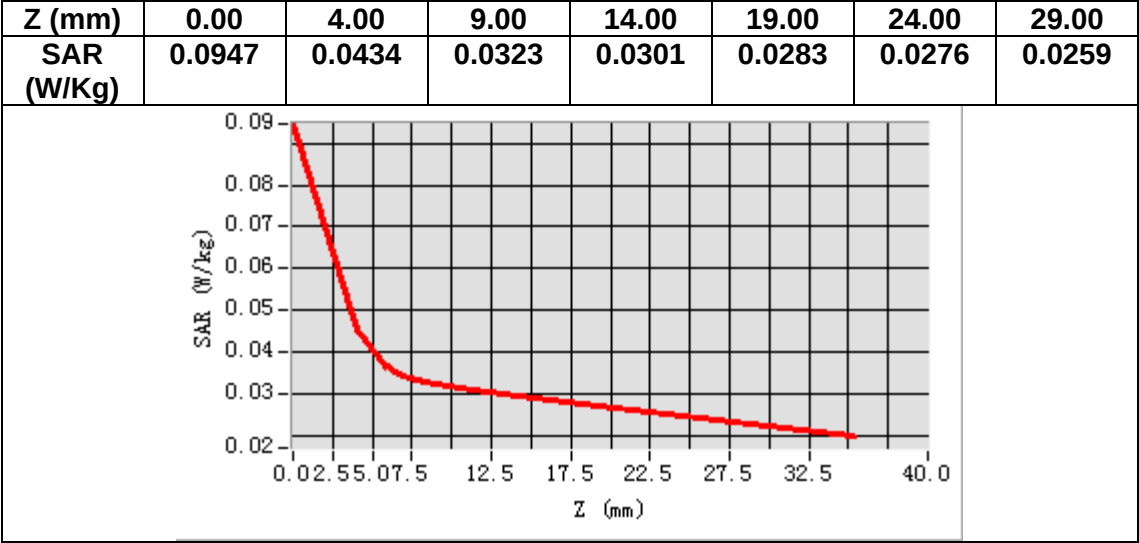
VOLUME SAR



Maximum location: X=8.00, Y=-24.00

SAR Peak: 0.06 W/kg

SAR 10g (W/Kg)	0.028092
SAR 1g (W/Kg)	0.039106



MEASUREMENT 17

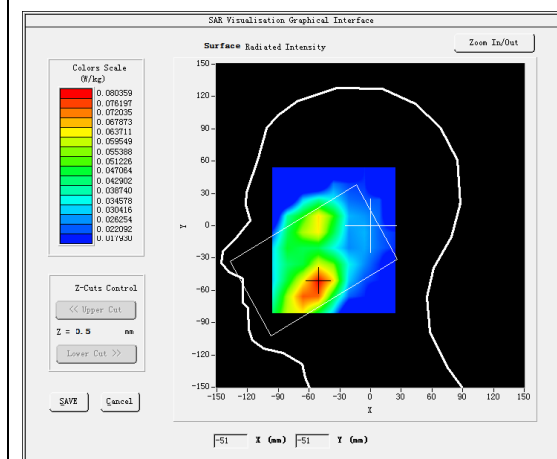
A. Experimental conditions.

<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 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

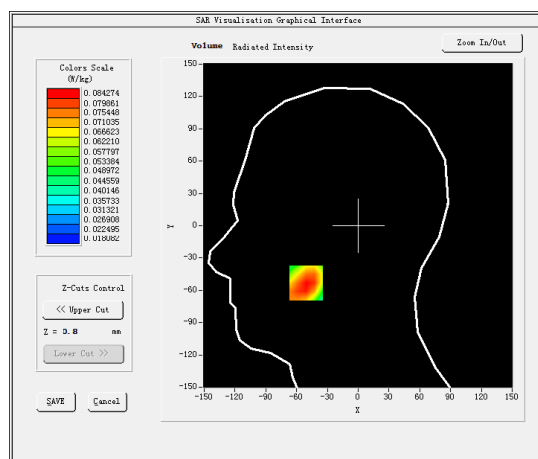
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.043800
Relative permittivity (imaginary part)	13.558100
Conductivity (S/m)	1.415692
Variation (%)	0.740000

SURFACE SAR



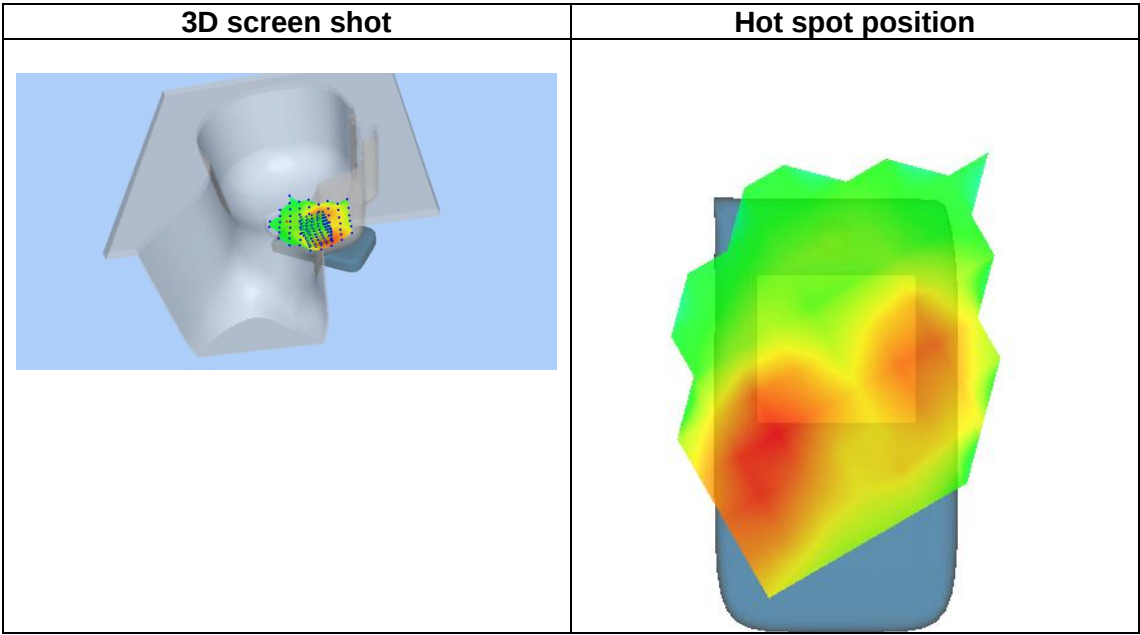
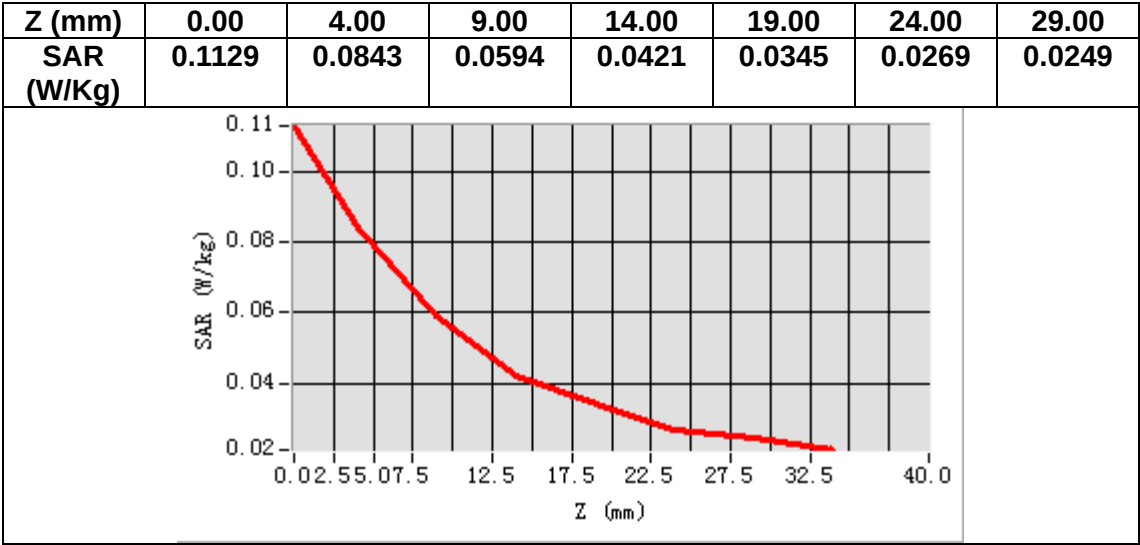
VOLUME SAR



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

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.055549
SAR 1g (W/Kg)	0.082272



MEASUREMENT 18

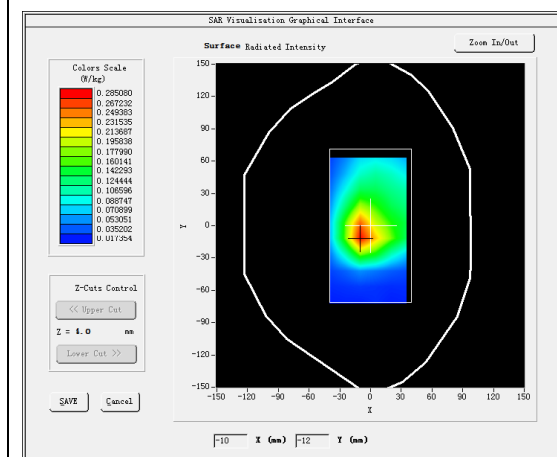
A. Experimental conditions.

<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 2</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

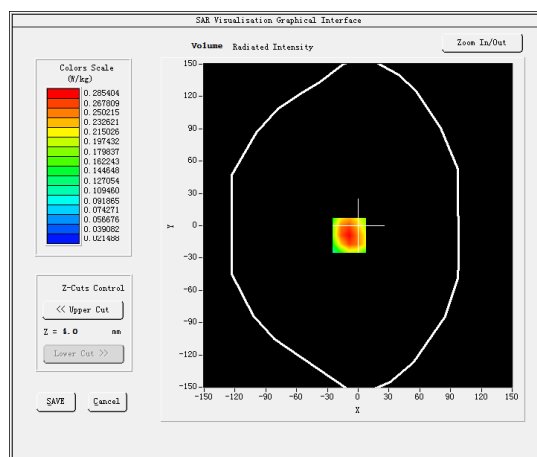
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.645950
Relative permittivity (imaginary part)	14.486150
Conductivity (S/m)	1.512595
Variation (%)	-0.260000

SURFACE SAR



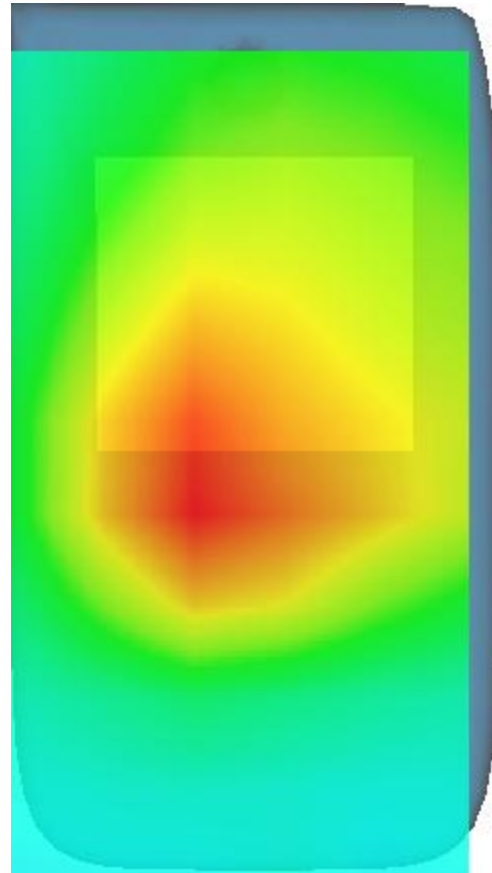
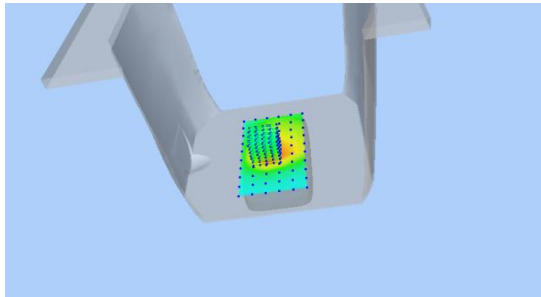
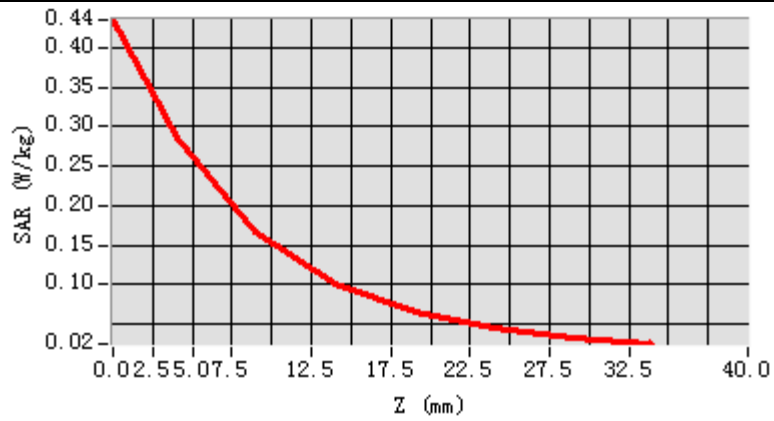
VOLUME SAR



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

SAR Peak: 0.44 W/kg

SAR 10g (W/Kg)	0.158958
SAR 1g (W/Kg)	0.275266



MEASUREMENT 19

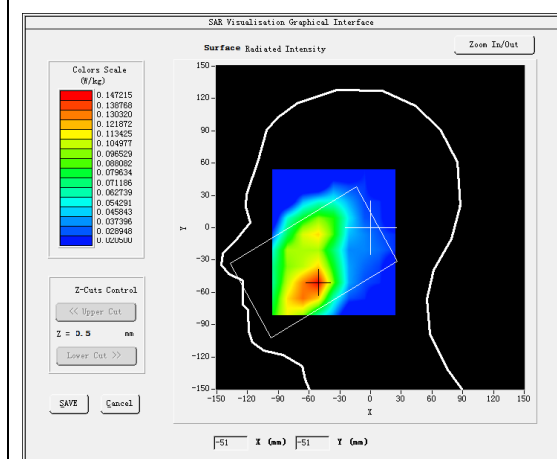
A. Experimental conditions.

<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>

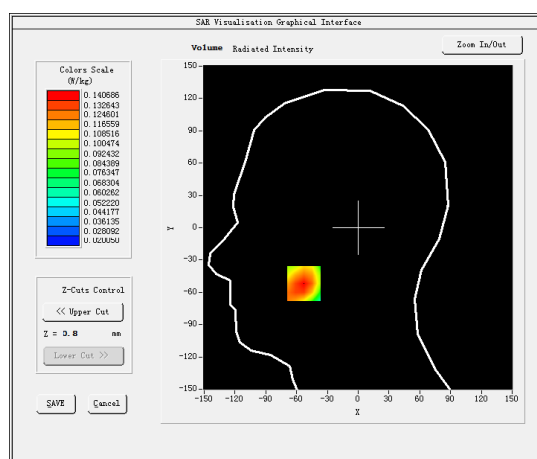
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	38.845291
Relative permittivity (imaginary part)	13.960592
Conductivity (S/m)	1.343707
Variation (%)	-4.210000

SURFACE SAR



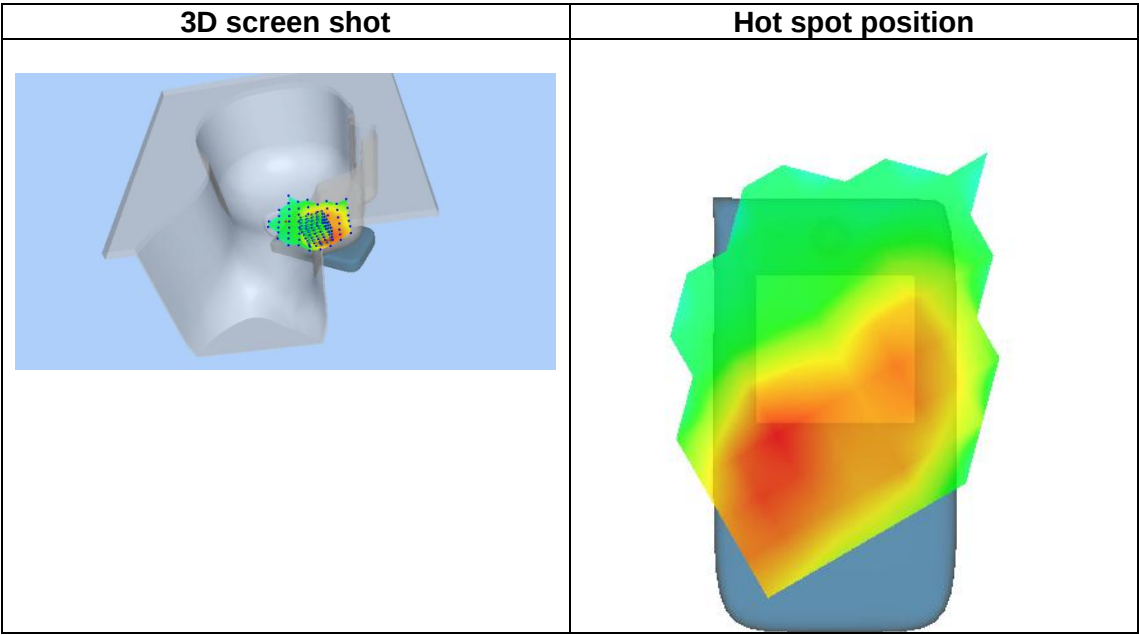
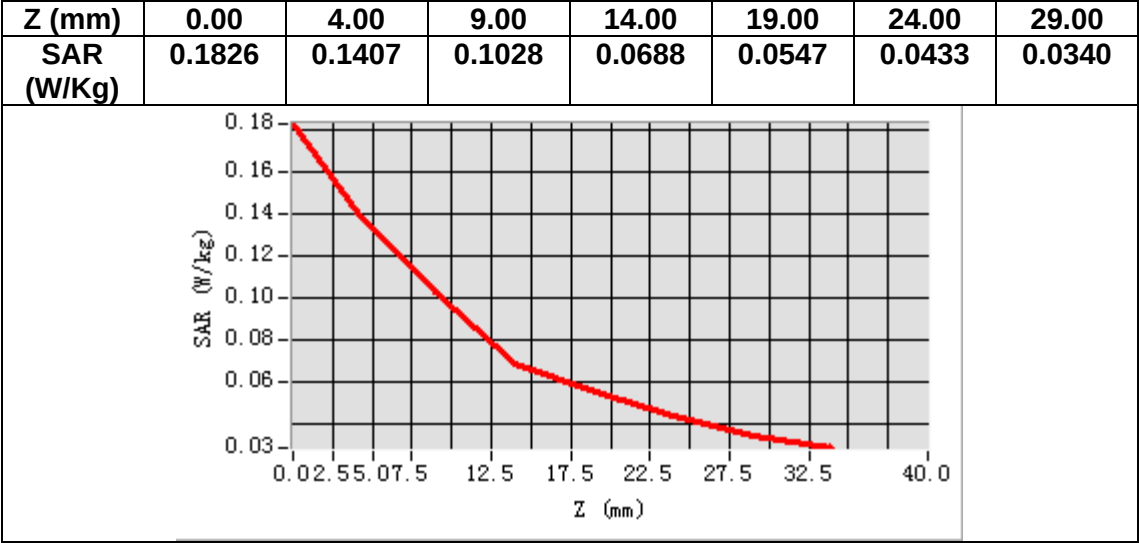
VOLUME SAR



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

SAR Peak: 0.19 W/kg

SAR 10g (W/Kg)	0.090555
SAR 1g (W/Kg)	0.134994



MEASUREMENT 20

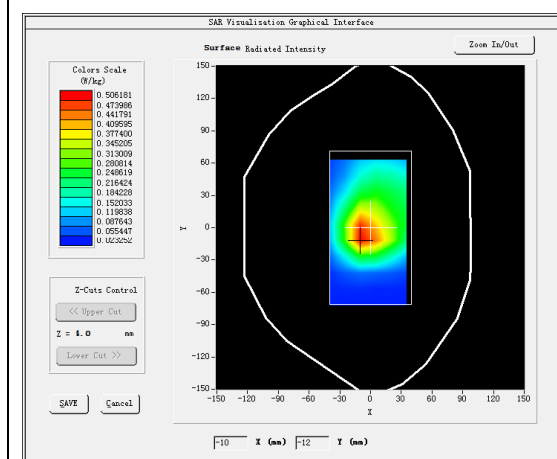
A. Experimental conditions.

<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>

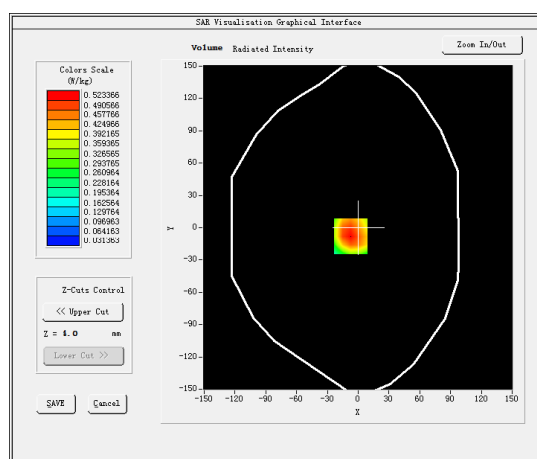
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	53.443367
Relative permittivity (imaginary part)	15.423220
Conductivity (S/m)	1.484485
Variation (%)	-1.440000

SURFACE SAR



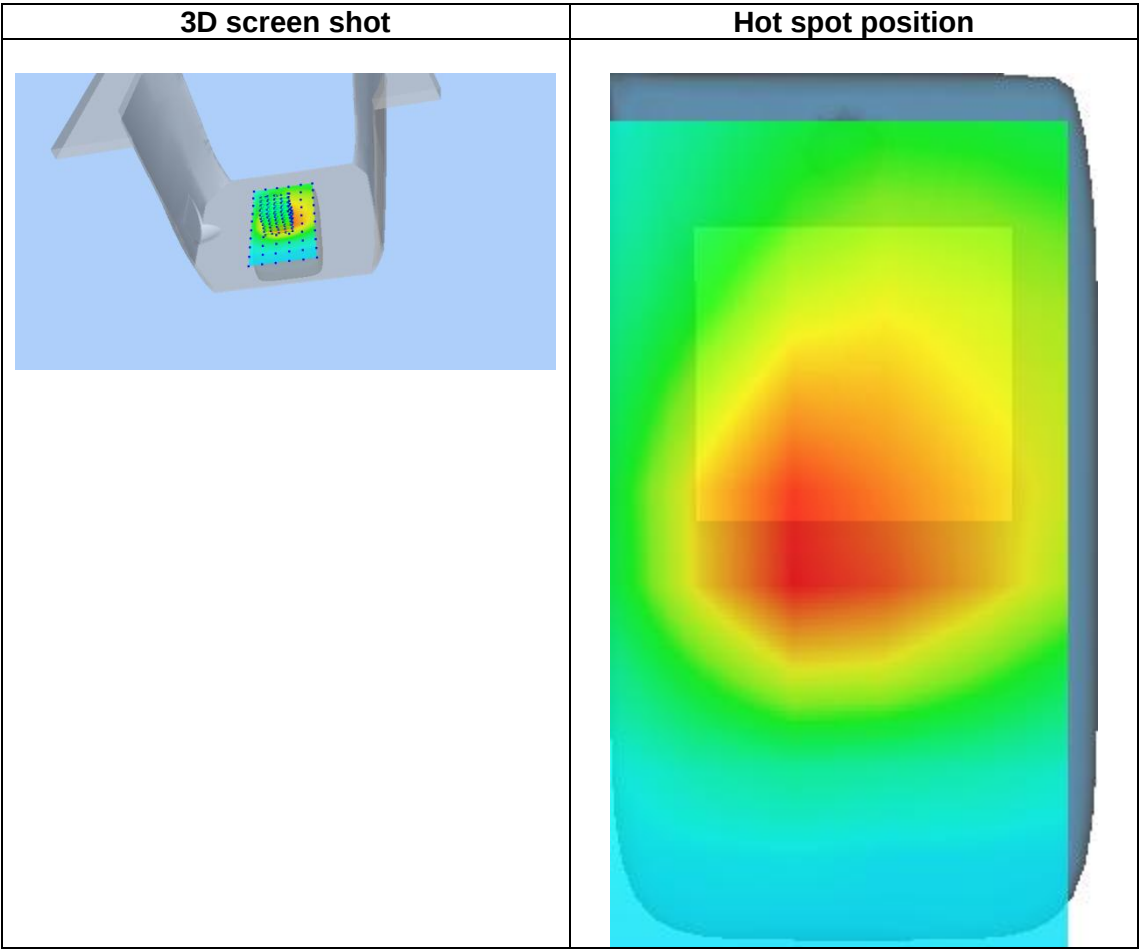
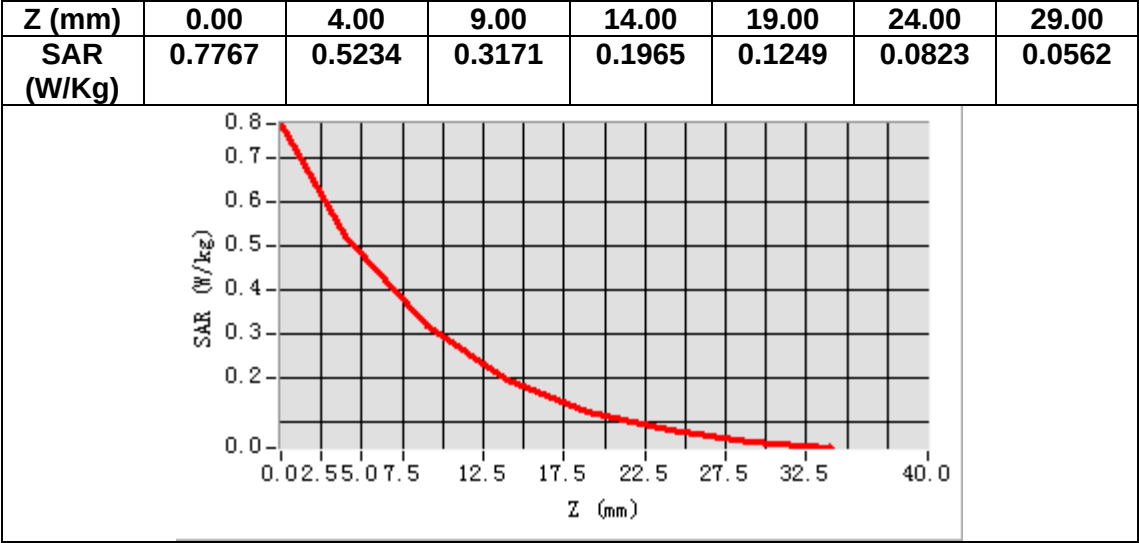
VOLUME SAR



Maximum location: X=-7.00, Y=-8.00

SAR Peak: 0.78 W/kg

SAR 10g (W/Kg)	0.301059
SAR 1g (W/Kg)	0.505957



MEASUREMENT 21

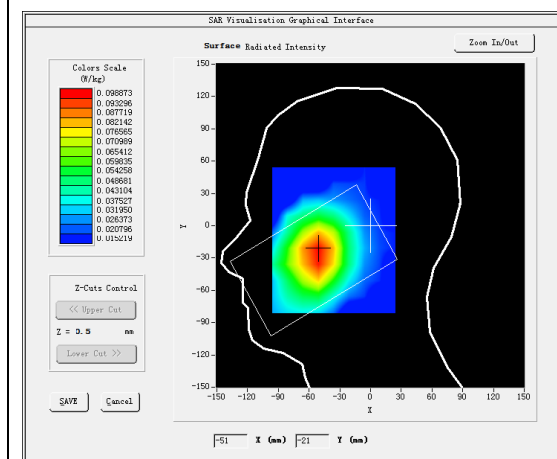
A. Experimental conditions.

<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 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

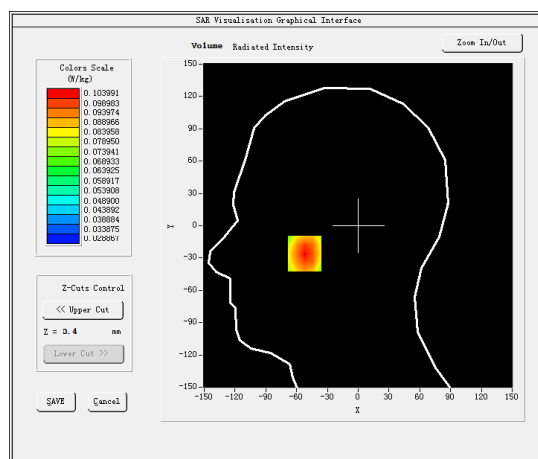
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	40.333549
Relative permittivity (imaginary part)	20.080200
Conductivity (S/m)	0.933172
Variation (%)	3.210000

SURFACE SAR



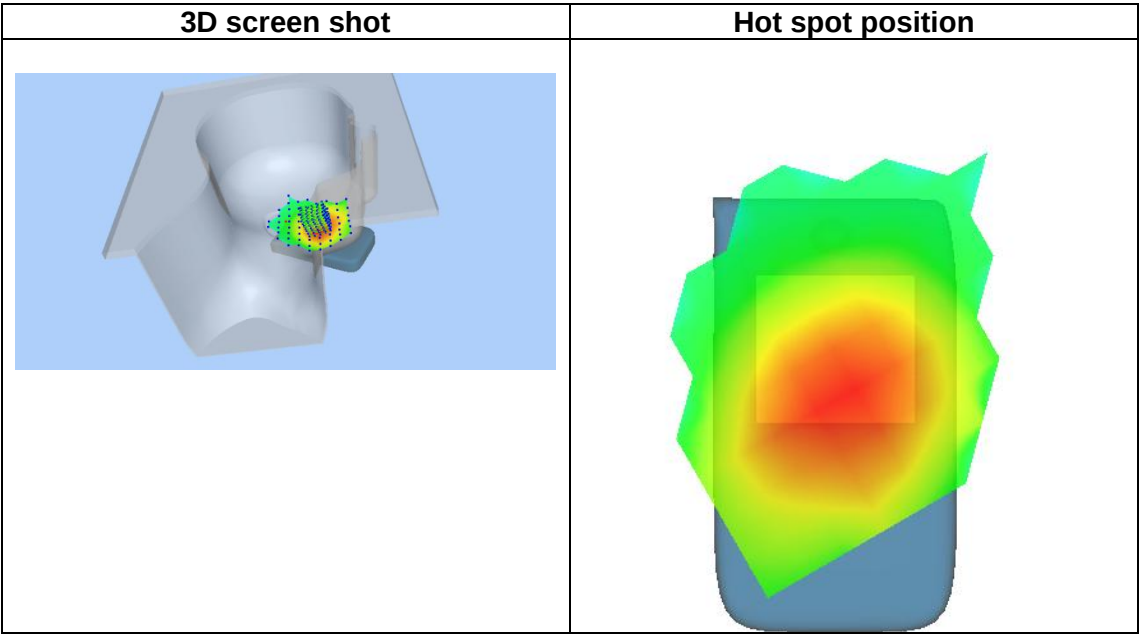
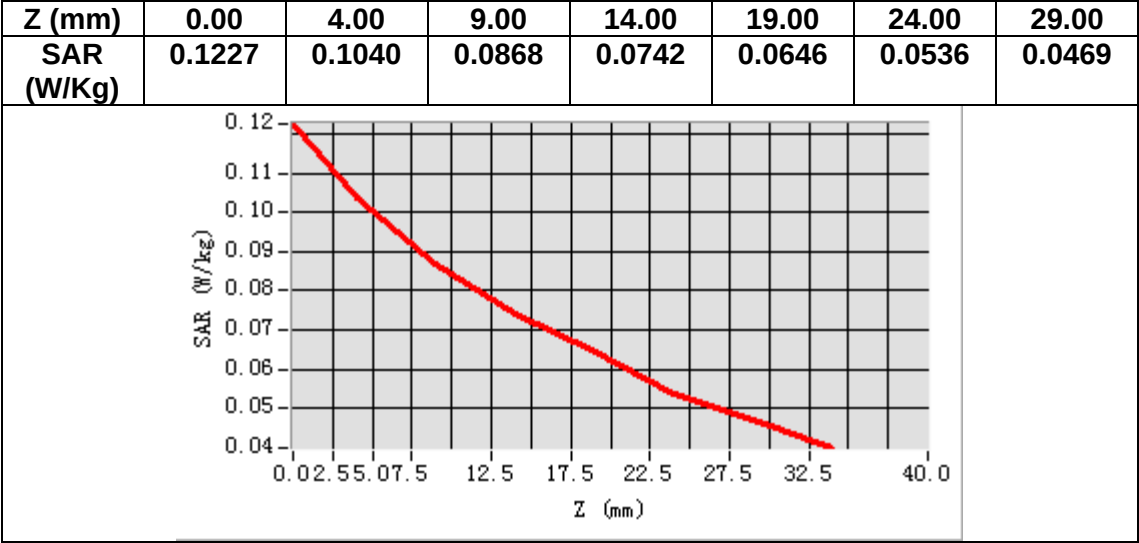
VOLUME SAR



Maximum location: X=-52.00, Y=-26.00

SAR Peak: 0.12 W/kg

SAR 10g (W/Kg)	0.081351
SAR 1g (W/Kg)	0.103988



MEASUREMENT 22

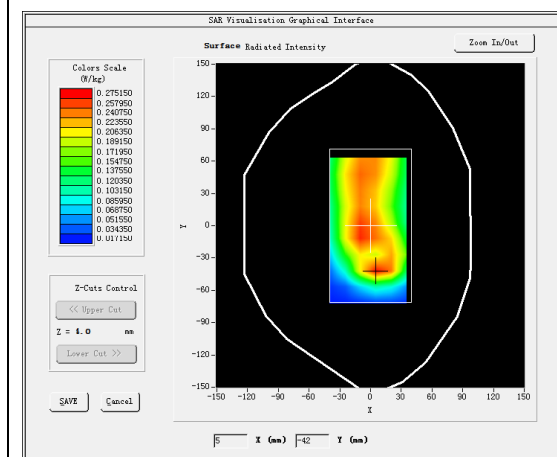
A. Experimental conditions.

<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 5</u>
<u>Channels</u>	<u>Middle</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

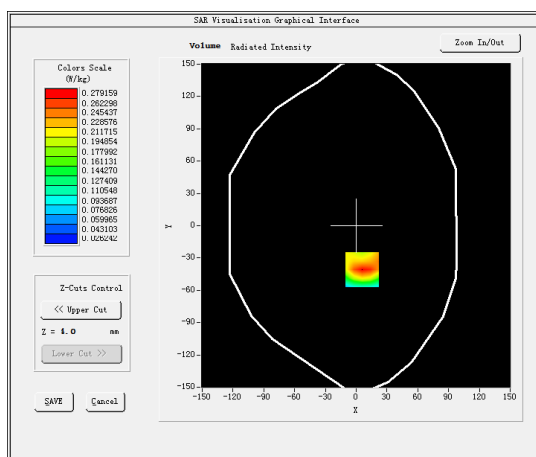
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	54.463501
Relative permittivity (imaginary part)	21.197001
Conductivity (S/m)	0.985072
Variation (%)	-0.620000

SURFACE SAR



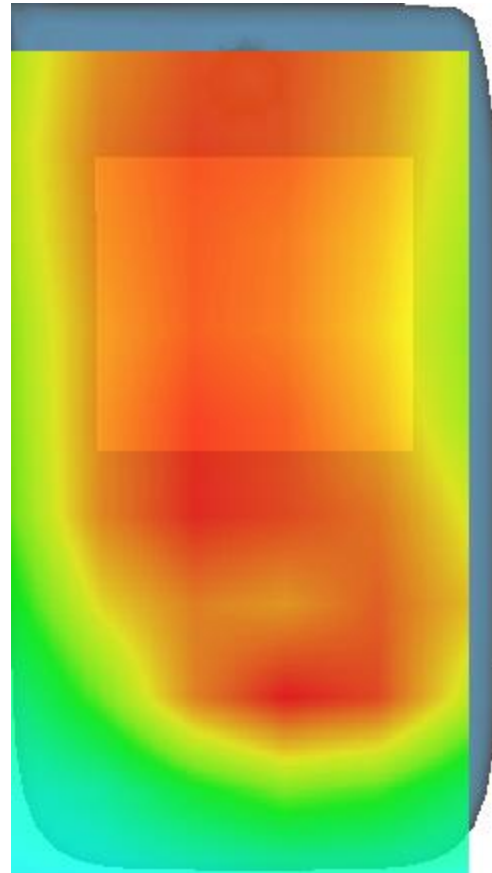
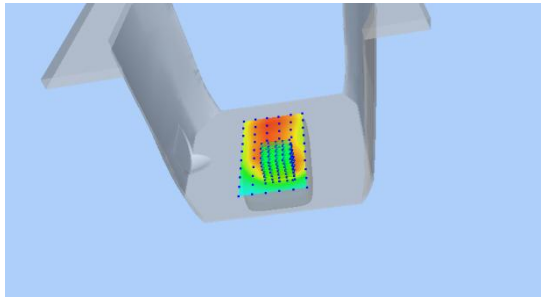
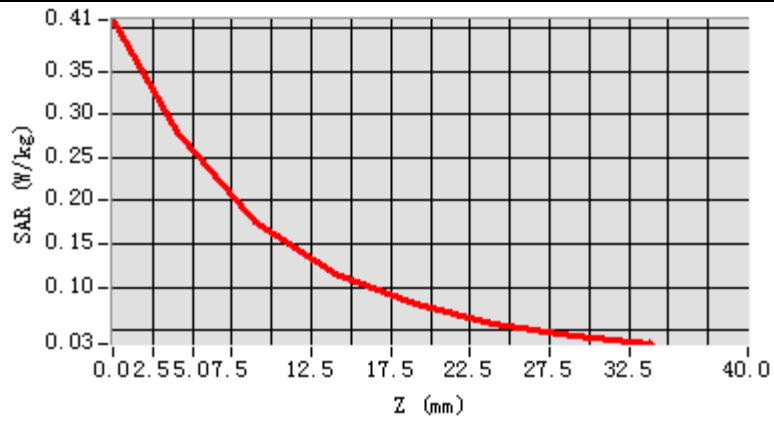
VOLUME SAR



Maximum location: X=6.00, Y=-41.00

SAR Peak: 0.41 W/kg

SAR 10g (W/Kg)	0.159726
SAR 1g (W/Kg)	0.265670



MEASUREMENT 23

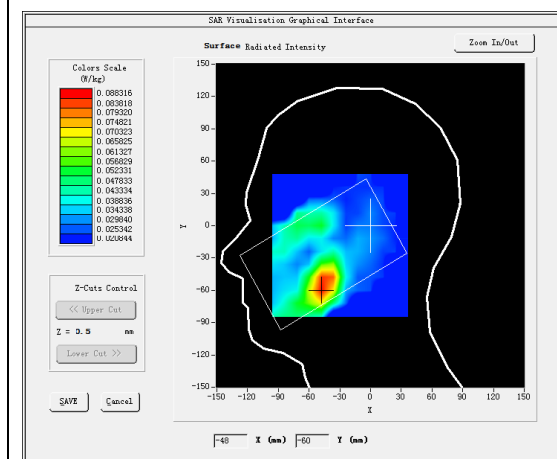
A. Experimental conditions.

<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>

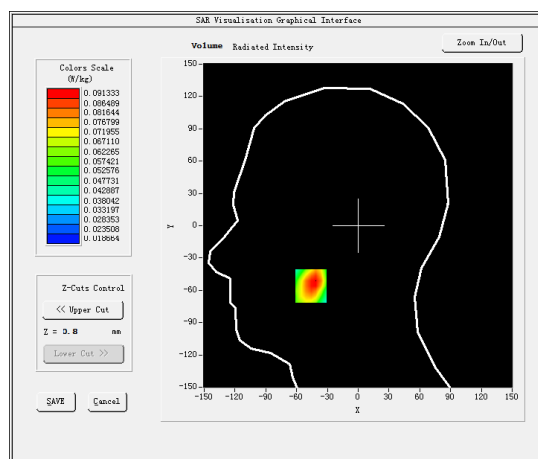
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.402485
Relative permittivity (imaginary part)	13.871160
Conductivity (S/m)	1.953522
Variation (%)	1.040000

SURFACE SAR



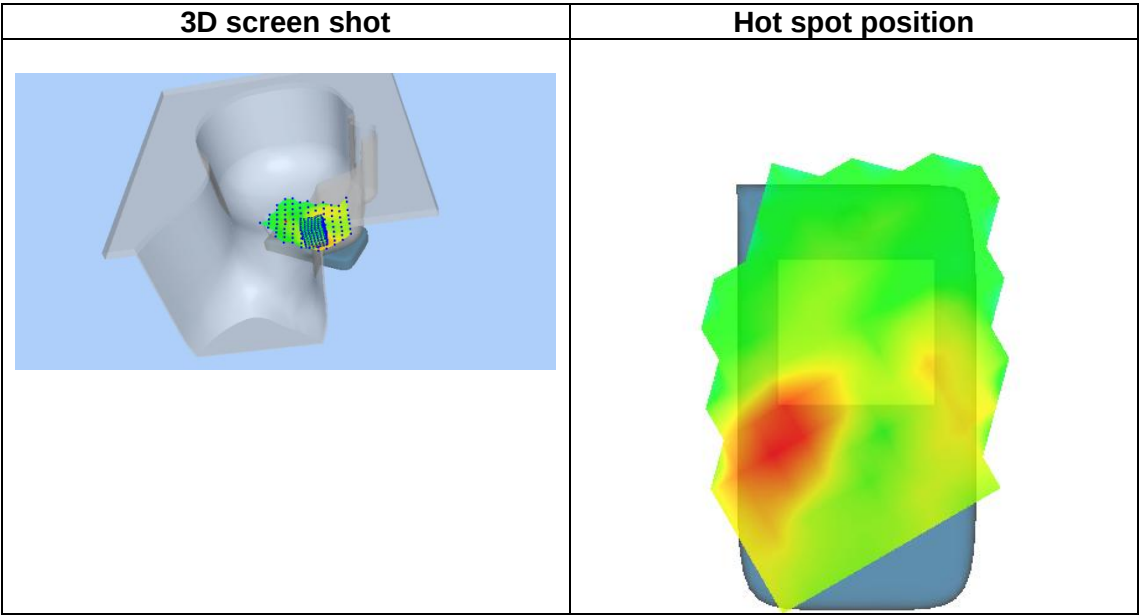
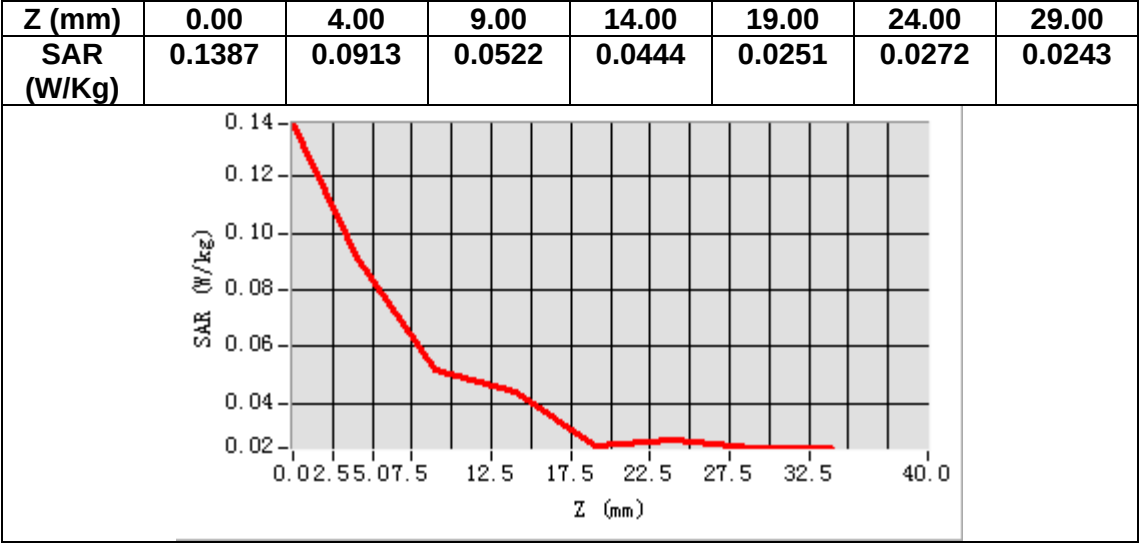
VOLUME SAR



Maximum location: X=-46.00, Y=-56.00

SAR Peak: 0.13 W/kg

SAR 10g (W/Kg)	0.055649
SAR 1g (W/Kg)	0.088077



MEASUREMENT 24

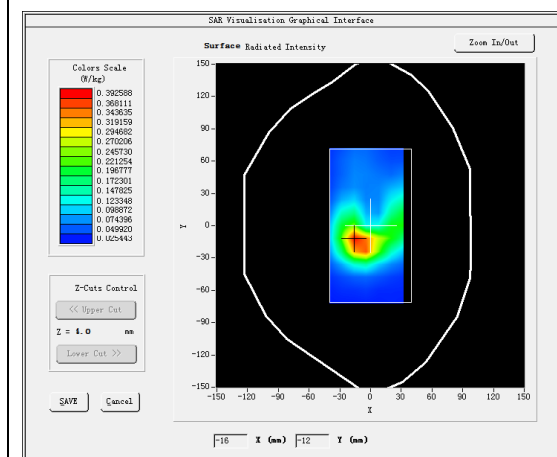
A. Experimental conditions.

<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>

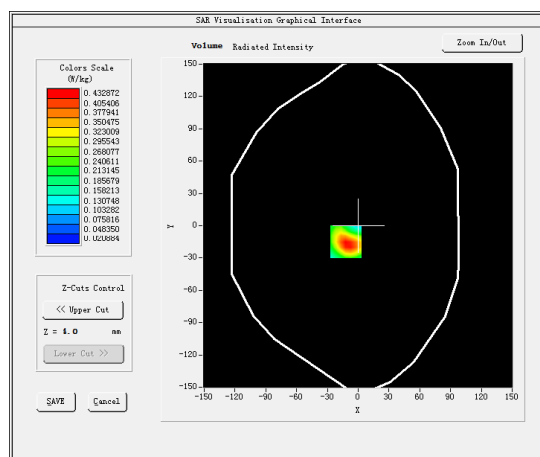
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	52.896946
Relative permittivity (imaginary part)	15.067840
Conductivity (S/m)	2.122054
Variation (%)	-0.240000

SURFACE SAR



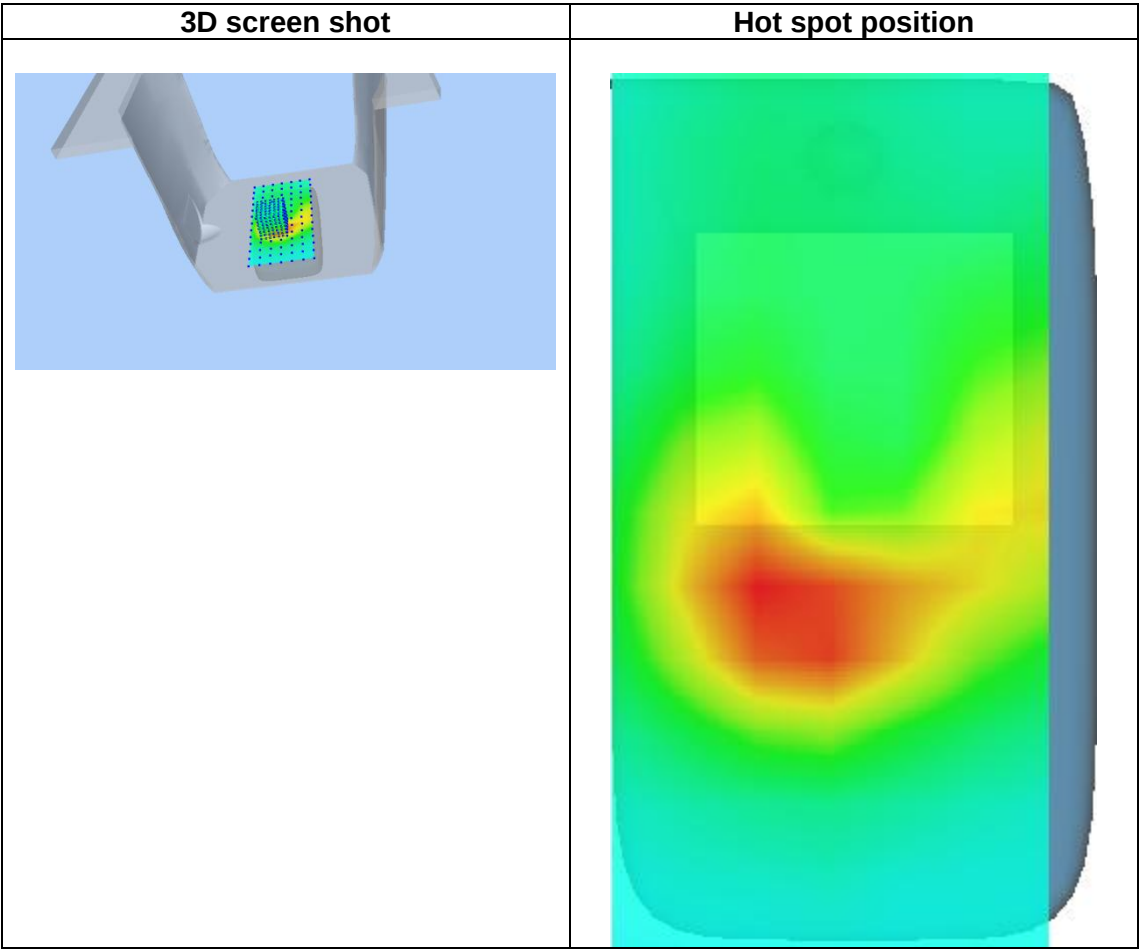
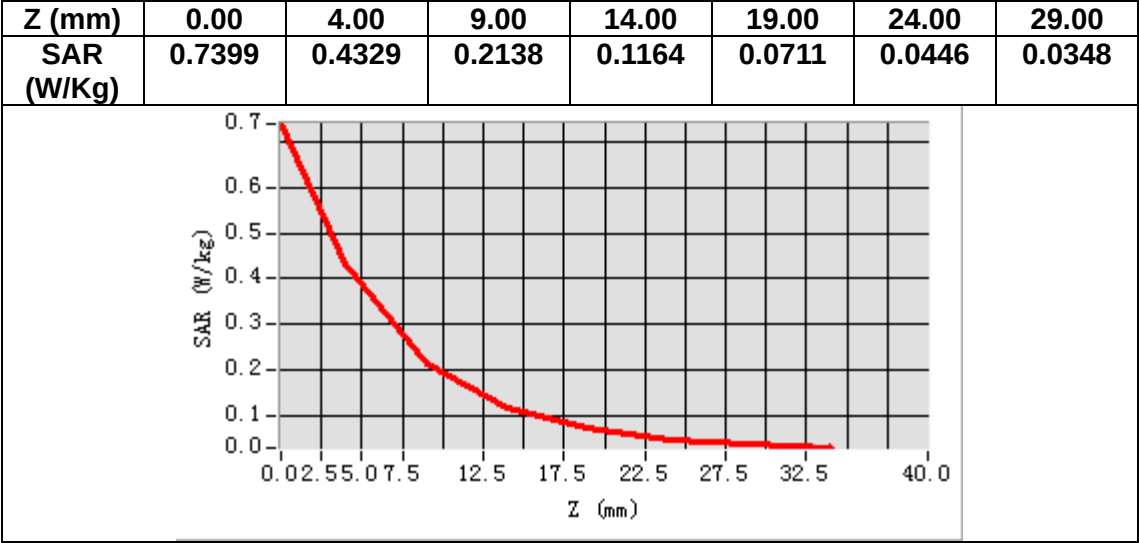
VOLUME SAR



Maximum location: X=-12.00, Y=-15.00

SAR Peak: 0.74 W/kg

SAR 10g (W/Kg)	0.209694
SAR 1g (W/Kg)	0.416010



MEASUREMENT 25

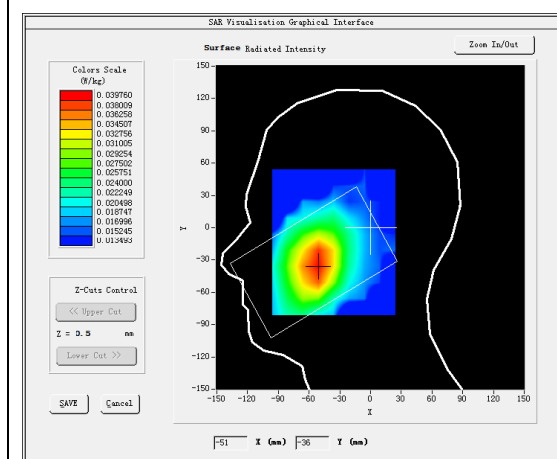
A. Experimental conditions.

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

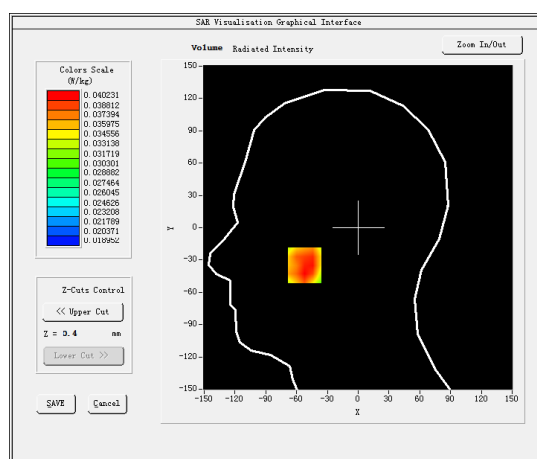
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	42.067959
Relative permittivity (imaginary part)	22.077780
Conductivity (S/m)	0.867779
Variation (%)	0.400000

SURFACE SAR



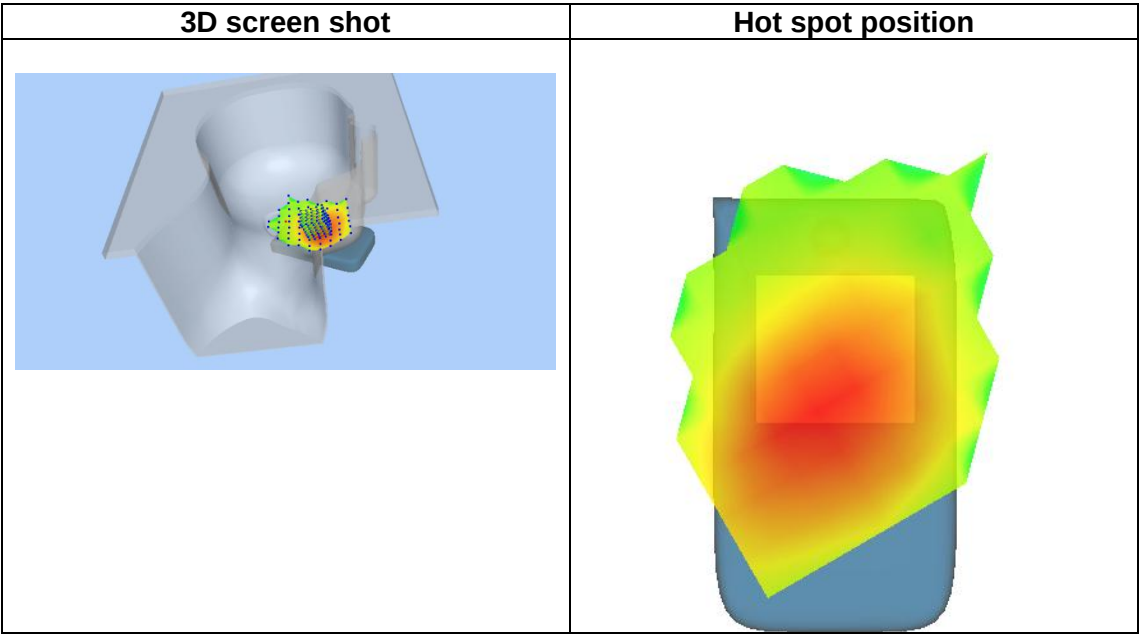
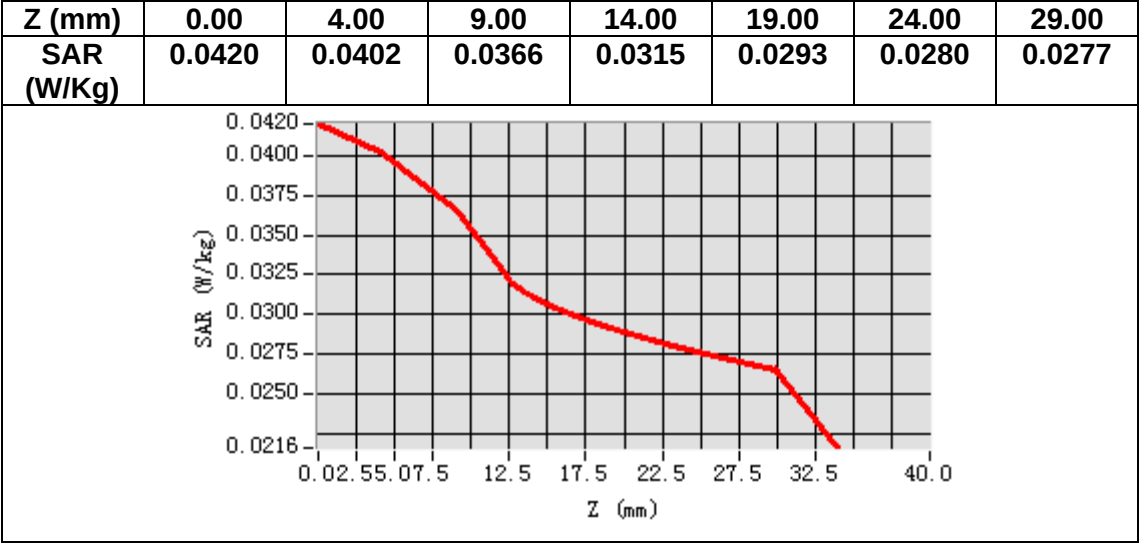
VOLUME SAR



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

SAR Peak: 0.05 W/kg

SAR 10g (W/Kg)	0.034739
SAR 1g (W/Kg)	0.040226



MEASUREMENT 26

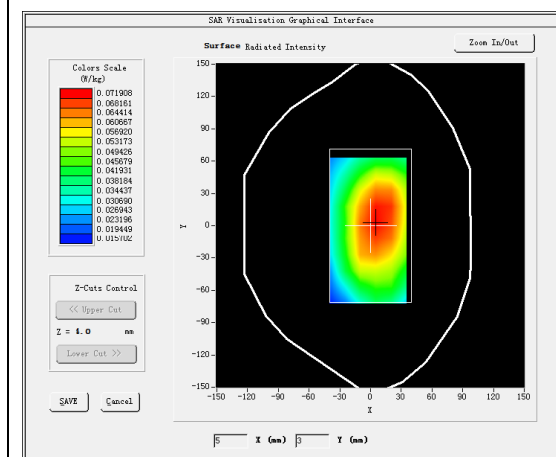
A. Experimental conditions.

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

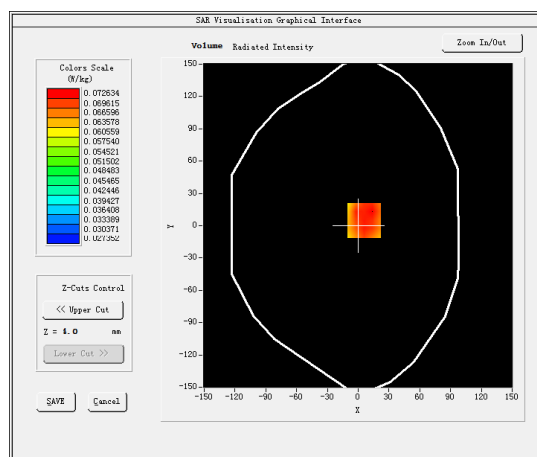
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	55.867962
Relative permittivity (imaginary part)	23.571301
Conductivity (S/m)	0.926483
Variation (%)	-2.050000

SURFACE SAR



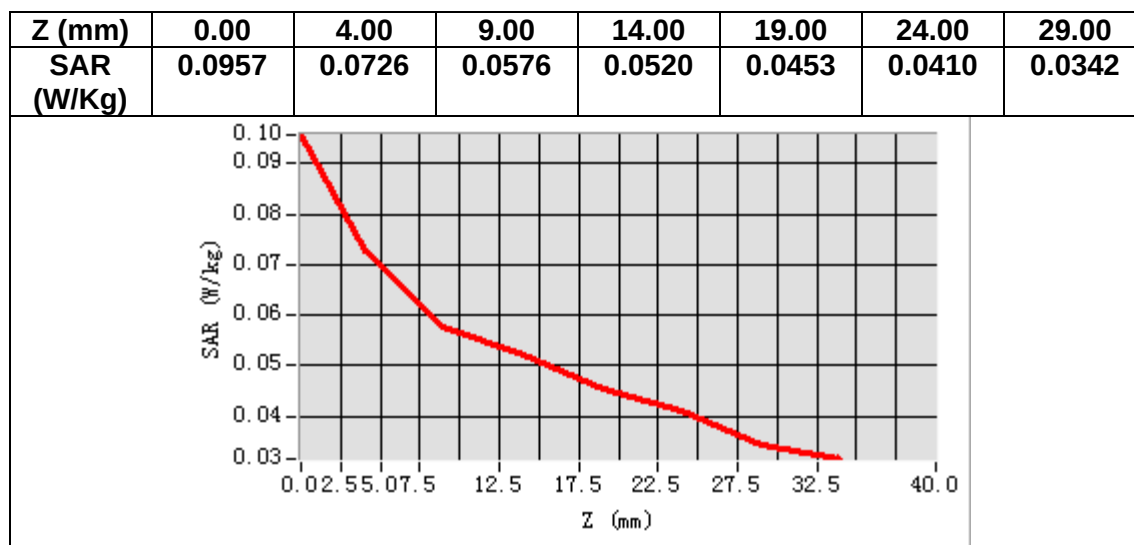
VOLUME SAR

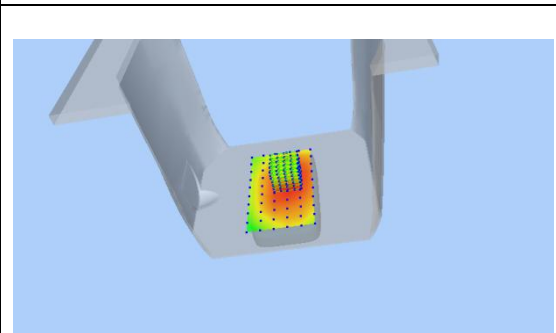
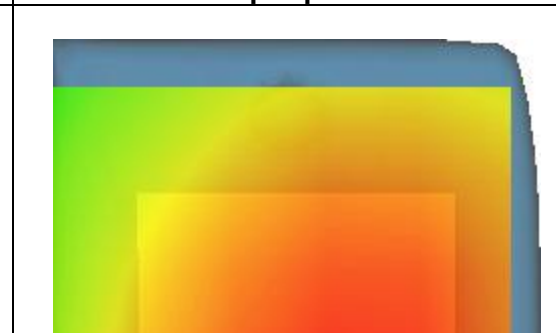


Maximum location: X=6.00, Y=5.00

SAR Peak: 0.09 W/kg

SAR 10g (W/Kg)	0.058193
SAR 1g (W/Kg)	0.070882



3D screen shot	Hot spot position
 A 3D perspective view of a grey robotic gripper holding a small, rectangular object. The object's surface is covered with a grid of colored dots, representing a hot spot map. The colors range from green (low intensity) to red (high intensity), with the highest intensity concentrated in the center of the object. The background is a solid light blue.	 A 2D heatmap visualization of the hot spot position. The image shows a rectangular area with a color gradient from green (low intensity) to red (high intensity). The highest intensity (red) is concentrated in the center of the rectangle, with the intensity decreasing towards the edges (green). The background is a solid light blue.

MEASUREMENT 27

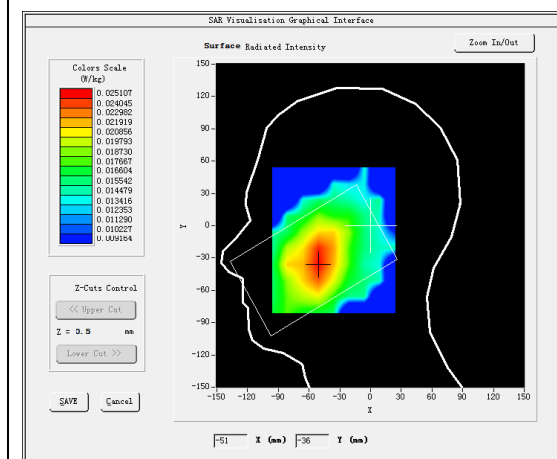
A. Experimental conditions.

<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>

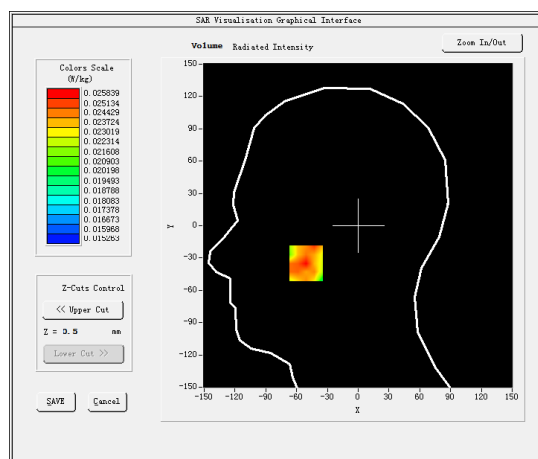
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	42.046711
Relative permittivity (imaginary part)	22.106178
Conductivity (S/m)	0.871966
Variation (%)	0.270000

SURFACE SAR



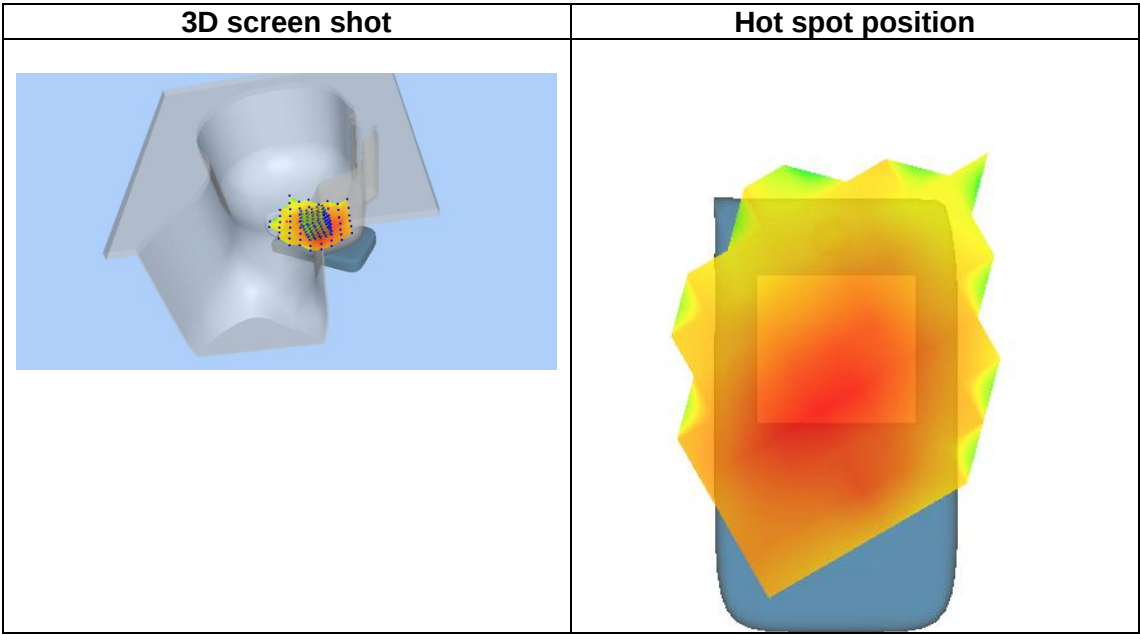
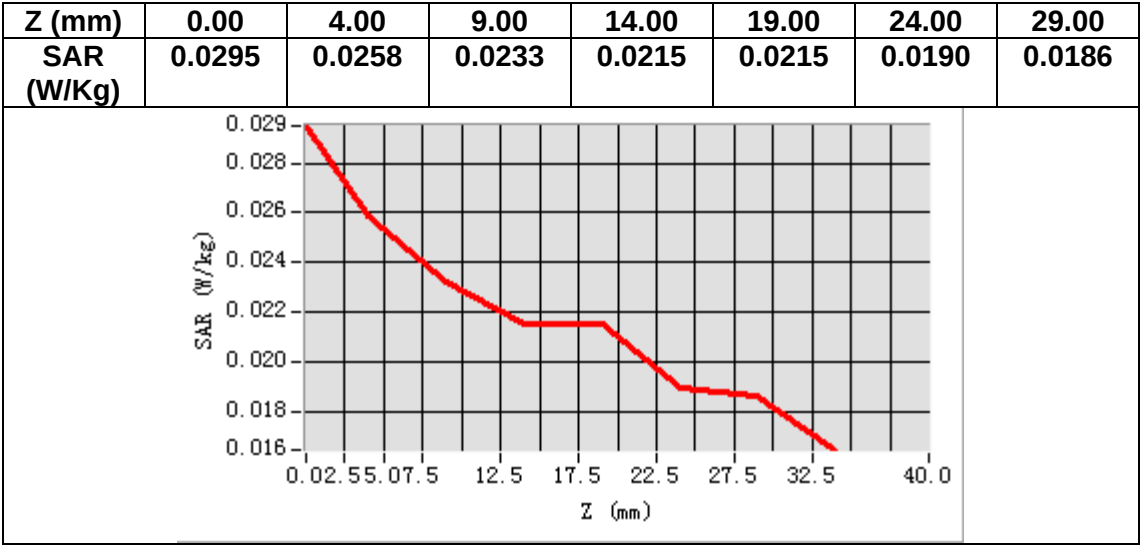
VOLUME SAR



Maximum location: X=-51.00, Y=-35.00

SAR Peak: 0.03 W/kg

SAR 10g (W/Kg)	0.022428
SAR 1g (W/Kg)	0.025251



MEASUREMENT 28

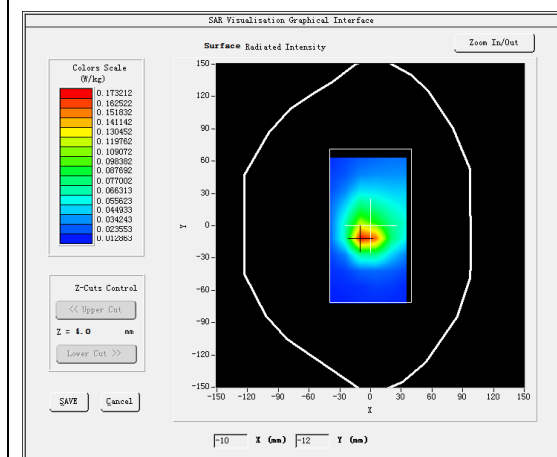
A. Experimental conditions.

<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>

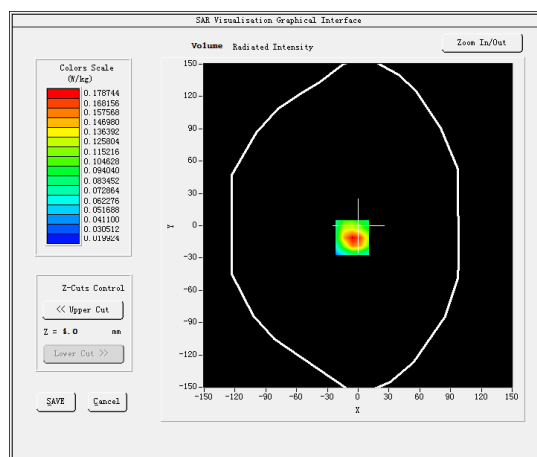
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	55.846710
Relative permittivity (imaginary part)	23.590500
Conductivity (S/m)	0.930514
Variation (%)	0.700000

SURFACE SAR



VOLUME SAR



Maximum location: X=-6.00, Y=-11.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.098456
SAR 1g (W/Kg)	0.176730

