

FCC SAR EVALUATION REPORT

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

Product Name : SMART PHONE

Trademark : N/A

Model Name : Stratus_C5

Family Model : N/A

Report No. : STR190723001001E

FCC ID : 2ATH4-C5

Prepared for

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TEST RESULT CERTIFICATION**Applicant's name**.....: Alliance International group, Inc

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Manufacturer's Name.....: Alliance International group, Inc

Address.....: 43337 Isle Royal Street Fremont CA 94538 USA

Product description

Product name.....: SMART PHONE

Trademark: N/A

Model Name: Stratus_C5

Family Model.....: N/A

FCC 47 CFR Part 2(2.1093)

ANSI/IEEE C95.1-1992

Standards.....: IEEE Std 1528-2013

Published RF exposure KDB procedures

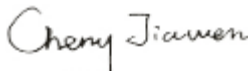
This device described above has been tested by Shenzhen NTEK. In accordance with the measurement methods and procedures specified in IEEE Std 1528-2013 and KDB 865664 D01. Testing has shown that this device is capable of compliance with localized specific absorption rate (SAR) specified in FCC 47 CFR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

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Date of Test

Date (s) of performance of tests.....: Jul. 24, 2019 ~ Jul. 31, 2019

Date of Issue: Aug. 20, 2019

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

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Rev.1.0	Initial Test Report Release	Aug. 20, 2019	Cheng Jiawen

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1. General Information

1.1. RF exposure limits

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

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

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

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

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

Occupational/Controlled Environments:

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

General Population/Uncontrolled Environments:

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

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

1.2. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for Stratus_C5 are as follows.

Band	Max Reported SAR Value(W/kg)			
	1-g Head	1-g Body-Worn (Separation distance of 10mm)	1-g Hotspot (Separation distance of 10mm)	Max Simultaneous Tx
GSM 850	0.614	0.735	0.735	1.581
GSM 1900	0.395	0.666	0.715	
WCDMA Band 2	0.461	0.635	0.675	
WCDMA Band 4	0.556	1.161	1.161	
WCDMA Band 5	0.356	0.526	0.526	
LTE Band 2	0.412	0.721	0.796	
LTE Band 4	0.621	1.192	1.192	
LTE Band 5	0.383	0.546	0.546	
LTE Band 7	0.223	0.188	0.200	
LTE Band 12	0.129	0.188	0.188	
LTE Band 17	0.141	0.262	0.262	
WLAN 2.4G	0.450	0.246	0.246	
WLAN 5.2G	0.408	0.383	0.383	
WLAN 5.8G	0.619	0.389	0.389	

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

1.3. EUT Description

Device Information	
Product Name	SMART PHONE
Trade Name	N/A
Model Name	Stratus_C5
Family Model	N/A
FCC ID	2ATH4-C5
Device Phase	Identical Prototype
Exposure Category	General population / Uncontrolled environment
Antenna	PIFA Antenna
Battery Information	DC 3.8V, 2200mAh, 8.36Wh

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		
Test Modulation	GSM(GMSK/8PSK), WCDMA(QPSK), LTE(QPSK/16QAM), WLAN(DSSS/OFDM), Bluetooth(GFSK, $\pi/4$ -DQPSK, 8DPSK)		
Device Class	B		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824-849	869-894
	GSM 1900	1850-1910	1930-1990
	WCDMA Band 2	1850-1910	1930-1990
	WCDMA Band 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	
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)
36-38-40-46-48(WLAN 5.2G)
149-151-157-159-165(WLAN 5.8G)

1.4. Test specification(s)

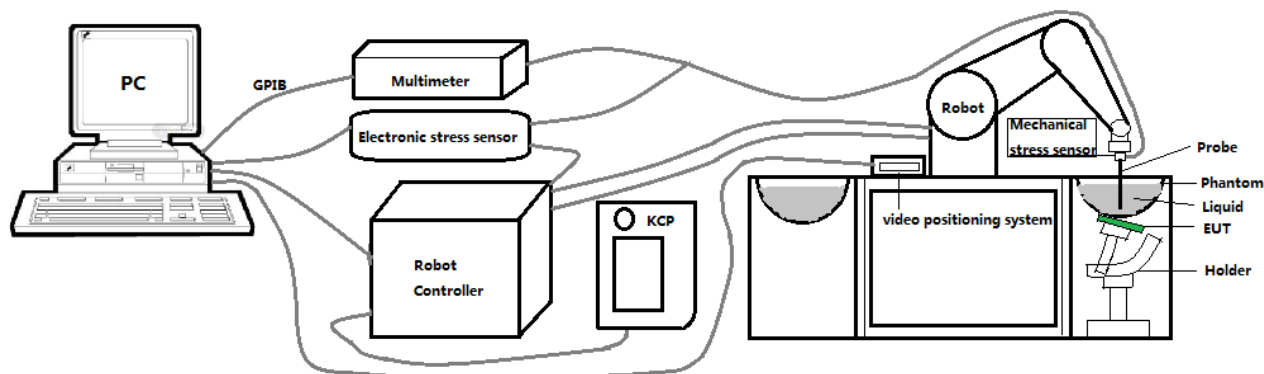
FCC 47 CFR Part 2(2.1093)
ANSI/IEEE C95.1-1992
IEEE Std 1528-2013
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz
KDB 865664 D02 RF Exposure Reporting
KDB 447498 D01 General RF Exposure Guidance
KDB 248227 D01 802.11 Wi-Fi SAR
KDB 941225 D01 3G SAR Procedures
KDB 941225 D05 SAR for LTE Devices
KDB 941225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

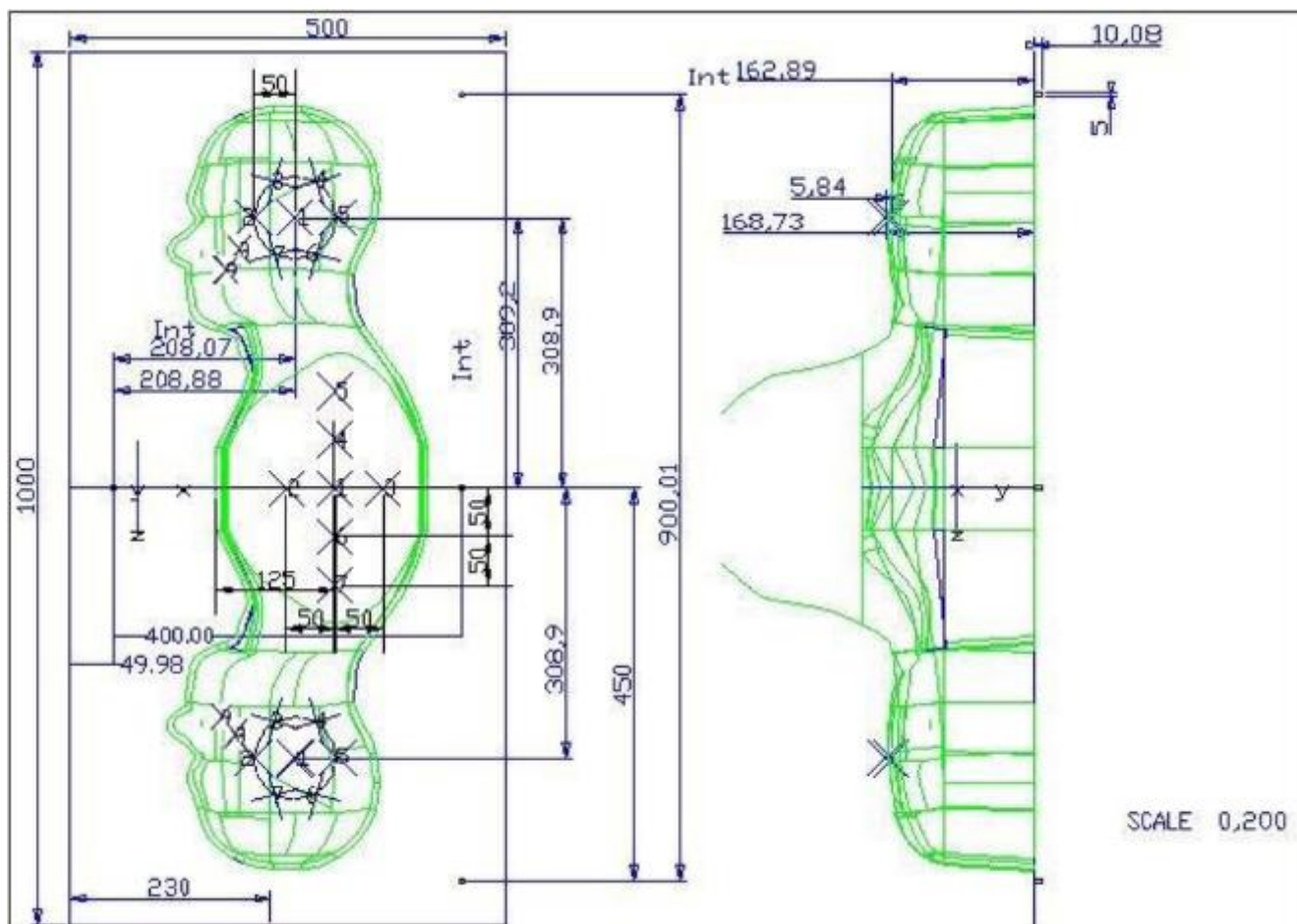
Photo of SAM phantom SN 16/15 SAM119



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 ±0.2 mm	27 liters	Length:1000 mm Width:500 mm Height:200 mm	Gelcoat with fiberglass	3.4	0.02

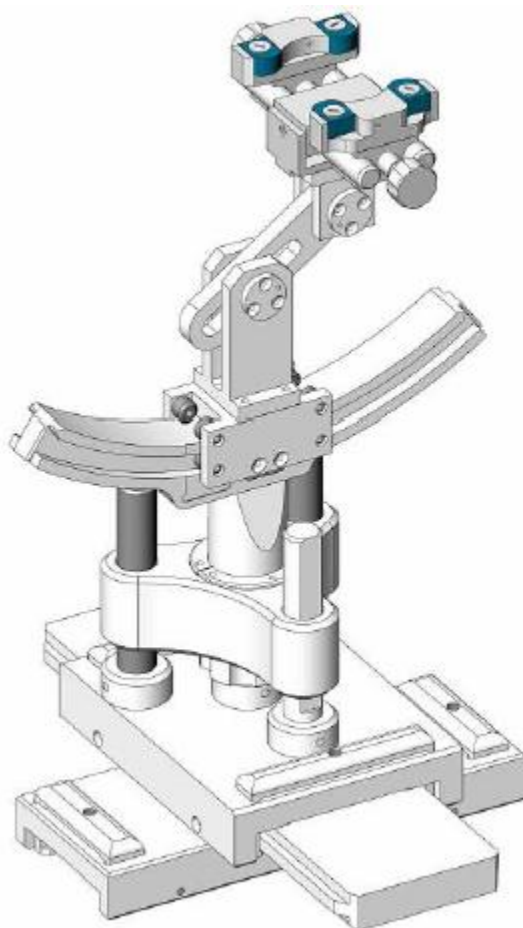


Serial Number	Left Head(mm)		Right Head(mm)		Flat Part(mm)	
SN 16/15 SAM119	2	2.02	2	2.08	1	2.09
	3	2.05	3	2.06	2	2.06
	4	2.07	4	2.07	3	2.08
	5	2.08	5	2.08	4	2.10
	6	2.05	6	2.07	5	2.10
	7	2.05	7	2.05	6	2.07
	8	2.07	8	2.06	7	2.07
	9	2.08	9	2.06	-	-

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

2.5. Device Holder

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



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

2.6. Test Equipment List

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

Devices used during the test described are marked ☒

	Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
					Last Cal.	Due Date
☒	MVG	E FIELD PROBE	SSE2	SN 08/16 EPGO287	Sep. 17, 2018	Sep. 16, 2019
☒	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. 05, 2018	Aug. 04, 2019
☒	R&S	Wideband radio communication tester	CMW500	103917	Oct. 08, 2018	Oct. 07, 2019
☒	HP	Network Analyzer	8753D	3410J01136	Aug. 05, 2018	Aug. 04, 2019
☒	Agilent	PSG Analog Signal Generator	E8257D	MY51110112	Aug. 05, 2018	Aug. 04, 2019

☒	Agilent	Power meter	E4419B	MY45102538	Aug. 05, 2018	Aug. 04, 2019
☒	Agilent	Power sensor	E9301A	MY41495644	Aug. 05, 2018	Aug. 04, 2019
☒	Agilent	Power sensor	E9301A	US39212148	Aug. 05, 2018	Aug. 04, 2019
☒	MCLI/USA	Directional Coupler	CB11-20	0D2L51502	Aug. 05, 2018	Aug. 04, 2019

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

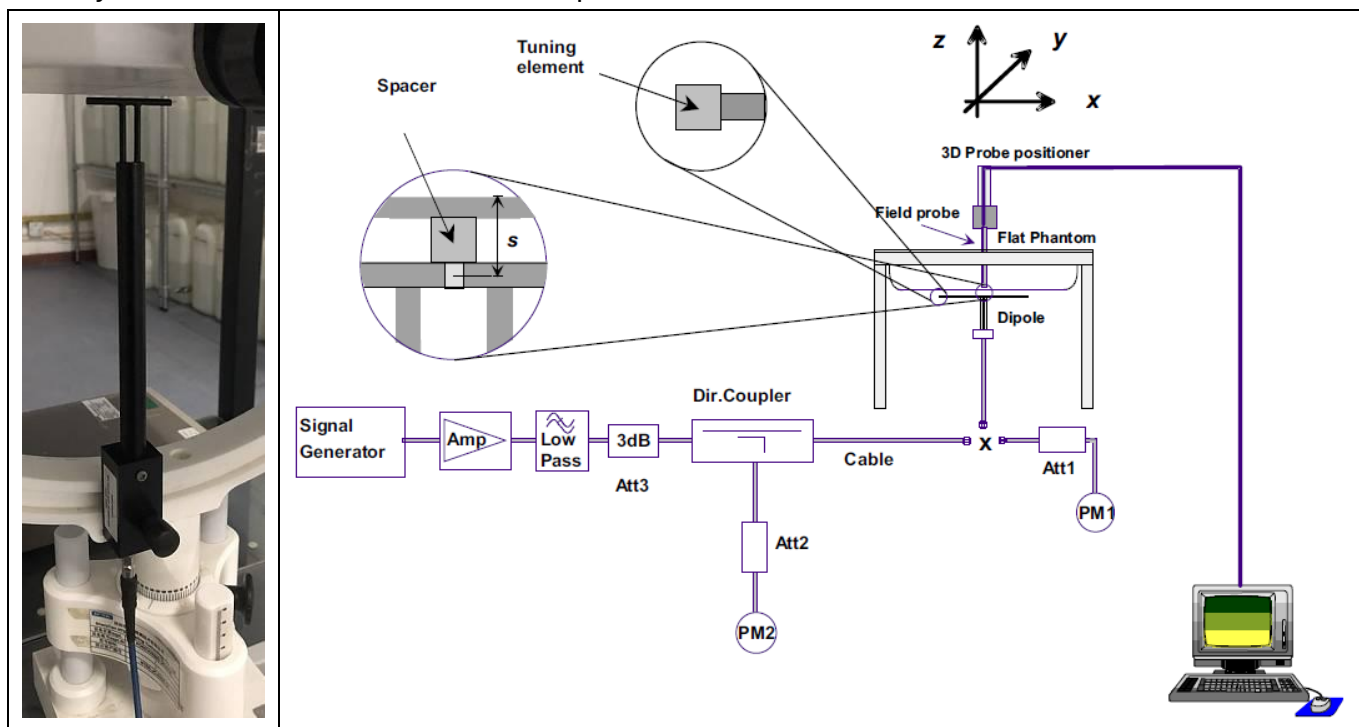
Tissue Type	Measured Frequency (MHz)	Target Tissue		Measured Tissue		Liquid Temp.	Test Date
		ϵ_r ($\pm 5\%$)	σ (S/m) ($\pm 5\%$)	ϵ_r	σ (S/m)		
Head 750	750	41.90 (39.81~43.99)	0.89 (0.85~0.93)	41.13	0.90	21.2 °C	Jul. 29, 2019
Body 750	750	55.50 (52.73~58.27)	0.96 (0.91~1.01)	55.40	0.97	21.3 °C	Jul. 25, 2019
Head 850	835	41.50 (39.43~43.57)	0.90 (0.86~0.94)	40.80	0.93	21.1 °C	Jul. 29, 2019
Body 850	835	55.20 (52.44~57.96)	0.97 (0.92~1.01)	54.46	0.99	21.3 °C	Jul. 25, 2019
Head 1800	1800	40.00 (38.00~42.00)	1.40 (1.33~1.47)	39.16	1.44	21.2 °C	Jul. 26, 2019
Body 1800	1800	53.30 (50.64~55.96)	1.52 (1.44~1.59)	53.46	1.56	21.2 °C	Jul. 26, 2019
Head 1900	1900	40.00 (38.00~42.00)	1.40 (1.33~1.47)	41.06	1.46	21.4 °C	Jul. 25, 2019
Body 1900	1900	53.30 (50.64~55.96)	1.52 (1.44~1.59)	52.80	1.58	21.4 °C	Jul. 25, 2019
Head 2450	2450	39.20 (37.24~41.16)	1.80 (1.71~1.89)	39.30	1.88	21.3 °C	Jul. 24, 2019
Body 2450	2450	52.70 (50.07~55.33)	1.95 (1.85~2.04)	52.29	2.02	21.2 °C	Jul. 24, 2019
Head 2600	2600	39.00 (37.05~40.95)	1.96 (1.86~2.05)	38.37	2.03	21.3 °C	Jul. 30, 2019
Body 2600	2600	52.50 (49.88~55.13)	2.16 (2.05~2.27)	52.66	2.22	21.2 °C	Jul. 30, 2019
Head 5000	5200	36.00 (34.20~37.80)	4.66 (4.43~4.89)	35.66	4.67	21.4 °C	Jul. 31, 2019
Body 5000	5200	49.00 (46.55~51.45)	5.30 (5.04~5.57)	49.58	5.31	21.2 °C	Jul. 30, 2019
Head 5000	5800	35.30 (33.54~37.07)	5.27 (5.01~5.53)	34.58	5.24	21.3 °C	Jul. 31, 2019
Body 5000	5800	48.20 (45.79~50.61)	6.00 (5.70~6.30)	48.27	6.09	21.2 °C	Jul. 30, 2019

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

4.2. System Verification Procedure

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

The system verification is shown as below picture:



4.2.1. System Verification Results

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

System Verification	Target SAR (1W) (±10%)		Measured SAR (Normalized to 1W)		Liquid Temp.	Test Date
	1-g (W/Kg)	10-g (W/Kg)	1-g (W/Kg)	10-g (W/Kg)		
750MHz Head	8.49 (7.64~9.34)	5.55 (4.99~6.11)	8.24	5.57	21.2 °C	Jul. 29, 2019
750MHz Body	8.55 (7.69~9.41)	5.75 (5.17~6.33)	8.90	5.82	21.3 °C	Jul. 25, 2019
835MHz Head	9.56 (8.60~10.51)	6.22 (5.60~6.84)	9.37	6.15	21.1 °C	Jul. 29, 2019
835MHz Body	9.48 (8.53~10.42)	6.29 (5.66~6.91)	9.32	5.99	21.3 °C	Jul. 25, 2019
1800MHz Head	38.40 (34.56~42.24)	20.10 (18.09~22.11)	39.04	19.82	21.2 °C	Jul. 26, 2019
1800MHz Body	37.04 (33.34~40.74)	20.26 (18.23~22.29)	36.53	20.92	21.2 °C	Jul. 26, 2019
1900MHz Head	39.70 (35.73~43.67)	20.50 (18.45~22.55)	39.25	20.35	21.4 °C	Jul. 25, 2019
1900MHz Body	38.43 (34.59~42.27)	20.34 (18.31~22.37)	38.32	20.19	21.4 °C	Jul. 25, 2019
2450MHz Head	52.40 (47.16~57.64)	24.00 (21.60~26.40)	53.23	23.84	21.3 °C	Jul. 24, 2019
2450MHz Body	49.32 (44.39~54.25)	22.89 (20.60~25.17)	49.22	22.94	21.2 °C	Jul. 24, 2019
2600MHz Head	55.30 (49.77~60.83)	24.60 (22.14~27.06)	55.23	25.12	21.3 °C	Jul. 30, 2019
2600MHz Body	52.95 (47.66~58.25)	23.64 (21.28~26.00)	52.82	23.28	21.2 °C	Jul. 30, 2019
5200MHz Head	159.00 (143.10~174.90)	56.90 (51.21~62.59)	158.23	57.94	21.4 °C	Jul. 31, 2019
5200MHz Body	156.85 (141.17~172.54)	55.20 (49.68~60.72)	155.42	56.37	21.2 °C	Jul. 30, 2019
5800MHz Head	181.20 (163.08~199.32)	61.50 (55.35~67.65)	181.25	60.84	21.3 °C	Jul. 31, 2019
5800MHz Body	169.30 (152.37~186.23)	58.49 (52.64~64.34)	167.87	57.93	21.2 °C	Jul. 30, 2019

5. SAR Measurement variability and uncertainty

5.1. SAR measurement variability

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

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

5.2. SAR measurement uncertainty

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

6. RF Exposure Positions

6.1. Ear and handset reference point

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



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

6.2. Definition of the cheek position

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

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

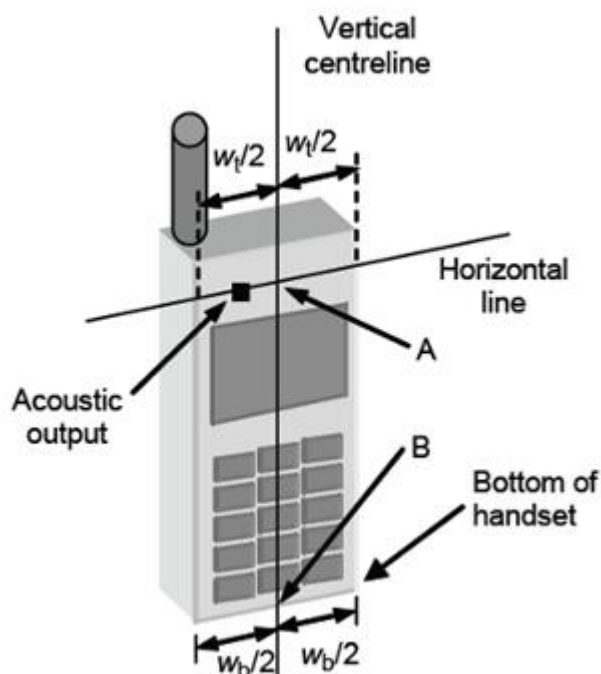


Fig 6.2.1 Handset vertical and horizontal reference lines—"fixed case"

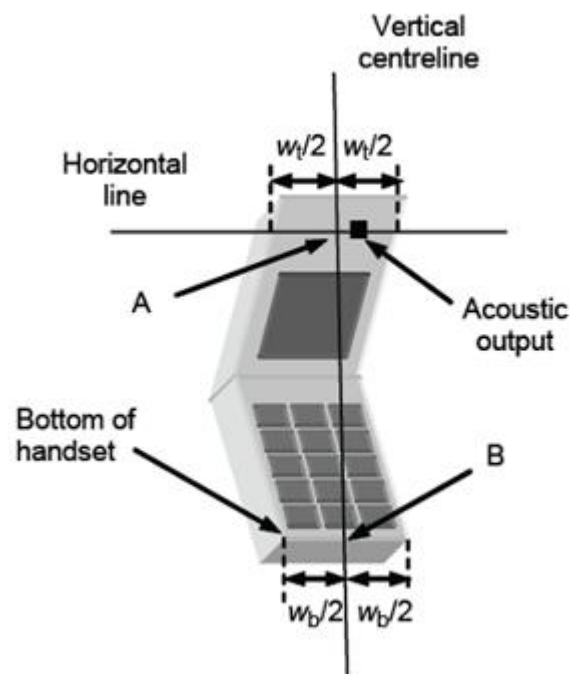


Fig 6.2.2 Handset vertical and horizontal reference lines—"clam-shell case"

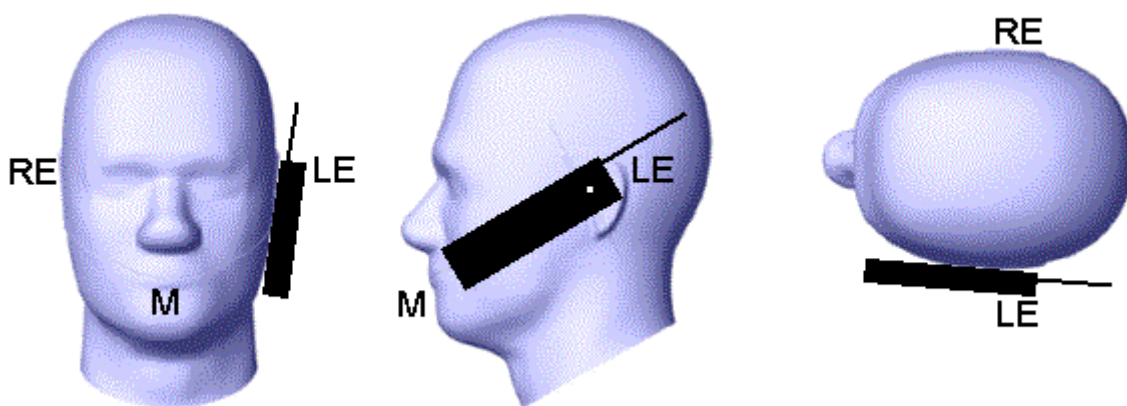


Fig 6.2.3 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

6.3. Definition of the tilt position

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

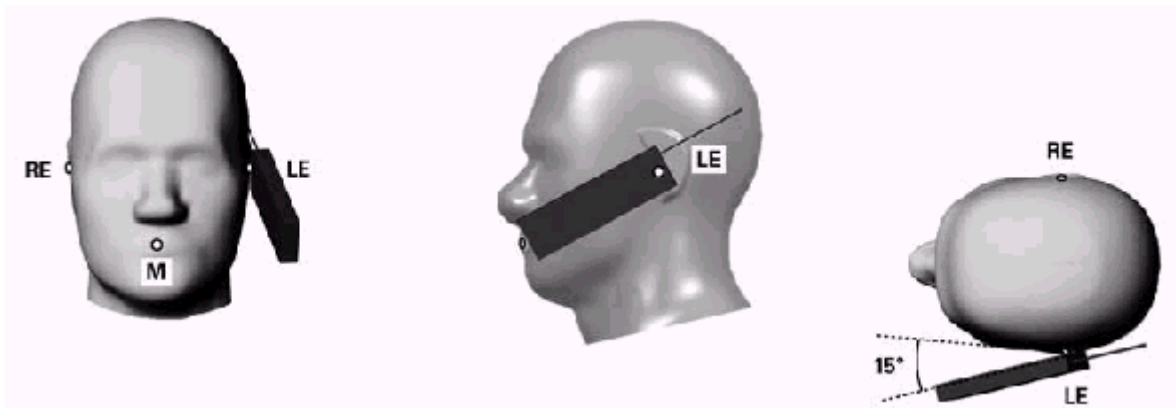


Figure 6.3.1 – Tilt position of the wireless device on the left side of SAM

6.4. Body Worn Accessory

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

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

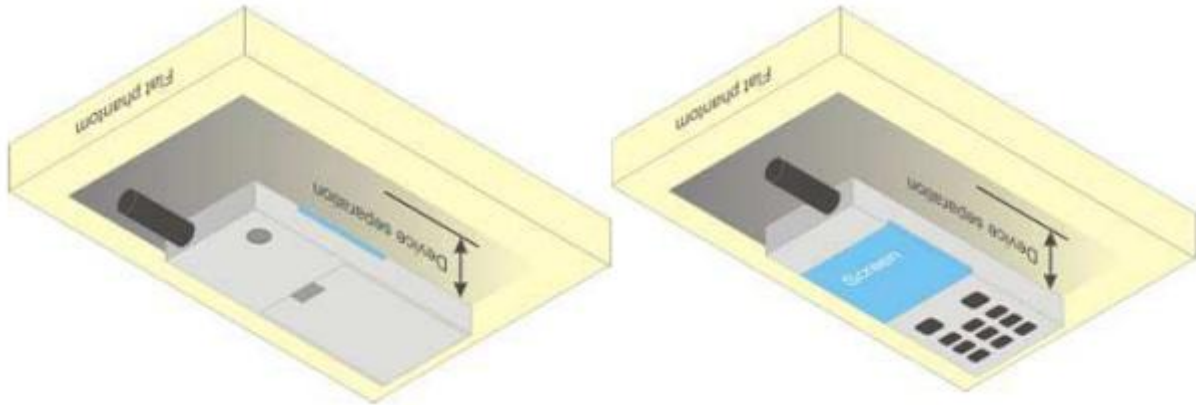


Figure 6.4.1 – Test positions for body-worn devices

6.5. Wireless Router Devices

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

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

7. RF Output Power

7.1. GSM Conducted Power

Band GSM850	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	128	189	251	Tune-up	128	189	251
Frequency (MHz)	(dBm)	824.2	836.4	848.8	(dBm)	824.2	836.4	848.8
GSM (GMSK)	33.00	32.57	32.74	32.48	23.97	23.54	23.71	23.45
GPRS(GMSK, 1 TS)	33.00	32.35	32.51	32.25	23.97	23.32	23.48	23.22
GPRS(GMSK, 2 TS)	32.00	31.63	31.80	31.45	25.98	25.61	25.78	25.43
GPRS(GMSK, 3 TS)	30.00	29.77	29.99	29.63	25.74	25.51	25.73	25.37
GPRS(GMSK, 4 TS)	29.00	28.47	28.69	28.33	25.99	25.46	25.68	25.32
EDGE(GMSK, 1 TS)	28.00	27.40	27.02	27.40	18.97	18.37	17.99	18.37
EDGE(GMSK, 2 TS)	26.00	25.34	25.25	25.52	19.98	19.32	19.23	19.50
EDGE(GMSK, 3 TS)	23.00	22.19	22.04	22.31	18.74	17.93	17.78	18.05
EDGE(GMSK, 4 TS)	20.00	19.91	19.57	19.77	16.99	16.90	16.56	16.76
Band GSM1900	Burst-Averaged output Power (dBm)				Frame-Averaged output Power (dBm)			
Tx Channel	Tune-up	512	661	810	Tune-up	512	661	810
Frequency (MHz)	(dBm)	1850.2	1880.0	1909.8	(dBm)	1850.2	1880.0	1909.8
GSM (GMSK)	30.00	29.20	29.20	29.11	20.97	20.17	20.17	20.08
GPRS(GMSK, 1 TS)	30.00	29.01	29.00	28.92	20.97	19.98	19.97	19.89
GPRS(GMSK, 2 TS)	29.00	28.01	27.96	27.97	22.98	21.99	21.94	21.95
GPRS(GMSK, 3 TS)	26.00	25.64	25.62	25.65	21.74	21.38	21.36	21.39
GPRS(GMSK, 4 TS)	25.00	24.32	24.30	24.32	21.99	21.31	21.29	21.31
EDGE(GMSK, 1 TS)	27.00	26.56	26.24	25.82	17.97	17.53	17.21	16.79
EDGE(GMSK, 2 TS)	26.00	25.27	24.95	24.49	19.98	19.25	18.93	18.47
EDGE(GMSK, 3 TS)	23.00	22.79	22.19	21.66	18.74	18.53	17.93	17.40
EDGE(GMSK, 4 TS)	22.00	21.08	20.42	20.00	18.99	18.07	17.41	16.99

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	22.00	20.76	21.71	21.82
HSDPA Subtest-1	21.00	19.67	20.44	20.43
HSDPA Subtest-2	21.00	19.09	20.12	20.08
HSDPA Subtest-3	20.00	18.48	19.42	19.22
HSDPA Subtest-4	20.00	18.32	19.40	19.51
HSUPA Subtest-1	21.00	19.33	20.46	20.43
HSUPA Subtest-2	21.00	19.37	20.15	20.18
HSUPA Subtest-3	20.00	18.64	19.51	19.64
HSUPA Subtest-4	21.00	19.20	19.98	20.06
HSUPA Subtest-5	20.00	18.77	19.82	19.76
Band	WCDMA Band 4			
Tx Channel	Tune-up	1312	1413	1513
Frequency (MHz)		1712.4	1732.6	1752.6
RMC 12.2Kbps	23.00	22.11	22.03	21.70
HSDPA Subtest-1	22.00	21.14	21.11	20.92
HSDPA Subtest-2	21.00	20.69	20.49	20.48
HSDPA Subtest-3	20.00	19.80	19.74	19.32
HSDPA Subtest-4	20.00	19.79	19.52	19.16
HSUPA Subtest-1	21.00	19.00	20.54	20.67
HSUPA Subtest-2	21.00	20.92	20.94	20.76
HSUPA Subtest-3	21.00	20.07	19.94	19.75
HSUPA Subtest-4	22.00	21.13	21.10	20.96
HSUPA Subtest-5	21.00	20.40	20.34	20.13
Band	WCDMA Band 5			
Tx Channel	Tune-up	4132	4182	4233
Frequency (MHz)		826.4	836.4	846.6
RMC 12.2Kbps	24.00	22.06	23.02	22.87
HSDPA Subtest-1	23.00	21.12	22.05	22.10
HSDPA Subtest-2	22.00	20.62	21.62	21.48
HSDPA Subtest-3	21.00	19.70	20.18	20.32
HSDPA Subtest-4	21.00	19.45	20.57	20.46
HSUPA Subtest-1	23.00	21.12	22.06	22.13
HSUPA Subtest-2	22.00	20.62	21.52	21.71
HSUPA Subtest-3	21.00	19.76	20.27	20.23
HSUPA Subtest-4	21.00	19.47	20.69	20.90
HSUPA Subtest-5	23.00	21.19	22.06	22.09

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	21.00	20.98	20.70	20.81
			1	2	21.00	21.00	20.80	20.92
			1	5	21.00	20.95	20.65	20.77
			3	0	21.00	20.77	20.76	20.83
			3	1	21.00	20.69	20.76	20.83
			3	2	21.00	20.70	20.78	20.80
			6	0	20.00	19.71	19.75	19.83
		16QAM	1	0	21.00	19.84	19.91	19.63
			1	2	21.00	19.97	20.01	19.76
			1	5	21.00	19.85	19.90	19.56
			3	0	21.00	19.95	20.04	19.95
			3	1	21.00	19.95	20.05	19.96
			3	2	21.00	19.92	20.00	19.95
			6	0	19.00	18.91	18.87	18.95
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	21.00	20.74	20.73	20.85
			1	7	21.00	20.97	20.96	21.00
			1	14	21.00	20.74	20.70	20.83
			8	0	20.00	19.74	19.76	19.83
			8	4	20.00	19.76	19.80	19.84
			8	7	20.00	19.74	19.76	19.81
			15	0	20.00	19.72	19.75	19.79
		16QAM	1	0	21.00	20.13	19.95	19.72
			1	7	21.00	20.40	20.25	19.93
			1	14	21.00	20.09	19.91	19.57
			8	0	19.00	18.76	18.80	18.85
			8	4	19.00	18.78	18.79	18.86
			8	7	19.00	18.75	18.76	18.83
			15	0	19.00	18.76	18.69	18.91
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	21.00	20.60	20.63	20.72
			1	12	21.00	20.94	21.00	20.95
			1	24	21.00	20.60	20.64	20.68
			12	0	20.00	19.73	19.73	19.84
			12	6	20.00	19.78	19.81	19.83
			12	11	20.00	19.79	19.74	19.77
			25	0	20.00	19.76	19.80	19.83
		16QAM	1	0	21.00	20.14	20.01	20.09
			1	12	21.00	20.58	20.31	20.28
			1	24	21.00	20.17	19.98	19.92
			12	0	19.00	18.75	18.77	18.96
			12	6	19.00	18.84	18.79	18.94
			12	11	19.00	18.82	18.69	18.89
			25	0	19.00	18.78	18.83	18.85
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	21.00	20.69	20.74	20.86
			1	24	21.00	20.84	20.81	20.95
			1	49	21.00	20.68	20.65	20.81
			25	0	21.00	19.76	19.89	20.10
			25	12	21.00	19.82	19.82	19.89
			25	24	21.00	19.94	19.83	19.85
			50	0	20.00	19.90	19.87	20.00
		16QAM	1	0	21.00	20.06	19.91	19.79
			1	24	21.00	20.25	20.01	19.82
			1	49	21.00	20.12	19.88	19.56
			25	0	20.00	18.78	18.91	19.11
			25	12	20.00	18.79	18.81	18.97
			25	24	20.00	18.98	18.85	18.92
			50	0	19.00	18.91	18.92	19.00
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18675/1857.5	18900/1880	19125/1902.5
LTE Band	15MHz	QPSK	1	0	21.00	20.53	20.70	20.72
			1	37	21.00	20.90	20.76	21.00

2			1	74	21.00	20.59	20.61	20.62
			36	0	21.00	19.74	19.91	20.07
			36	18	21.00	19.82	19.82	19.99
			36	37	21.00	19.92	19.82	19.84
			75	0	20.00	19.92	19.92	20.00
		16QAM	1	0	21.00	20.04	19.94	19.90
			1	37	21.00	20.49	20.18	20.24
			1	74	21.00	20.11	19.79	19.72
			36	0	20.00	18.82	18.99	19.01
			36	18	20.00	18.92	18.89	18.95
			36	37	20.00	18.97	18.87	18.85
			75	0	19.00	18.92	18.87	19.00
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		18700/1860	18900/1880	19100/1900
LTE Band 2	20MHz	QPSK	1	0	21.00	20.41	20.56	20.55
			1	49	21.00	20.87	20.71	21.00
			1	99	21.00	20.48	20.44	20.55
			50	0	20.00	19.71	19.99	19.86
			50	24	20.00	19.88	19.87	19.95
			50	49	20.00	19.91	19.86	19.76
			100	0	20.00	19.81	19.93	19.83
		16QAM	1	0	21.00	19.81	19.87	19.81
			1	49	21.00	20.22	20.09	20.24
			1	99	21.00	19.89	19.80	19.71
			50	0	20.00	18.75	19.06	18.90
			50	24	20.00	18.97	18.88	19.06
			50	49	20.00	18.97	18.84	18.82
			100	0	19.00	18.85	18.95	18.82

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19957/1710.7	20175/1732.5	20393/1754.3
LTE Band 4	1.4MHz	QPSK	1	0	23.00	22.97	22.95	22.77
			1	2	23.00	23.00	23.00	22.90
			1	5	23.00	22.96	22.94	22.80
			3	0	23.00	22.93	22.99	22.81
			3	1	23.00	22.92	22.92	22.83

			3	2	23.00	22.99	23.00	22.75
			6	0	23.00	22.11	22.00	21.51
		16QAM	1	0	23.00	21.80	21.97	21.48
			1	2	23.00	21.94	22.07	21.59
			1	5	23.00	21.78	21.97	21.41
			3	0	23.00	22.12	22.07	21.49
			3	1	23.00	22.10	22.09	21.55
			3	2	23.00	22.13	22.06	21.54
			6	0	22.00	21.21	21.14	20.48
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19965/1711.5	20175/1732.5	20385/1753.5
LTE Band 4	3MHz	QPSK	1	0	23.00	22.60	22.50	22.32
			1	7	23.00	22.80	22.82	22.68
			1	14	23.00	22.53	22.47	22.34
			8	0	22.00	21.59	21.50	21.34
			8	4	22.00	21.58	21.53	21.34
			8	7	22.00	21.55	21.52	21.29
			15	0	22.00	21.52	21.44	21.30
		16QAM	1	0	23.00	21.89	21.59	21.17
			1	7	23.00	22.23	21.83	21.50
			1	14	23.00	21.86	21.54	21.13
			8	0	21.00	20.64	20.53	20.36
			8	4	21.00	20.65	20.57	20.39
			8	7	21.00	20.60	20.50	20.35
			15	0	21.00	20.57	20.42	20.39
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		19975/1712.5	20175/1732.5	20375/1752.5
LTE Band 4	5MHz	QPSK	1	0	23.00	22.51	22.46	22.21
			1	12	23.00	22.86	22.88	22.58
			1	24	23.00	22.46	22.36	22.21
			12	0	22.00	21.49	21.47	21.28
			12	6	22.00	21.59	21.51	21.34
			12	11	22.00	21.49	21.46	21.26
			25	0	22.00	21.56	21.50	21.35
		16QAM	1	0	23.00	21.90	21.69	21.51
			1	12	23.00	22.39	22.08	21.94

			1	24	23.00	21.87	21.57	21.51
			12	0	21.00	20.56	20.51	20.43
			12	6	21.00	20.64	20.50	20.46
			12	11	21.00	20.59	20.44	20.35
			25	0	21.00	20.60	20.54	20.34
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	23.00	22.53	22.53	22.38
			1	24	23.00	22.64	22.60	22.45
			1	49	23.00	22.55	22.45	22.35
			25	0	22.00	21.59	21.57	21.45
			25	12	22.00	21.58	21.52	21.35
			25	24	22.00	21.57	21.48	21.33
			50	0	22.00	21.59	21.55	21.35
		16QAM	1	0	22.00	21.83	21.64	21.19
			1	24	22.00	21.97	21.65	21.27
			1	49	22.00	21.89	21.47	21.11
			25	0	21.00	20.67	20.58	20.47
			25	12	21.00	20.64	20.51	20.39
			25	24	21.00	20.67	20.50	20.38
			50	0	21.00	20.63	20.57	20.40
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20025/1717.5	20175/1732.5	20325/1747.5
LTE Band 4	15MHz	QPSK	1	0	23.00	22.41	22.43	22.25
			1	37	23.00	22.72	22.71	22.53
			1	74	23.00	22.36	22.32	22.13
			36	0	22.00	21.59	21.63	21.46
			36	18	22.00	21.60	21.60	21.39
			36	37	22.00	21.62	21.56	21.31
			75	0	22.00	21.63	21.62	21.43
		16QAM	1	0	23.00	21.74	21.55	21.35
			1	37	23.00	22.16	21.76	21.50
			1	74	23.00	21.75	21.36	21.26
			36	0	21.00	20.65	20.66	20.43
			36	18	21.00	20.63	20.70	20.41
			36	37	21.00	20.63	20.62	20.34

			75	0	21.00	20.61	20.56	20.46
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20050/1720	20175/1732.5	20300/1745
LTE Band 4	20MHz	QPSK	1	0	23.00	22.28	22.28	22.22
			1	49	23.00	22.64	22.63	22.54
			1	99	23.00	22.30	22.13	22.03
			50	0	22.00	21.53	21.53	21.40
			50	24	22.00	21.58	21.52	21.37
			50	49	22.00	21.52	21.40	21.25
			100	0	22.00	21.52	21.43	21.36
		16QAM	1	0	22.00	21.51	21.48	21.29
			1	49	22.00	21.91	21.71	21.62
			1	99	22.00	21.54	21.25	21.25
			50	0	21.00	20.65	20.54	20.49
			50	24	21.00	20.69	20.56	20.53
			50	49	21.00	20.66	20.41	20.33
			100	0	21.00	20.59	20.51	20.39

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	23.00	22.83	22.77	22.26
			1	2	23.00	22.98	22.90	22.46
			1	5	23.00	22.83	22.78	21.97
			3	0	23.00	22.85	22.82	22.29
			3	1	23.00	22.85	22.84	22.34
			3	2	23.00	22.85	22.83	22.14
			6	0	22.00	21.85	21.70	21.79
		16QAM	1	0	23.00	21.60	21.84	21.95
			1	2	23.00	21.80	21.95	22.09
			1	5	23.00	21.61	21.87	21.98
			3	0	23.00	21.95	21.91	22.09
			3	1	23.00	21.98	22.01	22.06
			3	2	23.00	22.01	21.91	22.13
			6	0	21.00	20.99	20.90	20.99
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	24.00	22.84	22.74	22.78
			1	7	24.00	23.16	22.98	22.72
			1	14	24.00	22.80	22.77	22.05
			8	0	22.00	21.86	21.71	21.80
			8	4	22.00	21.84	21.78	21.81
			8	7	22.00	21.83	21.82	21.80
			15	0	22.00	21.83	21.75	21.83
		16QAM	1	0	23.00	22.21	21.93	21.68
			1	7	23.00	22.44	22.23	21.90
			1	14	23.00	22.17	21.96	21.68
			8	0	21.00	20.85	20.73	20.78
			8	4	21.00	20.85	20.76	20.83
			8	7	21.00	20.83	20.74	20.80
			15	0	21.00	20.84	20.70	20.92
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	24.00	22.75	22.65	22.73
			1	12	24.00	23.13	22.88	22.68
			1	24	24.00	22.73	22.70	22.17
			12	0	22.00	21.80	21.76	21.89
			12	6	22.00	21.86	21.84	21.85
			12	11	22.00	21.76	21.79	21.76
			25	0	22.00	21.86	21.80	21.88
		16QAM	1	0	23.00	22.14	21.97	22.00
			1	12	23.00	22.76	22.32	22.43
			1	24	23.00	22.20	22.02	22.02
			12	0	21.00	20.89	20.75	20.94
			12	6	21.00	20.87	20.80	20.89
			12	11	21.00	20.84	20.77	20.84
			25	0	21.00	20.84	20.84	20.86
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20450/829	20525/836.5	20600/844
LTE Band	10MHz	QPSK	1	0	24.00	22.78	22.74	22.81
			1	24	24.00	22.90	22.88	23.03

5			1	49	24.00	22.76	22.83	22.29
			25	0	22.00	21.95	21.86	21.97
			25	12	22.00	21.86	21.82	21.90
			25	24	22.00	21.87	21.92	21.84
			50	0	22.00	21.97	21.88	21.91
		16QAM	1	0	23.00	22.13	21.89	21.67
			1	24	23.00	22.34	22.04	21.83
			1	49	23.00	22.12	21.98	21.68
			25	0	21.00	20.95	20.85	20.97
			25	12	21.00	20.92	20.80	20.90
			25	24	21.00	20.93	20.90	20.81
			50	0	21.00	20.94	20.91	20.89

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	22.00	21.26	21.48	21.36
			1	12	22.00	21.62	21.67	21.20
			1	24	22.00	21.30	21.50	21.13
			12	0	21.00	20.24	20.47	20.87
			12	6	21.00	20.33	20.51	20.90
			12	11	21.00	20.28	20.49	20.84
			25	0	21.00	20.31	20.50	20.87
		16QAM	1	0	22.00	20.50	20.87	21.03
			1	12	22.00	20.81	21.19	21.22
			1	24	22.00	20.53	20.91	21.05
			12	0	20.00	19.32	19.55	19.86
			12	6	20.00	19.43	19.58	19.90
			12	11	20.00	19.39	19.54	19.87
			25	0	20.00	19.27	19.47	19.91
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		20800/2505	21100/2535	21400/2565
LTE Band 7	10MHz	QPSK	1	0	22.00	21.34	21.36	21.81
			1	24	22.00	21.54	21.48	21.21
			1	49	22.00	21.42	21.54	21.17
			25	0	21.00	20.30	20.55	20.90
			25	12	21.00	20.38	20.54	20.84

			25	24	21.00	20.41	20.61	20.88
			50	0	21.00	20.35	20.55	20.87
		16QAM	1	0	21.00	20.64	20.58	20.59
			1	24	21.00	20.79	20.74	20.74
			1	49	21.00	20.78	20.62	20.68
			25	0	20.00	19.31	19.57	19.95
			25	12	20.00	19.42	19.55	19.85
			25	24	20.00	19.45	19.63	19.88
			50	0	20.00	19.37	19.62	19.88
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	22.00	21.28	21.22	21.65
			1	37	22.00	21.63	21.43	21.34
			1	74	22.00	21.35	21.48	21.17
			36	0	21.00	20.39	20.57	20.90
			36	18	21.00	20.47	20.62	20.91
			36	37	21.00	20.42	20.67	20.94
			75	0	21.00	20.43	20.66	20.93
		16QAM	1	0	22.00	20.57	20.55	20.74
			1	37	22.00	21.02	20.83	21.07
			1	74	22.00	20.68	20.55	20.85
			36	0	20.00	19.42	19.67	19.92
			36	18	20.00	19.50	19.70	19.88
			36	37	20.00	19.49	19.75	19.91
			75	0	20.00	19.38	19.63	19.94
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	22.00	21.15	20.90	21.46
			1	49	22.00	21.58	21.35	21.67
			1	99	22.00	21.24	21.37	21.12
			50	0	21.00	20.33	20.50	20.89
			50	24	21.00	20.45	20.58	20.82
			50	49	21.00	20.40	20.65	20.76
			100	0	21.00	20.38	20.57	20.80
		16QAM	1	0	22.00	20.35	20.48	20.63
			1	49	22.00	20.83	20.81	21.11

			1	99	22.00	20.52	20.57	20.80
			50	0	20.00	19.40	19.50	19.95
			50	24	20.00	19.54	19.59	19.91
			50	49	20.00	19.45	19.67	19.80
			100	0	20.00	19.41	19.60	19.84

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	23.00	22.60	22.72	22.65
			1	2	23.00	22.73	22.88	22.79
			1	5	23.00	22.64	22.75	22.67
			3	0	23.00	22.63	22.77	22.72
			3	1	23.00	22.61	22.81	22.76
			3	2	23.00	22.64	22.86	22.72
			6	0	22.00	21.70	21.74	21.69
		16QAM	1	0	22.00	21.34	21.82	21.79
			1	2	22.00	21.50	21.93	21.91
			1	5	22.00	21.41	21.88	21.75
			3	0	22.00	21.78	21.97	21.94
			3	1	22.00	21.78	21.97	21.96
			3	2	22.00	21.83	21.95	21.90
			6	0	21.00	20.78	20.93	20.82
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	23.00	22.63	22.68	22.75
			1	7	23.00	22.95	22.92	22.87
			1	14	23.00	22.59	22.73	22.76
			8	0	22.00	21.67	21.71	21.81
			8	4	22.00	21.72	21.82	21.84
			8	7	22.00	21.64	21.81	21.83
			15	0	22.00	21.64	21.79	21.79
		16QAM	1	0	23.00	21.93	21.95	21.56
			1	7	23.00	22.22	22.21	21.85
			1	14	23.00	21.97	21.89	21.44
			8	0	21.00	20.66	20.75	20.76
			8	4	21.00	20.72	20.83	20.77

			8	7	21.00	20.63	20.78	20.76
			15	0	21.00	20.67	20.74	20.85
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	23.00	22.53	22.56	22.59
			1	12	23.00	23.00	22.99	22.84
			1	24	23.00	22.63	22.66	22.61
			12	0	22.00	21.75	21.66	21.83
			12	6	22.00	21.71	21.84	21.79
			12	11	22.00	21.63	21.77	21.80
			25	0	22.00	21.70	21.74	21.84
		16QAM	1	0	23.00	21.98	21.97	21.84
			1	12	23.00	22.37	22.34	22.31
			1	24	23.00	22.14	21.94	21.87
			12	0	21.00	20.76	20.64	20.87
			12	6	21.00	20.76	20.81	20.88
			12	11	21.00	20.67	20.78	20.89
			25	0	21.00	20.72	20.77	20.82
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	23.00	22.60	22.61	22.68
			1	24	23.00	22.79	22.82	22.83
			1	49	23.00	22.76	22.73	22.73
			25	0	22.00	21.83	21.65	21.78
			25	12	22.00	21.72	21.75	21.77
			25	24	22.00	21.95	21.73	21.67
			50	0	22.00	21.90	21.68	21.74
		16QAM	1	0	23.00	21.89	21.79	21.61
			1	24	23.00	22.23	21.97	21.60
			1	49	23.00	22.12	21.86	21.51
			25	0	22.00	20.89	20.71	20.75
			25	12	22.00	20.79	20.78	20.75
			25	24	22.00	21.05	20.75	20.67
			50	0	21.00	20.94	20.77	20.77

Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23755/706.5	23790/710	23825/713.5
LTE Band 17	5MHz	QPSK	1	0	23.00	22.65	22.63	22.66
			1	12	23.00	22.99	23.00	22.98
			1	24	23.00	22.67	22.66	22.66
			12	0	22.00	21.73	21.72	21.84
			12	6	22.00	21.89	21.81	21.81
			12	11	22.00	21.86	21.63	21.89
			25	0	22.00	21.83	21.74	21.88
		16QAM	1	0	23.00	22.00	21.97	22.11
			1	12	23.00	22.48	22.29	22.64
			1	24	23.00	21.99	21.90	22.07
			12	0	21.00	20.68	20.80	20.84
			12	6	21.00	20.84	20.87	20.86
			12	11	21.00	20.84	20.70	20.88
			25	0	21.00	20.87	20.70	20.85
Band	Band Width	Modulation	RB Configuration		Tune-up	Channel/Frequency(MHz)		
			RB Size	RB Offset		23780/709	23790/710	23800/711
LTE Band 17	10MHz	QPSK	1	0	23.00	22.71	22.70	22.74
			1	24	23.00	22.86	22.89	22.89
			1	49	23.00	22.74	22.77	22.81
			25	0	22.00	21.67	21.74	21.81
			25	12	22.00	21.78	21.80	21.80
			25	24	22.00	21.63	21.63	21.73
			50	0	22.00	21.72	21.68	21.79
		16QAM	1	0	23.00	22.09	21.91	21.58
			1	24	23.00	22.23	21.96	21.59
			1	49	23.00	22.10	21.89	21.52
			25	0	21.00	20.70	20.74	20.78
			25	12	21.00	20.87	20.82	20.82
			25	24	21.00	20.67	20.63	20.73
			50	0	21.00	20.74	20.79	20.78

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	14.00
	6	2437	14	13.77
	11	2462	14	13.47
802.11g	1	2412	13	12.59
	6	2437	13	12.10
	11	2462	13	11.59
802.11n HT20	1	2412	13	12.29
	6	2437	13	11.62
	11	2462	13	11.13
802.11n HT40	3	2422	12	11.67
	6	2437	12	10.76
	9	2452	12	11.60

NOTE: Power measurement results of WLAN 2.4G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	36	5180	9	7.53
	40	5200	9	7.64
	48	5240	9	8.12
802.11n HT20	36	5180	9	7.64
	40	5200	9	7.63
	48	5240	9	8.35
802.11n HT40	38	5190	9	7.60
	46	5230	9	8.12

NOTE: Power measurement results of WLAN 5.2G.

Mode	Channel	Frequency (MHz)	Tune-up	Output Power (dBm)
802.11a	149	5745	12.5	10.78
	157	5785	12.5	10.93
	165	5825	12.5	12.34
802.11n HT20	149	5745	12.5	10.58
	157	5785	12.5	10.95
	165	5825	12.5	12.24
802.11n HT40	151	5755	12.5	10.95
	159	5795	12.5	11.59

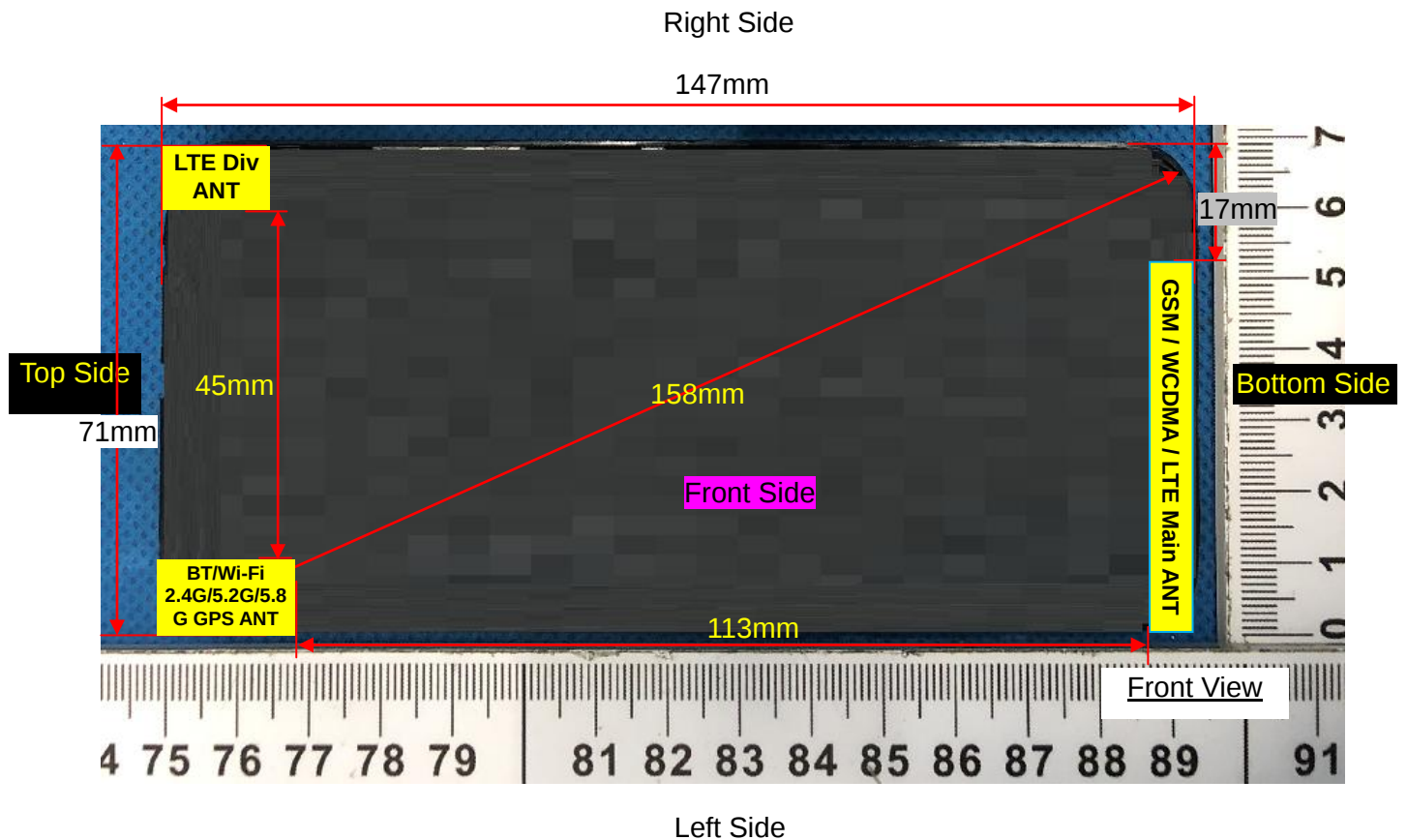
NOTE: Power measurement results of WLAN 5.8G.

7.4.2. Output Power Results Of Bluetooth

BR+EDR	Output Power (dBm)				
	Channel	Tune-up	Data Rates		
			1M	2M	3M
	0CH	8	7.570	6.689	6.854
	39CH	8	7.547	6.977	7.176
78CH	8	6.968	6.324	6.550	

BLE	Channel	Tune-up	Output Power (dBm)
	0CH	9	8.283
	19CH	9	8.168
	39CH	9	7.536

8. Antenna Location



Distance of the Antenna to the EUT surface/edge						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	≤ 25mm	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm
WLAN & Bluetooth	≤ 25mm	≤ 25mm	≤ 25mm	>25mm	≤ 25mm	>25mm
Positions for SAR tests						
Antennas	Front Side	Back Side	Left Side	Right Side	Top Side	Bottom Side
WWAN Main	Yes	Yes	Yes	Yes	NO	Yes
WLAN & Bluetooth	Yes	Yes	Yes	NO	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	9.00	7.94	5	2.480	2.50	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	9.00	7.94	5	2.480	7.5	0.334
Bluetooth	Body	9.00	7.94	10	2.480	7.5	0.167
Bluetooth	Hotspot	9.00	7.94	10	2.480	7.5	0.167

NOTE: Estimated SAR calculation for Bluetooth

10. SAR Results

10.1. SAR measurement results

10.1.1. SAR measurement Result of GSM850

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	189/836.4	GPRS(GMSK 4TS)	0.572	0.415	-0.30	28.69	29.00	0.614
Left Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.229	0.152	-0.92	28.69	29.00	0.246
Right Cheek	189/836.4	GPRS(GMSK 4TS)	0.565	0.403	0.75	28.69	29.00	0.607
Right Tilt 15 Degree	189/836.4	GPRS(GMSK 4TS)	0.224	0.146	2.61	28.69	29.00	0.241

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)	0.323	0.216	4.79	28.69	29.00	0.347
Back Side	189/836.4	GPRS(GMSK 4TS)	0.684	0.508	-2.00	28.69	29.00	0.735

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)	0.323	0.216	4.79	28.69	29.00	0.347
Back Side	189/836.4	GPRS(GMSK 4TS)	0.684	0.508	-2.00	28.69	29.00	0.735
Left Side	189/836.4	GPRS(GMSK 4TS)	0.157	0.107	-1.37	28.69	29.00	0.169
Right Side	189/836.4	GPRS(GMSK 4TS)	0.132	0.087	4.74	28.69	29.00	0.142
Bottom Side	189/836.4	GPRS(GMSK 4TS)	0.213	0.121	-3.97	28.69	29.00	0.229

NOTE: Hotspot SAR test results of GSM850

10.1.2. SAR measurement Result of GSM1900

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	661/1880	GPRS(GMSK 2TS)	0.311	0.189	1.53	27.96	29.00	0.395
Left Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.124	0.087	2.59	27.96	29.00	0.158
Right Cheek	661/1880	GPRS(GMSK 2TS)	0.304	0.182	-1.28	27.96	29.00	0.386
Right Tilt 15 Degree	661/1880	GPRS(GMSK 2TS)	0.119	0.081	-2.98	27.96	29.00	0.151

NOTE: Head SAR test results of GSM1900

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	661/1880	GPRS(GMSK 2TS)	0.524	0.264	3.05	27.96	29.00	0.666
Back Side	661/1880	GPRS(GMSK 2TS)	0.479	0.298	0.29	27.96	29.00	0.609

NOTE: Body-Worn SAR test results of GSM1900

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	661/1880	GPRS(GMSK 2TS)	0.524	0.264	3.05	27.96	29.00	0.666
Back Side	661/1880	GPRS(GMSK 2TS)	0.479	0.298	0.29	27.96	29.00	0.609
Left Side	661/1880	GPRS(GMSK 2TS)	0.379	0.212	1.33	27.96	29.00	0.482
Right Side	661/1880	GPRS(GMSK 2TS)	0.343	0.194	-1.42	27.96	29.00	0.436
Bottom Side	661/1880	GPRS(GMSK 2TS)	0.563	0.299	2.97	27.96	29.00	0.715

NOTE: Hotspot SAR test results of GSM1900

10.1.3. SAR measurement Result of WCDMA Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Left Cheek	9400/1880	RMC12.2K	0.431	0.255	-1.23	21.71	22.00	0.461
Left Tilt 15 Degree	9400/1880	RMC12.2K	0.207	0.121	0.51	21.71	22.00	0.221
Right Cheek	9400/1880	RMC12.2K	0.426	0.251	1.89	21.71	22.00	0.455
Right Tilt 15 Degree	9400/1880	RMC12.2K	0.200	0.118	-4.61	21.71	22.00	0.214

NOTE: Head SAR test results of WCDMA Band 2

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	9400/1880	RMC12.2K	0.507	0.264	-2.47	21.71	22.00	0.542
Back Side	9400/1880	RMC12.2K	0.594	0.352	-2.83	21.71	22.00	0.635

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	0.507	0.264	-2.47	21.71	22.00	0.542
Back Side	9400/1880	RMC12.2K	0.594	0.352	-2.83	21.71	22.00	0.635
Left Side	9400/1880	RMC12.2K	0.284	0.163	-0.74	21.71	22.00	0.304
Right Side	9400/1880	RMC12.2K	0.359	0.202	1.89	21.71	22.00	0.384
Bottom Side	9400/1880	RMC12.2K	0.631	0.331	-3.26	21.71	22.00	0.675

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	0.445	0.281	0.44	22.03	23.00	0.556
Left Tilt 15 Degree	1413/1732.6	RMC12.2K	0.207	0.138	-0.62	22.03	23.00	0.259
Right Cheek	1413/1732.6	RMC12.2K	0.439	0.276	1.84	22.03	23.00	0.549
Right Tilt 15 Degree	1413/1732.6	RMC12.2K	0.200	0.134	-1.88	22.03	23.00	0.250

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	0.537	0.264	3.66	22.03	23.00	0.671
Back Side	1413/1732.6	RMC12.2K	0.929	0.591	-0.81	22.03	23.00	1.161
Back Side - Repeated	1413/1732.6	RMC12.2K	0.924	0.587	2.24	22.03	23.00	1.155
Back Side	1312/1712.4	RMC12.2K	0.904	0.581	-0.61	22.11	23.00	1.110
Back Side	1513/1752.6	RMC12.2K	0.854	0.542	-0.90	21.70	23.00	1.152

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	0.537	0.264	3.66	22.03	23.00	0.671
Back Side	1413/1732.6	RMC12.2K	0.929	0.591	-0.81	22.03	23.00	1.161
Back Side - Repeated	1413/1732.6	RMC12.2K	0.924	0.587	2.24	22.03	23.00	1.155
Left Side	1413/1732.6	RMC12.2K	0.602	0.318	-0.94	22.03	23.00	0.753
Right Side	1413/1732.6	RMC12.2K	0.387	0.174	2.93	22.03	23.00	0.484
Bottom Side	1413/1732.6	RMC12.2K	0.616	0.321	-0.42	22.03	23.00	0.770
Back Side	1312/1712.4	RMC12.2K	0.904	0.581	-0.61	22.11	23.00	1.110
Back Side	1513/1752.6	RMC12.2K	0.854	0.542	-0.90	21.70	23.00	1.152

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	0.284	0.221	-1.31	23.02	24.00	0.356
Left Tilt 15 Degree	4182/836.4	RMC12.2K	0.121	0.084	0.21	23.02	24.00	0.152
Right Cheek	4182/836.4	RMC12.2K	0.277	0.216	-2.08	23.02	24.00	0.347
Right Tilt 15 Degree	4182/836.4	RMC12.2K	0.198	0.081	2.02	23.02	24.00	0.248

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	0.204	0.148	-3.55	23.02	24.00	0.256
Back Side	4182/836.4	RMC12.2K	0.420	0.318	0.35	23.02	24.00	0.526

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	0.204	0.148	-3.55	23.02	24.00	0.256
Back Side	4182/836.4	RMC12.2K	0.420	0.318	0.35	23.02	24.00	0.526
Left Side	4182/836.4	RMC12.2K	0.152	0.127	3.01	23.02	24.00	0.190
Right Side	4182/836.4	RMC12.2K	0.136	0.093	2.78	23.02	24.00	0.170
Bottom Side	4182/836.4	RMC12.2K	0.119	0.072	0.18	23.02	24.00	0.149

NOTE: Hotspot SAR test results of WCDMA Band 5

10.1.6. SAR measurement Result of LTE Band 2

Test Position of Head	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Left Cheek	18900/1880	20M QPSK(1,49)	0.385	0.231	-1.58	20.71	21.00	0.412
Left Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.139	0.084	0.54	20.71	21.00	0.149
Right Cheek	18900/1880	20M QPSK(1,49)	0.376	0.224	1.80	20.71	21.00	0.402
Right Tilt 15 Degree	18900/1880	20M QPSK(1,49)	0.133	0.076	-4.64	20.71	21.00	0.142
50%RB								
Left Cheek	18900/1880	1.4M QPSK(3,0)	0.380	0.226	-3.94	20.76	21.00	0.402
Left Tilt 15 Degree	18900/1880	1.4M QPSK(3,0)	0.135	0.079	1.88	20.76	21.00	0.143

Right Cheek	18900/1880	1.4M QPSK(3,0)	0.369	0.218	-2.53	20.76	21.00	0.390
Right Tilt 15 Degree	18900/1880	1.4M QPSK(3,0)	0.128	0.067	-4.97	20.76	21.00	0.135

NOTE: Head SAR test results of LTE Band 2

Test Position of Body-Wor n with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.452	0.286	-4.90	20.71	21.00	0.483
Back Side	18900/1880	20M QPSK(1,49)	0.674	0.391	-3.52	20.71	21.00	0.721
50%RB								
Front Side	18900/1880	1.4M QPSK(3,0)	0.432	0.273	3.49	20.76	21.00	0.457
Back Side	18900/1880	1.4M QPSK(3,0)	0.638	0.345	-1.57	20.76	21.00	0.674

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	18900/1880	20M QPSK(1,49)	0.452	0.286	-4.90	20.71	21.00	0.483
Back Side	18900/1880	20M QPSK(1,49)	0.674	0.391	-3.52	20.71	21.00	0.721
Left Side	18900/1880	20M QPSK(1,49)	0.528	0.324	-0.45	20.71	21.00	0.564
Right Side	18900/1880	20M QPSK(1,49)	0.469	0.294	-1.79	20.71	21.00	0.501
Bottom Side	18900/1880	20M QPSK(1,49)	0.745	0.401	-3.74	20.71	21.00	0.796
50%RB								
Front Side	18900/1880	1.4M QPSK(3,0)	0.432	0.273	3.49	20.76	21.00	0.457
Back Side	18900/1880	1.4M QPSK(3,0)	0.638	0.345	-1.57	20.76	21.00	0.674
Left Side	18900/1880	1.4M QPSK(3,0)	0.501	0.294	0.78	20.76	21.00	0.529
Right Side	18900/1880	1.4M QPSK(3,0)	0.433	0.271	-2.23	20.76	21.00	0.458
Bottom	18900/1880	1.4M QPSK(3,0)	0.709	0.382	0.58	20.76	21.00	0.749

Side								
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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)	0.570	0.356	-3.81	22.63	23.00	0.621
Left Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.334	0.261	-0.40	22.63	23.00	0.364
Right Cheek	20175/1732.5	20M QPSK(1,49)	0.567	0.350	-4.16	22.63	23.00	0.617
Right Tilt 15 Degree	20175/1732.5	20M QPSK(1,49)	0.328	0.254	-2.54	22.63	23.00	0.357
50%RB								
Left Cheek	20175/1732.5	1.4M QPSK(3,2)	0.566	0.348	0.37	23.00	23.00	0.566
Left Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,2)	0.329	0.258	-1.07	23.00	23.00	0.329
Right Cheek	20175/1732.5	1.4M QPSK(3,2)	0.560	0.342	-1.69	23.00	23.00	0.560
Right Tilt 15 Degree	20175/1732.5	1.4M QPSK(3,2)	0.321	0.250	-2.52	23.00	23.00	0.321

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)	0.348	0.192	-0.16	22.63	23.00	0.379
Back Side	20175/1732.5	20M QPSK(1,49)	1.064	0.674	-3.34	22.63	23.00	1.159

	5							
Back Side	20050/1720	20M QPSK(1,49)	1.097	0.725	0.46	22.64	23.00	1.192
Back Side - Repeated	20050/1720	20M QPSK(1,49)	1.094	0.720	2.21	22.64	23.00	1.189
Back Side	20300/1745	20M QPSK(1,49)	1.042	0.656	-0.21	22.54	23.00	1.158
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,2)	0.278	0.136	3.74	23.00	23.00	0.278
Back Side	20175/1732.5	1.4M QPSK(3,2)	0.724	0.357	-4.22	23.00	23.00	0.724
100%RB								
Back Side	20175/1732.5	1.4M QPSK(6,0)	0.508	0.273	-0.30	22.00	23.00	0.640

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)	0.348	0.192	-0.16	22.63	23.00	0.379
Back Side	20175/1732.5	20M QPSK(1,49)	1.064	0.674	-3.34	22.63	23.00	1.159
Left Side	20175/1732.5	20M QPSK(1,49)	0.437	0.254	0.04	22.63	23.00	0.476
Right Side	20175/1732.5	20M QPSK(1,49)	0.386	0.218	1.11	22.63	23.00	0.420
Bottom Side	20175/1732.5	20M QPSK(1,49)	0.728	0.378	0.69	22.63	23.00	0.793
Back Side	20050/1720	20M QPSK(1,49)	1.097	0.725	0.46	22.64	23.00	1.192
Back Side - Repeated	20050/1720	20M QPSK(1,49)	1.094	0.720	2.21	22.64	23.00	1.189
Back Side	20300/1745	20M QPSK(1,49)	1.042	0.656	-0.21	22.54	23.00	1.158
50%RB								
Front Side	20175/1732.5	1.4M QPSK(3,2)	0.278	0.136	3.74	23.00	23.00	0.278
Back Side	20175/1732.5	1.4M QPSK(3,2)	0.724	0.357	-4.22	23.00	23.00	0.724

Left Side	20175/1732. 5	1.4M QPSK(3,2)	0.301	0.172	-3.93	23.00	23.00	0.301
Right Side	20175/1732. 5	1.4M QPSK(3,2)	0.264	0.157	4.72	23.00	23.00	0.264
Bottom Side	20175/1732. 5	1.4M QPSK(3,2)	0.587	0.332	1.24	23.00	23.00	0.587
100%RB								
Back Side	20175/1732. 5	1.4M QPSK(6,0)	0.508	0.273	-0.30	22.00	23.00	0.640

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(1,24)	0.296	0.227	0.94	22.88	24.00	0.383
Left Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.124	0.082	-0.92	22.88	24.00	0.160
Right Cheek	20525/836.5	10M QPSK(1,24)	0.288	0.219	0.75	22.88	24.00	0.373
Right Tilt 15 Degree	20525/836.5	10M QPSK(1,24)	0.109	0.074	2.61	22.88	24.00	0.141
50%RB								
Left Cheek	20525/836.5	1.4M QPSK(3,1)	0.274	0.205	-1.16	22.84	23.00	0.284
Left Tilt 15 Degree	20525/836.5	1.4M QPSK(3,1)	0.101	0.070	0.17	22.84	23.00	0.105
Right Cheek	20525/836.5	1.4M QPSK(3,1)	0.259	0.193	3.47	22.84	23.00	0.269
Right Tilt 15 Degree	20525/836.5	1.4M QPSK(3,1)	0.091	0.063	-3.55	22.84	23.00	0.094

NOTE: Head SAR test results of LTE Band 5

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	20525/836.5	10M QPSK(1,24)	0.245	0.165	-1.70	22.88	24.00	0.317
Back Side	20525/836.5	10M QPSK(1,24)	0.422	0.314	-1.16	22.88	24.00	0.546
50%RB								
Front Side	20525/836.5	1.4M QPSK(3,1)	0.201	0.147	2.08	22.84	23.00	0.209
Back Side	20525/836.5	1.4M QPSK(3,1)	0.384	0.272	-3.17	22.84	23.00	0.398

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(1,24)	0.245	0.165	-1.70	22.88	24.00	0.317
Back Side	20525/836.5	10M QPSK(1,24)	0.422	0.314	-1.16	22.88	24.00	0.546
Left Side	20525/836.5	10M QPSK(1,24)	0.168	0.124	-0.90	22.88	24.00	0.217
Right Side	20525/836.5	10M QPSK(1,24)	0.124	0.079	-2.06	22.88	24.00	0.160
Bottom Side	20525/836.5	10M QPSK(1,24)	0.101	0.061	-0.08	22.88	24.00	0.131
50%RB								
Front Side	20525/836.5	1.4M QPSK(3,1)	0.201	0.147	2.08	22.84	23.00	0.209
Back Side	20525/836.5	1.4M QPSK(3,1)	0.384	0.272	-3.17	22.84	23.00	0.398
Left Side	20525/836.5	1.4M QPSK(3,1)	0.126	0.081	2.79	22.84	23.00	0.131
Right Side	20525/836.5	1.4M QPSK(3,1)	0.084	0.053	1.43	22.84	23.00	0.087
Bottom Side	20525/836.5	1.4M QPSK(3,1)	0.061	0.040	-0.26	22.84	23.00	0.063

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(1,49)	0.192	0.105	1.40	21.35	22.00	0.223
Left Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.103	0.074	1.02	21.35	22.00	0.120
Right Cheek	21100/2535	20M QPSK(1,49)	0.174	0.092	0.32	21.35	22.00	0.202
Right Tilt 15 Degree	21100/2535	20M QPSK(1,49)	0.087	0.054	1.01	21.35	22.00	0.101
50%RB								
Left Cheek	21100/2535	20M QPSK(50,0)	0.187	0.102	0.32	20.50	21.00	0.210
Left Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.093	0.070	1.02	20.50	21.00	0.104
Right Cheek	21100/2535	20M QPSK(50,0)	0.168	0.085	1.57	20.50	21.00	0.188
Right Tilt 15 Degree	21100/2535	20M QPSK(50,0)	0.081	0.050	0.37	20.50	21.00	0.091

NOTE: Head SAR test results of LTE Band 7

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21100/2535	20M QPSK(1,49)	0.112	0.054	2.18	21.35	22.00	0.130
Back Side	21100/2535	20M QPSK(1,49)	0.162	0.081	0.36	21.35	22.00	0.188
50%RB								
Front Side	21100/2535	20M QPSK(50,0)	0.101	0.047	3.21	20.50	21.00	0.113
Back Side	21100/2535	20M QPSK(50,0)	0.156	0.075	0.24	20.50	21.00	0.175

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

Test Position of Hotspot with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conduc ted power (dBm)	Tune-u p power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
1RB								
Front Side	21100/2535	20M QPSK(1,49)	0.112	0.054	2.18	21.35	22.00	0.130
Back Side	21100/2535	20M QPSK(1,49)	0.162	0.081	0.36	21.35	22.00	0.188
Left Side	21100/2535	20M QPSK(1,49)	0.085	0.047	2.51	21.35	22.00	0.099
Right Side	21100/2535	20M QPSK(1,49)	0.075	0.042	1.39	21.35	22.00	0.087
Bottom Side	21100/2535	20M QPSK(1,49)	0.172	0.087	-1.50	21.35	22.00	0.200
50%RB								
Front Side	21100/2535	20M QPSK(50,0)	0.101	0.047	3.21	20.50	21.00	0.113
Back Side	21100/2535	20M QPSK(50,0)	0.156	0.075	0.24	20.50	21.00	0.175
Left Side	21100/2535	20M QPSK(50,0)	0.081	0.043	4.12	20.50	21.00	0.091
Right Side	21100/2535	20M QPSK(50,0)	0.071	0.036	2.34	20.50	21.00	0.080
Bottom Side	21100/2535	20M QPSK(50,0)	0.164	0.082	0.56	20.50	21.00	0.184

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)	0.124	0.095	4.47	22.82	23.00	0.129
Left Tilt 15	23095/707.5	10M QPSK(1,24)	0.052	0.035	0.75	22.82	23.00	0.054

Degree								
Right Cheek	23095/707.5	10M QPSK(1,24)	0.118	0.084	-3.50	22.82	23.00	0.123
Right Tilt 15 Degree	23095/707.5	10M QPSK(1,24)	0.047	0.032	3.74	22.82	23.00	0.049
50%RB								
Left Cheek	23095/707.5	1.4M QPSK(3,2)	0.108	0.076	-4.08	22.86	23.00	0.112
Left Tilt 15 Degree	23095/707.5	1.4M QPSK(3,2)	0.041	0.027	-3.22	22.86	23.00	0.042
Right Cheek	23095/707.5	1.4M QPSK(3,2)	0.093	0.064	0.38	22.86	23.00	0.096
Right Tilt 15 Degree	23095/707.5	1.4M QPSK(3,2)	0.036	0.024	-0.34	22.86	23.00	0.037

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)	0.132	0.098	3.79	22.82	23.00	0.138
Back Side	23095/707.5	10M QPSK(1,24)	0.180	0.143	-1.17	22.82	23.00	0.188
50%RB								
Front Side	23095/707.5	1.4M QPSK(3,2)	0.104	0.067	1.83	22.86	23.00	0.107
Back Side	23095/707.5	1.4M QPSK(3,2)	0.145	0.126	3.03	22.86	23.00	0.150

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)	0.132	0.098	3.79	22.82	23.00	0.138
Back	23095/707.5	10M QPSK(1,24)	0.180	0.143	-1.17	22.82	23.00	0.188

Side								
Left Side	23095/707.5	10M QPSK(1,24)	0.064	0.034	1.49	22.82	23.00	0.067
Right Side	23095/707.5	10M QPSK(1,24)	0.088	0.049	-2.26	22.82	23.00	0.092
Bottom Side	23095/707.5	10M QPSK(1,24)	0.036	0.025	-1.76	22.82	23.00	0.038
50%RB								
Front Side	23095/707.5	1.4M QPSK(3,2)	0.104	0.067	1.83	22.86	23.00	0.107
Back Side	23095/707.5	1.4M QPSK(3,2)	0.145	0.126	3.03	22.86	23.00	0.150
Left Side	23095/707.5	1.4M QPSK(3,2)	0.042	0.030	0.83	22.86	23.00	0.043
Right Side	23095/707.5	1.4M QPSK(3,2)	0.057	0.032	-2.42	22.86	23.00	0.059
Bottom Side	23095/707.5	1.4M QPSK(3,2)	0.026	0.016	2.56	22.86	23.00	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)	0.137	0.113	3.82	22.89	23.00	0.141
Left Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.083	0.054	-3.30	22.89	23.00	0.085
Right Cheek	23790/710	10M QPSK(1,24)	0.132	0.108	-3.70	22.89	23.00	0.135
Right Tilt 15 Degree	23790/710	10M QPSK(1,24)	0.076	0.048	-4.89	22.89	23.00	0.078
50%RB								
Left Cheek	23790/710	10M QPSK(25,0)	0.094	0.063	-3.74	21.74	22.00	0.100
Left Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.062	0.041	-2.61	21.74	22.00	0.066

Right Cheek	23790/710	10M QPSK(25,0)	0.089	0.058	2.61	21.74	22.00	0.094
Right Tilt 15 Degree	23790/710	10M QPSK(25,0)	0.057	0.036	-4.35	21.74	22.00	0.061

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)	0.136	0.082	3.87	22.89	23.00	0.139
Back Side	23790/710	10M QPSK(1,24)	0.255	0.203	2.01	22.89	23.00	0.262
50%RB								
Front Side	23790/710	10M QPSK(25,0)	0.102	0.072	4.80	21.74	22.00	0.108
Back Side	23790/710	10M QPSK(25,0)	0.218	1.487	3.61	21.74	22.00	0.231

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)	0.136	0.082	3.87	22.89	23.00	0.139
Back Side	23790/710	10M QPSK(1,24)	0.255	0.203	2.01	22.89	23.00	0.262
Left Side	23790/710	10M QPSK(1,24)	0.121	0.073	-4.15	22.89	23.00	0.124
Right Side	23790/710	10M QPSK(1,24)	0.159	0.119	-3.49	22.89	23.00	0.163
Bottom Side	23790/710	10M QPSK(1,24)	0.177	0.132	1.18	22.89	23.00	0.182
50%RB								
Front Side	23790/710	10M QPSK(25,0)	0.102	0.072	4.80	21.74	22.00	0.108
Back Side	23790/710	10M QPSK(25,0)	0.218	1.487	3.61	21.74	22.00	0.231
Left Side	23790/710	10M QPSK(25,0)	0.094	0.062	2.96	21.74	22.00	0.100

Right Side	23790/710	10M QPSK(25,0)	0.125	0.076	-4.74	21.74	22.00	0.133
Bottom Side	23790/710	10M QPSK(25,0)	0.143	0.105	-0.60	21.74	22.00	0.152

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	0.427	0.242	0.51	13.77	14.00	0.450
Left Tilt 15 Degree	6/2437	802.11 b	0.254	0.163	2.90	13.77	14.00	0.268
Right Cheek	6/2437	802.11 b	0.421	0.238	4.44	13.77	14.00	0.444
Right Tilt 15 Degree	6/2437	802.11 b	0.250	0.158	-0.47	13.77	14.00	0.264

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	0.174	0.092	-4.06	13.77	14.00	0.183
Back Side	6/2437	802.11 b	0.233	0.134	-0.80	13.77	14.00	0.246

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	0.174	0.092	-4.06	13.77	14.00	0.183
Back Side	6/2437	802.11 b	0.233	0.134	-0.80	13.77	14.00	0.246
Left Side	6/2437	802.11 b	0.125	0.067	-0.62	13.77	14.00	0.132
Top Side	6/2437	802.11 b	0.088	0.050	1.34	13.77	14.00	0.093

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	Test Mode	SAR Value (W/kg)	Power Drift	Conducted power	Tune-up power	Scaled SAR
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	/Freq.		1g	10g	(±5%)	(dBm)	(dBm)	1g (W/Kg)
Left Cheek	40/5200	802.11a	0.294	0.110	-4.72	7.64	9.00	0.402
Left Tilt 15 Degree	40/5200	802.11a	0.121	0.081	4.18	7.64	9.00	0.165
Right Cheek	40/5200	802.11a	0.298	0.115	2.36	7.64	9.00	0.408
Right Tilt 15 Degree	40/5200	802.11a	0.128	0.074	-1.21	7.64	9.00	0.175

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	0.133	0.062	-3.42	7.64	9.00	0.182
Back Side	40/5200	802.11a	0.280	0.138	-3.40	7.64	9.00	0.383

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	0.133	0.062	-3.42	7.64	9.00	0.182
Back Side	40/5200	802.11a	0.280	0.138	-3.40	7.64	9.00	0.383
Left Side	40/5200	802.11a	0.154	0.068	-0.86	7.64	9.00	0.211
Top Side	40/5200	802.11a	0.188	0.081	3.98	7.64	9.00	0.257

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	0.418	0.145	1.20	10.93	12.50	0.600
Left Tilt 15 Degree	157/5785	802.11a	0.187	0.112	0.36	10.93	12.50	0.268
Right Cheek	157/5785	802.11a	0.431	0.151	-2.34	10.93	12.50	0.619
Right Tilt 15 Degree	157/5785	802.11a	0.198	0.120	3.78	10.93	12.50	0.284

NOTE: Head SAR test results of WLAN 5.8G

Test Position of Body-Worn with 10mm	Test channel /Freq.	Test Mode	SAR Value (W/kg)		Power Drift (±5%)	Conducted power (dBm)	Tune-up power (dBm)	Scaled SAR 1g (W/Kg)
			1g	10g				
Front Side	157/5785	802.11a	0.263	0.124	-0.09	10.93	12.50	0.378
Back Side	157/5785	802.11a	0.271	0.154	-2.43	10.93	12.50	0.389

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	0.263	0.124	-0.09	10.93	12.50	0.378
Back Side	157/5785	802.11a	0.271	0.154	-2.43	10.93	12.50	0.389
Left Side	157/5785	802.11a	0.227	0.103	1.55	10.93	12.50	0.326
Top Side	157/5785	802.11a	0.186	0.082	4.55	10.93	12.50	0.267

NOTE: Hotspot SAR test results of WLAN 5.2G

10.2. SAR Summation Scenario

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

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 2.4G			
Head	Left Cheek	0.614	0.450	1.065	N/A	N/A
	Left Tilt 15 Degree	0.246	0.268	0.514	N/A	N/A
	Right Cheek	0.607	0.444	1.051	N/A	N/A
	Right Tilt 15 Degree	0.241	0.264	0.504	N/A	N/A
Body-Worn	Front Side	0.347	0.183	0.530	N/A	N/A
	Back Side	0.735	0.246	0.980	N/A	N/A
Hotspot	Front Side	0.347	0.183	0.530	N/A	N/A
	Back Side	0.735	0.246	0.980	N/A	N/A
	Left Side	0.169	0.132	0.300	N/A	N/A
	Right Side	0.142	N/A	0.142	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.229	N/A	0.229	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	0.395	0.450	0.845	N/A	N/A
	Left Tilt 15 Degree	0.158	0.268	0.425	N/A	N/A
	Right Cheek	0.386	0.444	0.830	N/A	N/A
	Right Tilt 15 Degree	0.151	0.264	0.415	N/A	N/A
Body-Worn	Front Side	0.666	0.183	0.849	N/A	N/A
	Back Side	0.609	0.246	0.854	N/A	N/A
Hotspot	Front Side	0.666	0.183	0.849	N/A	N/A
	Back Side	0.609	0.246	0.854	N/A	N/A
	Left Side	0.482	0.132	0.613	N/A	N/A
	Right Side	0.436	N/A	0.436	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.715	N/A	0.715	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	0.461	0.450	0.911	N/A	N/A
	Left Tilt 15 Degree	0.221	0.268	0.489	N/A	N/A
	Right Cheek	0.455	0.444	0.899	N/A	N/A
	Right Tilt 15 Degree	0.214	0.264	0.477	N/A	N/A
Body-Worn	Front Side	0.542	0.183	0.725	N/A	N/A
	Back Side	0.635	0.246	0.881	N/A	N/A
Hotspot	Front Side	0.542	0.183	0.725	N/A	N/A
	Back Side	0.635	0.246	0.881	N/A	N/A
	Left Side	0.304	0.132	0.435	N/A	N/A
	Right Side	0.384	N/A	0.384	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.675	N/A	0.675	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	0.556	0.450	1.007	N/A	N/A
	Left Tilt 15 Degree	0.259	0.268	0.527	N/A	N/A

	Right Cheek	0.549	0.444	0.993	N/A	N/A
	Right Tilt 15 Degree	0.250	0.264	0.514	N/A	N/A
Body-Worn	Front Side	0.671	0.183	0.855	N/A	N/A
	Back Side	1.161	0.246	1.407	N/A	N/A
Hotspot	Front Side	0.671	0.183	0.855	N/A	N/A
	Back Side	1.161	0.246	1.407	N/A	N/A
	Left Side	0.753	0.132	0.884	N/A	N/A
	Right Side	0.484	N/A	0.484	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.770	N/A	0.770	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	0.356	0.450	0.806	N/A	N/A
	Left Tilt 15 Degree	0.152	0.268	0.419	N/A	N/A
	Right Cheek	0.347	0.444	0.791	N/A	N/A
	Right Tilt 15 Degree	0.248	0.264	0.512	N/A	N/A
Body-Worn	Front Side	0.256	0.183	0.439	N/A	N/A
	Back Side	0.526	0.246	0.772	N/A	N/A
Hotspot	Front Side	0.256	0.183	0.439	N/A	N/A
	Back Side	0.526	0.246	0.772	N/A	N/A
	Left Side	0.190	0.132	0.322	N/A	N/A
	Right Side	0.170	N/A	0.170	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.149	N/A	0.149	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	0.412	0.450	0.862	N/A	N/A
	Left Tilt 15 Degree	0.149	0.268	0.416	N/A	N/A
	Right Cheek	0.402	0.444	0.846	N/A	N/A
	Right Tilt 15 Degree	0.142	0.264	0.406	N/A	N/A
Body-Worn	Front Side	0.483	0.183	0.667	N/A	N/A
	Back Side	0.721	0.246	0.966	N/A	N/A
Hotspot	Front Side	0.483	0.183	0.667	N/A	N/A
	Back Side	0.721	0.246	0.966	N/A	N/A

	Left Side	0.564	0.132	0.696	N/A	N/A
	Right Side	0.501	N/A	0.501	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.796	N/A	0.796	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	0.621	0.450	1.071	N/A	N/A
	Left Tilt 15 Degree	0.364	0.268	0.632	N/A	N/A
	Right Cheek	0.617	0.444	1.061	N/A	N/A
	Right Tilt 15 Degree	0.357	0.264	0.621	N/A	N/A
Body-Worn	Front Side	0.379	0.183	0.562	N/A	N/A
	Back Side	1.192	0.246	1.437	N/A	N/A
Hotspot	Front Side	0.379	0.183	0.562	N/A	N/A
	Back Side	1.192	0.246	1.437	N/A	N/A
	Left Side	0.476	0.132	0.608	N/A	N/A
	Right Side	0.420	N/A	0.420	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.793	N/A	0.793	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	0.383	0.450	0.833	N/A	N/A
	Left Tilt 15 Degree	0.160	0.268	0.428	N/A	N/A
	Right Cheek	0.373	0.444	0.817	N/A	N/A
	Right Tilt 15 Degree	0.141	0.264	0.405	N/A	N/A
Body-Worn	Front Side	0.317	0.183	0.501	N/A	N/A
	Back Side	0.546	0.246	0.792	N/A	N/A
Hotspot	Front Side	0.317	0.183	0.501	N/A	N/A
	Back Side	0.546	0.246	0.792	N/A	N/A
	Left Side	0.217	0.132	0.349	N/A	N/A
	Right Side	0.160	N/A	0.160	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.131	N/A	0.131	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	0.223	0.450	0.673	N/A	N/A
	Left Tilt 15 Degree	0.120	0.268	0.387	N/A	N/A
	Right Cheek	0.202	0.444	0.646	N/A	N/A
	Right Tilt 15 Degree	0.101	0.264	0.365	N/A	N/A
Body-Worn	Front Side	0.130	0.183	0.314	N/A	N/A
	Back Side	0.188	0.246	0.434	N/A	N/A
Hotspot	Front Side	0.130	0.183	0.314	N/A	N/A
	Back Side	0.188	0.246	0.434	N/A	N/A
	Left Side	0.099	0.132	0.231	N/A	N/A
	Right Side	0.087	N/A	0.087	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.200	N/A	0.200	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	0.129	0.450	0.579	N/A	N/A
	Left Tilt 15 Degree	0.054	0.268	0.322	N/A	N/A
	Right Cheek	0.123	0.444	0.567	N/A	N/A
	Right Tilt 15 Degree	0.049	0.264	0.313	N/A	N/A
Body-Worn	Front Side	0.138	0.183	0.321	N/A	N/A
	Back Side	0.188	0.246	0.433	N/A	N/A
Hotspot	Front Side	0.138	0.183	0.321	N/A	N/A
	Back Side	0.188	0.246	0.433	N/A	N/A
	Left Side	0.067	0.132	0.199	N/A	N/A
	Right Side	0.092	N/A	0.092	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.038	N/A	0.038	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	0.141	0.450	0.591	N/A	N/A
	Left Tilt 15 Degree	0.085	0.268	0.353	N/A	N/A

	Right Cheek	0.135	0.444	0.579	N/A	N/A
	Right Tilt 15 Degree	0.078	0.264	0.342	N/A	N/A
Body-Worn	Front Side	0.139	0.183	0.323	N/A	N/A
	Back Side	0.262	0.246	0.507	N/A	N/A
Hotspot	Front Side	0.139	0.183	0.323	N/A	N/A
	Back Side	0.262	0.246	0.507	N/A	N/A
	Left Side	0.124	0.132	0.256	N/A	N/A
	Right Side	0.163	N/A	0.163	N/A	N/A
	Top Side	N/A	0.093	0.093	N/A	N/A
	Bottom Side	0.182	N/A	0.182	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	Bluetooth			
Head	Left Cheek	0.614	0.334	0.948	N/A	N/A
	Left Tilt 15 Degree	0.246	0.334	0.580	N/A	N/A
	Right Cheek	0.607	0.334	0.940	N/A	N/A
	Right Tilt 15 Degree	0.241	0.334	0.574	N/A	N/A
Body-Worn	Front Side	0.347	0.167	0.514	N/A	N/A
	Back Side	0.735	0.167	0.901	N/A	N/A
Hotspot	Front Side	0.347	0.167	0.514	N/A	N/A
	Back Side	0.735	0.167	0.901	N/A	N/A
	Left Side	0.169	0.167	0.335	N/A	N/A
	Right Side	0.142	N/A	0.142	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.229	N/A	0.229	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	0.395	0.334	0.729	N/A	N/A
	Left Tilt 15 Degree	0.158	0.334	0.491	N/A	N/A
	Right Cheek	0.386	0.334	0.720	N/A	N/A
	Right Tilt 15 Degree	0.151	0.334	0.485	N/A	N/A
Body-Worn	Front Side	0.666	0.167	0.833	N/A	N/A
	Back Side	0.609	0.167	0.775	N/A	N/A
Hotspot	Front Side	0.666	0.167	0.833	N/A	N/A
	Back Side	0.609	0.167	0.775	N/A	N/A

	Left Side	0.482	0.167	0.648	N/A	N/A
	Right Side	0.436	N/A	0.436	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.715	N/A	0.715	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	0.461	0.334	0.794	N/A	N/A
	Left Tilt 15 Degree	0.221	0.334	0.555	N/A	N/A
	Right Cheek	0.455	0.334	0.789	N/A	N/A
	Right Tilt 15 Degree	0.214	0.334	0.547	N/A	N/A
Body-Worn	Front Side	0.542	0.167	0.709	N/A	N/A
	Back Side	0.635	0.167	0.802	N/A	N/A
Hotspot	Front Side	0.542	0.167	0.709	N/A	N/A
	Back Side	0.635	0.167	0.802	N/A	N/A
	Left Side	0.304	0.167	0.470	N/A	N/A
	Right Side	0.384	N/A	0.384	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.675	N/A	0.675	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	0.556	0.334	0.890	N/A	N/A
	Left Tilt 15 Degree	0.259	0.334	0.592	N/A	N/A
	Right Cheek	0.549	0.334	0.882	N/A	N/A
	Right Tilt 15 Degree	0.250	0.334	0.584	N/A	N/A
Body-Worn	Front Side	0.671	0.167	0.838	N/A	N/A
	Back Side	1.161	0.167	1.328	N/A	N/A
Hotspot	Front Side	0.671	0.167	0.838	N/A	N/A
	Back Side	1.161	0.167	1.328	N/A	N/A
	Left Side	0.753	0.167	0.919	N/A	N/A
	Right Side	0.484	N/A	0.484	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.770	N/A	0.770	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	0.356	0.334	0.689	N/A	N/A
	Left Tilt 15 Degree	0.152	0.334	0.485	N/A	N/A
	Right Cheek	0.347	0.334	0.681	N/A	N/A
	Right Tilt 15 Degree	0.248	0.334	0.582	N/A	N/A
Body-Worn	Front Side	0.256	0.167	0.422	N/A	N/A
	Back Side	0.526	0.167	0.693	N/A	N/A
Hotspot	Front Side	0.256	0.167	0.422	N/A	N/A
	Back Side	0.526	0.167	0.693	N/A	N/A
	Left Side	0.190	0.167	0.357	N/A	N/A
	Right Side	0.170	N/A	0.170	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.149	N/A	0.149	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	0.412	0.334	0.745	N/A	N/A
	Left Tilt 15 Degree	0.149	0.334	0.482	N/A	N/A
	Right Cheek	0.402	0.334	0.736	N/A	N/A
	Right Tilt 15 Degree	0.142	0.334	0.476	N/A	N/A
Body-Worn	Front Side	0.483	0.167	0.650	N/A	N/A
	Back Side	0.721	0.167	0.887	N/A	N/A
Hotspot	Front Side	0.483	0.167	0.650	N/A	N/A
	Back Side	0.721	0.167	0.887	N/A	N/A
	Left Side	0.564	0.167	0.731	N/A	N/A
	Right Side	0.501	N/A	0.501	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.796	N/A	0.796	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	0.621	0.334	0.954	N/A	N/A
	Left Tilt 15 Degree	0.364	0.334	0.697	N/A	N/A
	Right Cheek	0.617	0.334	0.951	N/A	N/A

	Right Tilt 15 Degree	0.357	0.334	0.691	N/A	N/A
Body-Worn	Front Side	0.379	0.167	0.546	N/A	N/A
	Back Side	1.192	0.167	1.359	N/A	N/A
Hotspot	Front Side	0.379	0.167	0.546	N/A	N/A
	Back Side	1.192	0.167	1.359	N/A	N/A
	Left Side	0.476	0.167	0.643	N/A	N/A
	Right Side	0.420	N/A	0.420	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.793	N/A	0.793	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	0.383	0.334	0.717	N/A	N/A
	Left Tilt 15 Degree	0.160	0.334	0.494	N/A	N/A
	Right Cheek	0.373	0.334	0.706	N/A	N/A
	Right Tilt 15 Degree	0.141	0.334	0.475	N/A	N/A
Body-Worn	Front Side	0.317	0.167	0.484	N/A	N/A
	Back Side	0.546	0.167	0.713	N/A	N/A
Hotspot	Front Side	0.317	0.167	0.484	N/A	N/A
	Back Side	0.546	0.167	0.713	N/A	N/A
	Left Side	0.217	0.167	0.384	N/A	N/A
	Right Side	0.160	N/A	0.160	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.131	N/A	0.131	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	0.223	0.334	0.557	N/A	N/A
	Left Tilt 15 Degree	0.120	0.334	0.453	N/A	N/A
	Right Cheek	0.202	0.334	0.536	N/A	N/A
	Right Tilt 15 Degree	0.101	0.334	0.435	N/A	N/A
Body-Worn	Front Side	0.130	0.167	0.297	N/A	N/A
	Back Side	0.188	0.167	0.355	N/A	N/A
Hotspot	Front Side	0.130	0.167	0.297	N/A	N/A
	Back Side	0.188	0.167	0.355	N/A	N/A
	Left Side	0.099	0.167	0.266	N/A	N/A

	Right Side	0.087	N/A	0.087	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.200	N/A	0.200	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	0.129	0.334	0.463	N/A	N/A
	Left Tilt 15 Degree	0.054	0.334	0.388	N/A	N/A
	Right Cheek	0.123	0.334	0.457	N/A	N/A
	Right Tilt 15 Degree	0.049	0.334	0.383	N/A	N/A
Body-Worn	Front Side	0.138	0.167	0.304	N/A	N/A
	Back Side	0.188	0.167	0.354	N/A	N/A
Hotspot	Front Side	0.138	0.167	0.304	N/A	N/A
	Back Side	0.188	0.167	0.354	N/A	N/A
	Left Side	0.067	0.167	0.233	N/A	N/A
	Right Side	0.092	N/A	0.092	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.038	N/A	0.038	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 (W/Kg)	SPLSR	Remark
		LTE Band 17	Bluetooth			
Head	Left Cheek	0.141	0.334	0.474	N/A	N/A
	Left Tilt 15 Degree	0.085	0.334	0.419	N/A	N/A
	Right Cheek	0.135	0.334	0.469	N/A	N/A
	Right Tilt 15 Degree	0.078	0.334	0.412	N/A	N/A
Body-Worn	Front Side	0.139	0.167	0.306	N/A	N/A
	Back Side	0.262	0.167	0.428	N/A	N/A
Hotspot	Front Side	0.139	0.167	0.306	N/A	N/A
	Back Side	0.262	0.167	0.428	N/A	N/A
	Left Side	0.124	0.167	0.291	N/A	N/A
	Right Side	0.163	N/A	0.163	N/A	N/A
	Top Side	N/A	0.167	0.167	N/A	N/A
	Bottom Side	0.182	N/A	0.182	N/A	N/A

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

Test Position		Scaled SAR _{MAX}		Σ 1-g SAR (W/Kg)	SPLSR	Remark
		GSM 850	WLAN 5.2G			
Head	Left Cheek	0.614	0.402	1.016	N/A	N/A
	Left Tilt 15 Degree	0.246	0.165	0.411	N/A	N/A
	Right Cheek	0.607	0.408	1.014	N/A	N/A
	Right Tilt 15 Degree	0.241	0.175	0.416	N/A	N/A
Body-Worn	Front Side	0.347	0.182	0.529	N/A	N/A
	Back Side	0.735	0.383	1.118	N/A	N/A
Hotspot	Front Side	0.347	0.182	0.529	N/A	N/A
	Back Side	0.735	0.383	1.118	N/A	N/A
	Left Side	0.169	0.211	0.379	N/A	N/A
	Right Side	0.142	N/A	0.142	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.229	N/A	0.229	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	0.395	0.402	0.797	N/A	N/A
	Left Tilt 15 Degree	0.158	0.165	0.323	N/A	N/A
	Right Cheek	0.386	0.408	0.794	N/A	N/A
	Right Tilt 15 Degree	0.151	0.175	0.326	N/A	N/A
Body-Worn	Front Side	0.666	0.182	0.848	N/A	N/A
	Back Side	0.609	0.383	0.992	N/A	N/A
Hotspot	Front Side	0.666	0.182	0.848	N/A	N/A
	Back Side	0.609	0.383	0.992	N/A	N/A
	Left Side	0.482	0.211	0.692	N/A	N/A
	Right Side	0.436	N/A	0.436	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.715	N/A	0.715	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	0.461	0.402	0.863	N/A	N/A
	Left Tilt 15 Degree	0.221	0.165	0.387	N/A	N/A
	Right Cheek	0.455	0.408	0.863	N/A	N/A

	Right Tilt 15 Degree	0.214	0.175	0.389	N/A	N/A
Body-Worn	Front Side	0.542	0.182	0.724	N/A	N/A
	Back Side	0.635	0.383	1.018	N/A	N/A
Hotspot	Front Side	0.542	0.182	0.724	N/A	N/A
	Back Side	0.635	0.383	1.018	N/A	N/A
	Left Side	0.304	0.211	0.514	N/A	N/A
	Right Side	0.384	N/A	0.384	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.675	N/A	0.675	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	0.556	0.402	0.958	N/A	N/A
	Left Tilt 15 Degree	0.259	0.165	0.424	N/A	N/A
	Right Cheek	0.549	0.408	0.956	N/A	N/A
	Right Tilt 15 Degree	0.250	0.175	0.425	N/A	N/A
Body-Worn	Front Side	0.671	0.182	0.853	N/A	N/A
	Back Side	1.161	0.383	1.544	N/A	N/A
Hotspot	Front Side	0.671	0.182	0.853	N/A	N/A
	Back Side	1.161	0.383	1.544	N/A	N/A
	Left Side	0.753	0.211	0.963	N/A	N/A
	Right Side	0.484	N/A	0.484	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.770	N/A	0.770	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 (W/Kg)	SPLSR	Remark
		WCDMA Band 5	WLAN 5.2G			
Head	Left Cheek	0.356	0.402	0.758	N/A	N/A
	Left Tilt 15 Degree	0.152	0.165	0.317	N/A	N/A
	Right Cheek	0.347	0.408	0.755	N/A	N/A
	Right Tilt 15 Degree	0.248	0.175	0.423	N/A	N/A
Body-Worn	Front Side	0.256	0.182	0.438	N/A	N/A
	Back Side	0.526	0.383	0.909	N/A	N/A
Hotspot	Front Side	0.256	0.182	0.438	N/A	N/A
	Back Side	0.526	0.383	0.909	N/A	N/A

	Left Side	0.190	0.211	0.401	N/A	N/A
	Right Side	0.170	N/A	0.170	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.149	N/A	0.149	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	0.412	0.402	0.814	N/A	N/A
	Left Tilt 15 Degree	0.149	0.165	0.314	N/A	N/A
	Right Cheek	0.402	0.408	0.810	N/A	N/A
	Right Tilt 15 Degree	0.142	0.175	0.317	N/A	N/A
Body-Worn	Front Side	0.483	0.182	0.665	N/A	N/A
	Back Side	0.721	0.383	1.104	N/A	N/A
Hotspot	Front Side	0.483	0.182	0.665	N/A	N/A
	Back Side	0.721	0.383	1.104	N/A	N/A
	Left Side	0.564	0.211	0.775	N/A	N/A
	Right Side	0.501	N/A	0.501	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.796	N/A	0.796	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	0.621	0.402	1.023	N/A	N/A
	Left Tilt 15 Degree	0.364	0.165	0.529	N/A	N/A
	Right Cheek	0.617	0.408	1.025	N/A	N/A
	Right Tilt 15 Degree	0.357	0.175	0.532	N/A	N/A
Body-Worn	Front Side	0.379	0.182	0.561	N/A	N/A
	Back Side	1.192	0.383	1.575	N/A	N/A
Hotspot	Front Side	0.379	0.182	0.561	N/A	N/A
	Back Side	1.192	0.383	1.575	N/A	N/A
	Left Side	0.476	0.211	0.686	N/A	N/A
	Right Side	0.420	N/A	0.420	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.793	N/A	0.793	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	0.383	0.402	0.785	N/A	N/A
	Left Tilt 15 Degree	0.160	0.165	0.326	N/A	N/A
	Right Cheek	0.373	0.408	0.780	N/A	N/A
	Right Tilt 15 Degree	0.141	0.175	0.316	N/A	N/A
Body-Worn	Front Side	0.317	0.182	0.499	N/A	N/A
	Back Side	0.546	0.383	0.929	N/A	N/A
Hotspot	Front Side	0.317	0.182	0.499	N/A	N/A
	Back Side	0.546	0.383	0.929	N/A	N/A
	Left Side	0.217	0.211	0.428	N/A	N/A
	Right Side	0.160	N/A	0.160	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.131	N/A	0.131	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	0.223	0.402	0.625	N/A	N/A
	Left Tilt 15 Degree	0.120	0.165	0.285	N/A	N/A
	Right Cheek	0.202	0.408	0.610	N/A	N/A
	Right Tilt 15 Degree	0.101	0.175	0.276	N/A	N/A
Body-Worn	Front Side	0.130	0.182	0.312	N/A	N/A
	Back Side	0.188	0.383	0.571	N/A	N/A
Hotspot	Front Side	0.130	0.182	0.312	N/A	N/A
	Back Side	0.188	0.383	0.571	N/A	N/A
	Left Side	0.099	0.211	0.309	N/A	N/A
	Right Side	0.087	N/A	0.087	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.200	N/A	0.200	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	0.129	0.402	0.531	N/A	N/A
	Left Tilt 15 Degree	0.054	0.165	0.220	N/A	N/A
	Right Cheek	0.123	0.408	0.531	N/A	N/A

	Right Tilt 15 Degree	0.049	0.175	0.224	N/A	N/A
Body-Worn	Front Side	0.138	0.182	0.319	N/A	N/A
	Back Side	0.188	0.383	0.571	N/A	N/A
Hotspot	Front Side	0.138	0.182	0.319	N/A	N/A
	Back Side	0.188	0.383	0.571	N/A	N/A
	Left Side	0.067	0.211	0.277	N/A	N/A
	Right Side	0.092	N/A	0.092	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.038	N/A	0.038	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	0.141	0.402	0.543	N/A	N/A
	Left Tilt 15 Degree	0.085	0.165	0.251	N/A	N/A
	Right Cheek	0.135	0.408	0.543	N/A	N/A
	Right Tilt 15 Degree	0.078	0.175	0.253	N/A	N/A
Body-Worn	Front Side	0.139	0.182	0.321	N/A	N/A
	Back Side	0.262	0.383	0.645	N/A	N/A
Hotspot	Front Side	0.139	0.182	0.321	N/A	N/A
	Back Side	0.262	0.383	0.645	N/A	N/A
	Left Side	0.124	0.211	0.335	N/A	N/A
	Right Side	0.163	N/A	0.163	N/A	N/A
	Top Side	N/A	0.257	0.257	N/A	N/A
	Bottom Side	0.182	N/A	0.182	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	0.614	0.600	1.214	N/A	N/A
	Left Tilt 15 Degree	0.246	0.268	0.514	N/A	N/A
	Right Cheek	0.607	0.619	1.225	N/A	N/A
	Right Tilt 15 Degree	0.241	0.284	0.525	N/A	N/A
Body-Worn	Front Side	0.347	0.378	0.724	N/A	N/A
	Back Side	0.735	0.389	1.124	N/A	N/A
Hotspot	Front Side	0.347	0.378	0.724	N/A	N/A
	Back Side	0.735	0.389	1.124	N/A	N/A

	Left Side	0.169	0.326	0.494	N/A	N/A
	Right Side	0.142	N/A	0.142	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.229	N/A	0.229	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	0.395	0.600	0.995	N/A	N/A
	Left Tilt 15 Degree	0.158	0.268	0.426	N/A	N/A
	Right Cheek	0.386	0.619	1.005	N/A	N/A
	Right Tilt 15 Degree	0.151	0.284	0.435	N/A	N/A
Body-Worn	Front Side	0.666	0.378	1.043	N/A	N/A
	Back Side	0.609	0.389	0.998	N/A	N/A
Hotspot	Front Side	0.666	0.378	1.043	N/A	N/A
	Back Side	0.609	0.389	0.998	N/A	N/A
	Left Side	0.482	0.326	0.807	N/A	N/A
	Right Side	0.436	N/A	0.436	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.715	N/A	0.715	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	0.461	0.600	1.061	N/A	N/A
	Left Tilt 15 Degree	0.221	0.268	0.490	N/A	N/A
	Right Cheek	0.455	0.619	1.074	N/A	N/A
	Right Tilt 15 Degree	0.214	0.284	0.498	N/A	N/A
Body-Worn	Front Side	0.542	0.378	0.920	N/A	N/A
	Back Side	0.635	0.389	1.024	N/A	N/A
Hotspot	Front Side	0.542	0.378	0.920	N/A	N/A
	Back Side	0.635	0.389	1.024	N/A	N/A
	Left Side	0.304	0.326	0.629	N/A	N/A
	Right Side	0.384	N/A	0.384	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.675	N/A	0.675	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	0.556	0.600	1.156	N/A	N/A
	Left Tilt 15 Degree	0.259	0.268	0.527	N/A	N/A
	Right Cheek	0.549	0.619	1.168	N/A	N/A
	Right Tilt 15 Degree	0.250	0.284	0.534	N/A	N/A
Body-Worn	Front Side	0.671	0.378	1.049	N/A	N/A
	Back Side	1.161	0.389	1.551	N/A	N/A
Hotspot	Front Side	0.671	0.378	1.049	N/A	N/A
	Back Side	1.161	0.389	1.551	N/A	N/A
	Left Side	0.753	0.326	1.079	N/A	N/A
	Right Side	0.484	N/A	0.484	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.770	N/A	0.770	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	0.356	0.600	0.956	N/A	N/A
	Left Tilt 15 Degree	0.152	0.268	0.420	N/A	N/A
	Right Cheek	0.347	0.619	0.966	N/A	N/A
	Right Tilt 15 Degree	0.248	0.284	0.532	N/A	N/A
Body-Worn	Front Side	0.256	0.378	0.633	N/A	N/A
	Back Side	0.526	0.389	0.915	N/A	N/A
Hotspot	Front Side	0.256	0.378	0.633	N/A	N/A
	Back Side	0.526	0.389	0.915	N/A	N/A
	Left Side	0.190	0.326	0.516	N/A	N/A
	Right Side	0.170	N/A	0.170	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.149	N/A	0.149	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	0.412	0.600	1.012	N/A	N/A
	Left Tilt 15 Degree	0.149	0.268	0.417	N/A	N/A

	Right Cheek	0.402	0.619	1.021	N/A	N/A
	Right Tilt 15 Degree	0.142	0.284	0.426	N/A	N/A
Body-Worn	Front Side	0.483	0.378	0.861	N/A	N/A
	Back Side	0.721	0.389	1.110	N/A	N/A
Hotspot	Front Side	0.483	0.378	0.861	N/A	N/A
	Back Side	0.721	0.389	1.110	N/A	N/A
	Left Side	0.564	0.326	0.890	N/A	N/A
	Right Side	0.501	N/A	0.501	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.796	N/A	0.796	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	0.621	0.600	1.221	N/A	N/A
	Left Tilt 15 Degree	0.364	0.268	0.632	N/A	N/A
	Right Cheek	0.617	0.619	1.236	N/A	N/A
	Right Tilt 15 Degree	0.357	0.284	0.641	N/A	N/A
Body-Worn	Front Side	0.379	0.378	0.756	N/A	N/A
	Back Side	1.192	0.389	1.581	N/A	N/A
Hotspot	Front Side	0.379	0.378	0.756	N/A	N/A
	Back Side	1.192	0.389	1.581	N/A	N/A
	Left Side	0.476	0.326	0.802	N/A	N/A
	Right Side	0.420	N/A	0.420	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.793	N/A	0.793	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	0.383	0.600	0.983	N/A	N/A
	Left Tilt 15 Degree	0.160	0.268	0.429	N/A	N/A
	Right Cheek	0.373	0.619	0.991	N/A	N/A
	Right Tilt 15 Degree	0.141	0.284	0.425	N/A	N/A
Body-Worn	Front Side	0.317	0.378	0.695	N/A	N/A
	Back Side	0.546	0.389	0.935	N/A	N/A
Hotspot	Front Side	0.317	0.378	0.695	N/A	N/A
	Back Side	0.546	0.389	0.935	N/A	N/A

	Left Side	0.217	0.326	0.543	N/A	N/A
	Right Side	0.160	N/A	0.160	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.131	N/A	0.131	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	0.223	0.600	0.823	N/A	N/A
	Left Tilt 15 Degree	0.120	0.268	0.388	N/A	N/A
	Right Cheek	0.202	0.619	0.821	N/A	N/A
	Right Tilt 15 Degree	0.101	0.284	0.385	N/A	N/A
Body-Worn	Front Side	0.130	0.378	0.508	N/A	N/A
	Back Side	0.188	0.389	0.577	N/A	N/A
Hotspot	Front Side	0.130	0.378	0.508	N/A	N/A
	Back Side	0.188	0.389	0.577	N/A	N/A
	Left Side	0.099	0.326	0.425	N/A	N/A
	Right Side	0.087	N/A	0.087	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.200	N/A	0.200	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	0.129	0.600	0.729	N/A	N/A
	Left Tilt 15 Degree	0.054	0.268	0.323	N/A	N/A
	Right Cheek	0.123	0.619	0.742	N/A	N/A
	Right Tilt 15 Degree	0.049	0.284	0.333	N/A	N/A
Body-Worn	Front Side	0.138	0.378	0.515	N/A	N/A
	Back Side	0.188	0.389	0.577	N/A	N/A
Hotspot	Front Side	0.138	0.378	0.515	N/A	N/A
	Back Side	0.188	0.389	0.577	N/A	N/A
	Left Side	0.067	0.326	0.393	N/A	N/A
	Right Side	0.092	N/A	0.092	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.038	N/A	0.038	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	0.141	0.600	0.741	N/A	N/A
	Left Tilt 15 Degree	0.085	0.268	0.354	N/A	N/A
	Right Cheek	0.135	0.619	0.754	N/A	N/A
	Right Tilt 15 Degree	0.078	0.284	0.362	N/A	N/A
Body-Worn	Front Side	0.139	0.378	0.517	N/A	N/A
	Back Side	0.262	0.389	0.651	N/A	N/A
Hotspot	Front Side	0.139	0.378	0.517	N/A	N/A
	Back Side	0.262	0.389	0.651	N/A	N/A
	Left Side	0.124	0.326	0.450	N/A	N/A
	Right Side	0.163	N/A	0.163	N/A	N/A
	Top Side	N/A	0.267	0.267	N/A	N/A
	Bottom Side	0.182	N/A	0.182	N/A	N/A

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

11. Appendix A. Photo documentation

Refer to appendix Test Setup photo---SAR

12. Appendix B. System Check Plots

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MEASUREMENT 1

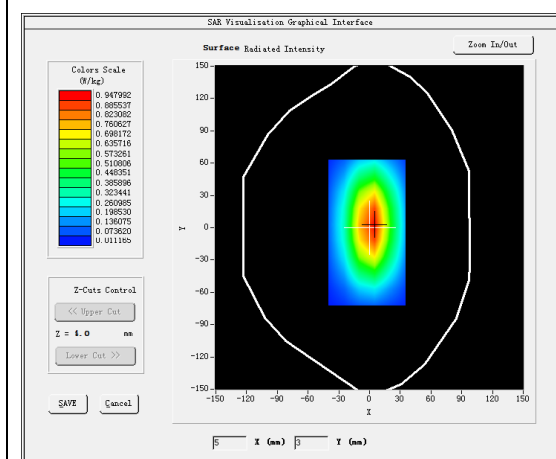
A. Experimental conditions.

<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>

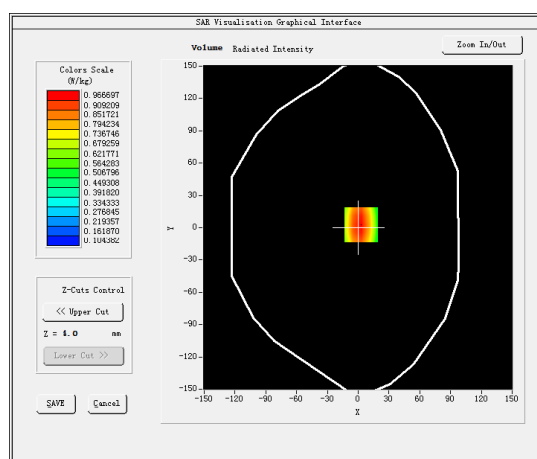
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	41.125462
Relative permittivity (imaginary part)	21.55741
Conductivity (S/m)	0.903237
Variation (%)	1.290000

SURFACE SAR



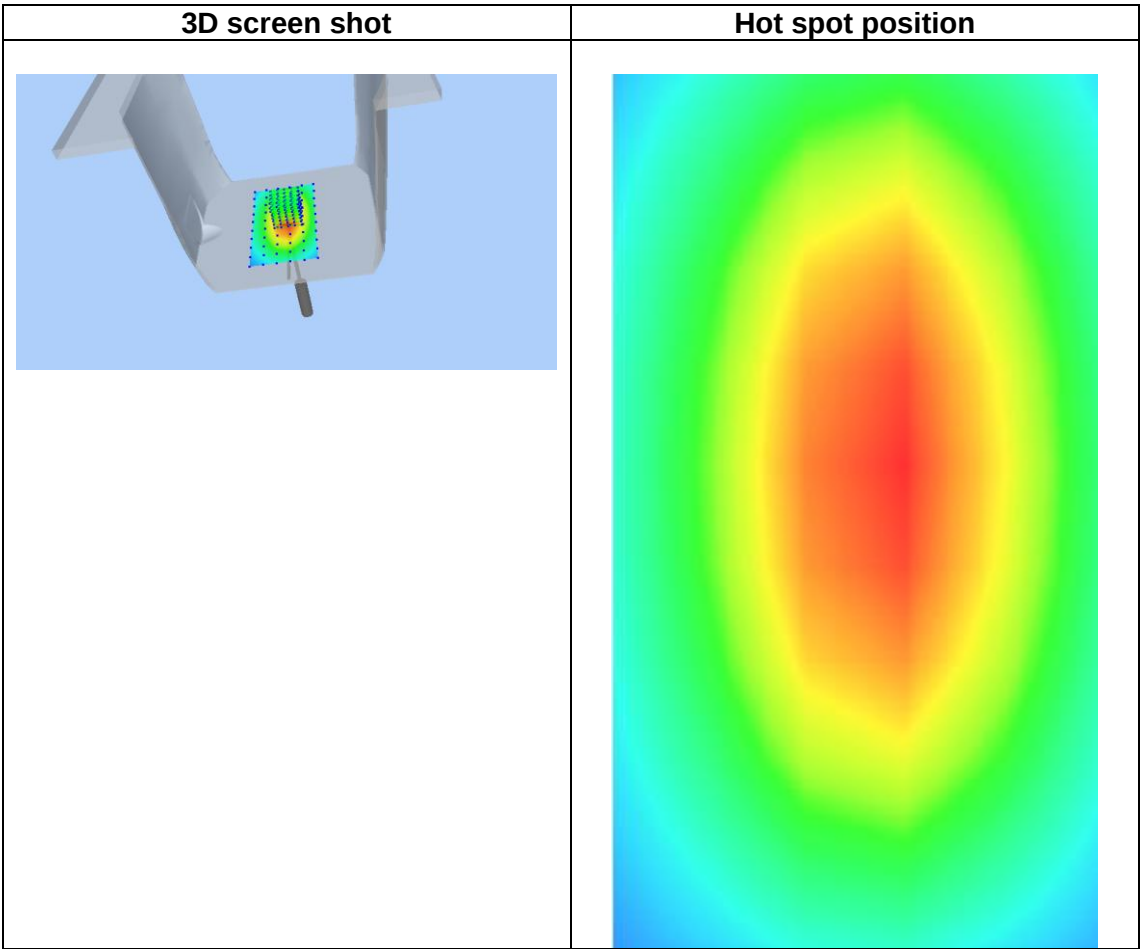
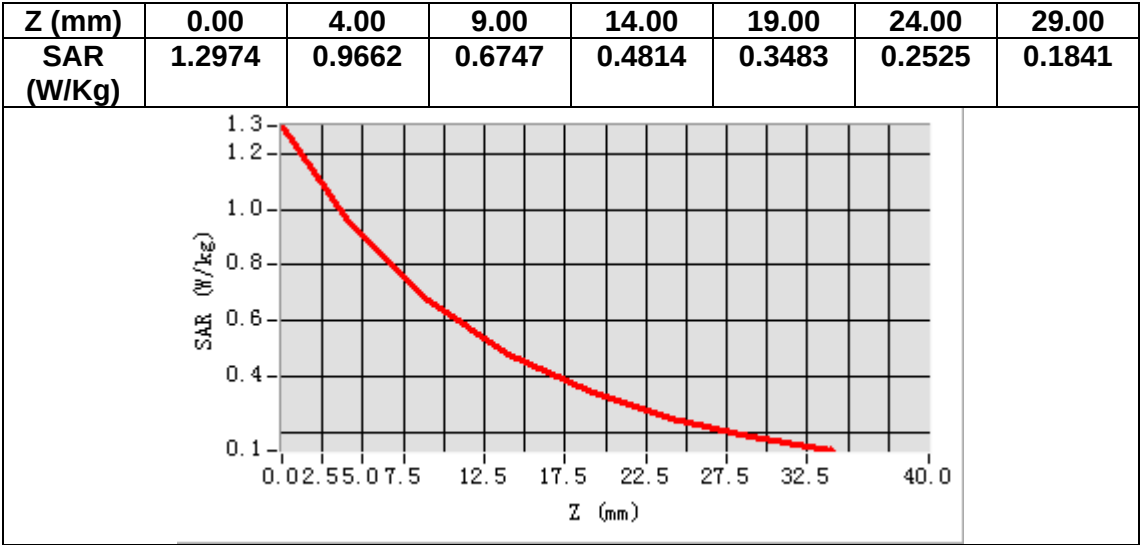
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.556817
SAR 1g (W/Kg)	0.824481



MEASUREMENT 2

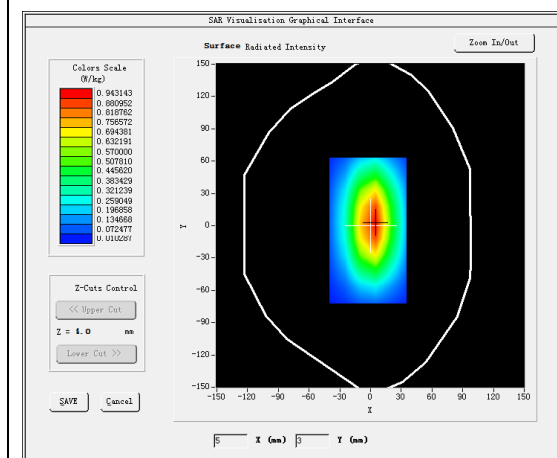
A. Experimental conditions.

<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>

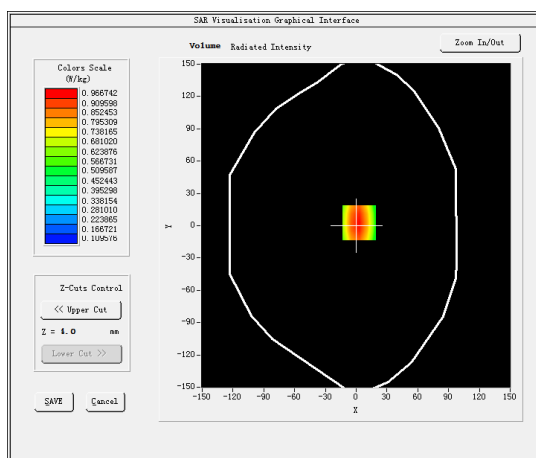
B. SAR Measurement Results

Frequency (MHz)	750.000000
Relative permittivity (real part)	55.400135
Relative permittivity (imaginary part)	23.201530
Conductivity (S/m)	0.973021
Variation (%)	0.910000

SURFACE SAR



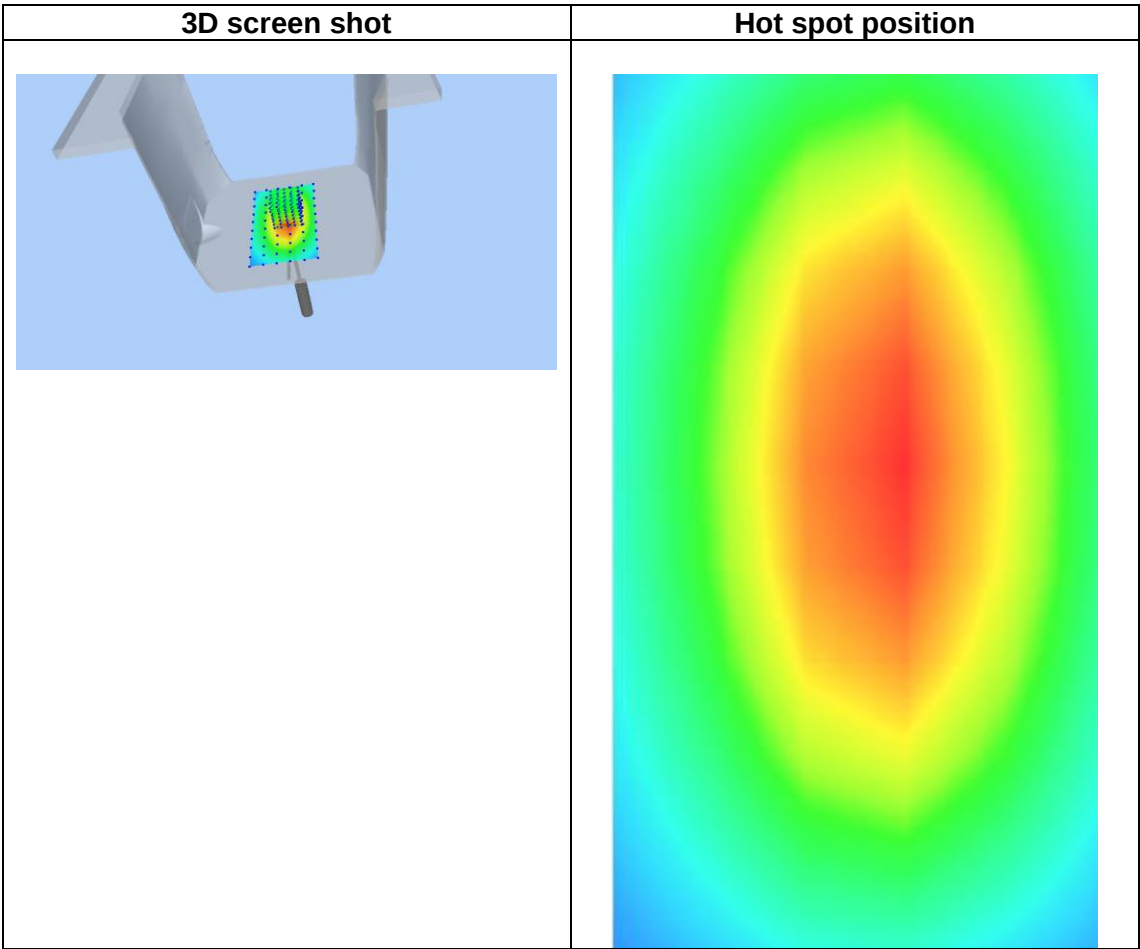
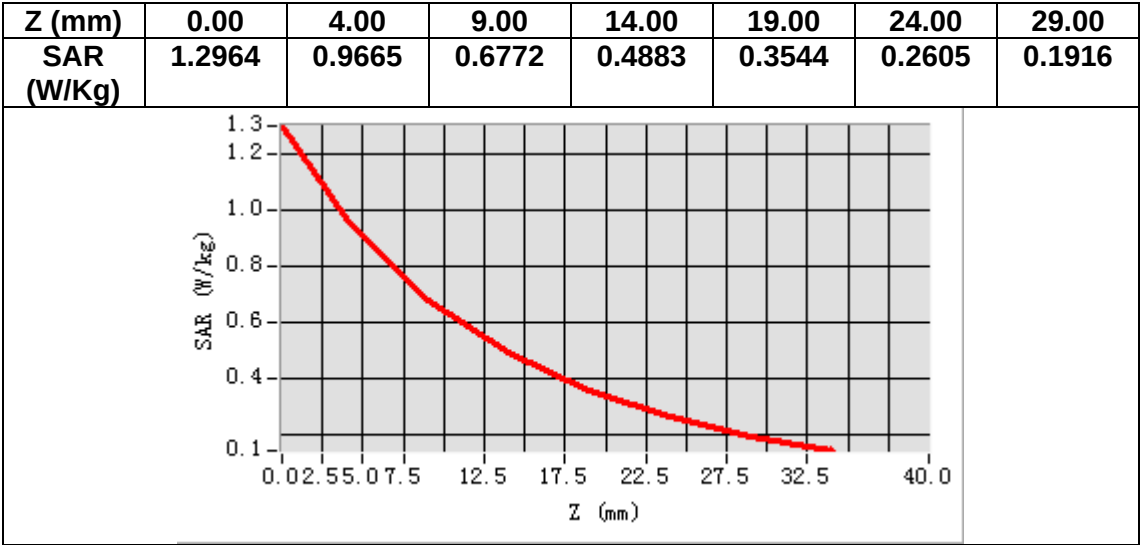
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.582252
SAR 1g (W/Kg)	0.890152



MEASUREMENT 3

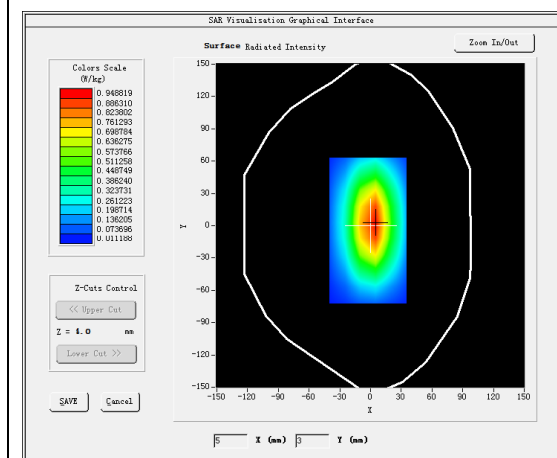
A. Experimental conditions.

<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>

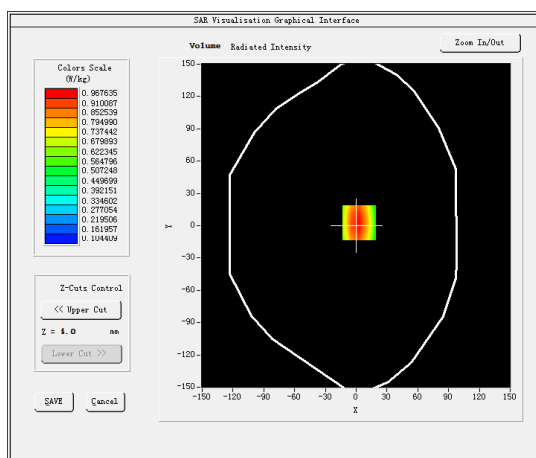
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.803217
Relative permittivity (imaginary part)	20.103430
Conductivity (S/m)	0.933523
Variation (%)	-0.490000

SURFACE SAR



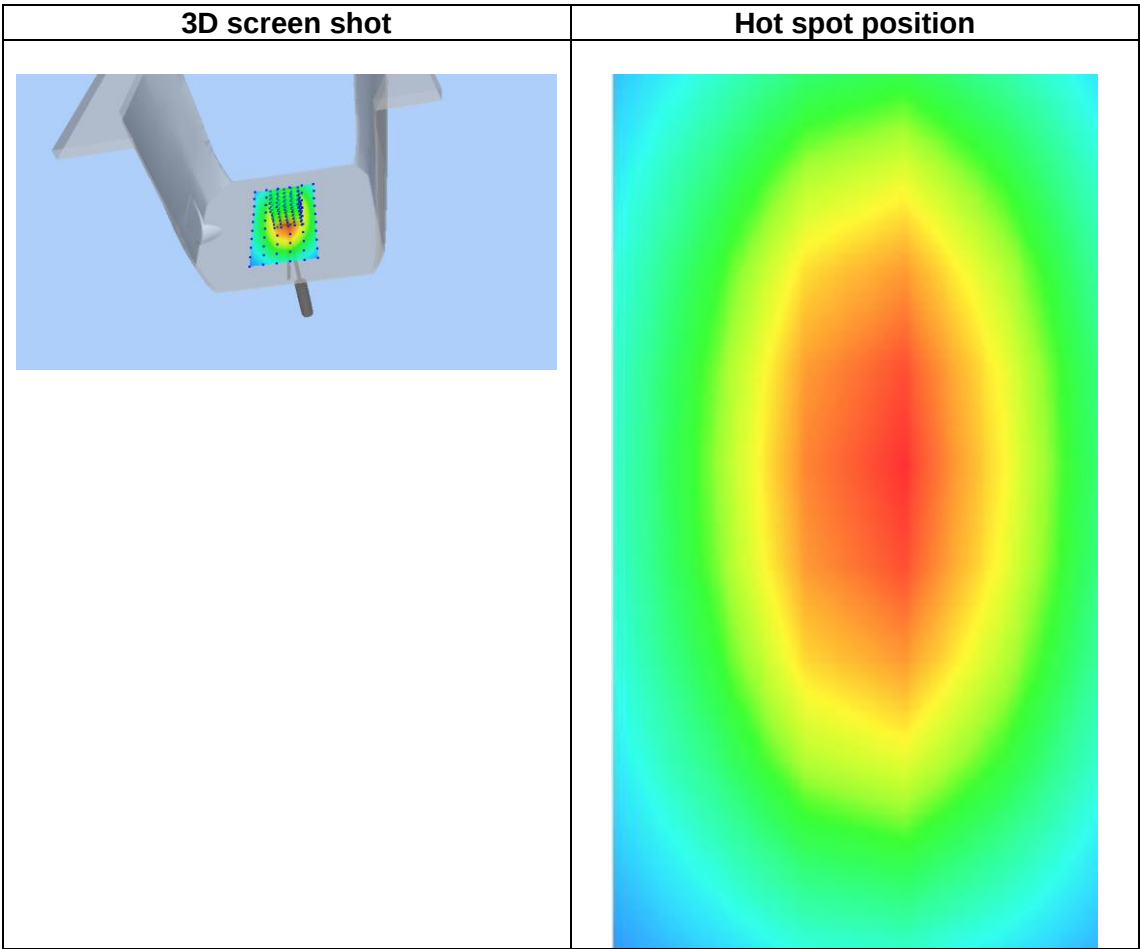
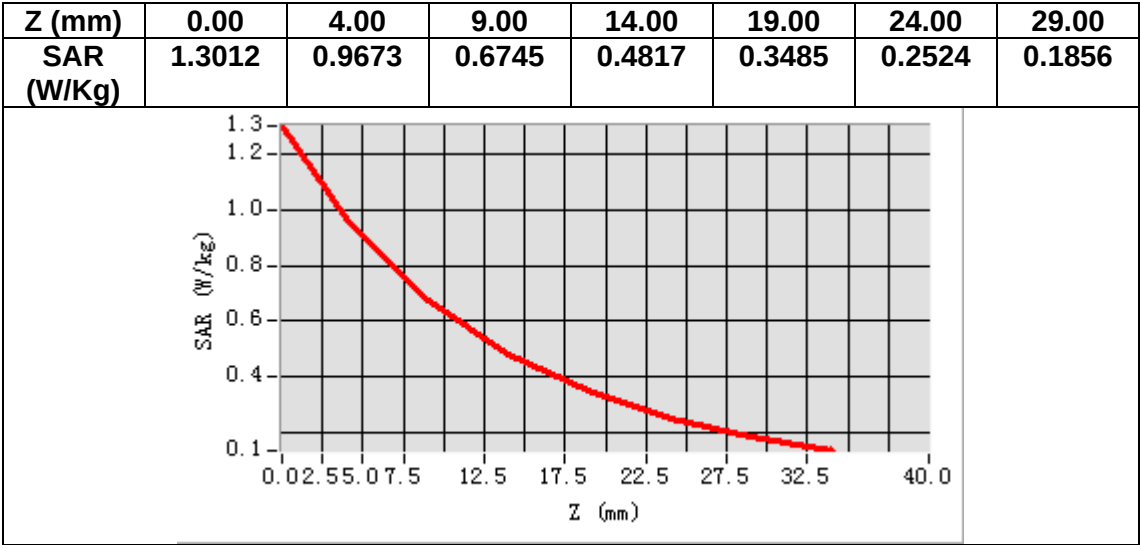
VOLUME SAR



Maximum location: X=3.00, Y=3.00

SAR Peak: 1.30 W/kg

SAR 10g (W/Kg)	0.614839
SAR 1g (W/Kg)	0.937218



MEASUREMENT 4

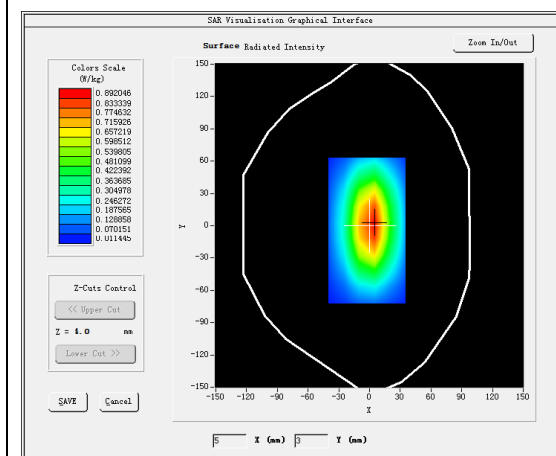
A. Experimental conditions.

<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>

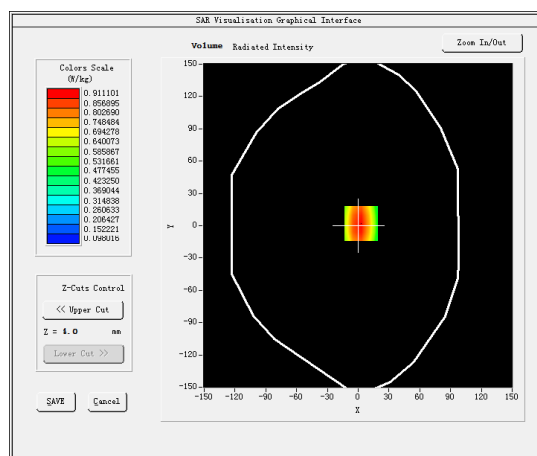
B. SAR Measurement Results

Frequency (MHz)	835.000000
Relative permittivity (real part)	54.463126
Relative permittivity (imaginary part)	21.841435
Conductivity (S/m)	0.993284
Variation (%)	-0.840000

SURFACE SAR



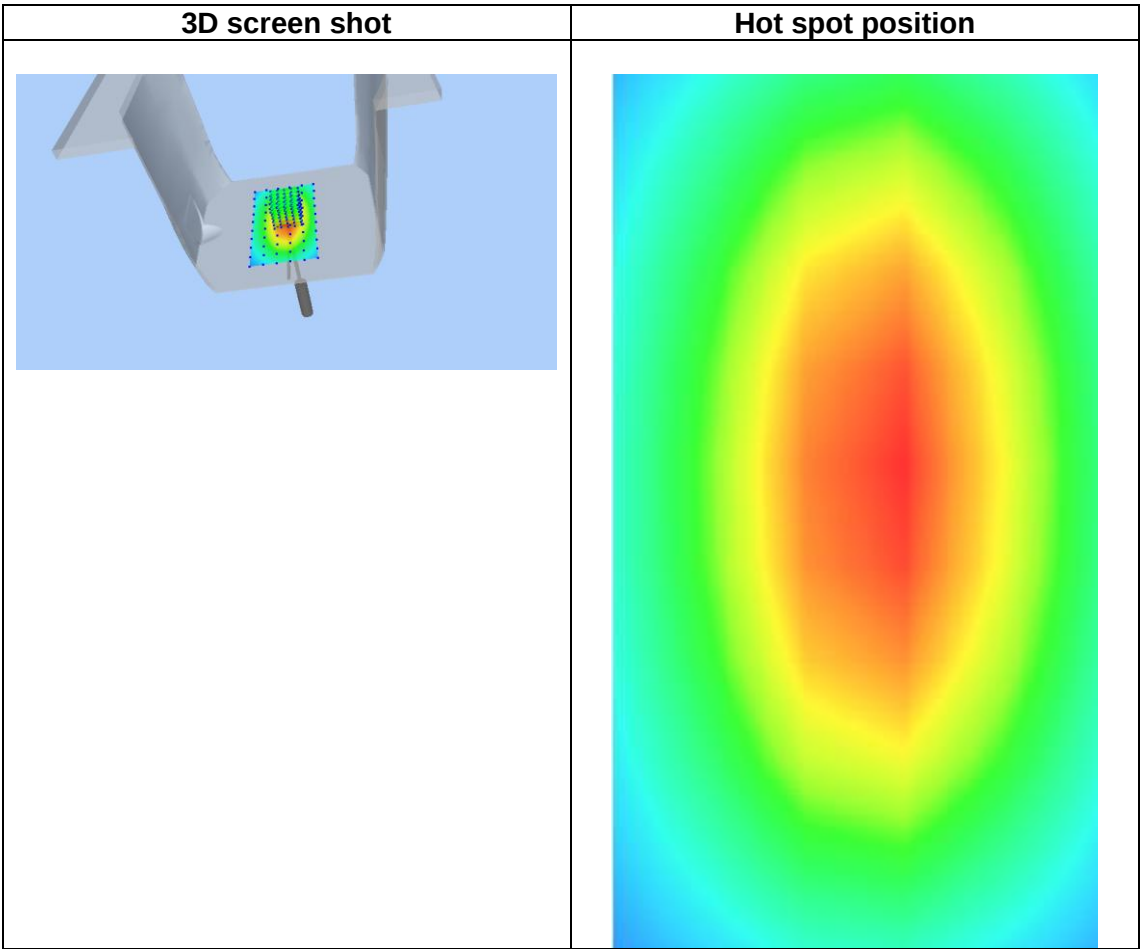
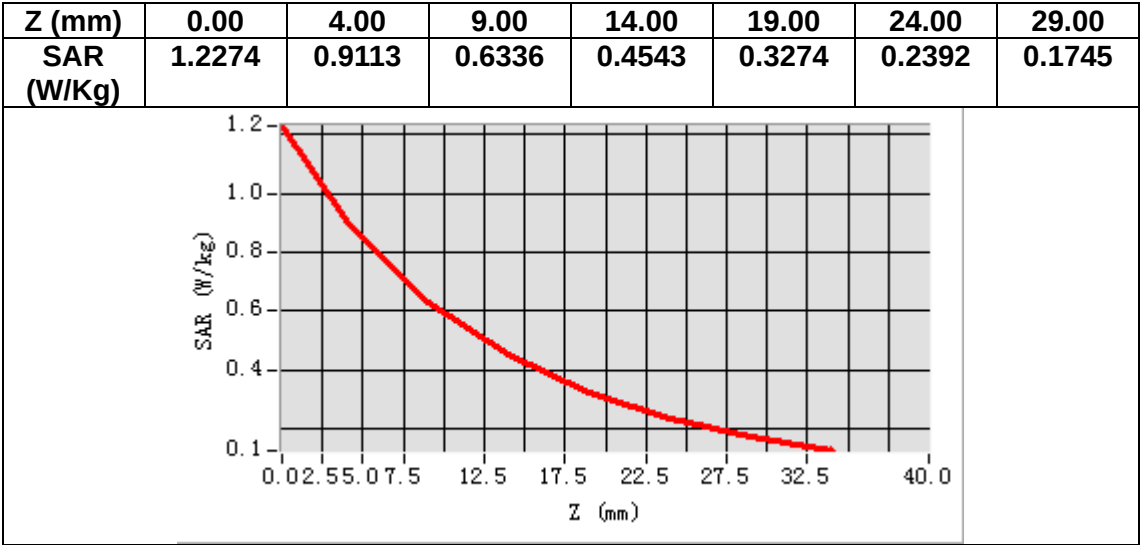
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 1.23 W/kg

SAR 10g (W/Kg)	0.598729
SAR 1g (W/Kg)	0.932494



MEASUREMENT 5

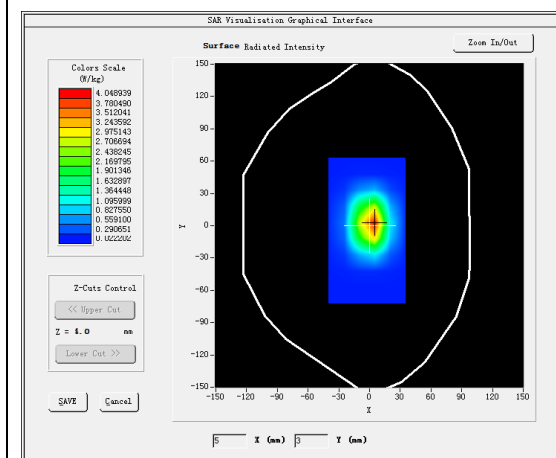
A. Experimental conditions.

<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>

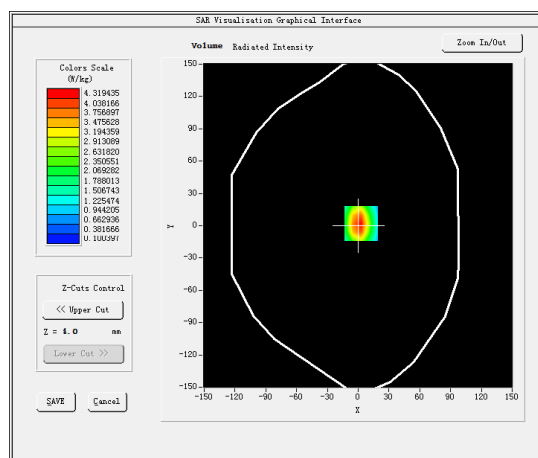
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	39.162735
Relative permittivity (imaginary part)	14.357302
Conductivity (S/m)	1.442821
Variation (%)	-1.880000

SURFACE SAR



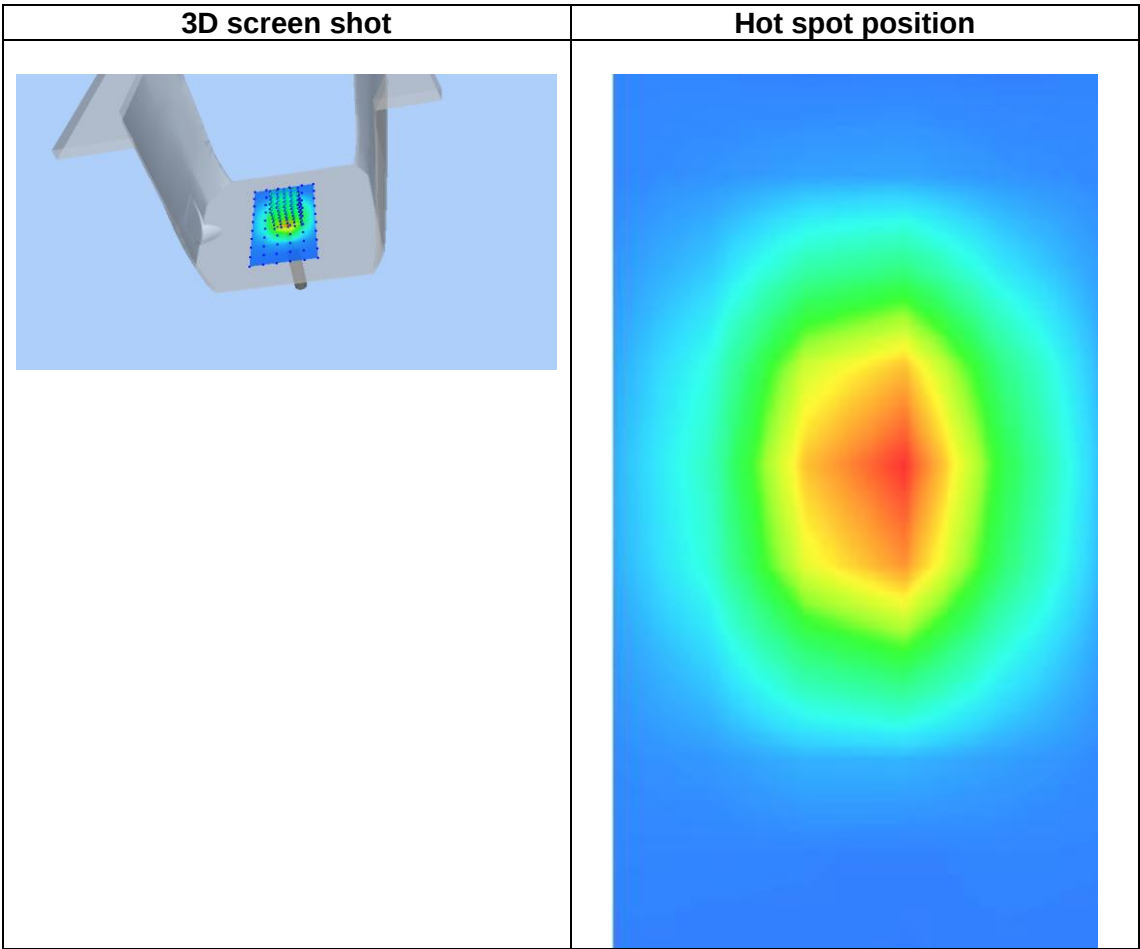
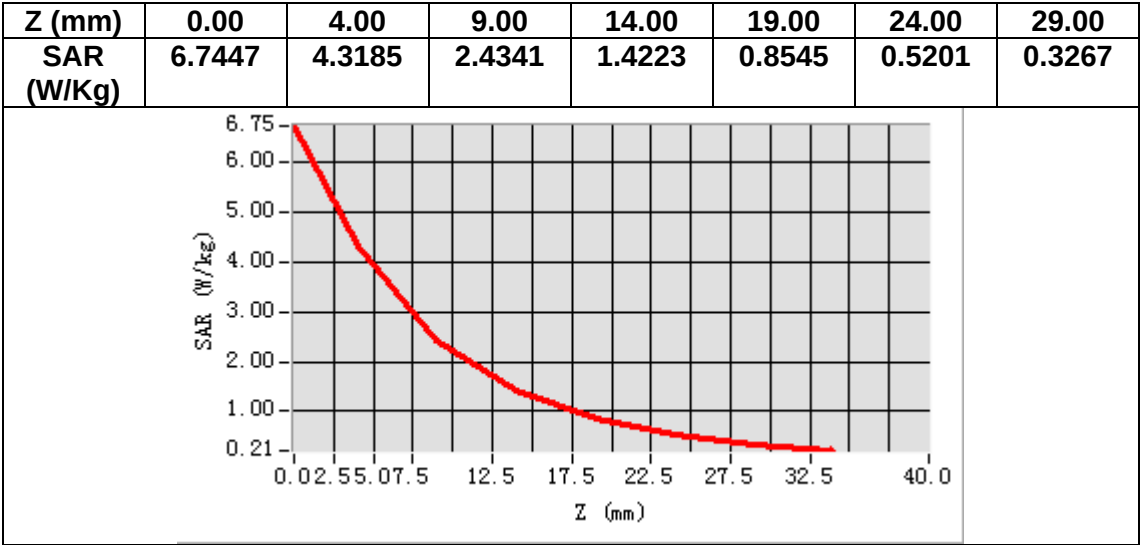
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	1.982459
SAR 1g (W/Kg)	3.904112



MEASUREMENT 6

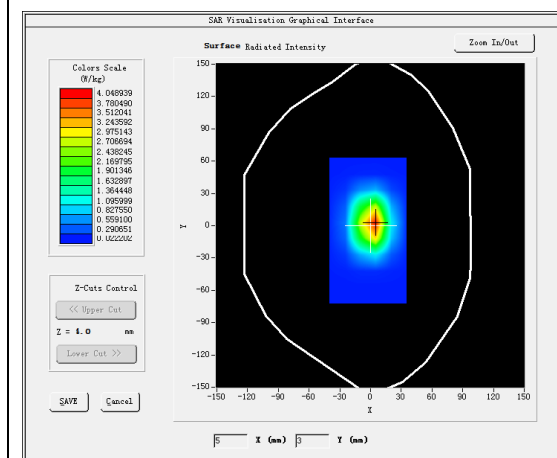
A. Experimental conditions.

<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>

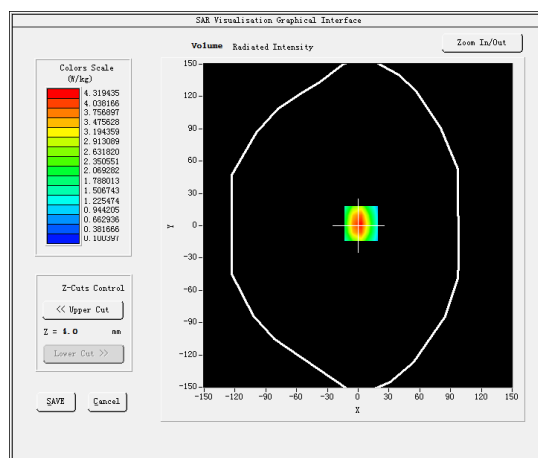
B. SAR Measurement Results

Frequency (MHz)	1800.000000
Relative permittivity (real part)	53.463471
Relative permittivity (imaginary part)	15.611244
Conductivity (S/m)	1.563759
Variation (%)	-0.380000

SURFACE SAR



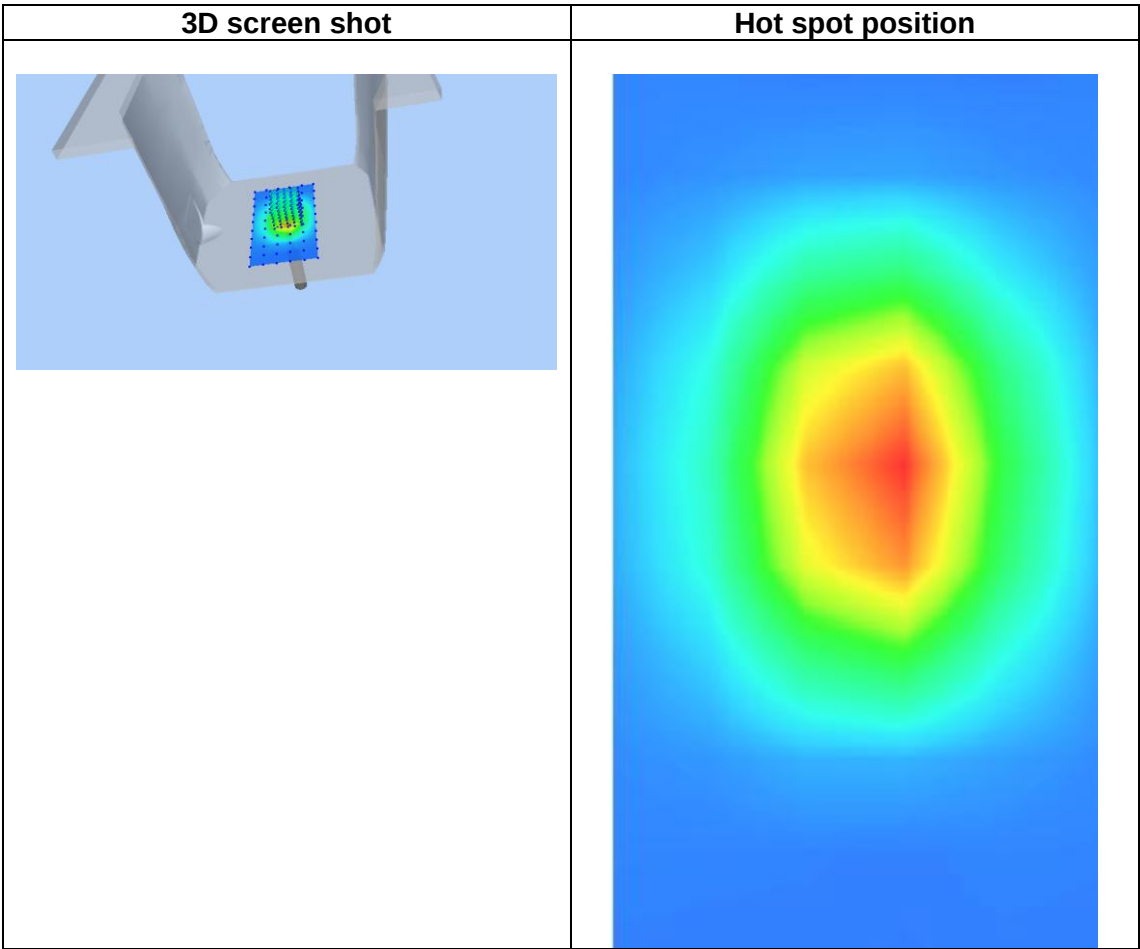
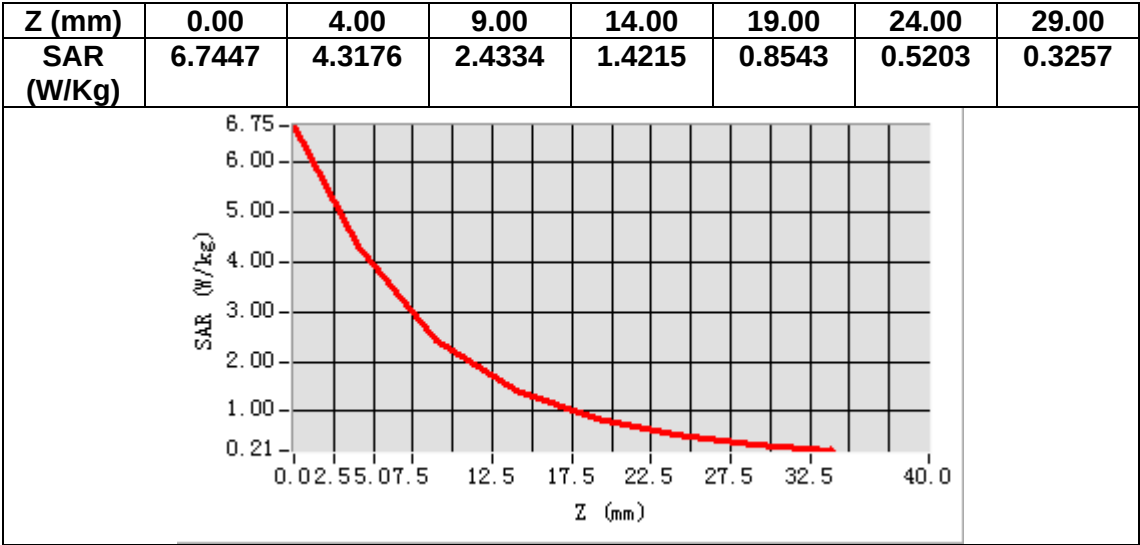
VOLUME SAR



Maximum location: X=3.00, Y=2.00

SAR Peak: 6.82 W/kg

SAR 10g (W/Kg)	2.092437
SAR 1g (W/Kg)	3.653251



MEASUREMENT 7

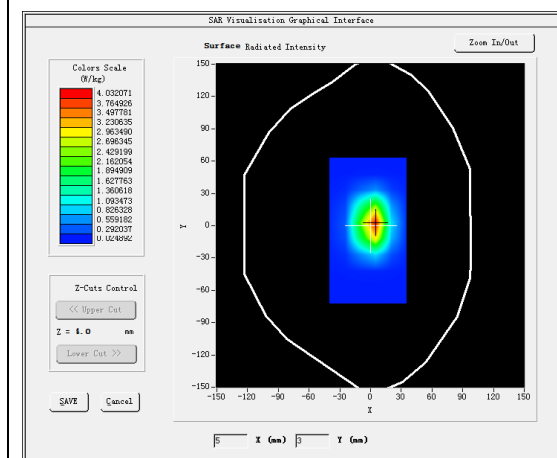
A. Experimental conditions.

<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>

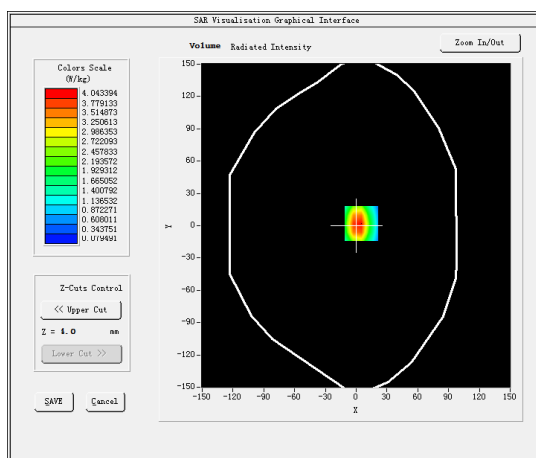
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	41.063541
Relative permittivity (imaginary part)	13.79021
Conductivity (S/m)	1.462563
Variation (%)	-0.810000

SURFACE SAR



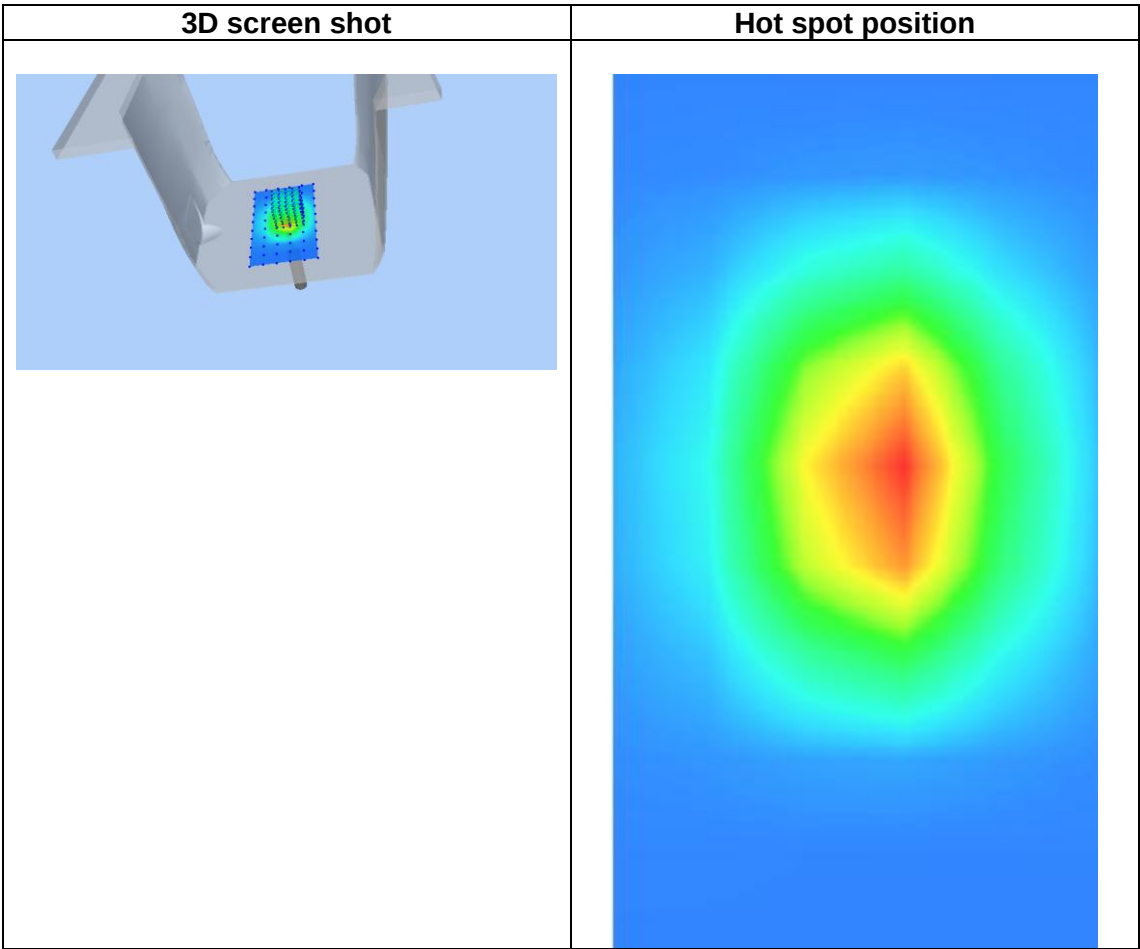
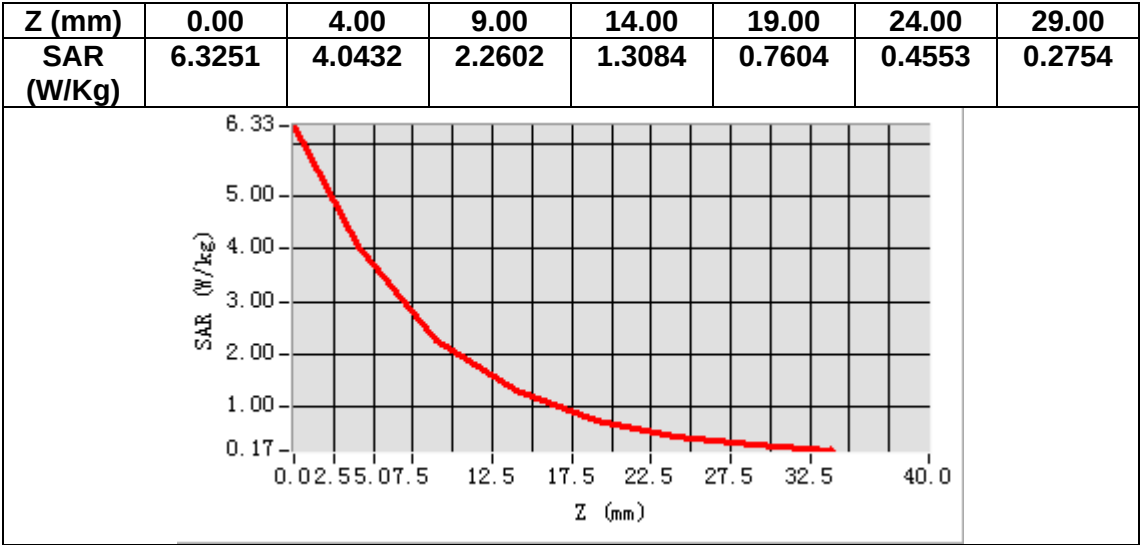
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.70 W/kg

SAR 10g (W/Kg)	2.035364
SAR 1g (W/Kg)	3.924820



MEASUREMENT 8

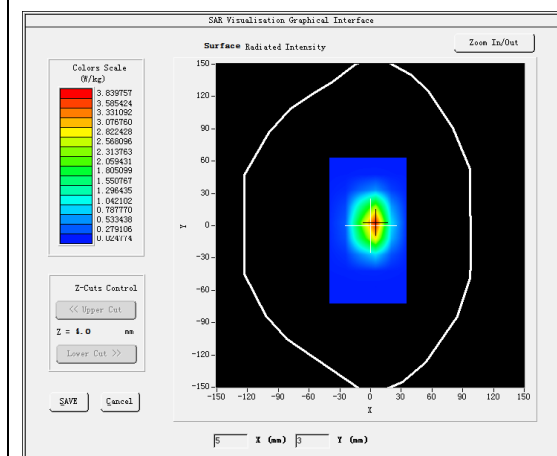
A. Experimental conditions.

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>

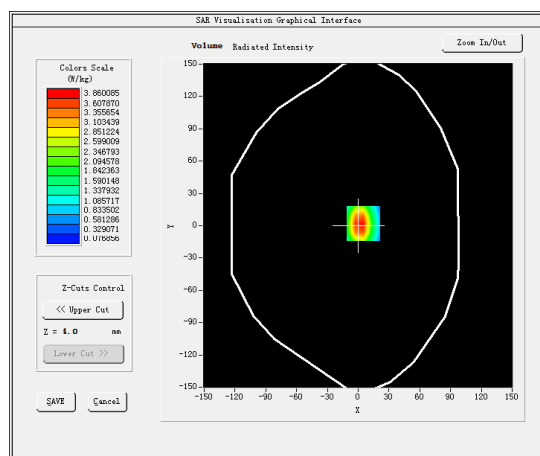
B. SAR Measurement Results

Frequency (MHz)	1900.000000
Relative permittivity (real part)	52.802499
Relative permittivity (imaginary part)	15.004311
Conductivity (S/m)	1.578447
Variation (%)	-1.320000

SURFACE SAR



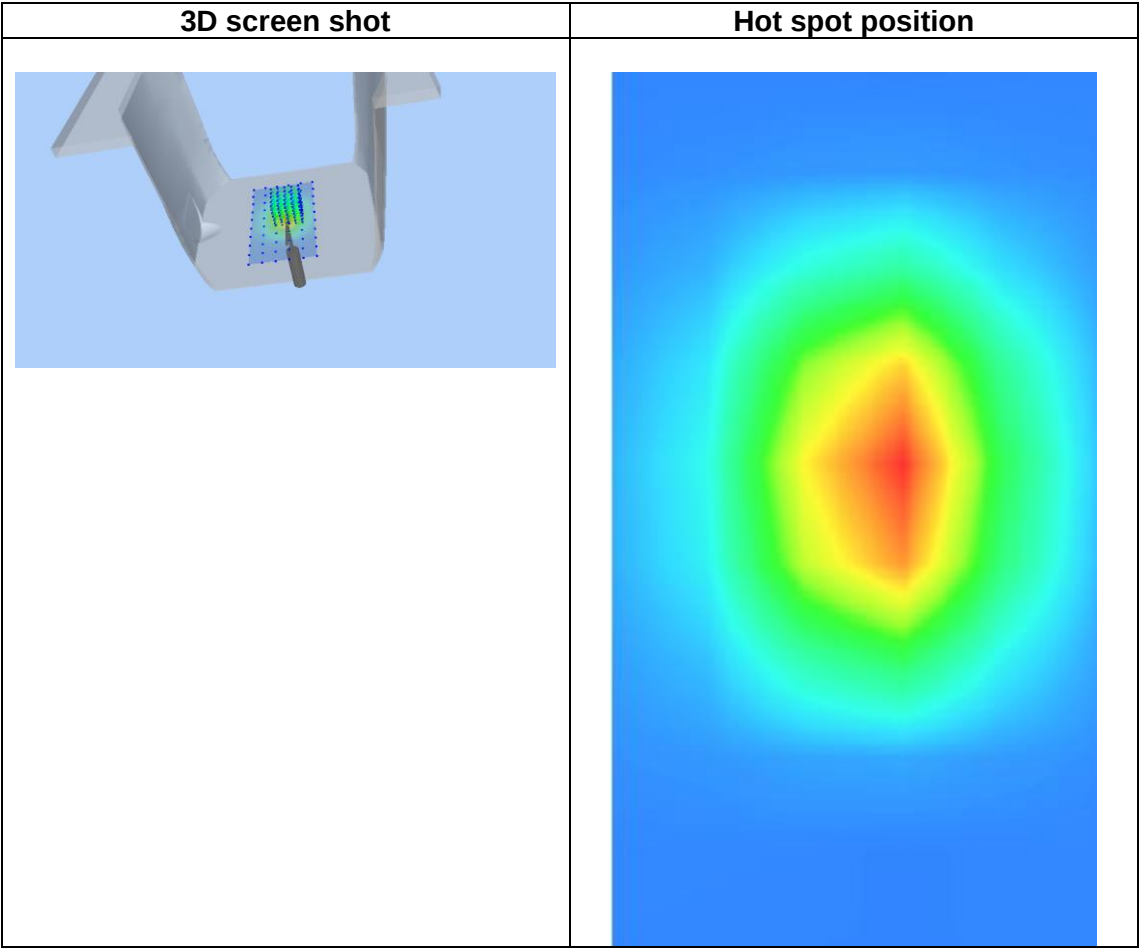
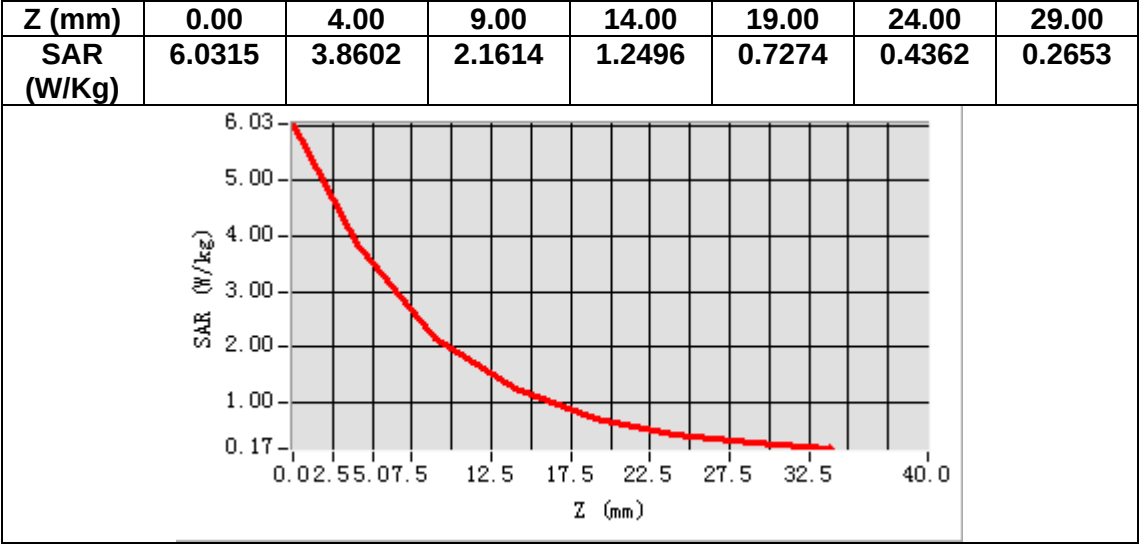
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 6.39 W/kg

SAR 10g (W/Kg)	2.018784
SAR 1g (W/Kg)	3.832165



MEASUREMENT 9

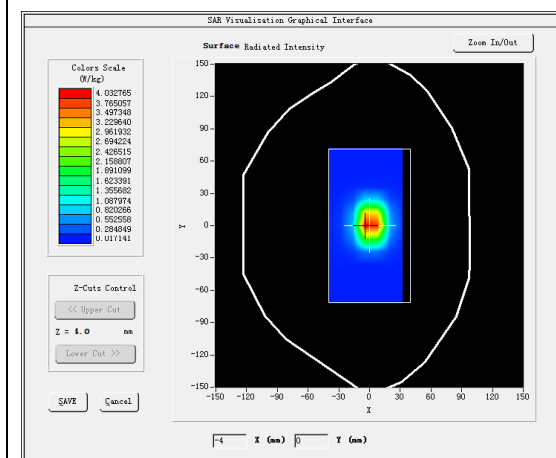
A. Experimental conditions.

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

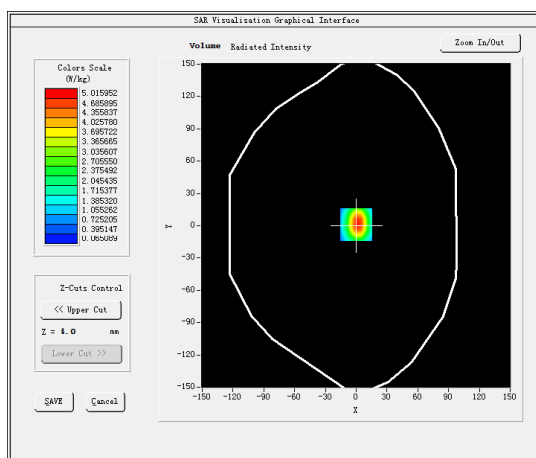
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	39.302341
Relative permittivity (imaginary part)	13.780112
Conductivity (S/m)	1.883464
Variation (%)	0.520000

SURFACE SAR



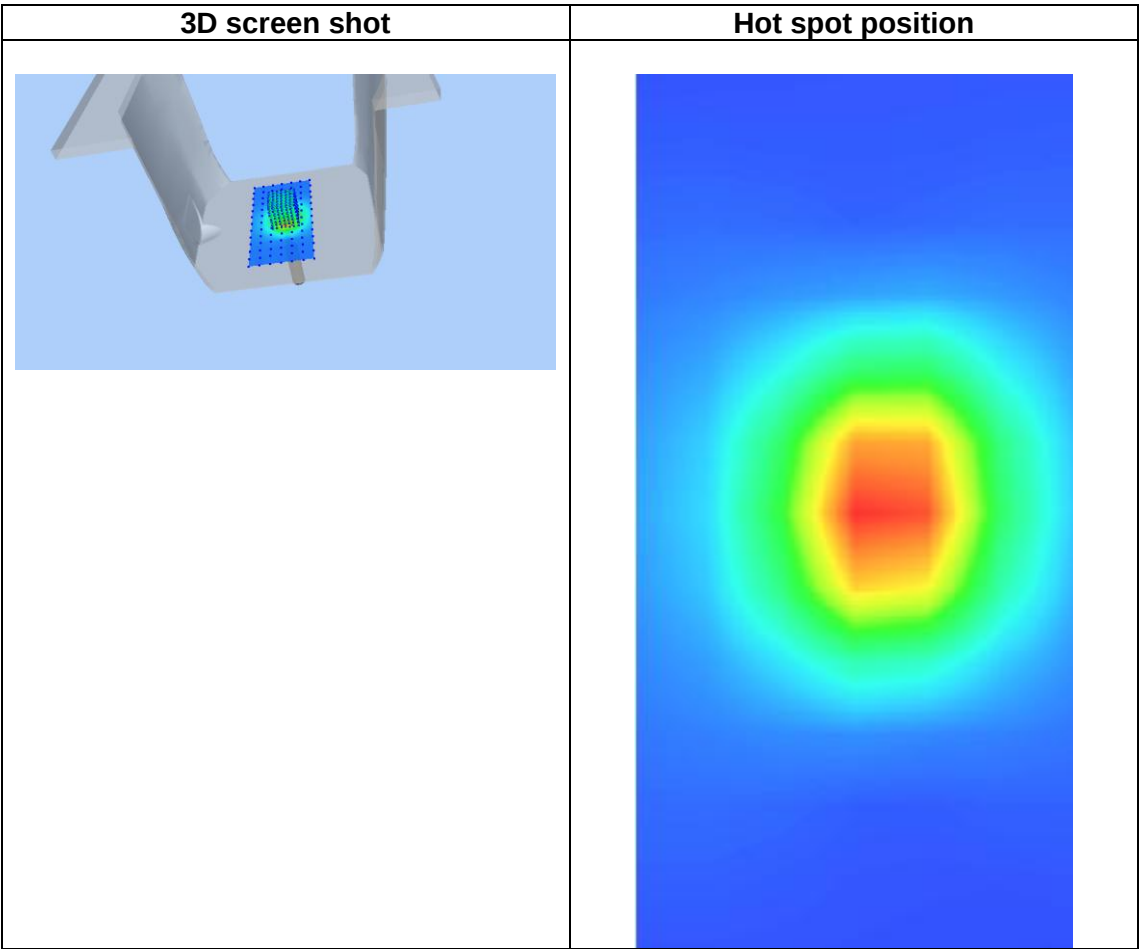
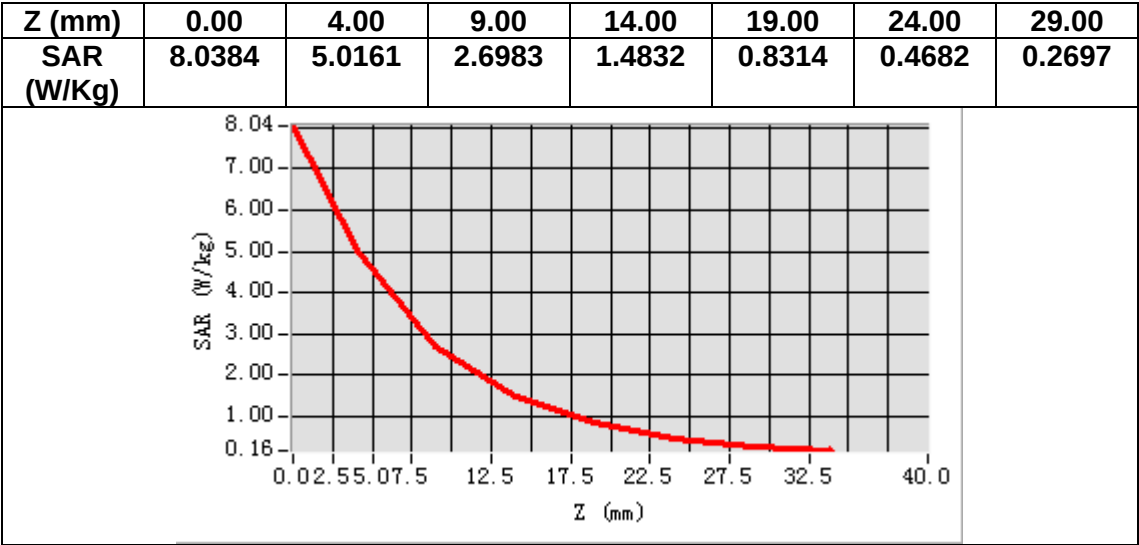
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.14 W/kg

SAR 10g (W/Kg)	2.384108
SAR 1g (W/Kg)	5.323165



MEASUREMENT 10

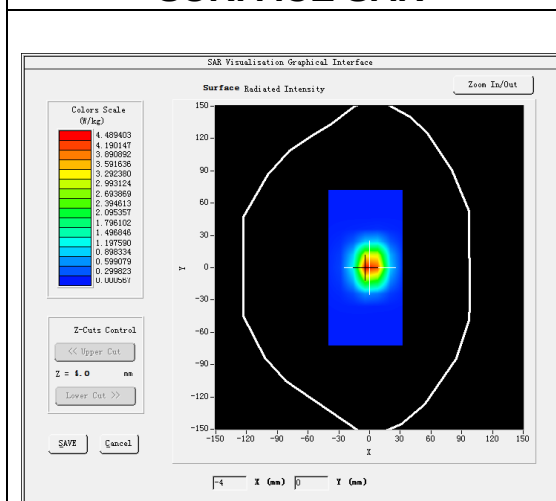
A. Experimental conditions.

<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>

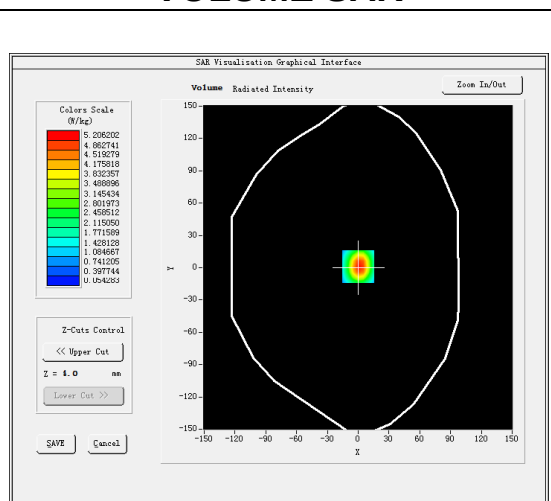
B. SAR Measurement Results

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.294343
Relative permittivity (imaginary part)	14.853194
Conductivity (S/m)	2.021329
Variation (%)	-1.020000

SURFACE SAR



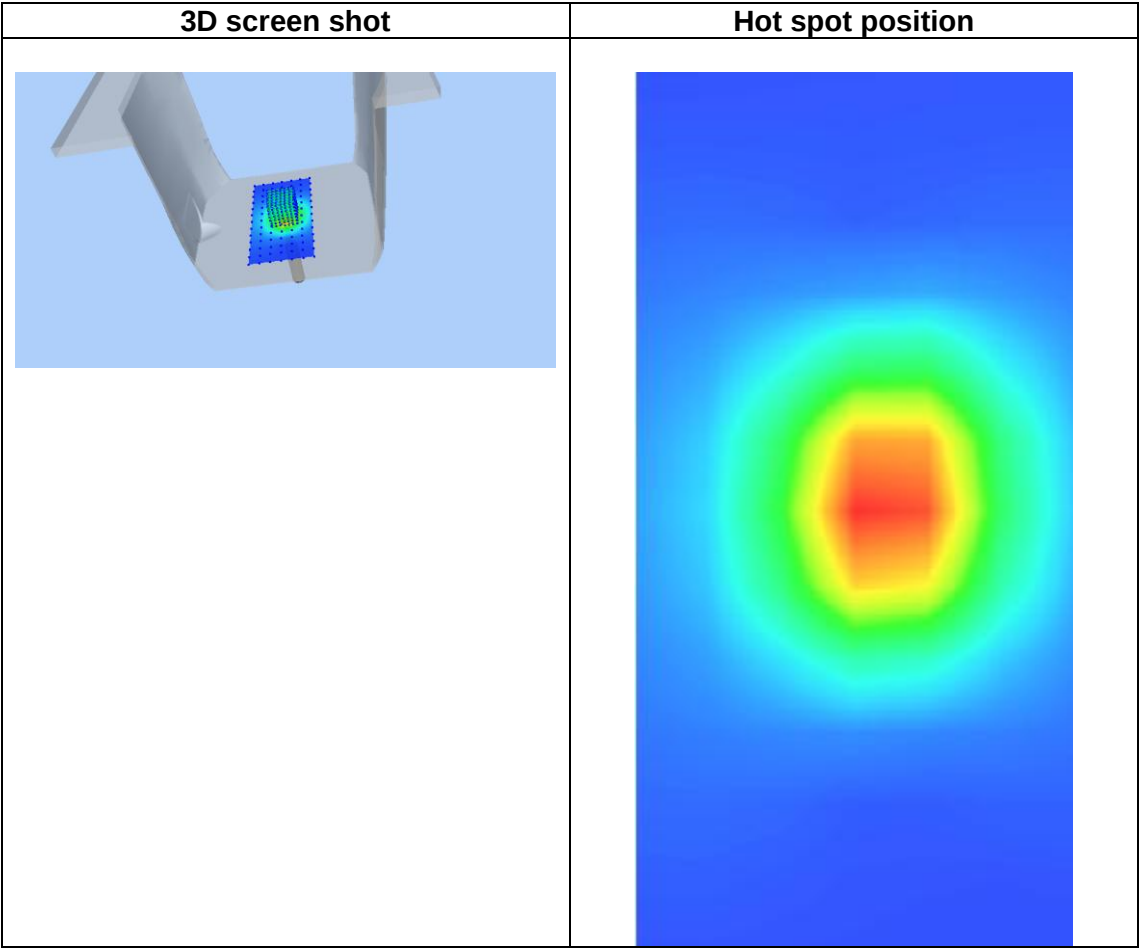
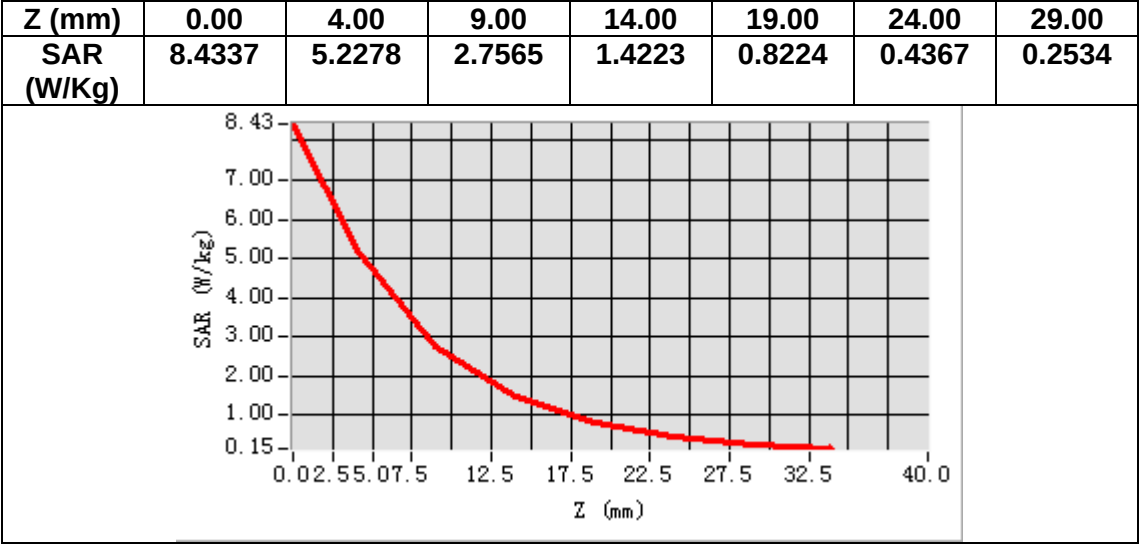
VOLUME SAR



Maximum location: X=0.00, Y=1.00

SAR Peak: 8.46 W/kg

SAR 10g (W/Kg)	2.294106
SAR 1g (W/Kg)	4.922395



MEASUREMENT 11

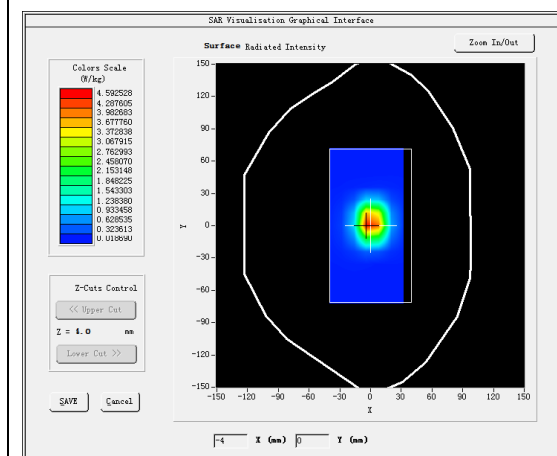
A. Experimental conditions.

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

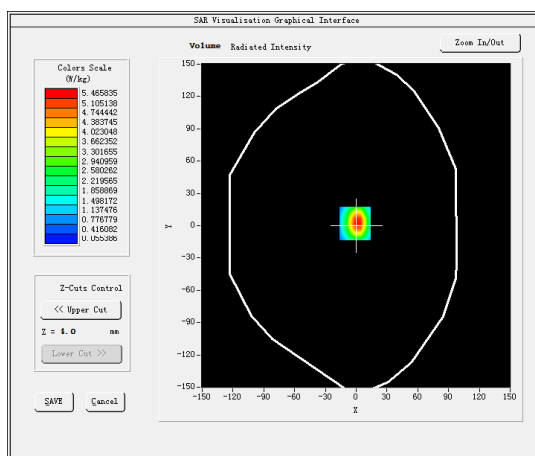
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	38.371213
Relative permittivity (imaginary part)	14.082359
Conductivity (S/m)	2.034158
Variation (%)	-2.280000

SURFACE SAR



VOLUME SAR

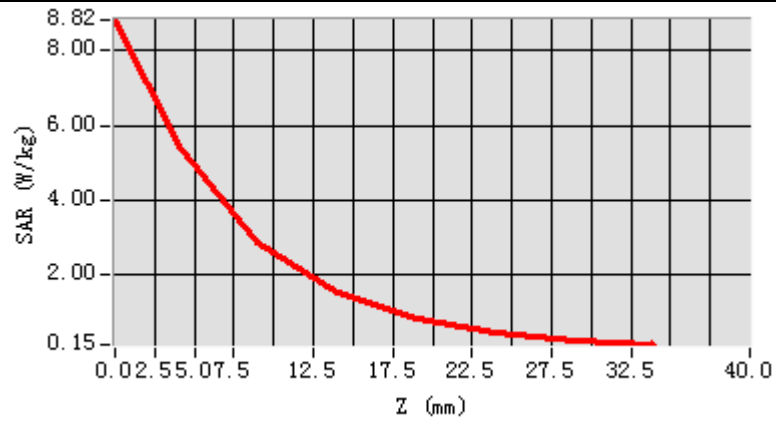


Maximum location: X=-1.00, Y=2.00

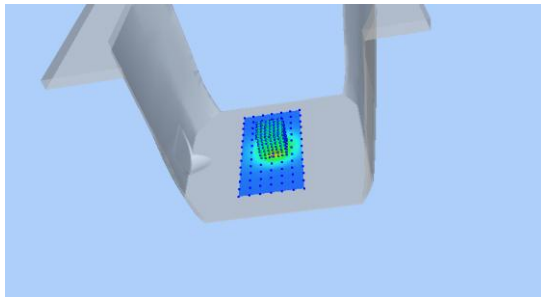
SAR Peak: 9.07 W/kg

SAR 10g (W/Kg)	2.512381
SAR 1g (W/Kg)	5.523138

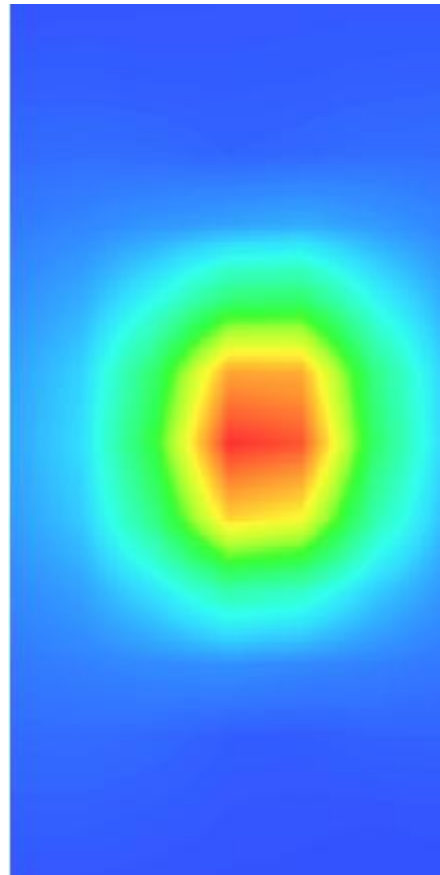
Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	8.8187	5.4637	2.8981	1.5671	0.8596	0.4718	0.2635



3D screen shot



Hot spot position



MEASUREMENT 12

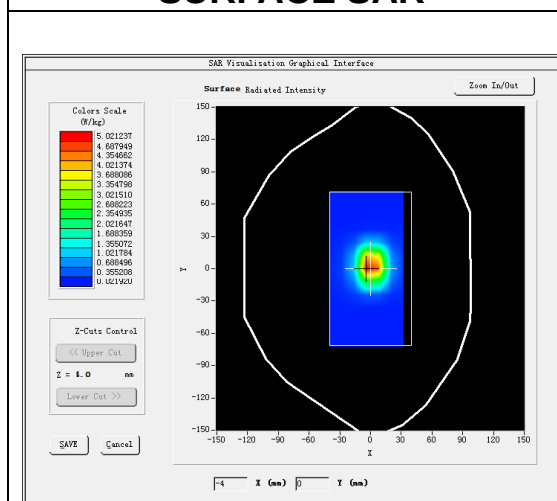
A. Experimental conditions.

<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>

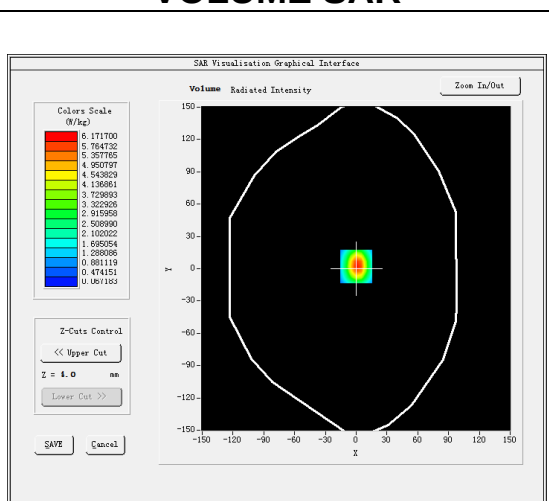
B. SAR Measurement Results

Frequency (MHz)	2600.000000
Relative permittivity (real part)	52.663291
Relative permittivity (imaginary part)	15.374188
Conductivity (S/m)	2.220218
Variation (%)	-2.430000

SURFACE SAR



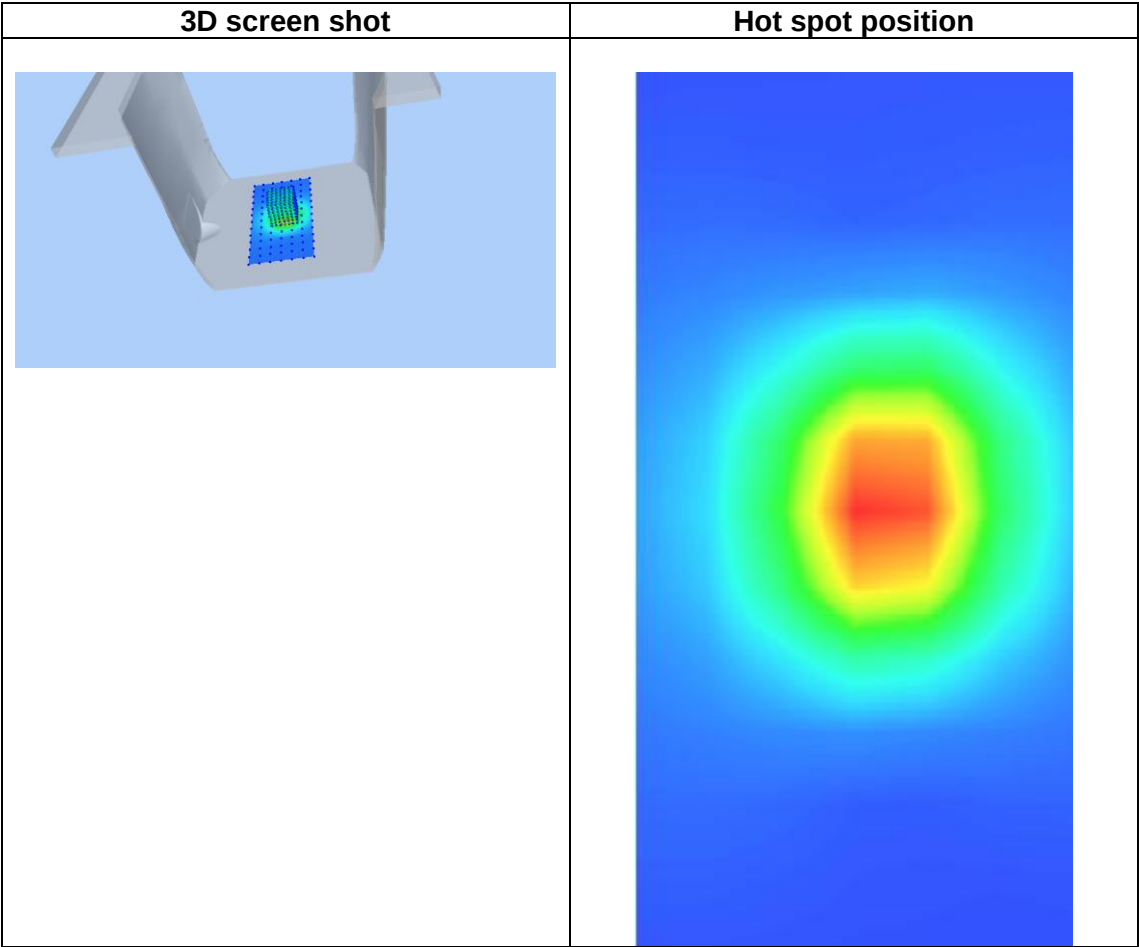
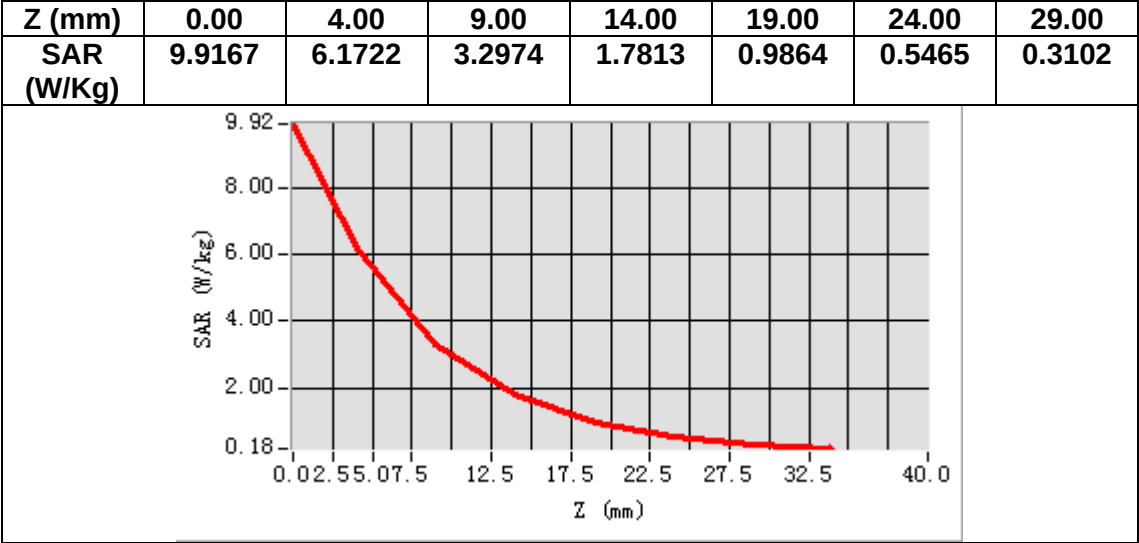
VOLUME SAR



Maximum location: X=0.00, Y=2.00

SAR Peak: 9.99 W/kg

SAR 10g (W/Kg)	2.328140
SAR 1g (W/Kg)	5.282335



MEASUREMENT 13

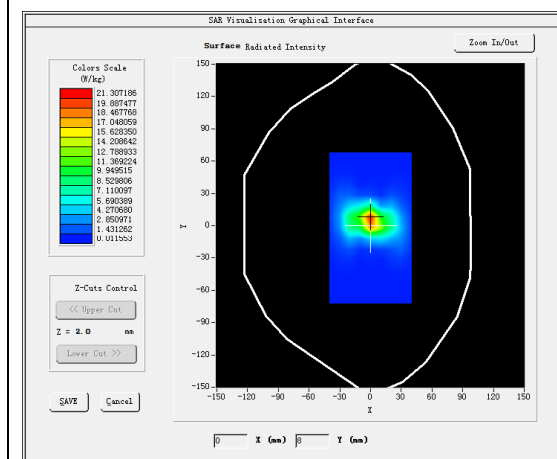
A. Experimental conditions.

<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>

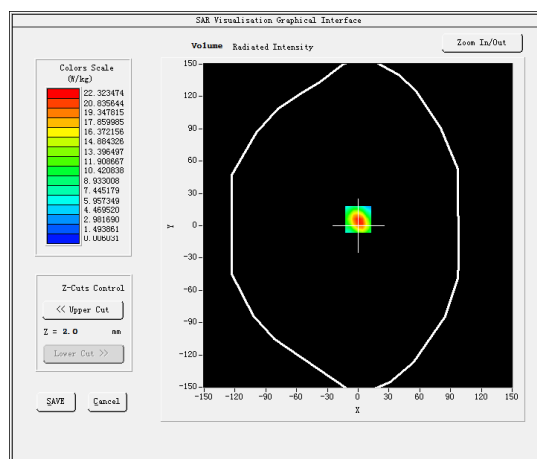
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.662314
Relative permittivity (imaginary part)	16.183214
Conductivity (S/m)	4.673211
Variation (%)	-1.280000

SURFACE SAR



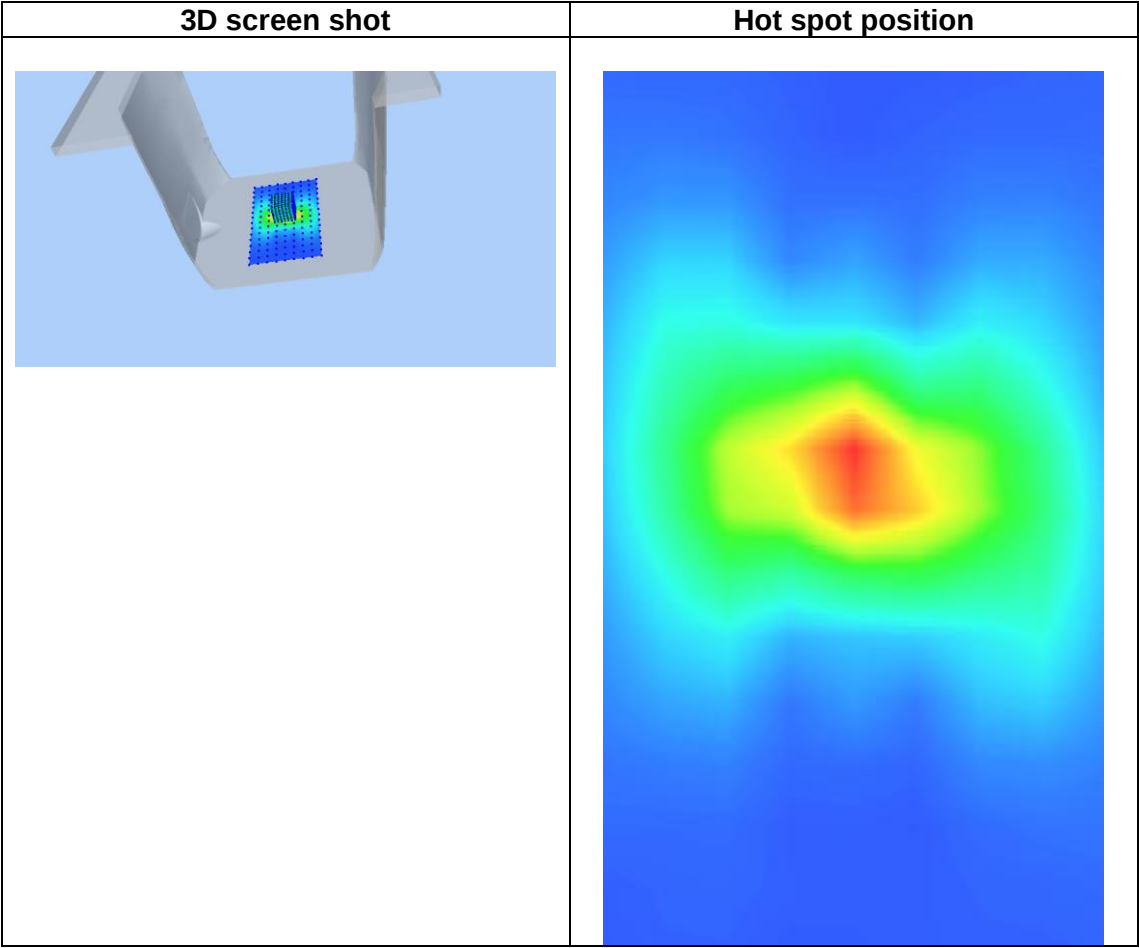
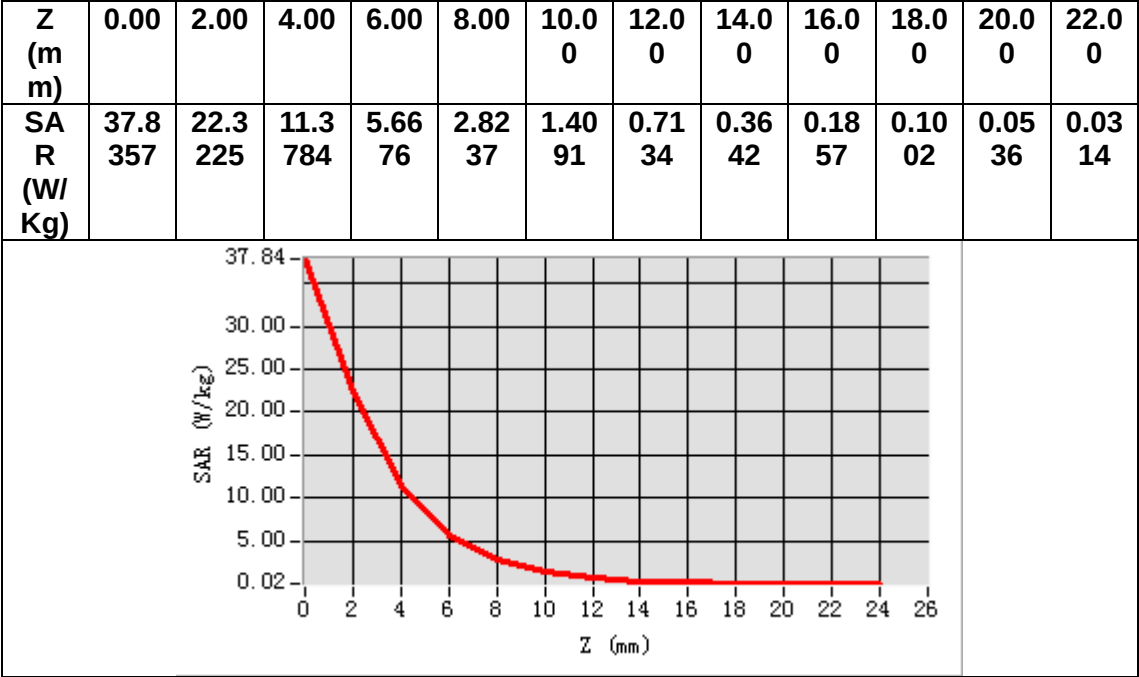
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 40.06 W/kg

SAR 10g (W/Kg)	5.794331
SAR 1g (W/Kg)	15.823217



MEASUREMENT 14

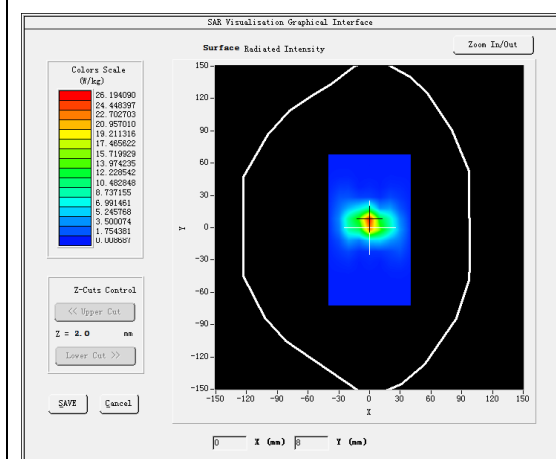
A. Experimental conditions.

<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>

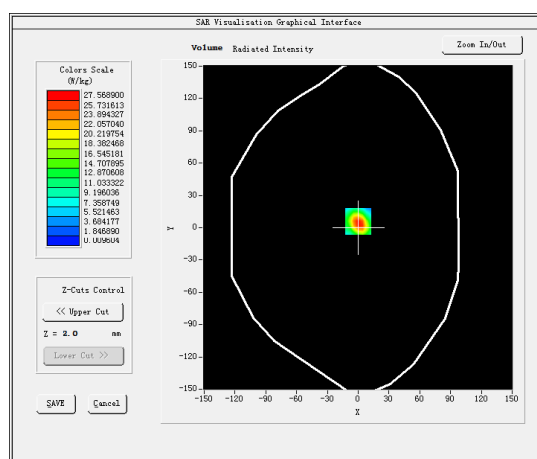
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.584189
Relative permittivity (imaginary part)	18.391220
Conductivity (S/m)	5.313624
Variation (%)	-2.970000

SURFACE SAR



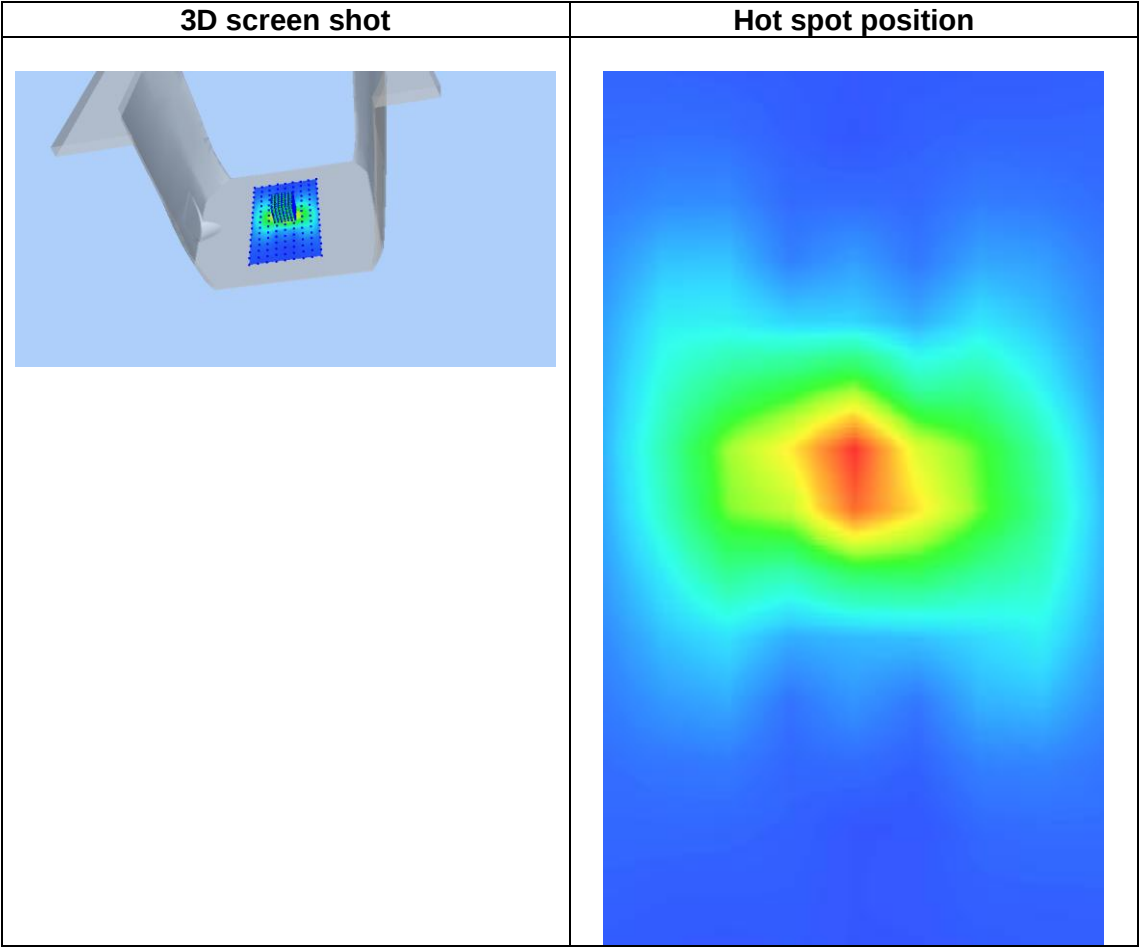
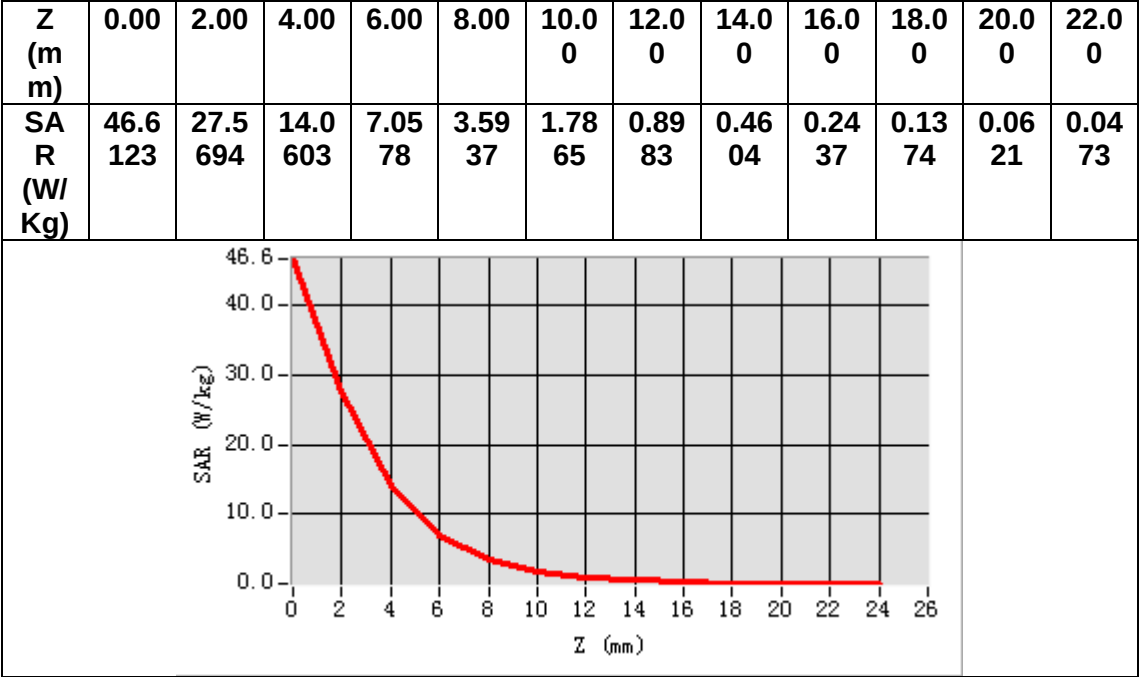
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 49.61 W/kg

SAR 10g (W/Kg)	5.637253
SAR 1g (W/Kg)	15.542128



MEASUREMENT 15

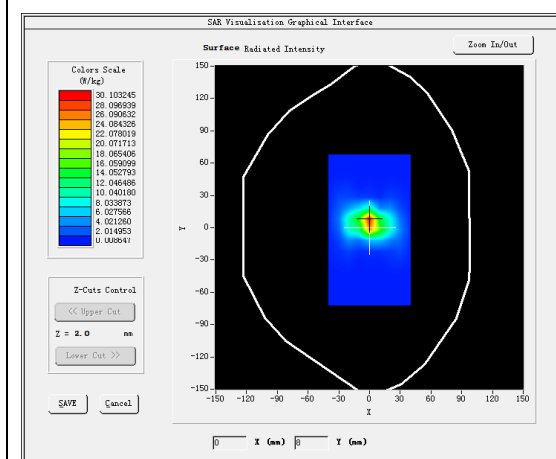
A. Experimental conditions.

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

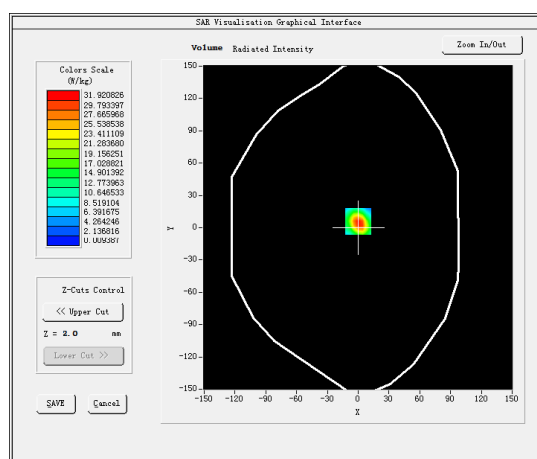
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	34.582434
Relative permittivity (imaginary part)	16.271137
Conductivity (S/m)	5.241341
Variation (%)	-0.810000

SURFACE SAR



VOLUME SAR

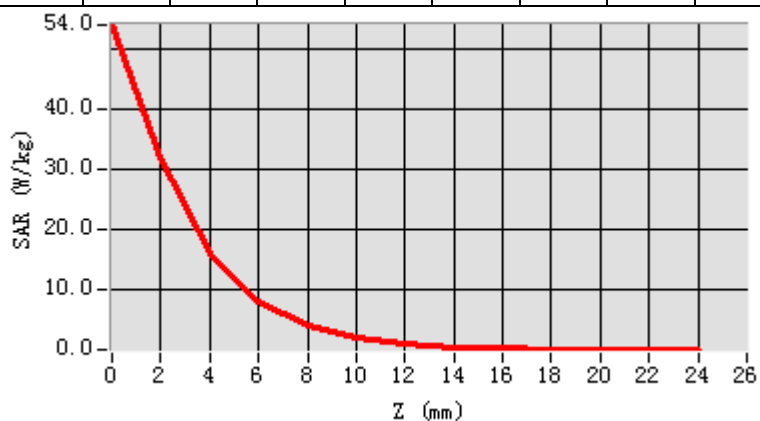


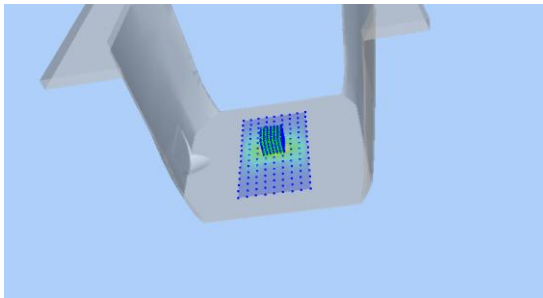
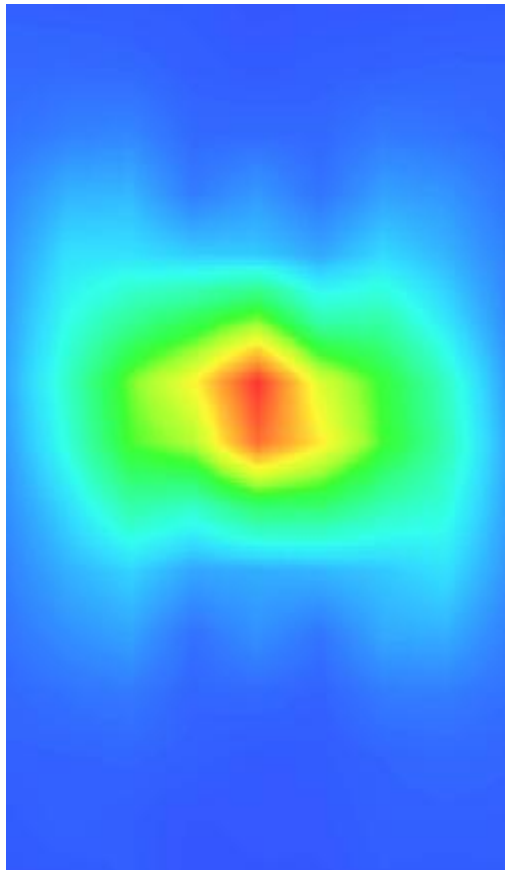
Maximum location: X=0.00, Y=6.00

SAR Peak: 57.37 W/kg

SAR 10g (W/Kg)	6.084372
SAR 1g (W/Kg)	18.124763

Z (mm)	SAR (W/kg)
0	54.0
2	32.0
4	16.0
6	8.0
8	4.0
10	2.0
12	0.0
14	0.0
16	0.0
18	0.0
20	0.0
22	0.0
24	0.0
26	0.0



3D screen shot	Hot spot position
 A 3D perspective view of a white robotic gripper. On the palm of the gripper, there is a square area with a grid of blue dots. A color-coded hot spot is overlaid on this grid, showing a central red/orange region transitioning through yellow and green to a blue outer edge.	 A 2D heatmap representing the hot spot position. The image shows a central, irregularly shaped region of high intensity, colored in shades of red and orange, surrounded by concentric rings of decreasing intensity through yellow, green, and cyan, finally fading into a solid blue background.

MEASUREMENT 16

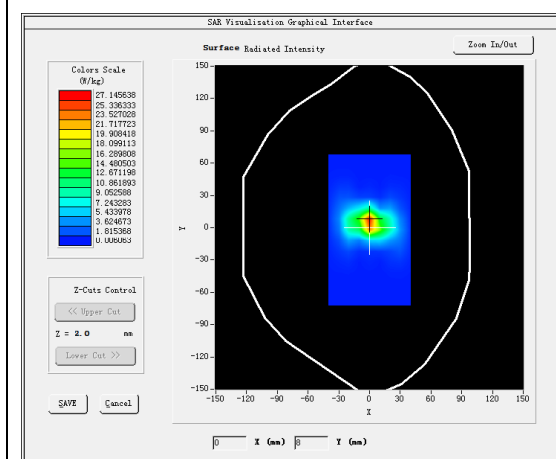
A. Experimental conditions.

<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>

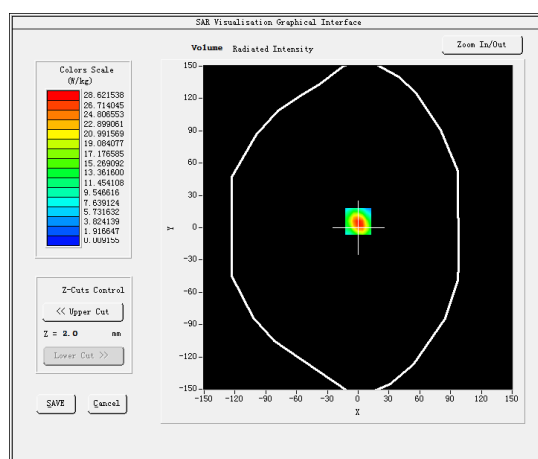
B. SAR Measurement Results

Frequency (MHz)	5800.000000
Relative permittivity (real part)	48.271331
Relative permittivity (imaginary part)	18.911426
Conductivity (S/m)	6.092350
Variation (%)	-0.960000

SURFACE SAR



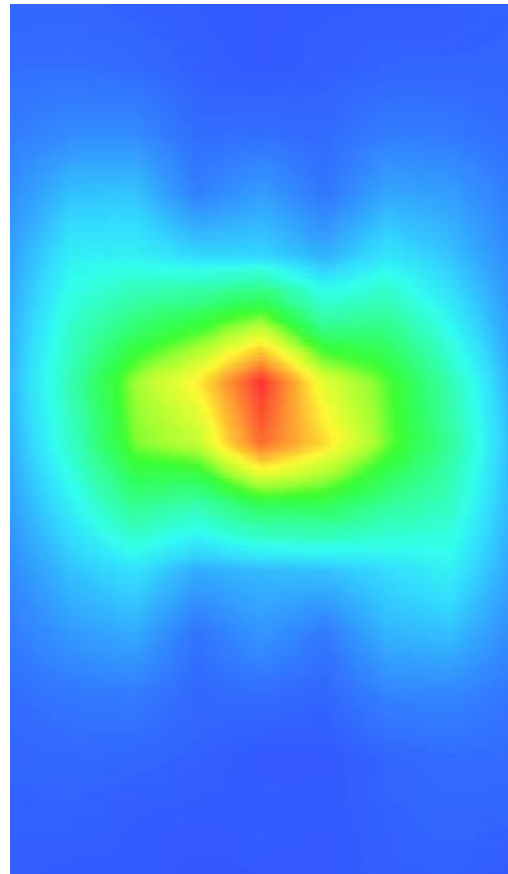
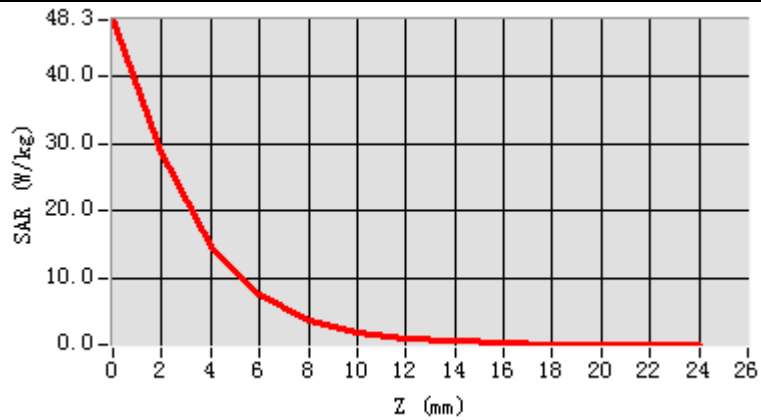
VOLUME SAR



Maximum location: X=0.00, Y=6.00

SAR Peak: 51.30 W/kg

SAR 10g (W/Kg)	5.793224
SAR 1g (W/Kg)	16.787126



13. Appendix C. Plots of High SAR Measurement

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MEASUREMENT 24 LTE Band 7 Body
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

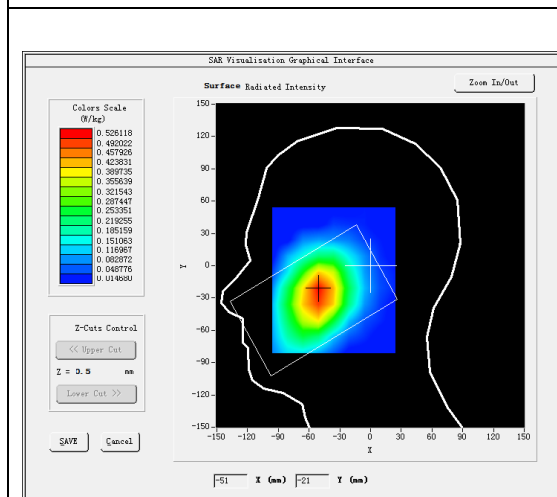
A. Experimental conditions.

<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>

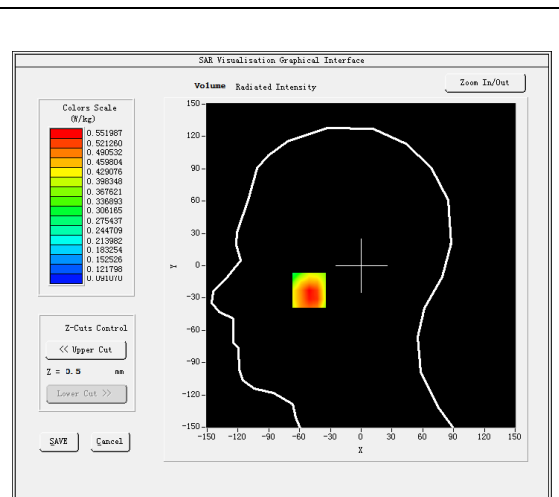
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.710960
Relative permittivity (imaginary part)	20.121540
Conductivity (S/m)	0.934981
Variation (%)	-0.300000

SURFACE SAR



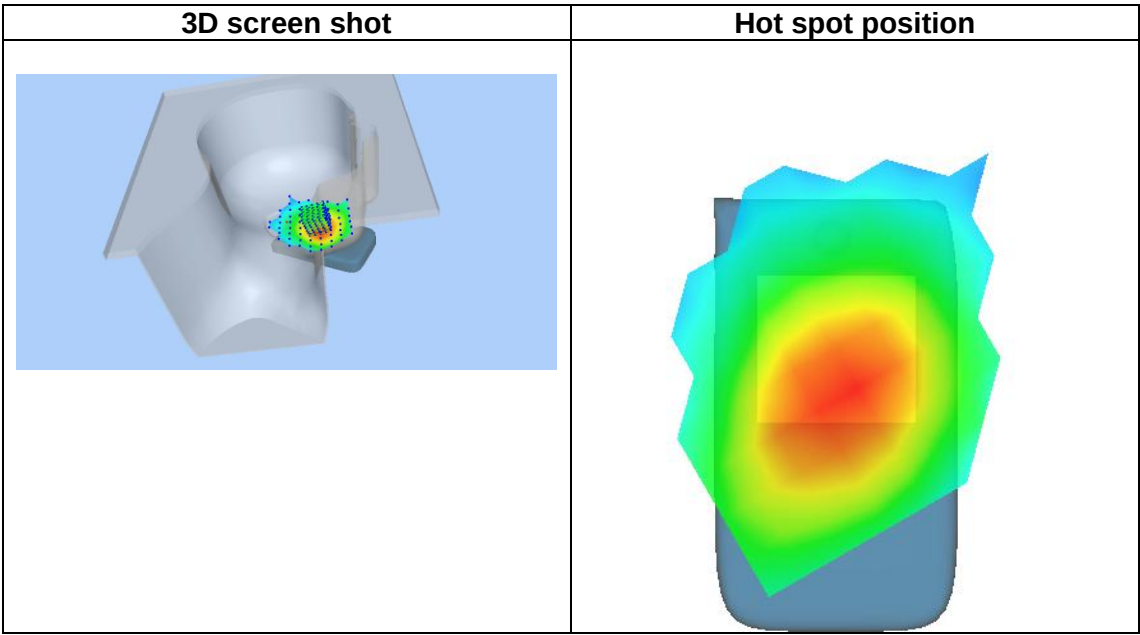
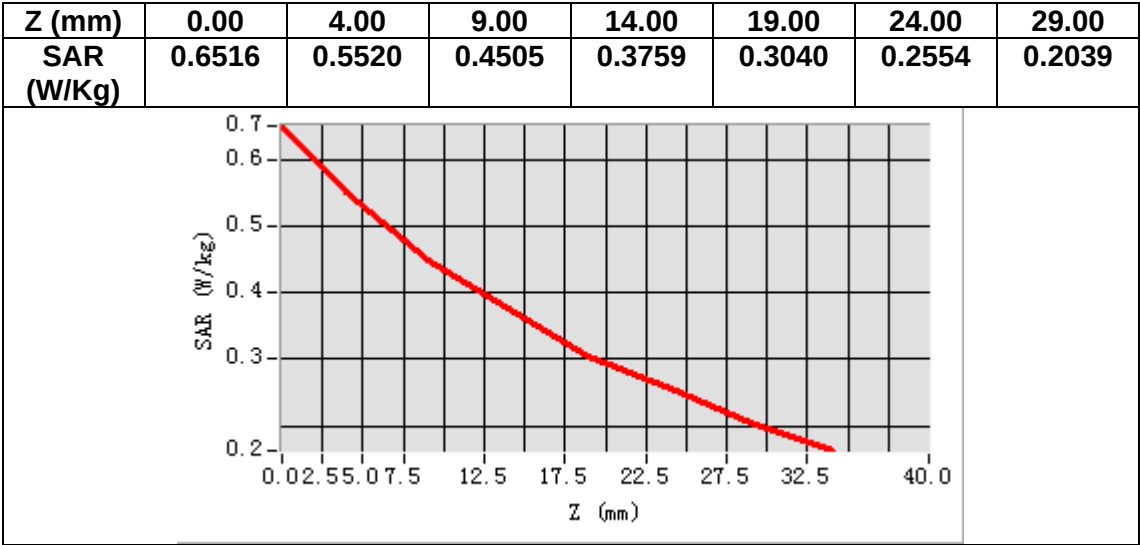
VOLUME SAR



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

SAR Peak: 0.77 W/kg

SAR 10g (W/Kg)	0.415441
SAR 1g (W/Kg)	0.572254



MEASUREMENT 2

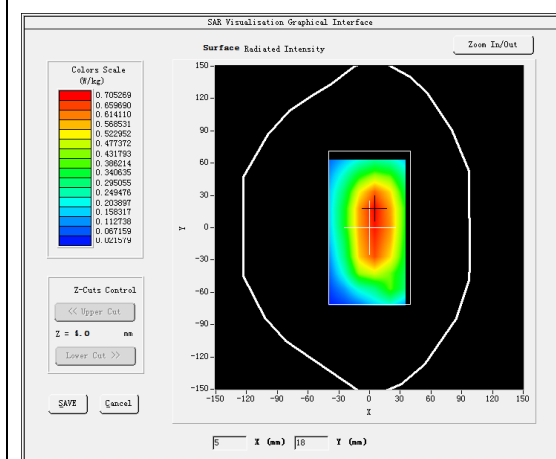
A. Experimental conditions.

<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>

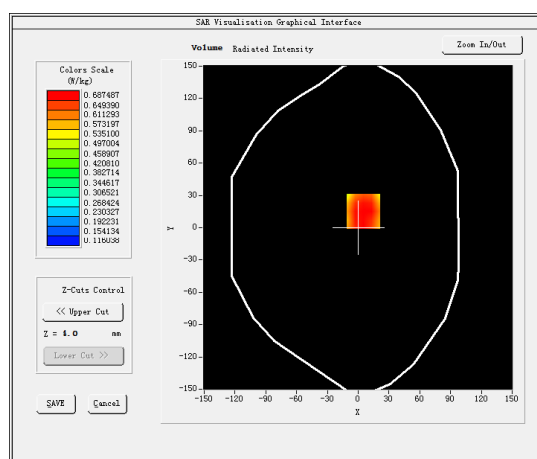
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.469582
Relative permittivity (imaginary part)	21.822741
Conductivity (S/m)	1.014030
Variation (%)	-2.000000

SURFACE SAR



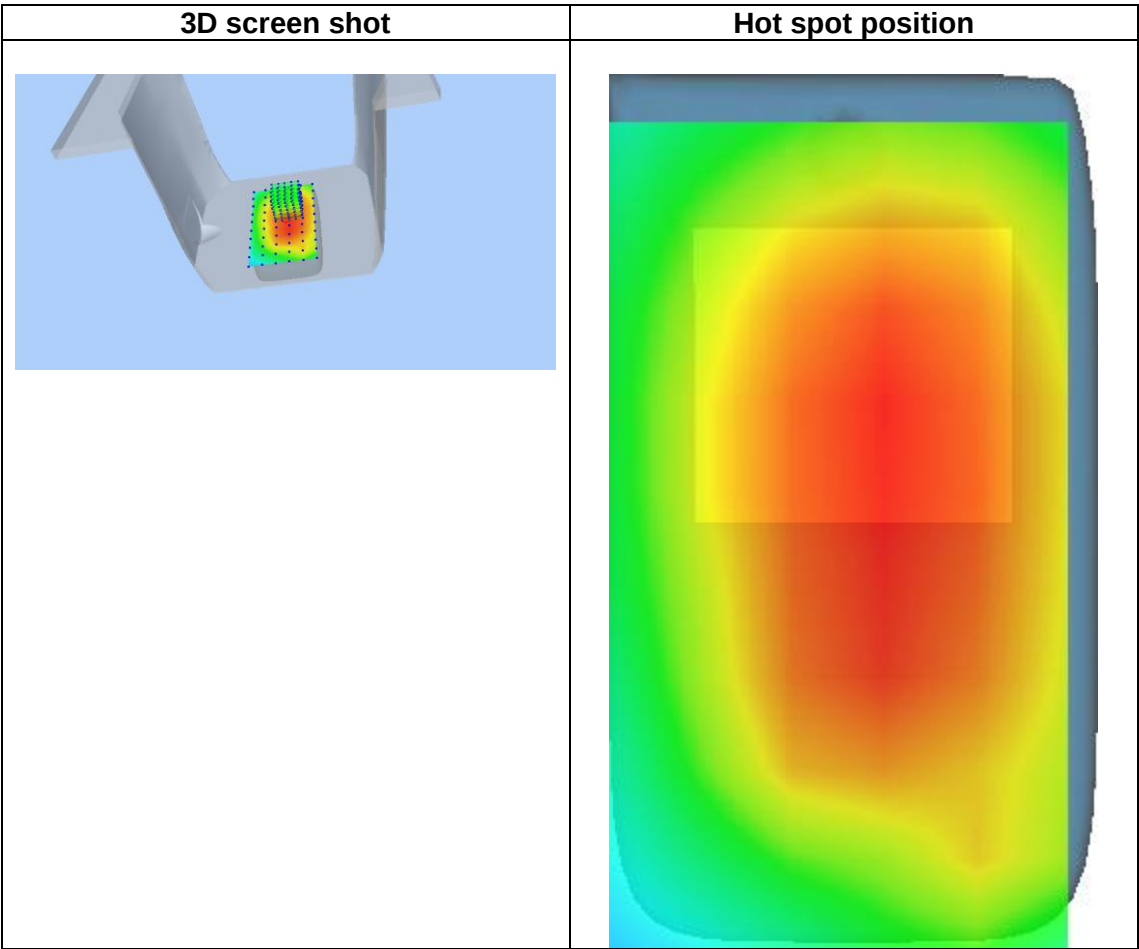
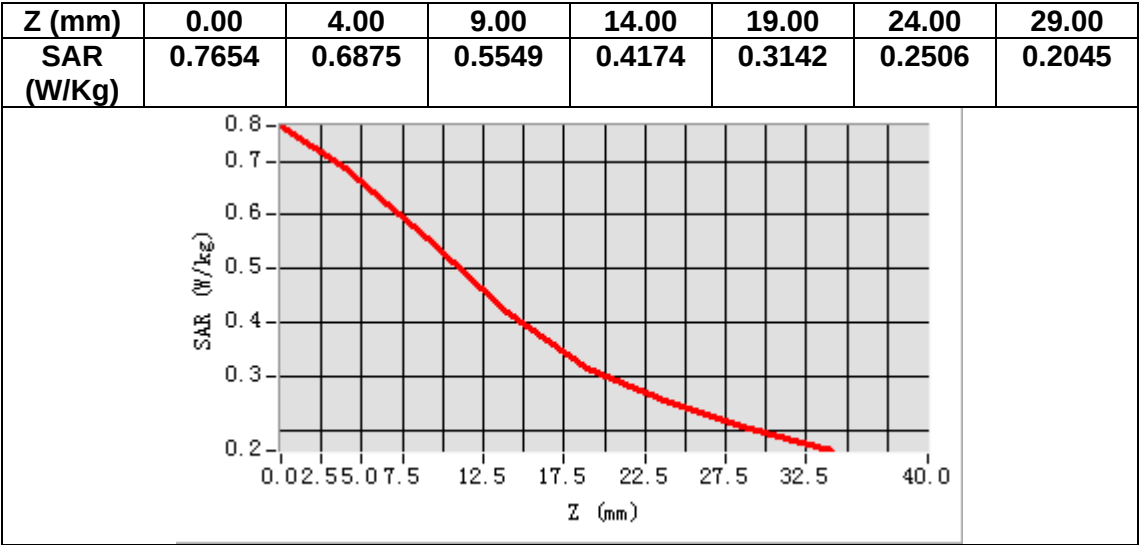
VOLUME SAR



Maximum location: X=5.00, Y=15.00

SAR Peak: 0.87 W/kg

SAR 10g (W/Kg)	0.508341
SAR 1g (W/Kg)	0.683998



MEASUREMENT 3

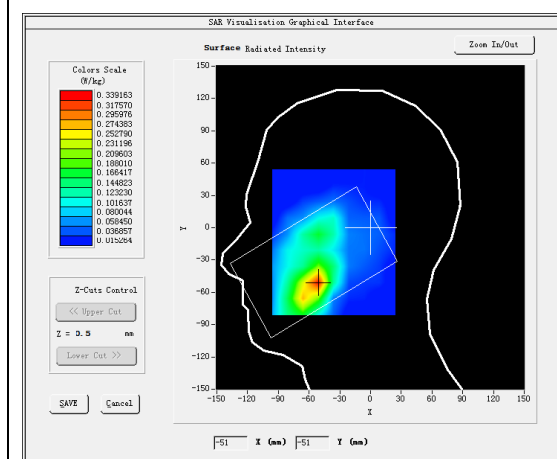
A. Experimental conditions.

<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: 4.0)</u>

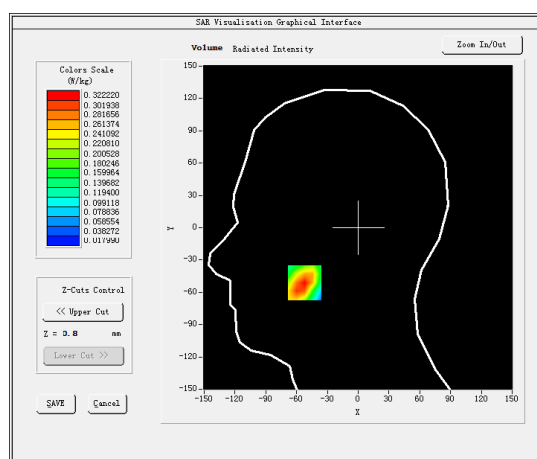
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.098202
Relative permittivity (imaginary part)	13.734300
Conductivity (S/m)	1.434471
Variation (%)	1.530000

SURFACE SAR



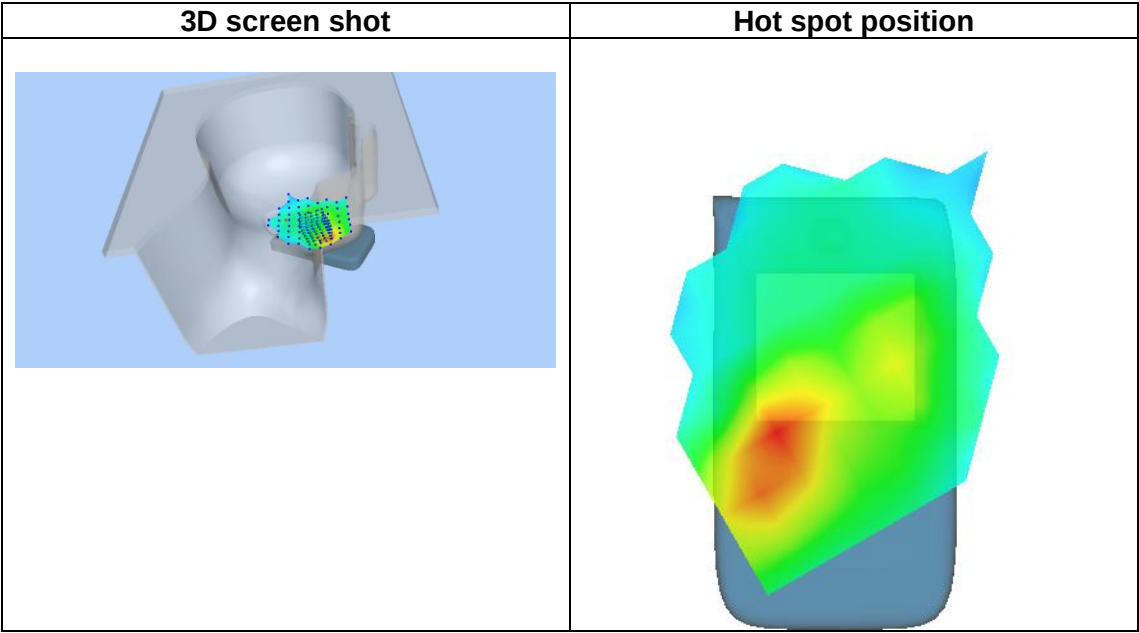
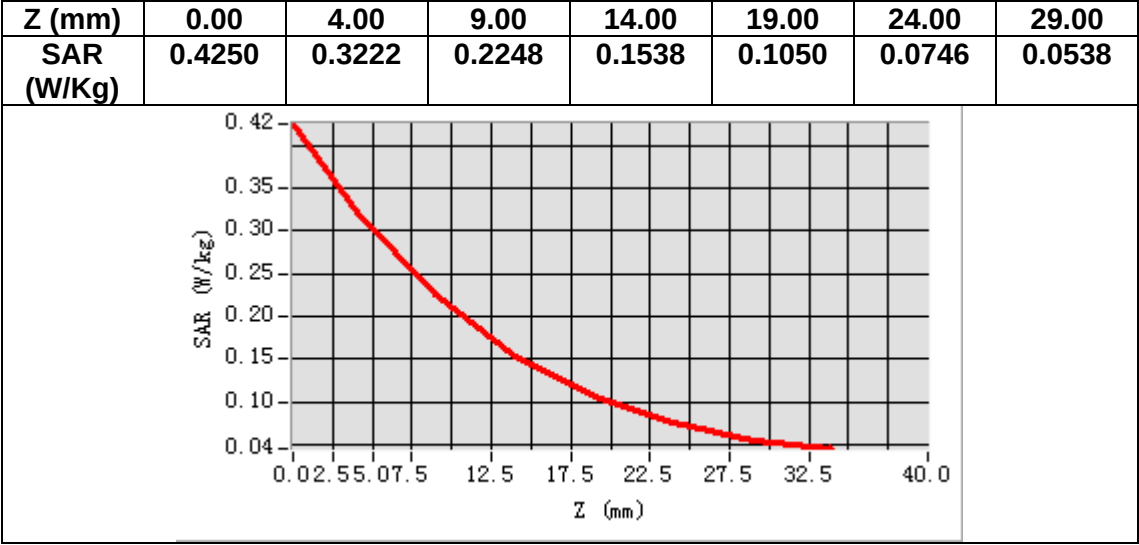
VOLUME SAR



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

SAR Peak: 0.46 W/kg

SAR 10g (W/Kg)	0.189035
SAR 1g (W/Kg)	0.311119



MEASUREMENT 4

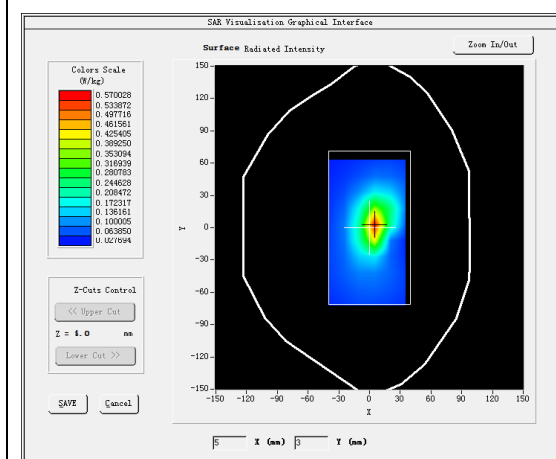
A. Experimental conditions.

<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: 4.0)</u>

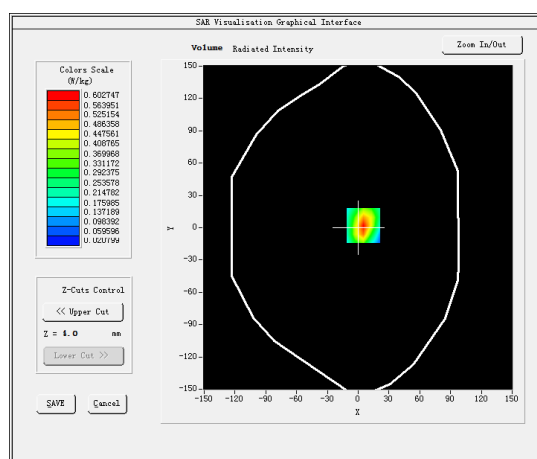
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.878899
Relative permittivity (imaginary part)	15.087700
Conductivity (S/m)	1.575826
Variation (%)	2.970000

SURFACE SAR



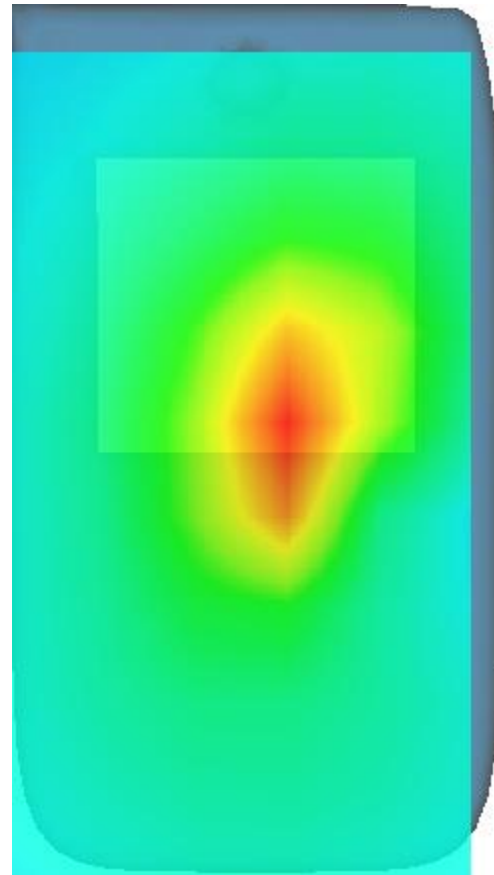
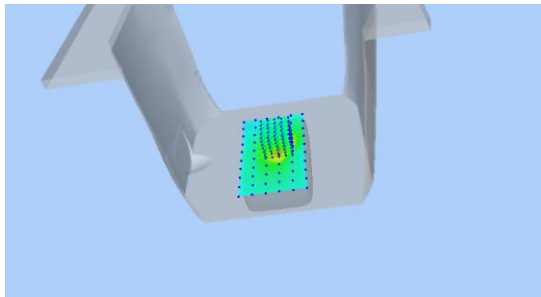
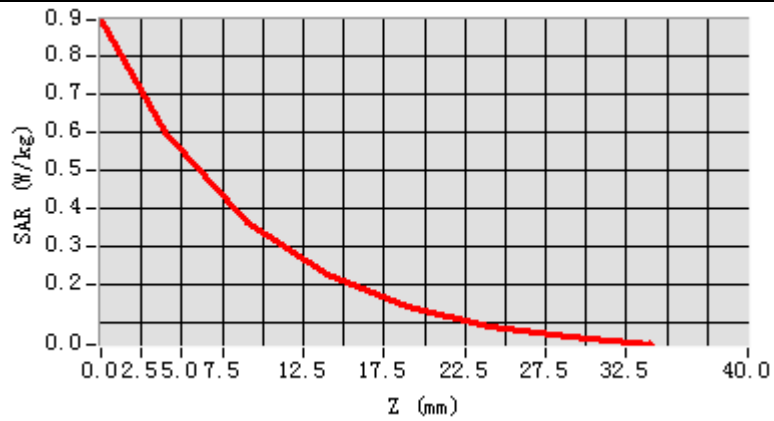
VOLUME SAR



Maximum location: X=5.00, Y=2.00

SAR Peak: 0.89 W/kg

SAR 10g (W/Kg)	0.298689
SAR 1g (W/Kg)	0.562549



MEASUREMENT 5

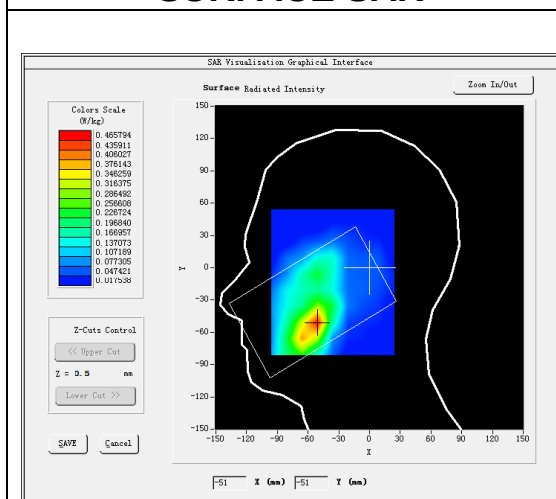
A. Experimental conditions.

<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>

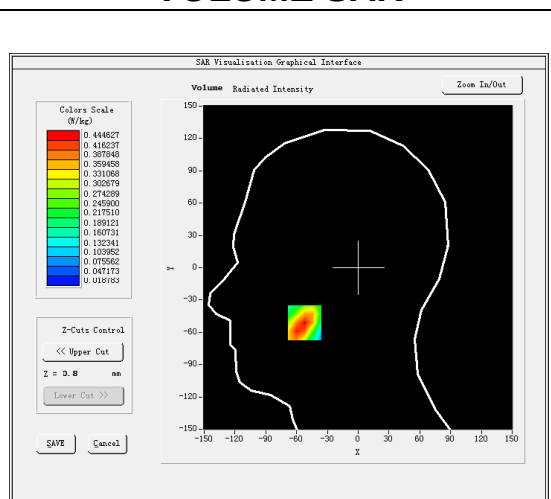
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.098202
Relative permittivity (imaginary part)	13.734300
Conductivity (S/m)	1.434471
Variation (%)	-1.230000

SURFACE SAR



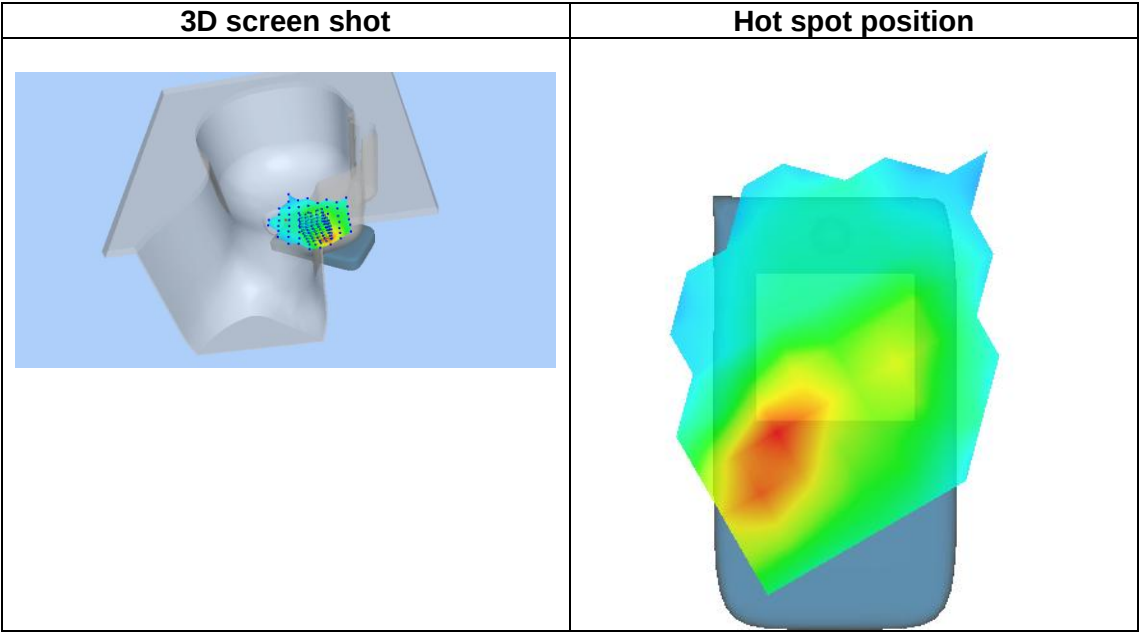
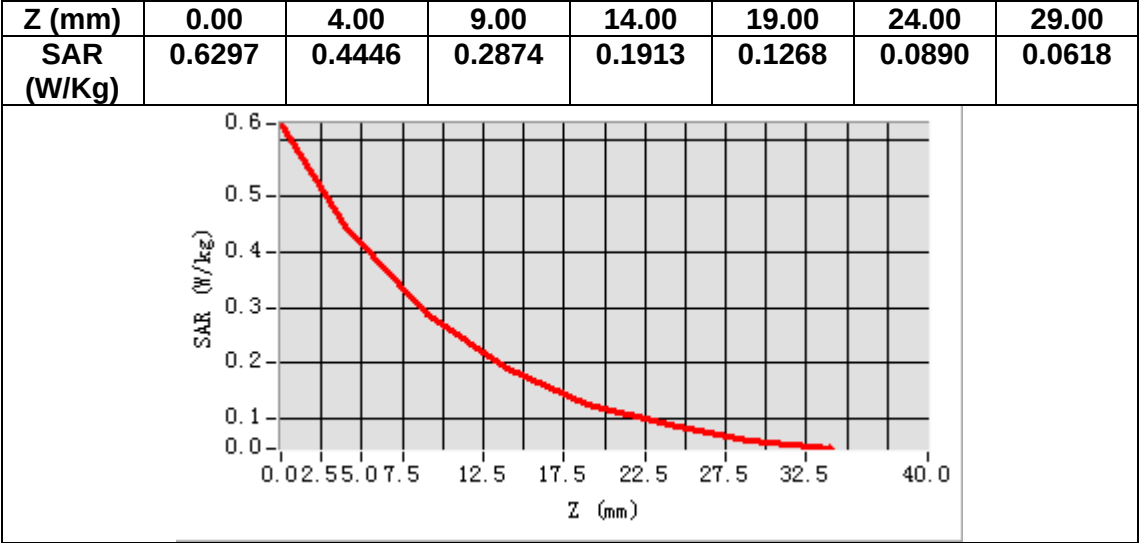
VOLUME SAR



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

SAR Peak: 0.65 W/kg

SAR 10g (W/Kg)	0.254995
SAR 1g (W/Kg)	0.431102



MEASUREMENT 6

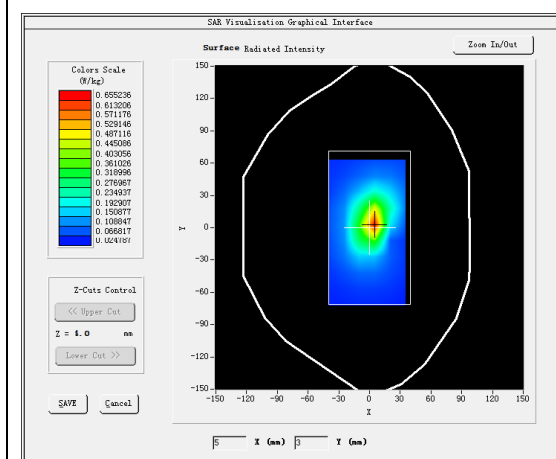
A. Experimental conditions.

<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>

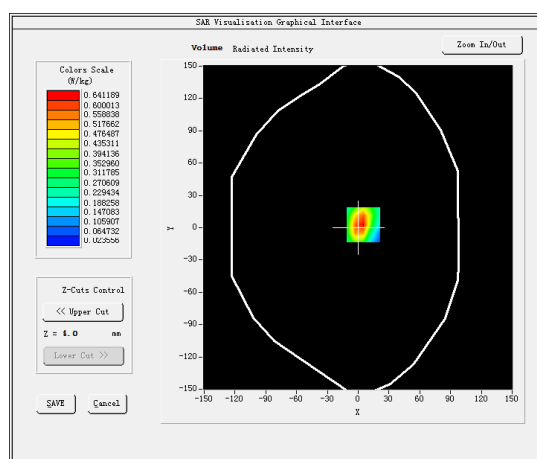
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.878899
Relative permittivity (imaginary part)	15.087700
Conductivity (S/m)	1.575826
Variation (%)	-3.260000

SURFACE SAR



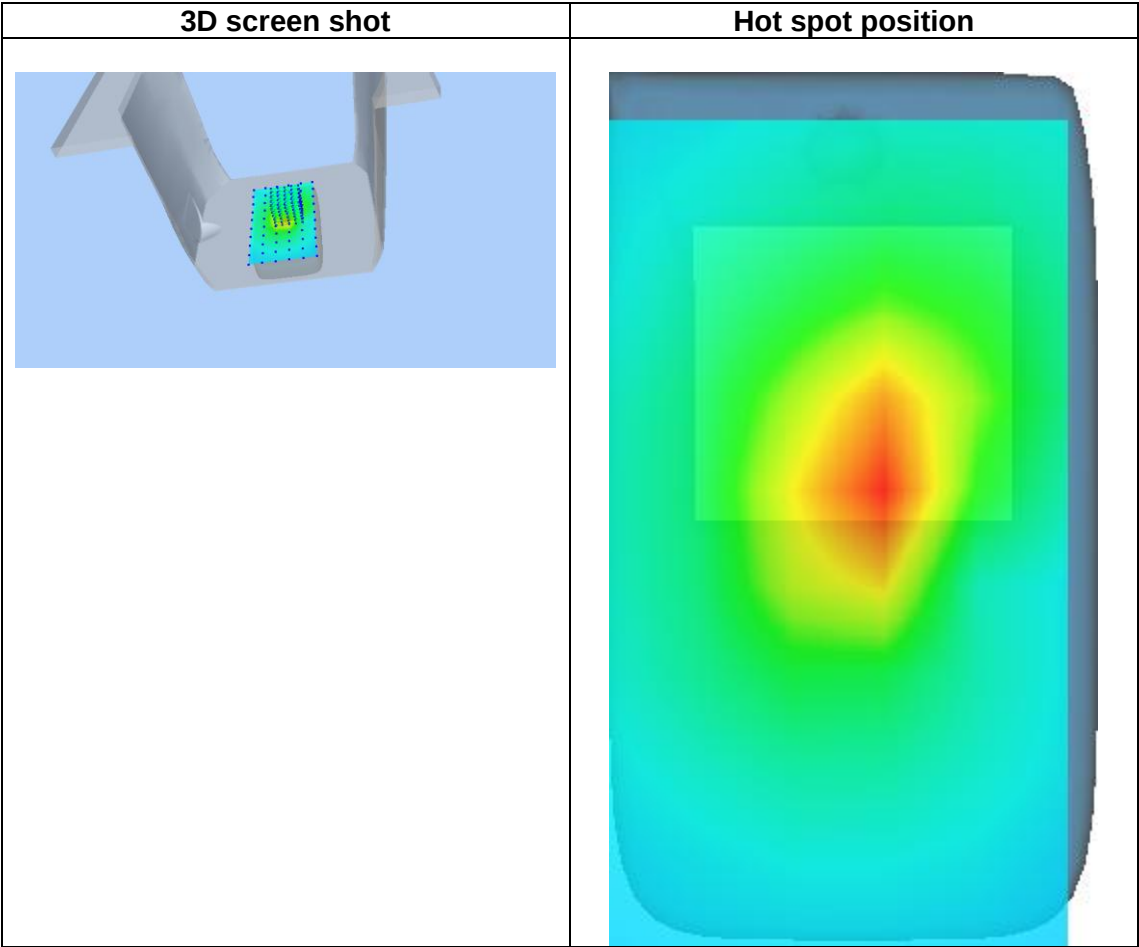
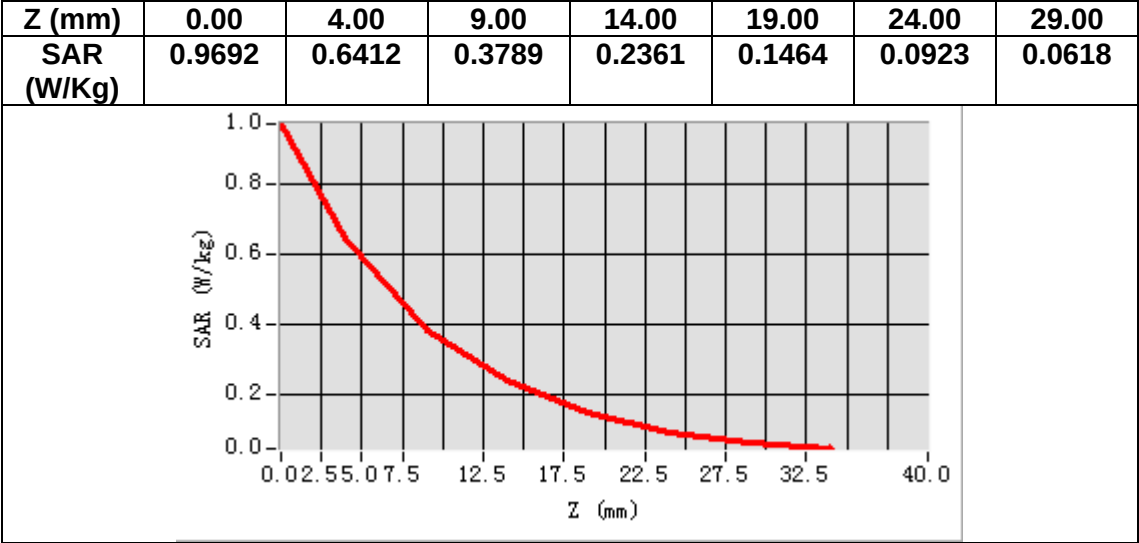
VOLUME SAR



Maximum location: X=5.00, Y=3.00

SAR Peak: 1.00 W/kg

SAR 10g (W/Kg)	0.331231
SAR 1g (W/Kg)	0.630758



MEASUREMENT 7

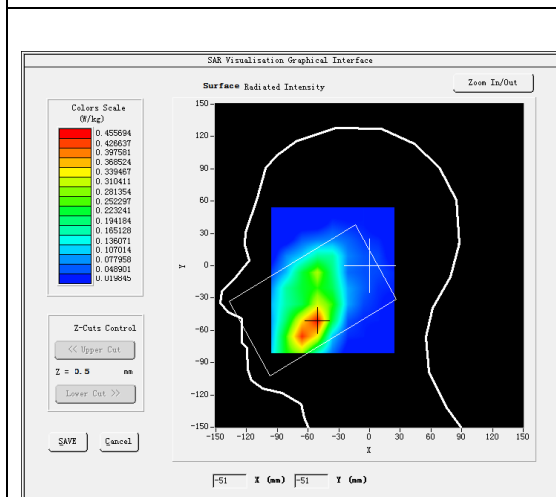
A. Experimental conditions.

<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>

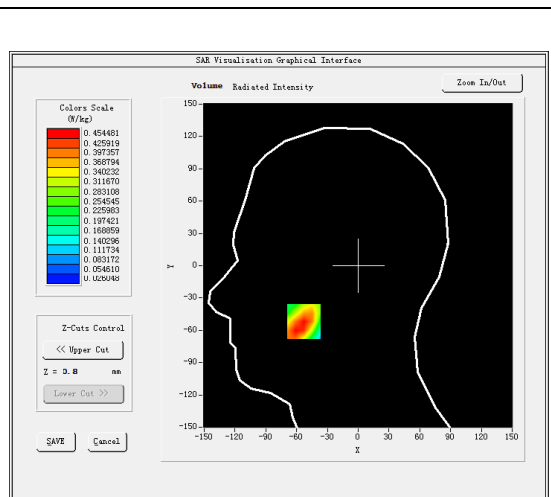
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	39.617390
Relative permittivity (imaginary part)	14.315742
Conductivity (S/m)	1.377493
Variation (%)	0.440000

SURFACE SAR



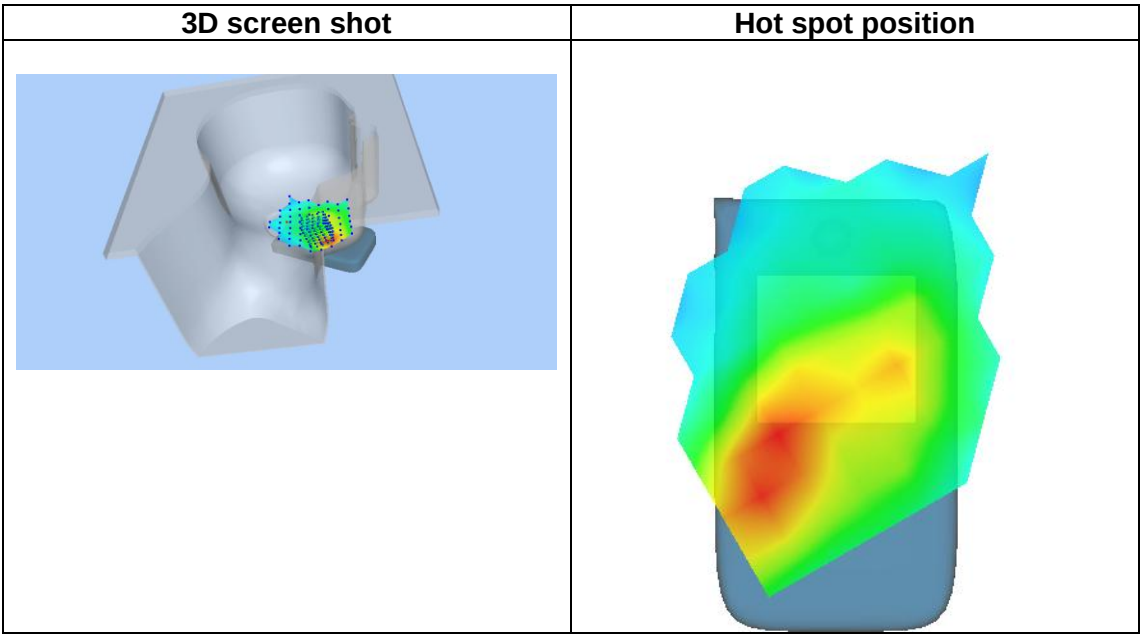
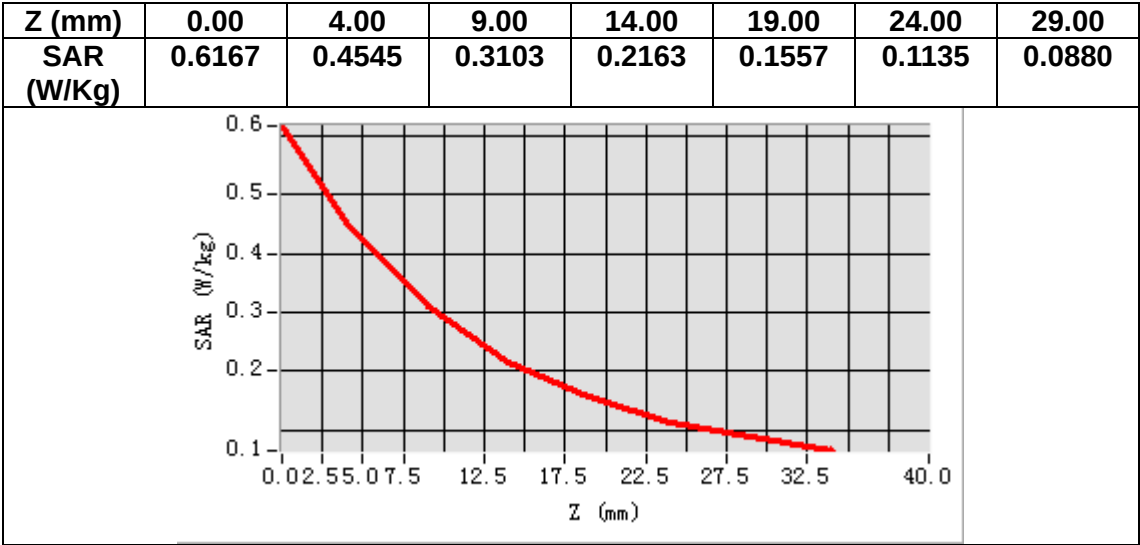
VOLUME SAR



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

SAR Peak: 0.64 W/kg

SAR 10g (W/Kg)	0.281221
SAR 1g (W/Kg)	0.444618



MEASUREMENT 8

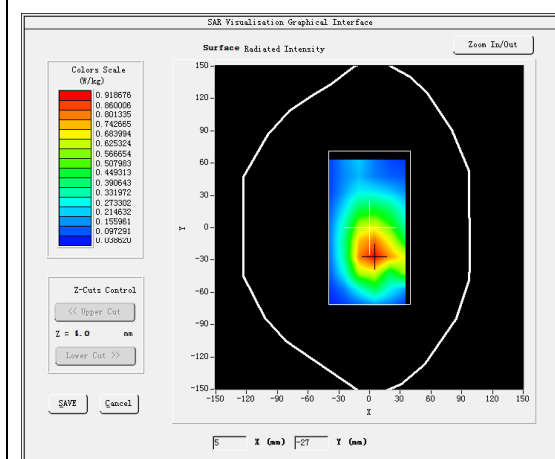
A. Experimental conditions.

<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>

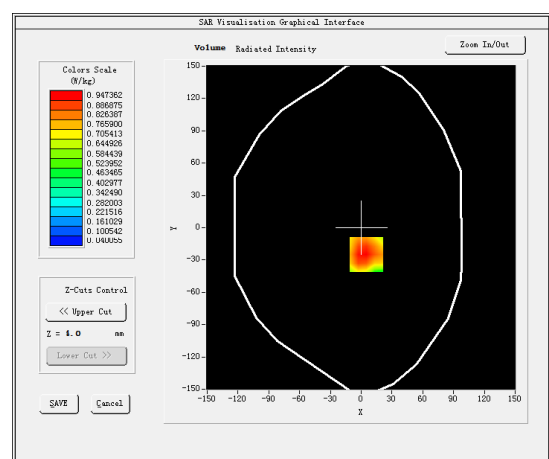
B. SAR Measurement Results

Frequency (MHz)	1732.600000
Relative permittivity (real part)	53.856167
Relative permittivity (imaginary part)	15.651370
Conductivity (S/m)	1.506010
Variation (%)	-0.810000

SURFACE SAR



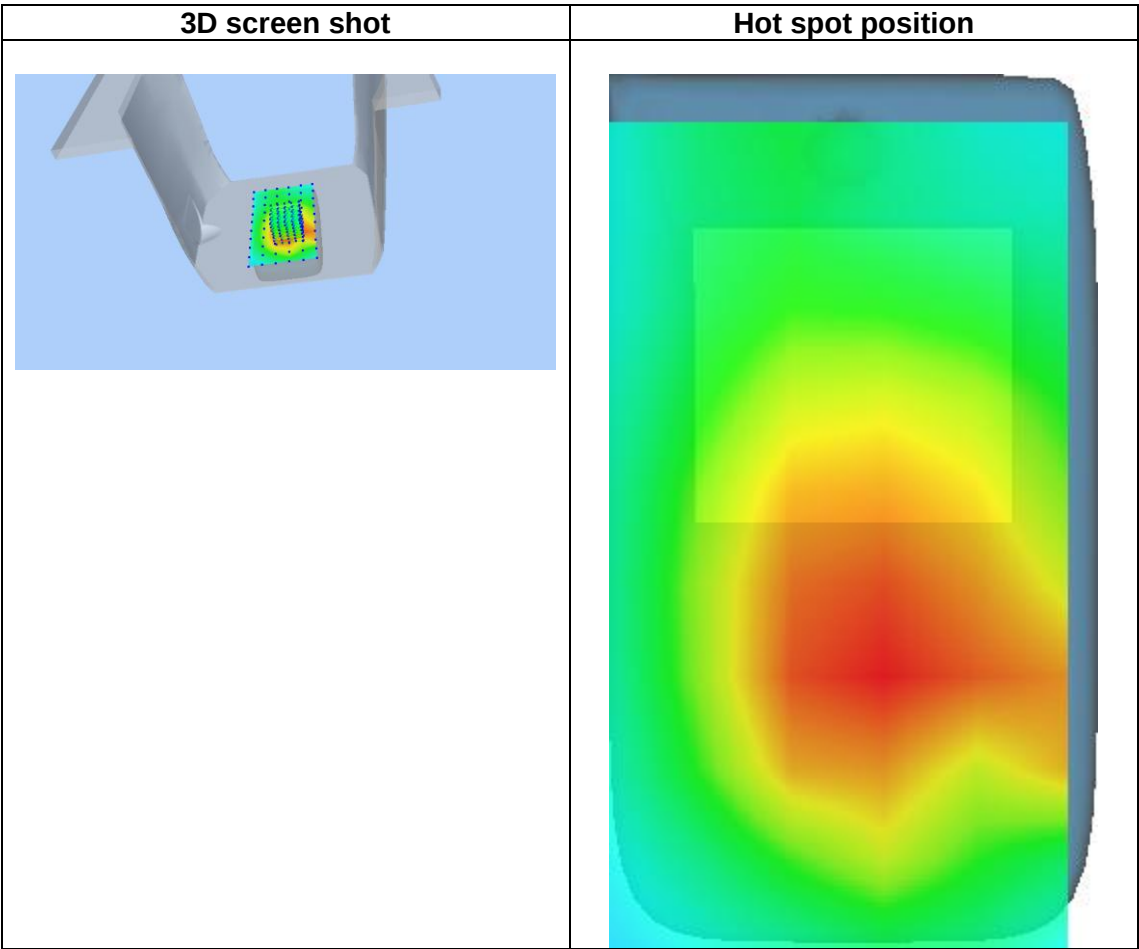
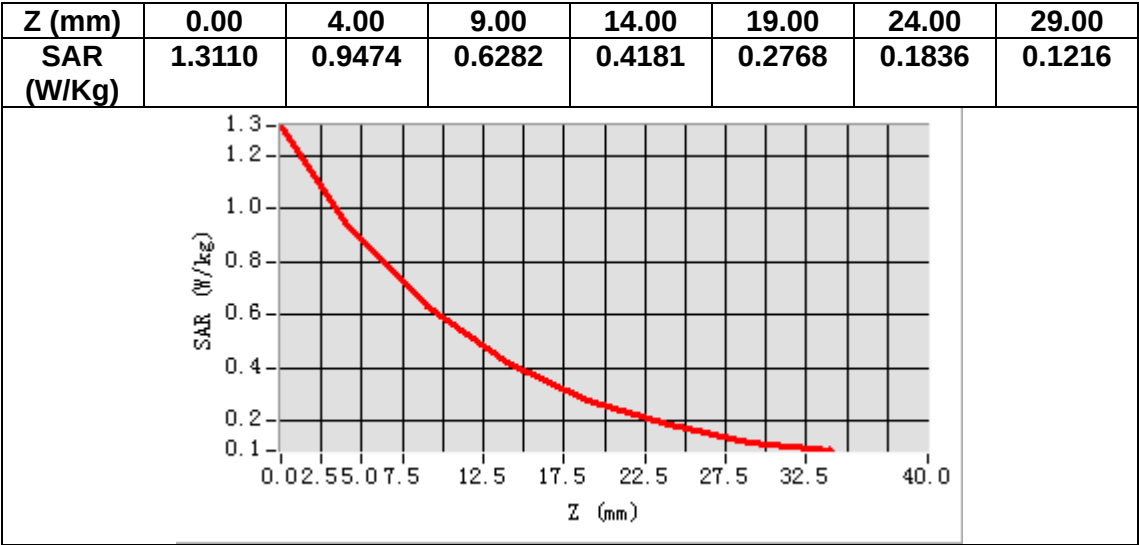
VOLUME SAR



Maximum location: X=5.00, Y=-25.00

SAR Peak: 1.32 W/kg

SAR 10g (W/Kg)	0.590748
SAR 1g (W/Kg)	0.929400



MEASUREMENT 9

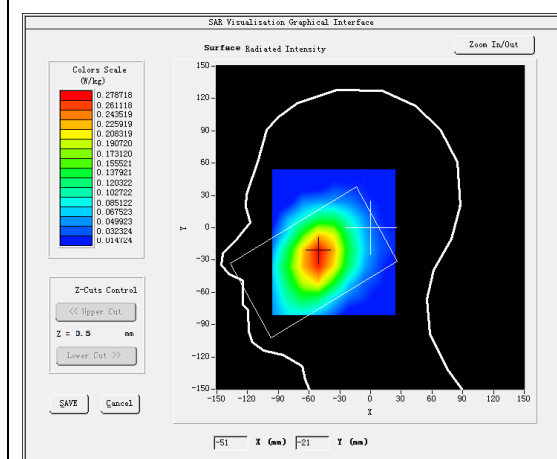
A. Experimental conditions.

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

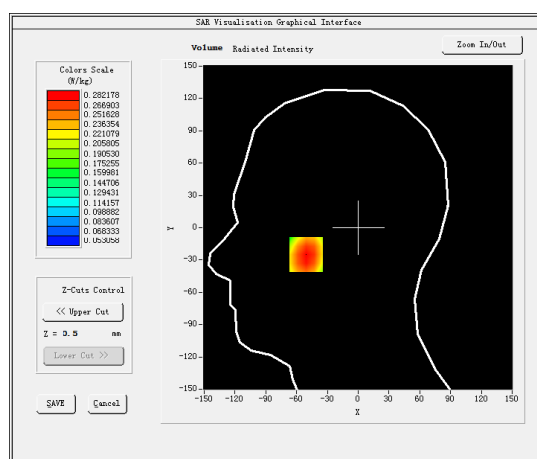
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	40.710960
Relative permittivity (imaginary part)	20.121540
Conductivity (S/m)	0.934981
Variation (%)	-1.310000

SURFACE SAR



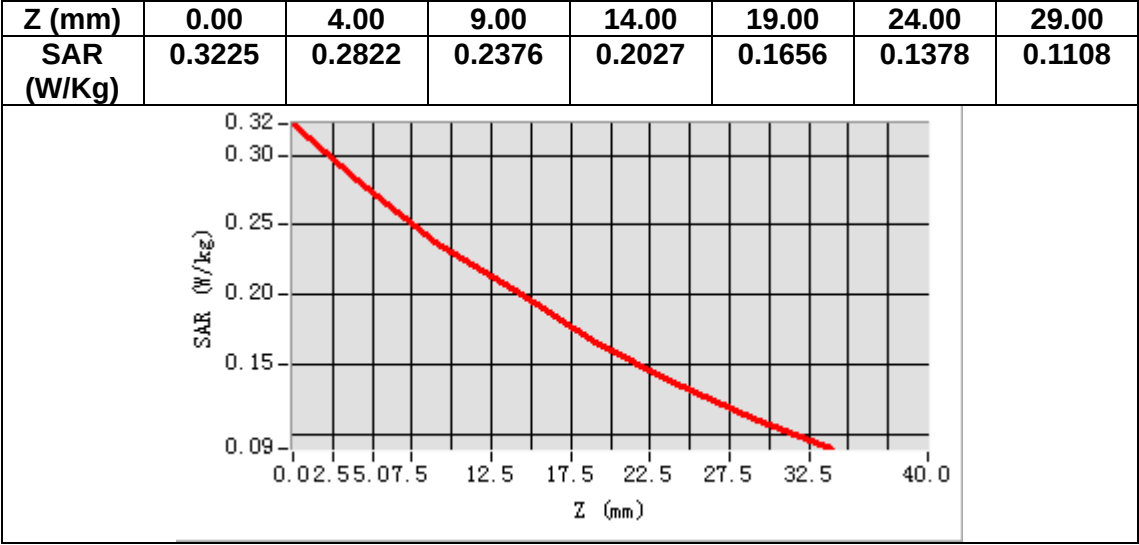
VOLUME SAR



Maximum location: X=-51.00, Y=-25.00

SAR Peak: 0.33 W/kg

SAR 10g (W/Kg)	0.221401
SAR 1g (W/Kg)	0.284338



MEASUREMENT 10

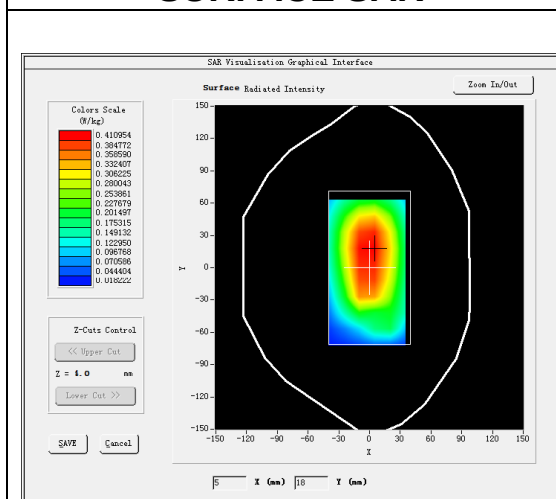
A. Experimental conditions.

<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>

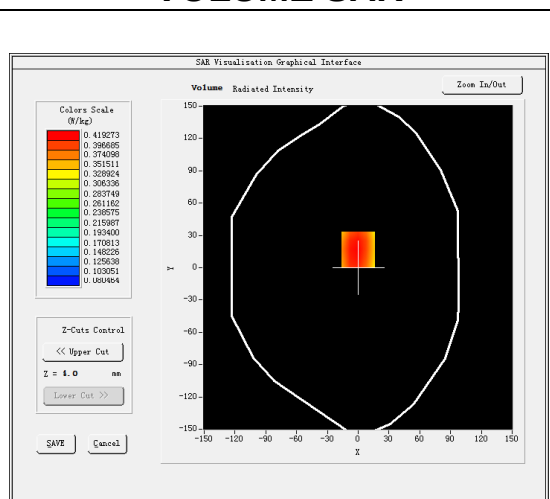
B. SAR Measurement Results

Frequency (MHz)	836.400000
Relative permittivity (real part)	54.469582
Relative permittivity (imaginary part)	21.822741
Conductivity (S/m)	1.014030
Variation (%)	0.350000

SURFACE SAR



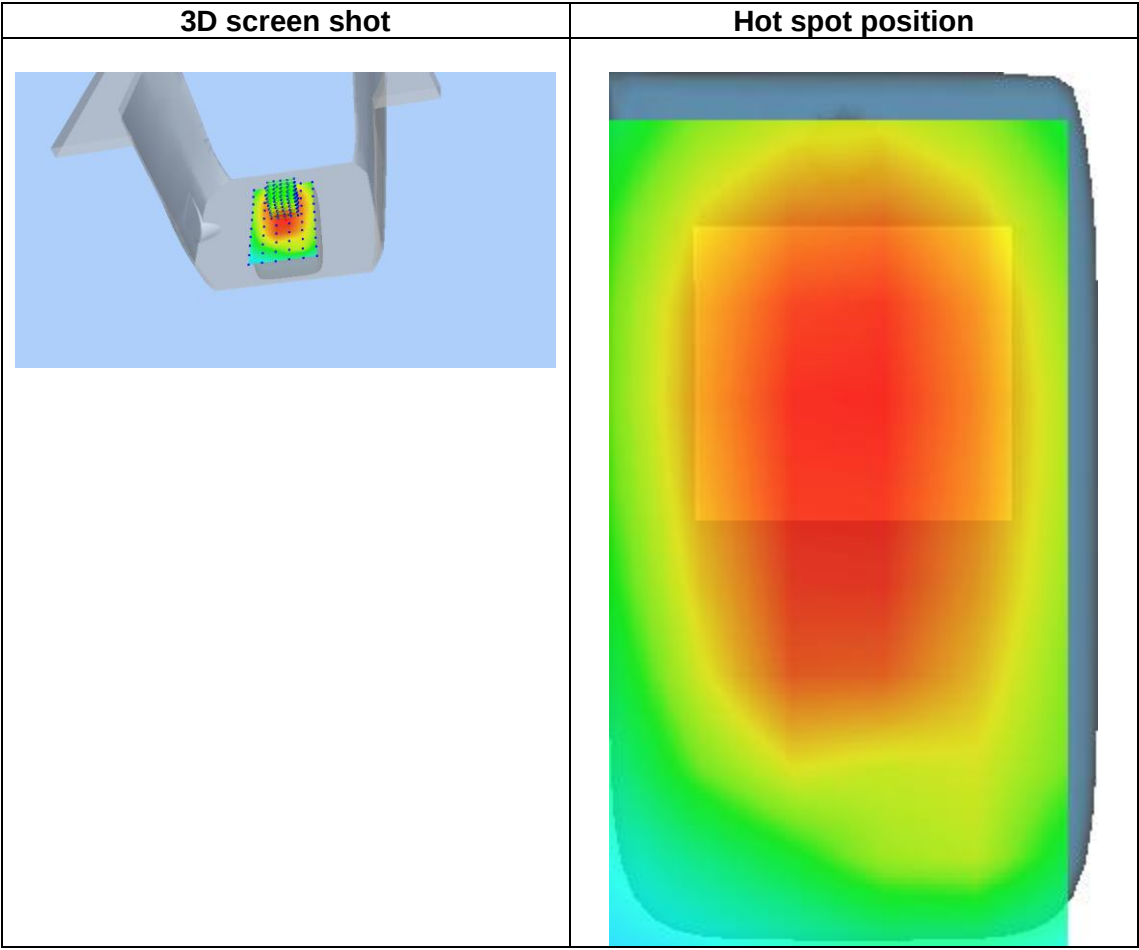
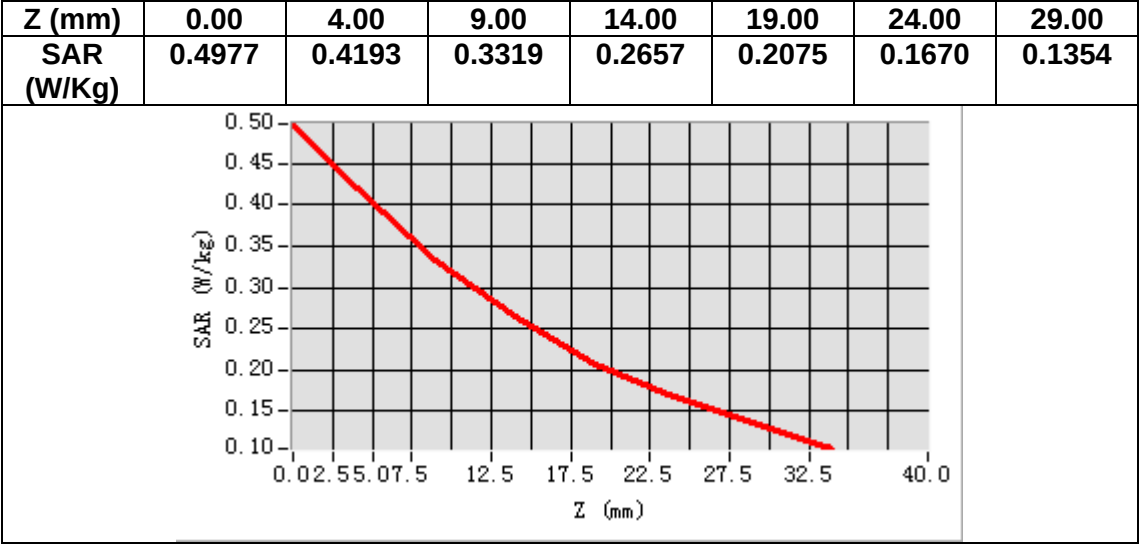
VOLUME SAR



Maximum location: X=0.00, Y=17.00

SAR Peak: 0.50 W/kg

SAR 10g (W/Kg)	0.318169
SAR 1g (W/Kg)	0.420183



MEASUREMENT 11

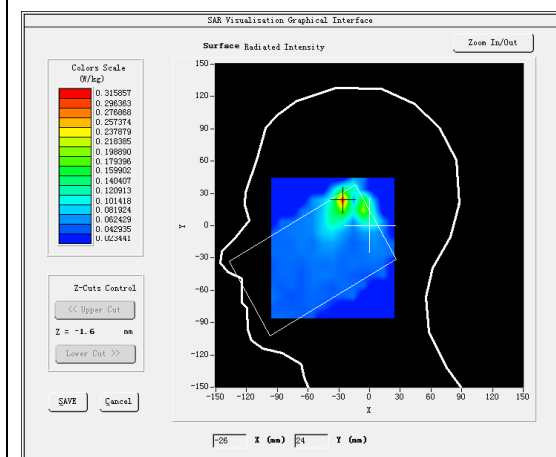
A. Experimental conditions.

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

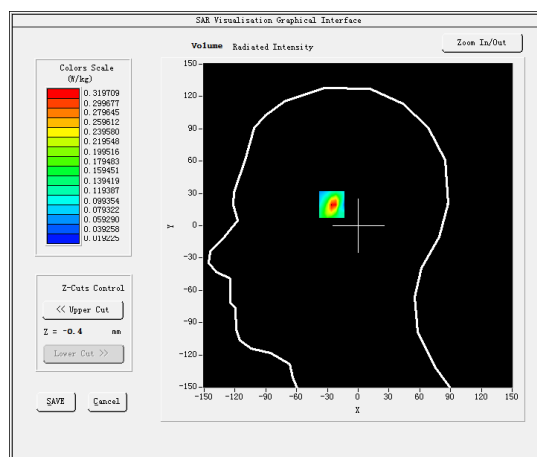
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	35.662979
Relative permittivity (imaginary part)	16.181620
Conductivity (S/m)	4.674690
Variation (%)	2.360000

SURFACE SAR



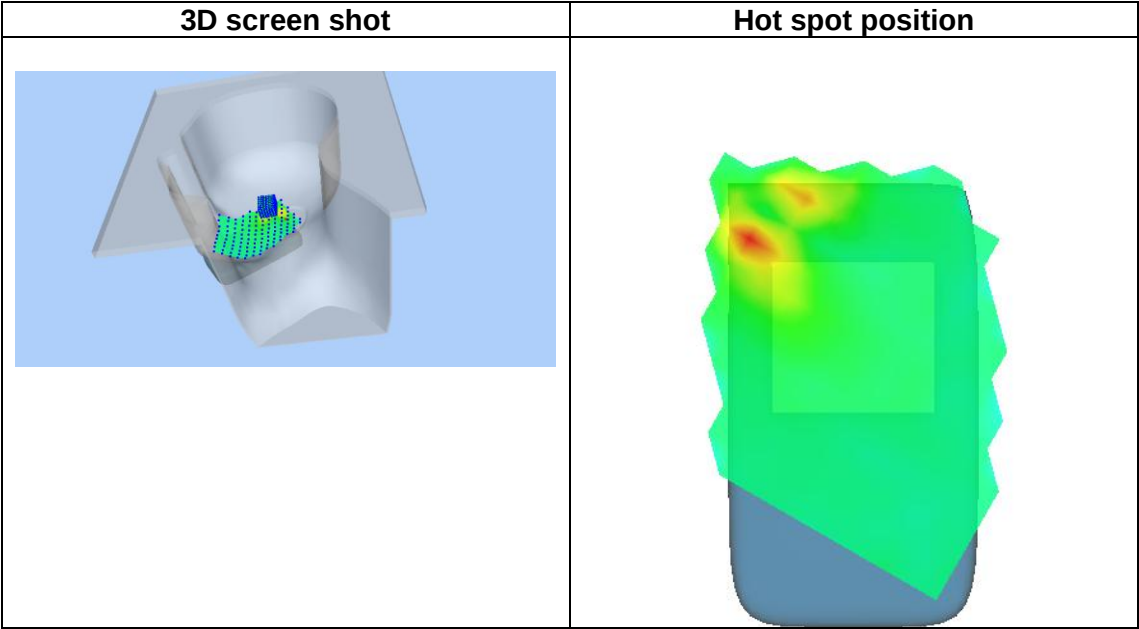
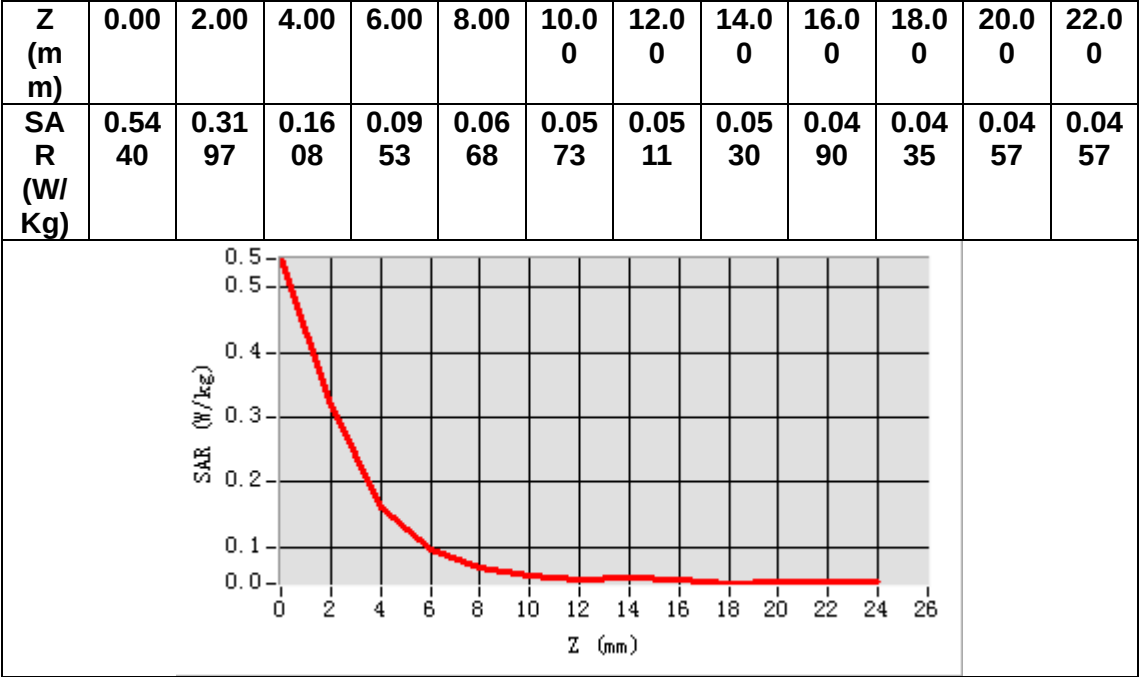
VOLUME SAR



Maximum location: X=-26.00, Y=24.00

SAR Peak: 0.92 W/kg

SAR 10g (W/Kg)	0.115003
SAR 1g (W/Kg)	0.297941



MEASUREMENT 12

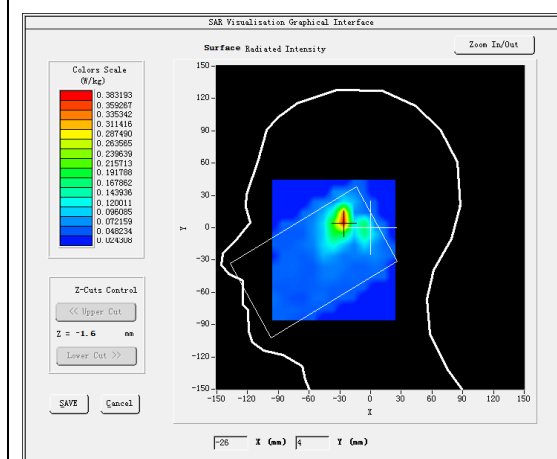
A. Experimental conditions.

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

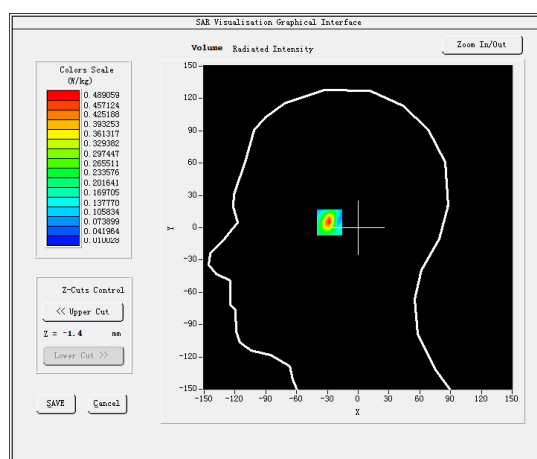
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	34.654789
Relative permittivity (imaginary part)	16.145266
Conductivity (S/m)	5.188909
Variation (%)	-2.340000

SURFACE SAR



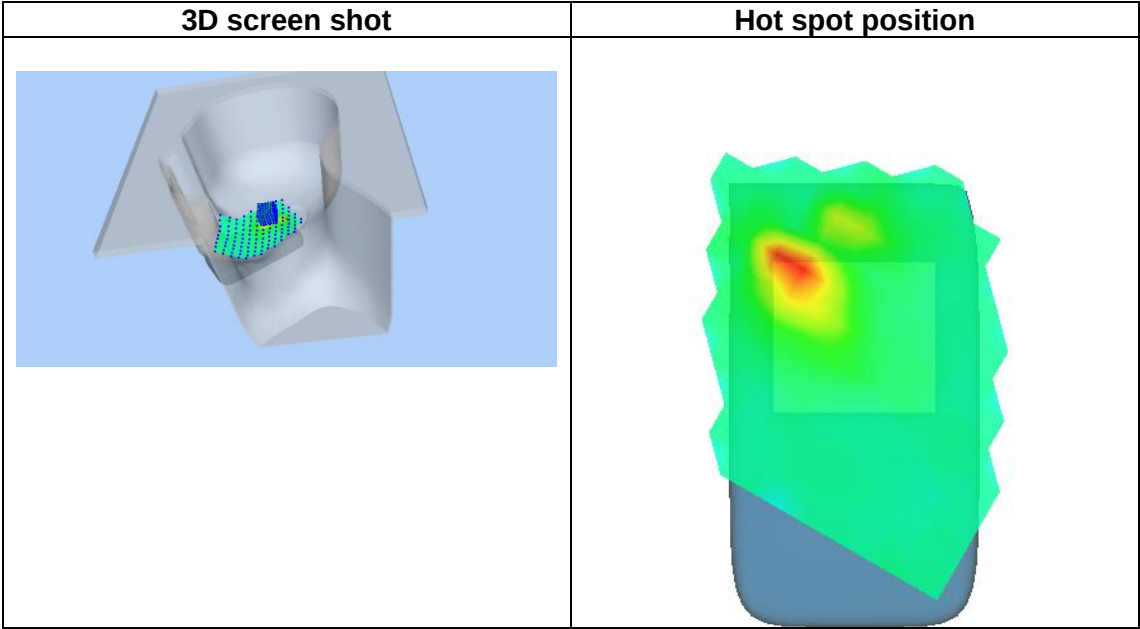
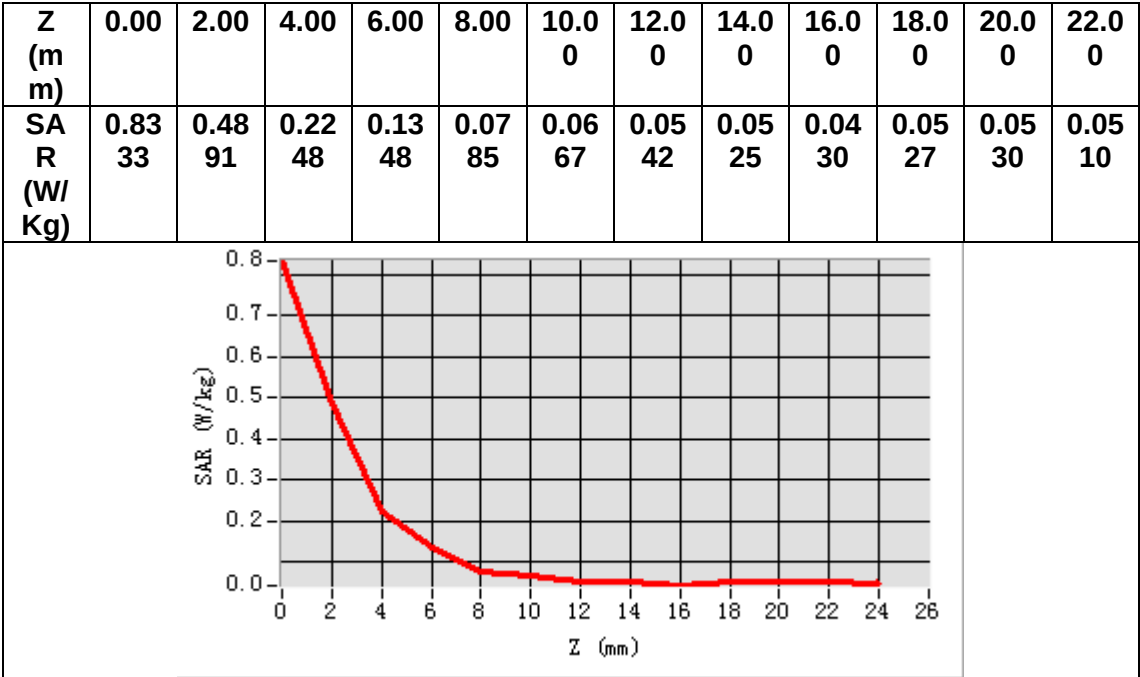
VOLUME SAR



Maximum location: X=-27.00, Y=7.00

SAR Peak: 1.34 W/kg

SAR 10g (W/Kg)	0.151204
SAR 1g (W/Kg)	0.431195



MEASUREMENT 13

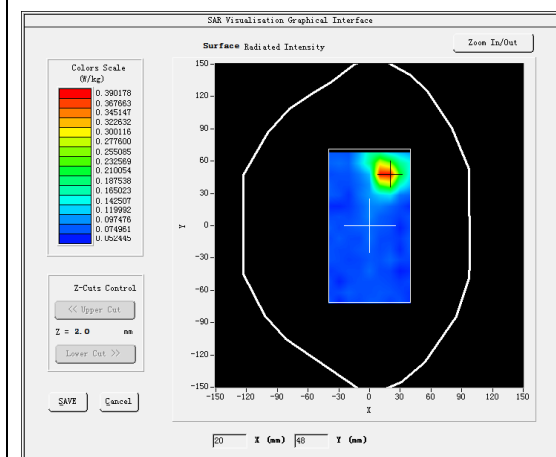
A. Experimental conditions.

<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>

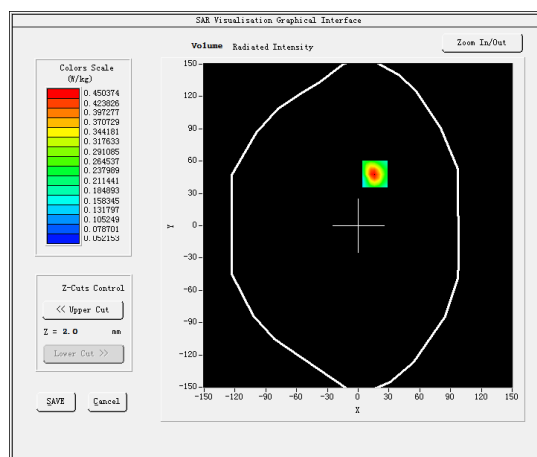
B. SAR Measurement Results

Frequency (MHz)	5200.000000
Relative permittivity (real part)	49.579536
Relative permittivity (imaginary part)	18.385509
Conductivity (S/m)	5.311369
Variation (%)	-3.400000

SURFACE SAR



VOLUME SAR

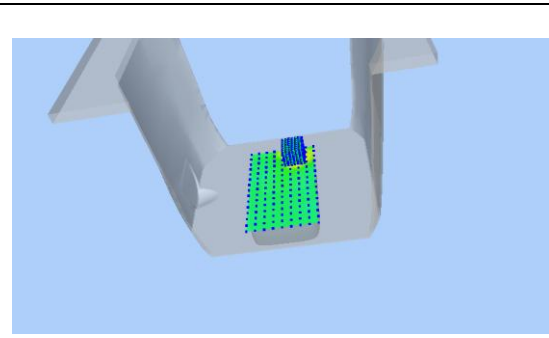
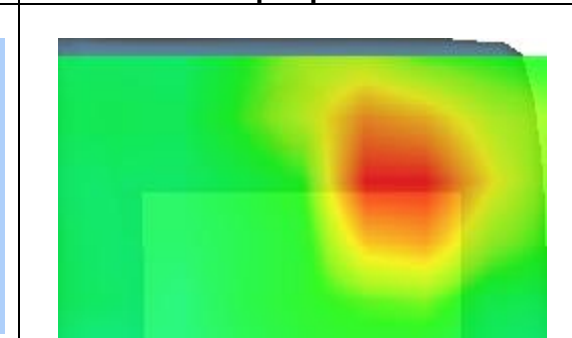


Maximum location: X=16.00, Y=48.00

SAR Peak: 0.76 W/kg

SAR 10g (W/Kg)	0.138053
SAR 1g (W/Kg)	0.280219

Z (mm)	SAR (W/kg)
0	0.70
2	0.45
4	0.25
6	0.18
8	0.14
10	0.11
12	0.10
14	0.10
16	0.10
18	0.10
20	0.10
22	0.10
24	0.10
26	0.10

3D screen shot	Hot spot position
 A 3D perspective view of a robotic arm holding a grey tray. On the tray is a grid of small dots, mostly green with a small cluster of blue dots in the upper right. The background is a solid light blue.	 A heatmap visualization of the tray area. The background is green. A large, bright yellow and red oval-shaped region in the top right corner indicates a 'hot spot'. A white rectangular box is overlaid on the left side of the heatmap, corresponding to the tray's position.

MEASUREMENT 14

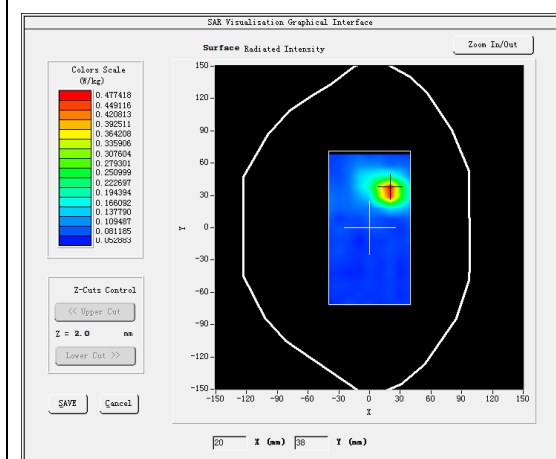
A. Experimental conditions.

<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>

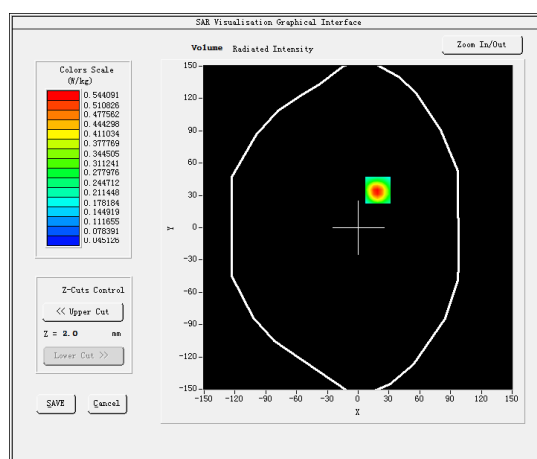
B. SAR Measurement Results

Frequency (MHz)	5785.000000
Relative permittivity (real part)	48.348701
Relative permittivity (imaginary part)	18.786766
Conductivity (S/m)	6.037858
Variation (%)	-2.430000

SURFACE SAR



VOLUME SAR

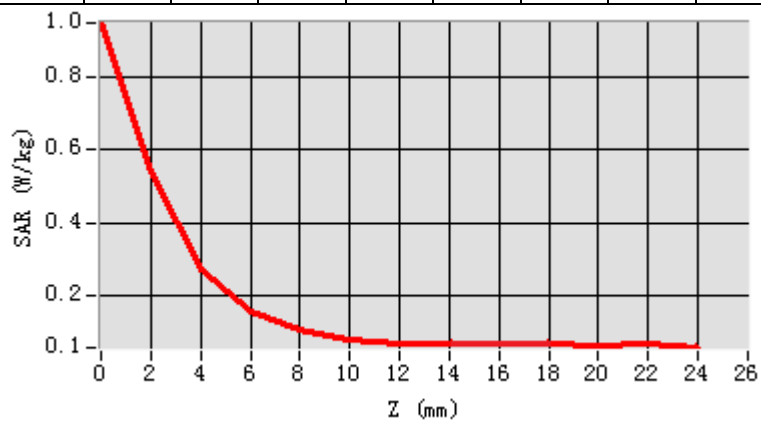


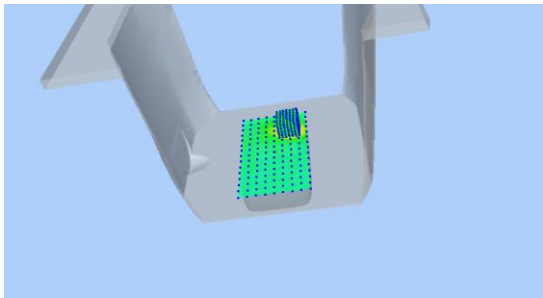
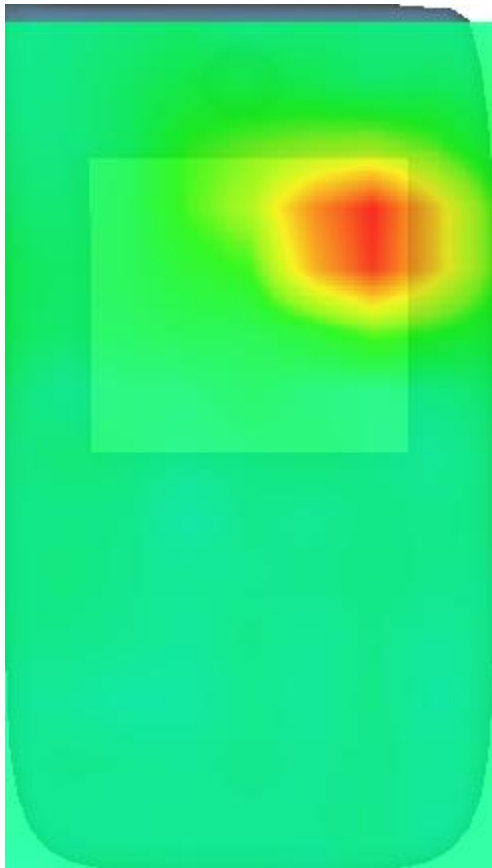
Maximum location: X=19.00, Y=35.00

SAR Peak: 1.01 W/kg

SAR 10g (W/Kg)	0.154250
SAR 1g (W/Kg)	0.270869

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)	0.95 11	0.54 41	0.26 82	0.15 37	0.10 28	0.07 84	0.06 71	0.06 46	0.06 45	0.06 49	0.06 11	0.06 80



3D screen shot	Hot spot position
	

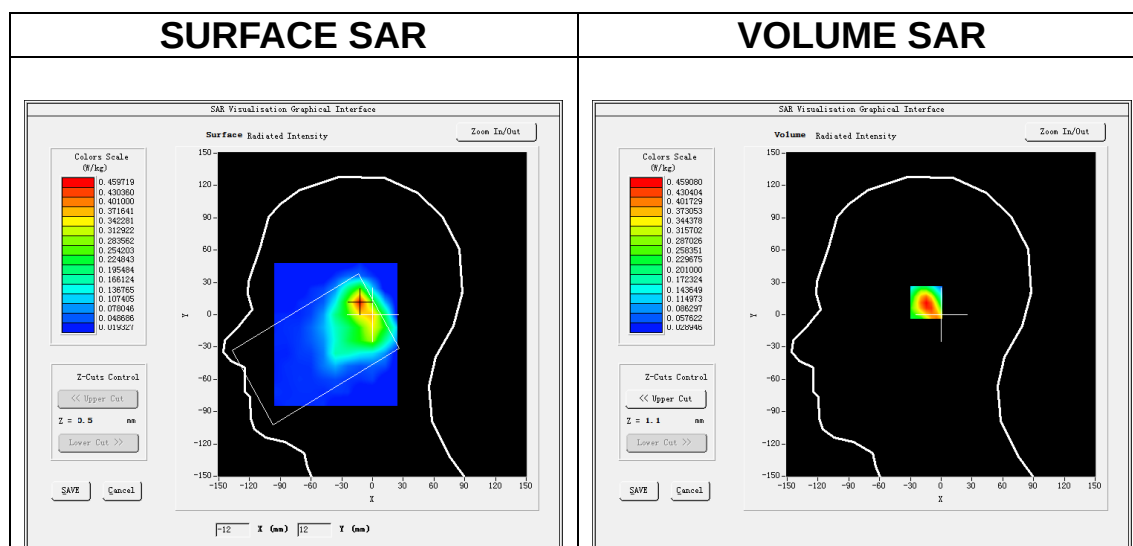
MEASUREMENT 15

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>	IEEE802.11b (Crest factor: 1.0)

B. SAR Measurement Results

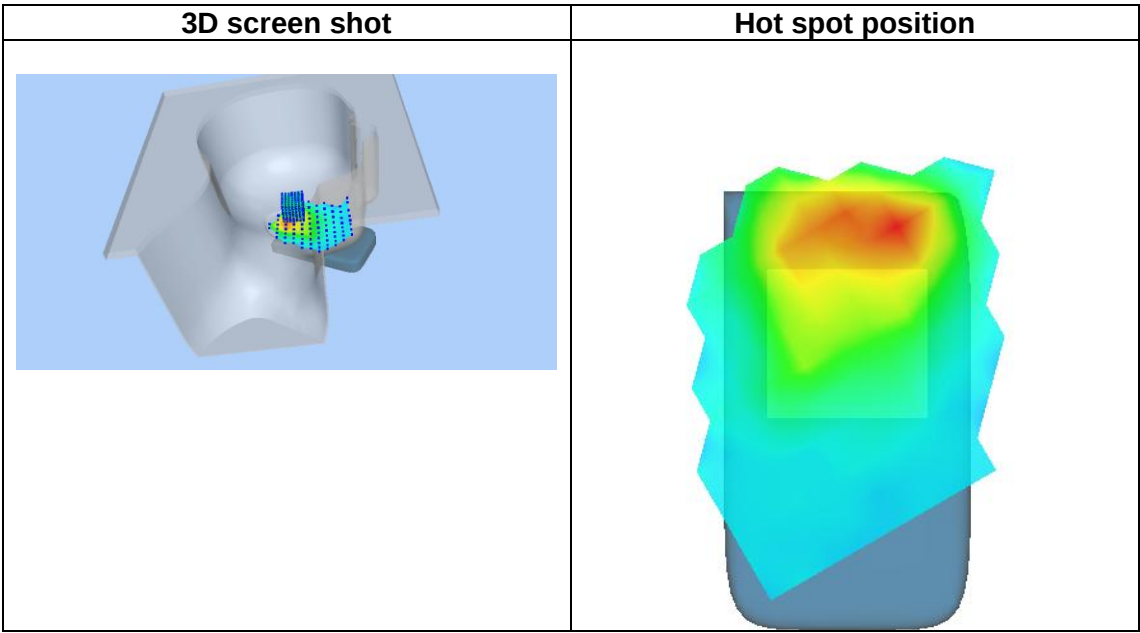
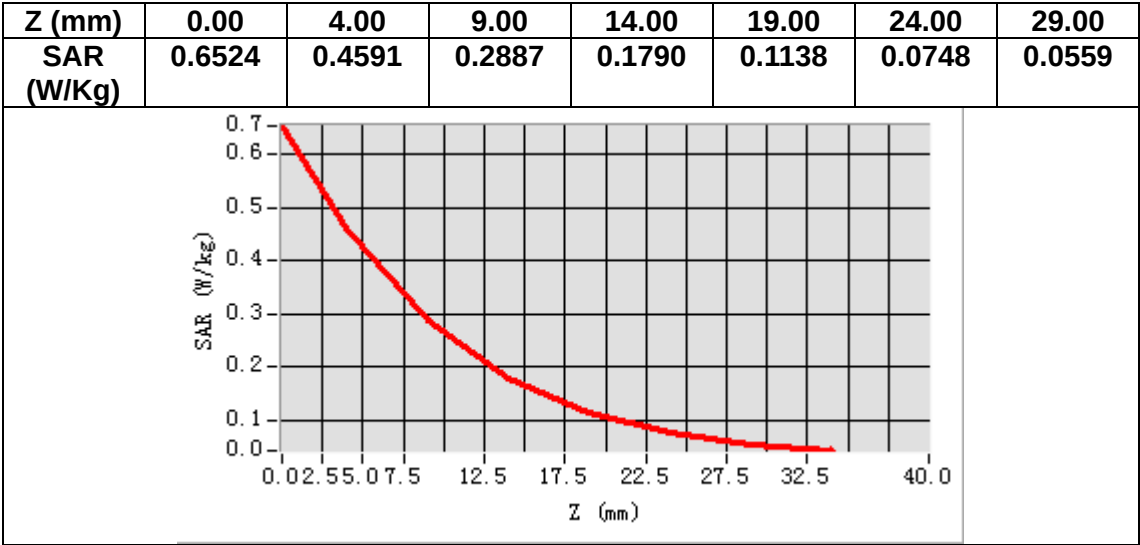
Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.351002
Relative permittivity (imaginary part)	13.700300
Conductivity (S/m)	1.854868
Variation (%)	0.510000



Maximum location: X=-12.00, Y=12.00

SAR Peak: 0.66 W/kg

SAR 10g (W/Kg)	0.242268
SAR 1g (W/Kg)	0.426755



MEASUREMENT 16

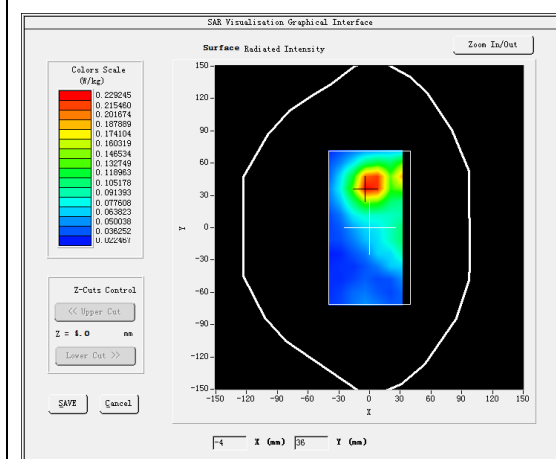
A. Experimental conditions.

<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>

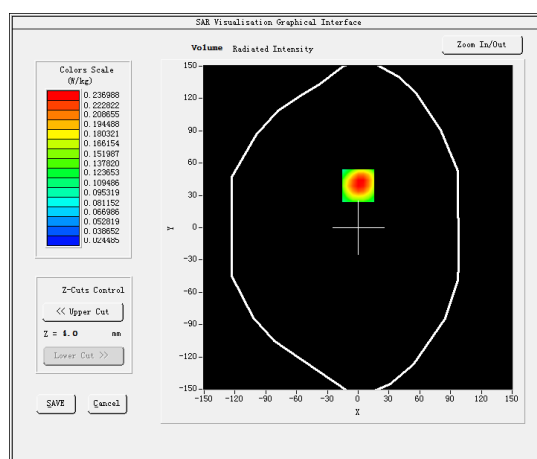
B. SAR Measurement Results

Frequency (MHz)	2437.000000
Relative permittivity (real part)	52.351601
Relative permittivity (imaginary part)	14.805620
Conductivity (S/m)	2.004516
Variation (%)	-0.800000

SURFACE SAR



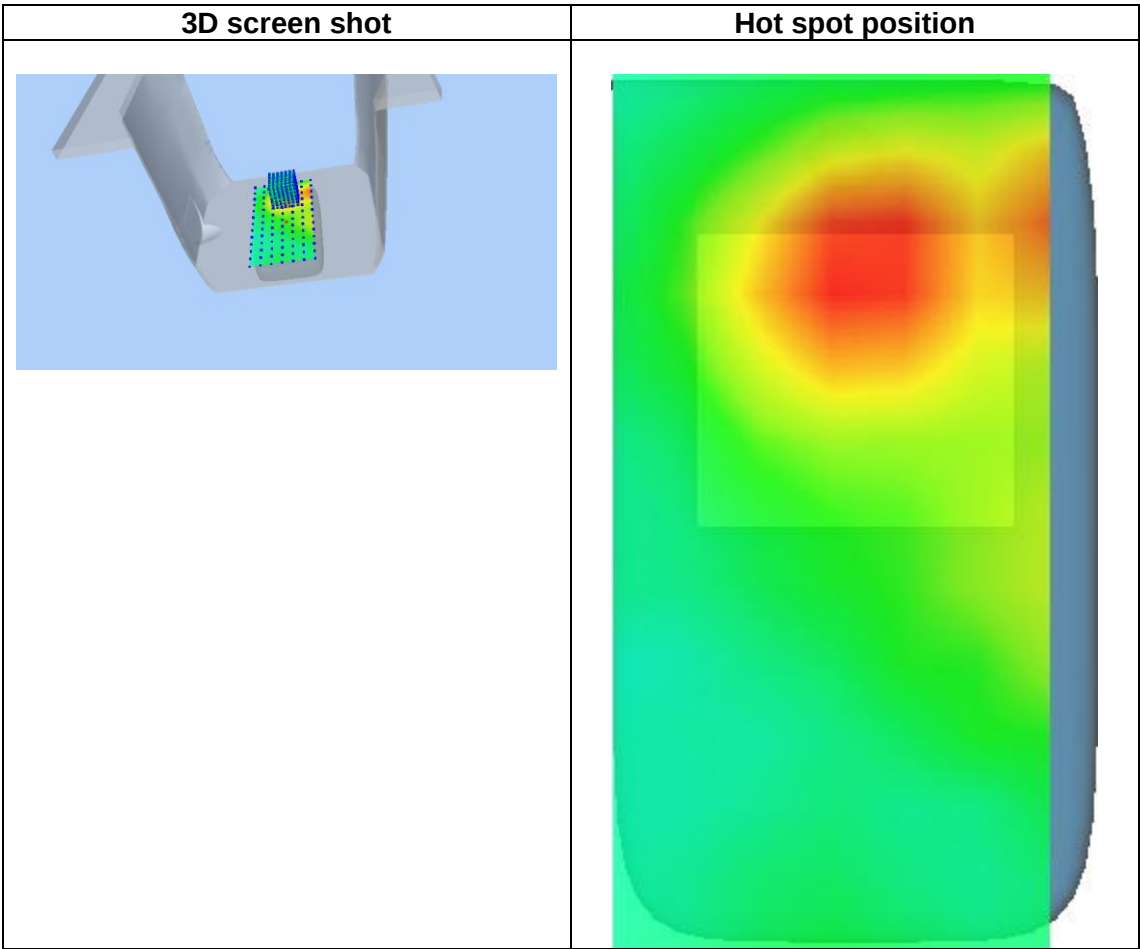
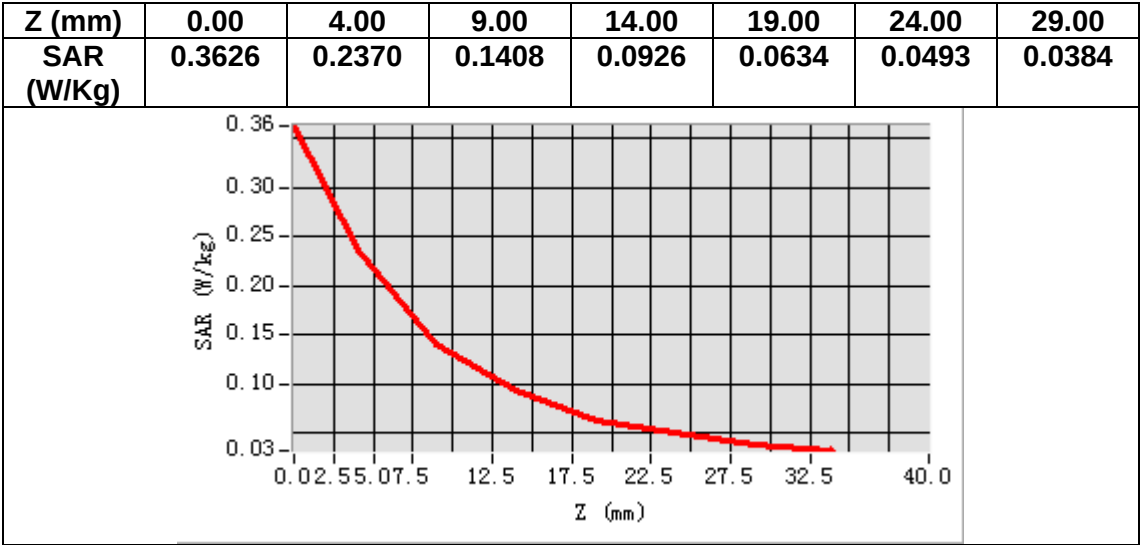
VOLUME SAR



Maximum location: X=0.00, Y=39.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.134353
SAR 1g (W/Kg)	0.233054



MEASUREMENT 17

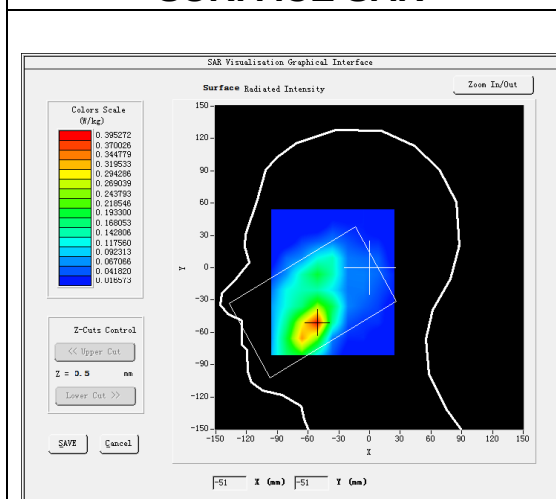
A. Experimental conditions.

<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>

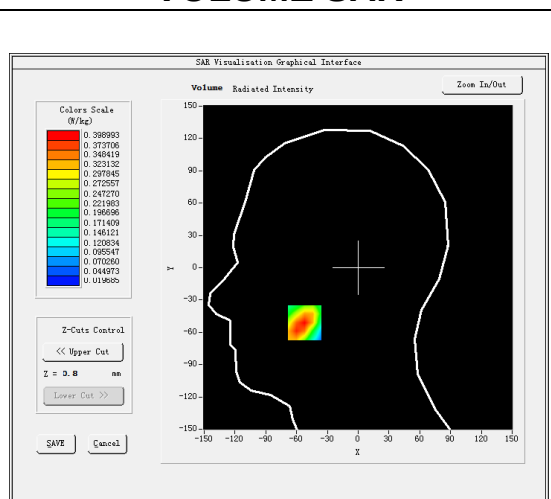
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	41.143799
Relative permittivity (imaginary part)	13.728100
Conductivity (S/m)	1.433442
Variation (%)	-1.580000

SURFACE SAR



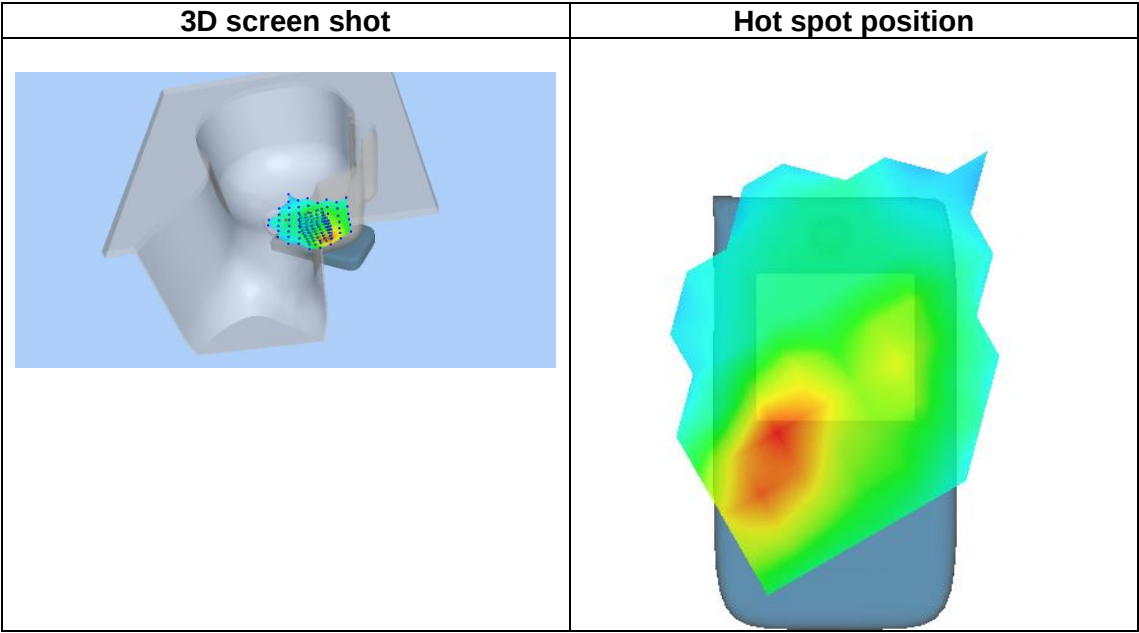
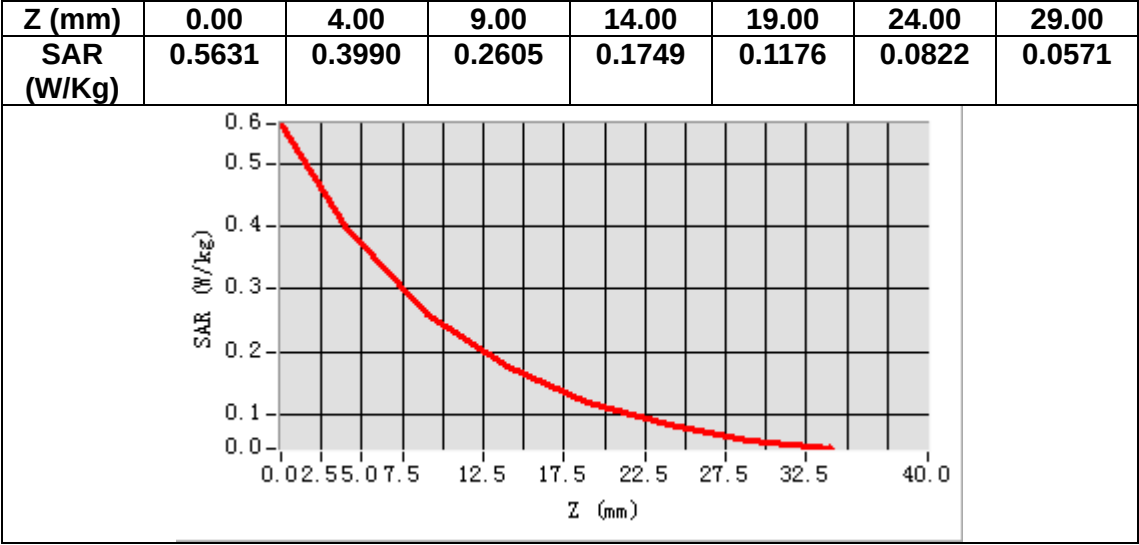
VOLUME SAR



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

SAR Peak: 0.57 W/kg

SAR 10g (W/Kg)	0.230741
SAR 1g (W/Kg)	0.385271



MEASUREMENT 18

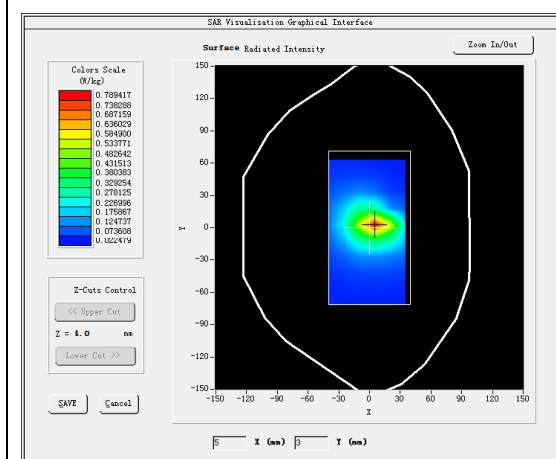
A. Experimental conditions.

<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>

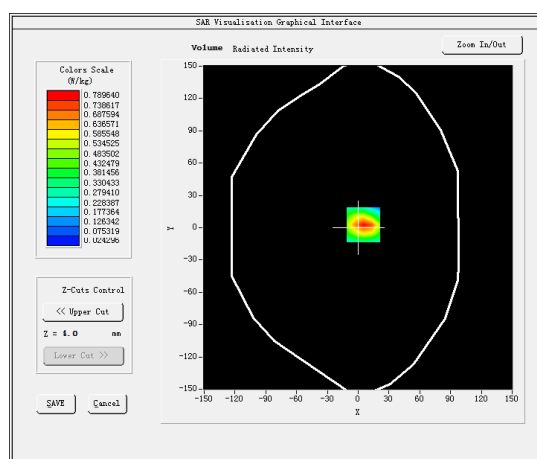
B. SAR Measurement Results

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.885948
Relative permittivity (imaginary part)	15.096150
Conductivity (S/m)	1.576290
Variation (%)	-3.740000

SURFACE SAR



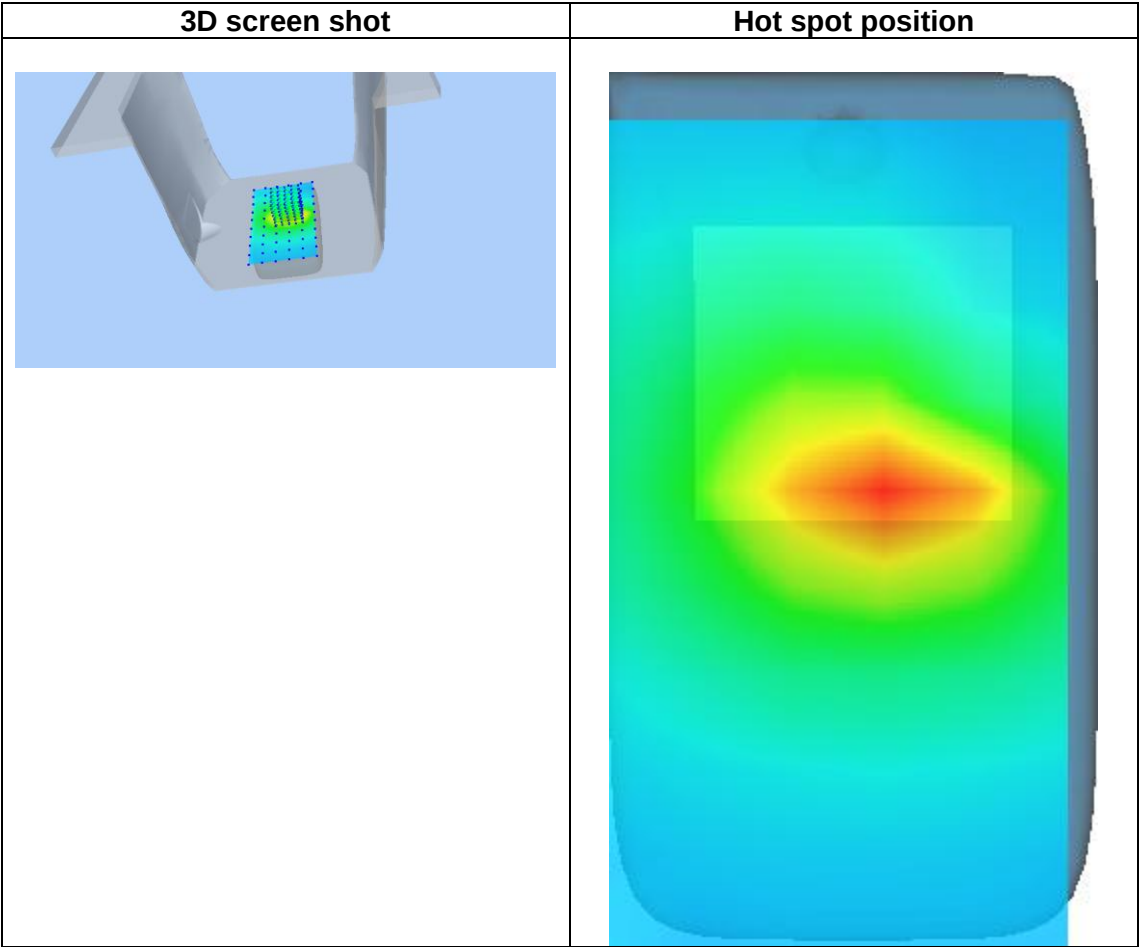
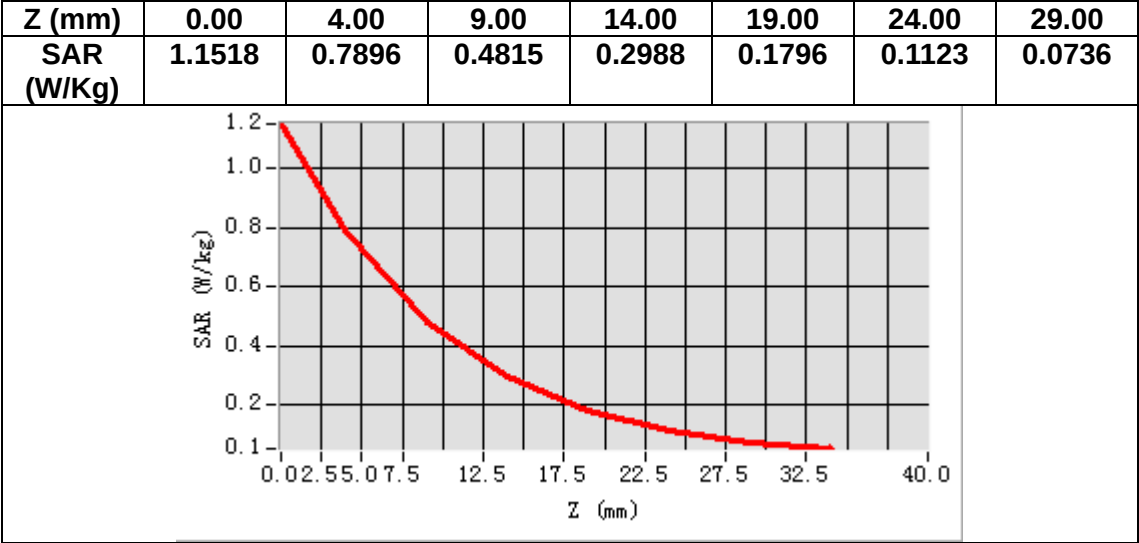
VOLUME SAR



Maximum location: X=5.00, Y=3.00

SAR Peak: 1.16 W/kg

SAR 10g (W/Kg)	0.400707
SAR 1g (W/Kg)	0.745457



MEASUREMENT 19

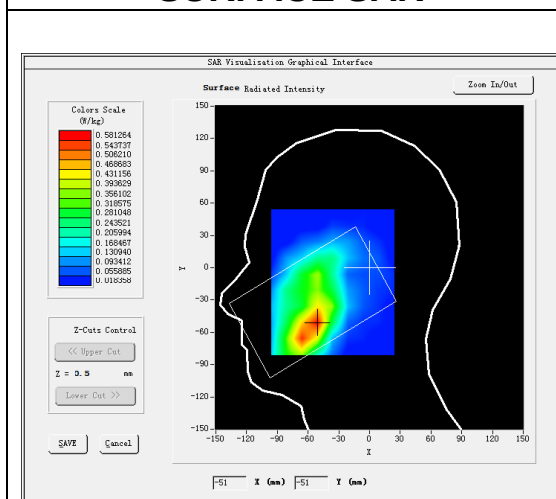
A. Experimental conditions.

<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>

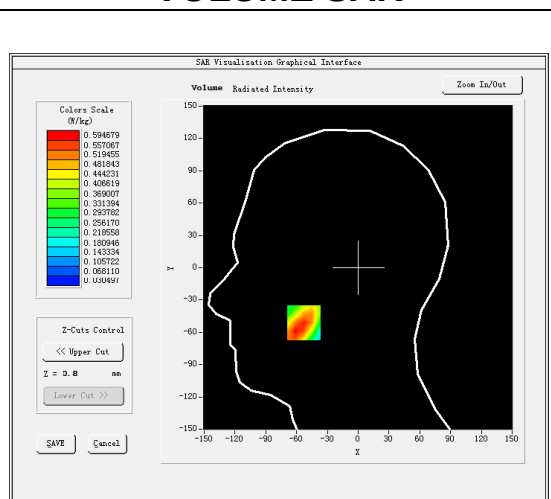
B. SAR Measurement Results

Frequency (MHz)	1732.500000
Relative permittivity (real part)	39.625290
Relative permittivity (imaginary part)	14.300592
Conductivity (S/m)	1.376432
Variation (%)	-3.810000

SURFACE SAR



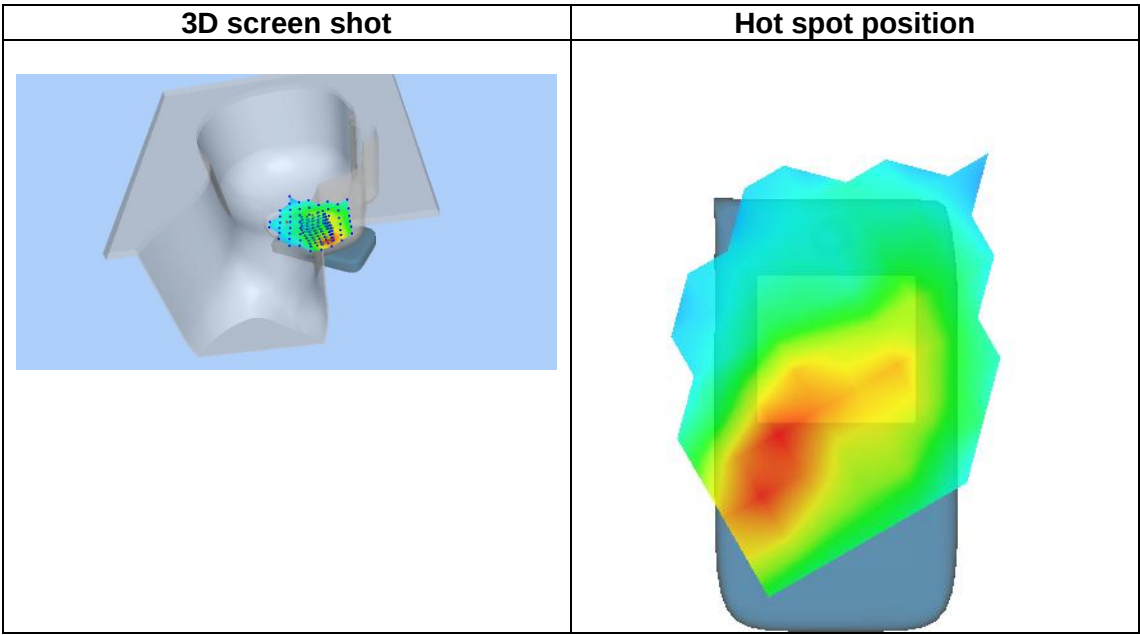
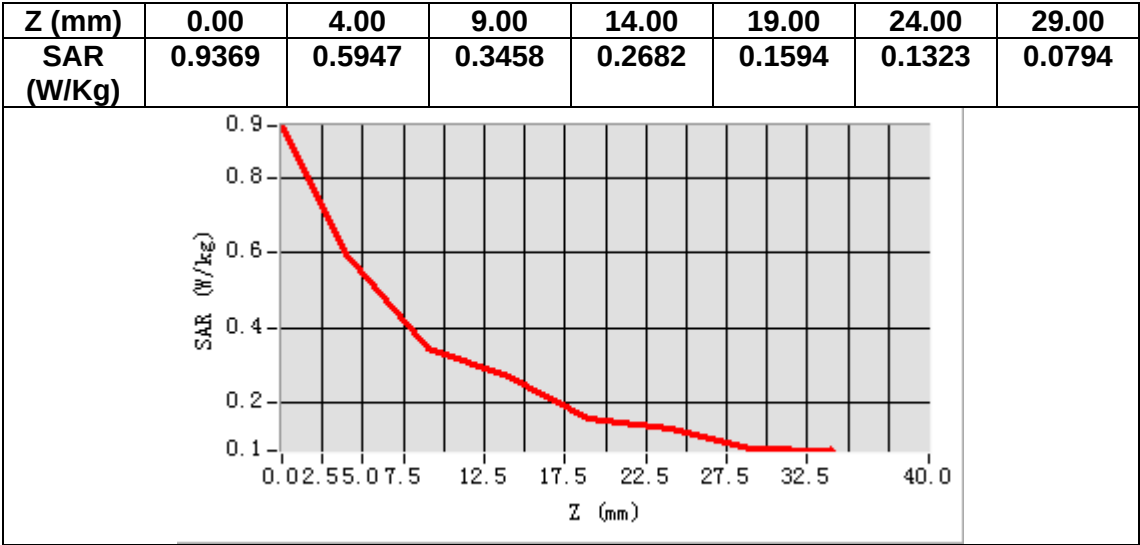
VOLUME SAR



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

SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	0.356021
SAR 1g (W/Kg)	0.569994



MEASUREMENT 20

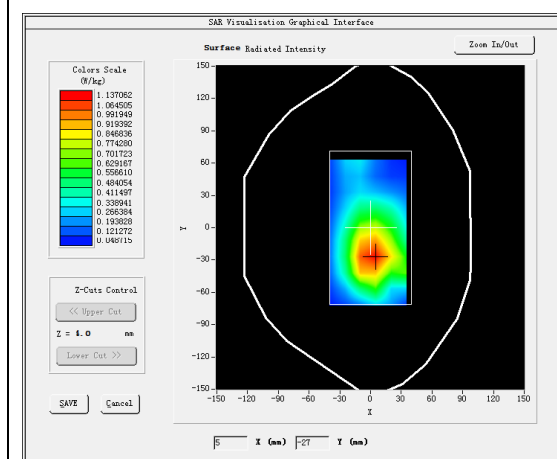
A. Experimental conditions.

<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>Low</u>
<u>Signal</u>	<u>LTE (Crest factor: 1.0)</u>

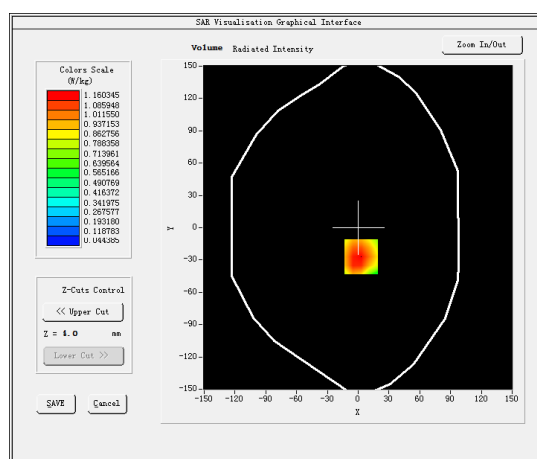
B. SAR Measurement Results

Frequency (MHz)	1720.000000
Relative permittivity (real part)	53.956665
Relative permittivity (imaginary part)	15.627870
Conductivity (S/m)	1.492896
Variation (%)	0.460000

SURFACE SAR



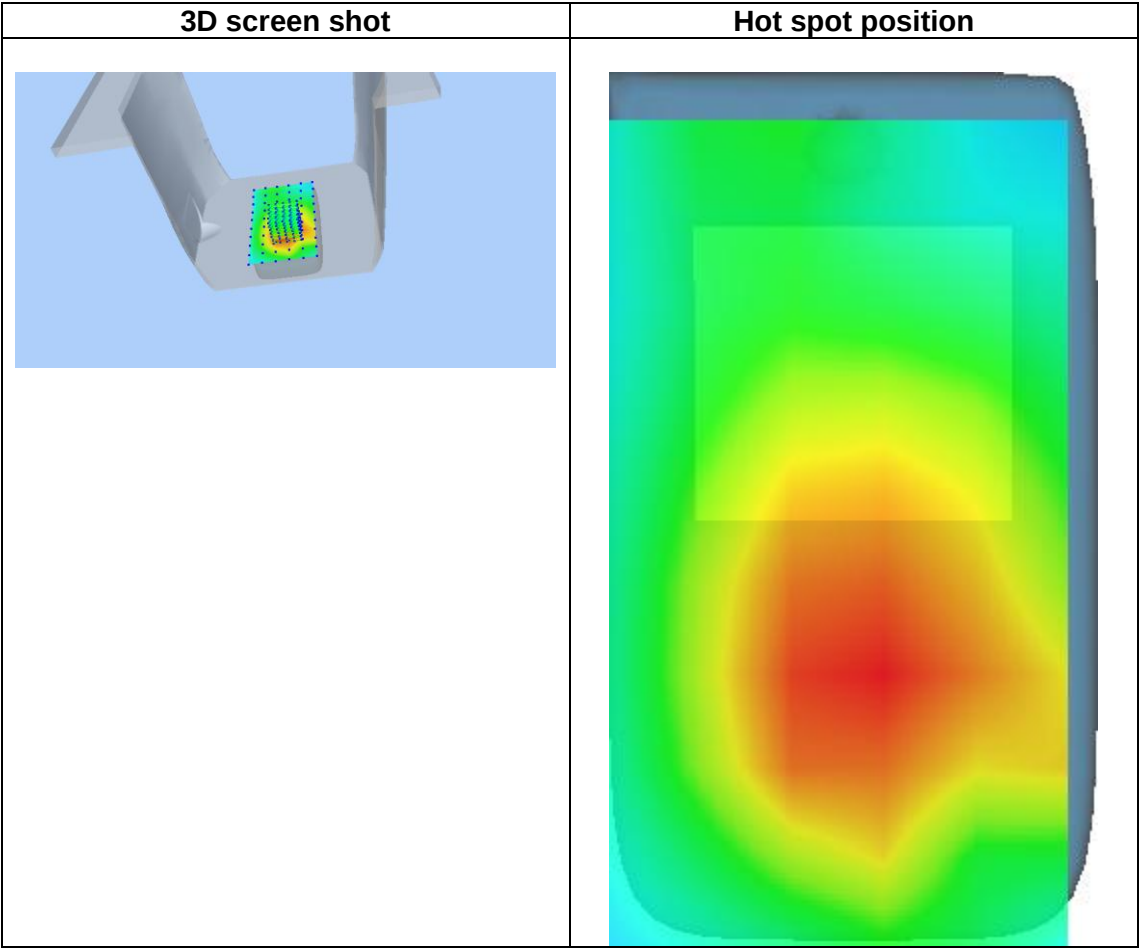
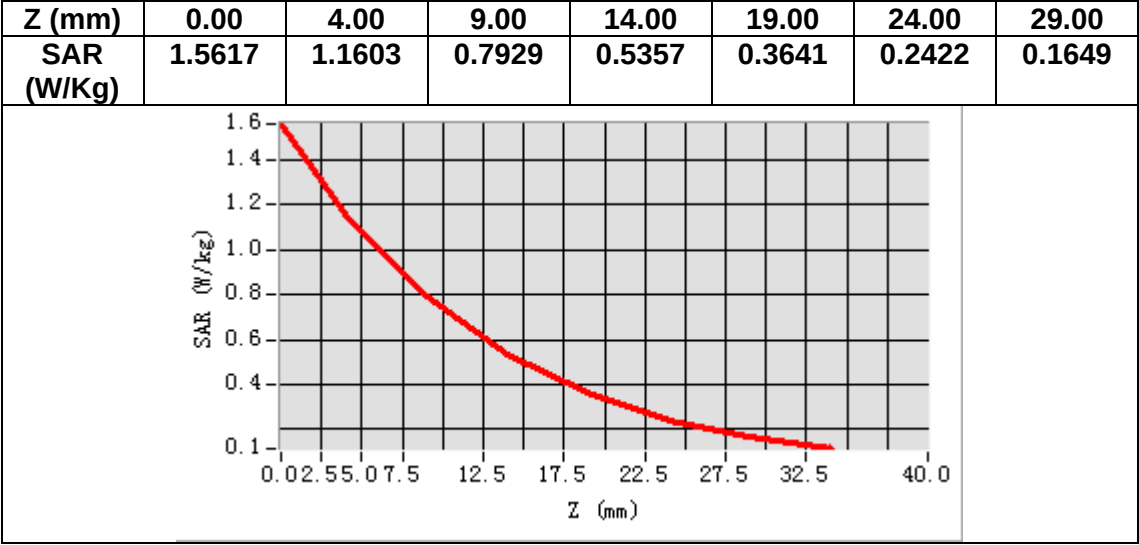
VOLUME SAR



Maximum location: X=3.00, Y=-27.00

SAR Peak: 1.60 W/kg

SAR 10g (W/Kg)	0.725397
SAR 1g (W/Kg)	1.097074



MEASUREMENT 21

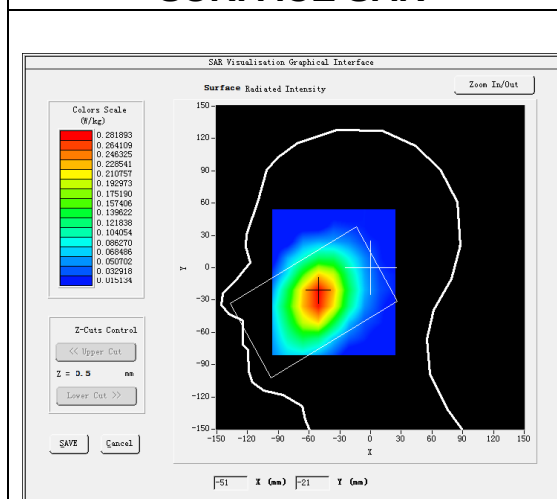
A. Experimental conditions.

<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>

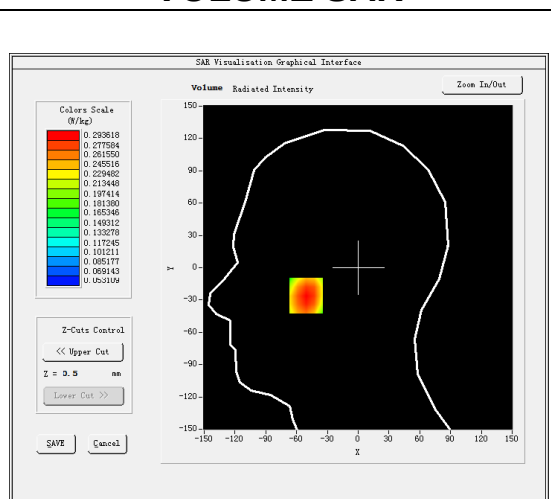
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	40.713551
Relative permittivity (imaginary part)	20.120199
Conductivity (S/m)	0.935030
Variation (%)	0.940000

SURFACE SAR



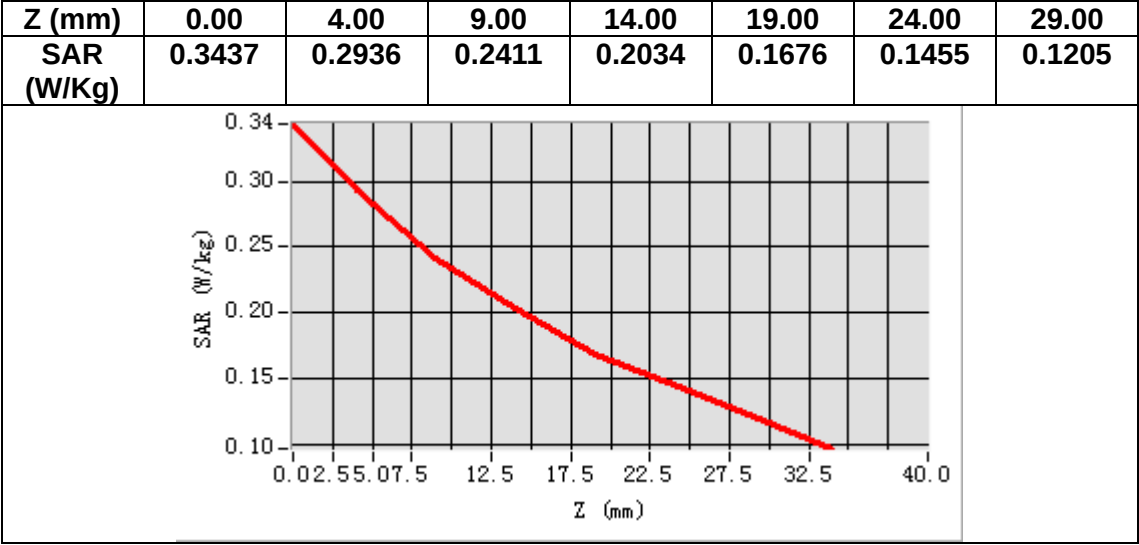
VOLUME SAR



Maximum location: X=-51.00, Y=-26.00

SAR Peak: 0.36 W/kg

SAR 10g (W/Kg)	0.226856
SAR 1g (W/Kg)	0.295420



MEASUREMENT 22

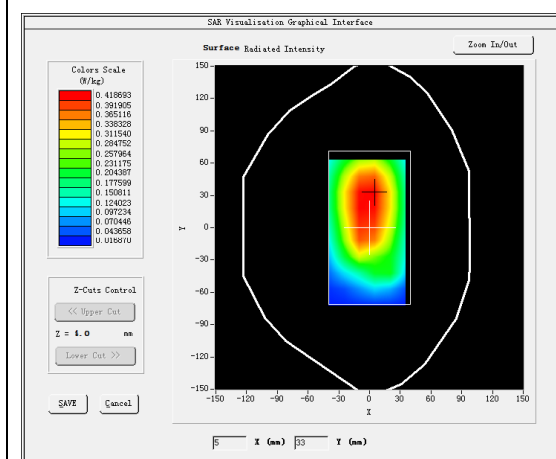
A. Experimental conditions.

<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>

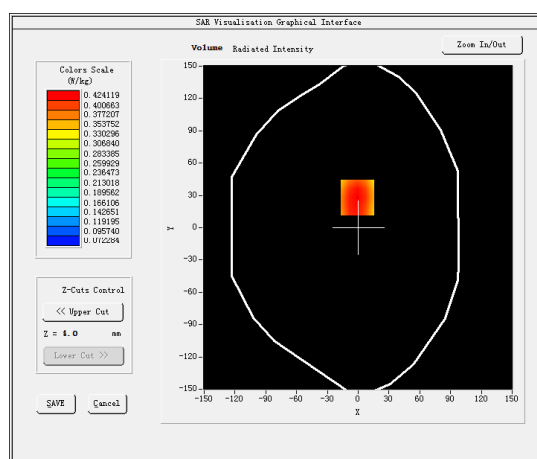
B. SAR Measurement Results

Frequency (MHz)	836.500000
Relative permittivity (real part)	54.473499
Relative permittivity (imaginary part)	21.816999
Conductivity (S/m)	1.013884
Variation (%)	-1.160000

SURFACE SAR



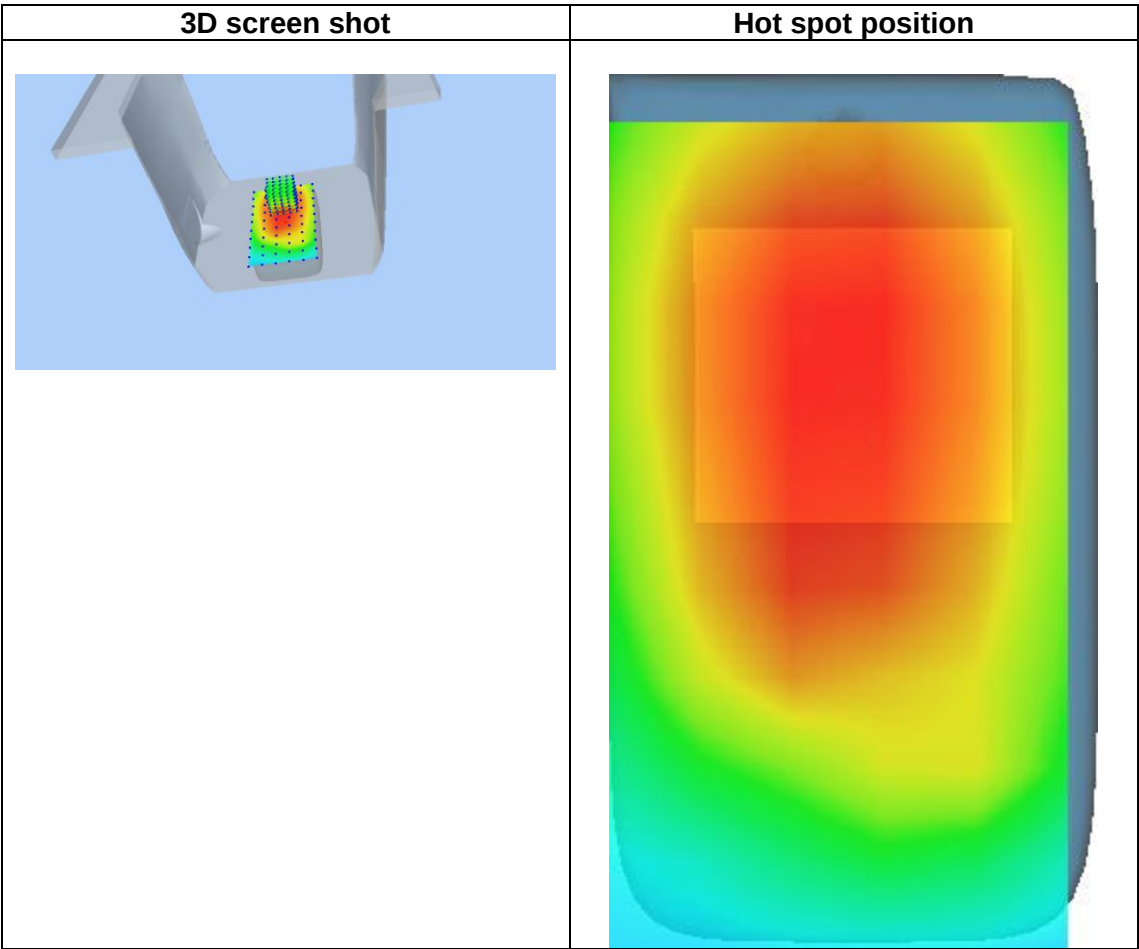
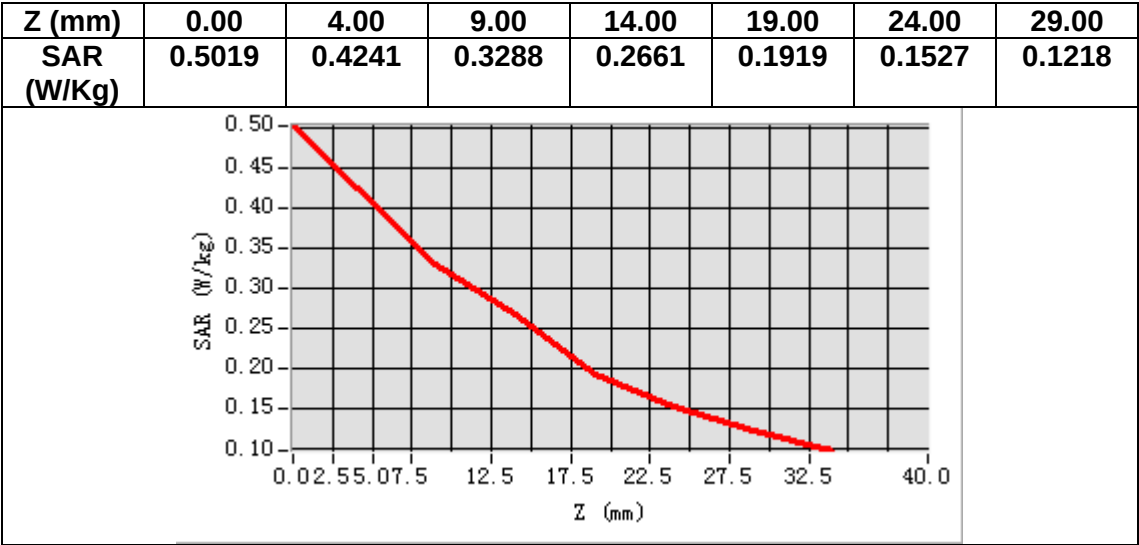
VOLUME SAR



Maximum location: X=-1.00, Y=28.00

SAR Peak: 0.51 W/kg

SAR 10g (W/Kg)	0.313970
SAR 1g (W/Kg)	0.421843



MEASUREMENT 23

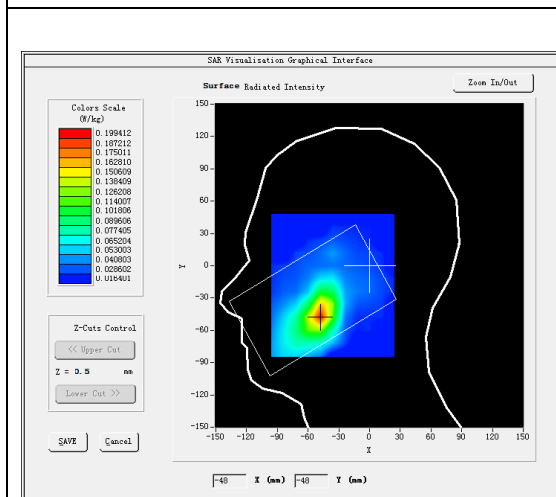
A. Experimental conditions.

<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>

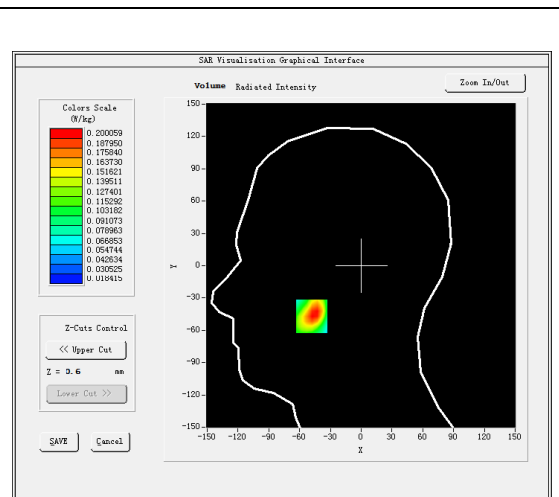
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	38.705486
Relative permittivity (imaginary part)	13.951160
Conductivity (S/m)	1.964788
Variation (%)	1.400000

SURFACE SAR



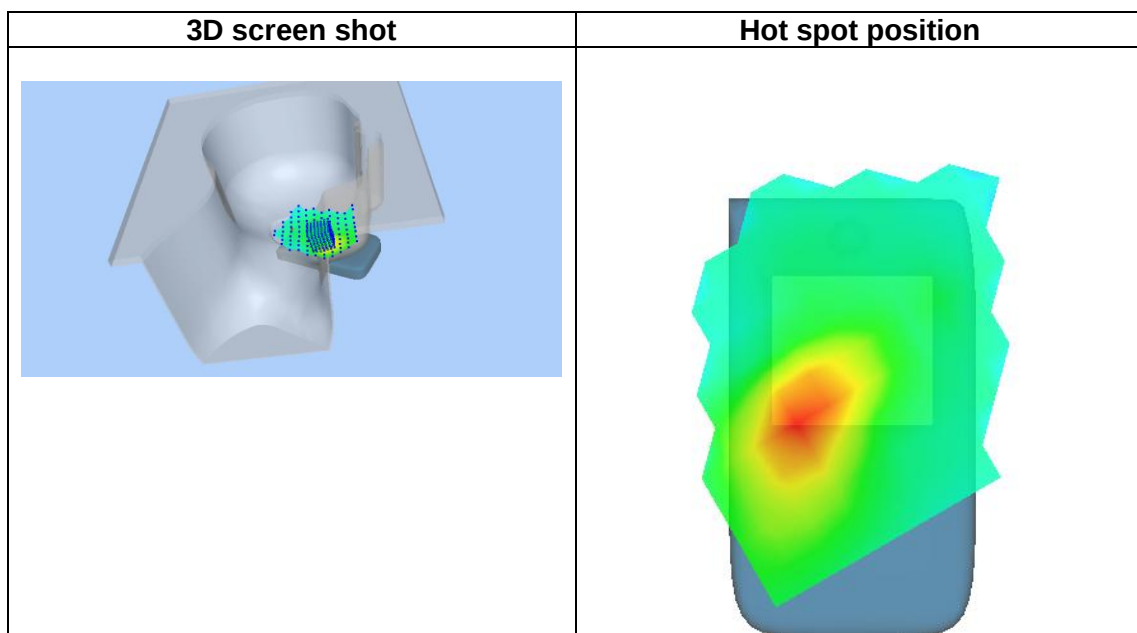
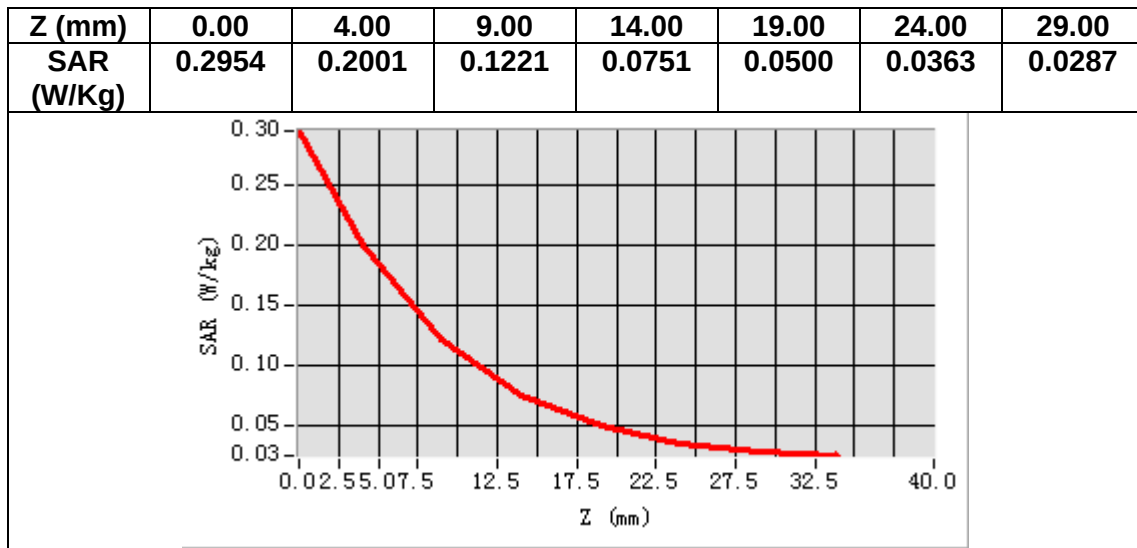
VOLUME SAR



Maximum location: X=-48.00, Y=-47.00

SAR Peak: 0.30 W/kg

SAR 10g (W/Kg)	0.105058
SAR 1g (W/Kg)	0.192008



MEASUREMENT 24

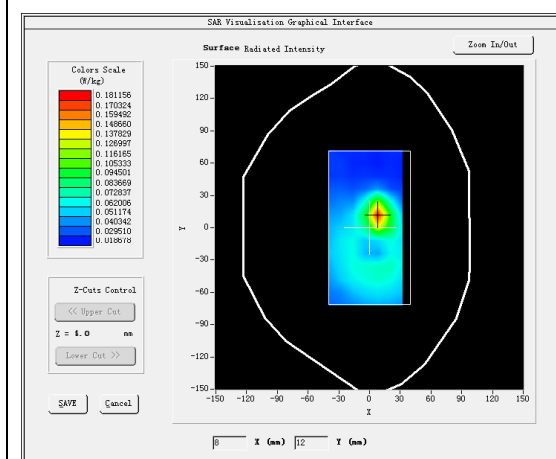
A. Experimental conditions.

<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>

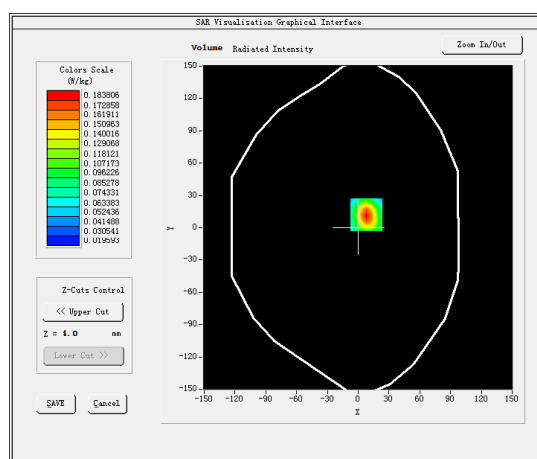
B. SAR Measurement Results

Frequency (MHz)	2535.000000
Relative permittivity (real part)	52.996944
Relative permittivity (imaginary part)	15.237840
Conductivity (S/m)	2.145996
Variation (%)	-1.500000

SURFACE SAR



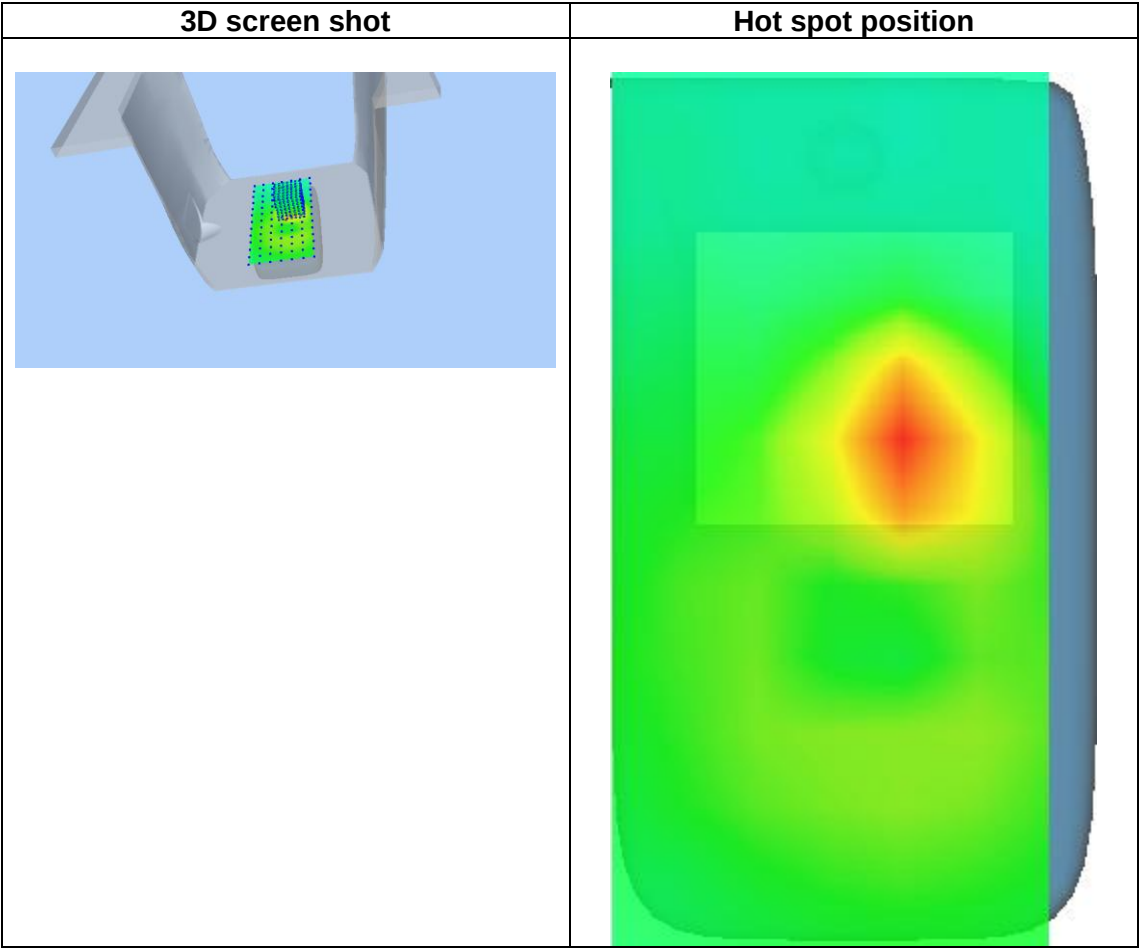
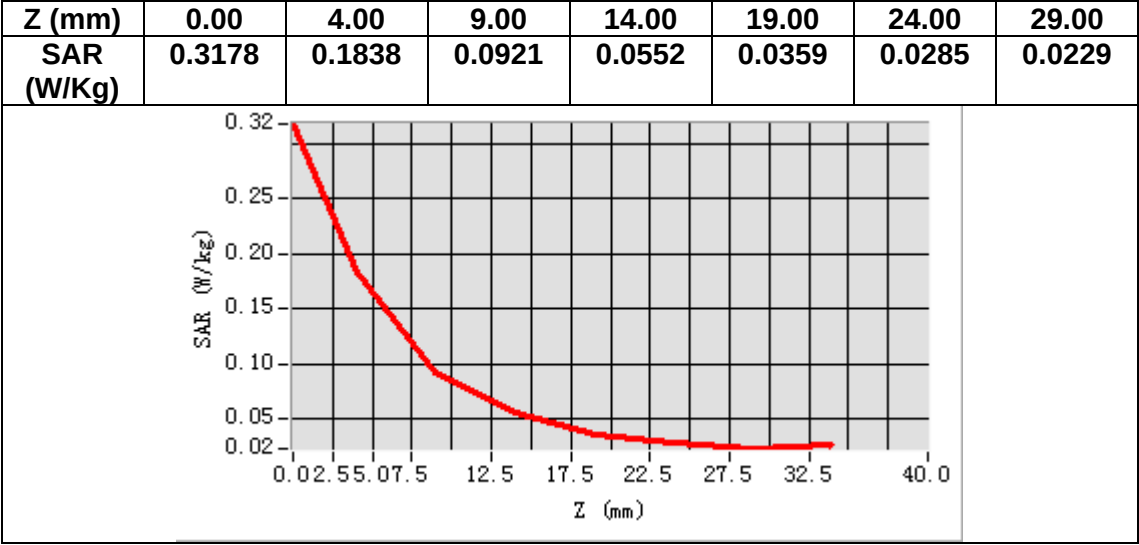
VOLUME SAR



Maximum location: X=8.00, Y=12.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.087452
SAR 1g (W/Kg)	0.171886



MEASUREMENT 25

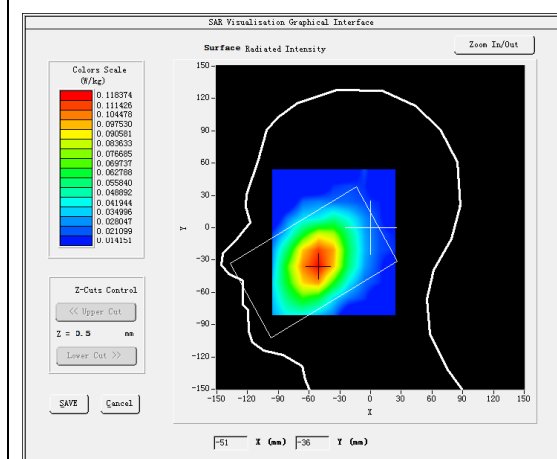
A. Experimental conditions.

<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>

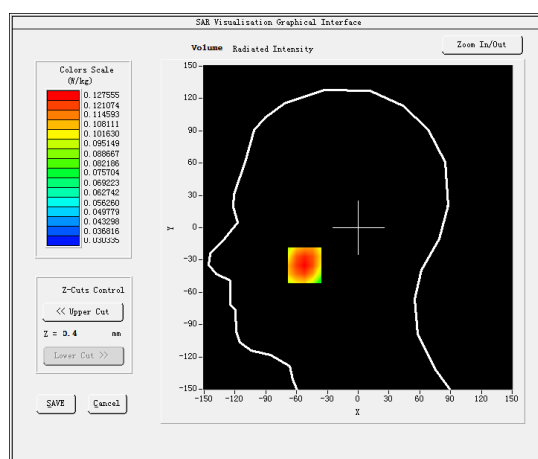
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.637959
Relative permittivity (imaginary part)	21.921301
Conductivity (S/m)	0.861629
Variation (%)	4.470000

SURFACE SAR



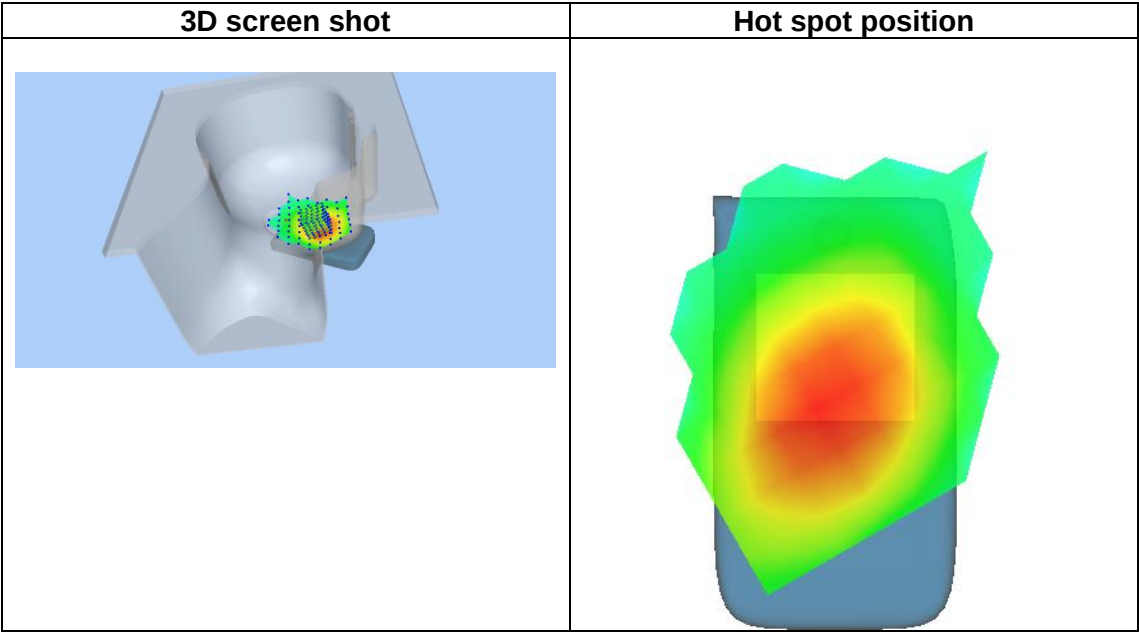
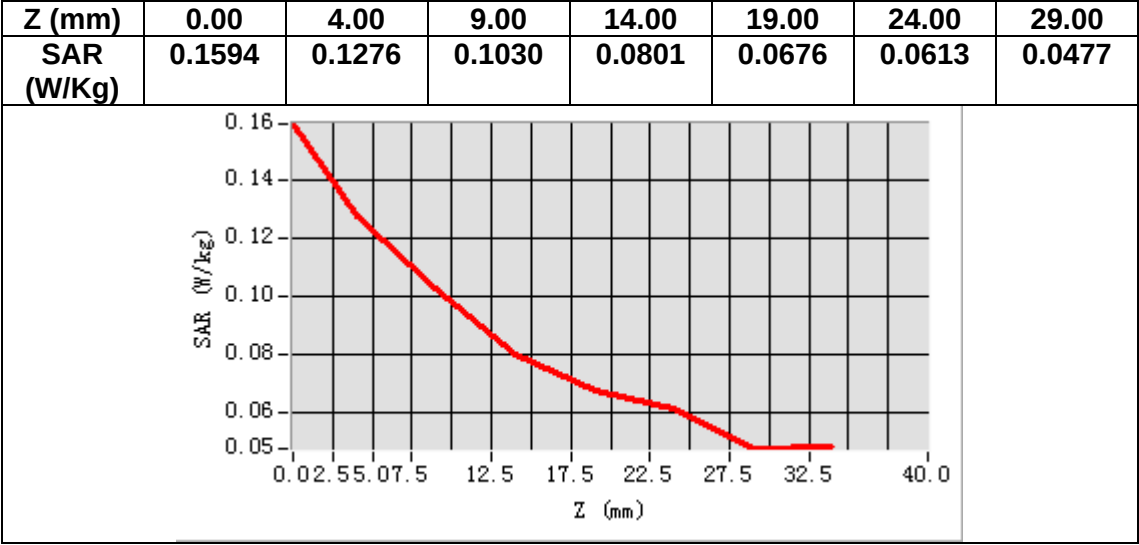
VOLUME SAR



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

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.094858
SAR 1g (W/Kg)	0.124213



MEASUREMENT 26

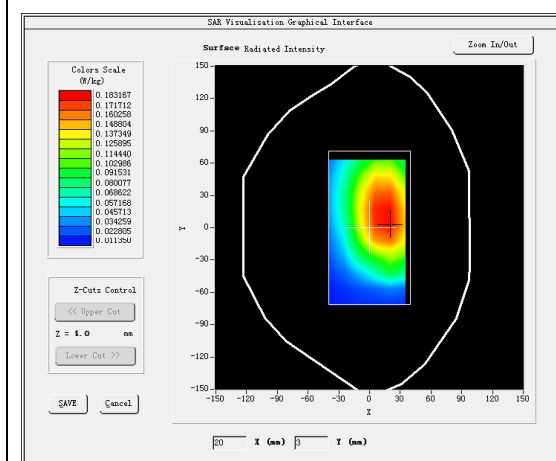
A. Experimental conditions.

<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>

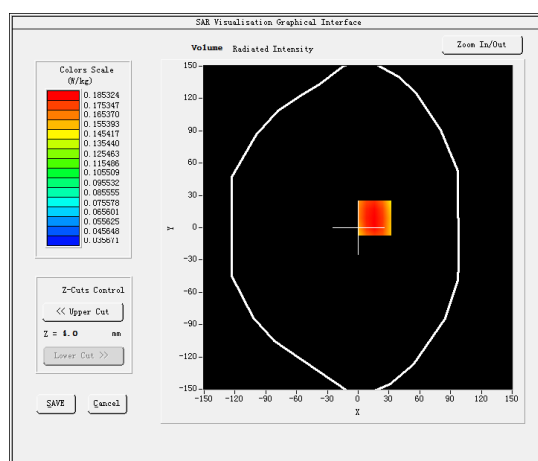
B. SAR Measurement Results

Frequency (MHz)	707.500000
Relative permittivity (real part)	41.637959
Relative permittivity (imaginary part)	21.921301
Conductivity (S/m)	0.861629
Variation (%)	-1.170000

SURFACE SAR



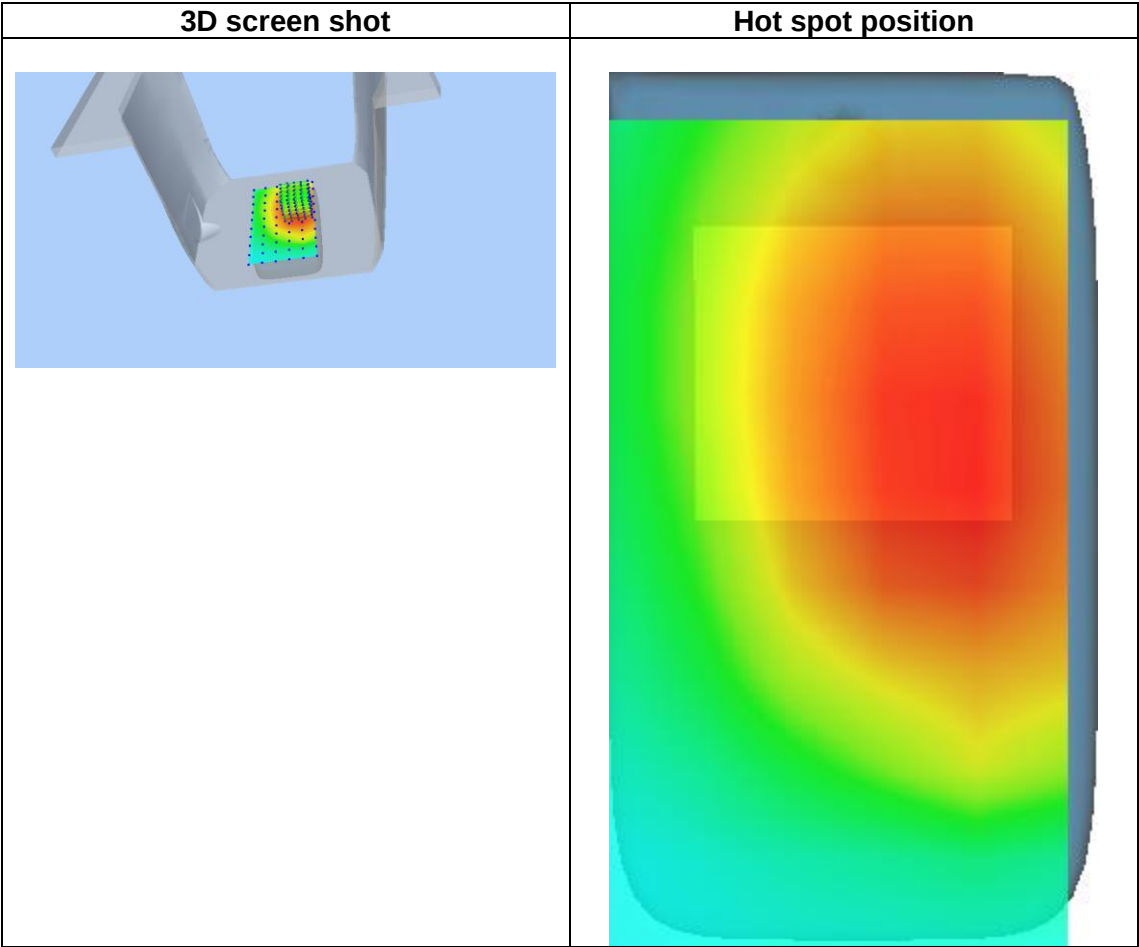
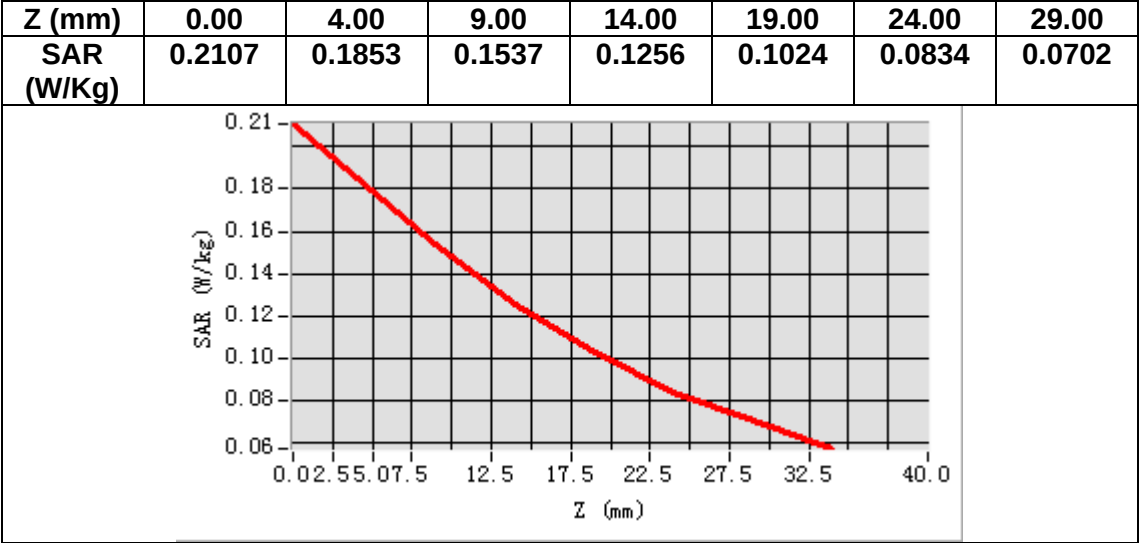
VOLUME SAR



Maximum location: X=16.00, Y=9.00

SAR Peak: 0.22 W/kg

SAR 10g (W/Kg)	0.142811
SAR 1g (W/Kg)	0.180168



MEASUREMENT 27

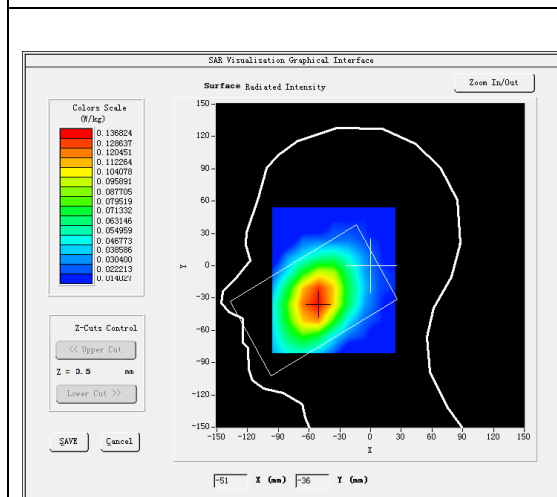
A. Experimental conditions.

<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>

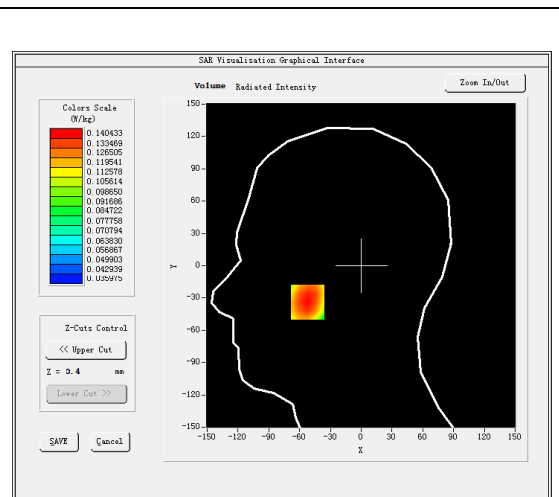
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	41.616711
Relative permittivity (imaginary part)	21.940500
Conductivity (S/m)	0.865431
Variation (%)	3.820000

SURFACE SAR



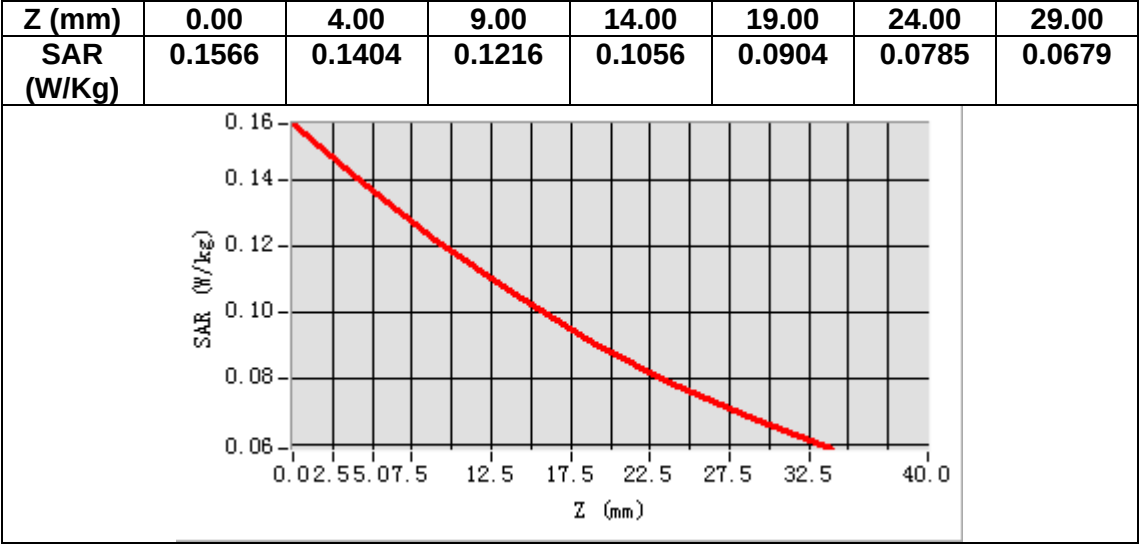
VOLUME SAR



Maximum location: X=-52.00, Y=-34.00

SAR Peak: 0.16 W/kg

SAR 10g (W/Kg)	0.112546
SAR 1g (W/Kg)	0.137041



MEASUREMENT 28

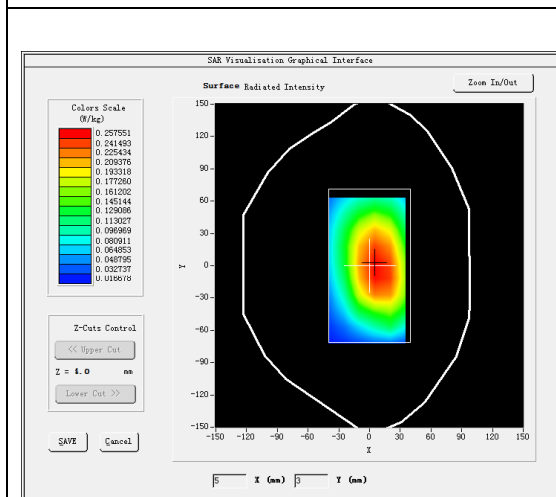
A. Experimental conditions.

<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>

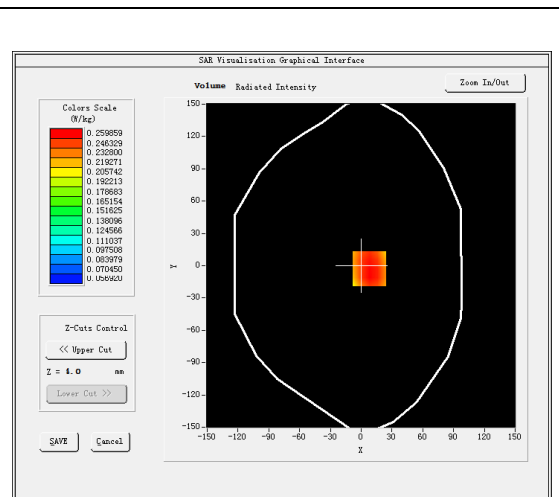
B. SAR Measurement Results

Frequency (MHz)	710.000000
Relative permittivity (real part)	55.886711
Relative permittivity (imaginary part)	23.580500
Conductivity (S/m)	0.930120
Variation (%)	2.010000

SURFACE SAR



VOLUME SAR



Maximum location: X=8.00, Y=-3.00

SAR Peak: 0.31 W/kg

SAR 10g (W/Kg)	0.202833
SAR 1g (W/Kg)	0.254838

