FCC SAR

TEST REPORT

of

3G QWERTY HAC Compatible Bar wireless phone

Model Name: S810
Trade Name: Verykool
Report No.: SZ10070019S01
FCC ID.: WA6S810

prepared for

Verykool USA Inc
4350 Executive Dr. #100, San Diego, CA 92121

pidrepared by

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Morlab Laboratory
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Change History		
Issue	Date	Reason for change
1.0	Sep. 20, 2010	First edition

1. General Information

1.1. Notes

The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the identification. The test report may only be reproduced or published in full. Reproduction or publications of extracts from the test report requires the prior written approval of Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory. The test report shall be invalid without all the signatures of testing the Project Manager, the Deputy Project Manager and the Test Lab Manager. Any objections must be raised to Morlab within 30 days since the date when the report is received. It will not be taken into consideration beyond this limit.

1.2. Organization item

Report No.:	SZ10070019S01
Date of Issue:	Sep. 20, 2010
Date of Tests:	Sep. 10, 2010 –Sep. 10, 2010
Responsible for Accreditation:	Shu Luan
Project Manager:	Li Lei
Deputy Project Manager:	Samuel Peng

1.3. Conclusion

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory has verified that all tests as listed in the section 11 of this report haven been performed succ essfully with the tested equipment.

Samuel Peng
Tested by
(Responsible for the Test Report)

Li Lei
Reviewed by
(Verification of the Test Report)

Shu Luan
Approved by
(Responsible Test Lab Manager)

2. Testing Laboratory

2.1. Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Department:	Morlab Laboratory
Address:	3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China
Responsible Test Lab Manager:	Mr. Shu Luan
Telephone:	+86 755 86130268
Facsimile:	+86 755 86130218

2.2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory
Address:	3/F, Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, 518055 P. R. China

2.3. Accreditation Certificate

Accredited Testing Laboratory:	No. CNAS L3572

2.4. List of Test Equipments

No.	Instrument	Type	Cal. Date	Cal. Due
1	PC	Dell (Pentium IV 2.4GHz, SN:X10-23533)		
2	Network Emulator	Rohde&Schwarz (CMU200, SN:105894)	2009-9-26	1year
3	Voltmeter	Keithley (2000, SN:1000572)	2009-9-24	1year
4	Synthetizer	Rohde&Schwarz (SML_03, SN:101868)	2009-9-24	1year
5	Amplifier	Nucl udes (ALB216, SN:10800)	2009-9-24	1year
6	Power Meter	Rohde&Schwarz (NRVD, SN:101066)	2009-9-24	1year
7	Probe	Antennessa (SN:SN_3708_EP80)	2009-9-24	1year
8	Phantom	Antennessa (SN:SN_36_08_SAM62)	2009-9-24	1year
9	Liquid	Antennessa (Last Calibration:21 08 08)	2010-8-21	1year

3. Technical Information

Note: the following data is based on the information by the applicant.

3.1. Identification of Applicant

Company Name:	Verykool USA Inc
Address:	4350 Executive Dr. #100, San Diego, CA 92121

3.2. Identification of Manufacturer

Company Name:	Verykool Wireless Technology Ltd.
Address:	Room 1701, Reward Building C, No.203, 2nd Section of WangJing, Li Ze Zhong Yuan, ChaoYang District, Beijing, P.R. of China 100102

3.3. Equipment Under Test (EUT)

Brand Name:	Verykool
Type Name:	Verykool
Marking Name:	S810
Hardware Version:	P1.2
Software Version:	S810_0031
Frequency Bands:	GSM 850MHz DCS 1900MHz WCMDA 850MHz WCMDA 1900MHz
Modulation Mode:	GSM / GPRS : GMSK EDGE : 8PSK WCDMA / CDMA2000 : QPSK HSDPA : QPSK / 16QAM
Multislot Class	GPRS: Multislot Class 12: EDGE: Multislot Class 12
GPRS operation mode:	Class B
HSPA release:	Rel-6
HS-DSCH categories:	Category 8
HS-DSCH categories:	Category 6
Antenna type:	Fixed Internal Antenna
Development Stage:	Identical prototype
Battery Model:	H12M20902-7260
Battery specification:	1000mAh 3.7V

3.3.1. Photographs of the EUT

Please see for photographs of the EUT.

3.3.2. Identification of all used EUTs

The EUT Identity consists of numerical and letter characters (see the table below), the first five numerical characters indicates the Type of the EUT defined by Morlab, the next letter character indicates the test sample, and the following two numerical characters indicates the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	P1.2	S810_0031

3.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	**47 CFR § 2. 1093**	Radiofrequency Radiation Exposure Evaluation: Portable Devices
2	**FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)**	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields
3	**ANSI C95.1-1999**	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz
4	**IEEE 1528-2003**	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techuiques.

3.5. Device Category and SAR Limits

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user. Limit for General Population/Uncontrolled exposure should be applied for this device, it is 1.6 W/kg as averaged over any 1 gram of tissue.

3.6. Test Environment/Conditions

Normal Temperature (NT):	20 ... 25 °C		
Relative Humidity:	30 ... 75 %		
Air Pressure:	980 ... 1020 hPa		
Details of Power Supply:	220V/50Hz AC		
Extreme Temperature:	Low Temperature (LT)	=	-10°C
	High Temperature (HT)	=	55°C
Extreme Voltage of the EUT:	Normal Voltage (NV)	=	3.70V
	Low Voltage (LV)	=	3.60V
	High Voltage (HV)	=	4.20V
Test frequency:	GSM 850MHz,GSM 1900MHz, WCDMA 850MHz,WCDMA 1900MHz		
Operation mode:	Call established		
Power Level:	GSM 850 MHz Maximum output power(level 5) PCS 1900 MHz Maximum output power(level 0) WCDMA Maximum output power		

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.
The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 125, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz or is allocated to 4132, 4182 and 4233 respectively in the case of WCDMA 850MHz and is allocated to 9262, 9400 and 9538 respectively in the case of WCDMA 1900MHz, The EUT is commanded to operate at maximum transmitting power.
The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.
The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.
For SAR testing, EUT is in GPRS/EDGE or WCDMA/HSDPA link mode. In GPRS/EDGE link mode, its crest factor is 2, because EUT is set in GPRS/EDGE multi-slot class 12 with 4 uplink slots. In WCDMA/HSDPA link mode, its crest factor is 1.

4. Specific Absorption Rate (SAR)

4.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

4.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density. ρ). The equation description is as below:

$$SAR = \frac{d}{dt}\left(\frac{dW}{dm}\right) = \frac{d}{dt}\left(\frac{dW}{\rho dv}\right)$$

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = C\frac{\delta T}{\delta t}$$

, where C is the specific head capacity, δ T is the temperature rise and δ t the exposure duration, or related to the electrical field in the tissue by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

, where σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the rms electrical field strength.

However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

5. SAR Measurement Setup

5.1. The Measurement System

Comosar is a system that is able to determine the SAR distribution inside a phantom of human being according to different standards. The Comosar system consists of the following items:

- Main computer to control all the system
- 6 axis robot
- Data acquisition system
- Miniature E-field probe
- Phone holder
- Head simulating tissue

The following figure shows the system.

The EUT under test operating at the maximum power level is placed in the phone holder, under the phantom, which is filled with head simulating liquid. The E-Field probe measures the electric field inside the phantom. The OpenSAR software computes the results to give a SAR value in a 1g or 10g mass.

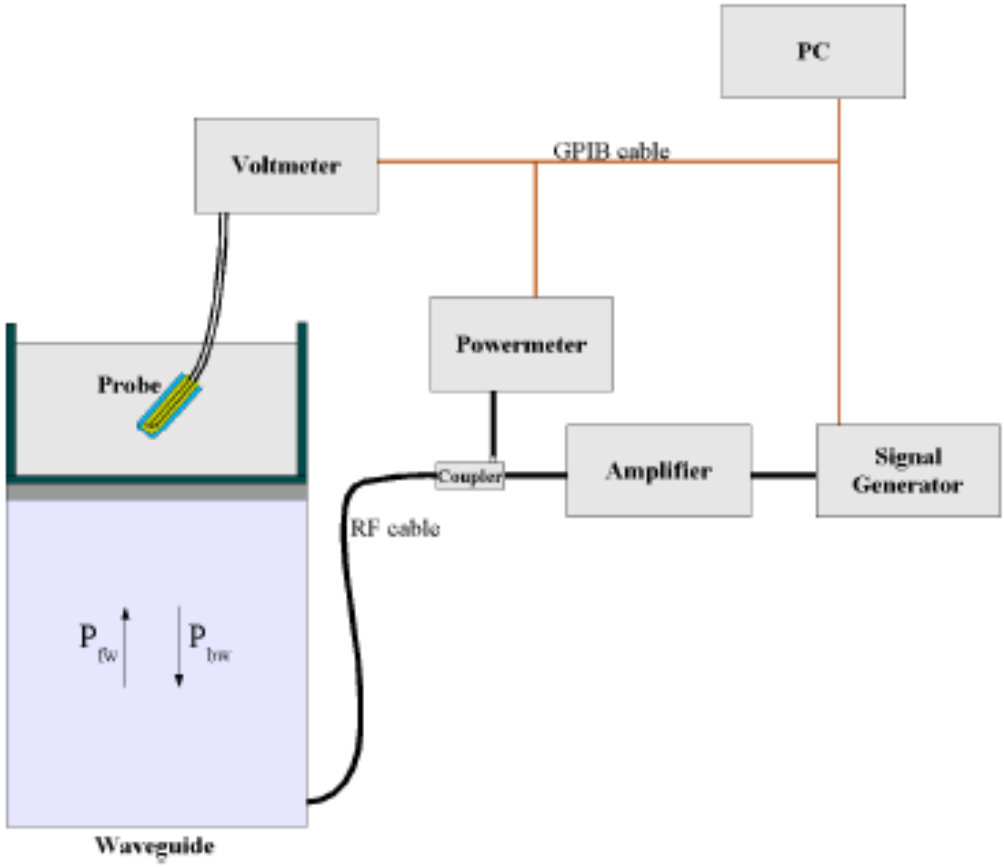
5.2. Probe

For the measurements the Specific Dosimetric E-Field Probe SSE5 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 5 mm
- Distance between probe tip and sensor center: 2.5mm
- Distance between sensor center and the inner phantom surface: 4 mm
  (repeatability better than +/- 1mm)
- Probe linearity: ＜0.25 dB
- Axial Isotropy: ＜0.25 dB
- Spherical Isotropy: ＜0.25 dB
- Calibration range: 835to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and suface normal line:1ess than 30°

Probe calibration is realized, in compliance with CENELEC EN 50361 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 50361 annexe technique using reference guide at the five frequencies.



$$SAR = \frac{4\left(P_{fw} - P_{bw}\right)}{ab\delta} \cos^2\left(\pi \frac{y}{a}\right) e^{-(2z/\delta)}$$

Where :
Pfw = Forward Power
Pbw = Backward Power
a and b = Waveguide dimensions
ı = Skin depth
Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO
After each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

CF(N)=SAR(N)/Vlin(N) (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

Vlin(N)=V(N)*(1+V(N)/DCP(N)) (N=1,2,3)

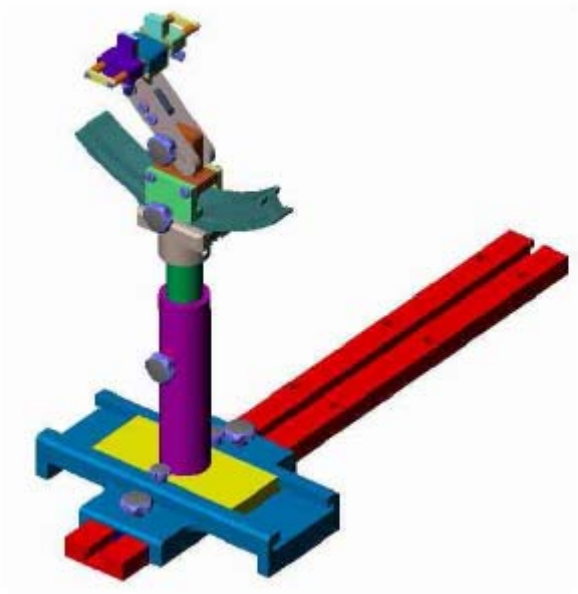
where DCP is the diode compression point in mV.

5.3. Phantom

For the measurements the Specific Anthropomorphic Mannequin (SAM) defined by the IEEE SCC-34/SC2 group is used. The phantom is a polyurethane shell integrated in a wooden table. The thickness of the phantom amounts to 2mm +/- 0.2mm. It enables the dosimetric evaluation of left and right phone usage and includes an additional flat phantom part for the simplified performance check. The phantom set-up includes a cover, which prevents the evaporation of the liquid.

5.4. 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°.



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

6. Tissue Simulating Liquids

Simulant liquids that are used for testing at frequencies of GSM 800MHz PCS 1900MHz WCDMA 850 WCDMA1900, which are made mainly of sugar, salt and water solutions may be left in the phantoms. Approximately 20litres are needed for an upright head compared to about 25 litres for a horizontal bath phantom. The liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is (head SAR)or from the flat phantom to the liquid top surface (body SAR) is 15 cm.

Table 6.1 gives the recipes for one liter of head and body tissue simulating liquid for frequency band 850MHz and 1900 MHz.

Ingredients (% by weight)	Frequency Band 835MHz		Frequency Band 1900MHz	
Tissue Type	Head	Body	Head	Body
Water	41.45	52.4	55.36	40.4
Salt(NaCl)	1.45	1.4	0.35	0.5
Sugar	56.0	45.0	30.45	58.0
HEC	1.0	1.0	0.0	1.0
Bactericide	0.1	0.1	0.0	0.1
Triton	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	13.84	0.0
Acticide SPX	0.0	0.0	0.0	0.0
Dielectric Constant	42.45	56.1	41.00	54.0
Conductivity (S/m)	0.91	0.95	1.38	1.45

Recipes for Tissue Simulating Liquid

The dielectric parameters of the liquids were verified prior to the SAR evaluation using an Agilent 85033E Dielectric Probe Kit and an Agilent Network Analyzer.

Table 1: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHZ	41.5	0.90
Validation value (Sep. 10)	835 MHZ	41.675999	0.894409

Target value	1900 MHZ	40	1.40
Validation value (Sep. 10)	1900 MHZ	38.509998	1.436111

For body-worn measurements, the device was tested against flat phantom representing the user body. Under measurement phone was put on in the belt holder.

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	55.2	0.97
Validation value (Sep. 10)	835 MHz	55.709999	1.009033
Target value	1900 MHz	53.3	1.52
Validation value (Sep. 10)	1900 MHz	52.548876	1.573978

7. Uncertainty Assessment

The following table includes the uncertainty table of the IEEE 1528. The values are determined by Antennessa.

7.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	V i
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	
Axial Isotropy	E.2.2	2.5	R				1.02	1.02	
Hemispherical Isotropy	E.2.2	4.0	R				1.63	1.63	
Boundary effect	E.2.3	1.0	R		1	1	0.58	0.58	
Linearity	E.2.4	5.0	R		1	1	2.89	2.89	
System detection limits	E.2.5	1.0	R		1	1	0.58	0.58	
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	
Reponse Time	E.2.7	3.0	R		1	1	1.73	1.73	
Integration Time	E.2.8	2.0	R		1	1	1.15	1.15	
RF ambient Conditions	E.6.1	3.0	R		1	1	1.73	1.73	
Probe positioner Mechanical Tolerance	E.6.2	2.0	R		1	1	1.15	1.15	
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R		1	1	0.03	0.03	
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R		1	1	2.89	2.89	
Test sample Related									
Test sample positioning	E.4.2.1	0.03	N	1	1	1	0.03	0.03	N-1
Device Holder Uncertainty	E.4.1.1	5.00	N	1	1	1	5.00	5.00	
Output power Variation - SAR drift measurement	6.6.2	4.04	R		1	1	2.33	2.33	
Phantom and Tissue Parameters									

Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R		1	1	0.03	0.03	
Liquid conductivity - deviation from target value	E.3.2	4.57	R		0.64	0.43	1.69	1.13	
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity - deviation from target value	E.3.2	3.69	R		0.6	0.49	1.28	1.04	
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
Combined Standard Uncertainty			RSS				11.23	10.70	
Expanded Uncertainty (95% Confidence interval)			k				21.91	20.86	

7.2. UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	V i
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	
Axial Isotropy	E.2.2	2.5	R				1.02	1.02	
Hemispherical Isotropy	E.2.2	4.0	R				1.63	1.63	
Boundary effect	E.2.3	1.0	R		1	1	0.58	0.58	
Linearity	E.2.4	5.0	R		1	1	2.89	2.89	
System detection limits	E.2.5	1.0	R		1	1	0.58	0.58	
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	
Reponse Time	E.2.7	3.0	R		1	1	1.73	1.73	
Integration Time	E.2.8	2.0	R		1	1	1.15	1.15	
RF ambient Conditions	E.6.1	3.0	R		1	1	1.73	1.73	
Probe positioner Mechanical Tolerance	E.6.2	2.0	R		1	1	1.15	1.15	
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R		1	1	0.03	0.03	
Extrapolation, interpolation and integration Algoritms for Max.	E.5.2	5.0	R		1	1	2.89	2.89	

SAR Evaluation									
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N		1	1	0.58	0.58	N-1
Input power and SAR drift measurement	8,6.6.2	4.04	R		1	1	2.33	2.33	
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R		1	1	0.03	0.03	
Liquid conductivity - deviation from target value	E.3.2	4.57	R		0.64	0.43	1.69	1.13	
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity - deviation from target value	E.3.2	3.69	R		0.6	0.49	1.28	1.04	
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
Combined Standard Uncertainty			RSS				10.08	9.47	
Expanded Uncertainty (95% Confidence interval)			k				19.65	18.47	

8. SAR Measurement Evaluation

8.1. System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave which comes from a signal generator at frequency 835 MHz and 1900 MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom.

Equipments :

name	Type and specification
Signal generator	E4433B
Directional coupler	450MHz-3GHz
Amplifier	3W 502(10-2500MHz)
Reference dipole	835MHz:SN 36/08 DIPC 99 1800MHz:SN 36/08 DIPF 101

8.2. Validation Results

Comparing to the original SAR value provided by SPEAG, the validation data should be within its specification of 10 %.

Frequency	835MHz	1900MHz
Target value (1g)	9.5 W/Kg	38.1 W/Kg
250 mW input power	2.627 W/Kg (head) 2.711 W/Kg (body)	9.903 W/Kg (head) 9.835 W/Kg (body)
Test value (1g)	10.508 W/Kg (head) 10.844 W/Kg (body)	39.612 W/Kg (head) 39.34 W/Kg (body)

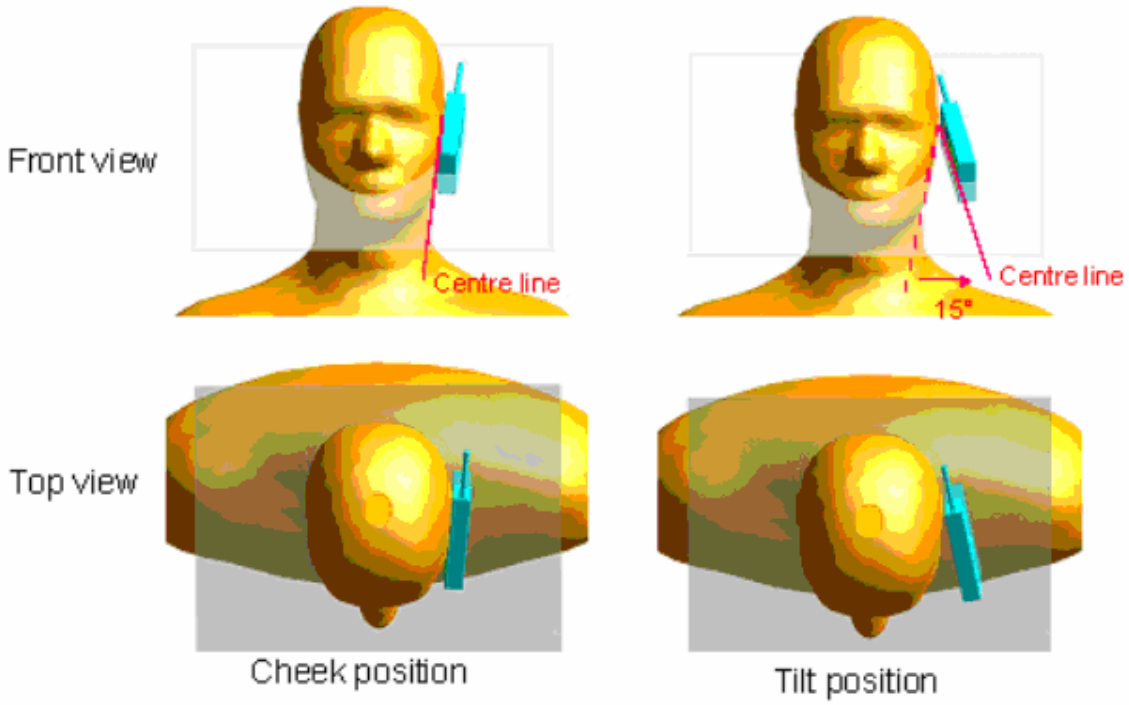
Note: System checks the specific test data please see page 144-155.

9. Operational Conditions During Test

9.1. Informations on the testing

The mobile phone antenna and battery are those specified by the manufacturer. The battery is fully charged before each measurement. The output power and frequency are controlled using a base station simulator. The mobile phone is set to transmit at its highest output peak power level.

The mobile phone is test in the “cheek” and “tilted” positions on the left and right sides of the phantom. The mobile phone is placed with the vertical centre line of the body of the mobile phone and the horizontal line crossing the centre of the earpiece in a plane parallel to the sagittal plane of the phantom.



Description of the “cheek” position:
The mobile phone is well placed in the reference plane and the earpiece is in contact with the ear. Then the mobile phone is moved until any point on the front side get in contact with the cheek of the phantom or until contact with the ear is lost.

Description of the “tilted” position:
The mobile phone is well placed in the “cheek” position as described above. Then the mobile phone is moved outward away from the month by an angle of 15 degrees or until contact with the ear lost.

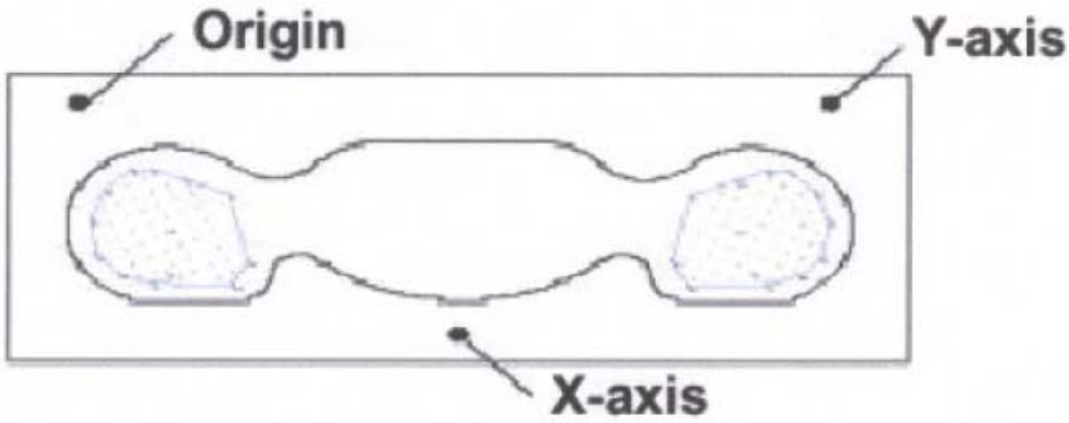
Remark: Please refer to Appendix B for the test setup photos.

9.2. Body-worn Configurations

The body-worn configurations shall be tested with the supplied accessories (belt-clips, holsters, etc.) attached to the device in normal use configuration.

The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 1.5cm(taking into account of the IEEE 1528 and the place of the antenna)

For body-worn and other configurations a flat phantom shall be used which is comprised of material with electrical properties similar to the corresponding tissues.



SAR Measurement Points in Area Scan

9.3. Measurement procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to16 mm and a constant distance to the inner surface of the phantom. Since the sensors can not 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.

9.4. 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 minimize 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 1mm 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.

10. 3G MEASUREMENT PROCEDURES

10.1.Procedures Used To Establish Test Signal

The handset was placed into a simulated call using a base station simulator in a shielded chamber. Such test signals offer a consistent means for testing SAR and are recommended for evaluating SAR. SAR measurements were taken with a fully charged battery. In order to verify that the device was tested and maintained at full power, this was configured with the base station simulator. The SAR measurement software calculates a reference point at the start and end of the test to check for power drifts. If conducted power deviations of more then 5% occurred, the tests were repeated.

10.2.SAR Measurement Conditions for WCDMA

These procedures were followed according to FCC KDB 941225, October, 2007.

10.3.Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC(transmit power control) set to all “1s”. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes) should be tabulated in the test report. All configurations that are not supported by the EUT or cannot be measured due to technical or equipment limitations should be clearly identified.

10.4.USB Dongle with HSDPA

Body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 1/4 dB higher then that measured without HSUPA using 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1,using the highest body SAR configuration in 12.2kbps RMC without HSD-PA

ltem	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	21.21	21.42	22.07	23.6	23.87	23.01
5.2AA(HSDPA)	1	21.37	22.11	22.45	24.01	24.09	23.98
	2	22.09	22.31	22.37	24.23	24.11	24.03
	3	21.87	21.72	22.01	24.23	24.13	23.87
	4	22.01	22.15	22.07	24.17	24.06	24.05

GPRS/EDGE modes conducted output power values

Band	Channel	Frequency (MHz)	Measured Output Power		Rated Output Power	
			dBm	Refer to Plot	dBm	Tolerance (dB)
GSM 850MHz	128	824.2	32.3	Plot A	33	±3
	190	836.6	32.44			
	251	848.8	32.13			
GSM 1900MHz	512	1850.2	31.06	Plot B	30	±3
	661	1880.0	30.09			
	810	1909.8	30.98			
GPRS 850MHz	128	824.2	32.22	Plot C	33	±3
	190	836.6	32.37			
	251	848.8	32.07			
GPRS 1900MHz	512	1850.2	31.05	Plot D	30	±3
	661	1880.0	30.07			
	810	1909.8	30.96			
EDGE 850MHz	128	824.2	31.39	Plot E		
	190	836.6	31.71			
	251	848.8	32.06			
EDGE 1900MHz	512	1850.2	29.52	Plot F		
	661	1880.0	29.41			
	810	1909.8	29.21			

11. Test Results List

Summary of Measurement Results (GSM 850MHz Band)
SAR Values (GSM 850MHz Band), Measured against the head.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Middle	0.610	32.44
Left head, Tilt 15 Degree, Channel Middle	0.450	32.44
Right head, Touch cheek, Channel Middle	0.699	32.44
Right head, Tilt 15 Degree, Channel Middle	0.464	32.44

Summary of Measurement Results (GSM 1900MHz Band)
SAR Values (GSM 1900MHz Band), Measured against the head.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Middle	0.561	30.09
Left head, Tilt 15 Degree, Channel Middle	0.309	30.09
Right head, Touch cheek, Channel Middle	0.595	30.09
Right head, Tilt 15 Degree, Channel Middle	0.339	30.09

Summary of Measurement Results (WCDMA 850MHz Band)
SAR Values (WCDMA 850MHz Band), Measured against the head.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Middle	0.463	21.42

Left head, Tilt 15 Degree, Channel Middle	0.275	21.42
Right head, Touch cheek, Channel Middle	0.531	21.42
Right head, Tilt 15 Degree, Channel Middle	0.317	21.42

Summary of Measurement Results (WCDMA 1900MHz Band)

SAR Values (WCDMA 1900MHz Band), Measured against the head.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Middle	0.413	23.87
Left head, Tilt 15 Degree, Channel Middle	0.236	23.87
Right head, Touch cheek, Channel Middle	0.431	23.87
Right head, Tilt 15 Degree, Channel Middle	0.263	23.87

SAR Values (GSM 850MHz Band), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency GPRS mode Back towards the phantom	1.057	32.22
Side, Middle frequency GPRS mode Back towards the phantom	1.173	32.37
Side, High frequency GPRS mode Back towards the phantom	0.997	32.07
Side, Middle frequency GPRS mode Keyboard towards the phantom	0.834	32.37
Side, Middle frequency EDGE mode Back towards the phantom	0.761	31.71
Side, Middle frequency GSM mode Back towards the phantom	0.564	32.44
Side, Middle frequency GSM mode Back towards the phantom (with earphone)	0.561	32.44

SAR Values (GSM 1900MHz Band), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Middle frequency GPRS mode Back towards the phantom	0.736	30.07
Side, Middle frequency GPRS mode Keyboard towards the phantom	0.624	30.07
Side, Middle frequency EDGE mode Back towards the phantom	0.564	29.41
Side, Middle frequency GSM mode Back towards the phantom	0.447	30.09
Side, Middle frequency GSM mode Back towards the phantom (with earphone)	0.438	30.09

SAR Values (WCDMA 850MHz Band), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Middle frequency WCDMA mode Back towards the phantom	0.683	21.42
Side, Middle frequency WCDMA mode Keyboard Towards the phantom	0.474	21.42
Side, Middle frequency HSDPA mode Back towards the phantom	0.674	22.31
Side, Middle frequency WCDMA mode Back towards the Phantom (with earphone)	0.675	21.42

SAR Values (WCDMA 1900MHz Band), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.	
Limit of SAR (W/kg)	1 g Average
	1.6
Test Case	Measurement Result (W/kg)

	1 g Average (W/kg)	Power level (dBm)
Side, Middle frequency WCDMA mode Back towards the phantom	0.572	23.87
Side, Middle frequency WCDMA mode Keyboard Towards the phantom	0.458	23.87
Side, Middle frequency HSDPA mode Back towards the phantom	0.561	24.11
Side, Middle frequency WCDMA mode Back towards the Phantom (with earphone)	0.571	23.87

Annex A Accreditation Certificate

China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(No. CNAS L3572)

China National Accreditation Service for Conformity Assessment has accredited

Morlab Laboratory Shenzhen Morlab Communications Technology Co., Ltd.

3/F, Electronic Testing Building, Shahe Road, Xili,Nanshan District, Shenzhen, Guangdong, China

to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing and/or calibration.

The scope of accreditation is detailed in the attached schedule bearing the same accreditation number as above. The schedule forms an integral part of this certificate.

Date of Issue: 2008-07-01

Date of Expiry: 2011-06-30

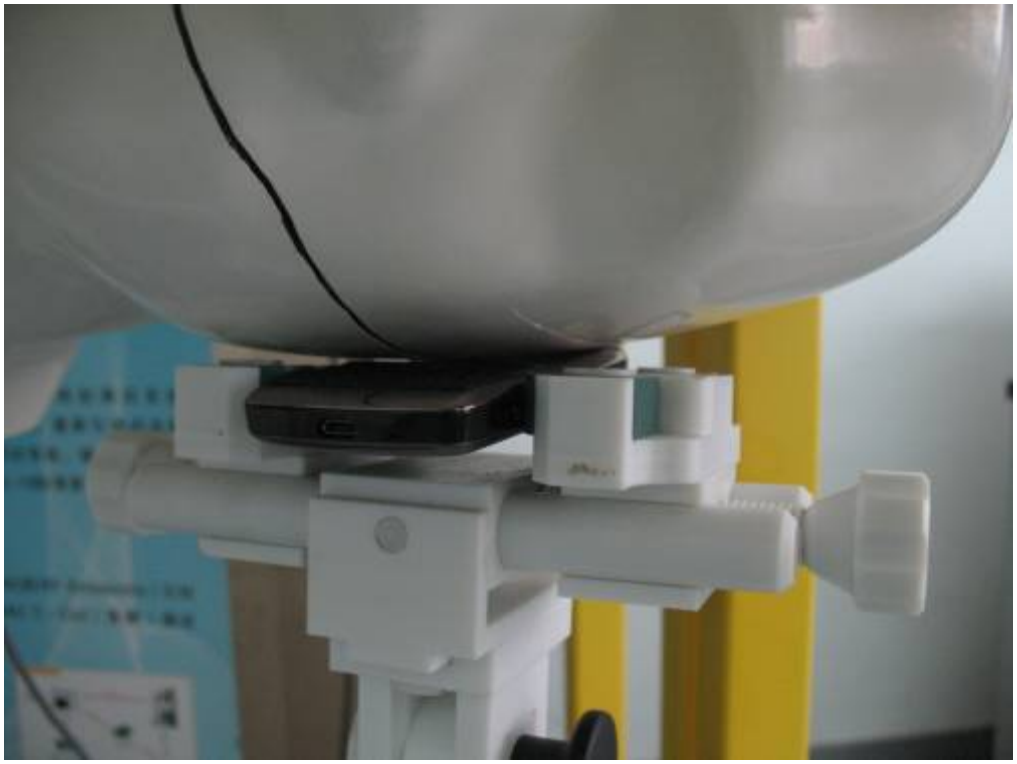
Date of Initial Accreditation: 2008-07-01

Signed on behalf of China National Accreditation Service for Conformity Assessment

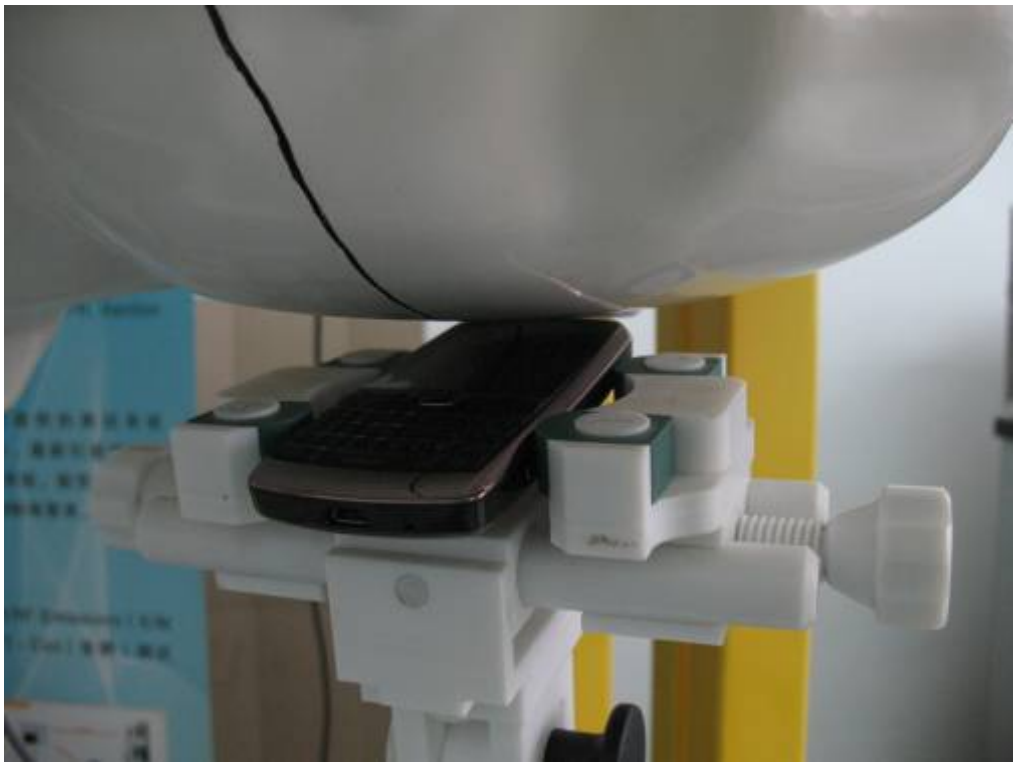
China National Accreditation Service for Conformity Assessment(CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation systems for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA), and the signatory to Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).

Annex B Photographs of the EUT

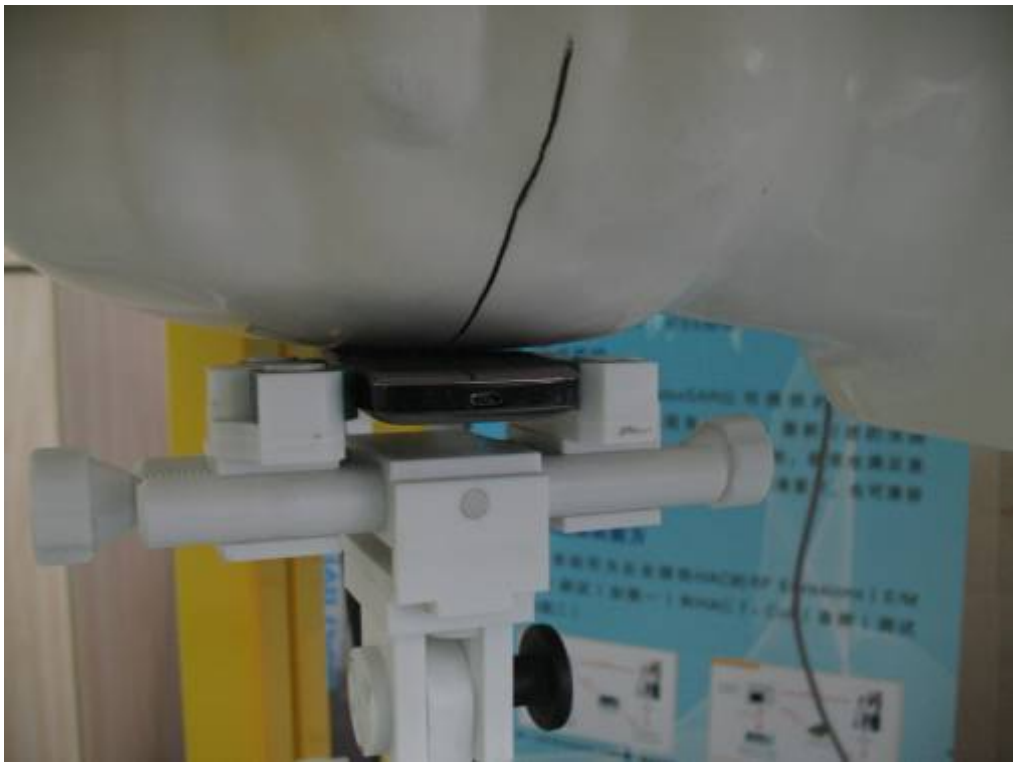
1 EUT Left Head Touch Cheek Position



2 EUT Left Head Tilt15 Position



3 EUT Right Head Touch Cheek Position



4 EUT Right Head Tilt15 Position

5 Side Position

6 With Headphone

Liquid Level Photo

Annex C Graph Test Results

	GSM850	Measurement 1: Right Head with Cheek device position on Middle Channel in GSM mode Measurement 2: Right Head with Tilt device position on Middle Channel in GSM mode Measurement 3: Left Head with Cheek device position on Middle Channel in GSM mode Measurement 4: Left Head with Tilt device position on Middle Channel in GSM mode Measurement 5: Validation Plane with Body device position on Low Channel in GSPR mode Measurement 6: Validation Plane with Body device position on Middle Channel in GSPR mode Measurement 7: Validation Plane with Body device position on High Channel in GSPR mode Measurement 8: Validation Plane with Body device position on Middle Channel in GSPR mode Measurement 9: Validation Plane with Body device position on Middle Channel in EDGE mode Measurement 10: Validation Plane with Body device position on Middle Channel in GSM mode Measurement 11: Validation Plane with Body device position on Middle Channel in GSM mode（with earphone）
	GSM 1900	Measurement 12: Right Head with Cheek device position on Middle Channel in GSM mode Measurement 13: Right Head with Tilt device position on Middle Channel in GSM mode Measurement 14: Left Head with Cheek device position on Middle Channel in GSM mode Measurement 15: Left Head with Tilt device position on Middle Channel in GSM mode Measurement 16: Validation Plane with Body device position on Middle Channel in GSPR mode Measurement 17: Validation Plane with Body device position on Middle Channel in GSPR mode Measurement 18: Validation Plane with Body device position on Middle Channel in EDGE mode Measurement 19: Validation Plane with Body device position on Middle Channel in GSM mode

		Measurement 20: Validation Plane with Body device position on Middle Channel in GSM mode （with earphone）
	WCDMA 850	Measurement 21: Right Head with Cheek device position on Middle Channel in WCDMA mode Measurement 22: Right Head with Tilt device position on Middle Channel in WCDMA mode Measurement 23: Left Head with Cheek device position on Middle Channel in WCDMA mode Measurement 24: Left Head with Tilt device position on Middle Channel in WCDMA mode Measurement 25: Validation Plane with Body device position on Middle Channel in WCDMA mode Measurement 26: Validation Plane with Body device position on Middle Channel in WCDMA mode Measurement 27: Validation Plane with Body device position on Middle Channel in HSDPA mode Measurement 28: Validation Plane with Body device position on Middle Channel in GSM mode （with earphone）
	WCDMA 1900	Measurement 29: Right Head with Cheek device position on Middle Channel in WCDMA mode Measurement 30: Right Head with Tilt device position on Middle Channel in WCDMA mode Measurement 31: Left Head with Cheek device position on Middle Channel in WCDMA mode Measurement 32: Left Head with Tilt device position on Middle Channel in WCDMA mode Measurement 33: Validation Plane with Body device position on Middle Channel in WCDMA mode Measurement 34: Validation Plane with Body device position on Middle Channel in WCDMA mode Measurement 35: Validation Plane with Body device position on Middle Channel in HSDPA mode Measurement 36: Validation Plane with Body device position on Middle Channel in GSM mode （with earphone）

MEASUREMENT 1

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 53 seconds

A. Experimental conditions.

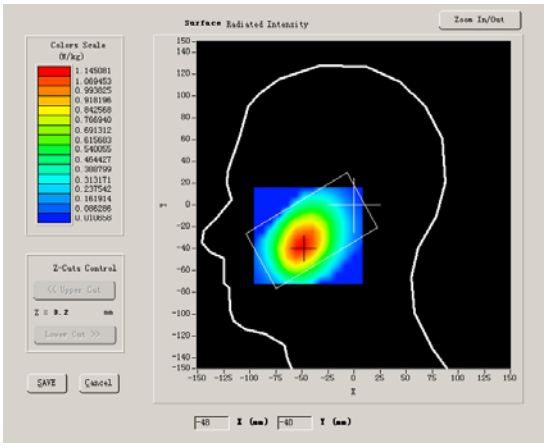
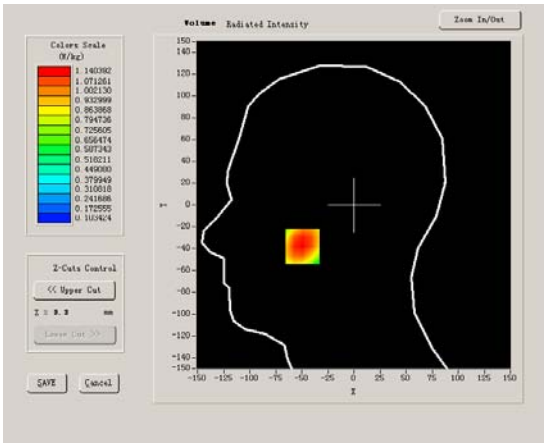
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	0.870000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

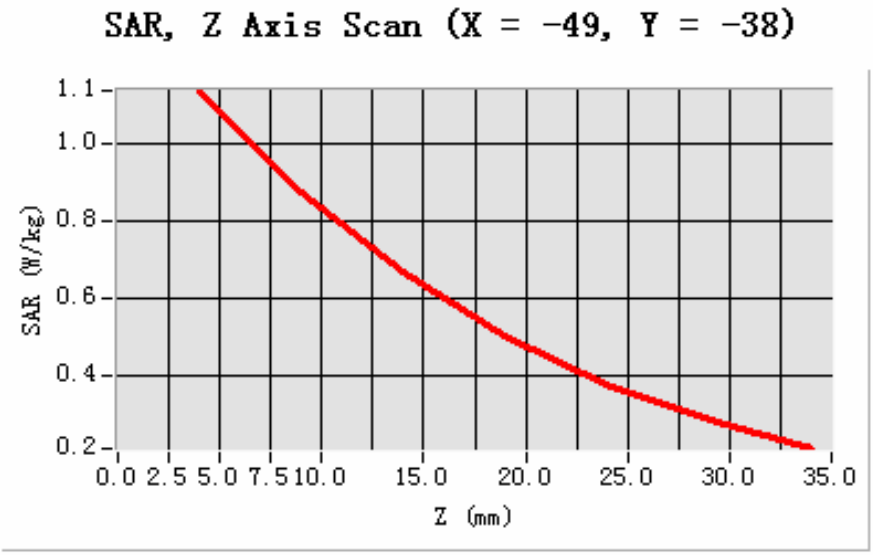
SURFACE SAR	**VOLUME SAR**
	

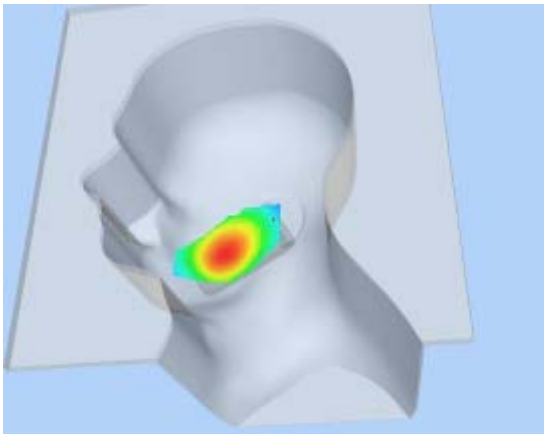
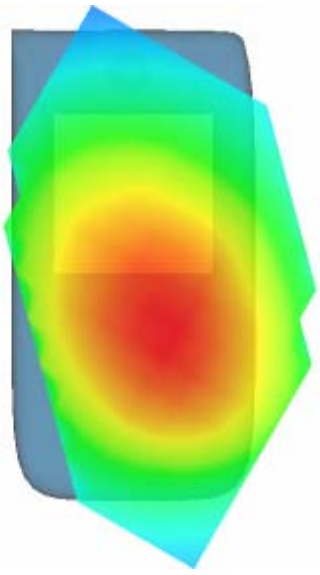
Maximum location: X=-49.00, Y=-38.00

SAR 10g (W/Kg)	0.387181
SAR 1g (W/Kg)	0.610663

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.1404	0.8770	0.6713	0.5004	0.3778	0.2830



3D sceen shot	Hot spot position
	

MEASUREMENT 2

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 38 seconds

A. Experimental conditions.

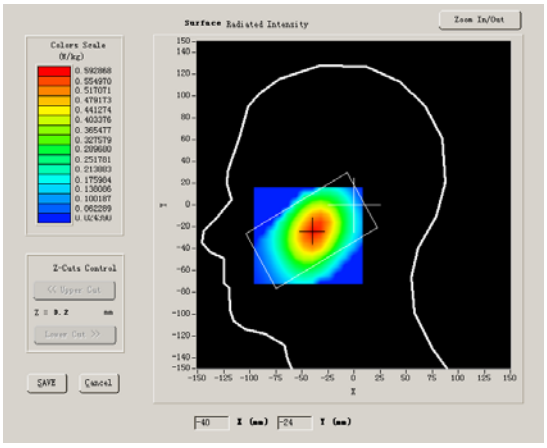
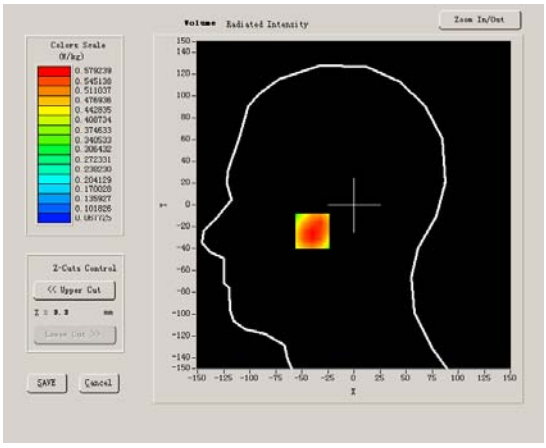
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	0.360000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

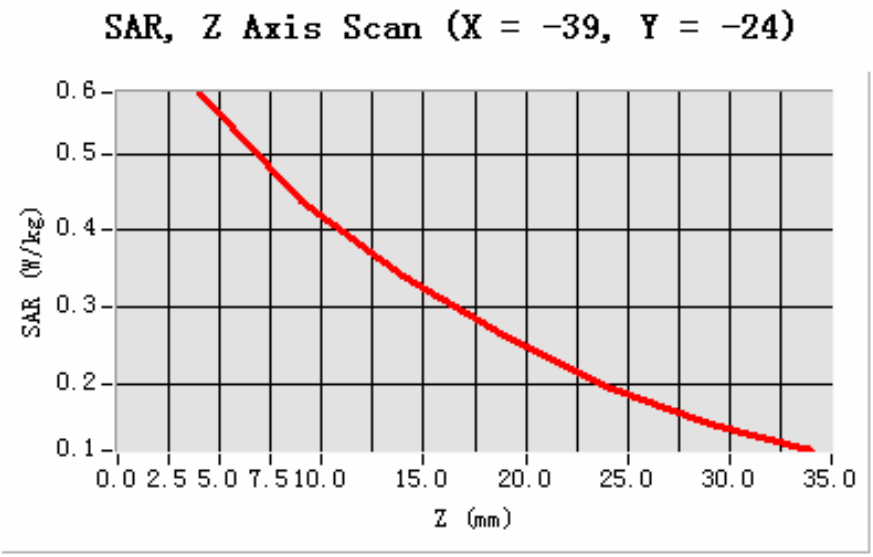
SURFACE SAR	**VOLUME SAR**
	

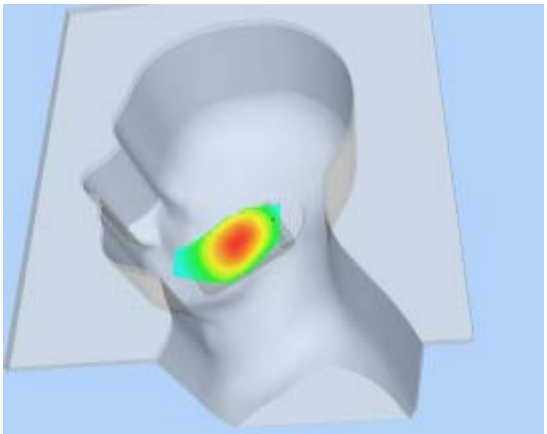
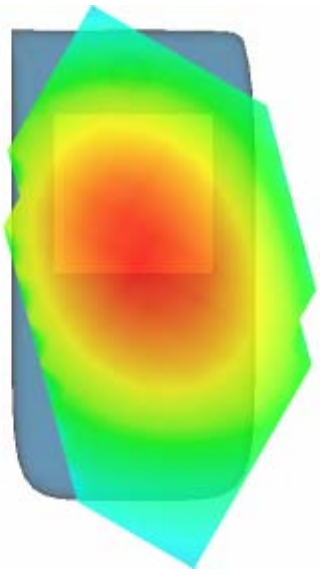
Maximum location: X=-39.00, Y=-24.00

SAR 10g (W/Kg)	0.324514
SAR 1g (W/Kg)	0.450506

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5792	0.4391	0.3410	0.2625	0.1965	0.1488



3D sceen shot	Hot spot position
	

MEASUREMENT 3

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 41 seconds

A. Experimental conditions.

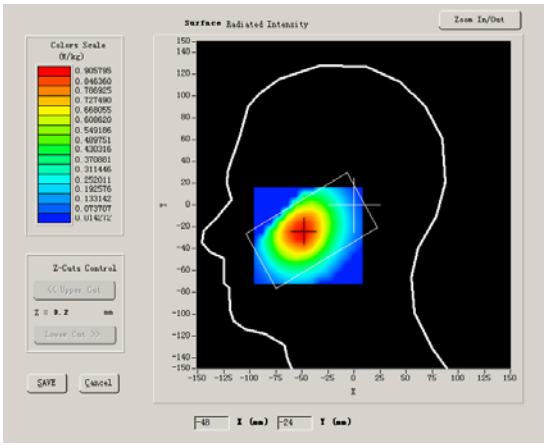
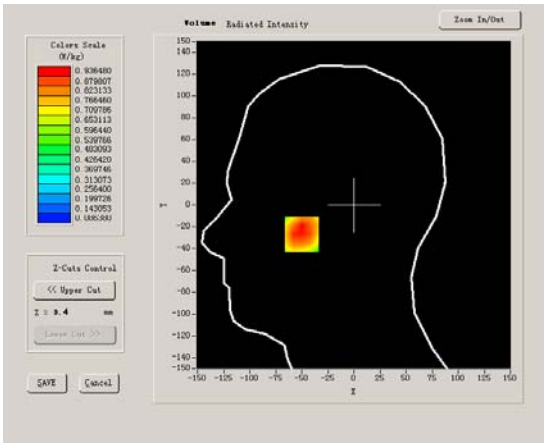
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	1.370000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

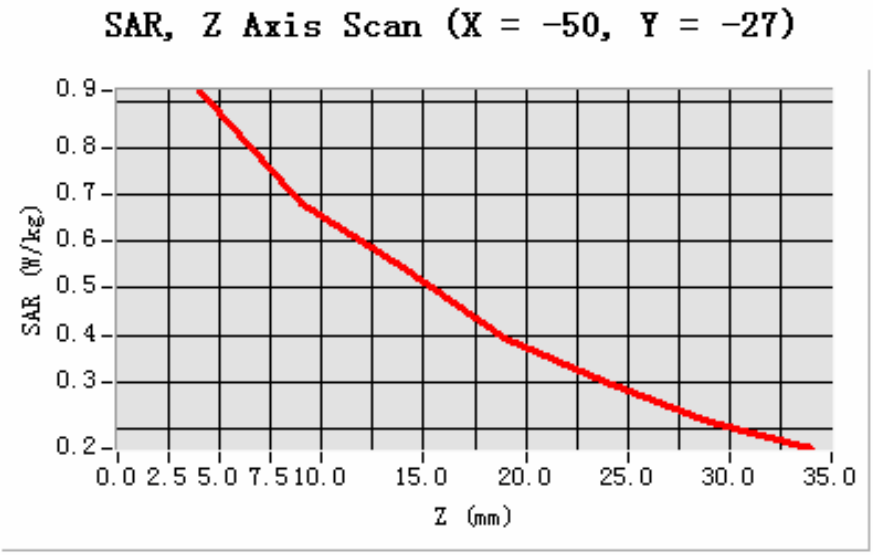
SURFACE SAR	**VOLUME SAR**
	

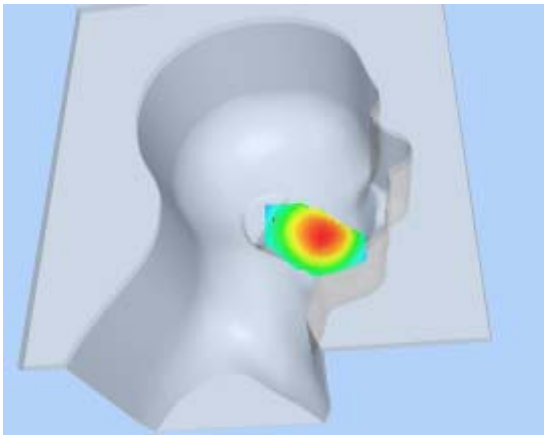
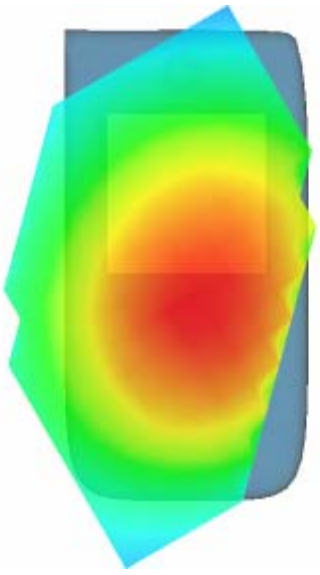
Maximum location: X=-50.00, Y=-27.00

SAR 10g (W/Kg)	0.356285
SAR 1g (W/Kg)	0.699216

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9225	0.6806	0.5422	0.3936	0.2995	0.2141



3D sceen shot	Hot spot position
	

MEASUREMENT 4

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 33 seconds

A. Experimental conditions.

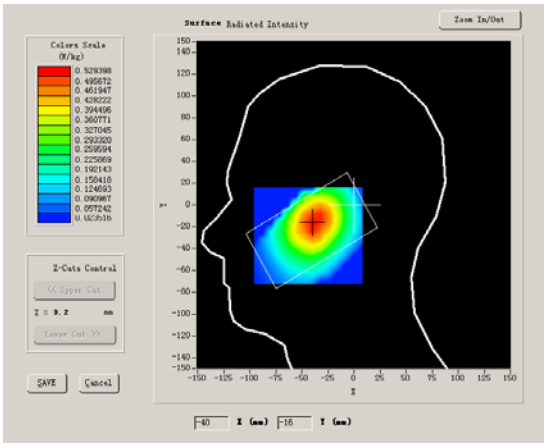
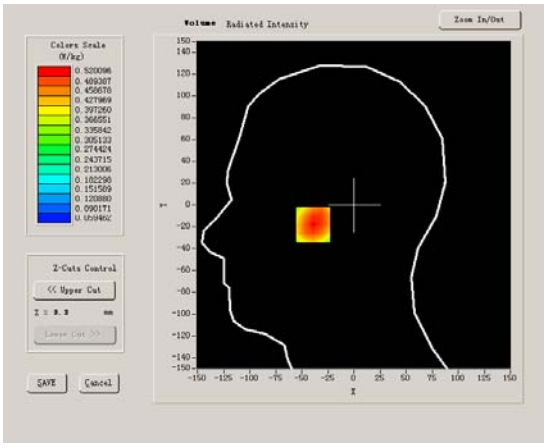
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	-0.990000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

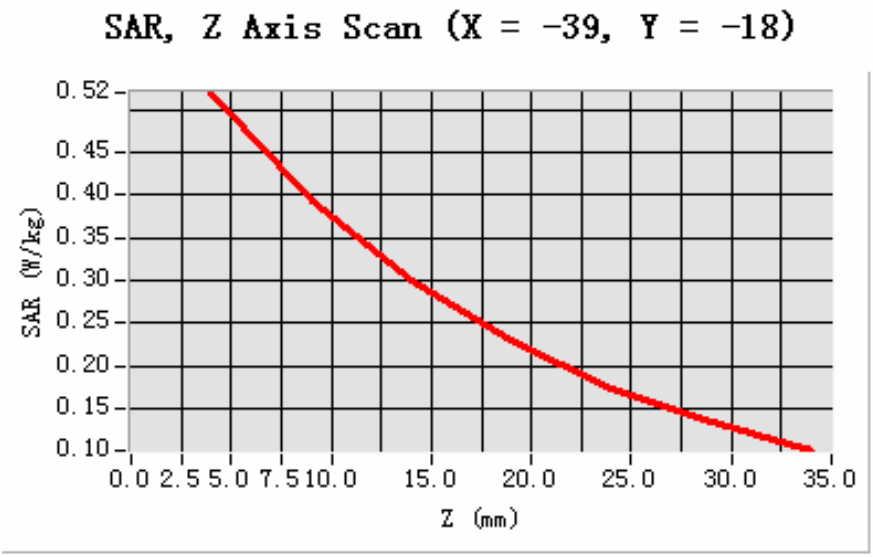
SURFACE SAR	**VOLUME SAR**
	

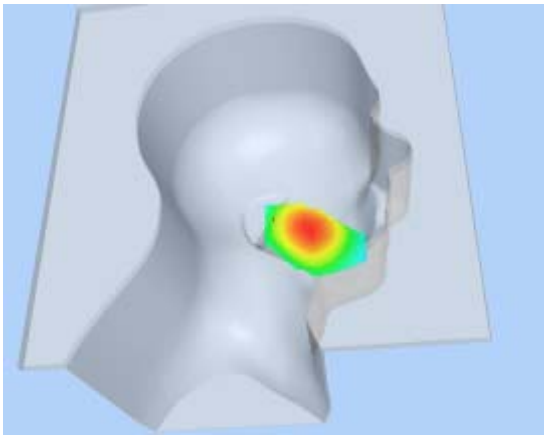
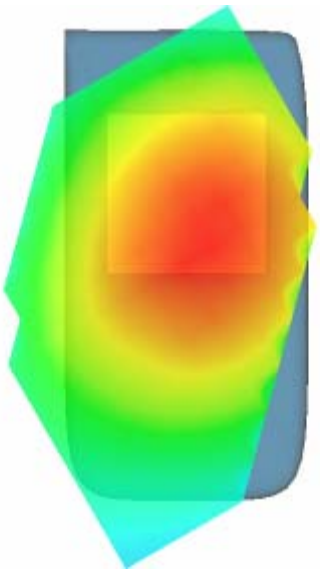
Maximum location: X=-39.00, Y=-18.00

SAR 10g (W/Kg)	0.260538
SAR 1g (W/Kg)	0.464221

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5201	0.3921	0.2994	0.2306	0.1733	0.1332



3D sceen shot	Hot spot position
	

MEASUREMENT 5

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 5 seconds

A. Experimental conditions.

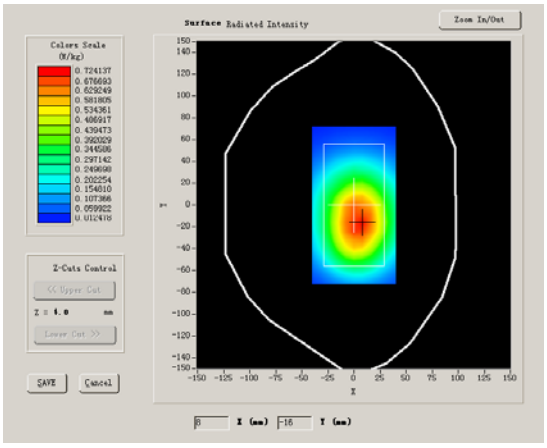
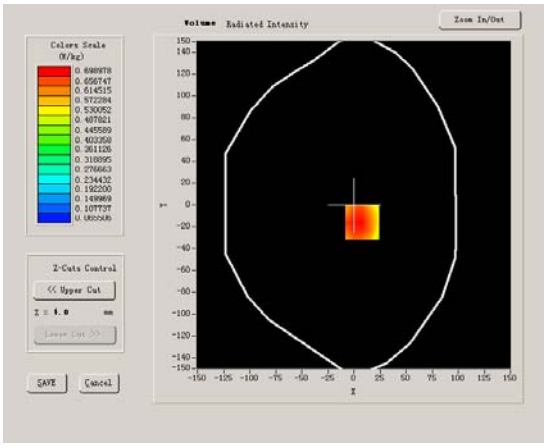
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Low
Signal	GPRS

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	41.790001
Relative permittivity	18.926250

Conductivity (S/m)	0.866612
Variation (%)	-1.190000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

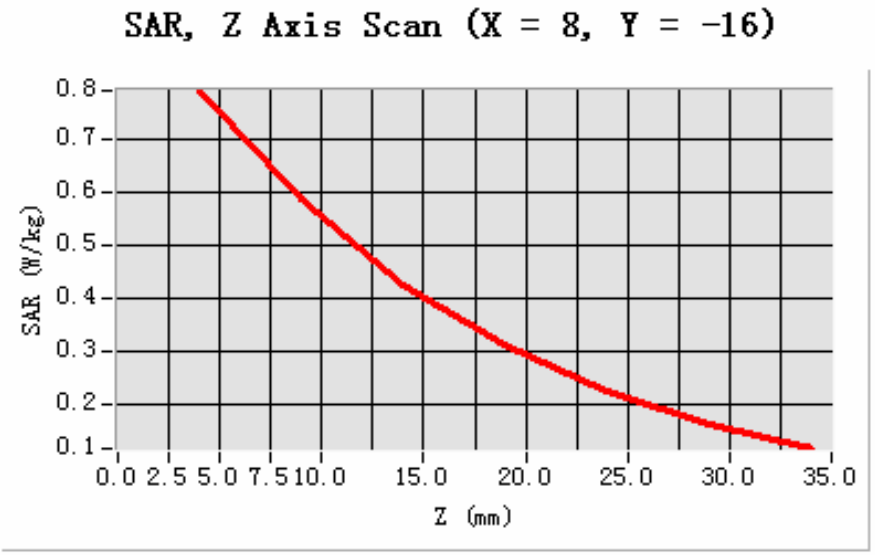
SURFACE SAR	**VOLUME SAR**
	

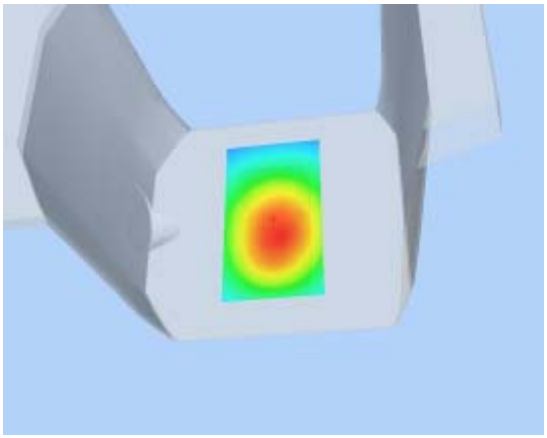
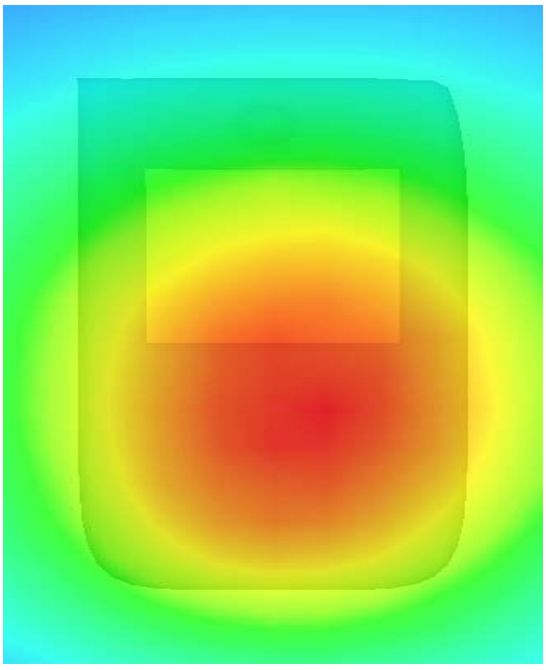
Maximum location: X=8.00, Y=-16.00

SAR 10g (W/Kg)	0.627844
SAR 1g (W/Kg)	1.057467

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7937	0.5881	0.4243	0.3123	0.2242	0.1605



3D sceen shot	Hot spot position
	

MEASUREMENT 6

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 7 seconds

A. Experimental conditions.

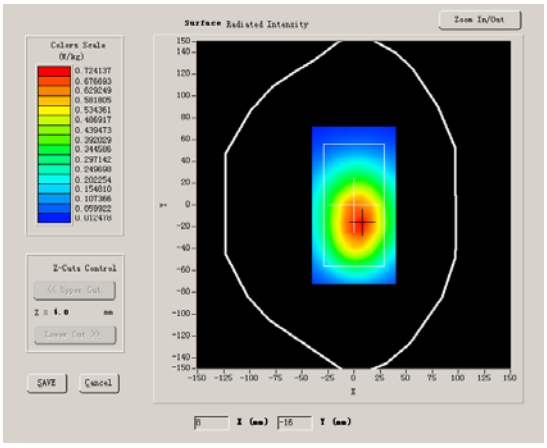
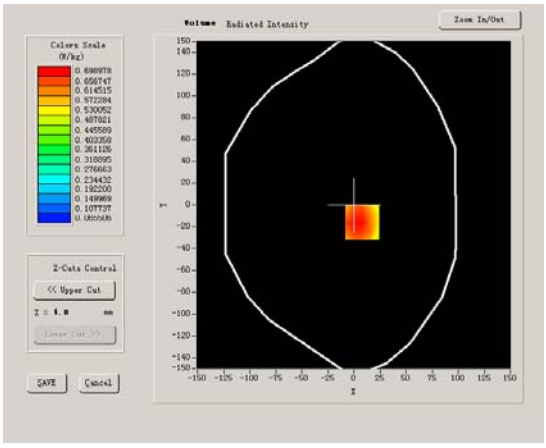
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-1.500000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

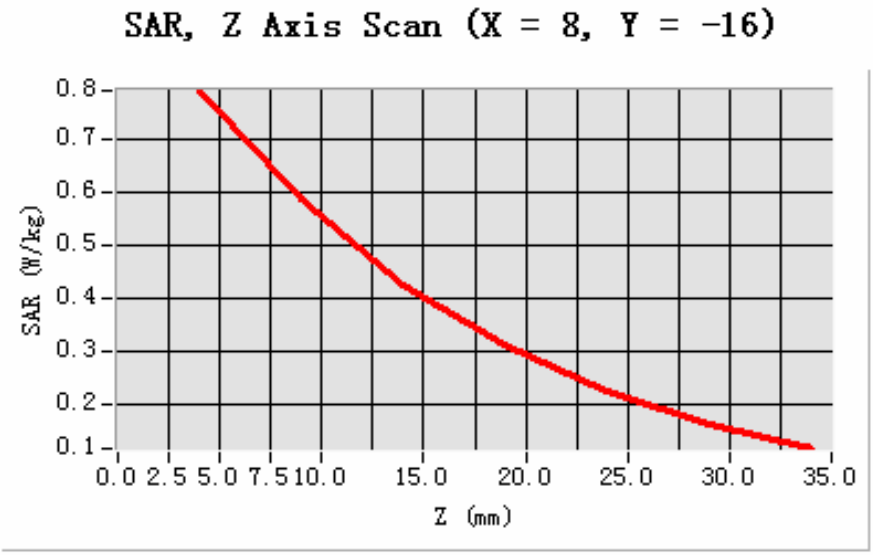
SURFACE SAR	**VOLUME SAR**
	

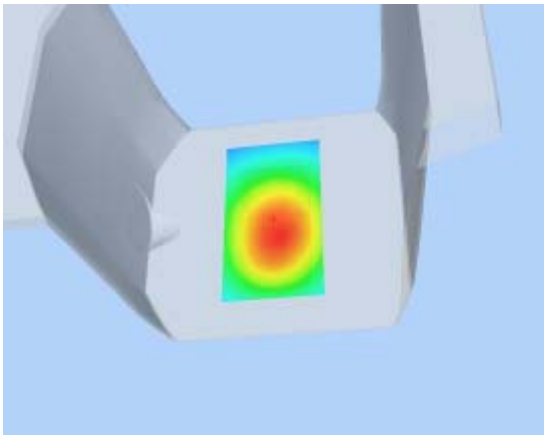
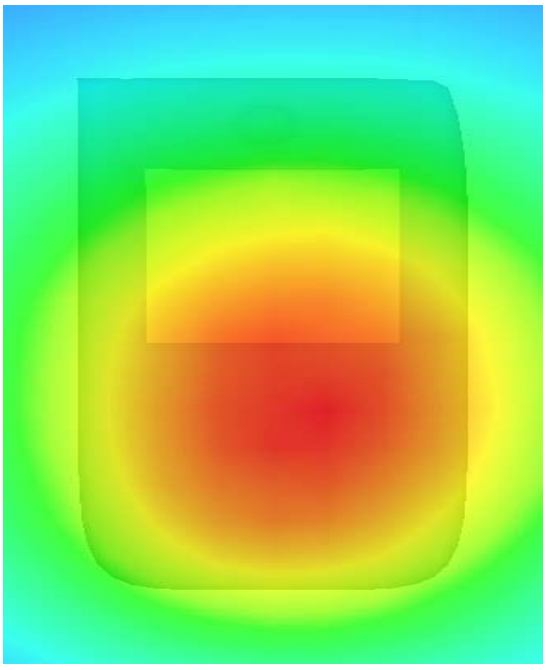
Maximum location: X=8.00, Y=-16.00

SAR 10g (W/Kg)	0.744713
SAR 1g (W/Kg)	1.173457

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7937	0.5881	0.4243	0.3123	0.2242	0.1605



3D sceen shot	Hot spot position
	

MEASUREMENT 7

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

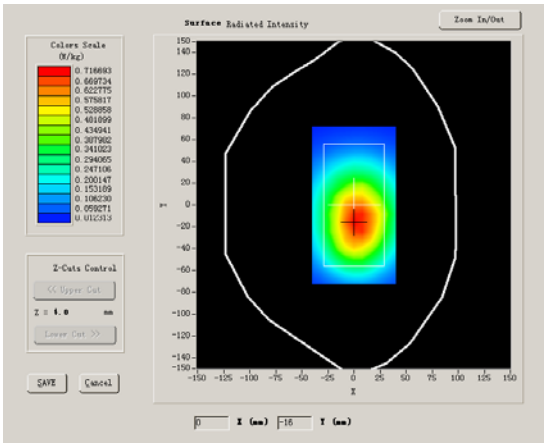
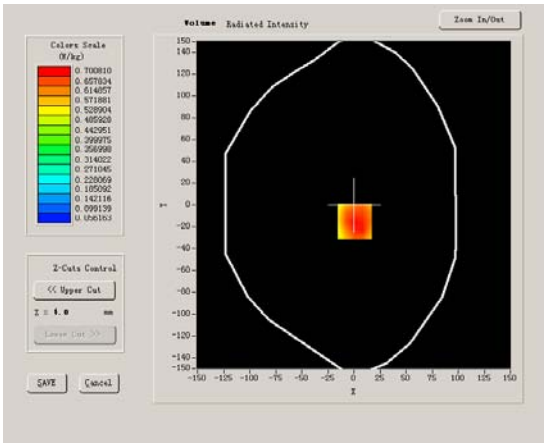
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	54.014999
Relative permittivity	21.332850

Conductivity (S/m)	1.005962
Variation (%)	-1.940000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

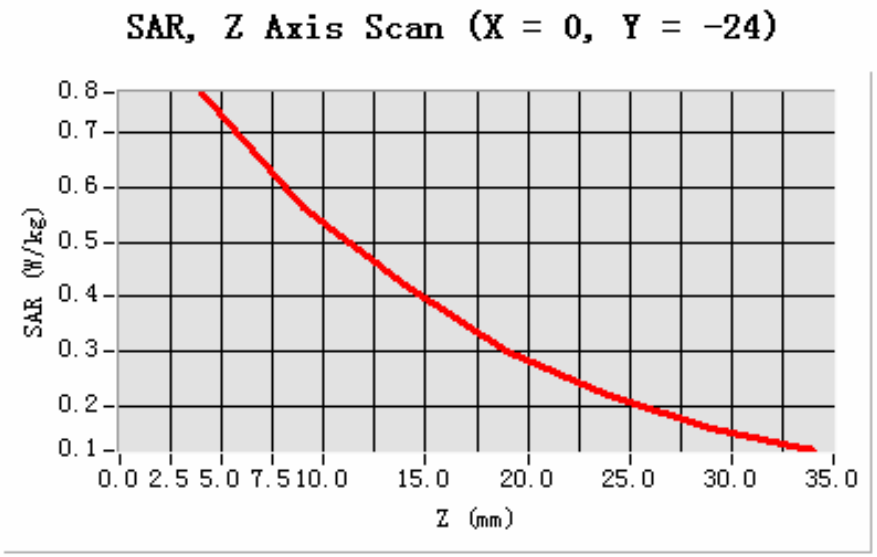
SURFACE SAR	**VOLUME SAR**
	

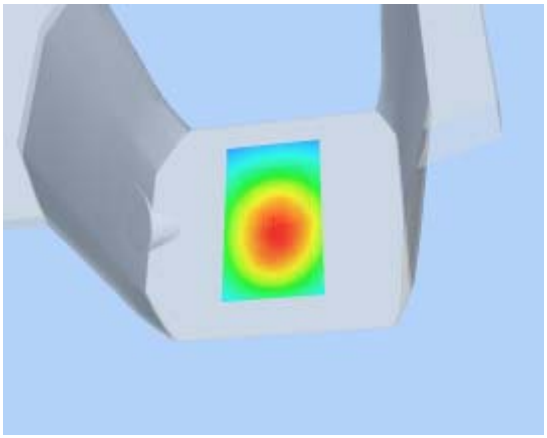
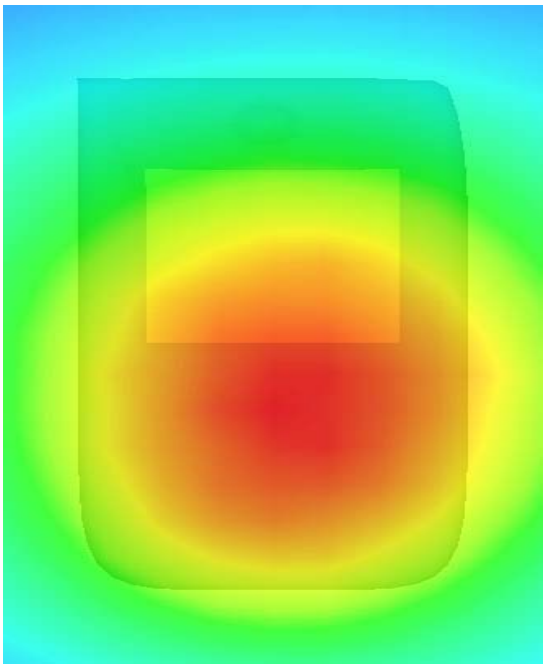
Maximum location: X=1.00, Y=-15.00

SAR 10g (W/Kg)	0.488372
SAR 1g (W/Kg)	0.997409

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7882	0.5678	0.4375	0.1453	0.2166	0.1575



3D sceen shot	Hot spot position
	

MEASUREMENT 8

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 25/6/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

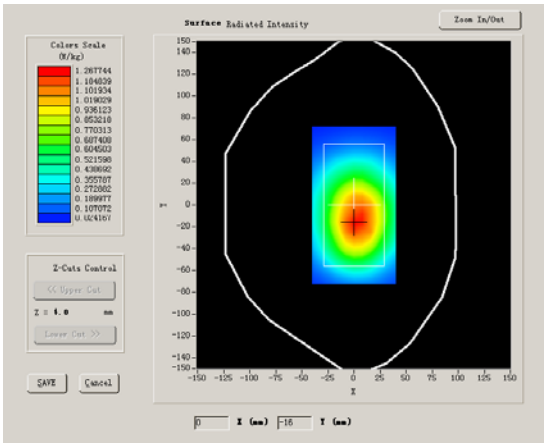
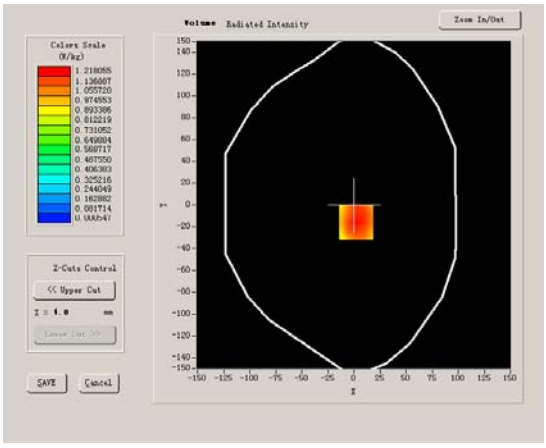
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-1.409912
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

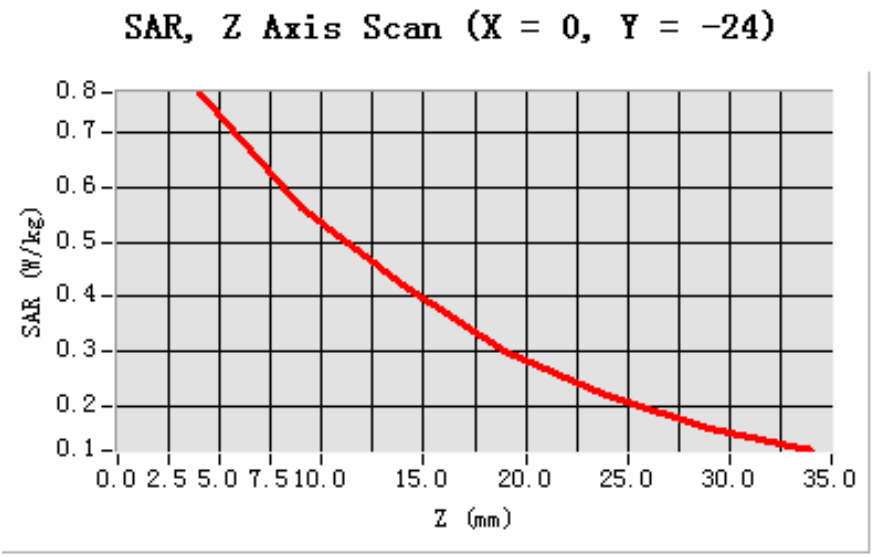
SURFACE SAR	**VOLUME SAR**
	

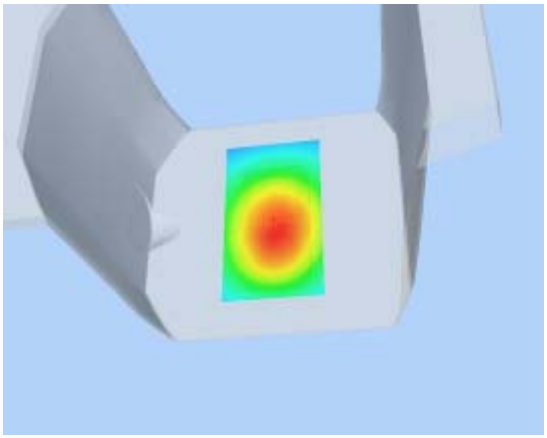
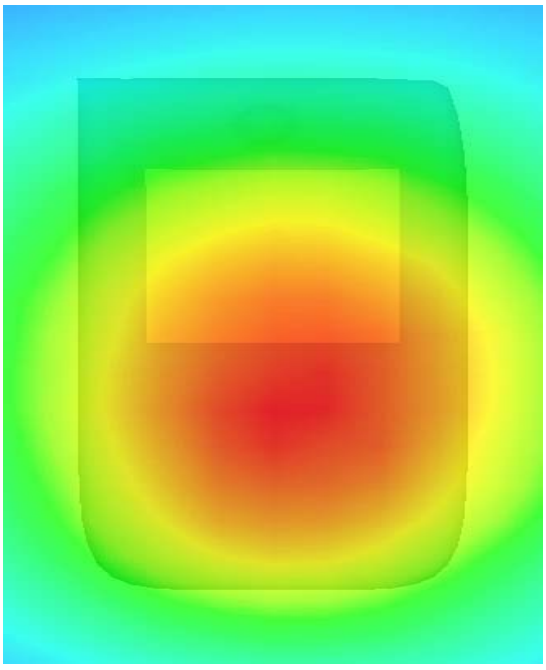
Maximum location: X=2.00, Y=-16.00

SAR 10g (W/Kg)	0.427355
SAR 1g (W/Kg)	0.834367

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3831	1.0070	0.7440	0.0012	0.0014	0.0014



3D sceen shot	Hot spot position
	

MEASUREMENT 9

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

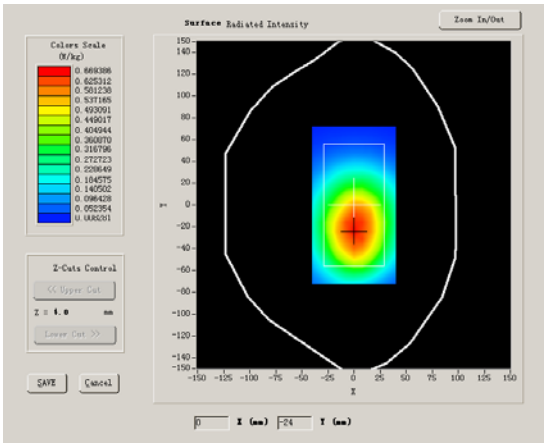
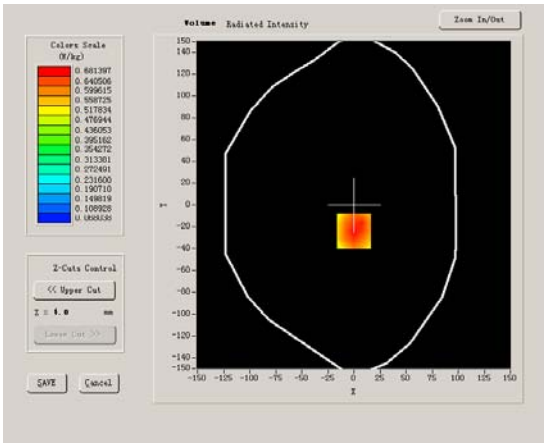
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	EDGE

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-1.090000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

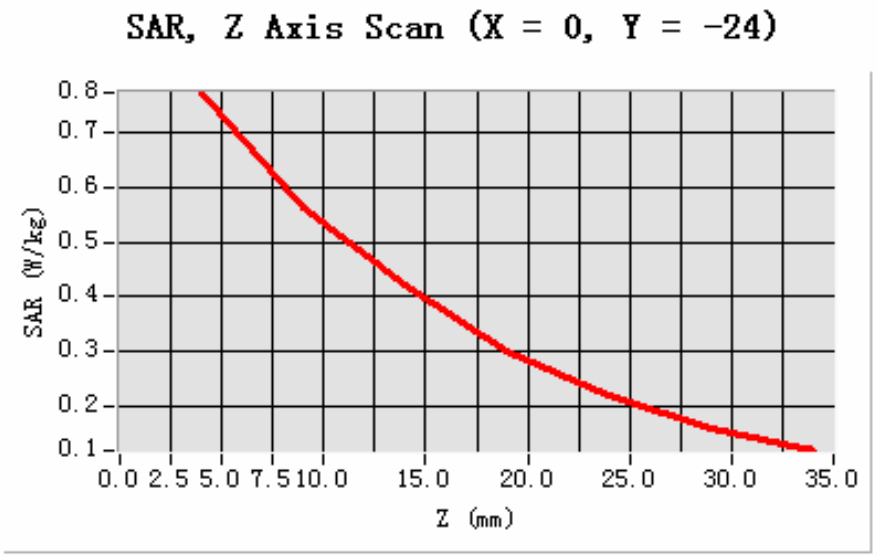
SURFACE SAR	**VOLUME SAR**
	

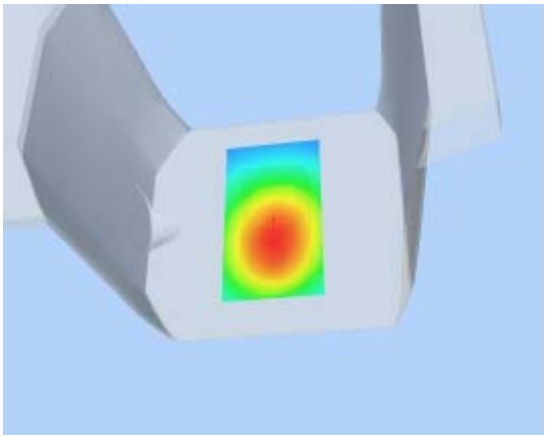
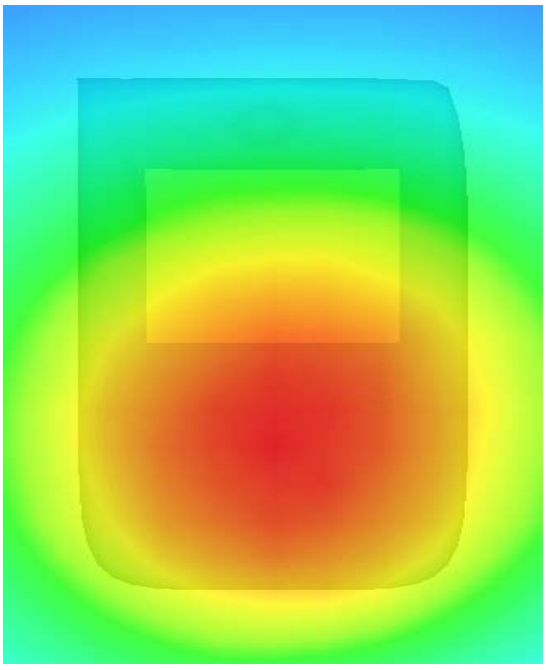
Maximum location: X=0.00, Y=-24.00

SAR 10g (W/Kg)	0.384662
SAR 1g (W/Kg)	0.761754

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7737	0.5633	0.4217	0.3016	0.2191	0.1600



3D sceen shot	Hot spot position
	

MEASUREMENT 10

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

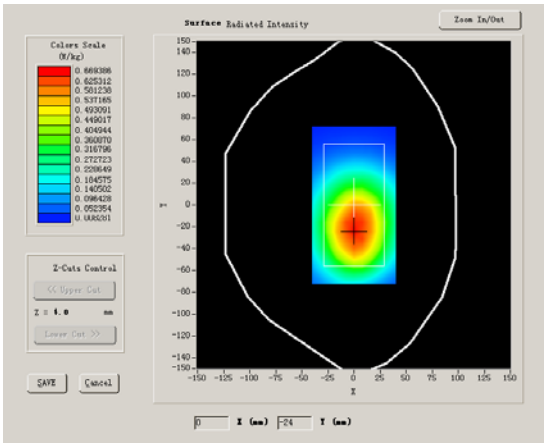
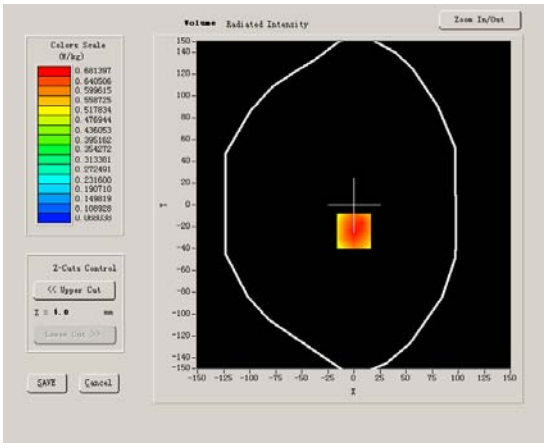
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-1.090000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

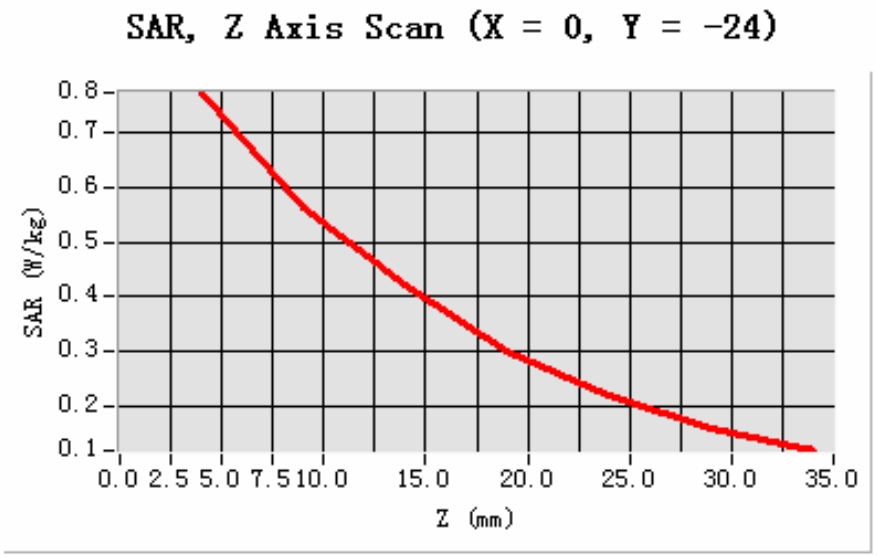
SURFACE SAR	VOLUME SAR
	

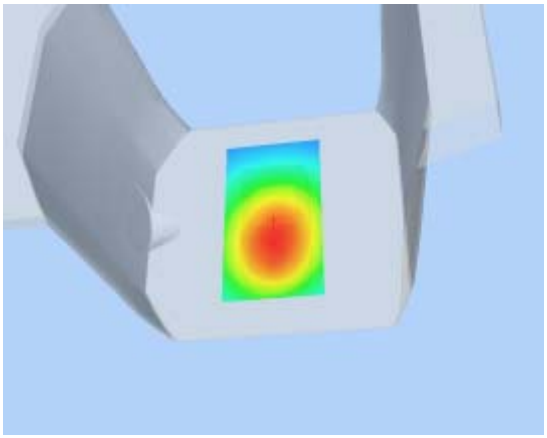
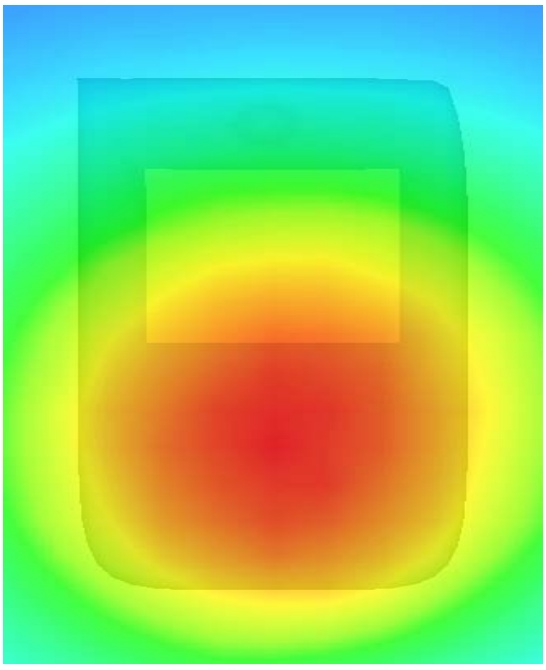
Maximum location: X=0.00, Y=-24.00

SAR 10g (W/Kg)	0.294767
SAR 1g (W/Kg)	0.564835

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7737	0.5633	0.4217	0.3016	0.2191	0.1600



3D sceen shot	Hot spot position
	

MEASUREMENT 11

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

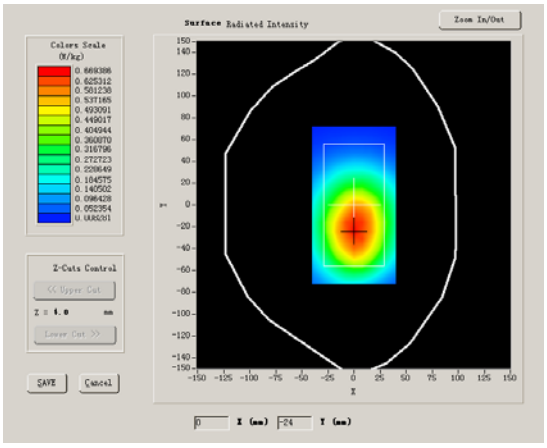
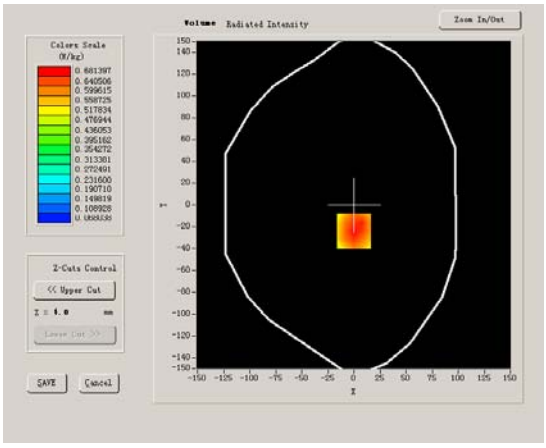
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-1.090000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

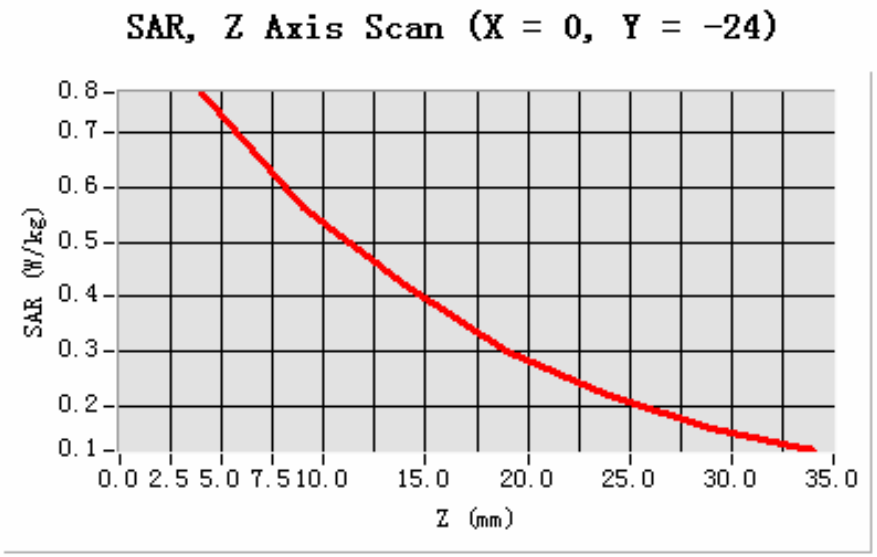
SURFACE SAR	**VOLUME SAR**
	

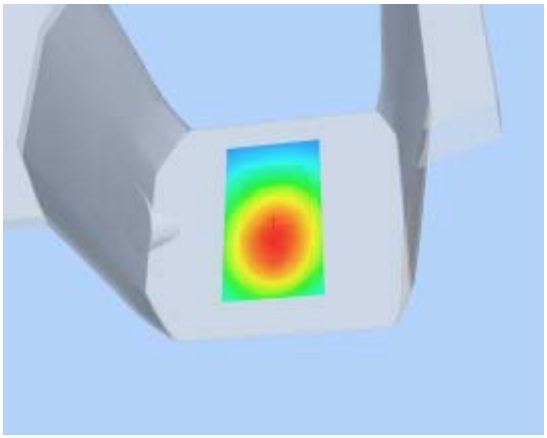
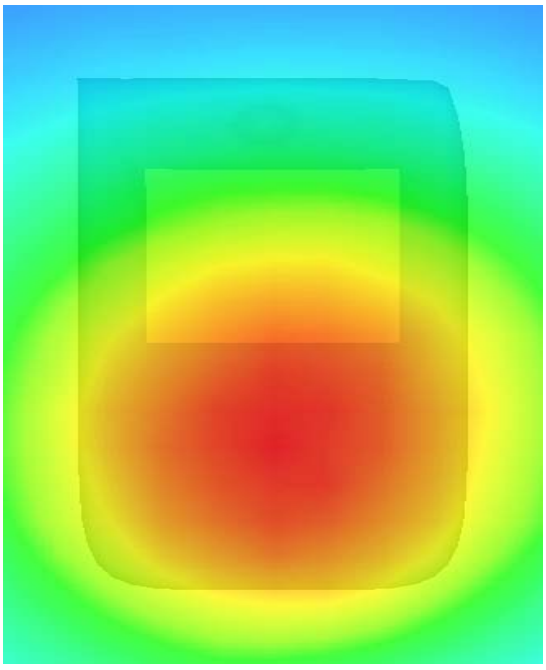
Maximum location: X=0.00, Y=-24.00

SAR 10g (W/Kg)	0.283773
SAR 1g (W/Kg)	0.561884

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7737	0.5633	0.4217	0.3016	0.2191	0.1600



3D sceen shot	Hot spot position
	

MEASUREMENT 12

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 8 minutes 20 seconds

A. Experimental conditions.

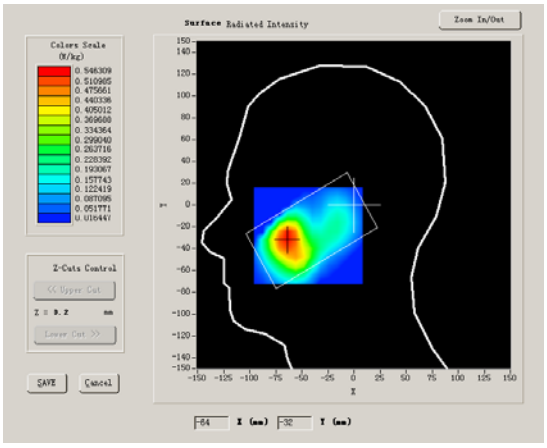
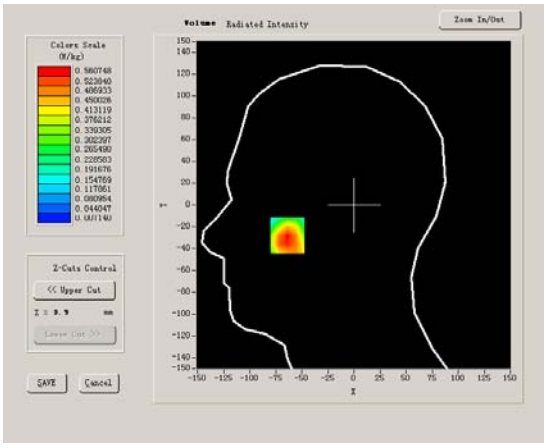
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	1.970000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

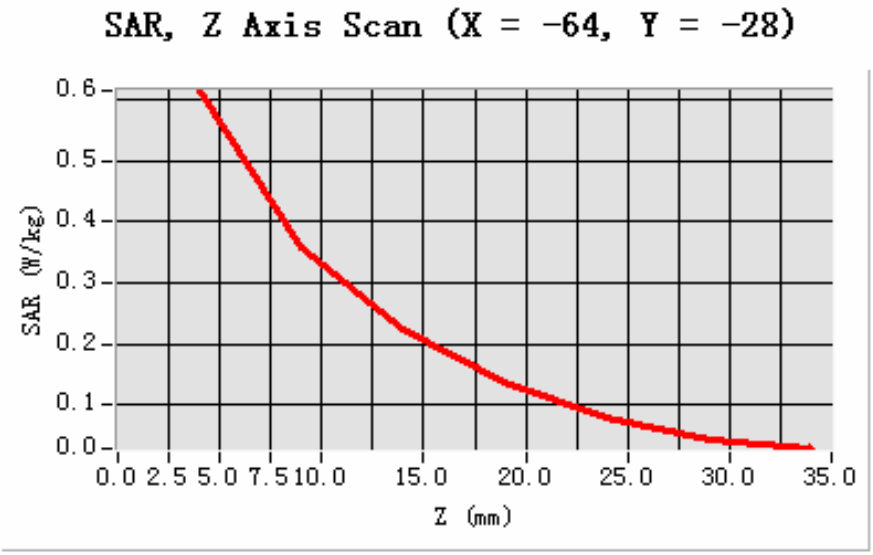
SURFACE SAR	**VOLUME SAR**
	

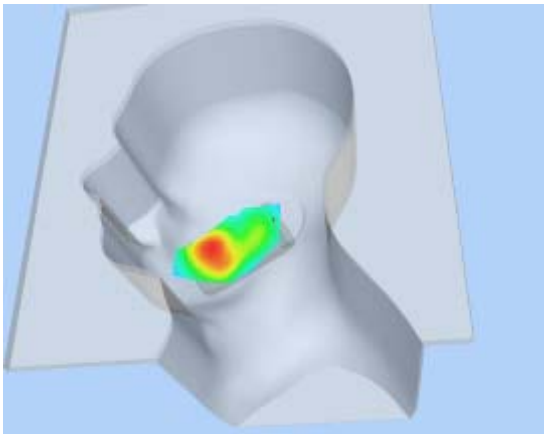
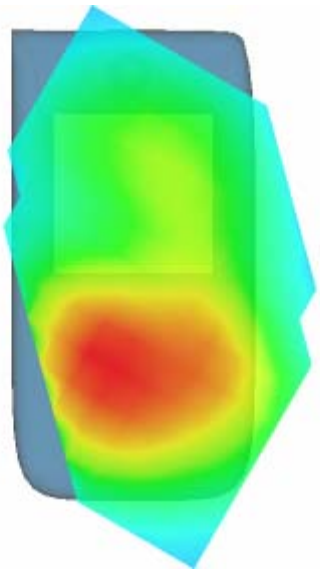
Maximum location: X=-64.00, Y=-28.00

SAR 10g (W/Kg)	0.343155
SAR 1g (W/Kg)	0.561425

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6146	0.3578	0.2241	0.1366	0.0776	0.0445



3D sceen shot	Hot spot position
	

MEASUREMENT 13

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 23 seconds

A. Experimental conditions.

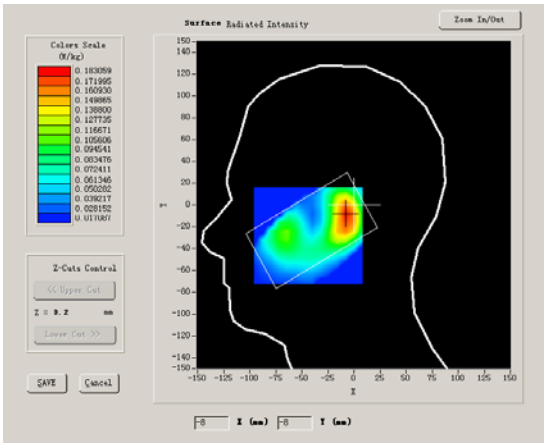
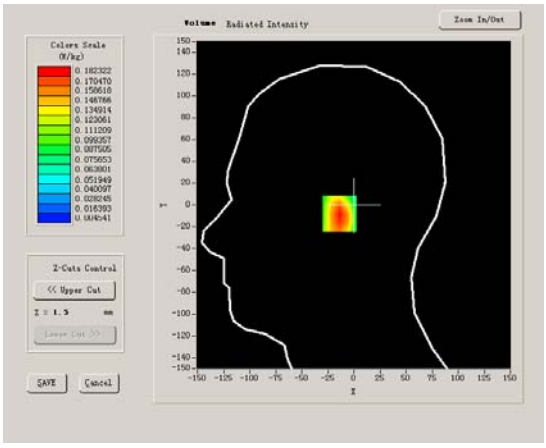
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-1.010000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

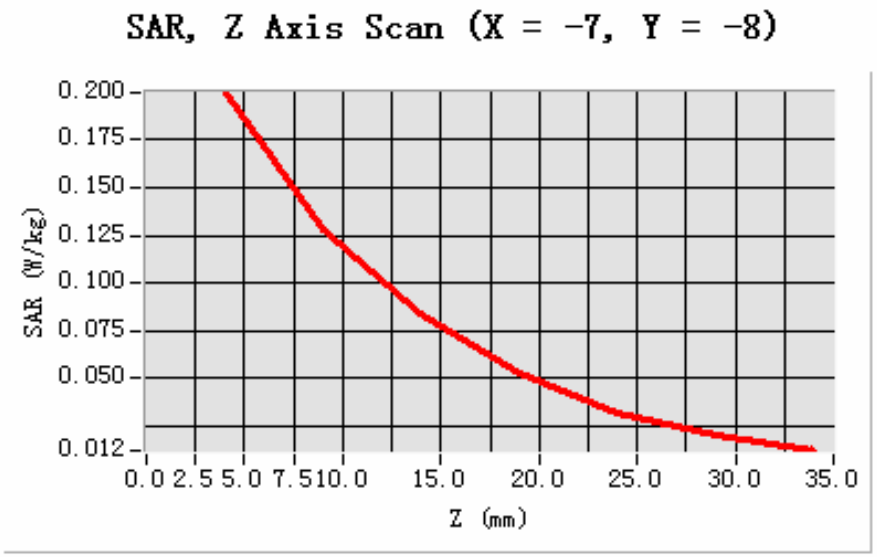
SURFACE SAR	**VOLUME SAR**
	

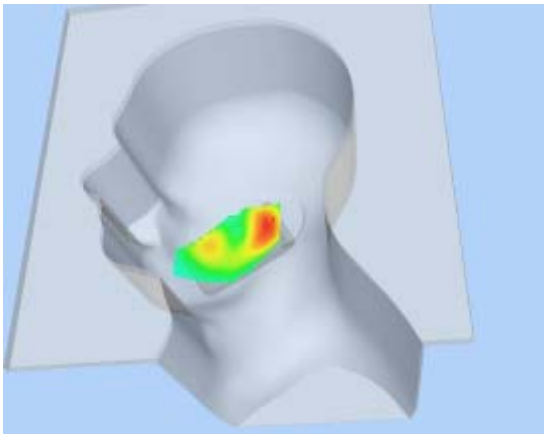
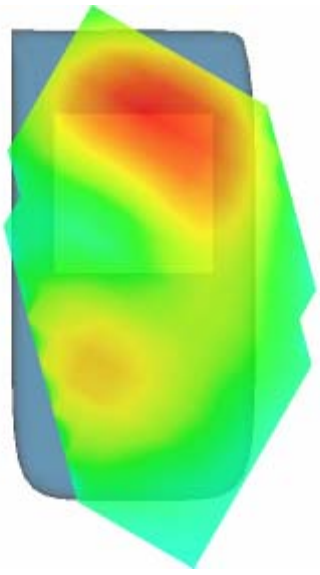
Maximum location: X=-7.00, Y=-8.00

SAR 10g (W/Kg)	0.213427
SAR 1g (W/Kg)	0.309003

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1998	0.1283	0.0836	0.0527	0.0315	0.0199



3D sceen shot	Hot spot position
	

MEASUREMENT 14

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 8 minutes 6 seconds

A. Experimental conditions.

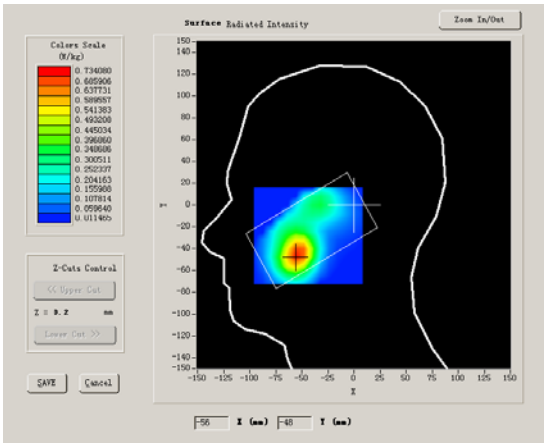
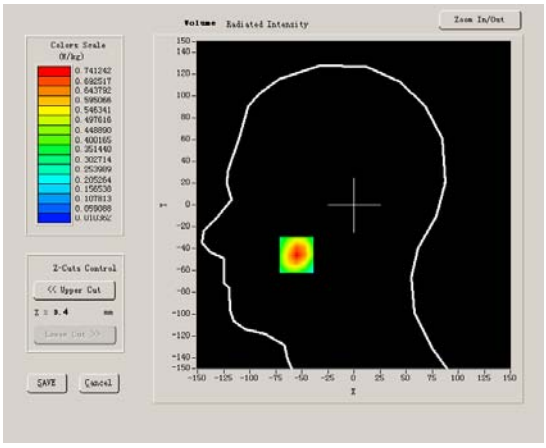
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-0.620000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

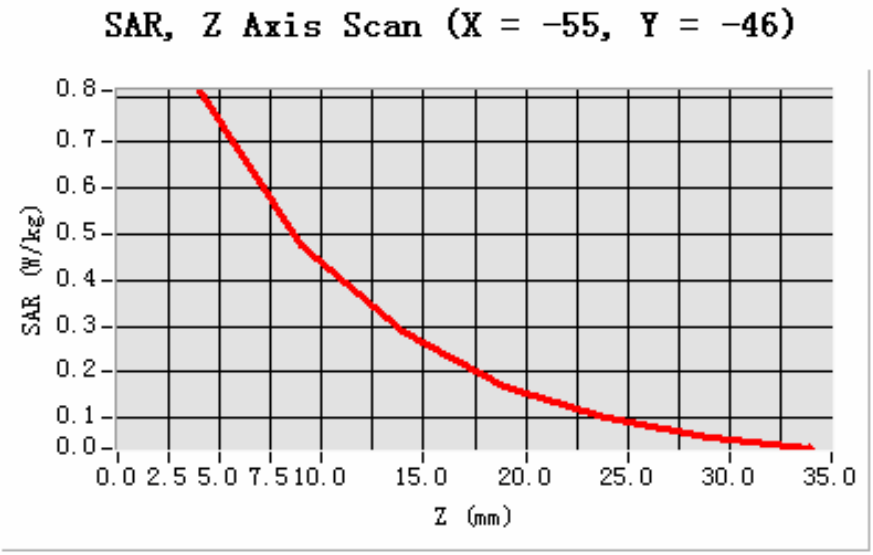
SURFACE SAR	**VOLUME SAR**
	

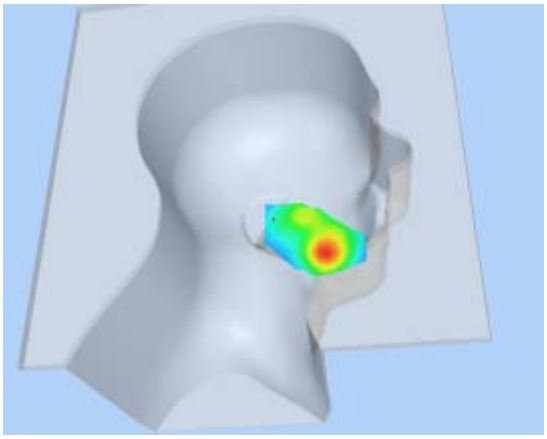
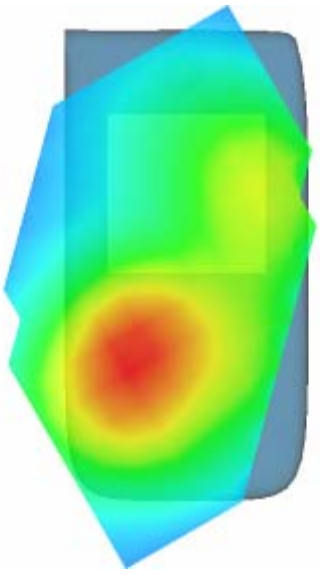
Maximum location: X=-55.00, Y=-46.00

SAR 10g (W/Kg)	0.322865
SAR 1g (W/Kg)	0.595375

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.8124	0.4754	0.2901	0.1665	0.1012	0.0603



3D sceen shot	Hot spot position
	

MEASUREMENT 15

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 28 seconds

A. Experimental conditions.

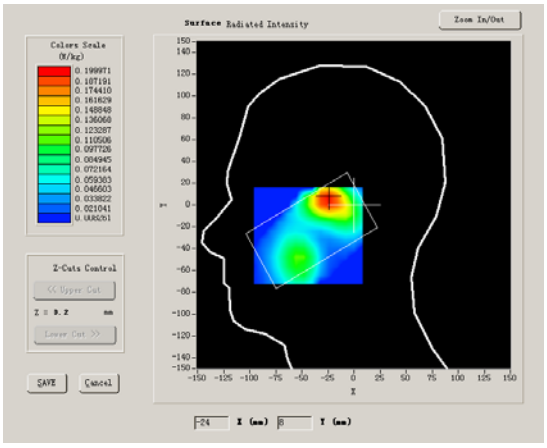
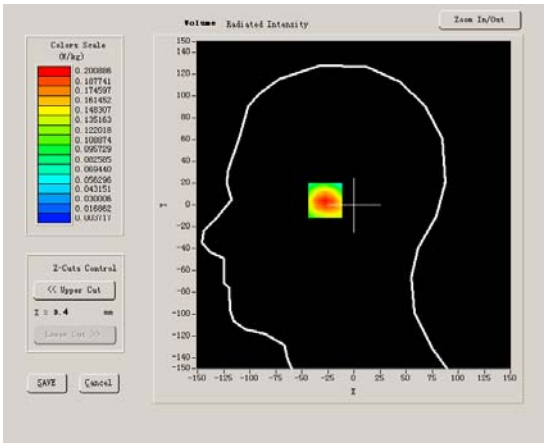
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-1.700000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

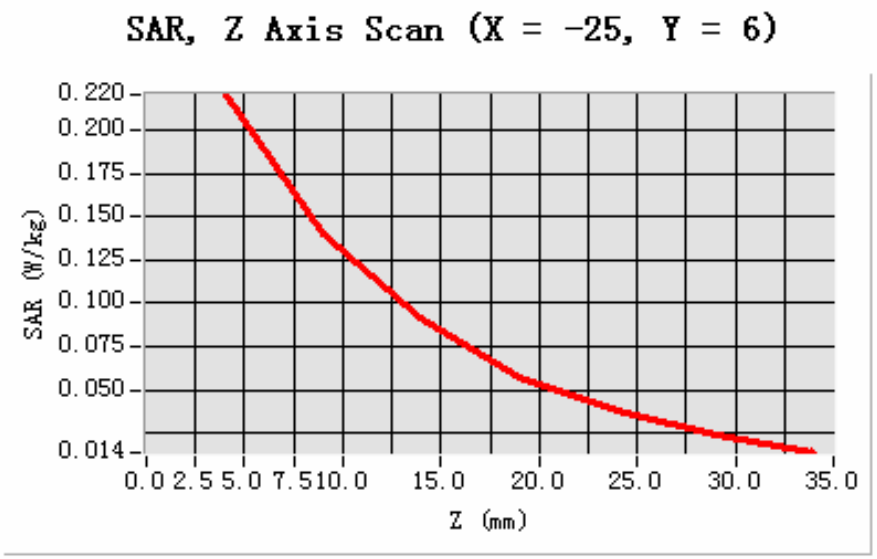
SURFACE SAR	**VOLUME SAR**
	

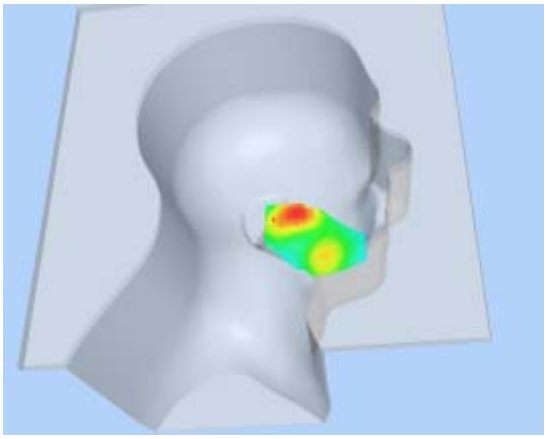
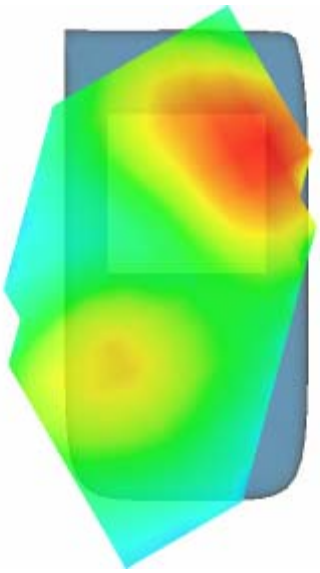
Maximum location: X=-25.00, Y=6.00

SAR 10g (W/Kg)	0.225163
SAR 1g (W/Kg)	0.339075

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2202	0.1394	0.0912	0.0574	0.0386	0.0241



3D sceen shot	Hot spot position
	

MEASUREMENT 16

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 7 seconds

A. Experimental conditions.

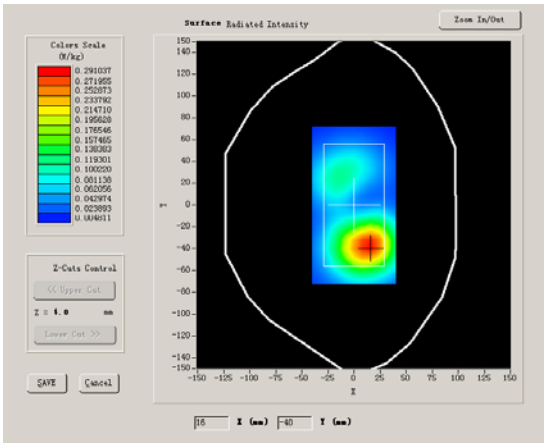
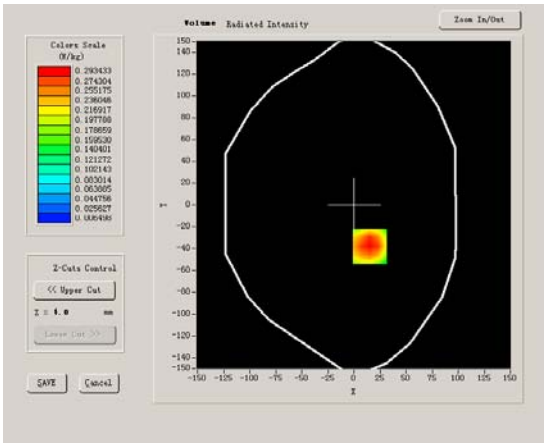
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-0.810000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:2

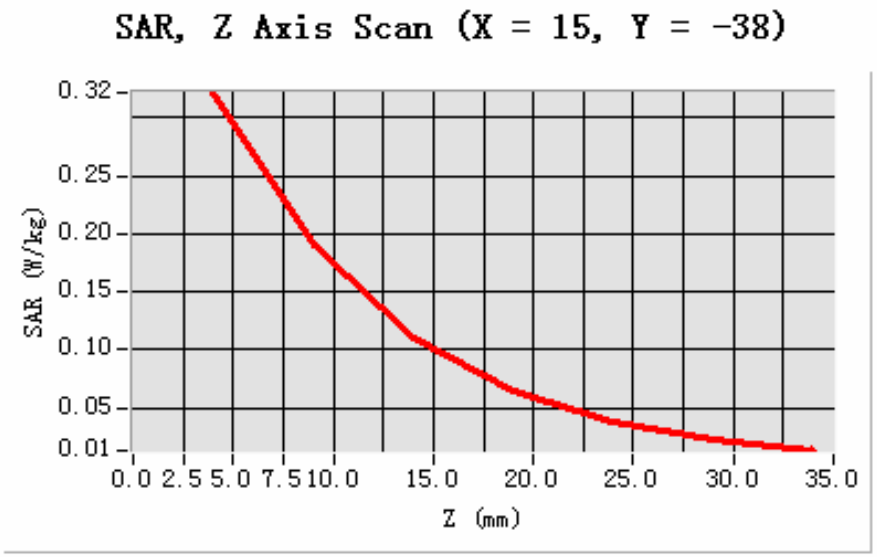
SURFACE SAR	**VOLUME SAR**
	

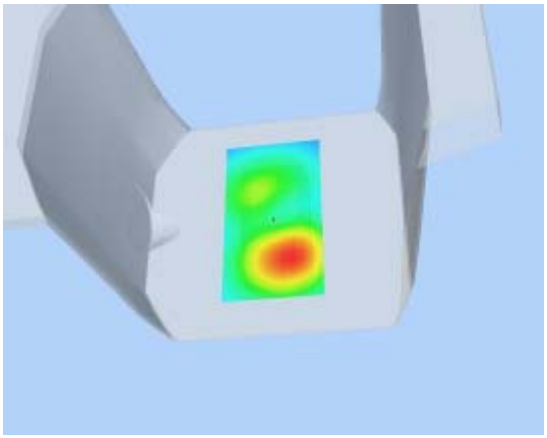
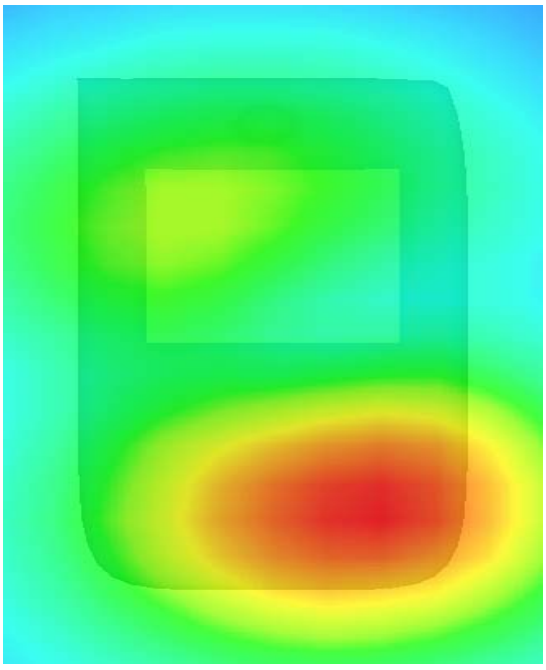
Maximum location: X=15.00, Y=-38.00

SAR 10g (W/Kg)	0.478108
SAR 1g (W/Kg)	0.736241

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3216	0.1911	0.1101	0.0639	0.0384	0.0224



3D sceen shot	Hot spot position
	

MEASUREMENT 17

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

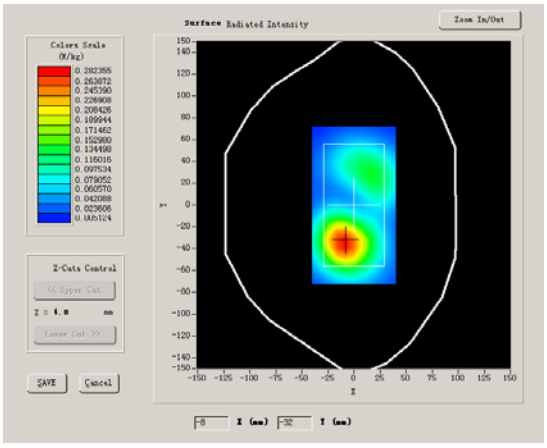
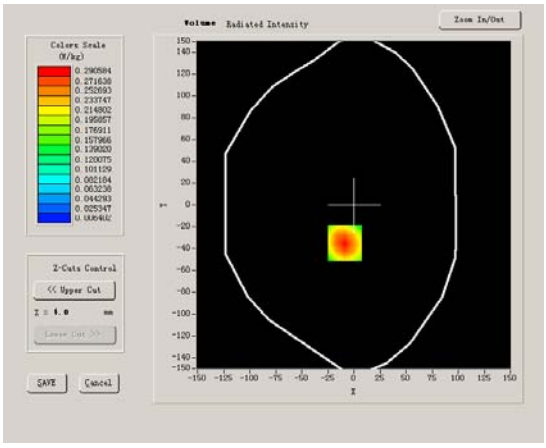
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-0.610000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:2

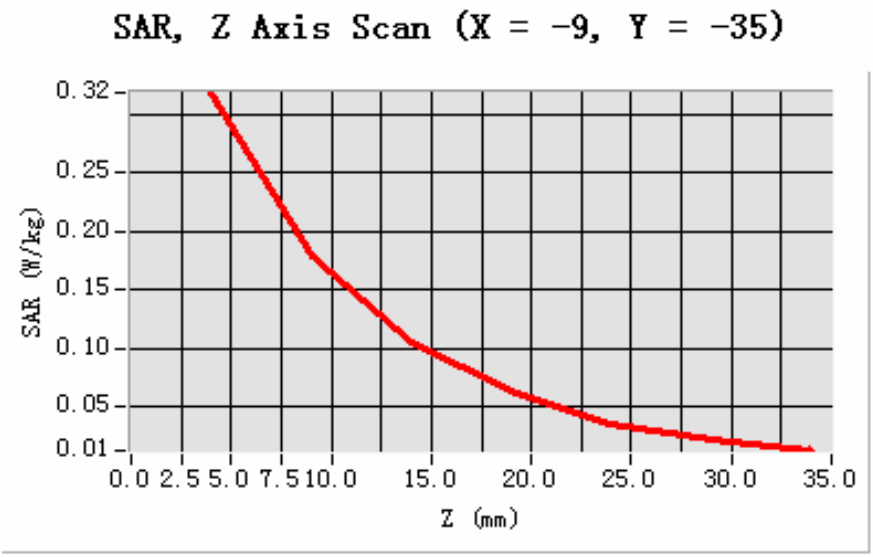
SURFACE SAR	**VOLUME SAR**
	

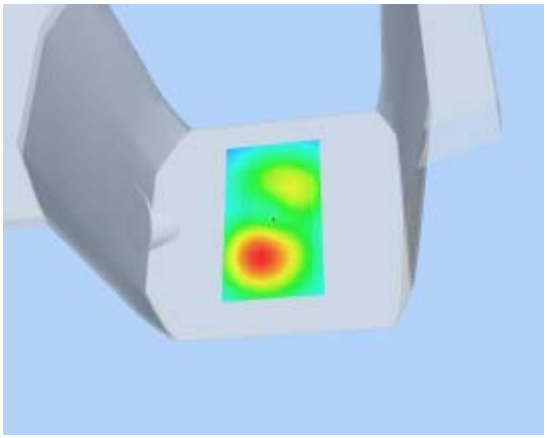
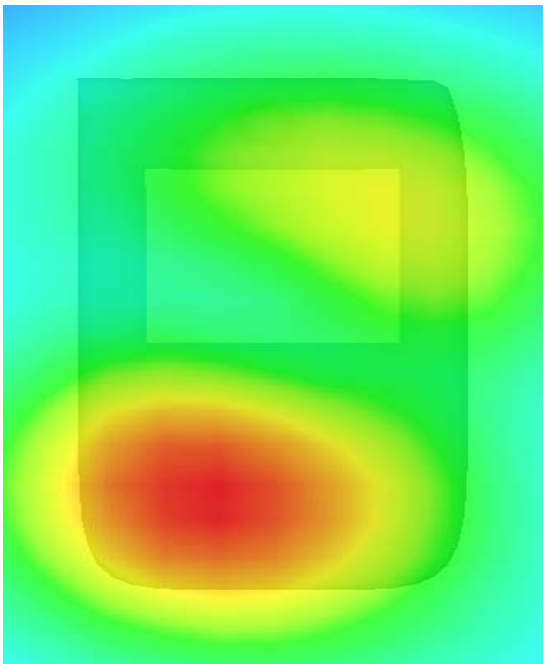
Maximum location: X=-9.00, Y=-35.00

SAR 10g (W/Kg)	0.378322
SAR 1g (W/Kg)	0.624835

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3185	0.1787	0.1060	0.0632	0.0364	0.0229



3D sceen shot	Hot spot position
	

MEASUREMENT 18

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 6 seconds

A. Experimental conditions.

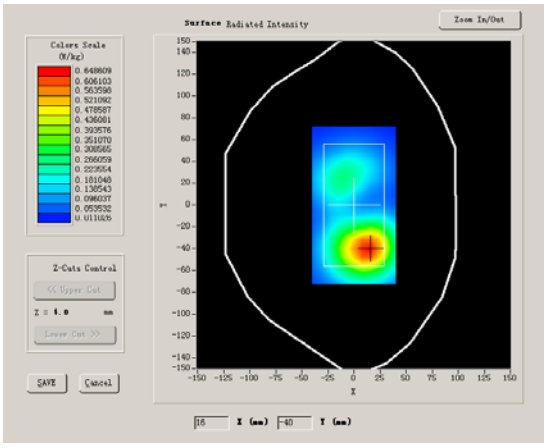
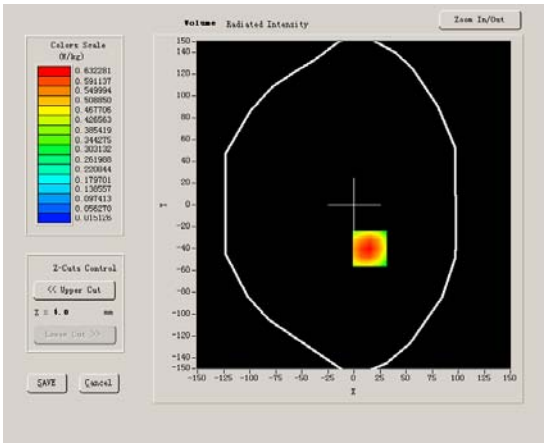
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-1.060000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:2

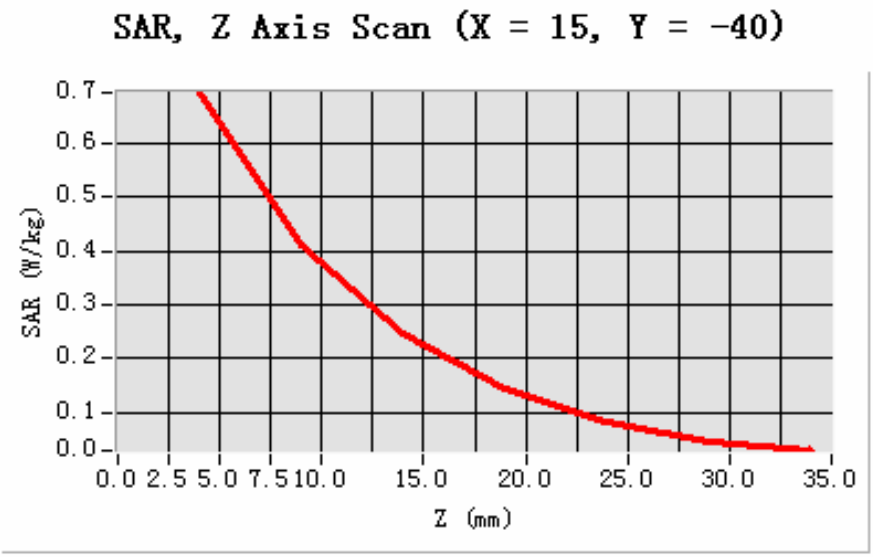
SURFACE SAR	**VOLUME SAR**
	

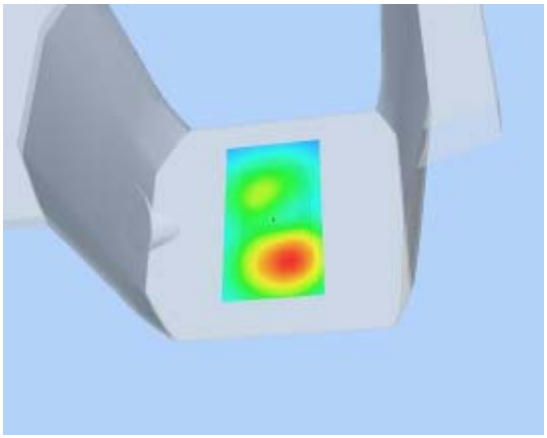
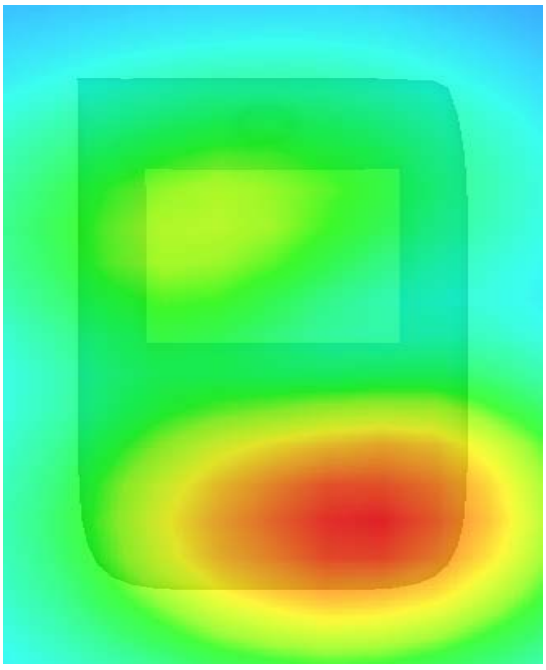
Maximum location: X=15.00, Y=-40.00

SAR 10g (W/Kg)	0.318463
SAR 1g (W/Kg)	0.564893

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6930	0.4121	0.2445	0.1423	0.0812	0.0474



3D sceen shot	Hot spot position
	

MEASUREMENT 19

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

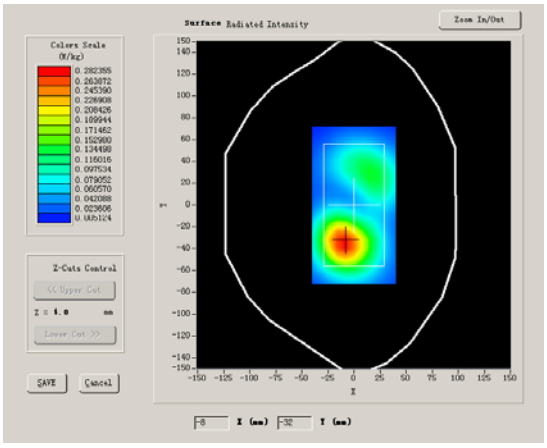
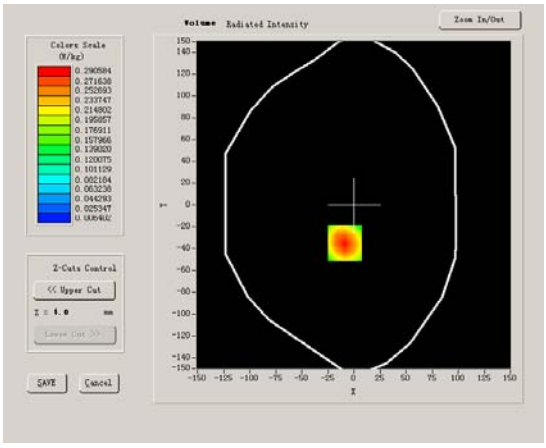
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-0.610000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

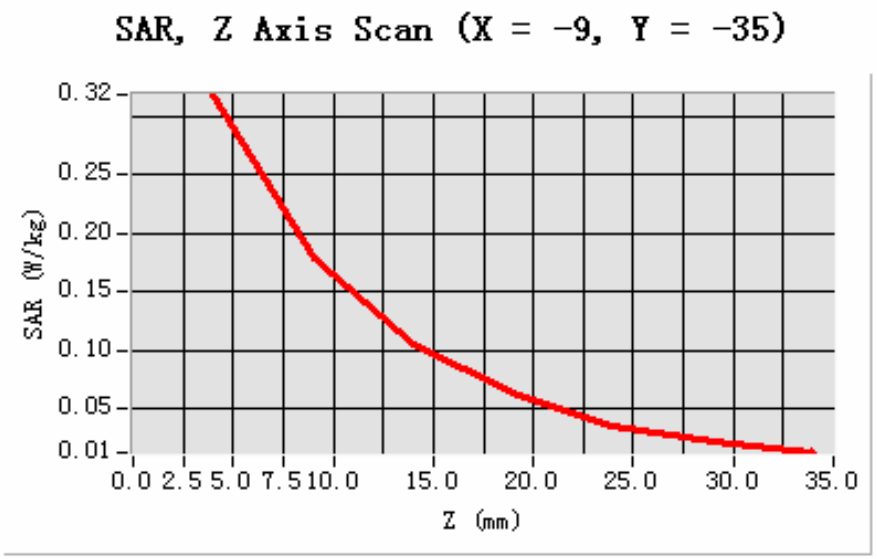
SURFACE SAR	**VOLUME SAR**
	

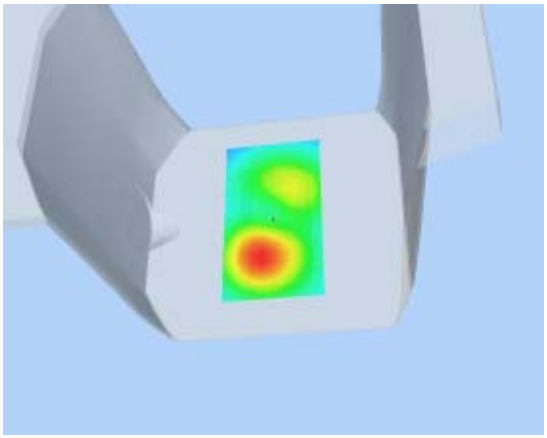
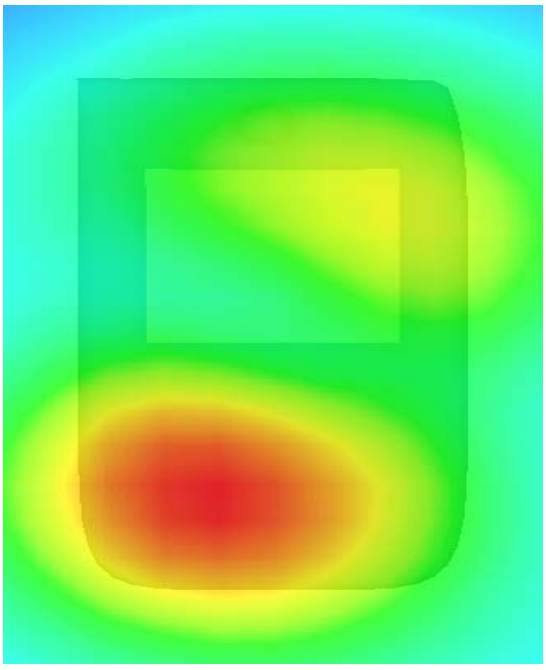
Maximum location: X=-9.00, Y=-35.00

SAR 10g (W/Kg)	0.273572
SAR 1g (W/Kg)	0.447399

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3185	0.1787	0.1060	0.0632	0.0364	0.0229



3D sceen shot	Hot spot position
	

MEASUREMENT 20

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

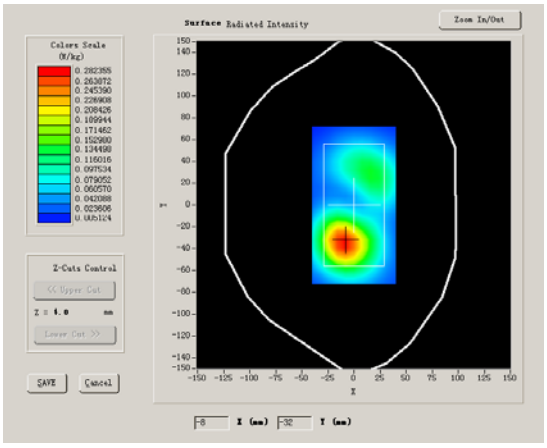
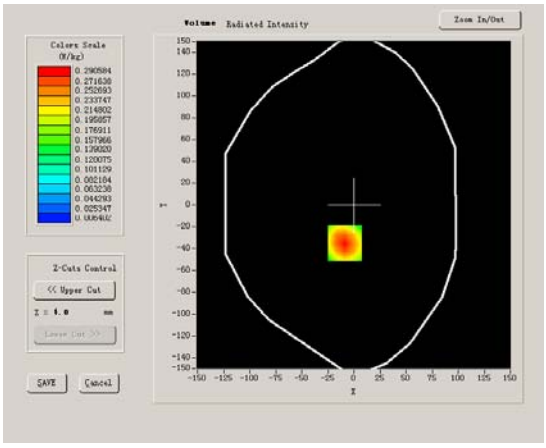
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-0.610000
Ambient Temperature:	22.8°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

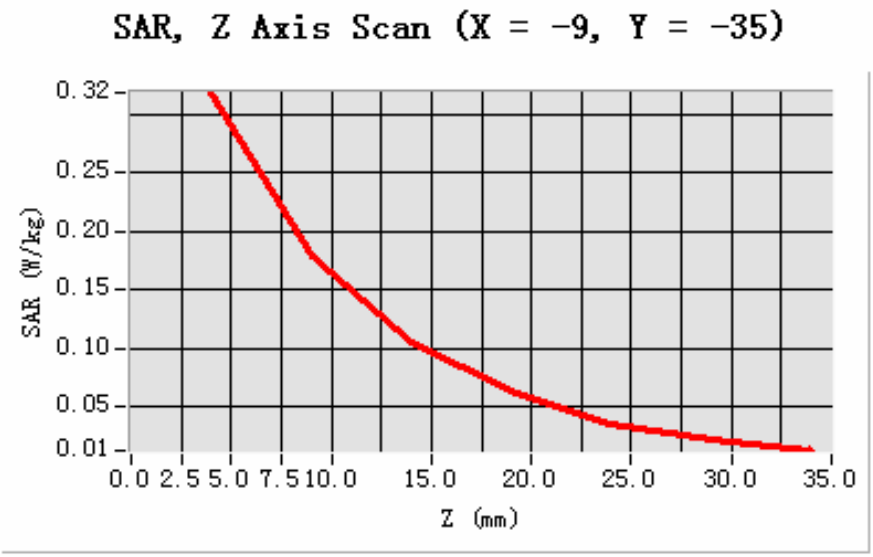
SURFACE SAR	**VOLUME SAR**
	

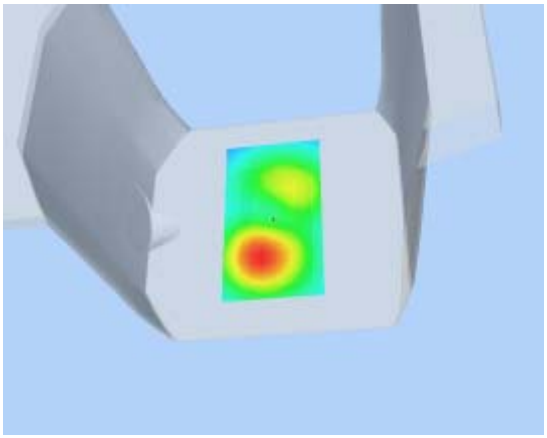
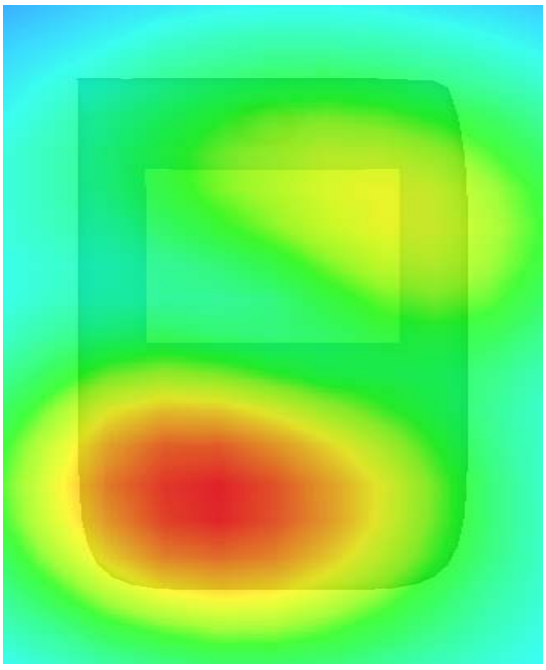
Maximum location: X=-9.00, Y=-35.00

SAR 10g (W/Kg)	0.283684
SAR 1g (W/Kg)	0.438363

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3185	0.1787	0.1060	0.0632	0.0364	0.0229



3D sceen shot	Hot spot position
	

MEASUREMENT 21

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 31 seconds

A. Experimental conditions.

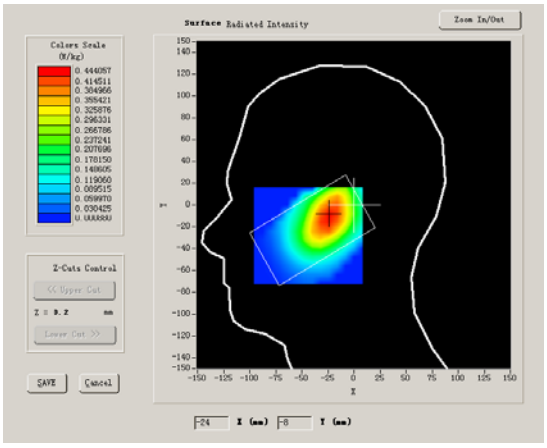
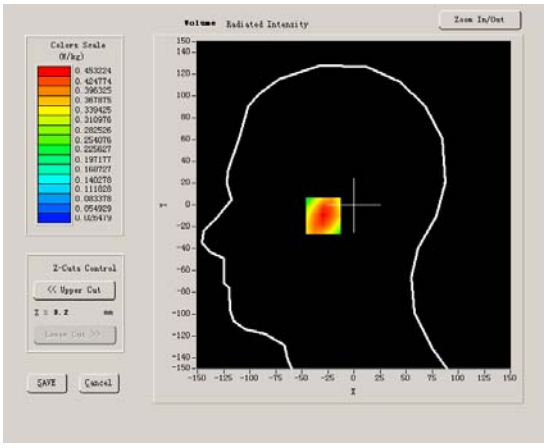
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	1.710000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

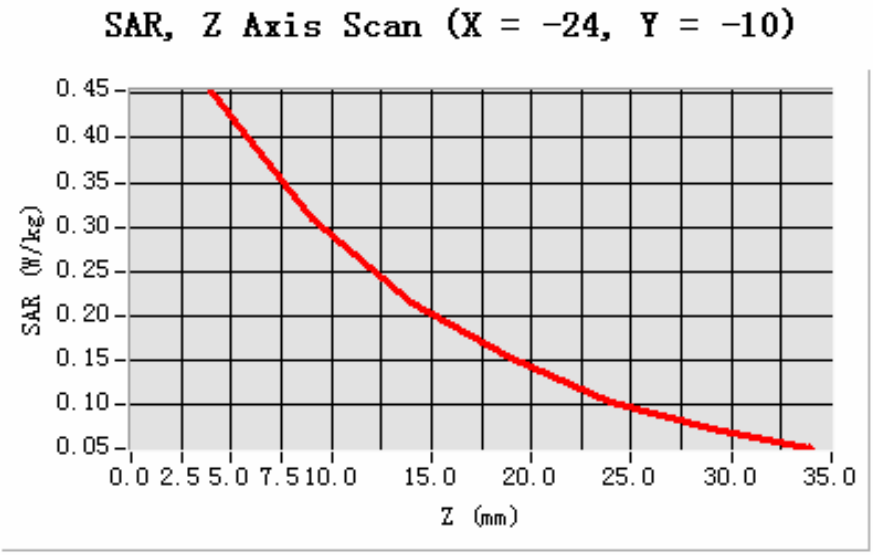
SURFACE SAR	**VOLUME SAR**
	

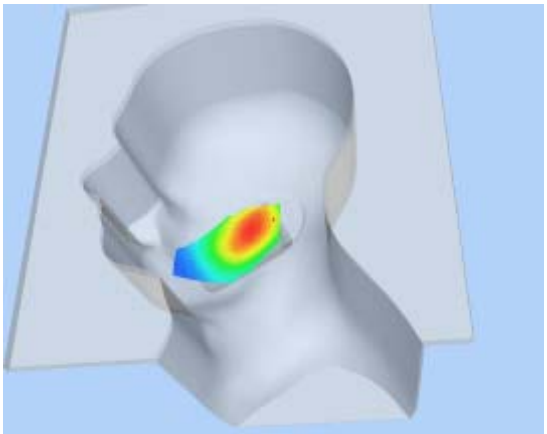
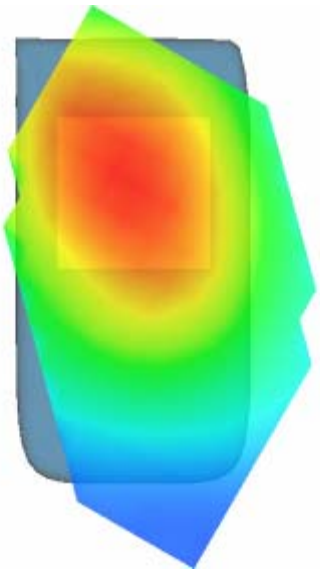
Maximum location: X=-24.00, Y=-10.00

SAR 10g (W/Kg)	0.290133
SAR 1g (W/Kg)	0.463233

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4532	0.3085	0.2141	0.1528	0.1033	0.0727



3D sceen shot	Hot spot position
	

MEASUREMENT 22

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 28 seconds

A. Experimental conditions.

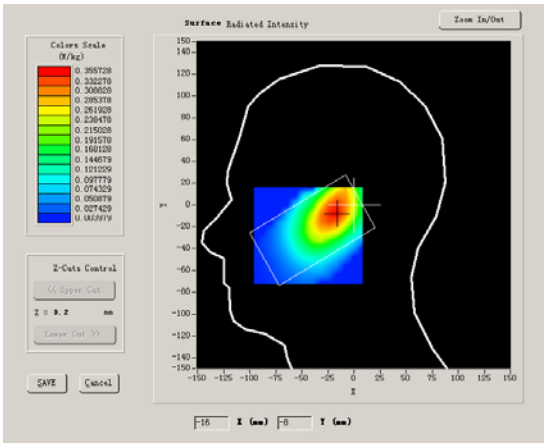
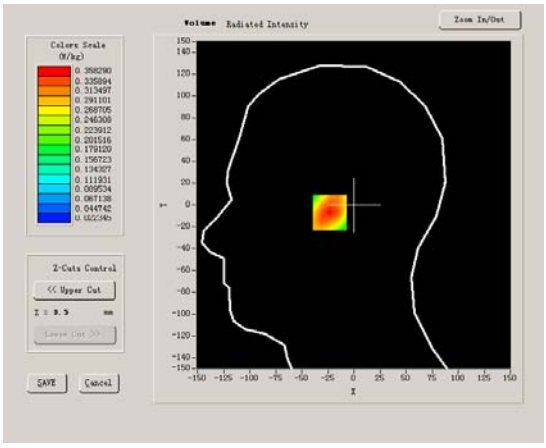
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	0.450000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

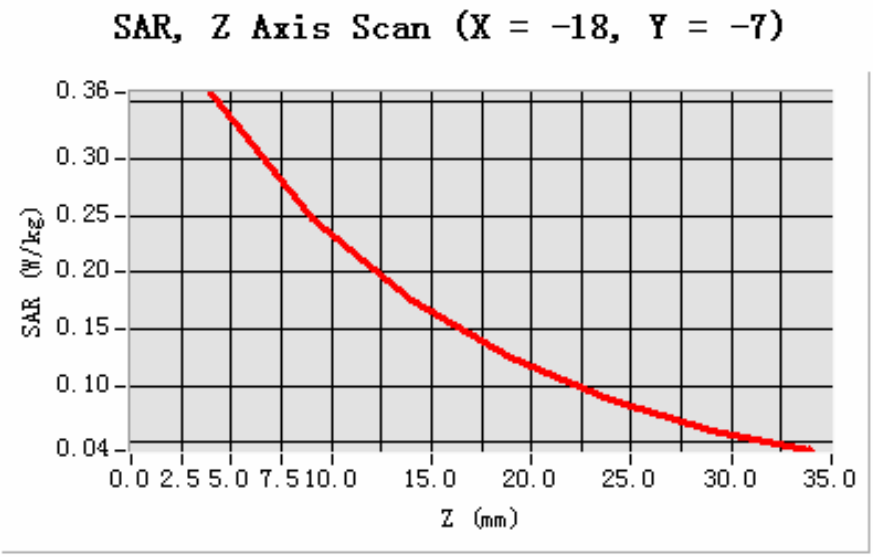
SURFACE SAR	**VOLUME SAR**
	

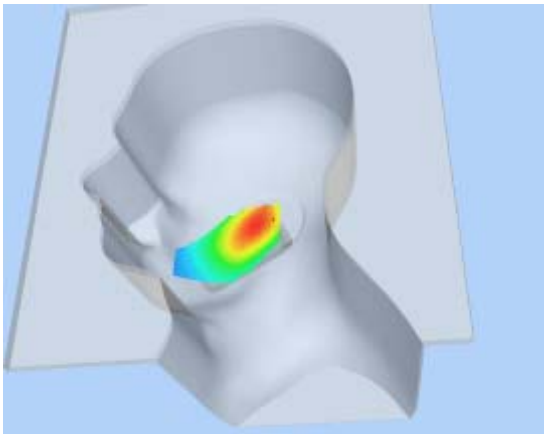
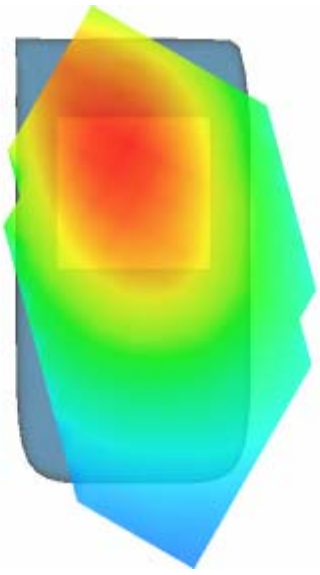
Maximum location: X=-18.00, Y=-7.00

SAR 10g (W/Kg)	0.178547
SAR 1g (W/Kg)	0.275030

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3583	0.2470	0.1757	0.1247	0.0873	0.0607



3D sceen shot	Hot spot position
	

MEASUREMENT 23

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 37 seconds

A. Experimental conditions.

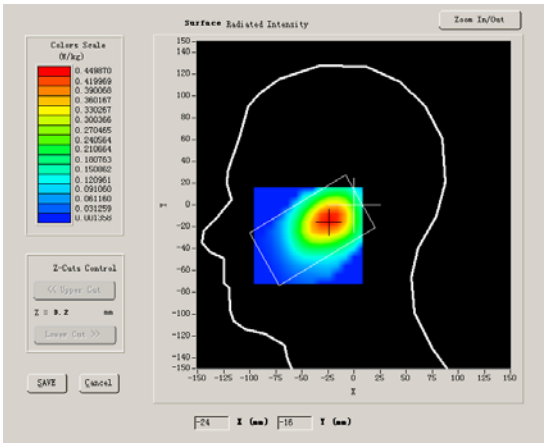
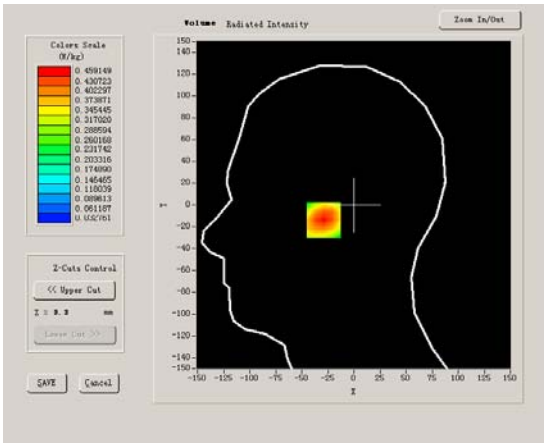
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	-0.830000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

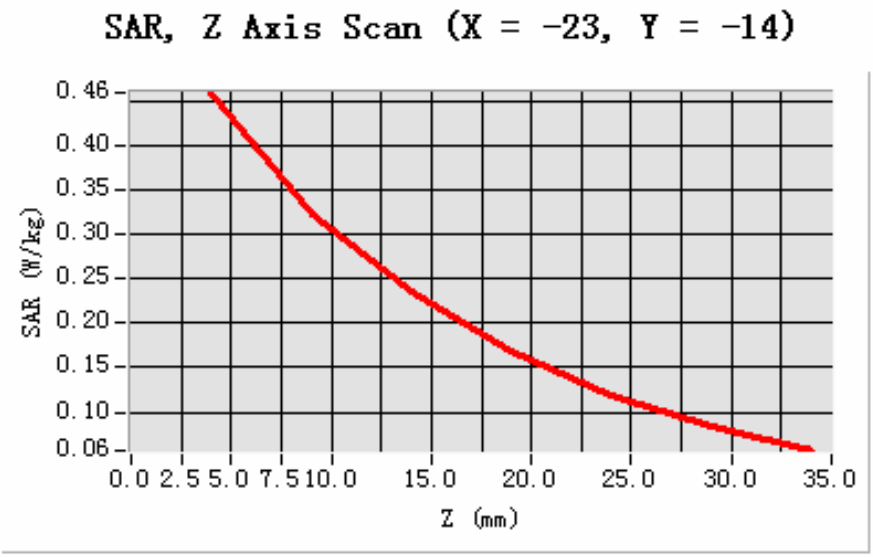
SURFACE SAR	**VOLUME SAR**
	

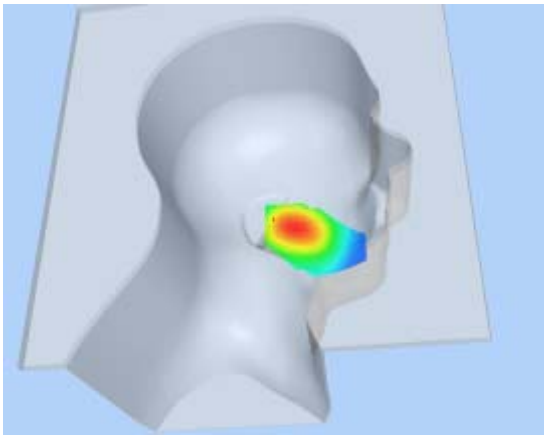
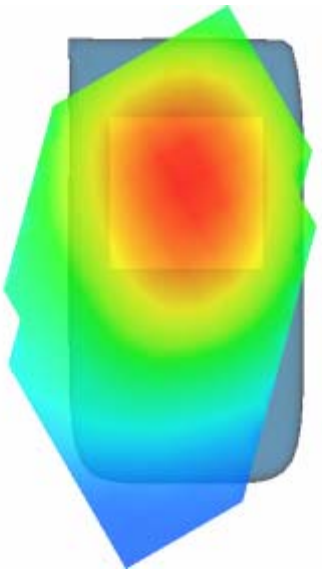
Maximum location: X=-23.00, Y=-14.00

SAR 10g (W/Kg)	0.294183
SAR 1g (W/Kg)	0.531337

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4591	0.3233	0.2360	0.1684	0.1201	0.0846



3D sceen shot	Hot spot position
	

MEASUREMENT 24

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 41 seconds

A. Experimental conditions.

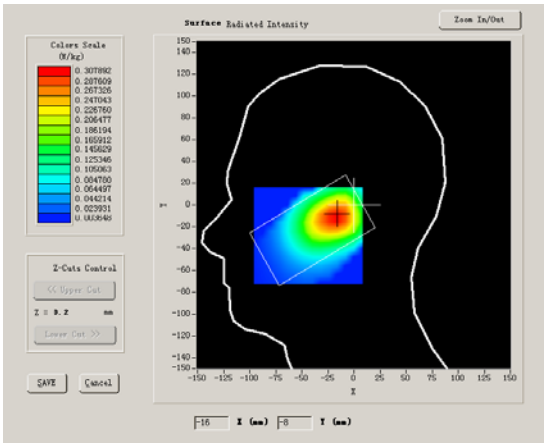
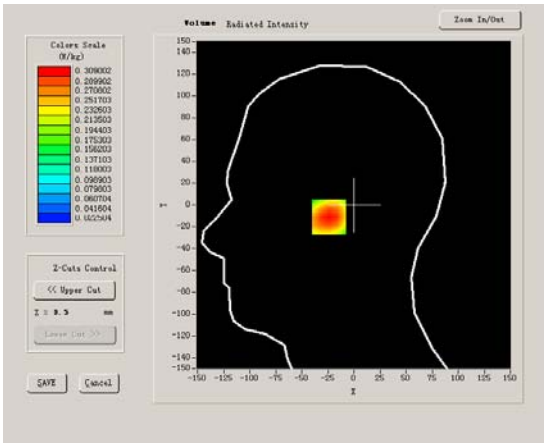
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001

Conductivity (S/m)	0.888655
Variation (%)	0.300000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

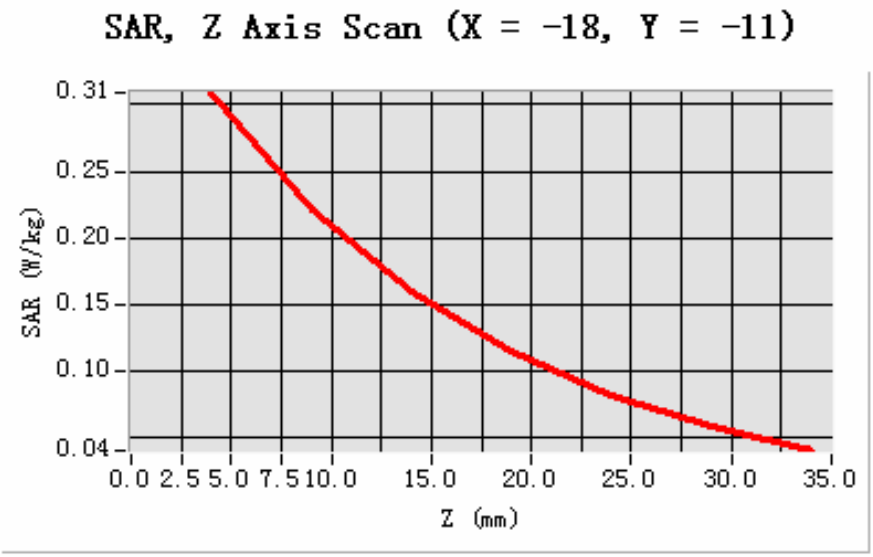
SURFACE SAR	**VOLUME SAR**
	

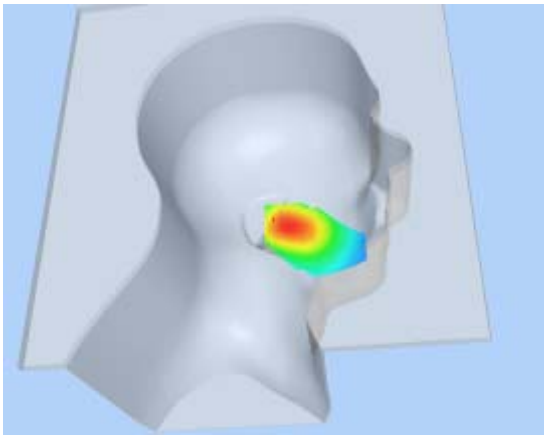
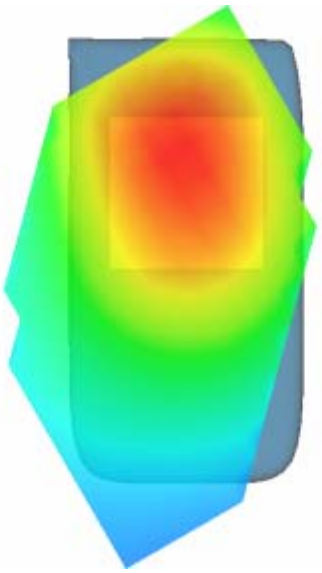
Maximum location: X=-18.00, Y=-11.00

SAR 10g (W/Kg)	0.201957
SAR 1g (W/Kg)	0.317491

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3090	0.2207	0.1601	0.1154	0.0818	0.0583



3D sceen shot	Hot spot position
	

MEASUREMENT 25

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 30 seconds

A. Experimental conditions.

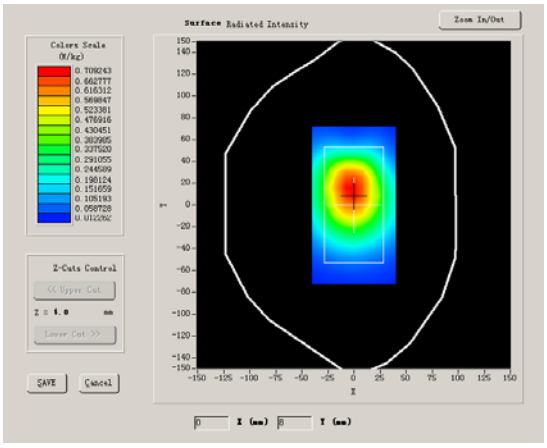
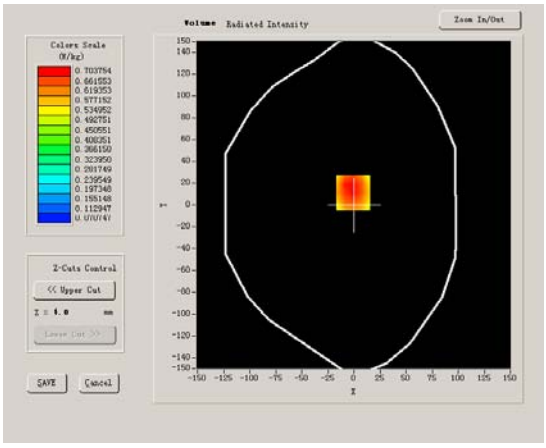
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999

Conductivity (S/m)	1.009033
Variation (%)	-0.070000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

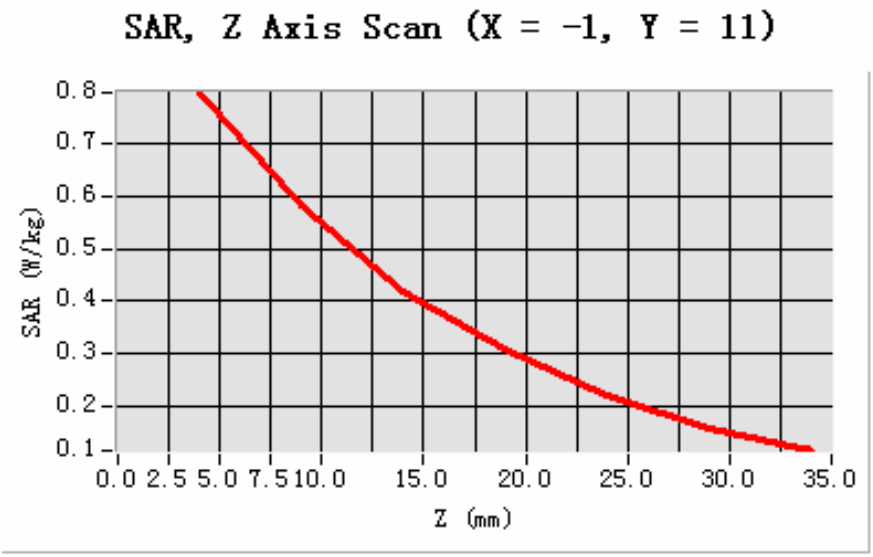
SURFACE SAR	**VOLUME SAR**
	

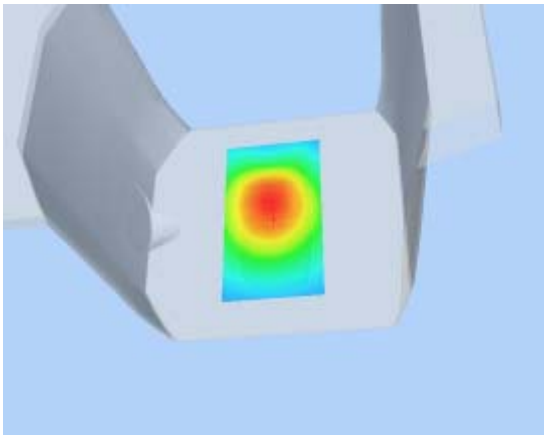
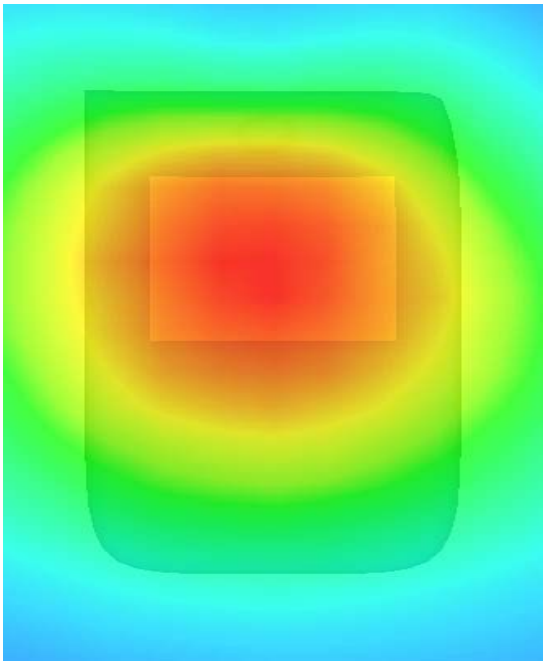
Maximum location: X=-1.00, Y=11.00

SAR 10g (W/Kg)	0.440545
SAR 1g (W/Kg)	0.683467

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7991	0.5829	0.4193	0.3099	0.2209	0.1567



3D sceen shot	Hot spot position
	

MEASUREMENT 26

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 30 seconds

A. Experimental conditions.

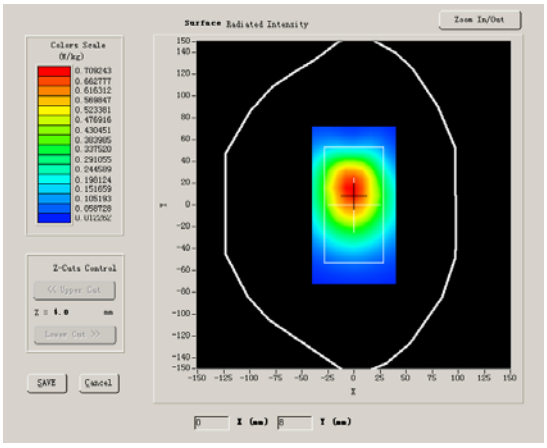
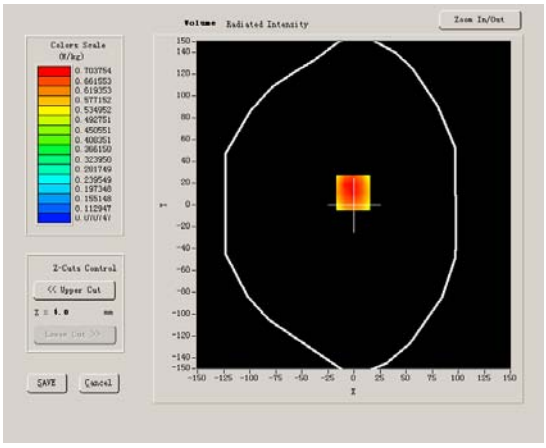
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	55.533523
Relative permittivity	21.709999

Conductivity (S/m)	0.999756
Variation (%)	-0.070000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

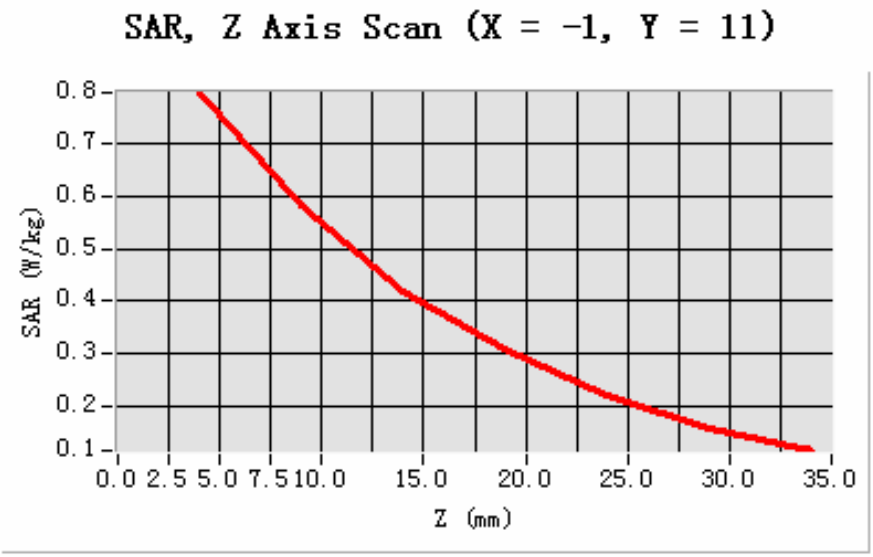
SURFACE SAR	**VOLUME SAR**
	

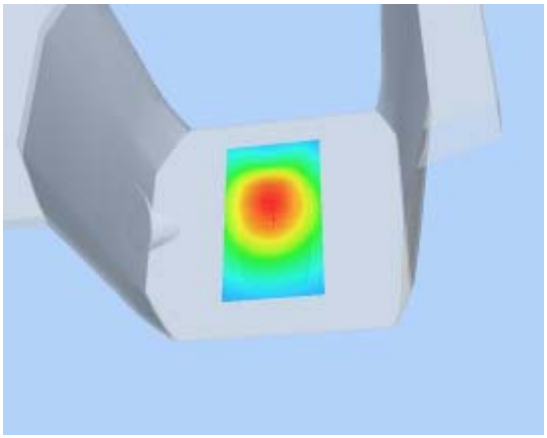
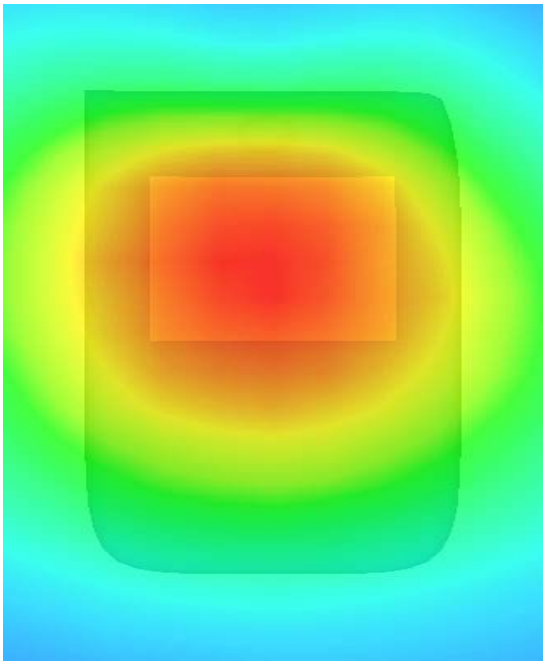
Maximum location: X=-1.00, Y=11.00

SAR 10g (W/Kg)	0.242355
SAR 1g (W/Kg)	0.474353

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7991	0.5829	0.4193	0.3099	0.2209	0.1567



3D sceen shot	Hot spot position
	

MEASUREMENT 27

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 30 seconds

A. Experimental conditions.

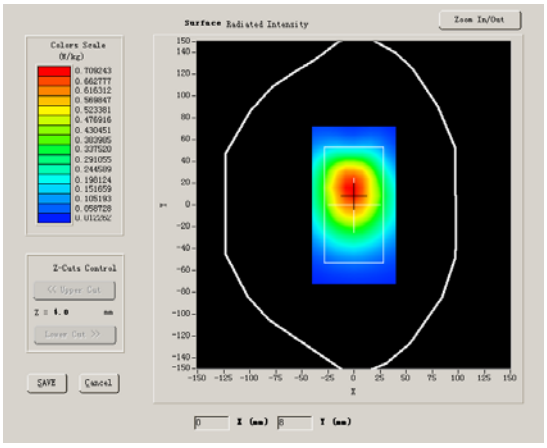
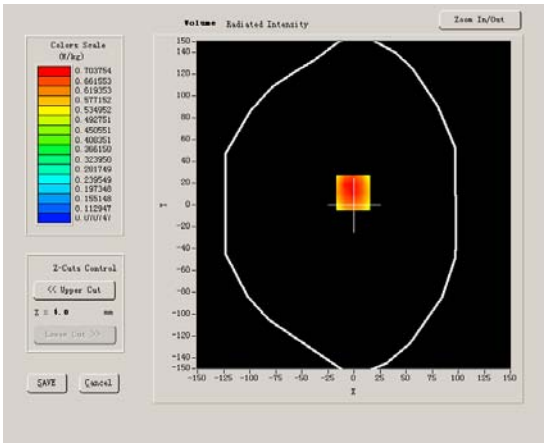
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	55.533523
Relative permittivity	21.709999

Conductivity (S/m)	0.999756
Variation (%)	-0.070000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

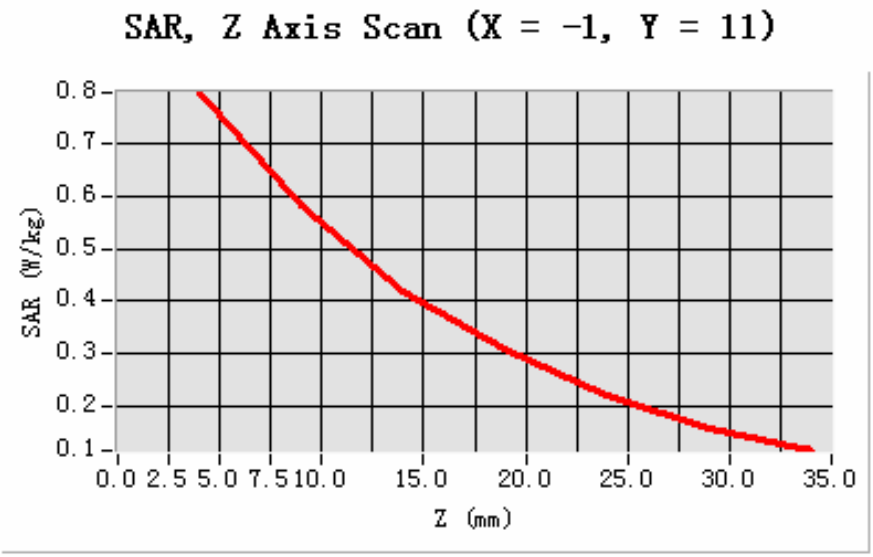
SURFACE SAR	**VOLUME SAR**
	

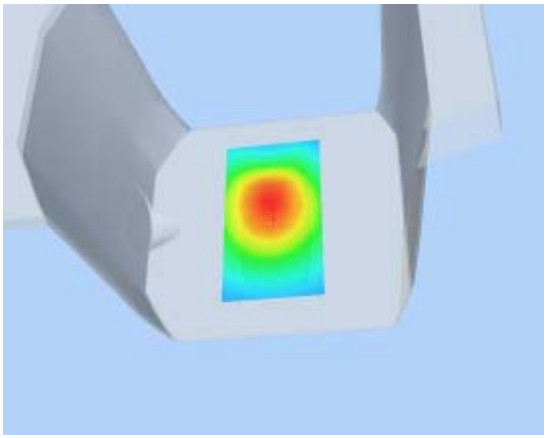
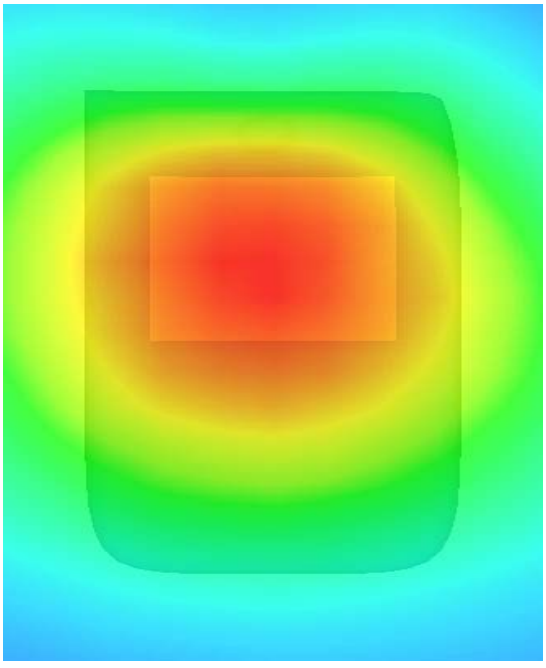
Maximum location: X=-1.00, Y=11.00

SAR 10g (W/Kg)	0.373566
SAR 1g (W/Kg)	0.674552

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7991	0.5829	0.4193	0.3099	0.2209	0.1567



3D sceen shot	Hot spot position
	

MEASUREMENT 28

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 30 seconds

A. Experimental conditions.

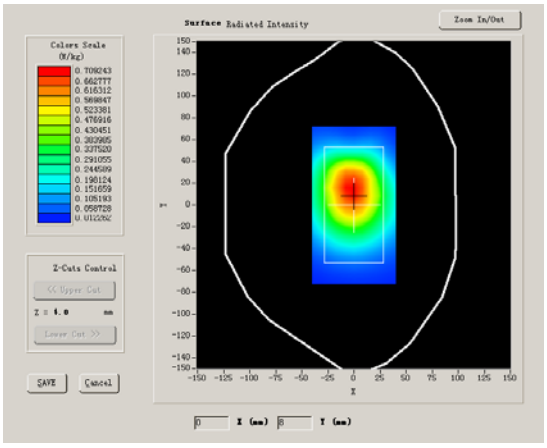
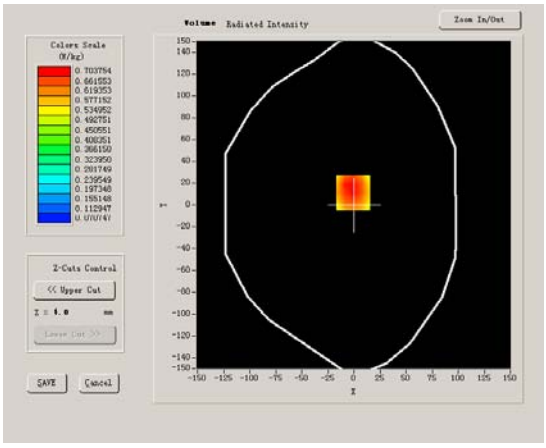
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	55.533523
Relative permittivity	21.709999

Conductivity (S/m)	0.999756
Variation (%)	-0.070000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:2

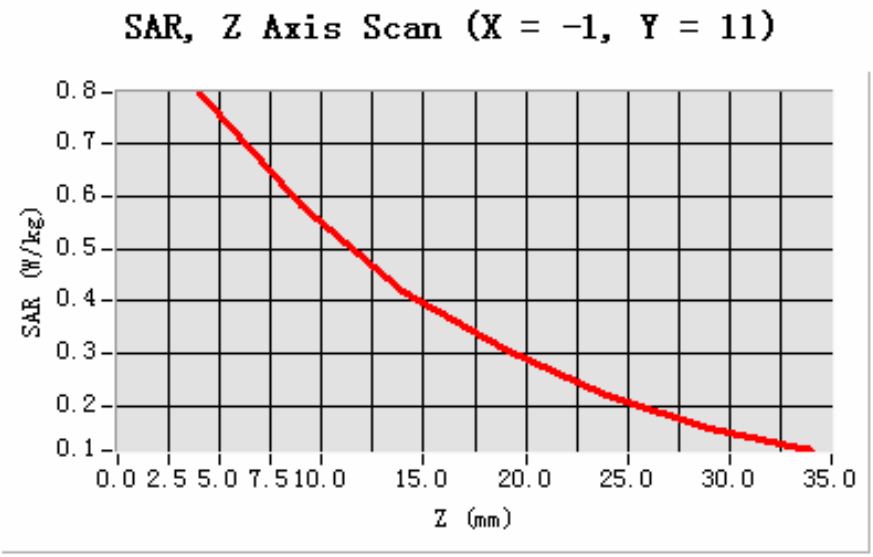
SURFACE SAR	**VOLUME SAR**
	

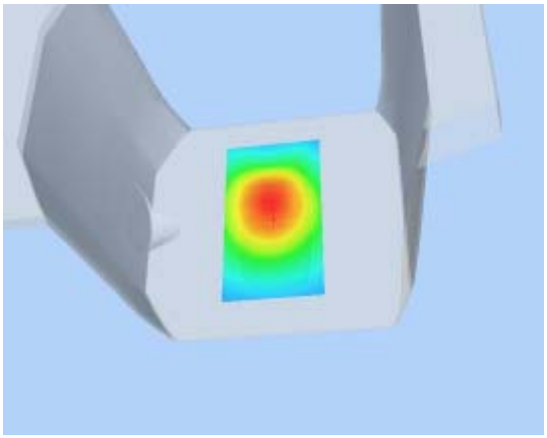
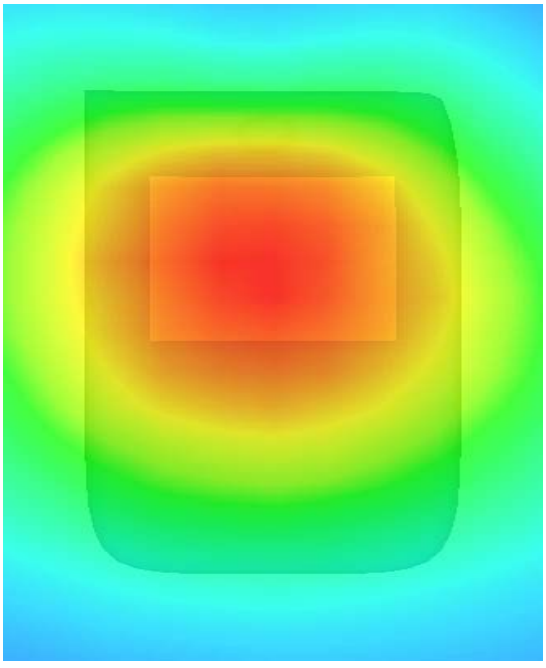
Maximum location: X=-1.00, Y=11.00

SAR 10g (W/Kg)	0.383512
SAR 1g (W/Kg)	0.675129

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7991	0.5829	0.4193	0.3099	0.2209	0.1567



3D sceen shot	Hot spot position
	

MEASUREMENT 29

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 21 seconds

A. Experimental conditions.

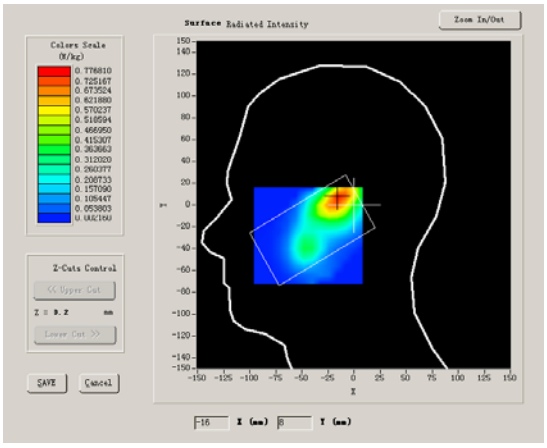
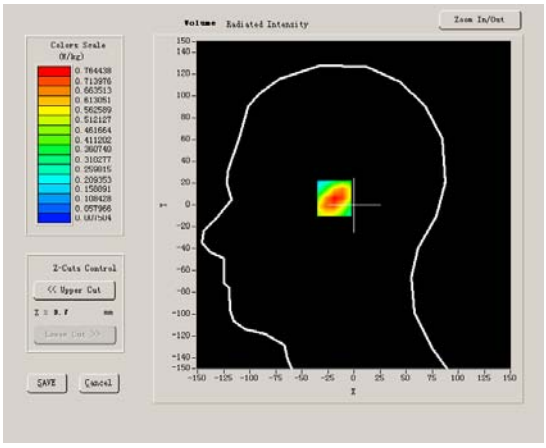
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-2.240000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

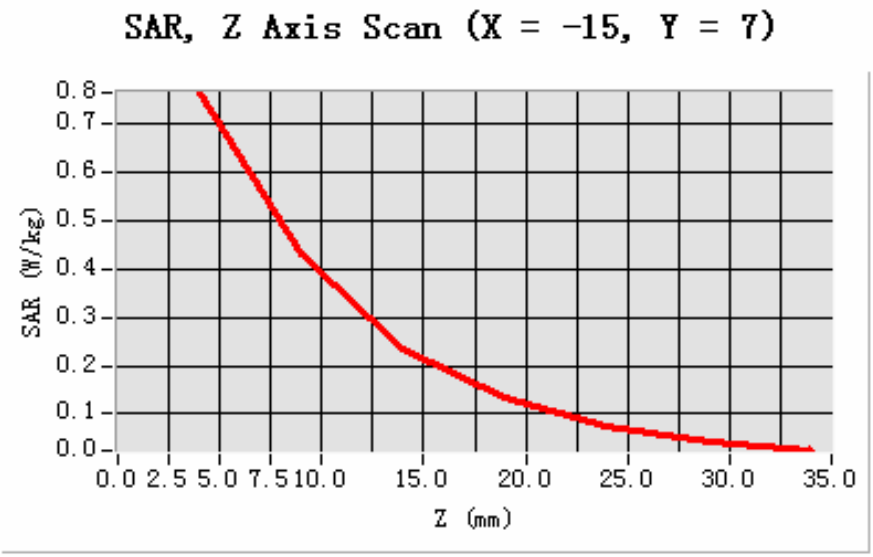
SURFACE SAR	VOLUME SAR
	

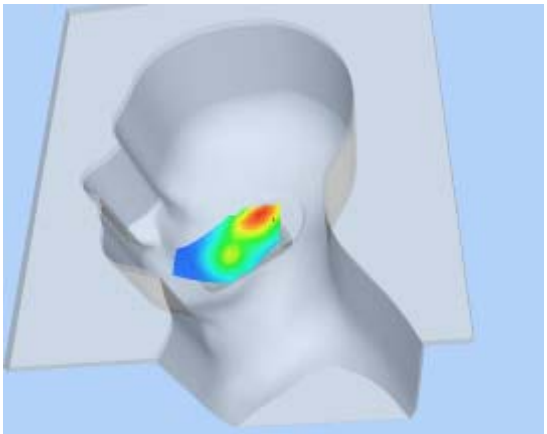
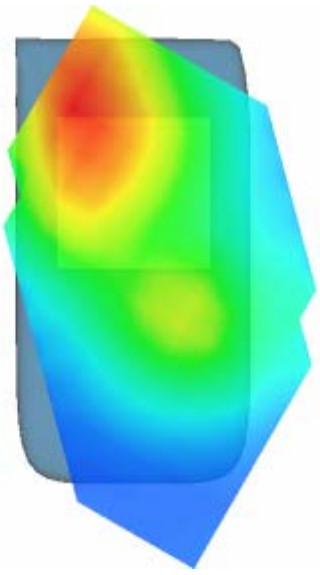
Maximum location: X=-15.00, Y=7.00

SAR 10g (W/Kg)	0.227554
SAR 1g (W/Kg)	0.413559

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7644	0.4323	0.2341	0.1331	0.0745	0.0416



3D sceen shot	Hot spot position
	

MEASUREMENT 30

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 16 seconds

A. Experimental conditions.

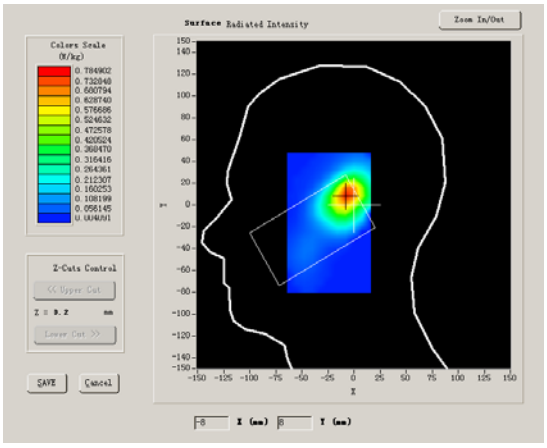
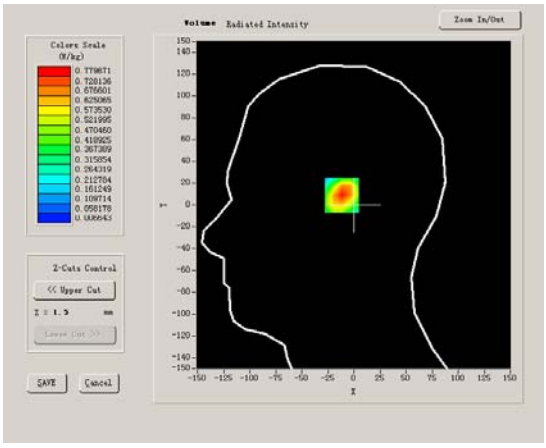
Phantom File	zinf3.txt
Phantom	Right head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-2.240000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

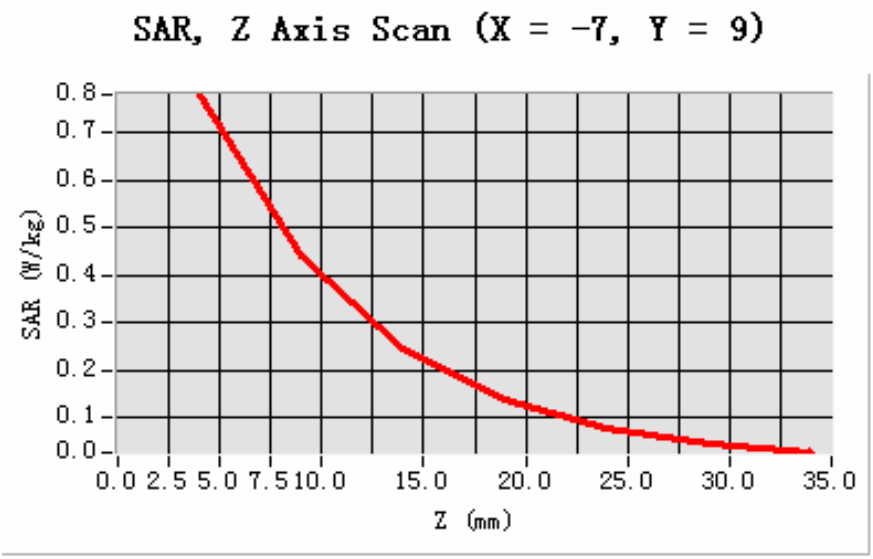
SURFACE SAR	**VOLUME SAR**
	

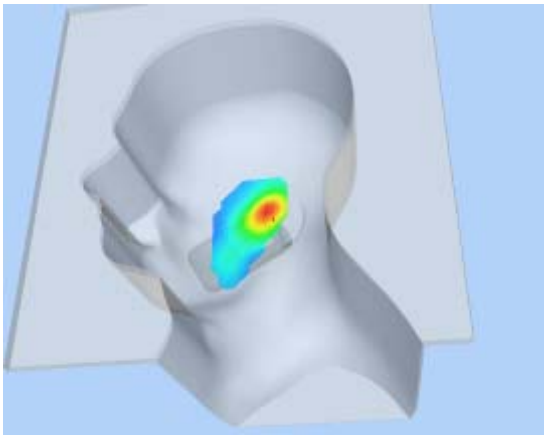
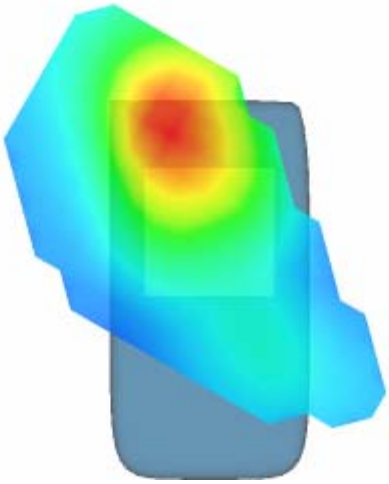
Maximum location: X=-7.00, Y=9.00

SAR 10g (W/Kg)	0.173552
SAR 1g (W/Kg)	0.236893

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7797	0.4417	0.2438	0.1367	0.0792	0.0436



3D sceen shot	Hot spot position
	

MEASUREMENT 31

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 20 seconds

A. Experimental conditions.

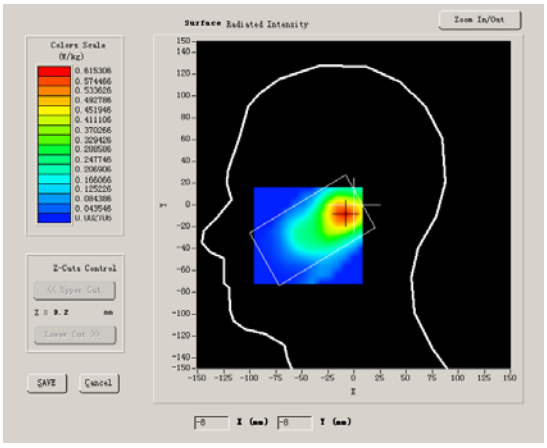
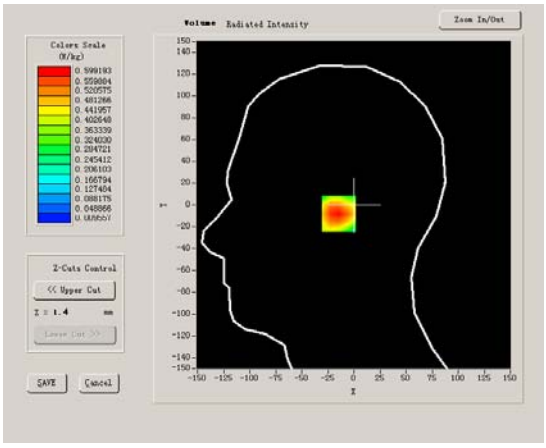
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-2.4182000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

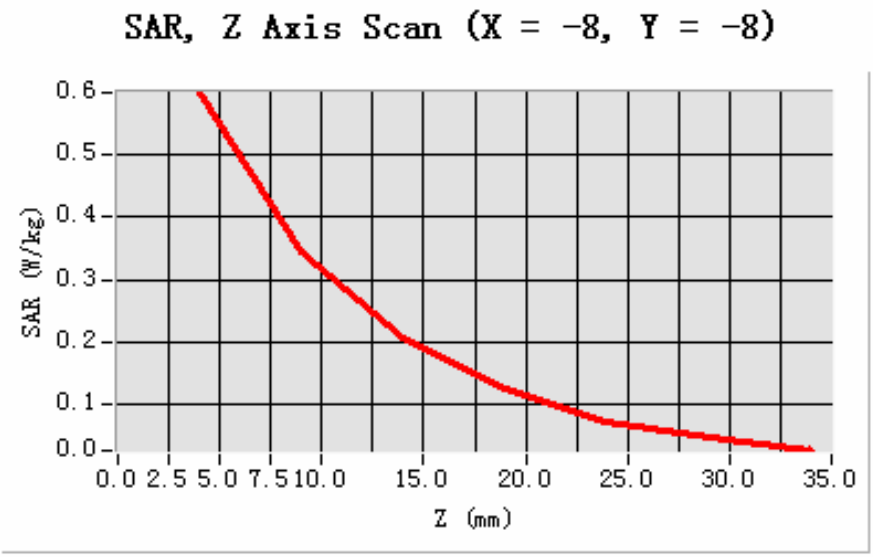
SURFACE SAR	**VOLUME SAR**
	

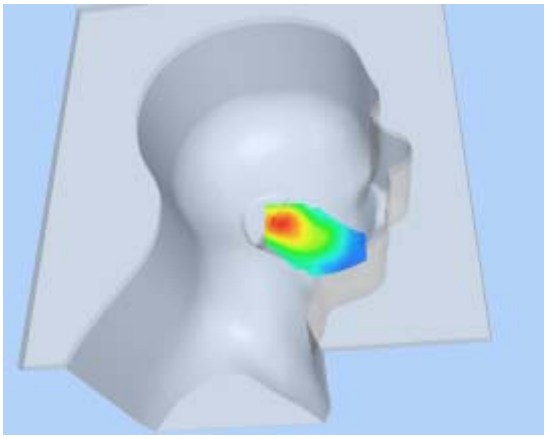
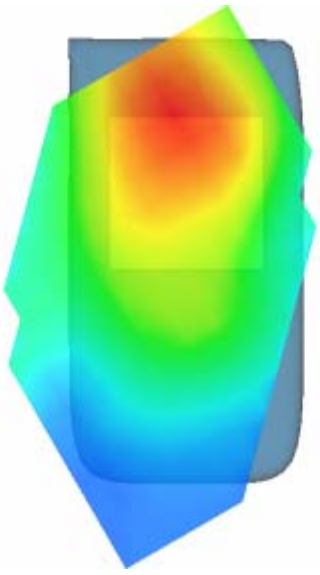
Maximum location: X=-8.00, Y=-8.00

SAR 10g (W/Kg)	0.263511
SAR 1g (W/Kg)	0.431846

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5992	0.3452	0.2057	0.1261	0.0744	0.0475



3D sceen shot	Hot spot position
	

MEASUREMENT 32

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 7 minutes 17 seconds

A. Experimental conditions.

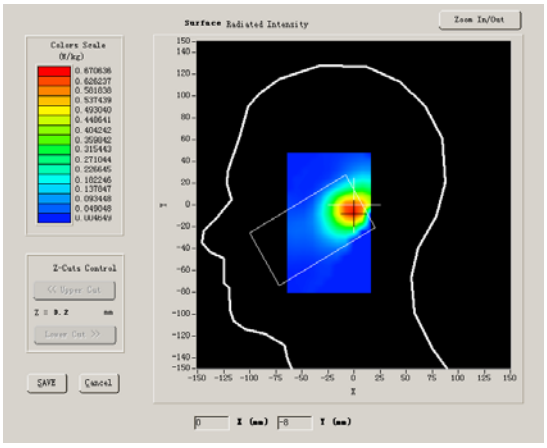
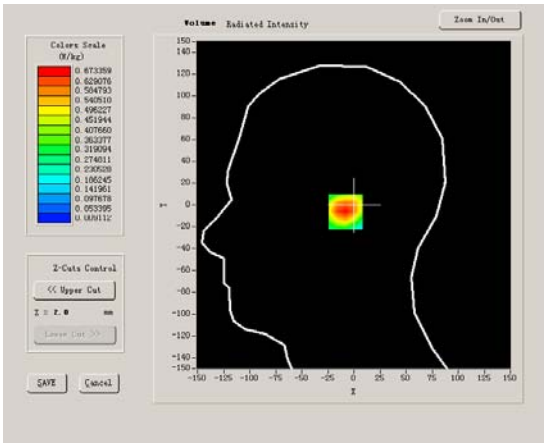
Phantom File	zinf3.txt
Phantom	Left head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-0.220000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

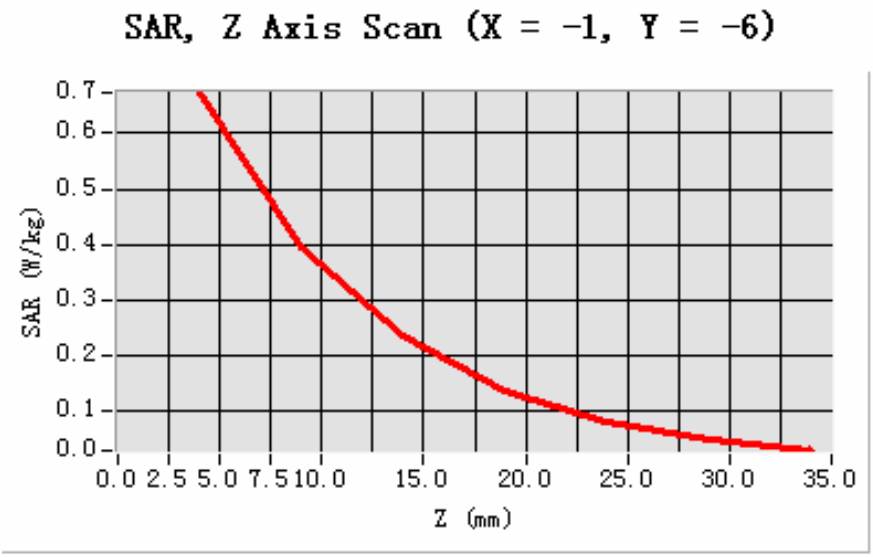
SURFACE SAR	**VOLUME SAR**
	

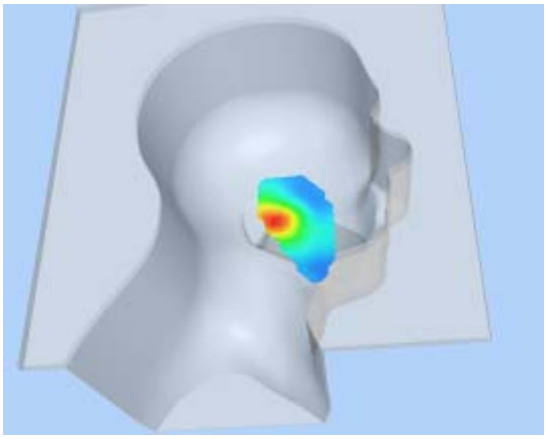
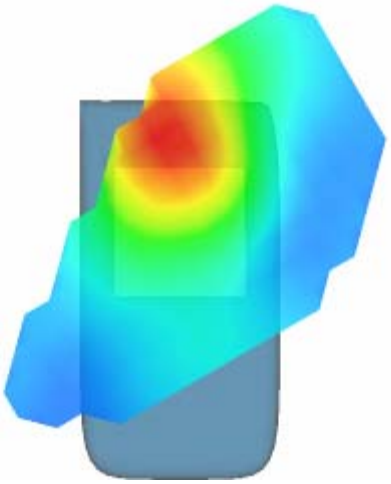
Maximum location: X=-1.00, Y=-6.00

SAR 10g (W/Kg)	0.158357
SAR 1g (W/Kg)	0.263834

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6734	0.3973	0.2374	0.1383	0.0809	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 33

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

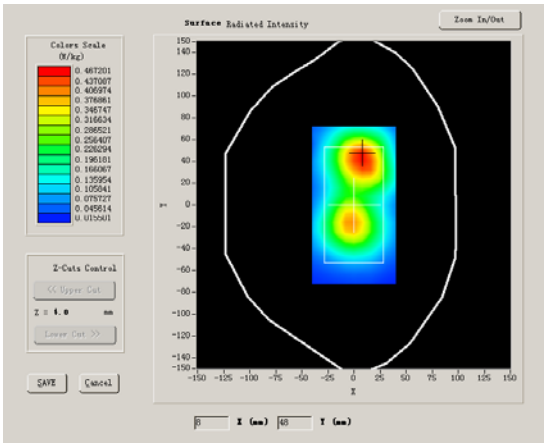
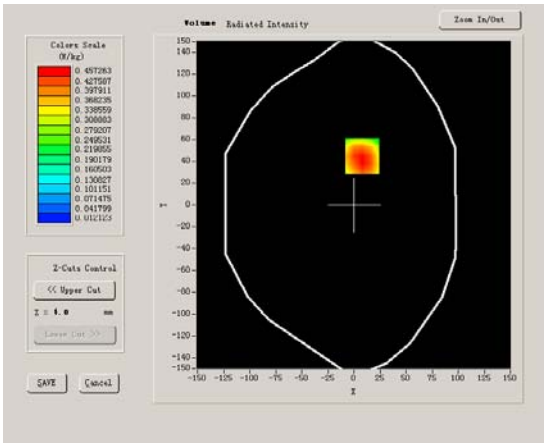
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-0.640000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

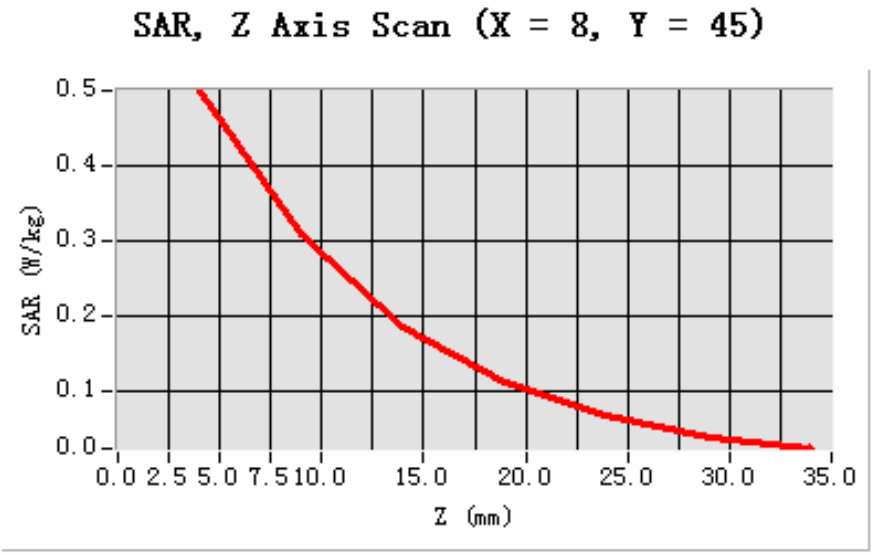
SURFACE SAR	**VOLUME SAR**
	

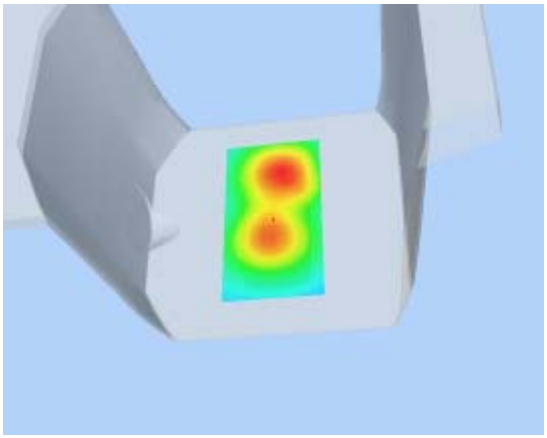
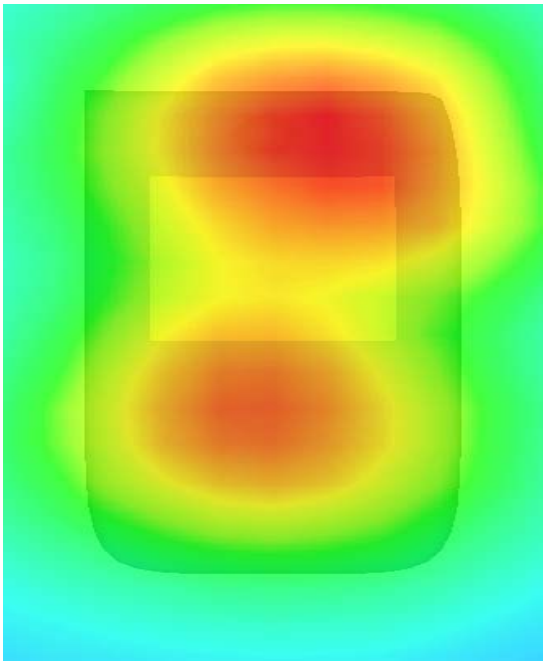
Maximum location: X=8.00, Y=45.00

SAR 10g (W/Kg)	0.391522
SAR 1g (W/Kg)	0.572960

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5012	0.3098	0.1842	0.1123	0.0662	0.0384



3D sceen shot	Hot spot position
	

MEASUREMENT 34

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

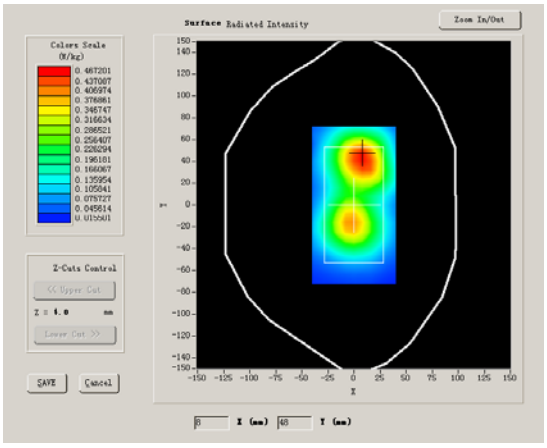
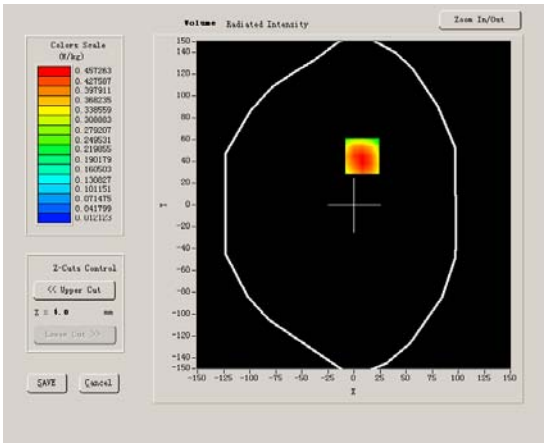
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
Variation (%)	-0.640000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

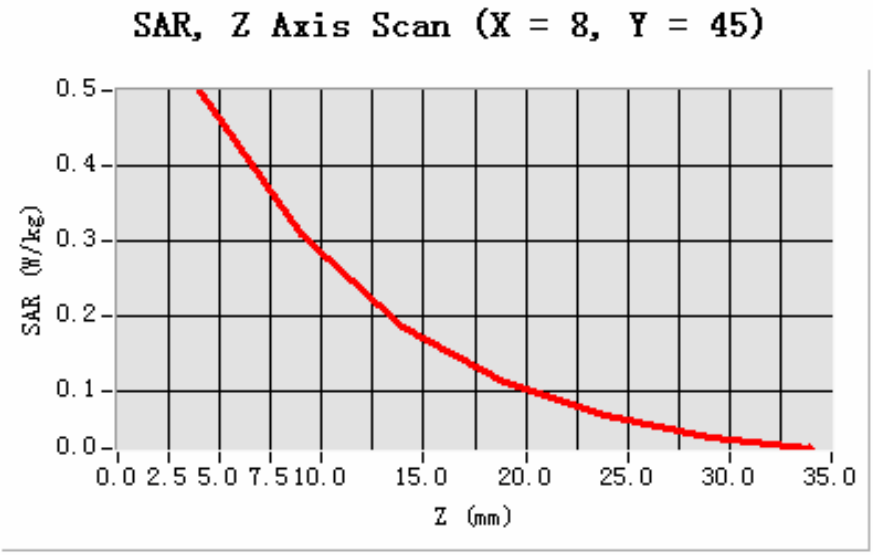
SURFACE SAR	**VOLUME SAR**
	

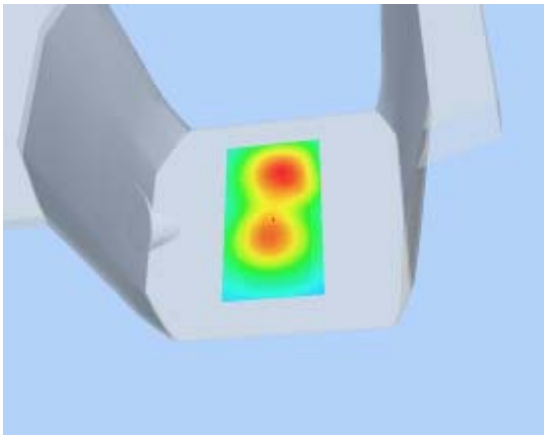
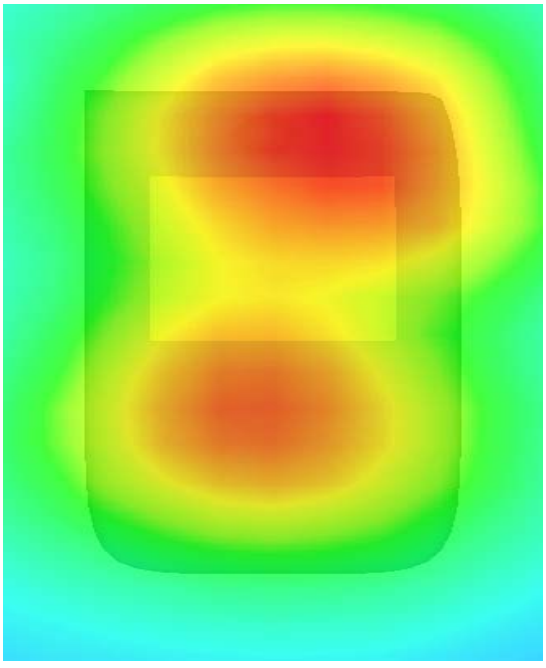
Maximum location: X=8.00, Y=45.00

SAR 10g (W/Kg)	0.256976
SAR 1g (W/Kg)	0.458664

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5012	0.3098	0.1842	0.1123	0.0662	0.0384



3D sceen shot	Hot spot position
	

MEASUREMENT 35

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 7 seconds

A. Experimental conditions.

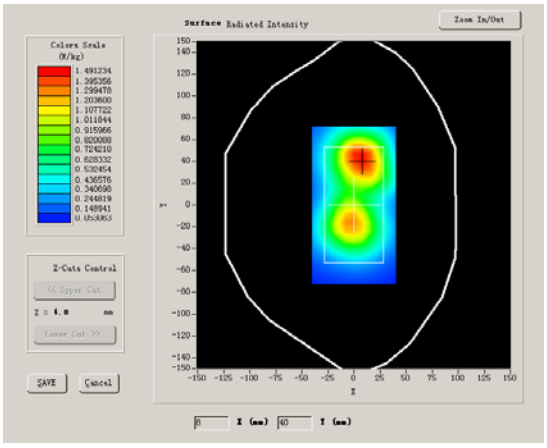
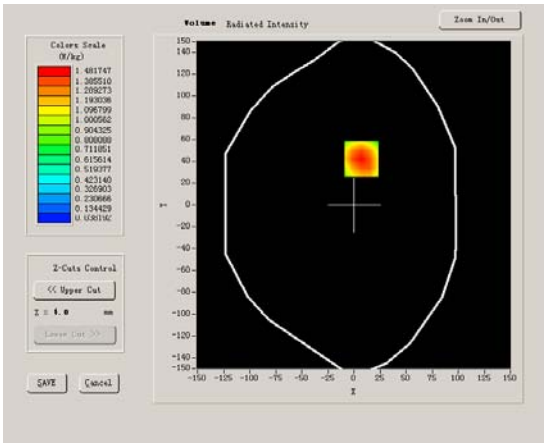
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	52.552665
Relative permittivity	15.070000

Conductivity (S/m)	1.511735
Variation (%)	-2.620000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

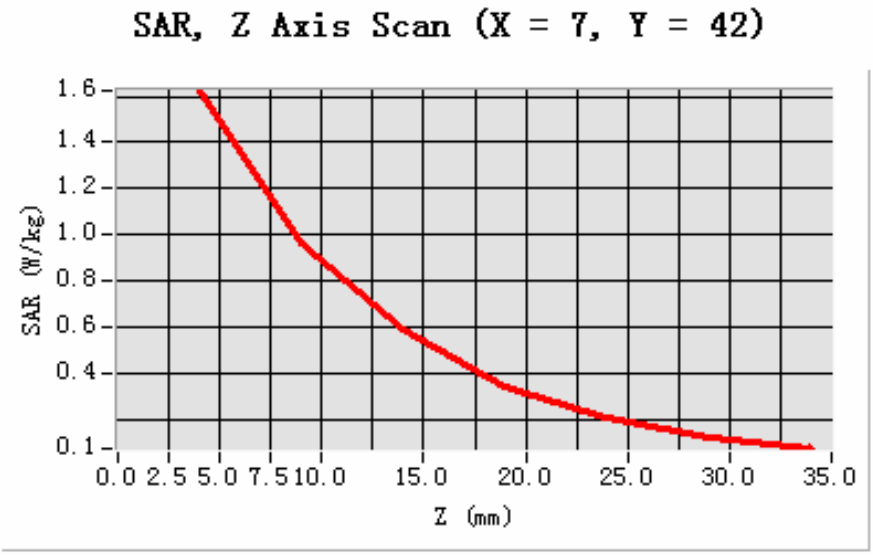
SURFACE SAR	**VOLUME SAR**
	

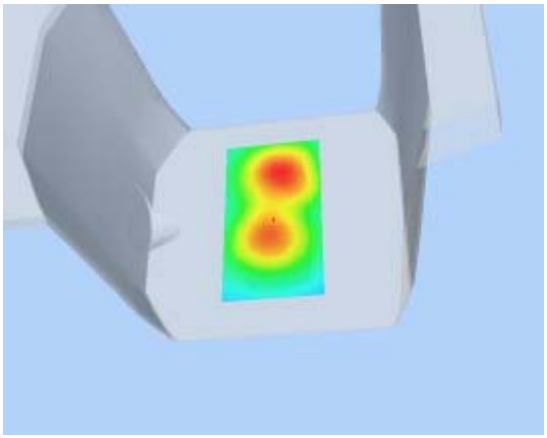
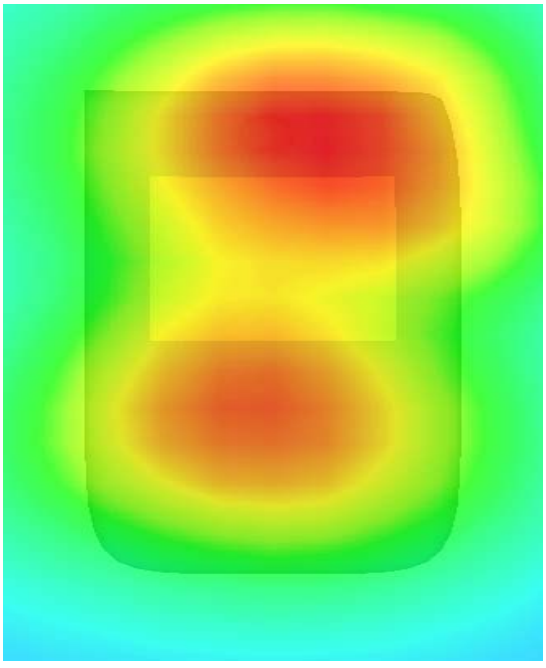
Maximum location: X=7.00, Y=42.00

SAR 10g (W/Kg)	0.256997
SAR 1g (W/Kg)	0.561127

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.6240	0.9642	0.5865	0.3432	0.2052	0.1225



3D sceen shot	Hot spot position
	

MEASUREMENT 36

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

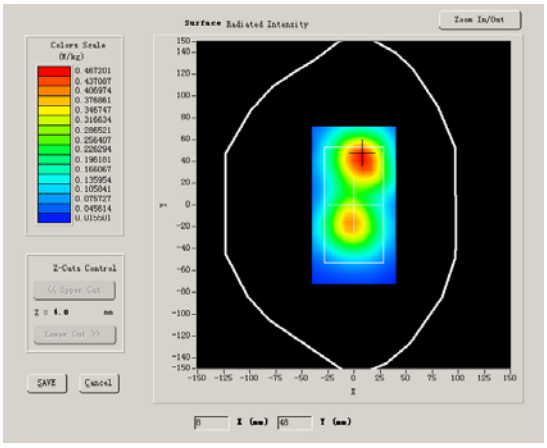
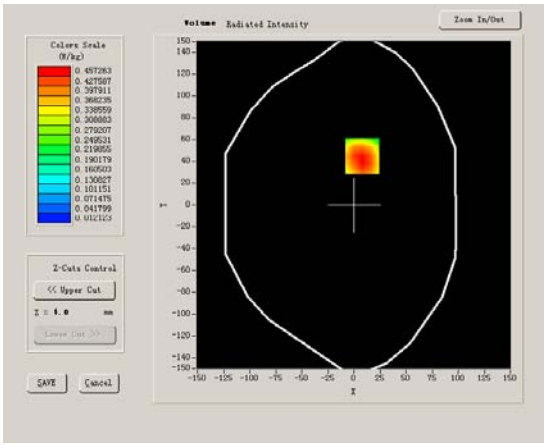
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1747.400024
Relative permittivity (real part)	51.540001
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
Variation (%)	-1.850000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

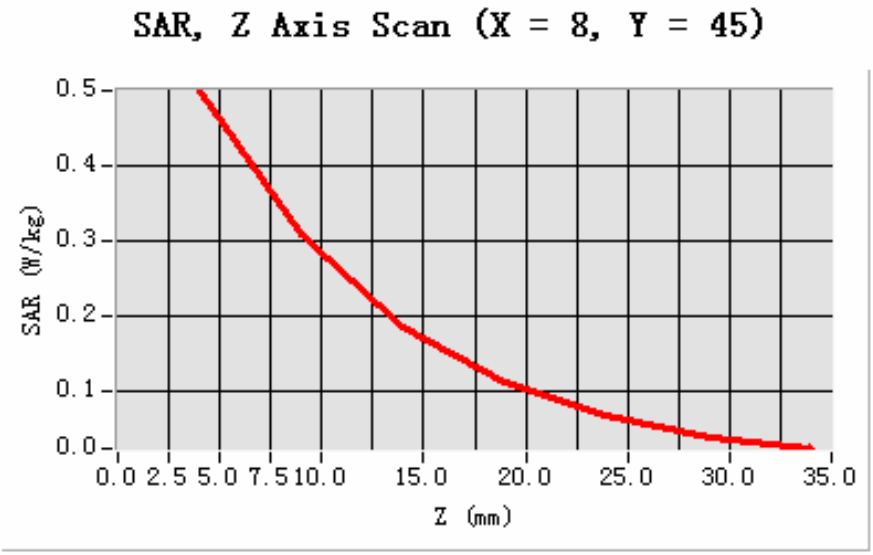
SURFACE SAR	**VOLUME SAR**
	

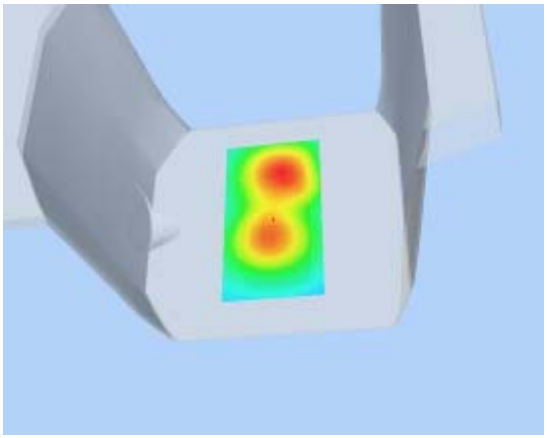
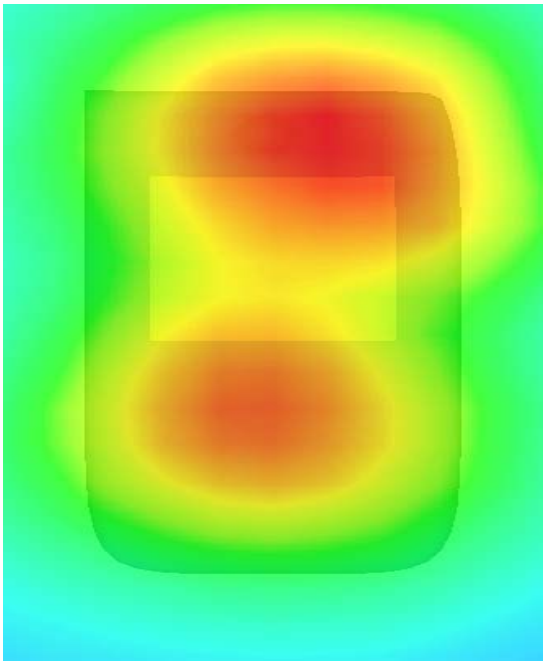
Maximum location: X=8.00, Y=45.00

SAR 10g (W/Kg)	0.283533
SAR 1g (W/Kg)	0.571773

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5012	0.3098	0.1842	0.1123	0.0662	0.0384



3D sceen shot	Hot spot position
	

System Performance Check Data(Head)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

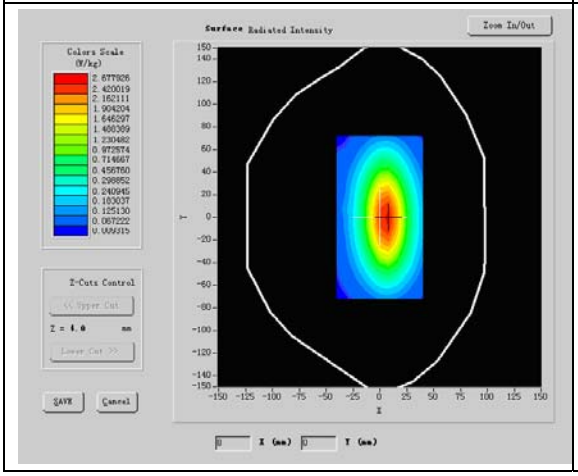
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.490002
Relative permittivity	15.070000

Conductivity (S/m)	0.983918
Variation (%)	-0.050000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

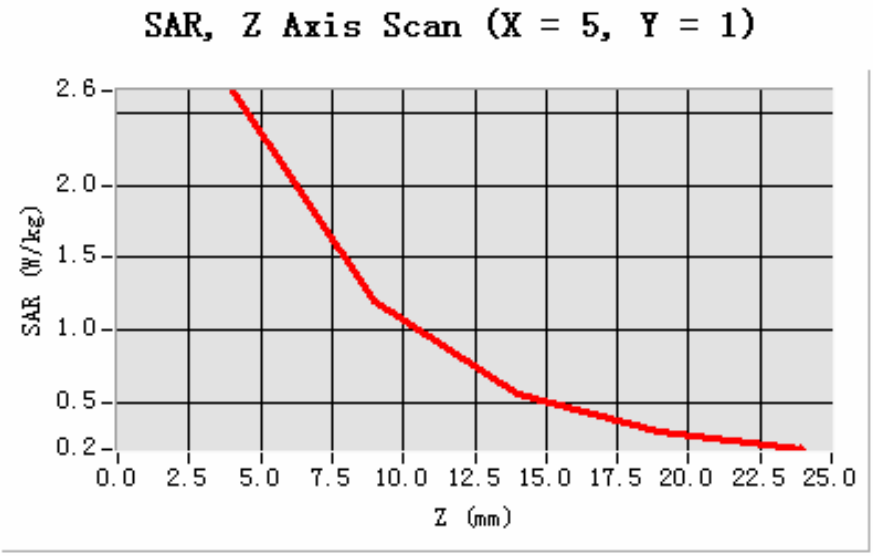
SURFACE SAR	VOLUME SAR
	

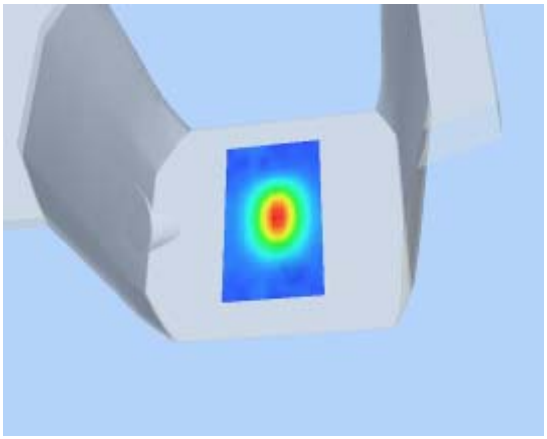
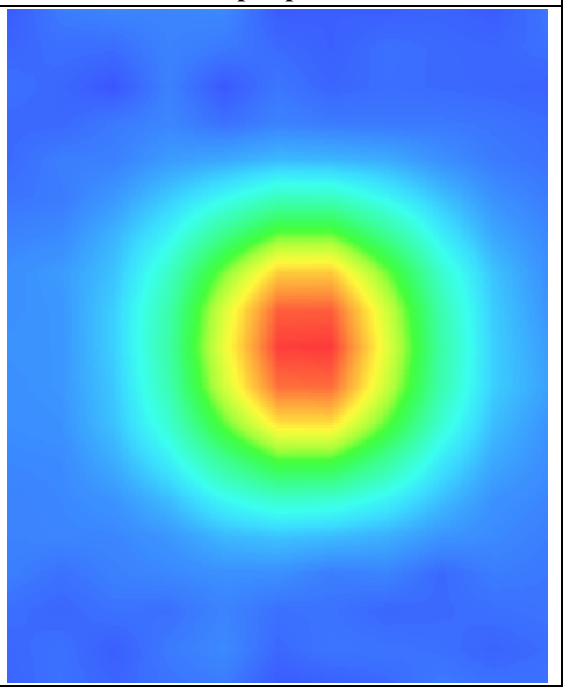
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.715223
SAR 1g (W/Kg)	2.677926

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.6486	1.2069	0.5583	0.3002



3D sceen shot	Hot spot position
	

System Performance Check Data(Head)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

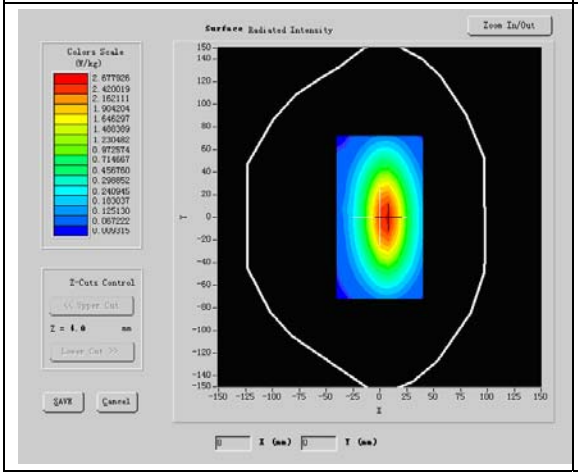
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	40.490002
Relative permittivity	15.070000

Conductivity (S/m)	0.983918
Variation (%)	-0.050000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

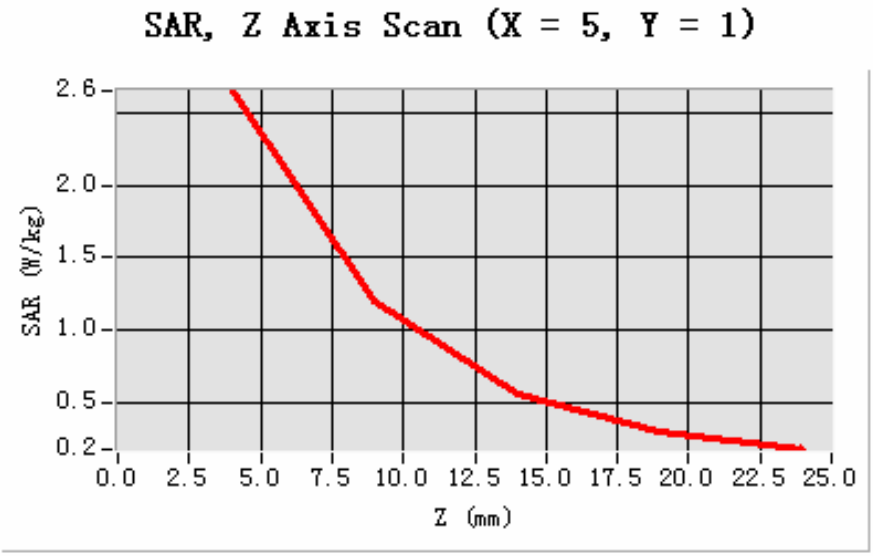
SURFACE SAR	VOLUME SAR
	

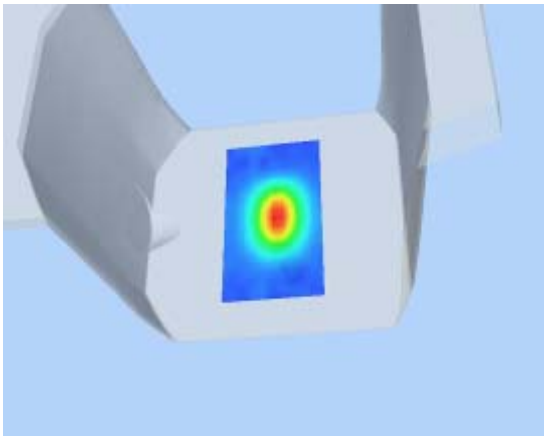
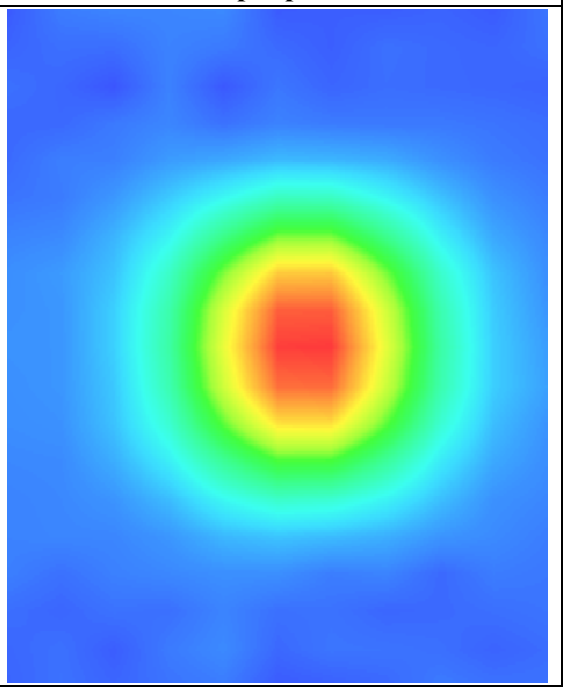
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.715223
SAR 1g (W/Kg)	2.677926

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.6486	1.2069	0.5583	0.3002



3D sceen shot	Hot spot position
	

System Performance Check Data(Head)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

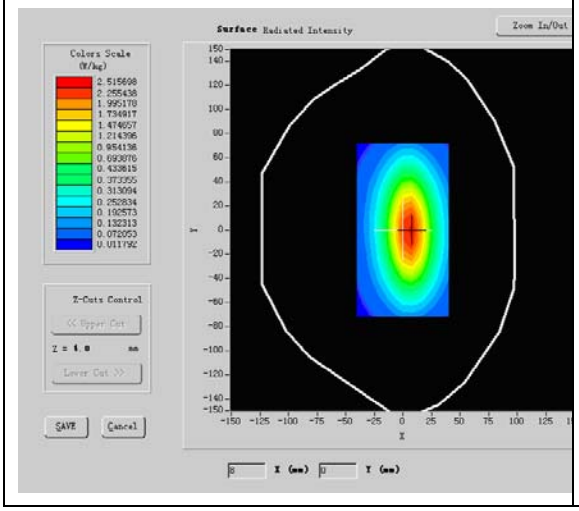
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.930000
Relative permittivity	15.070000

Conductivity (S/m)	1.321229
Variation (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

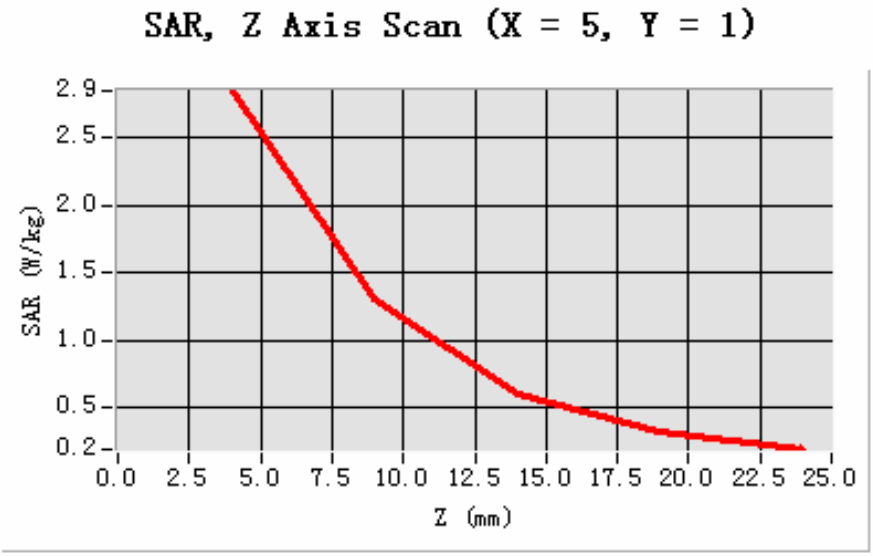
SURFACE SAR	VOLUME SAR
	

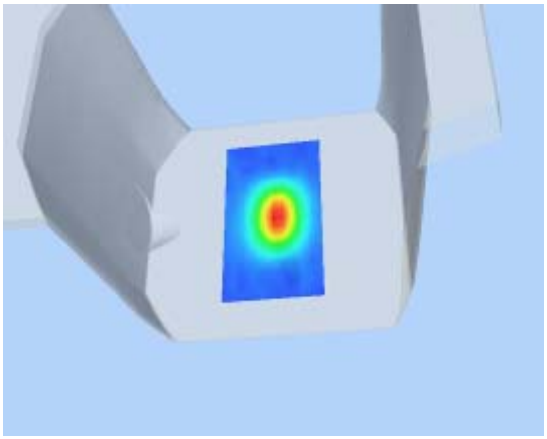
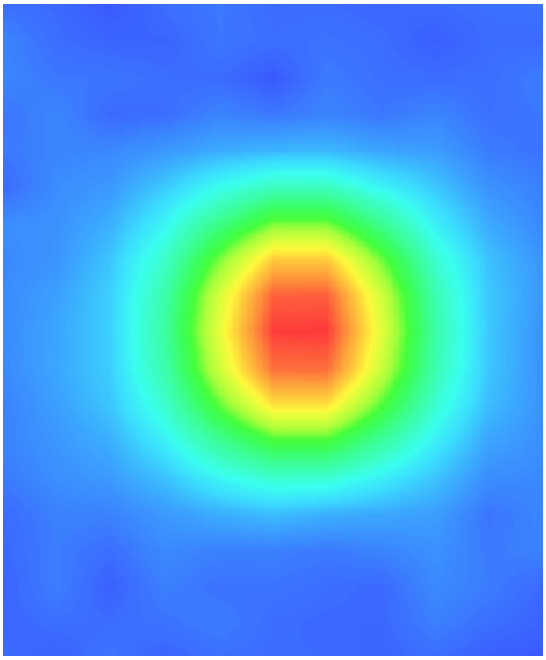
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	4.910003
SAR 1g (W/Kg)	8.455521

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.8536	1.3061	0.6041	0.3211



3D sceen shot	Hot spot position
	

System Performance Check Data(Body)

Type: Phone measurement (Complete)

Area scan resolution: dx=8mm,dy=8mm

Zoom scan resolution: dx=8mm, dy=8mm, dz=5mm

Date of measurement: 10/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

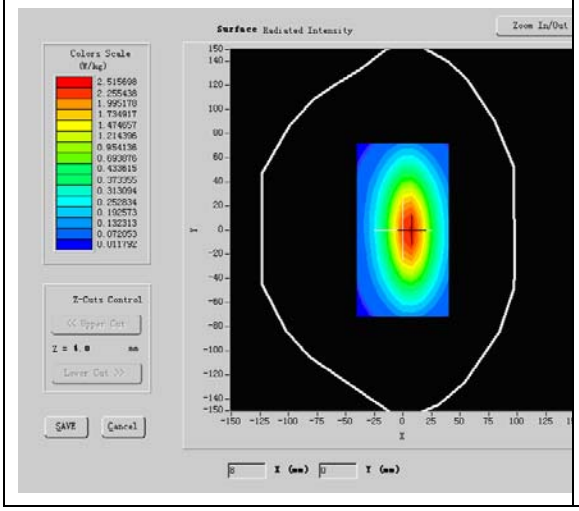
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

Frequency (MHz)	1800.000000
Relative permittivity (real part)	38.930000
Relative permittivity	15.070000

Conductivity (S/m)	1.321229
Variation (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

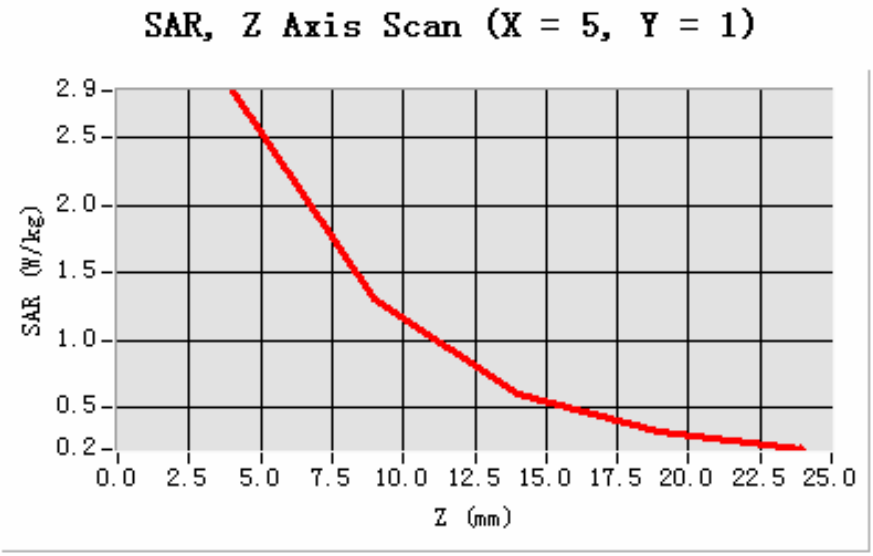
SURFACE SAR	VOLUME SAR
	

Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	4.910003
SAR 1g (W/Kg)	8.455521

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.8536	1.3061	0.6041	0.3211



3D sceen shot	Hot spot position