FCC SAR

TEST REPORT

of

Media Touch

Model Name: TVA201

Trade Name: technicolor

Report No.: SZ10080166S01

prepared for

Beijing Thomson Commerce Co., Ltd

6/F, Building A Technology Fortune Center, No.8 Xue Qing Road, Hai Dian District, Beijing, China

Prepared by

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CTIA Authorized Test Lab

LAB CODE 20081223-00

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Change History		
Issue	Date	Reason for change
1.0	Nov. 2, 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 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. 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.:	SZ10080166S01
Date of Issue:	Nov. 2, 2010
Date of Tests:	Sep. 28, 2010 –Sep. 28, 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 has verified that all tests as listed in the section 10 of this report have been performed successfully 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.
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
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 (see Annex A)

2.4. List of Test Equipments

No.	Instrument	Type	Cal. Date	Cal. Due
1	PC	Dell (Pentium IV 2.4GHz, SN:X10-23533)	(n.a)	(n.a)
2	Network Emulator	Rohde&Schwarz (CMU200, SN:105894)	2010-9-26	1year
3	Voltmeter	Keithley (2000, SN:1000572)	2010-9-24	1year
4	Synthetizer	Rohde&Schwarz (SML_03, SN:101868)	2010-9-24	1year
5	Amplifier	Nucl udes (ALB216, SN:10800)	2010-9-24	1year
6	Power Meter	Rohde&Schwarz (NRVD, SN:101066)	2010-9-24	1year
7	Probe	Antennessa (SN:SN_3708_EP80)	2010-9-24	1year
8	Phantom	Antennessa (SN:SN_36_08_SAM62)	2010-9-24	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:	Beijing Thomson Commerce Co., Ltd
Address:	6/F, Building A Technology Fortune Center, No.8 Xue Qing Road, Hai Dian District, Beijing, China

3.2. Identification of Manufacturer

Company Name:	Hong Fu Jin Percision Industry (Shen Zhen) Co., Ltd
Address:	No.2, 2nd Donghuan Road 10th Yousong Industrial District Longhua Town, Baoan, Shenzhen, Guang Dong, China

3.3. Equipment Under Test (EUT)

Brand Name:	Media Touch
Type Name:	Media Touch
Marking Name:	TVA201
Hardware Version:	PEM3
Software Version:	V006
Frequency Bands:	WIFI 802.11 b/g/n; DECT
Modulation Type:	GMSK, DSSS
Data Rate:	802.11b: 11/ 5.5/ 2/ 1Mbps 802.11g: 54/ 48/ 36/ 24/ 18/ 12/ 9/ 6Mbps Draft 802.11n (20MHz): 65/58.5/52/39/26/19.5/13/6.5Mbps Draft 802.11n (40MHz): 135/121.5/108/81/54/40.5/27/13.5Mbps
Antenna type:	Fixed Internal Antenna
Development Stage:	Identical prototype
Battery Model:	GPS 065590
Battery specification:	3450mAh 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, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	PEM3	V006

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:	802.11 b/g/n DECT		

Test tool is Art provided by client. It can control EUT to transmit continuously at specific channel, output power level, data rates and 100 % duty signal.

Comparing output power of all modulations and data rates of each mode can find the lowest data rates has max output power. Therefore, EUT will set under lowest data rates to test.

The EUT is the Wireless Internet connected portable device controlled by a touch panel and supporting services around multimedia, communication and infotainment. And the TVA201 also contains a DECT module supports 1800MHz Band, it based GFSK modulation to transmit voice data, the model TVA200 is same with TVA201 just no DECT module, and only the TVA201 was tested in this report.

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:

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

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

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

, 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

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

, 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.

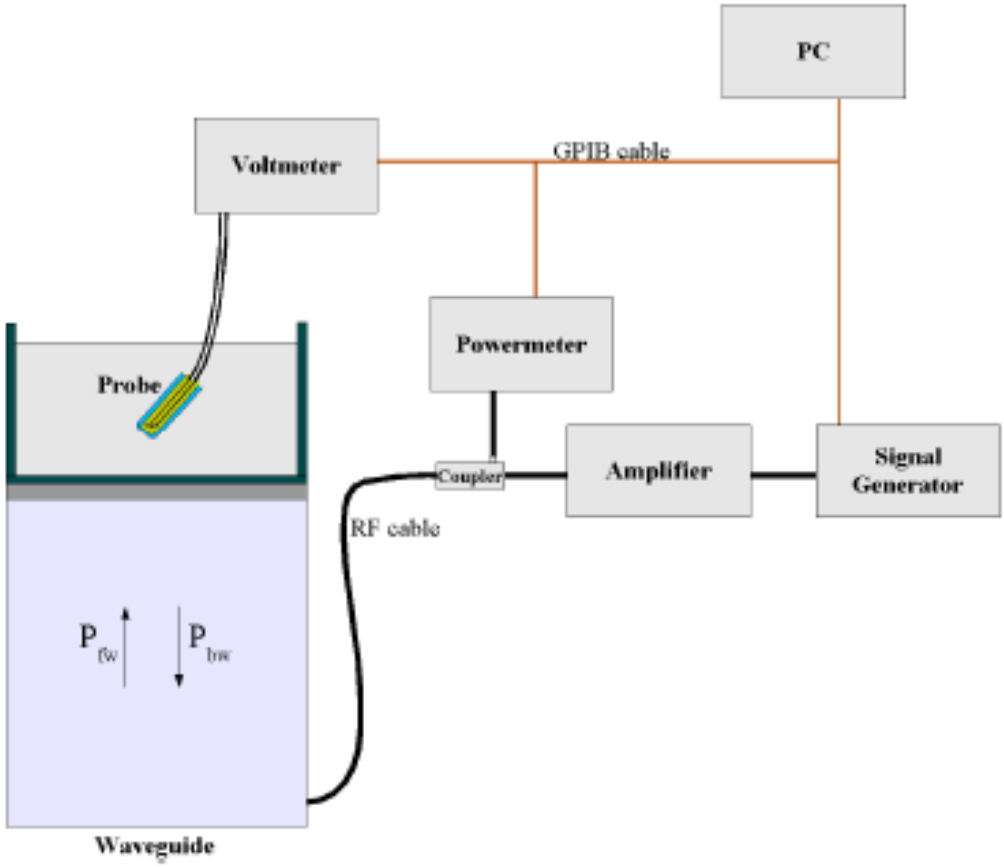
5.2. Probe

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 62209 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 62209 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)

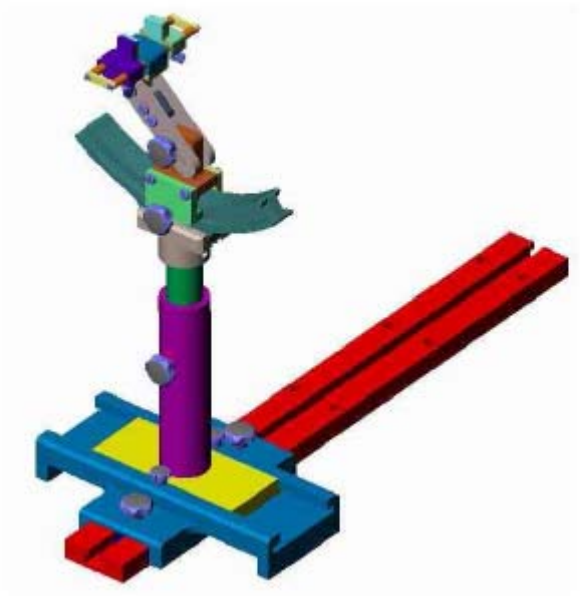
where DCP is the diode compression point in mV.

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 2450MHz, 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 20litres for a horizontal bath phantom.

Recipes for Tissue Simulating Liquid

Ingredients (% by weight)	Frequency Band	
	2450MHz	1800 MHz
Tissue Type	Body	Body
Water	52.4	54.90
Salt(NaCl)	1.4	0.18
Sugar	45.0	0.0
HEC	1.0	0.0
Bactericide	0.1	0.0
Triton	0.0	0.0
DGBE	0.0	44.92
Acticide SPX	0.0	0.0
Dielectric Constant	52.7	40.0
Conductivity (S/m)	1.95	1.40

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 Body Tissue Simulating Liquid

Temperature: 22.0~23.8°C, humidity: 54~60%.			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	1800 MHZ	53.3	1.52
Validation value (Sep. 28)	1800 MHZ	53.271999	1.478356
Target value	2450 MHz	52.7	1.95
Validation value (Sep. 28)	2450 MHz	51.562264	1.915574

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 (+-%)	Vi
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 2450MHz. 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	1800MHz: SN 36/08 DIPF 101 2450MHz: SN 36/08 DIPJ103

8.2. Validation Results

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

Frequency	1800MHz	2450 MHz
Target value（1g）	19.8 W/Kg	52.4 W/Kg(body)
250 mW input power	4.894 W/Kg (head)	12.9 W/Kg (body)
Test value（1g）	19.576 W/Kg (head)	51.6 W/Kg (body)

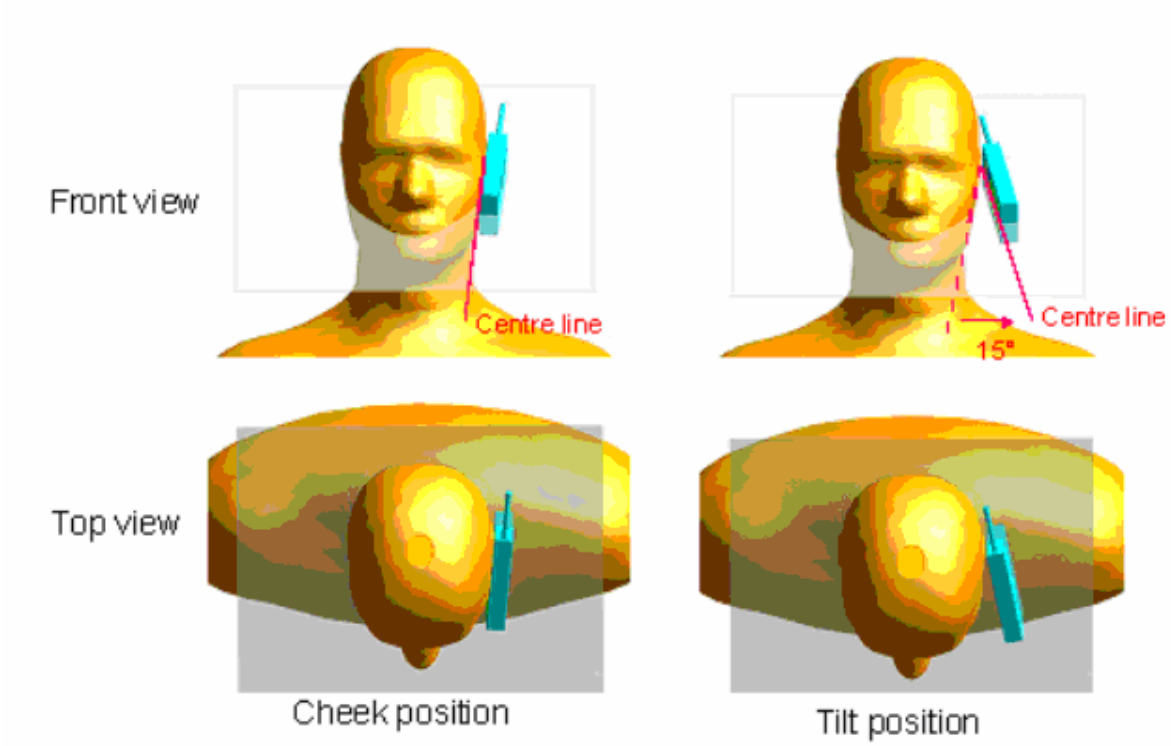
Note: System checks the specific test data please see page 148-153

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.

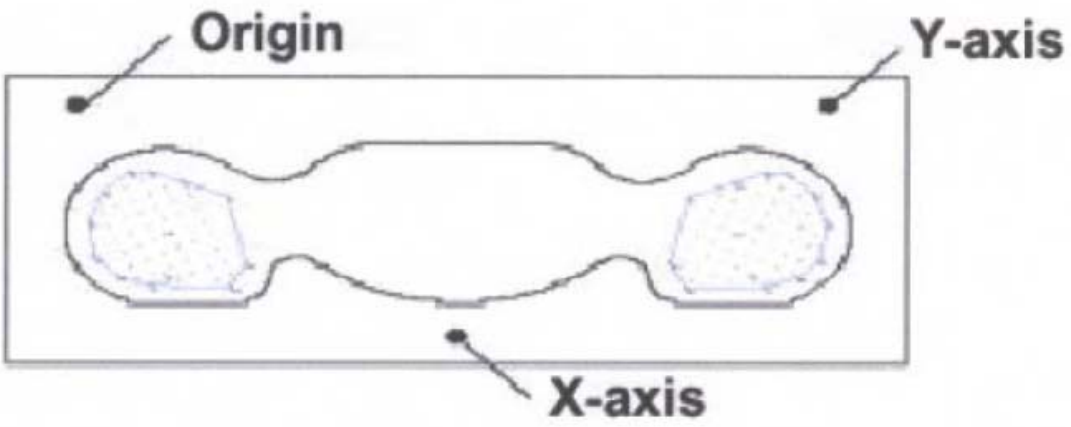
Remark: Please refer to Appendix B for the test setup photos.

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 0cm(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. Test Results List

Summary of Measurement Results (WIFI 802.11b)
SAR Values (WIFI 802.11b), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Peak	
	1.6	
Test Case	Measurement Result (W/kg)	
	1g Average (W/kg)	Power level (dBm)
Validation Plane with Body device position on Channel Middle Data Rate 1（Horizontal-Up）	0.317	14.73
Validation Plane with Body device position on Channel Middle Data Rate 1（Horizontal-Down）	0.277	14.73
Validation Plane with Body device position on Channel Middle Data Rate 2（Horizontal-Down）	0.257	14.73
Validation Plane with Body device position on Channel Middle Data Rate 5.5（Horizontal-Down）	0.242	14.73
Validation Plane with Body device position on Channel Middle Data Rate 11（Horizontal-Down）	0.200	14.73
Validation Plane with Body device position on Channel Low Data Rate 1（Horizontal-Down）	0.275	14.92
Validation Plane with Body device position on Channel High Data Rate 1（Horizontal-Down）	0.278	14.88

Summary of Measurement Results (WIFI 802.11g)
SAR Values (WIFI 802.11g), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Peak	
	1.6	
Test Case	Measurement Result (W/kg)	
	1g Average (W/kg)	Power level (dBm)
Validation Plane with Body device position on Channel Middle Data Rate 6（Horizontal-Up）	0.395	15.41
Validation Plane with Body device position on Channel Middle Data Rate 6（Horizontal-Down）	0.378	15.41
Validation Plane with Body device position on Channel Middle Data Rate 9（Horizontal-Down）	0.356	15.41
Validation Plane with Body device position on Channel	0.336	15.41

Middle Data Rate 12（Horizontal-Down）		
Validation Plane with Body device position on Channel Middle Data Rate 18（Horizontal-Down）	0.338	15.41
Validation Plane with Body device position on Channel Middle Data Rate 24（Horizontal-Down）	0.298	15.41
Validation Plane with Body device position on Channel Middle Data Rate 36（Horizontal-Down）	0.300	15.41
Validation Plane with Body device position on Channel Middle Data Rate 48（Horizontal-Down）	0.278	15.41
Validation Plane with Body device position on Channel Middle Data Rate 54（Horizontal-Down）	0.256	15.41
Validation Plane with Body device position on Channel Low Data Rate 6（Horizontal-Down）	0.419	15.72
Validation Plane with Body device position on Channel High Data Rate 6（Horizontal-Down）	0.389	15.01

Summary of Measurement Results (WIFI 802.11 n)
SAR Values (WIFI 802.11 n), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Peak	
	1.6	
Test Case	Measurement Result (W/kg)	
	1g Average (W/kg)	Power level (dBm)
Validation Plane with Body device position on Channel Middle Data Rate 13.5（Horizontal-Up）	0.378	15.47
Validation Plane with Body device position on Channel Middle Data Rate 13.5（Horizontal-Down）	0.346	15.47
Validation Plane with Body device position on Channel Middle Data Rate 27（Horizontal-Down）	0.344	15.47
Validation Plane with Body device position on Channel Middle Data Rate 40.5（Horizontal-Down）	0.349	15.47
Validation Plane with Body device position on Channel Middle Data Rate 54（Horizontal-Down）	0.334	15.47
Validation Plane with Body device position on Channel Middle Data Rate 81（Horizontal-Down）	0.311	15.47
Validation Plane with Body device position on Channel Middle Data Rate 108（Horizontal-Down）	0.306	15.47
Validation Plane with Body device position on Channel Middle Data Rate 121.5（Horizontal-Down）	0.317	15.47

Validation Plane with Body device position on Channel Middle Data Rate 135（Horizontal-Down）	0.343	15.47
Validation Plane with Body device position on Channel Low Data Rate 13.5（Horizontal-Down）	0.343	15.79
Validation Plane with Body device position on Channel High Data Rate 13.5（Horizontal-Down）	0.376	12.87

Summary of Measurement Results (DECT)
SAR Values (DECT), Measured against the body.

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Peak	
	1.6	
Test Case	Measurement Result (W/kg)	
	1g Average (W/kg)	Power level (dBm)
Validation Plane with Body device position on Channel Low（Horizontal-Up）	0.424	20.06
Validation Plane with Body device position on Channel Middle（Horizontal-Up）	0.462	19.98
Validation Plane with Body device position on Channel High（Horizontal-Up）	0.484	20.01
Validation Plane with Body device position on Channel Low（Horizontal-Down）	0.638	20.06
Validation Plane with Body device position on Channel Middle（Horizontal-Down）	0.668	19.98
Validation Plane with Body device position on Channel High（Horizontal-Down）	0.642	20.01

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

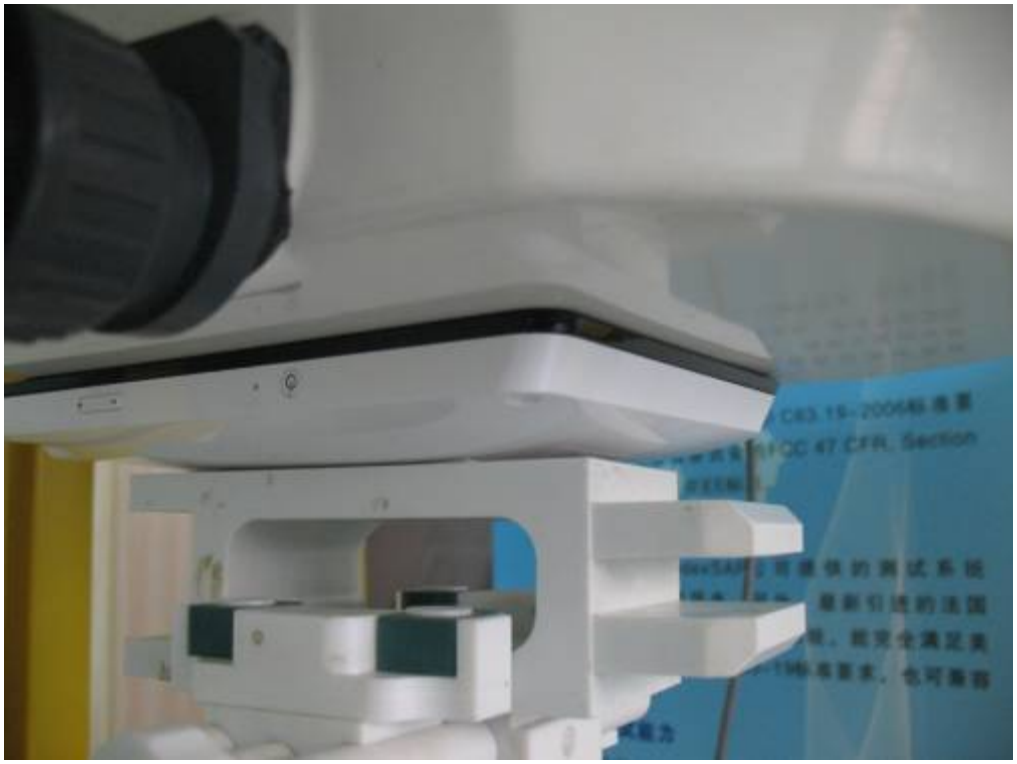
Date of Initial Accreditation: 2008-07-01

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 Horizontal-Up



2 EUT Horizontal-Down

Liquid Level Photo

Annex C Graph Test Results

TYPE	BAND	PARAMETERS
	802.11 b	Measurement 1: Validation Plane with Body device position on Data Rate 1 （**Horizontal-Up**） Measurement 2: Validation Plane with Body device position on Data Rate 1（**Horizontal-Down**） Measurement 3: Validation Plane with Body device position on Data Rate 2（**Horizontal-Down**） Measurement 4: Validation Plane with Body device position on Data Rate 5.5（**Horizontal-Down**） Measurement 5: Validation Plane with Body device position on Data Rate 11（**Horizontal-Down**） Measurement 6: Validation Plane with Body device position on Data Rate 1 （**Horizontal-Down**） Measurement 7: Validation Plane with Body device position on Data Rate 1 （**Horizontal-Down**）
	802.11 g	Measurement 8: Validation Plane with Body device position on Data Rate 6 （**Horizontal-Up**） Measurement 9: Validation Plane with Body device position on Data Rate 6（**Horizontal-Down**） Measurement 10: Validation Plane with Body device position on Data Rate 9（**Horizontal-Down**） Measurement 11: Validation Plane with Body device position on Data Rate 12（**Horizontal-Down**） Measurement 12: Validation Plane with Body device position on Data Rate 18（**Horizontal-Down**） Measurement 13: Validation Plane with Body device position on Data Rate 24（**Horizontal-Down**） Measurement 14: Validation Plane with Body device position on Data Rate 36（**Horizontal-Down**） Measurement 15: Validation Plane with Body device position on Data Rate 48（**Horizontal-Down**） Measurement 16: Validation Plane with Body device position on Data Rate 54（**Horizontal-Down**） Measurement 17: Validation Plane with Body device position on Data Rate 6 （**Horizontal-Down**） Measurement 18: Validation Plane with Body device position on Data Rate 6 （**Horizontal-Down**）

	802.11 n	Measurement 19: Validation Plane with Body device position on Data Rate 13.5 （**Horizontal-Up**） Measurement 20: Validation Plane with Body device position on Data Rate 13.5（**Horizontal-Down**） Measurement 21: Validation Plane with Body device position on Data Rate 27（**Horizontal-Down**） Measurement 22: Validation Plane with Body device position on Data Rate 40.5（**Horizontal-Down**） Measurement 23: Validation Plane with Body device position on Data Rate 54（**Horizontal-Down**） Measurement 24: Validation Plane with Body device position on Data Rate 81（**Horizontal-Down**） Measurement 25: Validation Plane with Body device position on Data Rate 108（**Horizontal-Down**） Measurement 26: Validation Plane with Body device position on Data Rate 121.5（**Horizontal-Down**） Measurement 27: Validation Plane with Body device position on Data Rate 135（**Horizontal-Down**） Measurement 28: Validation Plane with Body device position on Data Rate 13.5 （**Horizontal-Down**） Measurement 29: Validation Plane with Body device position on Data Rate 13.5 （**Horizontal-Down**）
	DECT	Measurement 30: Validation Plane with Body device position on Low Channel in DECT mode （**Horizontal-Up**） Measurement 31: Validation Plane with Body device position on Middle Channel in DECT mode （**Horizontal-Up**） Measurement 32: Validation Plane with Body device position on High Channel in DECT mode （**Horizontal-Up**） Measurement 33: Validation Plane with Body device position on Low Channel in DECT mode （**Horizontal-Down**） Measurement 34: Validation Plane with Body device position on Middle Channel in DECT mode （**Horizontal-Down**） Measurement 35: Validation Plane with Body device position on High Channel in DECT mode （**Horizontal-Down**）

MEASUREMENT 1

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 8 seconds

A. Experimental conditions.

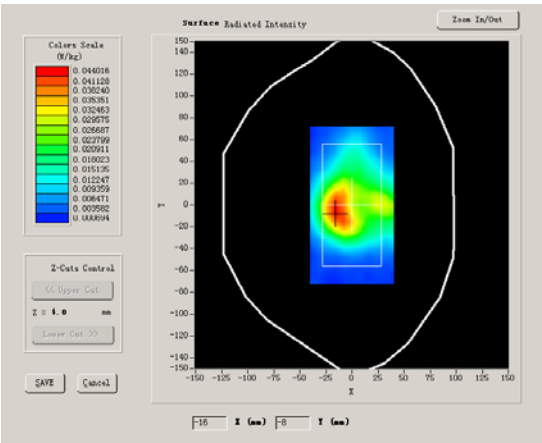
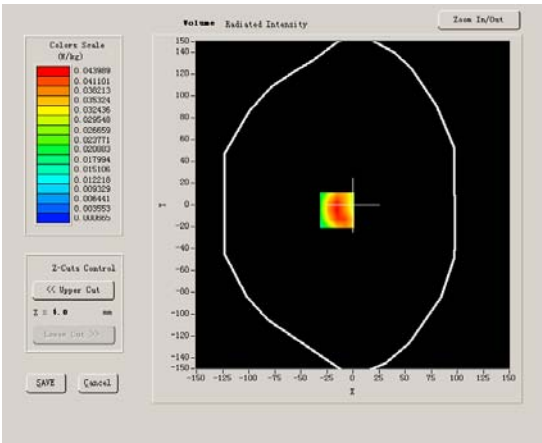
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	1.360000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

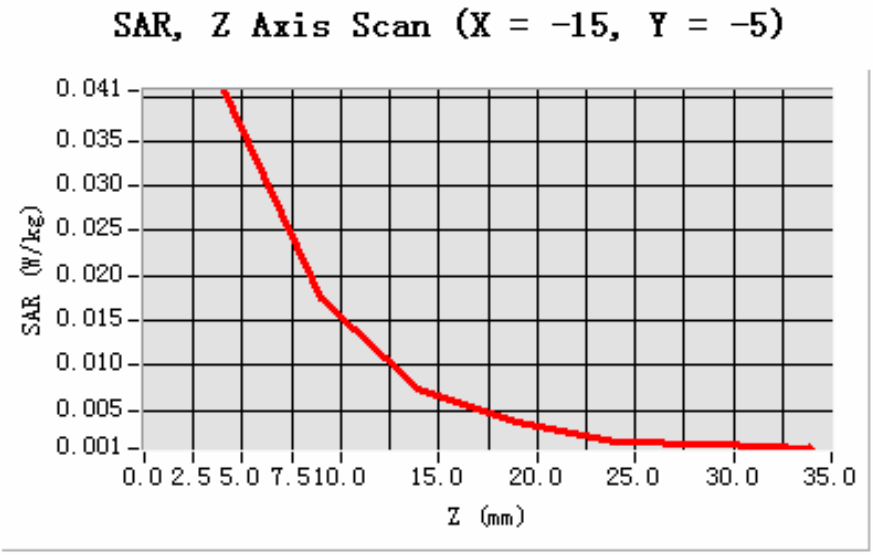
SURFACE SAR	**VOLUME SAR**
	

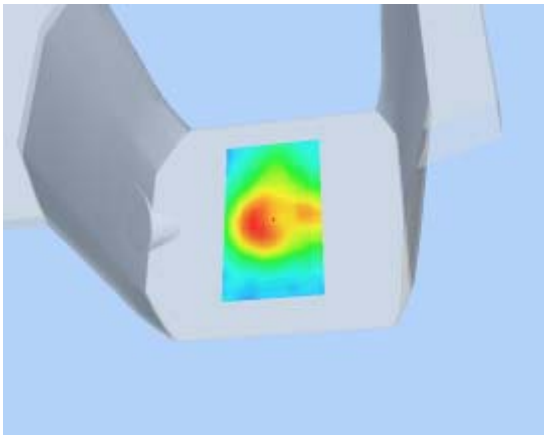
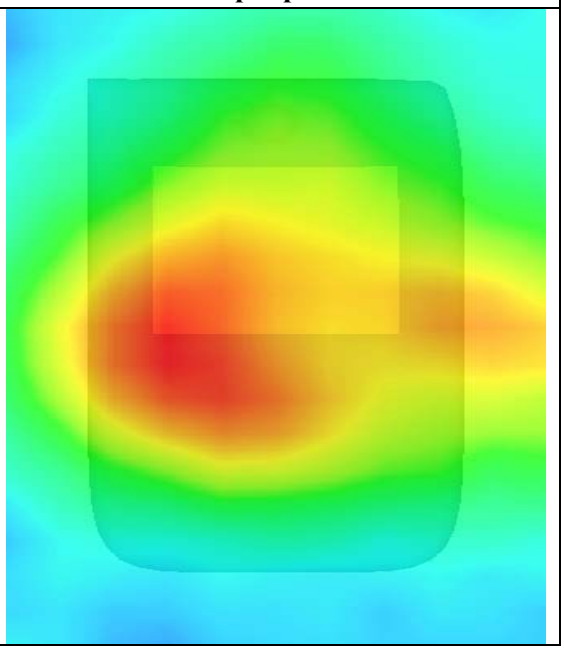
Maximum location: X=-15.00, Y=-5.00

SAR 10g (W/Kg)	0.163734
SAR 1g (W/Kg)	0.317435

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4274	0.2715	0.1650	0.1015	0.0665	0.0425



3D sceen shot	Hot spot position
	

MEASUREMENT 2

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 9 seconds

A. Experimental conditions.

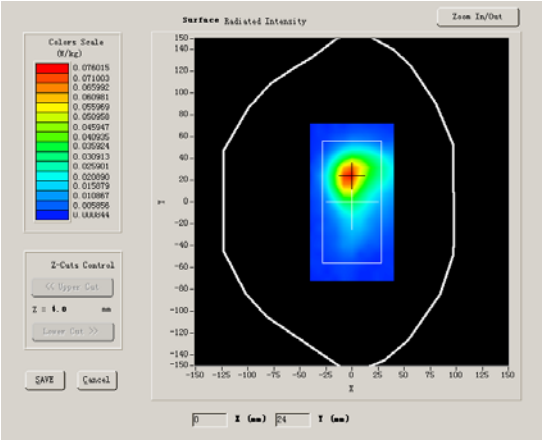
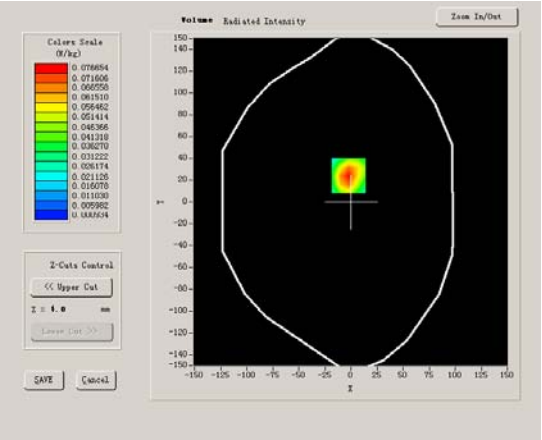
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	-3.940000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

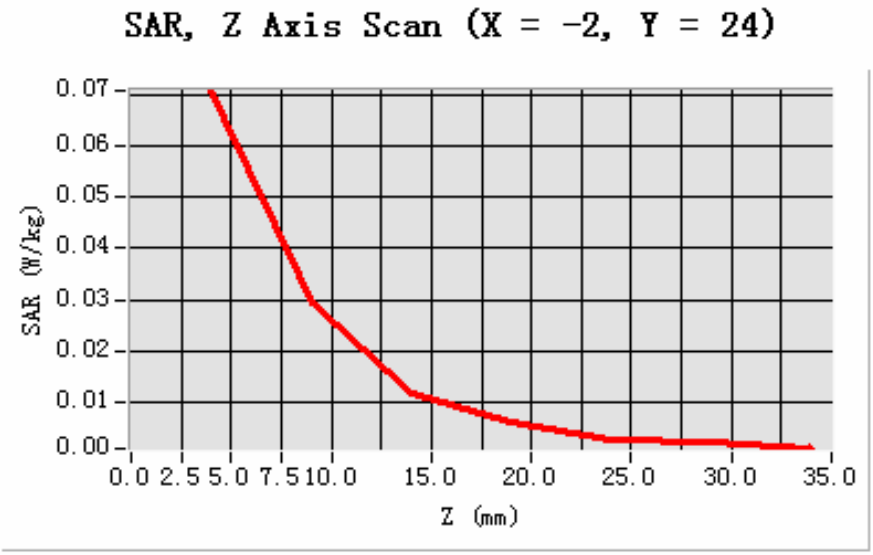
SURFACE SAR	**VOLUME SAR**
	

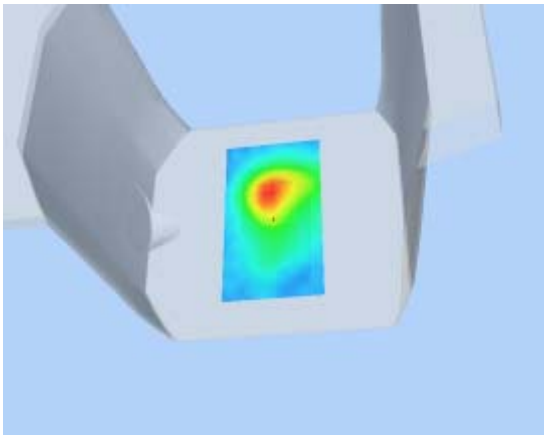
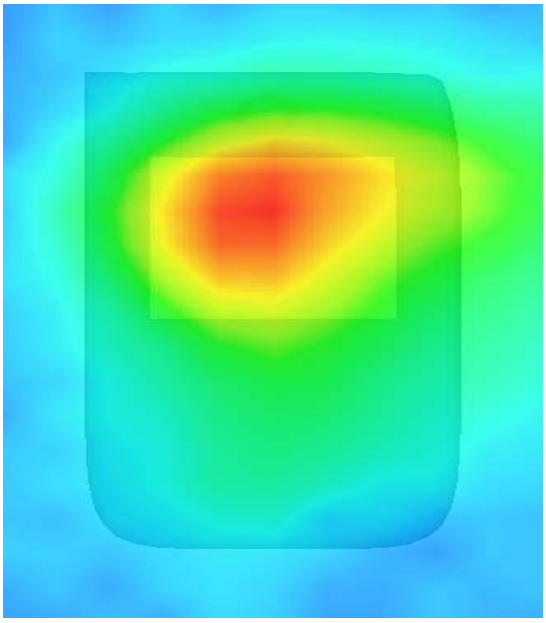
Maximum location: X=-2.00, Y=24.00

SAR 10g (W/Kg)	0.146835
SAR 1g (W/Kg)	0.277835

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3461	0.2328	0.1506	0.0969	0.0654	0.0436



3D sceen shot	Hot spot position
	

MEASUREMENT 3

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 8 seconds

A. Experimental conditions.

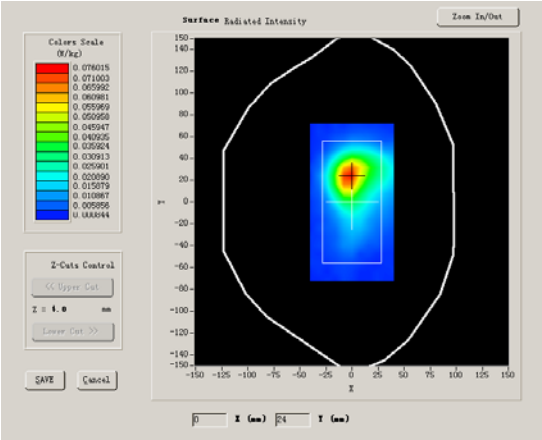
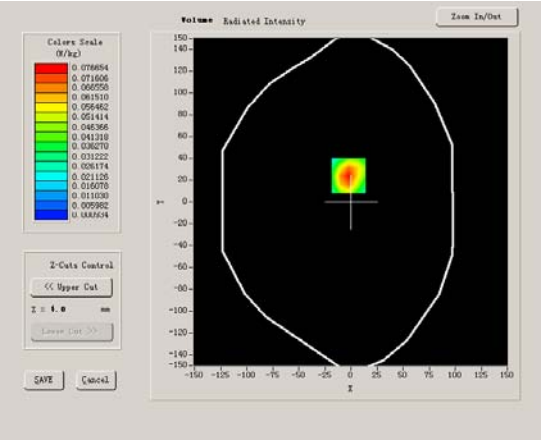
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	1.360000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

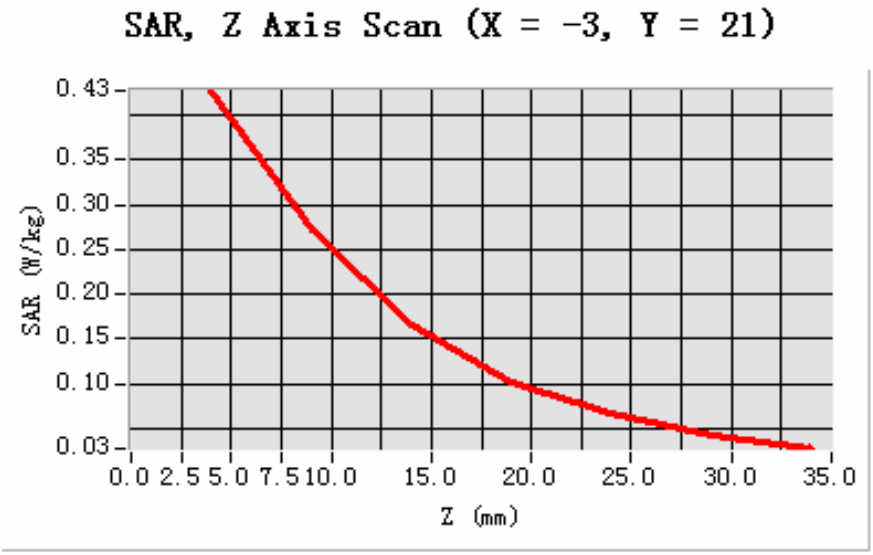
SURFACE SAR	**VOLUME SAR**
	

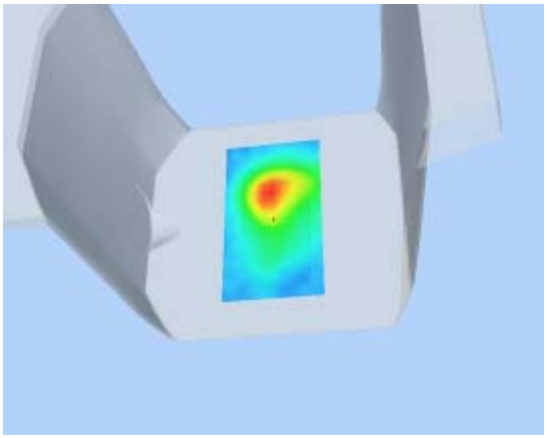
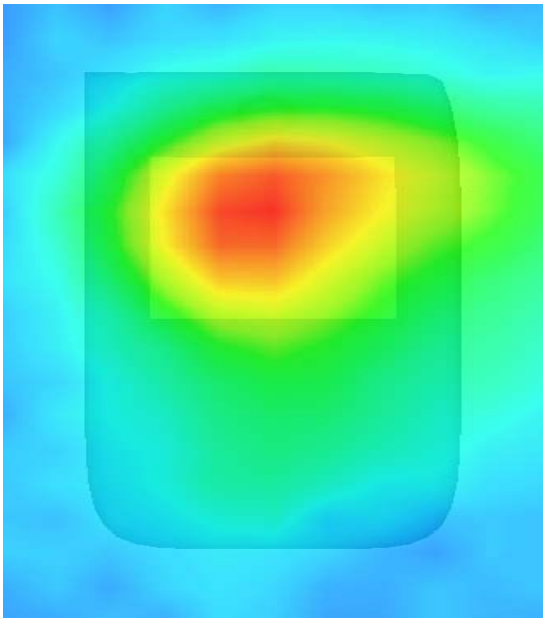
Maximum location: X=-3.00, Y=21.00

SAR 10g (W/Kg)	0.133653
SAR 1g (W/Kg)	0.257353

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4274	0.2715	0.1650	0.1015	0.0665	0.0425



3D sceen shot	Hot spot position
	

MEASUREMENT 4

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 8 seconds

A. Experimental conditions.

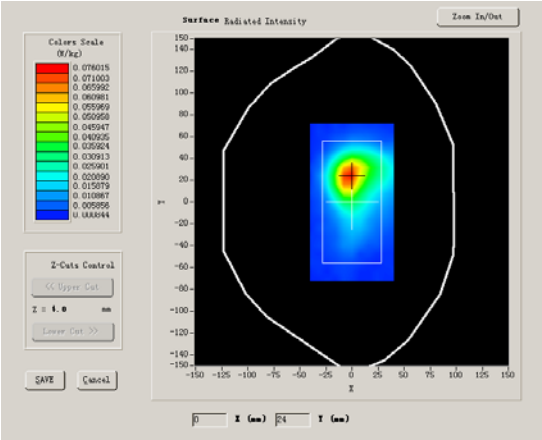
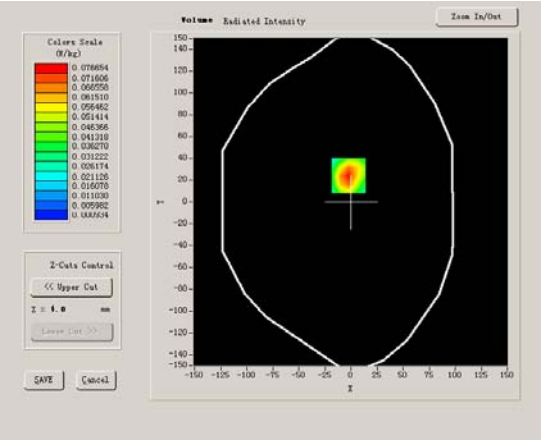
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	1.360000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

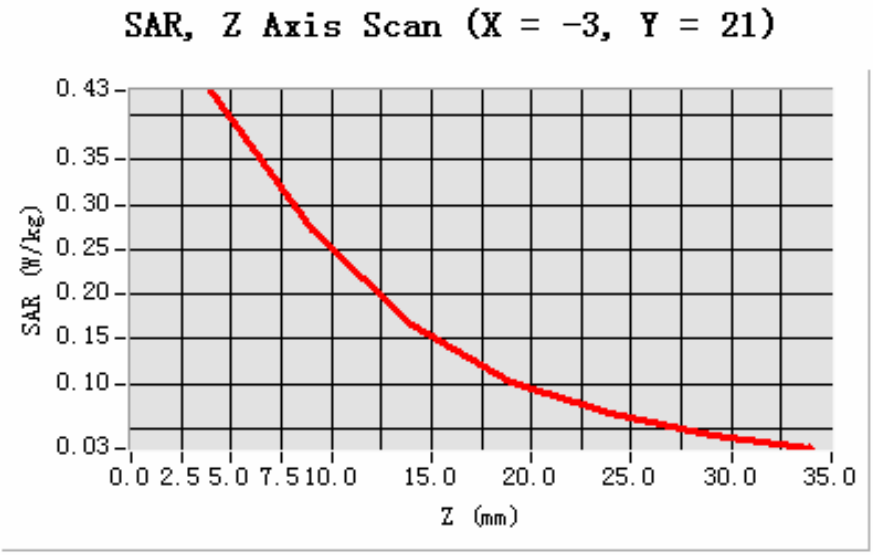
SURFACE SAR	**VOLUME SAR**
	

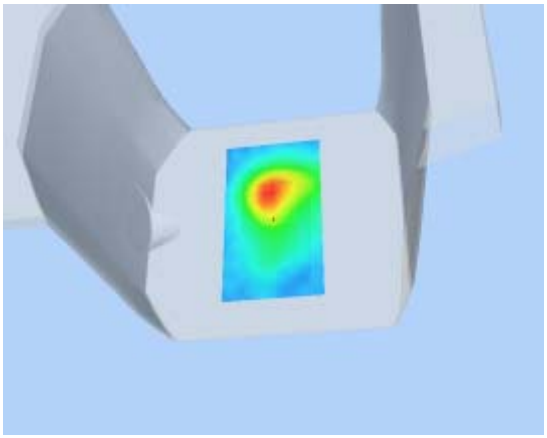
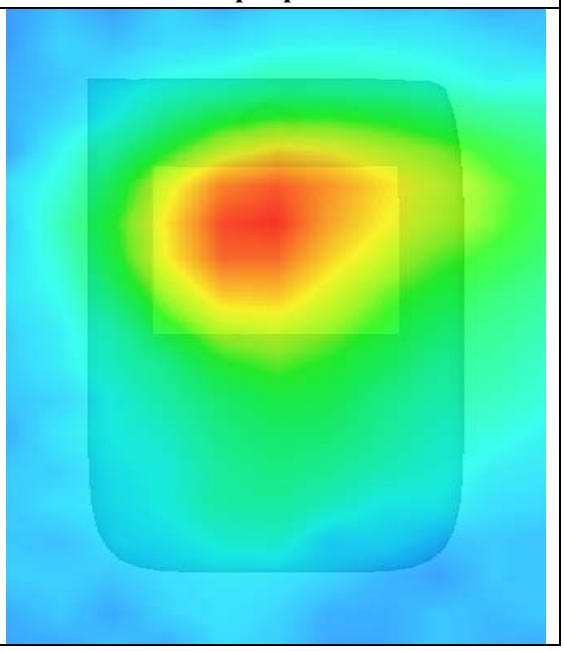
Maximum location: X=-3.00, Y=21.00

SAR 10g (W/Kg)	0.129465
SAR 1g (W/Kg)	0.242754

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4274	0.2715	0.1650	0.1015	0.0665	0.0425



3D sceen shot	Hot spot position
	

MEASUREMENT 5

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 8 seconds

A. Experimental conditions.

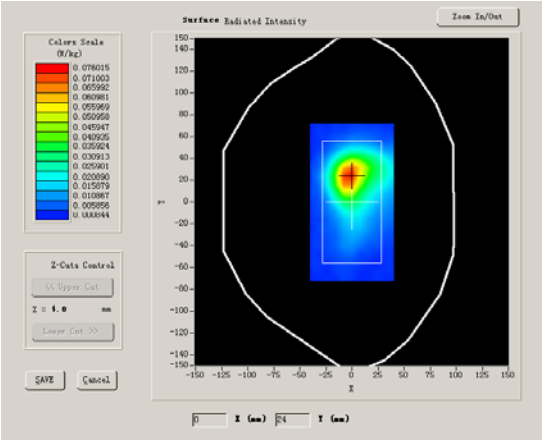
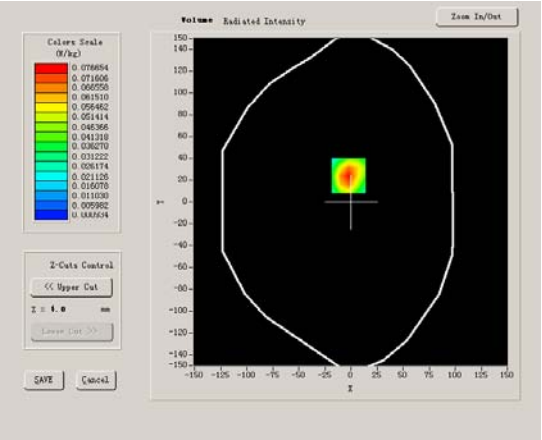
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	1.360000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

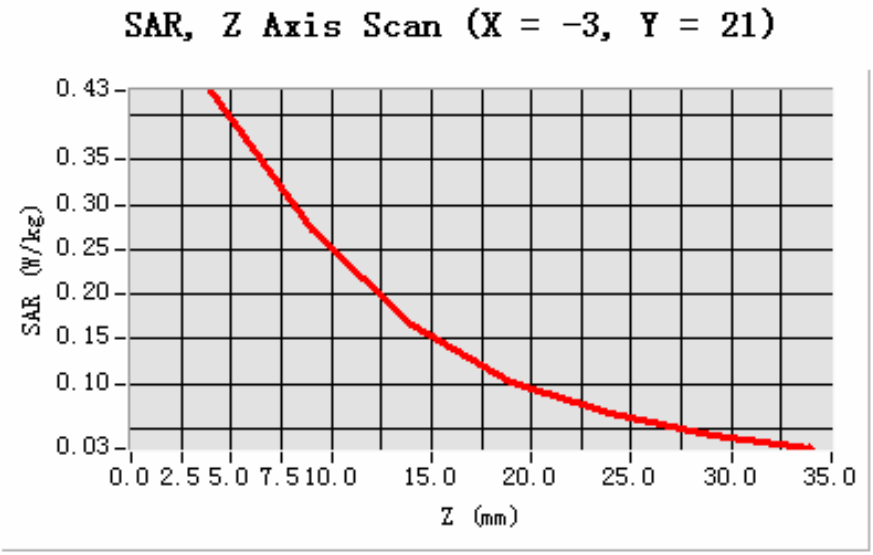
SURFACE SAR	**VOLUME SAR**
	

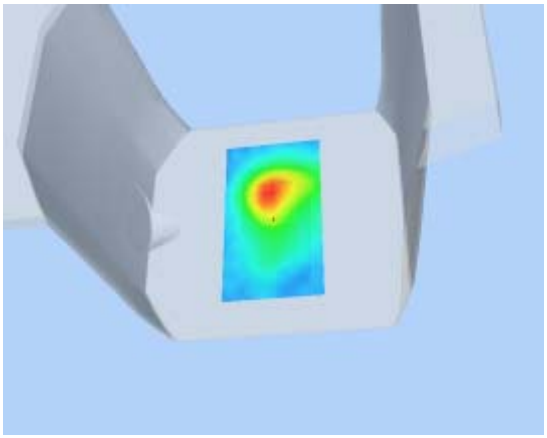
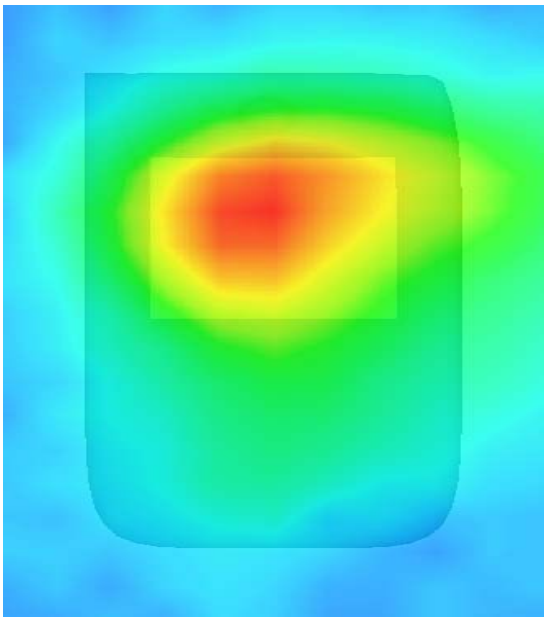
Maximum location: X=-3.00, Y=21.00

SAR 10g (W/Kg)	0.106265
SAR 1g (W/Kg)	0.200881

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4274	0.2715	0.1650	0.1015	0.0665	0.0425



3D sceen shot	Hot spot position
	

MEASUREMENT 6

Type: Phone measurement (Complete)

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

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

Date of measurement: 11/5/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

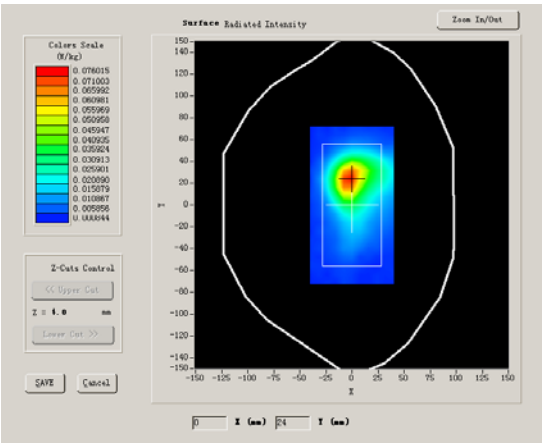
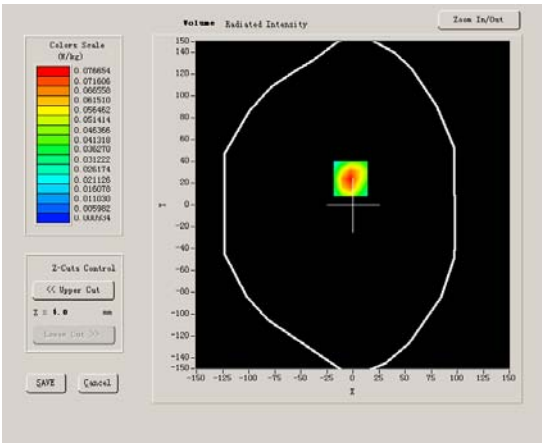
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	Low
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2412.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	-0.790000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

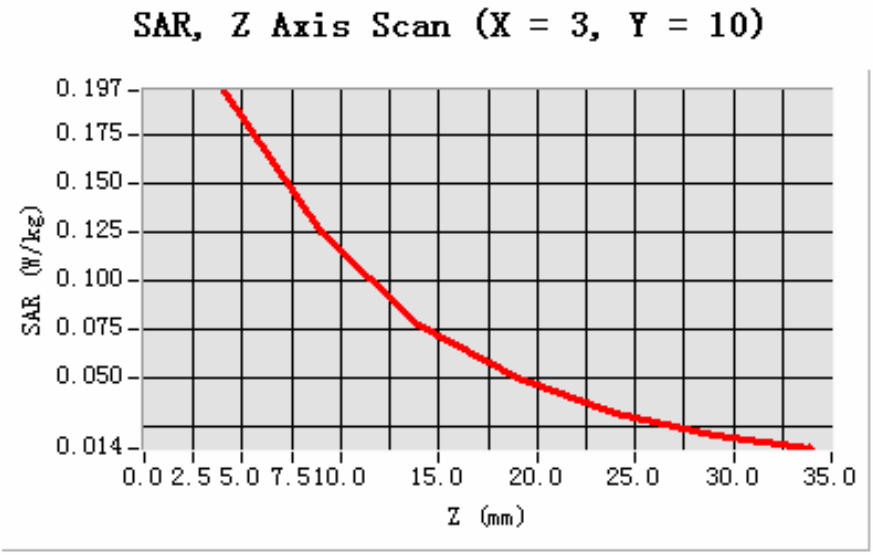
SURFACE SAR	**VOLUME SAR**
	

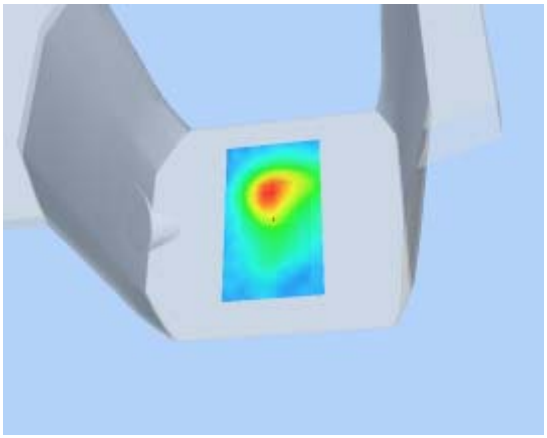
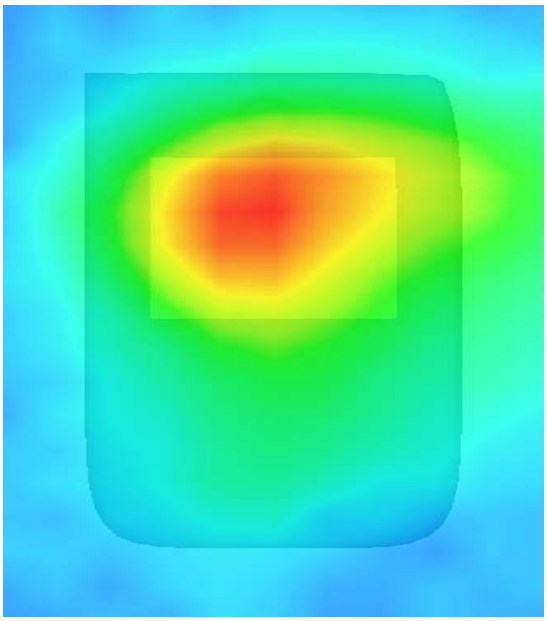
Maximum location: X=3.00, Y=10.00

SAR 10g (W/Kg)	0.143635
SAR 1g (W/Kg)	0.275664

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1970	0.1248	0.0779	0.0503	0.0327	0.0208



3D sceen shot	Hot spot position
	

MEASUREMENT 7

Type: Phone measurement (Complete)

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

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

Date of measurement: 11/5/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

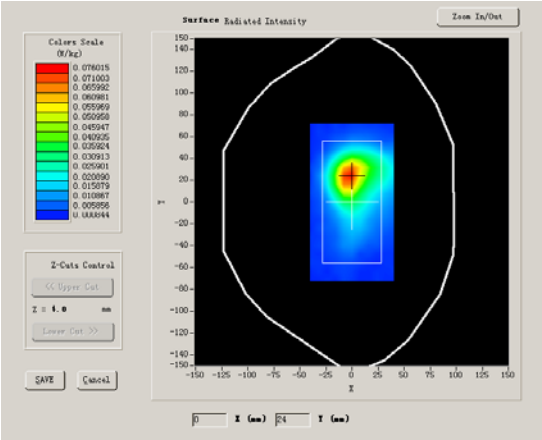
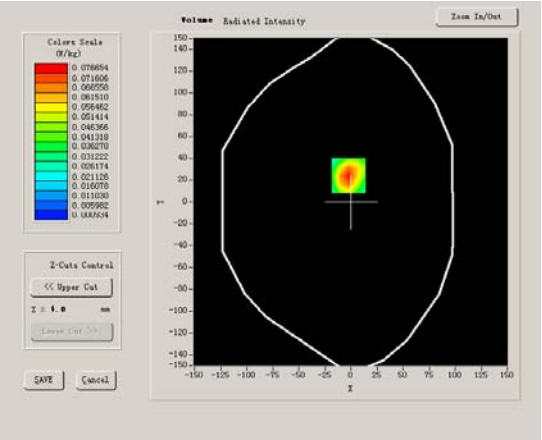
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 b
Channels	High
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.548876
Relative permittivity	12.000000

Conductivity (S/m)	1.720014
Variation (%)	-0.790000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

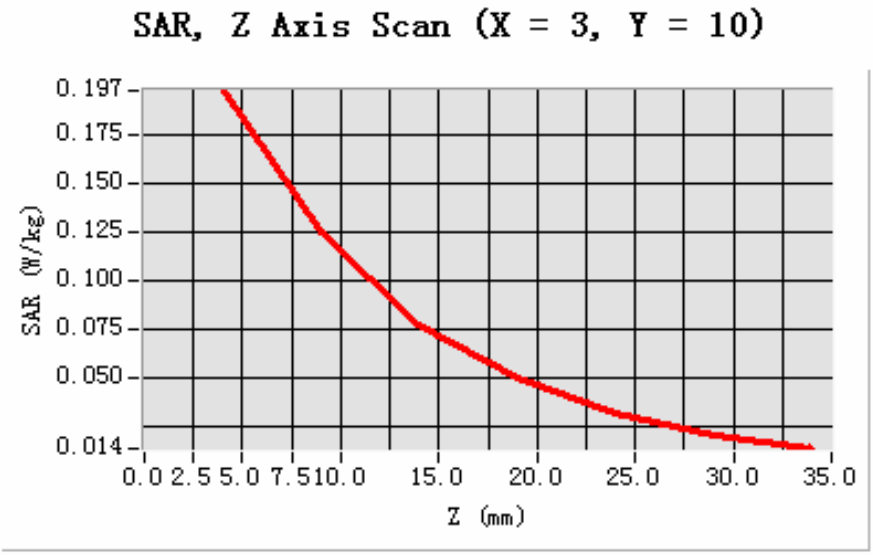
SURFACE SAR	**VOLUME SAR**
	

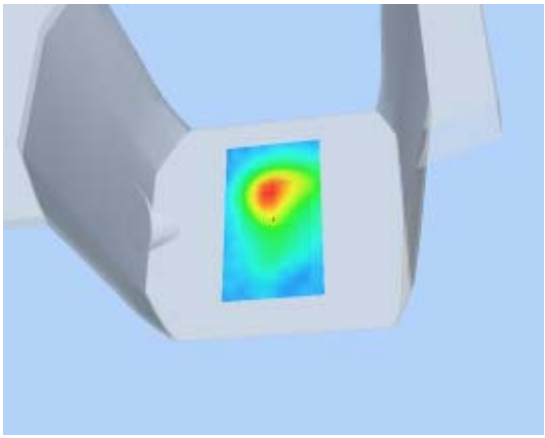
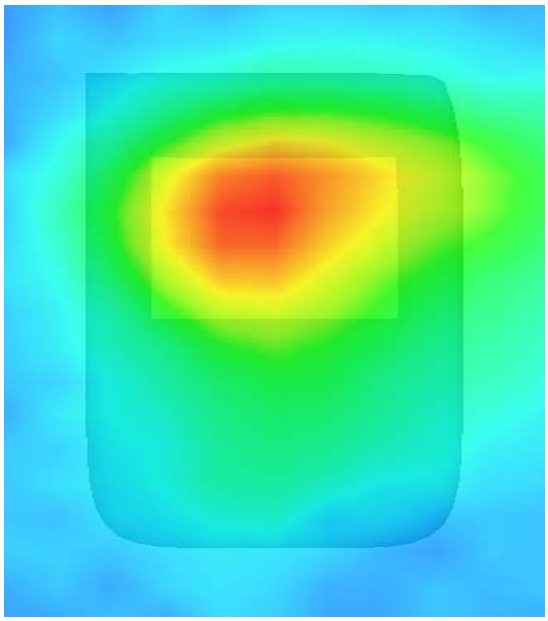
Maximum location: X=3.00, Y=10.00

SAR 10g (W/Kg)	0.151534
SAR 1g (W/Kg)	0.278445

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1970	0.1248	0.0779	0.0503	0.0327	0.0208



3D sceen shot	Hot spot position
	

MEASUREMENT 8

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

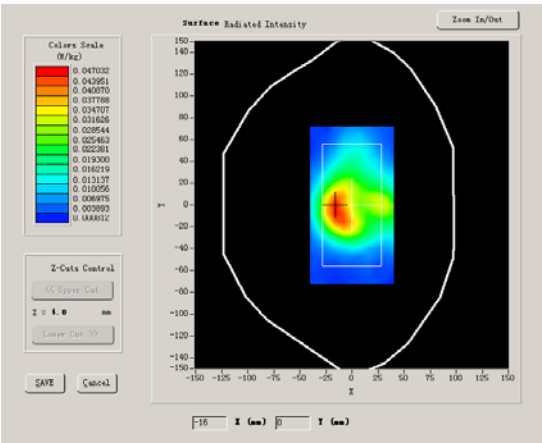
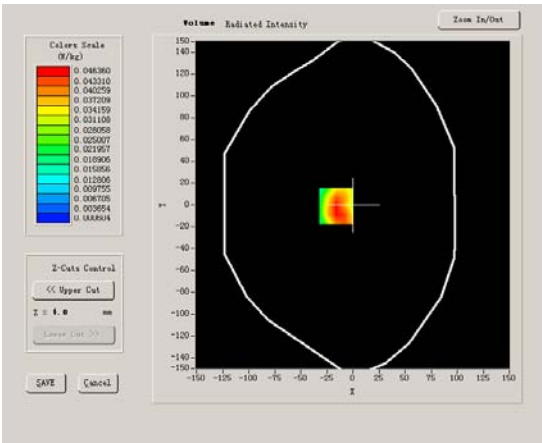
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-1.510000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

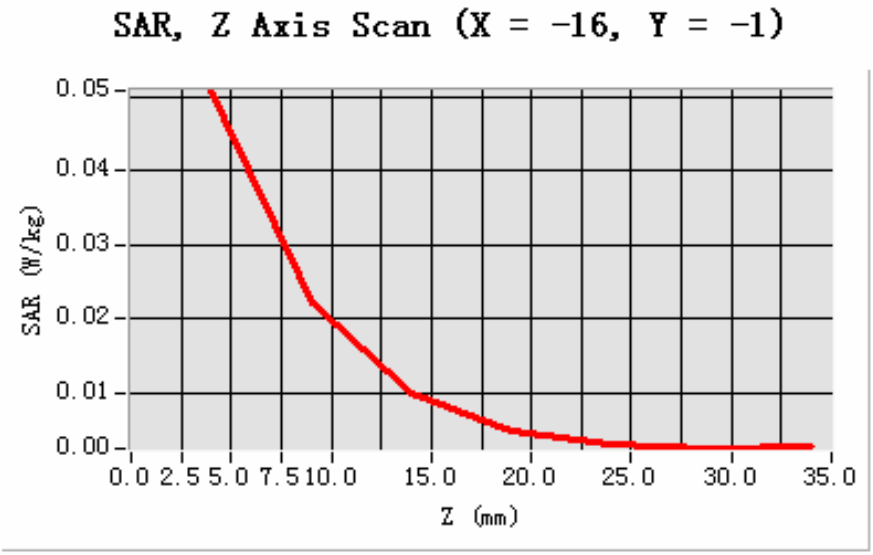
SURFACE SAR	**VOLUME SAR**
	

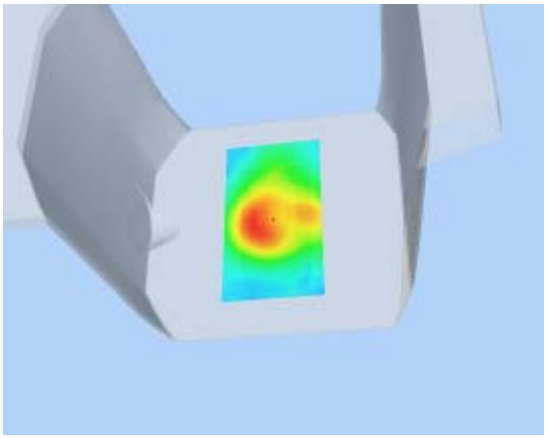
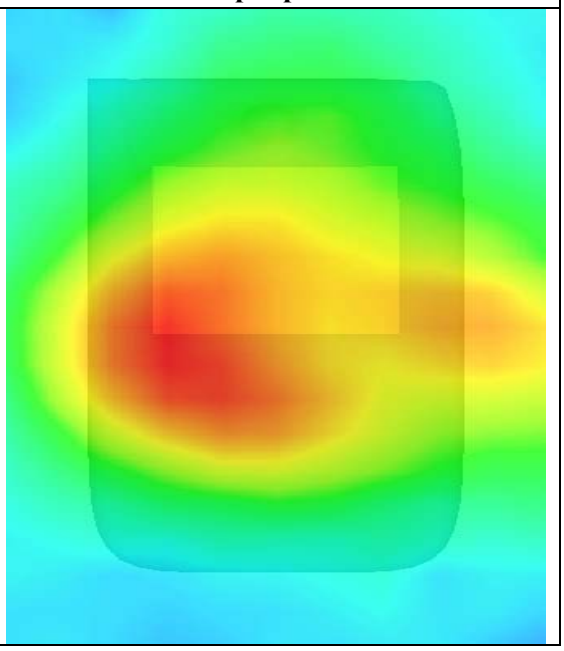
Maximum location: X=-16.00, Y=-1.00

SAR 10g (W/Kg)	0.215735
SAR 1g (W/Kg)	0.395766

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3149	0.1901	0.1178	0.0726	0.0447	0.0291



3D sceen shot	Hot spot position
	

MEASUREMENT 9

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

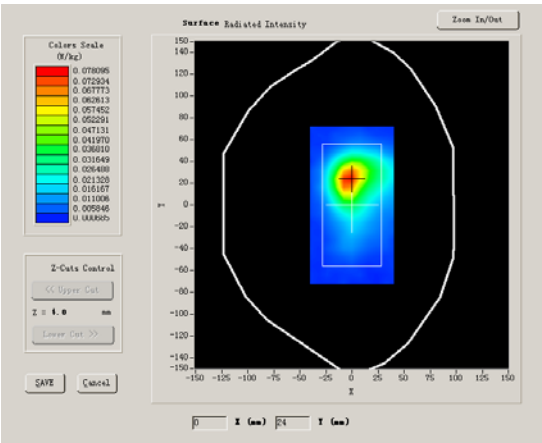
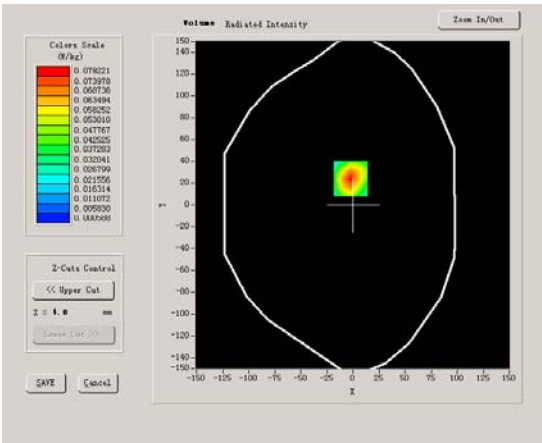
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

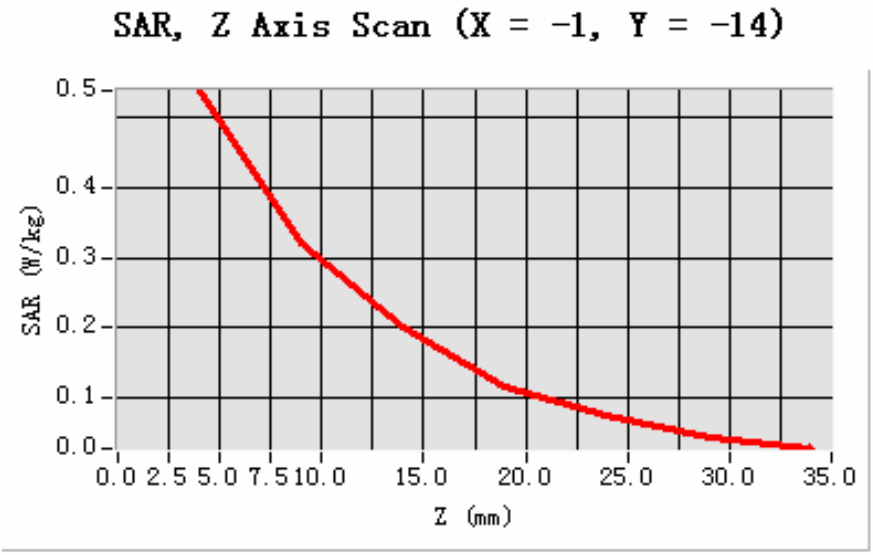
SURFACE SAR	**VOLUME SAR**
	

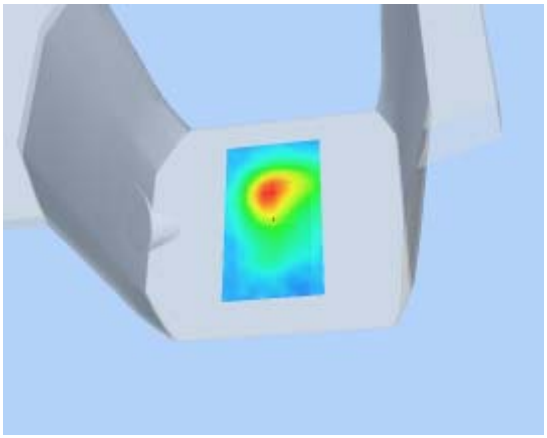
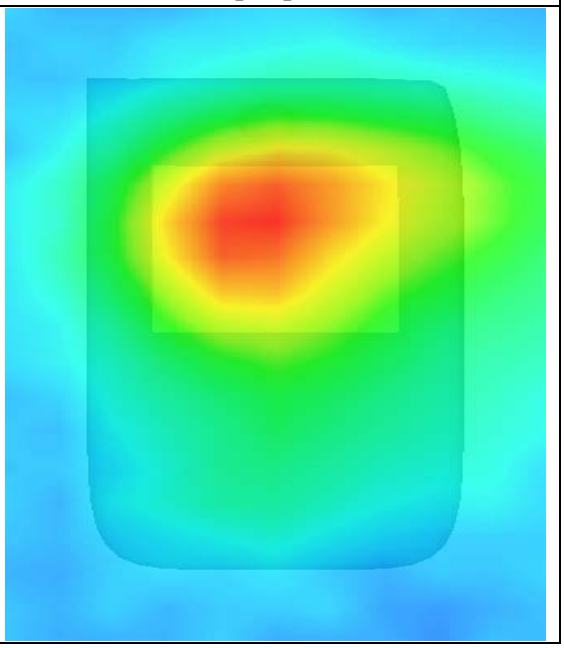
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.194375
SAR 1g (W/Kg)	0.378465

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 10

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

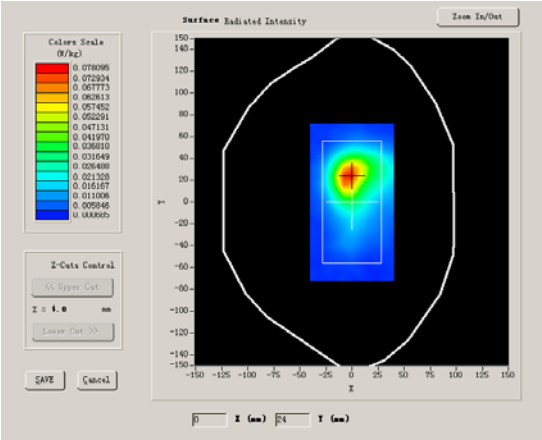
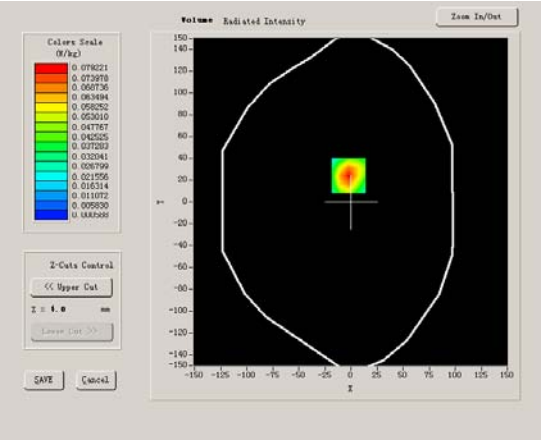
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

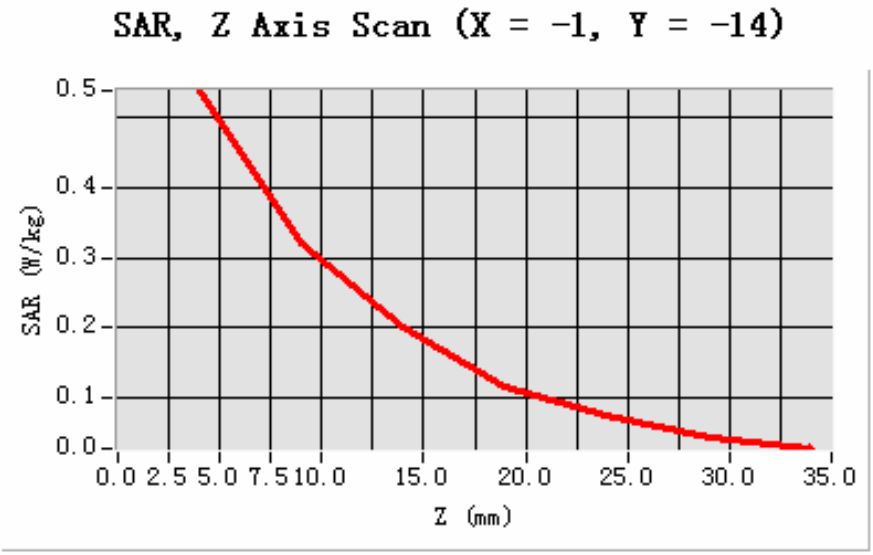
SURFACE SAR	**VOLUME SAR**
	

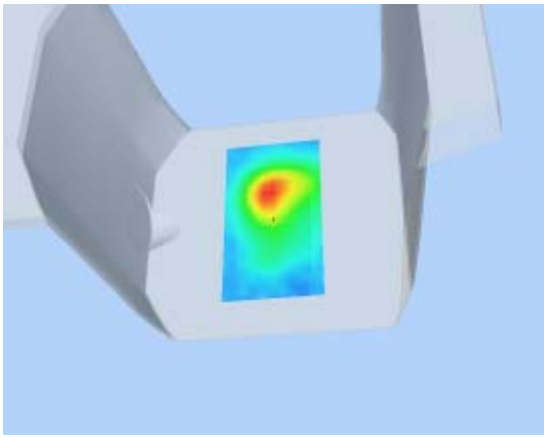
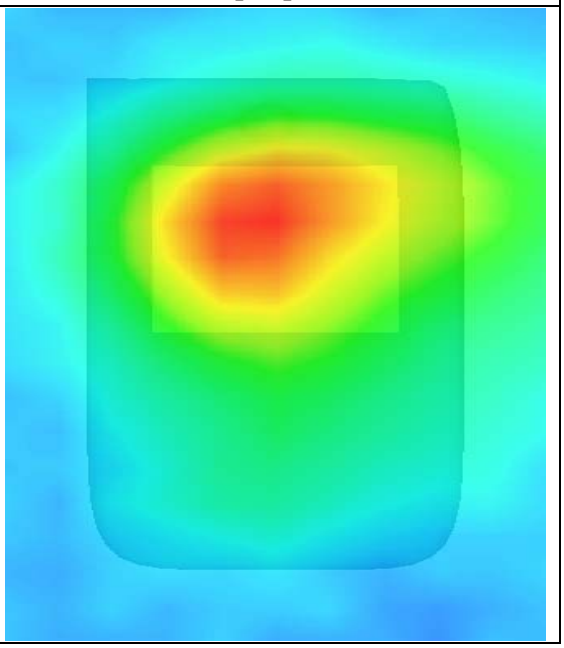
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.185734
SAR 1g (W/Kg)	0.356234

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 11

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

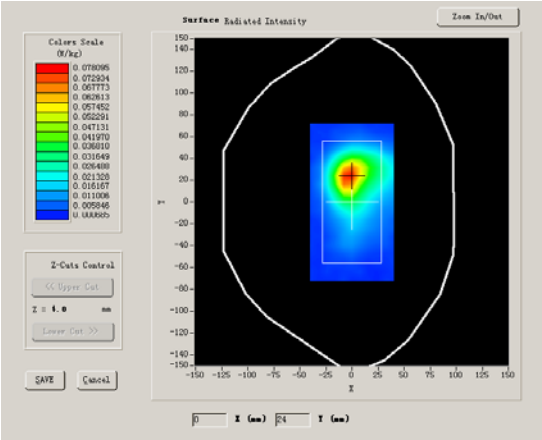
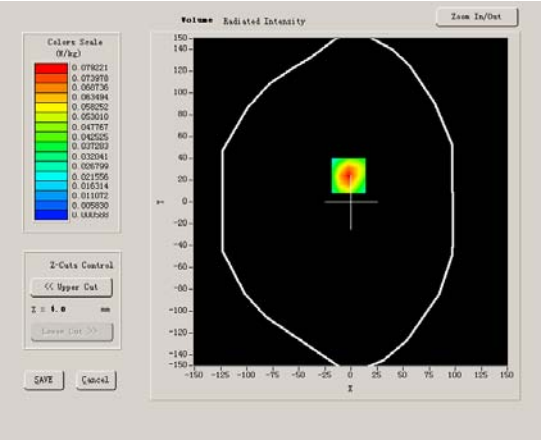
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

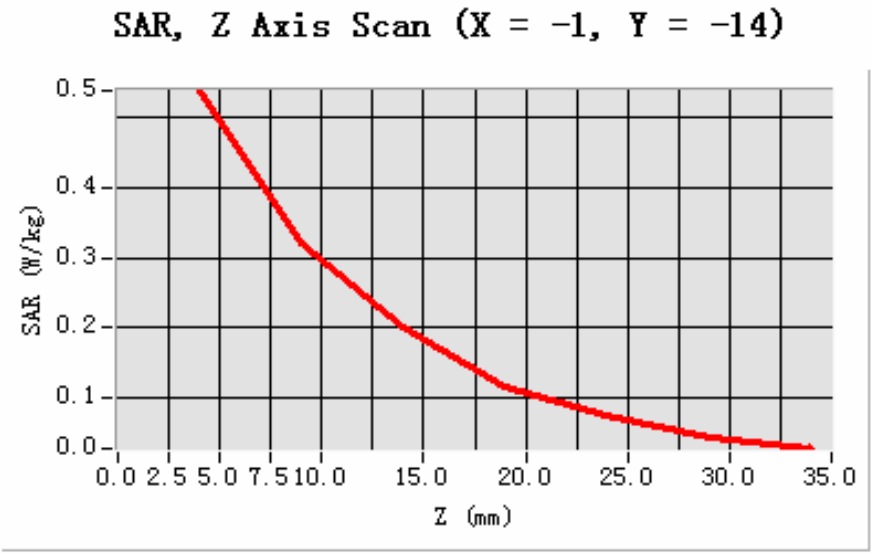
SURFACE SAR	**VOLUME SAR**
	

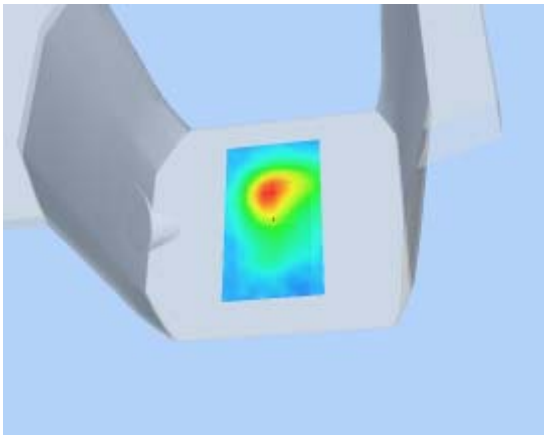
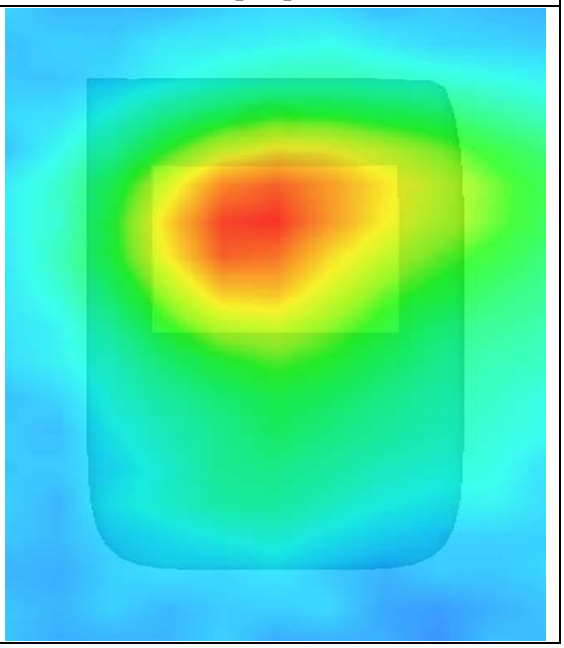
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.174325
SAR 1g (W/Kg)	0.336243

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 12

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

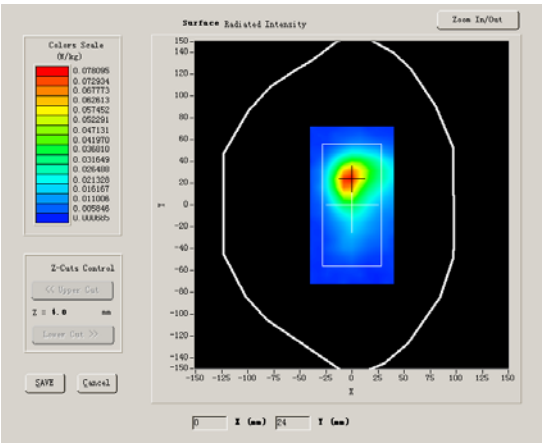
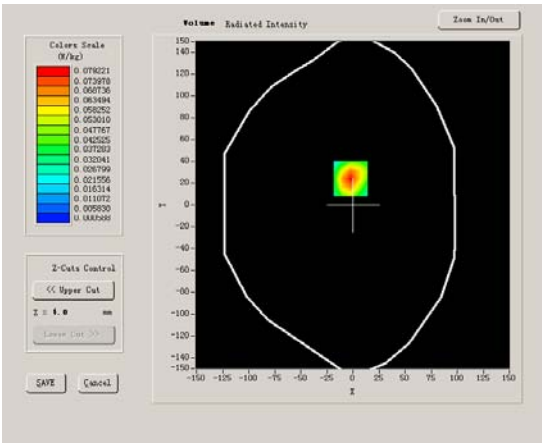
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

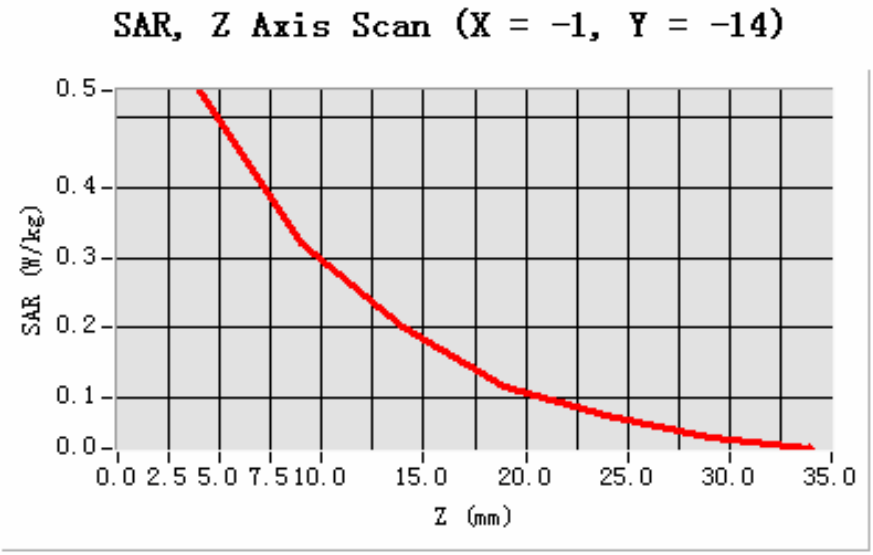
SURFACE SAR	**VOLUME SAR**
	

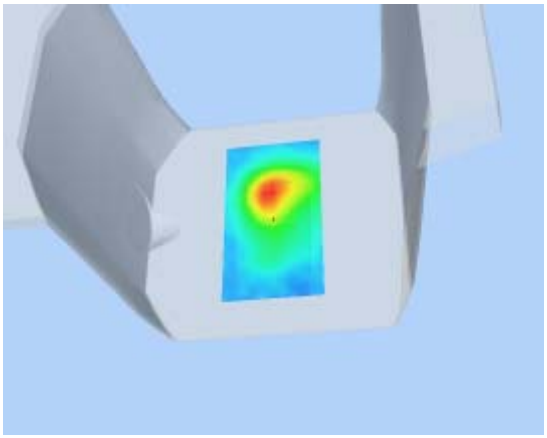
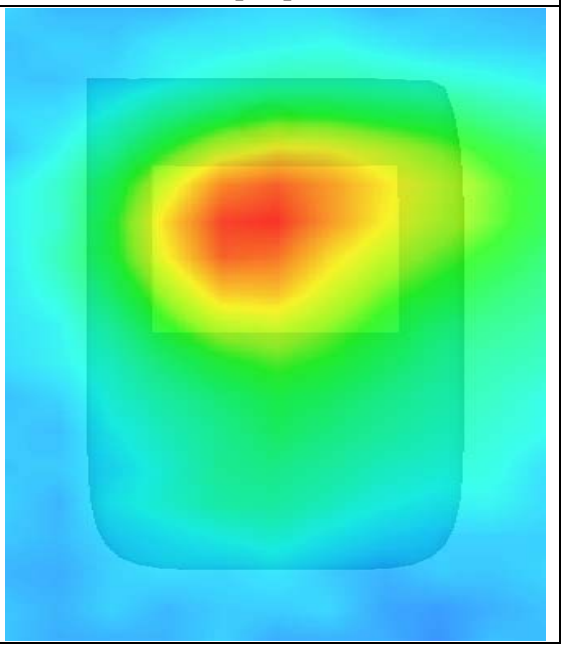
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.175255
SAR 1g (W/Kg)	0.338456

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 13

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

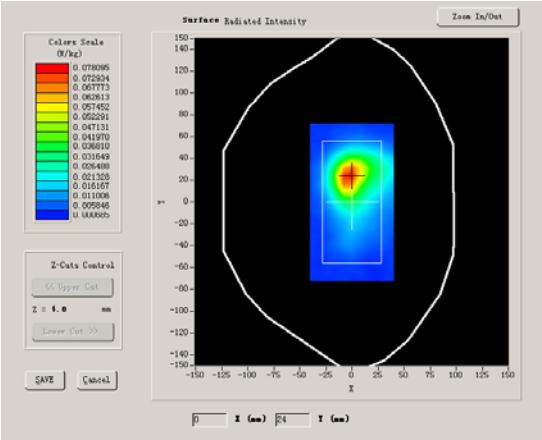
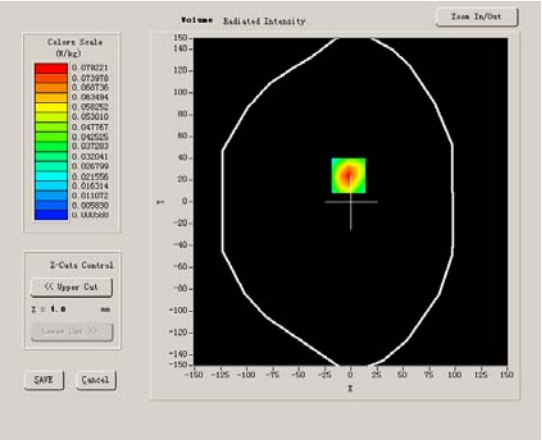
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

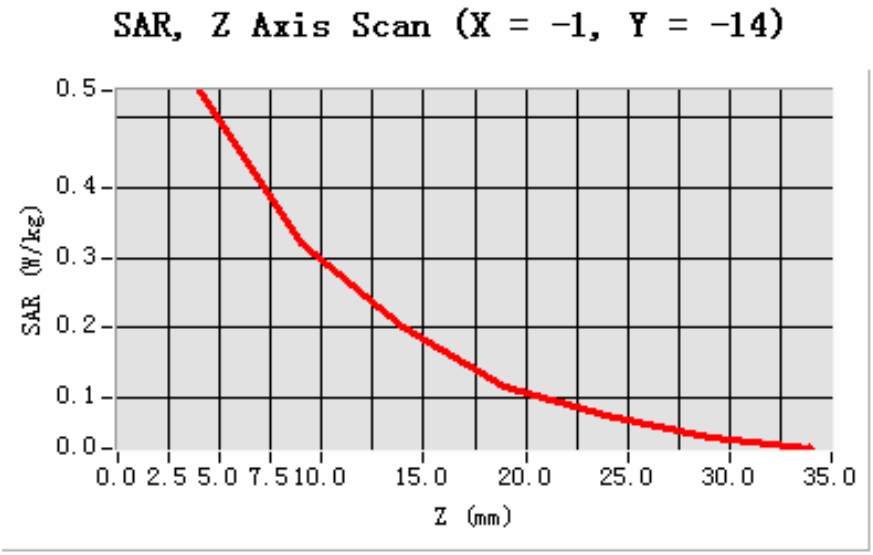
SURFACE SAR	**VOLUME SAR**
	

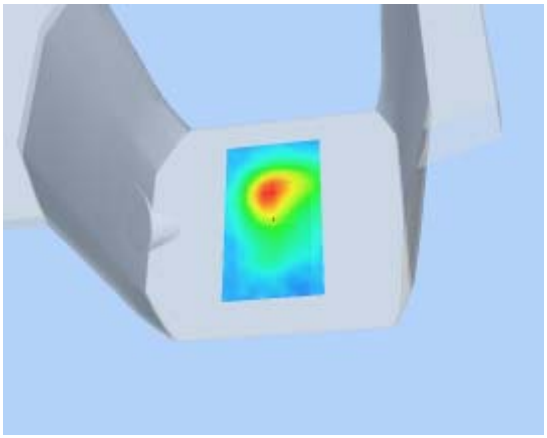
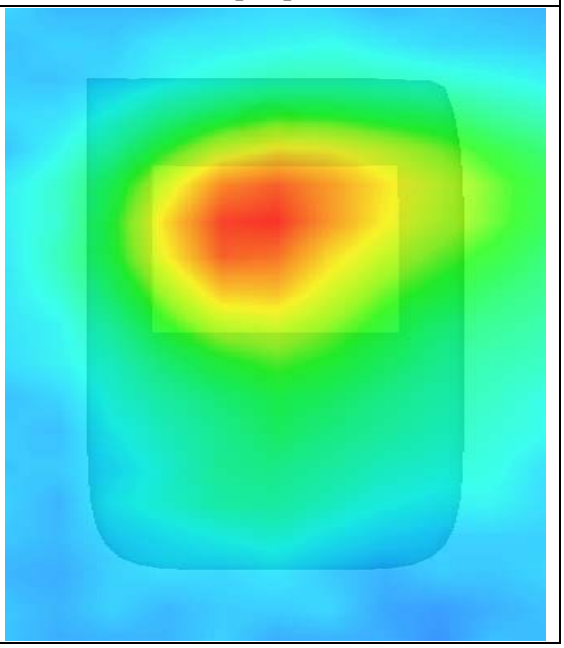
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.156386
SAR 1g (W/Kg)	0.298786

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 14

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

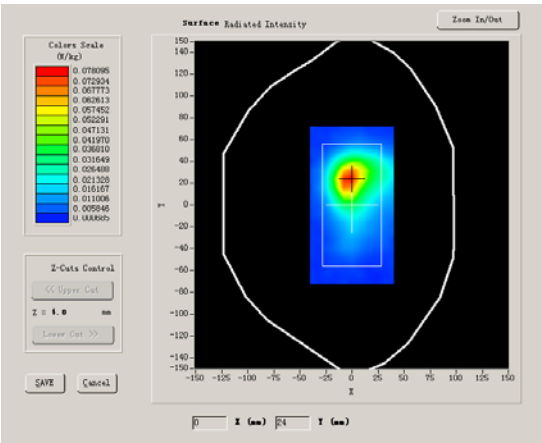
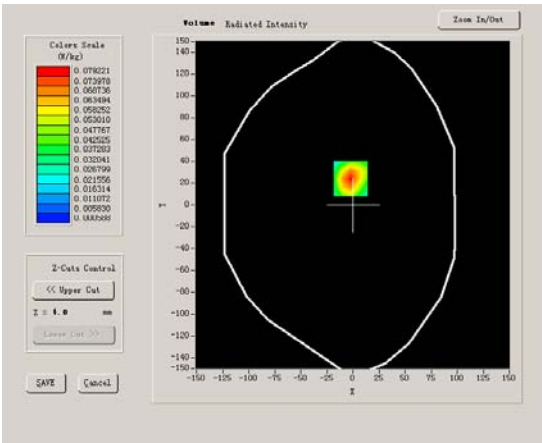
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

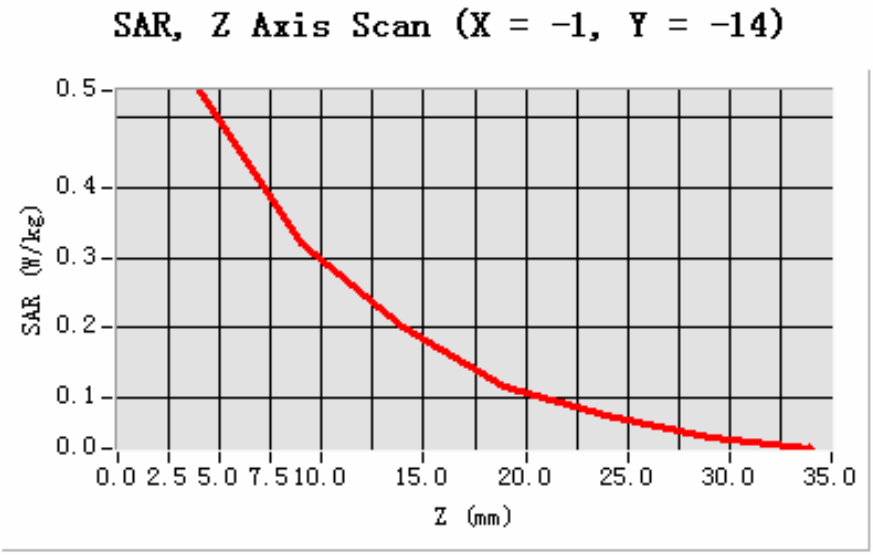
SURFACE SAR	**VOLUME SAR**
	

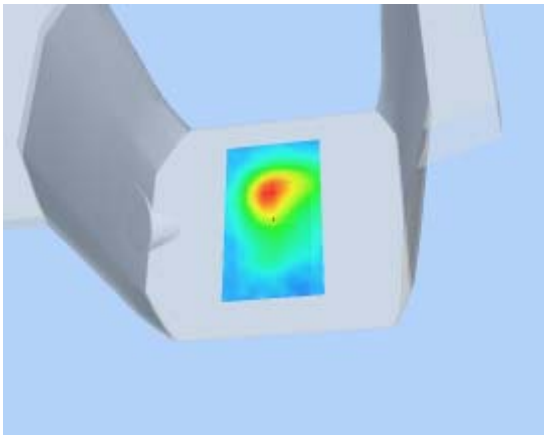
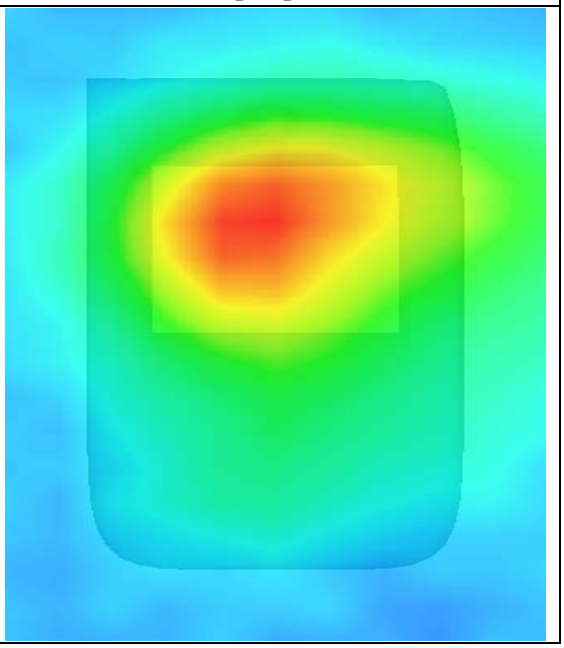
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.157368
SAR 1g (W/Kg)	0.300566

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 15

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

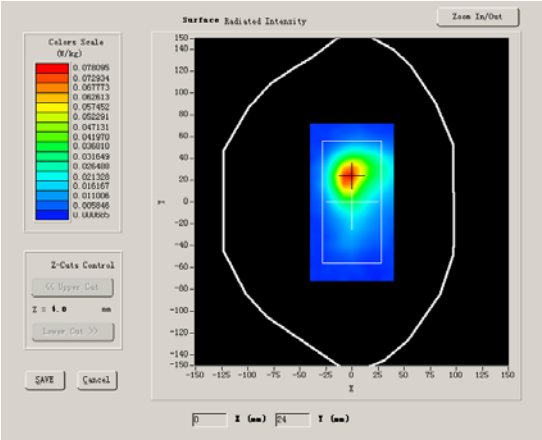
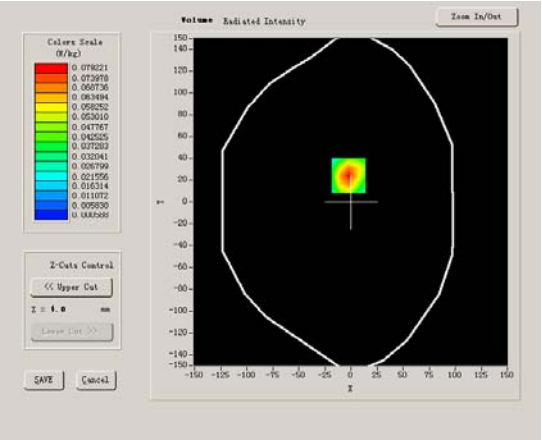
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

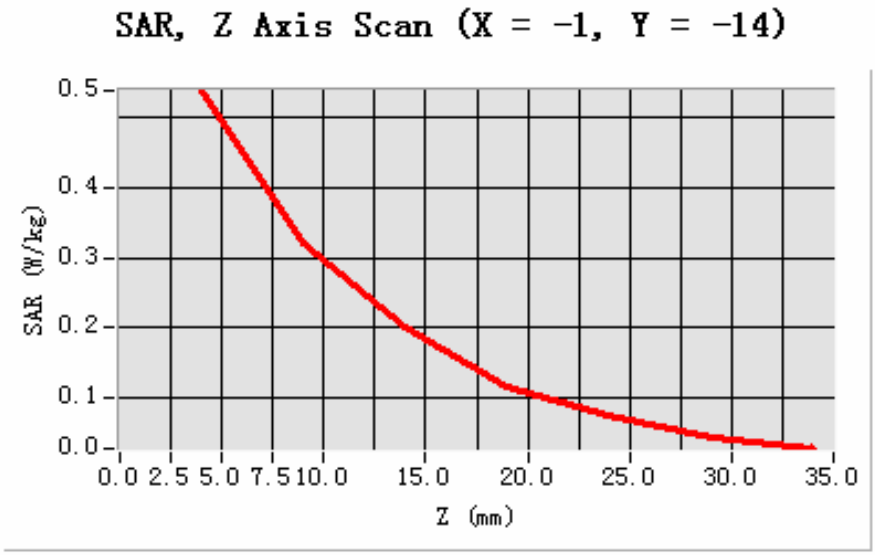
SURFACE SAR	**VOLUME SAR**
	

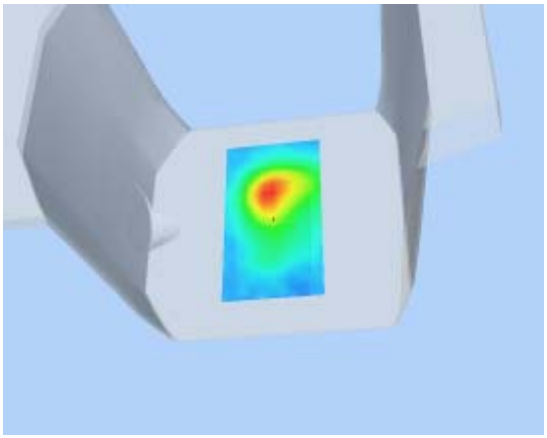
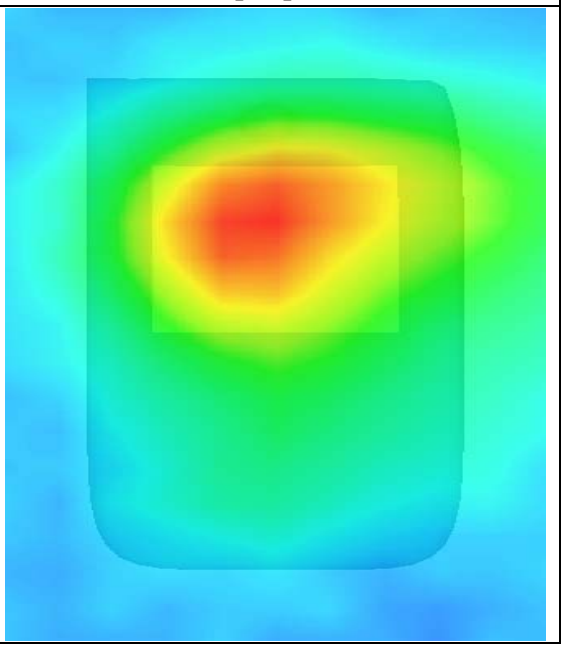
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.141745
SAR 1g (W/Kg)	0.278455

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 16

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

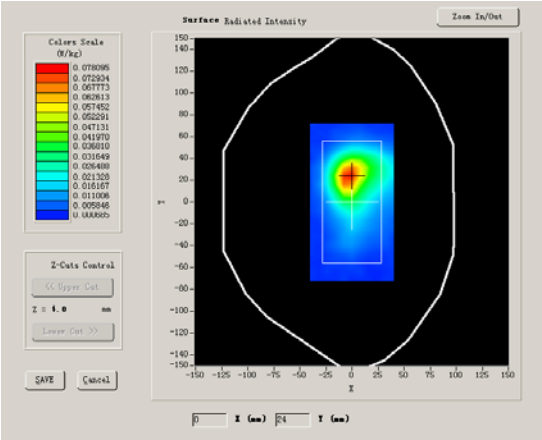
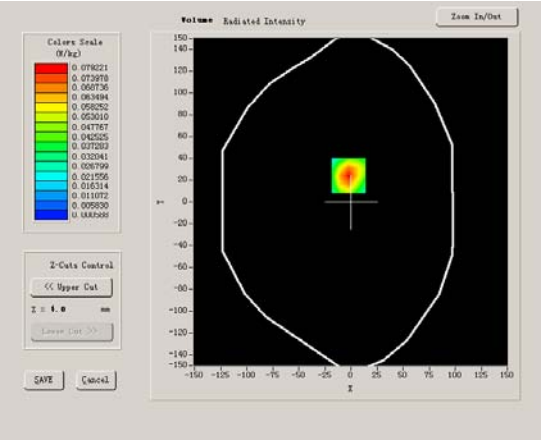
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

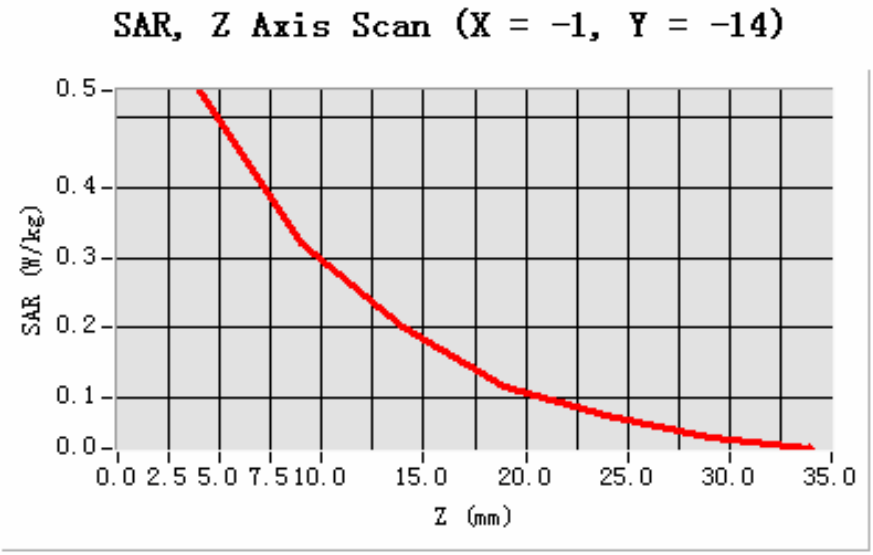
SURFACE SAR	**VOLUME SAR**
	

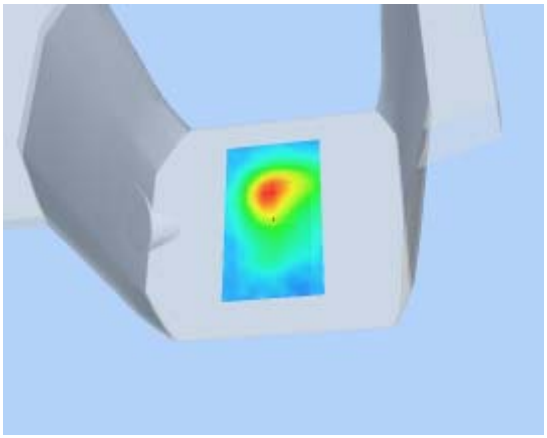
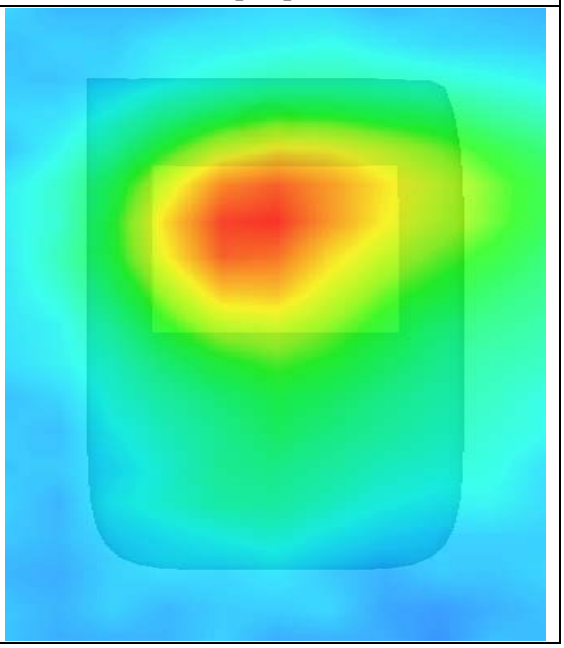
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.139465
SAR 1g (W/Kg)	0.256448

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 17

Type: Phone measurement (Complete)

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

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

Date of measurement: 11/5/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

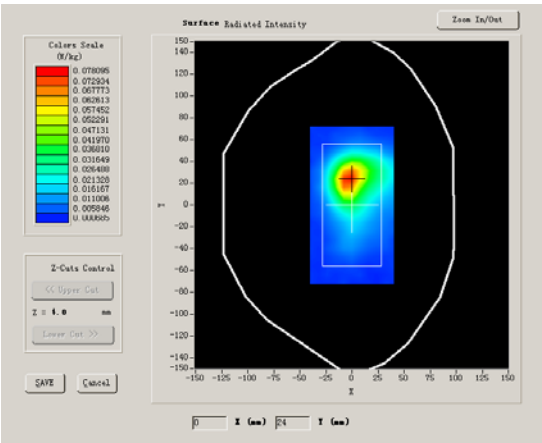
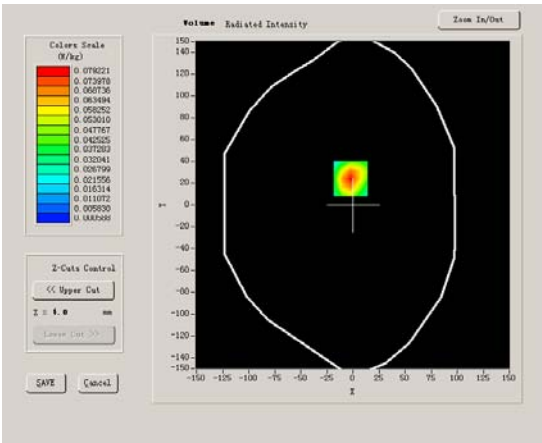
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	Low
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2412.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

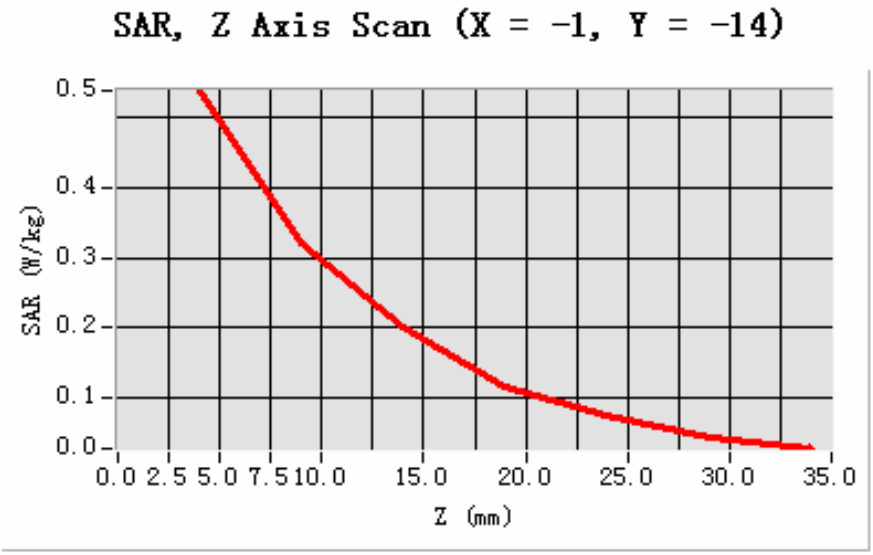
SURFACE SAR	**VOLUME SAR**
	

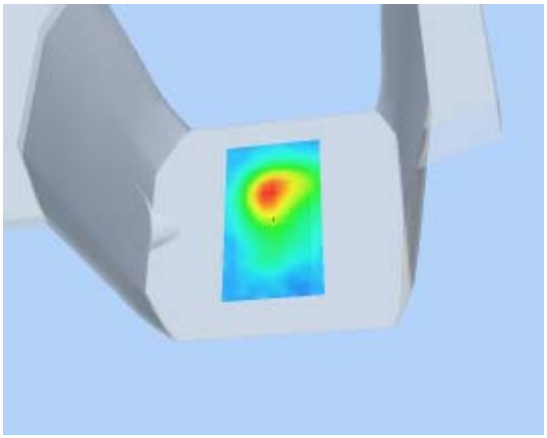
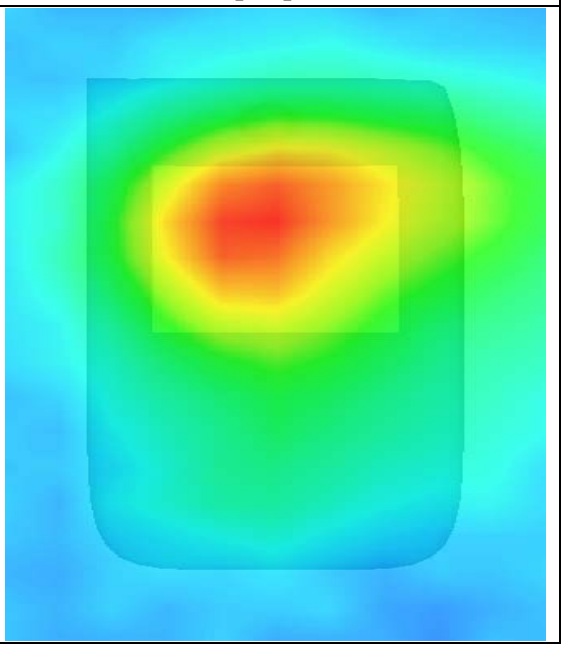
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.210446
SAR 1g (W/Kg)	0.419564

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 18

Type: Phone measurement (Complete)

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

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

Date of measurement: 11/5/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

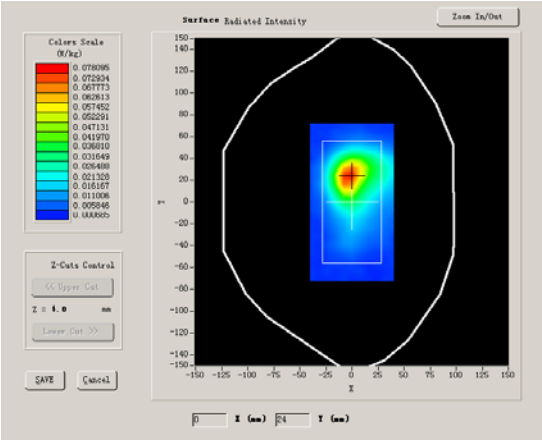
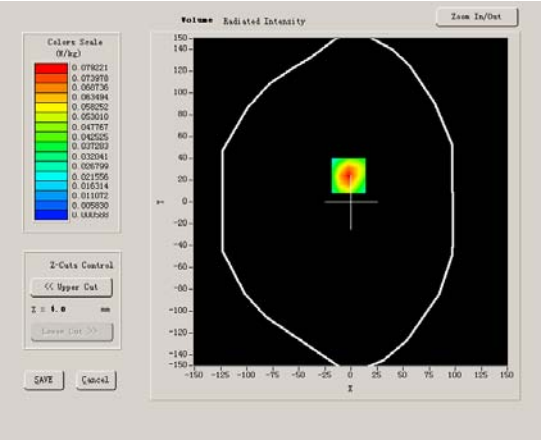
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 G
Channels	High
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.548876
Relative permittivity	14.820000

Conductivity (S/m)	1.720014
Variation (%)	-2.800000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

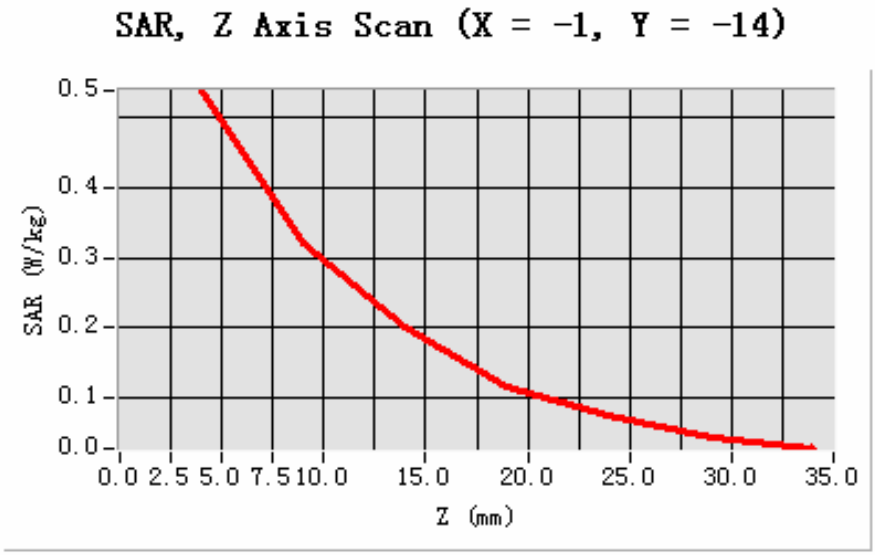
SURFACE SAR	**VOLUME SAR**
	

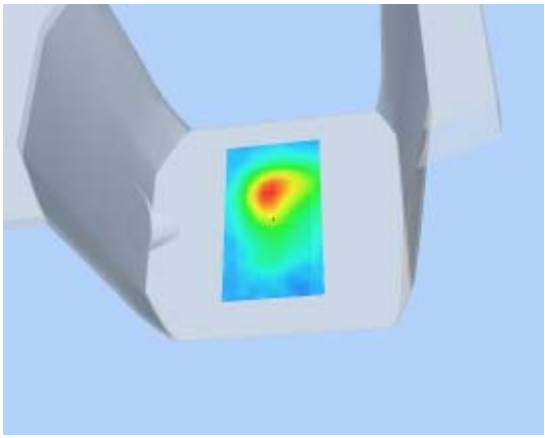
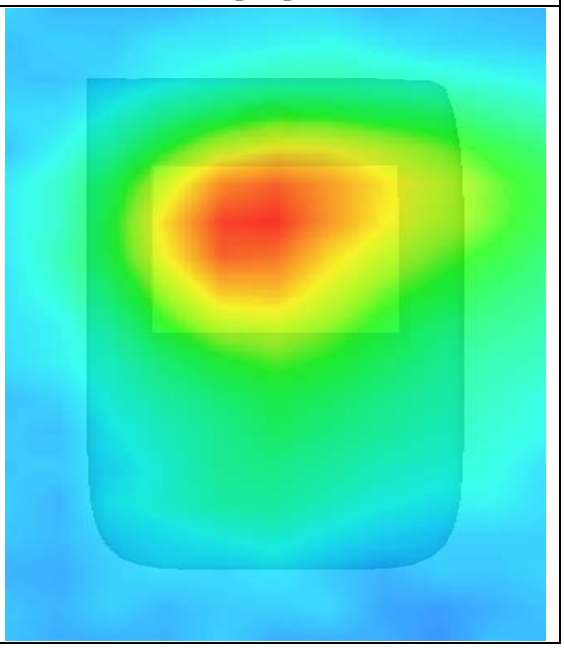
Maximum location: X=-1.00, Y=-14.00

SAR 10g (W/Kg)	0.201552
SAR 1g (W/Kg)	0.389565

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5388	0.3204	0.2015	0.1166	0.0745	0.0431



3D sceen shot	Hot spot position
	

MEASUREMENT 19

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 9 seconds

A. Experimental conditions.

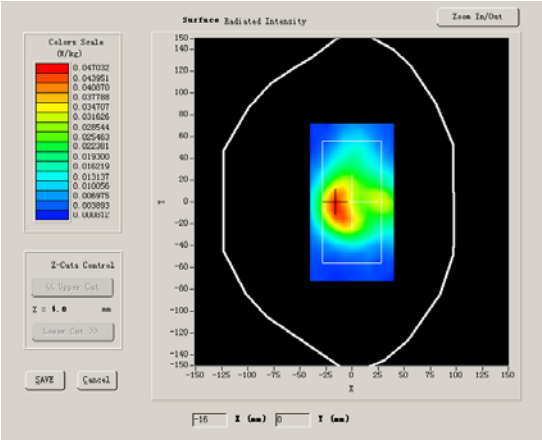
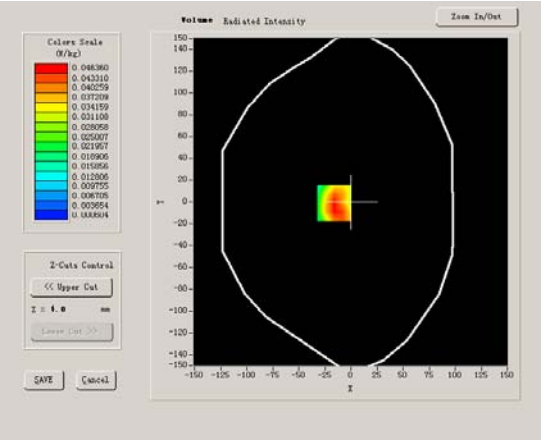
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	0.130000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

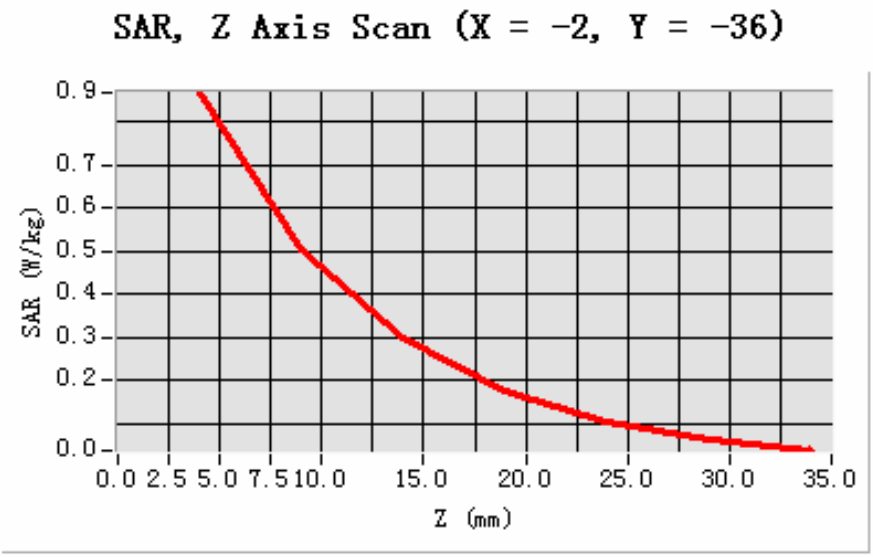
SURFACE SAR	**VOLUME SAR**
	

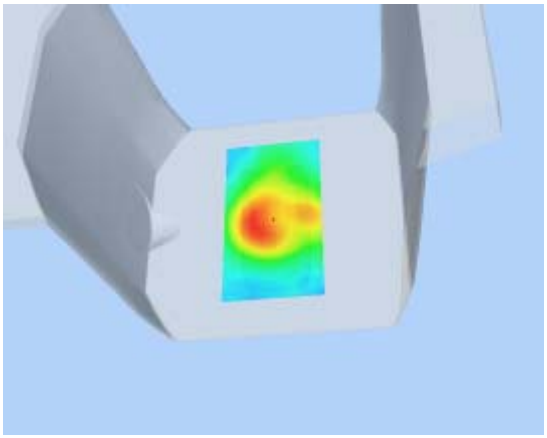
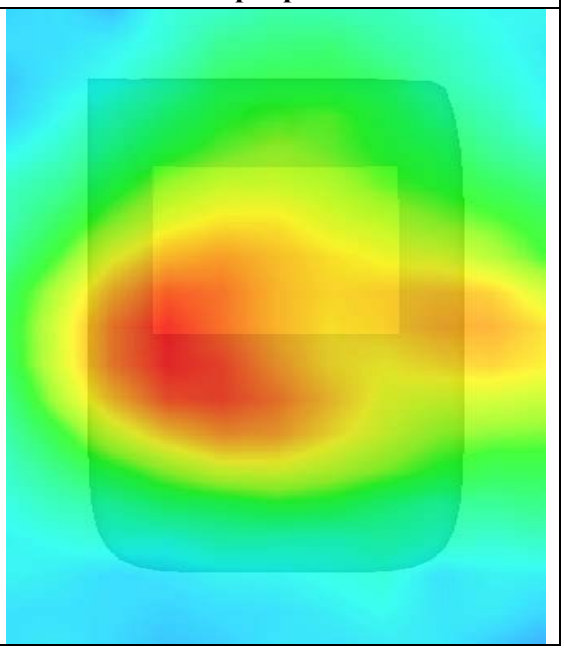
Maximum location: X=-2.00, Y=-36.00

SAR 10g (W/Kg)	0.196375
SAR 1g (W/Kg)	0.378454

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.8688	0.5047	0.2991	0.1753	0.1054	0.0628



3D sceen shot	Hot spot position
	

MEASUREMENT 20

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

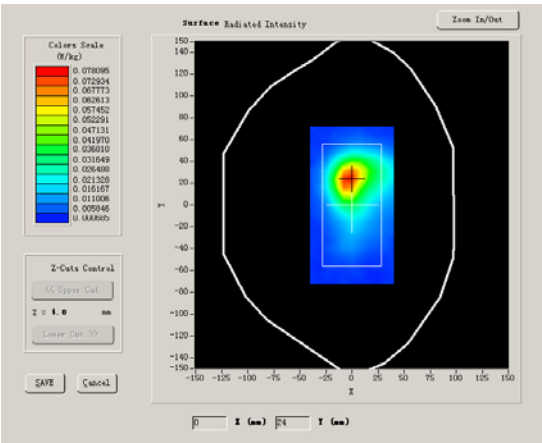
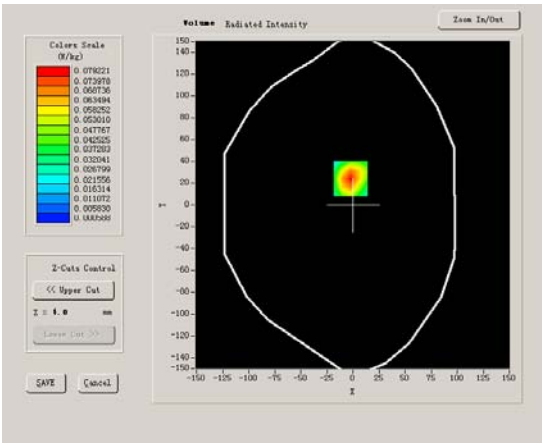
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

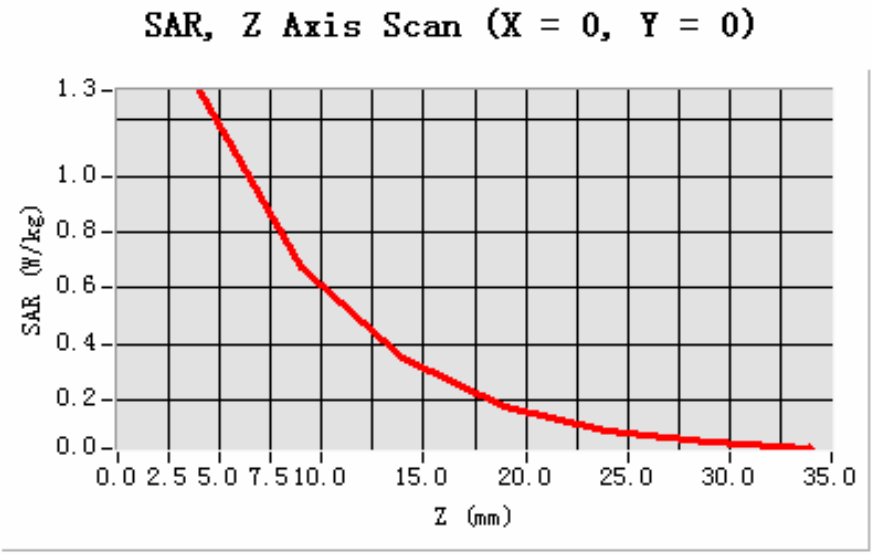
SURFACE SAR	**VOLUME SAR**
	

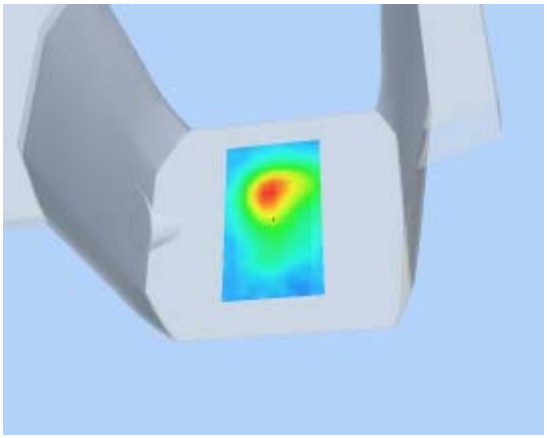
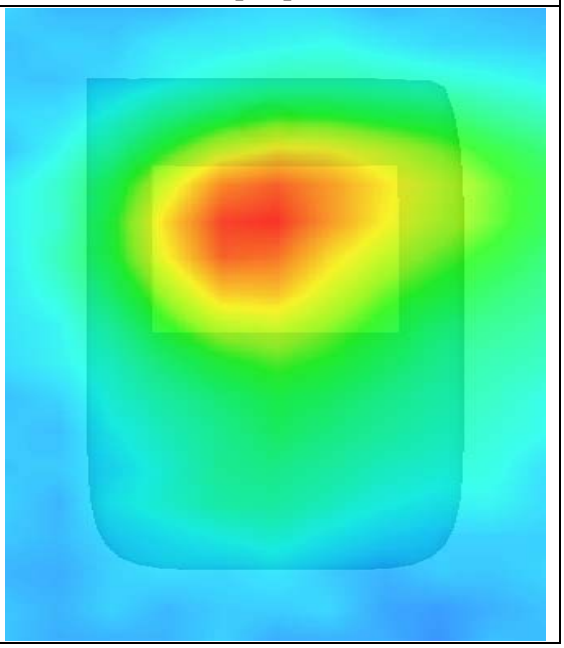
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.185265
SAR 1g (W/Kg)	0.346944

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 21

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

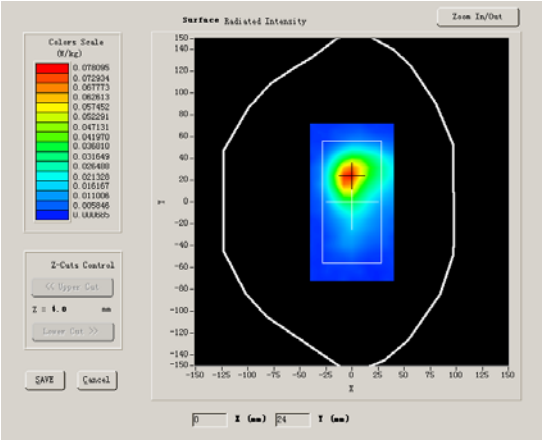
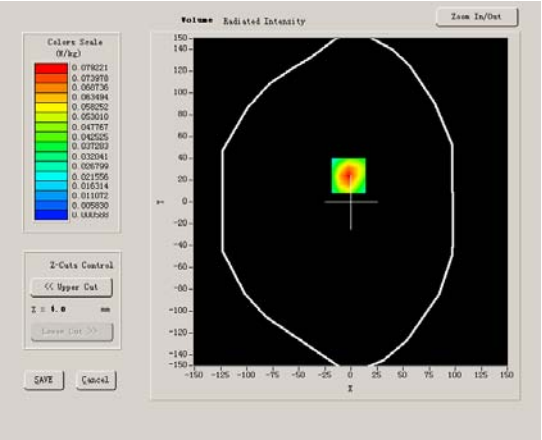
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

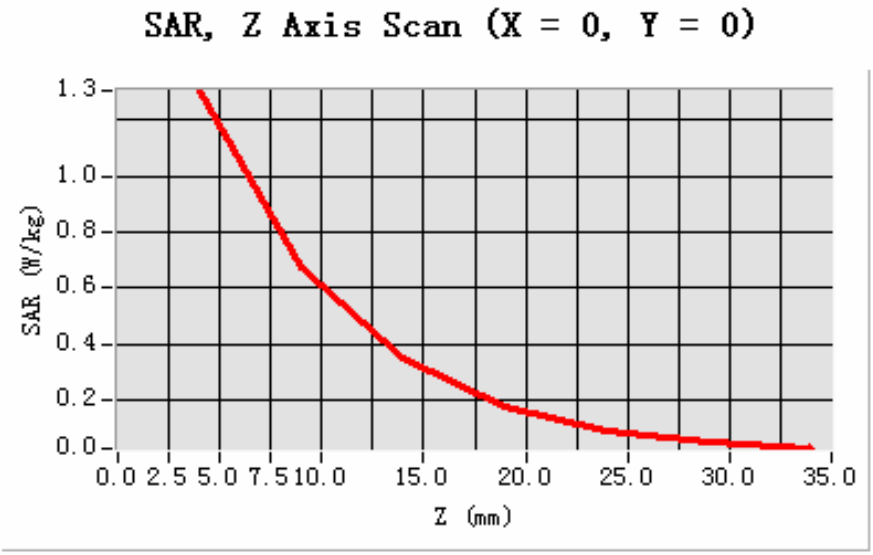
SURFACE SAR	**VOLUME SAR**
	

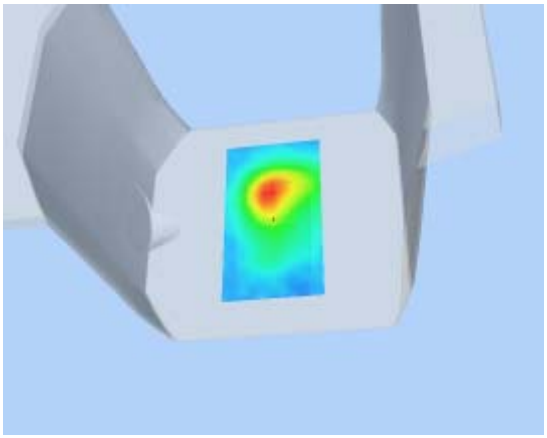
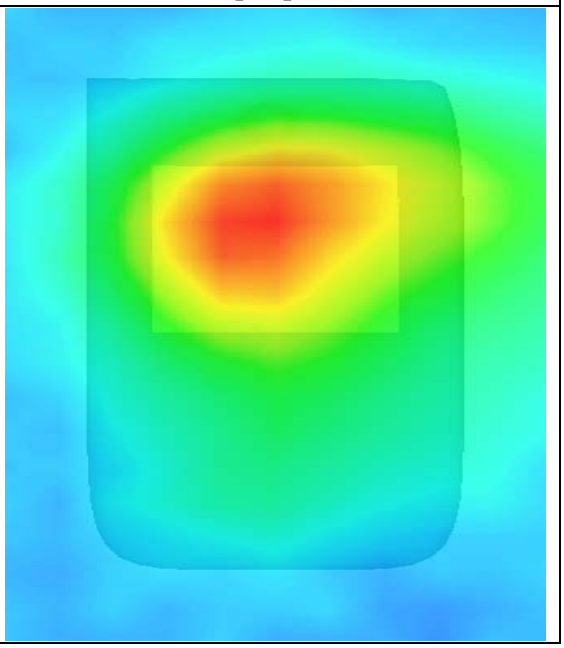
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.177345
SAR 1g (W/Kg)	0.344177

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 22

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

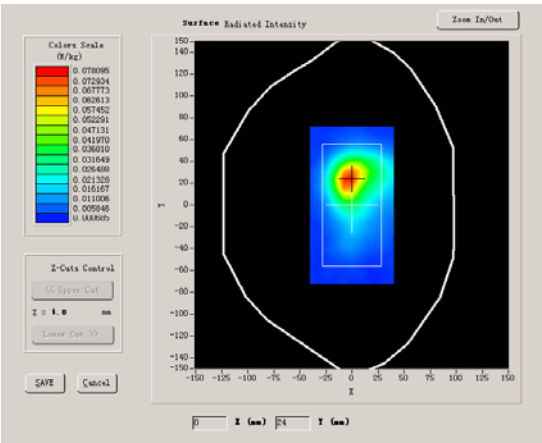
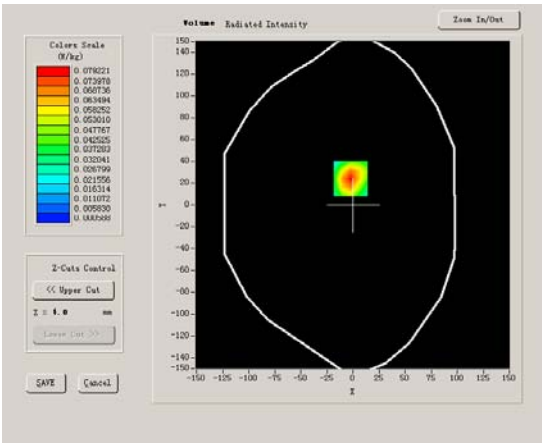
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

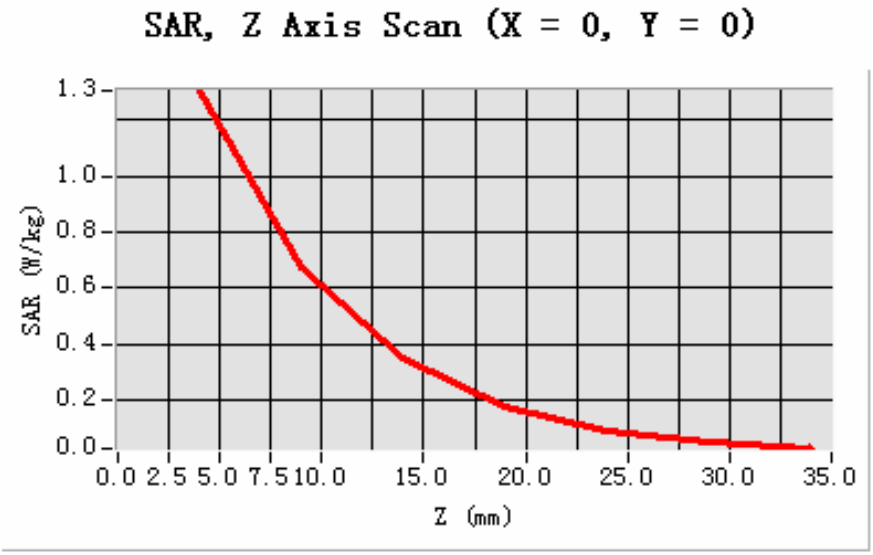
SURFACE SAR	**VOLUME SAR**
	

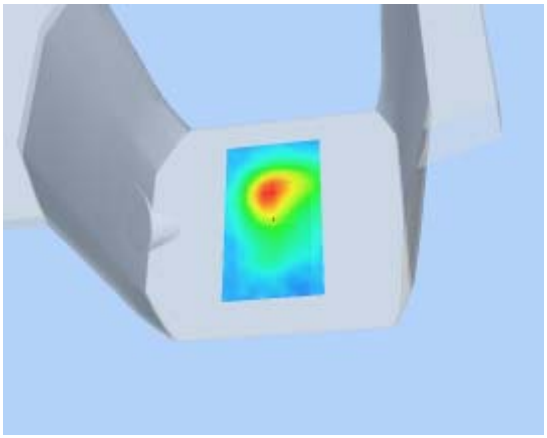
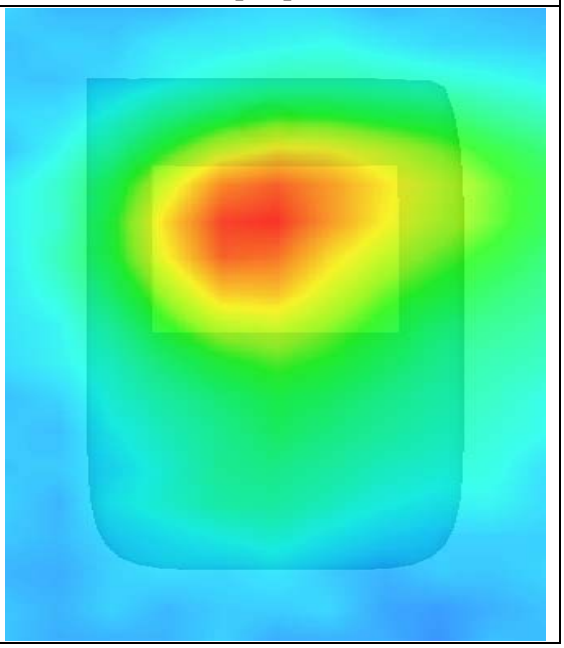
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.179344
SAR 1g (W/Kg)	0.349944

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 23

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

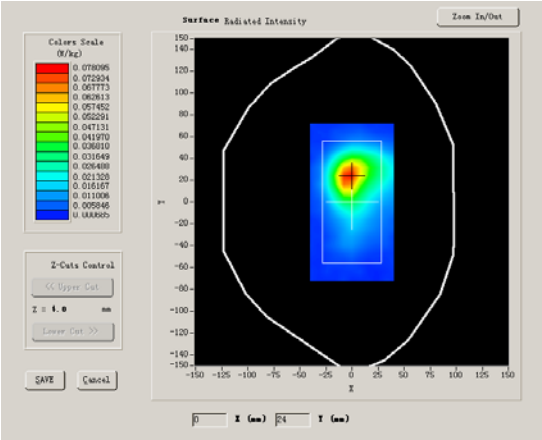
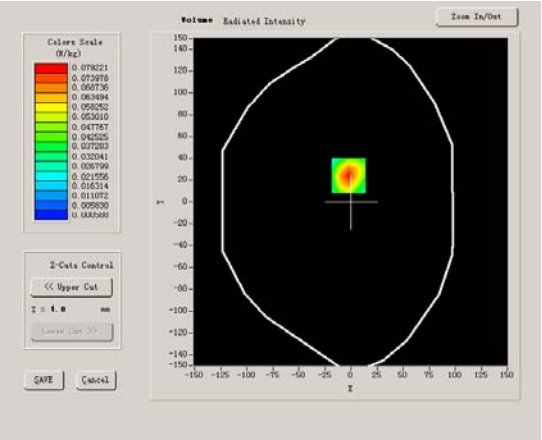
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

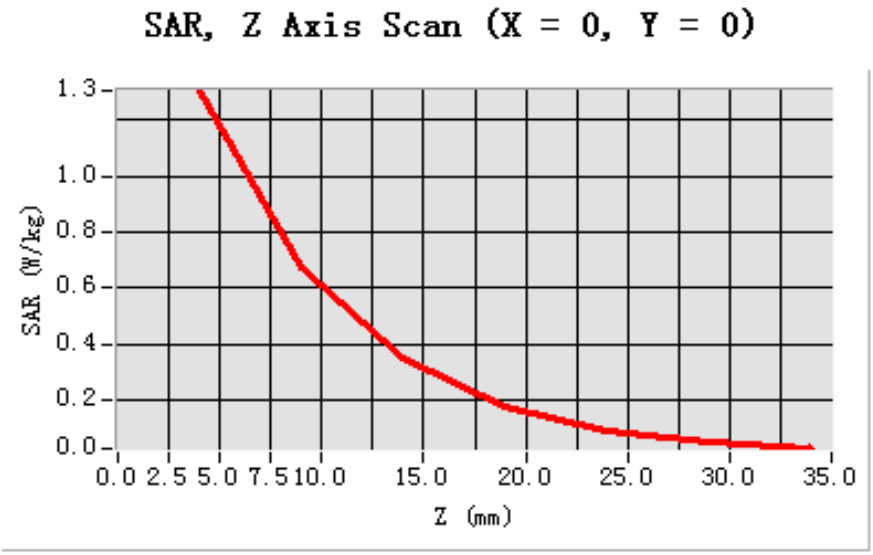
SURFACE SAR	**VOLUME SAR**
	

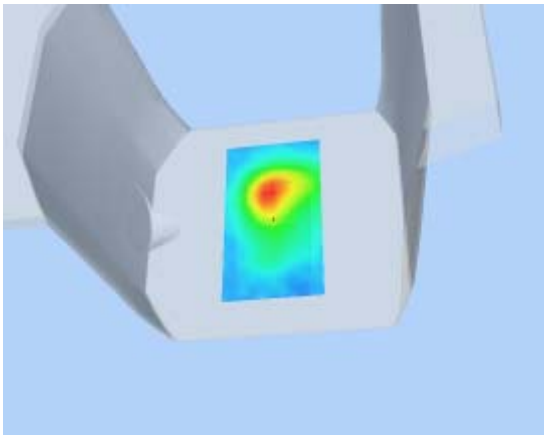
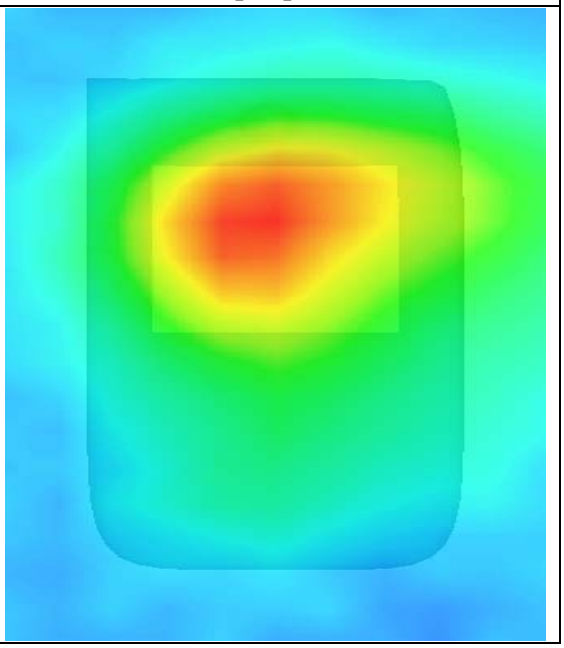
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.173534
SAR 1g (W/Kg)	0.334155

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 24

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

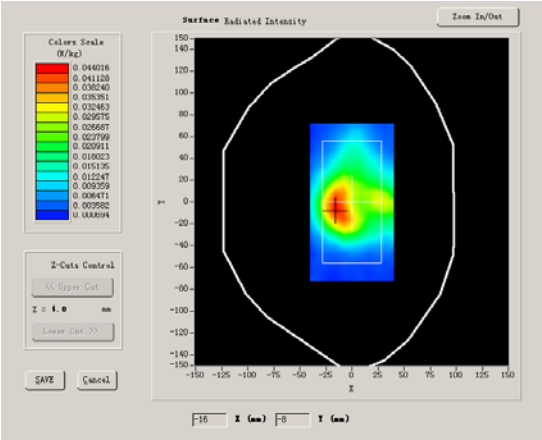
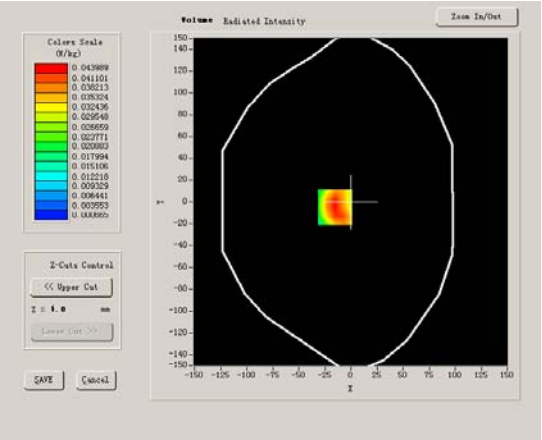
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

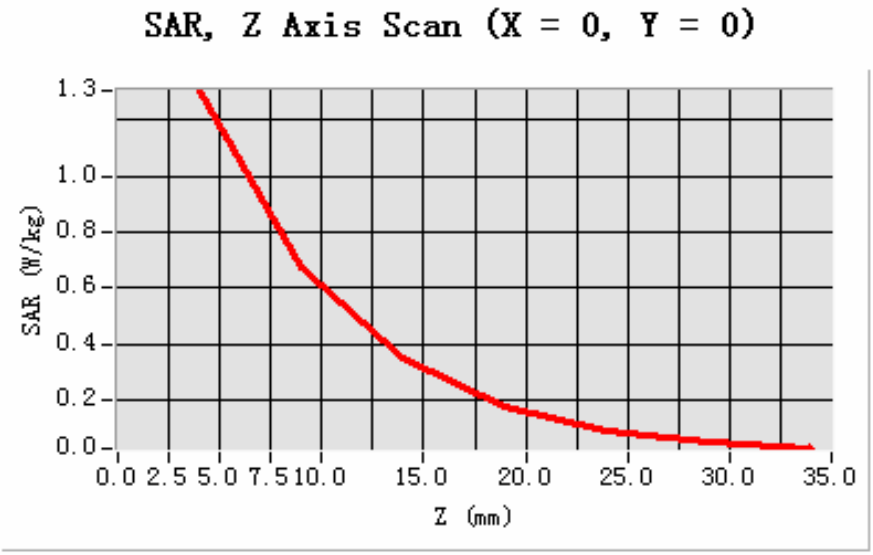
SURFACE SAR	**VOLUME SAR**
	

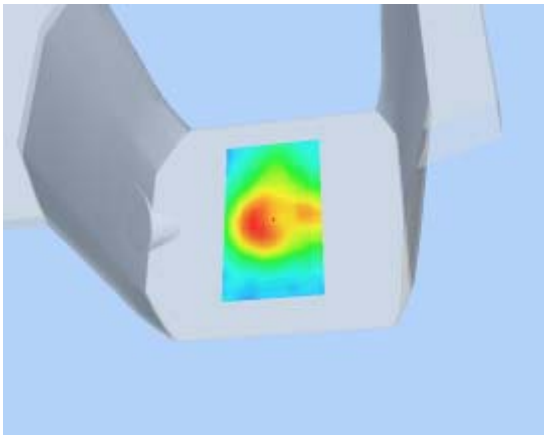
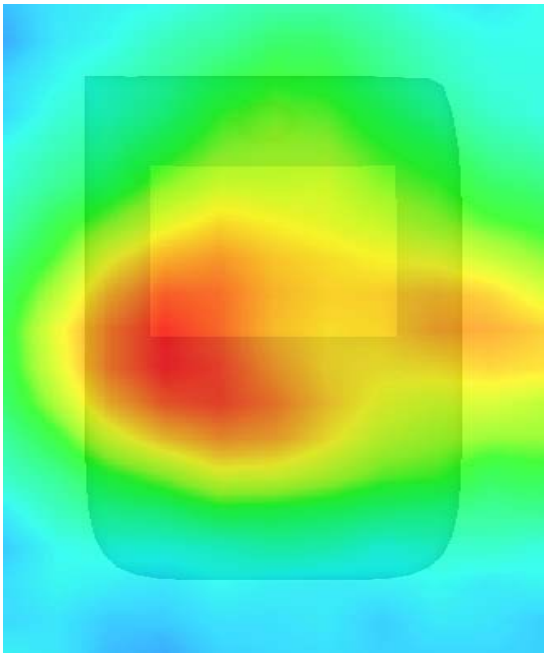
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.168345
SAR 1g (W/Kg)	0.311638

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 25

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

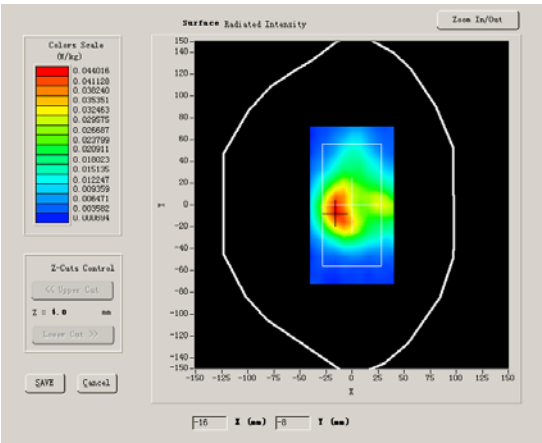
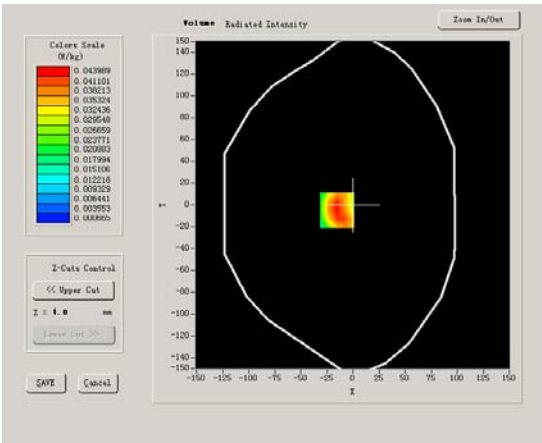
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

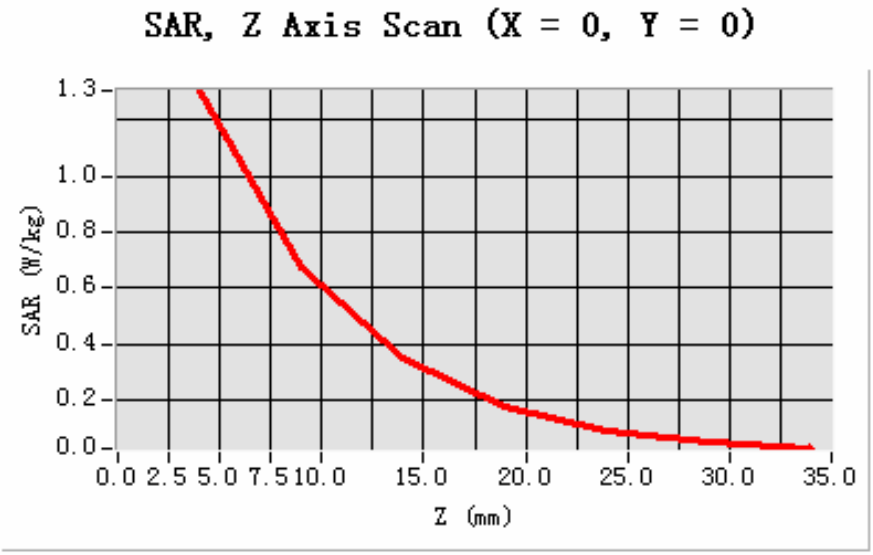
SURFACE SAR	**VOLUME SAR**
	

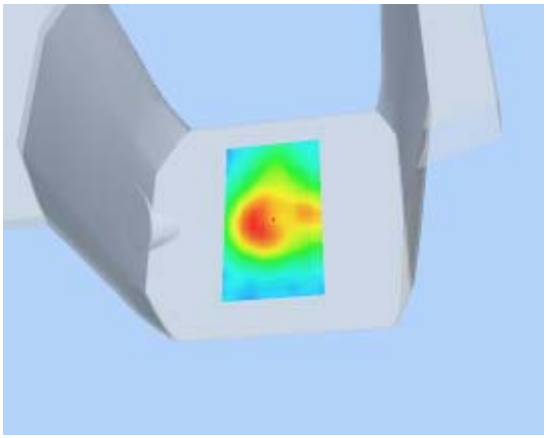
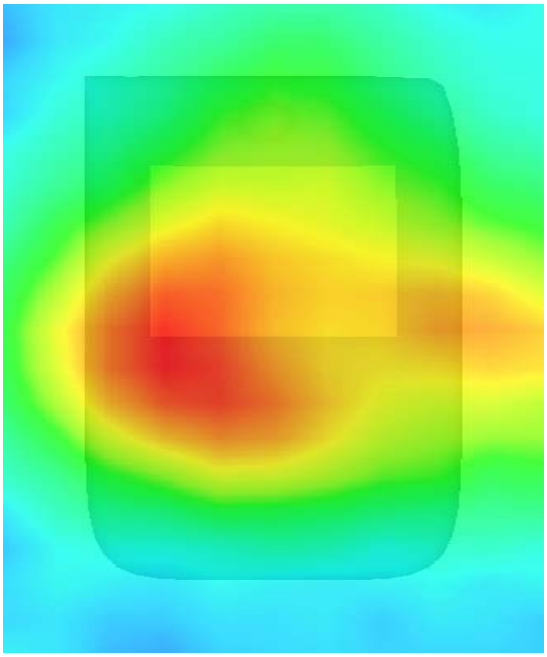
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.165386
SAR 1g (W/Kg)	0.306345

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 26

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

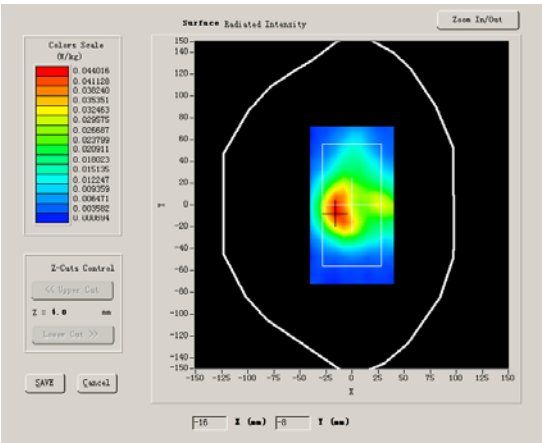
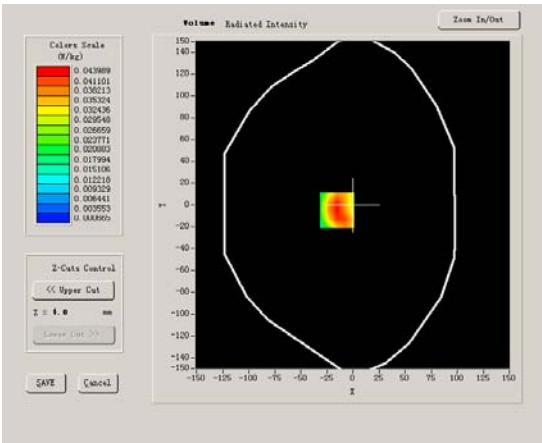
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

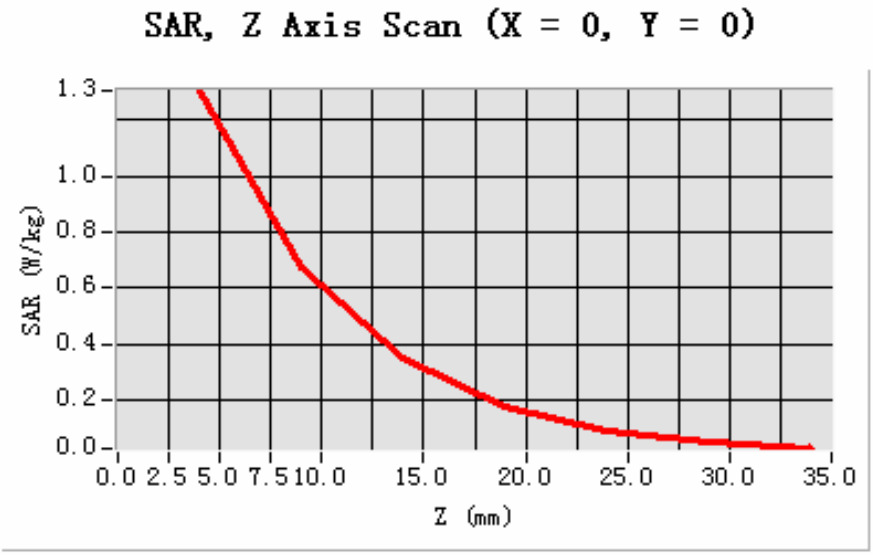
SURFACE SAR	**VOLUME SAR**
	

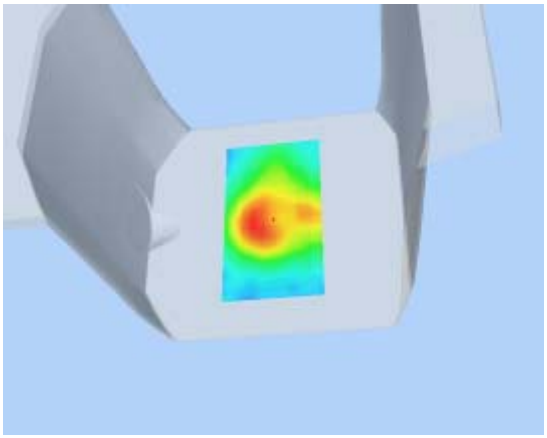
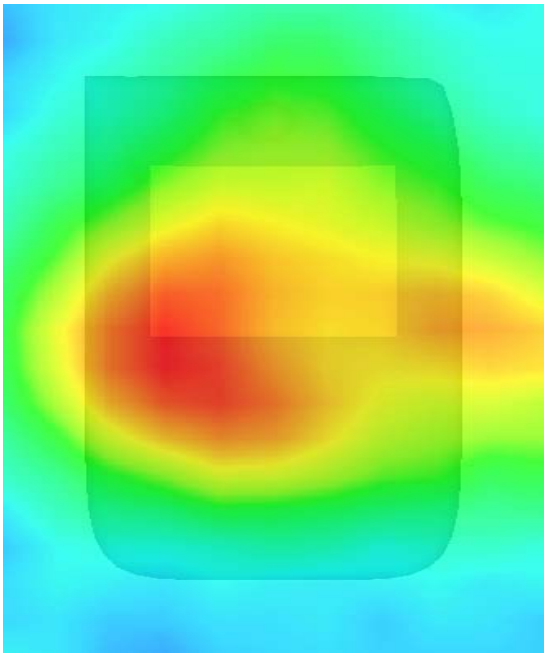
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.173275
SAR 1g (W/Kg)	0.317455

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 27

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

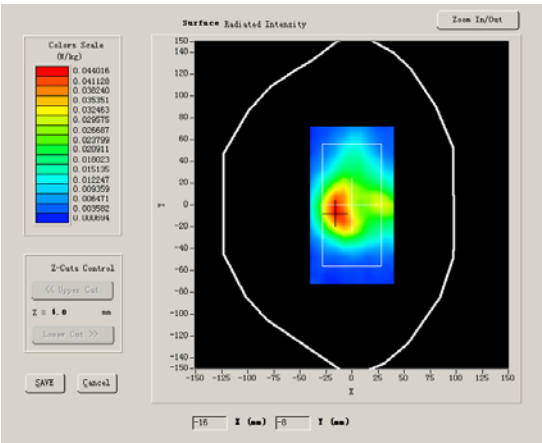
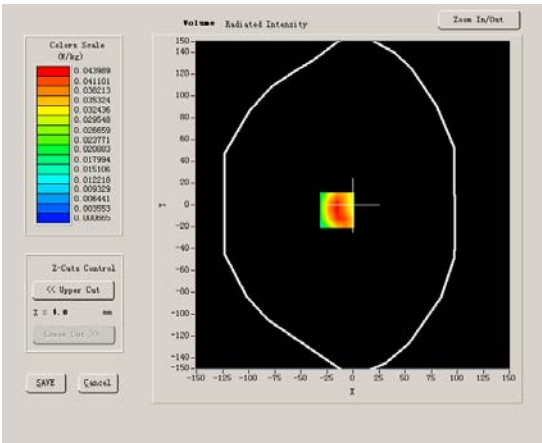
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Middle
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2437.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

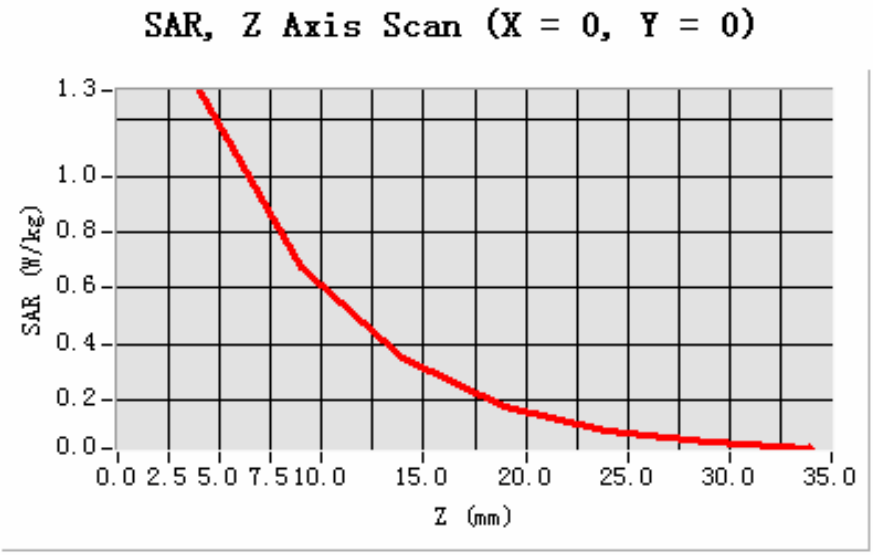
SURFACE SAR	**VOLUME SAR**
	

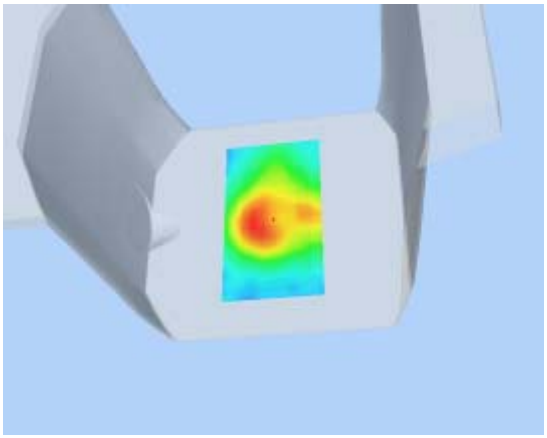
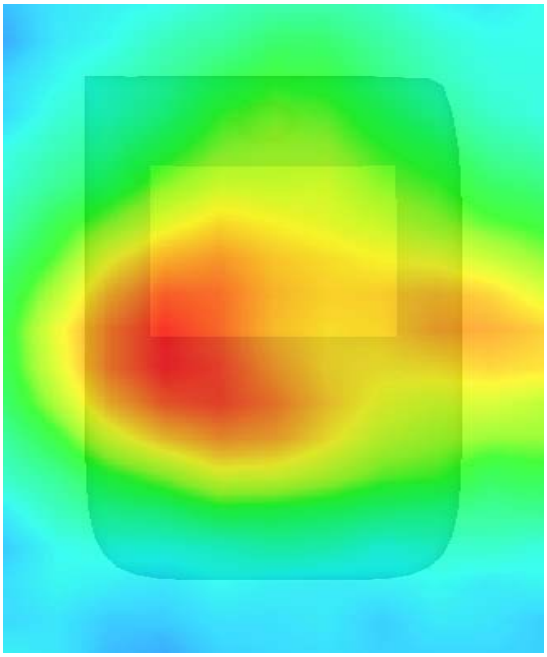
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.174375
SAR 1g (W/Kg)	0.343884

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 28

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

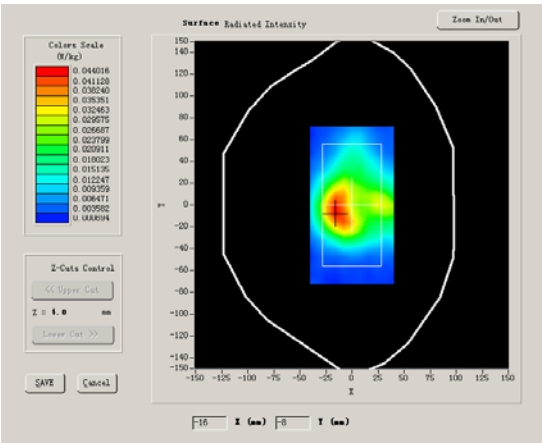
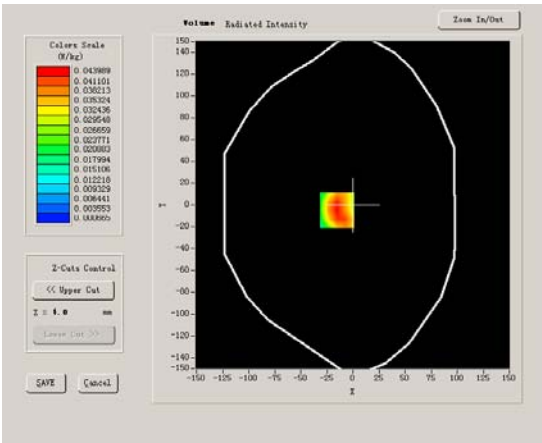
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	Low
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2422.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

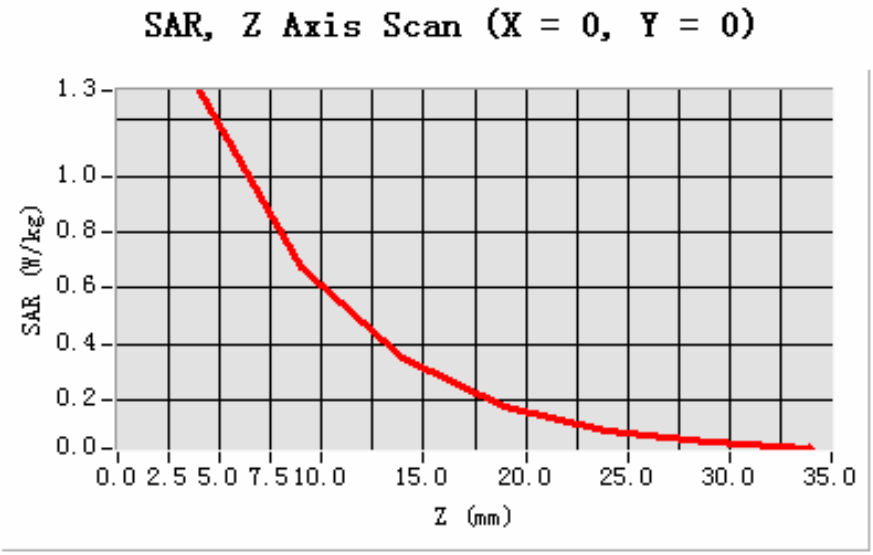
SURFACE SAR	**VOLUME SAR**
	

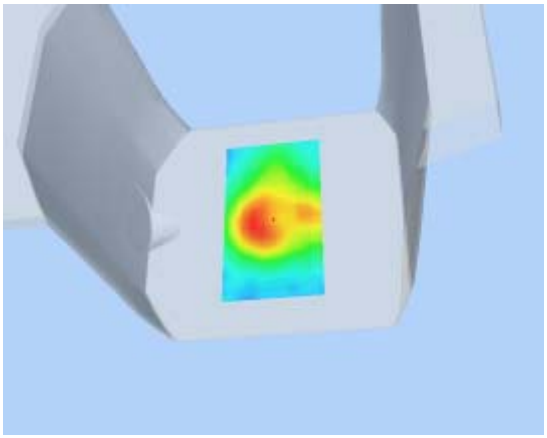
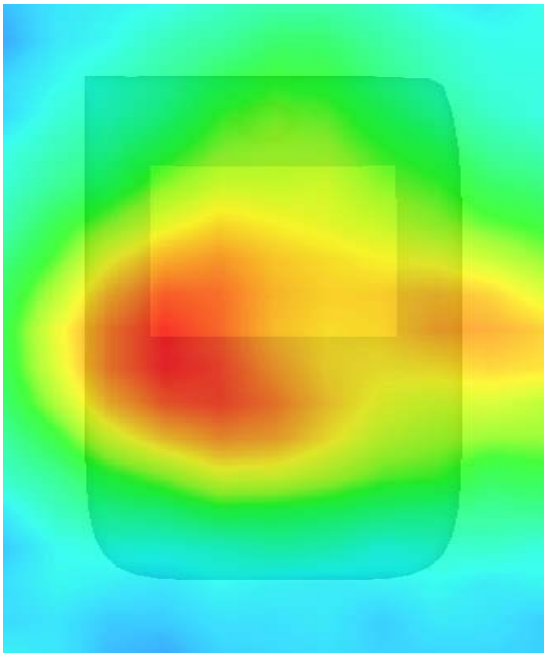
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.184634
SAR 1g (W/Kg)	0.343466

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 29

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

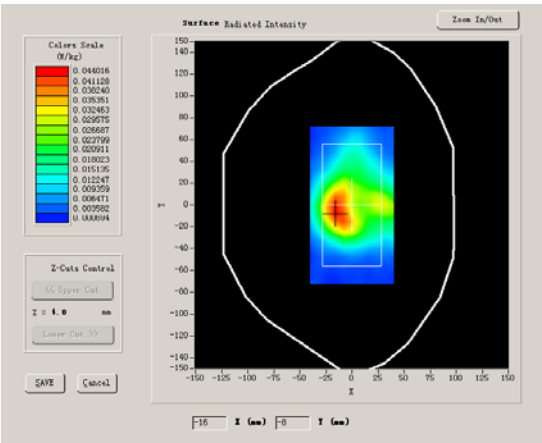
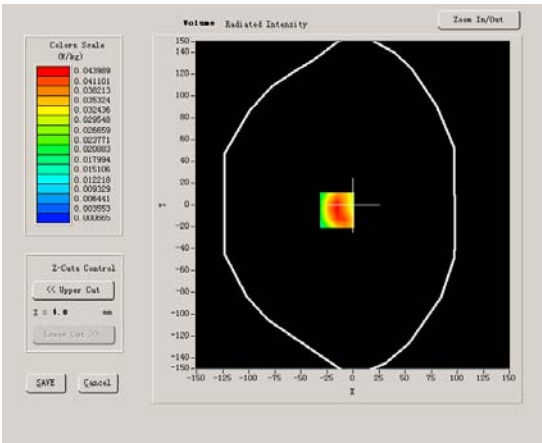
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11 N
Channels	High
Signal	CW

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	2452.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.4°C
ConvF:	39.563,33.614,37.677
Crest factor：	1:1

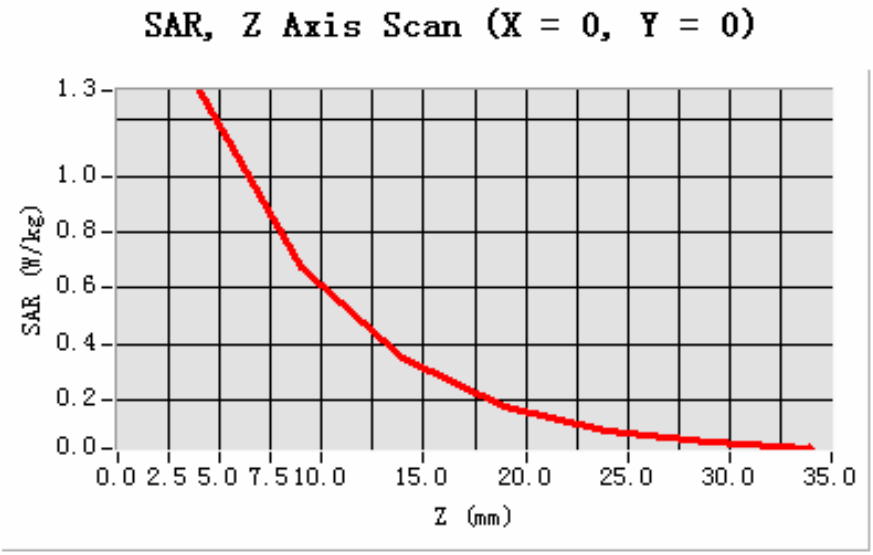
SURFACE SAR	**VOLUME SAR**
	

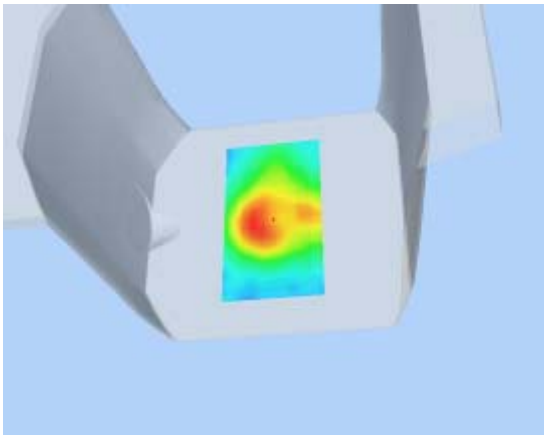
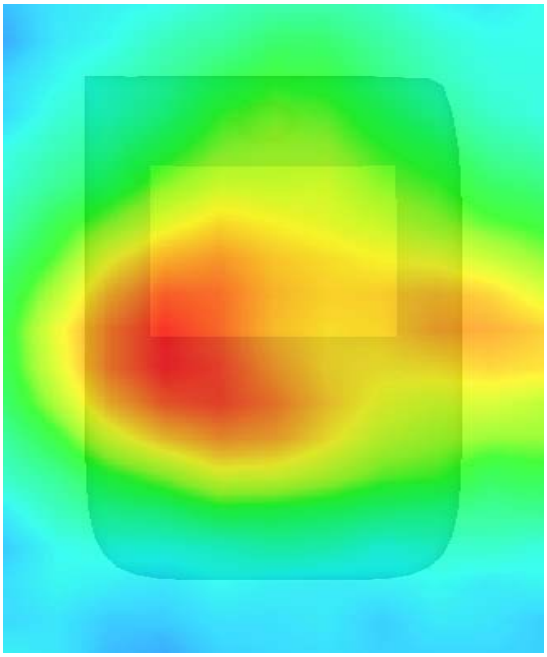
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.199455
SAR 1g (W/Kg)	0.376338

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 30

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

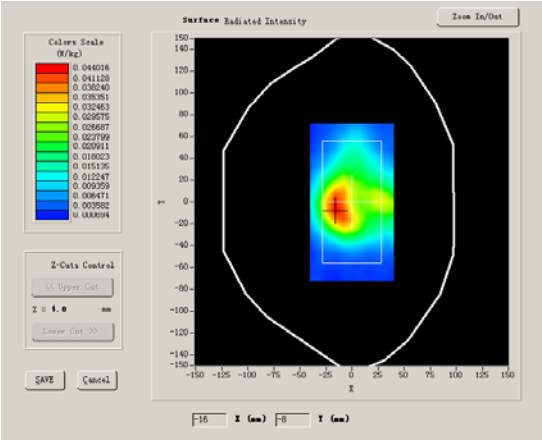
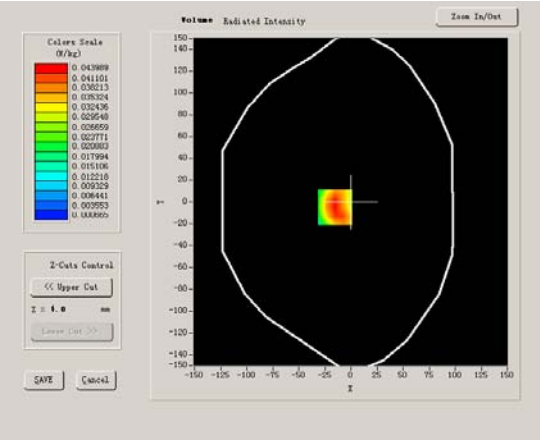
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	Low
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1921.536000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

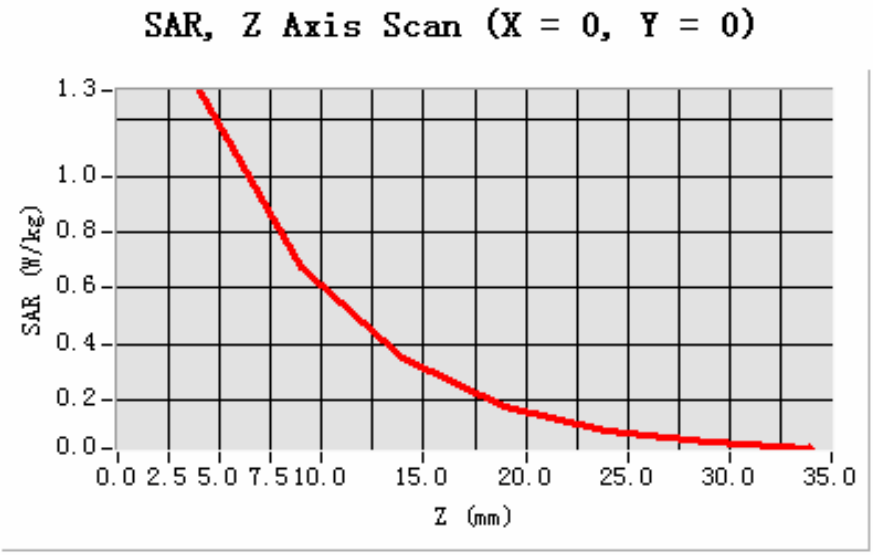
SURFACE SAR	**VOLUME SAR**
	

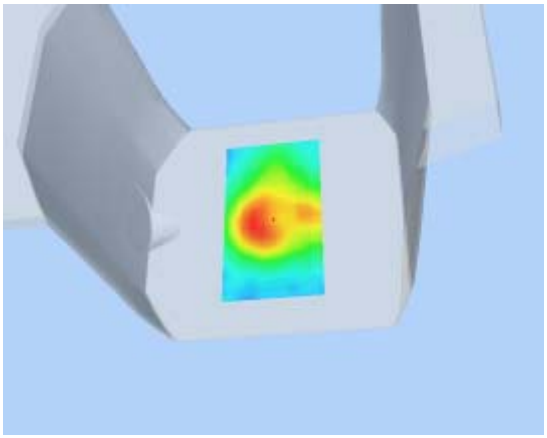
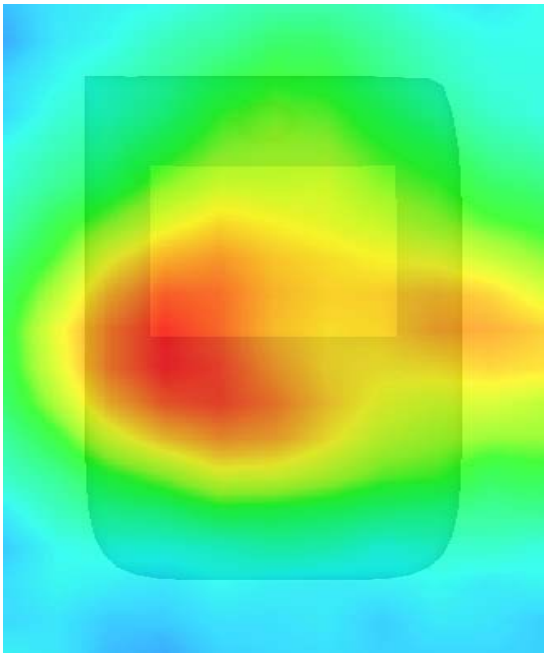
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.231784
SAR 1g (W/Kg)	0.424563

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 31

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

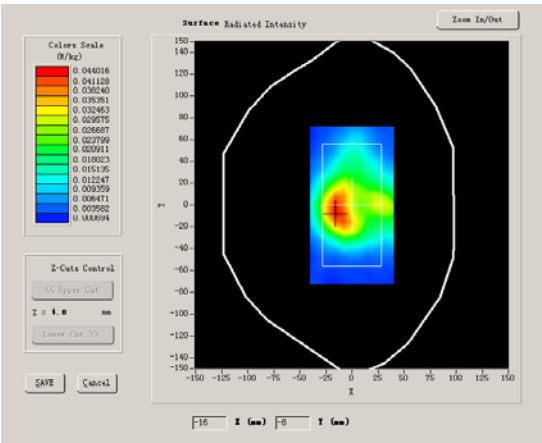
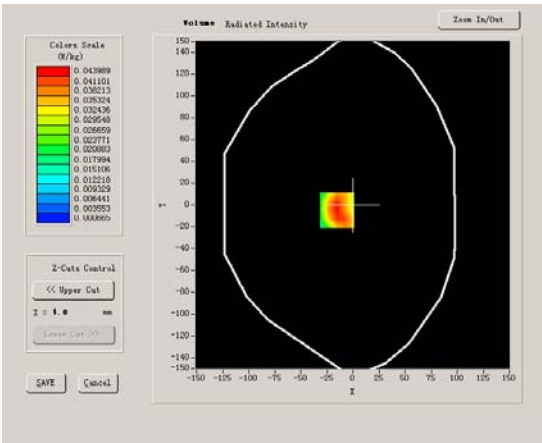
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	Middle
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1924.992000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

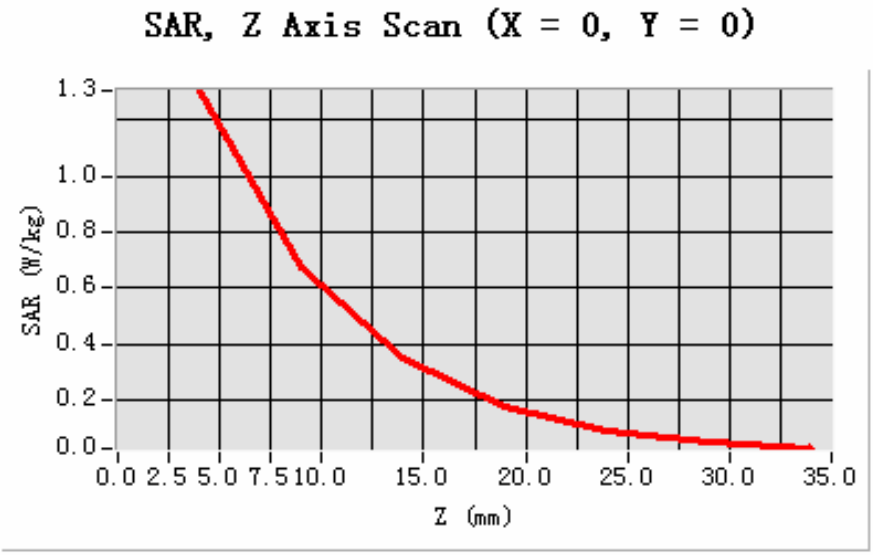
SURFACE SAR	**VOLUME SAR**
	

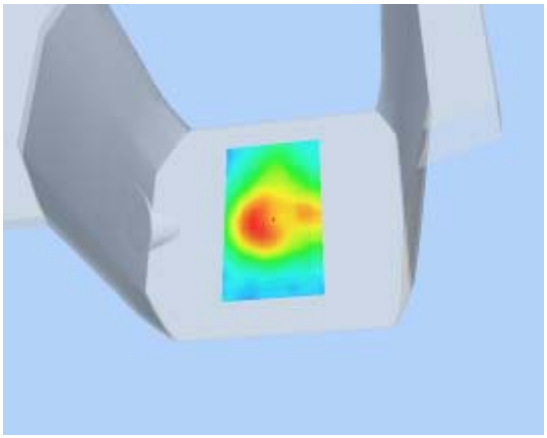
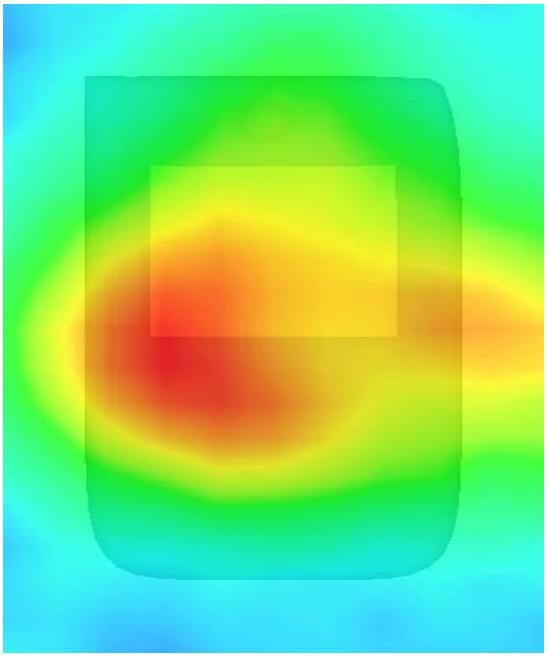
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.245285
SAR 1g (W/Kg)	0.462456

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 32

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration:13 minutes 7 seconds

A. Experimental conditions.

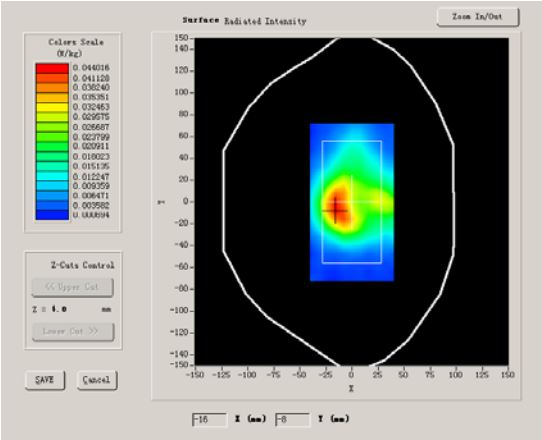
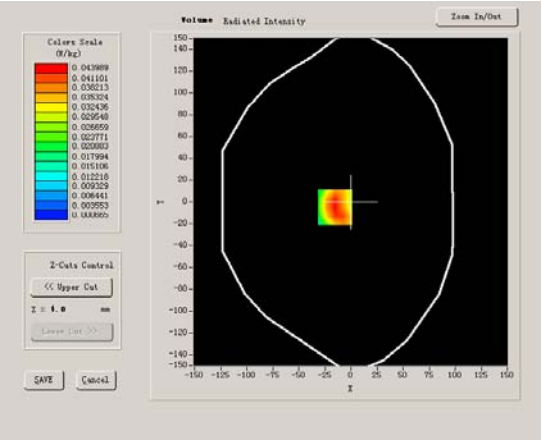
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	High
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1928.448000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

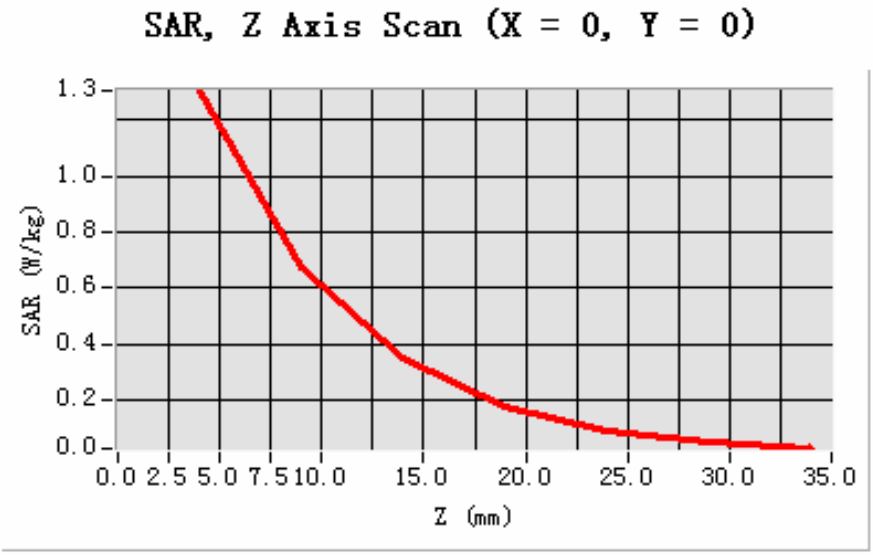
SURFACE SAR	**VOLUME SAR**
	

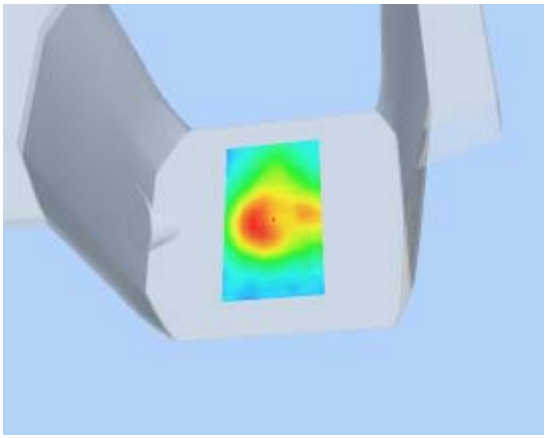
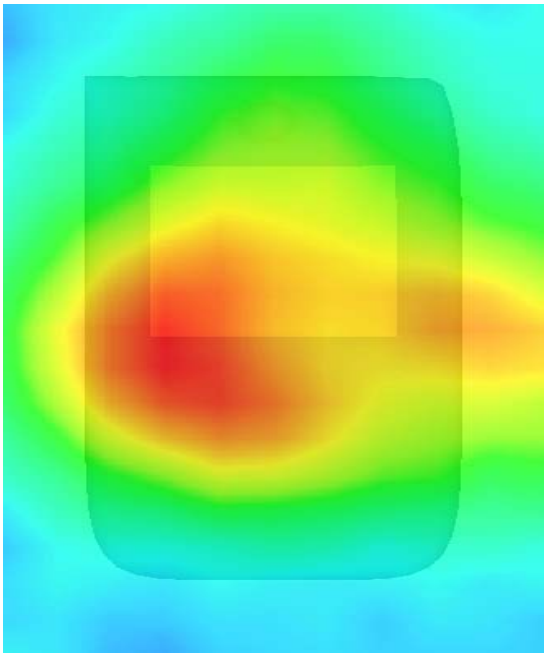
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.264735
SAR 1g (W/Kg)	0.484563

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	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=5mm, dy=5mm, dz=5mm

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

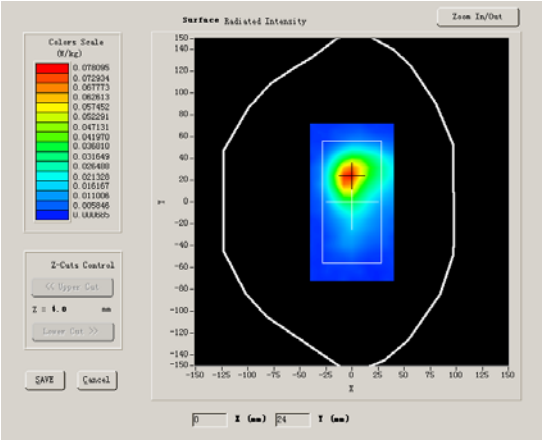
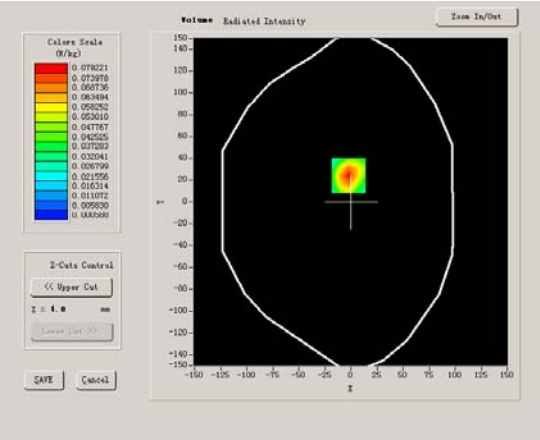
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	Low
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1921.536000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

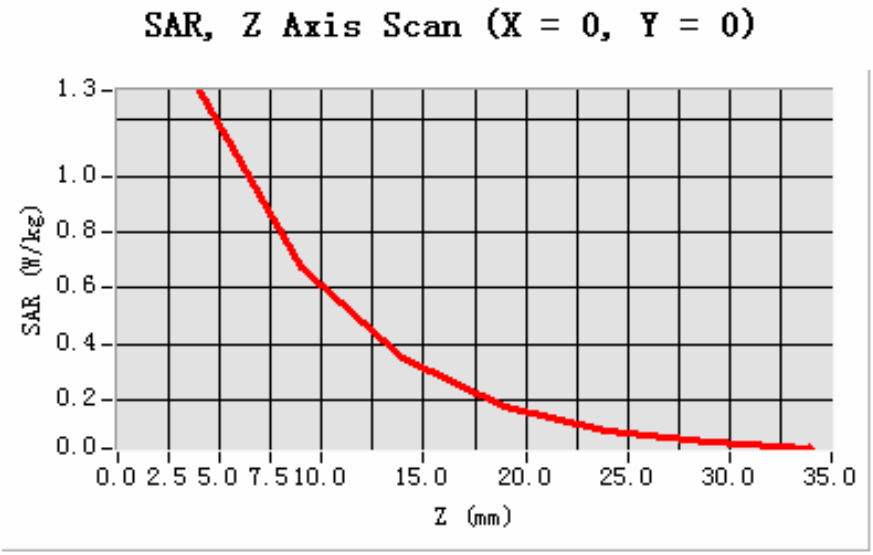
SURFACE SAR	**VOLUME SAR**
	

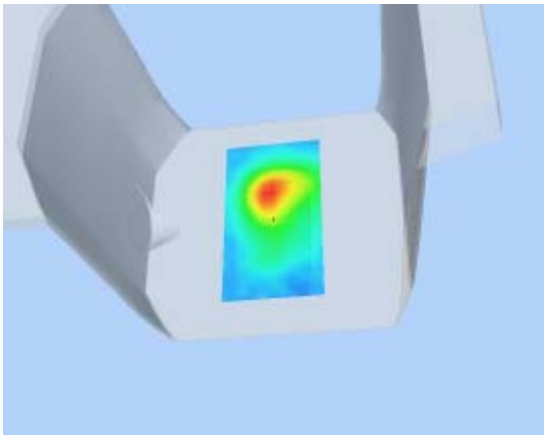
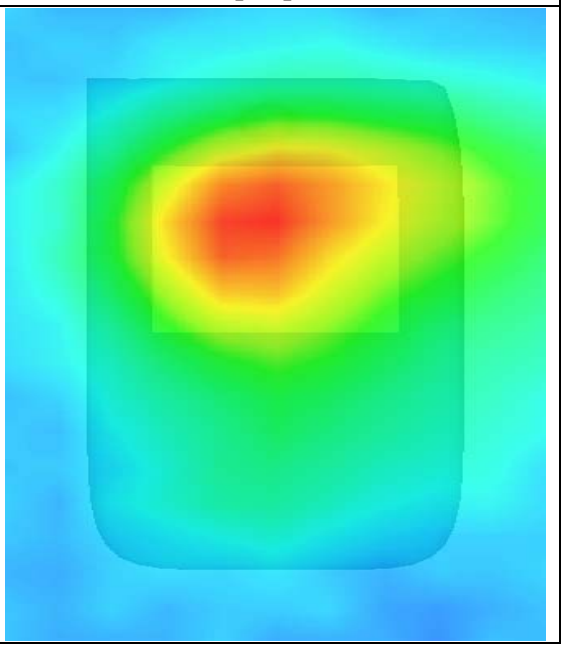
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.346285
SAR 1g (W/Kg)	0.638662

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 34

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

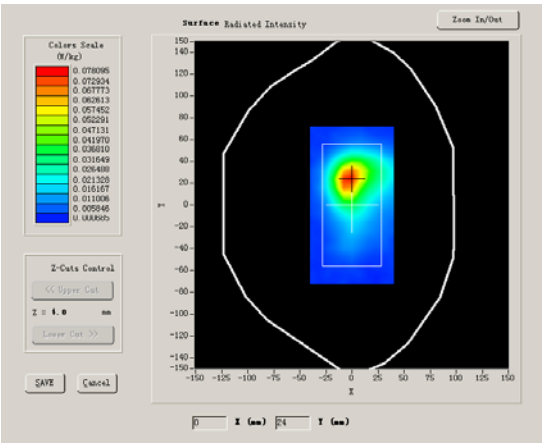
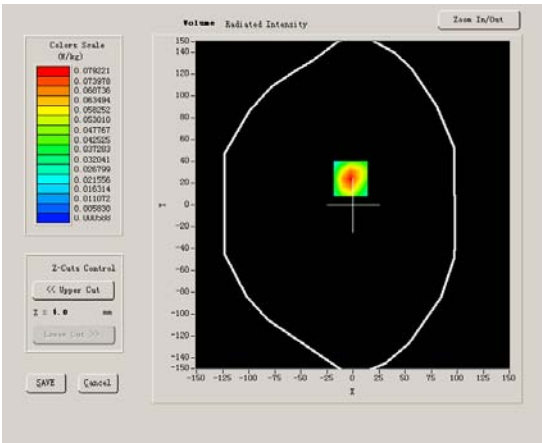
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	Middle
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1924.992000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

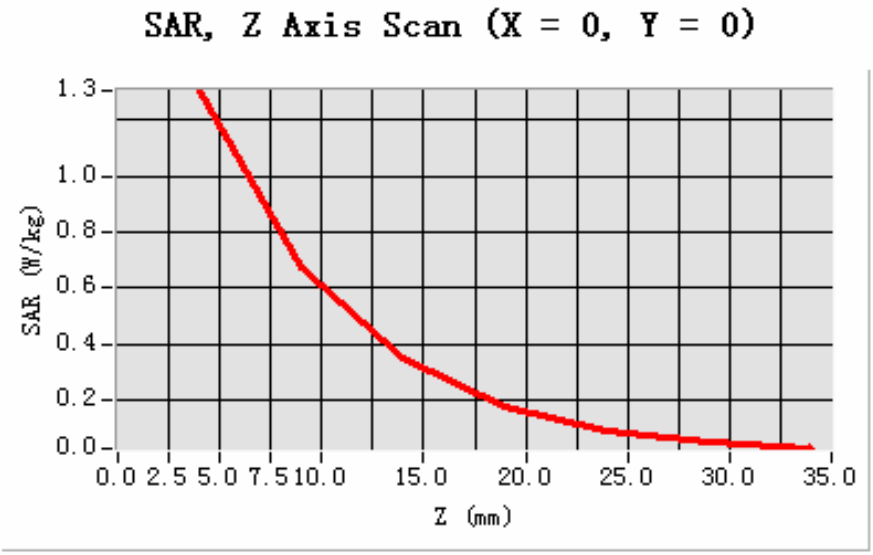
SURFACE SAR	**VOLUME SAR**
	

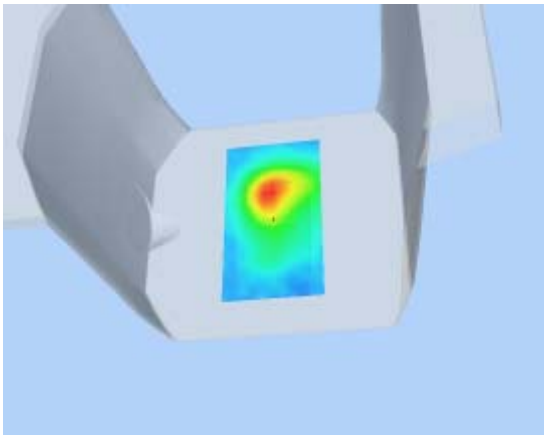
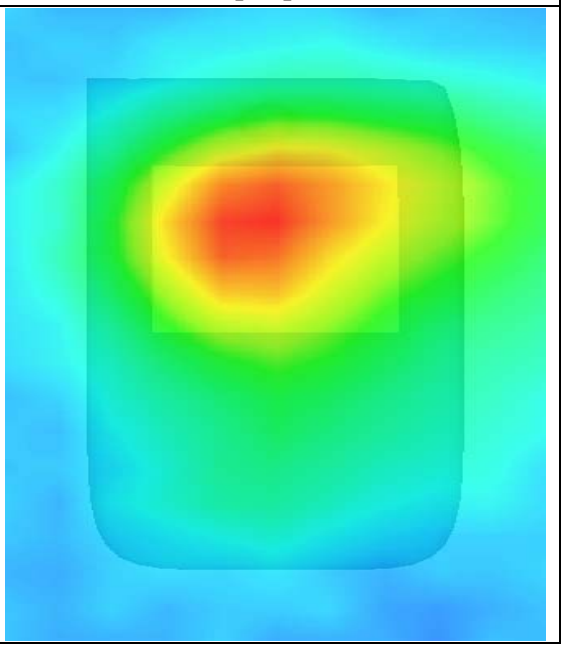
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.384845
SAR 1g (W/Kg)	0.668450

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



3D sceen shot	Hot spot position
	

MEASUREMENT 35

Type: Phone measurement (Complete)

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

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

Date of measurement: 28/9/2010

Measurement duration: 13 minutes 7 seconds

A. Experimental conditions.

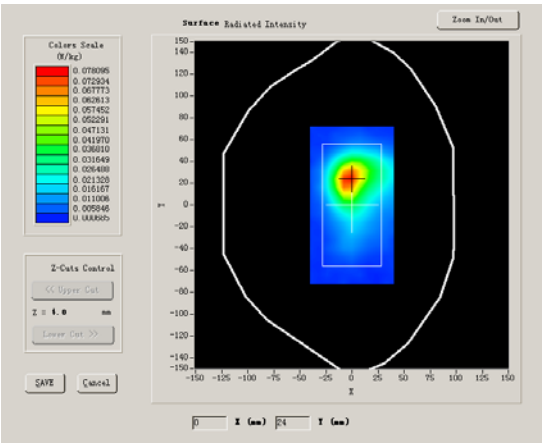
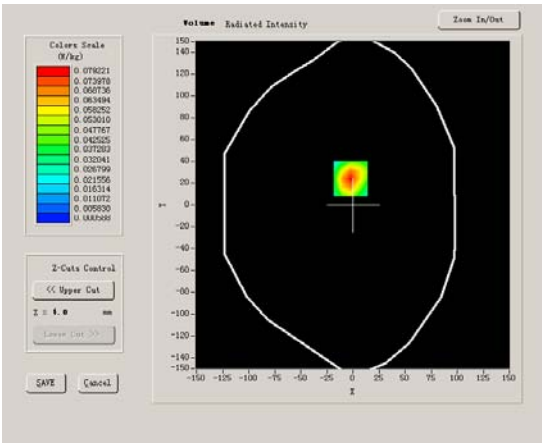
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	DECT
Channels	High
Signal	TDMA

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	1928.448000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050

Conductivity (S/m)	1.720014
Variation (%)	-0.670000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:24

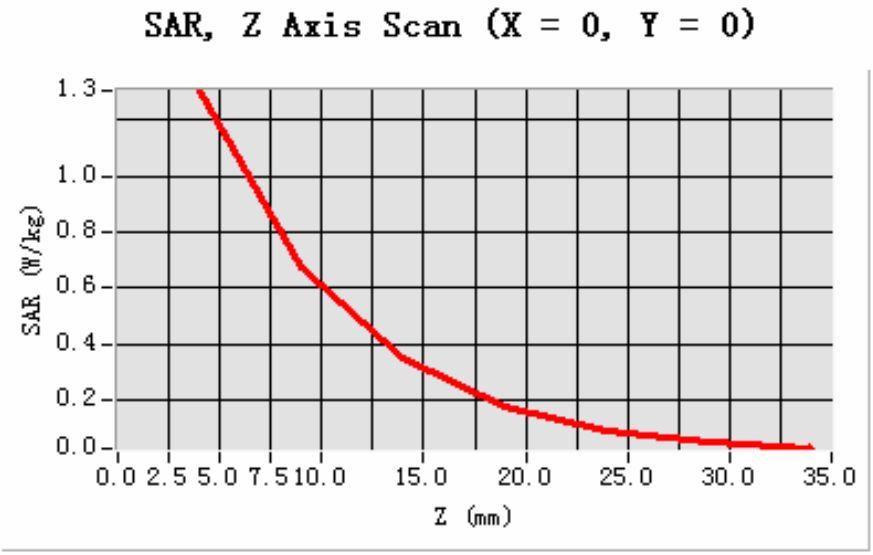
SURFACE SAR	**VOLUME SAR**
	

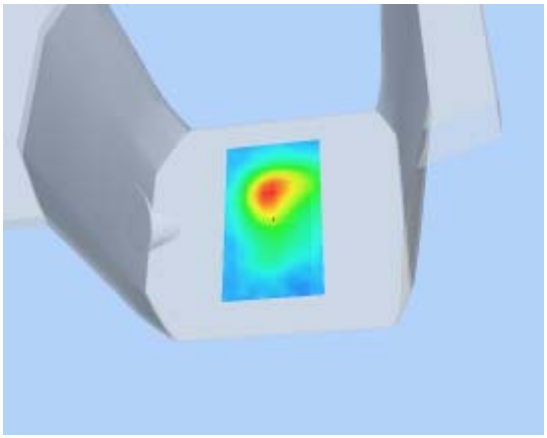
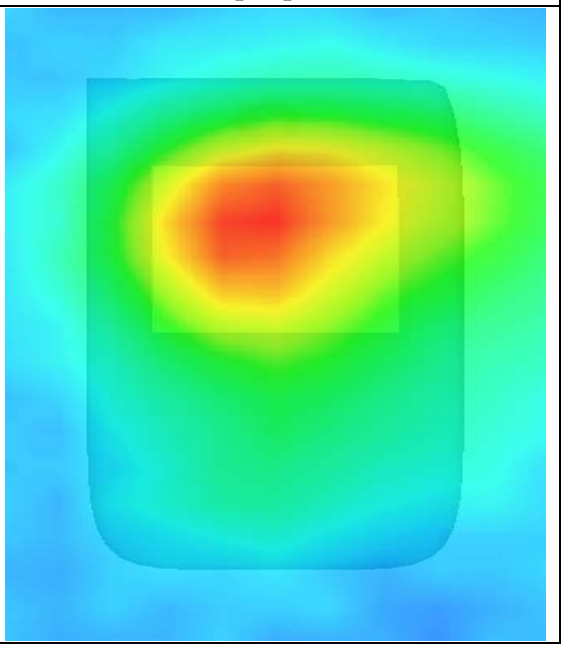
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.376830
SAR 1g (W/Kg)	0.642899

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3034	0.6704	0.3466	0.1765	0.0915	0.0494



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: 28/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

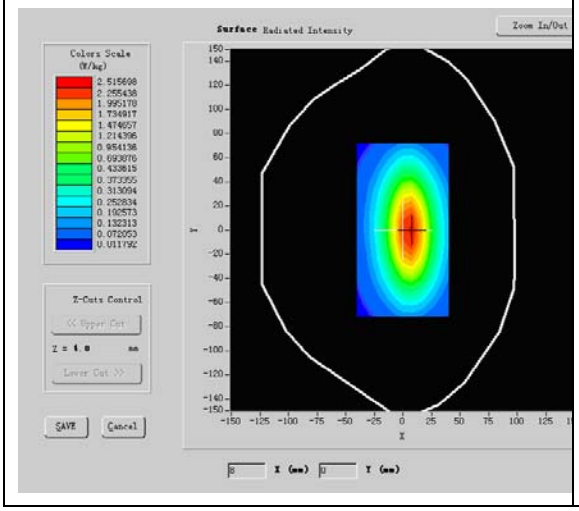
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

Frequency (MHz)	1800.000000
Relative permittivity (real part)	53.271999
Relative permittivity	15.070000

Conductivity (S/m)	1.478356
Power Drift (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

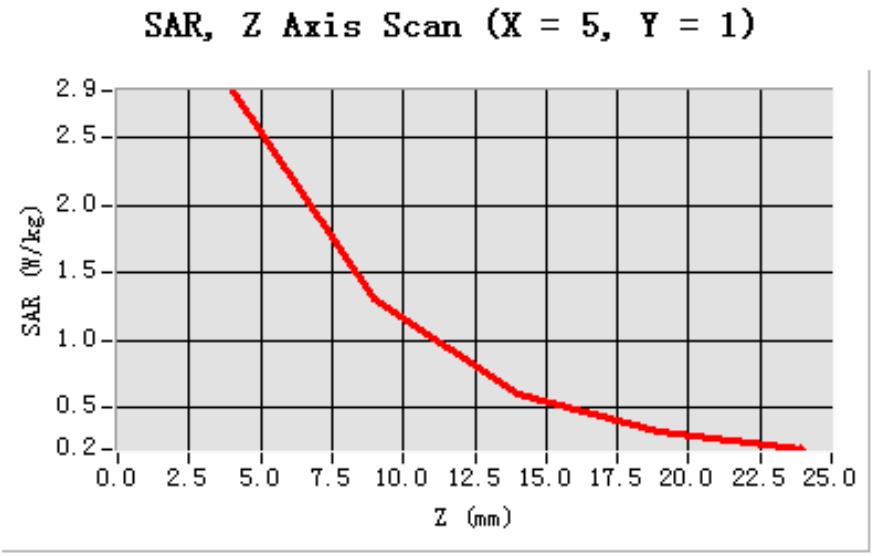
SURFACE SAR	**VOLUME SAR**
	

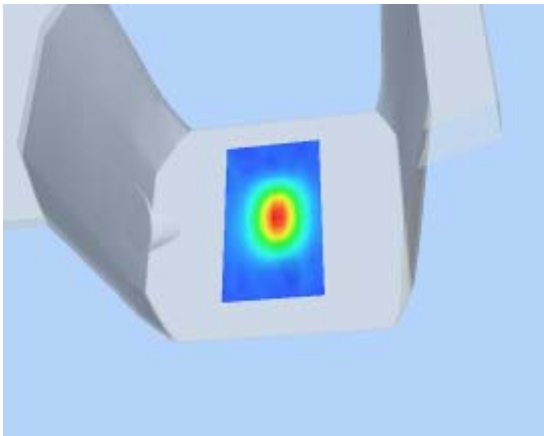
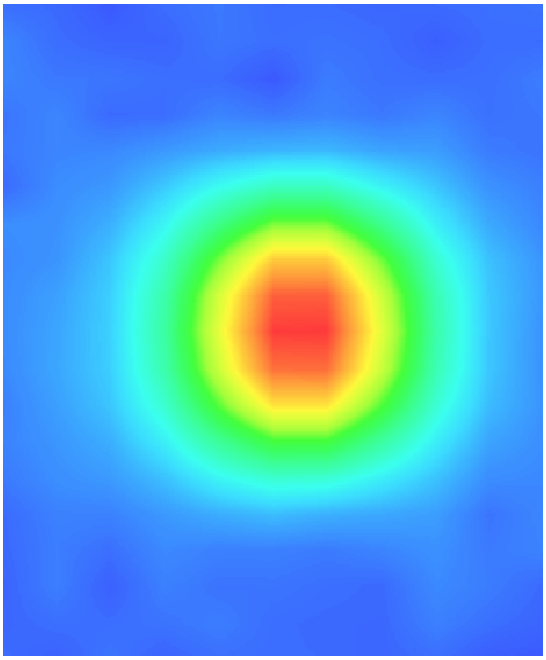
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	5.473662
SAR 1g (W/Kg)	9.798734

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: 28/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

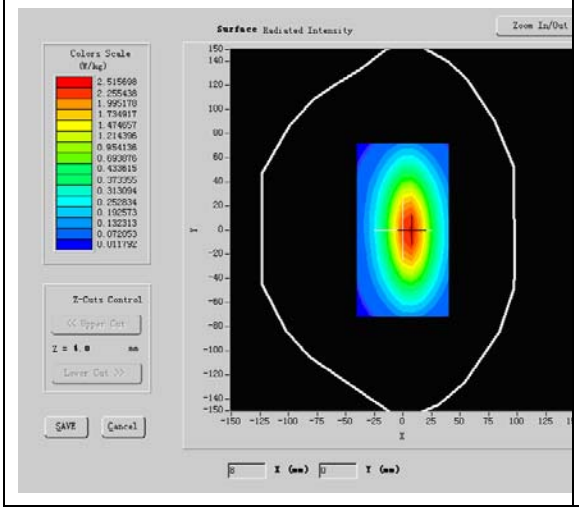
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	2450MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

Frequency (MHz)	2450.000000
Relative permittivity (real part)	51.562264
Relative permittivity	12.991650

Conductivity (S/m)	1.915574
Variation (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

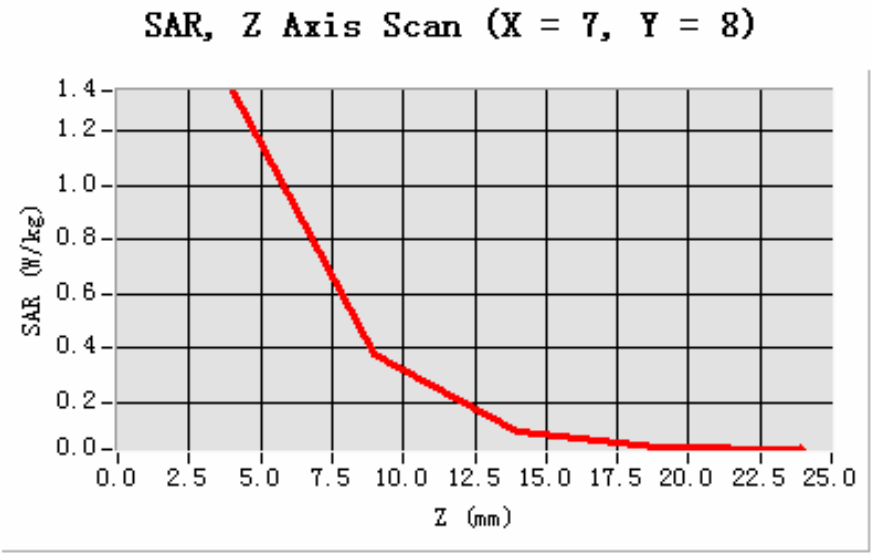
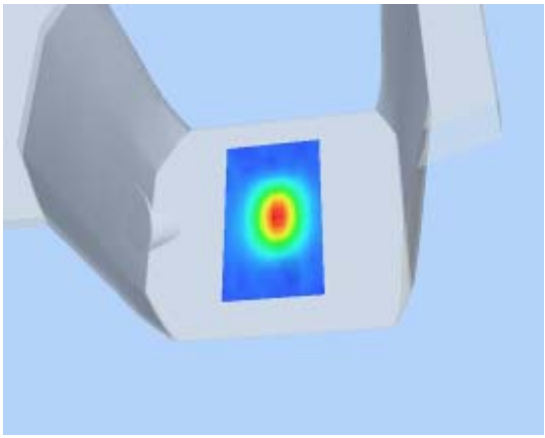
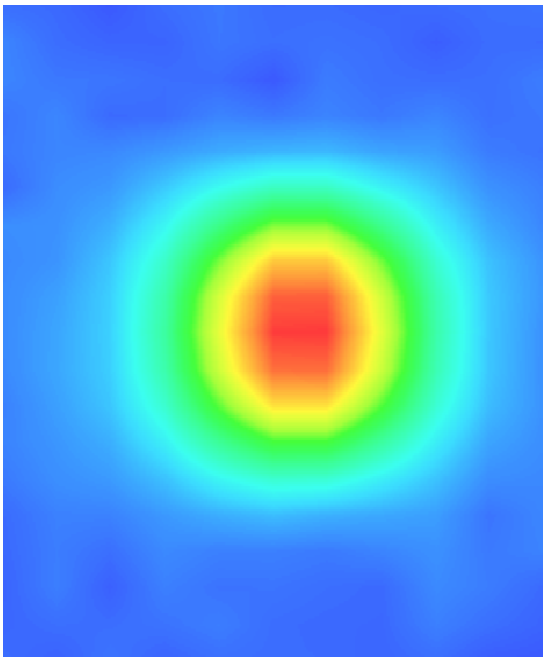
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	7.077634
SAR 1g (W/Kg)	12.988772

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