FCC SAR

TEST REPORT

of

Cordless Fixed Wireless Phone

Model Name:	FXC-851
Trade Name:	MOTOROLA
Report No.:	SZ10010087S02
FCC ID.:	WVB-FXC851

prepared for

Brightstar Corporation
9725 NW 117th Avenue, #300 Miami, FL 33178

prepared by

Shenzhen Electronic Product Quality Testing Center
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OFTA 電訊管理局   GCF Official Observer of Global Certification Forum   TAF Testing Laboratory   ilac-MRA   CNAS

Bluetooth®   CTIA Authorized Test Lab
LAB CODE 20081223-00

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Contents

General Information

1.1. Notes

The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Electronic Product Quality Testing Center 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 Electronic Product Quality Testing Center 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.:	SZ10010087S02
Date of Issue:	Mar 15, 2010
Date of Tests:	Mar 3, 2010 –Mar 3, 2010
Responsible for Accreditation:	Shu luan
Project Manager:	Li Lei
Deputy Project Manager:	Chen Chao

1.3. Conclusion

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory has verified that all tests as listed in the section 4.5 of this report haven been performed succ essfully with the tested equipment.

Chen Chao
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 Electronic Product Quality Testing Center
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 Electronic Product Quality Testing Center 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 L1659 (see 0)

2.4. List of Test Equipments

No.	Instrument	Type
1	PC	Dell (Pentium IV 2.4GHz, SN:X10-23533)
2	Network Emulator	Rohde&Schwarz (CMU200, SN:105894)
3	Voltmeter	Keithley (2000, SN:1000572)
4	Synthetizer	Rohde&Schwarz (SML_03, SN:101868)
5	Amplifier	Nucl udes (ALB216, SN:10800)
6	Power Meter	Rohde&Schwarz (NRVD, SN:101066)
7	Probe	Antennessa (SN:SN_3708_EP80)
8	Phantom	Antennessa (SN:SN_36_08_SAM62)
9	Liquid	Antennessa (Last Calibration:21 08 04)

3. Technical Information

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

3.1. Identification of Applicant

Company Name:	Brightstar Corporation
Address:	9725 NW 117th Avenue, #300 Miami, FL 33178

3.2. Identification of Manufacturer

Company Name:	LAKIA Networks CO., LTD.
Address:	2/F,Unit A, Technology Service Building, Software Garden, 1phase, Xiamen, Fujian, China Zip: 361005

3.3. Equipment Under Test (EUT)

Brand Name:	MOTOROLA
Type Name:	MOTOROLA
Marking Name:	FXC-851
Hardware Version:	P4
Software Version:	LKW_R20.07
Frequency Bands:	GSM 850MHz (channel 128:824.20MHz,channel 190:836.59MHz, channel 251:848.29MHz)
	PCS 1900MHz (channel 512:1850.19MHz,channel 661:1880.00MHz, channel 810:1909.80MHz)
Modulation Mode:	GMSK
Antenna type:	Build inside
Development Stage:	Identical prototype
Battery Model:	3 x AAA600mAh 3.6V
Battery specification:	600mAh 3.7V
Development Stage	Identical prototype

3.3.1. Photographs of the EUT

Please see for photographs of the EUT.

3.3.2. Identification of all used EUTs

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

EUT Identity	Hardware Version	Software Version
1#	P4	LKW_R20.07

4. Test Results

4.1. 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.

4.2. Test Environment/Conditions

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

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established.

The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz, The EUT, The EUT is commanded to operate at maximum transmitting power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset.

The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 35 dB.

4.3.Operational Conditions During Test

4.3.1. Informations On The Testing

I. INFORMATIONS ON THE TESTING

I.1. Normative reference

IEEE 1528: Recommended Practice for determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. Institute of Electrical and Electronics Engineers, INC., 2003.

I.3. Positions and test conditions of the mobile phone under test

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.
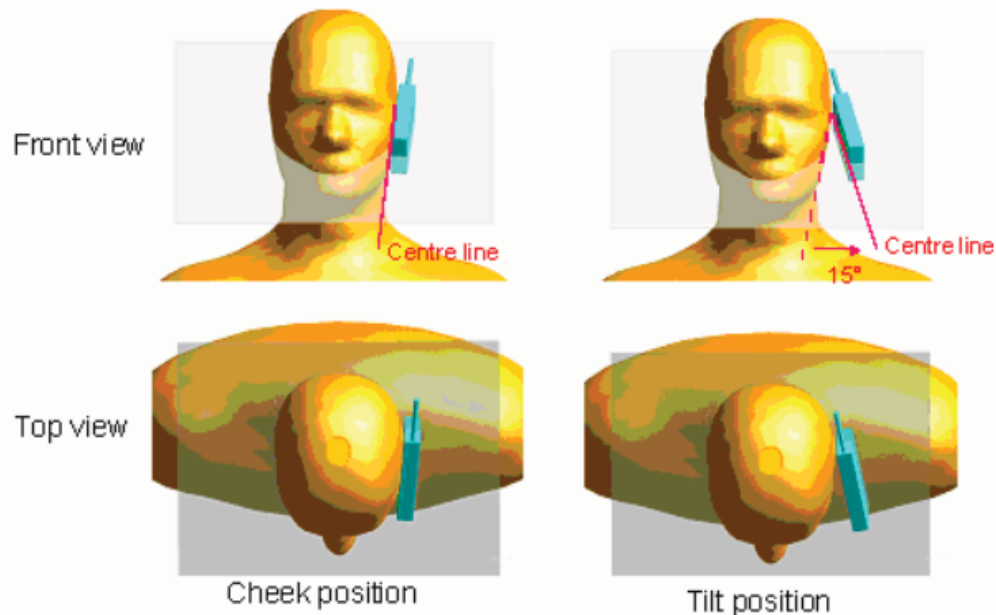
Description of the « cheek » position:

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 place in the "cheek" position as described above. Then the mobile phone is moved outward away from the mouth by an angle of 15 degrees or until contact with the ear lost.

4.3.2. 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.

COMOSAR bench

The mobile phone 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 10 g mass.

II.1. 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 2 mm +/- 0,2 mm. It enables the dosimetric evaluation of left and right hand 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.

II.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 : 2.5 mm
- 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 : <0.50 dB
- Calibration range : 835 to 2500 MHz for head & body simulating liquid
- Angle between probe axis (evaluation axis) and suface normal line : less than 30°

II.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 16 mm * 8 to 16 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.

II.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 minimise measurements errors, but the highest local SAR will occur at the surface of the phantom.

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

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

4.3.3. Uncertainty Assessment

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

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	$\sqrt{3}$	$(1-Cp)^{1/2}$	$(1-Cp)^{1/2}$	1.02	1.02	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	$\sqrt{Cp}$	$\sqrt{Cp}$	1.63	1.63	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	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	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	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	4.76	R	$\sqrt{3}$	1	1	2.75	2.75	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Liquid conductivity - deviation from target value	E.3.2	0.57	R	$\sqrt{3}$	0.64	0.43	0.21	0.14	∞

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	3.66	R	$\sqrt{3}$	0.6	0.49	1.27	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				11.28	10.78	
Expanded Uncertainty (95% Confidence interval)			k				21.99	21.03	

4.3.4. Equipments and results of validation testing

Equipments :

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

Results:

Frequency	835MHz	1900MHz
Target value（1g）	10.8 W/Kg(body)	39.7 W/Kg
250 mW input power	2.627 W/Kg (head) 2.711 W/Kg (body)	9.903 W/Kg (head) 9.835 W/Kg (body)
Test value（1g）	10.508 W/Kg (head) 10.844 W/Kg (body)	39.612 W/Kg (head) 39.34 W/Kg (body)

Note:Please refer to check the system performance data, the first 132-143 page. 250 mW input power

4.3.5. Dielectric Performance

The measured 1-gram averaged SAR values of the device against the head and the body are provided in Tables 1 and 2 respectively. The humidity and ambient temperature of test facility were 54% ~60% and 23.0 °C ~23.8°C respectively. The SAM head phantom（SN 0381 SH）were full of the head tissue simulating liquid. The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 1.5cm (taking into account of the IEEE 1528 and the place of the antenna). A base station simulator was used to control the device during the SAR measurement. The phone was supplied with full-charged battery for each measurement.

For head measurement, the device was tested at the lowest, middle and highest frequencies in the transmit band.

Table 1: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	835 MHZ	41.5	0.90
Validation value (Mar 3)	835 MHZ	41.675999	0.894409
Target value	1900 MHZ	40	1.40
Validation value (Mar 3)	1900 MHZ	38.509998	1.436111

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

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	835 MHz	55.0	0.95
Validation value (Mar 3)	835 MHz	55.709999	1.009033
Target value	1900 MHz	53.3	1.52

Validation value (Mar 3)	1900 MHz	52.548876	1.573978

4.3.6. Simulant liquids

Simulant liquids that are used for testing at frequencies of GSM 850MHz and GSM 1900MHz, 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.

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

4.4. Items used in the Test Results List

Terms in the column "Verdict" for the test results list of the section 4.5:

Verdict	Description
PASS	EUT passed this test case
FAIL	EUT failed this test case
INC.	EUT did not pass and did not fail this test case, therefore the verdict is inconclusive
Decl.	"Declaration": Morlab has received documents from the applicant and/or manufacturer which show conformity to the applied standards for this test case.
N/A	Test case not applicable for the EUT, see the column "Note" for detailed

4.5. Test Results List

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Low	0.354	31.40
Left head, Touch cheek, Channel Middle	0.322	31.07
Left head, Touch cheek, Channel High	0.295	30.45
Left head, Tilt 15 Degree, Channel Low	0.211	31.40
Left head, Tilt 15 Degree, Channel Middle	0.200	31.07
Left head, Tilt 15 Degree, Channel High	0.185	30.45
Right head, Touch cheek, Channel Low	0.368	31.40
Right head, Touch cheek, Channel Middle	0.342	31.07
Right head, Touch cheek, Channel High	0.311	30.45
Right head, Tilt 15 Degree, Channel Low	0.231	31.40
Right head, Tilt 15 Degree, Channel Middle	0.214	31.07
Right head, Tilt 15 Degree, Channel High	0.201	30.45

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Left head, Touch cheek, Channel Low	0.185	27.87
Left head, Touch cheek, Channel Middle	0.167	27.09
Left head, Touch cheek, Channel High	0.164	27.33
Left head, Tilt 15 Degree, Channel Low	0.112	27.87
Left head, Tilt 15 Degree, Channel Middle	0.101	27.09
Left head, Tilt 15 Degree, Channel High	0.108	27.33
Right head, Touch cheek, Channel Low	0.193	27.87

Right head, Touch cheek, Channel Middle	0.178	27.09
Right head, Touch cheek, Channel High	0.169	27.33
Right head, Tilt 15 Degree, Channel Low	0.132	27.87
Right head, Tilt 15 Degree, Channel Middle	0.121	27.09
Right head, Tilt 15 Degree, Channel High	0.109	27.33

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency	0.421	31.40
Side, Middle frequency	0.406	31.07
Side, High frequency	0.395	30.45
Side, Low frequency (back)	0.254	31.40

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency	0.291	27.87
Side, Middle frequency	0.274	27.09
Side, High frequency	0.280	27.33
Side, Low frequency (back)	0.166	27.87

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

Annex A   Accreditation Certificate

China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(No. CNAS L1659)

China National Accreditation Service for Conformity Assessment has accredited

Shenzhen Electronic Product Quality Testing Center

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 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: 2009-09-29

Date of Expiry: 2012-09-28

Date of Initial Accreditation: 1999-08-03

Signed on behalf of China National Accreditation Service
for Conformity Assessment

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

Annex B Photographs of the EUT

1   EUT Left Head Touch Cheek Position

2   EUT Left Head Tilt15 Position
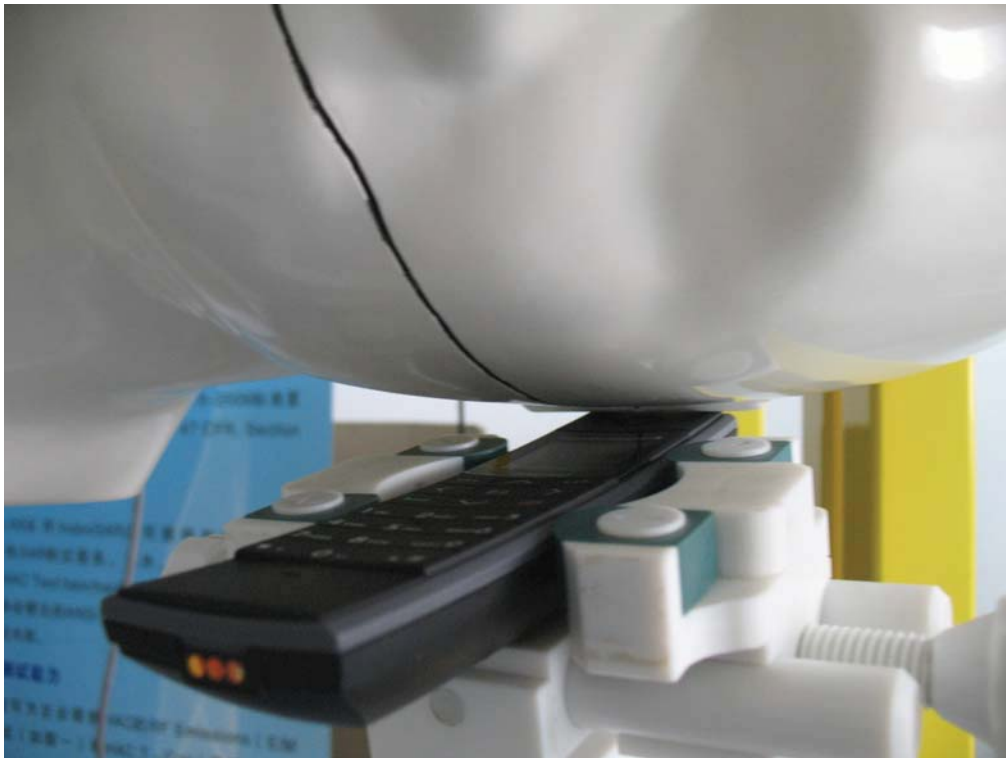
3 EUT Right Head Touch Cheek Position

4 EUT Right Head Tilt15 Position

5   Side Position

Annex C   Graph Test Results

	BAND	PARAMETERS
TYPE	**GSM850**	Measurement 1: Right Head with Cheek device position on Low Channel in GSM mode Measurement 2: Right Head with Cheek device position on Middle Channel in GSM mode Measurement 3: Right Head with Cheek device position on High Channel in GSM mode Measurement 4: Right Head with Tilt device position on Low Channel in GSM mode Measurement 5: Right Head with Tilt device position on Middle Channel in GSM mode Measurement 6: Right Head with Tilt device position on High Channel in GSM mode Measurement 7: Left Head with Cheek device position on Low Channel in GSM mode Measurement 8: Left Head with Cheek device position on Middle Channel in GSM mode Measurement 9: Left Head with Cheek device position on High Channel in GSM mode Measurement 10: Left Head with Tilt device position on Low Channel in GSM mode Measurement 11: Left Head with Tilt device position on Middle Channel in GSM mode Measurement 12: Left Head with Tilt device position on High Channel in GSM mode Measurement 13: Validation Plane with Body device position on Low Channel in GSM mode Measurement 14: Validation Plane with Body device position on Middle Channel in GSM mode Measurement 15: Validation Plane with Body device position on High Channel in GSM mode Measurement 16: Validation Plane with Body device position on Low Channel in GSM mode（back）

	GSM **1900**	Measurement 17: Right Head with Cheek device position on Low Channel in GSM mode Measurement 18: Right Head with Cheek device position on Middle Channel in GSM mode Measurement 19: Right Head with Cheek device position on High Channel in GSM mode Measurement 20: Right Head with Tilt device position on Low Channel in GSM mode Measurement 21: Right Head with Tilt device position on Middle Channel in GSM mode Measurement 22: Right Head with Tilt device position on High Channel in GSM mode Measurement 23: Left Head with Cheek device position on Low Channel in GSM mode Measurement 24: Left Head with Cheek device position on Middle Channel in GSM mode Measurement 25: Left Head with Cheek device position on High Channel in GSM mode Measurement 26: Left Head with Tilt device position on Low Channel in GSM mode Measurement 27: Left Head with Tilt device position on Middle Channel in GSM mode Measurement 28: Left Head with Tilt device position on High Channel in GSM mode Measurement 29: Validation Plane with Body device position on Low Channel in GSM mode Measurement 30: Validation Plane with Body device position on Middle Channel in GSM mode Measurement 31: Validation Plane with Body device position on High Channel in GSM mode Measurement 32: Validation Plane with Body device position on Middle Channel in GSM mode（back）

MEASUREMENT 1

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 21 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	40.485002
Relative permittivity	19.160000

Conductivity (S/m)	0.936924
Variation (%)	-1.730000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
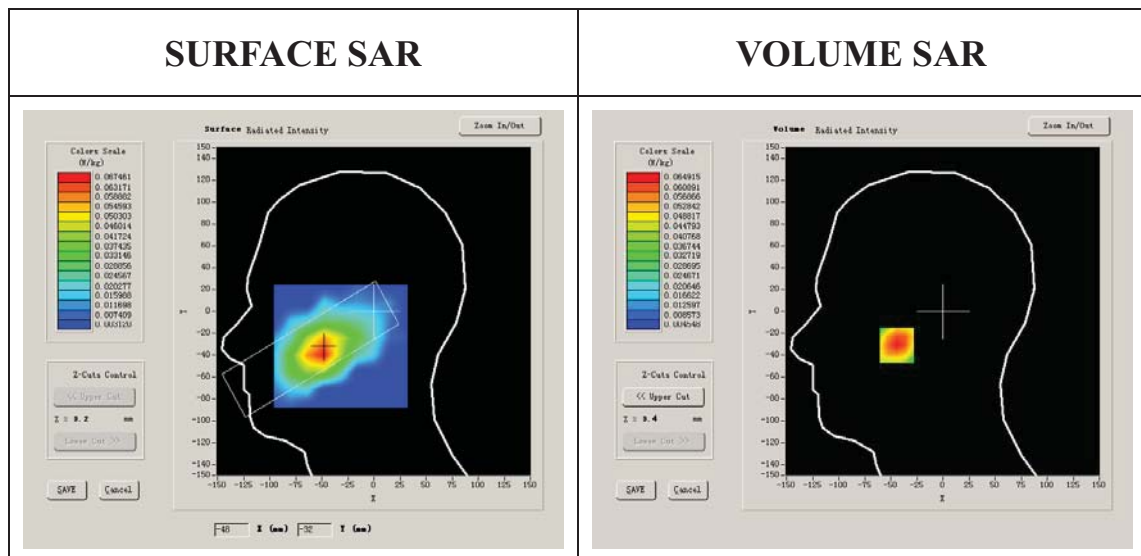
Maximum location: X=-44.00, Y=-31.00

SAR 10g (W/Kg)	0.368414
SAR 1g　(W/Kg)	0.564414

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0649	0.0451	0.0316	0.0226	0.0165	0.0112
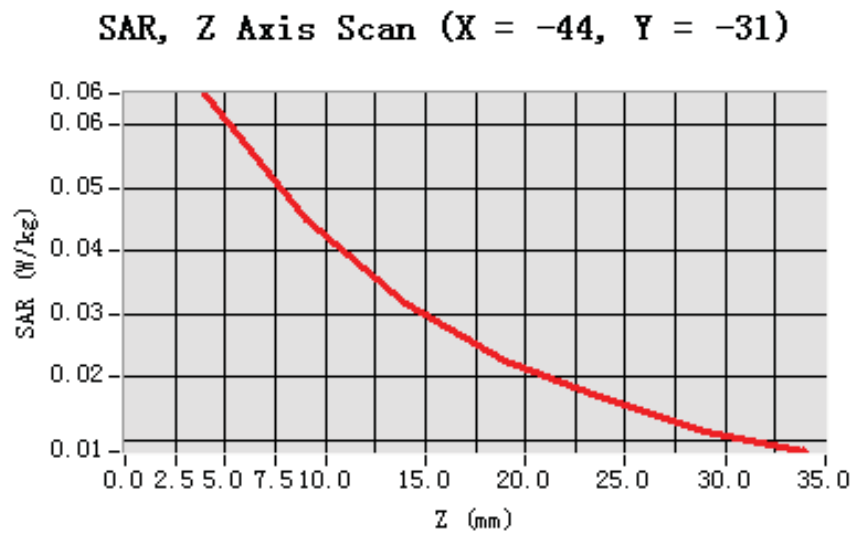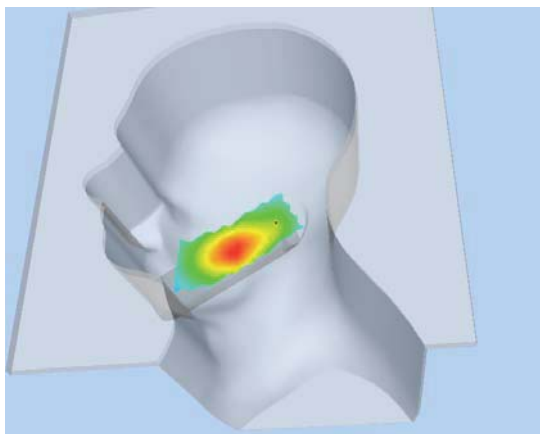
3D sceen shot	Hot spot position
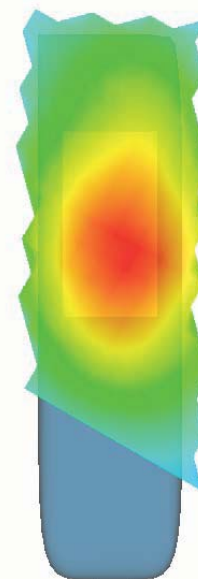
MEASUREMENT 2

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 29 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.330002
Relative permittivity	19.219999

Conductivity (S/m)	0.958437
Variation (%)	0.285000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
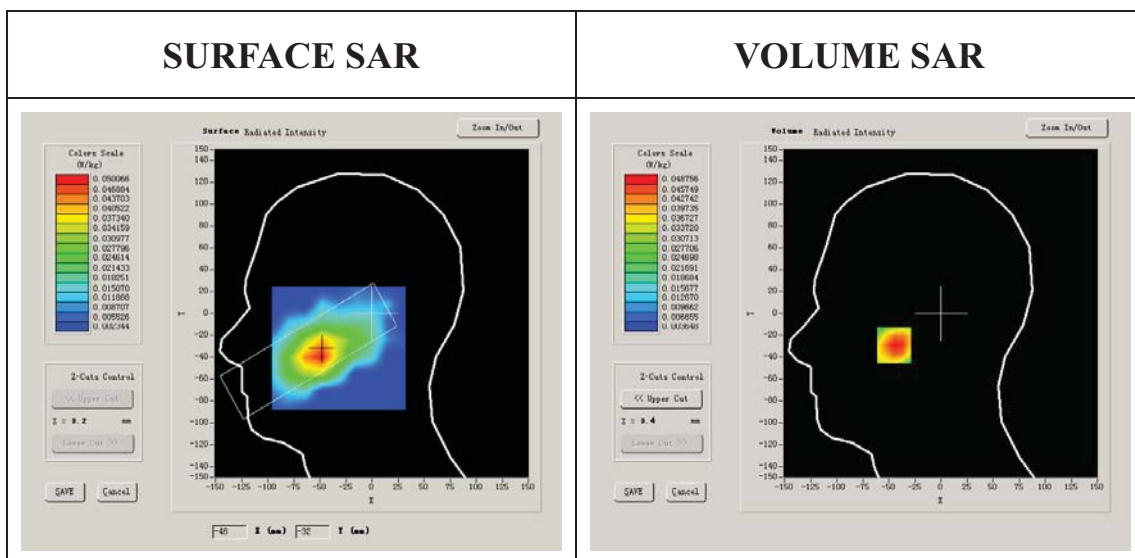
Maximum location: X=-45.00, Y=-29.00

SAR 10g (W/Kg)	0.342473
SAR 1g (W/Kg)	0.550213

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0488	0.0306	0.0237	0.0169	0.0120	0.0086

SAR, Z Axis Scan (X = −45, Y = −29)
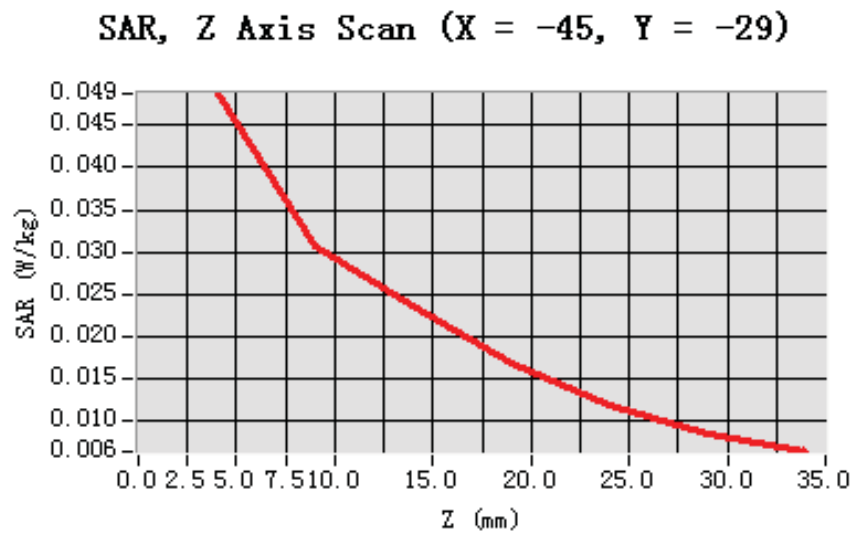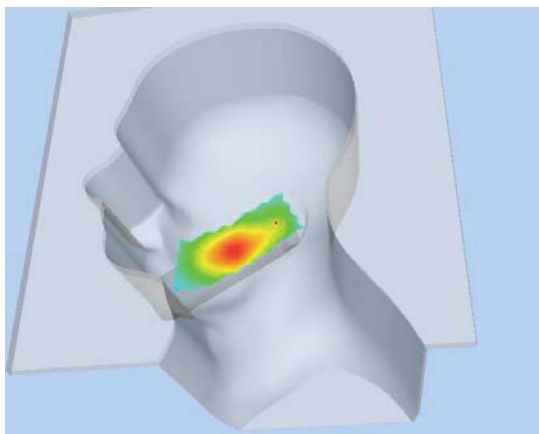
3D sceen shot	Hot spot position
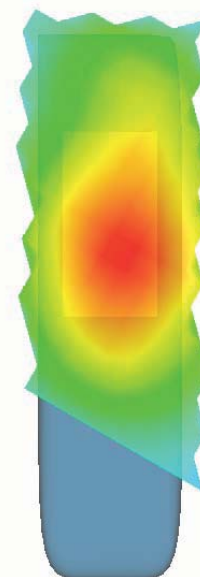
MEASUREMENT 3

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 21 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	40.180000
Relative permittivity	19.360001

Conductivity (S/m)	0.983918
Variation (%)	0.185000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
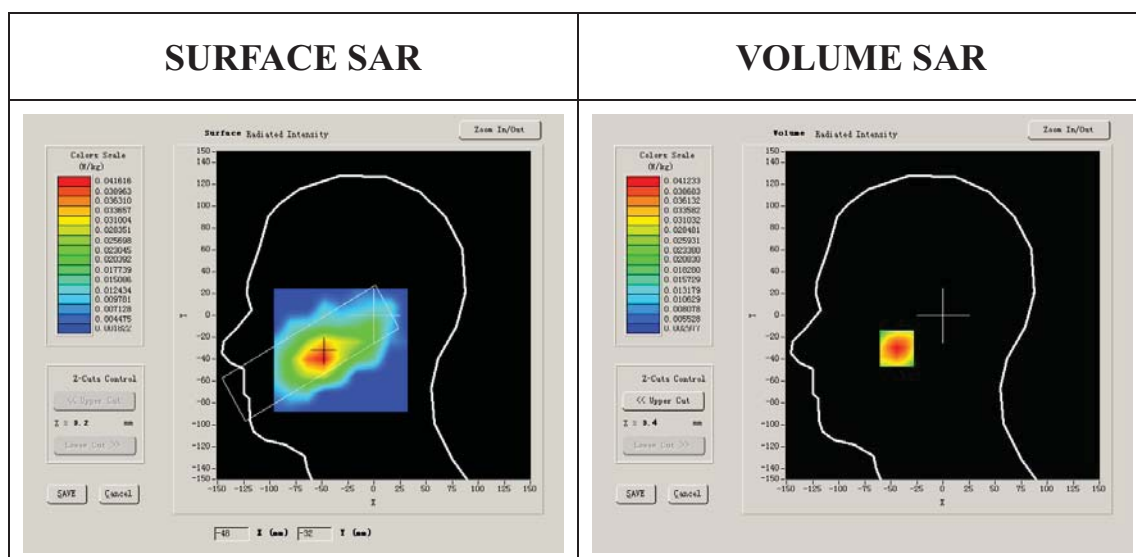
Maximum location: X=-44.00, Y=-30.00

SAR 10g (W/Kg)	0.311844
SAR 1g (W/Kg)	0.521354

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0412	0.0273	0.0189	0.0136	0.0097	0.0072

SAR, Z Axis Scan (X = −44, Y = −30)
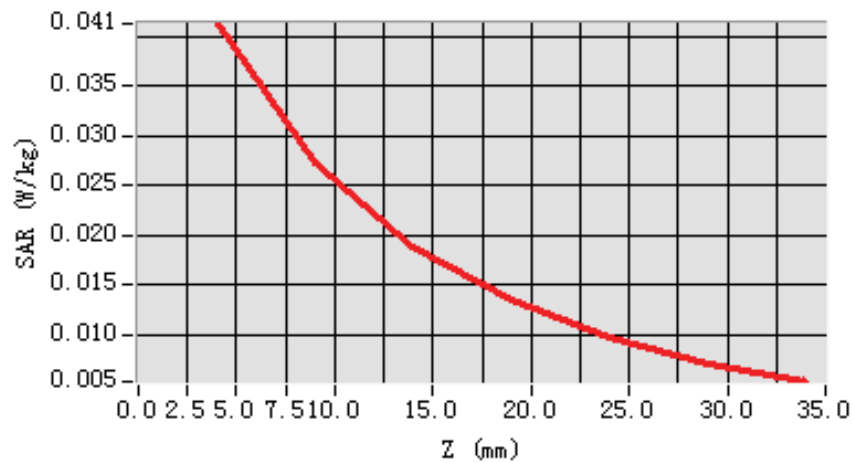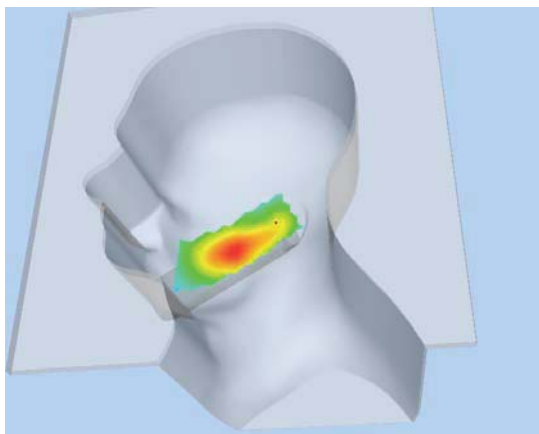
3D sceen shot	Hot spot position
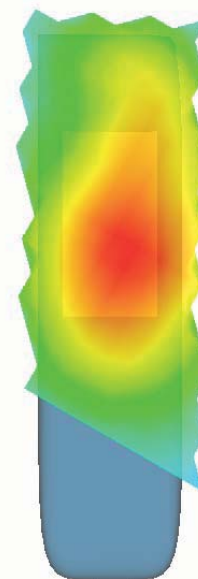
MEASUREMENT 4

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 2 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	40.485002
Relative permittivity	19.160000

Conductivity (S/m)	0.936924
Variation (%)	-0.185000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR

Maximum location: X=-40.00, Y=-24.00

SAR 10g (W/Kg)	0.231844
SAR 1g (W/Kg)	0.432155

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0211	0.0153	0.0111	0.0082	0.0057	0.0045

SAR, Z Axis Scan (X = −40, Y = −24)
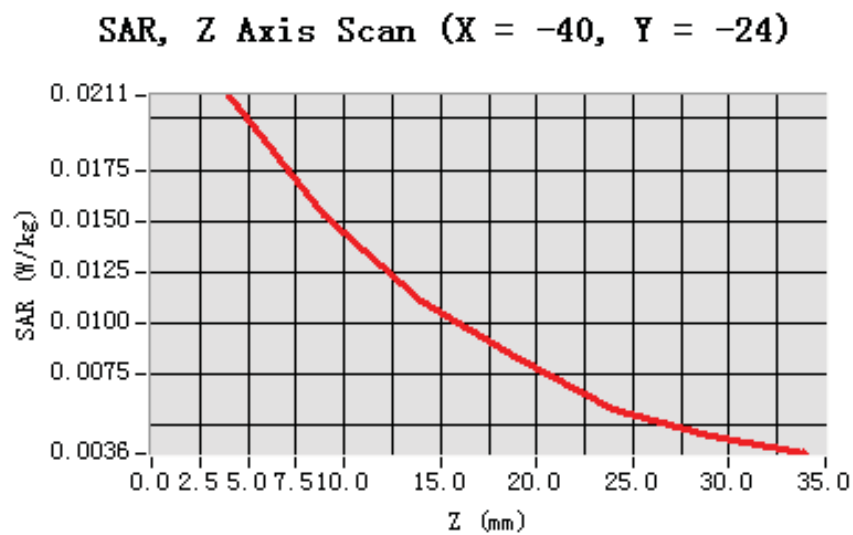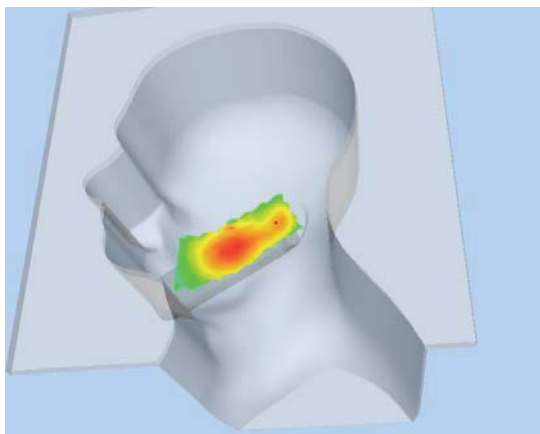
3D sceen shot	Hot spot position
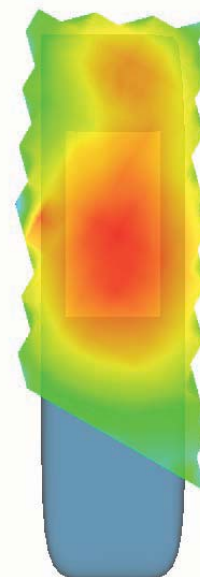
MEASUREMENT 5

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 5 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.330002
Relative permittivity	19.219999

Conductivity (S/m)	0.958437
Variation (%)	0.110000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
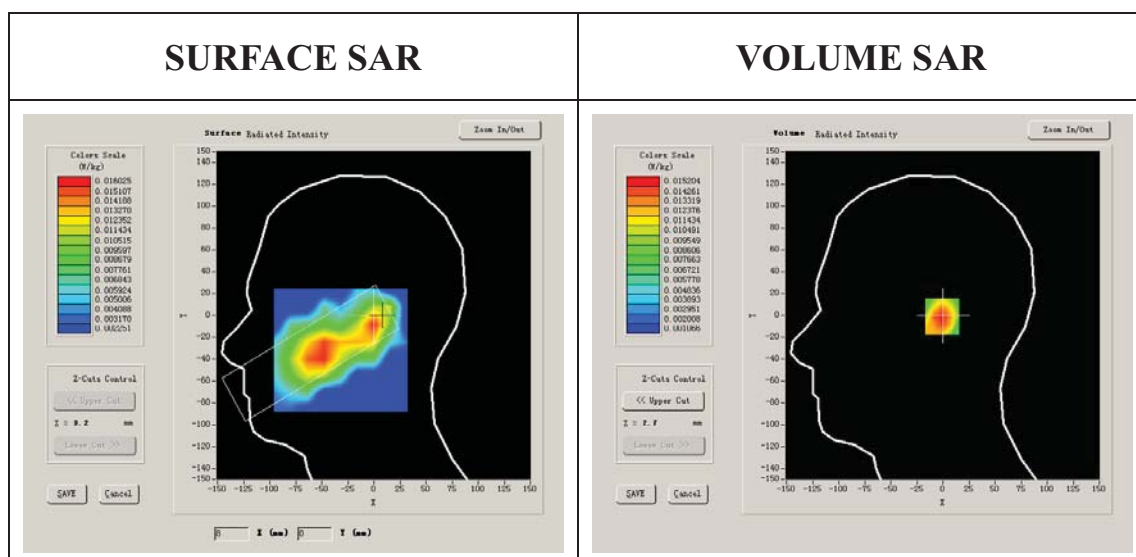
Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	0.214646
SAR 1g　(W/Kg)	0.421585

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0152	0.0090	0.0064	0.0038	0.0025	0.0021
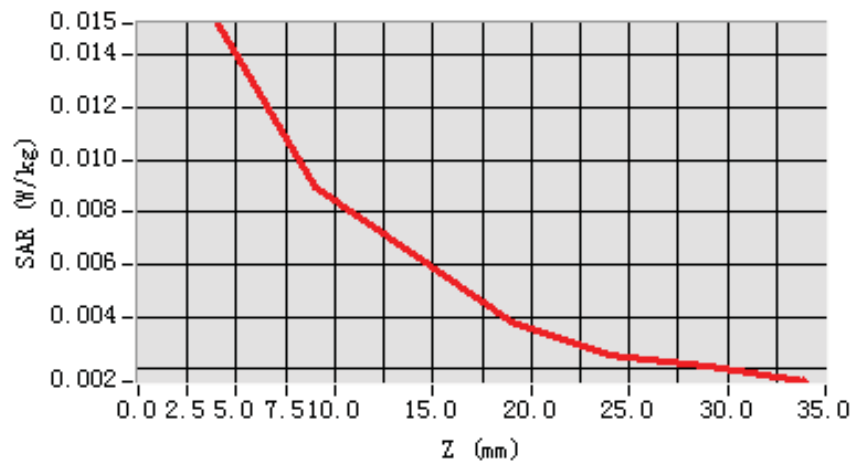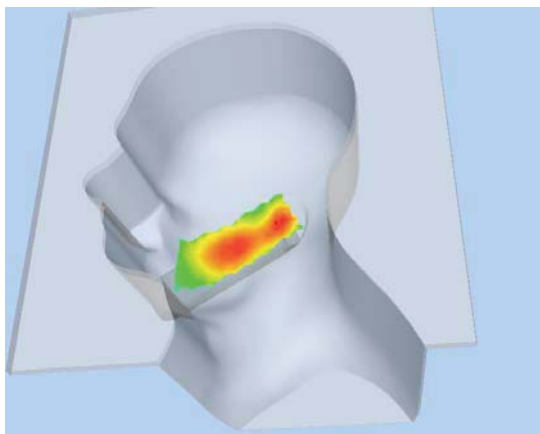
3D sceen shot	Hot spot position
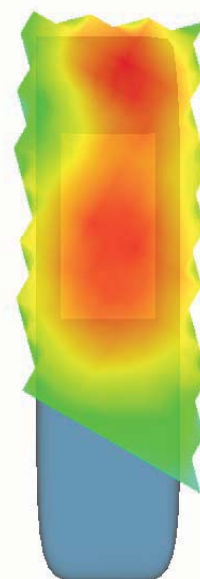
MEASUREMENT 6

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 2 seconds

A. Experimental conditions.

|	
Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	40.180000
Relative permittivity	19.360001

Conductivity (S/m)	0.983918
Variation (%)	-1.140000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
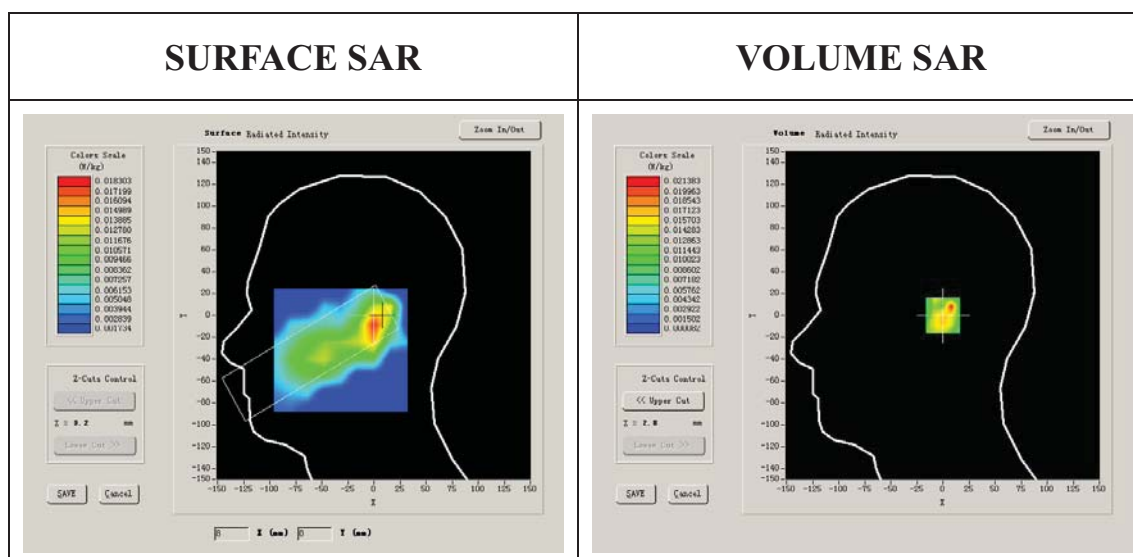
Maximum location: X=8.00, Y=0.00

SAR 10g (W/Kg)	0.201846
SAR 1g (W/Kg)	0.395465

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0174	0.0110	0.0073	0.0048	0.0037	0.0018
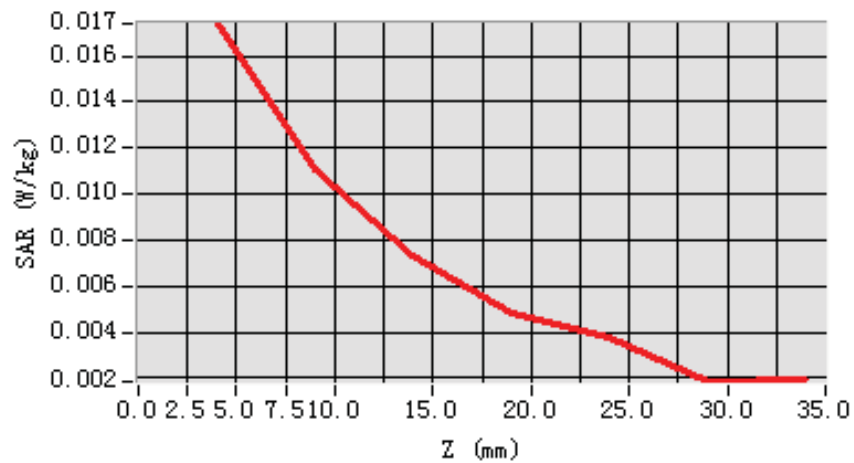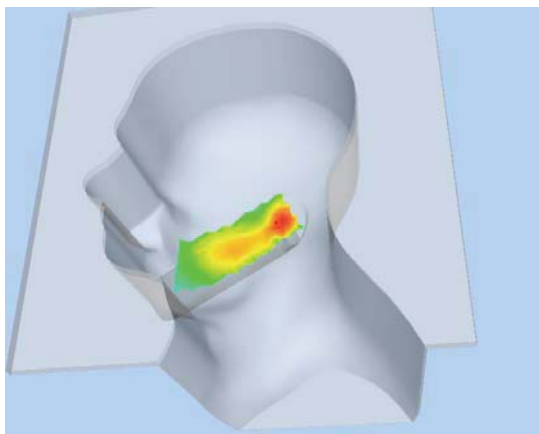
3D sceen shot	Hot spot position
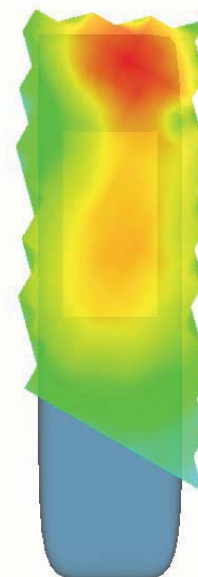
MEASUREMENT 7

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 4 seconds

A. Experimental conditions.

|	
Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	40.485002
Relative permittivity	19.160000

Conductivity (S/m)	0.936924
Variation (%)	-0.910000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
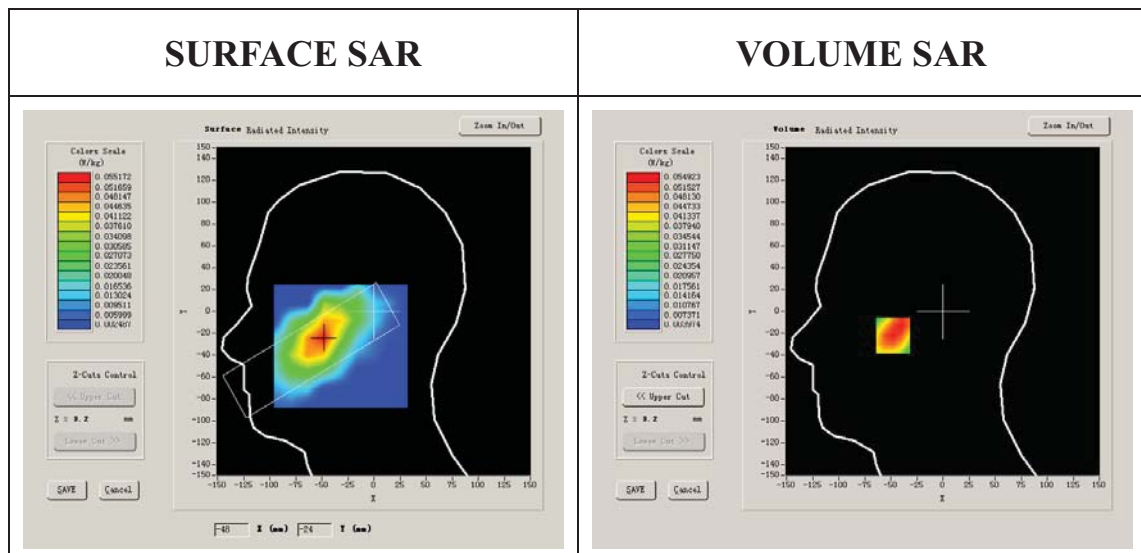
Maximum location: X=-48.00, Y=-22.00

SAR 10g (W/Kg)	0.354213
SAR 1g　(W/Kg)	0.552814

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0545	0.0389	0.0276	0.0200	0.0147	0.0103
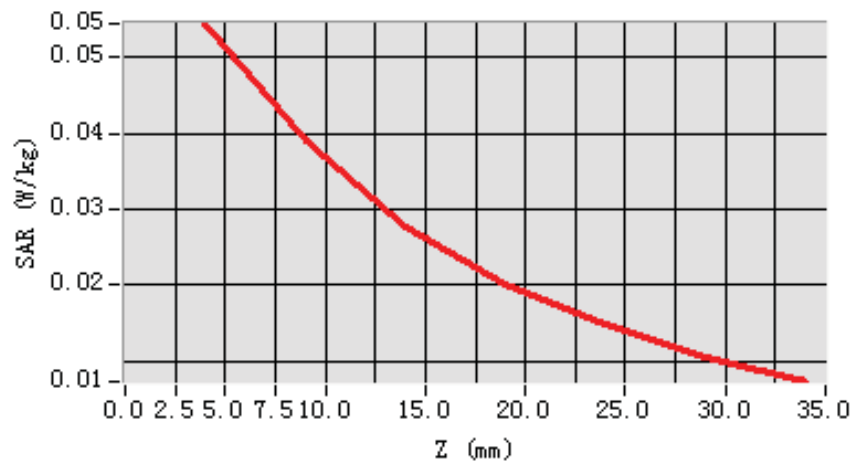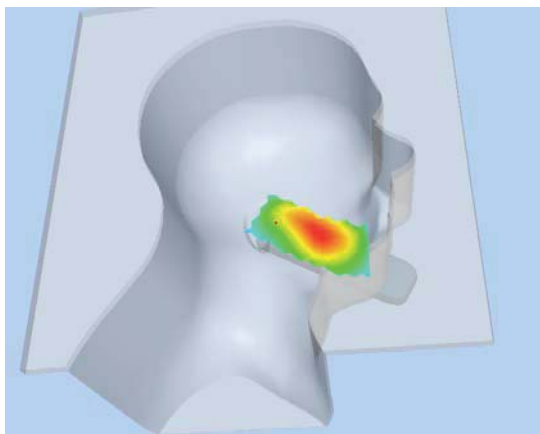
3D sceen shot	Hot spot position
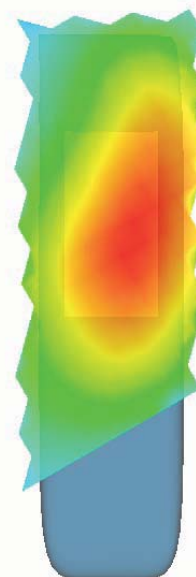
MEASUREMENT 8

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 59 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.330002
Relative permittivity	19.219999

Conductivity (S/m)	0.958437
Variation (%)	-1.430000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
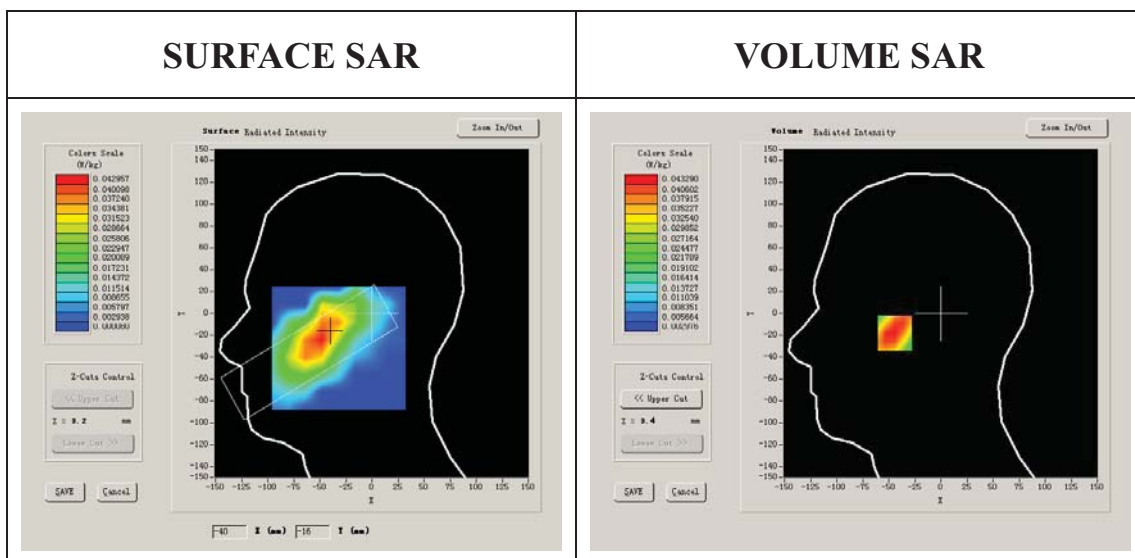
Maximum location: X=-44.00, Y=-18.00

SAR 10g (W/Kg)	0.322164
SAR 1g　(W/Kg)	0.541894

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0433	0.0302	0.0213	0.0152	0.0113	0.0079

SAR, Z Axis Scan (X = −44, Y = −18)
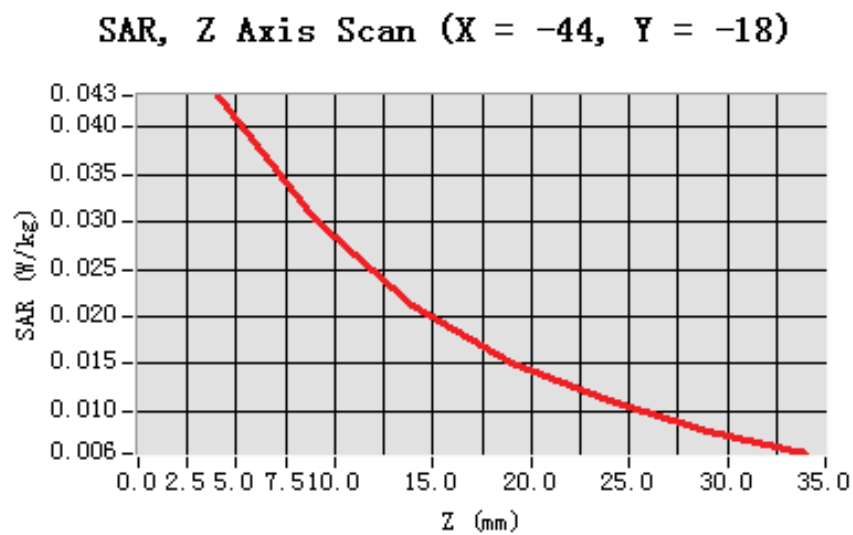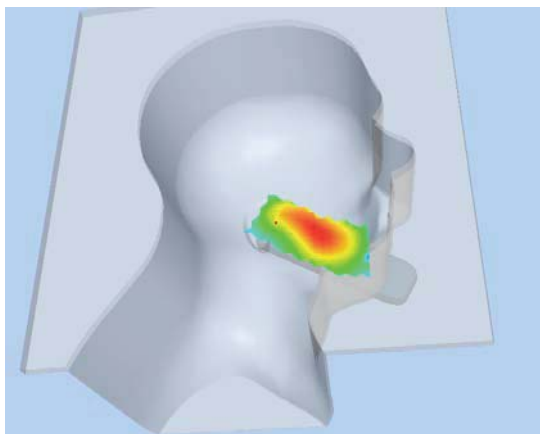
3D sceen shot	Hot spot position
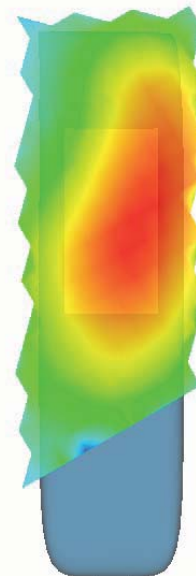
MEASUREMENT 9

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 58 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	40.180000
Relative permittivity	19.360001

Conductivity (S/m)	0.983918
Variation (%)	-1.450000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
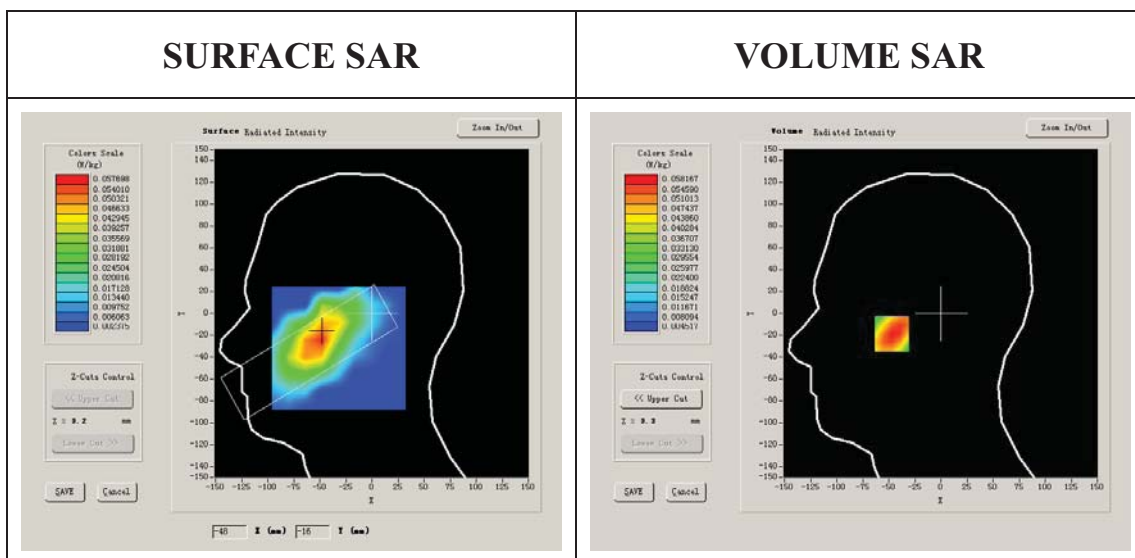
Maximum location: X=-47.00, Y=-18.00

SAR 10g (W/Kg)	0.295146
SAR 1g (W/Kg)	0.473477

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0582	0.0405	0.0297	0.0207	0.0146	0.0105
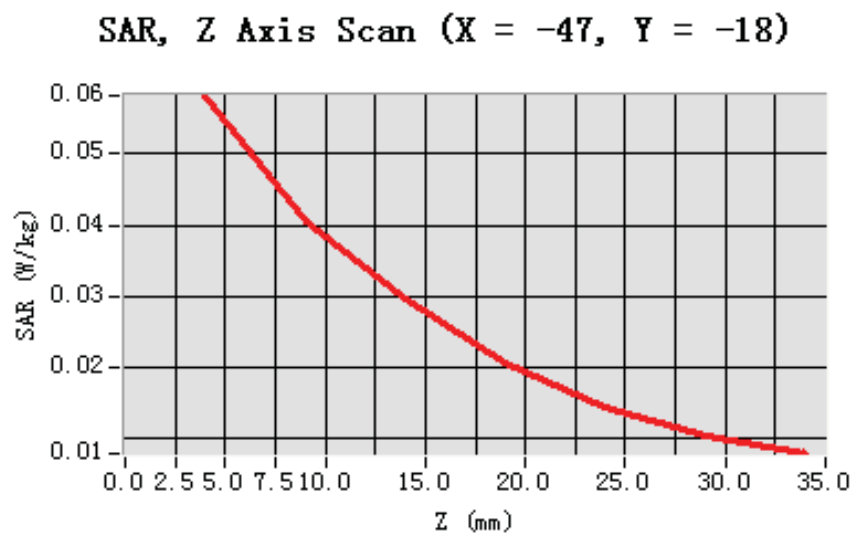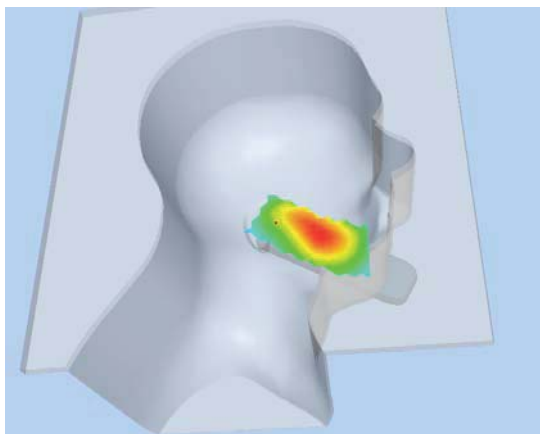
3D sceen shot	Hot spot position
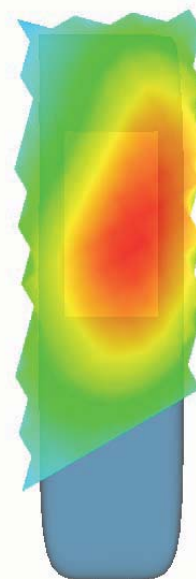
MEASUREMENT 10

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 54 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	40.485002
Relative permittivity	19.160000

Conductivity (S/m)	0.936924
Variation (%)	-0.480000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
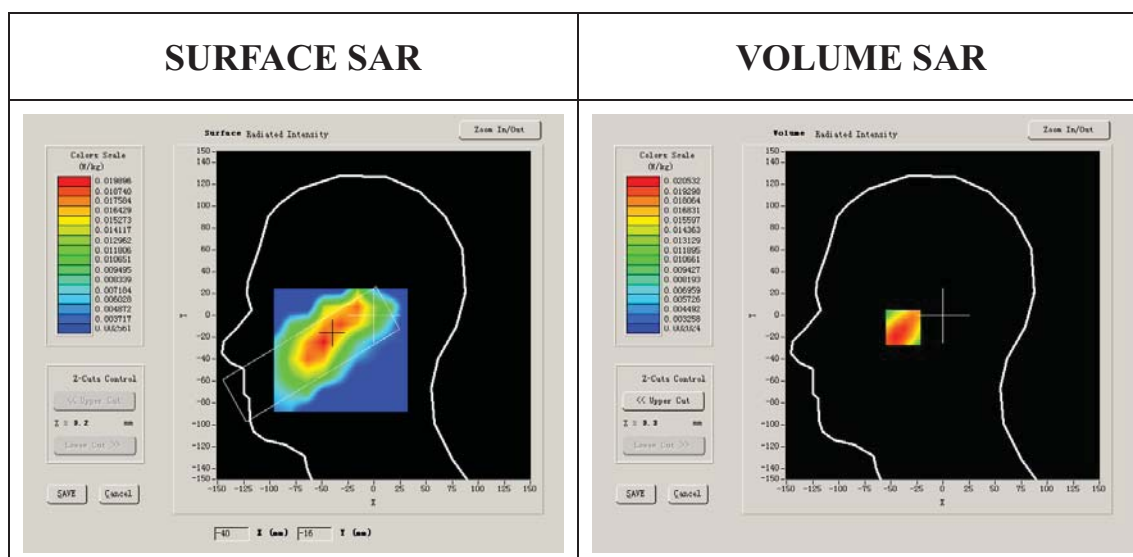
Maximum location: X=-38.00, Y=-10.00

SAR 10g (W/Kg)	0.211514
SAR 1g　(W/Kg)	0.373553

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0200	0.0145	0.0109	0.0081	0.0056	0.0046

SAR, Z Axis Scan (X = −38, Y = −10)
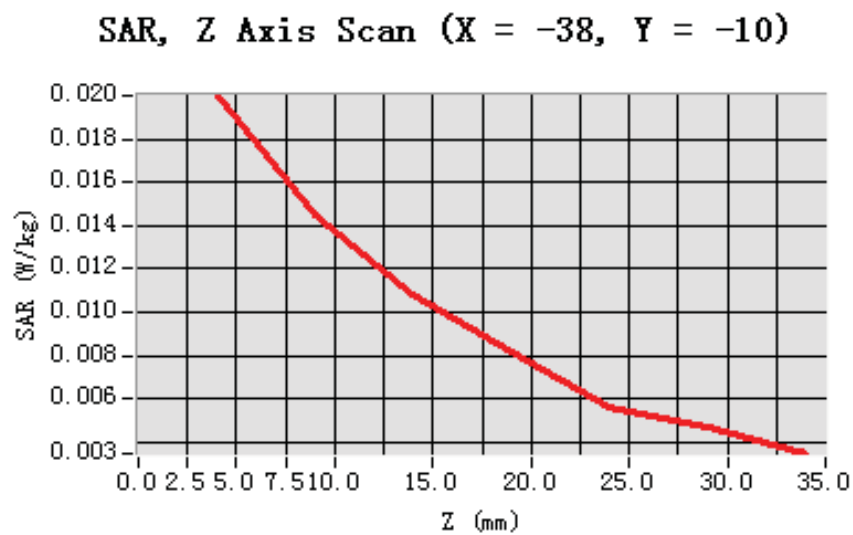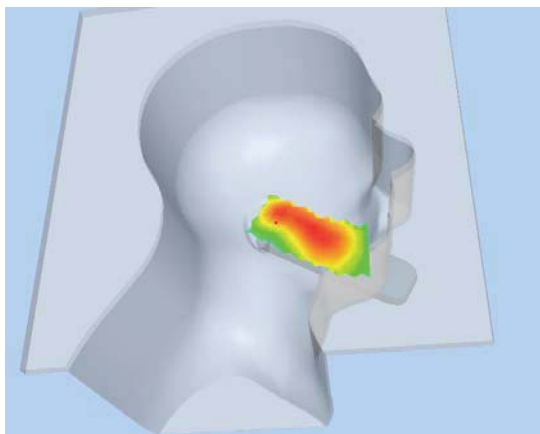
3D sceen shot	Hot spot position
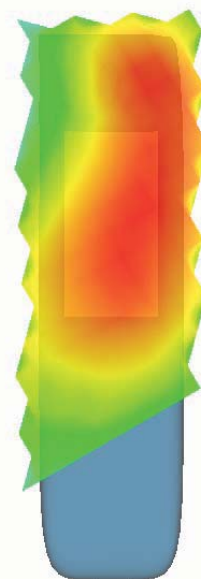
MEASUREMENT 11

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 15 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

Frequency (MHz)	836.599976
Relative permittivity (real part)	40.330002
Relative permittivity	19.219999

Conductivity (S/m)	0.958437
Variation (%)	-2.400002
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

SURFACE SAR	VOLUME SAR
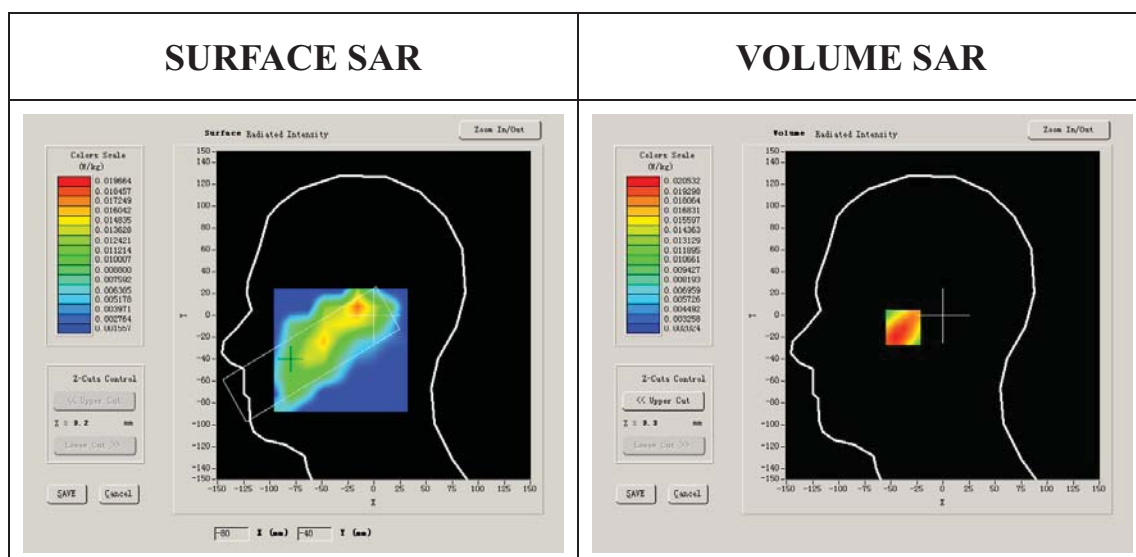
Maximum location: X=-80.00, Y=-41.00

SAR 10g (W/Kg)	0.200574
SAR 1g (W/Kg)	0.373551

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0081	0.0063	0.0053	0.0044	0.0035	0.0029
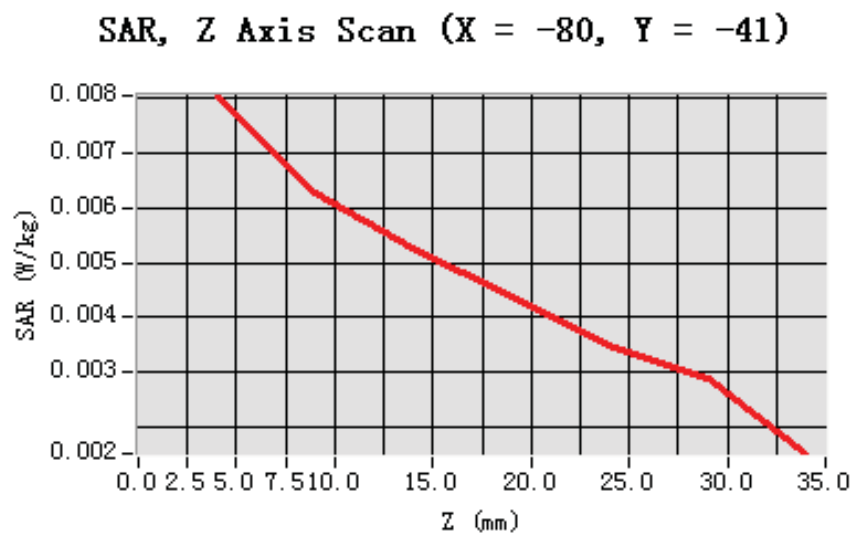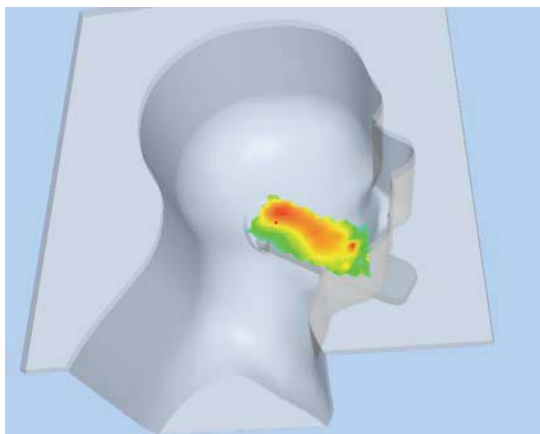
3D sceen shot	Hot spot position
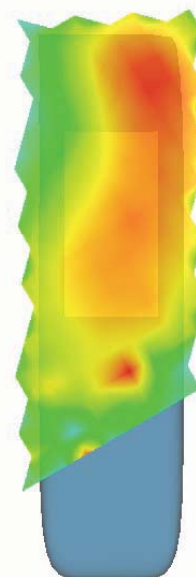
MEASUREMENT 12

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 56 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	40.180000
Relative permittivity	19.360001

Conductivity (S/m)	0.983918
Variation (%)	-1.480000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
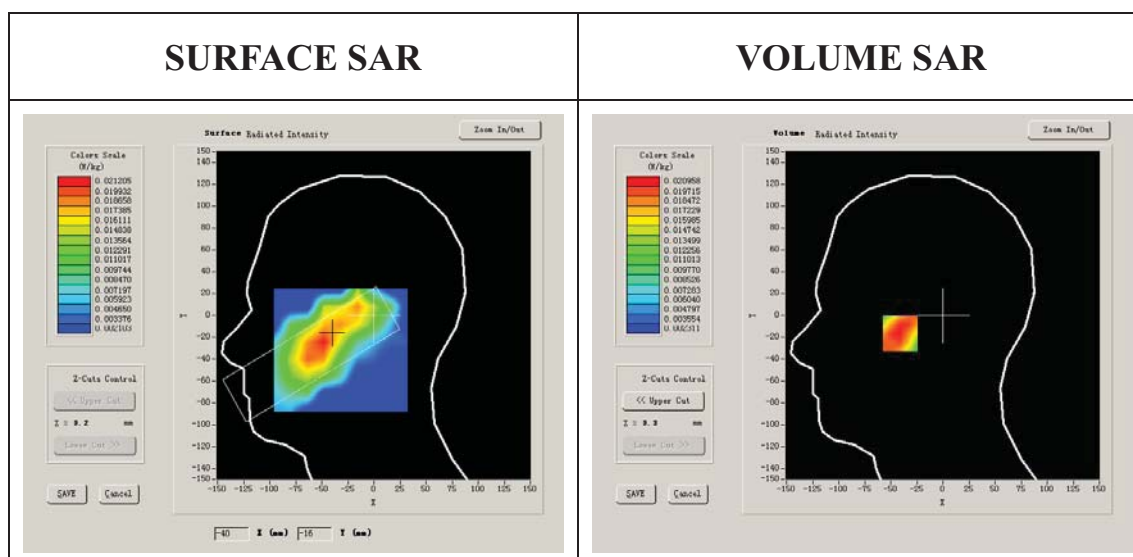
Maximum location: X=-41.00, Y=-16.00

SAR 10g (W/Kg)	0.185724
SAR 1g　(W/Kg)	0.278553

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0210	0.0143	0.0112	0.0084	0.0071	0.0052

SAR, Z Axis Scan (X = −41, Y = −16)
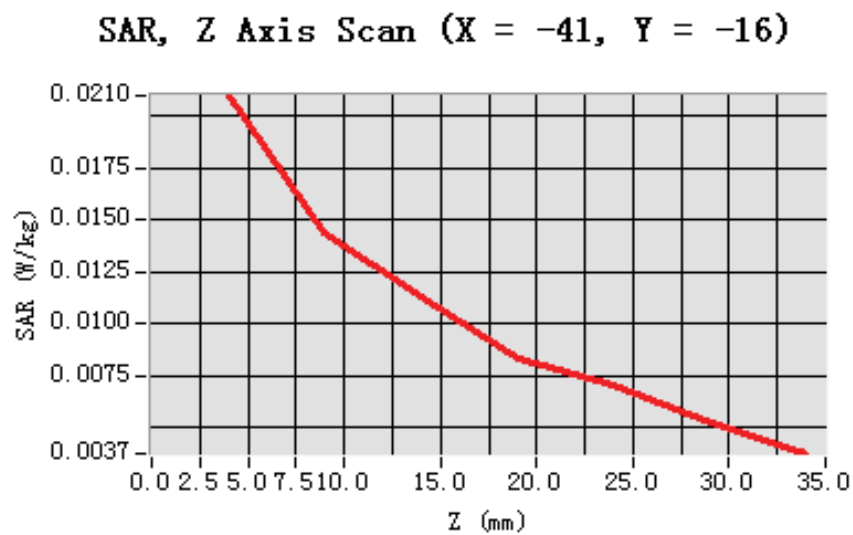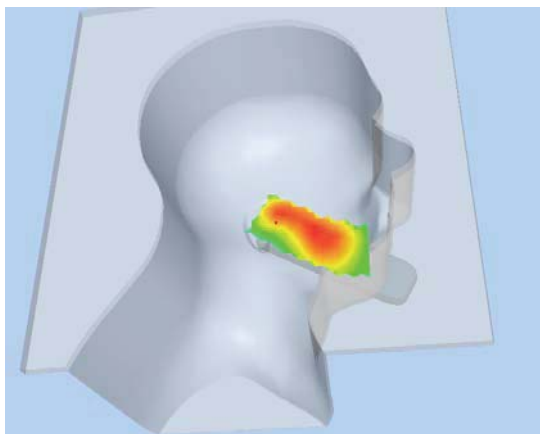
3D sceen shot	Hot spot position
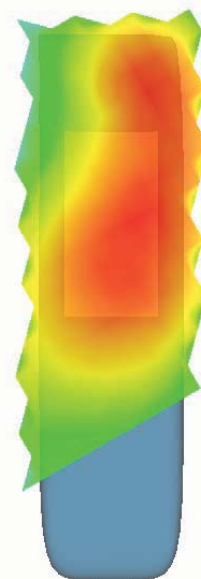
MEASUREMENT 13

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 6 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	54.116001
Relative permittivity	21.284550

Conductivity (S/m)	0.974596
Variation (%)	-0.820000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
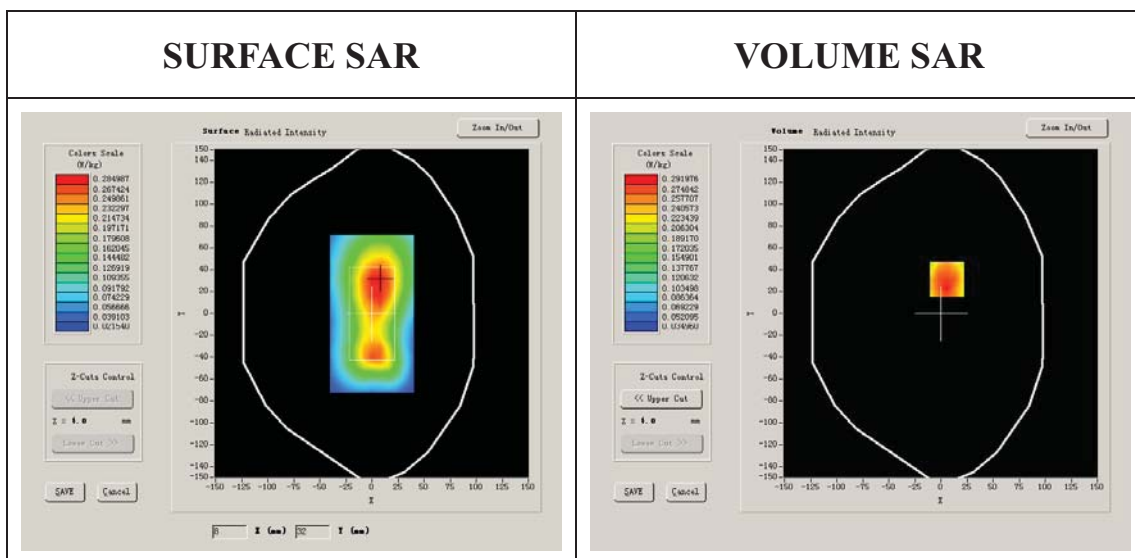
Maximum location: X=6.00, Y=31.00

SAR 10g (W/Kg)	0.421885
SAR 1g (W/Kg)	0.693156

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3145	0.2302	0.1713	0.1308	0.0965	0.0703

SAR, Z Axis Scan (X = 6, Y = 31)
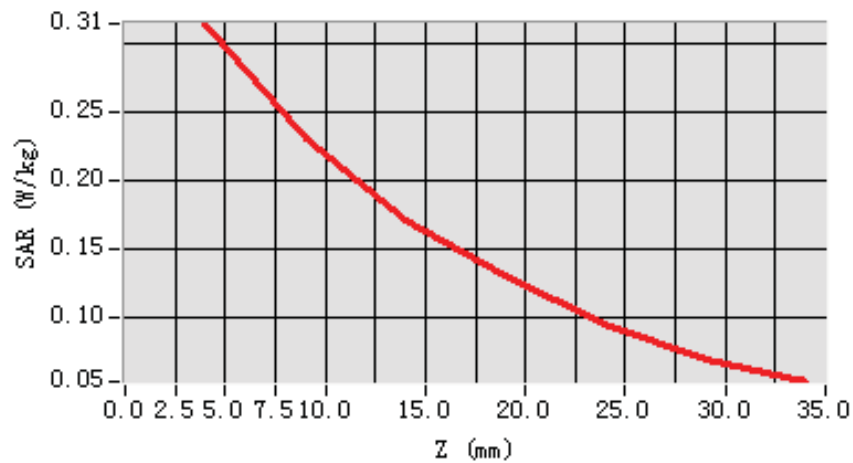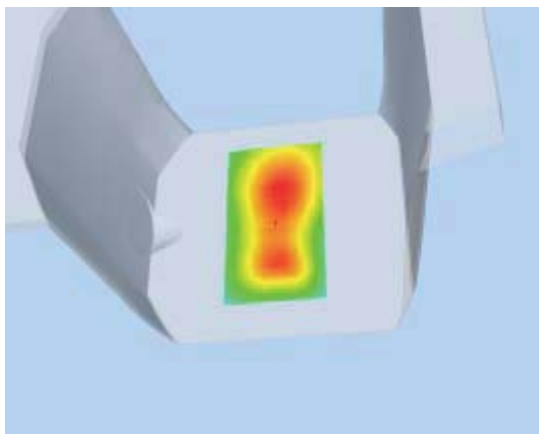
3D sceen shot	Hot spot position
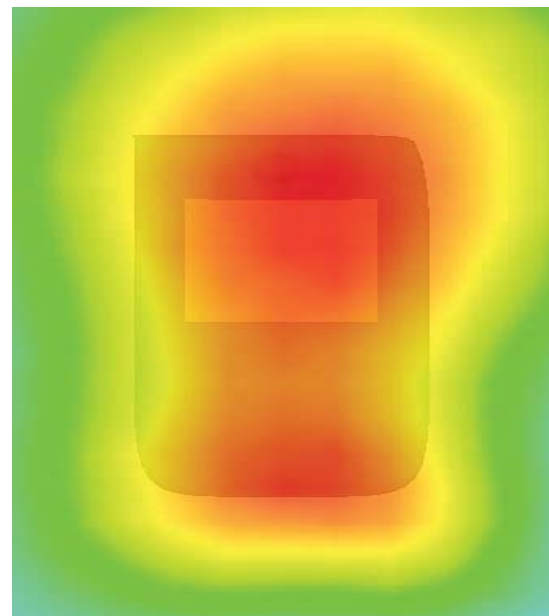
MEASUREMENT 14

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	1.009033
Variation (%)	-1.490000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
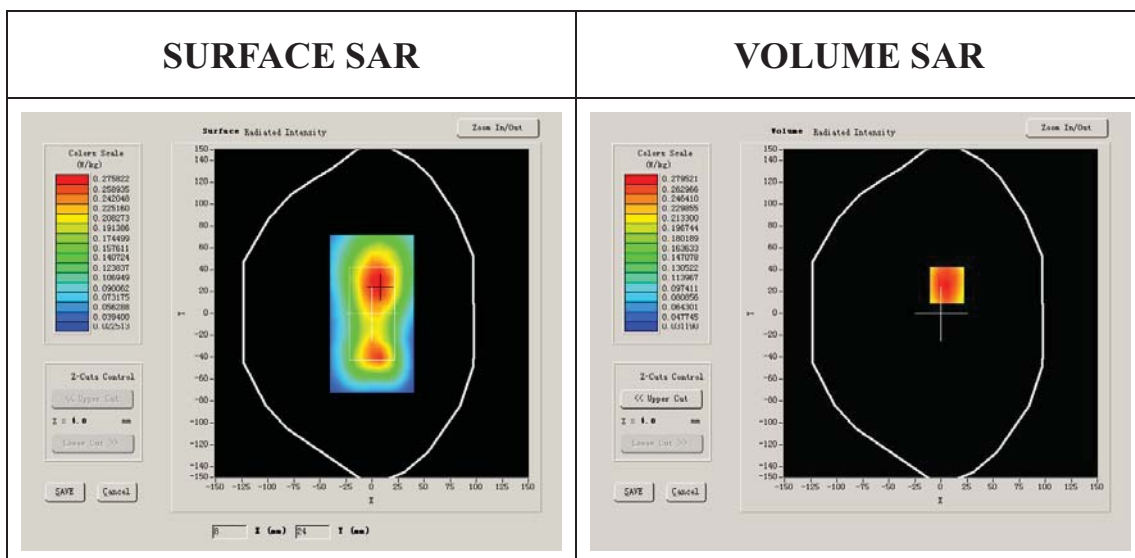
Maximum location: X=6.00, Y=26.00

SAR 10g (W/Kg)	0.406363
SAR 1g (W/Kg)	0.685551

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3174	0.2296	0.1743	0.1280	0.0956	0.0690

SAR, Z Axis Scan (X = 6, Y = 26)
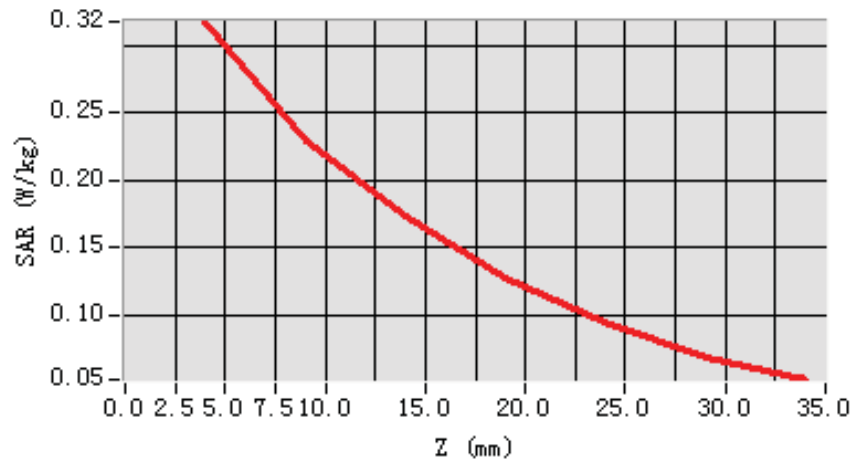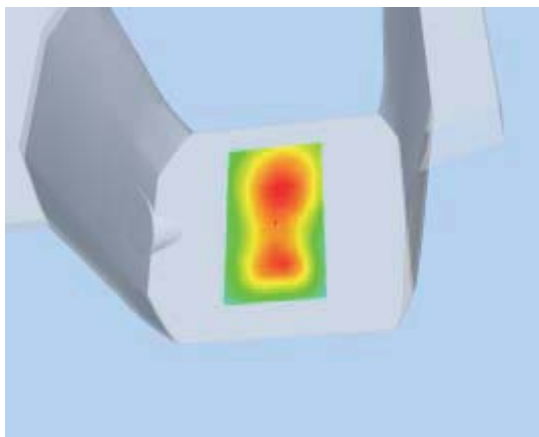
3D sceen shot	Hot spot position
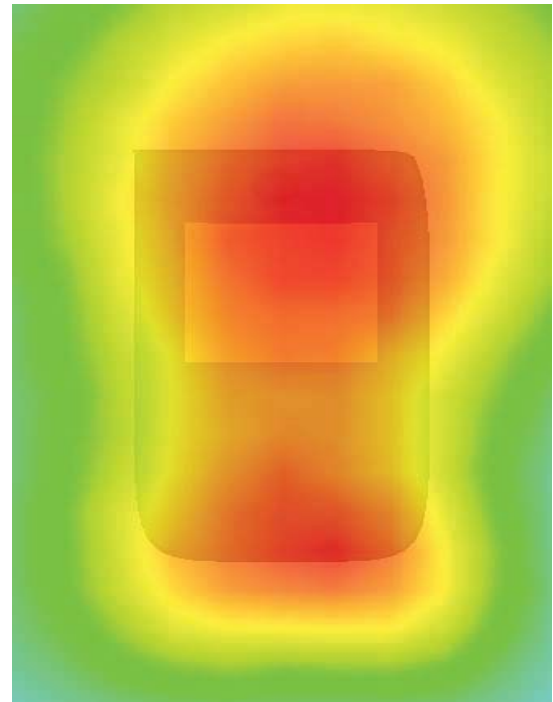
MEASUREMENT 15

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Higher Band SAR (Channel 251):

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

Conductivity (S/m)	1.005962
Variation (%)	-1.670000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
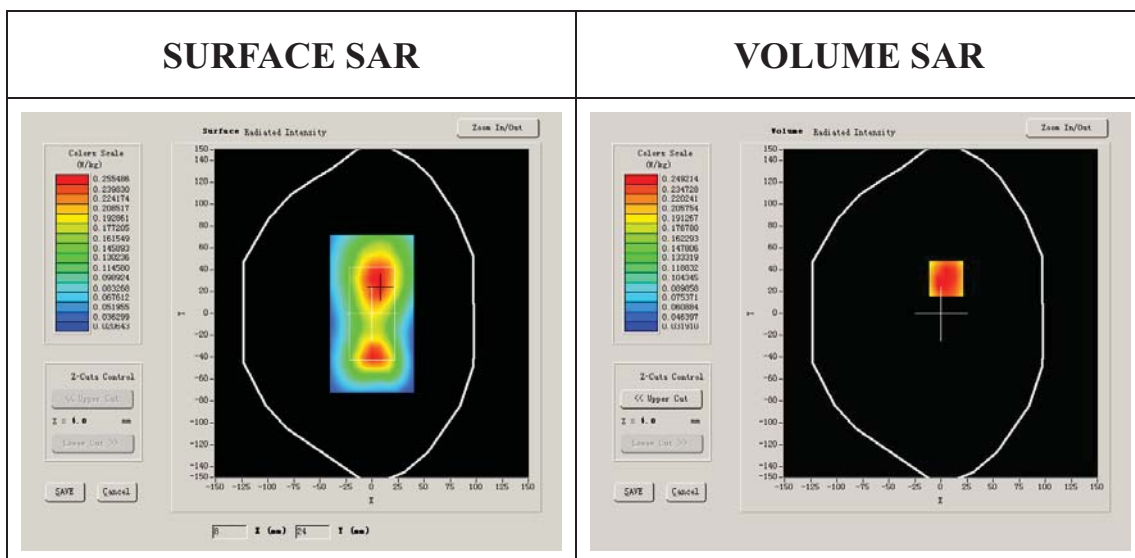
Maximum location: X=5.00, Y=32.00

SAR 10g (W/Kg)	0.395477
SAR 1g　(W/Kg)	0.615511

Z Axis Scan

| Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2782	0.2156	0.1556	0.1180	0.0858	0.0613

SAR, Z Axis Scan (X = 5, Y = 32)
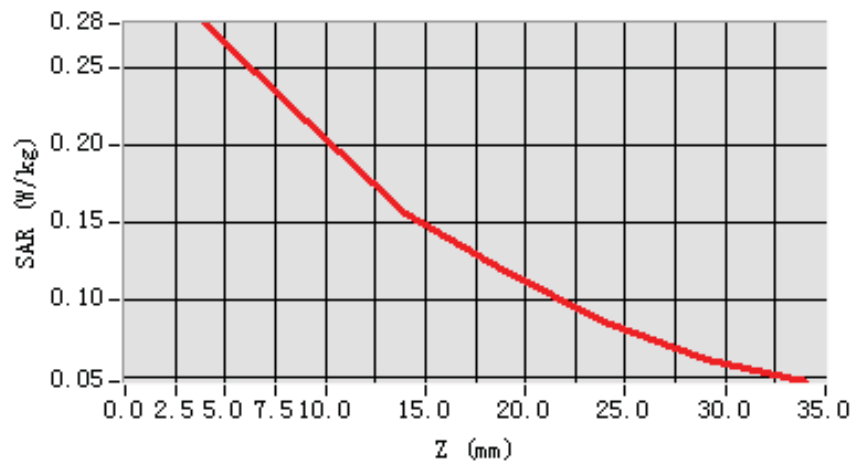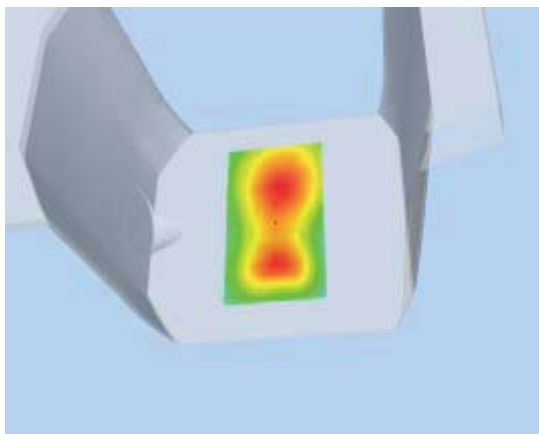
3D sceen shot	Hot spot position
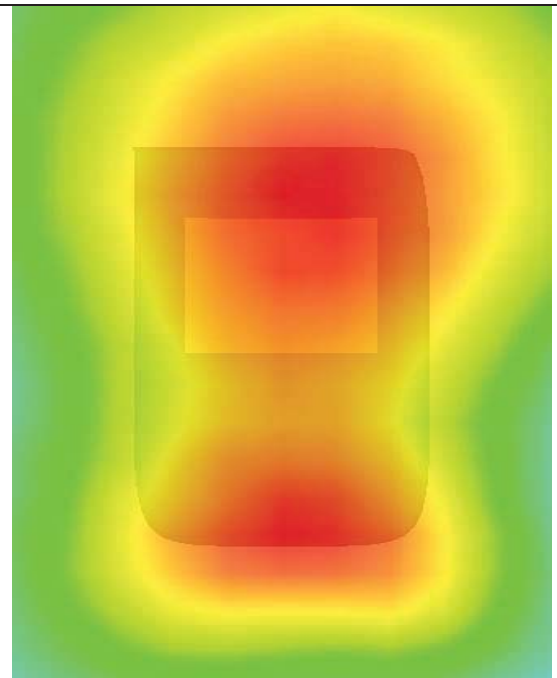
MEASUREMENT 16

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	54.116001
Relative permittivity	21.284550

Conductivity (S/m)	0.974596
Variation (%)	-0.340000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
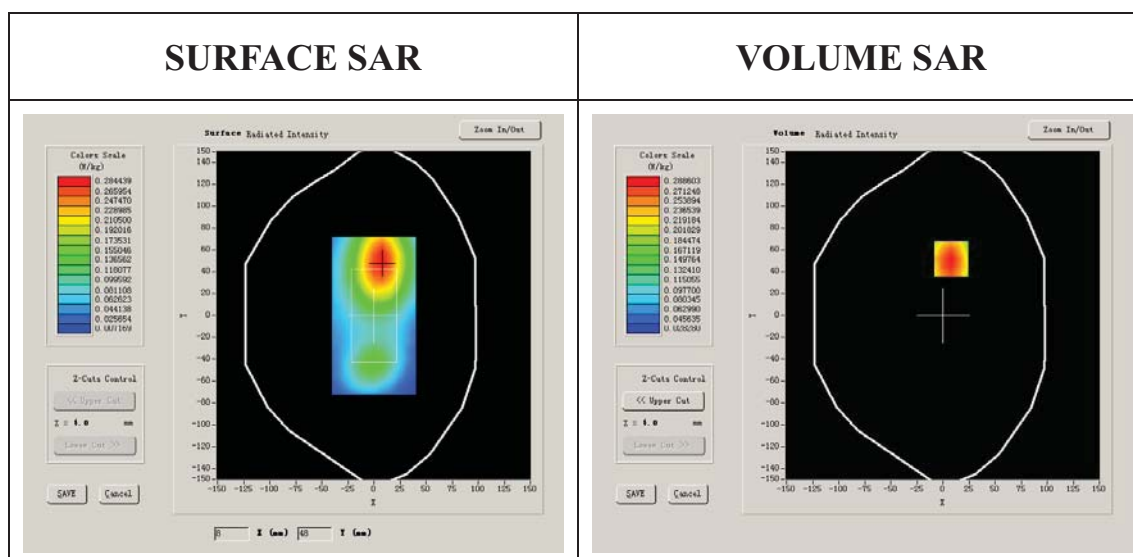
Maximum location: X=8.00, Y=52.00

SAR 10g (W/Kg)	0.245936
SAR 1g (W/Kg)	0.477957

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3246	0.2298	0.1690	0.1180	0.0836	0.0635

SAR, Z Axis Scan (X = 8, Y = 52)
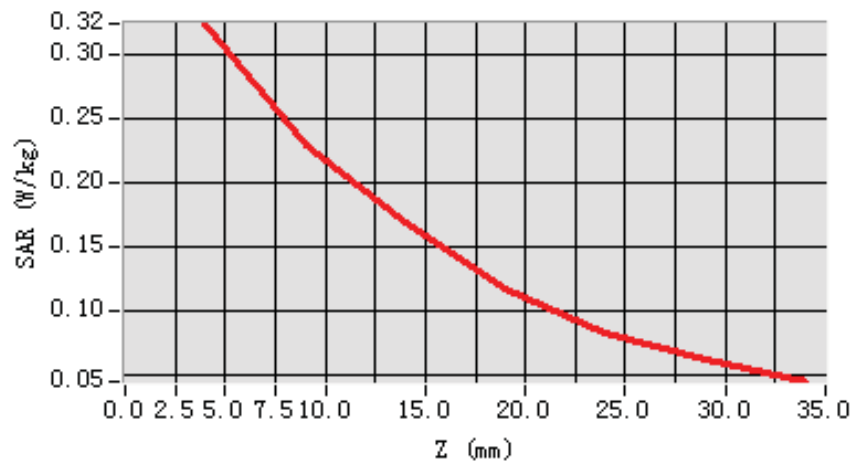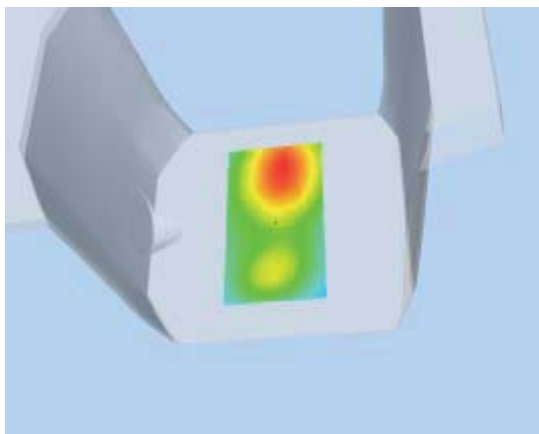
3D sceen shot	Hot spot position
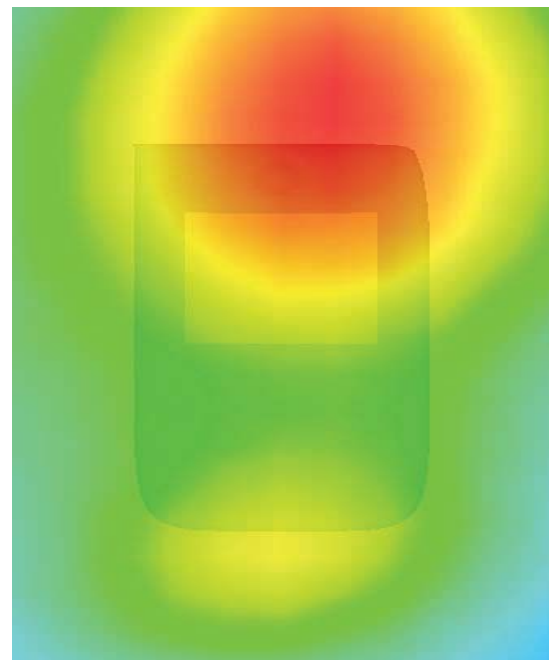
MEASUREMENT 17

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 9 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	38.648998
Relative permittivity	13.752850

Conductivity (S/m)	1.306678
Variation (%)	0.310000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
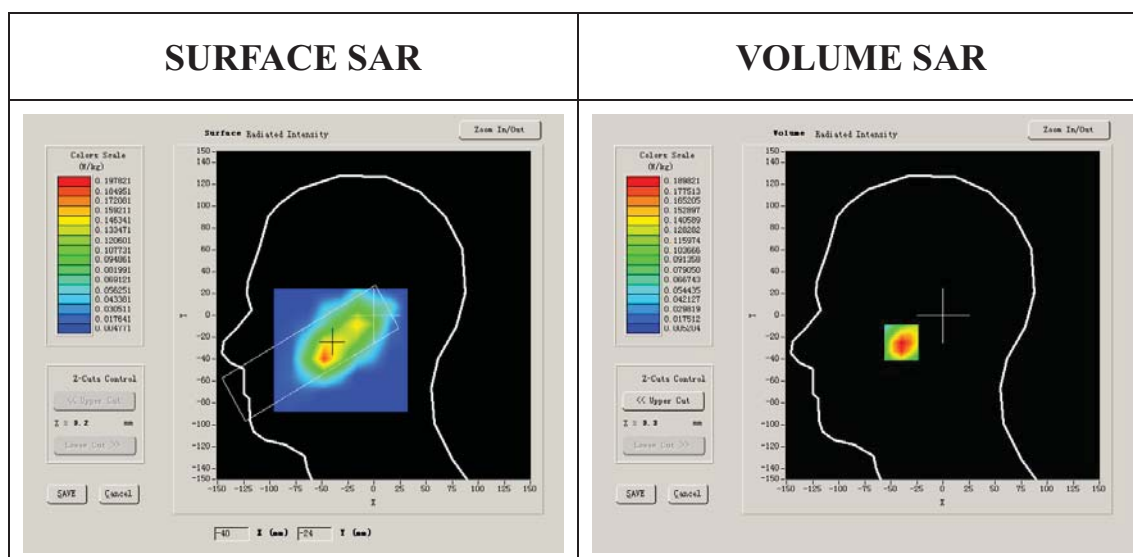
Maximum location: X=-39.00, Y=-25.00

SAR 10g (W/Kg)	0.193773
SAR 1g (W/Kg)	0.280956

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1898	0.2514	0.0799	0.0541	0.0336	0.0228

SAR, Z Axis Scan (X = −39, Y = −25)
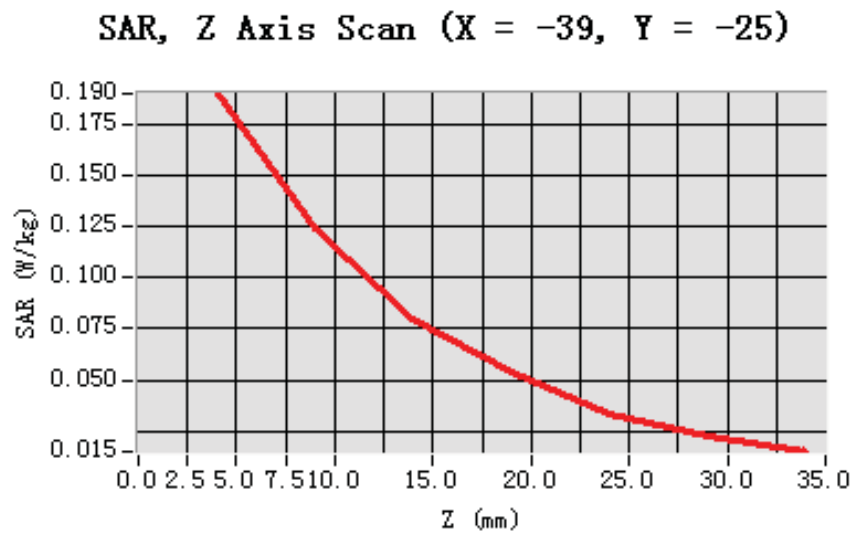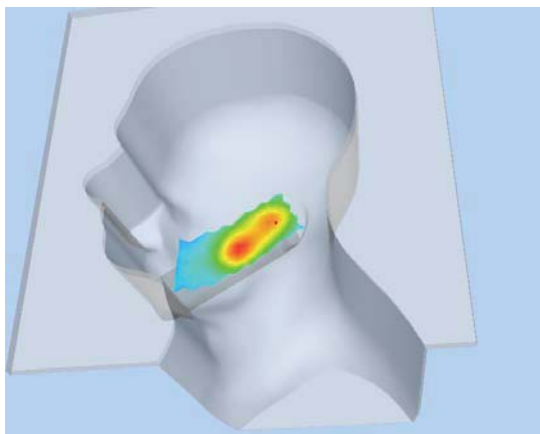
3D sceen shot	Hot spot position
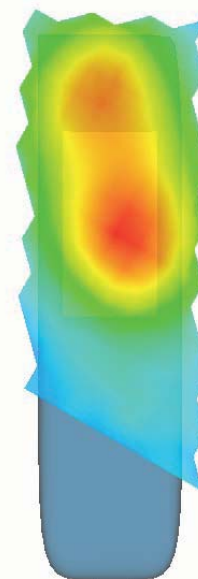
MEASUREMENT 18

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 2 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.930000
Relative permittivity	13.610000

Conductivity (S/m)	1.321229
Variation (%)	0.180000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
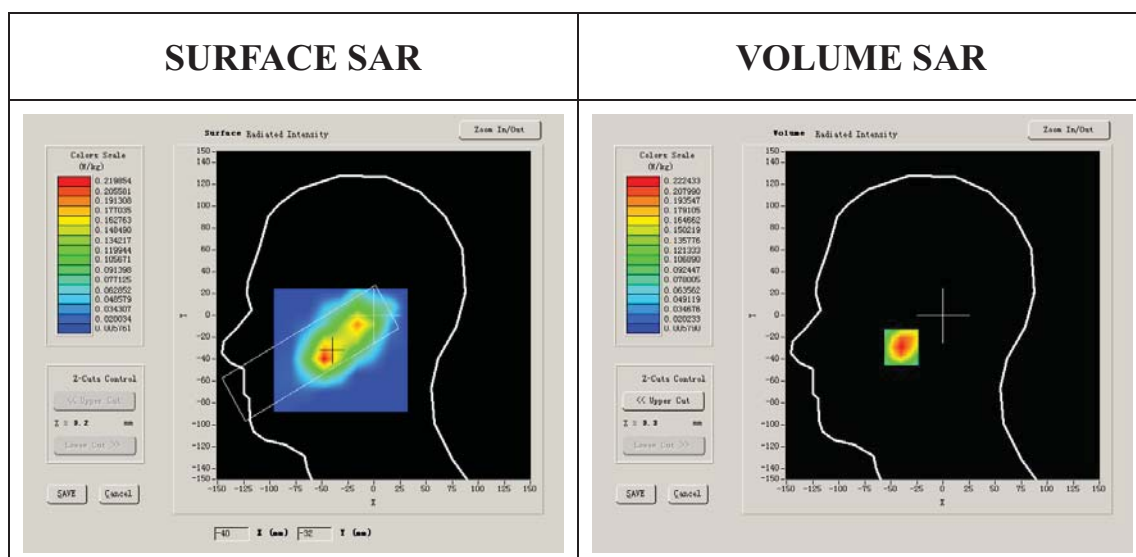
Maximum location: X=-39.00, Y=-29.00

SAR 10g (W/Kg)	0.178710
SAR 1g　(W/Kg)	0.258783

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2224	0.1455	0.0932	0.0628	0.0376	0.0239

SAR, Z Axis Scan (X = −39, Y = −29)
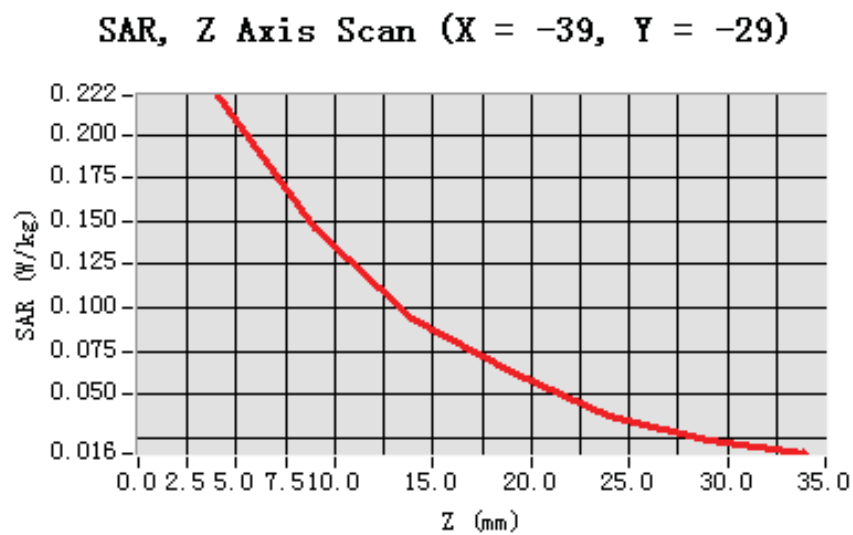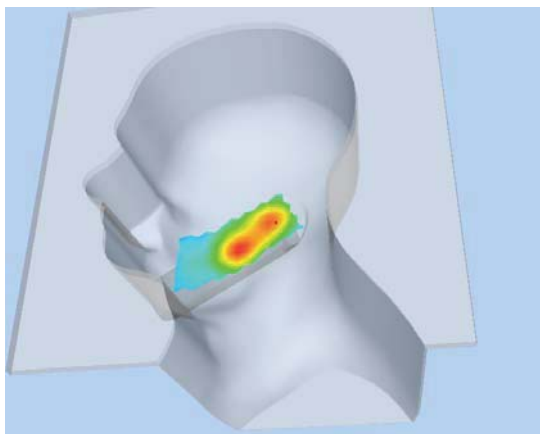
3D sceen shot	Hot spot position
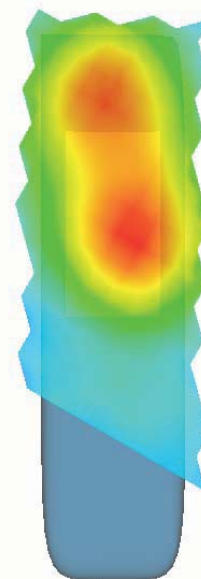
MEASUREMENT 19

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 19 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	38.271999
Relative permittivity	13.850950

Conductivity (S/m)	1.378356
Variation (%)	-1.180000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

SURFACE SAR	VOLUME SAR
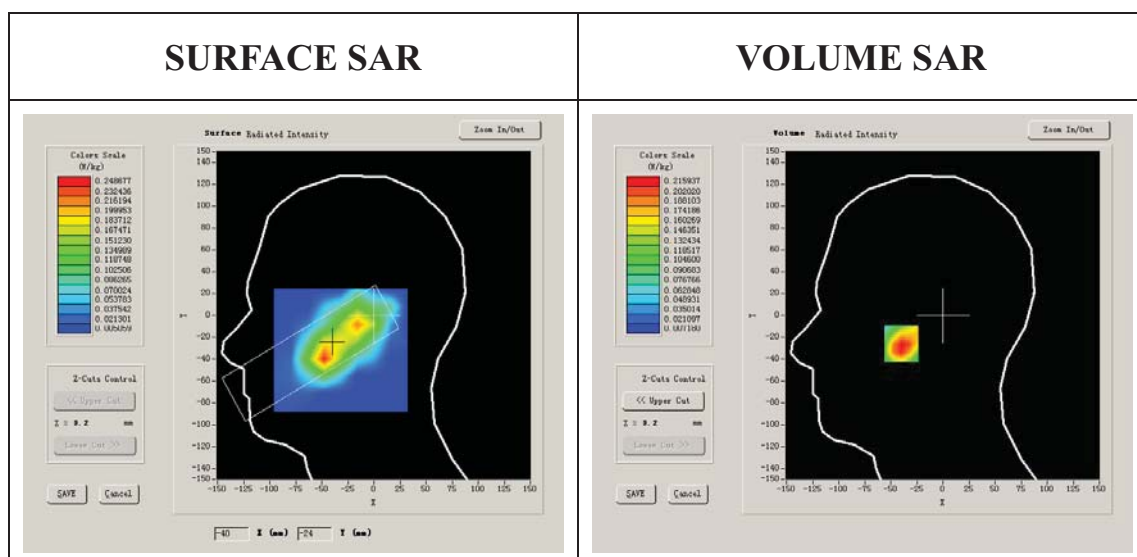
Maximum location: X=-40.00, Y=-26.00

SAR 10g (W/Kg)	0.169746
SAR 1g　(W/Kg)	0.237244

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2159	0.1405	0.0944	0.0573	0.0393	0.0232

SAR, Z Axis Scan (X = -40, Y = -26)
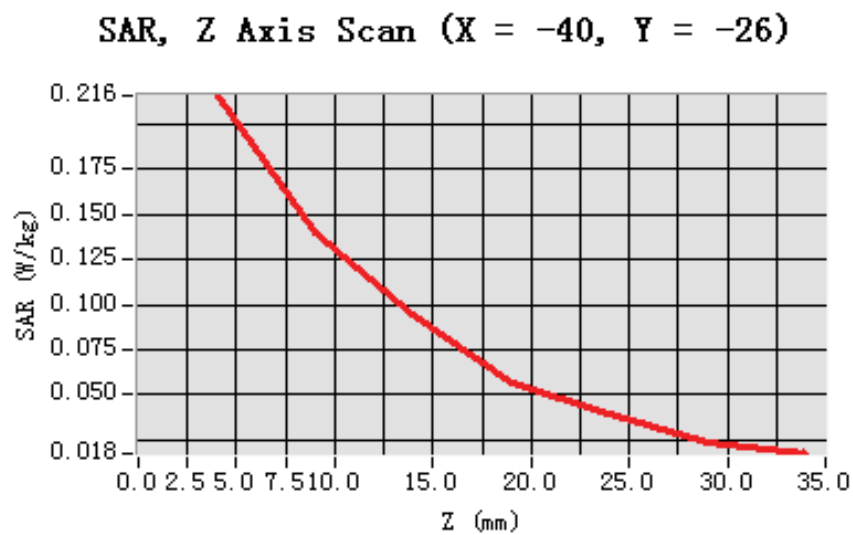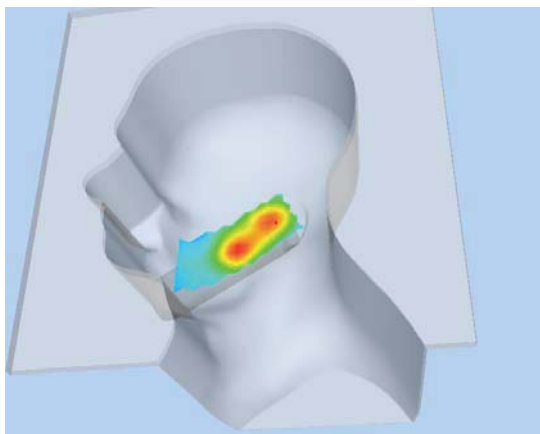
3D sceen shot	Hot spot position
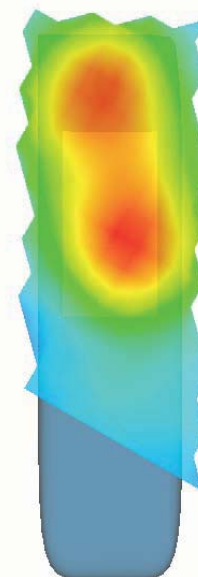
MEASUREMENT 20

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 59 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	38.648998
Relative permittivity	13.752850

Conductivity (S/m)	1.306678
Variation (%)	0.730000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
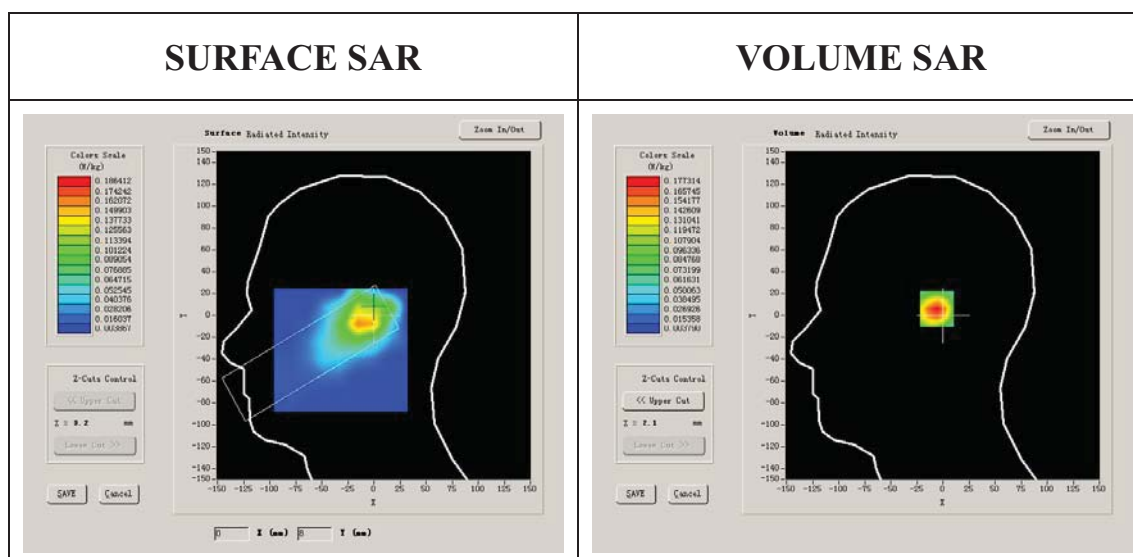
Maximum location: X=0.00, Y=6.00

SAR 10g (W/Kg)	0.132735
SAR 1g (W/Kg)	0.211441

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1773	0.1032	0.0663	0.0428	0.0259	0.0165
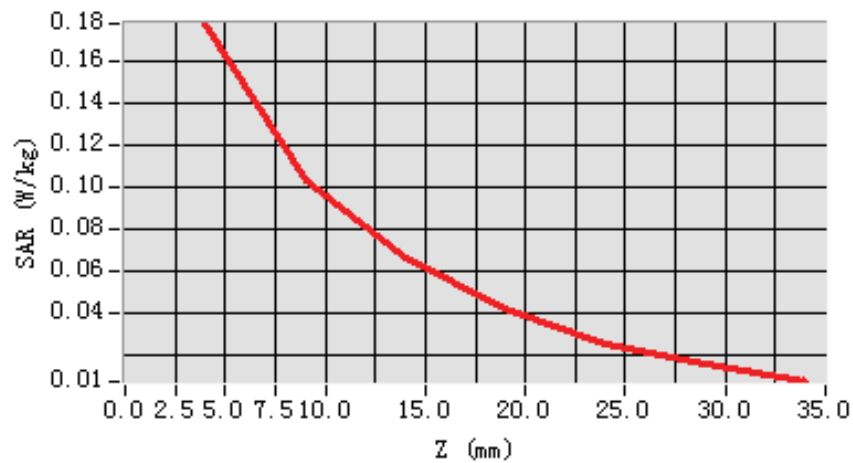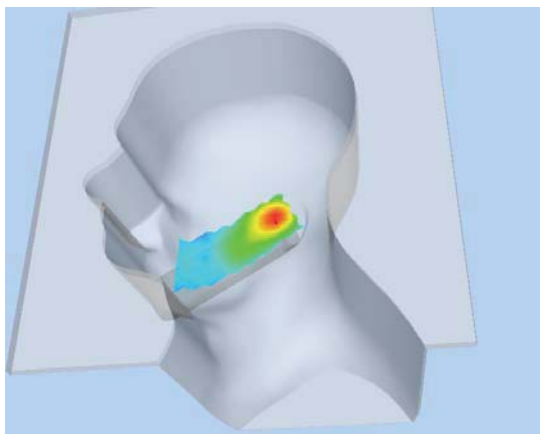
3D sceen shot	Hot spot position
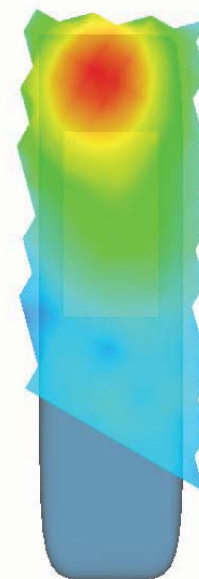
MEASUREMENT 21

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 8 minutes 0 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.930000
Relative permittivity	13.610000

Conductivity (S/m)	1.321229
Variation (%)	-2.560000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
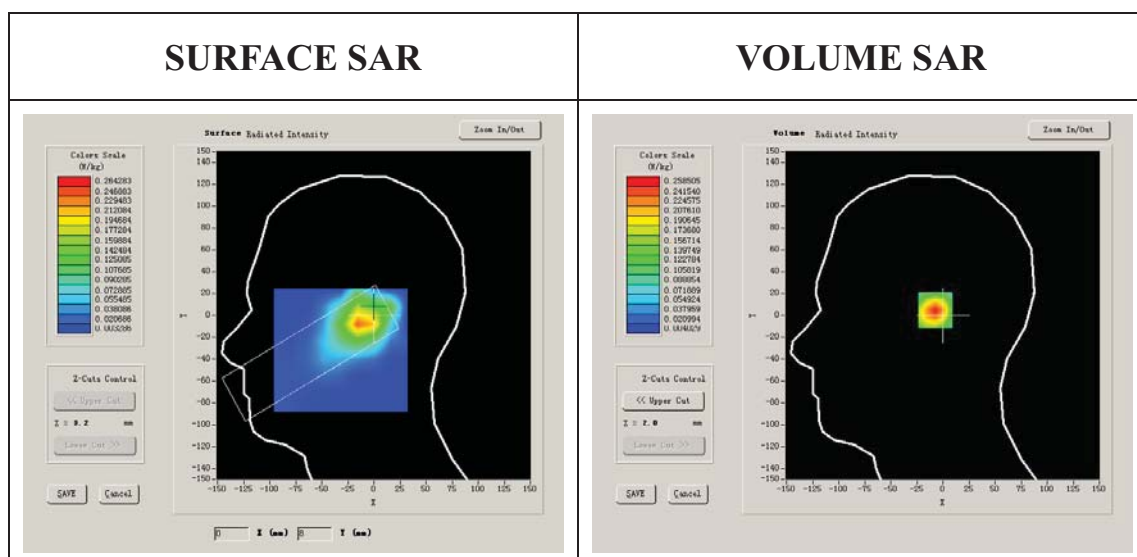
Maximum location: X=-1.00, Y=5.00

SAR 10g (W/Kg)	0.121463
SAR 1g (W/Kg)	0.211344

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2585	0.1530	0.0920	0.0574	0.0320	0.0207
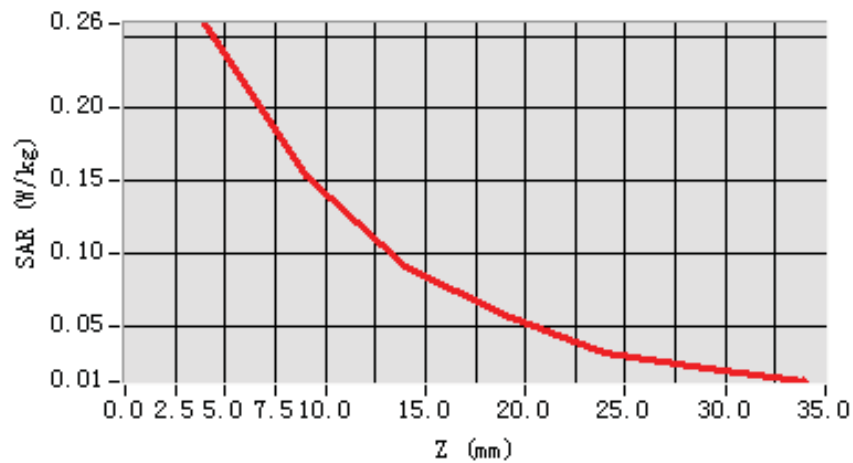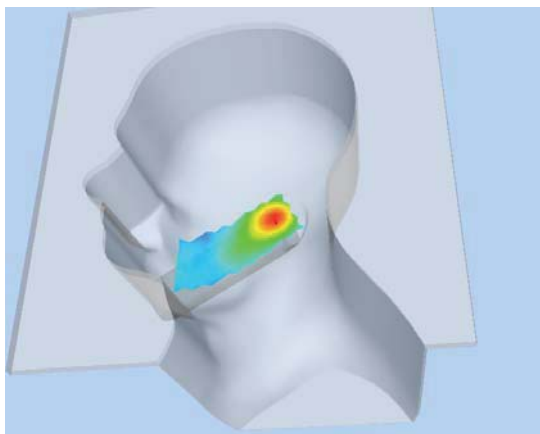
3D sceen shot	Hot spot position

MEASUREMENT 22

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 59 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	38.271999
Relative permittivity	13.850950

Conductivity (S/m)	1.378356
Variation (%)	-0.880000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
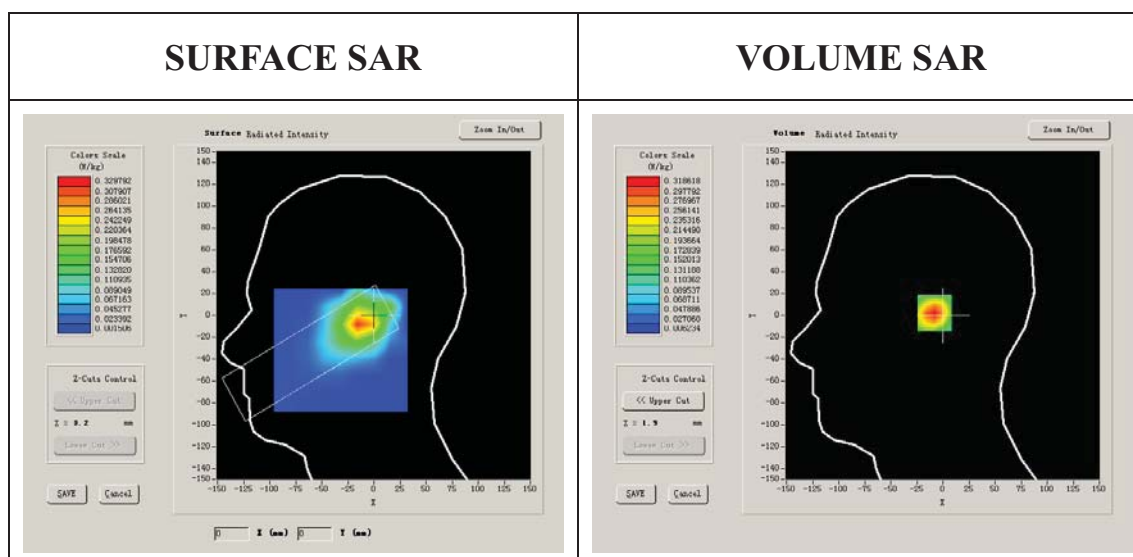
Maximum location: X=-2.00, Y=2.00

SAR 10g (W/Kg)	0.109466
SAR 1g　(W/Kg)	0.201382

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3186	0.1932	0.1173	0.0721	0.0424	0.0278

SAR, Z Axis Scan (X = -2, Y = 2)
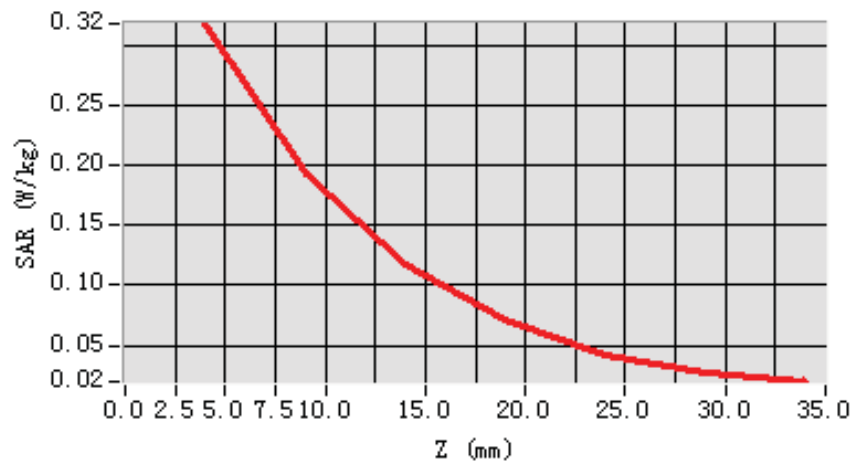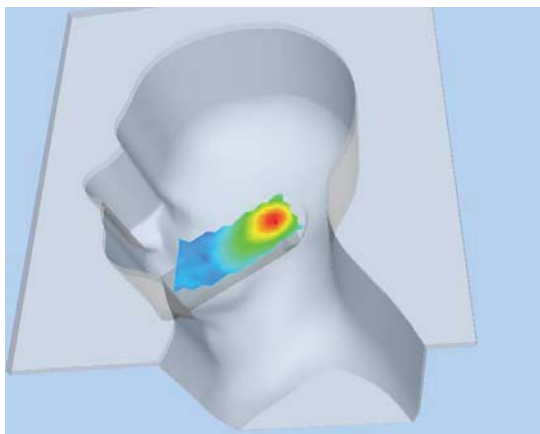
3D sceen shot	Hot spot position

MEASUREMENT 23

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 43 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	38.648998
Relative permittivity	13.752850

Conductivity (S/m)	1.306678
Variation (%)	0.350000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
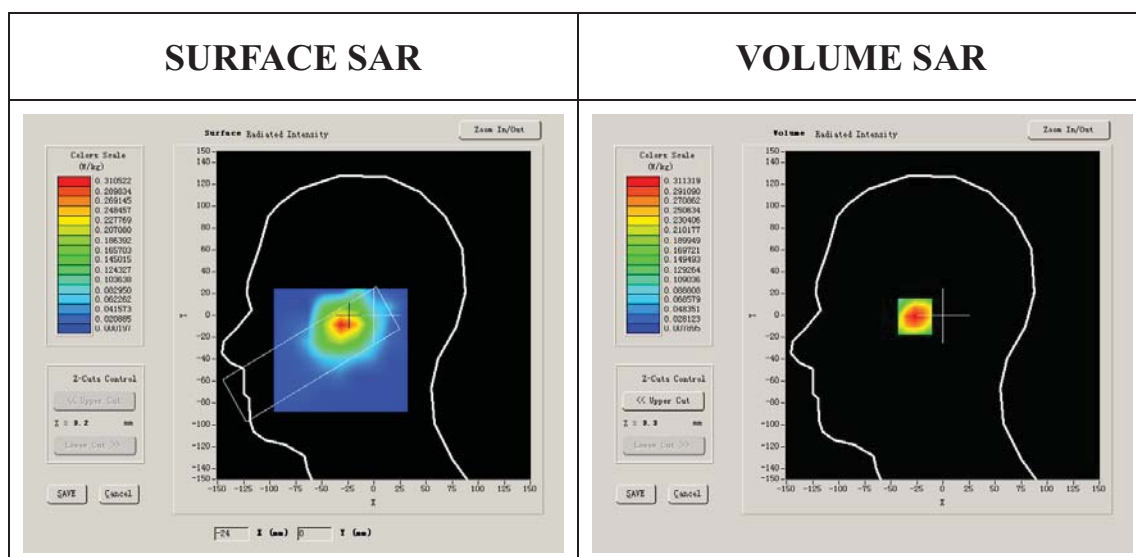
Maximum location: X=-23.00, Y=-1.00

SAR 10g (W/Kg)	0.185804
SAR 1g　(W/Kg)	0.295682

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3113	0.2022	0.1319	0.0775	0.0522	0.0334

SAR, Z Axis Scan (X = −23, Y = −1)
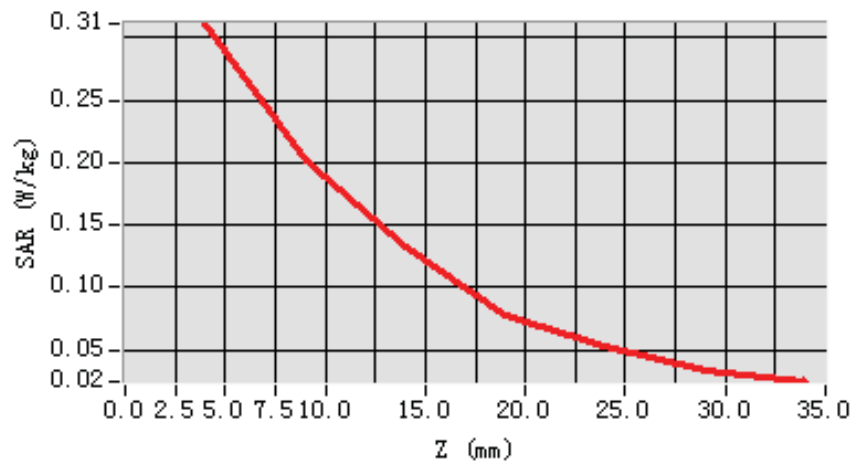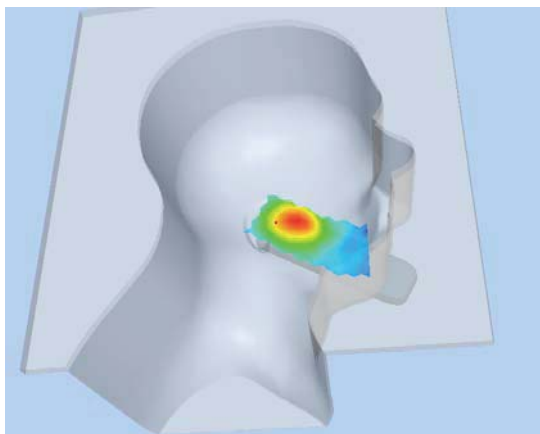
3D sceen shot	Hot spot position
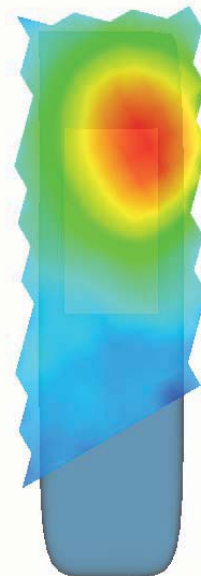
MEASUREMENT 24

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 35 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.930000
Relative permittivity	13.610000

Conductivity (S/m)	1.321229
Variation (%)	-1.060000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
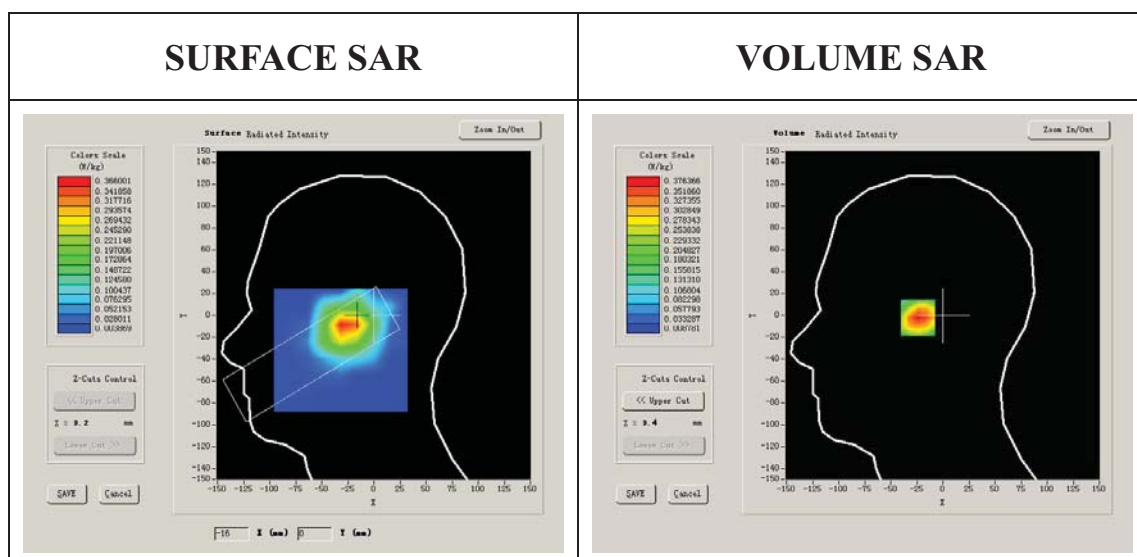
Maximum location: X=-20.00, Y=-2.00

SAR 10g (W/Kg)	0.167074
SAR 1g (W/Kg)	0.256095

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3764	0.2263	0.1465	0.0941	0.0499	0.0351

SAR, Z Axis Scan (X = -20, Y = -2)
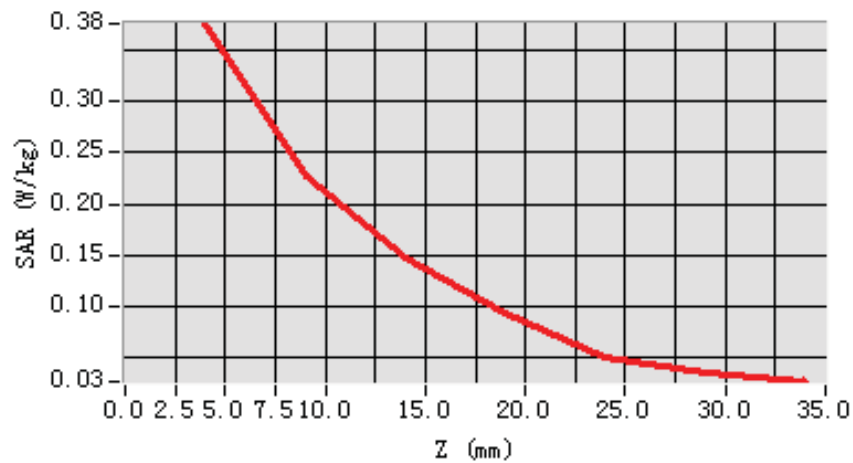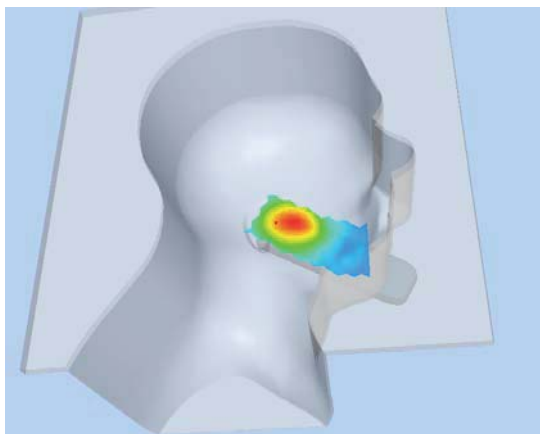
3D sceen shot	Hot spot position
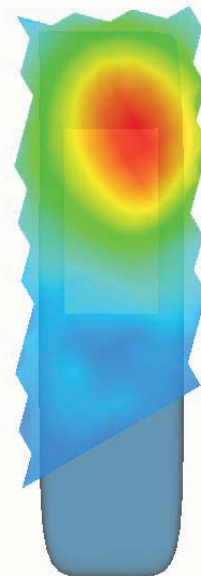
MEASUREMENT 25

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 45 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	38.271999
Relative permittivity	13.850950

Conductivity (S/m)	1.378356
Variation (%)	-1.030000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
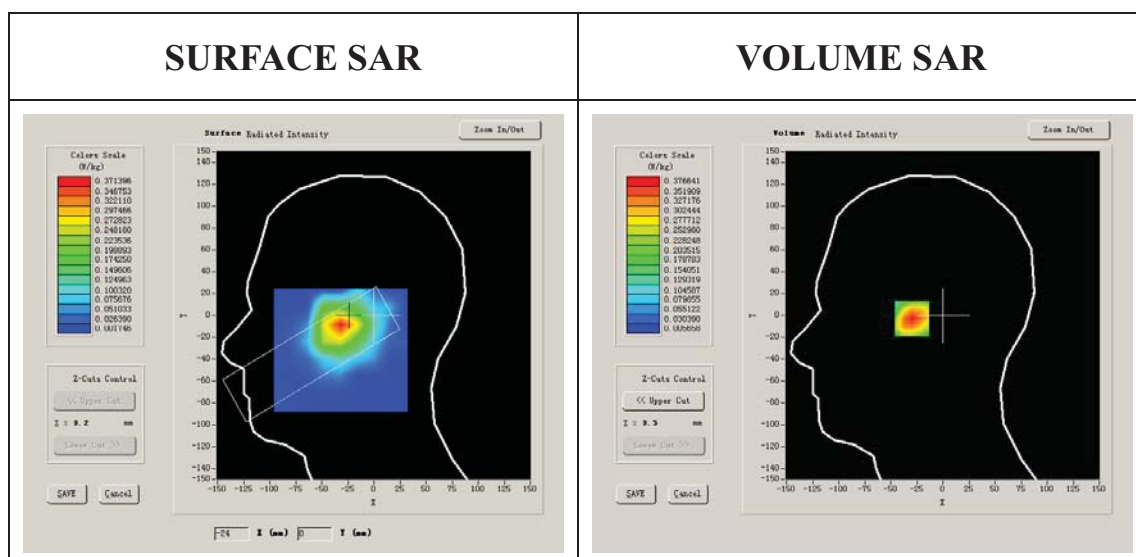
Maximum location: X=-27.00, Y=-2.00

SAR 10g (W/Kg)	0.164366
SAR 1g　(W/Kg)	0.256820

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3766	0.2335	0.1489	0.0941	0.0583	0.0336
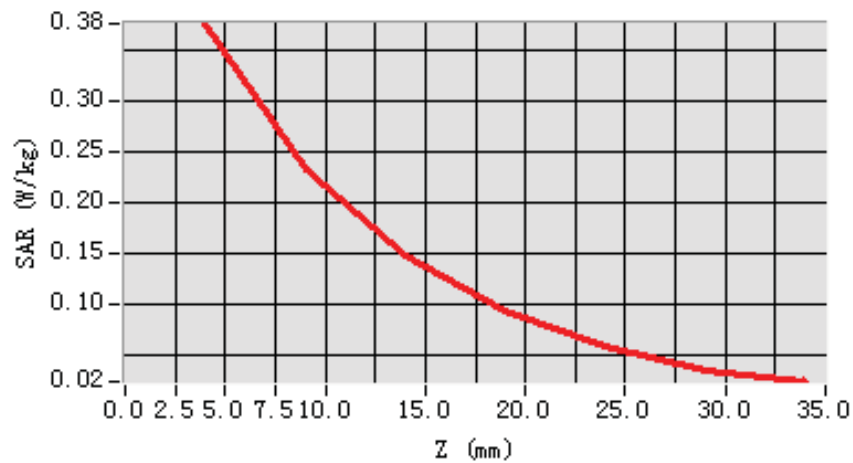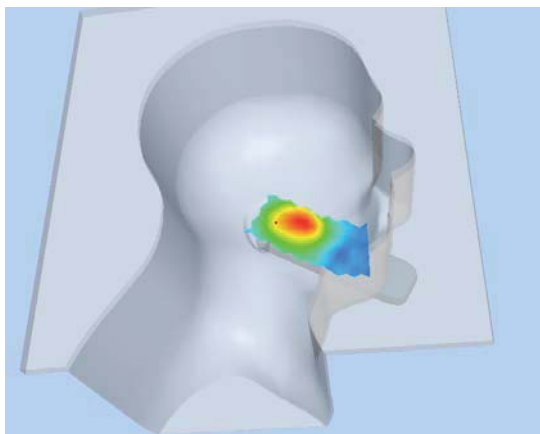
3D sceen shot	Hot spot position
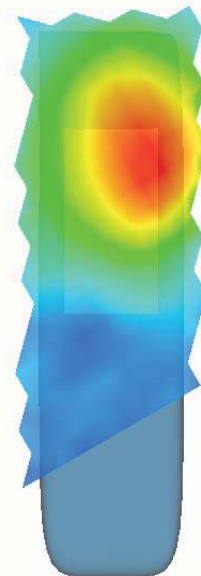
MEASUREMENT 26

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 40 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	38.648998
Relative permittivity	13.752850

Conductivity (S/m)	1.306678
Variation (%)	-3.770000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
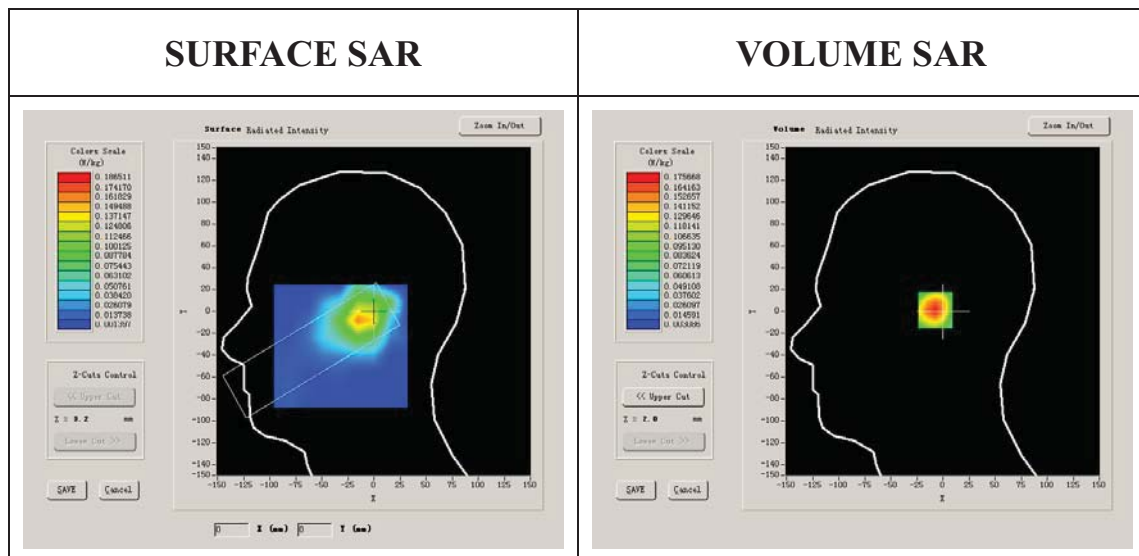
Maximum location: X=-1.00, Y=1.00

SAR 10g (W/Kg)	0.112318
SAR 1g (W/Kg)	0.188933

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1757	0.1103	0.0687	0.0375	0.0286	0.0162
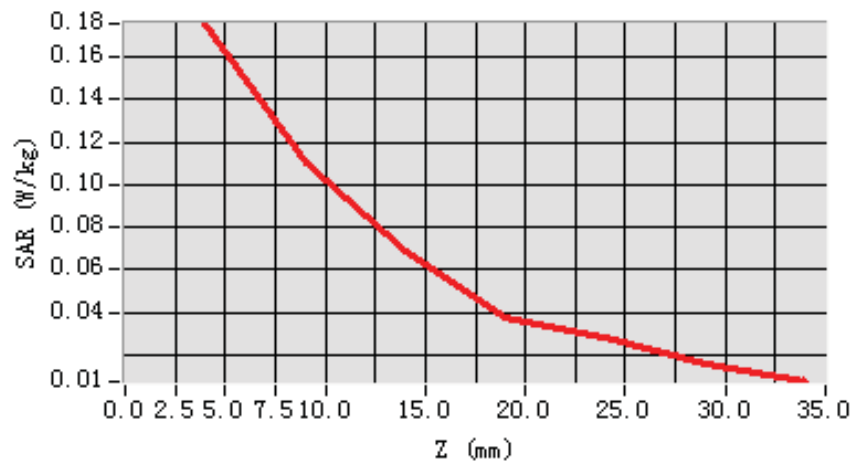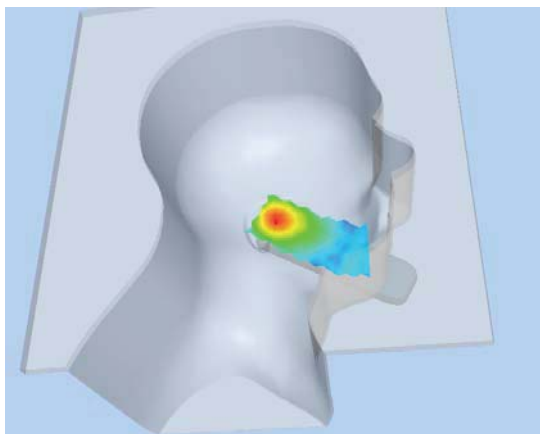
3D sceen shot	Hot spot position
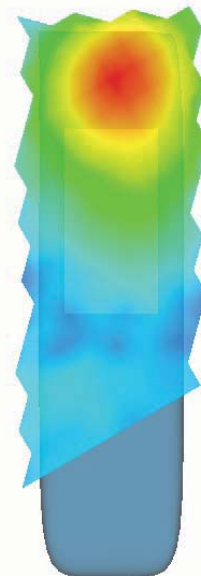
MEASUREMENT 27

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 37 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.930000
Relative permittivity	13.610000

Conductivity (S/m)	1.321229
Variation (%)	-0.420000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
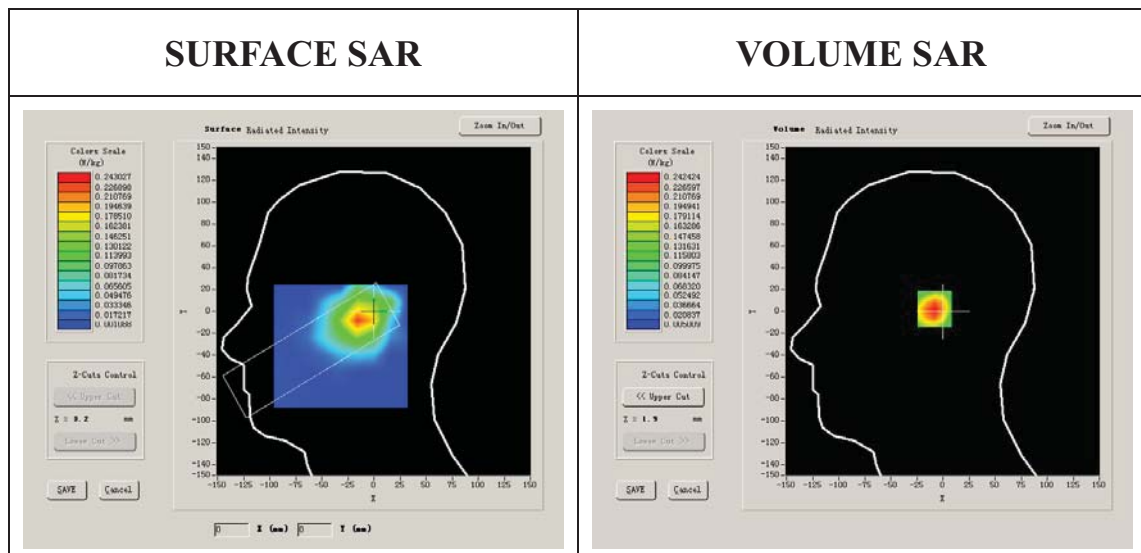
Maximum location: X=-2.00, Y=2.00

SAR 10g (W/Kg)	0.101067
SAR 1g　(W/Kg)	0.190849

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2424	0.1512	0.0918	0.0589	0.0359	0.0207
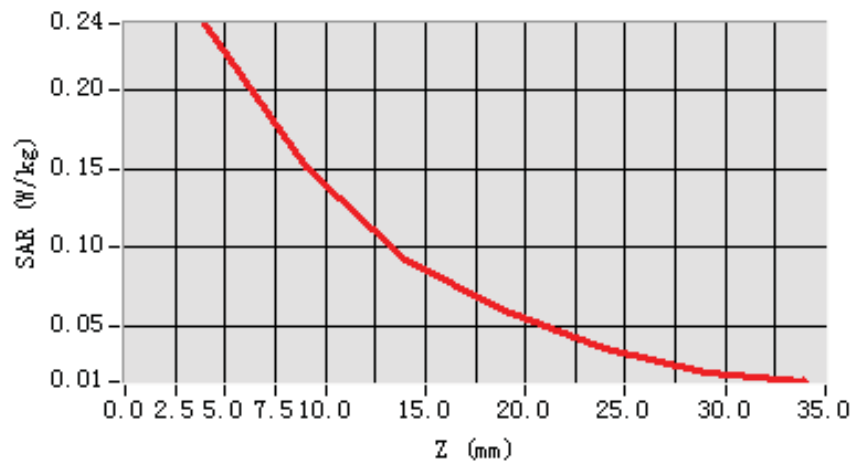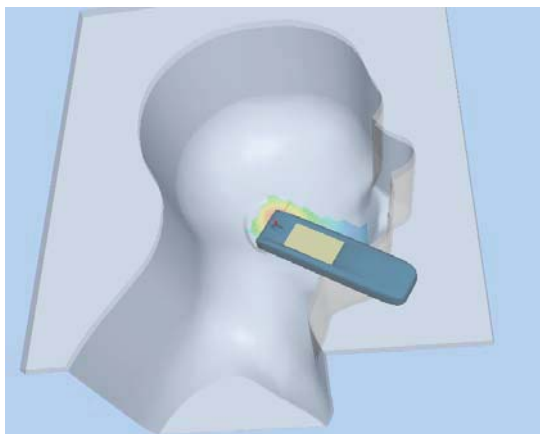
3D sceen shot	Hot spot position
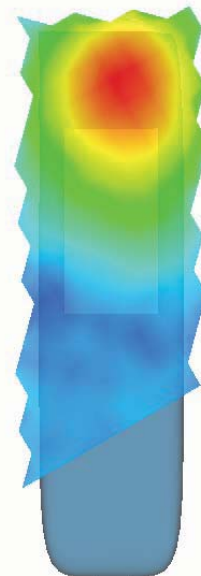
MEASUREMENT 28

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 7 minutes 41 seconds

A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	38.271999
Relative permittivity	13.850950

Conductivity (S/m)	1.378356
Variation (%)	-0.320000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.2°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
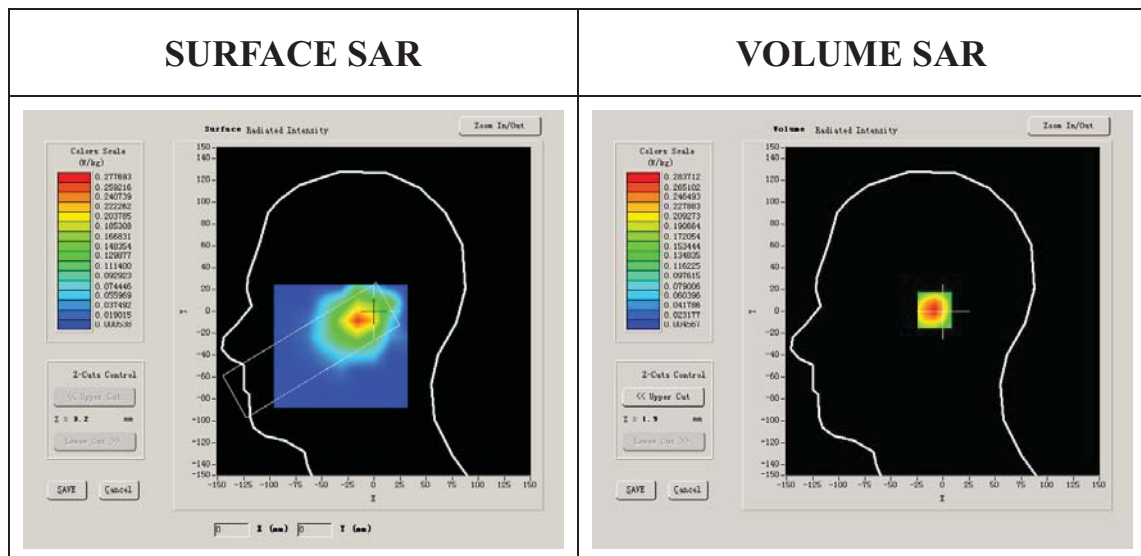
Maximum location: X=-2.00, Y=1.00

SAR 10g (W/Kg)	0.108669
SAR 1g (W/Kg)	0.184676

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2837	0.1654	0.1065	0.0610	0.0358	0.0235

SAR, Z Axis Scan (X = -2, Y = 1)
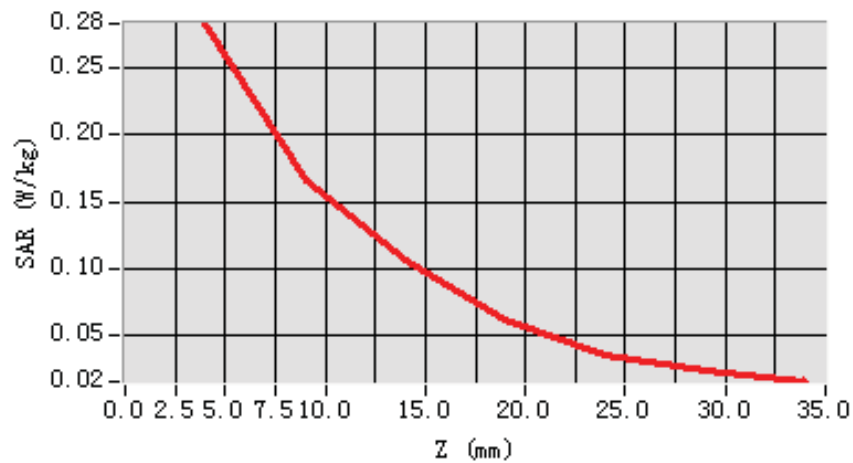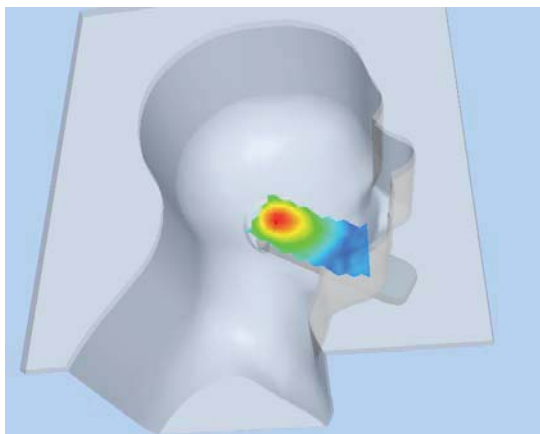
3D sceen shot	Hot spot position
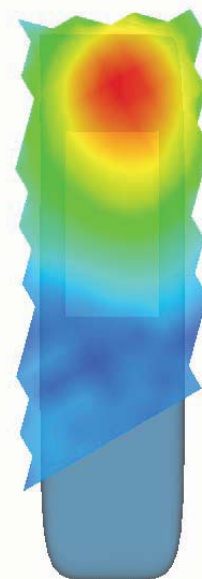
MEASUREMENT 29

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	51.540001
Relative permittivity	12.000000

Conductivity (S/m)	1.233467
Variation (%)	0.440000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.1°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
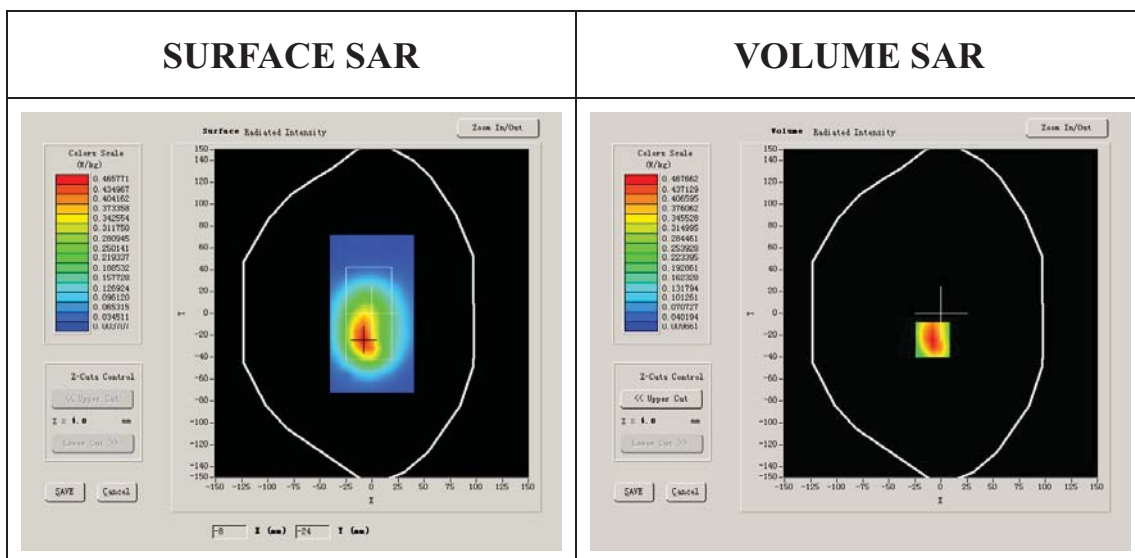
Maximum location: X=-8.00, Y=-24.00

SAR 10g (W/Kg)	0.291722
SAR 1g　(W/Kg)	0.460151

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4320	0.2471	0.1418	0.0829	0.0496	0.0302
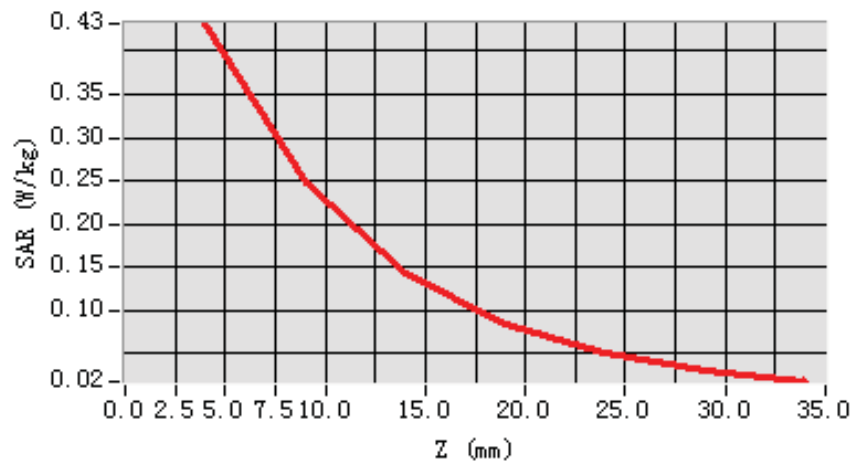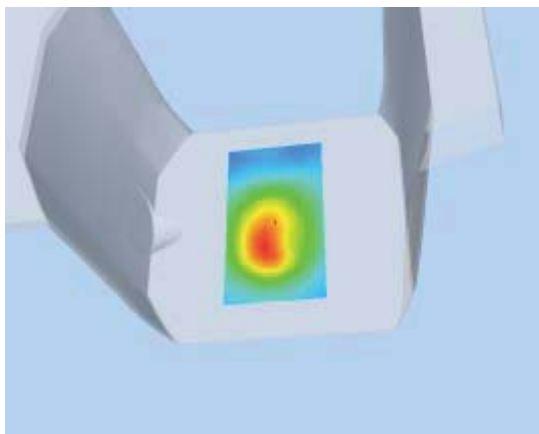
3D sceen shot	Hot spot position
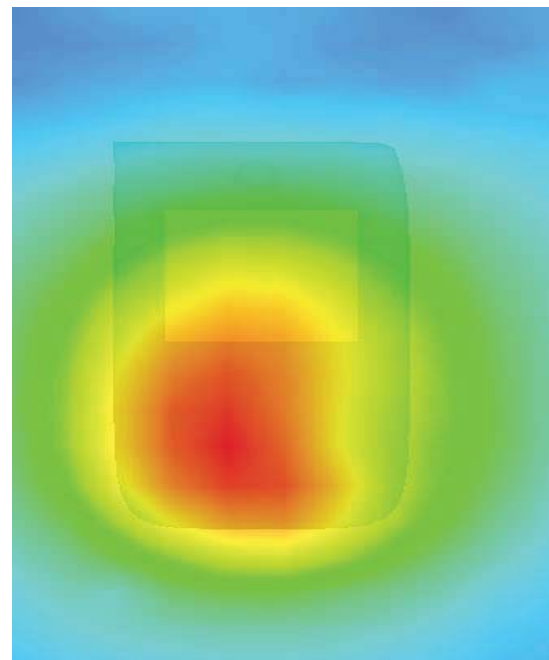
MEASUREMENT 30

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

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

Conductivity (S/m)	1.573978
Variation (%)	-1.340000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.1°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
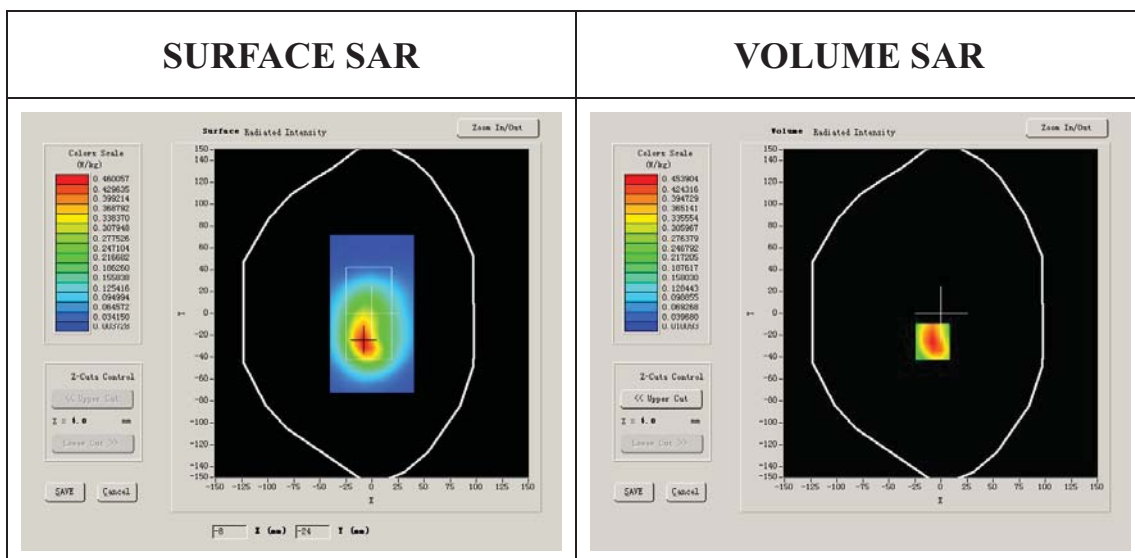
Maximum location: X=-8.00, Y=-26.00

SAR 10g (W/Kg)	0.274593
SAR 1g (W/Kg)	0.431709

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4975	0.2771	0.1664	0.0947	0.0580	0.0338

SAR, Z Axis Scan (X = −8, Y = −26)
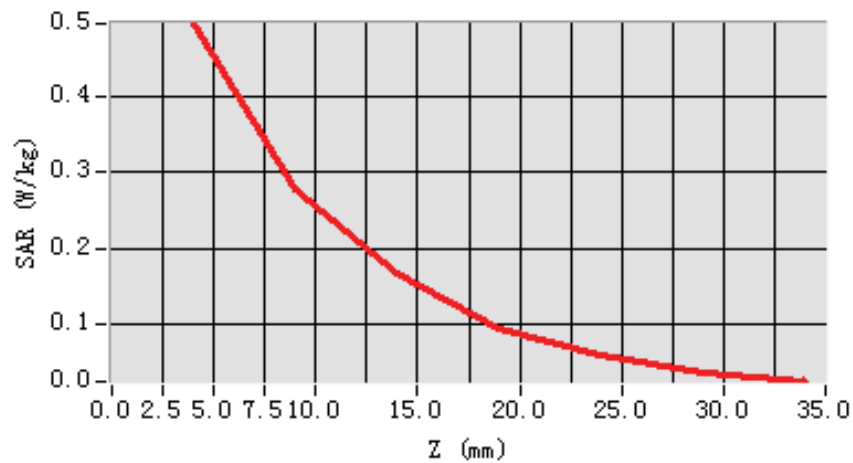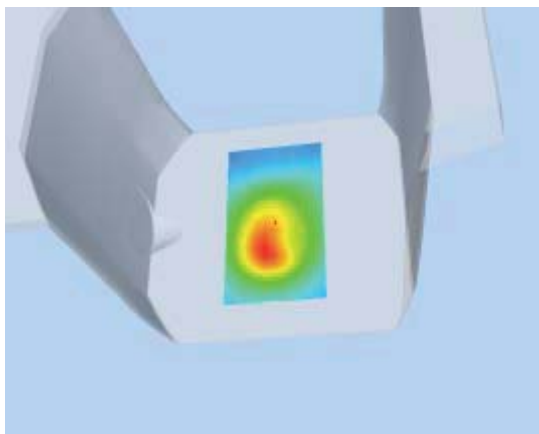
3D sceen shot	Hot spot position
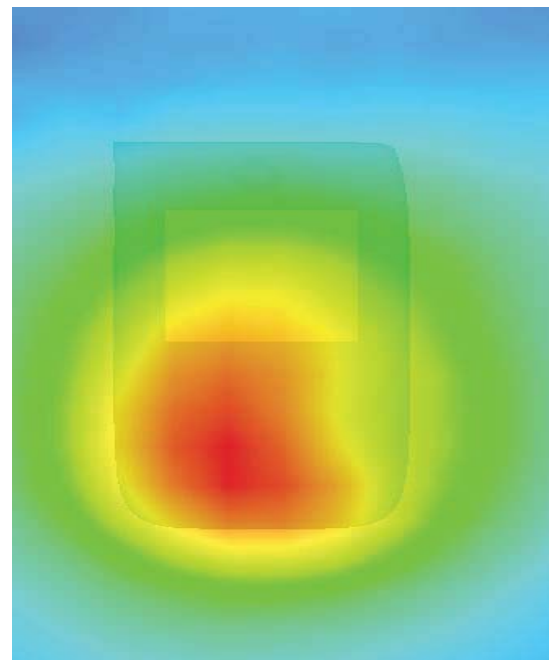
MEASUREMENT 31

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 13 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	51.540001
Relative permittivity	12.000000

Conductivity (S/m)	1.273200
Variation (%)	-0.470000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.1°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
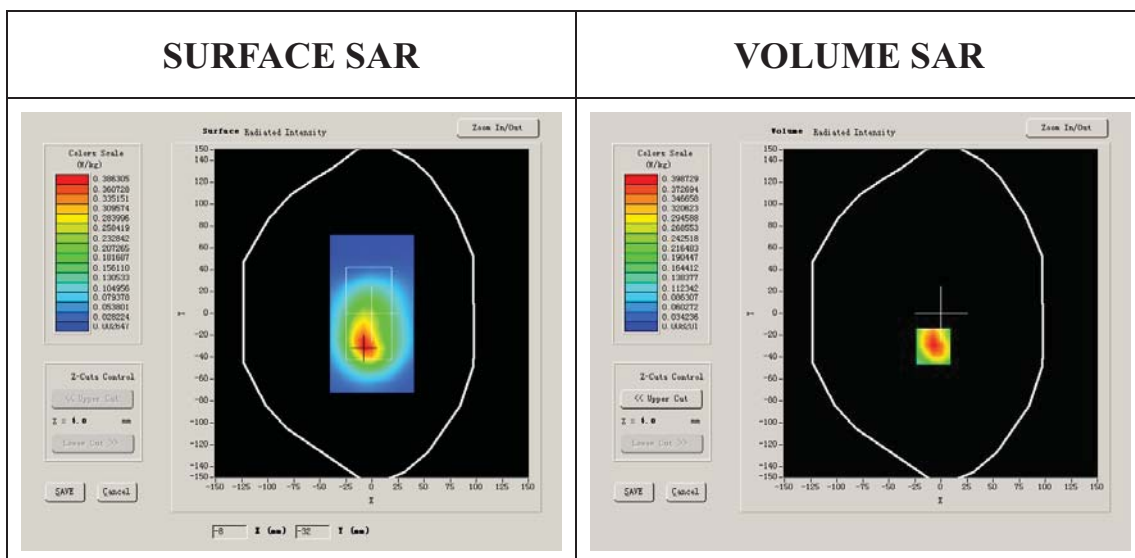
Maximum location: X=-7.00, Y=-30.00

SAR 10g (W/Kg)	0.280998
SAR 1g (W/Kg)	0.444072

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3637	0.2017	0.1194	0.0666	0.0411	0.0233

SAR, Z Axis Scan (X = −7, Y = −30)
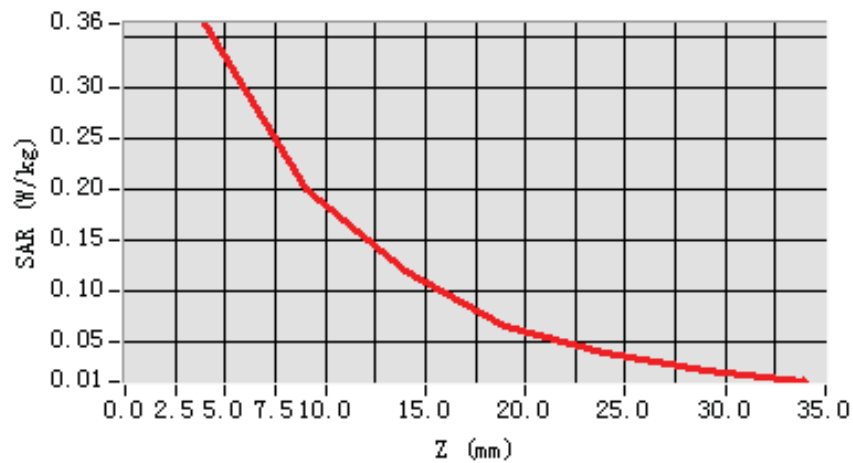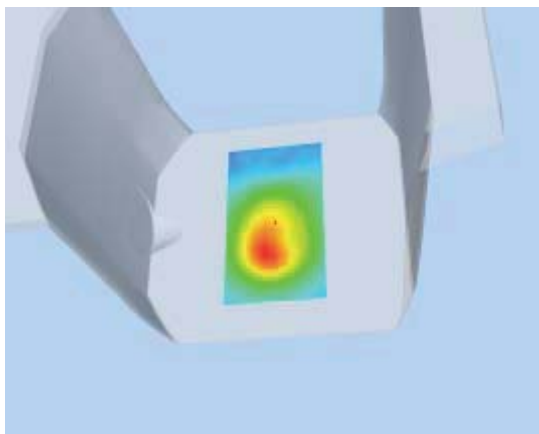
3D sceen shot	Hot spot position
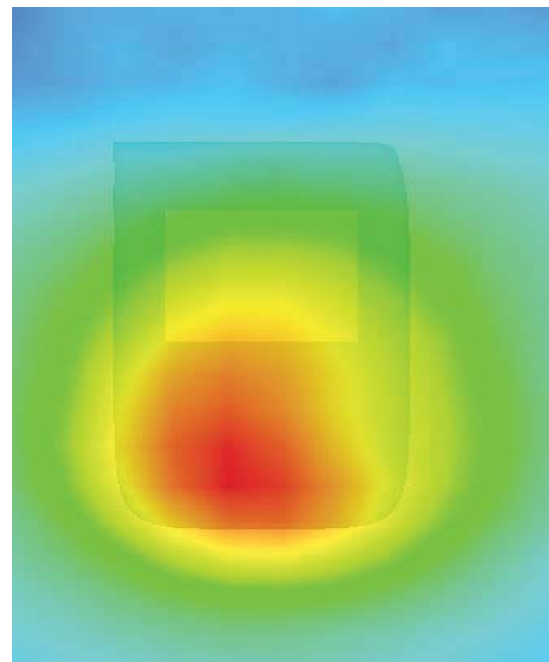
MEASUREMENT 32

Type: Phone measurement (Complete)

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

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

Date of measurement: 3/3/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

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

Conductivity (S/m)	1.573978
Variation (%)	-0.660000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.1°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:8

SURFACE SAR	VOLUME SAR
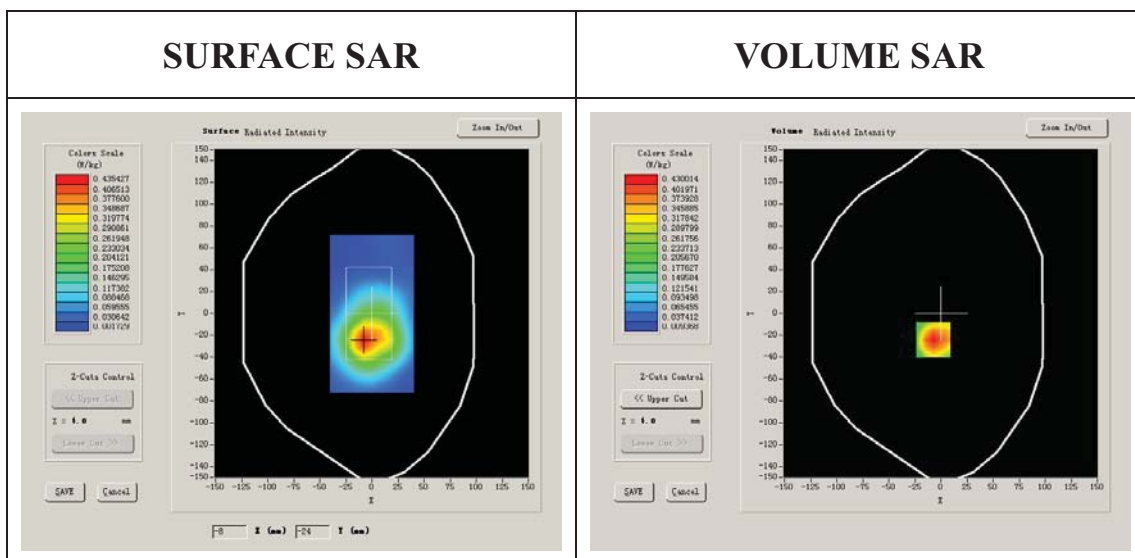
Maximum location: X=-7.00, Y=-24.00

SAR 10g (W/Kg)	0.166734
SAR 1g (W/Kg)	0.226834

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4713	0.2741	0.1587	0.0921	0.0526	0.0300
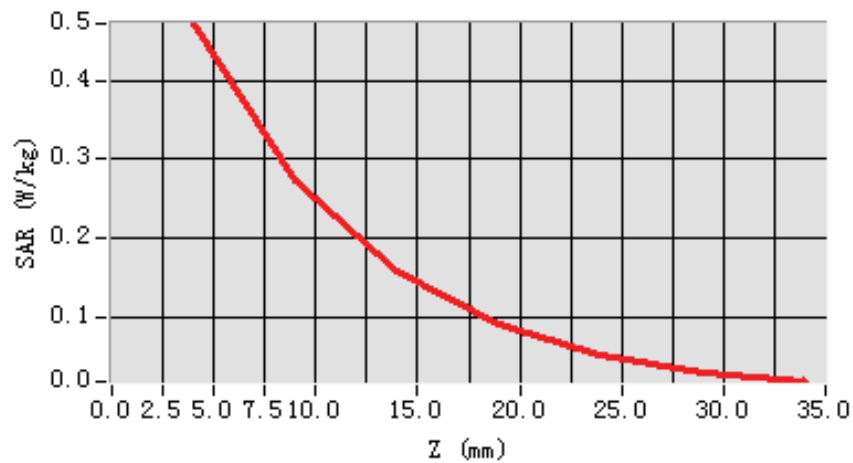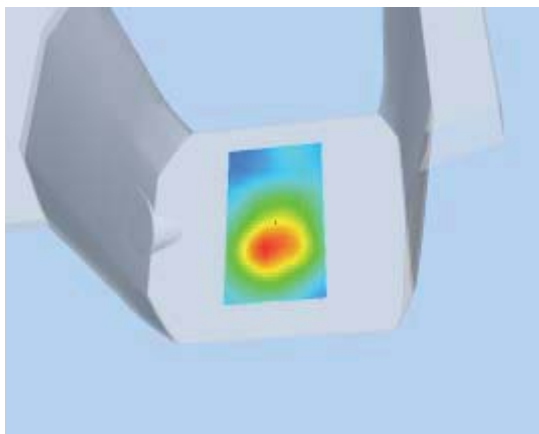
3D sceen shot	Hot spot position
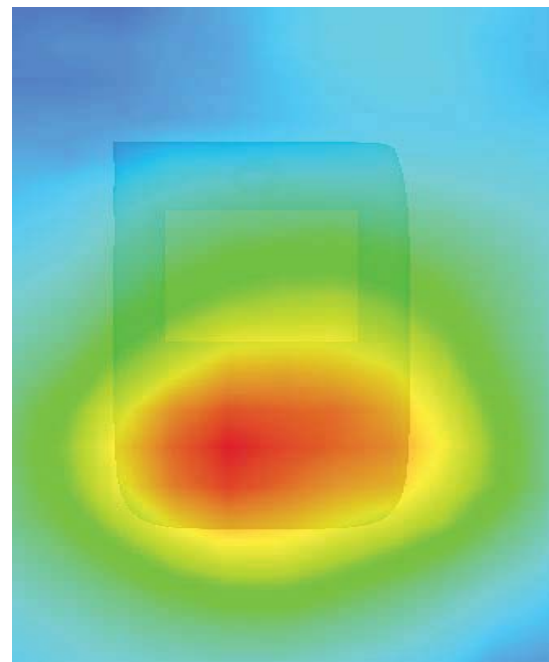
System Performance Check Data(835MHz Head)

Type: Phone measurement (Complete)

Date of measurement: 3/3/2010

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

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

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	835.00000
Relative permittivity (real part)	41.675999
Relative permittivity	18.926250
Conductivity (S/m)	0.894409

Variation (%)	-0.050000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	28.479,25.214,27.196
Crest factor：	1:1

SURFACE SAR
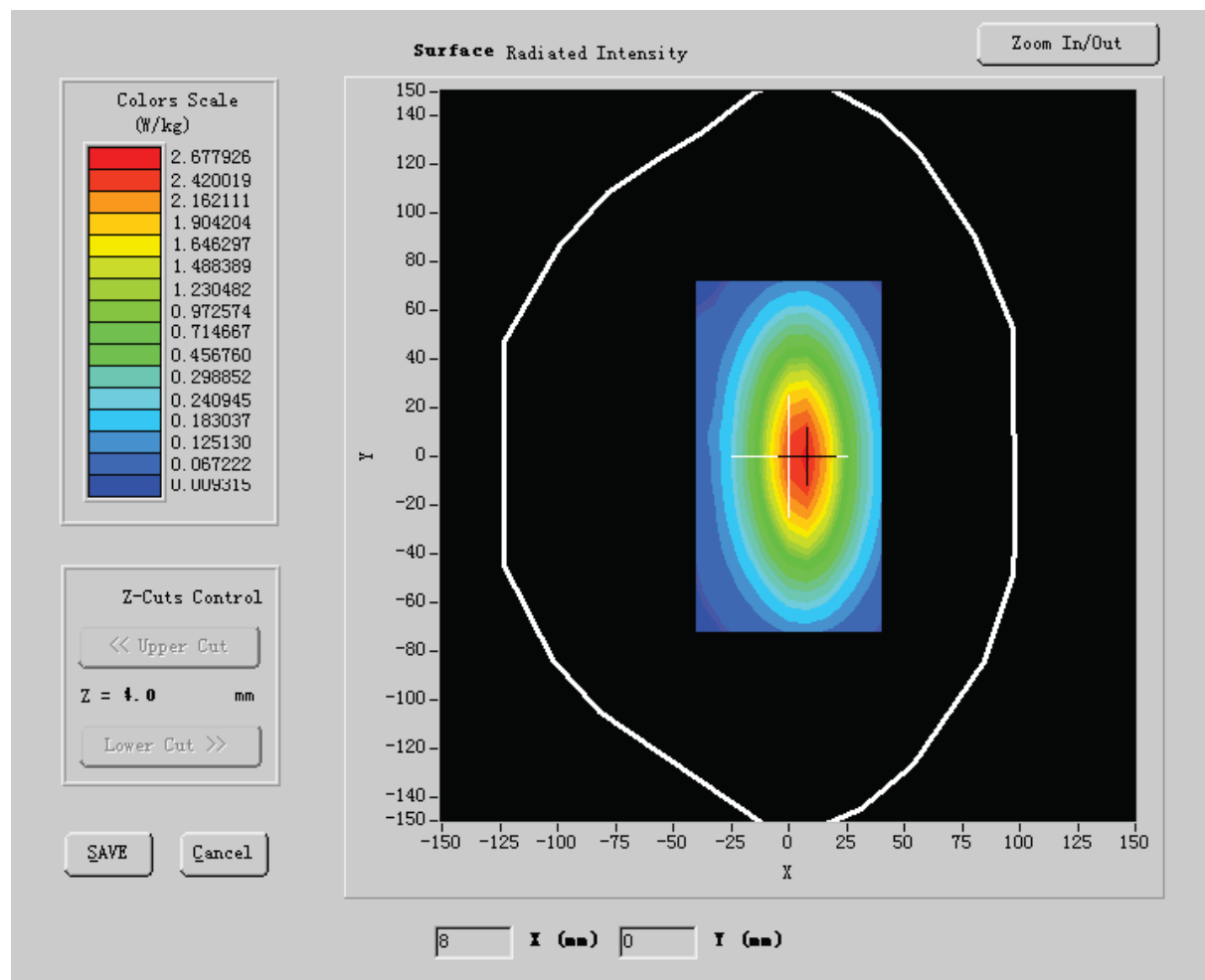
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.875252
SAR 1g (W/Kg)	2.709422

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.6486	1.2069	0.5583	0.3002
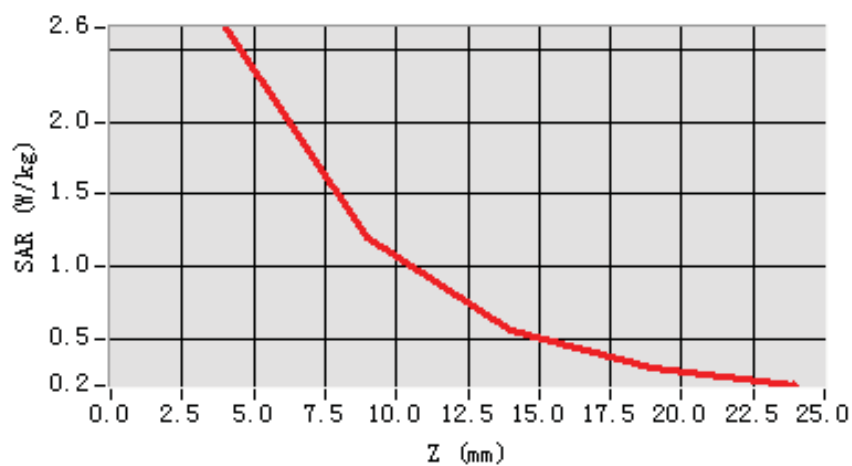
System Performance Check Data(835MHz Body)

Type: Phone measurement (Complete)

Date of measurement: 3/3/2010

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

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

A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR:

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.070000
Conductivity (S/m)	1.009033

Variation (%)	-0.140000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR
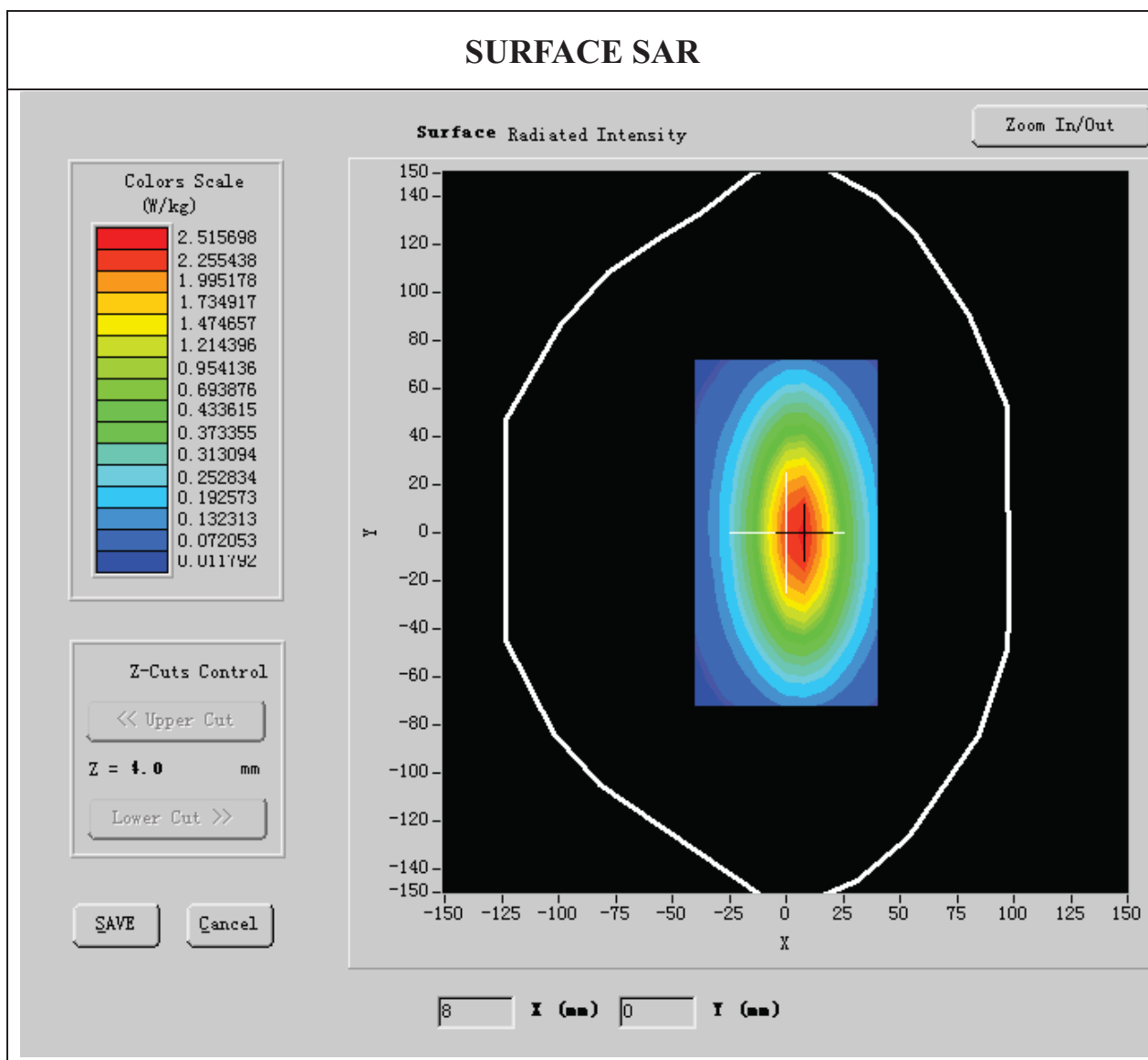
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.652852
SAR 1g (W/Kg)	2.701584

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

SAR, Z Axis Scan (X = 5, Y = 1)
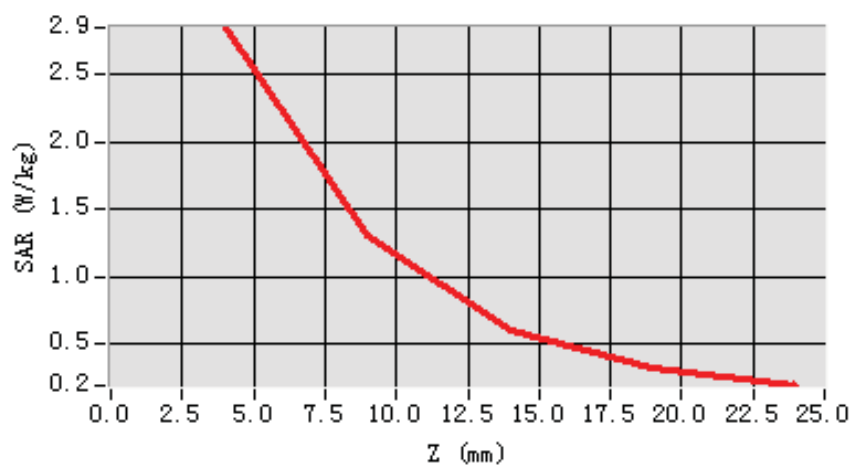
System Performance Check Data(1900MHz Head)

Type: Phone measurement (Complete)

Date of measurement: 3/3/2010

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

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

A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR:

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.481223
Relative permittivity	12.991650
Conductivity (S/m)	1.395758

Variation (%)	0.570000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.136,34.843,38.721
Crest factor：	1:1

SURFACE SAR
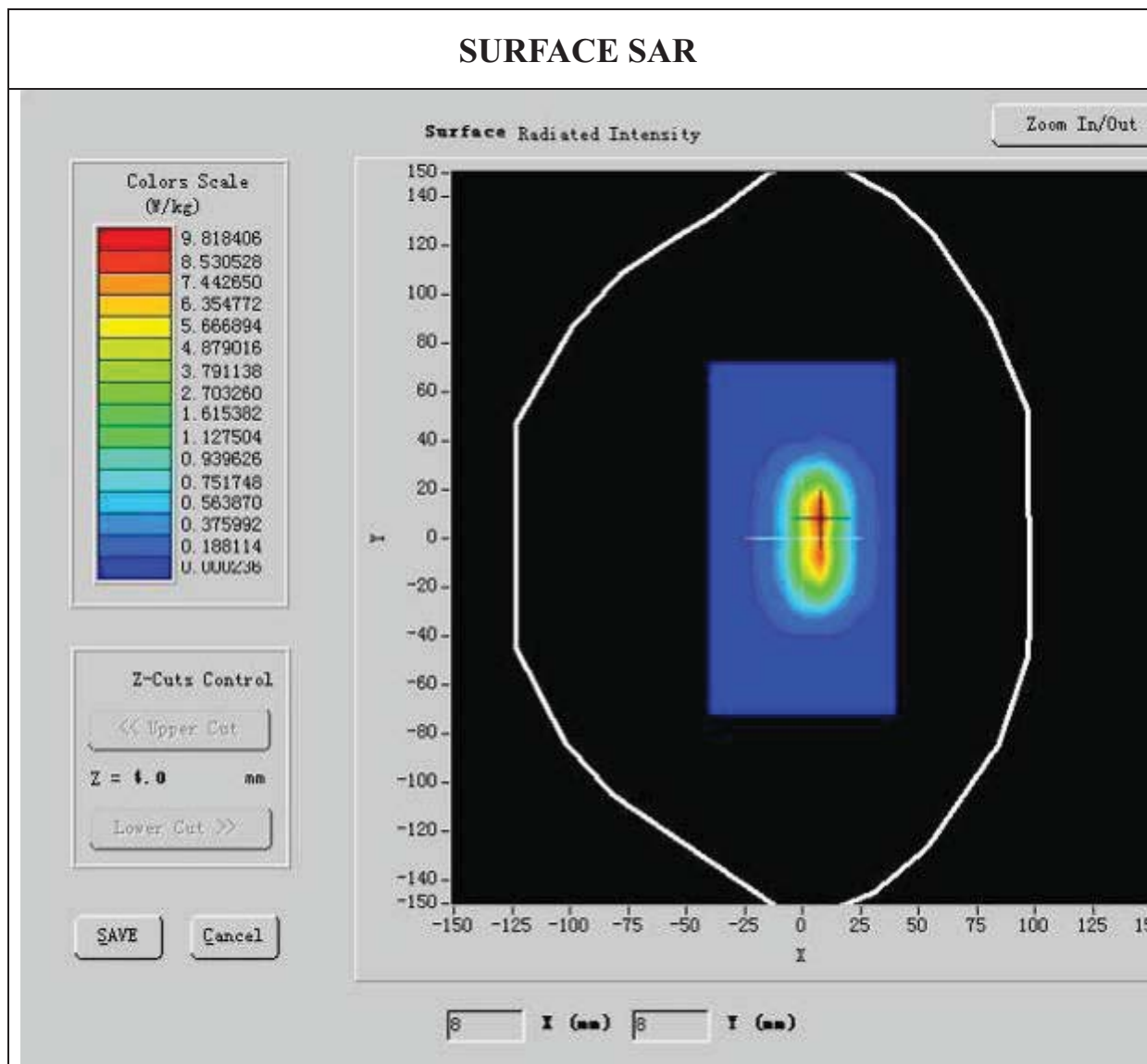
Maximum location: X=7.00, Y=8.00

SAR 10g (W/Kg)	5.873331
SAR 1g (W/Kg)	9.843651

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.3503	0.3791	0.0904	0.0338

SAR, Z Axis Scan (X = 7, Y = 8)
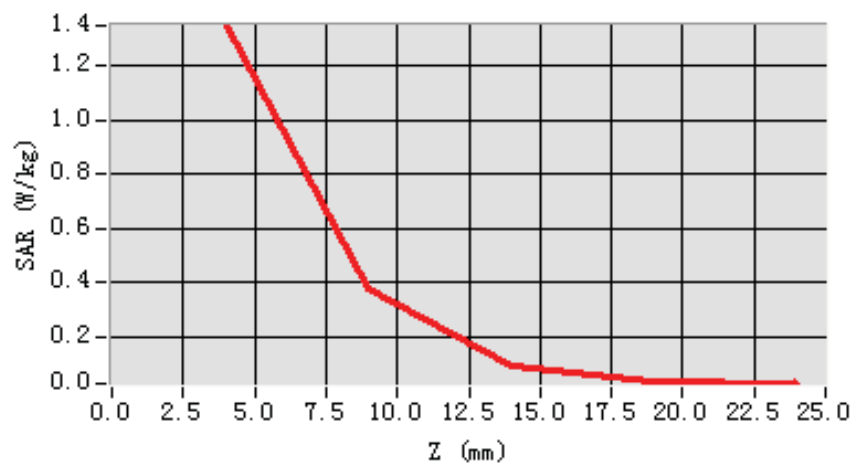
System Performance Check Data(1900MHz Body)

Type: Phone measurement (Complete)

Date of measurement: 3/3/2010

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

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

A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR:

Frequency (MHz)	1900.000000
Relative permittivity (real part)	52.548876
Relative permittivity (imaginary part)	12.991650

Conductivity (S/m)	1.573978
Variation (%)	0.570000
Ambient Temperature:	23.5°C
Liquid Temperature:	22.8°C
ConvF:	40.625,34.773,38.535
Crest factor：	1:1

SURFACE SAR
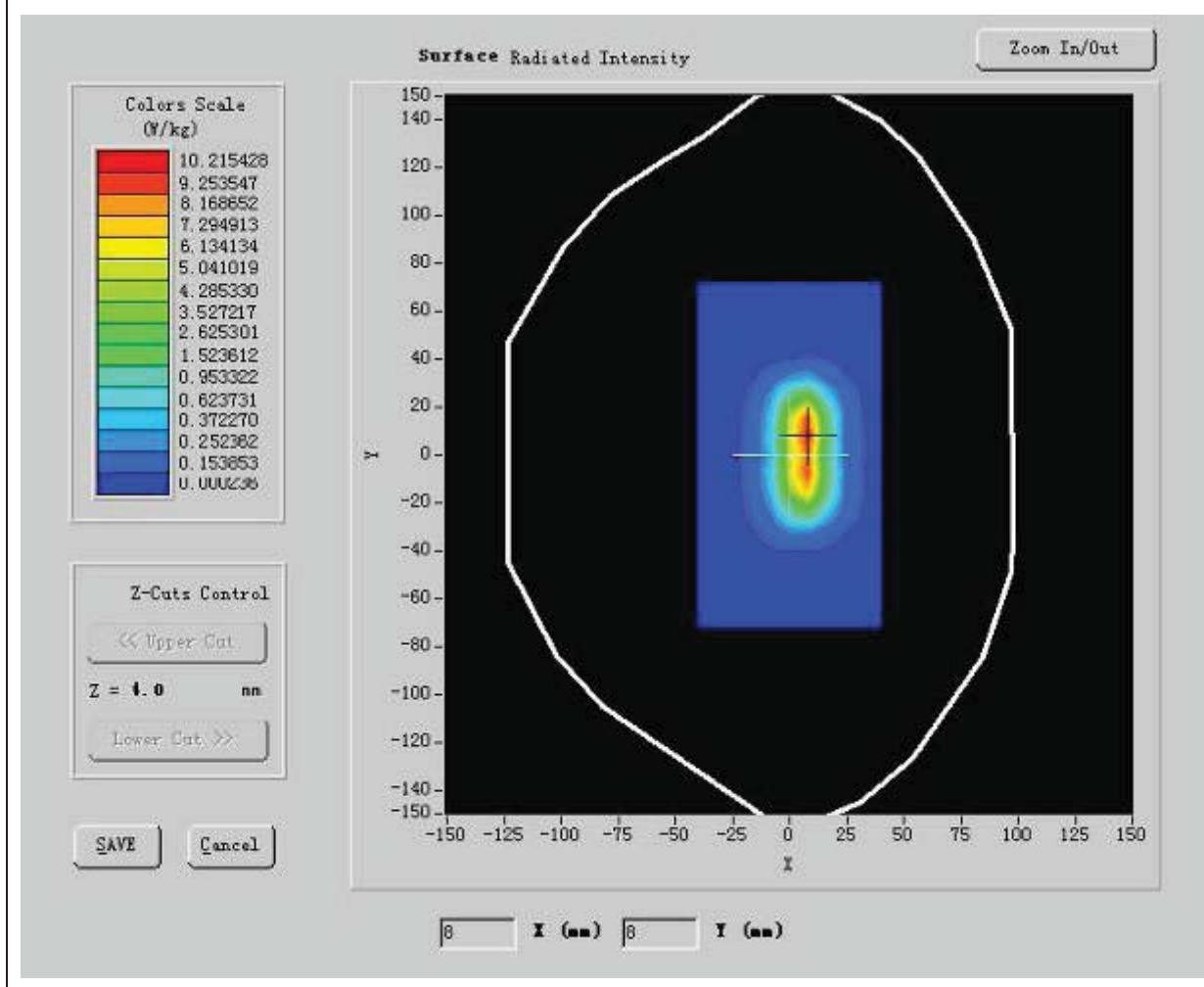
Maximum location: X=7.00, Y=8.00

SAR 10g (W/Kg)	5.487222
SAR 1g (W/Kg)	10.225723

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.3503	0.3791	0.0904	0.0338

SAR, Z Axis Scan (X = 7, Y = 8)