



## FCC SAR

# TEST REPORT

of

### 3G Mobile Phone

Model Name: C8093, C8093P, ADR2100, ADR2100GT, ADR2100CL, ADR2100CLB, ADR2100CLR, ADR2100AL, ADR2100PO, ADR2100CA, ADR2100EN, ADR2100PR, ADR2100AR, ADR2100CP, ADR2100PA, ADR2100SV, ADR2100MV, ADR2100NI, ADR2100MX, ADR2100OM, ADR2100PE

Trade Name: PCD, Cellon  
Report No.: SZ11010075S01  
FCC ID.: T38PCD8093P

*prepared for*

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**Bluetooth®**

**CTIA Authorized Test Lab**

LAB CODE 20081223-00

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Change History		
Issue	Date	Reason for change
1.0	Mar. 24, 2011	First edition

## 1. General Information

### 1.1. Notes

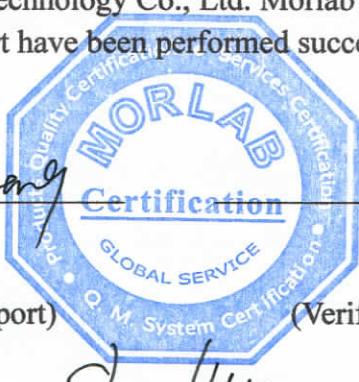
The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens 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.:	SZ11010075S01
Date of Issue:	Mar. 24, 2011
Date of Tests:	Jan.22, 2011
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 11 of this report have been performed successfully with the tested equipment.

  
Samuel Peng  
Tested by  
(Responsible for the Test Report)  
Shu Luan  
Approved by  
(Responsible Test Lab Manager)

Li Lei  
Reviewed by  
(Verification of the Test Report)

## 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  
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### 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

### 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: Cellon Communications Technology(ShenZhen)Co., Ltd.  
Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen

#### 3.2. Identification of Manufacturer

Company Name: Cellon Communications Technology(ShenZhen)Co., Ltd.  
Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen

#### 3.3. Equipment Under Test (EUT)

Brand Name: PCD, Cellon  
Type Name: PCD, Cellon  
Marking Name: C8093, C8093P, ADR2100, ADR2100GT, ADR2100CL, ADR2100CLB, ADR2100CLR, ADR2100AL, ADR2100PO, ADR2100CA, ADR2100EN, ADR2100PR, ADR2100AR, ADR2100CP, ADR2100PA, ADR2100SV, ADR2100MV, ADR2100NI, ADR2100MX, ADR2100OM, ADR2100PE  
Hardware Version: C8093 Main PCB P4  
Software Version: 20110106  
Frequency Bands: GSM 850MHz DCS 1900MHz  
WCDMA 850MHz WCDMA 1900MHz  
Modulation Mode: GSM / GPRS : GMSK  
EDGE : 8PSK  
WCDMA / CDMA2000 : QPSK  
HSDPA : QPSK / 16QAM  
Multislot Class: GPRS: Multislot Class 12: EDGE: Multislot Class 12  
GPRS operation mode: Class B  
HS-DSCH categories: Category 8  
Antenna type: Fixed Internal Antenna  
Development Stage: Identical prototype  
Battery Model: BTR8093  
Battery specification: 1200mAh 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#	C8093 Main PCB P4	20110106

## 3.4. Applied Reference Documents

Leading reference documents for testing:

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

## 3.5. Device Category and SAR Limits

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

### 3.6. Test Environment/Conditions

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

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

The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 125, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz or is allocated to 4132, 4182 and 4233 respectively in the case of WCDMA 850MHz and is allocated to 9262, 9400 and 9538 respectively in the case of WCDMA 1900MHz, The EUT is commanded to operate at maximum transmitting power.

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

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

For SAR testing, EUT is in GPRS/EDGE or WCDMA/HSDPA/HSUPA link mode. In GPRS/EDGE link mode, its crest factor is 2, because EUT is set in GPRS/EDGE multi-slot class 12 with 4 uplink slots. In WCDMA/HSDPA/HSUPA link mode, its crest factor is 1.

## 4. Specific Absorption Rate (SAR)

### 4.1 Introduction

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

### 4.2 SAR Definition

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

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

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

, where  $C$  is the specific heat capacity,  $\delta T$  is the temperature rise and  $\delta t$  the exposure duration, or related to the electrical field in the tissue by

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

, where  $\sigma$  is the conductivity of the tissue,  $\rho$  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.

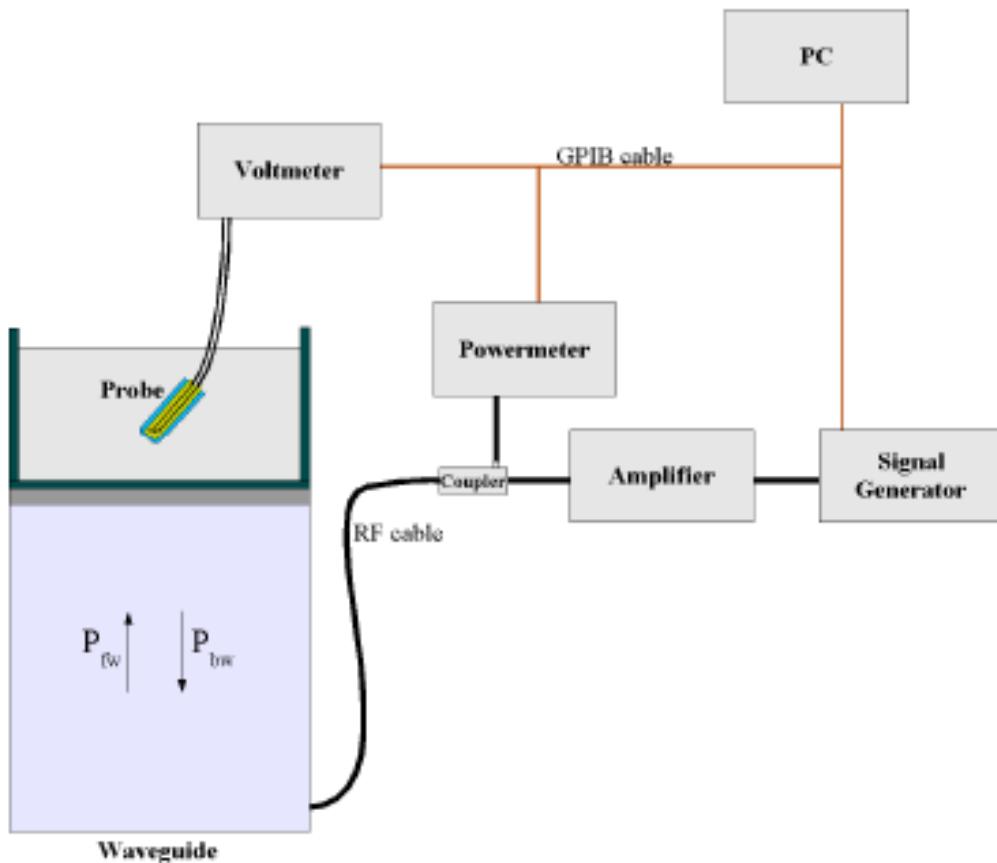
## 5.2. Probe

For the measurements the Specific Dosimetric E-Field Probe SN 37/08 EP80 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 6.5 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 surface normal line: less 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.



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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b = Waveguide dimensions

$\delta$  = 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:

$$CF(N) = SAR(N)/V_{lin}(N) \quad (N=1,2,3)$$

The linearised output voltage  $V_{lin}(N)$  is obtained from the displayed output voltage  $V(N)$  using

$$V_{lin}(N) = V(N) * (1 + V(N)/DCP(N)) \quad (N=1,2,3)$$

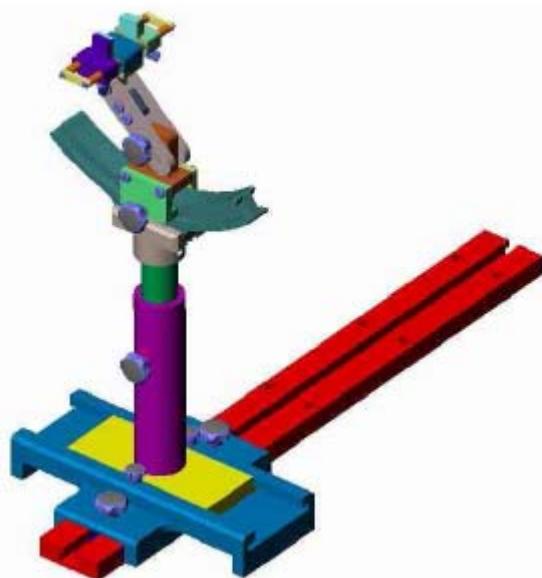
where DCP is the diode compression point in mV.

### 5.3. Phantom

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

### 5.4. Device Holder

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



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

## 6. Tissue Simulating Liquids

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

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

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

### Recipes for Tissue Simulating Liquid

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

**Table 1: Dielectric Performance of Head Tissue Simulating Liquid**

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity $\epsilon$	Conductivity $\sigma$ (S/m)
Target value	835 MHZ	41. 5	0. 90
Validation value (Jan. 22)	835 MHZ	41. 675999	0. 894409

Target value	1900 MHZ	40	1. 40
Validation value (Jan. 22)	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 phone holder.

**Table 2: Dielectric Performance of Body Tissue Simulating Liquid**

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity $\epsilon$	Conductivity $\sigma$ (S/m)
Target value	835 MHz	55. 2	0.97
Validation value (Jan. 22)	835 MHz	55. 709999	1. 009033
Target value	1900 MHz	53. 3	1. 52
Validation value (Jan. 22)	1900 MHz	52. 548876	1. 573978

## 7. Uncertainty Assessment

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

### 7.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- )	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	V i
<b>Measurement System</b>									
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 Algorithms for Max. SAR Evaluation	E.5.2	5.0	R		1	1	2.89	2.89	
<b>Test sample Related</b>									
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	
<b>Phantom and Tissue Parameters</b>									

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
<b>Measurement System</b>									
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 Algorithms for Max.	E.5.2	5.0	R		1	1	2.89	2.89	

SAR Evaluation									
<b>Dipole</b>									
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	
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R		1	1	0.03	0.03	
Liquid conductivity - deviation from target value	E.3.2	4.57	R		0.64	0.43	1.69	1.13	
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	M
Liquid permittivity - deviation from target value	E.3.2	3.69	R		0.6	0.49	1.28	1.04	
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
Combined Standard Uncertainty			RSS				10.08	9.47	
Expanded Uncertainty (95% Confidence interval)			k				19.65	18.47	

## 8. SAR Measurement Evaluation

### 8.1. System Setup

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

Equipments :

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

### 8.2. Validation Results

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

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

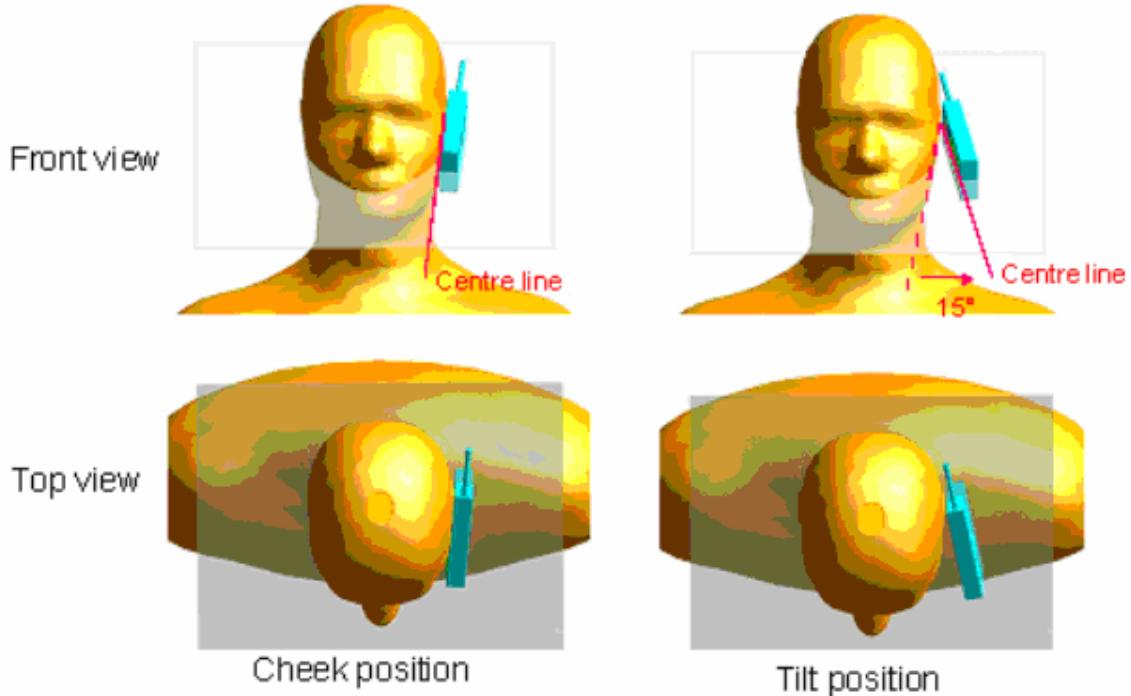
**Note:** System checks the specific test data please see page 161-174

## 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 mouth by an angle of 15 degrees or until contact with the ear lost.

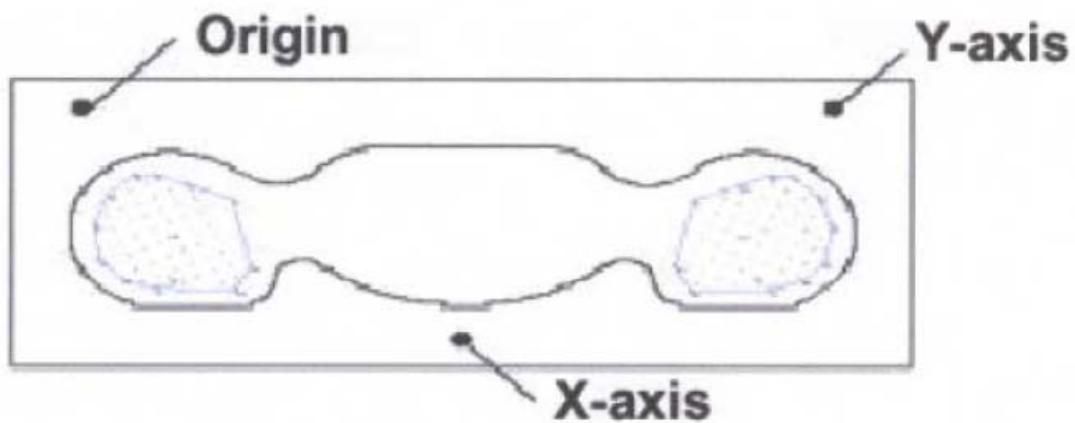
Remark: Please refer to Appendix B for the test setup photos.

## 9.2. Body-worn Configurations

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

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

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



SAR Measurement Points in Area Scan

## 9.3. Measurement procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm \* 8 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.

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

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

## 10. 3G MEASUREMENT PROCEDURES

### 10.1. Procedures Used To Establish Test Signal

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

### 10.2. SAR Measurement Conditions for WCDMA

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

### 10.3. Output Power Verification

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

### 10.4. USB Dongle with HSDPA

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

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest						
5.2(WCDMA)	non	24.93	24.43	24.79	24.31	23.87	24.09
5.2AA(HSDPA)	1	24.37	24.38	24.46	23.10	22.90	23.02
	2	24.69	24.41	24.54	23.10	22.99	23.08
	3	24.19	23.80	23.99	22.61	22.46	22.48
	4	24.15	23.71	23.81	22.56	22.37	22.51

#### GPRS/EDGE modes conducted output power values

Band	Channel	Frequency (MHz)	Measured Output Power(dBm)	Rated Output Power	
				dBm	Tolerance (dB)
GSM 850MHz	128	824.2	31.35	33	±2
	190	836.6	31.72		
	251	848.8	31.97		
GSM 1900MHz	512	1850.2	28.30	30	±2
	661	1880.0	28.33		
	810	1909.8	29.18		
GPRS 850MHz	128	824.2	32.23	33	±2
	190	836.6	31.64		
	251	848.8	32.00		
GPRS 1900MHz	512	1850.2	28.72	30	±2
	661	1880.0	28.44		
	810	1909.8	28.34		
EDGE 850MHz	128	824.2	30.15	33	±2
	190	836.6	30.74		
	251	848.8	31.15		
EDGE 1900MHz	512	1850.2	28.67	30	±2
	661	1880.0	28.49		
	810	1909.8	28.52		

## 11. Test Results List

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
Right head, Touch cheek, Channel Middle	1 g Average (W/kg)	Power level (dBm)
0.514	31.72	
Right head, Tilt 15 Degree, Channel Middle	0.380	31.72
Left head, Touch cheek, Channel Middle	0.597	31.72
Left head, Tilt 15 Degree, Channel Middle	0.381	31.72

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)	
Right head, Touch cheek, Channel Middle	1 g Average (W/kg)	Power level (dBm)
0.299	28.33	
Right head, Tilt 15 Degree, Channel Middle	0.077	28.33
Left head, Touch cheek, Channel Middle	0.359	28.33
Left head, Tilt 15 Degree, Channel Middle	0.091	28.33

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
Right head, Touch cheek, Channel Middle	1 g Average (W/kg)	Power level (dBm)
0.227	24.43	
Right head, Tilt 15 Degree, Channel Middle	0.138	24.43
Left head, Touch cheek, Channel Middle	0.211	24.43

Left head, Tilt 15 Degree, Channel Middle	0.137	24.43
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**Summary of Measurement Results (WCDMA 1900MHz Band)**
**SAR Values (WCDMA 1900MHz Band), Measured against the head.**

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case		Measurement Result (W/kg)
Right head, Touch cheek, Channel Middle	1 g Average (W/kg)	Power level (dBm)
Right head, Tilt 15 Degree, Channel Middle	0.091	23.87
Left head, Touch cheek, Channel Middle	0.289	23.87
Left head, Tilt 15 Degree, Channel Middle	0.075	23.87

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case		Measurement Result (W/kg)
Side, Low frequency GPRS mode Back towards the phantom	1 g Average (W/kg)	Power level (dBm)
Side, Middle frequency GPRS mode Back towards the phantom	0.976	32.23
Side, High frequency GPRS mode Back towards the phantom	1.048	31.64
Side, Middle frequency GPRS mode Keyboard towards the phantom	0.893	32.00
Side, Middle frequency GSM mode Back towards the phantom	0.546	31.64
Side, Middle frequency GSM mode Back towards the Phantom With Headphone	0.351	31.72
Side, Middle frequency EDGE mode Back towards the Phantom With Headphone	0.339	31.72
	0.516	30.74

## 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 GPRS mode Back towards the phantom	0.253	28.72
Side, Middle frequency GPRS mode Back towards the phantom	0.286	28.44
Side, High frequency GPRS mode Back towards the phantom	0.389	28.34
Side, High frequency GPRS mode Keyboard towards the phantom	0.271	28.34
Side, High frequency GSM mode Back towards the phantom	0.156	29.18
Side, High frequency GSM mode Back towards the Phantom With Headphone	0.158	29.18
Side, High frequency EDGE mode Back towards the Phantom With Headphone	0.269	28.52

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency WCDMA mode Back towards the phantom	0.691	24.93
Side, Middle frequency WCDMA mode Back towards the phantom	0.577	24.43
Side, High frequency WCDMA mode Back towards the phantom	0.850	24.79
Side, High frequency WCDMA mode Keyboard towards the phantom	0.410	24.79
Side, High frequency HSDPA mode Back towards the phantom	0.373	24.54
Side, High frequency WCDMA mode Back towards the	0.396	24.79

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

Temperature: 23.0~23.8°C, humidity: 54~60%.		
Limit of SAR (W/kg)	1 g Average	
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency WCDMA mode Back towards the phantom	0.585	24.31
Side, Middle frequency WCDMA mode Back towards the phantom	0.386	23.87
Side, High frequency WCDMA mode Back towards the phantom	0.487	24.09
Side, Low frequency WCDMA mode Keyboard towards the phantom	0.329	24.31
Side, Low frequency HSDPA mode Back towards the phantom	0.313	23.10
Side, Low frequency WCDMA mode Back towards the phantom with earphone	0.327	24.31

1. Per KDB 648474, when the SAR procedures require multiple channels to be tested and the 1-g SAR for the highest output channel is less than 0.8 W/kg and peak SAR is less than 1.6W/kg, where the transmission band corresponding to all channels is  $\leq 100$  MHz, testing for the other channels is not required.
2. EUT with Bluetooth, but Bluetooth Peak Output power is 2.67dBm, very low, so the test does not consider the Bluetooth status.
3. EUT with WIFI, but WIFI Peak Output power is 11.51dBm, very low, so the test does not consider the WIFI status.
4. As the power of the BT and WLAN is below the low threshold, no simultaneous SAR is required. SAR on only the cellular part will be sufficient. Response to pre-TCB KDB inquiry to FCC (Tracking Number 724636)

## Annex A Accreditation Certificate



## Annex B Photographs of the EUT

### 1 EUT Left Head Touch Cheek Position



### 2 EUT Left Head Tilt15 Position



## 3 EUT Right Head Touch Cheek Position



## 4 EUT Right Head Tilt15 Position



## 5 Side Position



## 6 With Headphone



Liquid Level Photo



## Annex C Graph Test Results

<u>TYPE</u>	<u>BAND</u>	<u>PARAMETERS</u>
	<u>GSM850</u>	<p><u>Measurement 1:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 2:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 3:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 4:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 5:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 6:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 7:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 8:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 9:</u> Validation Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 10:</u> Validation Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 11:</u> Validation Plane with Body device position on Middle Channel in EDGE mode</p>
	<u>GSM</u> <u>1900</u>	<p><u>Measurement 12:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 13:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 14:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 15:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 16:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 17:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 18:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 19:</u> Validation Plane with Body device</p>

		<p>position on High Channel in GPRS mode</p> <p><u>Measurement 20:</u> Validation Plane with Body device position on High Channel in GSM mode</p> <p><u>Measurement 21:</u> Validation Plane with Body device position on High Channel in GSM mode</p> <p><u>Measurement 22:</u> Validation Plane with Body device position on High Channel in EDGE mode</p>
	<p><b><u>WCDMA</u></b></p> <p><b><u>850</u></b></p>	<p><u>Measurement 23:</u> Right Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 24:</u> Right Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 25:</u> Left Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 26:</u> Left Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 27:</u> Validation Plane with Body device position on Low Channel in WCDMA mode</p> <p><u>Measurement 28:</u> Validation Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 29:</u> Validation Plane with Body device position on High Channel in WCDMA mode</p> <p><u>Measurement 30:</u> Validation Plane with Body device position on High Channel in WCDMA mode</p> <p><u>Measurement 31:</u> Validation Plane with Body device position on High Channel in HSDPA mode</p> <p><u>Measurement 32:</u> Validation Plane with Body device position on High Channel in WCDMA mode</p>
	<p><b><u>WCDMA</u></b></p> <p><b><u>1900</u></b></p>	<p><u>Measurement 33:</u> Right Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 34:</u> Right Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 35:</u> Left Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 36:</u> Left Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 37:</u> Validation Plane with Body device position on Low Channel in WCDMA mode</p> <p><u>Measurement 38:</u> Validation Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 39:</u> Validation Plane with Body device position on High Channel in WCDMA mode</p>

		<p><u>Measurement 40:</u> Validation Plane with Body device position on Low Channel in WCDMA mode</p> <p><u>Measurement 41:</u> Validation Plane with Body device position on Low Channel in HSDPA mode</p> <p><u>Measurement 42:</u> Validation Plane with Body device position on Low Channel in WCDMA mode</p>
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## 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: 22/1/2011

Measurement duration: 8 minutes 1 seconds

### A. Experimental conditions.

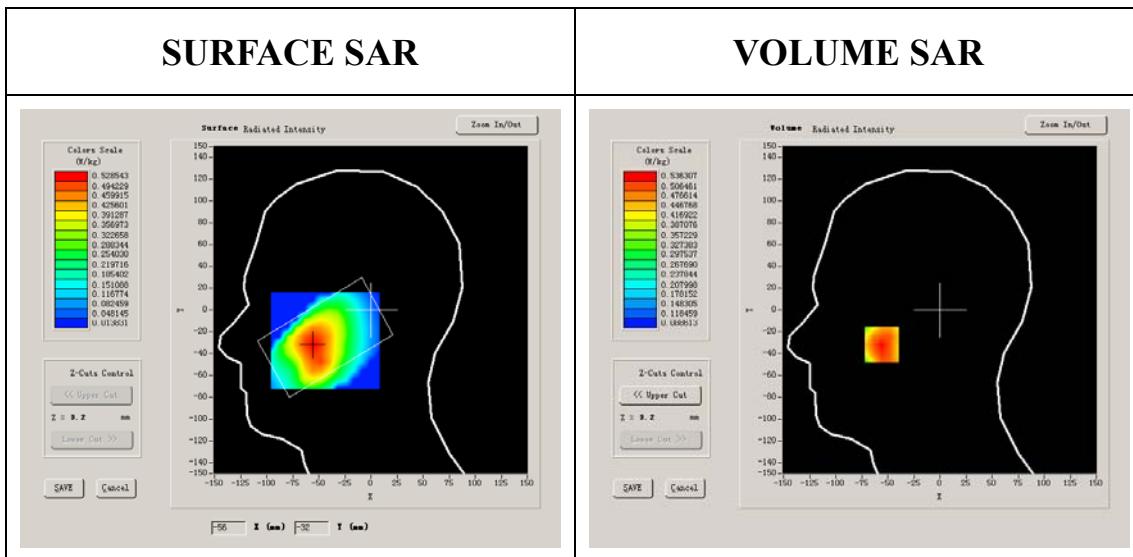
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	40.669998
<b>Relative permittivity</b>	19.120001

<b>Conductivity (S/m)</b>	0.888655
<b>Variation (%)</b>	-0.480000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8

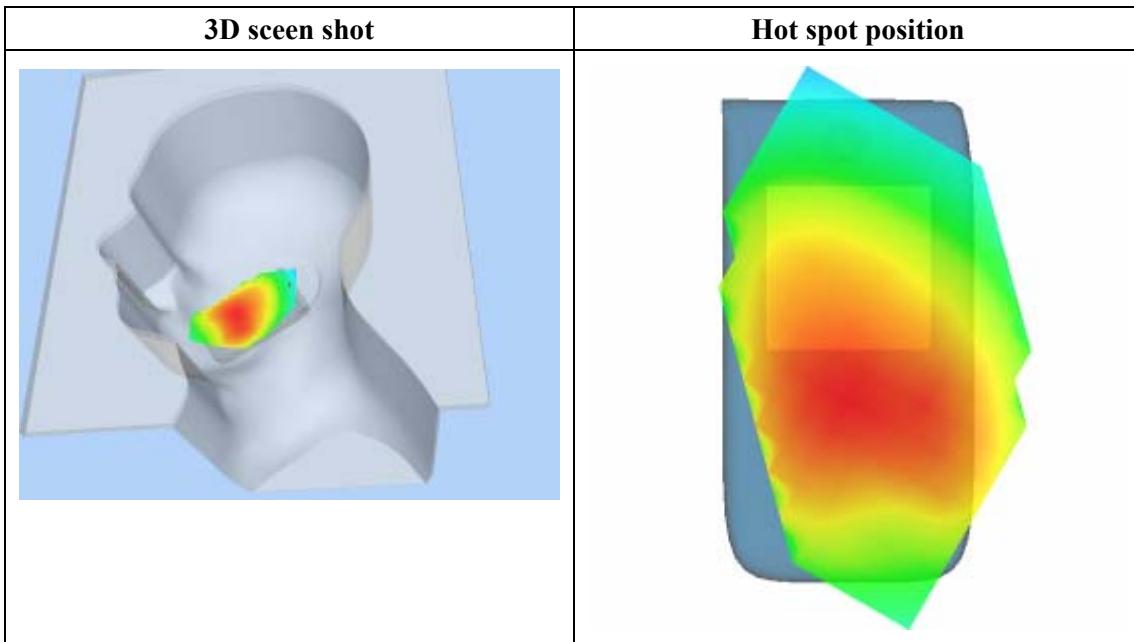
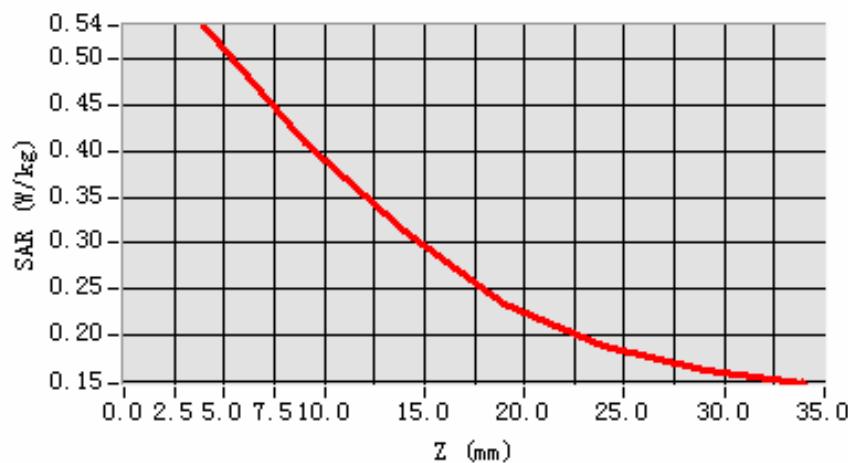


**Maximum location: X=-56.00, Y=-32.00**

<b>SAR 10g (W/Kg)</b>	0.376908
<b>SAR 1g (W/Kg)</b>	0.513551

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5363	0.4087	0.3118	0.2342	0.1882	0.1614

**SAR, Z Axis Scan (X = -56, Y = -32)**

## 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: 22/1/2011

Measurement duration: 7 minutes 37 seconds

### A. Experimental conditions.

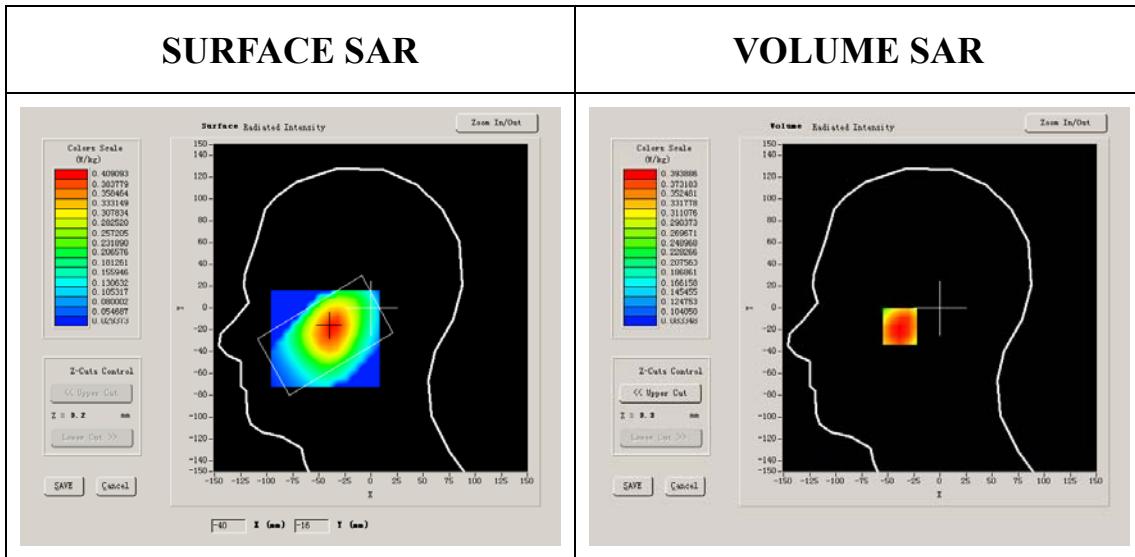
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	40.669998
<b>Relative permittivity</b>	19.120001

<b>Conductivity (S/m)</b>	0.888655
<b>Variation (%)</b>	-1.440000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8

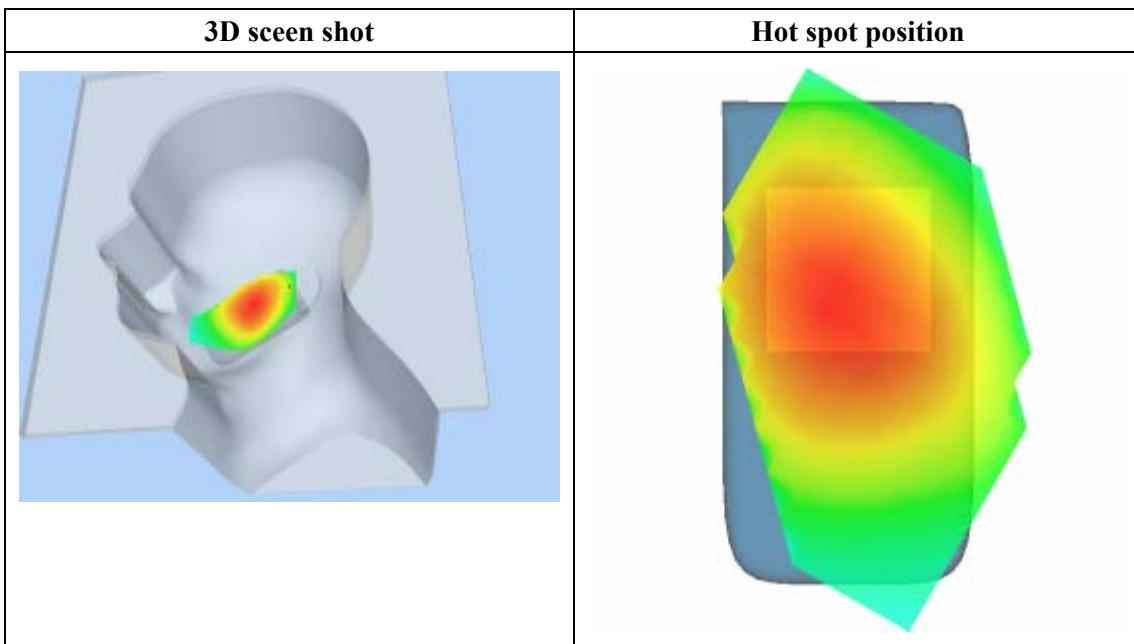
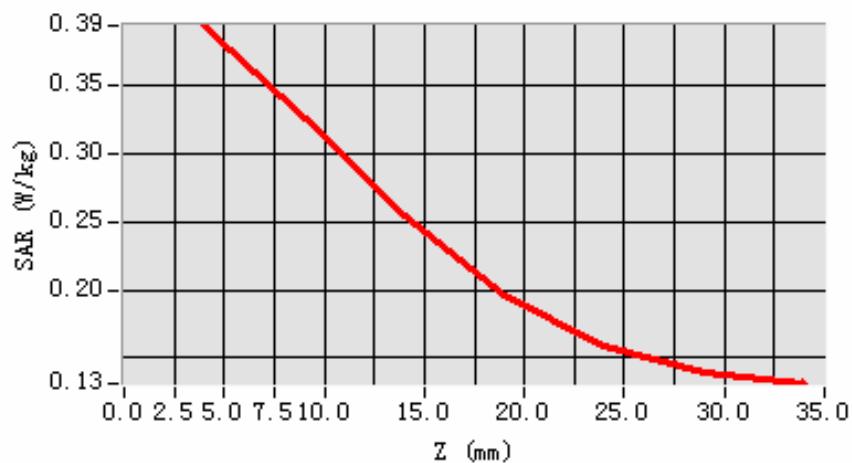


**Maximum location: X=-38.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.289343
<b>SAR 1g (W/Kg)</b>	0.379853

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3939	0.3258	0.2546	0.1955	0.1592	0.1400

**SAR, Z Axis Scan (X = -38, Y = -17)**

## 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: 22/1/2011

Measurement duration: 7 minutes 56 seconds

### A. Experimental conditions.

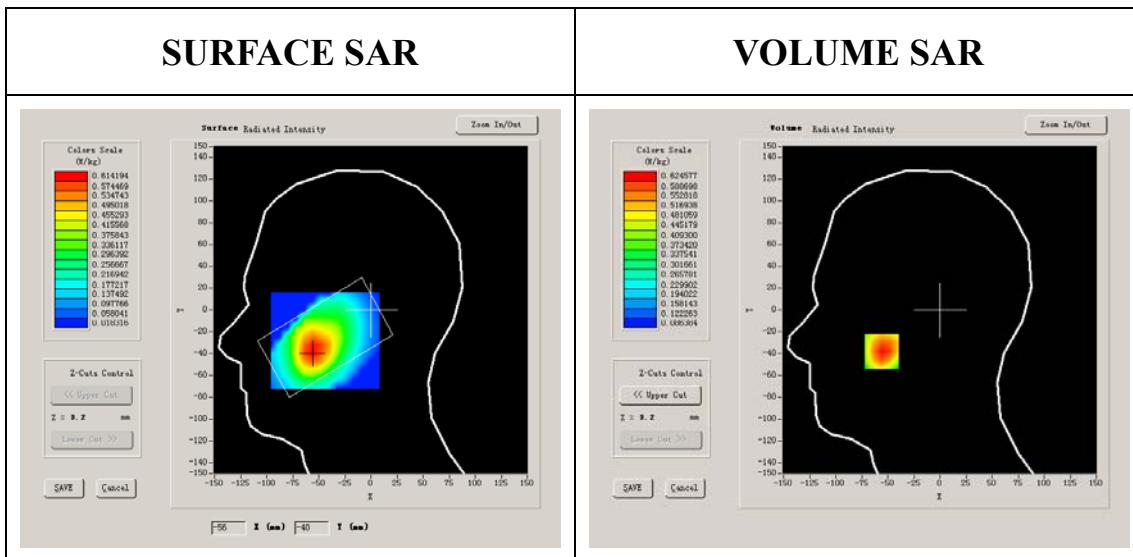
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	40.669998
<b>Relative permittivity</b>	19.120001

<b>Conductivity (S/m)</b>	0.888655
<b>Variation (%)</b>	0.870000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8

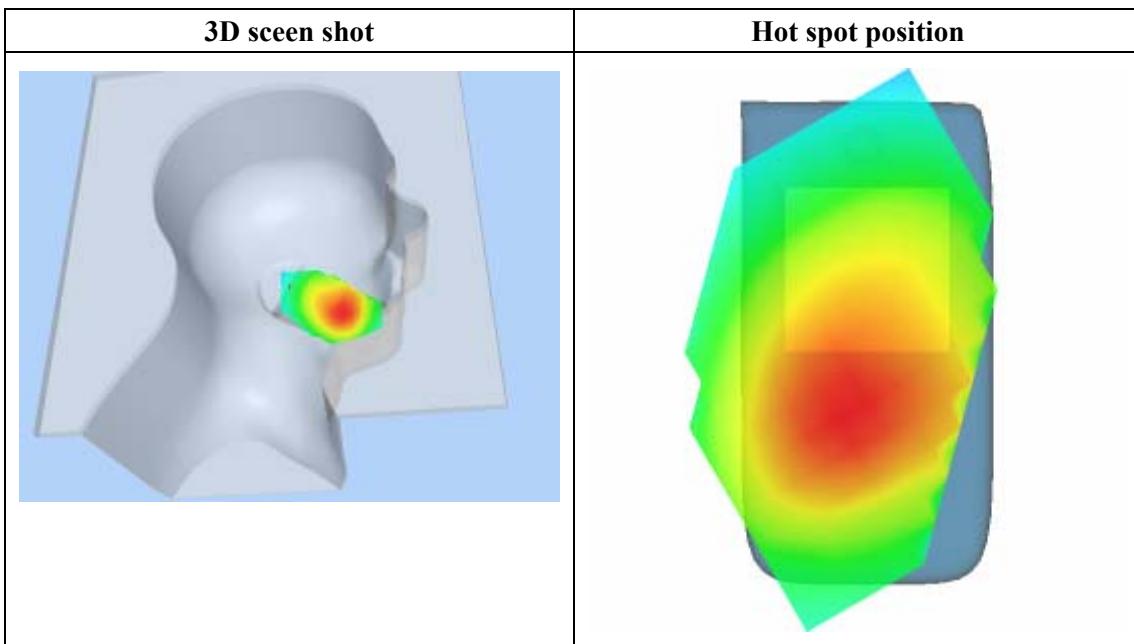
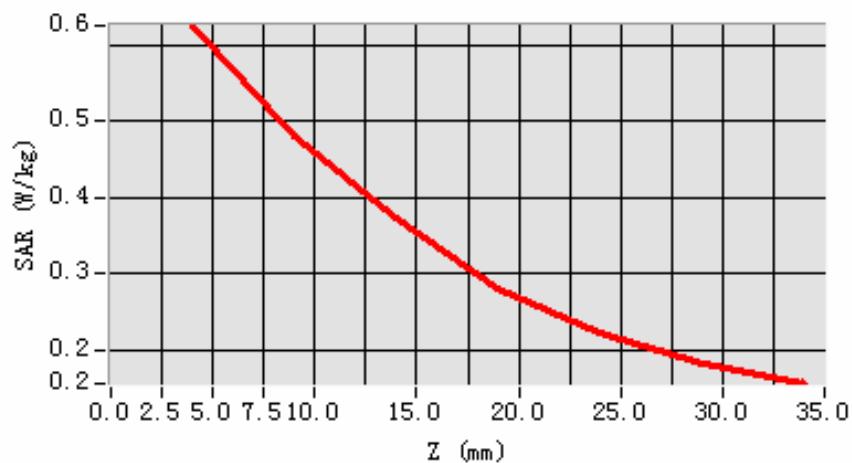


**Maximum location: X=-56.00, Y=-38.00**

<b>SAR 10g (W/Kg)</b>	0.428315
<b>SAR 1g (W/Kg)</b>	0.597427

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6246	0.4814	0.3726	0.2802	0.2230	0.1834

**SAR, Z Axis Scan (X = -56, Y = -38)**

## 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: 22/1/2011

Measurement duration: 7 minutes 37 seconds

### A. Experimental conditions.

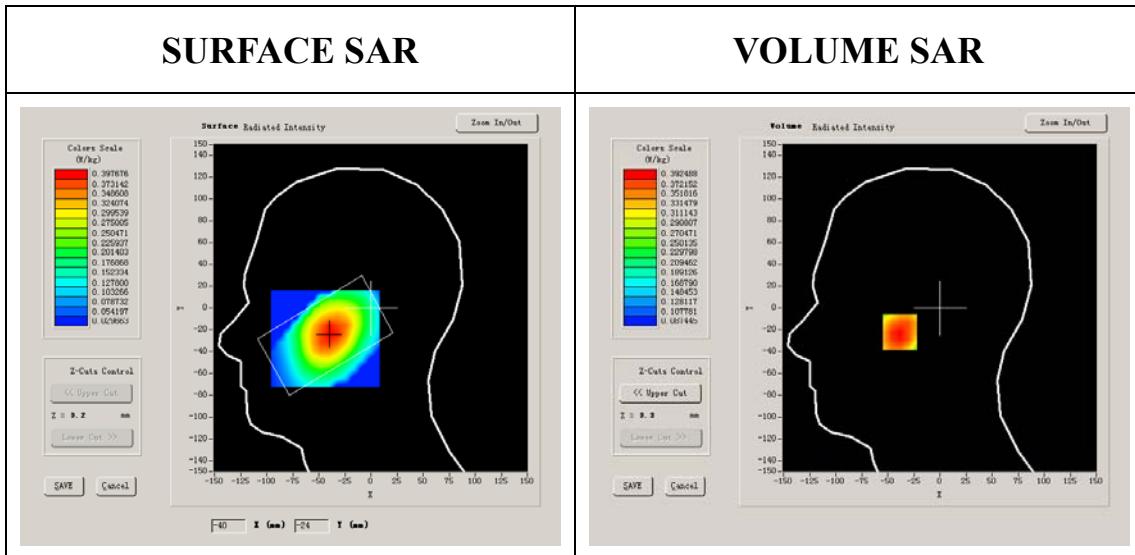
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	40.669998
<b>Relative permittivity</b>	19.120001

<b>Conductivity (S/m)</b>	0.888655
<b>Variation (%)</b>	0.660000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8

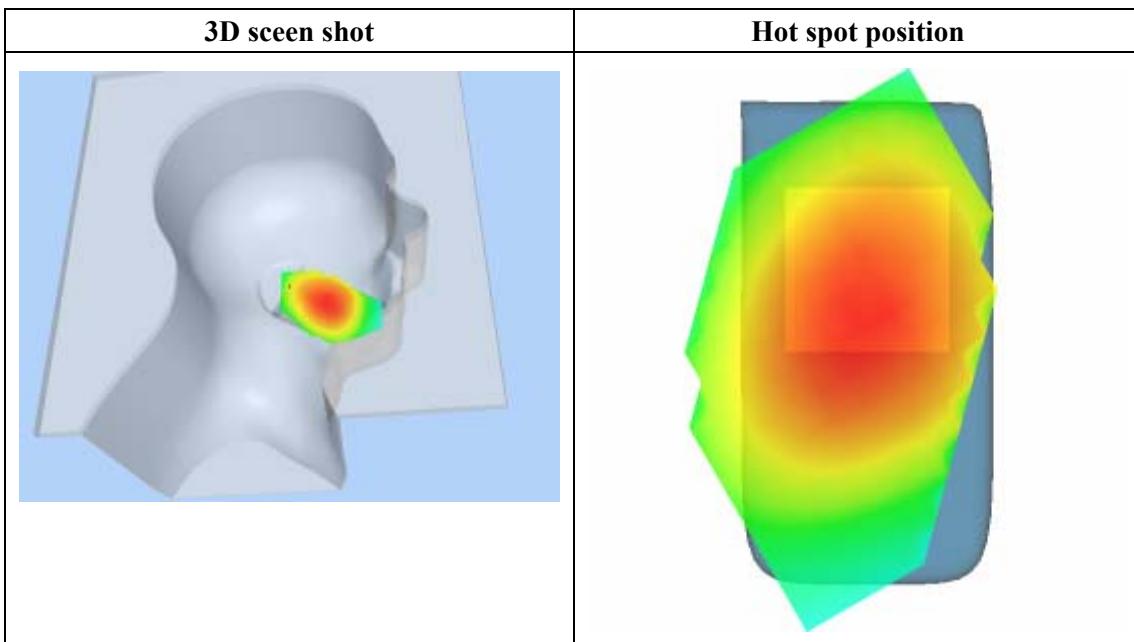
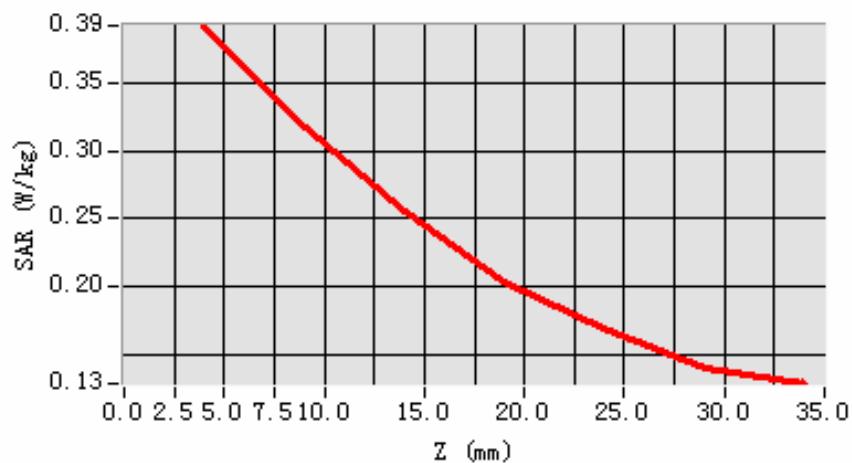


**Maximum location: X=-38.00, Y=-22.00**

<b>SAR 10g (W/Kg)</b>	0.290987
<b>SAR 1g (W/Kg)</b>	0.380766

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3925	0.3181	0.2547	0.2040	0.1682	0.1398

**SAR, Z Axis Scan (X = -38, Y = -22)**

## 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: 22/1/2011

Measurement duration: 9 minutes 7 seconds

### A. Experimental conditions.

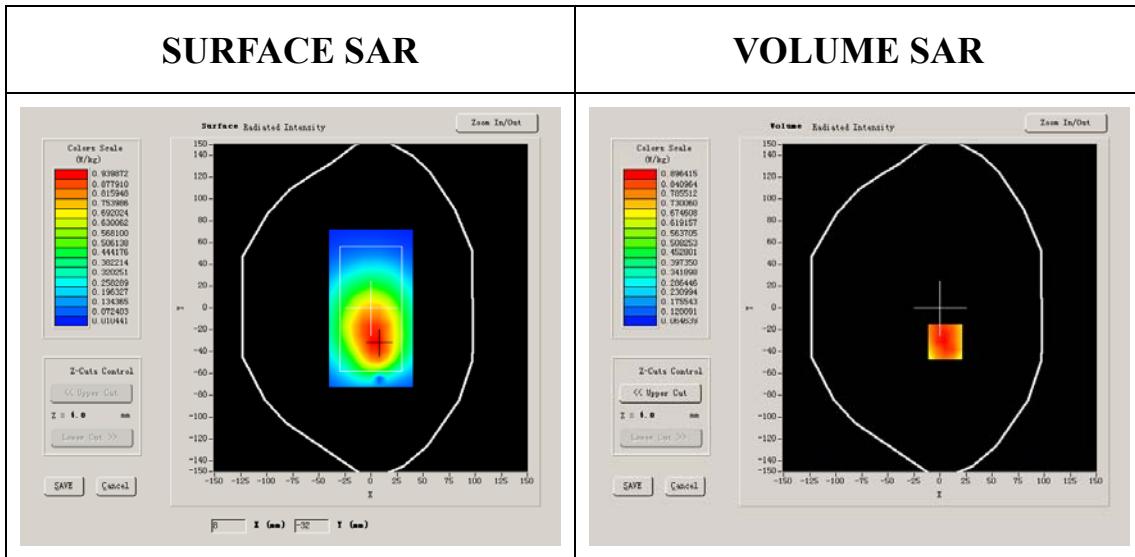
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Low
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Lower Band SAR (Channel 128):

<b>Frequency (MHz)</b>	824.200012
<b>Relative permittivity (real part)</b>	54.116001
<b>Relative permittivity</b>	21.284550

<b>Conductivity (S/m)</b>	0.974596
<b>Variation (%)</b>	-4.420000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:2



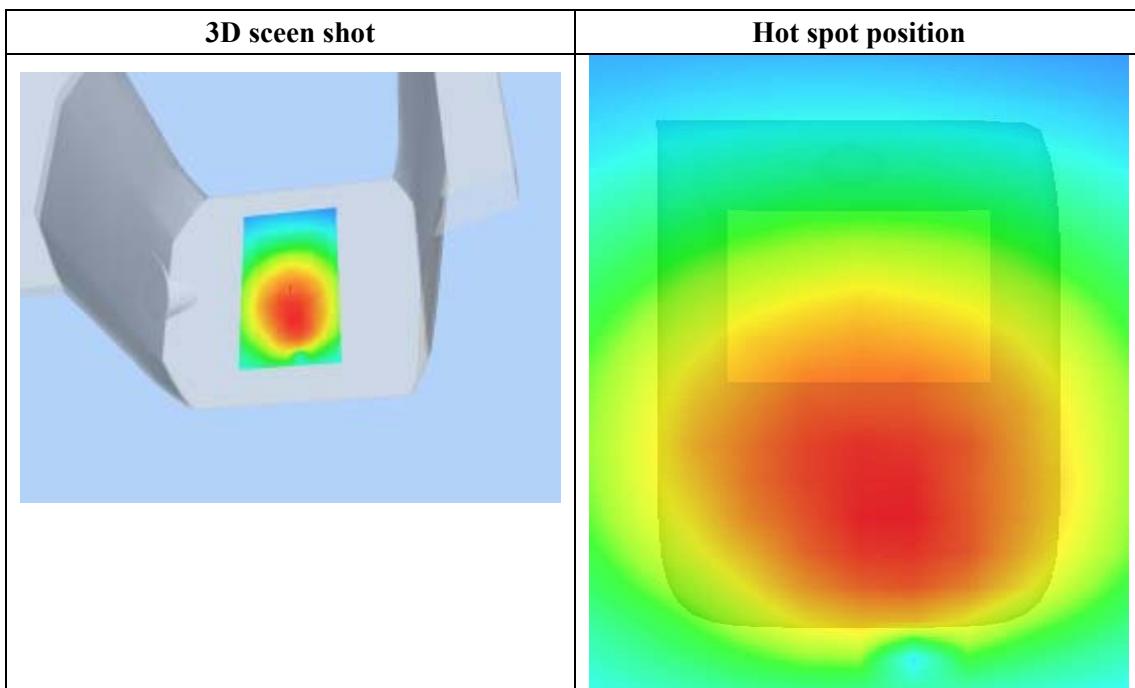
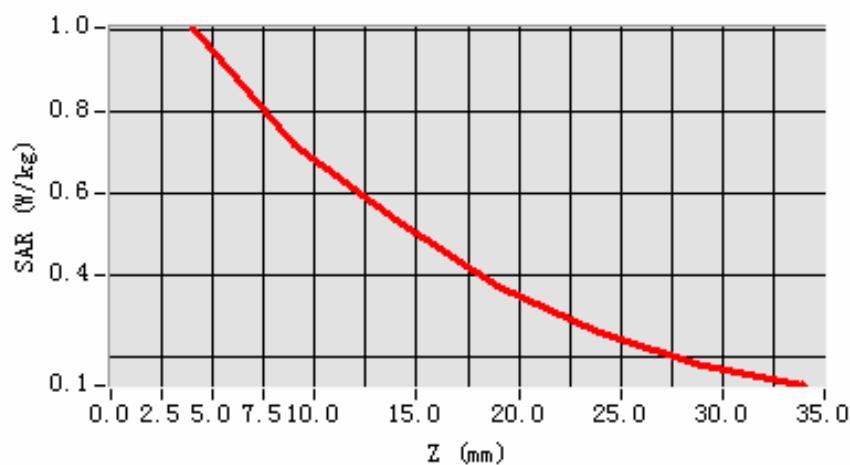
**Maximum location: X=5.00, Y=-31.00**

<b>SAR 10g (W/Kg)</b>	0.679283
<b>SAR 1g (W/Kg)</b>	0.976479

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0081	0.7195	0.5343	0.3718	0.2592	0.1785

SAR, Z Axis Scan (X = 5, Y = -31)



## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

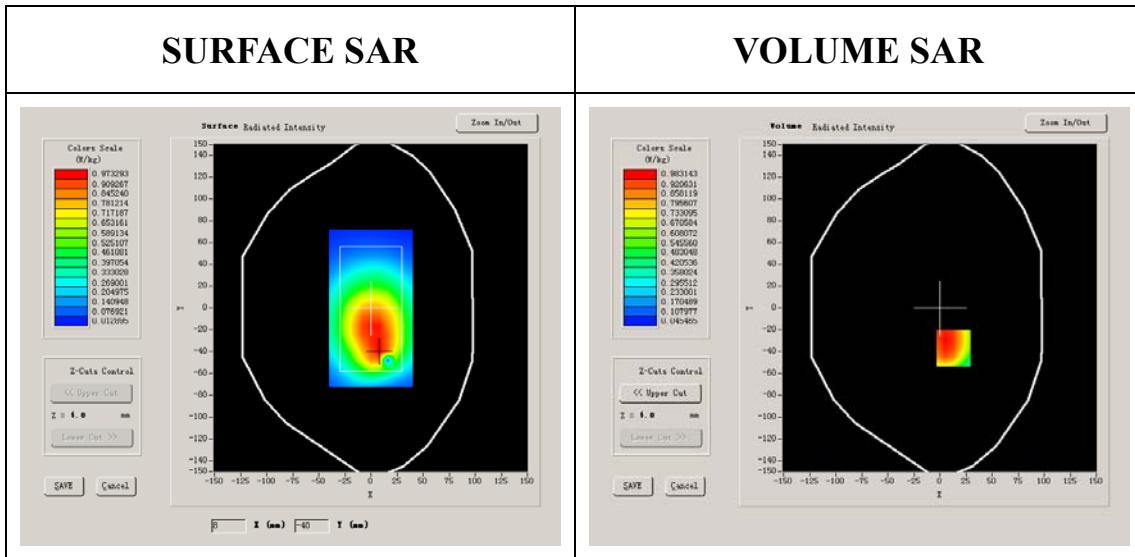
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	55.709999
<b>Relative permittivity</b>	21.709999

<b>Conductivity (S/m)</b>	1.009033
<b>Variation (%)</b>	-0.100000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:2



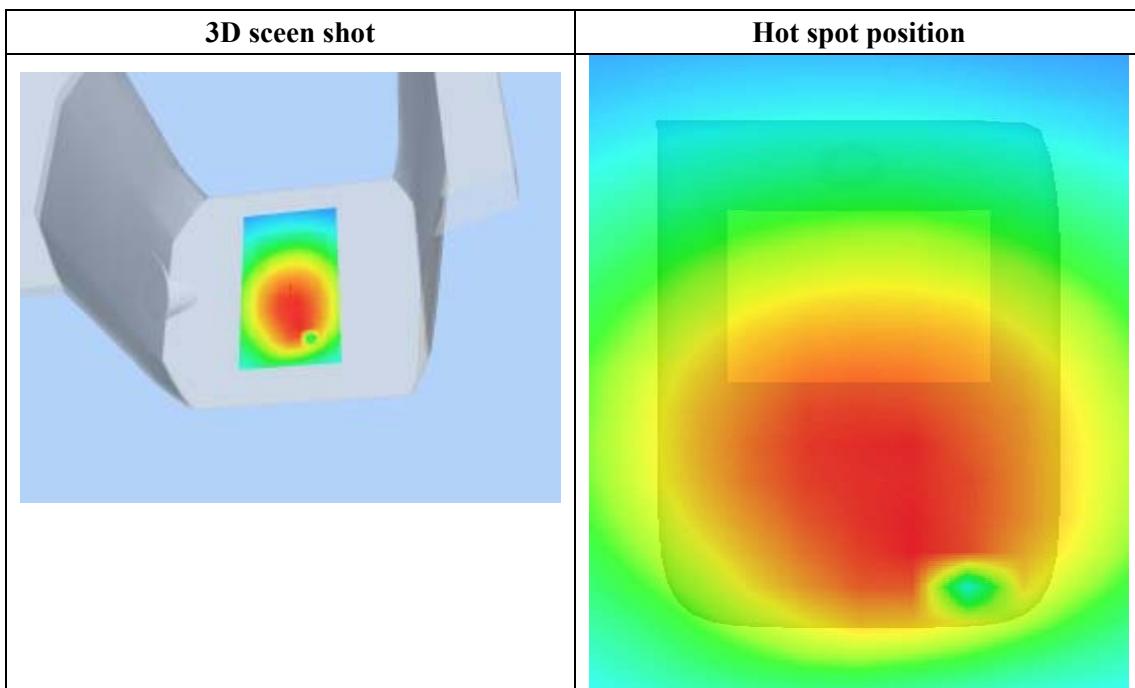
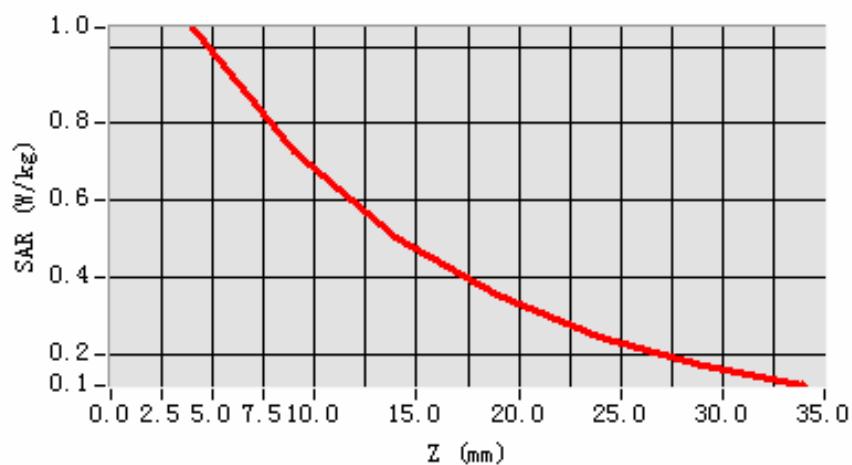
**Maximum location: X=13.00, Y=-37.00**

<b>SAR 10g (W/Kg)</b>	0.719030
<b>SAR 1g (W/Kg)</b>	1.048418

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0490	0.7260	0.5044	0.3574	0.2482	0.1737

**SAR, Z Axis Scan (X = 13, Y = -37)**



## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

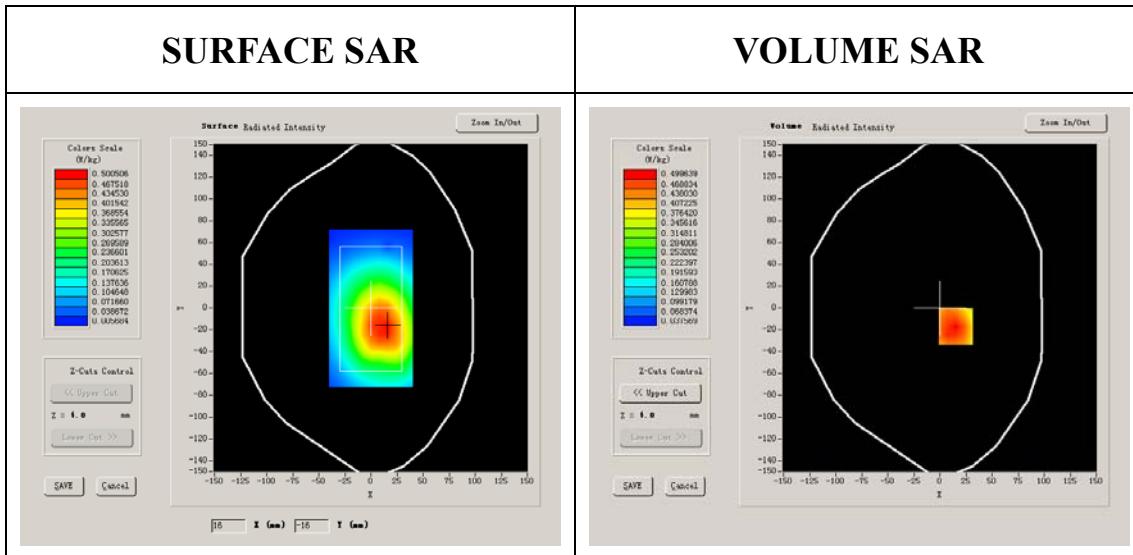
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	High
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Higher Band SAR (Channel 251):

<b>Frequency (MHz)</b>	848.799988
<b>Relative permittivity (real part)</b>	54.014999
<b>Relative permittivity</b>	21.332850

<b>Conductivity (S/m)</b>	1.005962
<b>Variation (%)</b>	1.000000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:2



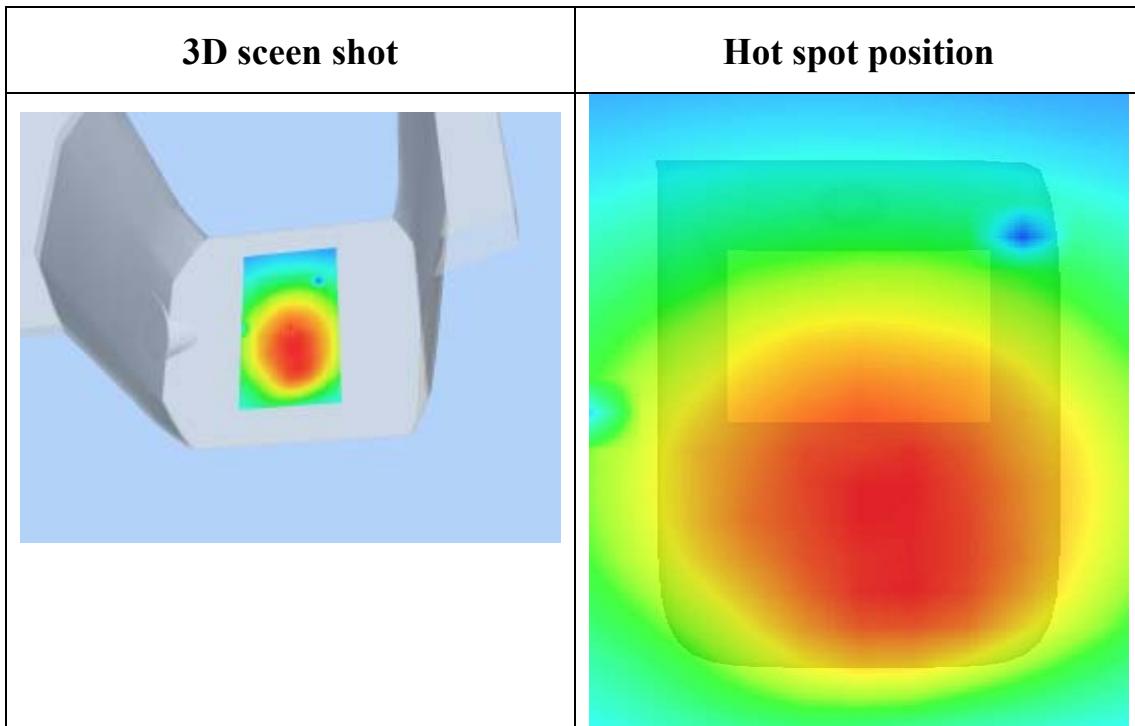
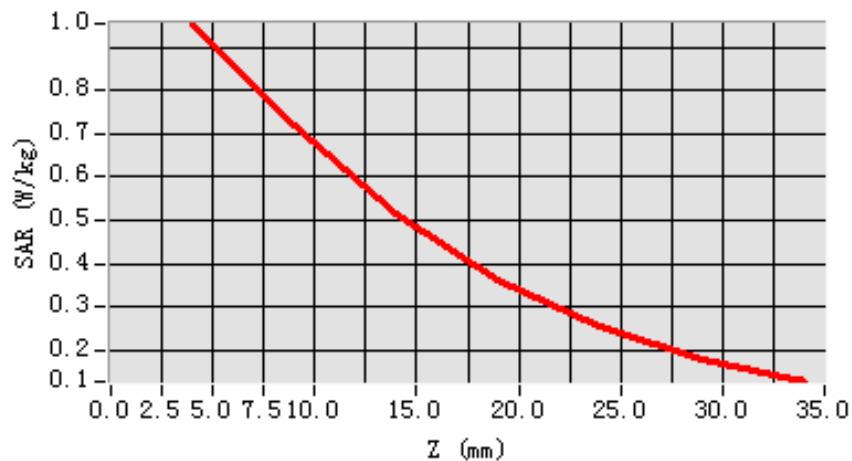
**Maximum location: X=15.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.645787
<b>SAR 1g (W/Kg)</b>	0.892888

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9539	0.7170	0.5158	0.3632	0.2559	0.1811

SAR, Z Axis Scan (X = 2, Y = -22)



## 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: 22/1/2011

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

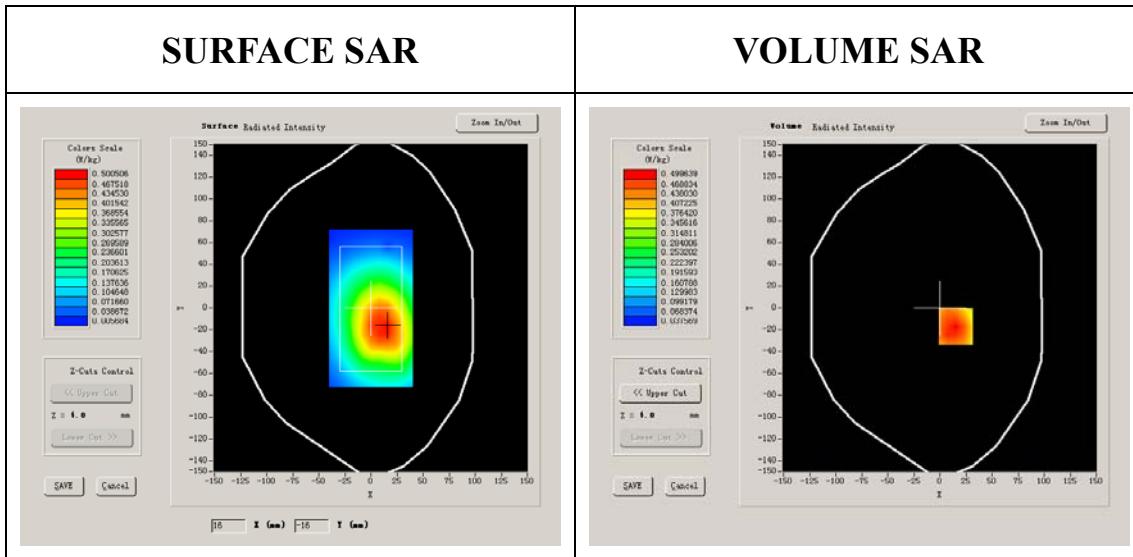
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	55.709999
<b>Relative permittivity</b>	21.709999

<b>Conductivity (S/m)</b>	1.009033
<b>Variation (%)</b>	-1.610000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:2



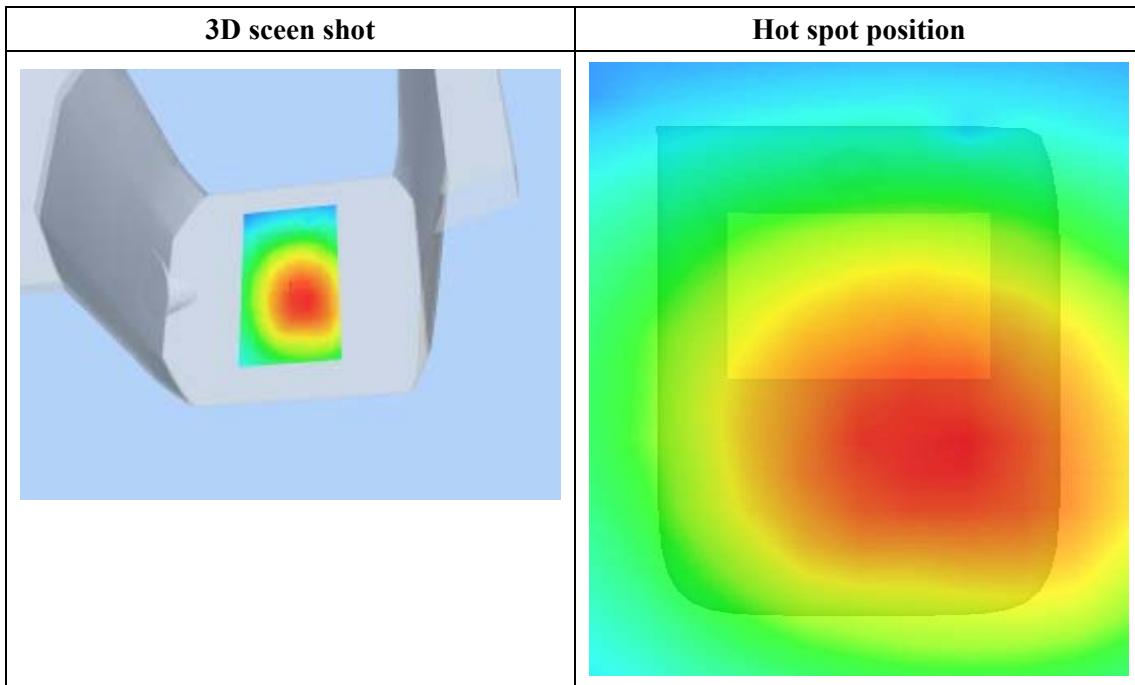
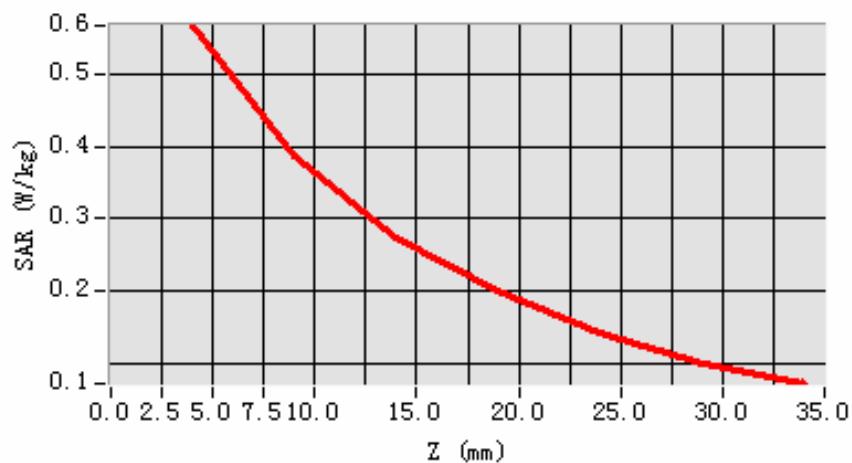
**Maximum location: X=15.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.371355
<b>SAR 1g (W/Kg)</b>	0.545819

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5673	0.3861	0.2722	0.1990	0.1418	0.0976

**SAR, Z Axis Scan (X = 15, Y = -17)**



## 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: 22/1/2011

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

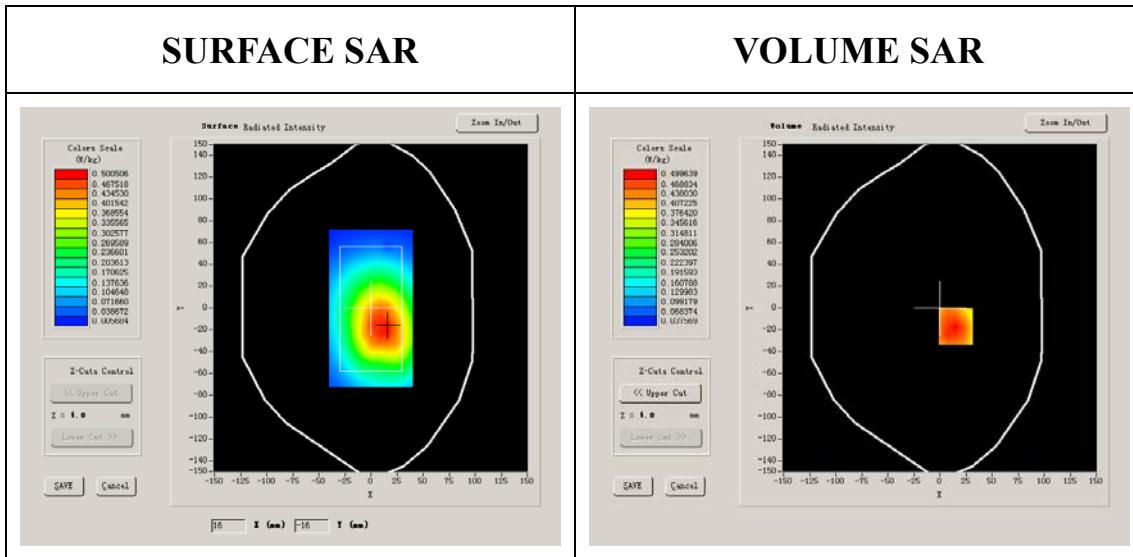
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	55.709999
<b>Relative permittivity</b>	21.709999

<b>Conductivity (S/m)</b>	1.009033
<b>Variation (%)</b>	-1.610000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8



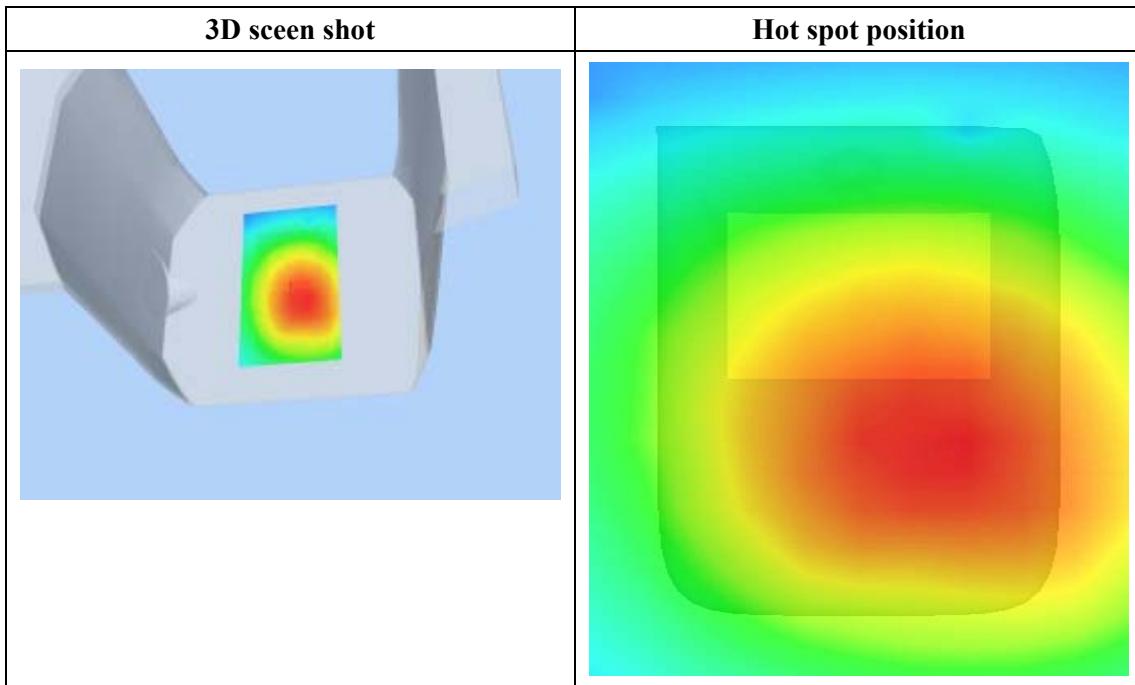
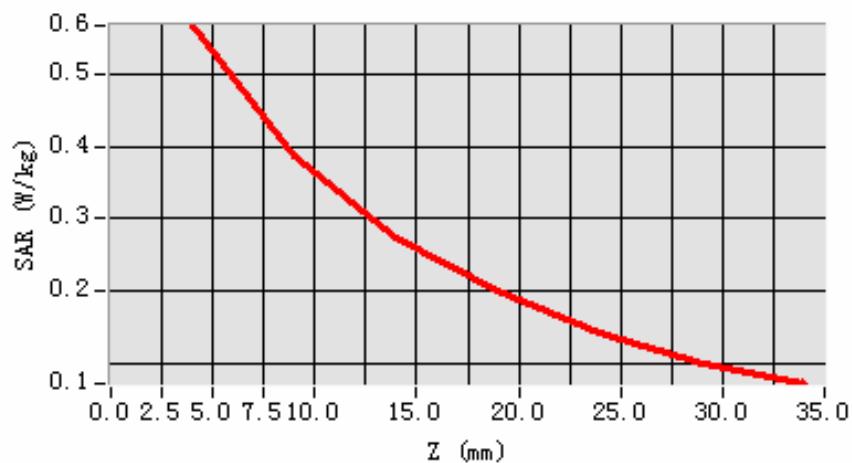
**Maximum location: X=15.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.163577
<b>SAR 1g (W/Kg)</b>	0.351222

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5673	0.3861	0.2722	0.1990	0.1418	0.0976

**SAR, Z Axis Scan (X = 15, Y = -17)**



## 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: 22/1/2011

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

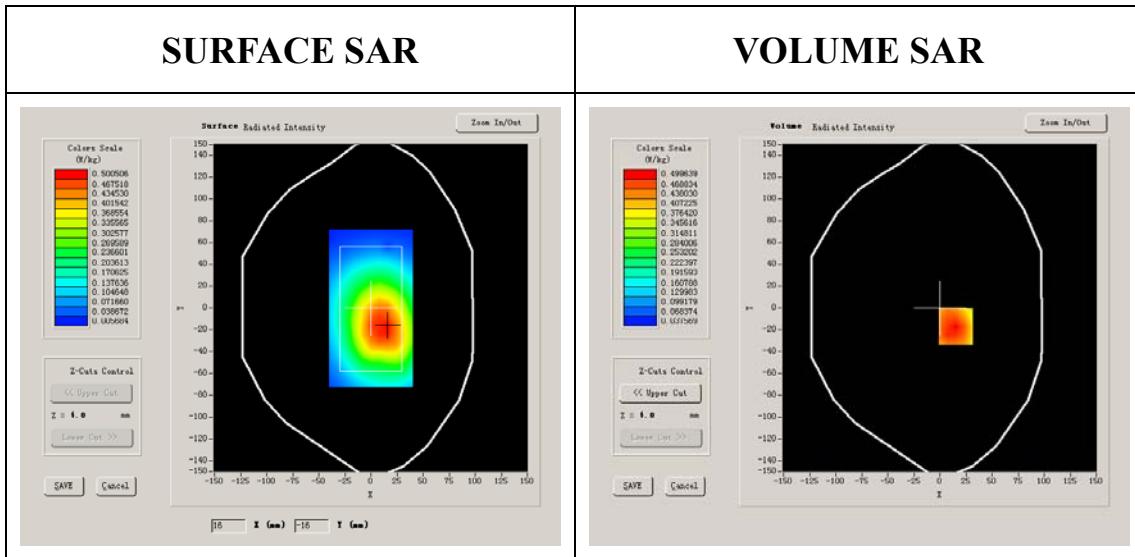
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	55.709999
<b>Relative permittivity</b>	21.709999

<b>Conductivity (S/m)</b>	1.009033
<b>Variation (%)</b>	-1.610000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:8



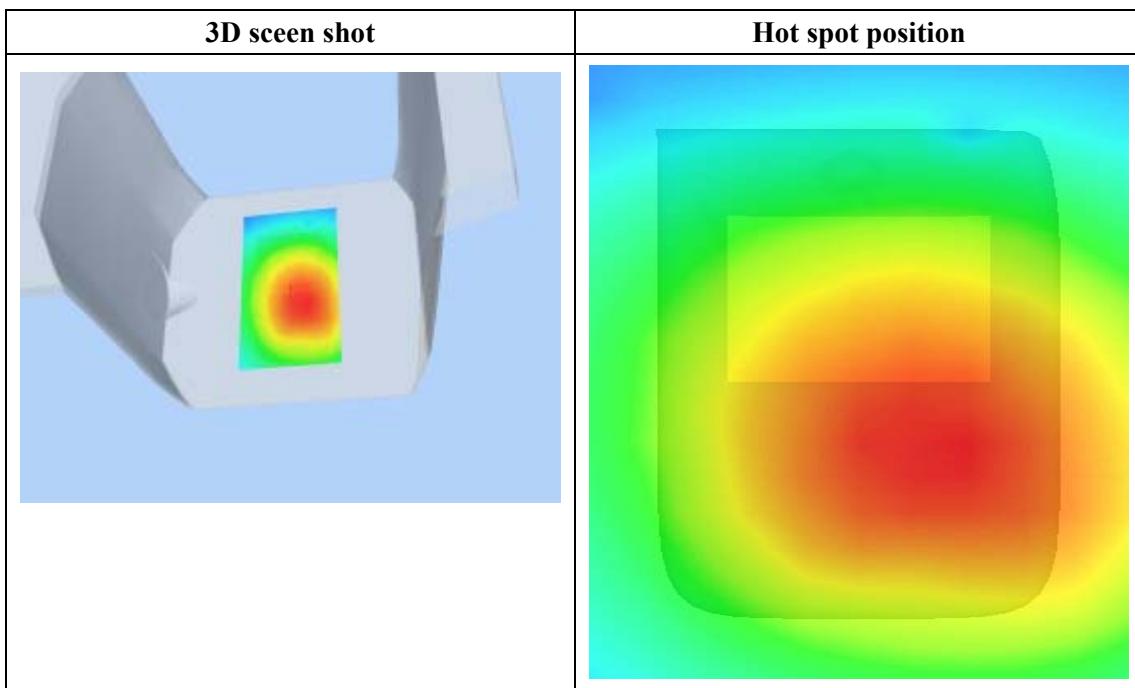
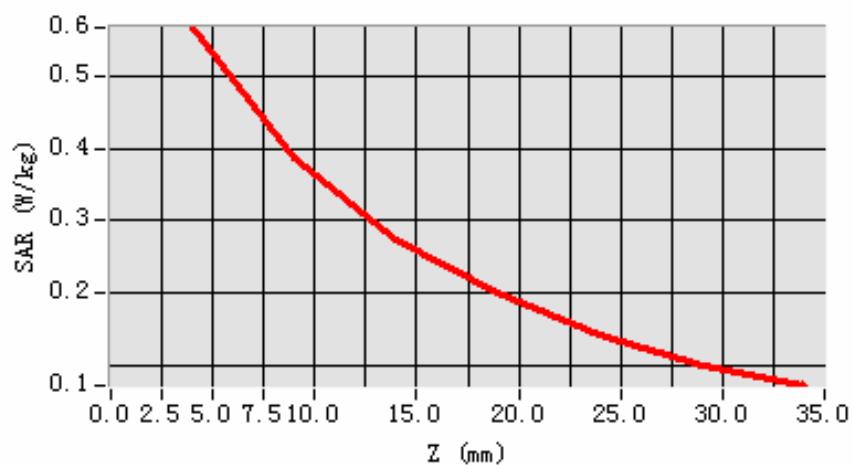
**Maximum location: X=15.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.158732
<b>SAR 1g (W/Kg)</b>	0.339456

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5673	0.3861	0.2722	0.1990	0.1418	0.0976

**SAR, Z Axis Scan (X = 15, Y = -17)**



## 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: 22/1/2011

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

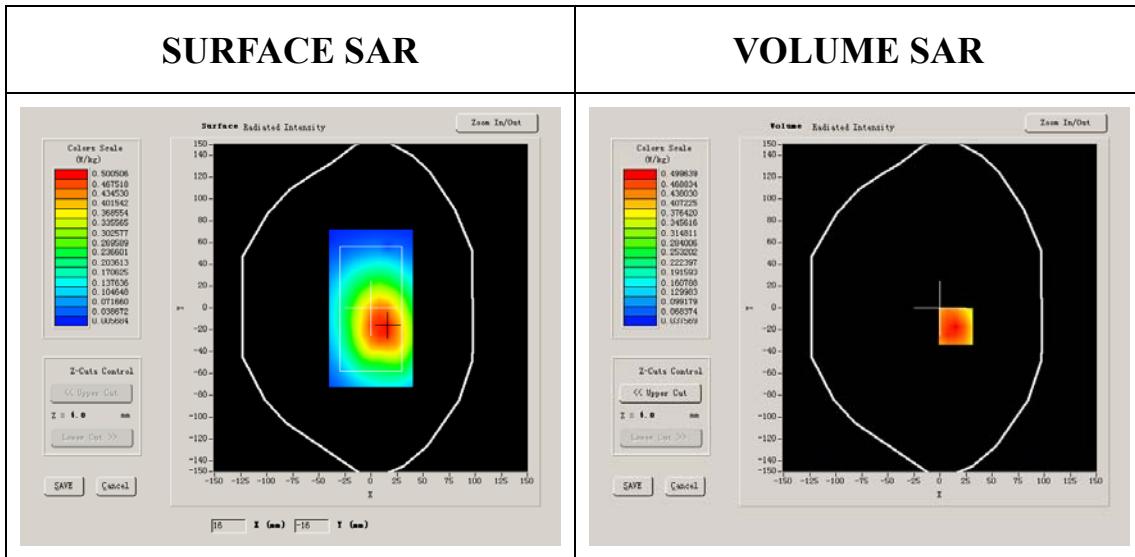
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	EDGE

### B. SAR Measurement Results

Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.599976
<b>Relative permittivity (real part)</b>	55.709999
<b>Relative permittivity</b>	21.709999

<b>Conductivity (S/m)</b>	1.009033
<b>Variation (%)</b>	-1.610000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:2



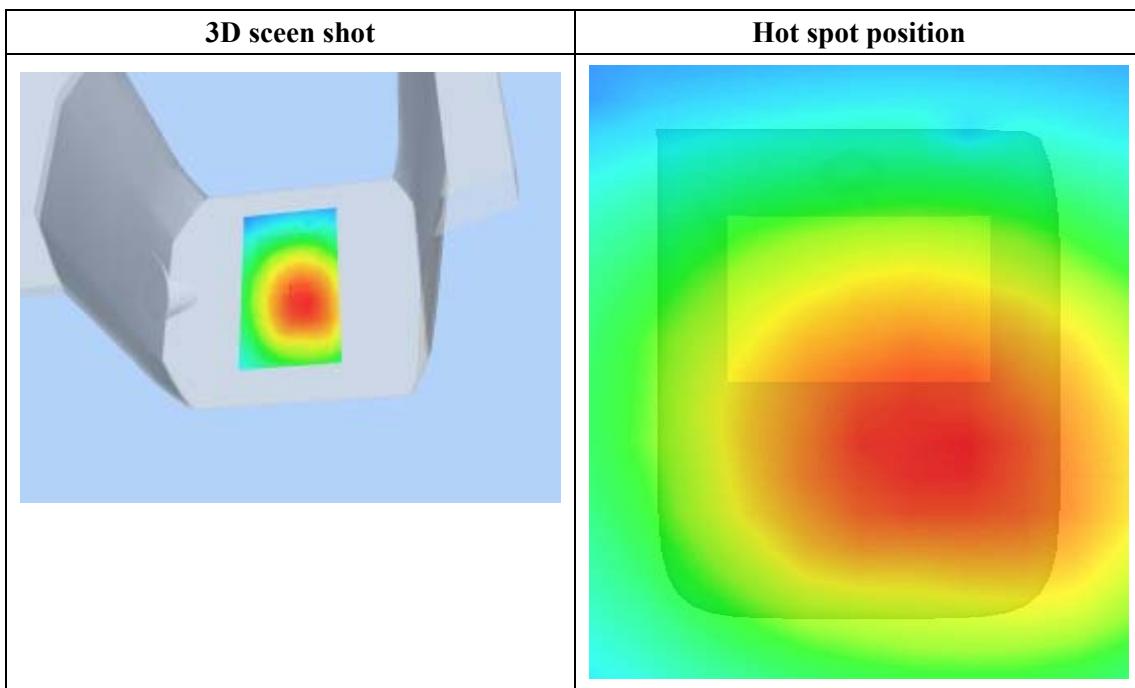
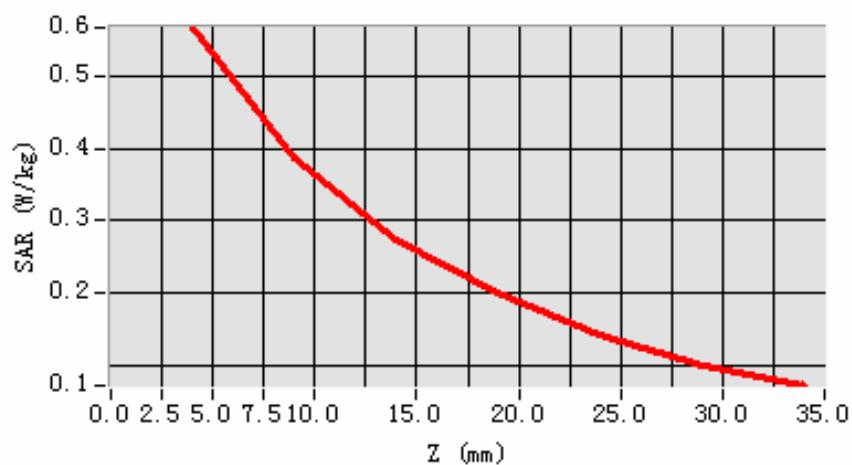
**Maximum location: X=15.00, Y=-17.00**

<b>SAR 10g (W/Kg)</b>	0.341662
<b>SAR 1g (W/Kg)</b>	0.515526

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5673	0.3861	0.2722	0.1990	0.1418	0.0976

**SAR, Z Axis Scan (X = 15, Y = -17)**



## 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: 22/1/2011

Measurement duration: 8 minutes 11 seconds

### A. Experimental conditions.

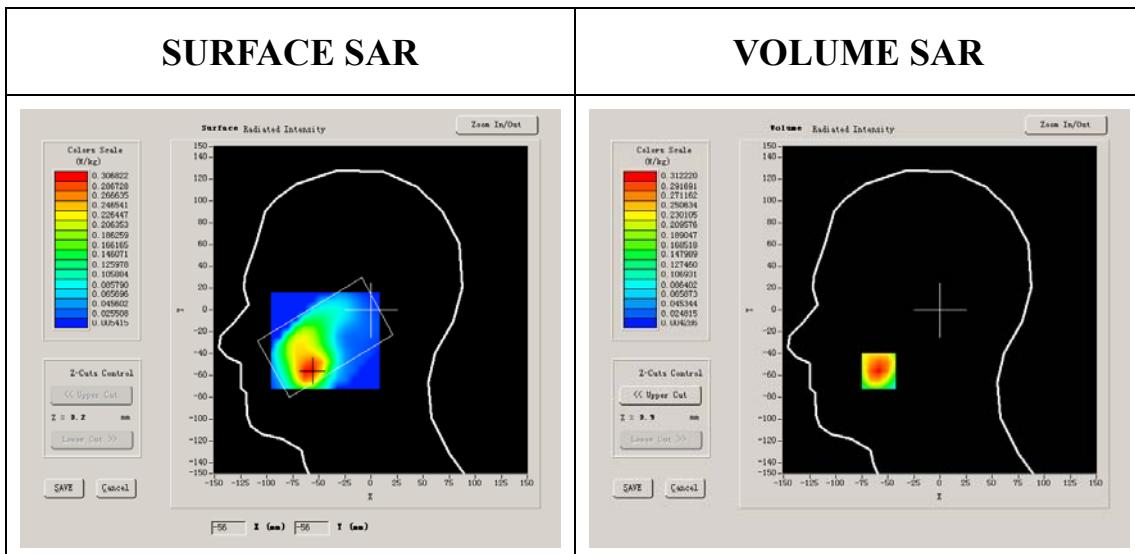
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	38.509998
<b>Relative permittivity</b>	13.750000

<b>Conductivity (S/m)</b>	1.436111
<b>Variation (%)</b>	0.540000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

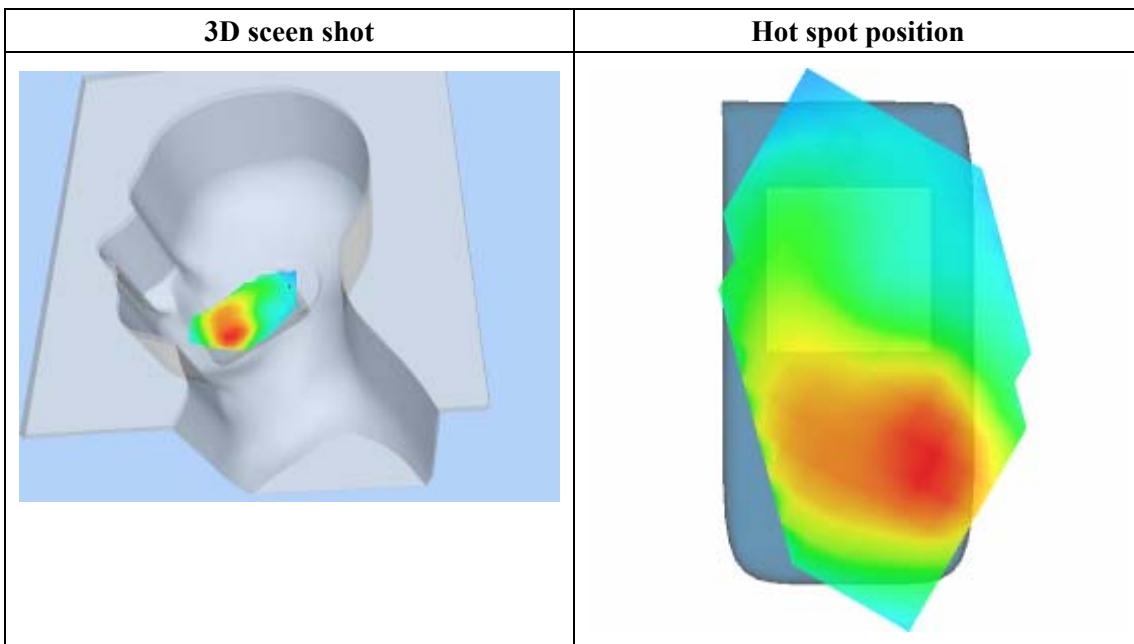
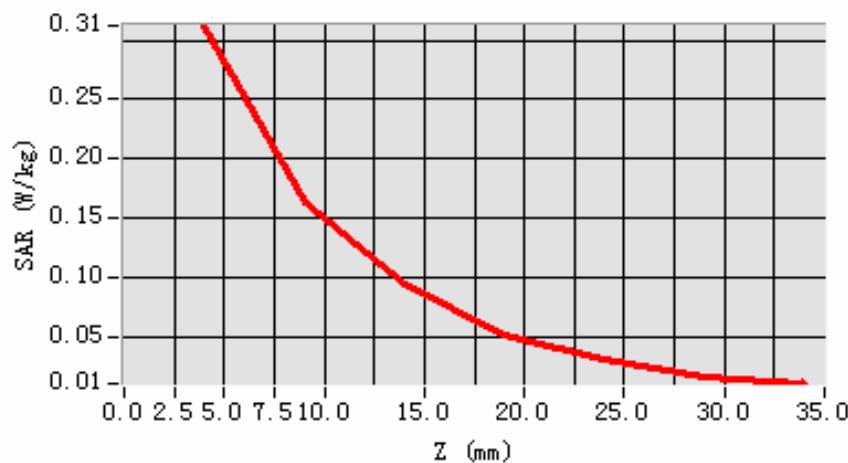


**Maximum location: X=-59.00, Y=-56.00**

<b>SAR 10g (W/Kg)</b>	0.166692
<b>SAR 1g (W/Kg)</b>	0.299163

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3122	0.1629	0.0947	0.0523	0.0303	0.0170

**SAR, Z Axis Scan (X = -59, Y = -56)**

## 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: 22/1/2011

Measurement duration: 7 minutes 32 seconds

### A. Experimental conditions.

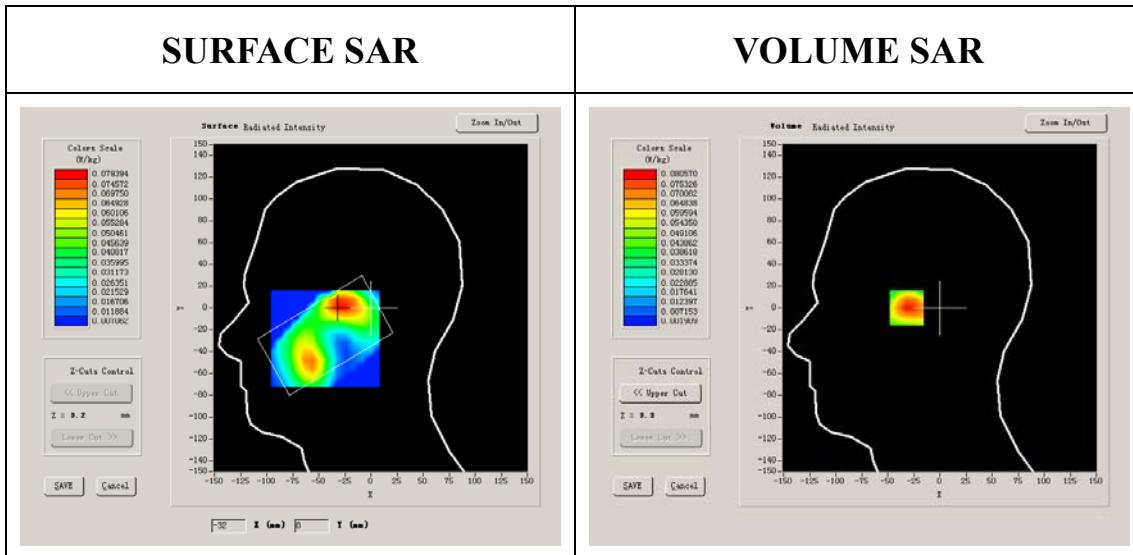
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	38.509998
<b>Relative permittivity</b>	13.750000

<b>Conductivity (S/m)</b>	1.436111
<b>Variation (%)</b>	-1.130000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

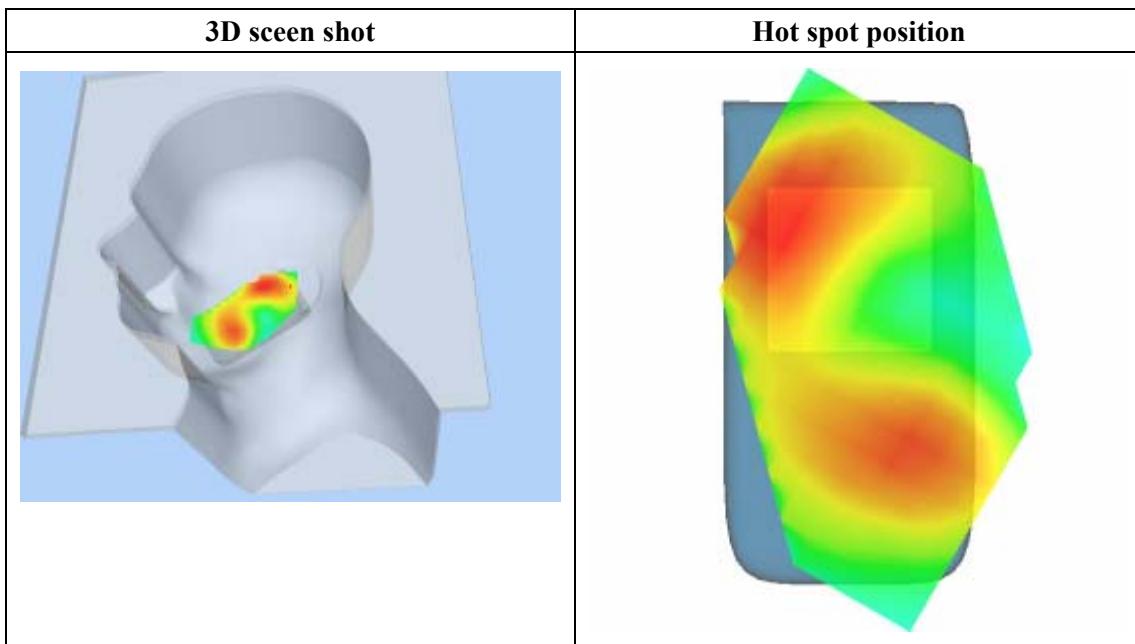
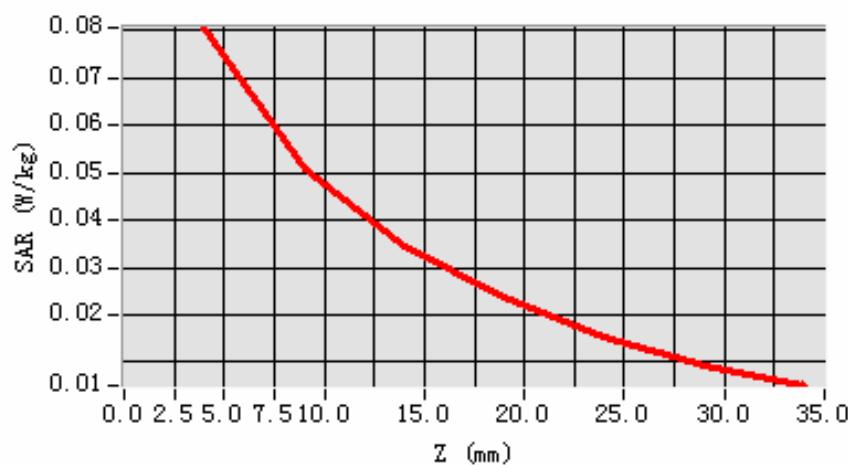


**Maximum location: X=-30.00, Y=2.00**

<b>SAR 10g (W/Kg)</b>	0.047273
<b>SAR 1g (W/Kg)</b>	0.077333

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0806	0.0508	0.0346	0.0236	0.0154	0.0094

**SAR, Z Axis Scan (X = -30, Y = 2)**

## 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: 22/1/2011

Measurement duration: 8 minutes 2 seconds

### A. Experimental conditions.

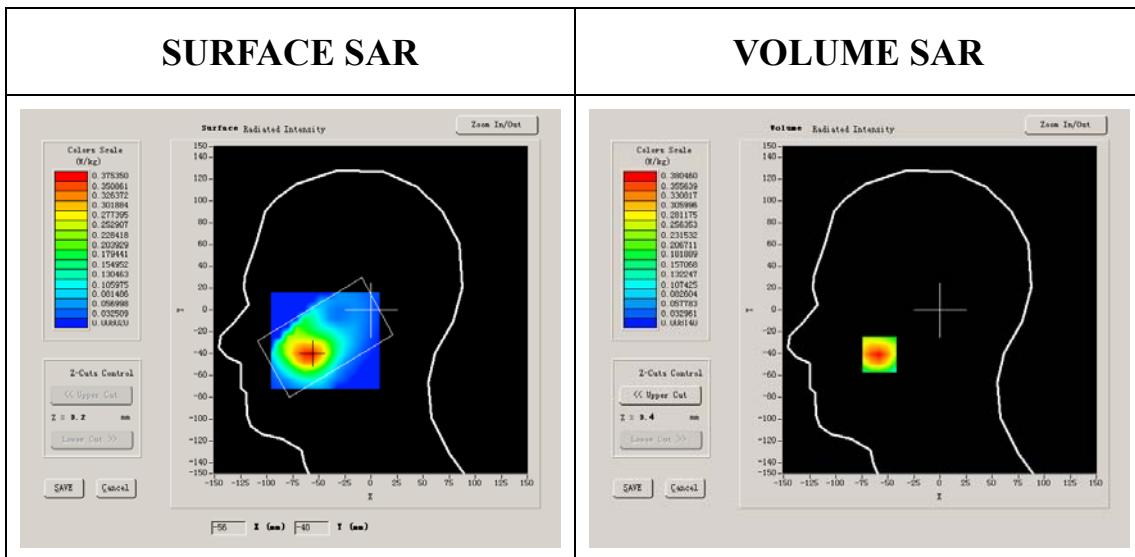
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	38.509998
<b>Relative permittivity</b>	13.750000

<b>Conductivity (S/m)</b>	1.436111
<b>Variation (%)</b>	-1.390000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8



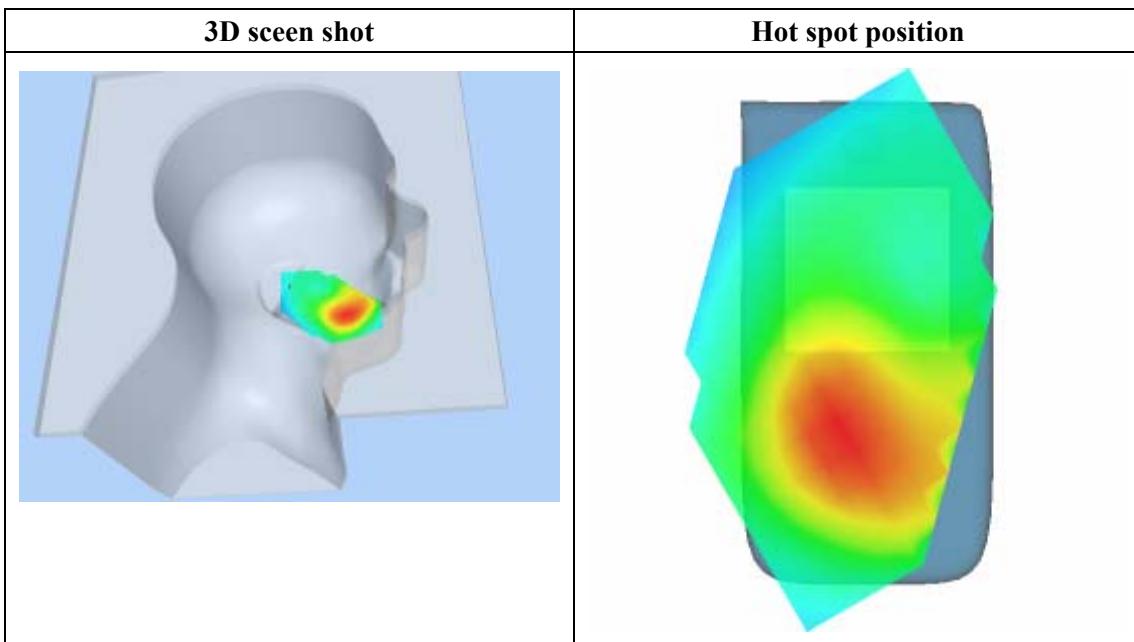
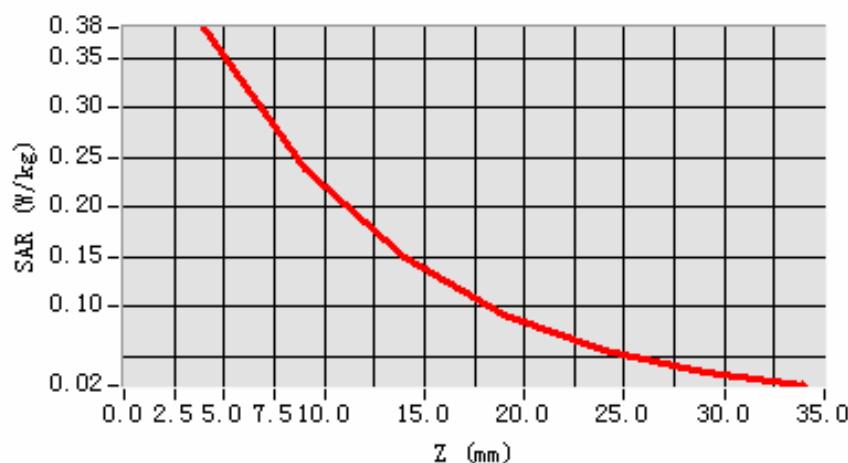
**Maximum location: X=-58.00, Y=-41.00**

<b>SAR 10g (W/Kg)</b>	0.210801
<b>SAR 1g (W/Kg)</b>	0.358755

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3805	0.2387	0.1493	0.0919	0.0557	0.0330

**SAR, Z Axis Scan (X = -58, Y = -41)**



## 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: 22/1/2011

Measurement duration: 7 minutes 19 seconds

### A. Experimental conditions.

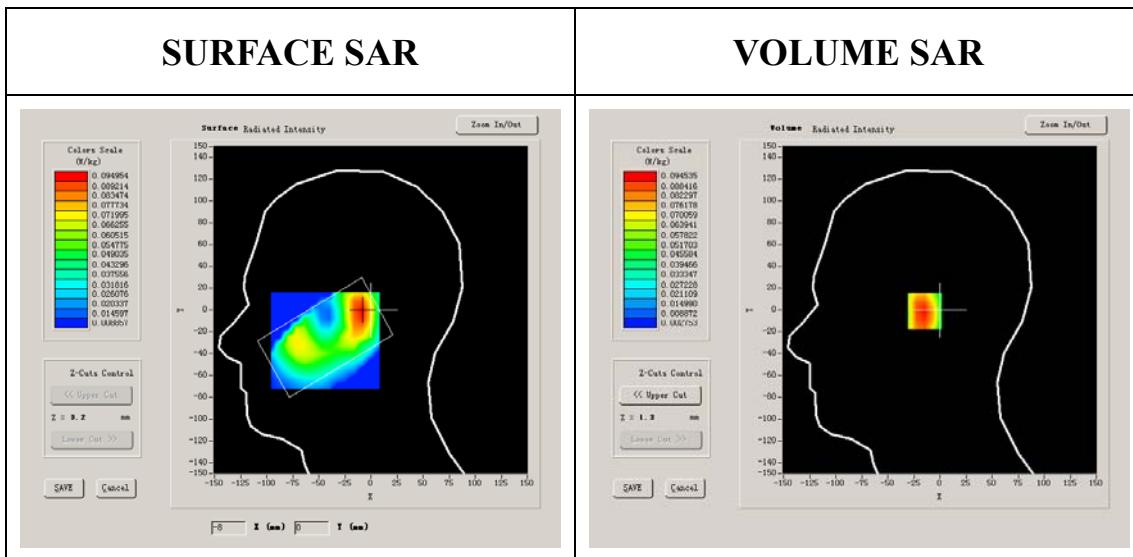
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	TDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	38.509998
<b>Relative permittivity</b>	13.750000

<b>Conductivity (S/m)</b>	1.436111
<b>Variation (%)</b>	-0.720000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

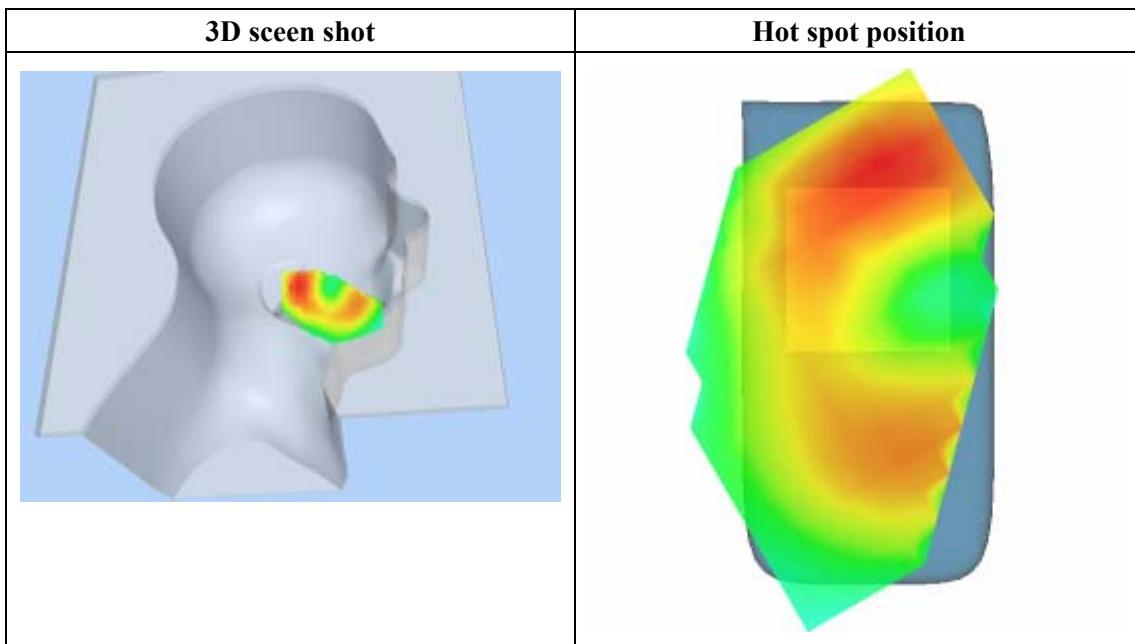
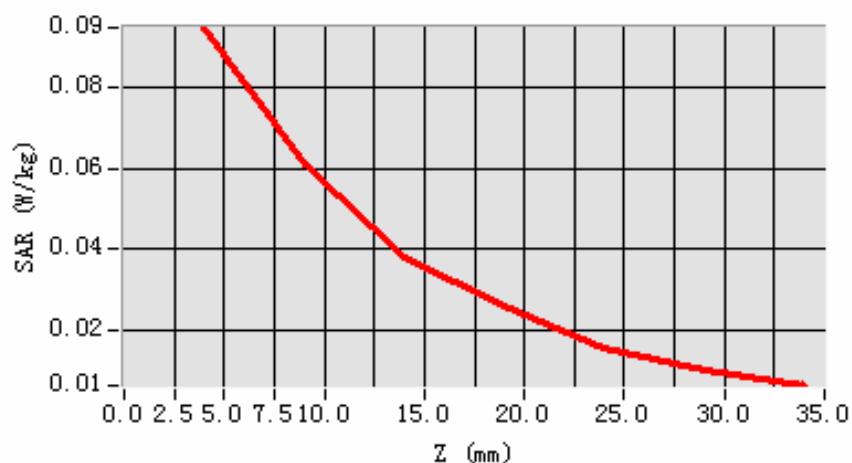


**Maximum location: X=-9.00, Y=-1.00**

<b>SAR 10g (W/Kg)</b>	0.056180
<b>SAR 1g (W/Kg)</b>	0.090807

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0945	0.0606	0.0380	0.0257	0.0157	0.0105

**SAR, Z Axis Scan (X = -9, Y = -1)**

## 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: 22/1/2011

Measurement duration: 9 minutes 13 seconds

### A. Experimental conditions.

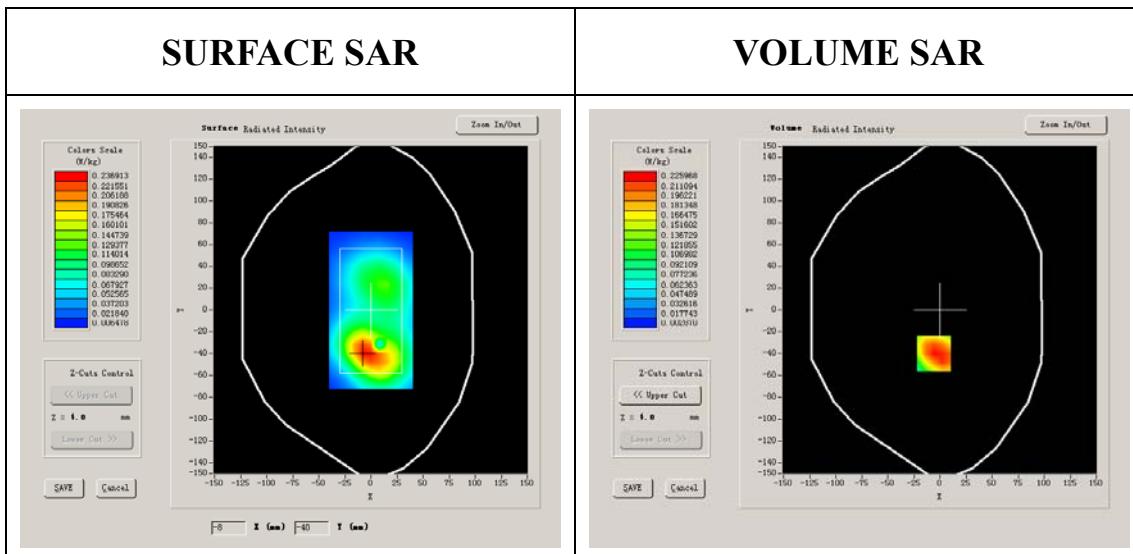
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Lower Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.199951
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.549029
<b>Variation (%)</b>	-3.640000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:2

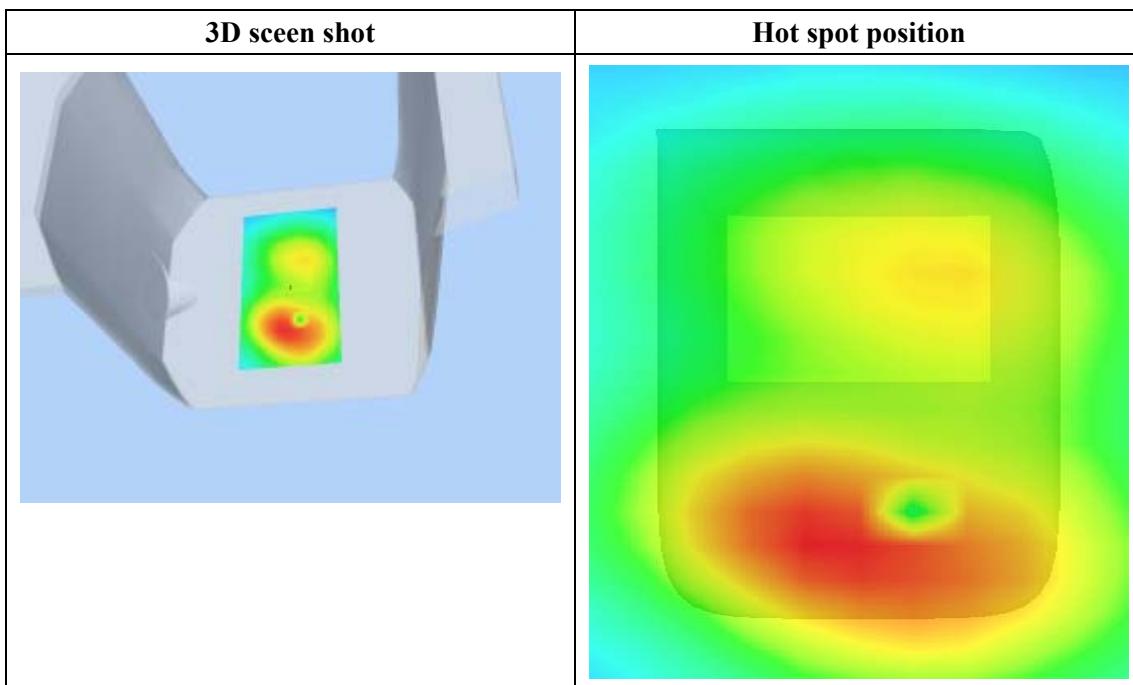
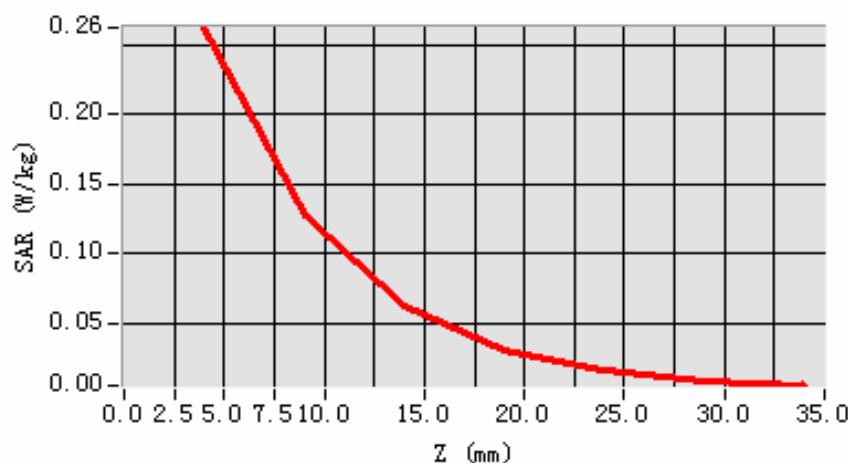


**Maximum location: X=-6.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.134953
<b>SAR 1g (W/Kg)</b>	0.253145

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2621	0.1275	0.0612	0.0296	0.0157	0.0084

**SAR, Z Axis Scan (X = -6, Y = -40)**

## 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: 22/1/2011

Measurement duration: 9 minutes 11 seconds

### A. Experimental conditions.

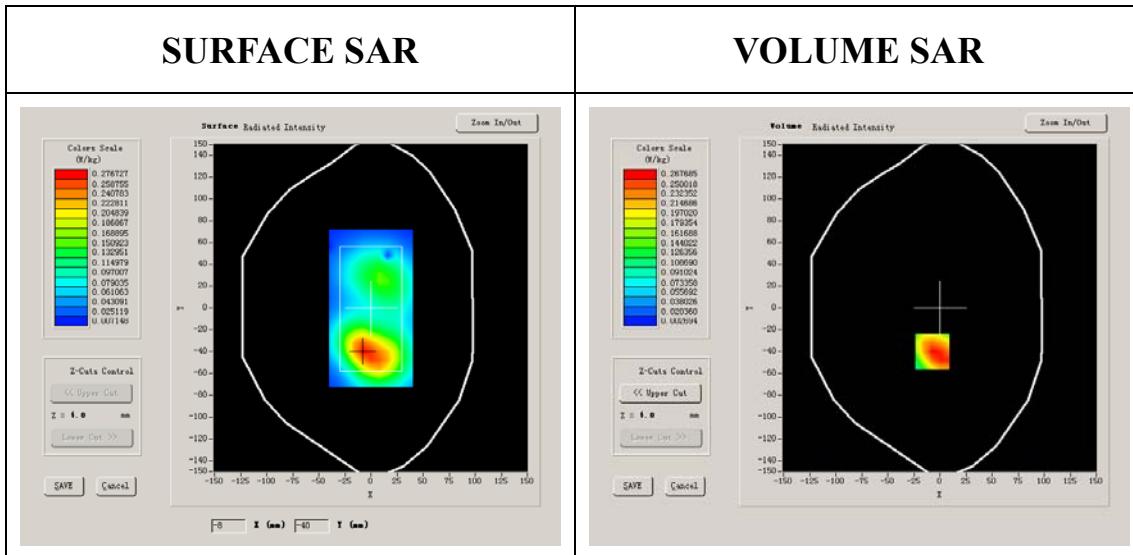
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.573978
<b>Variation (%)</b>	-1.720000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:2

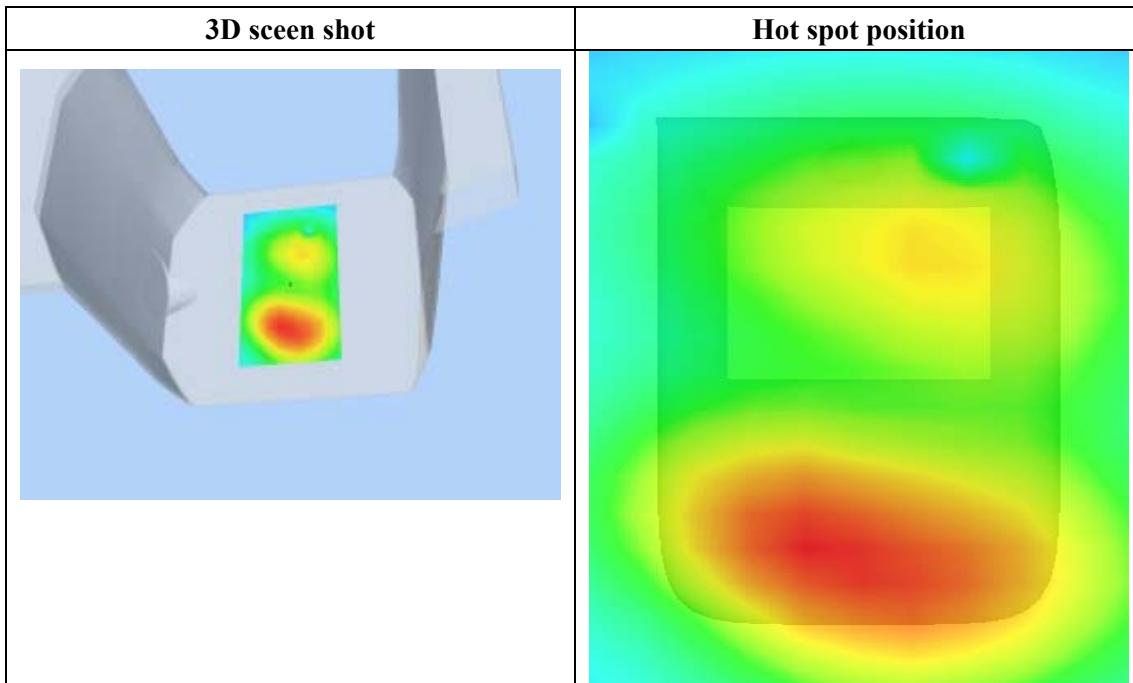
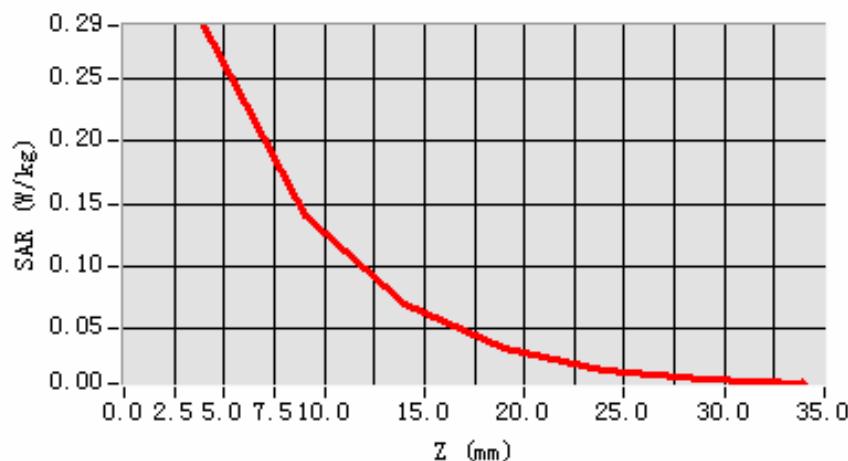


**Maximum location: X=-7.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.151733
<b>SAR 1g (W/Kg)</b>	0.286316

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2934	0.1394	0.0689	0.0335	0.0157	0.0090

**SAR, Z Axis Scan (X = -7, Y = -40)**

## 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: 22/1/2011

Measurement duration: 9 minutes 10 seconds

### A. Experimental conditions.

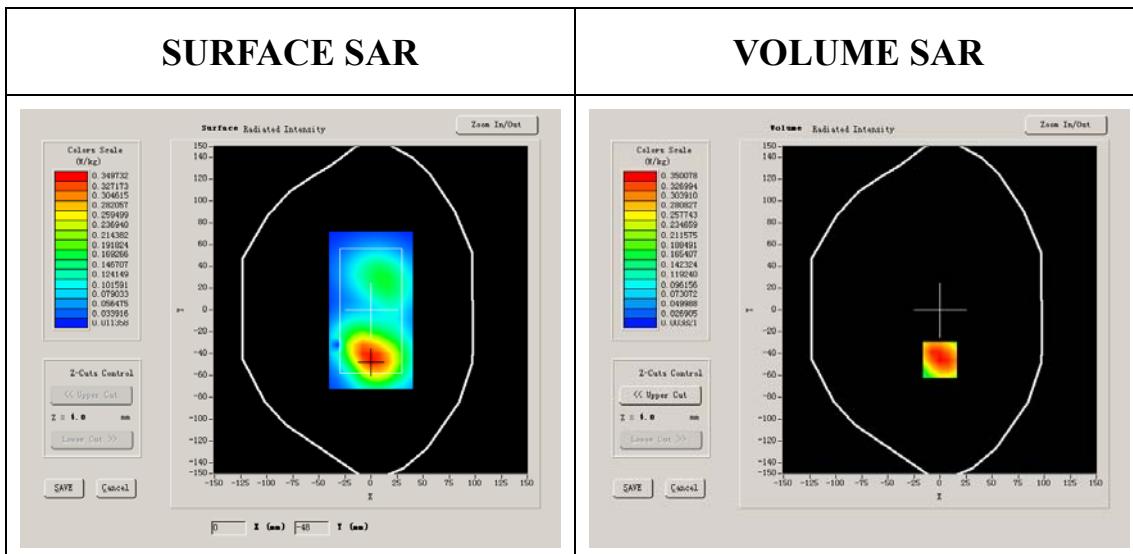
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	High
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

<b>Frequency (MHz)</b>	1909.800049
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.598927
<b>Variation (%)</b>	-2.080000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:2



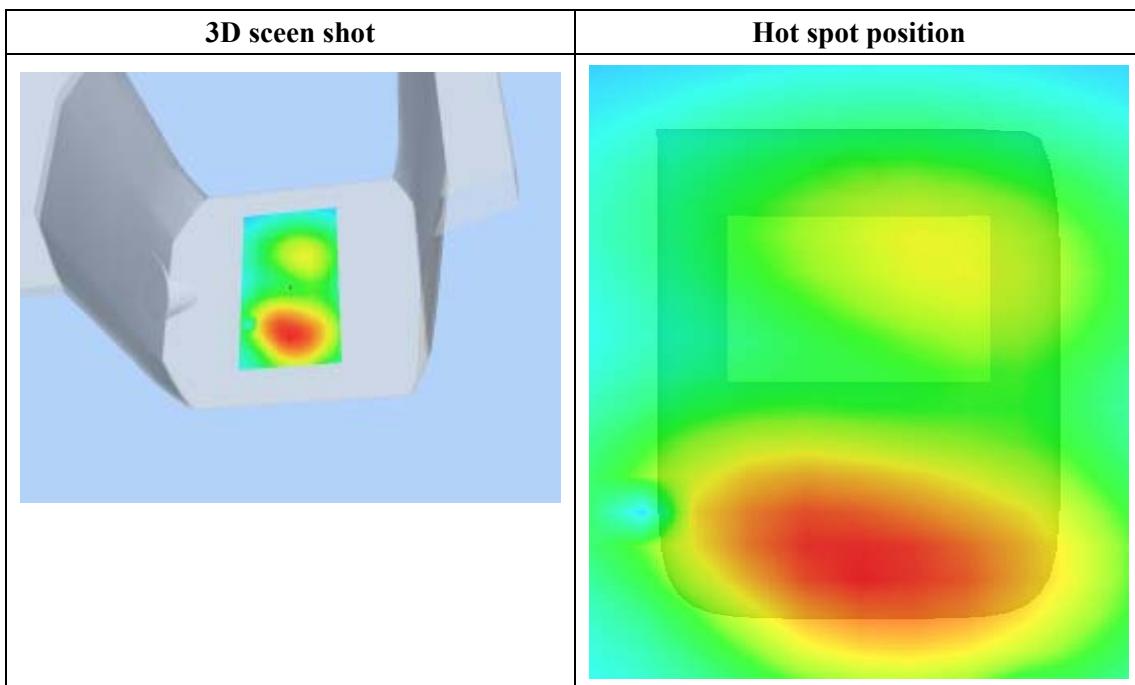
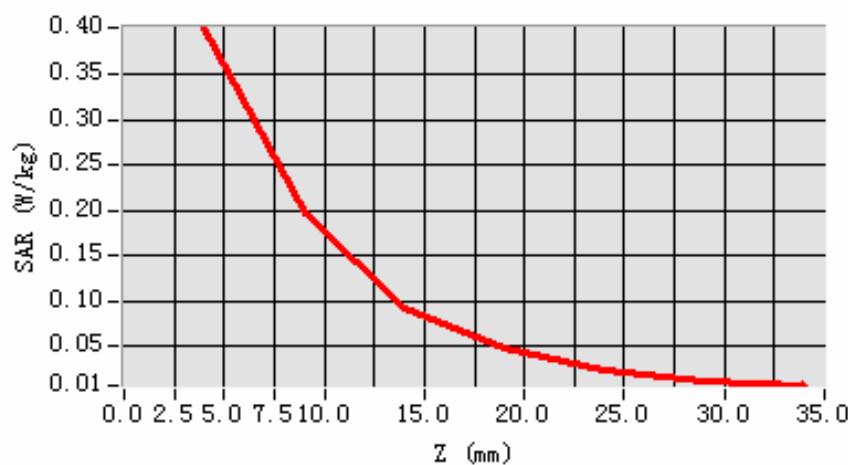
**Maximum location: X=0.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.206664
<b>SAR 1g (W/Kg)</b>	0.389041

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4010	0.1958	0.0930	0.0482	0.0247	0.0127

SAR, Z Axis Scan (X = 0, Y = -46)



## 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: 22/1/2011

Measurement duration: 9 minutes 13 seconds

### A. Experimental conditions.

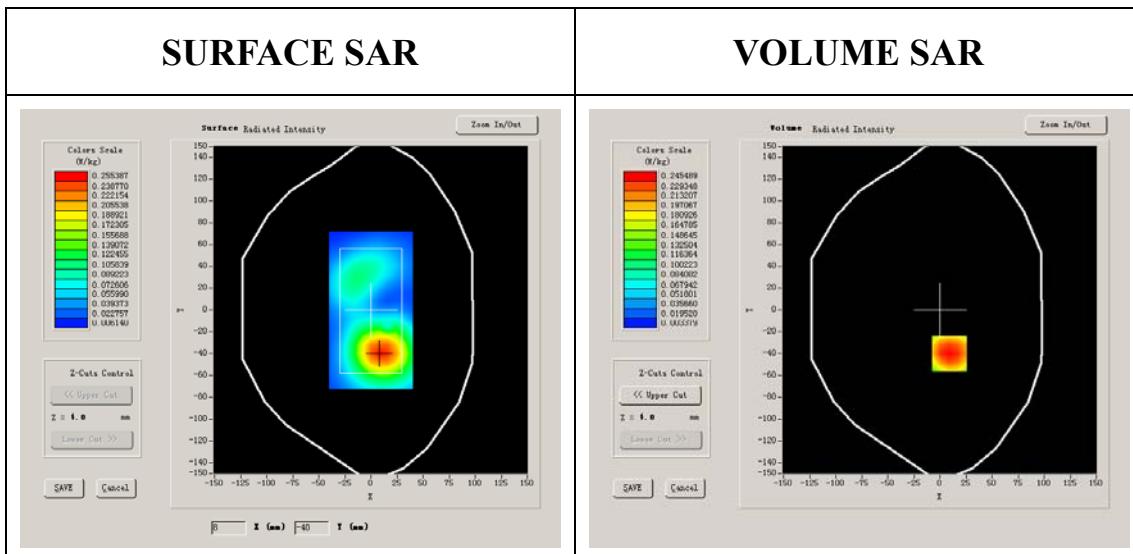
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	High
<b>Signal</b>	GPRS

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

<b>Frequency (MHz)</b>	1909.800049
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.598927
<b>Variation (%)</b>	-1.310000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:2

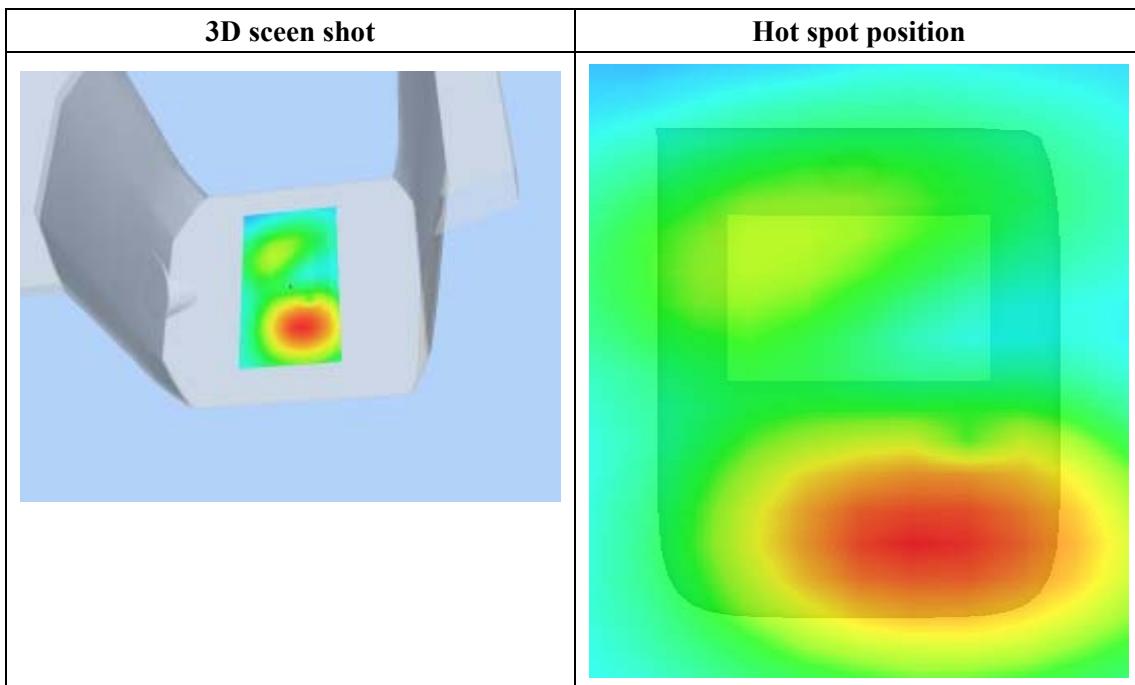
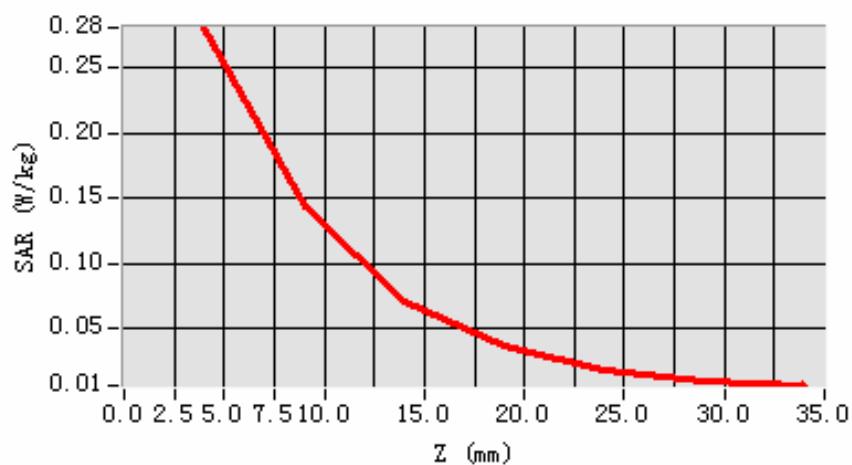


**Maximum location: X=9.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.147795
<b>SAR 1g (W/Kg)</b>	0.271387

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2812	0.1430	0.0703	0.0363	0.0180	0.0101

**SAR, Z Axis Scan (X = 9, Y = -40)**

## 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: 22/1/2011

Measurement duration: 9 minutes 13 seconds

### A. Experimental conditions.

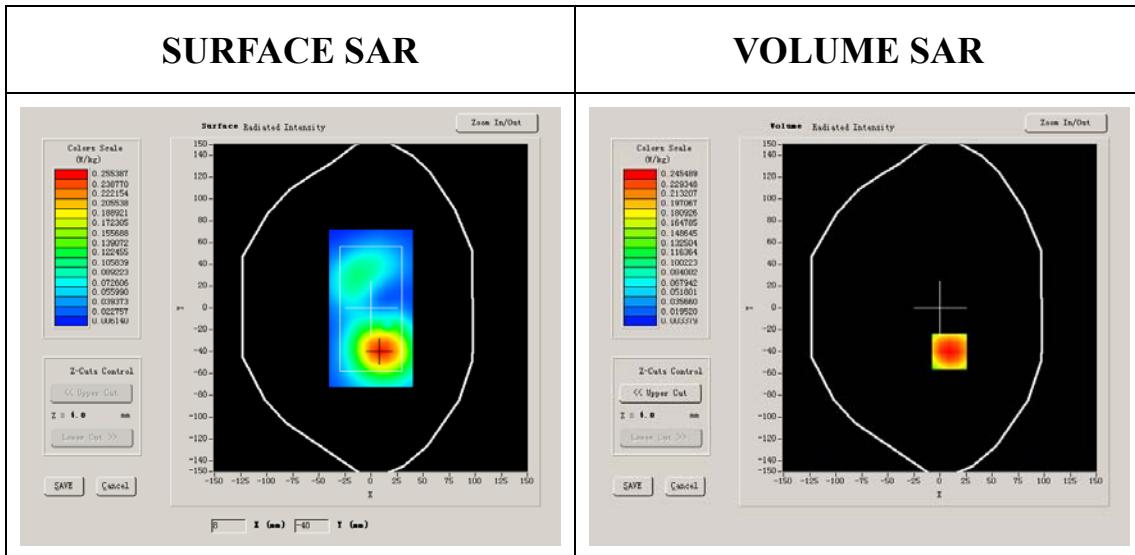
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	High
<b>Signal</b>	GSM

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

<b>Frequency (MHz)</b>	1909.800049
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.598927
<b>Variation (%)</b>	-1.310000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

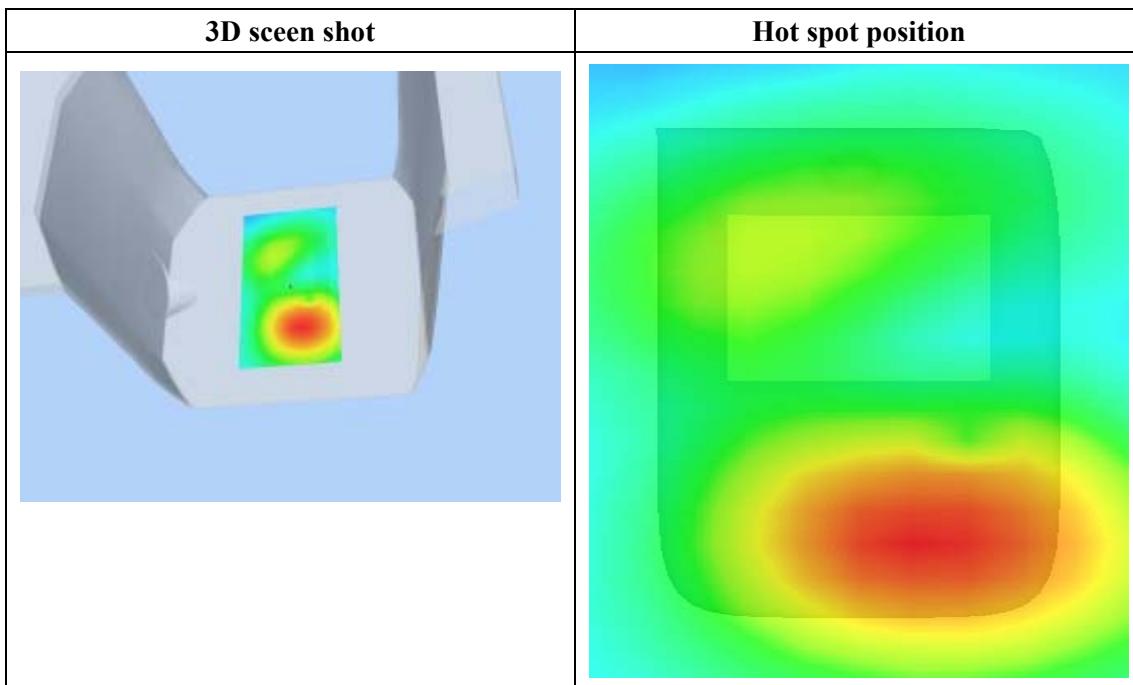
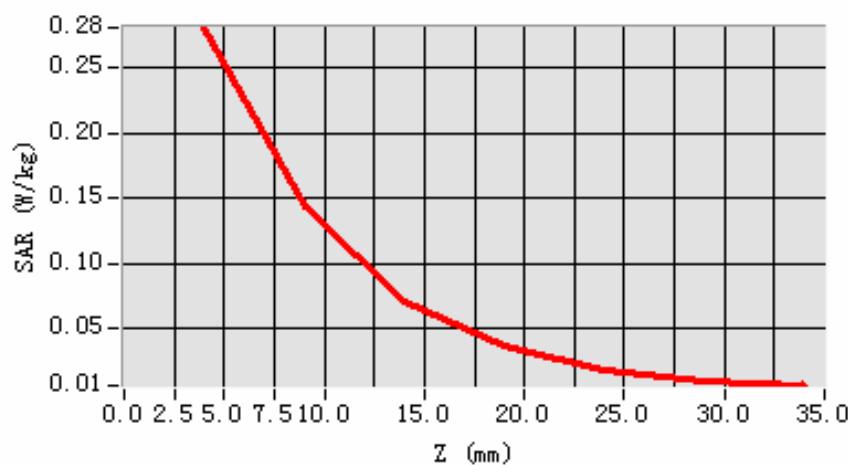


**Maximum location: X=9.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.097785
<b>SAR 1g (W/Kg)</b>	0.156366

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2812	0.1430	0.0703	0.0363	0.0180	0.0101

**SAR, Z Axis Scan (X = 9, Y = -40)**

## 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: 22/1/2011

Measurement duration: 9 minutes 13 seconds

### A. Experimental conditions.

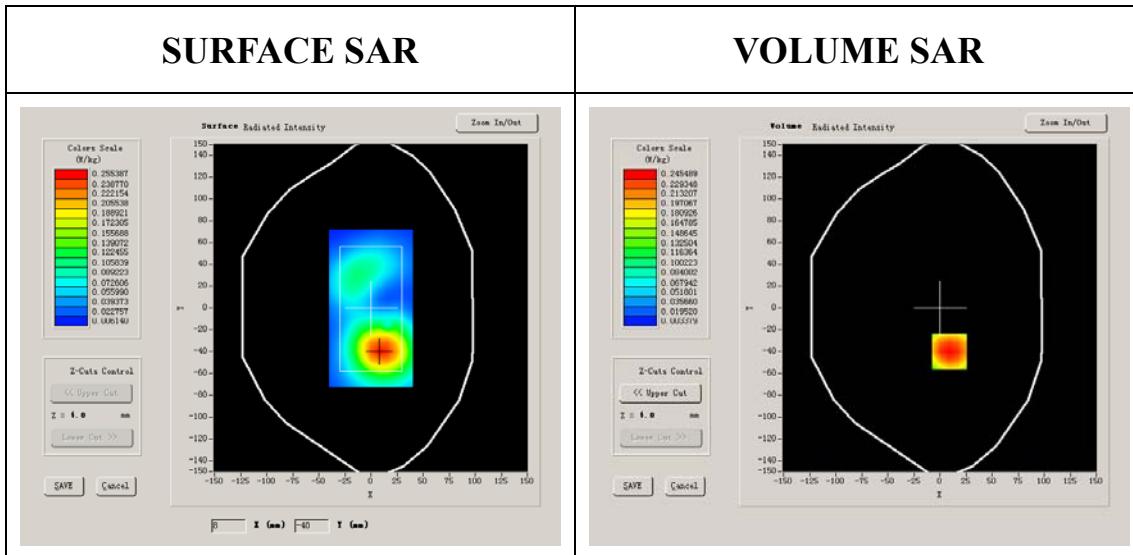
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	High
<b>Signal</b>	GSM

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

<b>Frequency (MHz)</b>	1909.800049
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.598927
<b>Variation (%)</b>	-1.310000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8



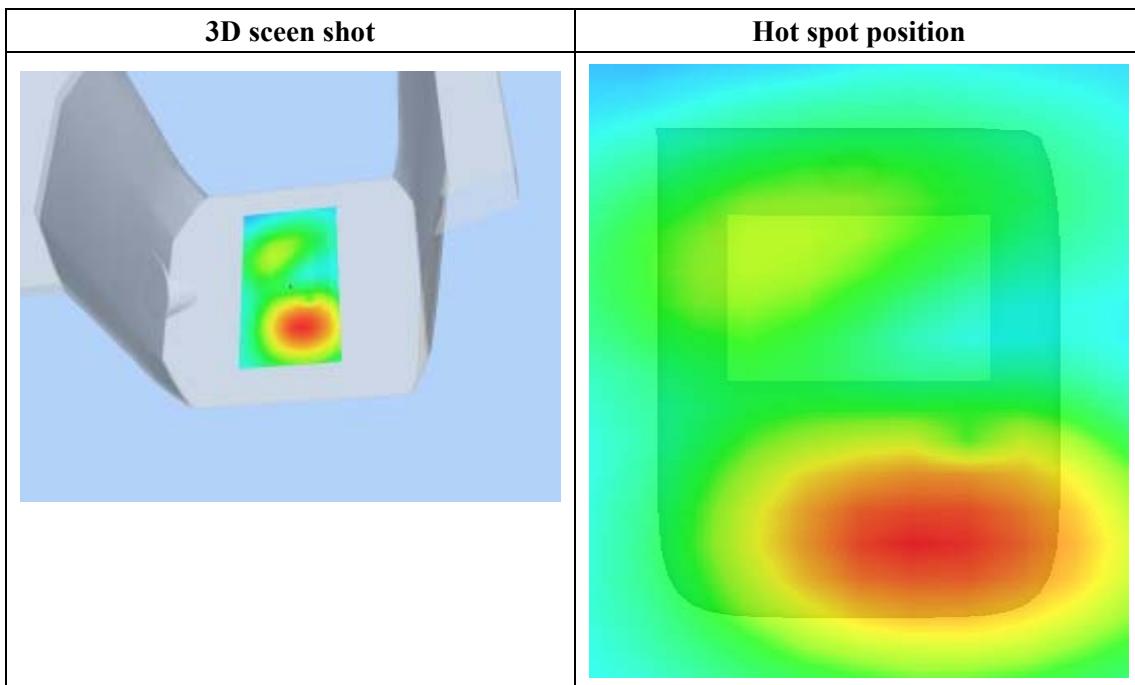
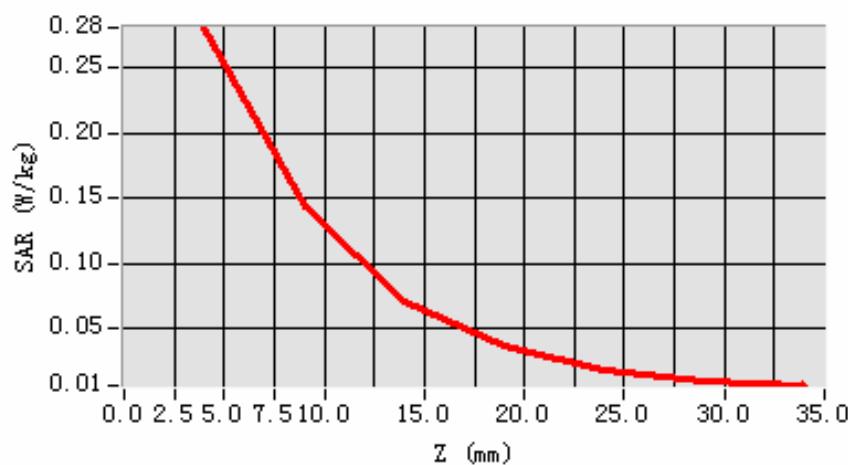
**Maximum location: X=9.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.089945
<b>SAR 1g (W/Kg)</b>	0.157733

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2812	0.1430	0.0703	0.0363	0.0180	0.0101

**SAR, Z Axis Scan (X = 9, Y = -40)**



## 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: 22/1/2011

Measurement duration: 9 minutes 13 seconds

### A. Experimental conditions.

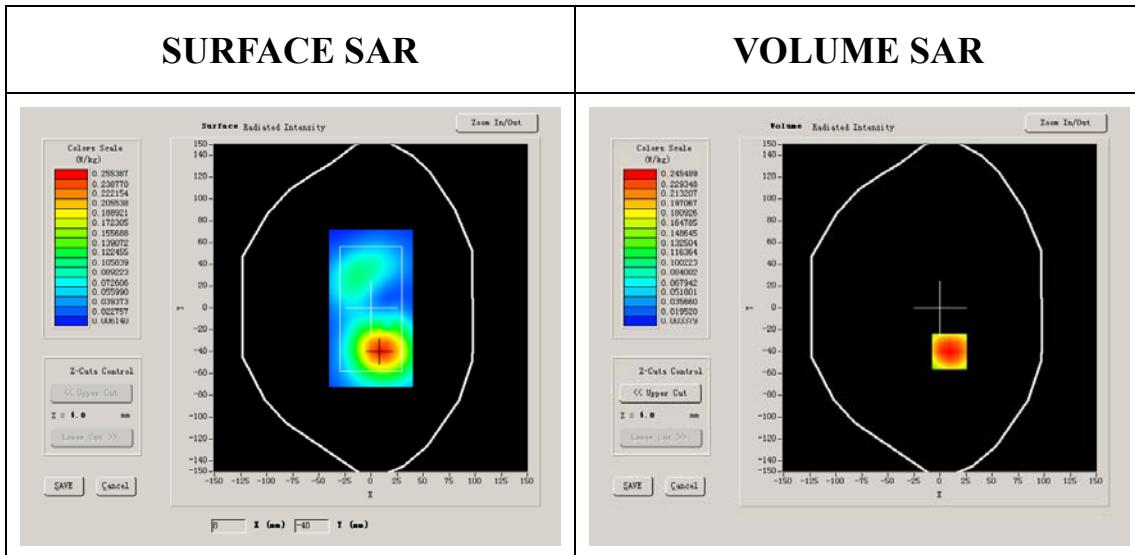
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	High
<b>Signal</b>	EDGE

### B. SAR Measurement Results

Higher Band SAR (Channel 810):

<b>Frequency (MHz)</b>	1909.800049
<b>Relative permittivity (real part)</b>	51.540001
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.598927
<b>Variation (%)</b>	-1.310000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:2

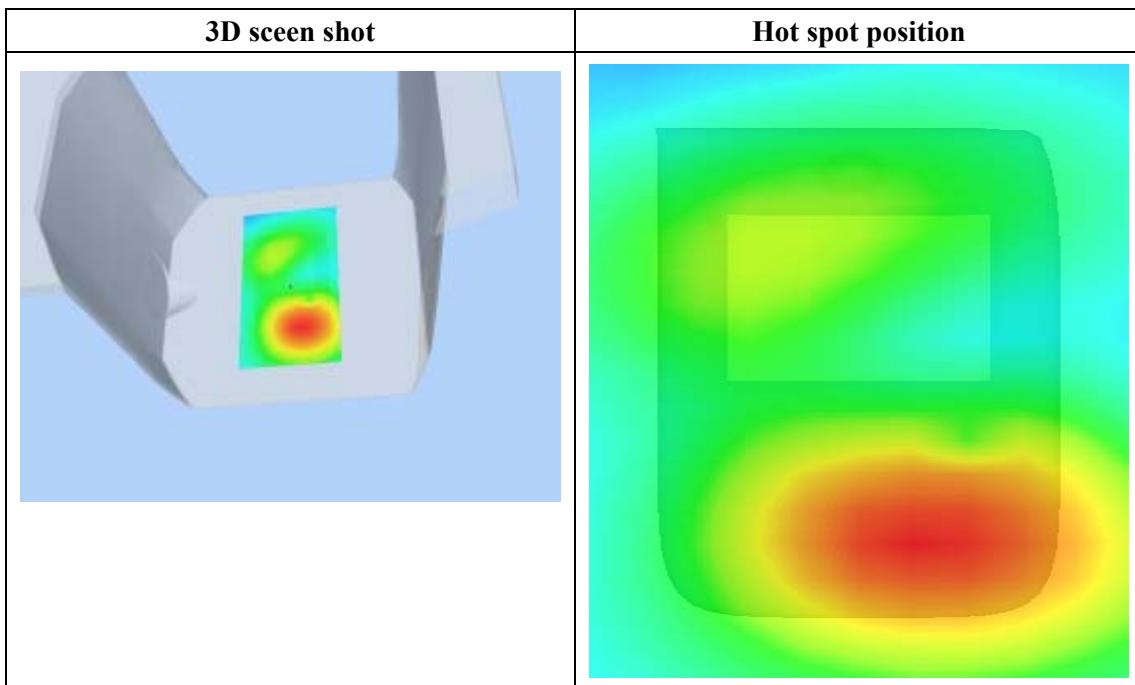
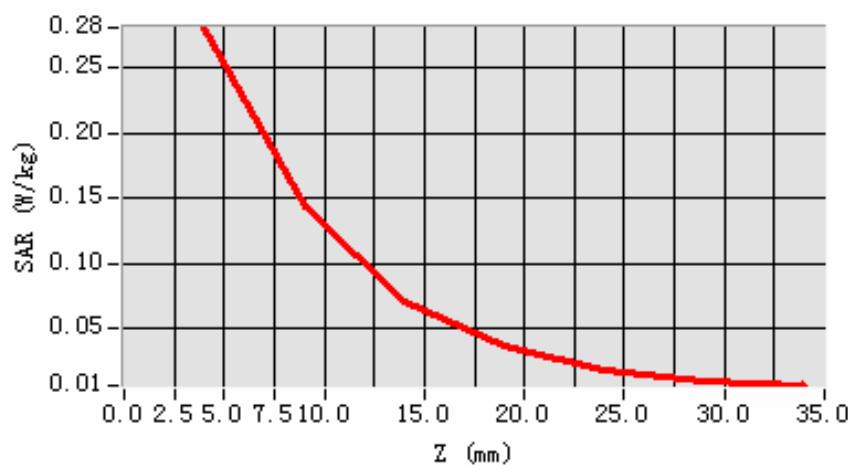


**Maximum location: X=9.00, Y=-40.00**

<b>SAR 10g (W/Kg)</b>	0.141233
<b>SAR 1g (W/Kg)</b>	0.269344

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2812	0.1430	0.0703	0.0363	0.0180	0.0101

**SAR, Z Axis Scan (X = 9, Y = -40)**

## 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: 27/1/2011

Measurement duration: 7 minutes 53 seconds

### A. Experimental conditions.

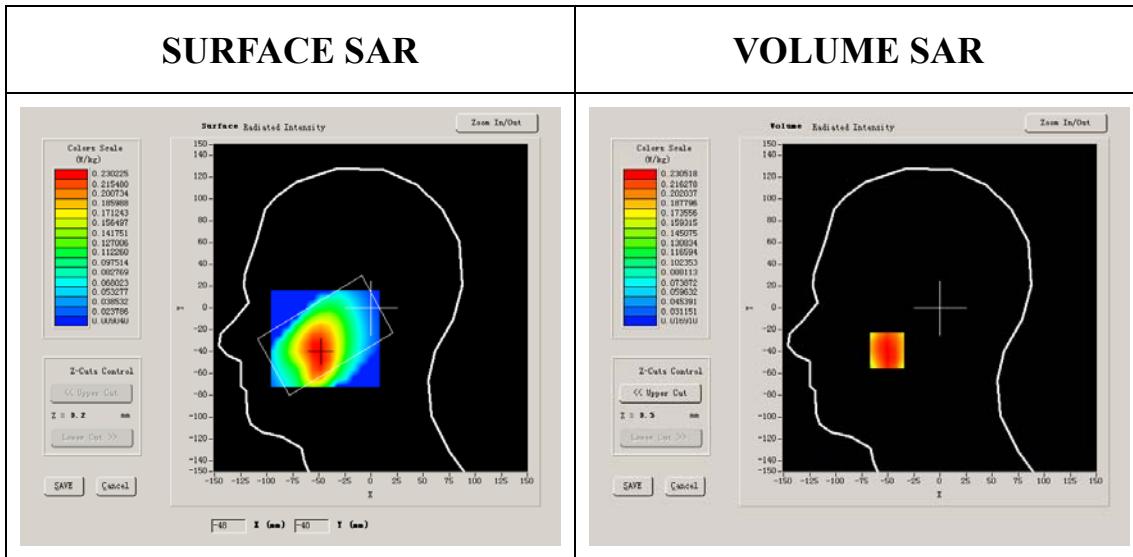
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<b>Frequency (MHz)</b>	836.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	0.614460
<b>Variation (%)</b>	0.420000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

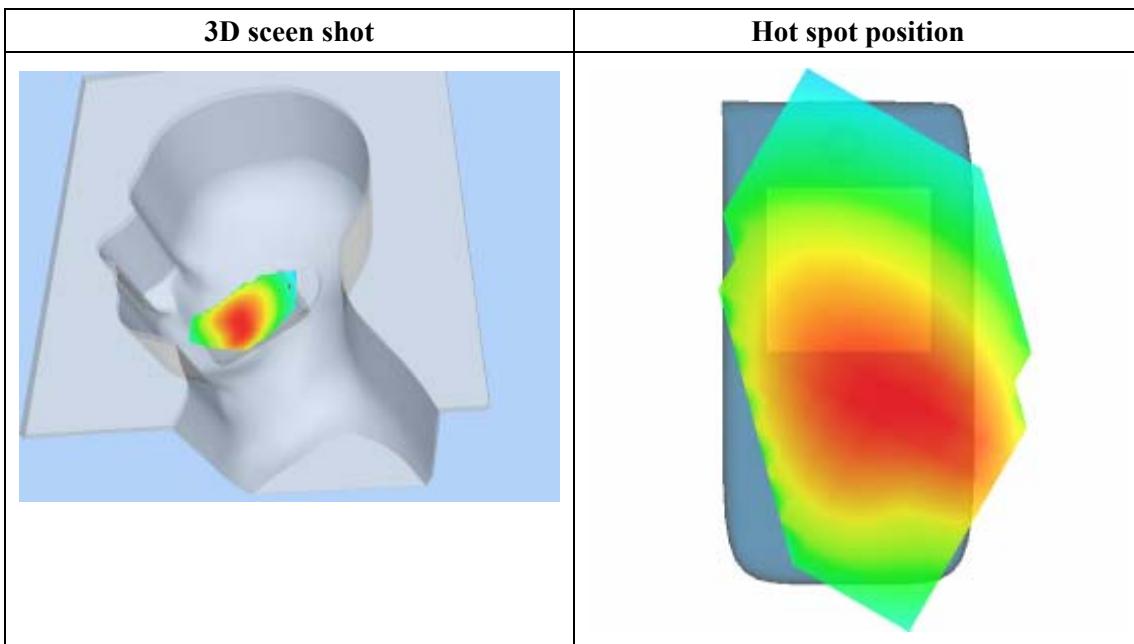
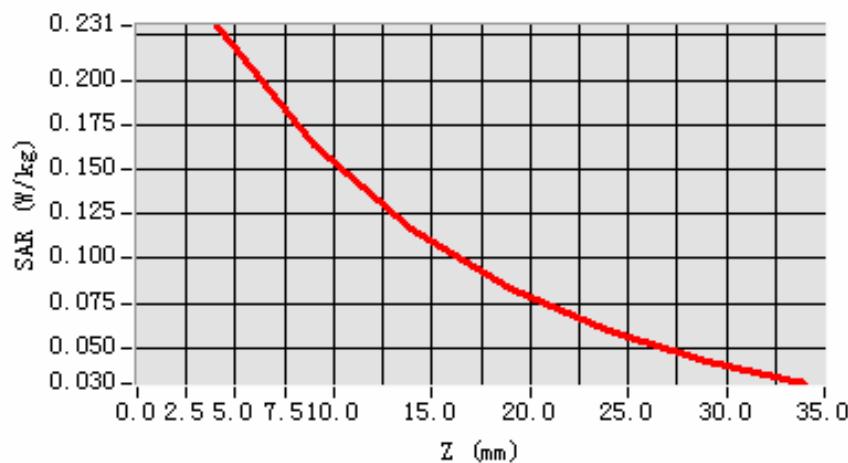


**Maximum location: X=-51.00, Y=-39.00**

<b>SAR 10g (W/Kg)</b>	0.158163
<b>SAR 1g (W/Kg)</b>	0.227016

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2305	0.1635	0.1170	0.0835	0.0598	0.0421

**SAR, Z Axis Scan (X = -51, Y = -39)**

## 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: 27/1/2011

Measurement duration: 7 minutes 38 seconds

### A. Experimental conditions.

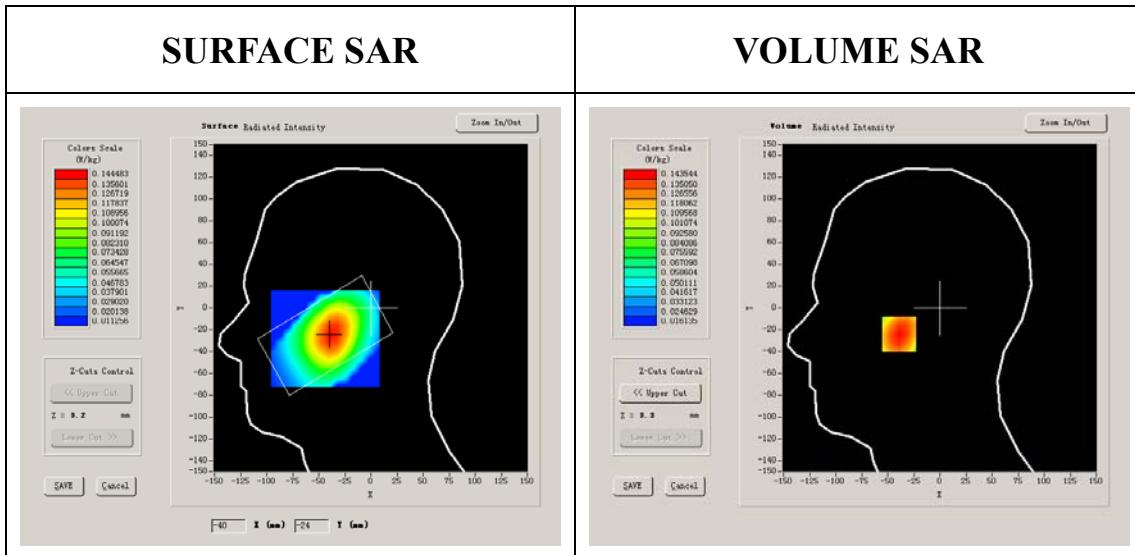
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<b>Frequency (MHz)</b>	836.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	0.614460
<b>Variation (%)</b>	-0.200000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

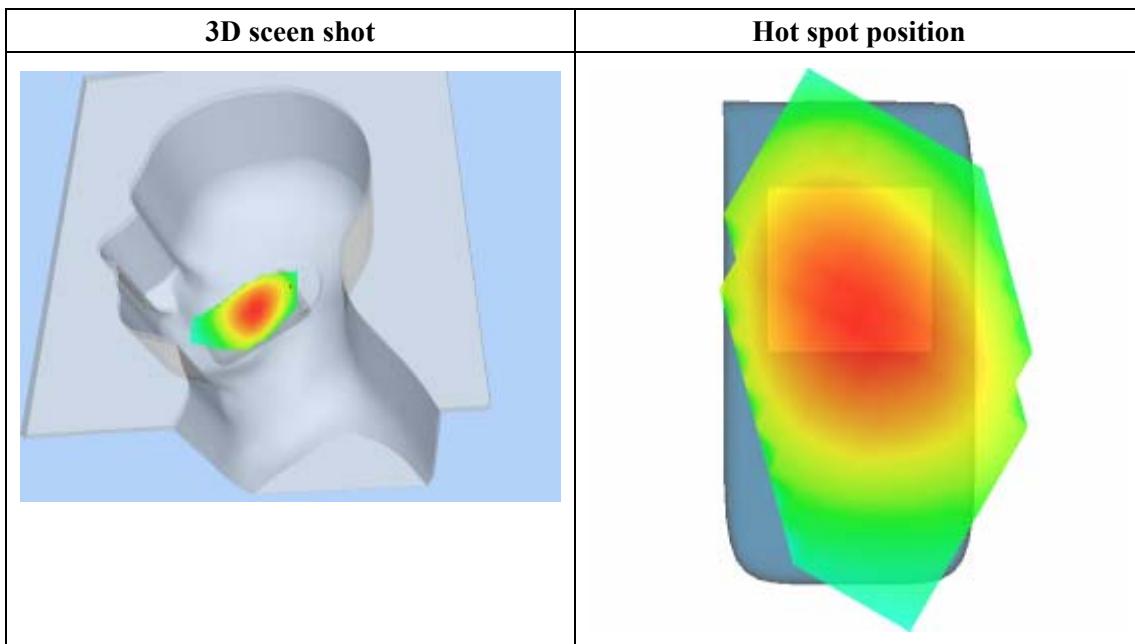
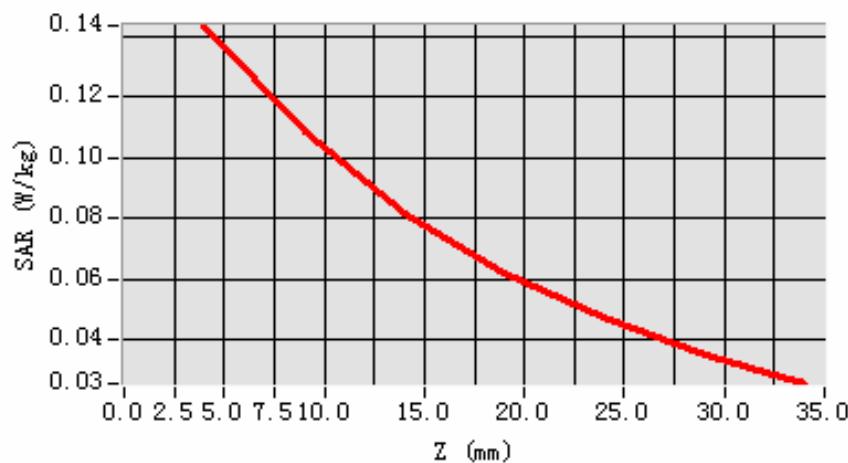


**Maximum location: X=-38.00, Y=-24.00**

<b>SAR 10g (W/Kg)</b>	0.099569
<b>SAR 1g (W/Kg)</b>	0.138402

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1435	0.1083	0.0817	0.0623	0.0475	0.0352

**SAR, Z Axis Scan (X = -38, Y = -24)**

## 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: 30/1/2011

Measurement duration: 8 minutes 5 seconds

### A. Experimental conditions.

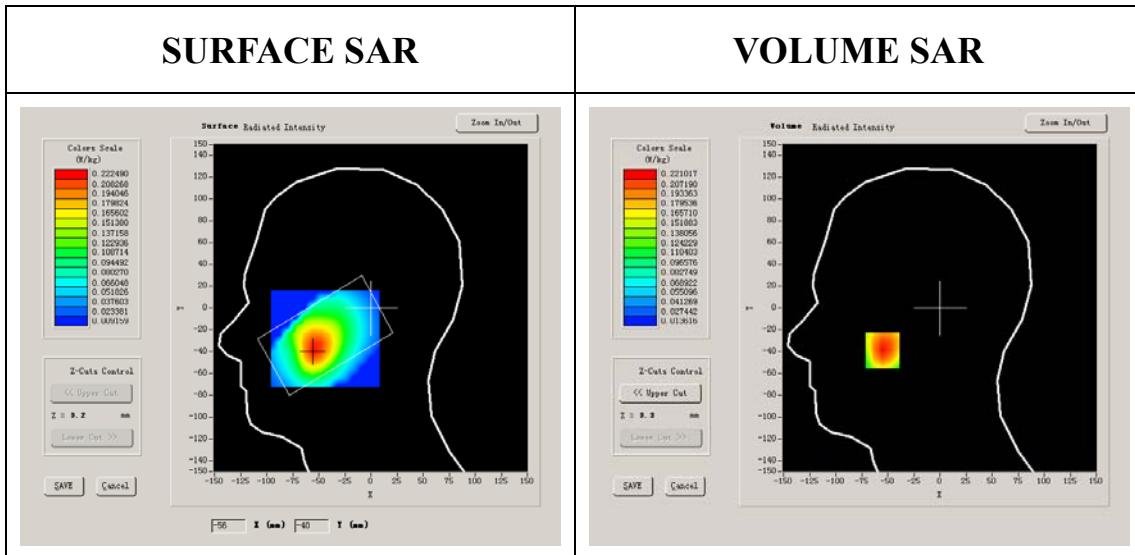
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<b>Frequency (MHz)</b>	836.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	0.614460
<b>Variation (%)</b>	-0.630000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

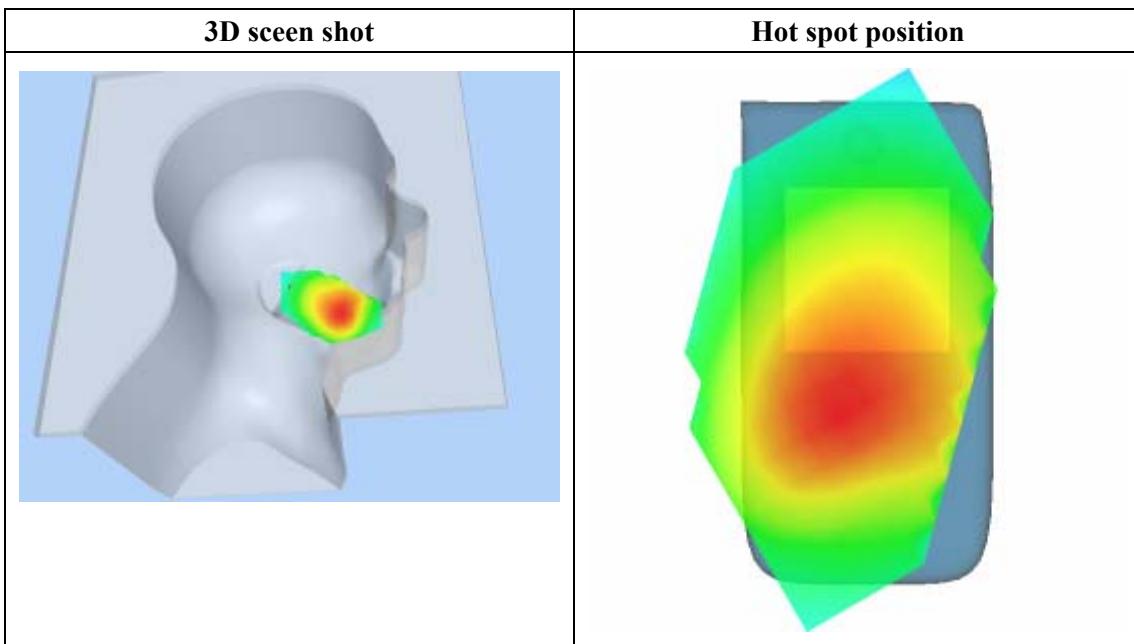
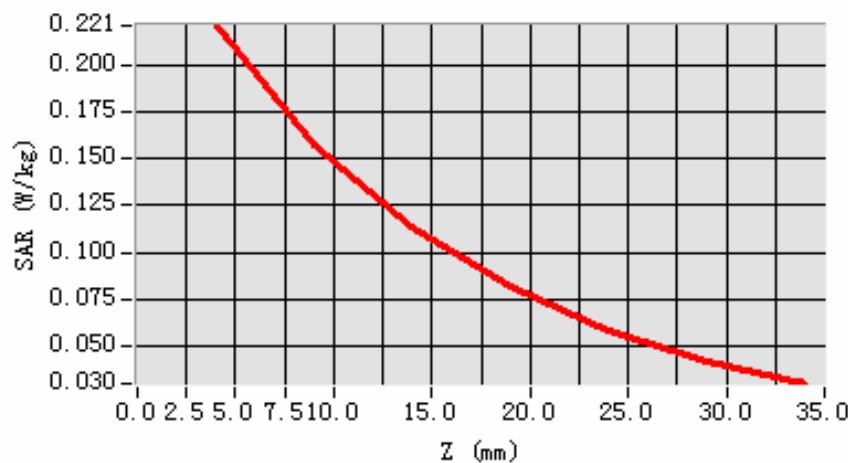


**Maximum location: X=-55.00, Y=-39.00**

<b>SAR 10g (W/Kg)</b>	0.144000
<b>SAR 1g (W/Kg)</b>	0.211406

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2210	0.1569	0.1138	0.0816	0.0586	0.0421

**SAR, Z Axis Scan (X = -55, Y = -39)**

## 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: 30/1/2011

Measurement duration: 7 minutes 37 seconds

### A. Experimental conditions.

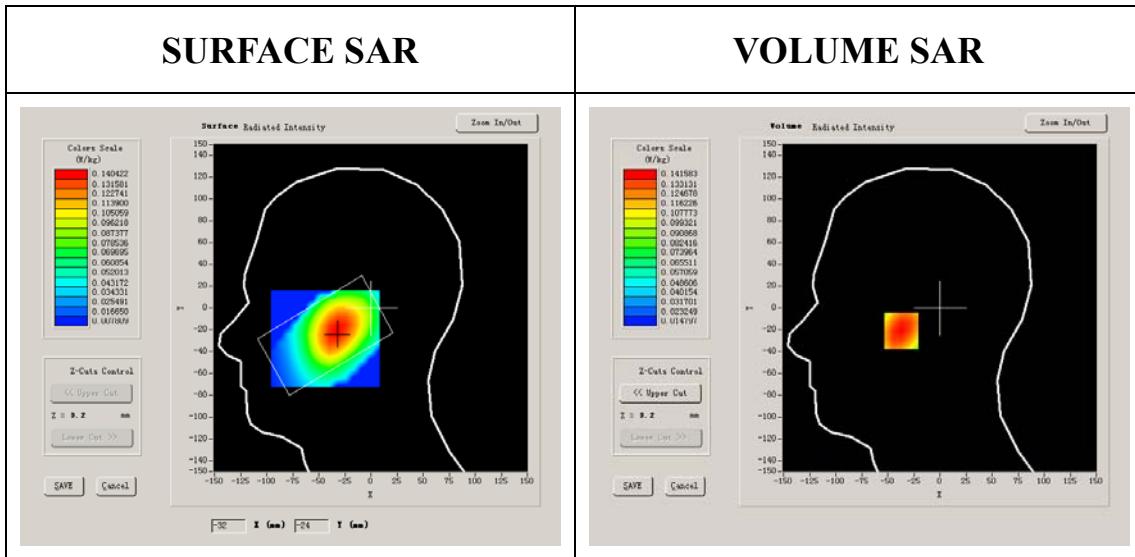
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<b>Frequency (MHz)</b>	836.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	0.614460
<b>Variation (%)</b>	0.140000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

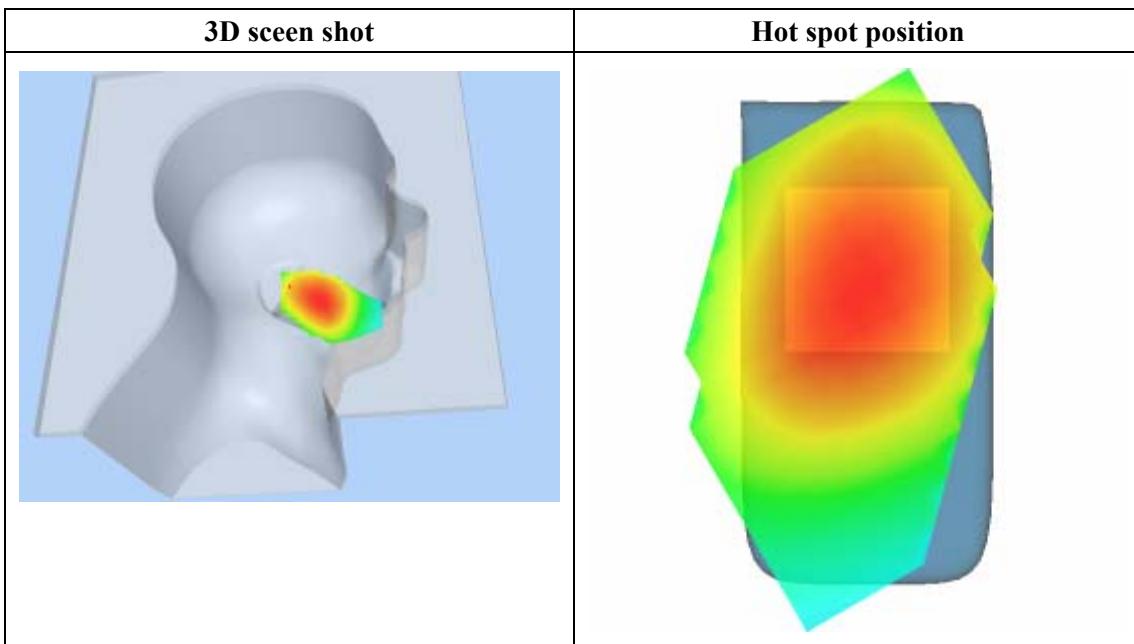
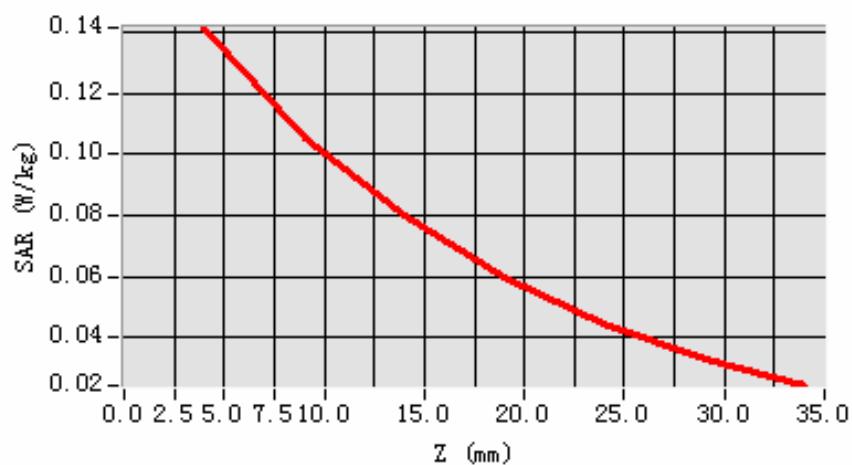


**Maximum location: X=-32.00, Y=-21.00**

<b>SAR 10g (W/Kg)</b>	0.098150
<b>SAR 1g (W/Kg)</b>	0.137035

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1416	0.1051	0.0800	0.0601	0.0447	0.0331

**SAR, Z Axis Scan (X = -32, Y = -21)**

## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

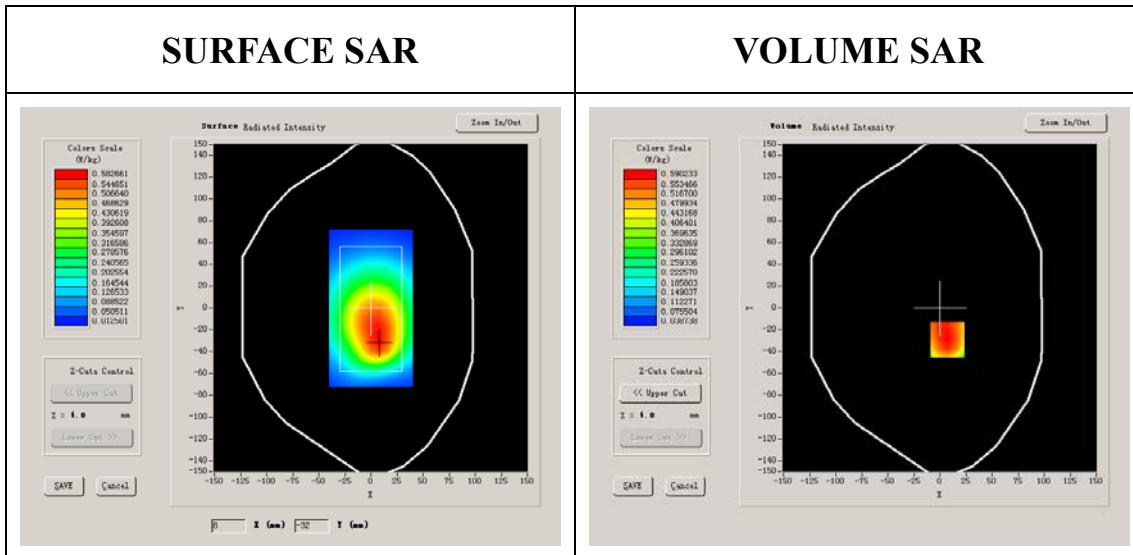
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Lower Band SAR (Channel 4132):

<b>Frequency (MHz)</b>	826.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.728580
<b>Variation (%)</b>	1.040000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1



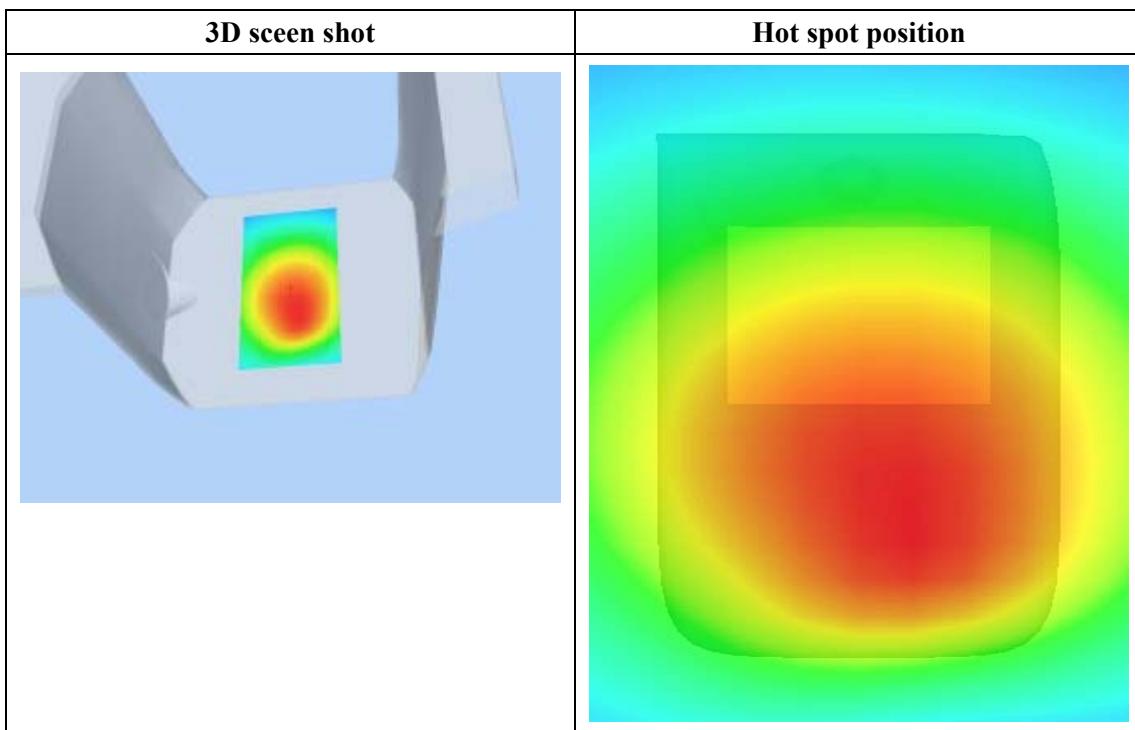
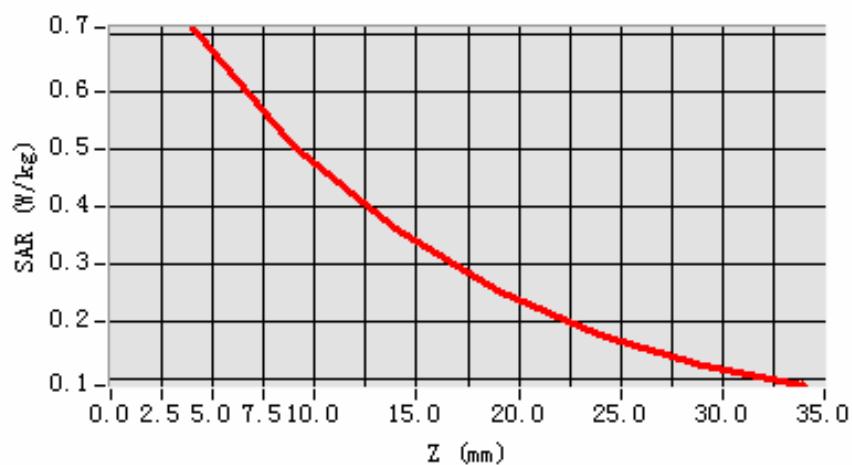
**Maximum location: X=7.00, Y=-29.00**

<b>SAR 10g (W/Kg)</b>	0.478260
<b>SAR 1g (W/Kg)</b>	0.691250

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7116	0.5051	0.3610	0.2519	0.1761	0.1229

SAR, Z Axis Scan (X = 7, Y = -29)



## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

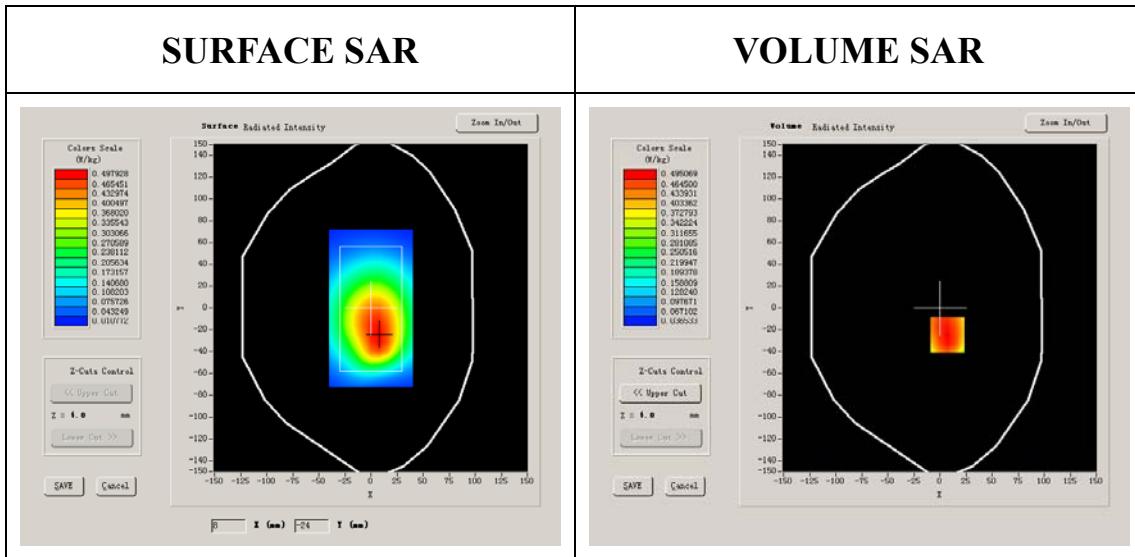
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<b>Frequency (MHz)</b>	836.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.737401
<b>Variation (%)</b>	-0.400000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

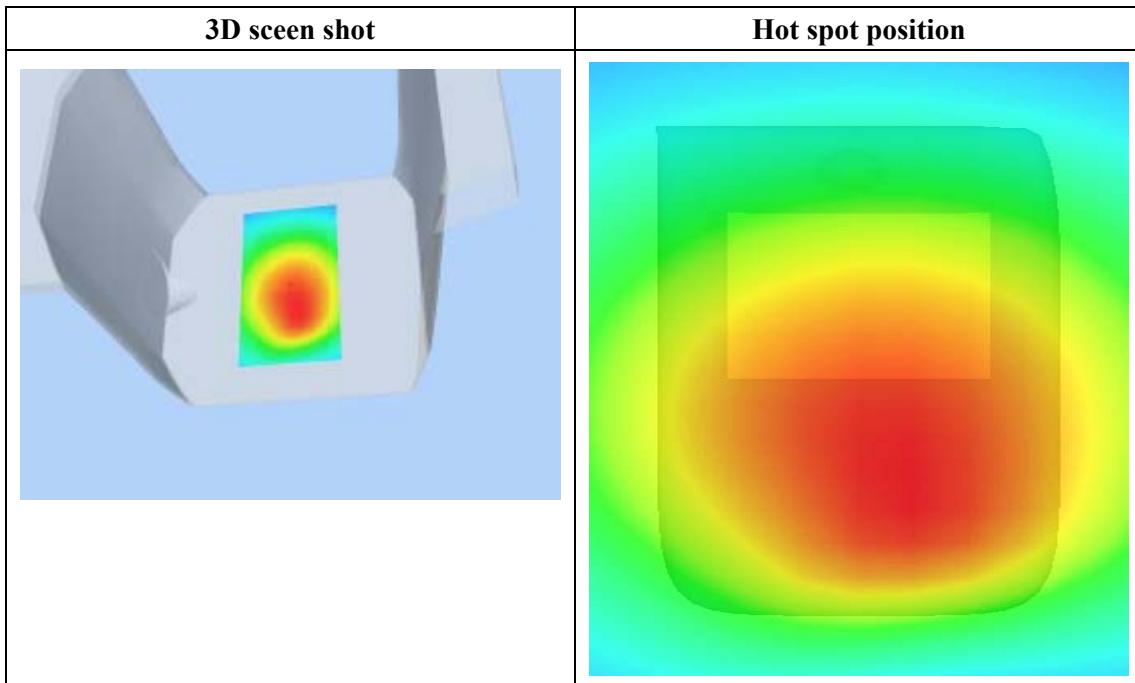
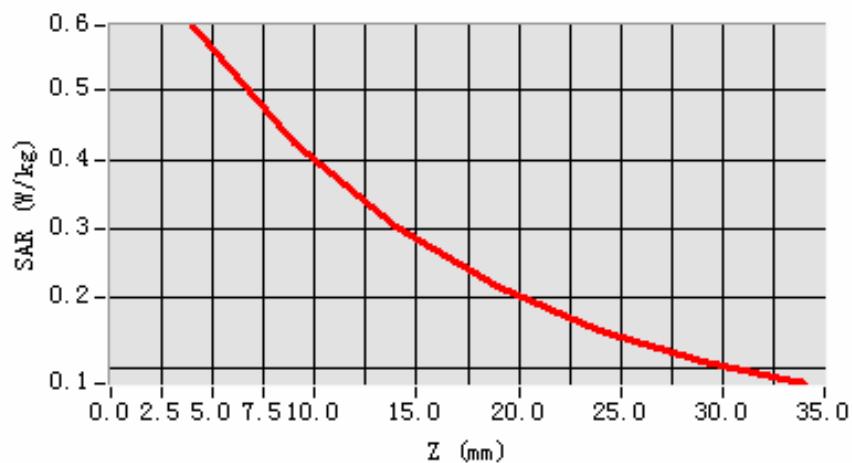


**Maximum location: X=7.00, Y=-25.00**

<b>SAR 10g (W/Kg)</b>	0.402488
<b>SAR 1g (W/Kg)</b>	0.577313

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5941	0.4250	0.3044	0.2181	0.1526	0.1080

**SAR, Z Axis Scan (X = 7, Y = -25)**

## 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: 22/1/2011

Measurement duration: 9 minutes 6 seconds

### A. Experimental conditions.

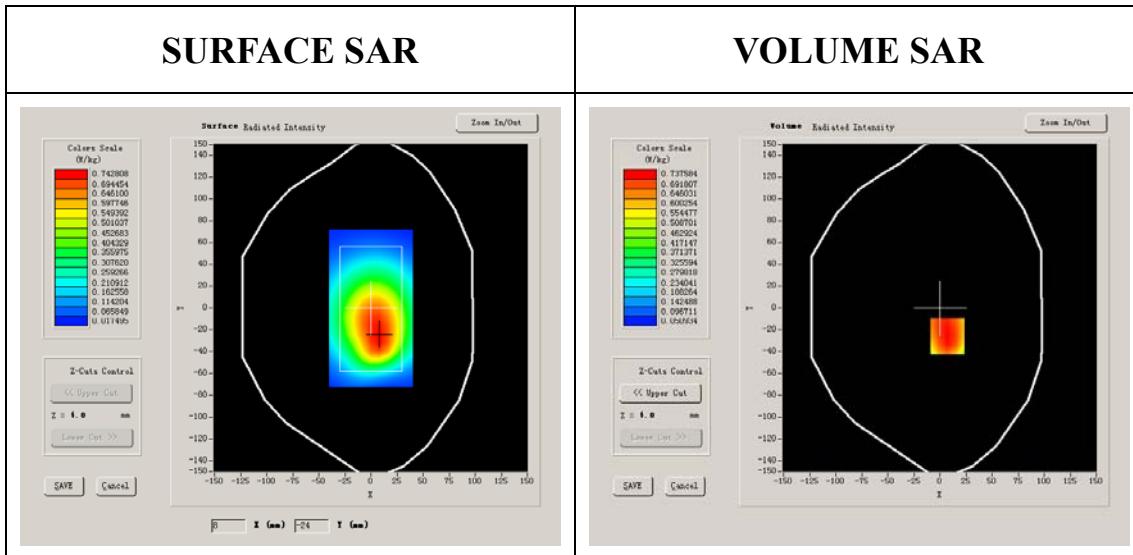
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	High
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Higher Band SAR (Channel 4233):

<b>Frequency (MHz)</b>	846.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.746221
<b>Variation (%)</b>	-0.370000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1



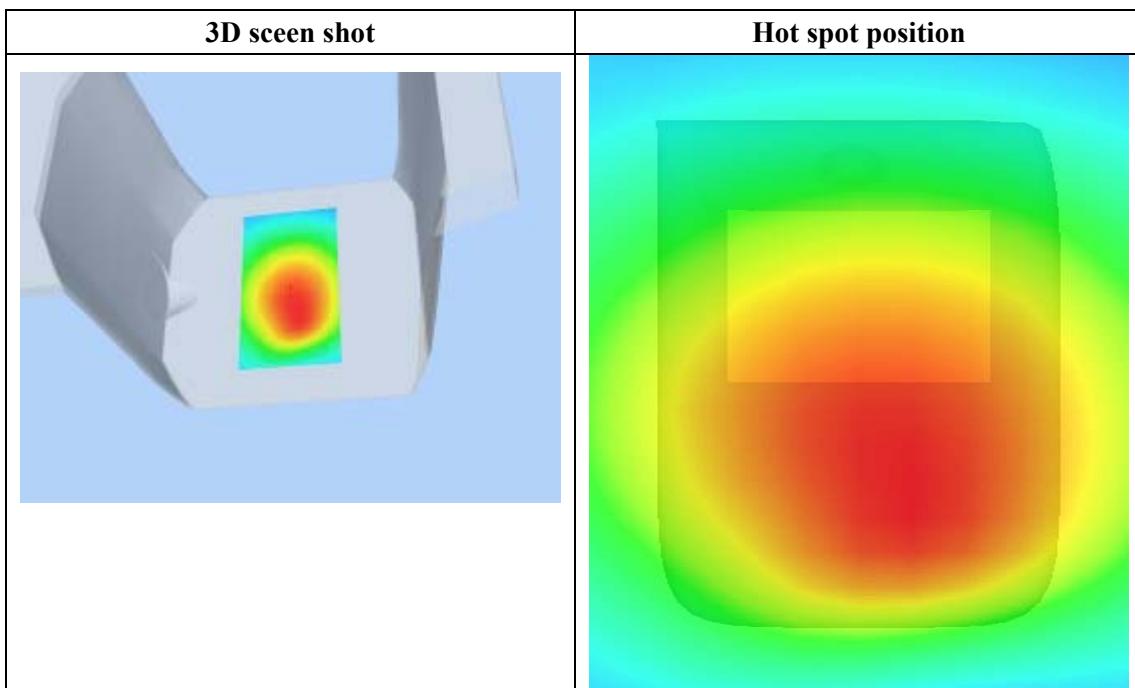
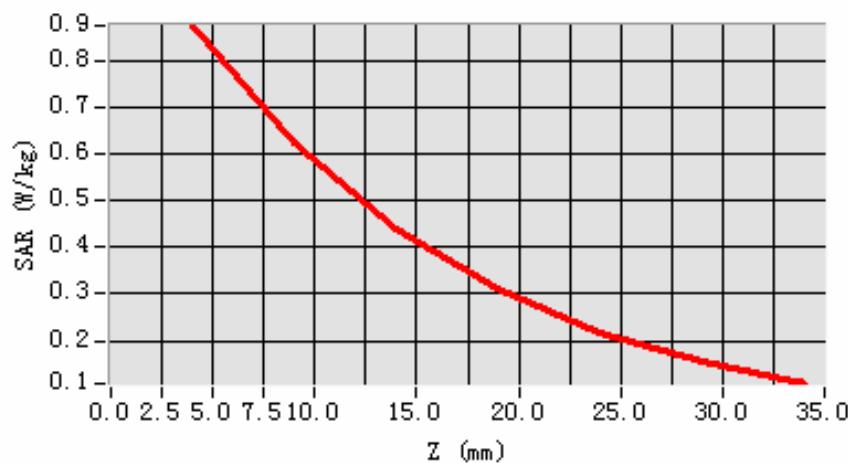
**Maximum location: X=7.00, Y=-26.00**

<b>SAR 10g (W/Kg)</b>	0.587729
<b>SAR 1g (W/Kg)</b>	0.849994

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.8752	0.6227	0.4393	0.3115	0.2153	0.1537

SAR, Z Axis Scan (X = 7, Y = -26)



## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

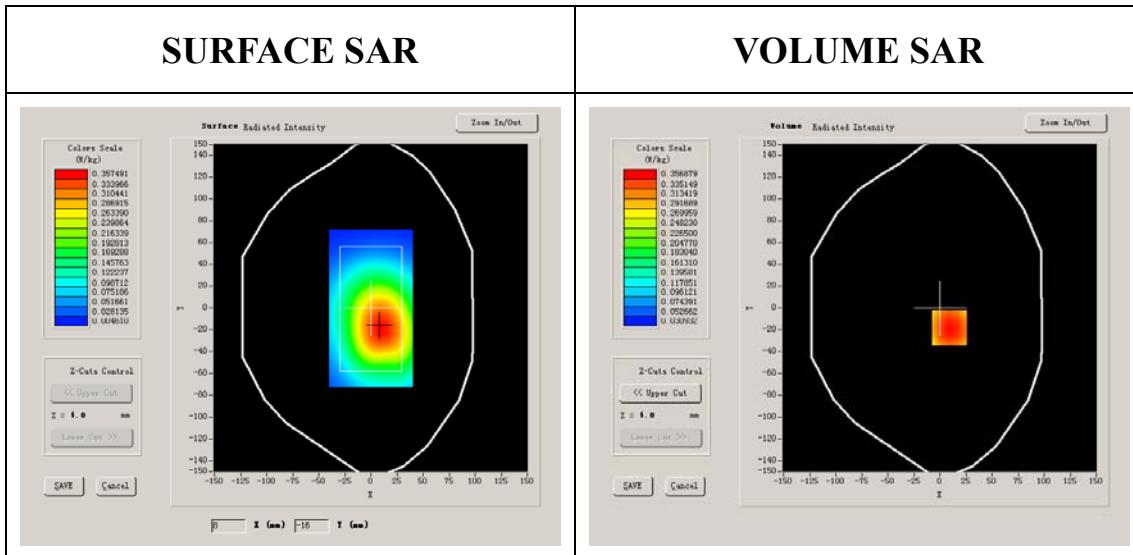
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	High
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Higher Band SAR (Channel 4233):

<b>Frequency (MHz)</b>	846.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.746221
<b>Variation (%)</b>	-0.260000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

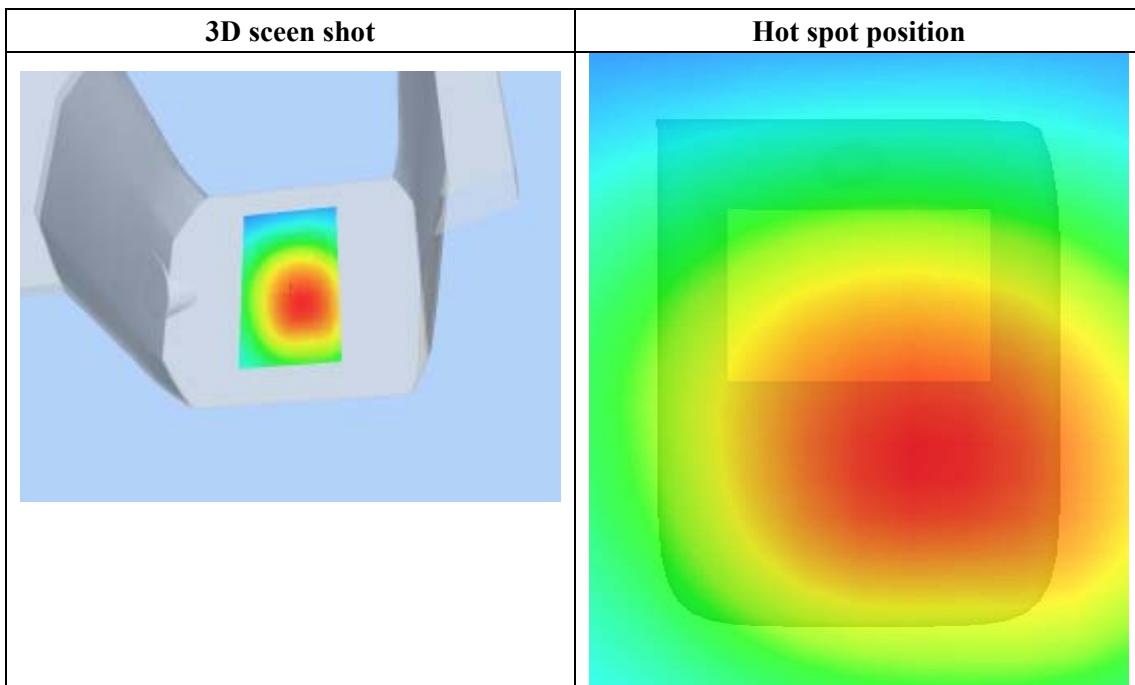
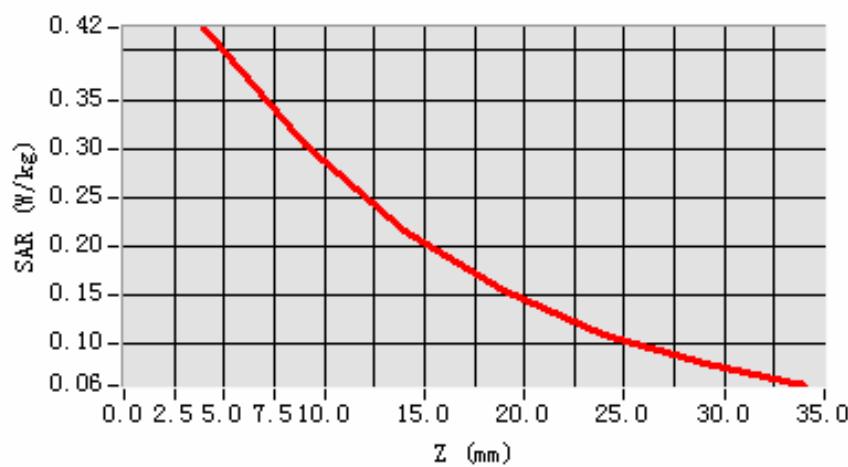


**Maximum location: X=9.00, Y=-18.00**

<b>SAR 10g (W/Kg)</b>	0.284962
<b>SAR 1g (W/Kg)</b>	0.409886

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4235	0.3033	0.2160	0.1545	0.1103	0.0799

**SAR, Z Axis Scan (X = 9, Y = -18)**

## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

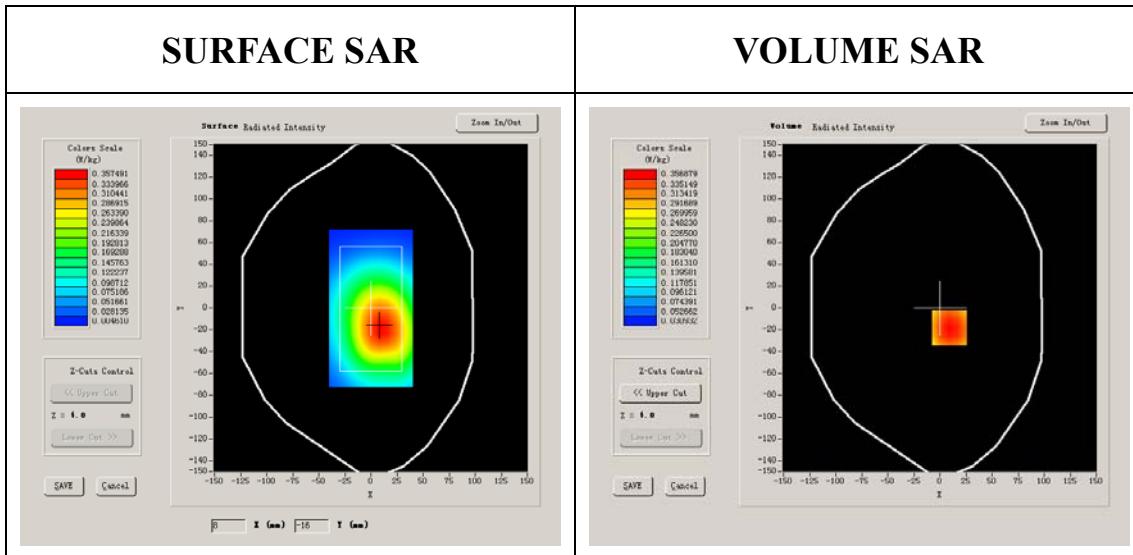
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	High
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Higher Band SAR (Channel 4233):

<b>Frequency (MHz)</b>	846.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.746221
<b>Variation (%)</b>	-0.260000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

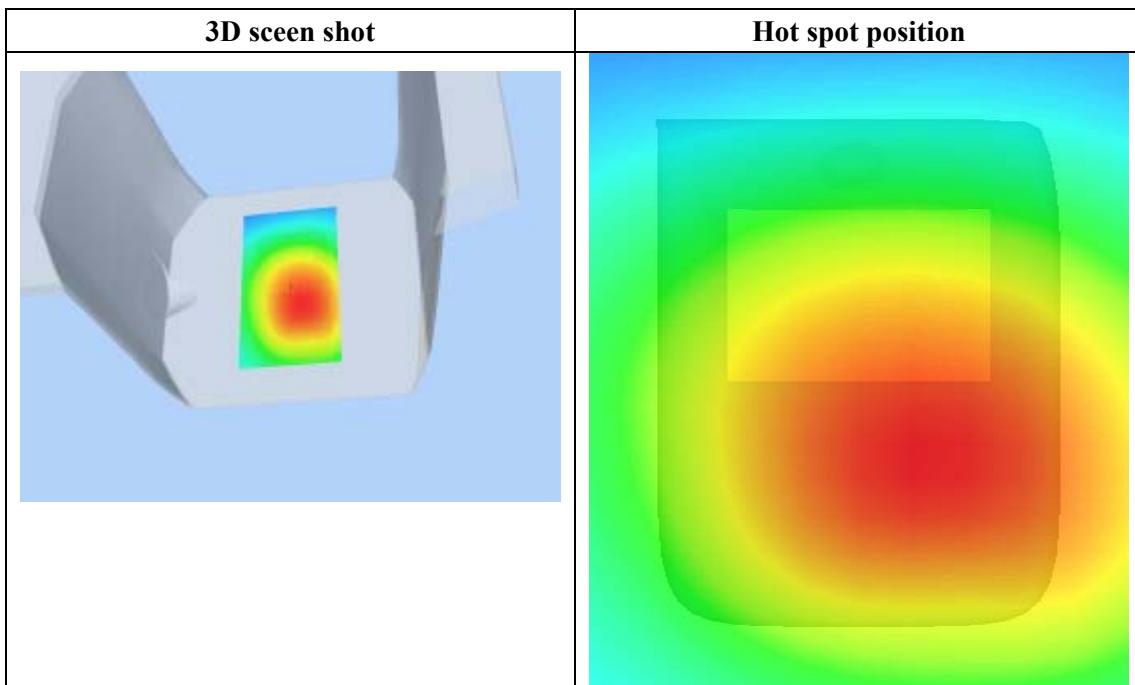
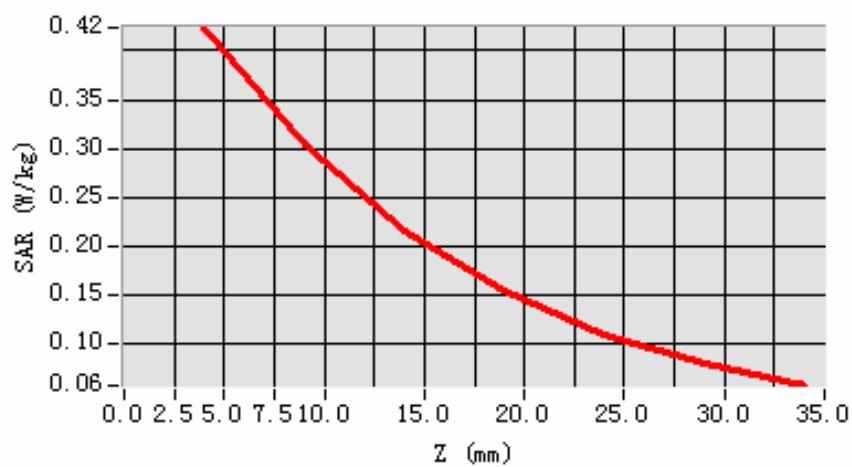


**Maximum location: X=9.00, Y=-18.00**

<b>SAR 10g (W/Kg)</b>	0.241644
<b>SAR 1g (W/Kg)</b>	0.373455

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4235	0.3033	0.2160	0.1545	0.1103	0.0799

**SAR, Z Axis Scan (X = 9, Y = -18)**

## 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: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

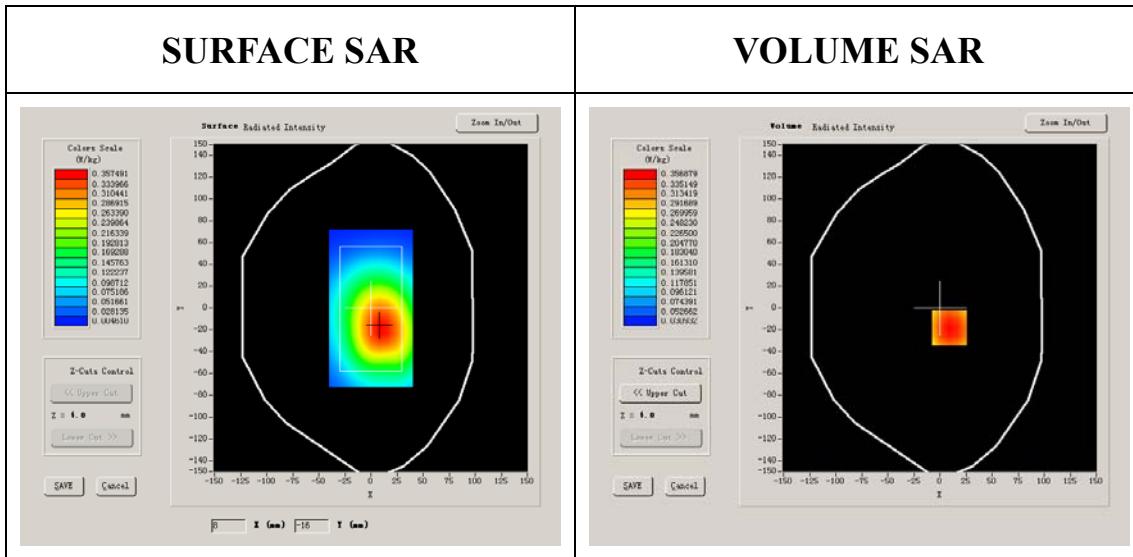
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	High
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Higher Band SAR (Channel 4233):

<b>Frequency (MHz)</b>	846.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	0.746221
<b>Variation (%)</b>	-0.260000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

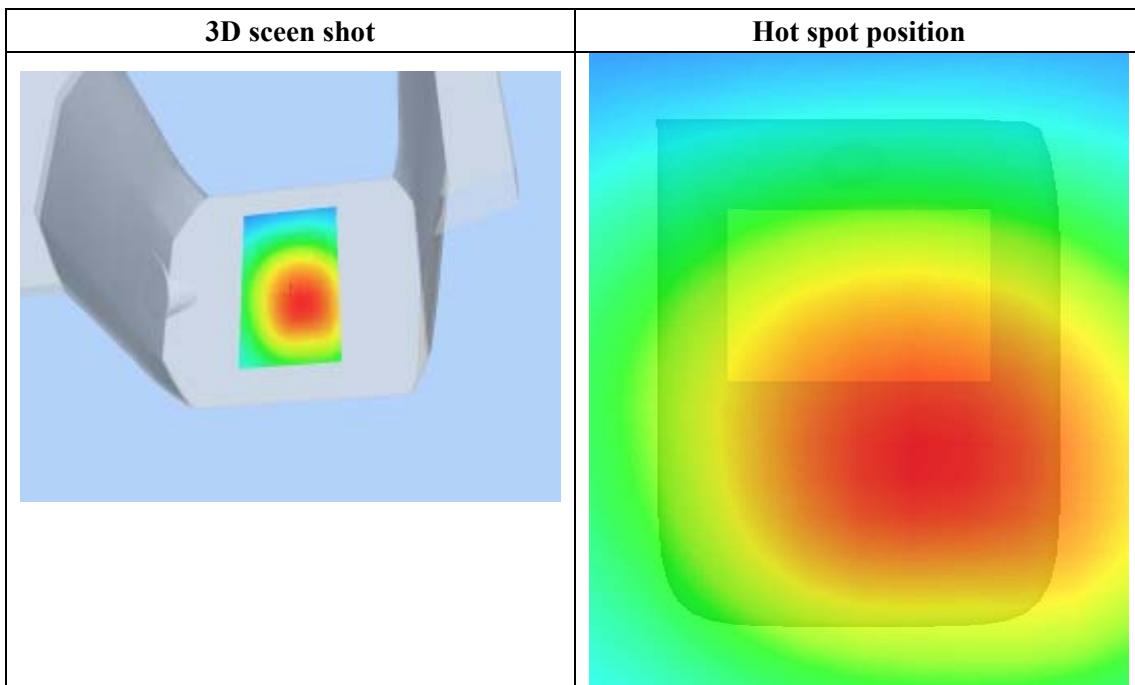
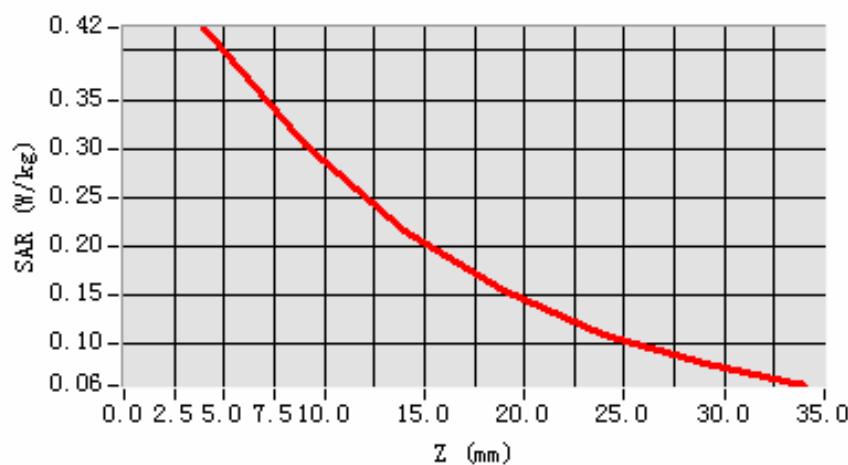


**Maximum location: X=9.00, Y=-18.00**

<b>SAR 10g (W/Kg)</b>	0.241422
<b>SAR 1g (W/Kg)</b>	0.395678

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4235	0.3033	0.2160	0.1545	0.1103	0.0799

**SAR, Z Axis Scan (X = 9, Y = -18)**

## MEASUREMENT 33

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 8 minutes 12 seconds

### A. Experimental conditions.

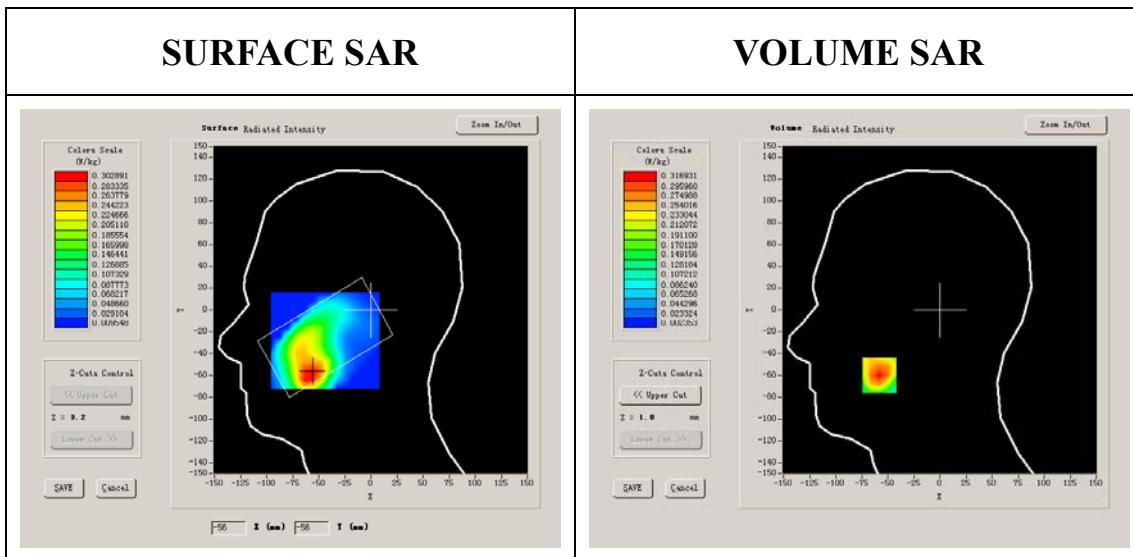
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	1.381800
<b>Variation (%)</b>	-0.500000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

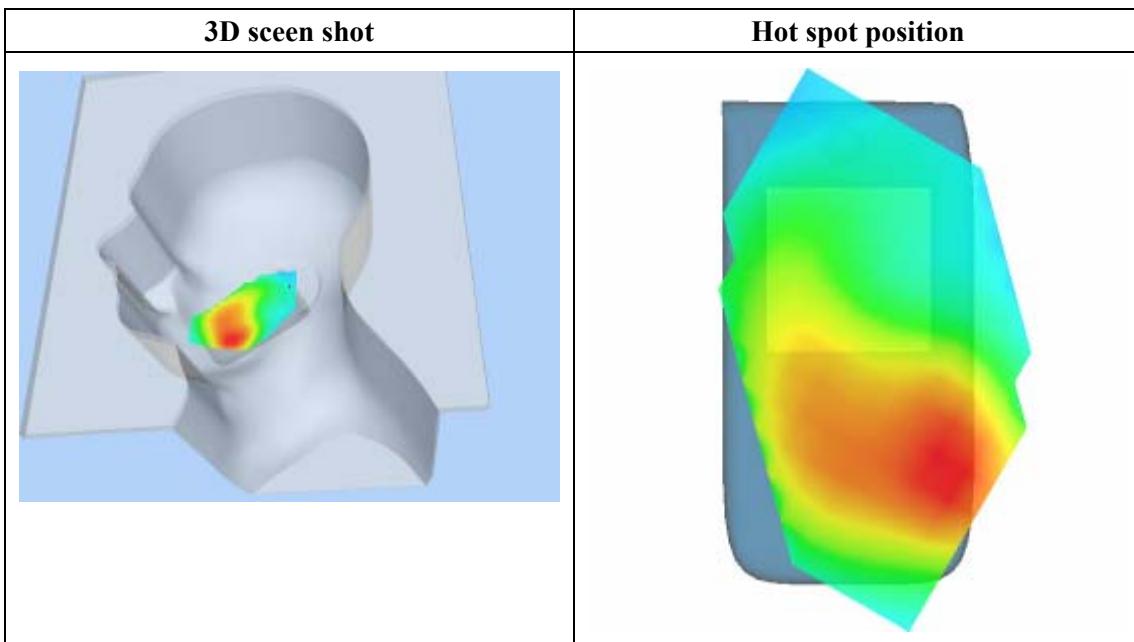
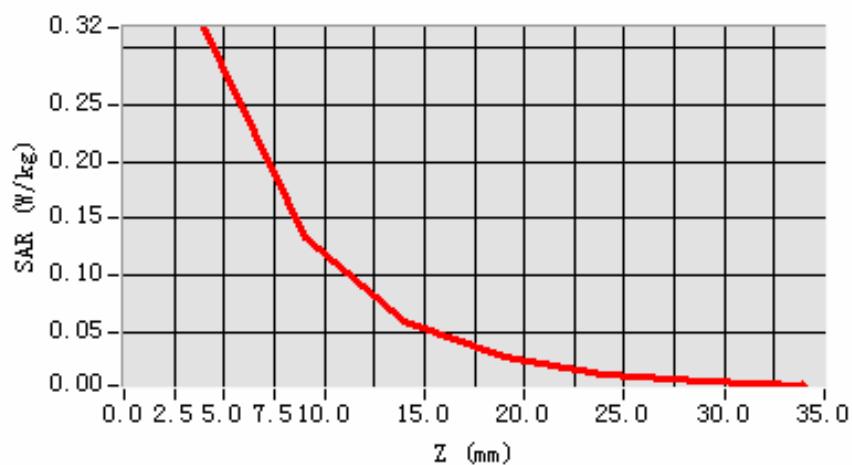


**Maximum location: X=-58.00, Y=-60.00**

<b>SAR 10g (W/Kg)</b>	0.152450
<b>SAR 1g (W/Kg)</b>	0.304320

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3169	0.1327	0.0598	0.0288	0.0145	0.0080

**SAR, Z Axis Scan (X = -58, Y = -60)**

## MEASUREMENT 34

Type: Phone measurement (Complete)

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

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

Date of measurement: 30/1/2011

Measurement duration: 7 minutes 34 seconds

### A. Experimental conditions.

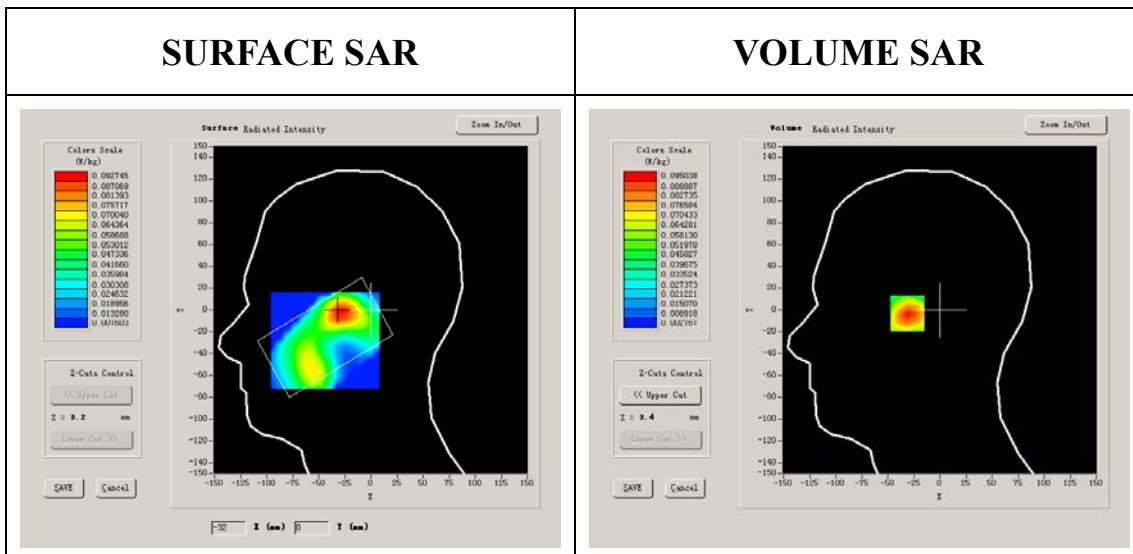
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	1.381800
<b>Variation (%)</b>	0.240000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

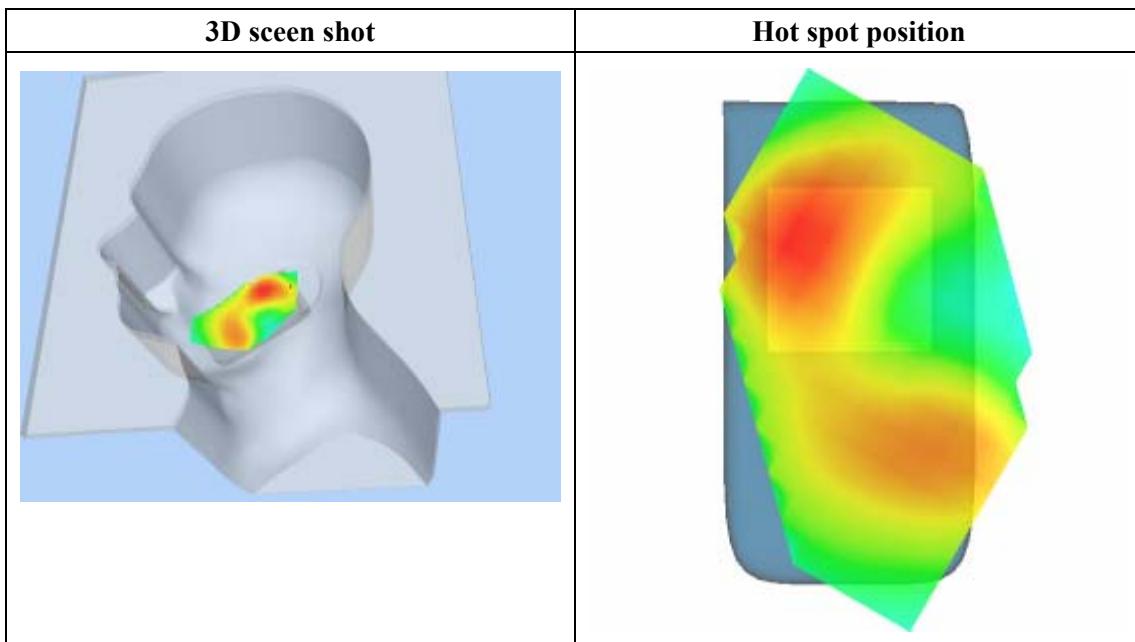
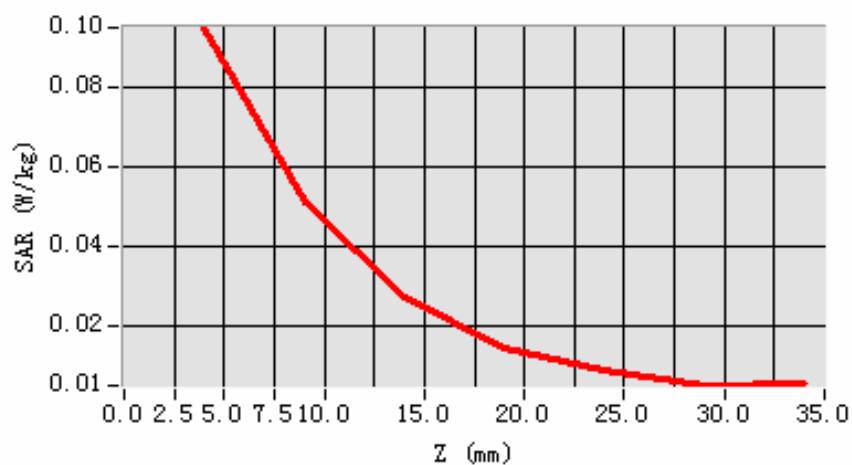


**Maximum location: X=-29.00, Y=-2.00**

<b>SAR 10g (W/Kg)</b>	0.049561
<b>SAR 1g (W/Kg)</b>	0.090867

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0950	0.0511	0.0273	0.0146	0.0089	0.0051

**SAR, Z Axis Scan (X = -29, Y = -2)**

## MEASUREMENT 35

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 8 minutes 7 seconds

### A. Experimental conditions.

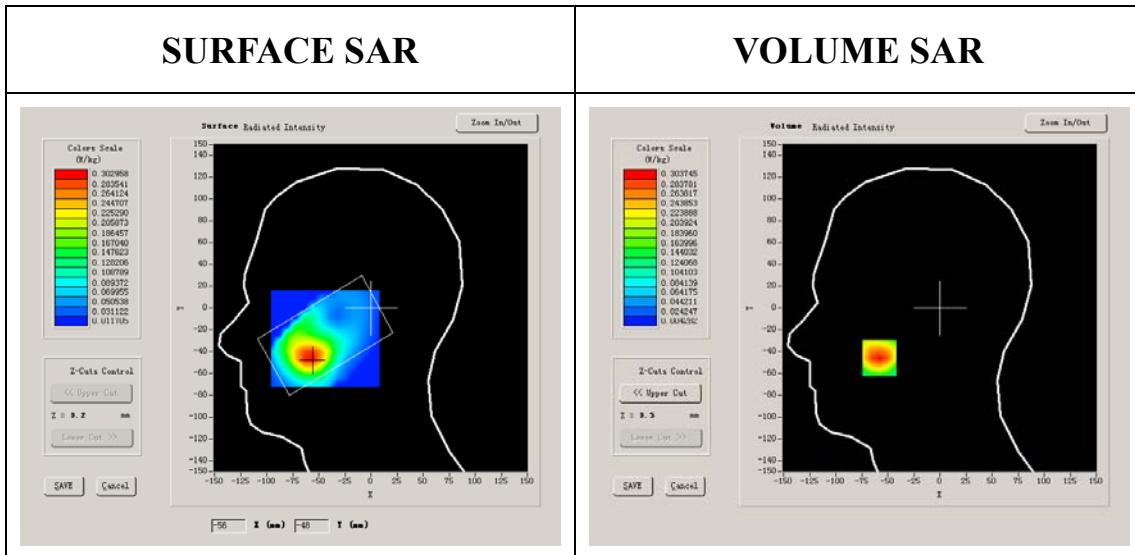
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	1.381800
<b>Variation (%)</b>	-1.450000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

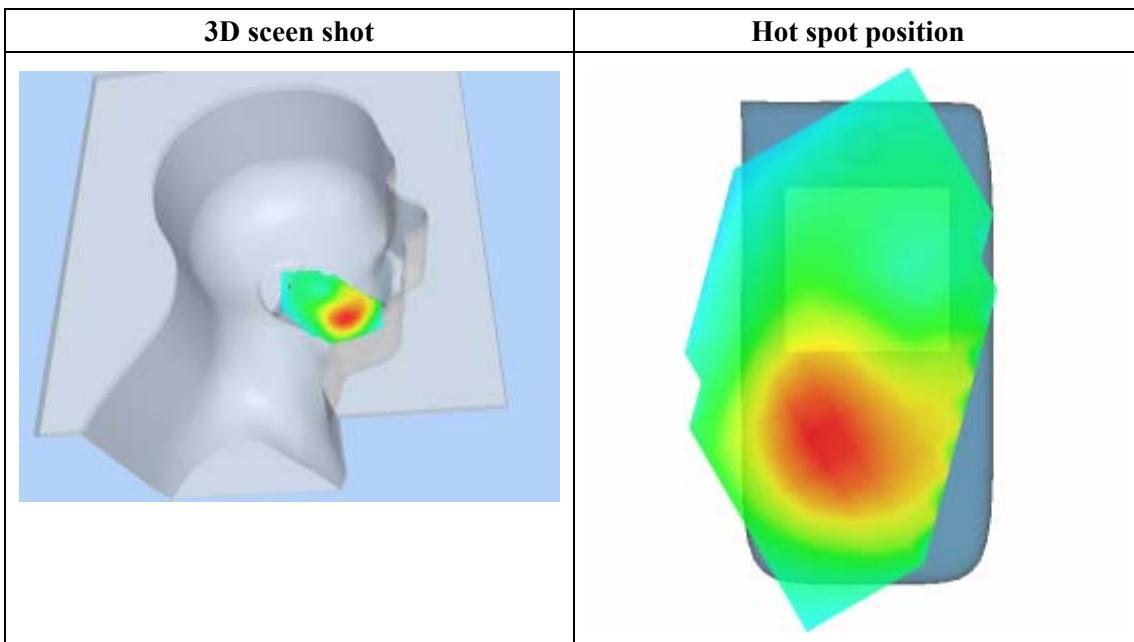
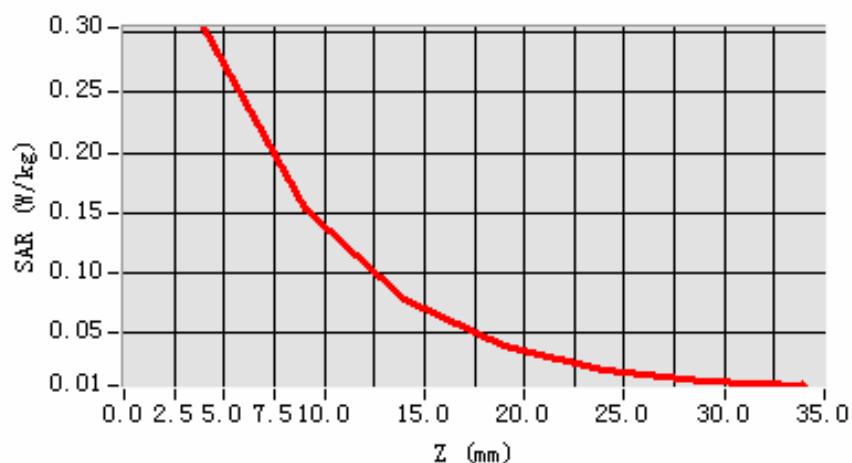


**Maximum location: X=-58.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.152087
<b>SAR 1g (W/Kg)</b>	0.289085

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3037	0.1538	0.0775	0.0397	0.0200	0.0102

**SAR, Z Axis Scan (X = -58, Y = -46)**

## MEASUREMENT 36

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 7 minutes 26 seconds

### A. Experimental conditions.

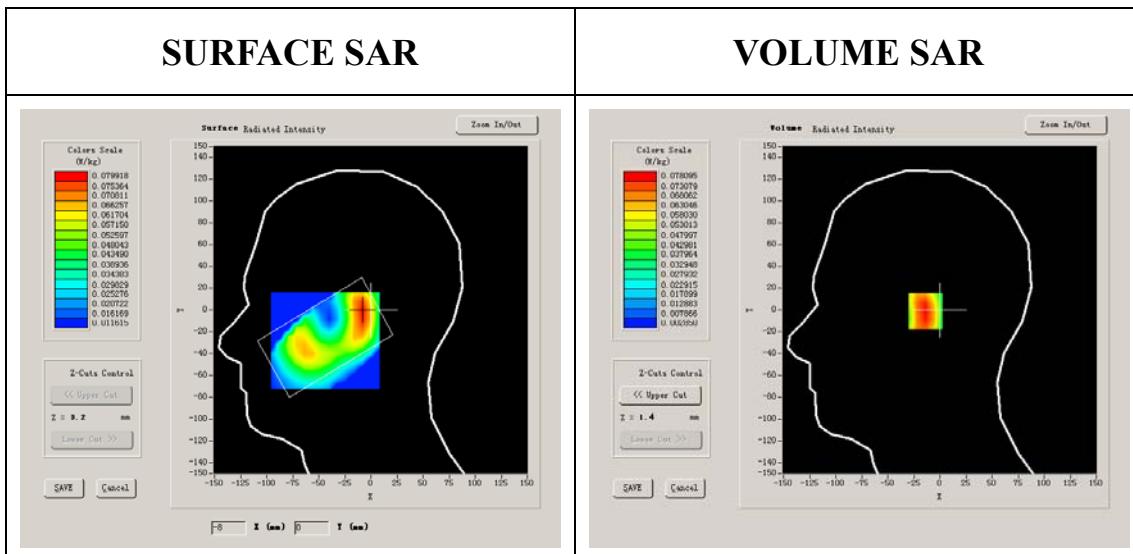
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	39.910000
<b>Relative permittivity</b>	13.230000

<b>Conductivity (S/m)</b>	1.381800
<b>Variation (%)</b>	-0.560000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

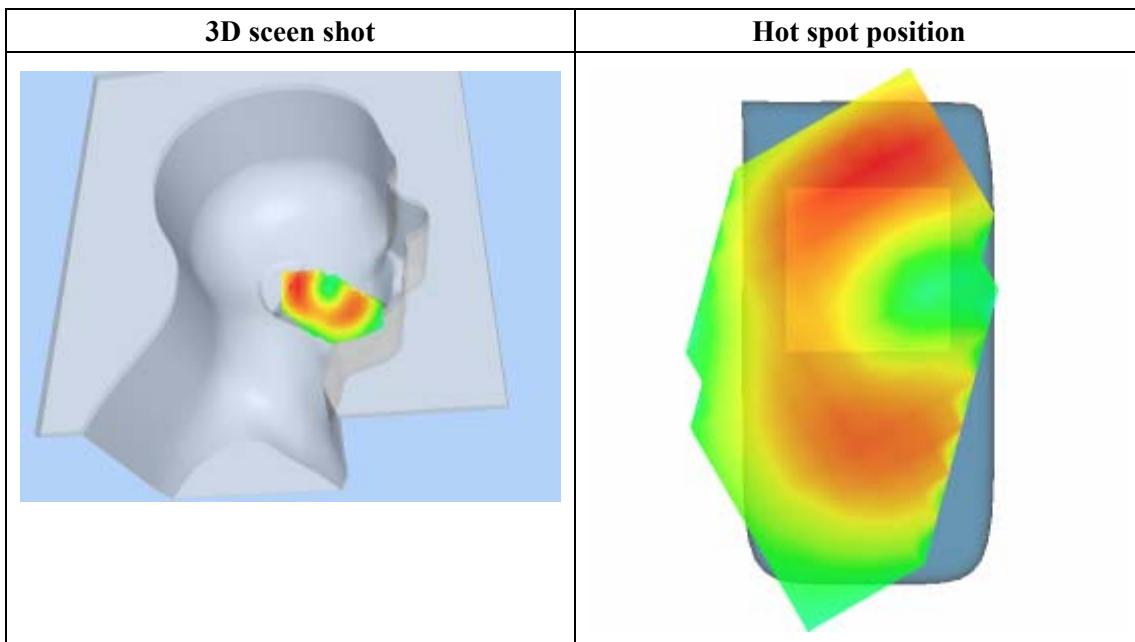
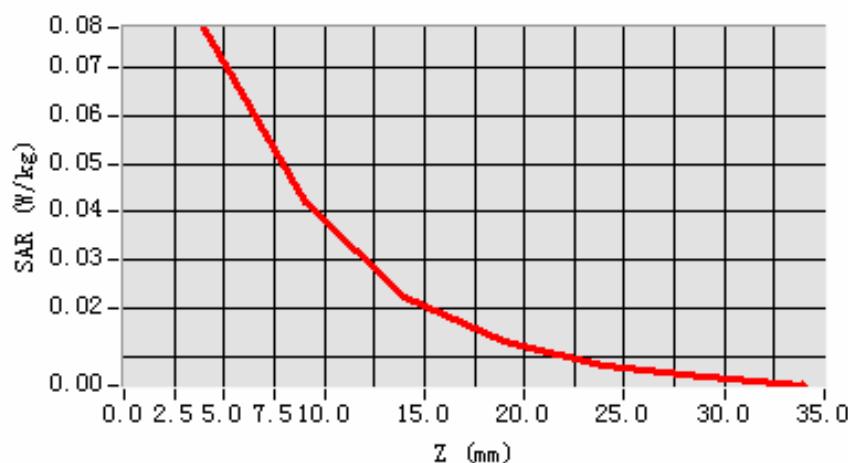


**Maximum location: X=-8.00, Y=-1.00**

<b>SAR 10g (W/Kg)</b>	0.041512
<b>SAR 1g (W/Kg)</b>	0.074622

**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0781	0.0419	0.0226	0.0134	0.0083	0.0060

**SAR, Z Axis Scan (X = -8, Y = -1)**

## MEASUREMENT 37

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

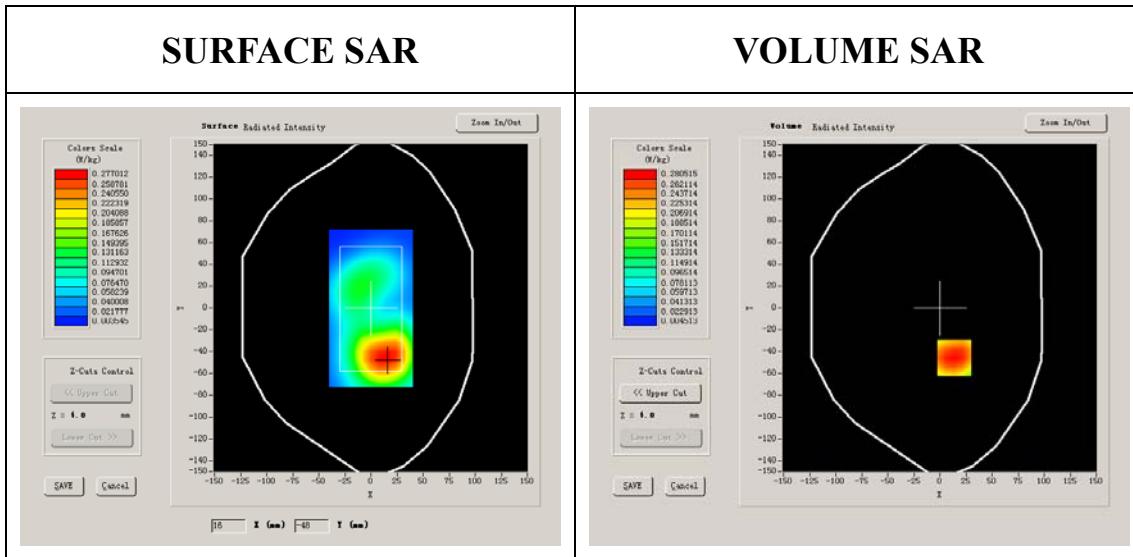
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Lower Band SAR (Channel 9262):

<b>Frequency (MHz)</b>	1852.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.633572
<b>Variation (%)</b>	0.280000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



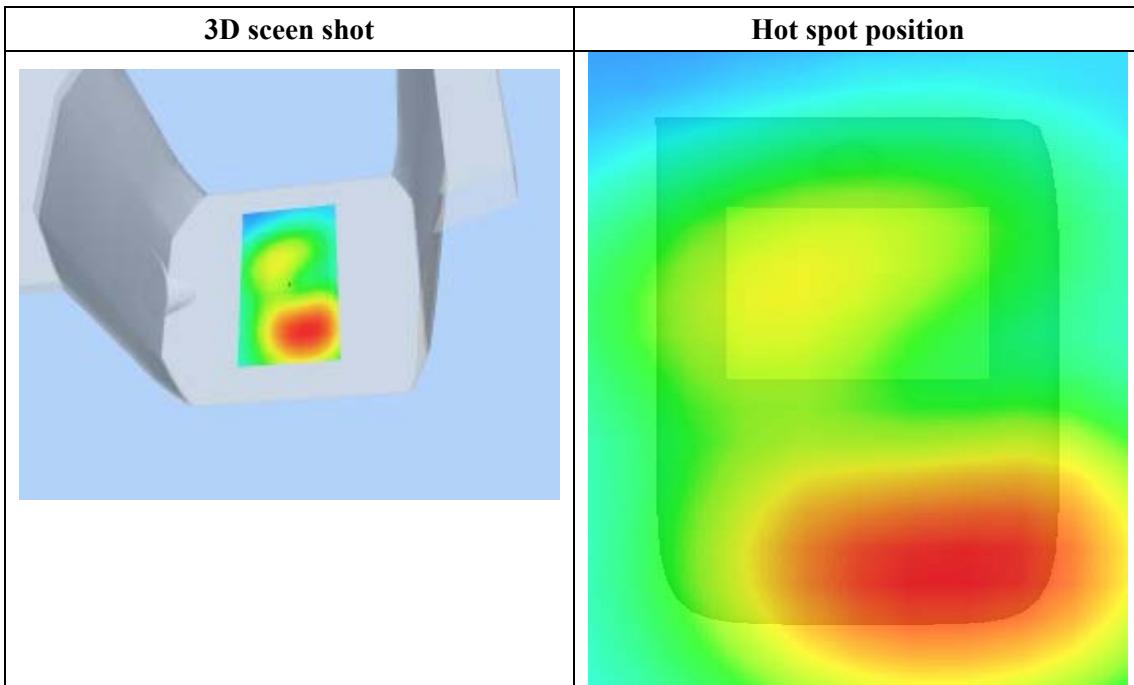
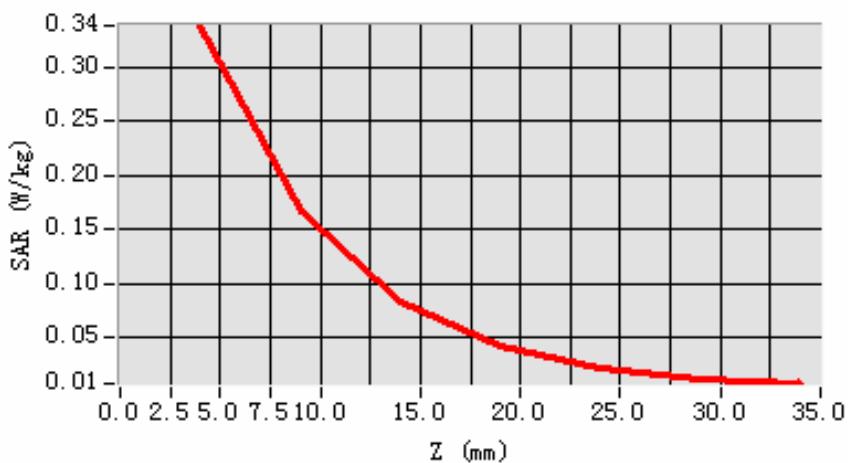
**Maximum location: X=14.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.362333
<b>SAR 1g (W/Kg)</b>	0.585123

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3382	0.1657	0.0837	0.0421	0.0218	0.0123

**SAR, Z Axis Scan (X = 14, Y = -46)**



## MEASUREMENT 38

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

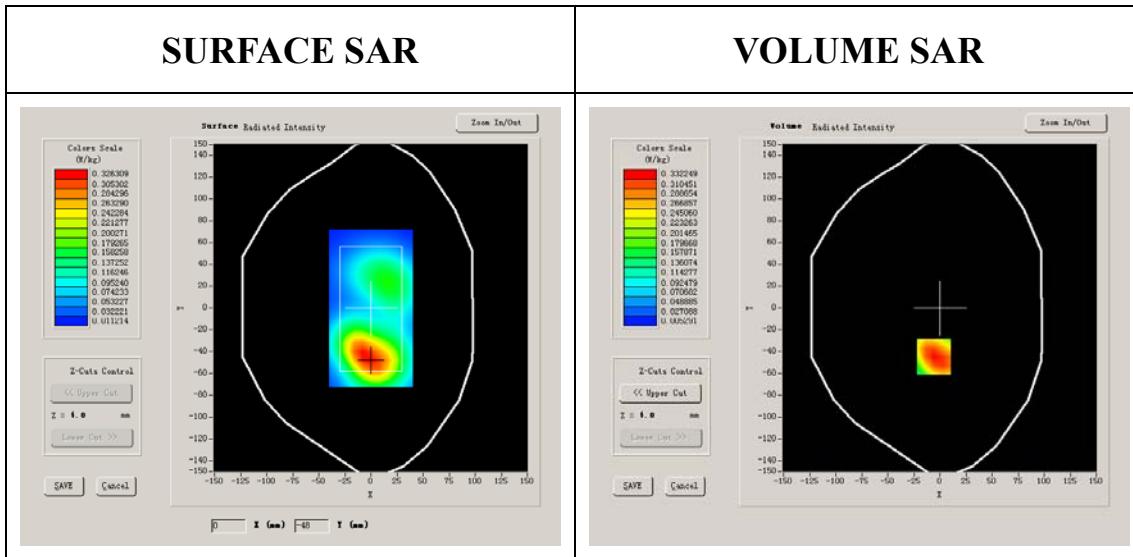
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.658270
<b>Variation (%)</b>	0.750000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



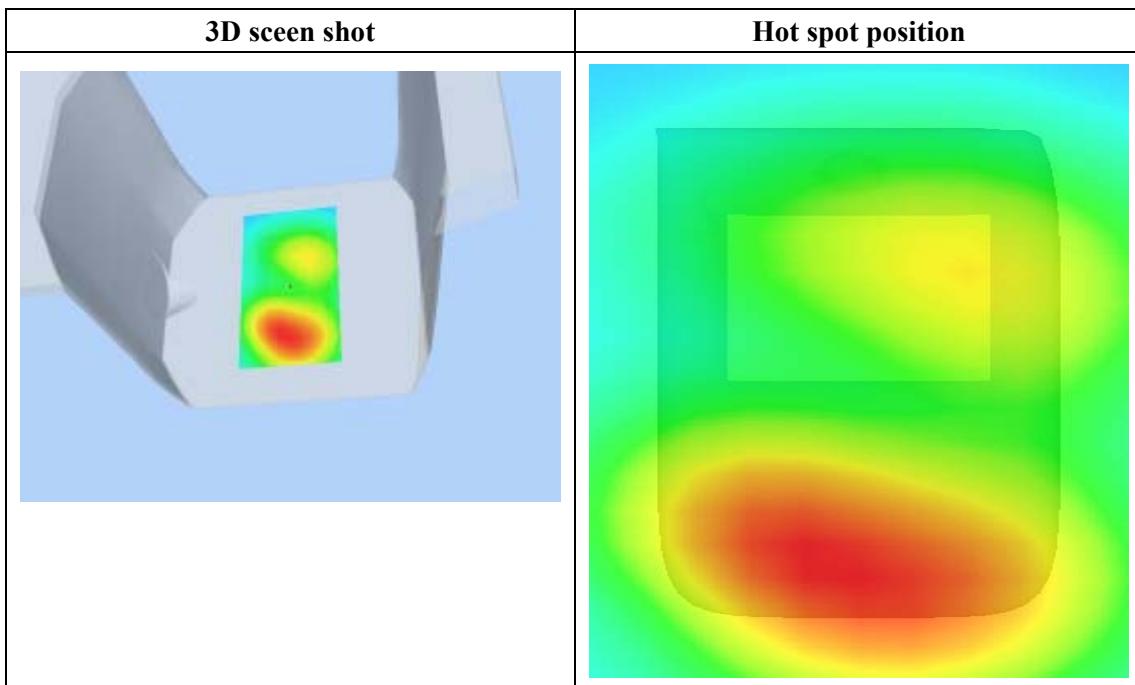
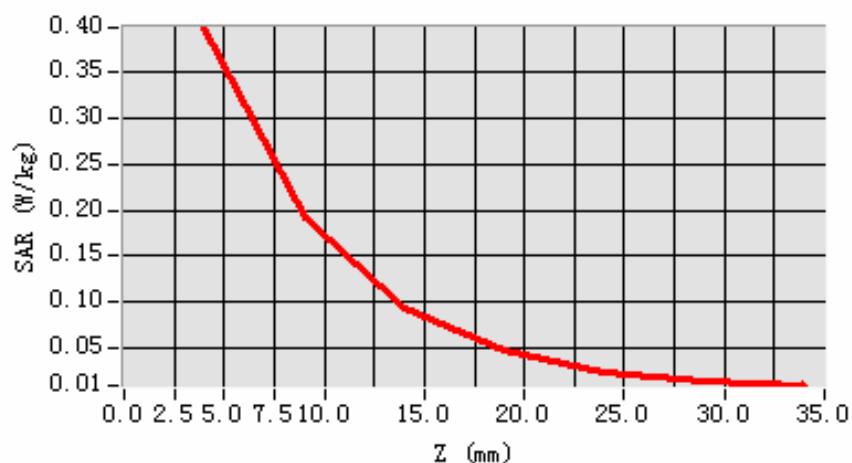
**Maximum location: X=-6.00, Y=-45.00**

<b>SAR 10g (W/Kg)</b>	0.207646
<b>SAR 1g (W/Kg)</b>	0.385959

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3987	0.1917	0.0924	0.0473	0.0235	0.0135

**SAR, Z Axis Scan (X = -6, Y = -45)**



## MEASUREMENT 39

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

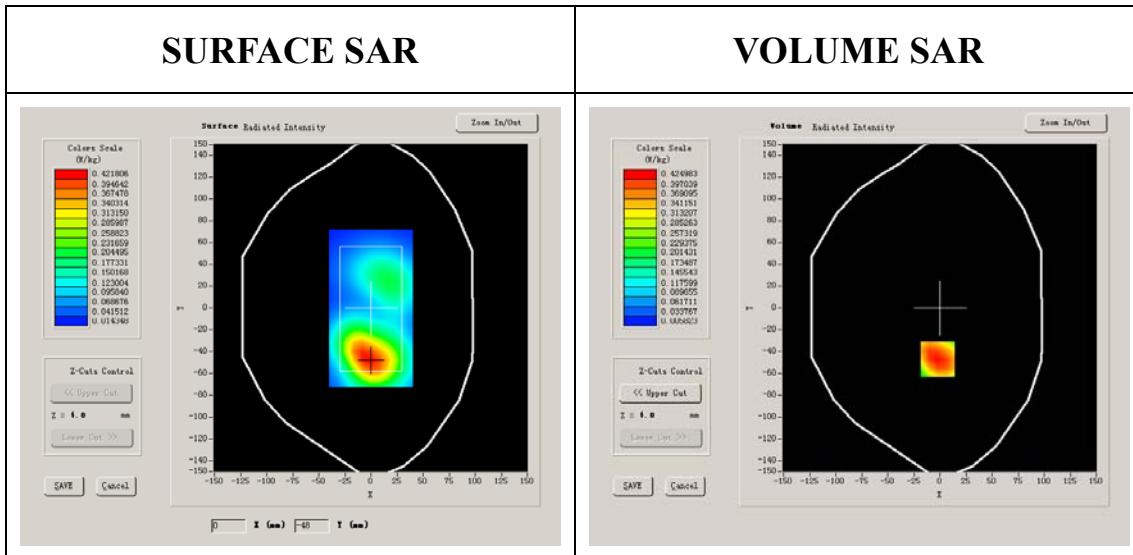
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	High
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Higher Band SAR (Channel 9538):

<b>Frequency (MHz)</b>	1907.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.682085
<b>Variation (%)</b>	0.280000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



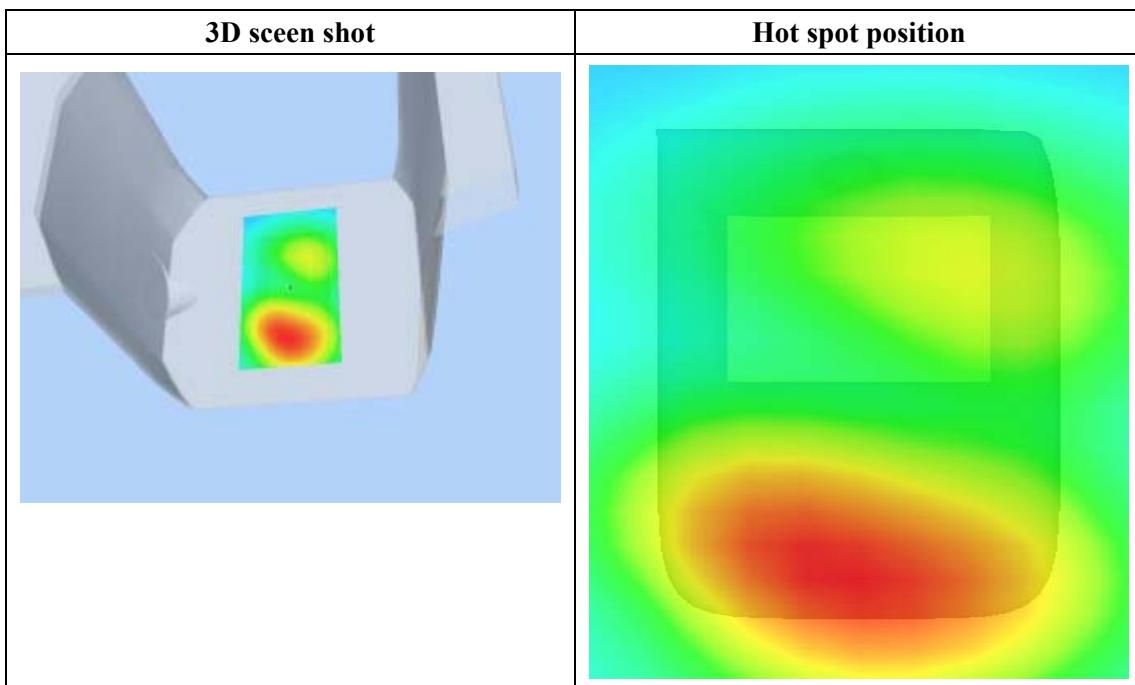
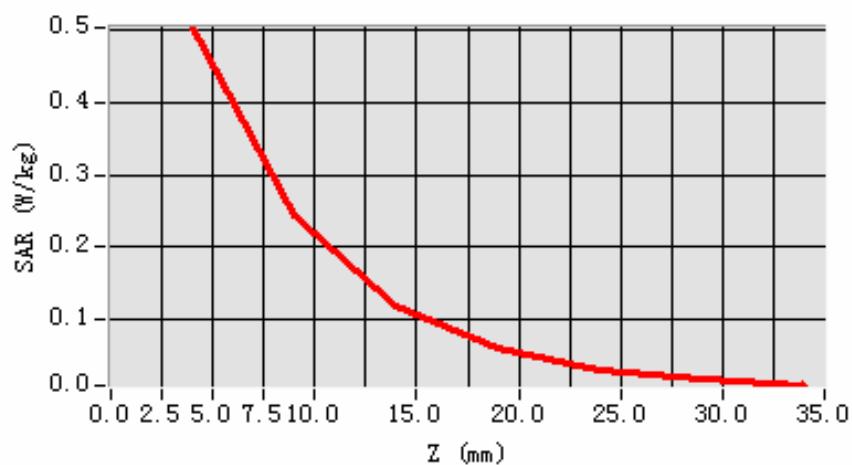
**Maximum location: X=-2.00, Y=-47.00**

<b>SAR 10g (W/Kg)</b>	0.262242
<b>SAR 1g (W/Kg)</b>	0.486652

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5043	0.2436	0.1198	0.0601	0.0296	0.0163

**SAR, Z Axis Scan (X = -2, Y = -47)**



## MEASUREMENT 40

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

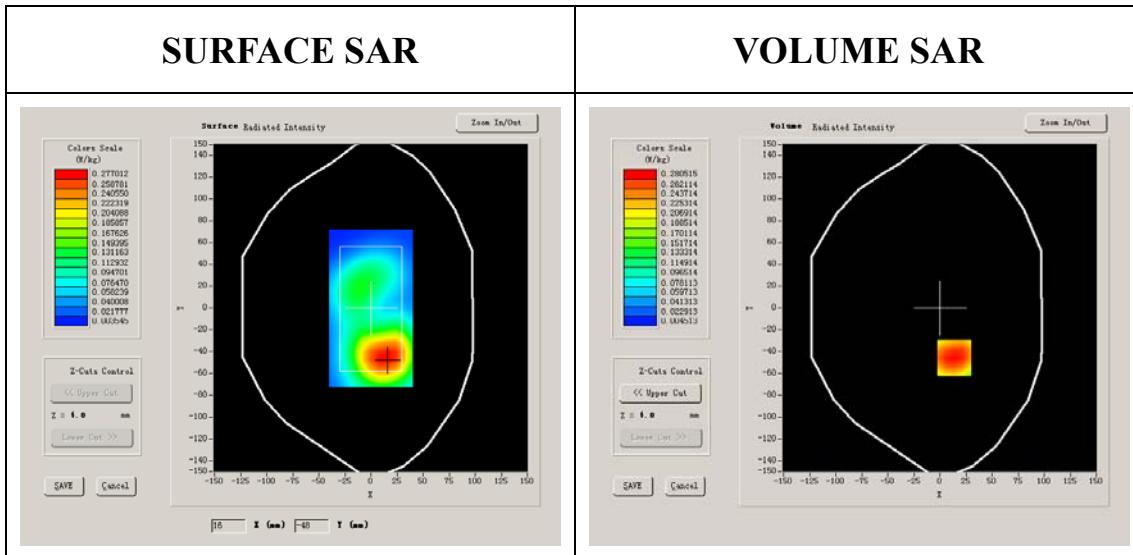
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Lower Band SAR (Channel 9262):

<b>Frequency (MHz)</b>	1852.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.633572
<b>Variation (%)</b>	0.280000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



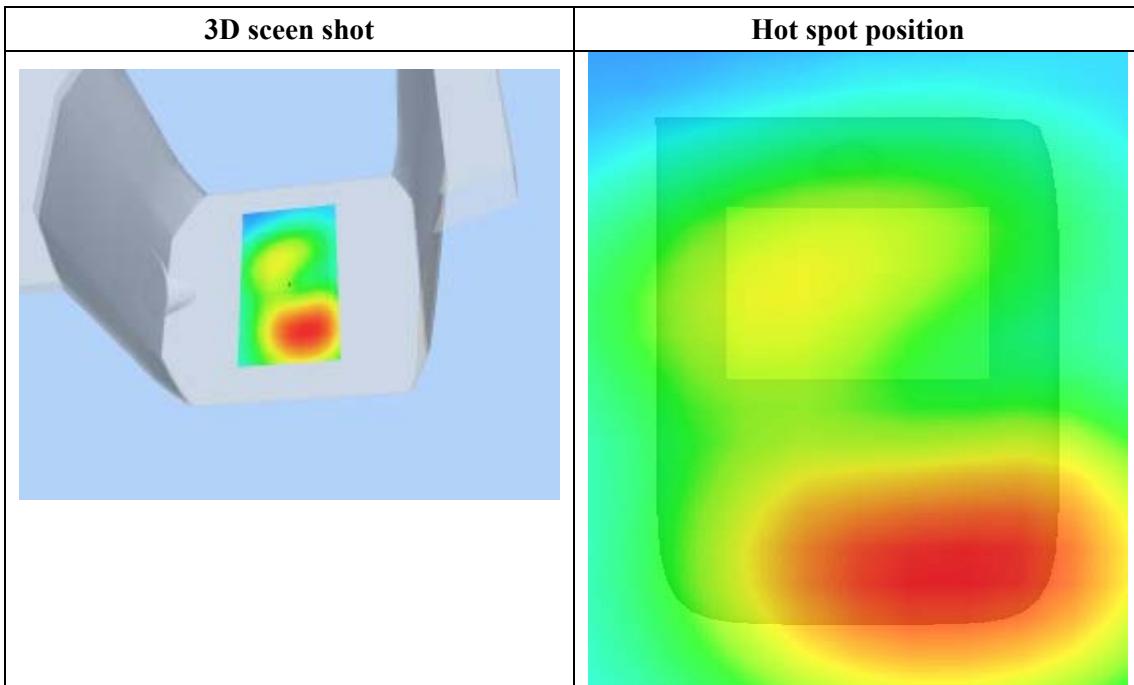
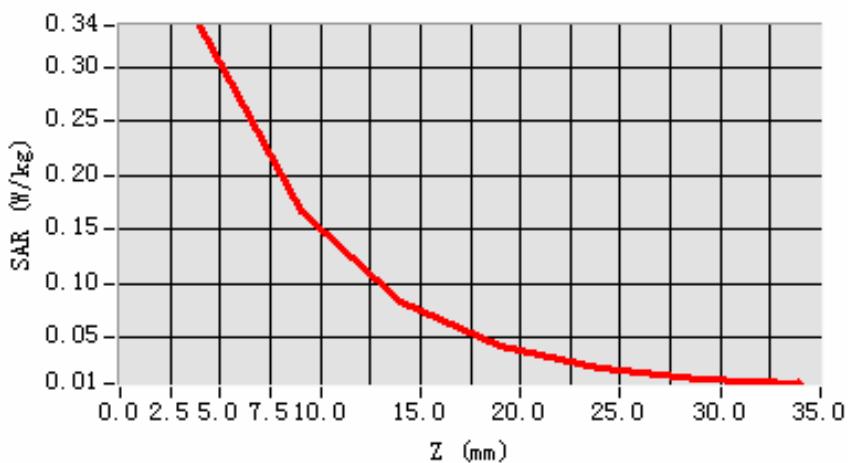
**Maximum location: X=14.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.180114
<b>SAR 1g (W/Kg)</b>	0.328516

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3382	0.1657	0.0837	0.0421	0.0218	0.0123

**SAR, Z Axis Scan (X = 14, Y = -46)**



## MEASUREMENT 41

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

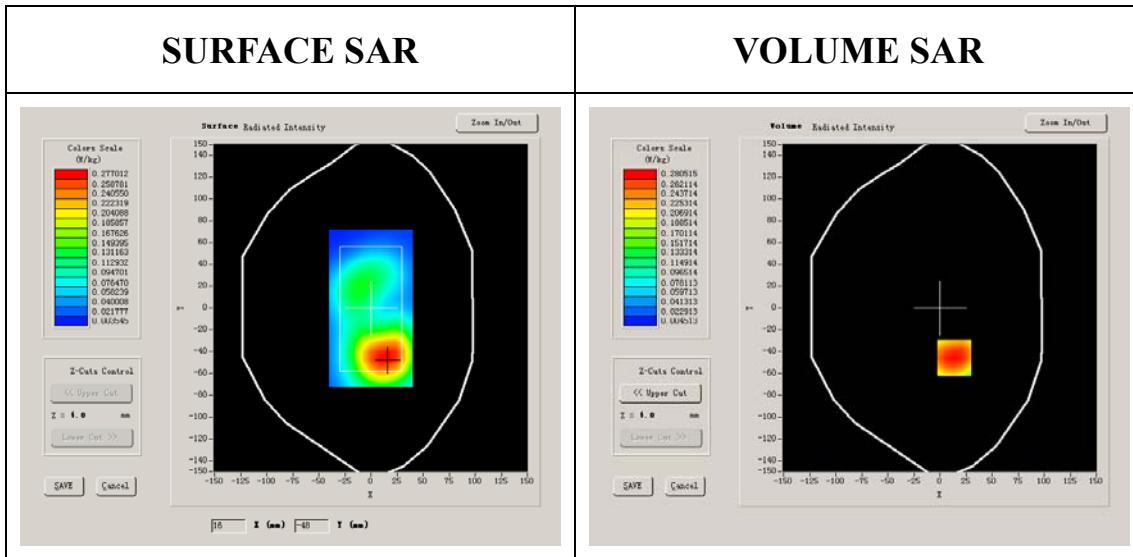
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Lower Band SAR (Channel 9262):

<b>Frequency (MHz)</b>	1852.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.633572
<b>Variation (%)</b>	0.280000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



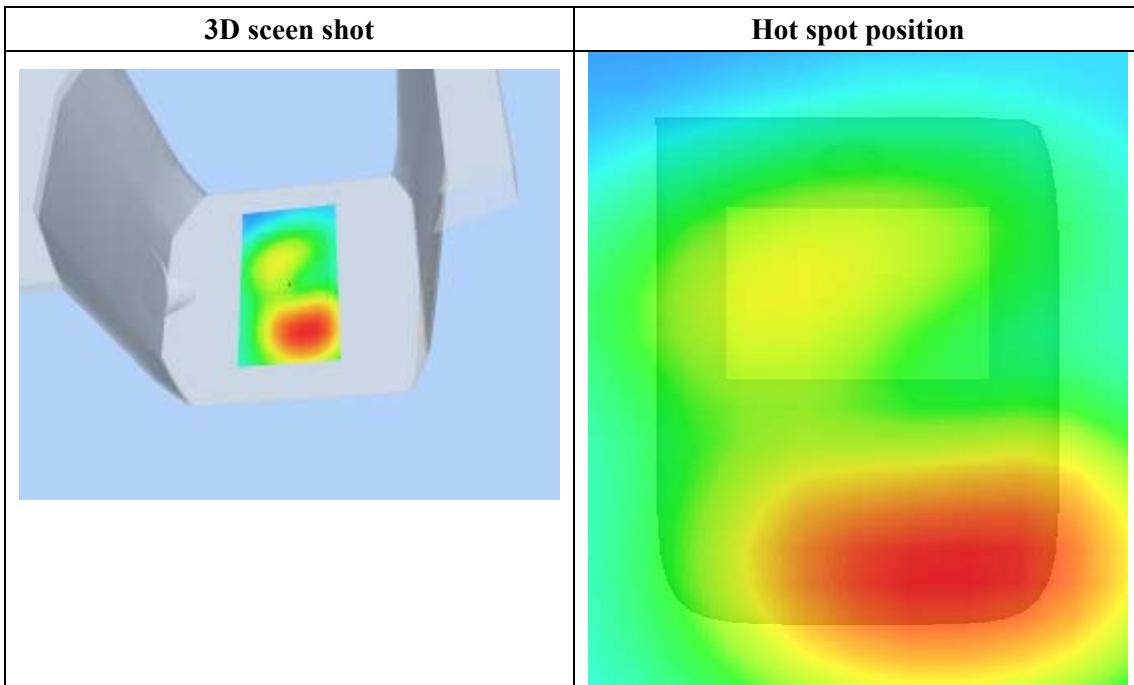
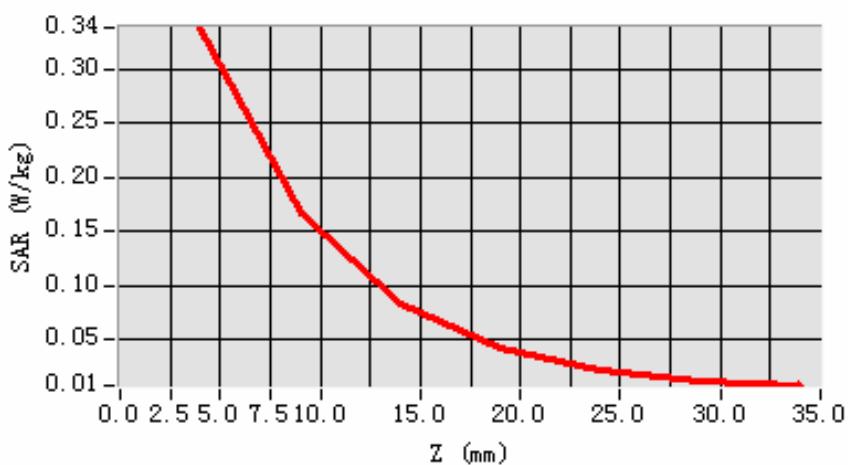
**Maximum location: X=14.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.157488
<b>SAR 1g (W/Kg)</b>	0.313455

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3382	0.1657	0.0837	0.0421	0.0218	0.0123

**SAR, Z Axis Scan (X = 14, Y = -46)**



## MEASUREMENT 42

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 9 minutes 8 seconds

### A. Experimental conditions.

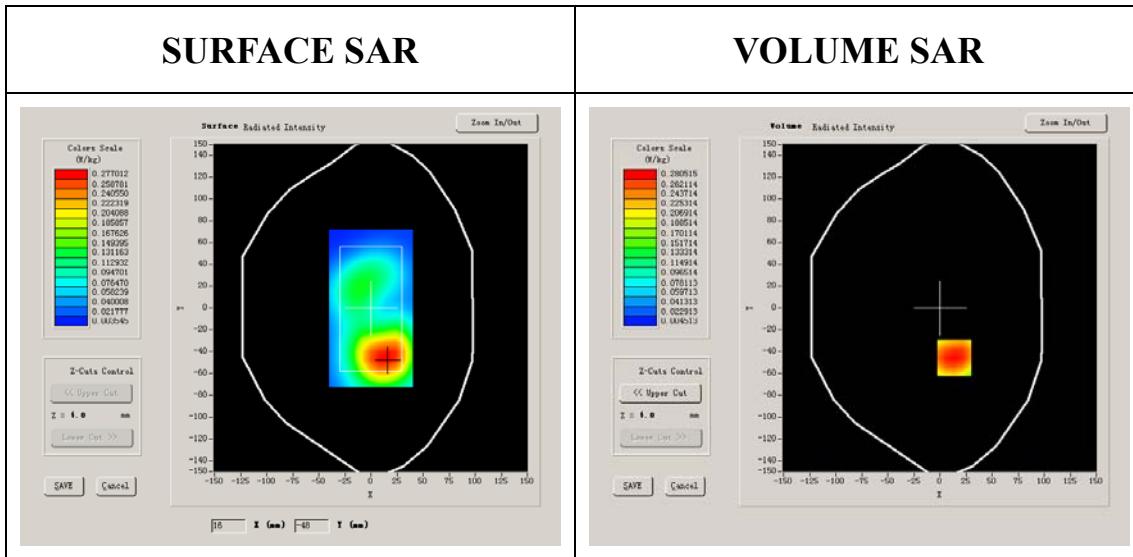
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Lower Band SAR (Channel 9262):

<b>Frequency (MHz)</b>	1852.000000
<b>Relative permittivity (real part)</b>	51.341000
<b>Relative permittivity</b>	15.877050

<b>Conductivity (S/m)</b>	1.633572
<b>Variation (%)</b>	0.280000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1



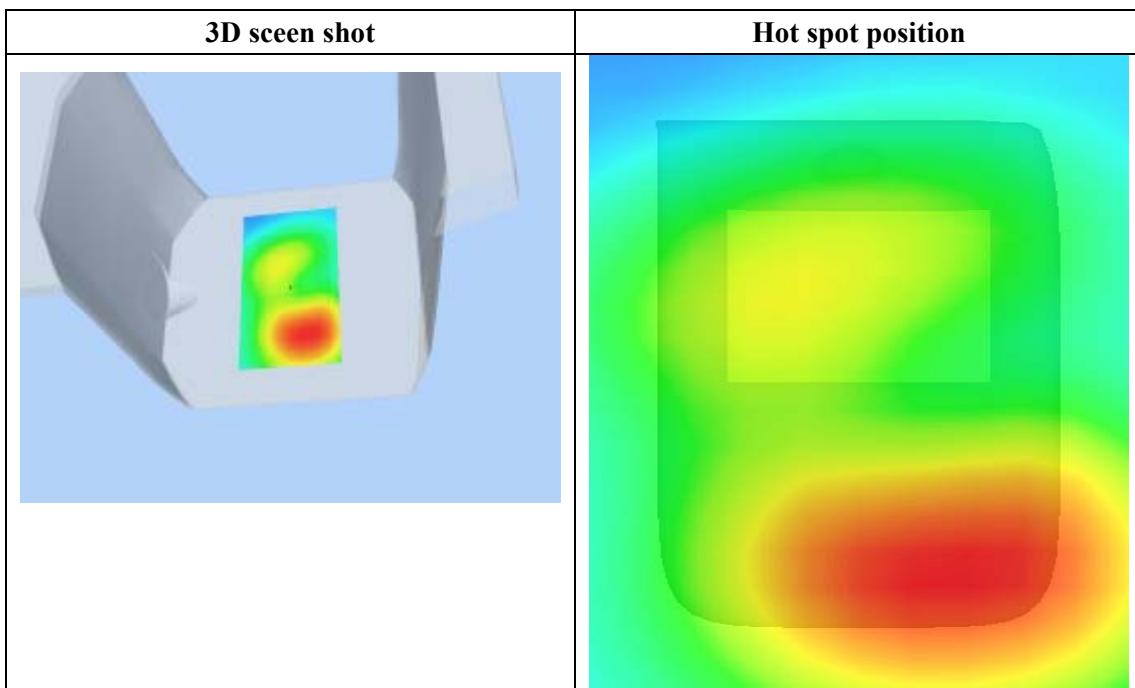
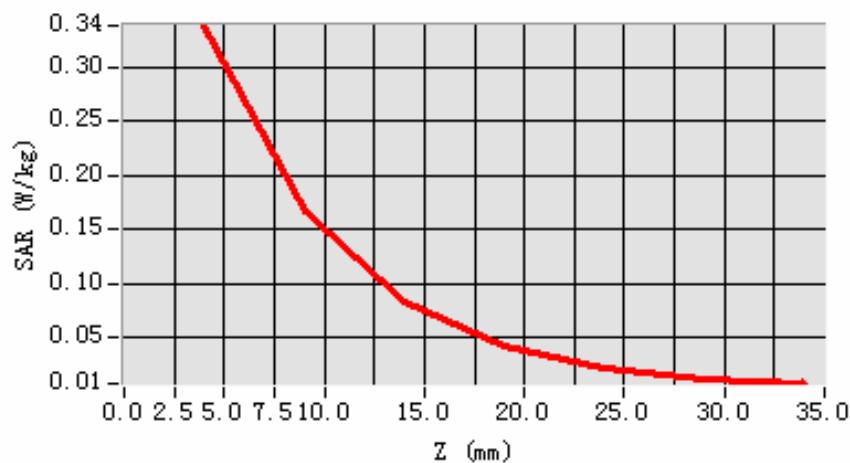
**Maximum location: X=14.00, Y=-46.00**

<b>SAR 10g (W/Kg)</b>	0.178455
<b>SAR 1g (W/Kg)</b>	0.327346

### Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3382	0.1657	0.0837	0.0421	0.0218	0.0123

**SAR, Z Axis Scan (X = 14, Y = -46)**



## System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

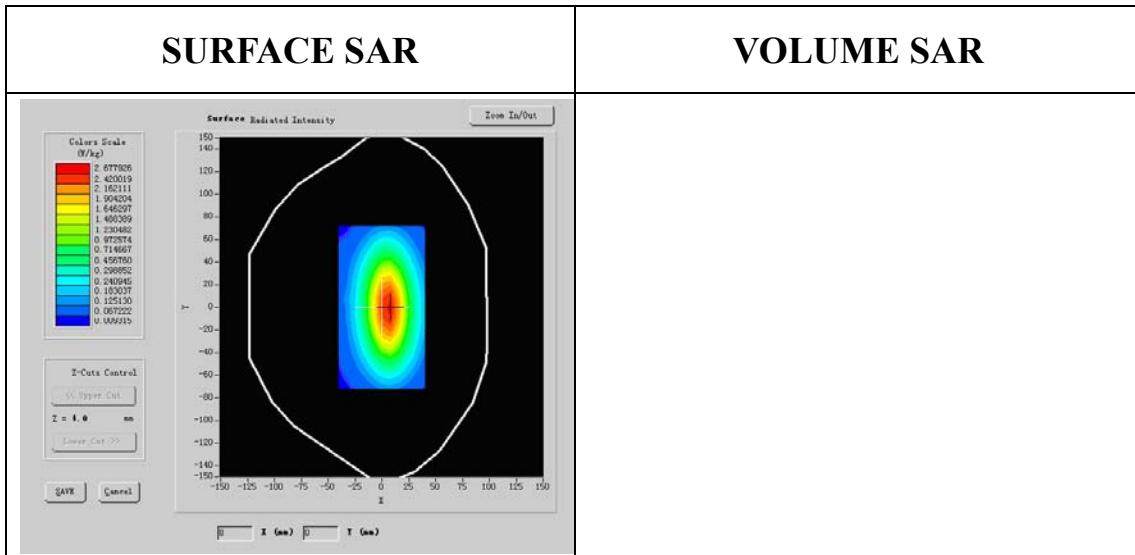
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	40.490002
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	0.983918
<b>Variation (%)</b>	-0.050000
<b>Ambient Temperature:</b>	23.6°C
<b>Liquid Temperature:</b>	23.4°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

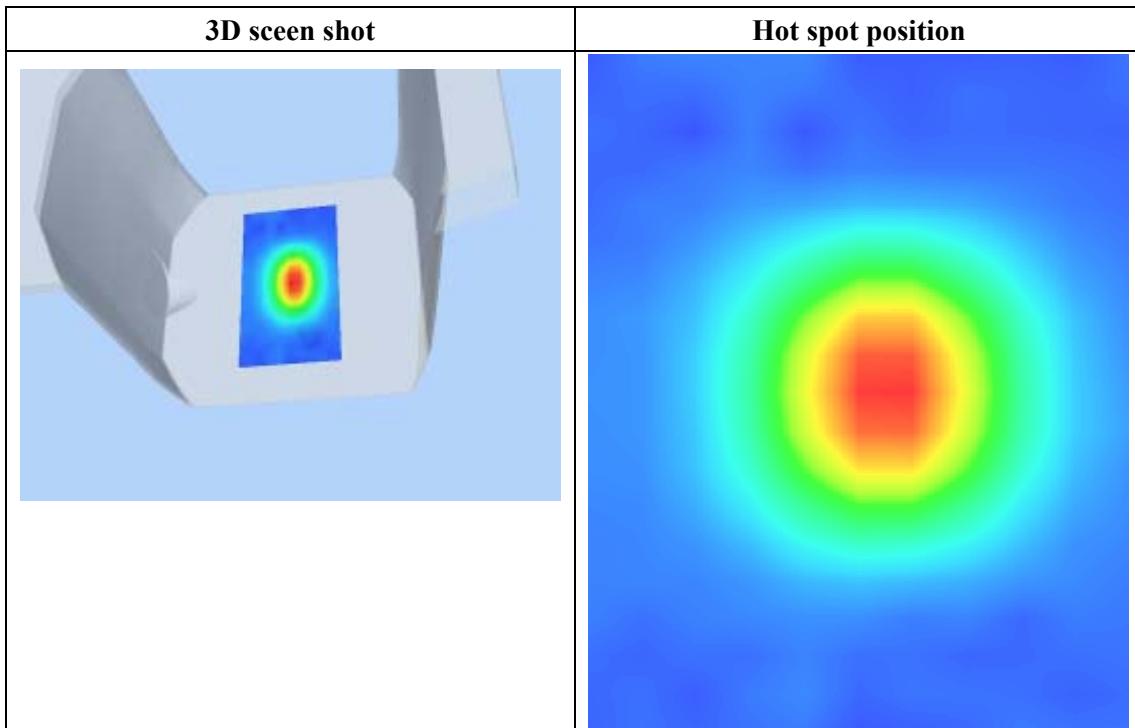
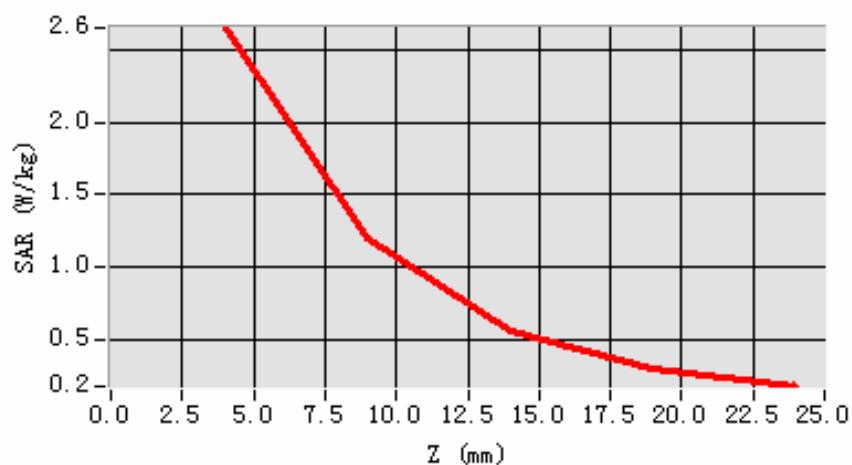


**Maximum location: X=5.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	1.715223
<b>SAR 1g (W/Kg)</b>	2.677926

**Z Axis Scan**

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

**SAR, Z Axis Scan (X = 5, Y = 1)**

## System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

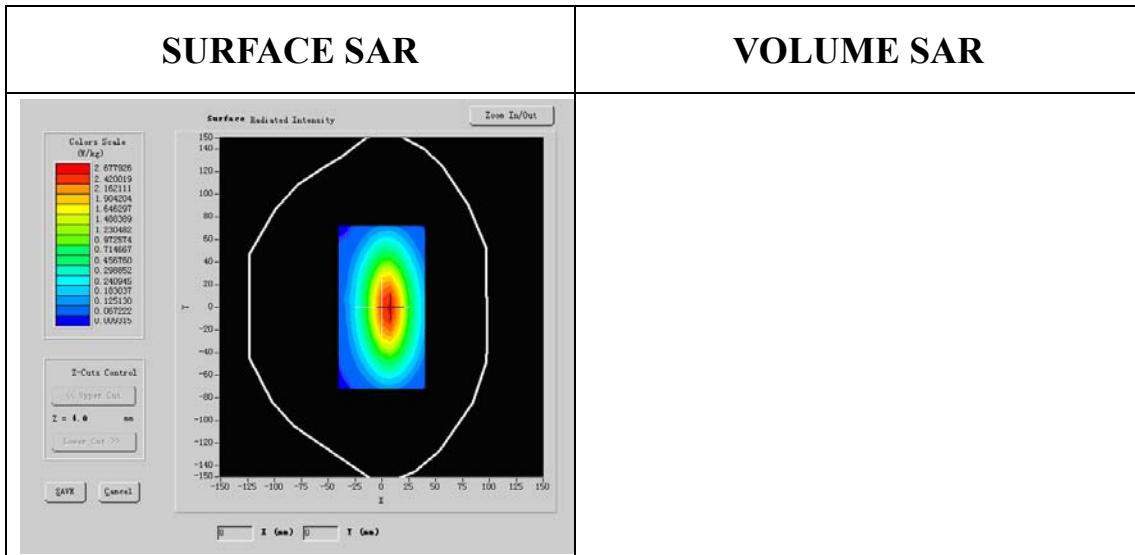
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

#### Band SAR

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	40.490002
<b>Relative permittivity</b>	15.070000

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

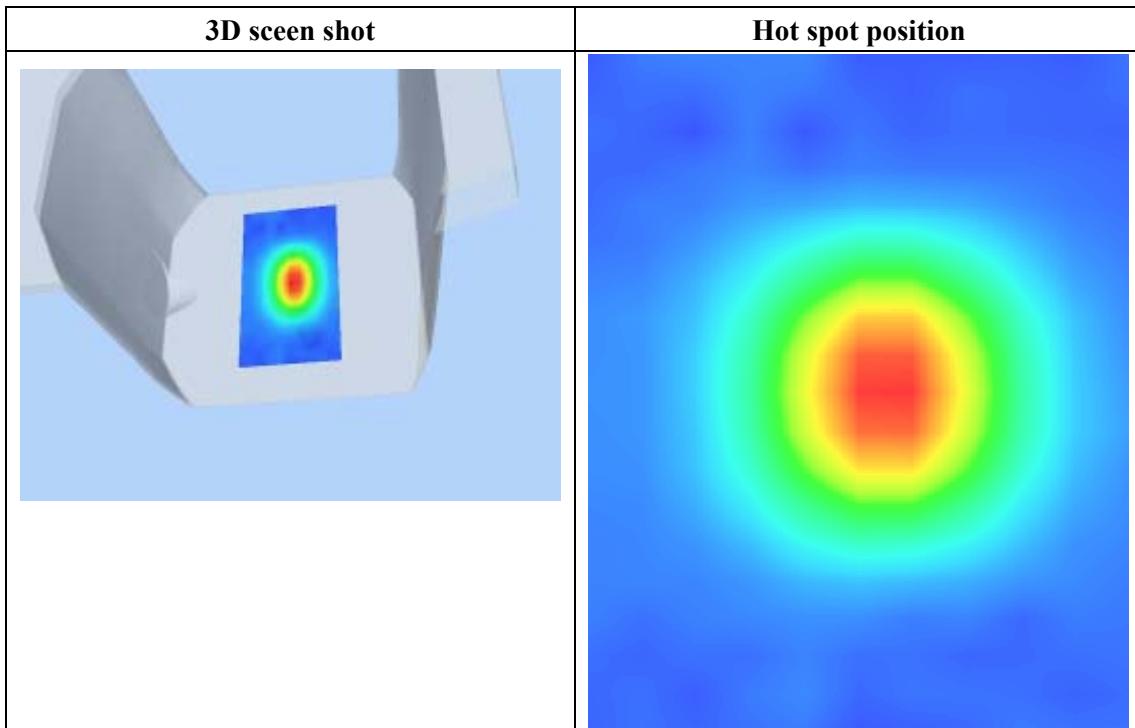
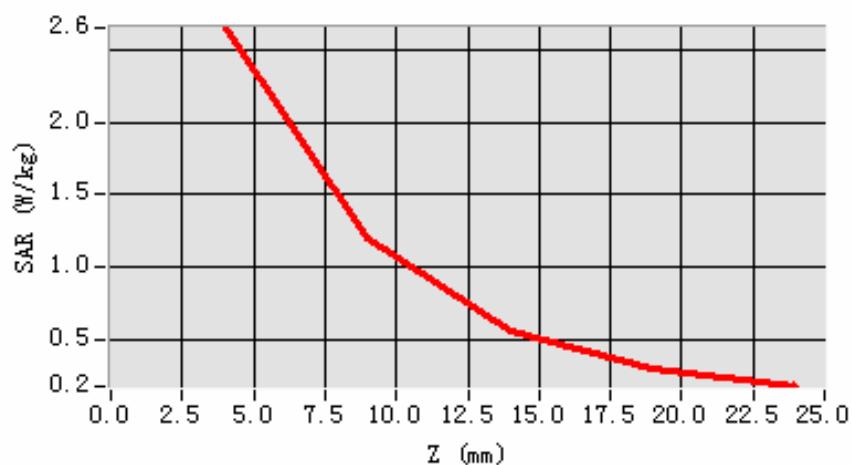


**Maximum location: X=5.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	1.715223
<b>SAR 1g (W/Kg)</b>	2.677926

**Z Axis Scan**

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

**SAR, Z Axis Scan (X = 5, Y = 1)**

## System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 22/1/2011

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

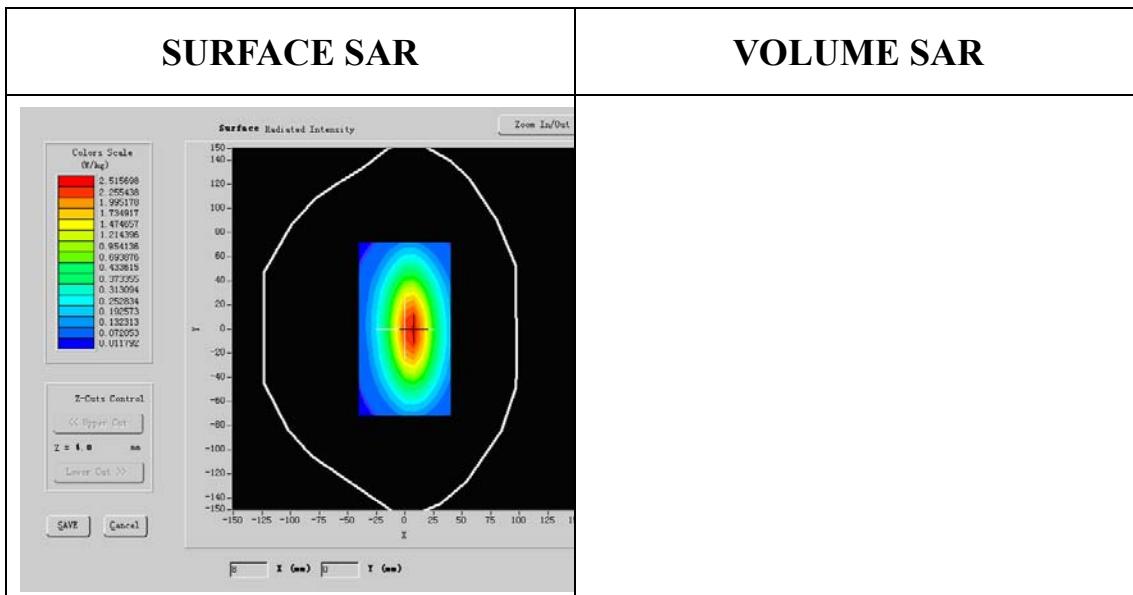
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	1800MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

Band SAR:

<b>Frequency (MHz)</b>	1800.000000
<b>Relative permittivity (real part)</b>	38.930000
<b>Relative permittivity</b>	15.070000

<b>Conductivity (S/m)</b>	1.321229
<b>Variation (%)</b>	-0.140000
<b>Ambient Temperature:</b>	23.1°C
<b>Liquid Temperature:</b>	22.6°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

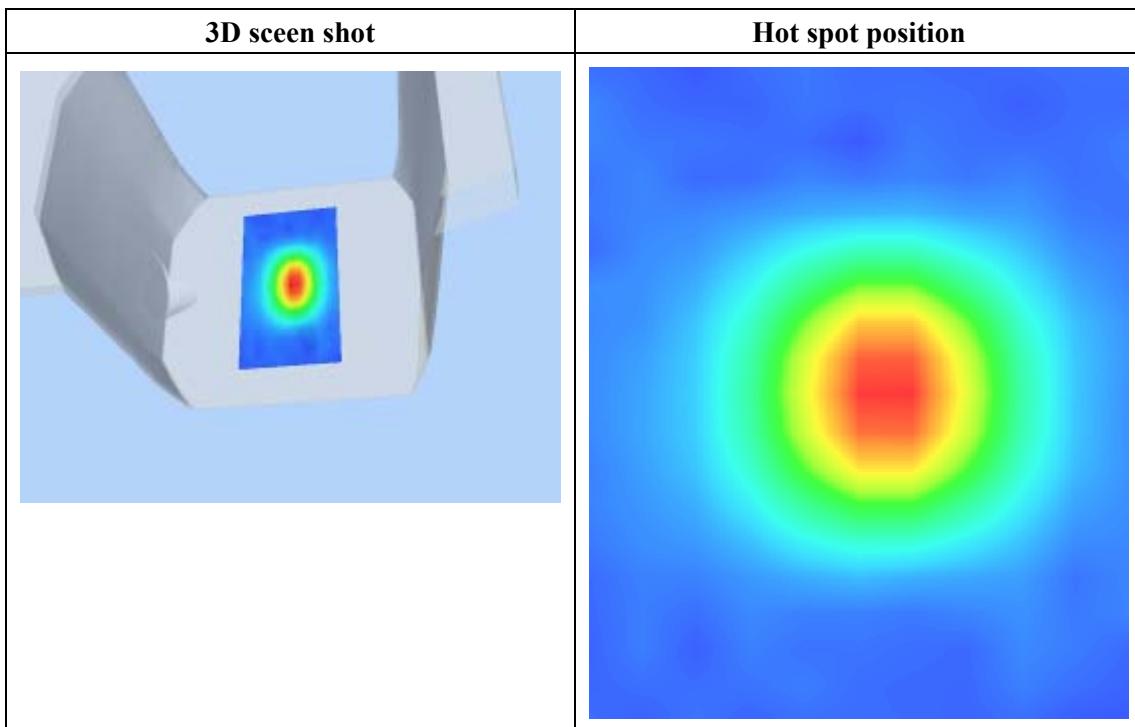
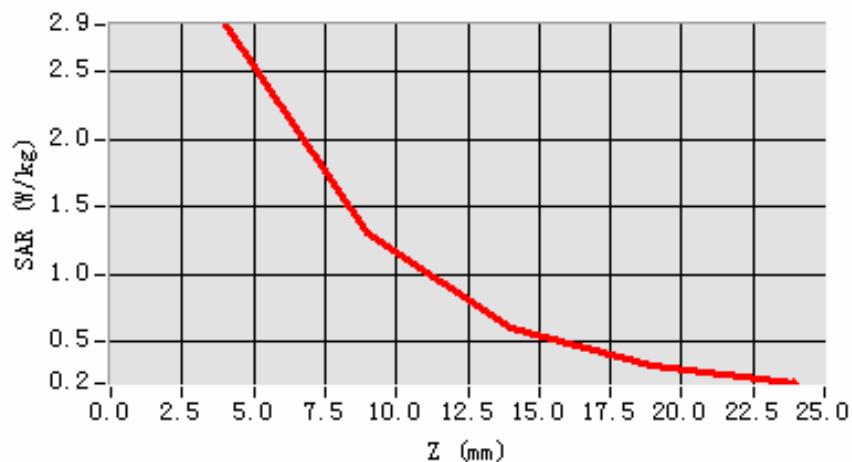


**Maximum location: X=5.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	4.910003
<b>SAR 1g (W/Kg)</b>	8.455521

**Z Axis Scan**

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

**SAR, Z Axis Scan (X = 5, Y = 1)**

## 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: 22/1/2011

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

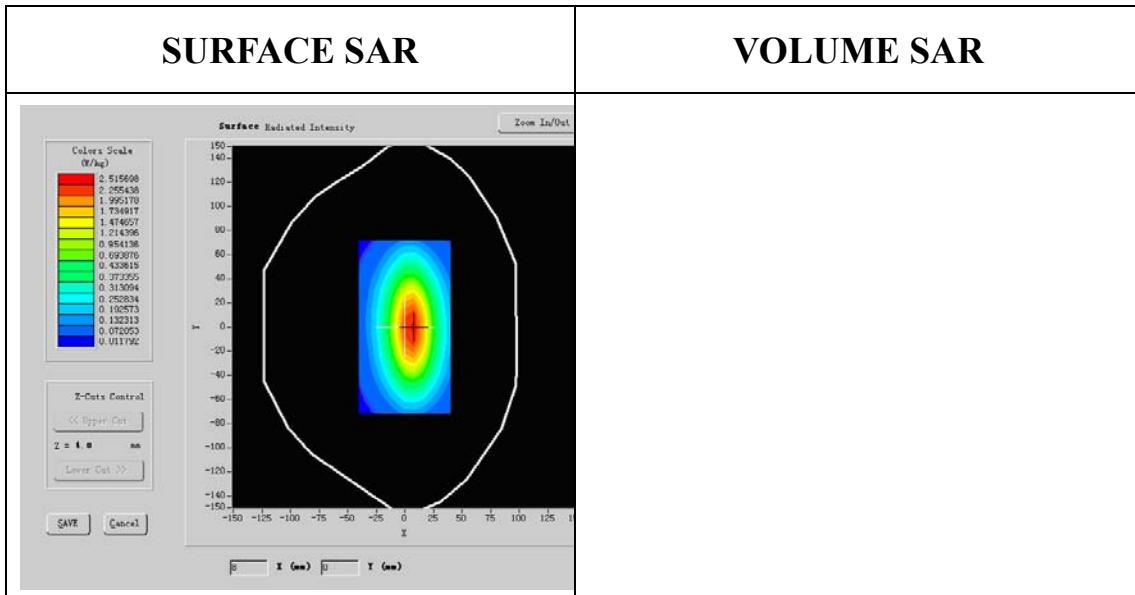
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	1800MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

Band SAR:

<b>Frequency (MHz)</b>	1800.000000
<b>Relative permittivity (real part)</b>	38.930000
<b>Relative permittivity</b>	15.070000

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



**Maximum location: X=5.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	4.910003
<b>SAR 1g (W/Kg)</b>	8.455521

**Z Axis Scan**

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

**SAR, Z Axis Scan (X = 5, Y = 1)**