



FCC SAR

TEST REPORT

of

C1017

Model Name: GLP148
Trade Name: PCD/movistar
Report No.: SZ10080043S01
FCC ID.: T38PCD1017

prepared for

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NanShan, ShenZhen.



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Authorized Test Lab

LAB CODE 20081223-00

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Change History		
Issue	Date	Reason for change
1.0	Sep. 15, 2010	First edition

1. General Information

1.1. Notes

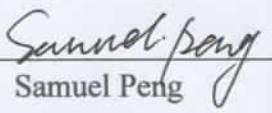
The test results of this test report relate exclusively to the information specified in section 3.3. Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to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

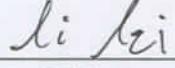
1.2. Organization item

Report No.:	SZ10080043S01
Date of Issue:	Sep. 15, 2010
Date of Tests:	Sep. 7, 2010 – Sep. 7, 2010
Responsible for Accreditation:	Shu Luan
Project Manager:	Li Lei
Deputy Project Manager:	Samuel Peng

1.3. Conclusion

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory Morlab Laboratory has verified that all tests as listed in the section 10 of this report have been performed successfully with the tested equipment.


Samuel Peng
Tested by
(Responsible for the Test Report)


Li Lei
Reviewed by
(Verification of the Test Report)


Shu Luan
Approved by
(Responsible Test Lab Manager)



2. Testing Laboratory

2.1. Identification of the Responsible Testing Laboratory

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

2.2. Identification of the Responsible Testing Location

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

2.3. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

2.4. List of Test Equipments

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

3. Technical Information

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

3.1. Identification of Applicant

Company Name: 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/movistar
Type Name: PCD/movistar
Marking Name: GLP148
Hardware Version: P3
Software Version: V1.2
Frequency Bands: GSM 850MHz (channel 128:824.20MHz, channel 190:836.59MHz, channel 251:848.29MHz)
PCS 1900MHz (channel 512:1850.19MHz, channel 661:1880.00MHz, channel 810:1909.80MHz)
Modulation Mode: GSM / GPRS : GMSK
Multislot Class: GPRS: Multislot Class 12: EDGE:(n.a)
GPRS operation mode: Class B
Antenna type: Fixed Internal Antenna
Development Stage: Identical prototype
Battery Model: BTR1238
Battery specification: 550mAh 3.7V

3.3.1. Photographs of the EUT

Please see for photographs of the EUT.

3.3.2. Identification of all used EUTs

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

EUT Identity	Hardware Version	Software Version
1#	P3	V1.2

3.4. Applied Reference Documents

Leading reference documents for testing:

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

3.5. Device Category and SAR Limits

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

3.6. Test Environment/Conditions

Normal Temperature (NT): 20 ... 25 °C
Relative Humidity: 30 ... 75 %

Air Pressure: 980 ... 1020 hPa

Details of Power Supply: 220V/50Hz AC

Extreme Temperature: Low Temperature (LT) = -10°C

High Temperature (HT) = 55°C

Extreme Voltage of the EUT: Normal Voltage (NV) = 3.70V

Low Voltage (LV) = 3.60V

High Voltage (HV) = 4.20V

Test frequency: GSM 850MHz

PCS 1900MHz

Operation mode: Call established

Power Level: GSM 850 MHz Maximum output power(level 5)

PCS 1900 MHz Maximum output power(level 0)

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

The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 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, The EUT, The EUT is commanded to operate at maximum transmitting power.

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

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

For SAR testing, EUT is in GPRS mode. its crest factor is 2, because EUT is set in GPRS multi-slot class 12 with 4 uplink slots. In

4. Specific Absorption Rate (SAR)

4.1 Introduction

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

4.2 SAR Definition

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

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

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, δT is the temperature rise and δt the exposure duration, or related to the electrical field in the tissue by

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

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

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

5. SAR Measurement Setup

5.1. The Measurement System

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

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

The following figure shows the system.



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

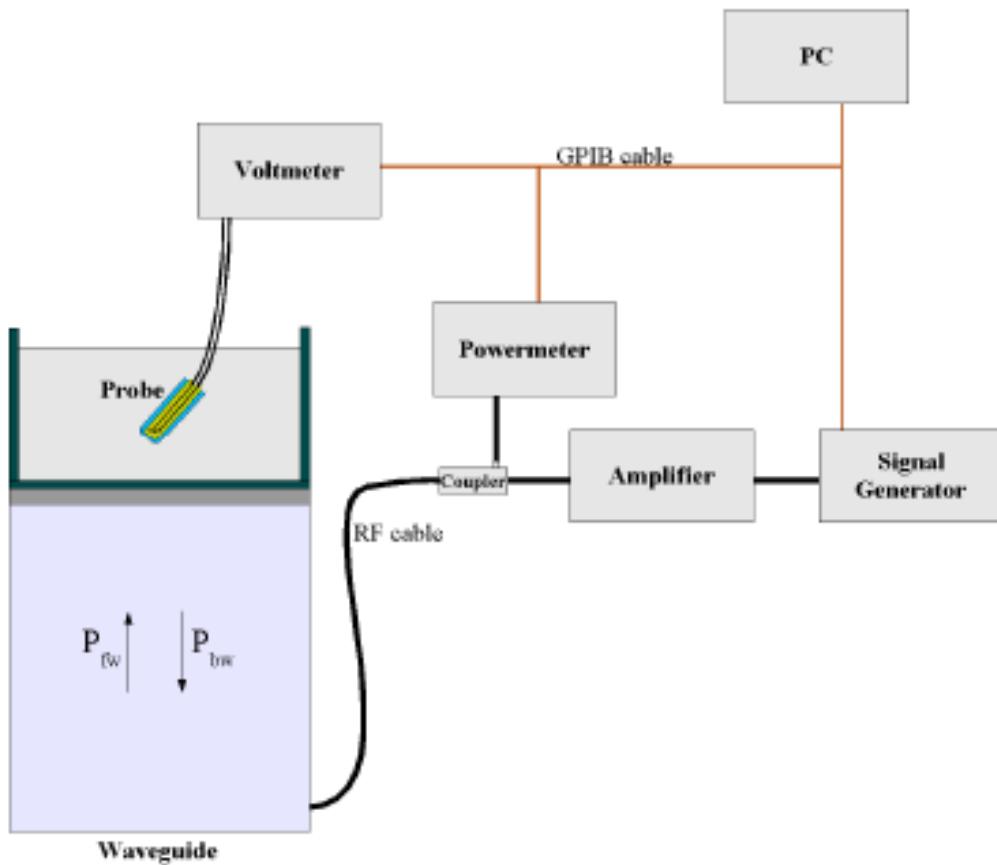
5.2. Probe

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

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

Angle between probe axis (evaluation axis) and surface normal line: less than 30°

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



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

Where :

Pfw = Forward Power

Pbw = Backward Power

a and b = Waveguide dimensions

δ = 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

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

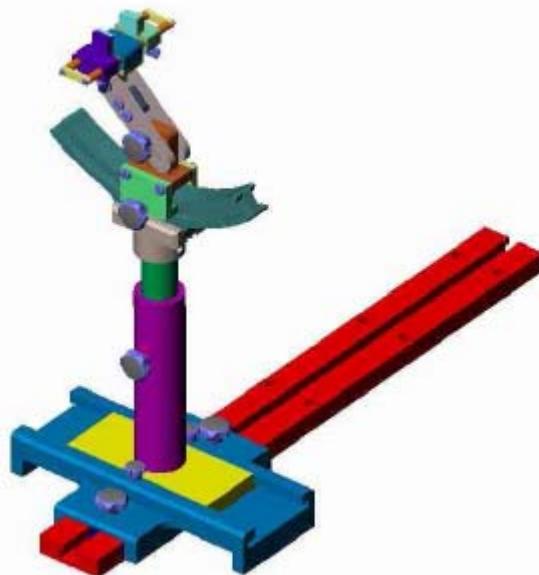
where DCP is the diode compression point in mV.

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 800MHz PCS 1900MHz, which are made mainly of sugar, salt and water solutions may be left in the phantoms. Approximately 20litres are needed for an upright head compared to about 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 ϵ	Conductivity σ (S/m)
Target value	835 MHZ	41. 5	0. 90
Validation value (Sep. 7)	835 MHZ	41. 675999	0. 894409
Target value	1900 MHZ	40	1. 40

Validation value (Sep. 7)	1900 MHZ	38. 509998	1. 436111
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For body-worn measurements, the device was tested against flat phantom representing the user body. Under measurement phone was put on in the belt holder.

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)
Target value	835 MHz	55. 2	0.97
Validation value (Sep. 7)	835 MHz	53. 846662	1. 009033
Target value	1900 MHz	53. 3	1. 52
Validation value (Sep. 7)	1900 MHz	52. 787744	1. 573978

7. Uncertainty Assessment

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

7.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

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

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

7.2. UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK

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

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

8. SAR Measurement Evaluation

8.1. System Setup

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

Equipments :

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

8.2. Validation Results

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

Frequency	835MHz	1800MHz
Target value (1g)	9. 5 W/Kg	38. 1 W/Kg
250 mW input power	2. 427 W/Kg (head) 2. 381 W/Kg (body)	9. 854 W/Kg (head) 9. 735 W/Kg (body)
Test value (1g)	9. 708 W/Kg (head) 9. 524 W/Kg (body)	39. 416 W/Kg (head) 38. 940 W/Kg (body)

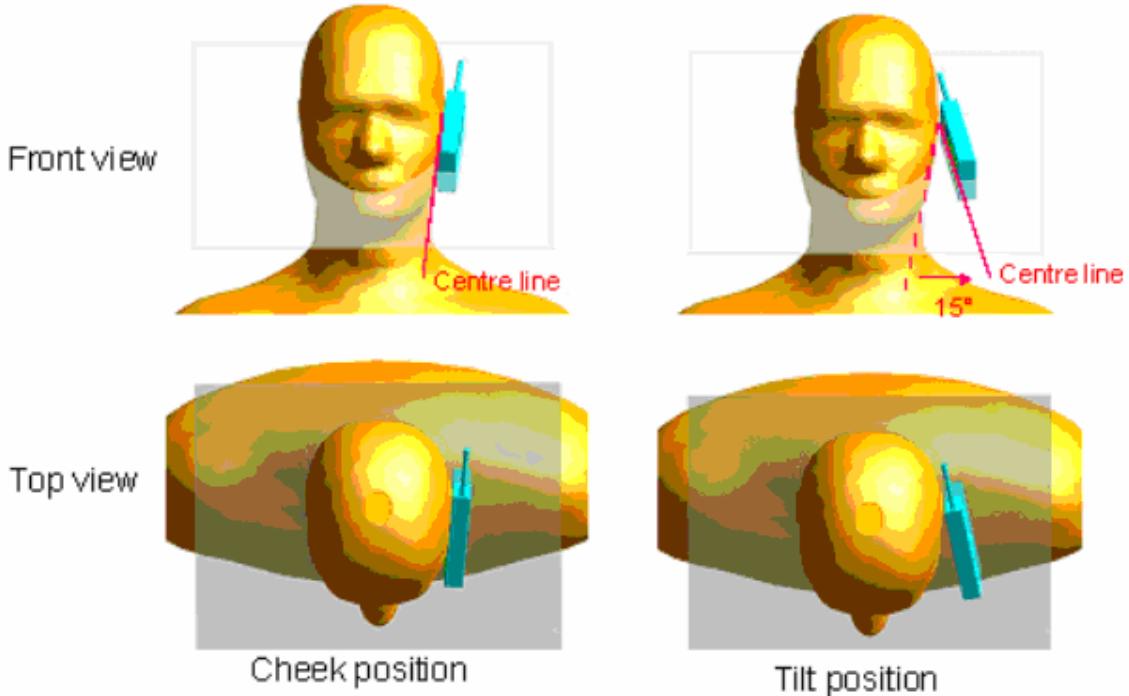
Note: System checks the specific test data please see page 140-151.

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.

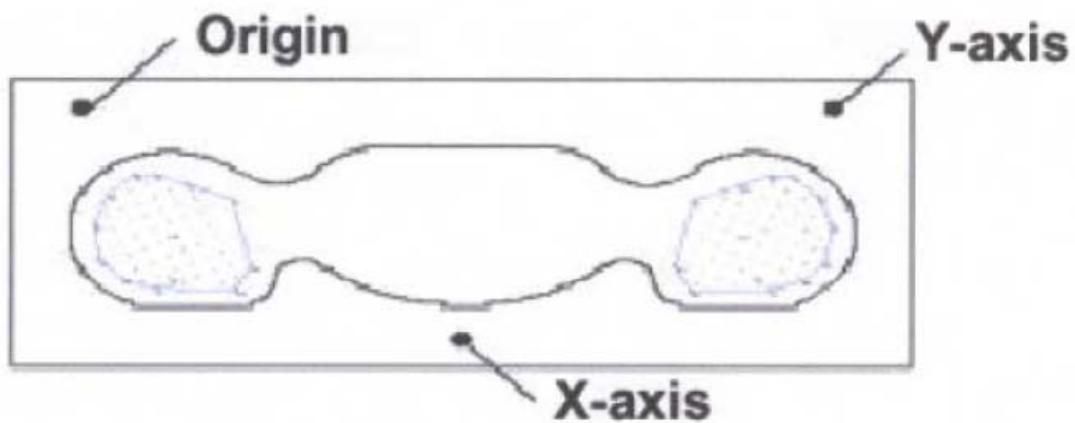
Remark: Please refer to Appendix B for the test setup photos.

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. 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 Low	1 g Average (W/kg)	Power level (dBm)
Right head, Touch cheek, Channel Low	0.931	31.6
Right head, Touch cheek, Channel Middle	1.326	32.19
Right head, Touch cheek, Channel High	1.154	32.75
Right head, Tilt 15 Degree, Channel Low	0.589	31.6
Right head, Tilt 15 Degree, Channel Middle	0.935	32.19
Right head, Tilt 15 Degree, Channel High	0.799	32.75
Left head, Touch cheek, Channel Low	0.967	31.6
Left head, Touch cheek, Channel Middle	1.396	32.19
Left head, Touch cheek, Channel High	1.126	32.75
Left head, Tilt 15 Degree, Channel Low	0.584	31.6
Left head, Tilt 15 Degree, Channel Middle	0.921	32.19
Left head, Tilt 15 Degree, Channel High	0.766	32.75

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 Low	1 g Average (W/kg)	Power level (dBm)
Right head, Touch cheek, Channel Low	0.333	28.74
Right head, Touch cheek, Channel Middle	0.502	28.88
Right head, Touch cheek, Channel High	0.546	29.49
Right head, Tilt 15 Degree, Channel Low	0.342	28.74
Right head, Tilt 15 Degree, Channel Middle	0.589	28.88
Right head, Tilt 15 Degree, Channel High	0.713	29.49
Left head, Touch cheek, Channel Low	0.490	28.74

Left head, Touch cheek, Channel Middle	0.590	28.88
Left head, Touch cheek, Channel High	0.898	29.49
Left head, Tilt 15 Degree, Channel Low	0.503	28.74
Left head, Tilt 15 Degree, Channel Middle	0.794	28.88
Left head, Tilt 15 Degree, Channel High	0.999	29.49

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, Low frequency GPRS mode Back towards the phantom	1.190	32.85
Side, Middle frequency GPRS mode Back towards the phantom	1.091	32.29
Side, High frequency GPRS mode Back towards the phantom	0.738	32.85
Side, Low frequency GPRS mode Keyboard towards the phantom	0.572	32.85
Side, Low frequency GSM mode Back towards the phantom	1.029	31.6
Side, Low frequency GSM mode Back towards the phantom	1.016	31.6

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)	
Side, Low frequency GPRS mode Back towards the phantom	1 g Average (W/kg)	Power level (dBm)
Side, Low frequency GPRS mode Back towards the phantom	0.280	28.8
Side, Middle frequency GPRS mode Back towards the phantom	0.428	28.94
Side, High frequency GPRS mode Back towards the phantom	0.437	29.56
Side, High frequency GPRS mode Keyboard towards	0.193	29.56

the phantom		
Side, High frequency GSM mode Back towards the phantom	0.396	29.49
Side, High frequency GSM mode Back towards the phantom (with earphone)	0.396	29.49

Annex A Accreditation Certificate



Annex B Photographs of the EUT

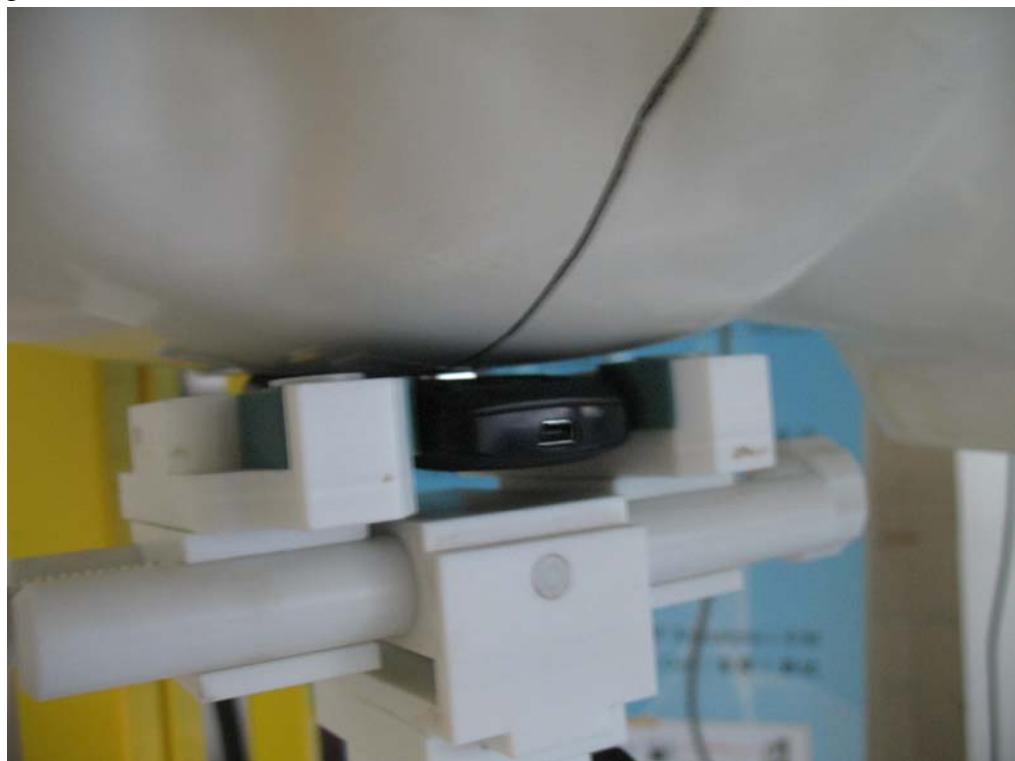
1 EUT Left Head Touch Cheek Position



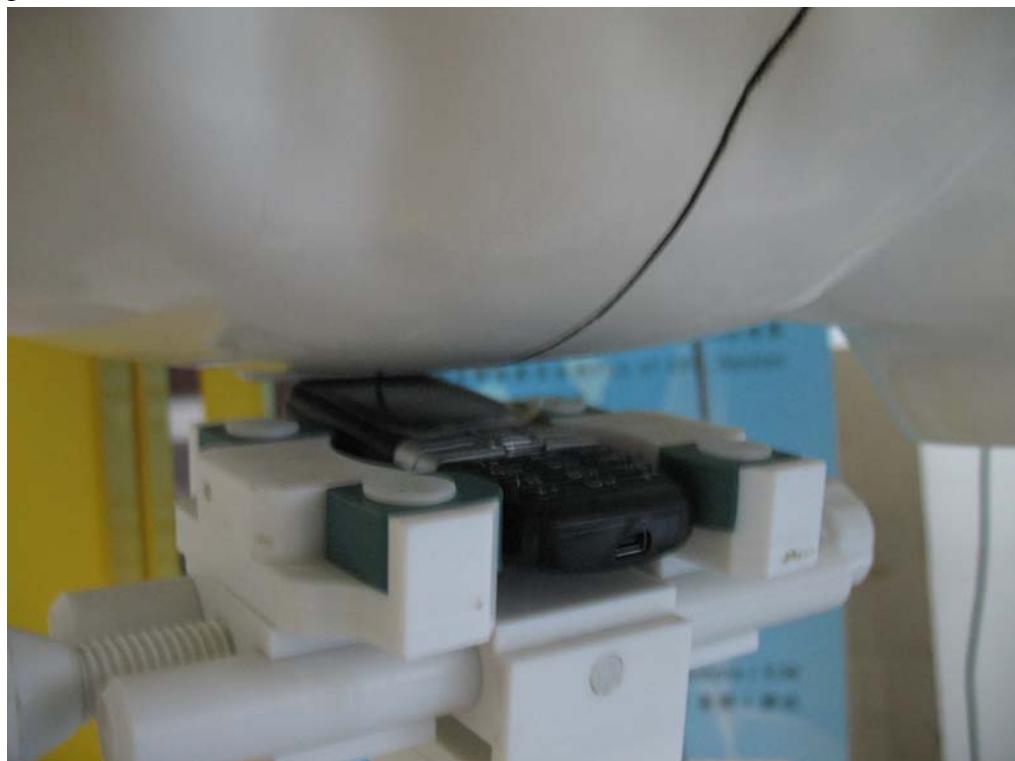
2 EUT Left Head Tilt15 Position



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 Low Channel in GSM mode</p> <p><u>Measurement 2:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 3:</u> Right Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 4:</u> Right Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 5:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 6:</u> Right Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 7:</u> Left Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 8:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 9:</u> Left Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 10:</u> Left Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 11:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 12:</u> Left Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 13:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 14:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 15:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 16:</u> Validation Plane with Body device position on Middle Channel in GPRS mode (back)</p> <p><u>Measurement 17:</u> Validation Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 18:</u> Validation Plane with Body device position on Middle Channel in GSM mode (with earphone)</p>

		<p><u>Measurement 19:</u> Right Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 20:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 21:</u> Right Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 22:</u> Right Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 23:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 24:</u> Right Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 25:</u> Left Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 26:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 27:</u> Left Head with Cheek device position on High Channel in GSM mode</p> <p><u>Measurement 28:</u> Left Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 29:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 30:</u> Left Head with Tilt device position on High Channel in GSM mode</p> <p><u>Measurement 31:</u> Validation Plane with Body device position on Low Channel in GPRS mode</p> <p><u>Measurement 32:</u> Validation Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 33:</u> Validation Plane with Body device position on High Channel in GPRS mode</p> <p><u>Measurement 34:</u> Validation Plane with Body device position on High Channel in GPRS mode (back)</p> <p><u>Measurement 35:</u> Validation Plane with Body device position on High Channel in GSM mode</p> <p><u>Measurement 36:</u> Validation Plane with Body device position on High Channel in GSM mode (with earphone)</p>
	<p><u>GSM</u></p> <p><u>1900</u></p>	

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: 7/9/2010

Measurement duration: 7 minutes 32 seconds

A. Experimental conditions.

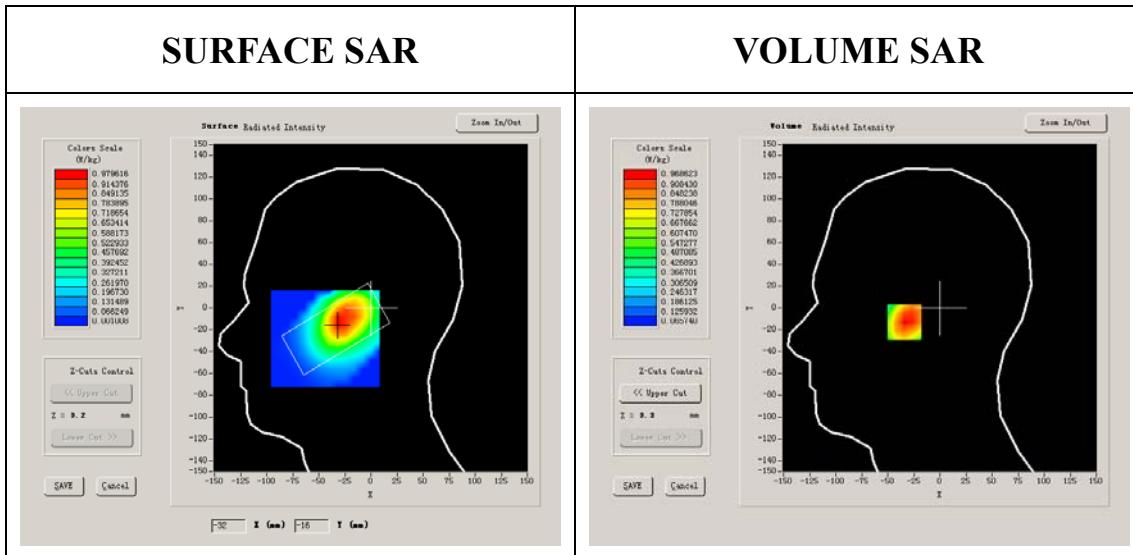
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.866612
SAR drift (%)	-1.960000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



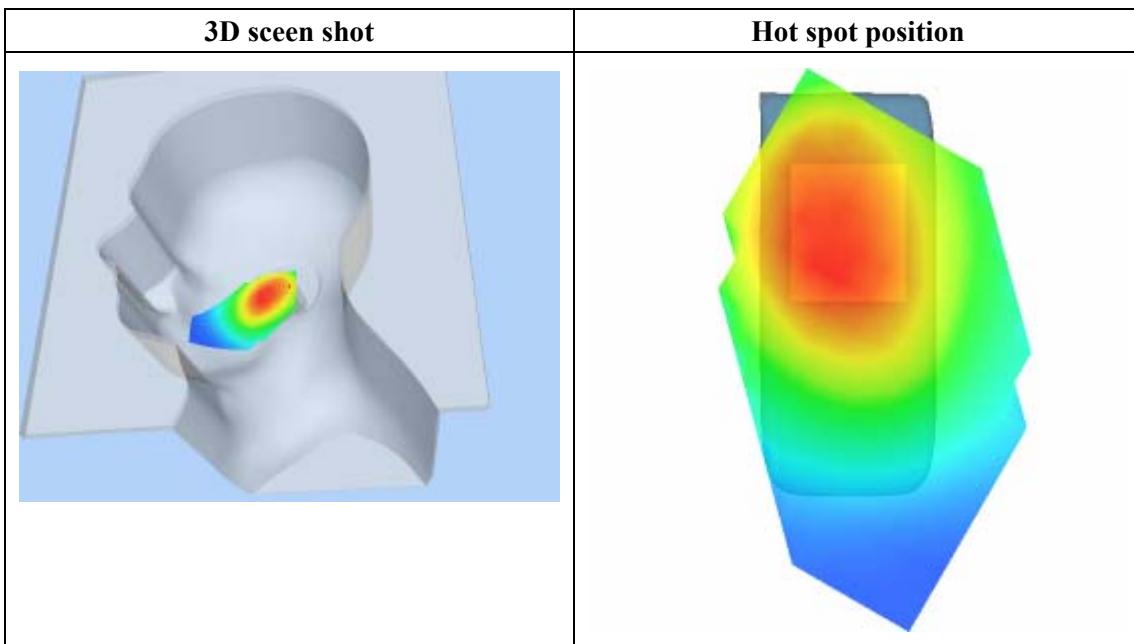
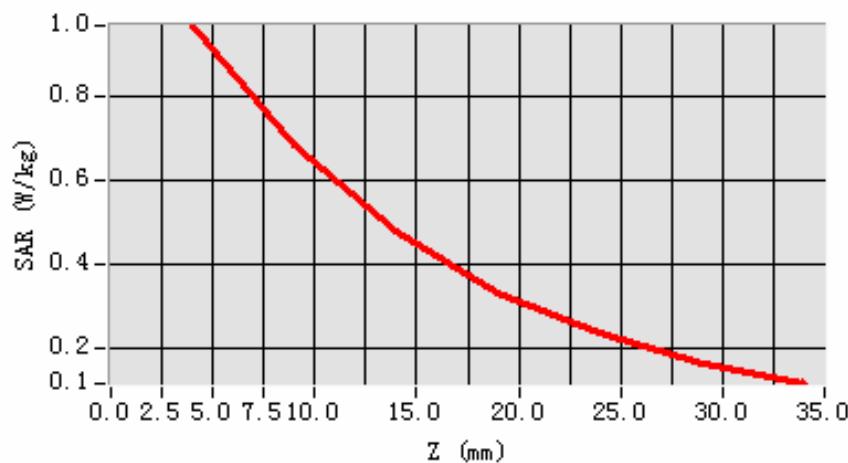
Maximum location: X=-30.00, Y=-13.00

SAR 10g (W/Kg)	0.616409
SAR 1g (W/Kg)	0.931099

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9686	0.6833	0.4773	0.3291	0.2354	0.1652

SAR, Z Axis Scan (X = -30, Y = -13)



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: 7/9/2010

Measurement duration: 7 minutes 27 seconds

A. Experimental conditions.

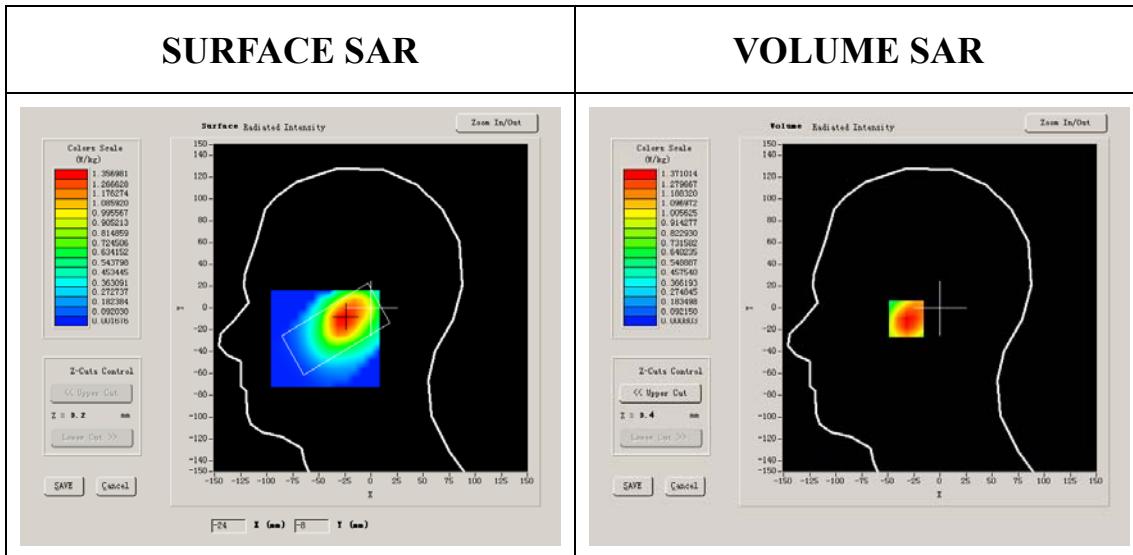
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	0.888655
SAR drift (%)	-3.739990
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



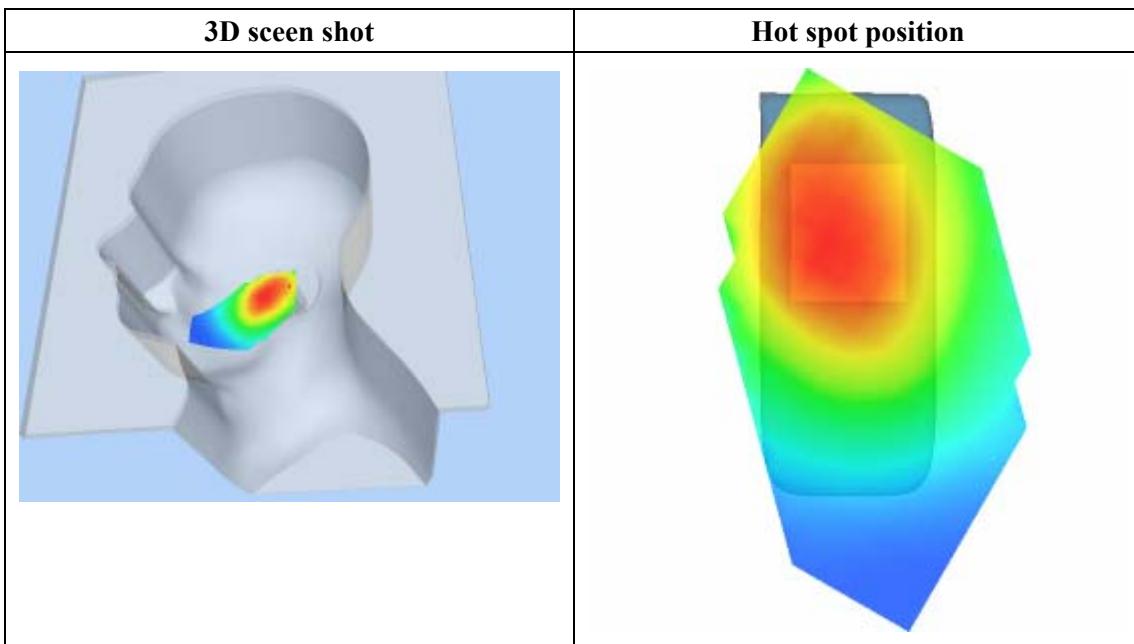
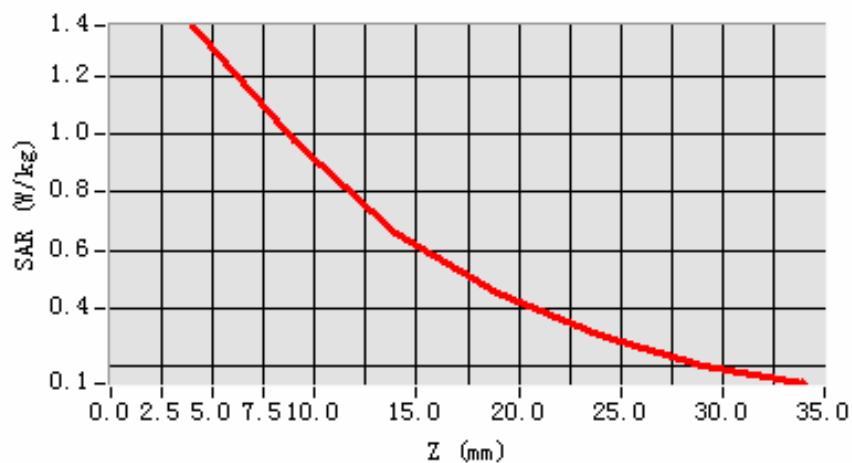
Maximum location: X=-28.00, Y=-10.00

SAR 10g (W/Kg)	0.866043
SAR 1g (W/Kg)	1.326460

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.3710	0.9763	0.6564	0.4501	0.3070	0.2001

SAR, Z Axis Scan (X = -28, Y = -10)



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: 7/9/2010

Measurement duration: 7 minutes 26 seconds

A. Experimental conditions.

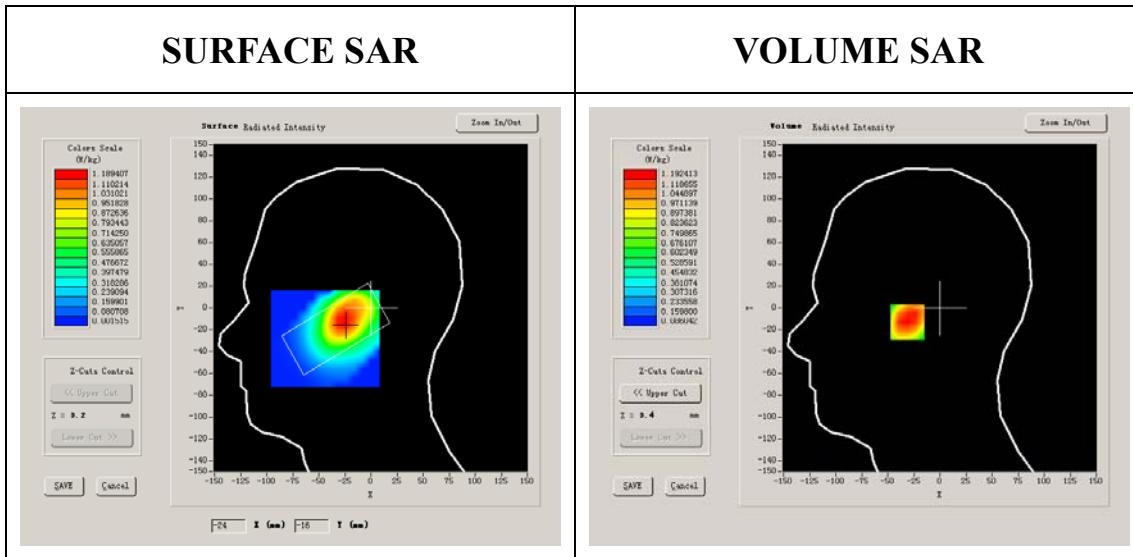
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	41.675999
Relative permittivity	18.967199

Conductivity (S/m)	0.894409
SAR drift (%)	-0.170000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



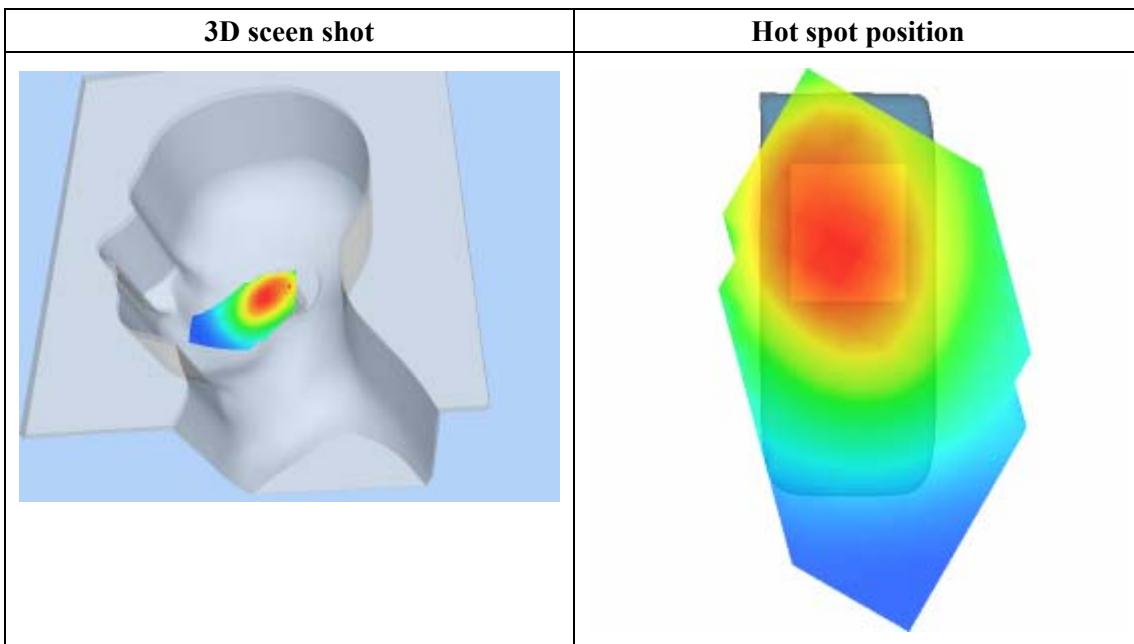
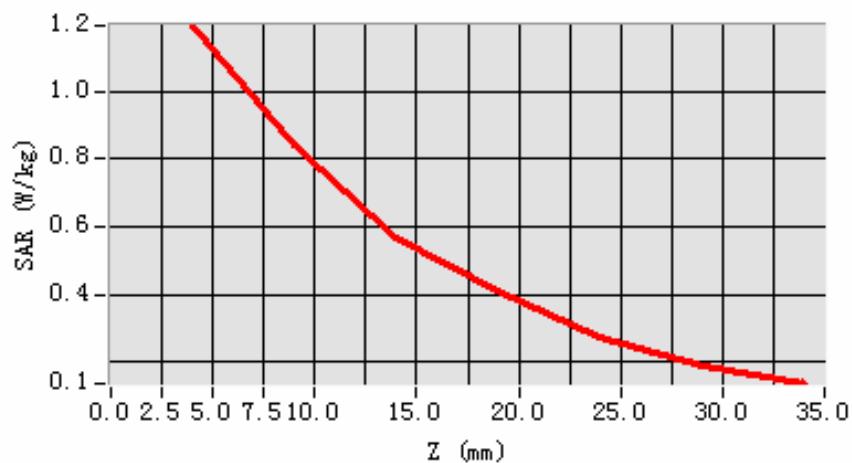
Maximum location: X=-26.00, Y=-13.00

SAR 10g (W/Kg)	0.756963
SAR 1g (W/Kg)	1.154154

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.1924	0.8392	0.5675	0.4122	0.2722	0.1914

SAR, Z Axis Scan (X = -26, Y = -13)



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: 7/9/2010

Measurement duration: 7 minutes 24 seconds

A. Experimental conditions.

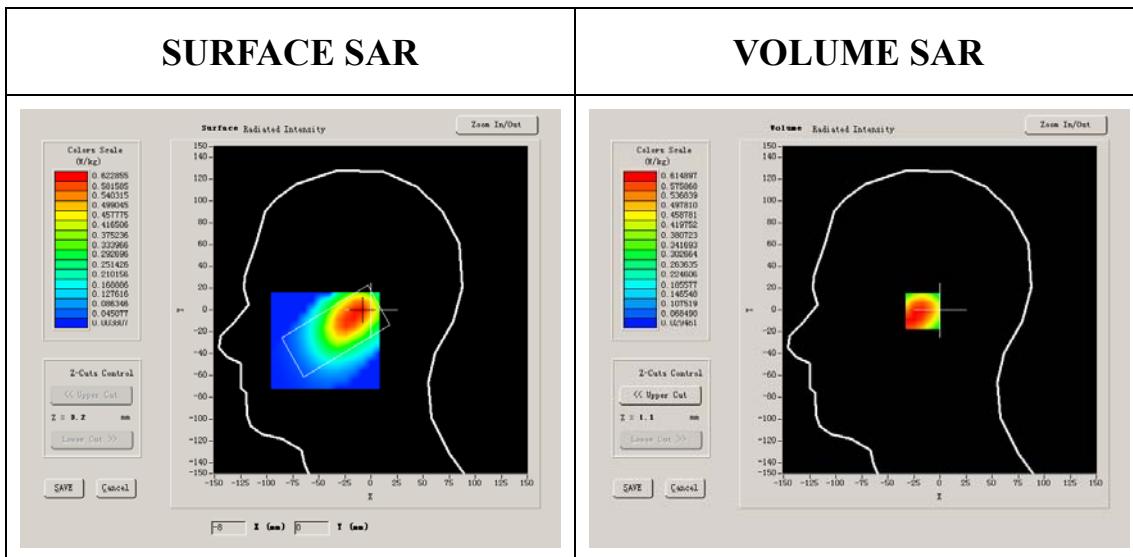
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.866612
SAR drift (%)	-1.520000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



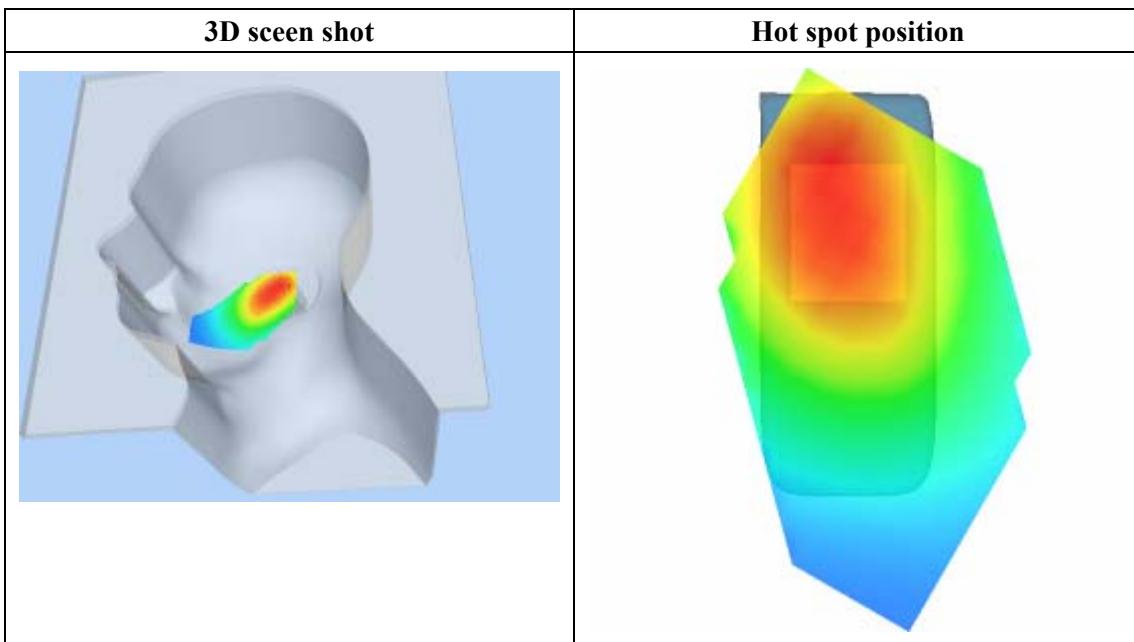
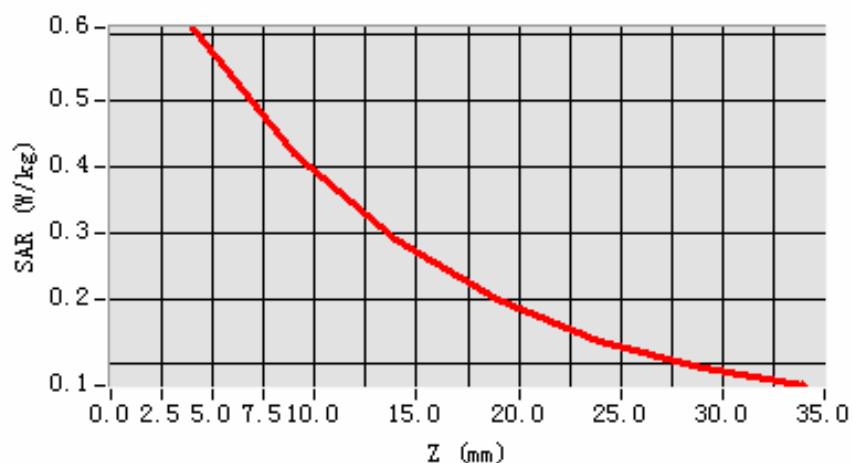
Maximum location: X=-11.00, Y=-1.00

SAR 10g (W/Kg)	0.397338
SAR 1g (W/Kg)	0.597500

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6114	0.4192	0.2884	0.1990	0.1364	0.0954

SAR, Z Axis Scan (X = -11, Y = -1)



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: 7/9/2010

Measurement duration: 7 minutes 29 seconds

A. Experimental conditions.

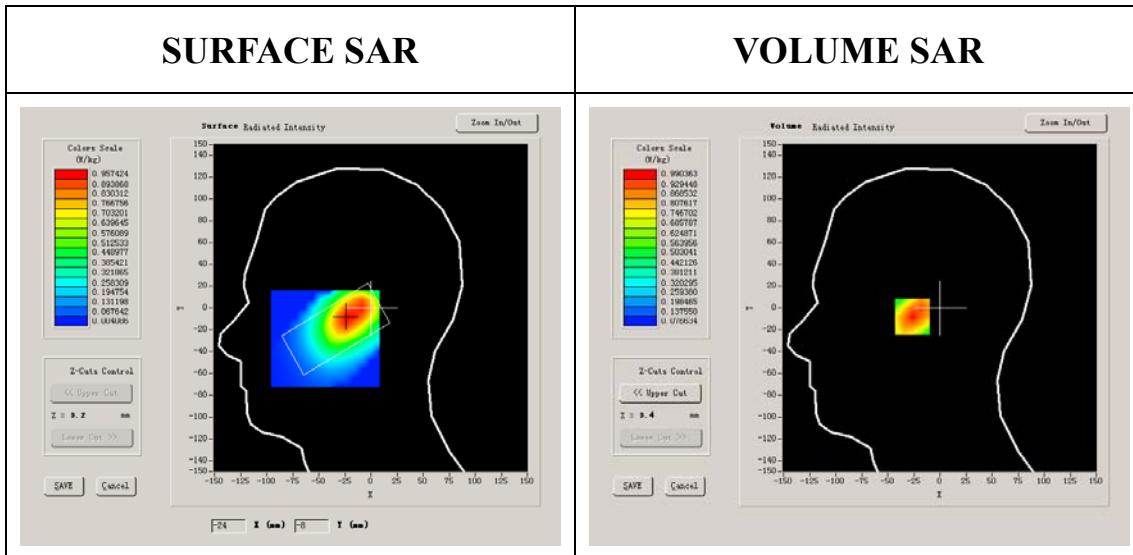
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	0.888655
SAR drift (%)	-0.130000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

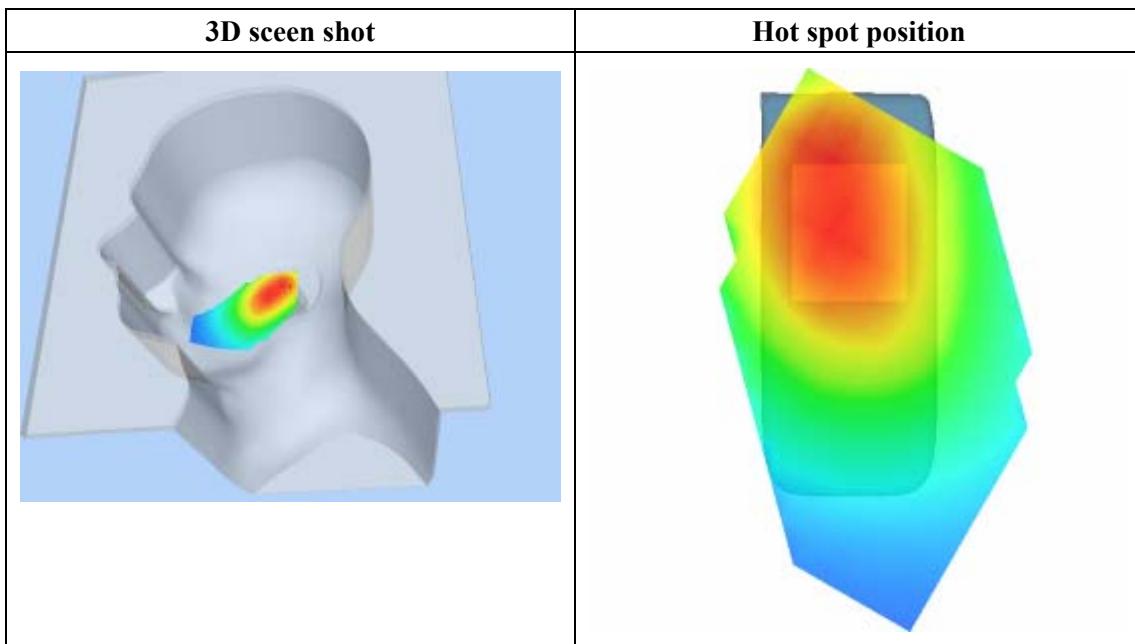
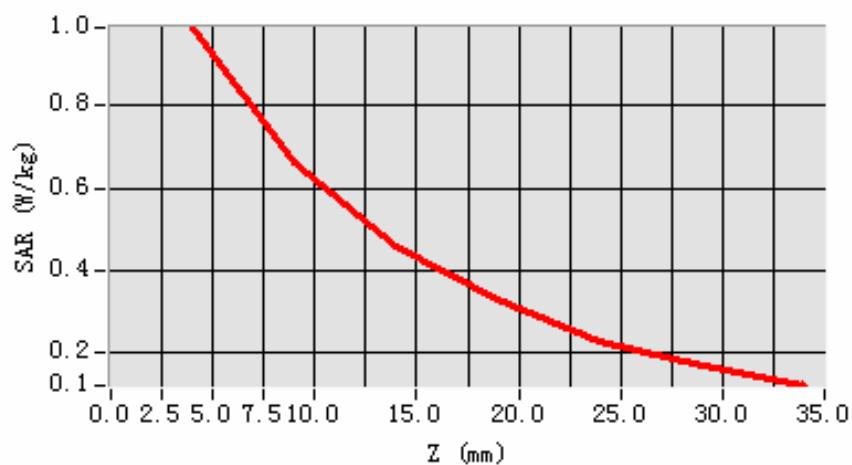


Maximum location: X=-21.00, Y=-8.00

SAR 10g (W/Kg)	0.611187
SAR 1g (W/Kg)	0.935324

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9904	0.6607	0.4605	0.3321	0.2299	0.1691

SAR, Z Axis Scan (X = -21, Y = -8)

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: 7/9/2010

Measurement duration: 7 minutes 24 seconds

A. Experimental conditions.

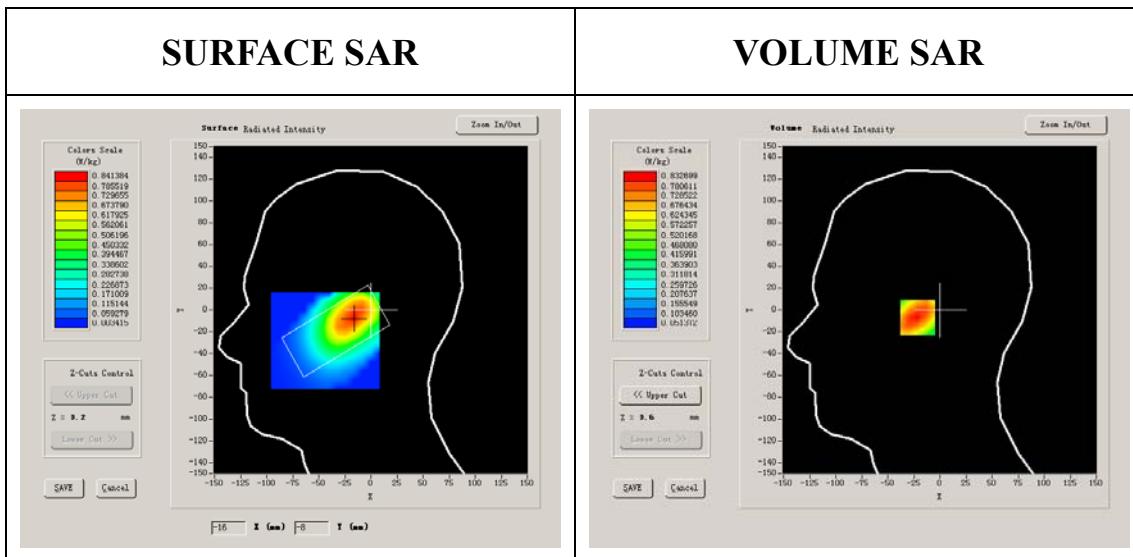
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	41.675999
Relative permittivity	18.967199

Conductivity (S/m)	0.894409
SAR drift (%)	-3.050000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

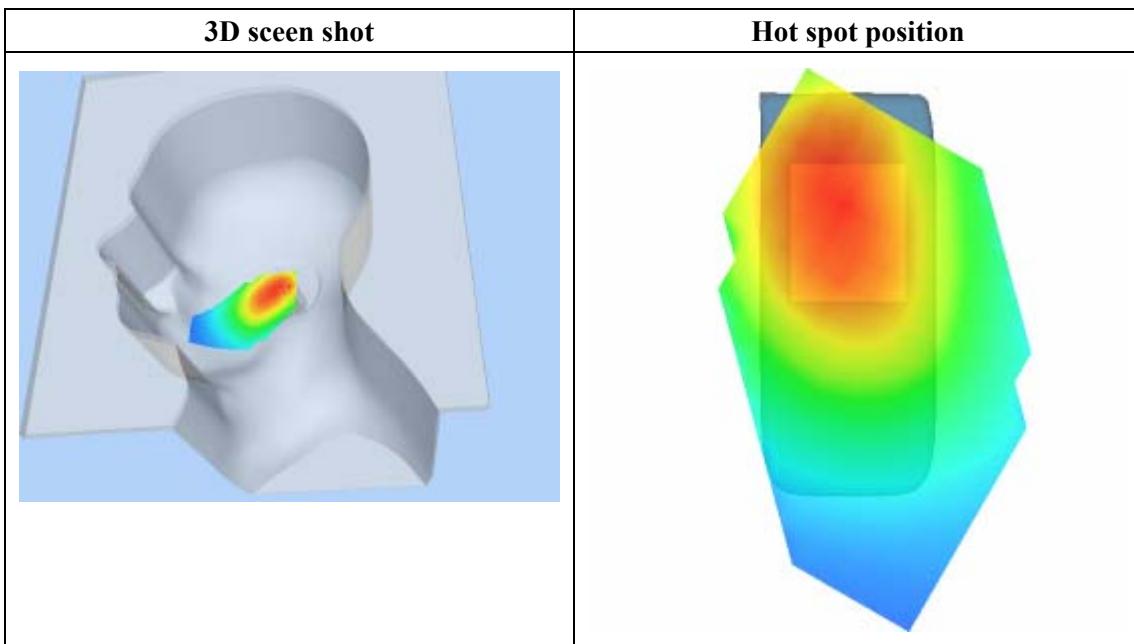
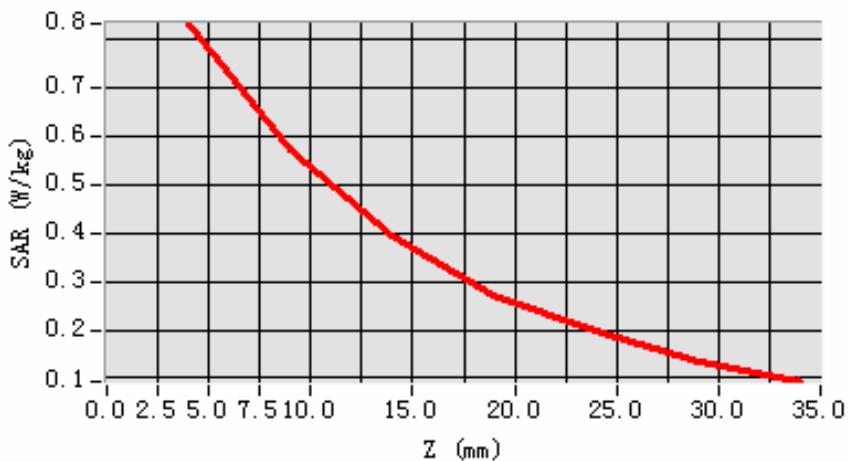


Maximum location: X=-16.00, Y=-7.00

SAR 10g (W/Kg)	0.525450
SAR 1g (W/Kg)	0.798624

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.8327	0.5744	0.3927	0.2727	0.1963	0.1343

SAR, Z Axis Scan (X = -16, Y = -7)

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: 7/9/2010

Measurement duration: 7 minutes 28 seconds

A. Experimental conditions.

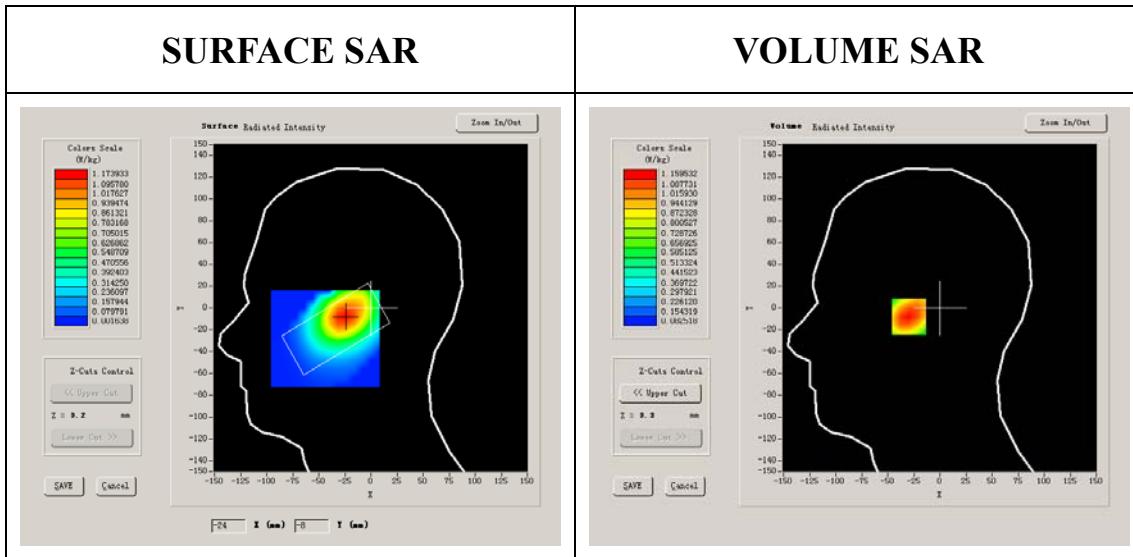
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 128):

Frequency (MHz)	824.200012
Relative permittivity (real part)	41.675999
Relative permittivity	18.967199

Conductivity (S/m)	0.894409
SAR drift (%)	-0.800000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

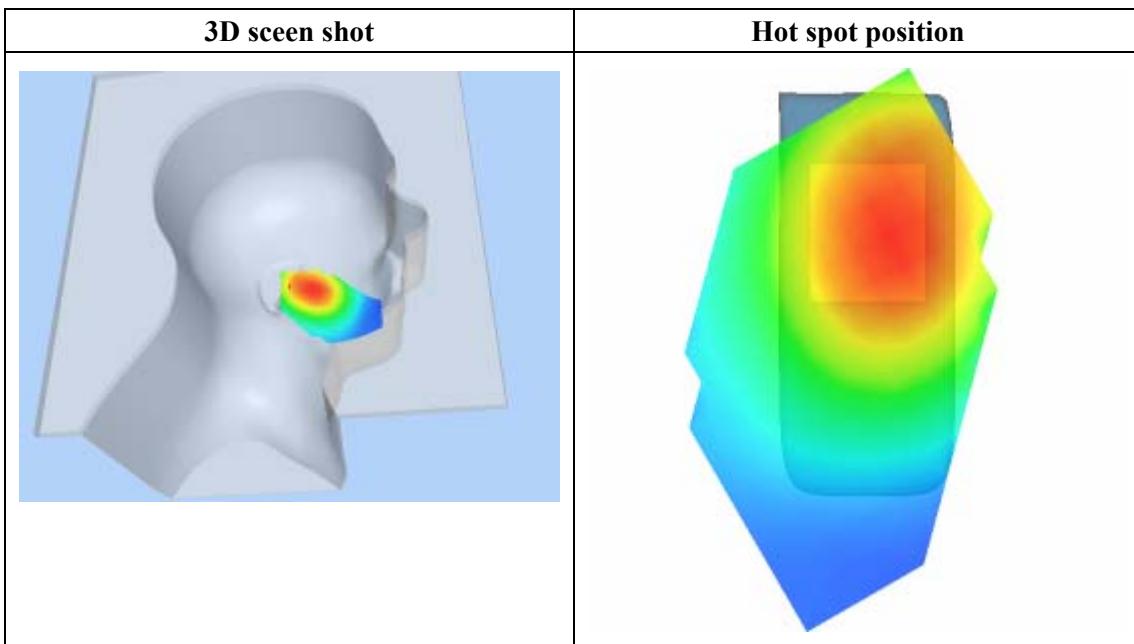
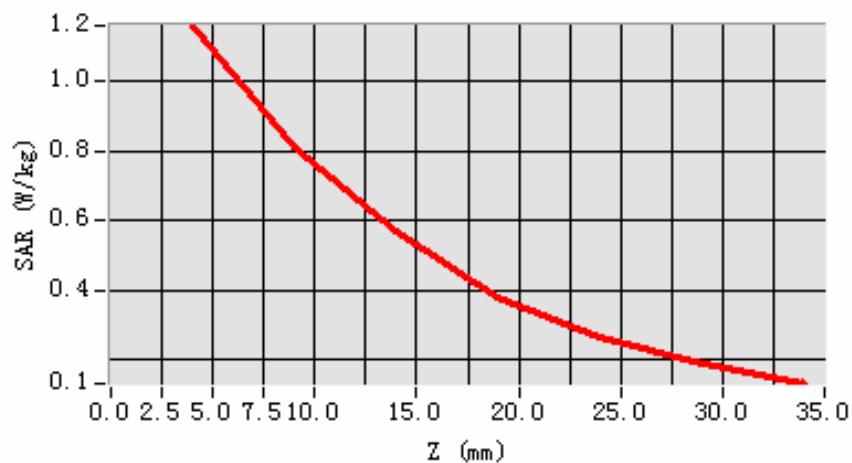


Maximum location: X=-25.00, Y=-8.00

SAR 10g (W/Kg)	0.638774
SAR 1g (W/Kg)	0.967542

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.1595	0.8087	0.5653	0.3802	0.2639	0.1869

SAR, Z Axis Scan (X = -25, Y = -8)

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: 7/9/2010

Measurement duration: 7 minutes 26 seconds

A. Experimental conditions.

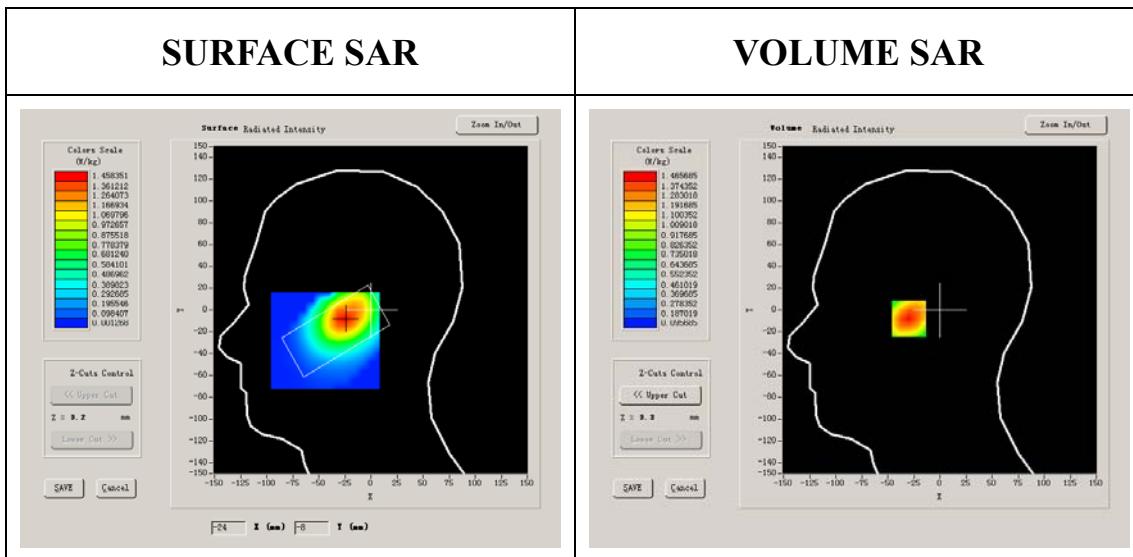
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	0.888655
SAR drift (%)	-0.010000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

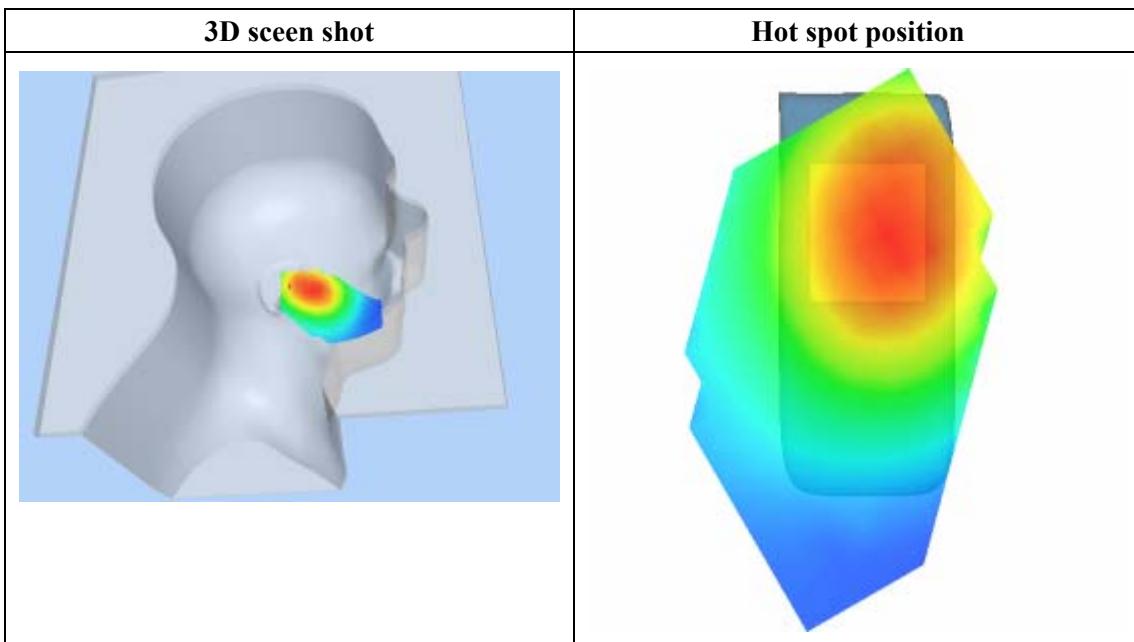
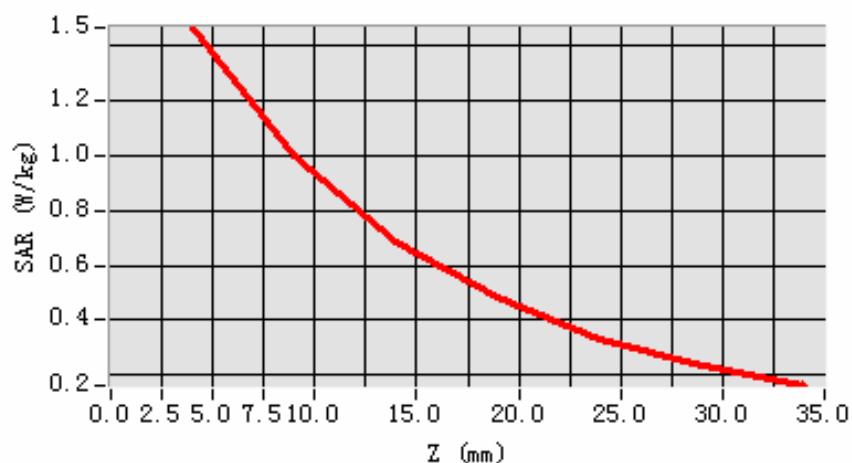


Maximum location: X=-25.00, Y=-8.00

SAR 10g (W/Kg)	0.908984
SAR 1g (W/Kg)	1.396103

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.4657	0.9985	0.6862	0.4846	0.3285	0.2316

SAR, Z Axis Scan (X = -25, Y = -8)

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: 7/9/2010

Measurement duration: 7 minutes 27 seconds

A. Experimental conditions.

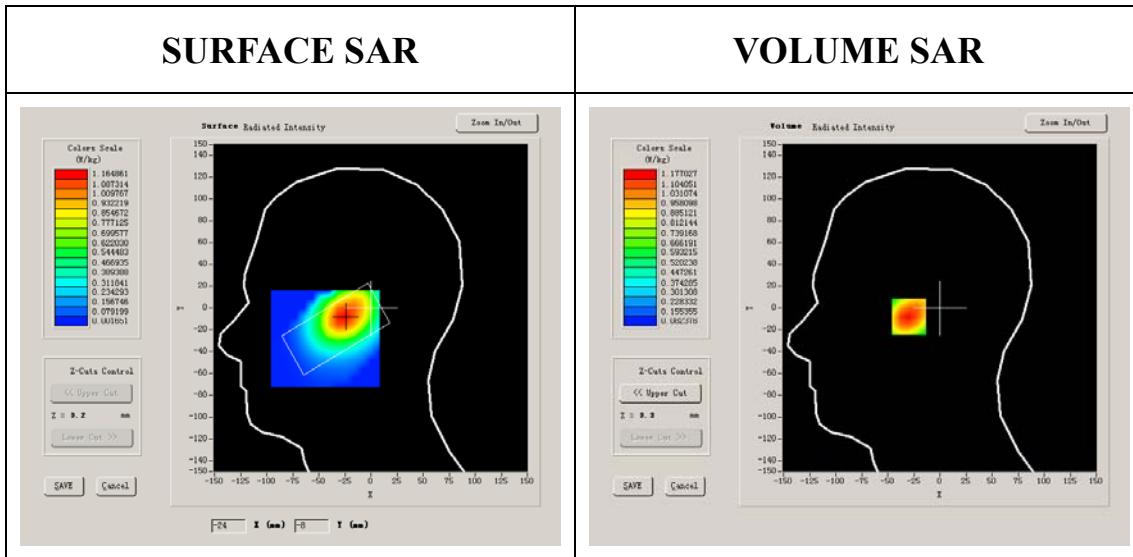
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	41.675999
Relative permittivity	18.967199

Conductivity (S/m)	0.894409
SAR drift (%)	0.320000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



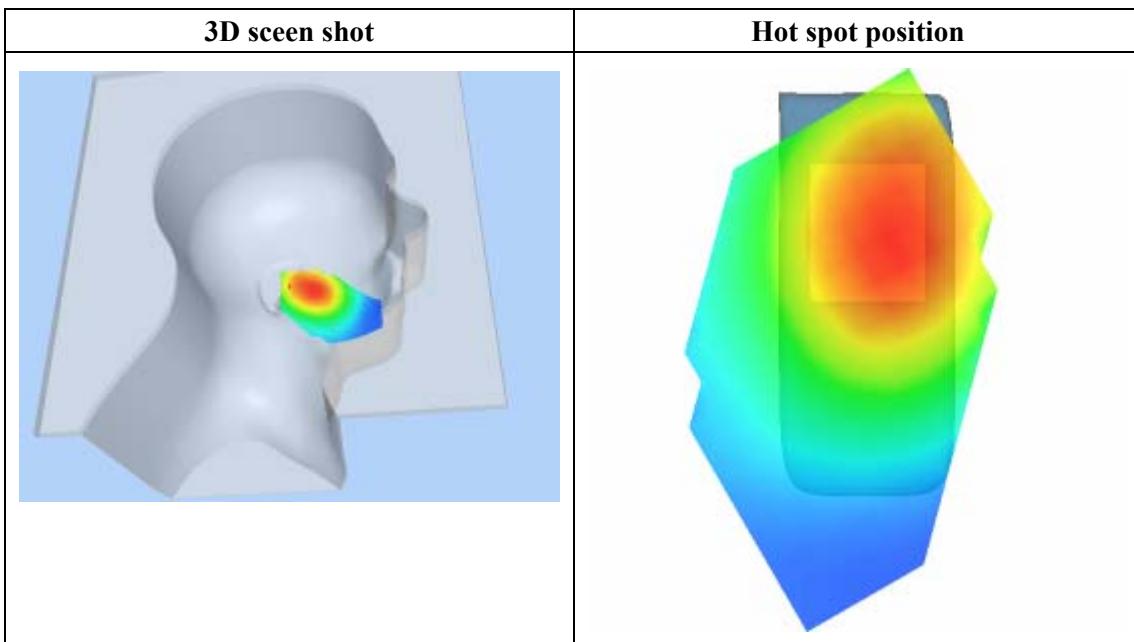
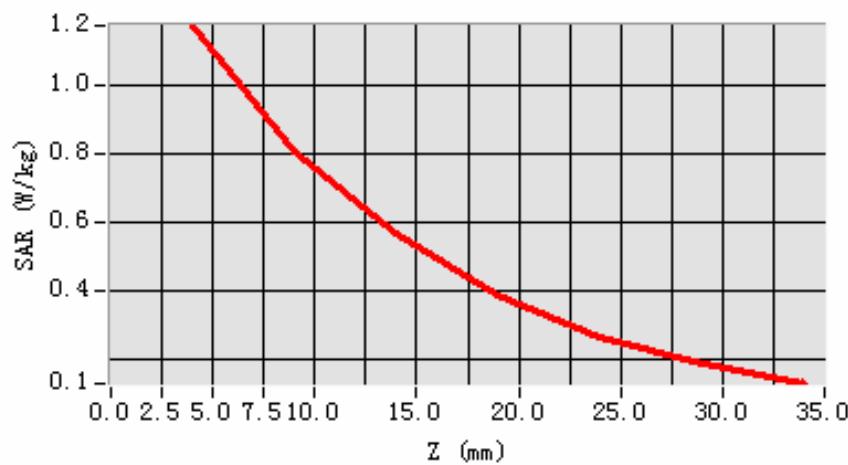
Maximum location: X=-25.00, Y=-8.00

SAR 10g (W/Kg)	0.737017
SAR 1g (W/Kg)	1.125566

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.1770	0.8102	0.5682	0.3842	0.2654	0.1864

SAR, Z Axis Scan (X = -25, Y = -8)



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: 7/9/2010

Measurement duration: 7 minutes 24 seconds

A. Experimental conditions.

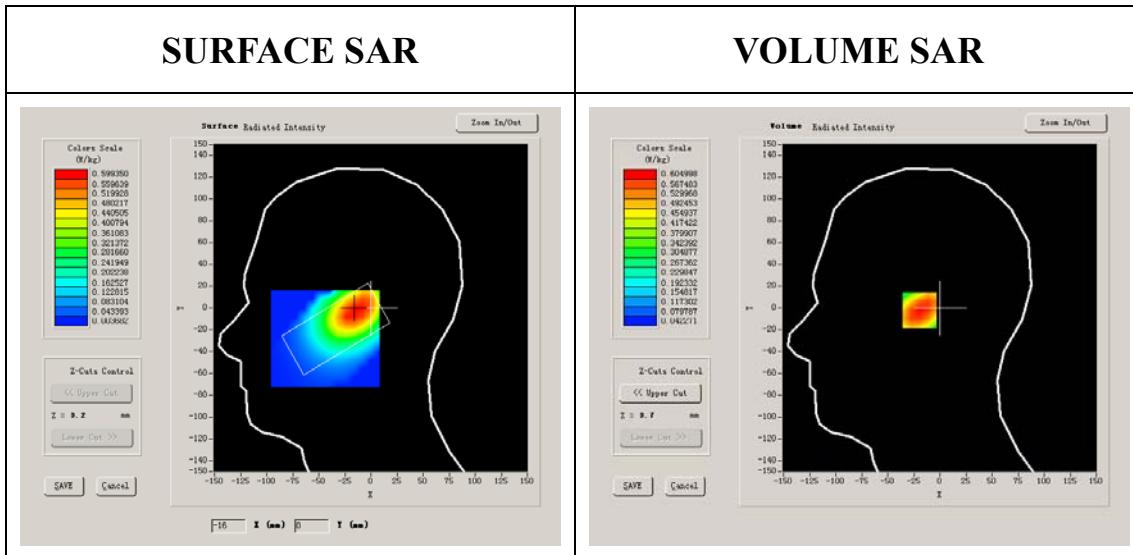
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.866612
SAR drift (%)	-0.460000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



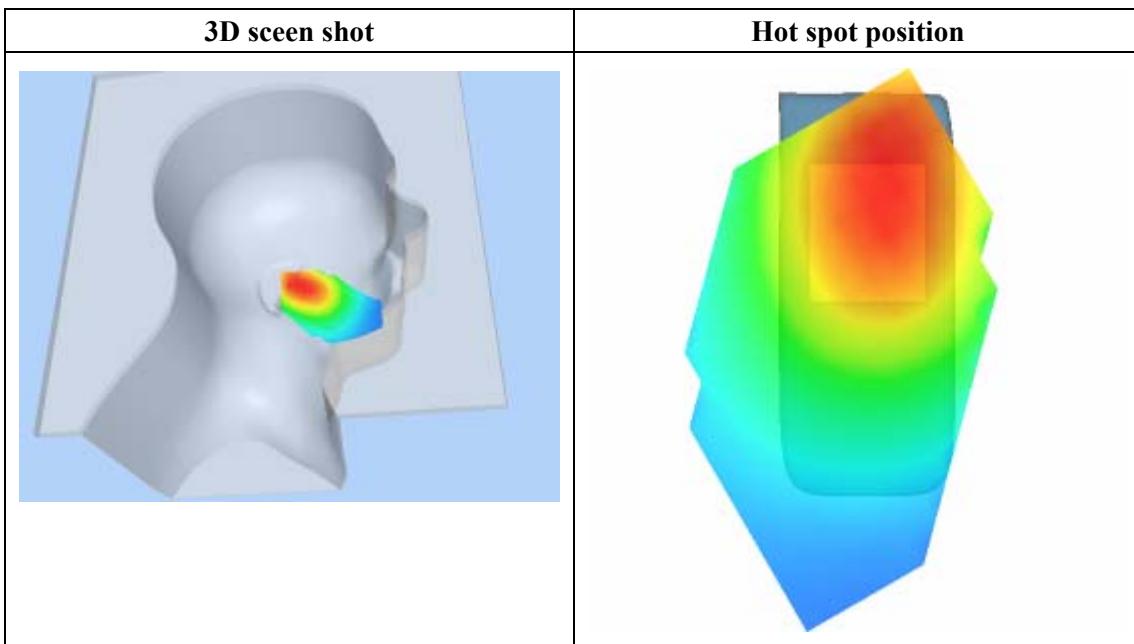
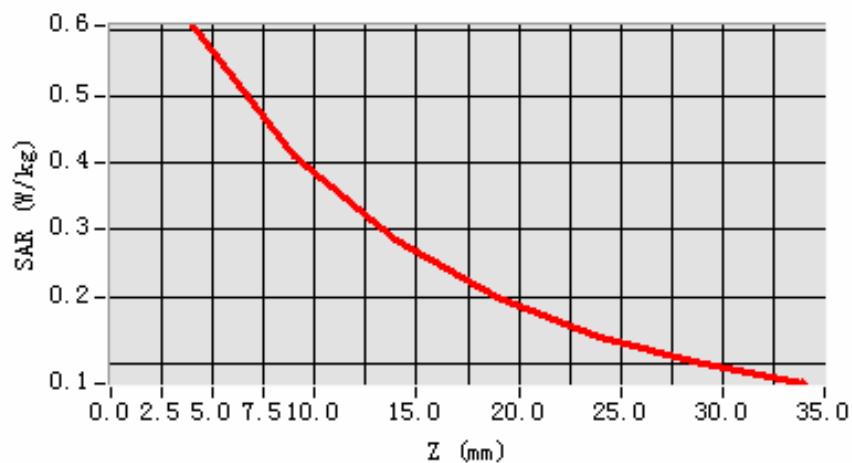
Maximum location: X=-15.00, Y=-2.00

SAR 10g (W/Kg)	0.385552
SAR 1g (W/Kg)	0.583915

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6050	0.4100	0.2843	0.1997	0.1408	0.1007

SAR, Z Axis Scan (X = -15, Y = -2)



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: 7/9/2010

Measurement duration: 7 minutes 23 seconds

A. Experimental conditions.

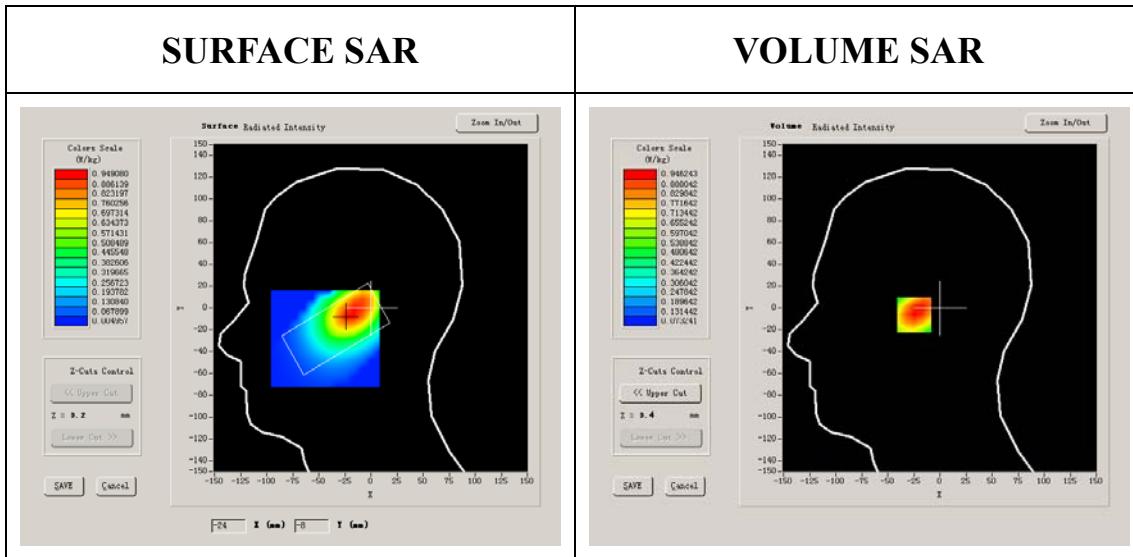
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	0.888655
SAR drift (%)	-3.000000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



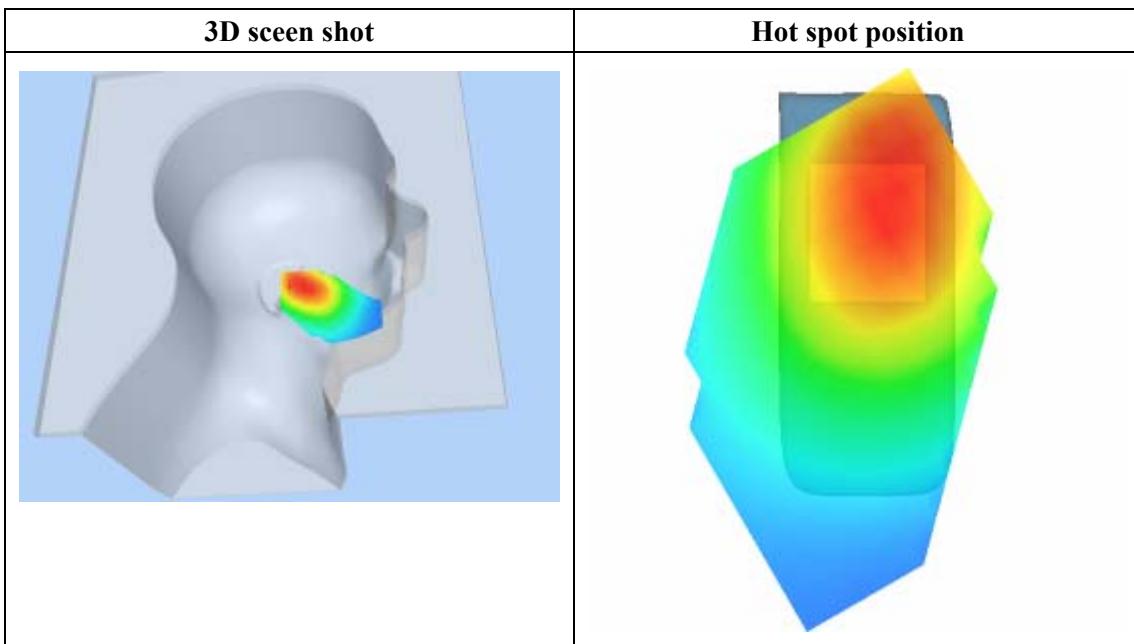
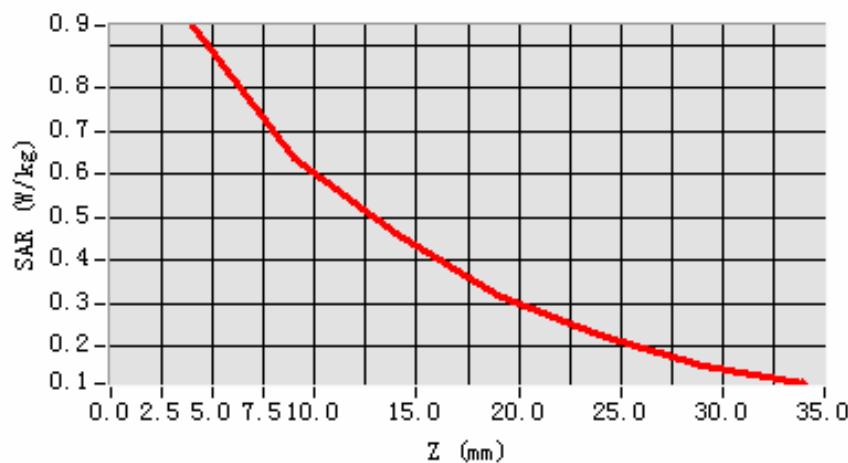
Maximum location: X=-20.00, Y=-6.00

SAR 10g (W/Kg)	0.603376
SAR 1g (W/Kg)	0.921075

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9462	0.6399	0.4633	0.3196	0.2248	0.1560

SAR, Z Axis Scan (X = -20, Y = -6)



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: 7/9/2010

Measurement duration: 7 minutes 25 seconds

A. Experimental conditions.

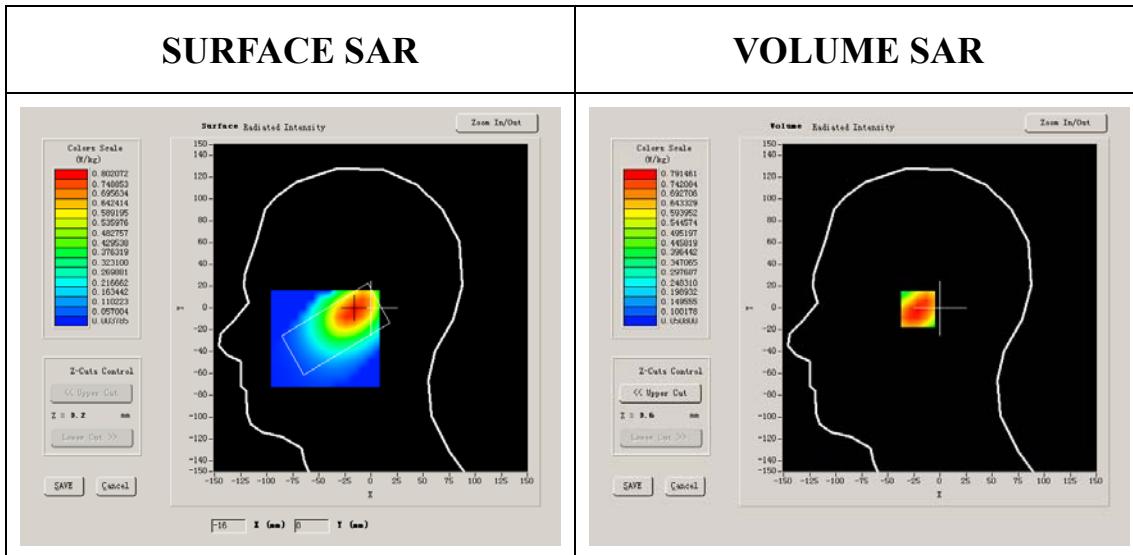
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 251):

Frequency (MHz)	848.799988
Relative permittivity (real part)	41.675999
Relative permittivity	18.967199

Conductivity (S/m)	0.894409
SAR drift (%)	0.330000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8

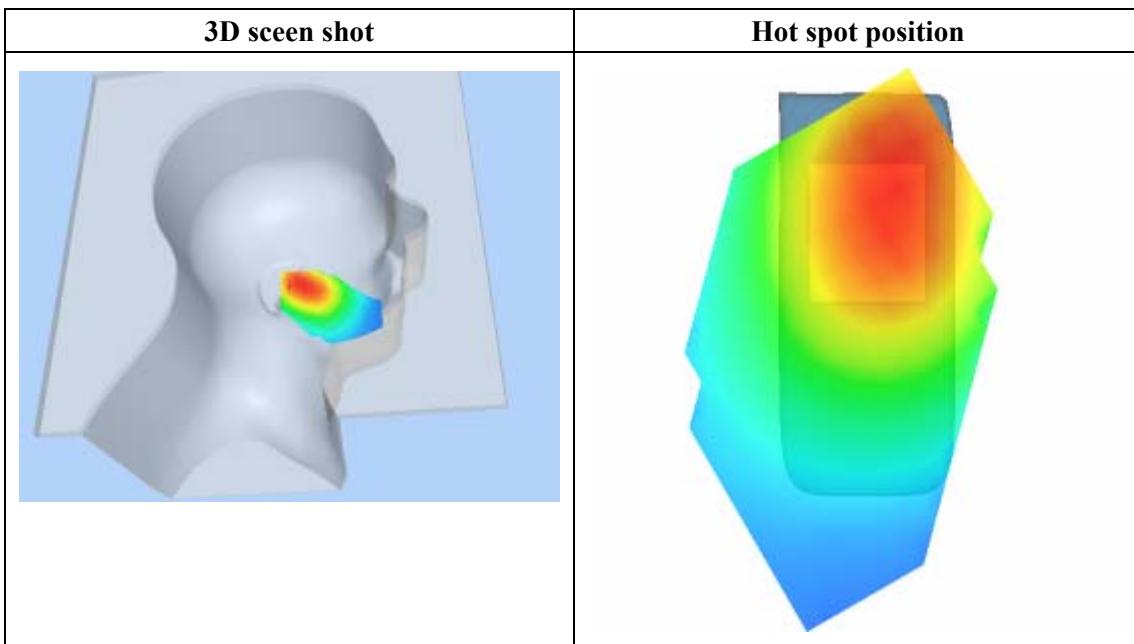
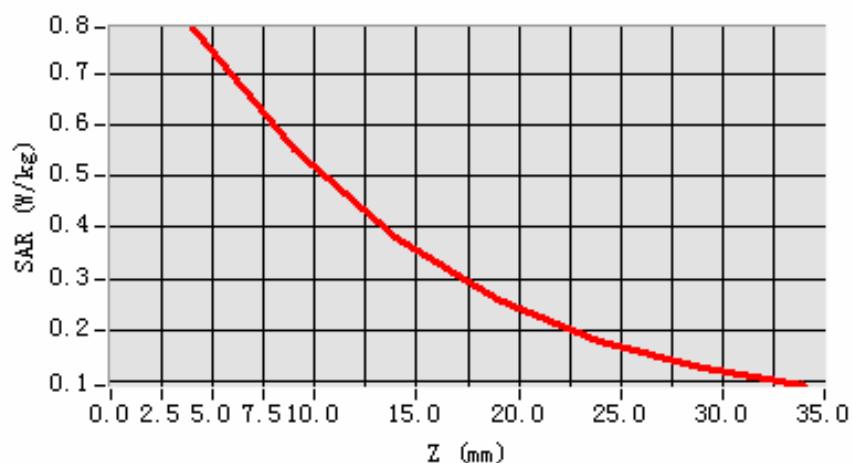


Maximum location: X=-16.00, Y=-1.00

SAR 10g (W/Kg)	0.506267
SAR 1g (W/Kg)	0.766217

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7915	0.5512	0.3791	0.2606	0.1788	0.1269

SAR, Z Axis Scan (X = -16, Y = -1)

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: 7/9/2010

Measurement duration: 9 minutes 6 seconds

A. Experimental conditions.

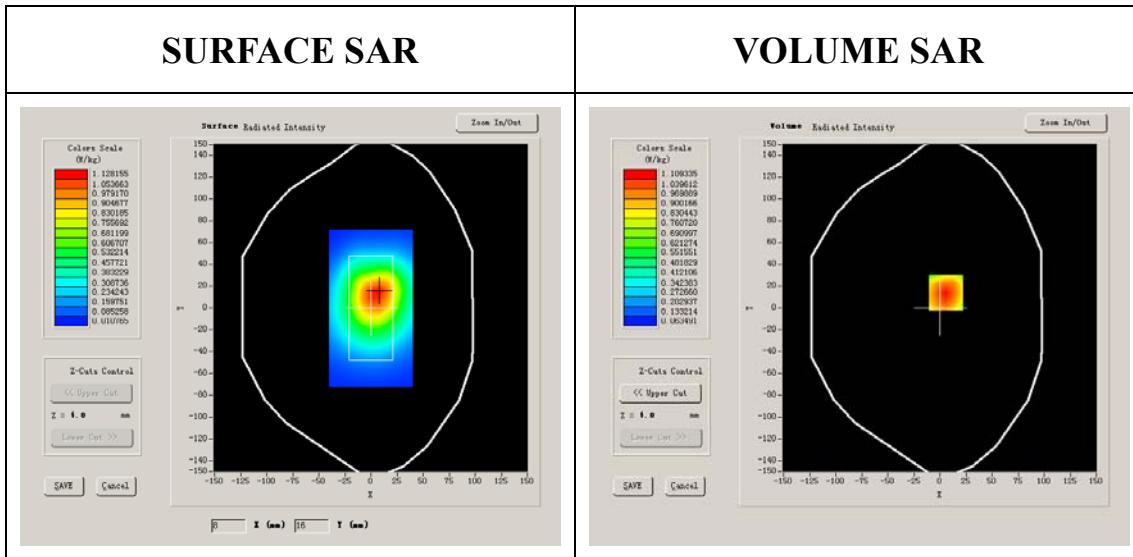
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Low
Signal	GPRS

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.974596
SAR drift (%)	-1.050000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:2



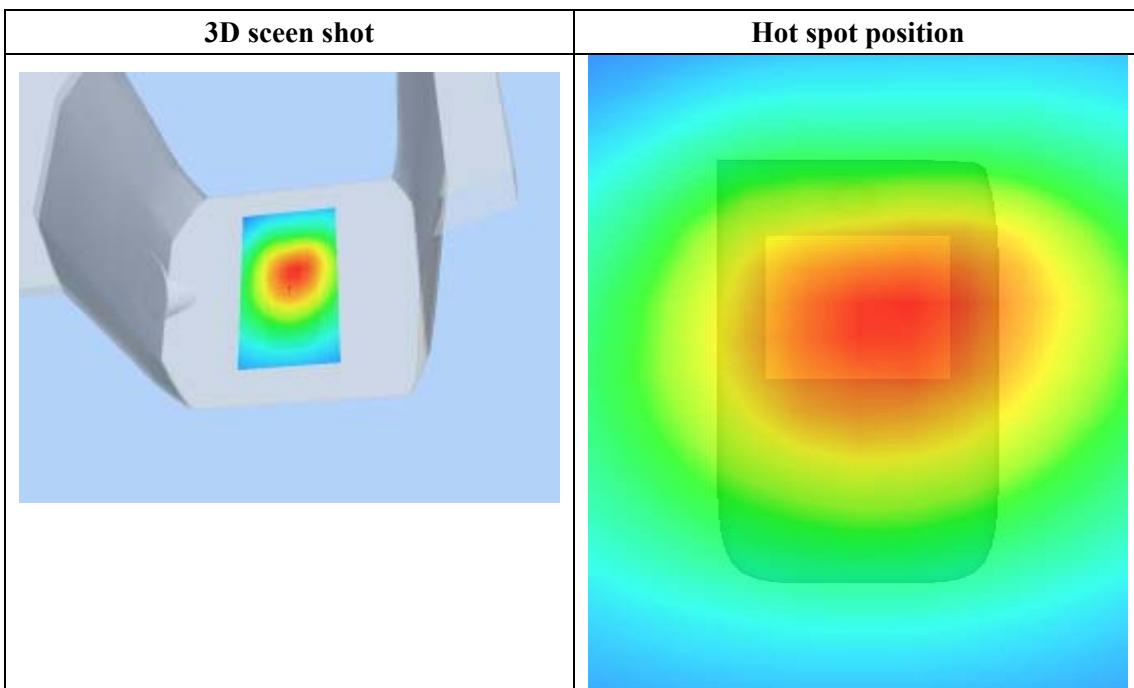
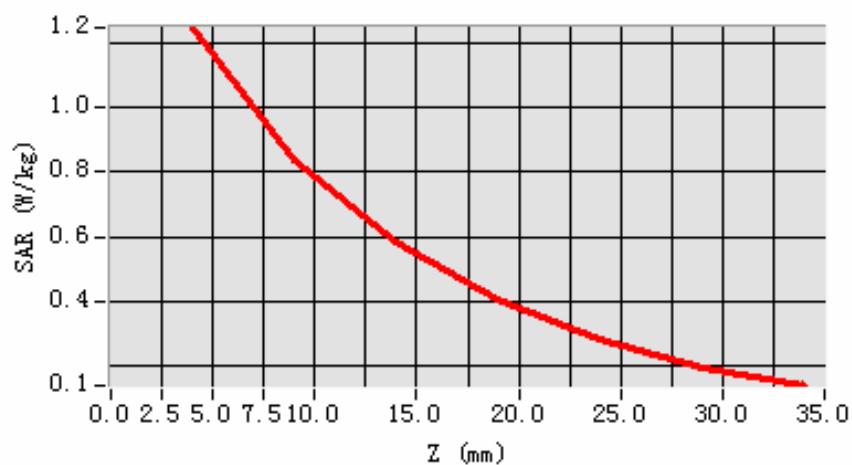
Maximum location: X=6.00, Y=14.00

SAR 10g (W/Kg)	0.790764
SAR 1g (W/Kg)	1.190197

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.2476	0.8358	0.5870	0.4052	0.2808	0.1958

SAR, Z Axis Scan (X = 6, Y = 14)



MEASUREMENT 14

Type: Phone measurement (Complete)

Area scan resolution: $dx=8\text{mm}, dy=8\text{mm}$

Zoom scan resolution: $dx=8\text{mm}, dy=8\text{mm}, dz=5\text{mm}$

Date of measurement: 13/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

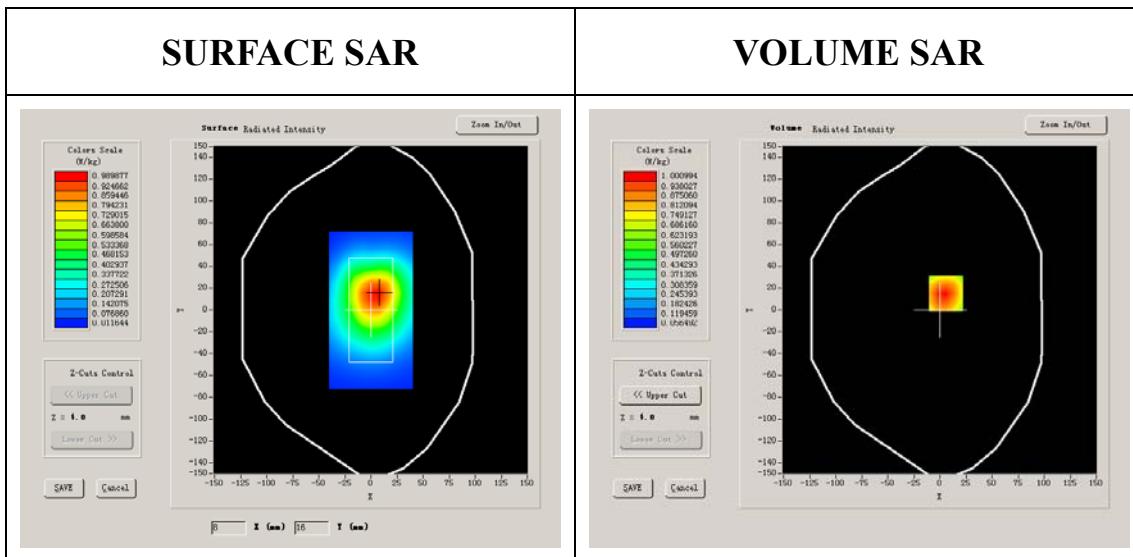
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 190):

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

Conductivity (S/m)	1.009033
SAR drift (%)	-0.580000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:2



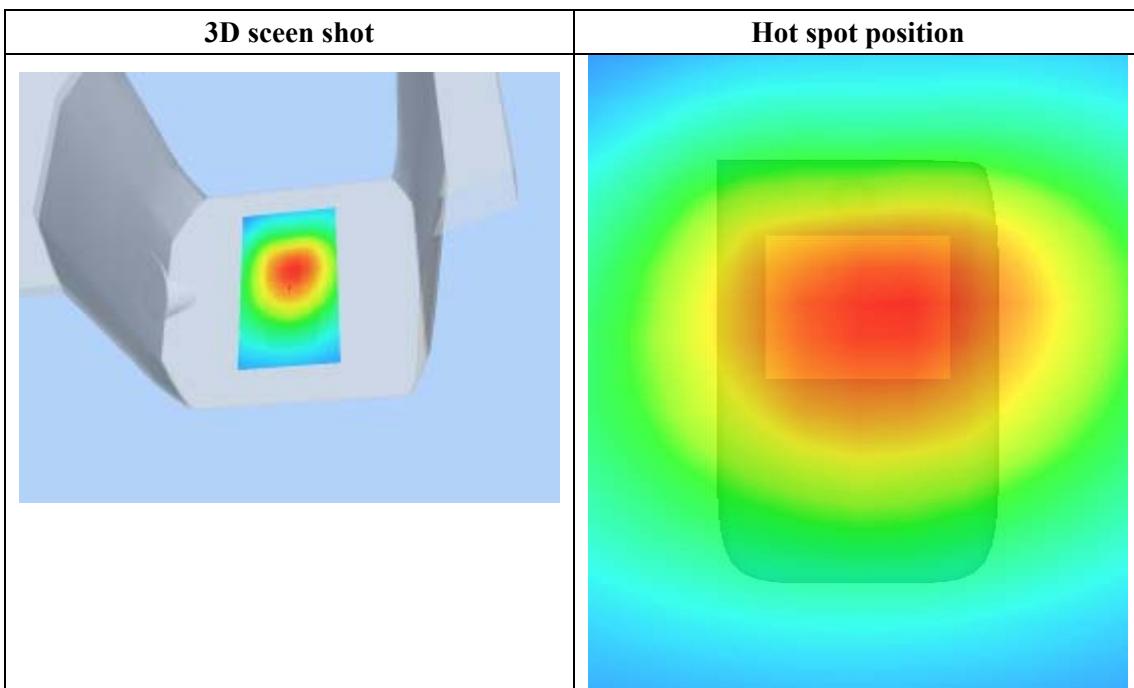
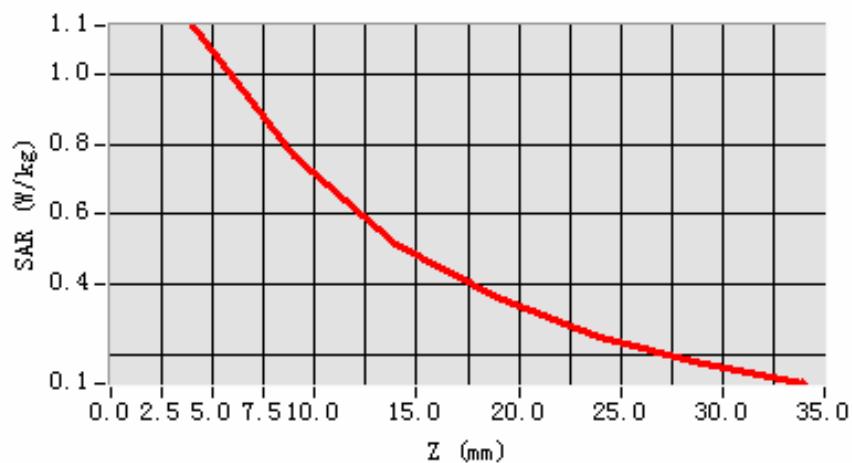
Maximum location: X=6.00, Y=15.00

SAR 10g (W/Kg)	0.715079
SAR 1g (W/Kg)	1.090575

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.1366	0.7677	0.5181	0.3645	0.2503	0.1749

SAR, Z Axis Scan (X = 6, Y = 15)



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: 7/9/2010

Measurement duration: 9 minutes 5 seconds

A. Experimental conditions.

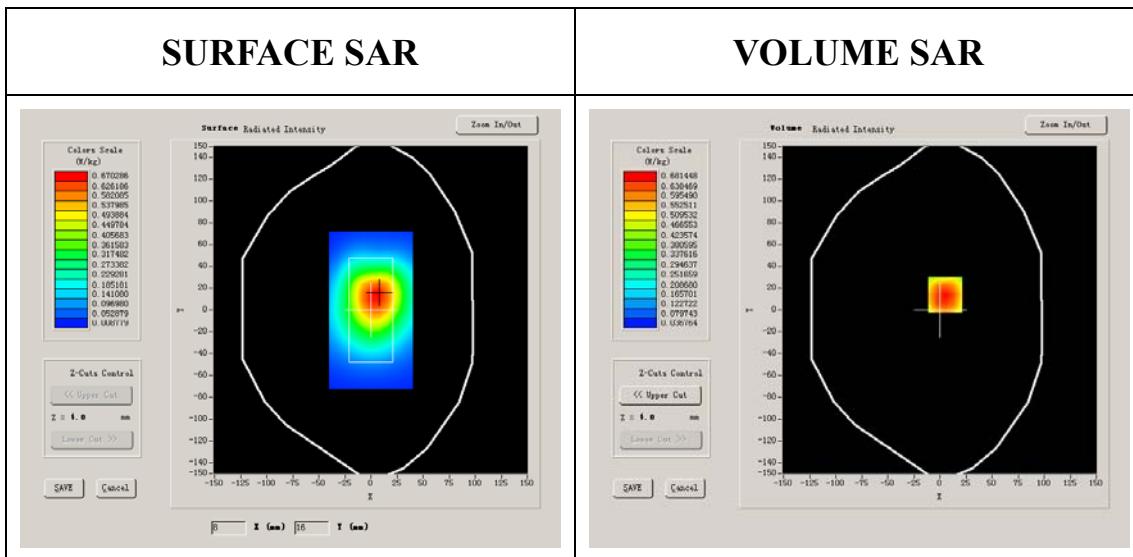
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

Higher Band SAR (Channel 251):

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

Conductivity (S/m)	1.005962
SAR drift (%)	0.780000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:2



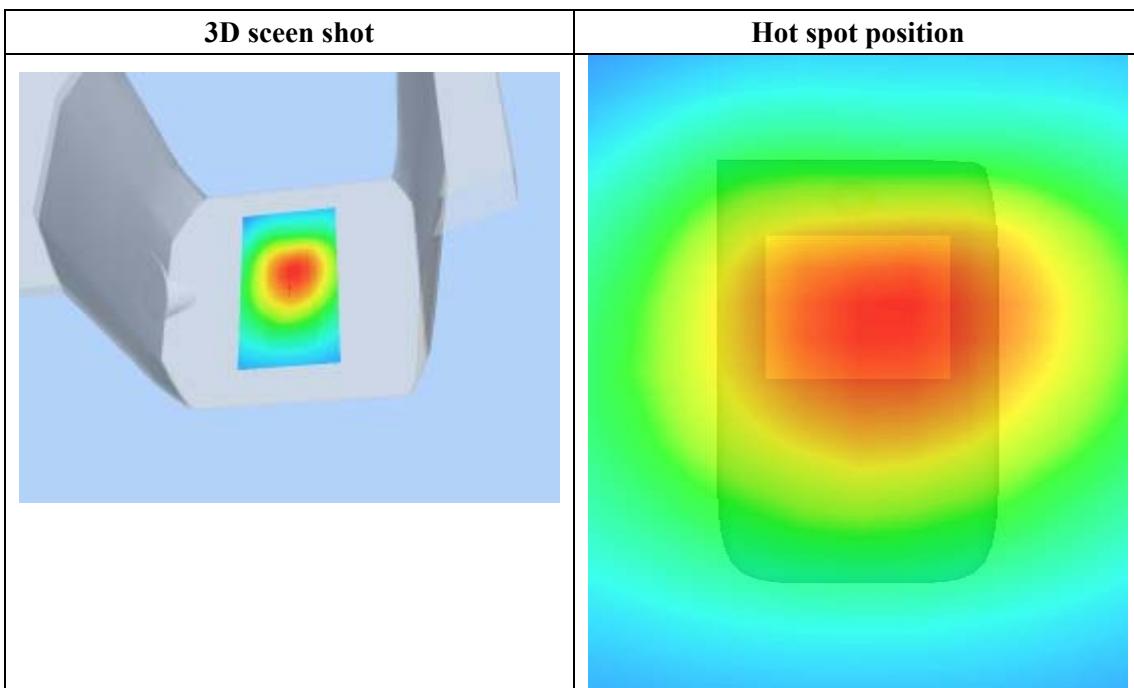
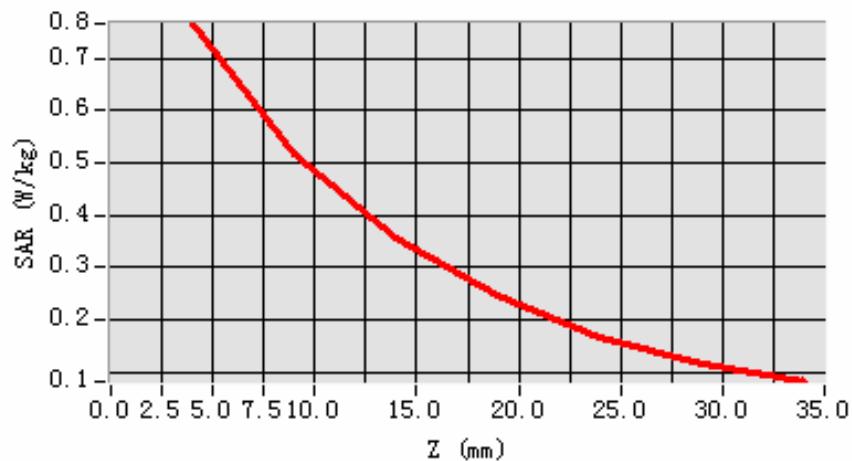
Maximum location: X=5.00, Y=14.00

SAR 10g (W/Kg)	0.490631
SAR 1g (W/Kg)	0.737954

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7664	0.5186	0.3557	0.2475	0.1657	0.1166

SAR, Z Axis Scan (X = 5, Y = 14)



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: 7/9/2010

Measurement duration: 9 minutes 6 seconds

A. Experimental conditions.

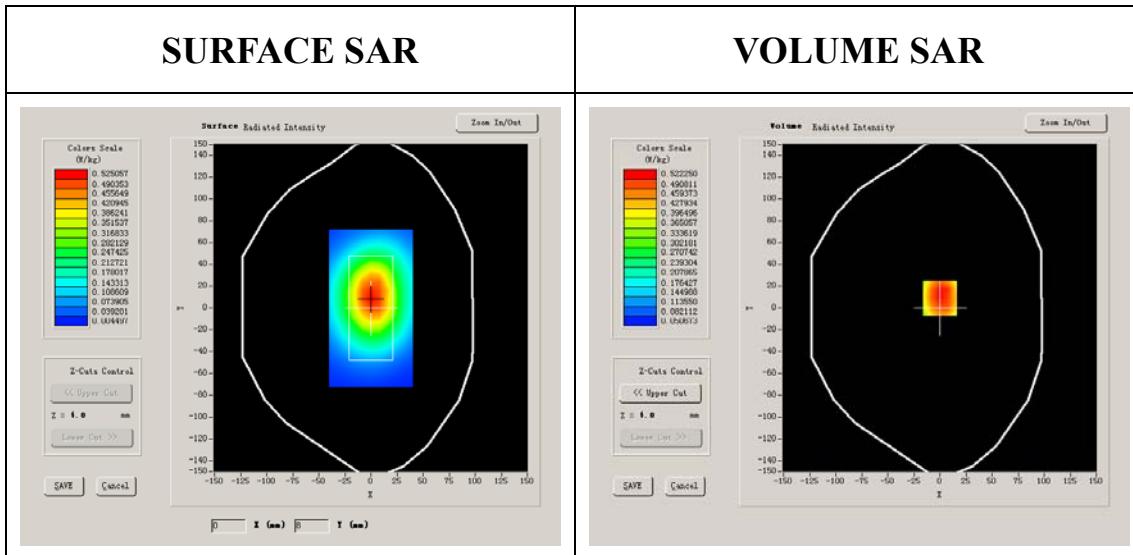
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Low
Signal	GPRS

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.974596
SAR drift (%)	-1.220000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:2

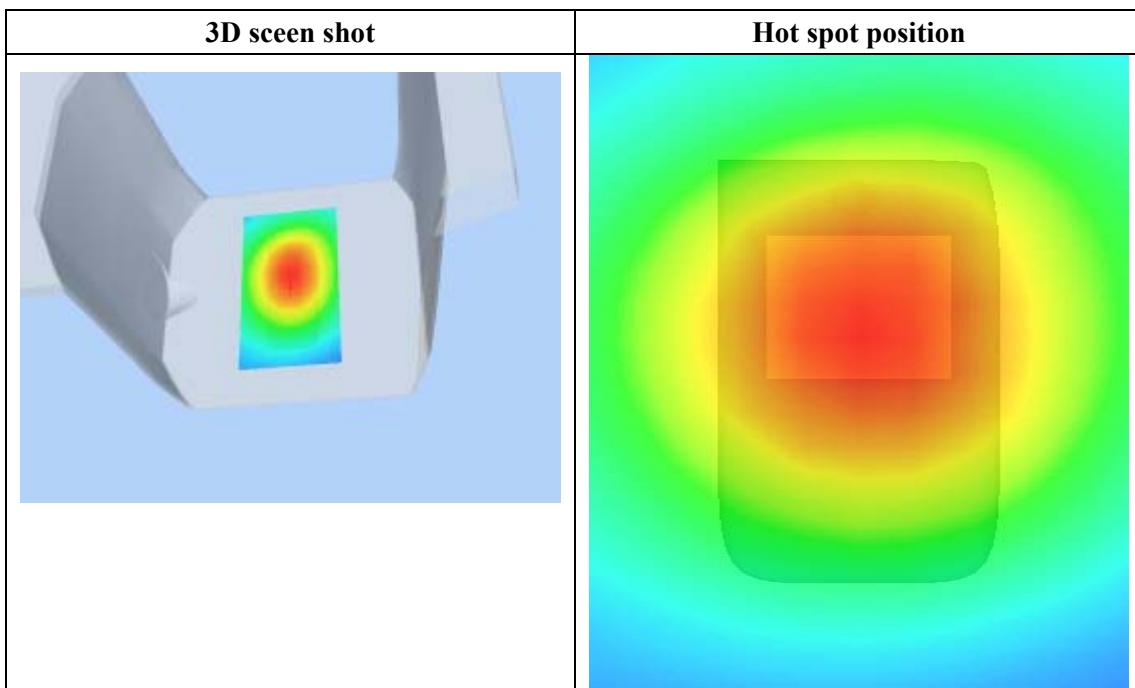
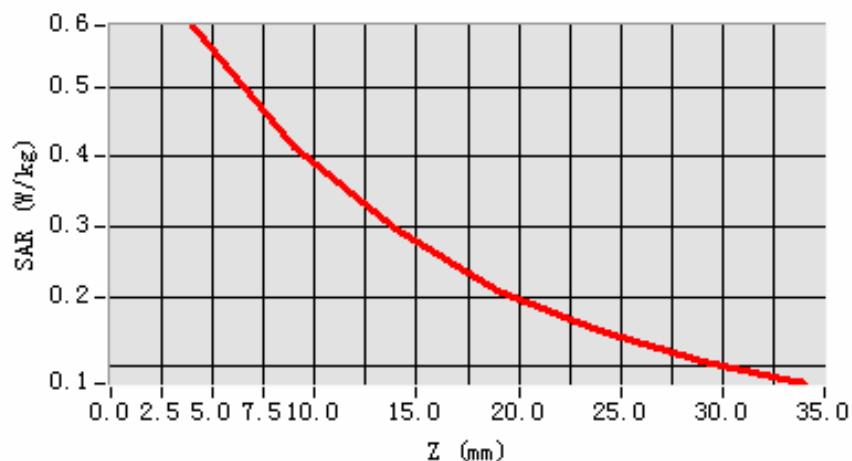


Maximum location: X=0.00, Y=9.00

SAR 10g (W/Kg)	0.386079
SAR 1g (W/Kg)	0.572363

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5873	0.4148	0.2966	0.2099	0.1504	0.1063

SAR, Z Axis Scan (X = 0, Y = 9)

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: 7/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

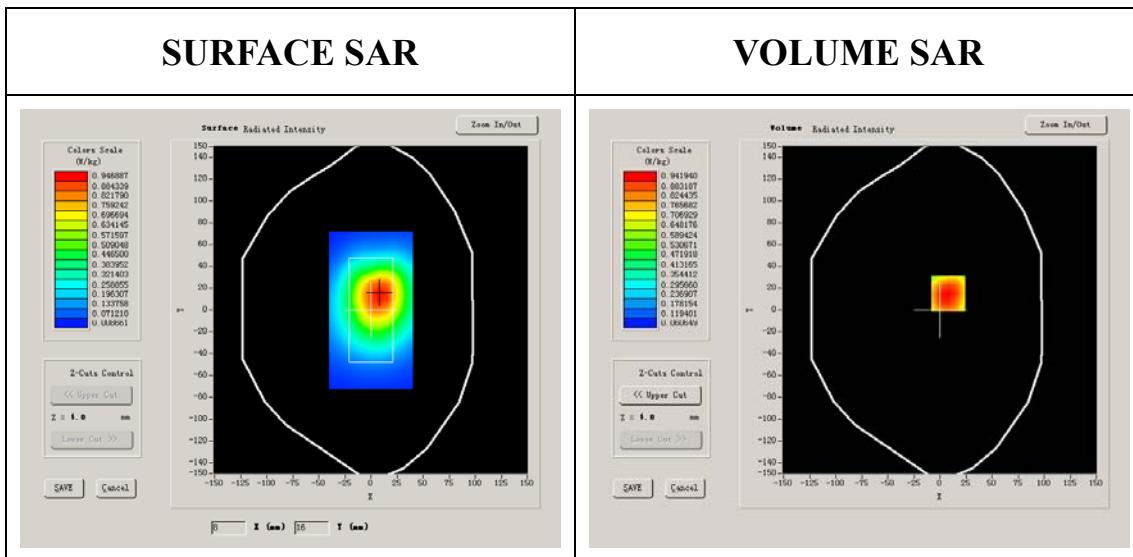
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.974596
SAR drift (%)	2.390000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



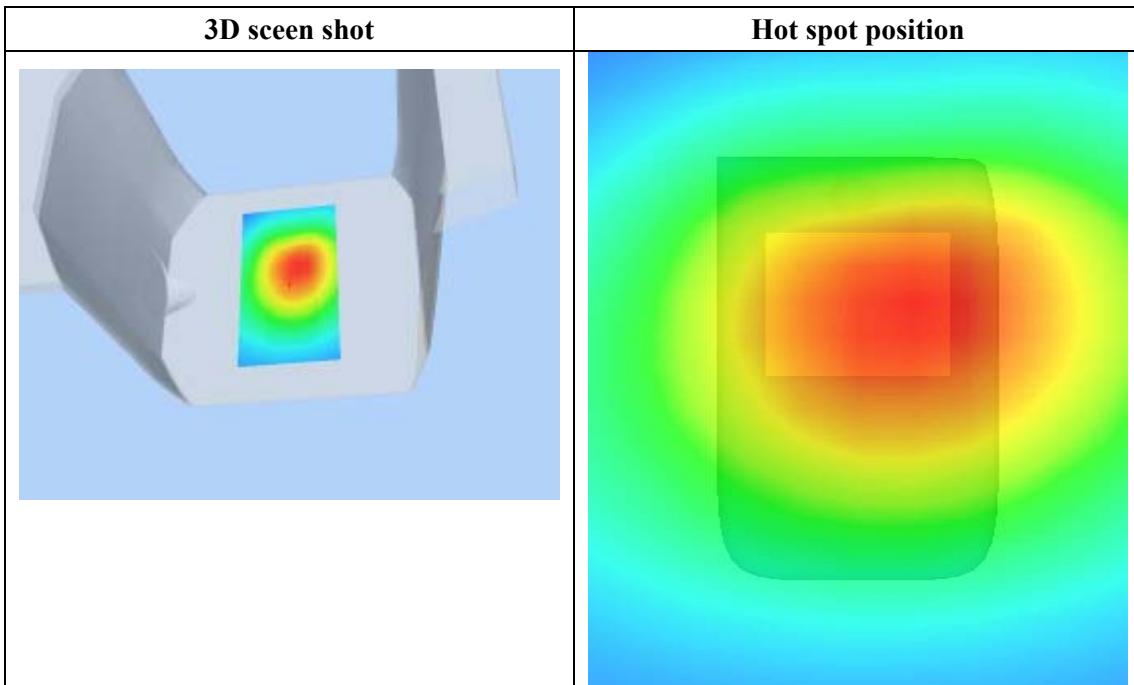
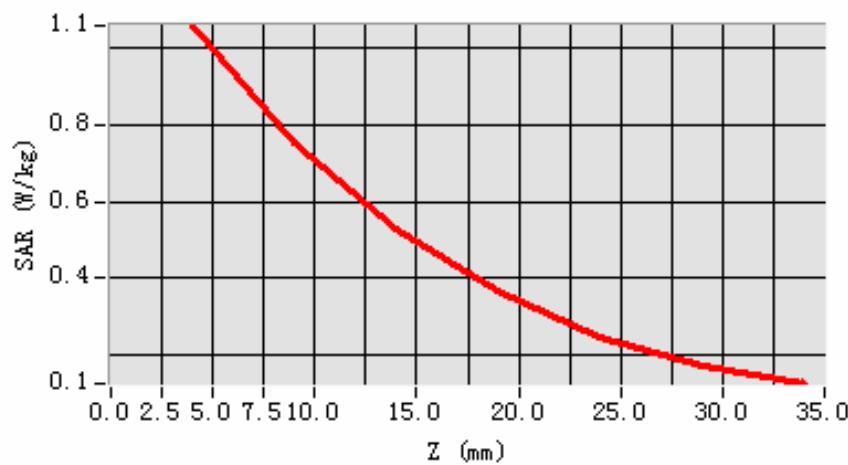
Maximum location: X=8.00, Y=15.00

SAR 10g (W/Kg)	0.688525
SAR 1g (W/Kg)	1.028964

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0593	0.7558	0.5285	0.3647	0.2433	0.1711

SAR, Z Axis Scan (X = 8, Y = 15)



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: 7/9/2010

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

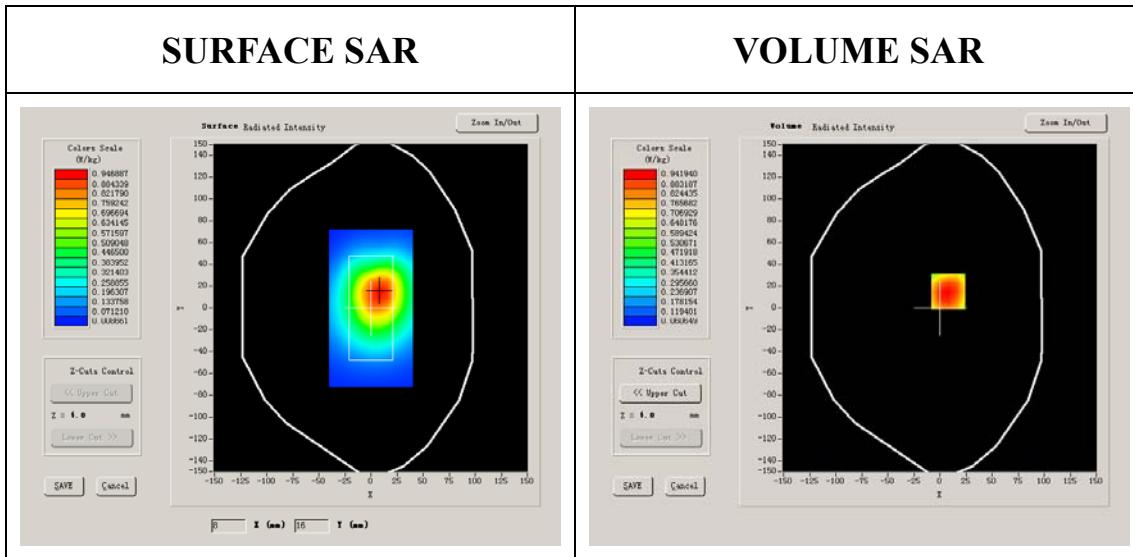
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 128):

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

Conductivity (S/m)	0.974596
SAR drift (%)	2.390000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:8



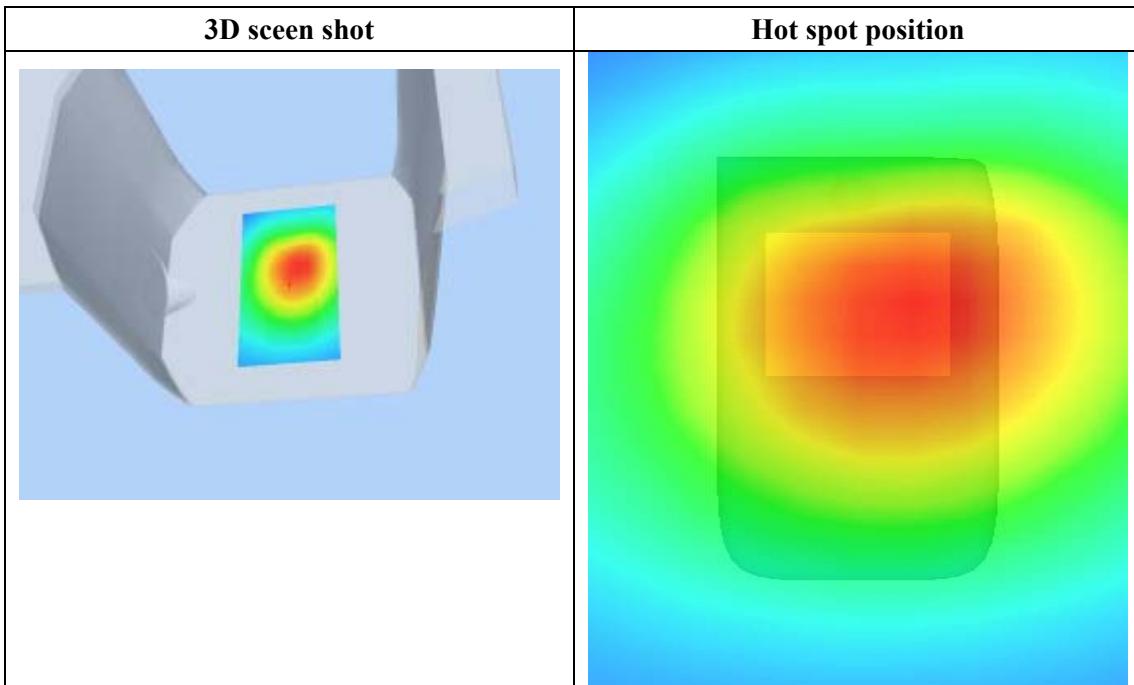
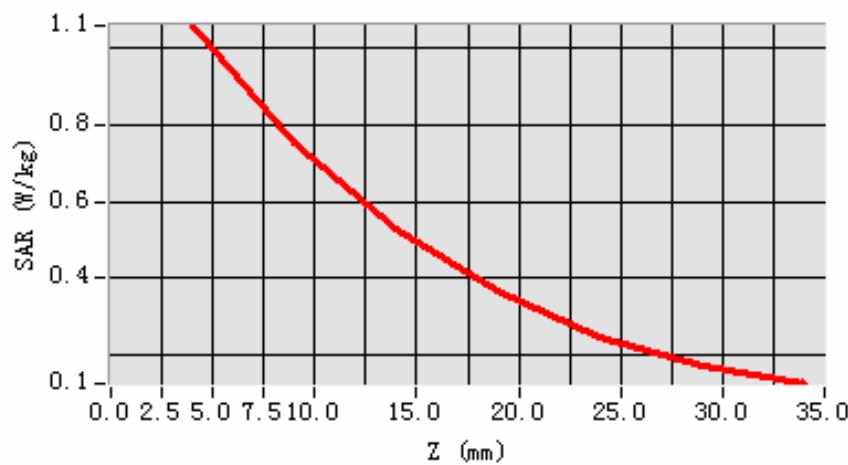
Maximum location: X=8.00, Y=15.00

SAR 10g (W/Kg)	0.673888
SAR 1g (W/Kg)	1.016499

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0593	0.7558	0.5285	0.3647	0.2433	0.1711

SAR, Z Axis Scan (X = 8, Y = 15)



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: 7/9/2010

Measurement duration: 7 minutes 23 seconds

A. Experimental conditions.

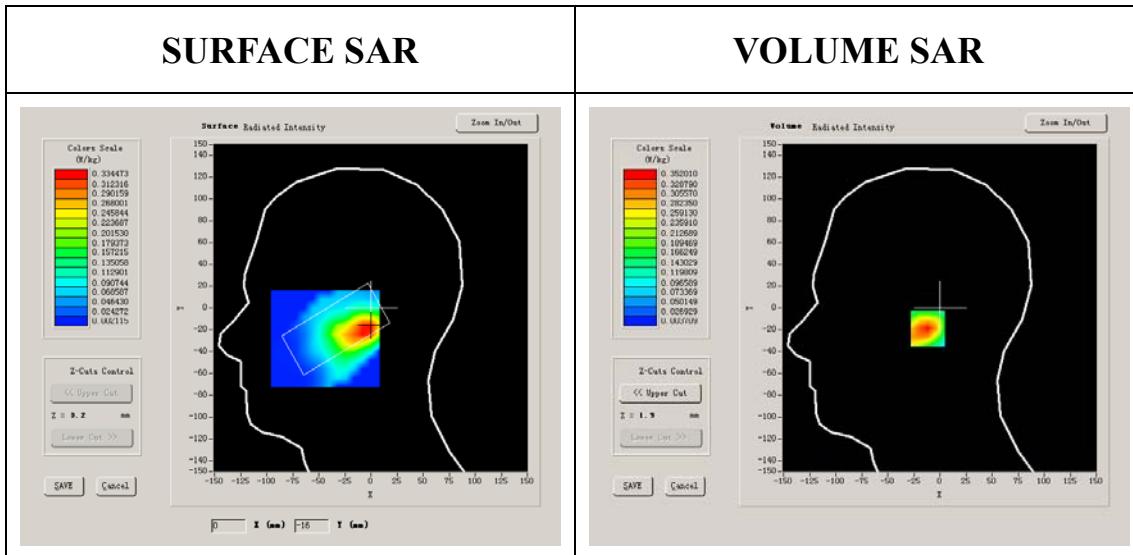
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	39.993999
Relative permittivity	12.991650

Conductivity (S/m)	1.335397
SAR drift (%)	0.360000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

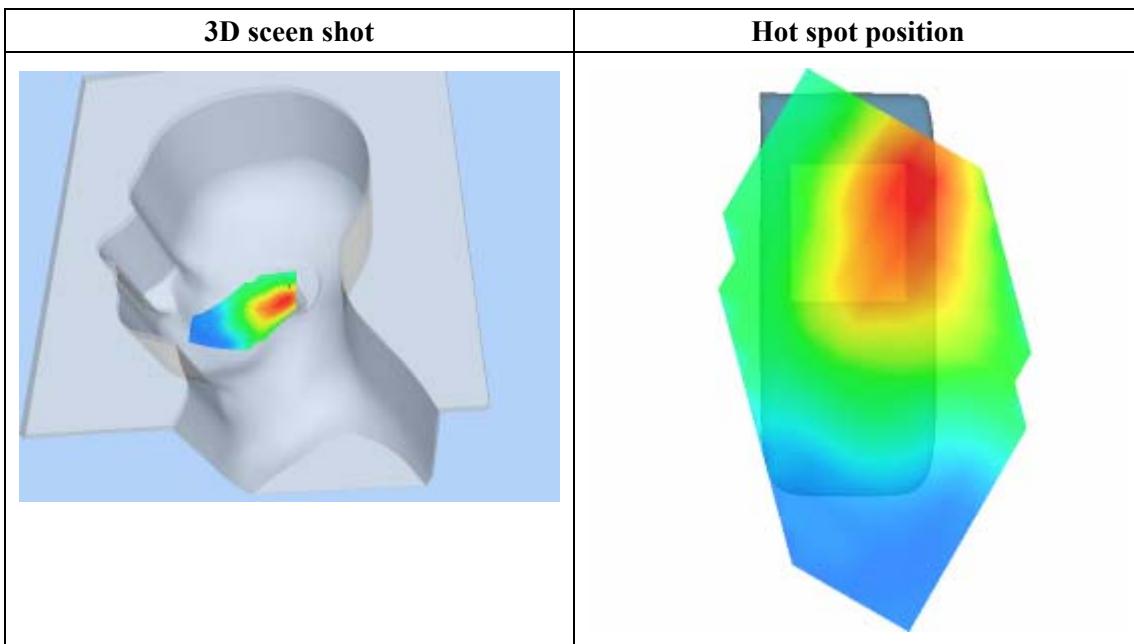
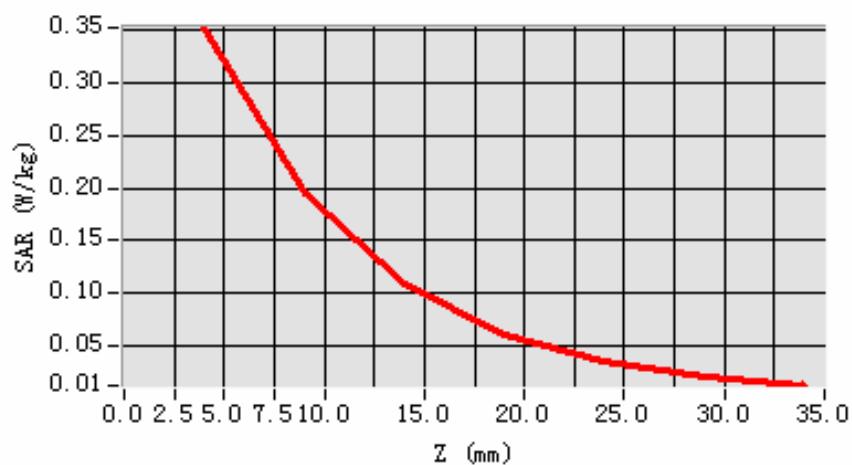


Maximum location: X=-3.00, Y=-19.00

SAR 10g (W/Kg)	0.186772
SAR 1g (W/Kg)	0.333138

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3520	0.1954	0.1090	0.0604	0.0359	0.0214

SAR, Z Axis Scan (X = -3, Y = -19)

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: 7/9/2010

Measurement duration: 7 minutes 26 seconds

A. Experimental conditions.

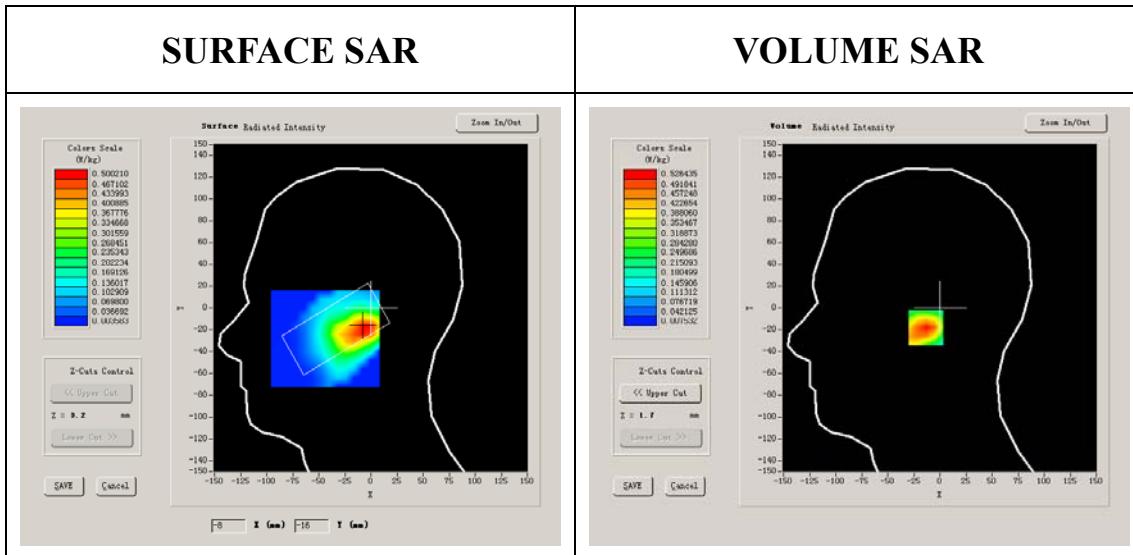
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
SAR drift (%)	-1.200000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

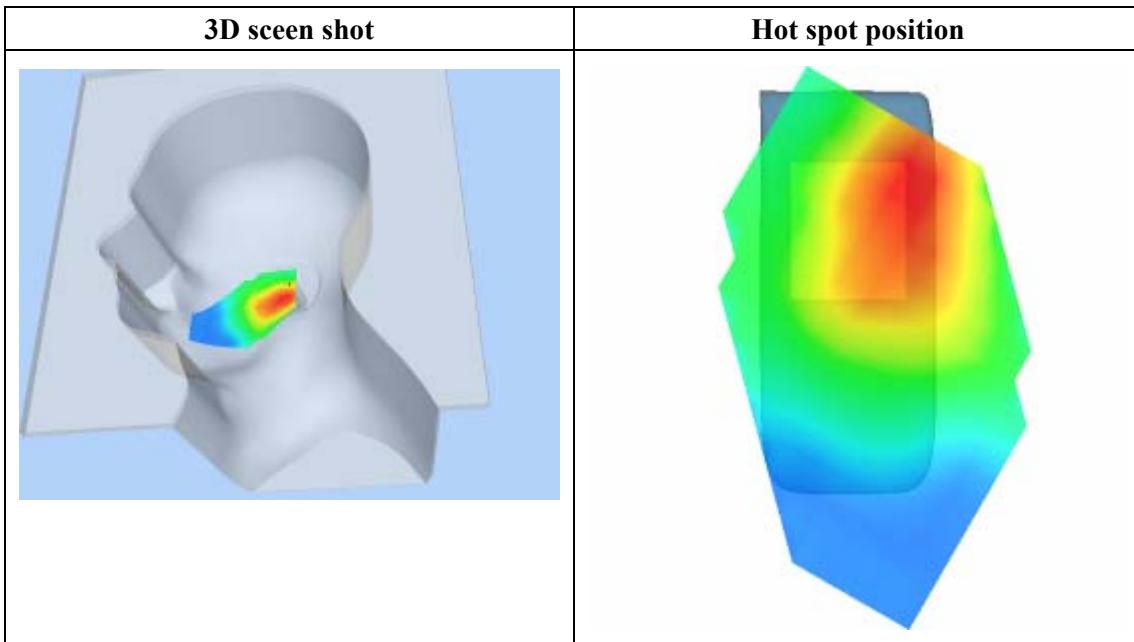
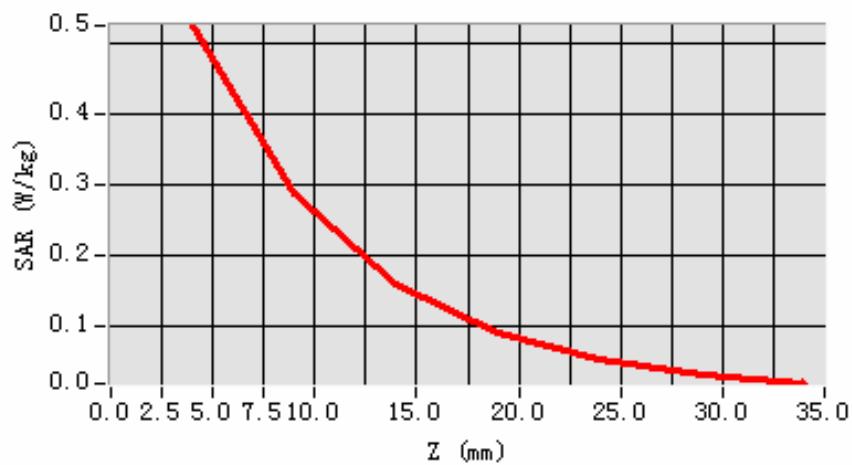


Maximum location: X=-5.00, Y=-18.00

SAR 10g (W/Kg)	0.281881
SAR 1g (W/Kg)	0.501692

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5264	0.2894	0.1604	0.0911	0.0538	0.0328

SAR, Z Axis Scan (X = -5, Y = -18)

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: 7/9/2010

Measurement duration: 7 minutes 23 seconds

A. Experimental conditions.

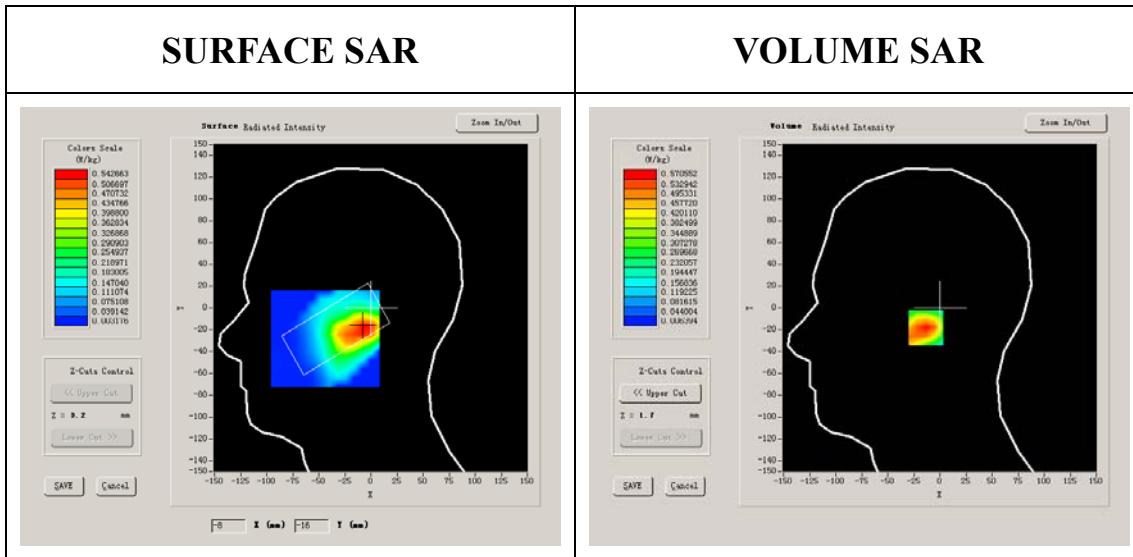
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	39.929001
Relative permittivity	13.156500

Conductivity (S/m)	1.395905
SAR drift (%)	0.550000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

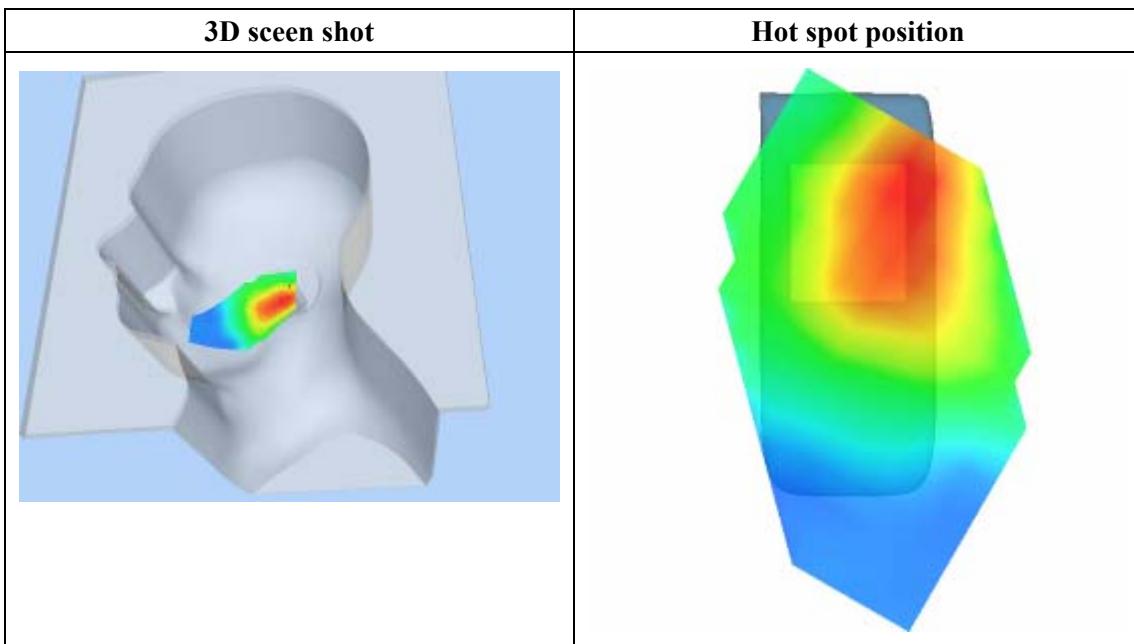
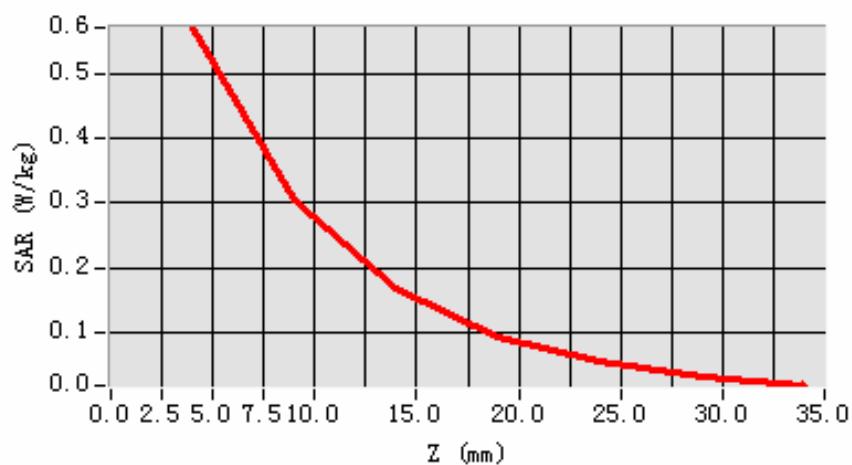


Maximum location: X=-5.00, Y=-18.00

SAR 10g (W/Kg)	0.307659
SAR 1g (W/Kg)	0.546154

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5706	0.3058	0.1693	0.0948	0.0579	0.0332

SAR, Z Axis Scan (X = -5, Y = -18)

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: 7/9/2010

Measurement duration: 7 minutes 25 seconds

A. Experimental conditions.

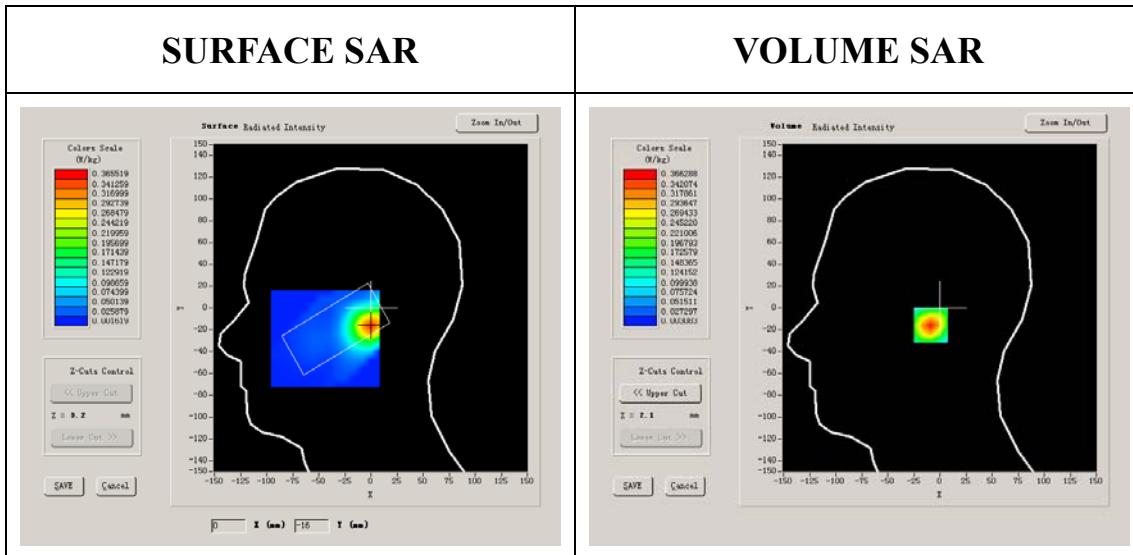
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	39.993999
Relative permittivity	12.991650

Conductivity (S/m)	1.335397
SAR drift (%)	0.810000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

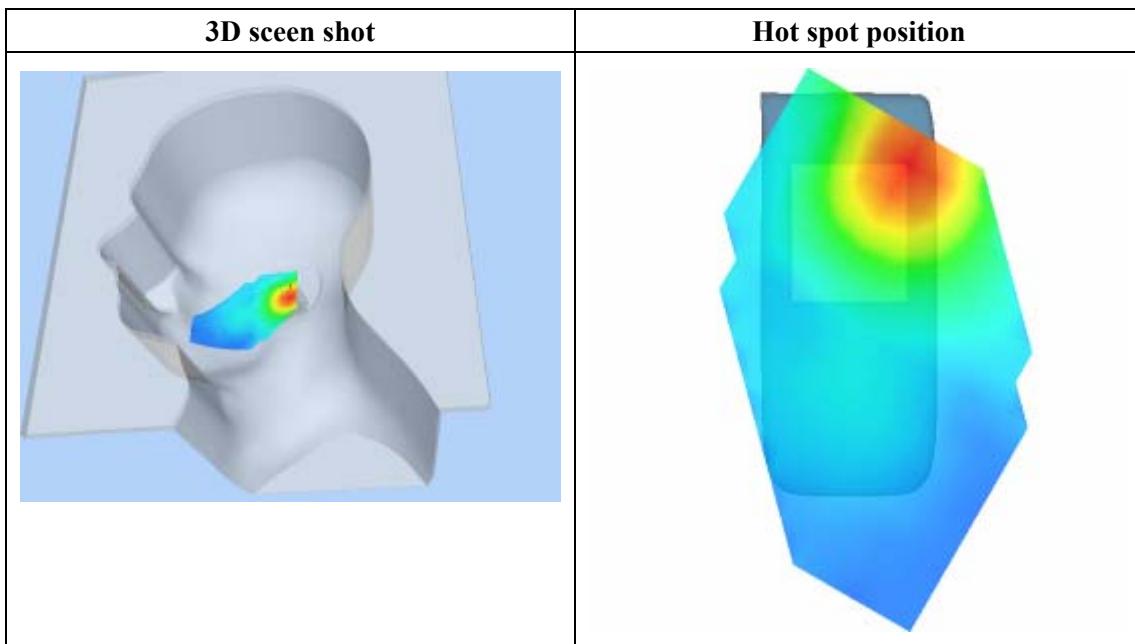
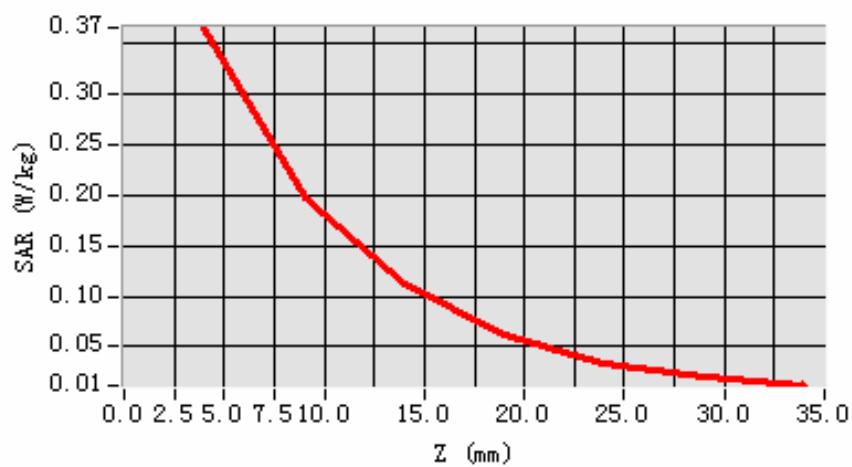


Maximum location: X=0.00, Y=-16.00

SAR 10g (W/Kg)	0.179140
SAR 1g (W/Kg)	0.342490

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3663	0.1983	0.1113	0.0631	0.0339	0.0209

SAR, Z Axis Scan (X = 0, Y = -16)

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: 7/9/2010

Measurement duration: 7 minutes 17 seconds

A. Experimental conditions.

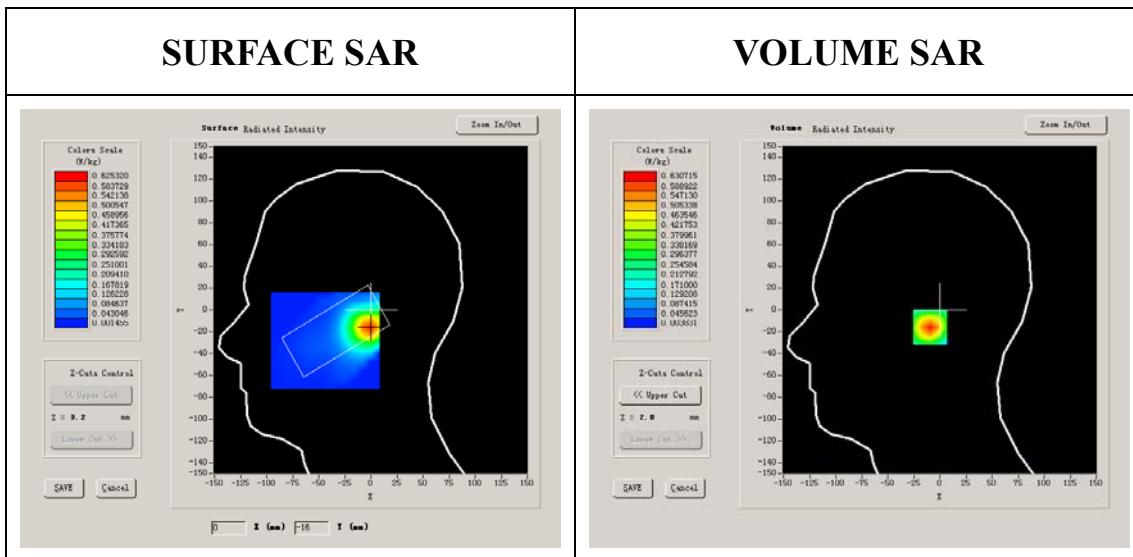
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
SAR drift (%)	0.590000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

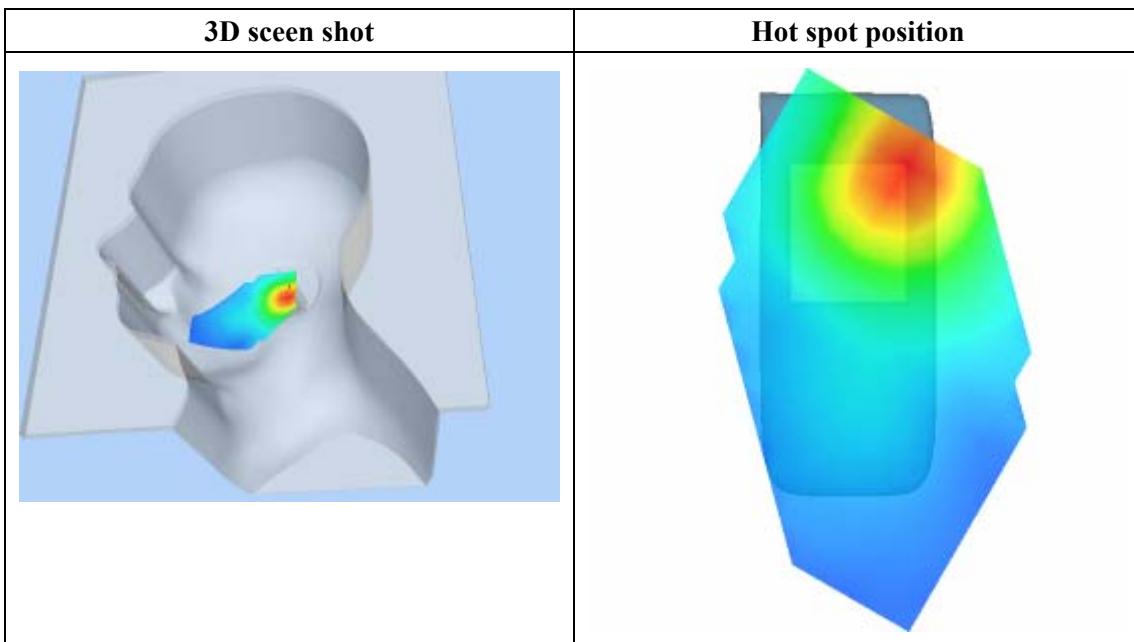
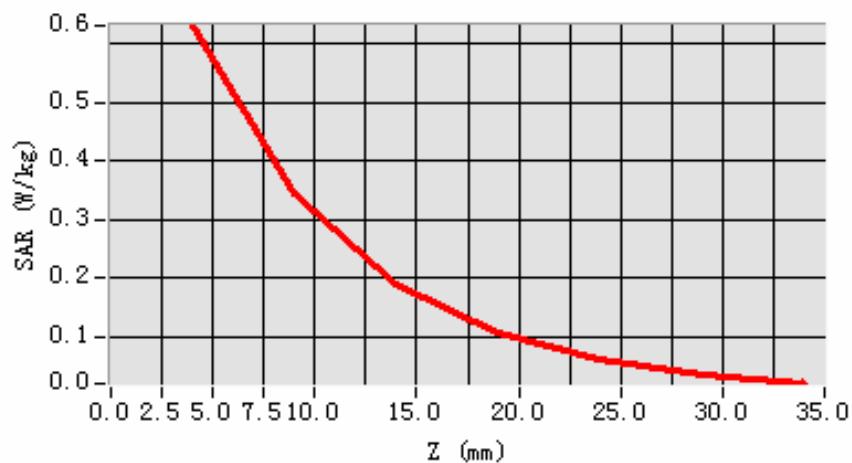


Maximum location: X=-1.00, Y=-16.00

SAR 10g (W/Kg)	0.308625
SAR 1g (W/Kg)	0.589000

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6307	0.3451	0.1903	0.1056	0.0597	0.0344

SAR, Z Axis Scan (X = -1, Y = -16)

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: 7/9/2010

Measurement duration: 7 minutes 27 seconds

A. Experimental conditions.

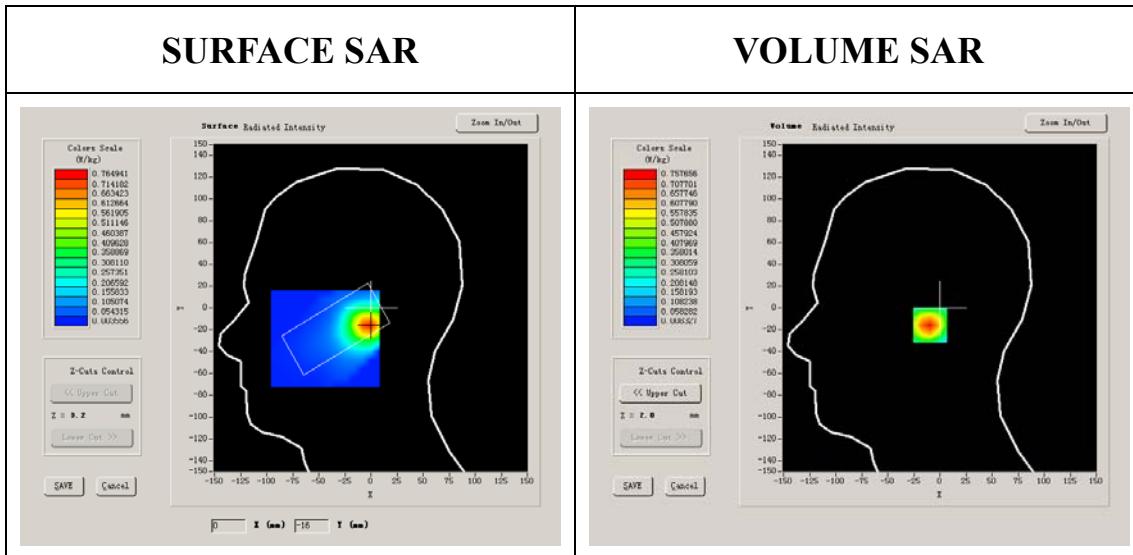
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	39.929001
Relative permittivity	13.156500

Conductivity (S/m)	1.395905
SAR drift (%)	-0.690000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8



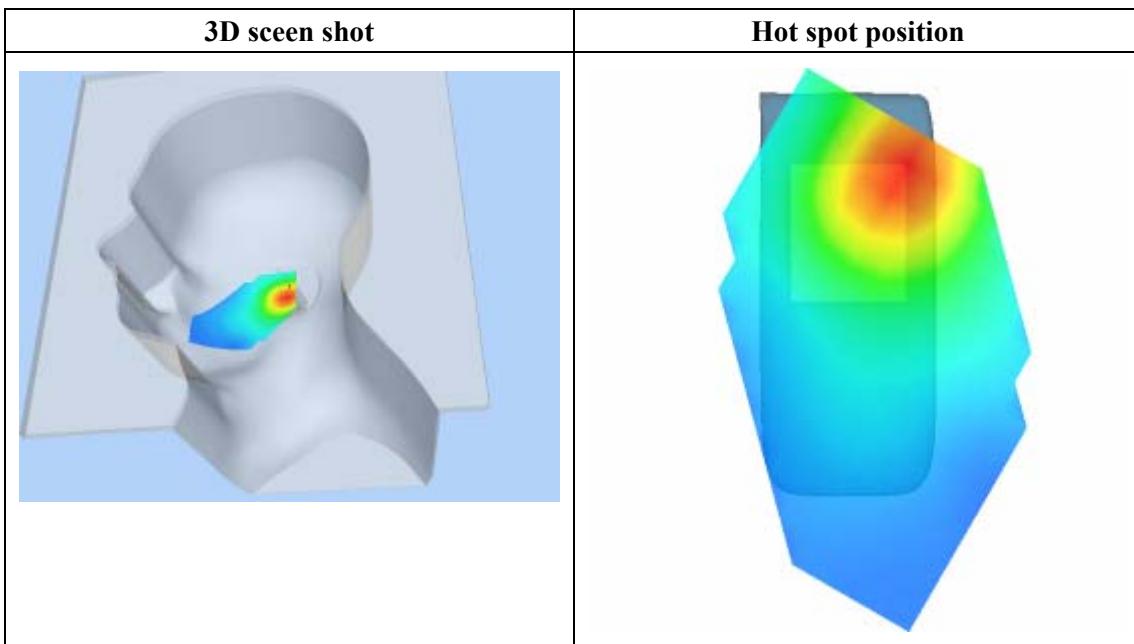
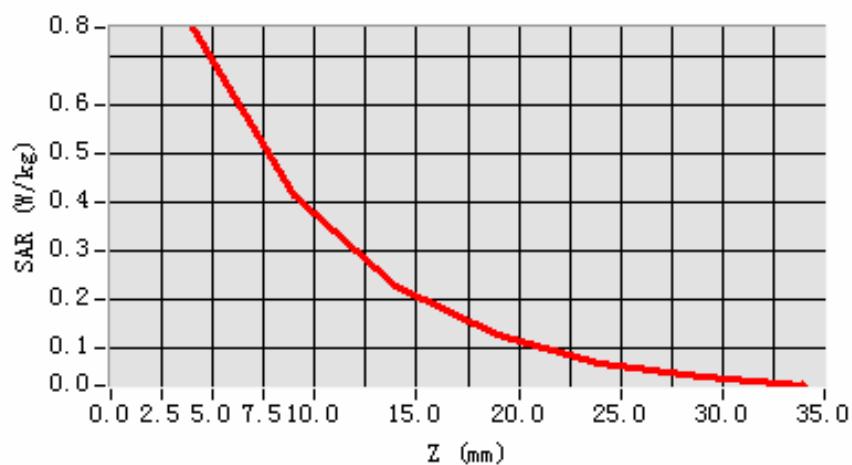
Maximum location: X=-1.00, Y=-16.00

SAR 10g (W/Kg)	0.377837
SAR 1g (W/Kg)	0.712752

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7577	0.4151	0.2282	0.1261	0.0702	0.0422

SAR, Z Axis Scan (X = -1, Y = -16)



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: 7/9/2010

Measurement duration: 7 minutes 25 seconds

A. Experimental conditions.

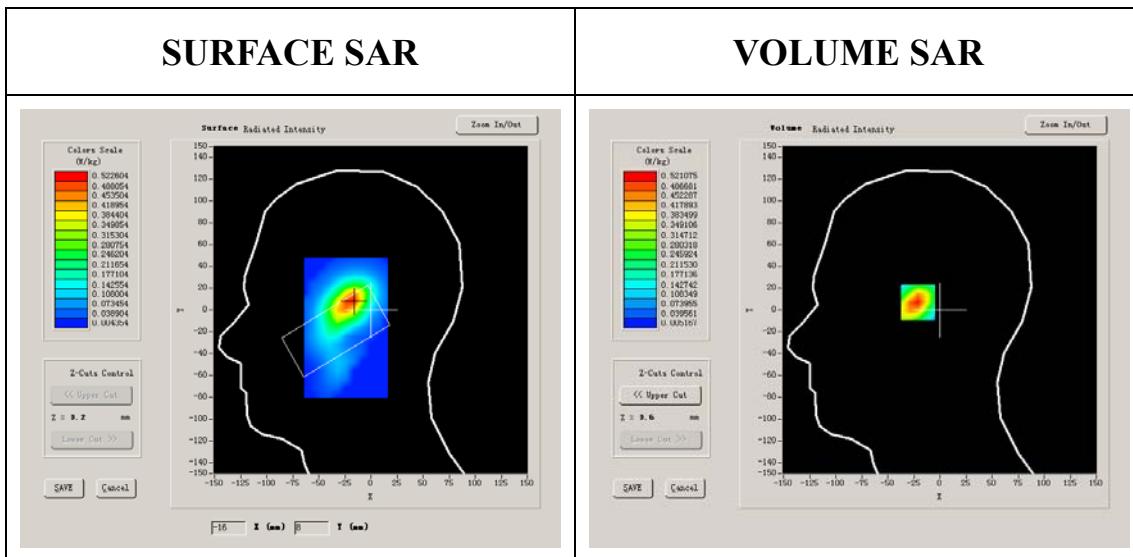
Phantom File	zinf3.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	39.993999
Relative permittivity	12.991650

Conductivity (S/m)	1.335397
SAR drift (%)	-0.860000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

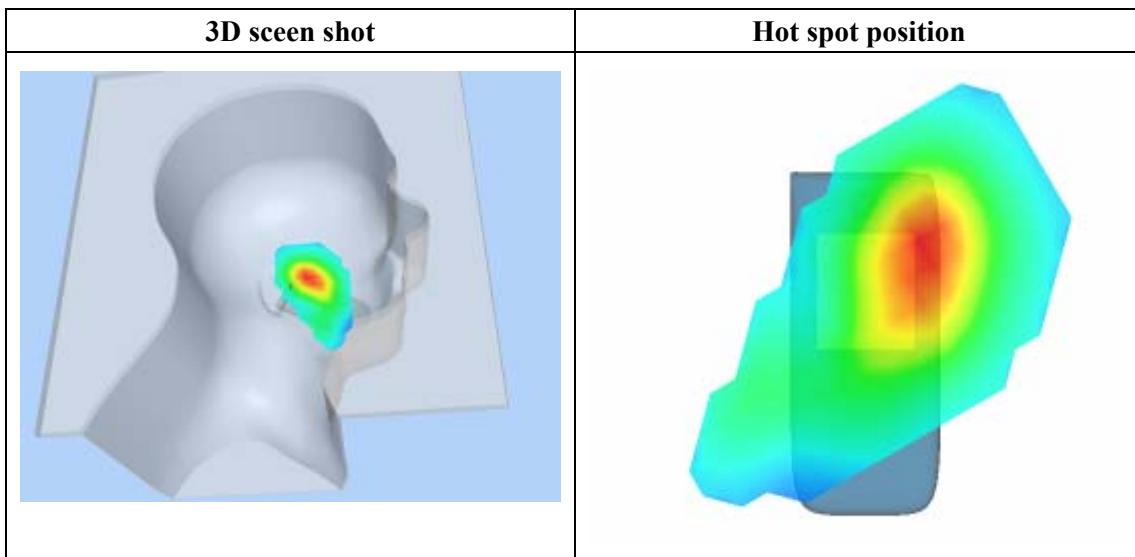
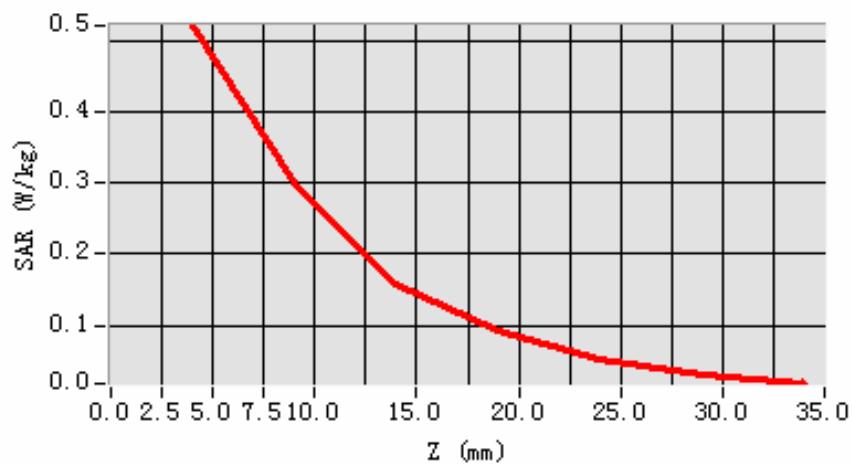


Maximum location: X=-18.00, Y=8.00

SAR 10g (W/Kg)	0.264001
SAR 1g (W/Kg)	0.490349

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5211	0.3002	0.1576	0.0920	0.0524	0.0309

SAR, Z Axis Scan (X = -18, Y = 8)

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: 9/9/2010

Measurement duration: 7 minutes 28 seconds

A. Experimental conditions.

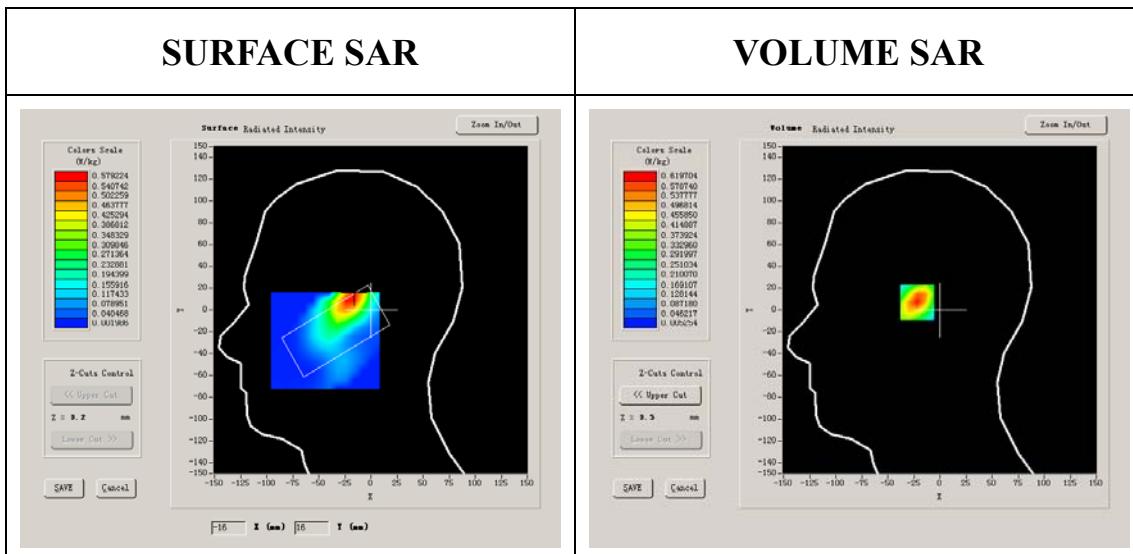
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
SAR drift (%)	0.130000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

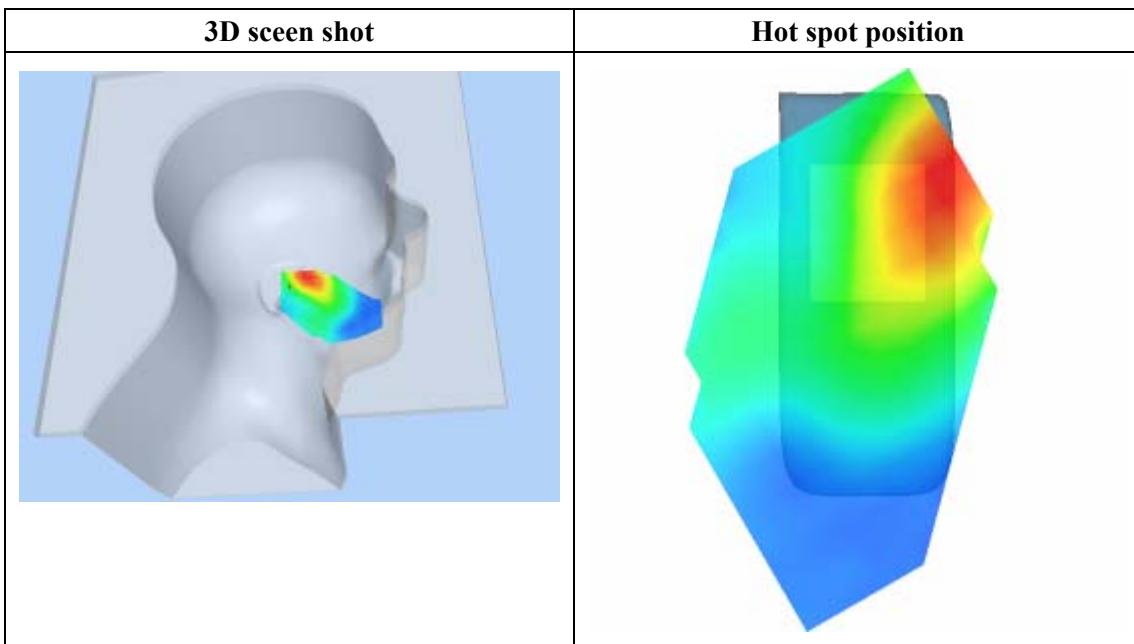
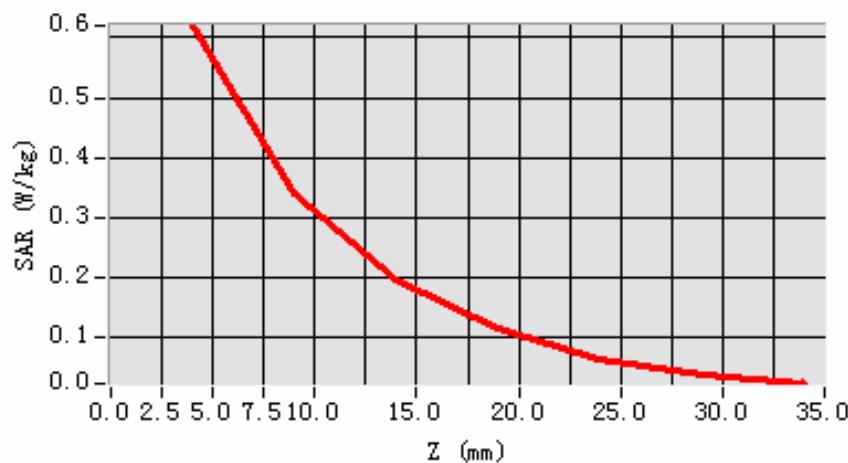


Maximum location: X=-19.00, Y=8.00

SAR 10g (W/Kg)	0.315163
SAR 1g (W/Kg)	0.590107

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6197	0.3404	0.1964	0.1141	0.0654	0.0387

SAR, Z Axis Scan (X = -19, Y = 8)

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: 7/9/2010

Measurement duration: 7 minutes 25 seconds

A. Experimental conditions.

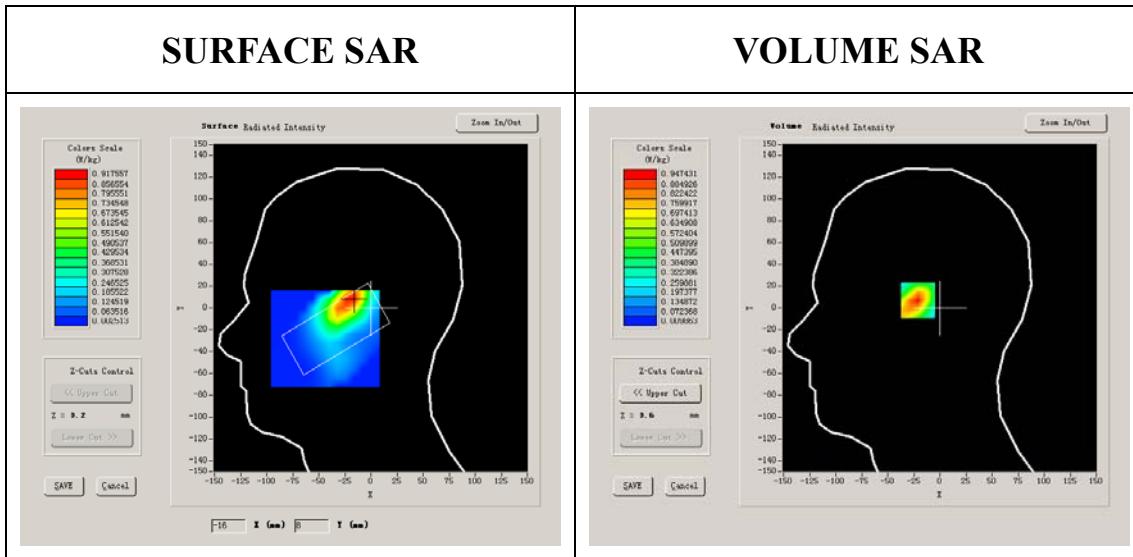
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	39.929001
Relative permittivity	13.156500

Conductivity (S/m)	1.395905
SAR drift (%)	-0.330000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

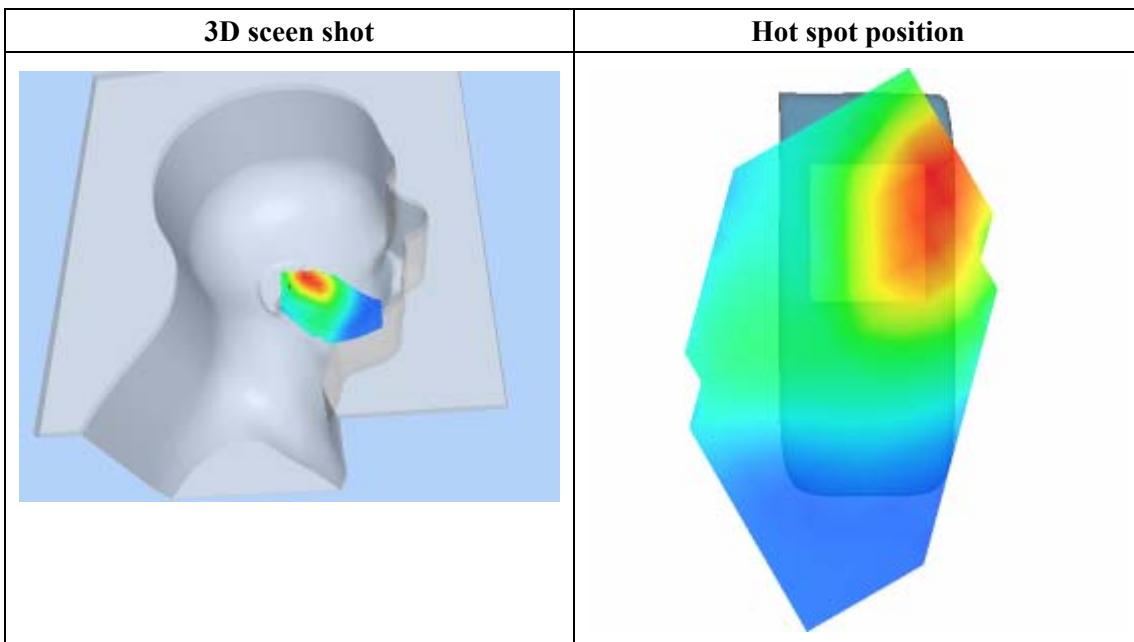
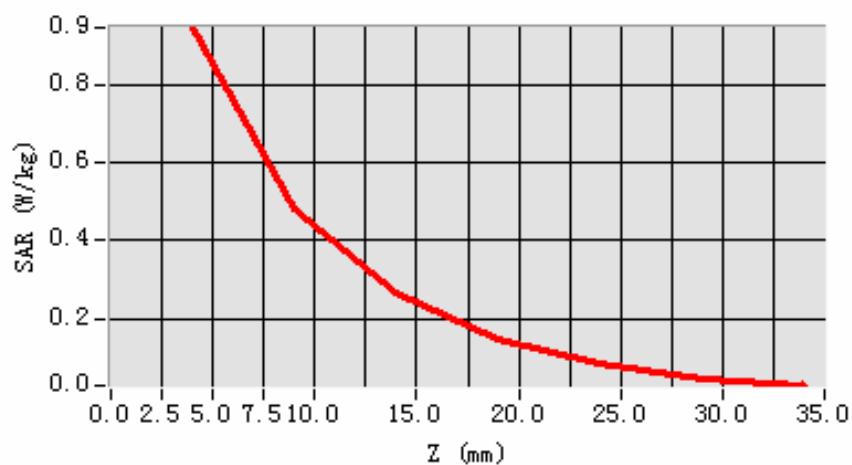


Maximum location: X=-18.00, Y=8.00

SAR 10g (W/Kg)	0.478581
SAR 1g (W/Kg)	0.898467

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9474	0.4843	0.2673	0.1479	0.0824	0.0474

SAR, Z Axis Scan (X = -18, Y = 8)

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: 7/9/2010

Measurement duration: 7 minutes 27 seconds

A. Experimental conditions.

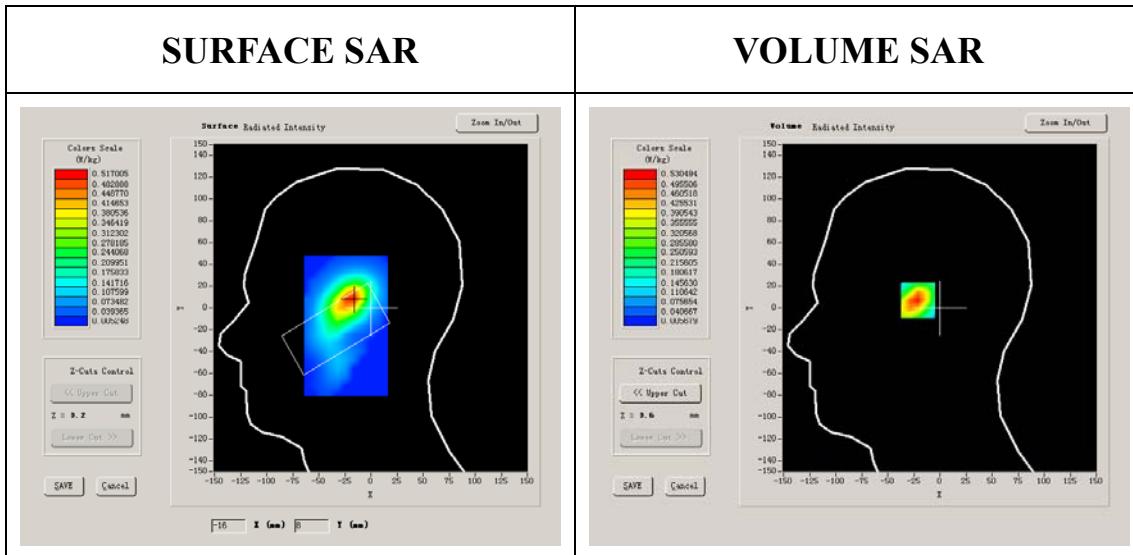
Phantom File	zinf3.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	39.993999
Relative permittivity	12.991650

Conductivity (S/m)	1.335397
SAR drift (%)	-0.790000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

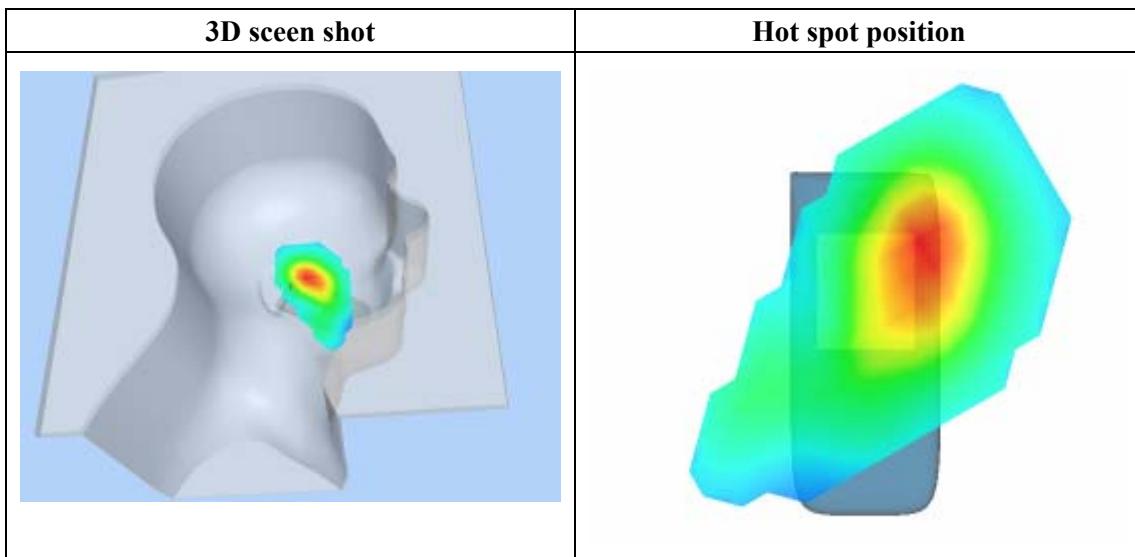
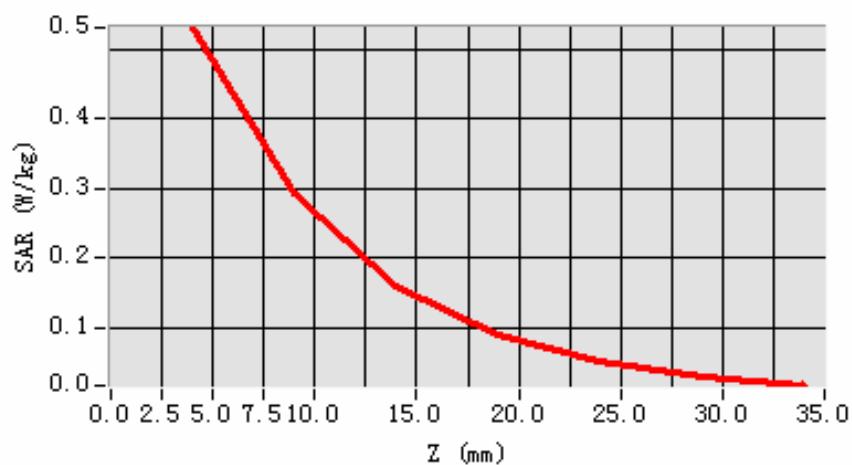


Maximum location: X=-18.00, Y=8.00

SAR 10g (W/Kg)	0.267861
SAR 1g (W/Kg)	0.502673

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5305	0.2931	0.1606	0.0905	0.0530	0.0305

SAR, Z Axis Scan (X = -18, Y = 8)

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: 7/9/2010

Measurement duration: 7 minutes 27 seconds

A. Experimental conditions.

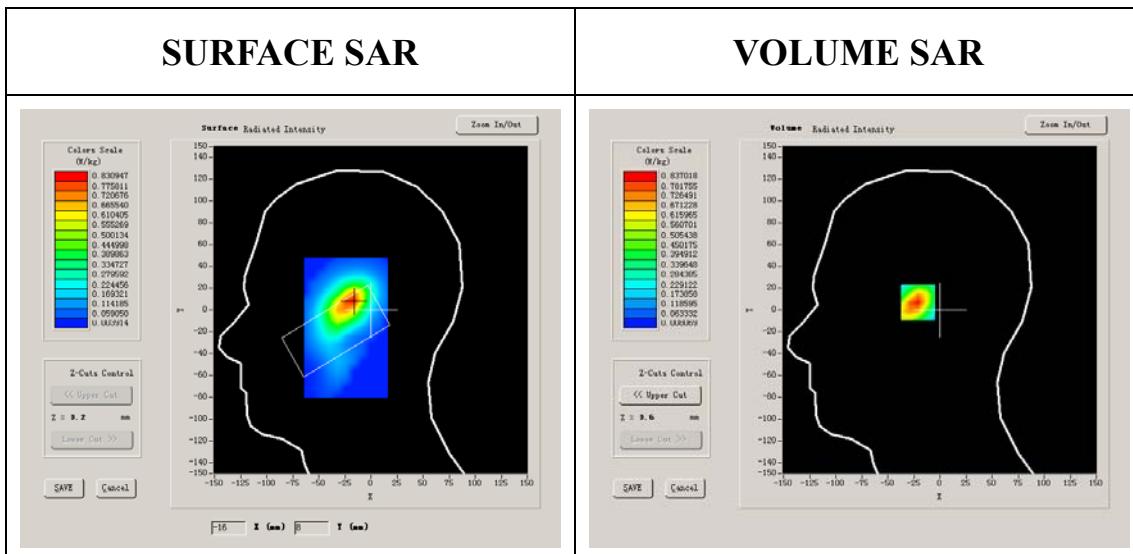
Phantom File	zinf3.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	Middle
Signal	GSM

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000

Conductivity (S/m)	1.436111
SAR drift (%)	-1.460000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

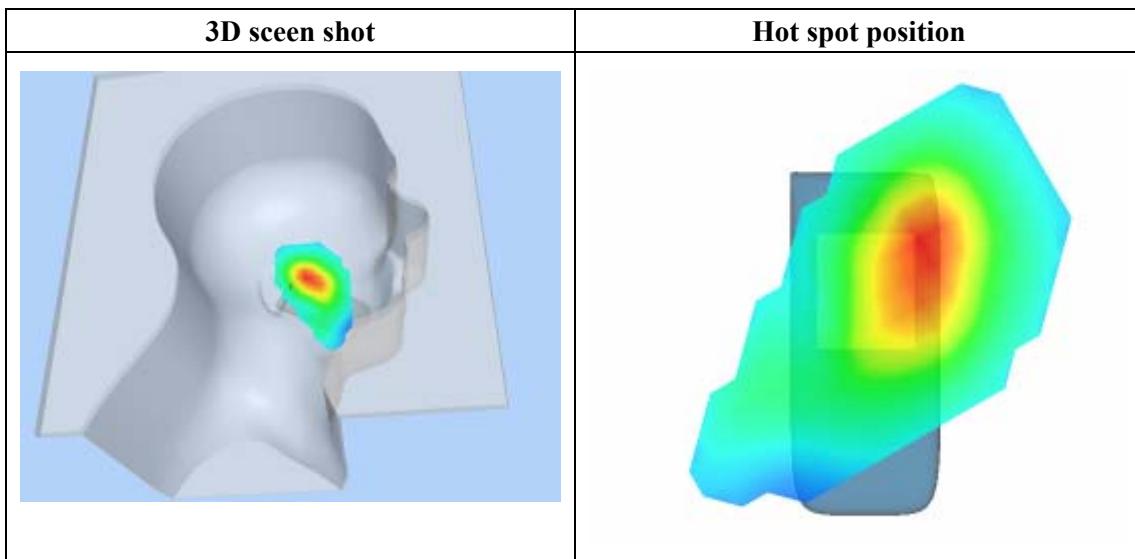
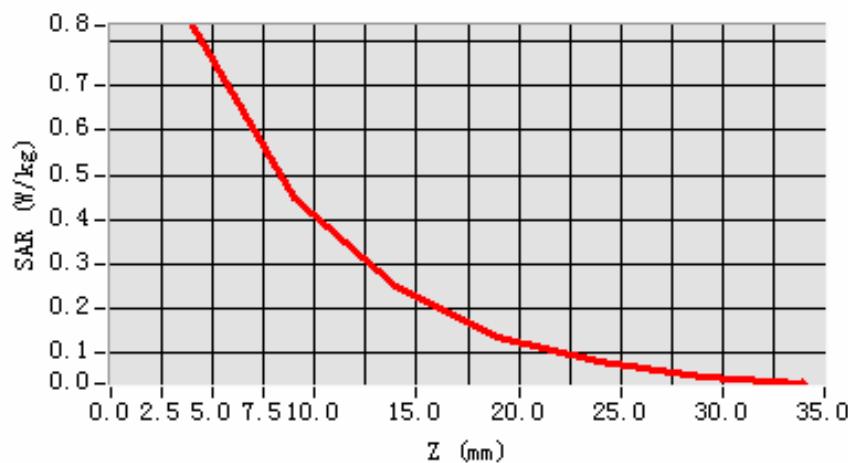


Maximum location: X=-18.00, Y=8.00

SAR 10g (W/Kg)	0.427071
SAR 1g (W/Kg)	0.793662

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.8370	0.4477	0.2470	0.1350	0.0806	0.0454

SAR, Z Axis Scan (X = -18, Y = 8)

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: 7/9/2010

Measurement duration: 7 minutes 26 seconds

A. Experimental conditions.

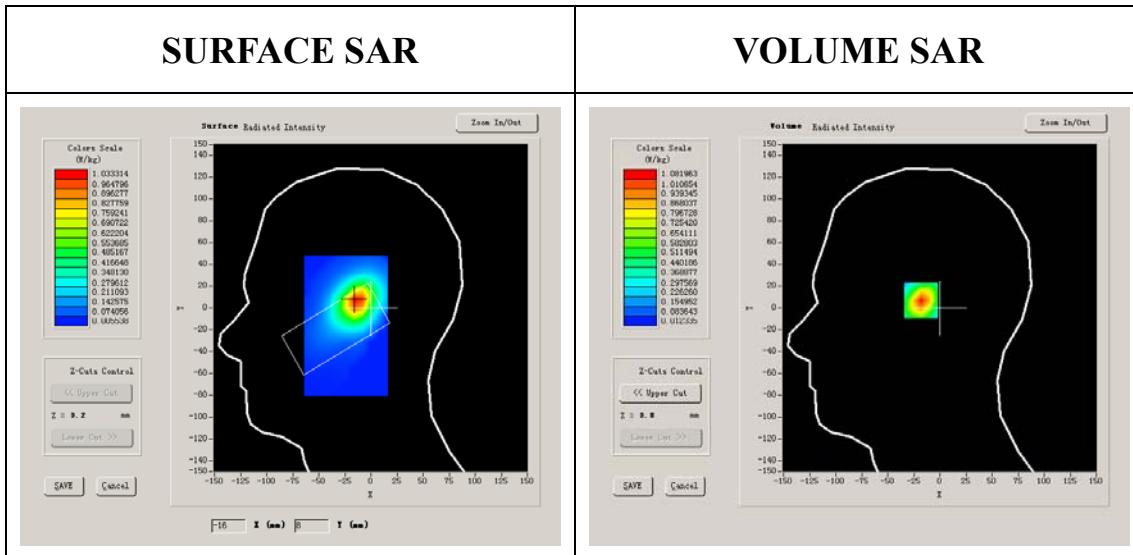
Phantom File	zinf3.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	39.929001
Relative permittivity	13.156500

Conductivity (S/m)	1.395905
SAR drift (%)	-1.630000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

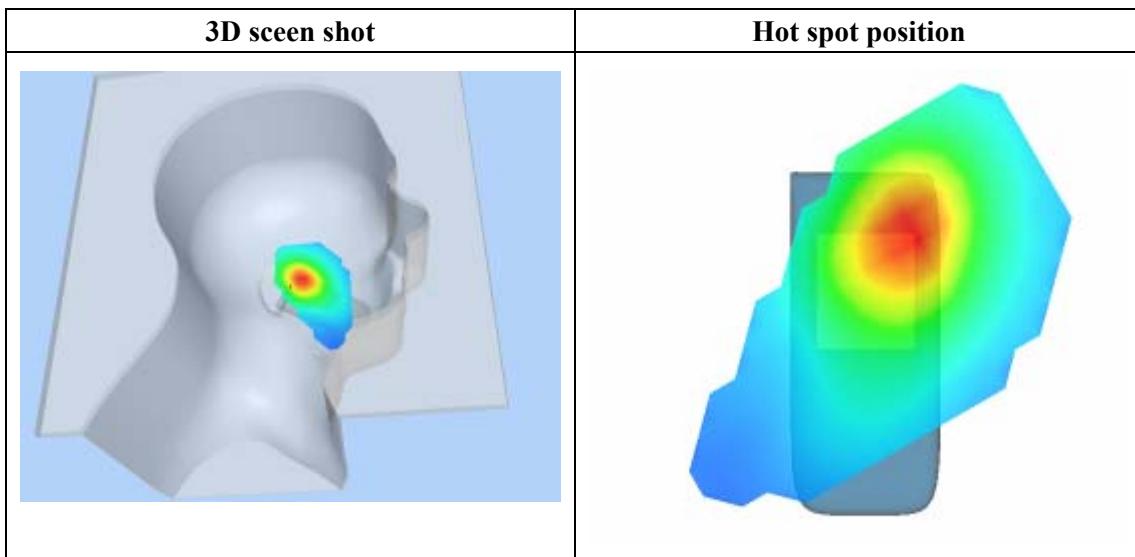
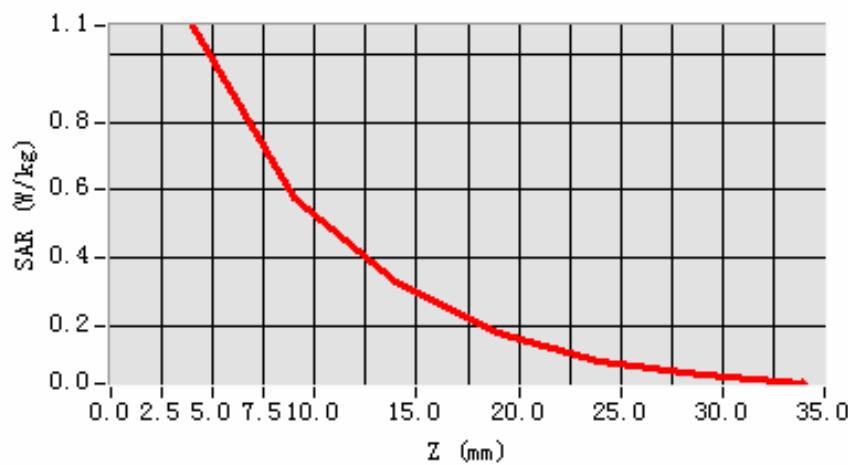


Maximum location: X=-14.00, Y=7.00

SAR 10g (W/Kg)	0.512874
SAR 1g (W/Kg)	0.999401

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0820	0.5779	0.3290	0.1820	0.1008	0.0584

SAR, Z Axis Scan (X = -14, Y = 7)

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: 7/9/2010

Measurement duration: 8 minutes 54 seconds

A. Experimental conditions.

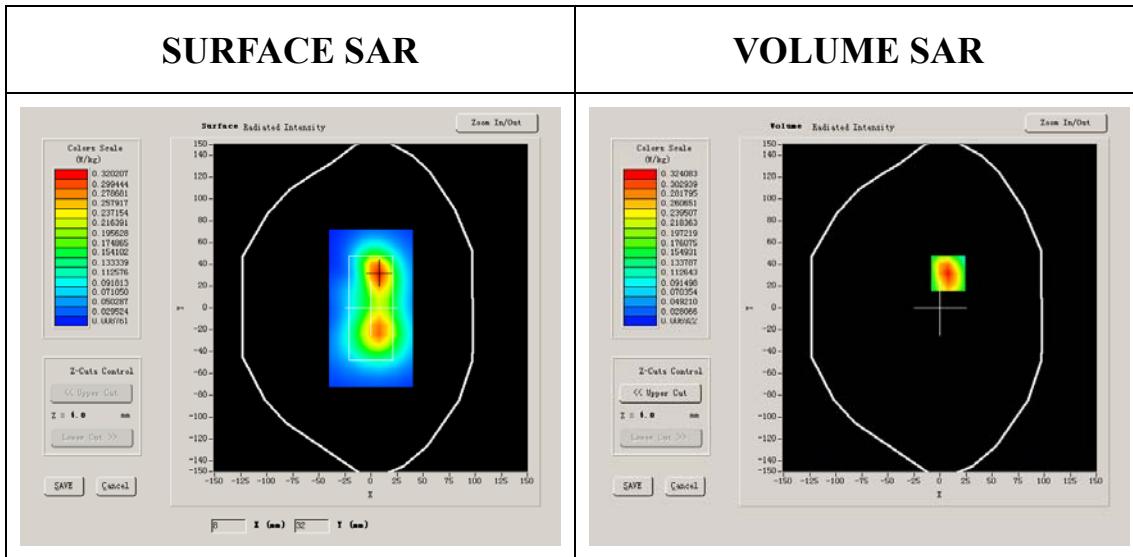
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GPRS

B. SAR Measurement Results

Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	52.787744
Relative permittivity	12.000000

Conductivity (S/m)	1.233467
SAR drift (%)	0.380000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:2

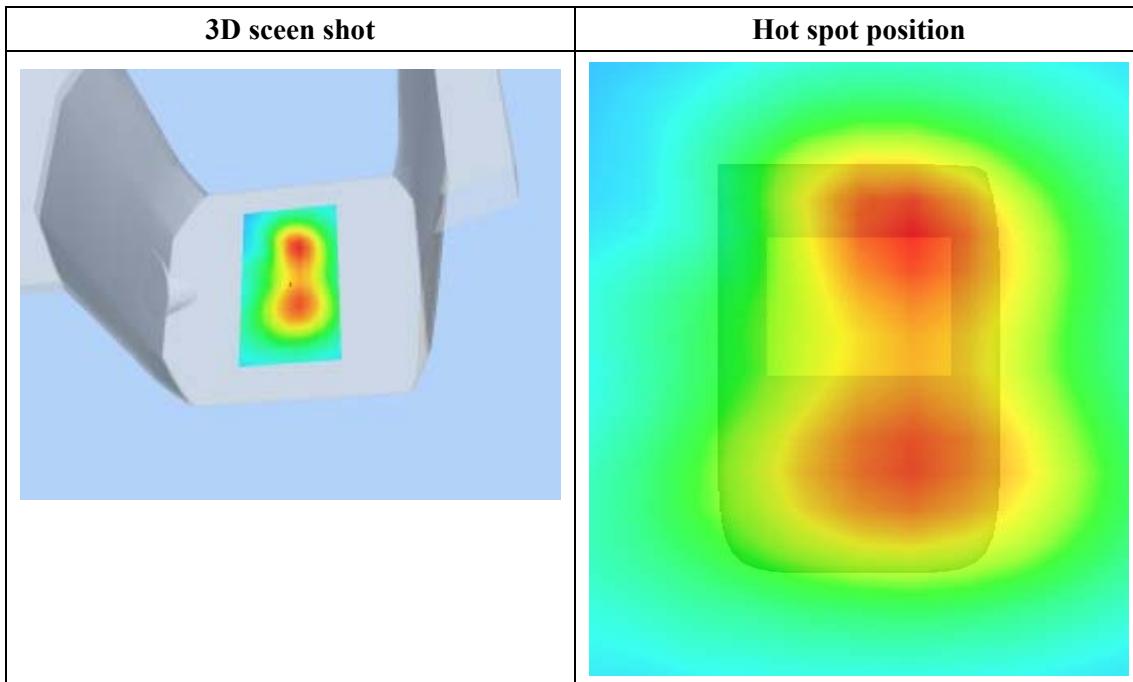
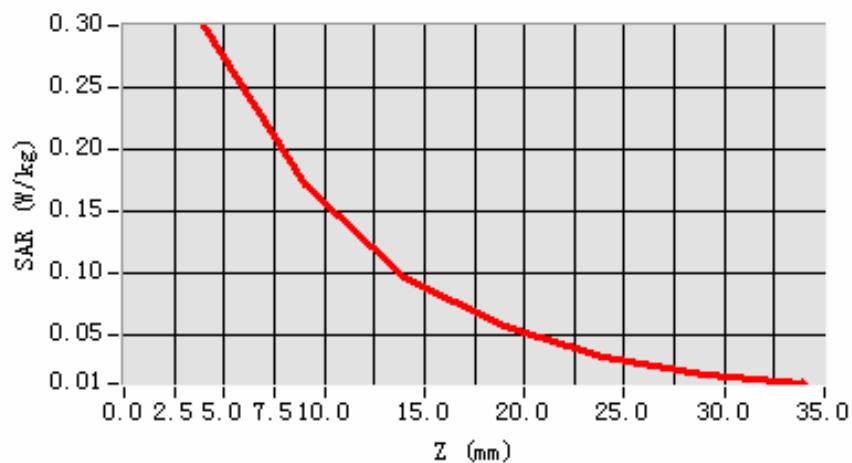


Maximum location: X=8.00, Y=32.00

SAR 10g (W/Kg)	0.154766
SAR 1g (W/Kg)	0.279518

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2993	0.1710	0.0971	0.0572	0.0335	0.0192

SAR, Z Axis Scan (X = 8, Y = 32)

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: 7/9/2010

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

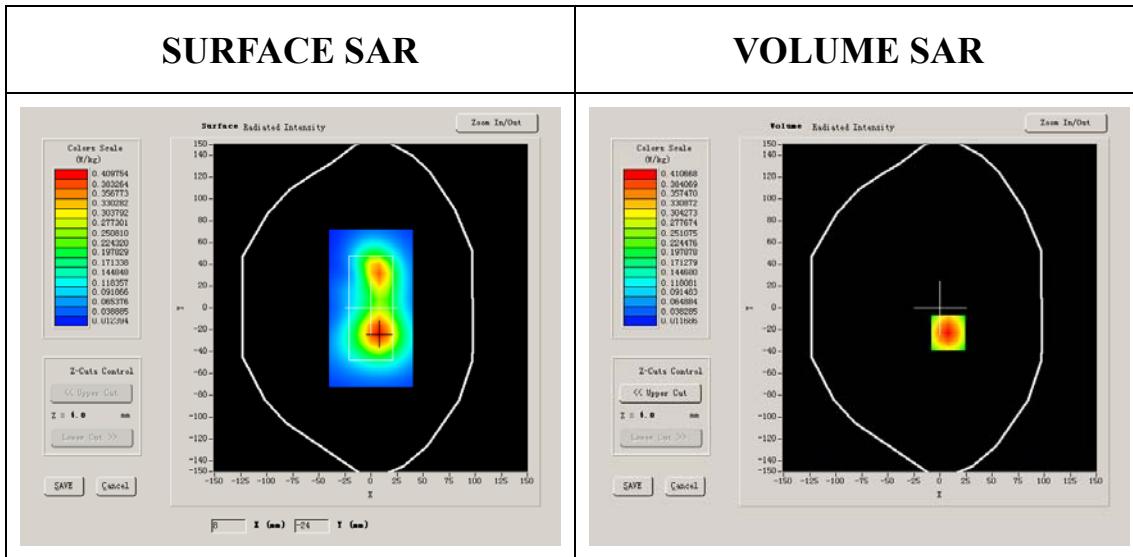
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Middle
Signal	GPRS

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.787744
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
SAR drift (%)	-0.270000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:2



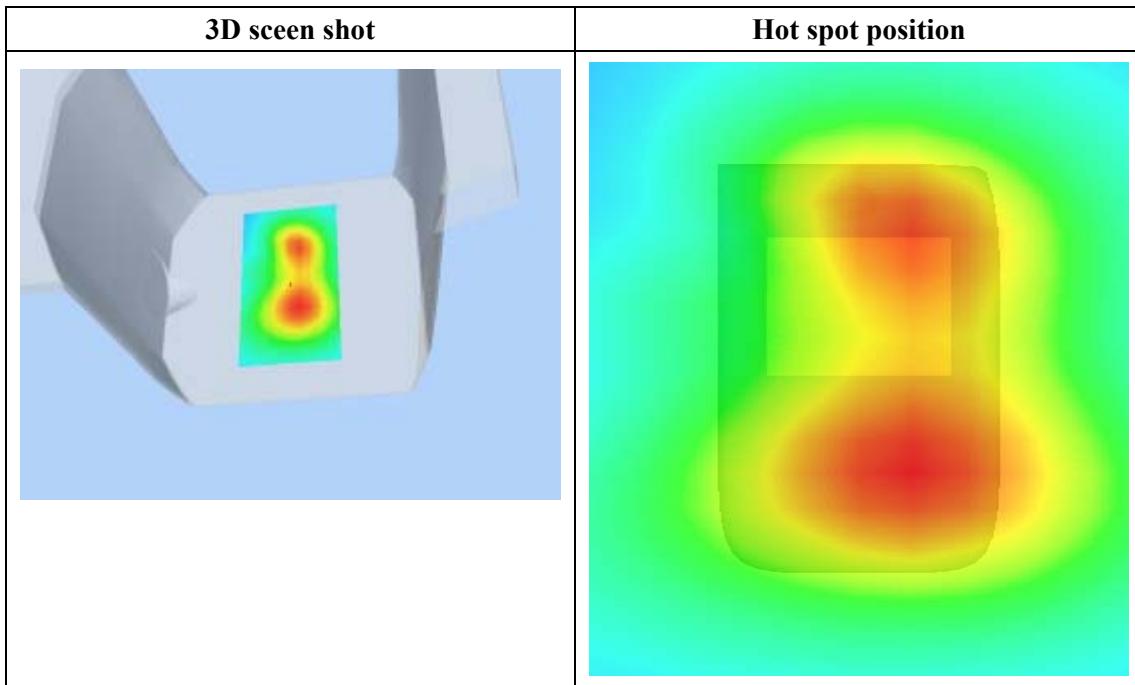
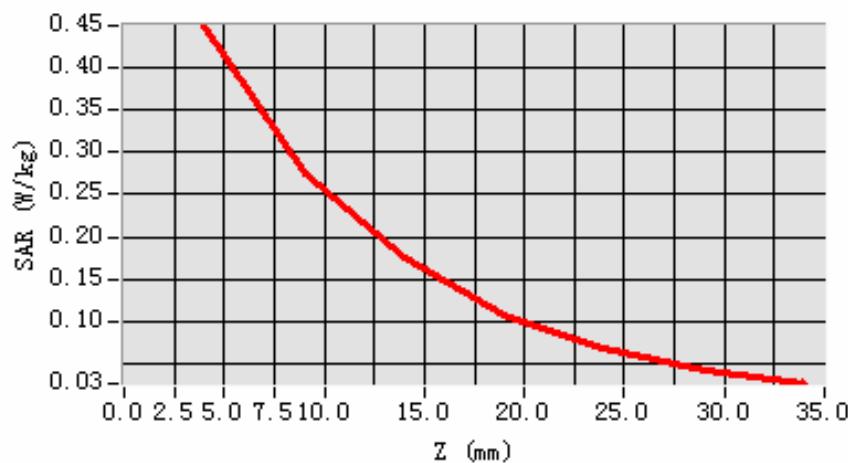
Maximum location: X=8.00, Y=-23.00

SAR 10g (W/Kg)	0.255924
SAR 1g (W/Kg)	0.427819

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4501	0.2744	0.1740	0.1078	0.0688	0.0413

SAR, Z Axis Scan (X = 8, Y = -23)



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: 7/9/2010

Measurement duration: 9 minutes 2 seconds

A. Experimental conditions.

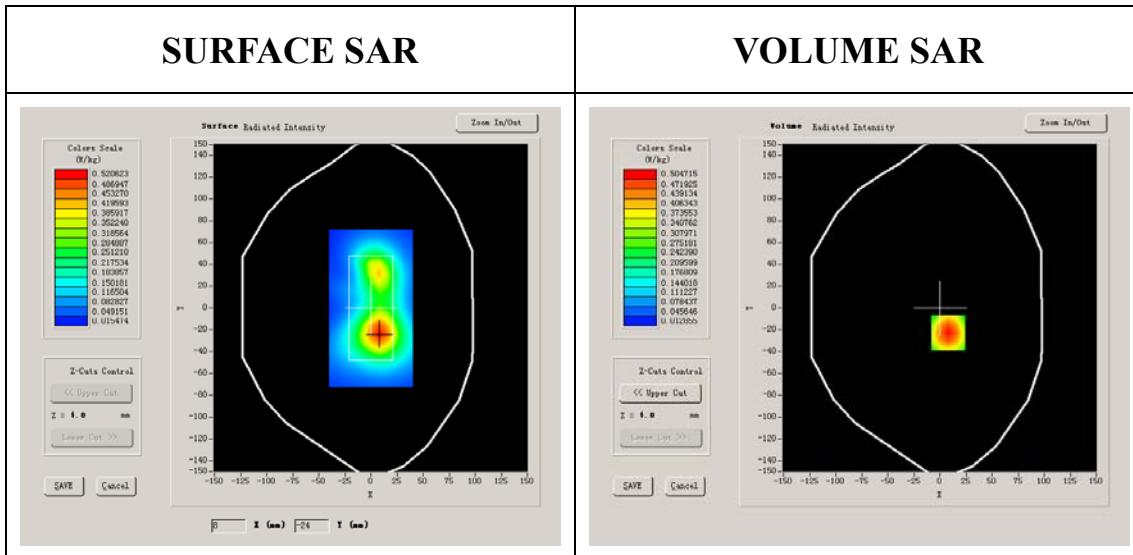
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	High
Signal	GPRS

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	52.787744
Relative permittivity	12.000000

Conductivity (S/m)	1.273200
SAR drift (%)	-1.660000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:2

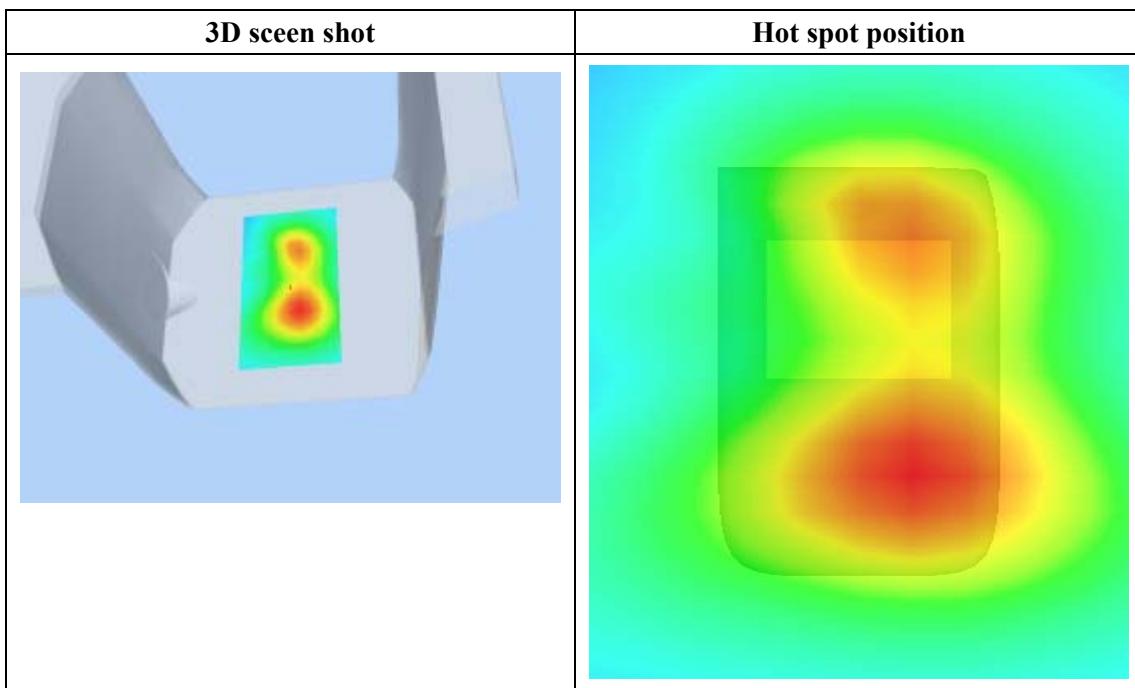
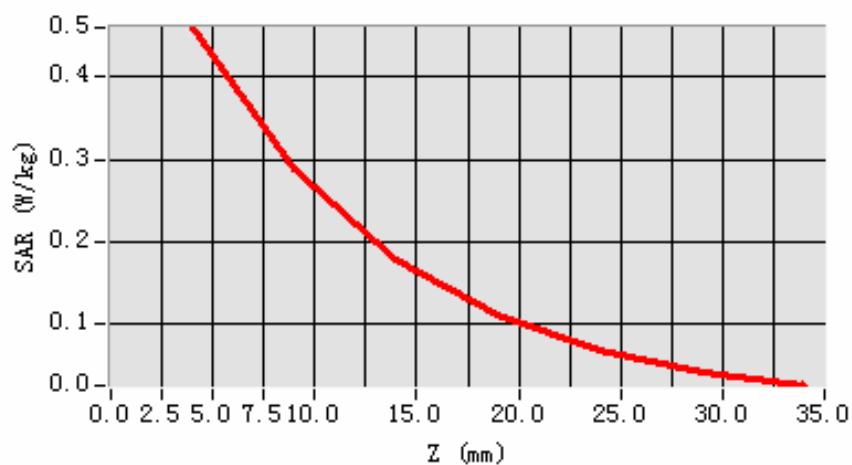


Maximum location: X=8.00, Y=-23.00

SAR 10g (W/Kg)	0.261791
SAR 1g (W/Kg)	0.436765

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4603	0.2895	0.1782	0.1106	0.0685	0.0413

SAR, Z Axis Scan (X = 8, Y = -23)

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: 7/9/2010

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

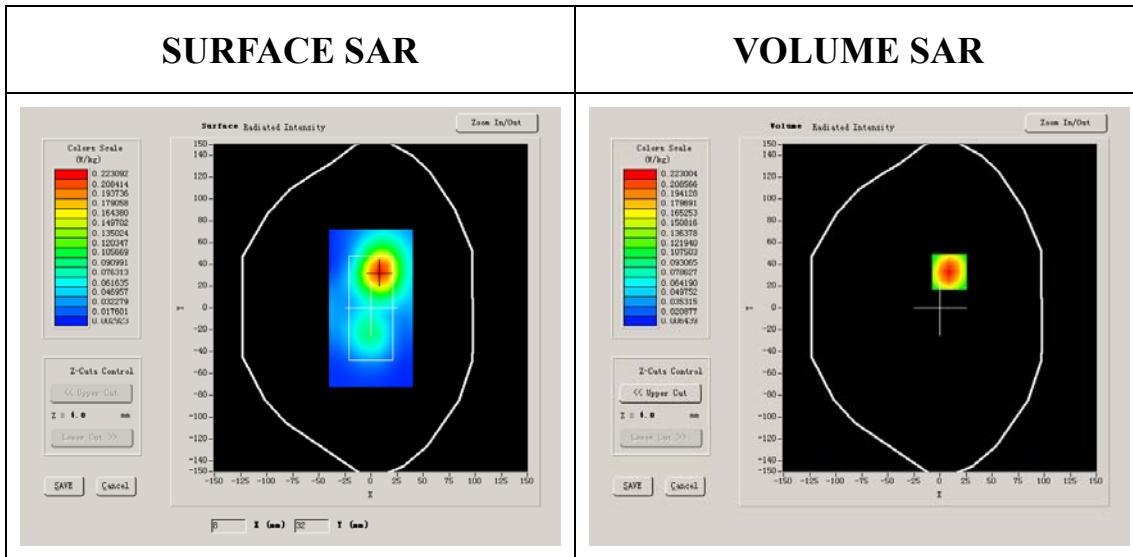
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	High
Signal	GPRS

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	52.787744
Relative permittivity	12.000000

Conductivity (S/m)	1.273200
SAR drift (%)	0.580000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:2



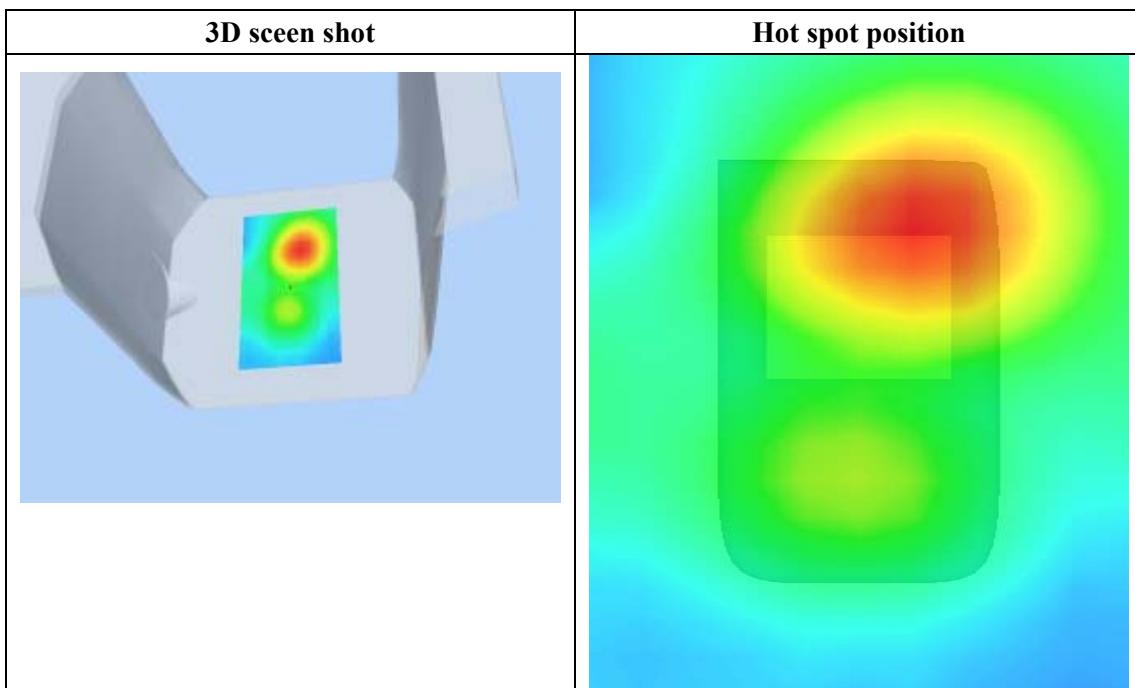
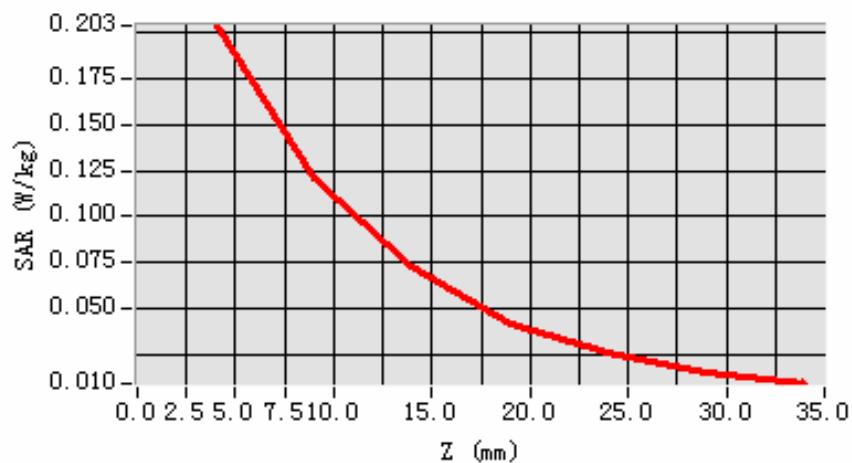
Maximum location: X=9.00, Y=33.00

SAR 10g (W/Kg)	0.111120
SAR 1g (W/Kg)	0.193003

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2034	0.1207	0.0724	0.0420	0.0260	0.0159

SAR, Z Axis Scan (X = 9, Y = 33)



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: 7/9/2010

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

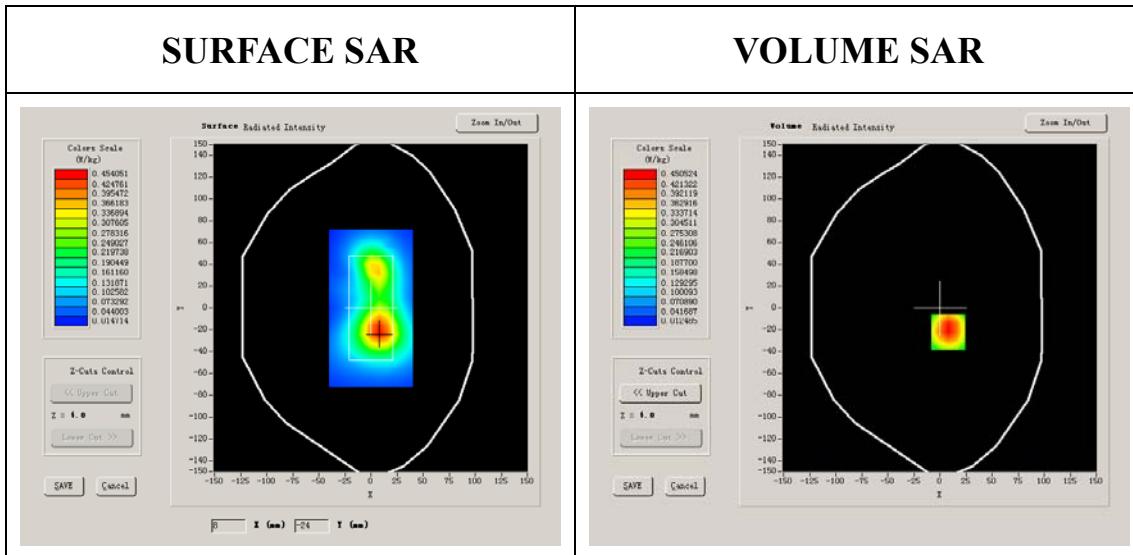
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	52.787744
Relative permittivity	12.000000

Conductivity (S/m)	1.273200
SAR drift (%)	-1.600000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8



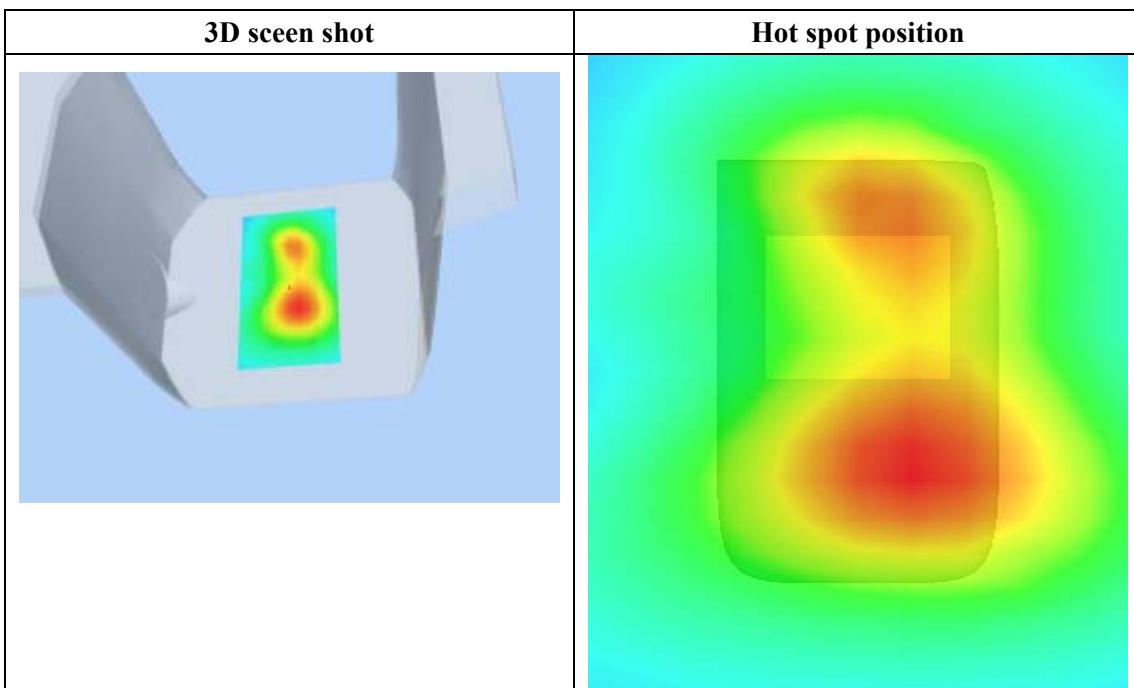
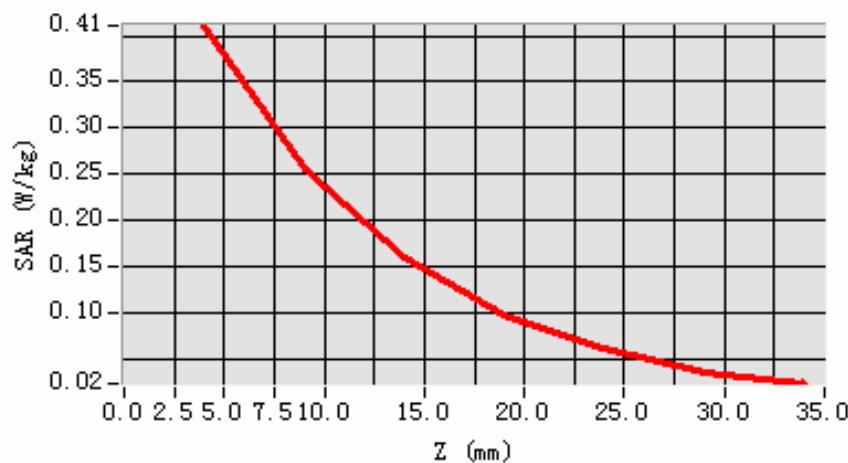
Maximum location: X=8.00, Y=-22.00

SAR 10g (W/Kg)	0.234936
SAR 1g (W/Kg)	0.395709

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4109	0.2549	0.1592	0.0979	0.0609	0.0357

SAR, Z Axis Scan (X = 8, Y = -22)



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: 7/9/2010

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

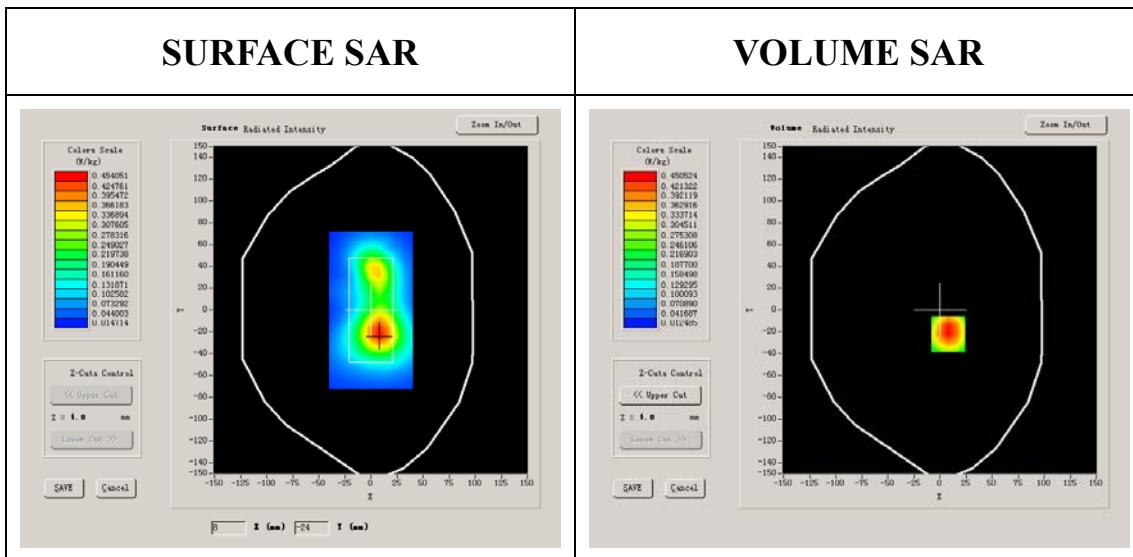
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	High
Signal	GSM

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	52.787744
Relative permittivity	12.000000

Conductivity (S/m)	1.273200
SAR drift (%)	-1.600000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8



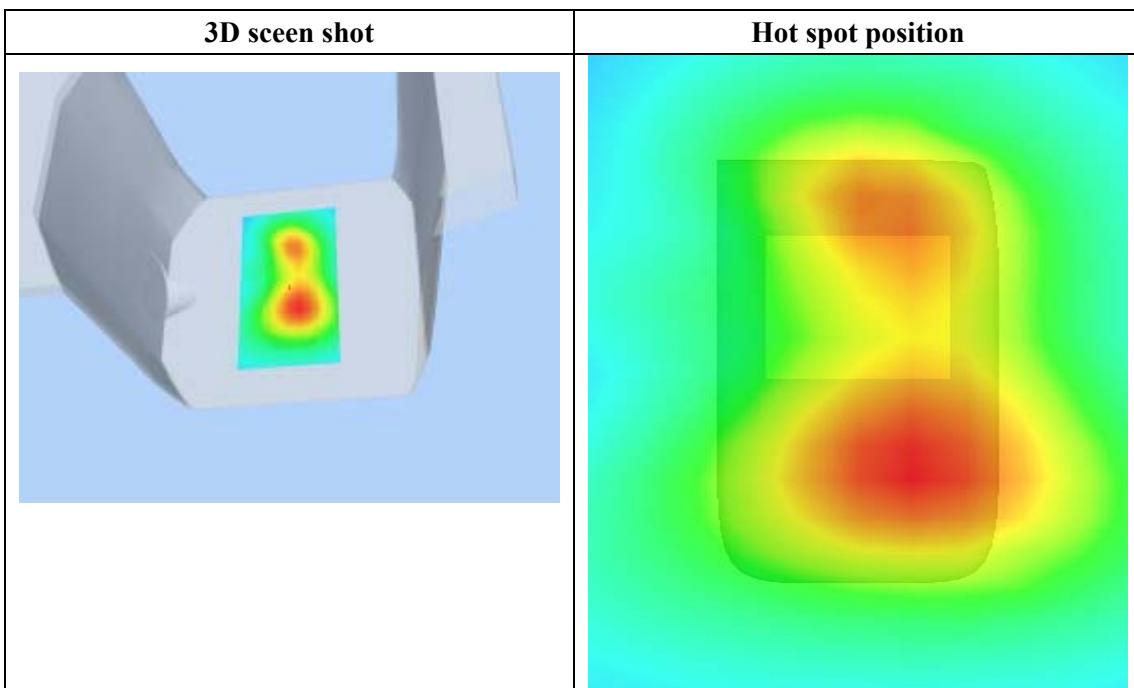
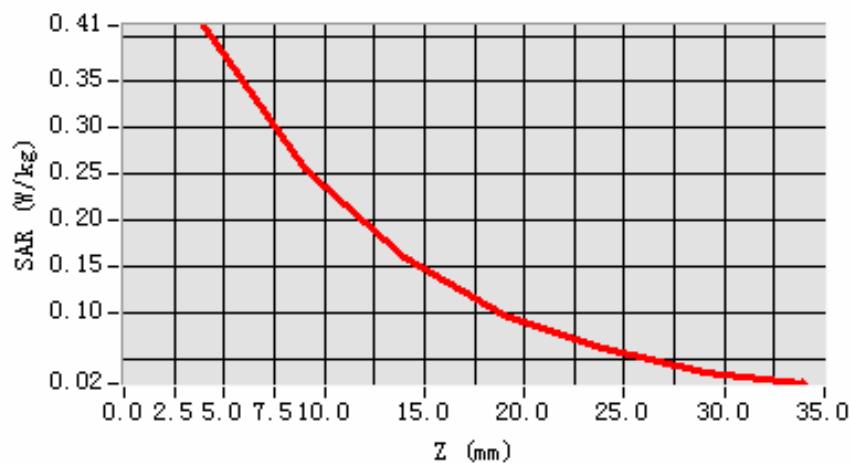
Maximum location: X=8.00, Y=-22.00

SAR 10g (W/Kg)	0.237485
SAR 1g (W/Kg)	0.396387

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4109	0.2549	0.1592	0.0979	0.0609	0.0357

SAR, Z Axis Scan (X = 8, Y = -22)



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: 7/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

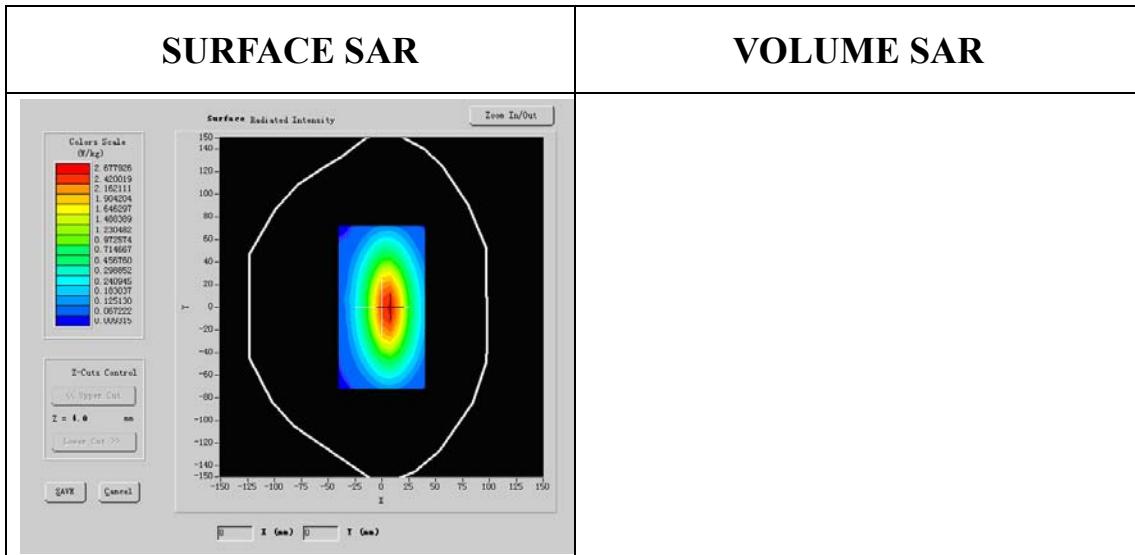
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	53.846662
Relative permittivity	15.070000

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

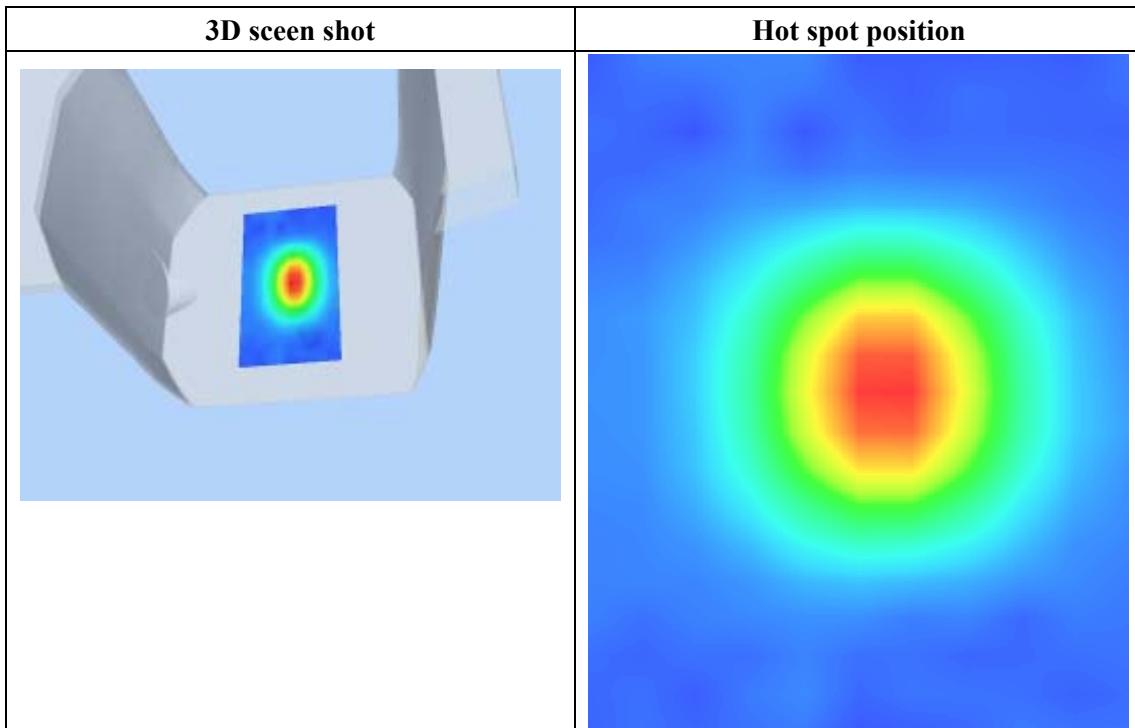
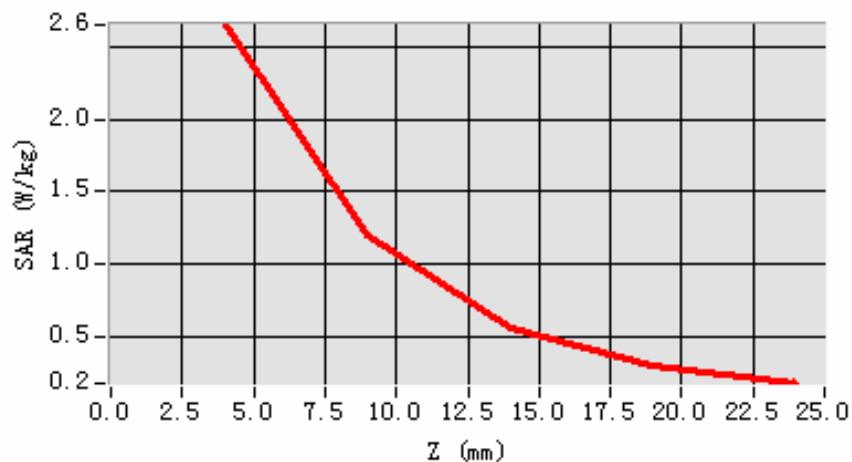


Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.374633
SAR 1g (W/Kg)	2.427376

Z Axis Scan

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

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: 7/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

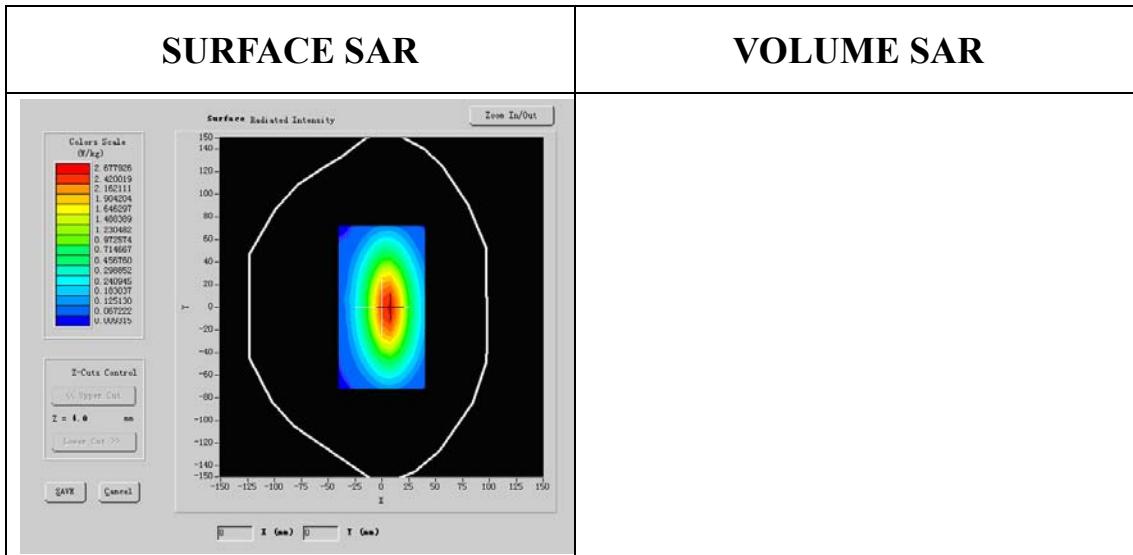
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

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

Conductivity (S/m)	1.009033
SAR drift (%)	-1.110000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:1

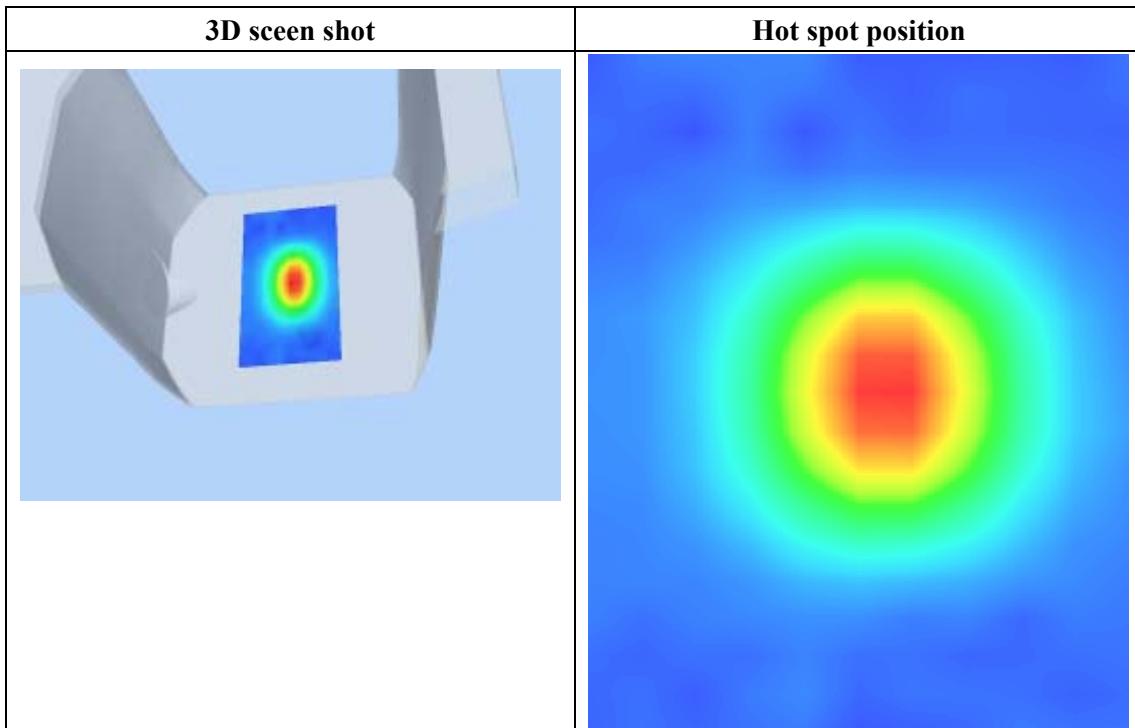
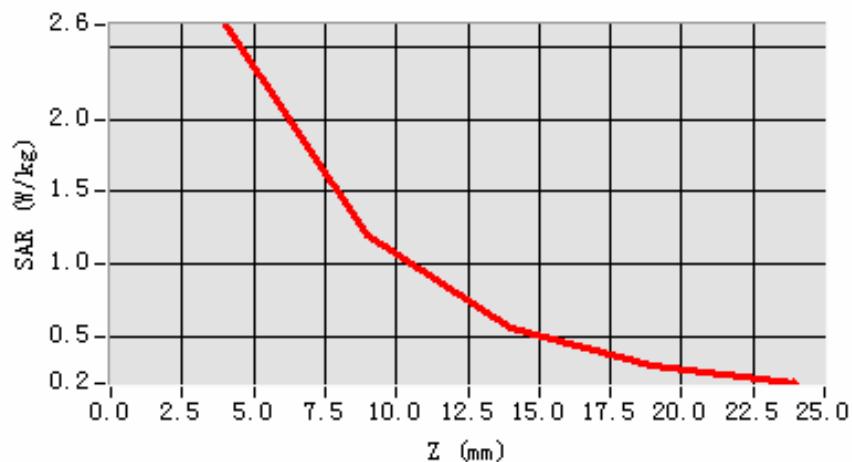


Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.263444
SAR 1g (W/Kg)	2.381846

Z Axis Scan

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

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: 7/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

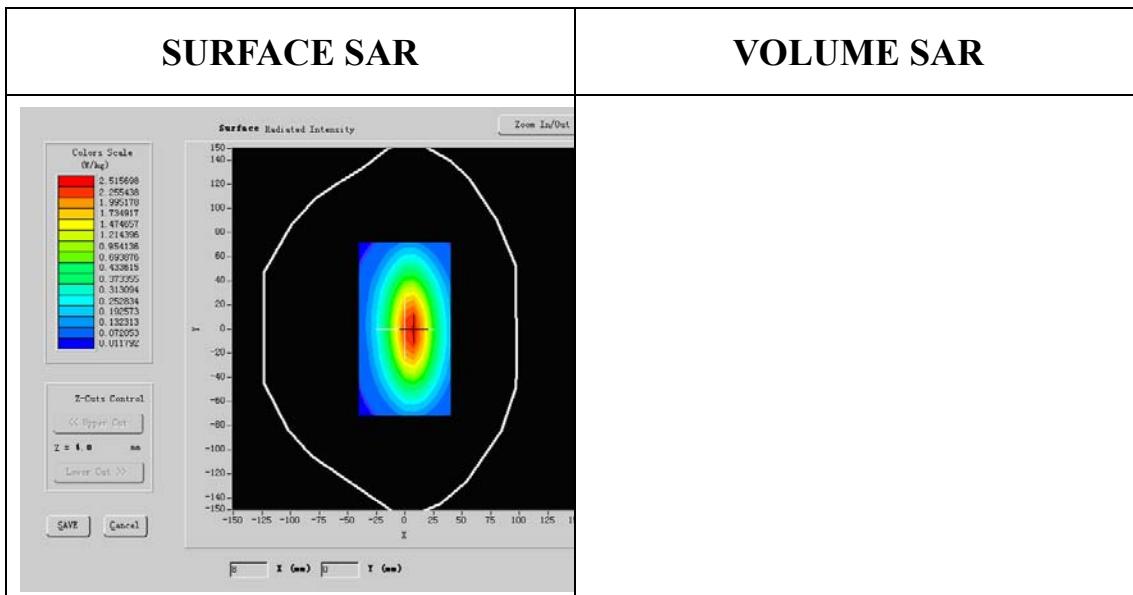
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

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

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

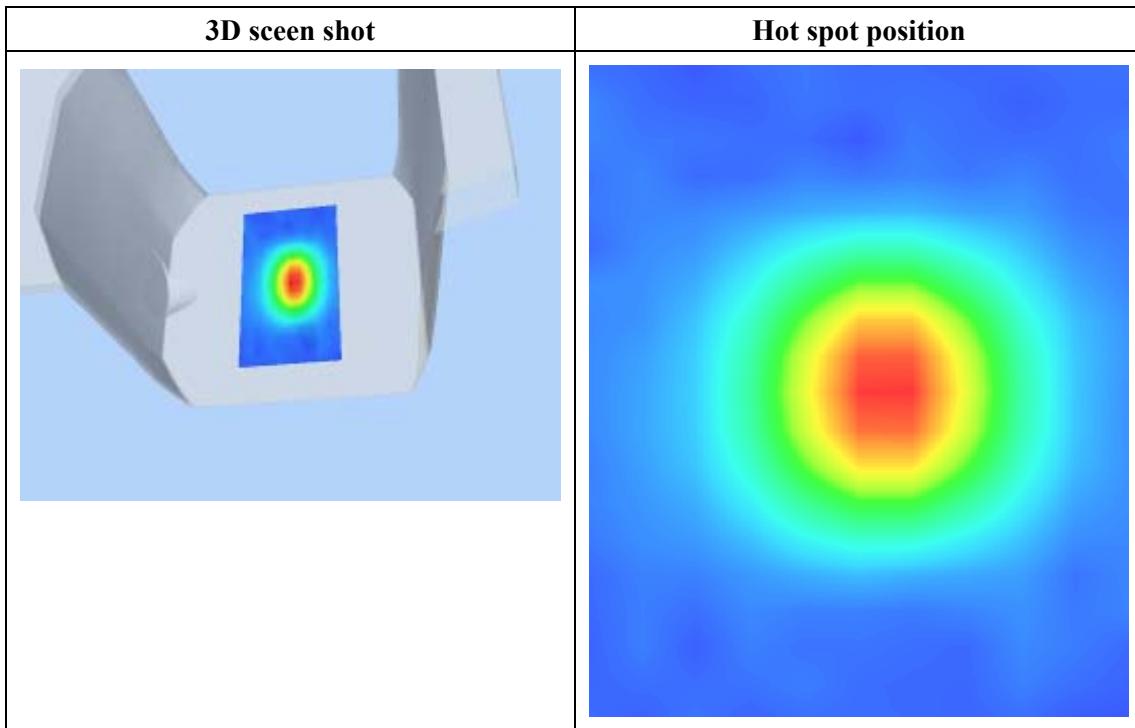
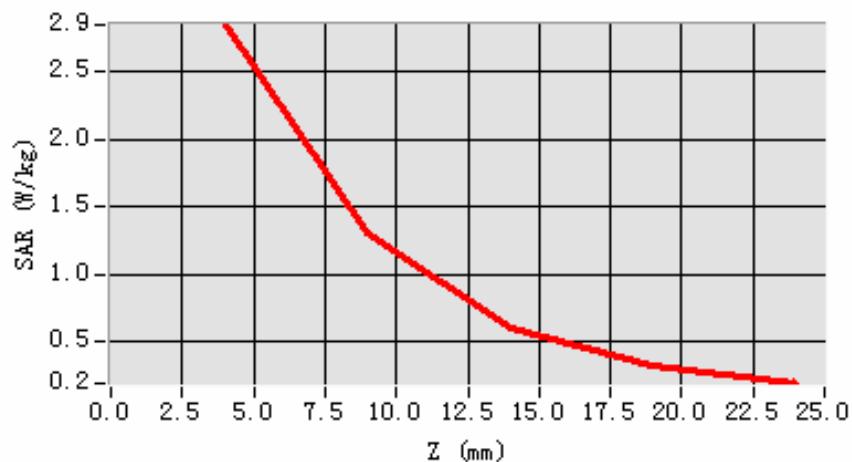


Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	4.957734
SAR 1g (W/Kg)	9.854132

Z Axis Scan

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

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

System Performance Check Data(Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 7/9/2010

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

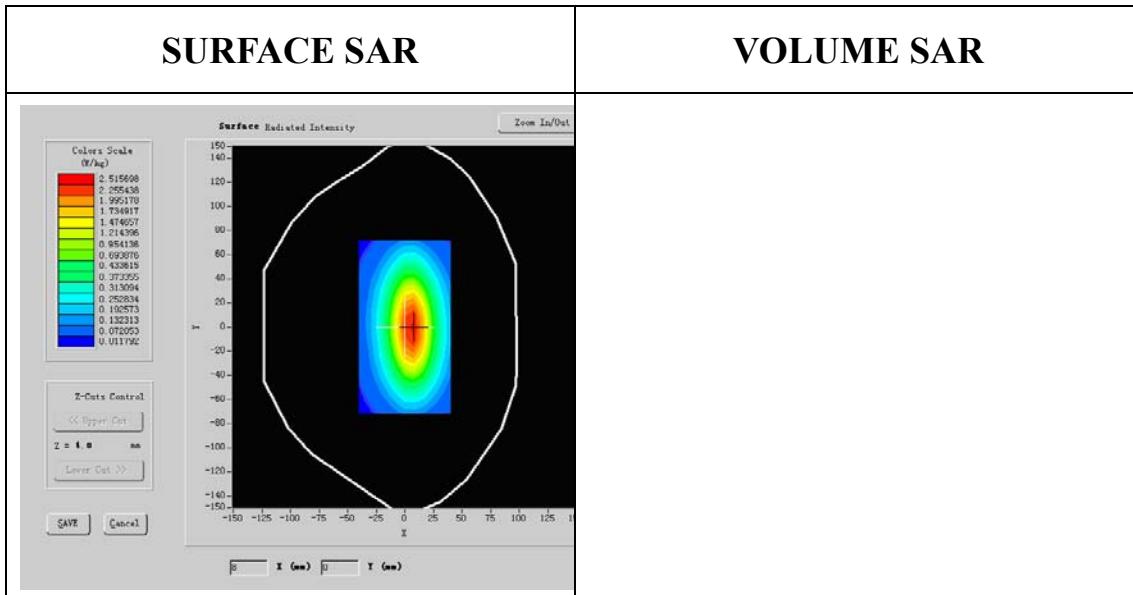
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1800MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR:

Frequency (MHz)	1800.000000
Relative permittivity (real part)	52.787744
Relative permittivity	15.070000

Conductivity (S/m)	1.573978
SAR drift (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1



Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	4.746277
SAR 1g (W/Kg)	9.735945

Z Axis Scan

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

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