



Report No.: SZ12020068S01



SAR TEST REPORT

Issued to

ToughShield Devices Limited

For

Toughshield

Model Name : R500
Trade Name : Toughshield
Brand Name : Toughshield
FCC ID : OHV-R500
Standard : FCC Oet65 Supplement C Jun.2001
47CFR 2.1093
ANSI C95.1-1999
IEEE 1528-2003
MAX SAR : Head: 1.020 W/kg
Body: 0.762 W/kg
Test date : 2012-6-14 to 2012-6-15
Issue date : 2012.7.4



Shenzhen MORLAB Communication Technology Co., Ltd.

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Li Lei

Date 2012.7.4

Date 2012.7.4

Date 2012.7.4

CTIA Authorized Test Lab
LAB CODE 20081223-02
IEEE 1725

OFTA
OTA
電訊管理局



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741109

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DIRECTORY

TESTING LABORATORY.....	4
1.1. Identification of the Responsible Testing Laboratory.....	4
1.2. Identification of the Responsible Testing Location.....	4
1.3. Accreditation Certificate.....	4
1.4. List of Test Equipments.....	4
2. TECHNICAL INFORMATION.....	5
2.1. Identification of Applicant.....	5
2.2. Identification of Manufacturer.....	5
2.3. Equipment Under Test (EUT).....	5
2.3.1. Photographs of the EUT.....	5
2.3.2. Identification of all used EUT.....	5
2.4. Applied Reference Documents.....	6
2.5. Device Category and SAR Limits.....	6
2.6. Test Environment/Conditions.....	7
3. SPECIFIC ABSORPTION RATE (SAR).....	8
3.1. Introduction.....	8
3.2. SAR Definition.....	8
4. SAR MEASUREMENT SETUP.....	9
4.1. The Measurement System.....	9
4.2. Probe.....	9
4.3. Probe Calibration Process.....	11
4.3.1 Dosimetric Assessment Procedure.....	11
4.3.2 Free Space Assessment Procedure.....	11
4.3.2 Temperature Assessment Procedure.....	11
4.4. Phantom.....	12
4.5. Device Holder.....	12
5. TISSUE SIMULATING LIQUIDS.....	13
6. UNCERTAINTY ASSESSMENT.....	15
6.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST.....	15
6.2. UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK.....	16
7. SAR MEASUREMENT EVALUATION.....	18

7.1. System Setup.....	18
7.2. Validation Results.....	19
8. OPERATIONAL CONDITIONS DURING TEST.....	20
8.1. Informations on the testing.....	20
8.2. Body-worn Configurations.....	21
8.3. Measurement procedure.....	21
8.4. Description of interpolation/extrapolation scheme.....	22
9. 3G MEASUREMENT PROCEDURES.....	23
9.1. Procedures Used To Establish Test Signal.....	23
9.2. SAR Measurement Conditions for WCDMA.....	23
9.3. Output Power Verification.....	23
9.4. Measurement Of Conducted Peak Output Power.....	24
10. TEST RESULTS LIST.....	28
11. MULTIPLE TRANSMITTERS EVALUATION.....	31
ANNEX A EUT SETUP PHOTOS.....	32
ANNEX B GRAPH TEST RESULTS.....	36

Change History		
Issue	Date	Reason for change
1.0	Jul. 4, 2012	First edition

Testing Laboratory

1.1. Identification of the Responsible Testing Laboratory

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

1.2. Identification of the Responsible Testing Location

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

1.3. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

1.4. List of Test Equipments

No.	Instrument	Type	Cal. Date	Cal. Due
1	PC	Dell (Pentium IV 2.4GHz, SN:X10-23533)	(n.a)	(n.a)
2	Network Emulator	Rohde&Schwarz (CMU200, SN:105894)	2011-9-26	1year
3	Voltmeter	Keithley (2000, SN:1000572)	2011-9-24	1year
4	Synthesizer	Rohde&Schwarz (SML_03, SN:101868)	2011-9-24	1year
5	Amplifier	Nucl udes (ALB216, SN:10800)	2011-9-24	1year
6	Power Meter	Rohde&Schwarz (NRVD, SN:101066)	2011-9-24	1year
7	Probe	Satimo (SN:SN_3708_EP80)	2011-9-24	1year
8	Phantom	Satimo (SN:SN_36_08_SAM62)	2011-9-24	1year
9	Liquid	Satimo (Last Calibration: 2012-6-15)	N/A	N.A
10	Dipole 835MHz	Satimo (SN 36/08 DIPC 99)	2011-9-24	1year
11	Dipole 1900MHz	Satimo (SN 36/08 DIPF 102)	2011-9-24	1year
12	Dipole 2450MHz	Satimo (SN 36/08 DIPJ 103)	2011-9-24	1year

2. Technical Information

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

2.1. Identification of Applicant

Company Name: ToughShield Devices Limited
Address: Toughshield Devices Limited ,104A Park Street, London W1K 6NG, UK

2.2. Identification of Manufacturer

Company Name: ToughShield Devices Limited
Address: Toughshield Devices Limited ,104A Park Street, London W1K 6NG, UK

2.3. Equipment Under Test (EUT)

Model Name: R500
Trade Name: Toughshield
Brand Name: Toughshield
Hardware Version: S042M001P000
Software Version: ROCK_V_2.0_01017_120510
Frequency Bands: GSM 850MHz /PCS 1900MHz; WCDMA 850MHz/1900MHz; WIFI802.11 B/G/N; Bluetooth
Modulation Mode: GSM/GPRS: GMSK; EDGE: 8PSK
WIFI802.11B: DSSS; WIFI802.11G: OFDM
BT: GFSK/ π /4-DQPSK/8-DPSK
Multislot Class: GPRS: Multislot Class 12; EDGE: Multislot Class 12
Antenna type: Fixed Internal Antenna
Development Stage: Identical prototype
Battery Model: ROCK
Battery specification: 1500mAh3.7V

2.3.1. Photographs of the EUT

Please see for photographs of the EUT.

2.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
1#	S042M001P000	ROCK_V_2.0_01017_120510

2.4. 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 Techniques.
5	KDB 648474 D1	SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas
6	KDB941225D1 v02	SAR Measurement Procedures for 3G Devices
7	KDB 941225 D6	SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities
8	KDB 2484227	SAR Measurement Procedures for 802.11 a/b/g Transmitters

2.5. 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.

2.6. Test Environment/Conditions

Normal Temperature (NT):	20 ... 25 °C
Relative Humidity:	30 ... 75 %
Air Pressure:	980 ... 1020 hPa
Test frequency:	GSM 850MHz PCS 1900MHz WCDMA 850MHz WCDMA1900MHz WIFI 802.11B
Operation mode:	Call established
Power Level:	GSM 850 MHz Maximum output power(level 5) PCS 1900 MHz Maximum output power(level 0) WCDMA Maximum output power WIFI Maximum output power

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

The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 125, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz ,or to 9262, 9400 and 9538 respectively in the case of WCDMA 19000, or to 4132, 4175 and 4233 respectively in the case of WCDMA 850. The EUT is commanded to operate at maximum transmitting power.

During WIFI SAR test, the EUT was located at channel 1, 6, 11. And EUT was commanded to operate at maximum transmitting power.

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

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

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

3. Specific Absorption Rate (SAR)

3.1. 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.

3.2. 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.

4. SAR Measurement Setup

4.1. 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.

4.2. Probe

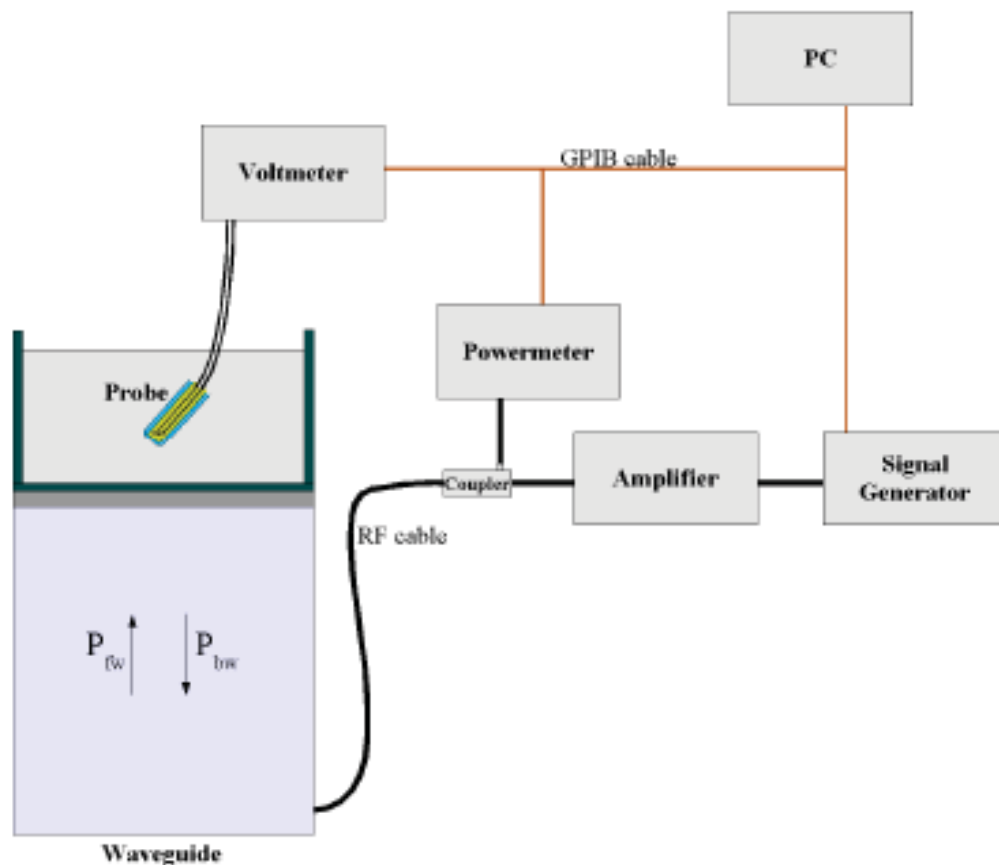
For the measurements the Specific Dosimetric E-Field Probe SN 37/08 EP80 with following specifications is used

- Dynamic range: 0.01-100 W/kg
- Tip Diameter : 6.5 mm
- Distance between probe tip and sensor center: 2.5mm
- Distance between sensor center and the inner phantom surface: 4 mm
(repeatability better than +/- 1mm)

- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.25 dB
- Calibration range: 835to 2500MHz for head & body simulating liquid.

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

Probe calibration is realized, in compliance with CENELEC EN 62209 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 622091 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 :

P_{fw} = Forward Power

P_{bw} = 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.

4.3. Probe Calibration Process

4.3.1 Dosimetric Assessment Procedure

Each E-Probe/Probe Amplifier combination has unique calibration parameters. SATIMO Probe calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm²) using an with CALISAR, Antenna proprietary calibration system.

4.3.2 Free Space Assessment Procedure

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and in a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm².

4.3.2 Temperature Assessment Procedure

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated head tissue. The E-field in the medium correlates with the temperature rise in the dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

Where:

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

Δt = exposure time (30 seconds),

C = heat capacity of tissue (brain or muscle),

ΔT = temperature increase due to RF exposure.

SAR is proportional to $\Delta T / \Delta t$, the initial rate of tissue heating, before thermal diffusion takes place. The electric field in the simulated tissue can be used to estimate SAR by equating the thermally derived SAR to that with the E- field component.

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

Where:

σ = simulated tissue conductivity,

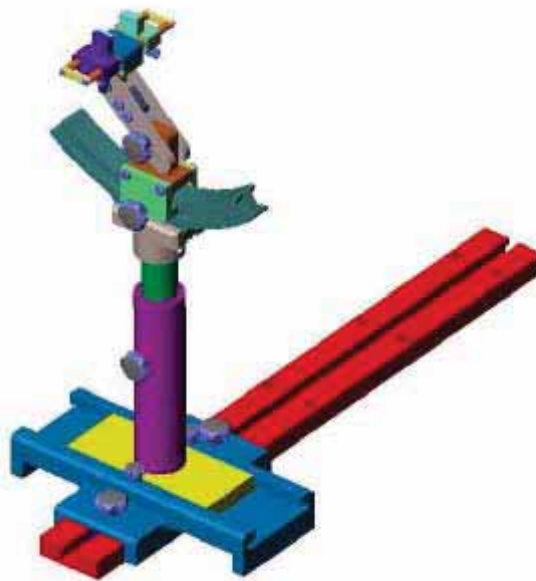
ρ = Tissue density (1.25 g/cm³ for brain tissue)

4.4. 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.

4.5. 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

5. Tissue Simulating Liquids

Simulant liquids that are used for testing at frequencies of 850, 1900MHz and 2450MHz. which are made mainly of sugar, salt and water solutions may be left in the phantoms. Approximately 20litres are needed for an upright head compared to about 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 15cm.

Following are the recipes for one liter of head and body tissue simulating liquid for frequency band 835 MHz, 1900 MHz and 2450 MHz.

Ingredients (% by weight)	Frequency Band		Frequency Band		Frequency Band	
	835MHz		1900MHz		2450MHz	
Tissue Type	Head	Body	Head	Body	Head	Body
Water	41.45	52.4	54.9	40.4	62.7	73.2
Salt(NaCl)	1.45	1.4	0.18	0.5	0.5	0.04
Sugar	56.0	45.0	0.0	58.0	0.0	0.0
HEC	1.0	1.0	0.0	1.0	0.0	0.0
Bactericide	0.1	0.1	0.0	0.1	0.0	0.0
Triton	0.0	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	44.92	0.0	36.8	0.0
Acticide SPX	0.0	0.0	0.0	0.0	0.0	26.7
Dielectric Constant	42.45	56.1	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.91	0.95	1.42	1.45	1.88	1.78

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 (Jun. 14)	835 MHZ	41.675999	0.894409
Target value	1900 MHZ	40	1.40
Validation value (Jun. 15)	1900 MHZ	38.509998	1.436111
Target value	2450 MHz	39.7	1.93
Validation value (Jun. 15)	2450 MHz	39.622857	1.964313

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

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%.			
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)
Target value	835 MHz	55.2	0.97
Validation value (Jun. 14)	835 MHz	55.709999	0.9809033
Target value	1900 MHz	53.3	1.52
Validation value (Jun. 15)	1900 MHz	52.548876	1.553978
Target value	2450 MHz	52.7	1.95
Validation value (Jun. 15)	2450 MHz	52.548876	1.974257

6. Uncertainty Assessment

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

6.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

a	b	c	d	e= f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+-%)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	4.76	N	1	1	1	4.76	4.76	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	0.7	0.7	1.01	1.01	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	0.7	0.7	1.62	1.62	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Test sample Related									
Test sample positioning	E.4.2.1	0.03	N	1	1	1	0.03	0.03	N-1
Device Holder Uncertainty	E.4.1.1	5.00	N	1	1	1	5.00	5.00	N-1
Output power Power drift - SAR drift measurement	6.6.2	4.04	R	$\sqrt{3}$	1	1	2.33	2.33	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞

Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	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	$\sqrt{3}$	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				11.55	10.67	
Expanded Uncertainty (95% Confidence interval)			K=2				23.11	21.33	

6.2. 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 (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	4.76	N	1	1	1	4.76	4.76	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	0.7	0.7	1.01	1.01	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	0.7	0.7	1.62	1.62	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	∞
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	∞
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	∞

Input power and SAR drift measurement	8,6.6.2	4.04	R	$\sqrt{3}$	1	1	2.33	2.33	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	∞
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	$\sqrt{3}$	0.64	0.43	1.85	1.24	M
Liquid permittivity - deviation from target value	E.3.2	3.69	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	∞
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	$\sqrt{3}$	0.6	0.49	3.46	2.83	M
Combined Standard Uncertainty			RSS				8.83	8.37	
Expanded Uncertainty (95% Confidence interval)			K=2				17.66	16.73	

7. SAR Measurement Evaluation

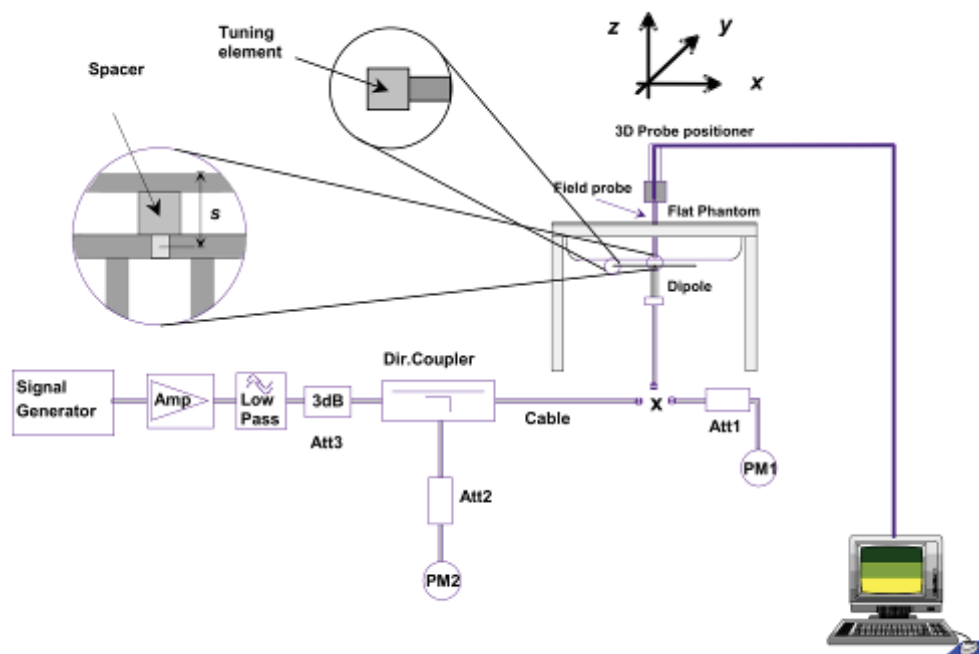
7.1. System Setup

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, 1900 MHz and 2450MHz. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom.

Equipments:

name	Type and specification
Signal generator	E4433B
Directional coupler	450MHz-3GHz
Amplifier	3W 502(10-2500MHz)
Reference dipole	835MHz:SN 36/08 DIPC 99 1900MHz:SN 36/08 DIPF 102 2450MHz:SN 36/08 DIPJ 103

System Verification Setup Block Diagram



7.2. Validation Results

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

Cal. On Jun.14 2012

Frequency	835MHz(Head)	835MHz(Body)
Target value (1g)	9.714 W/Kg	9.714 W/Kg
250 mW input power	2.478 W/Kg	2.386 W/Kg
Test value (1g)	9.912 W/Kg	9.544W/Kg

Cal. On Jun.15, 2012

Frequency	1900MHz(Head)	1900MHz(Body)	2450MHz(Head)	2450MHz(Body)
Target value (1g)	39.89 W/Kg	39.89 W/Kg	52.4 W/Kg	52.4 W/Kg
250 mW input power	9.455 W/Kg	9.740 W/Kg	12.443 W/Kg	12.789 W/Kg
Test value (1g)	37.820 W/Kg	38.960 W/Kg	49.772W/Kg	51.156 W/Kg

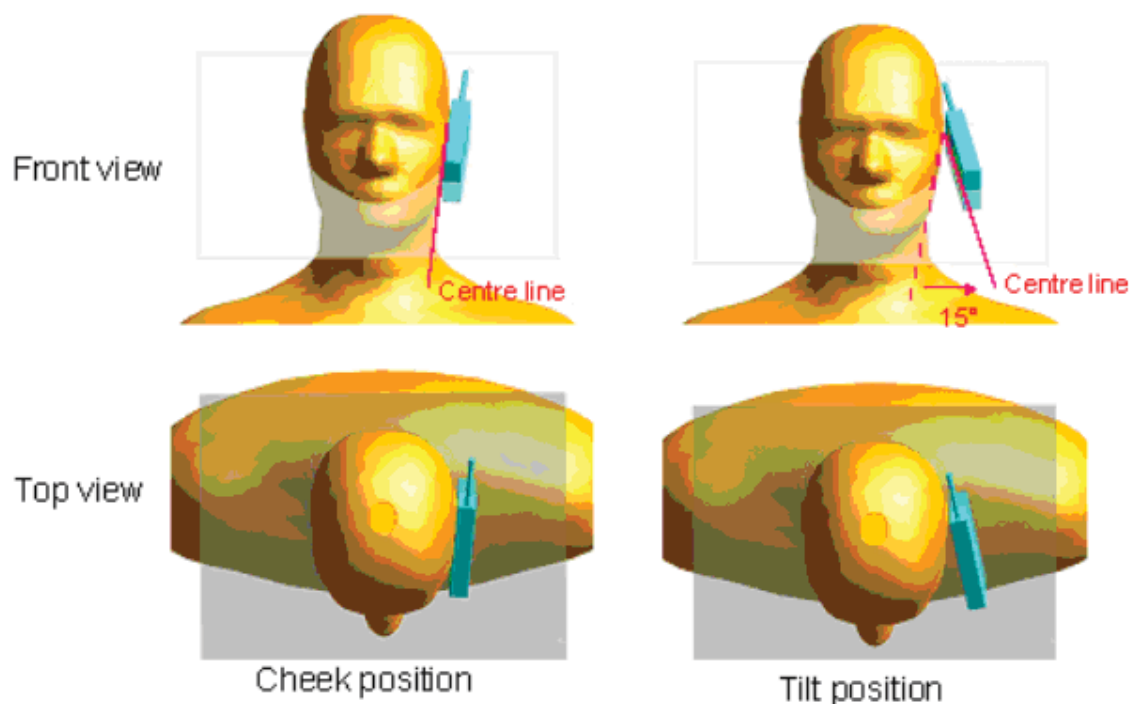
Note: System checks the specific test data please see page 150~161

8. Operational Conditions During Test

8.1. Informations on the testing

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

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



Description of the “cheek” position:

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

Description of the “tilted” position:

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

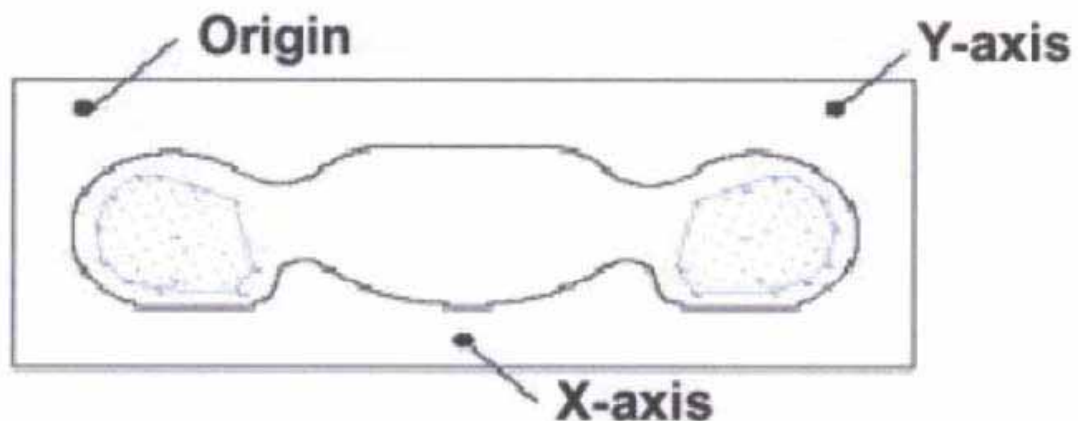
Remark: Please refer to Appendix B for the test setup photos.

8.2. 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

8.3. 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.

8.4. Description of interpolation/extrapolation scheme

The local SAR inside the phantom is measured using small dipole sensing elements inside a probe body. The probe tip must not be in contact with the phantom surface in order to minimize measurements errors, but the highest local SAR will occur at the surface of the phantom.

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

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

9. 3G MEASUREMENT PROCEDURES

9.1. WCDMA Handsets Test Configuration

The following procedures are applicable to WCDMA handsets operating under 3GPP Release 99, Release 5 and Release 6. The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2kbps RMC (refer measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCH_n), HSDPA and HSPA(HSDPA/HSUPA) modes according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with same RMC or AMR, when required. SAR for Release 5 HSDPA and Release 6 HSPA are measured using the applicable FRC (fised reference channel) and E-DCH reference channel configurations. Maximum output power is verified according to applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. When Maximum Power Reduction (MPR) is not implemented according to Cubic Metric (CM) requirements for Release 6 HSPA, the following procedures do not apply.

9.2. Output Power Verification

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

If Maximum SAR for 12.2kbps RMC is $\leq 75\%$ of the SAR limit and maximum average output of each RF channel with HSUPA/HSDPA active is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2kbps RMC, according to KDB 941225D01v02, SAR is not required for this handset with HSPA capabilities.

9.3. Head SAR measurements

SAR for head exposure configurations in voice mode is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2 kbps AMR is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2kbps RMC and the maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise, SAR is measured on the maximum output channel in 12.2 kbps AMR with a 3.4 kbps SRB (signaling radio bearer) using the exposure configuration that result in the highest SAR 12.2 kbps RMC for that RF channel.

9.4. Body SAR measurements

SAR for body exposure configurations in voice and data modes is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. SAR for other spreading codes and multiple DPDCH_n, when

supported by the DUT, are not required when the maximum average output of each RF channel, for spreading codes and multiple DPDCHn configuration are less than 1/4 dB higher than those measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel with an applicable RMC configuration for the corresponding spreading code or DPDCHn using the exposure configuration that results in the highest SAR with 12.2 kbps RMC. When more than 2 DPDCHn are supported by the DUT, it may be necessary to configure additional DPDCHn for a DUT using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

9.5. Handsets with Release 6 HSPA(HSDPA/HSUPA)

Body SAR is not required for handsets with HSPA capabilities when the maximum average output of each RF channel with HSUPA/HSDPA active is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC and maximum SAR for 12.2 kbps RMC is $\leq 75\%$ of the SAR limit. Otherwise, SAR is measured for HSPA using the additional body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, on the maximum output channel with the body exposure configuration that results in the highest SAR in 12.2 kbps RMC for that RF channel. When VOIP is applicable for head exposure in HSPA, SAR is not required when the maximum output of each RF channel with HSPA is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2 kbps RMC; otherwise, the same HSPA configuration used for body measurement should be tested for head exposure.

10. Measurement Of Conducted Peak Output Power.

1. WCDMA Conducted peak output power

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	21.37	22.19	22.16	21.28	21.17	21.18
HSDPA	1	21.26	22.14	22.08	21.19	21.15	21.16
	2	21.25	22.15	22.09	21.21	21.13	21.15
	3	20.69	21.63	21.51	20.66	20.66	20.65
	4	20.72	21.62	21.49	20.73	20.65	20.69

2. GSM Conducted peak output power

Band	Channel	Frequency (MHz)	Output Power (dBm)
GSM 850	128	824.2	28.13
	190	836.6	28.59
	251	848.8	29.38
PCS 1900	512	1850.2	25.87
	661	1880.0	24.54
	810	1909.8	24.39

2. GPRS Mode Conducted peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	25.19	24.90	25.17	25.01
	190	836.6	25.63	25.47	25.36	25.41
	251	848.8	25.92	26.41	26.33	26.30
PCS 1900	512	1850.2	23.92	23.86	23.72	23.77
	661	1880.0	22.50	22.42	22.33	22.40
	810	1909.8	22.33	22.30	22.33	22.23

GPRS Time-based Average Power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	16.19	18.88	20.91	22.00
	190	836.6	16.63	19.45	21.10	22.40
	251	848.8	16.92	20.39	22.07	23.29
PCS 1900	512	1850.2	14.92	17.84	19.46	20.76
	661	1880.0	13.50	16.40	18.07	19.39
	810	1909.8	13.33	16.28	18.07	19.22

Timeslot consignations:

No. Of Slots	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation	1Up4Down	2Up2Down	3Up2Down	4Up1Down
Duty Cycle	1:8	1:4	1:2.67	1:2
Correct Factor	-9.00dB	-6.02dB	-4.26dB	-3.01dB

Note: 1. Correct Factor= $10 \cdot \log(\text{Duty Cycle})$

2. Average Power= Peak Power+ Correct Factor

3. EDGE Mode Conducted peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	25.20	25.22	25.13	25.17
	190	836.6	25.67	25.63	25.64	25.64
	251	848.8	26.39	26.44	26.35	26.45
PCS 1900	512	1850.2	23.89	23.72	23.85	23.80
	661	1880.0	22.43	22.41	22.37	22.37
	810	1909.8	22.15	22.25	22.12	22.27

EDGE Time-based Average Power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	16.20	19.20	20.87	22.16
	190	836.6	16.67	19.61	21.38	22.63
	251	848.8	17.39	20.42	22.09	23.44
PCS 1900	512	1850.2	14.89	17.70	19.59	20.79
	661	1880.0	13.43	16.39	18.11	19.36
	810	1909.8	13.15	16.23	17.86	19.26

Timeslot consignations:

No. Of Slots	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation	1Up4Down	2Up2Down	3Up2Down	4Up1Down
Duty Cycle	1:8	1:4	1:2.67	1:2
Correct Factor	-9.00dB	-6.02dB	-4.26dB	-3.01dB

Note: 1. Correct Factor= $10 \cdot \log(\text{Duty Cycle})$

2. Average Power= Peak Power+ Correct Factor

4. Wifi peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			802.11B (DSSS)	802.11G (OFDM)	802.11N (OFDM)
WiFi	1	2412	13.51	11.49	9.02
	6	2437	13.46	11.83	9.17
	11	2462	13.54	11.75	9.46

5. Bluetooth peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			GFSK	$\pi/4$ -DQPSK	8-DPSK
BT	0	2402	-1.389	0.576	0.712
	38	2441	-1.258	0.053	0.623
	79	2480	-0.557	1.289	0.801

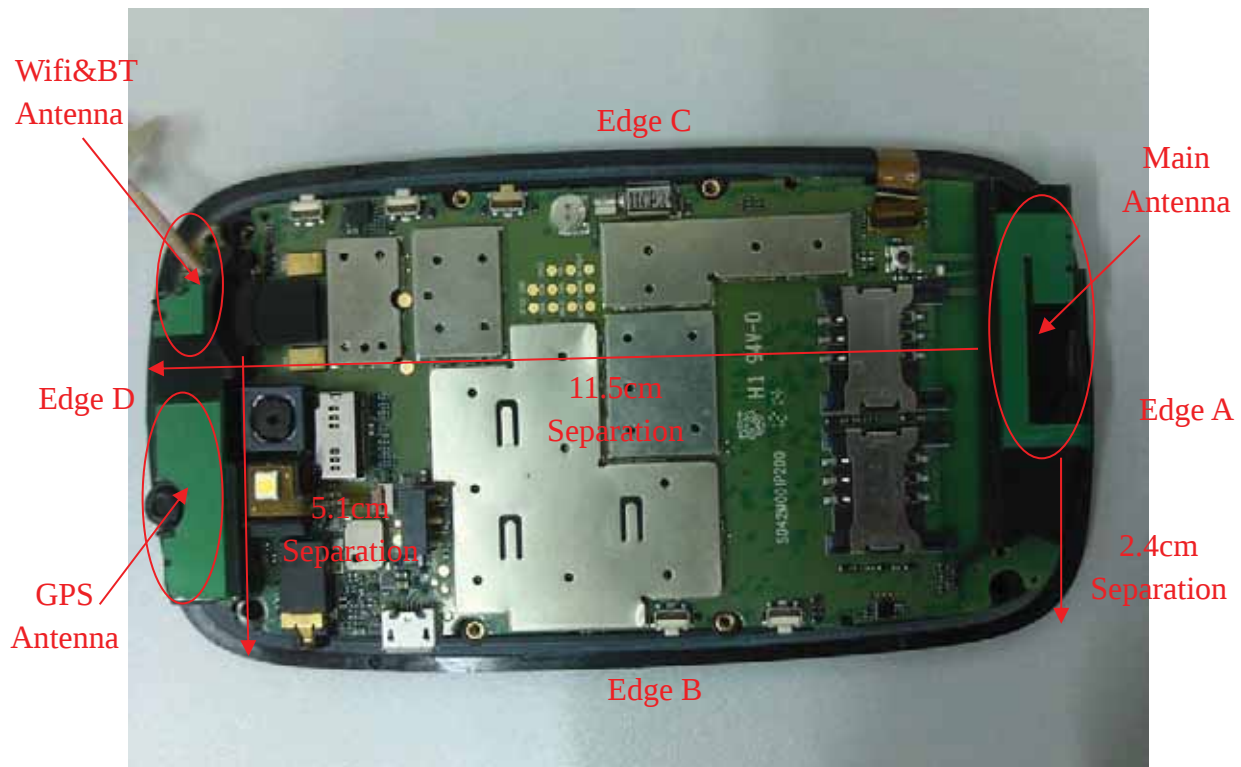
11. Wireless Hot Spot SAR Evaluation Procedures

This Portable Devices with Wireless Router function. And the SAR evaluation procedures accord with KDB 941225 D06 Hot Spot SAR v01.

1. SAR must be tested for all surfaces and edges (side) with a transmitting antenna with in 2.5 cm from that surface or edge, at a test separation distance of 10 mm, in the wireless modes that support wireless routing.

2. Edge configurations:

The are three transmitters build in EUT, As follwing :



3. WCDMA&GSM antenna is located at edge A, the distance between WCDMA&GSM antenna and edge D is 11.5cm larger than 2.5cm. according to KDB941225 D06, the SAR measurement of edge D of WCDMA and GSM is not required.
4. Wifi&BT antenna is located at edge D, the distance between wifi antenna and edge B is larger than 2.5cm. according to KDB941225 D06, the SAR measurement of edge C is not required, so is Edge A.

12. Test Results List

Summary of Measurement Results (GSM 850MHz Band)

Tempe(W/Kg), 1grature: 21.0~23.8°C, humidity: 54~60%.								
Phantom Configurations		Device Test Positions	Device Test channel	SAR (W/Kg), 1g Peak	Scaling Factor	Scaled SAR (W/Kg), 1g Peak		
Right Side Of Head		Cheek	251	0.695	1.153	0.801		
		Ear		0.295		0.340		
Left Side Of Head		Cheek		0.478		1.153	0.551	
		Ear		0.374			0.431	
Body (10mm Separation)	GSM	Back upward		0.530			1.153	0.611
		Face Upward		0.363				0.419
	GPRS	Back upward		0.762	1.175			0.895
		Face Upward		0.496				0.583
		Edge A		0.063		0.074		
		Edge B		0.640		0.752		
		Edge C		0.487		0.572		
	EDGE	Back upward		0.648	1.135	0.735		

Summary of Measurement Results (GSM 1900MHz Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.							
Phantom Configurations		Device Test Positions	Device Test channel	SAR (W/Kg), 1g Peak	Scaling Factor	Scaled SAR(W/K g), 1g Peak	
Right Side Of Head		Cheek	512	0.705	1.030	0.726	
		Ear		0.205		0.211	
Left Side Of Head		Cheek		0.734		0.756	
		Ear		0.345		0.355	
Body (10mm Separation)	GSM	Back upward		0.511		1.054	0.526
		Face Upward		0.235			0.242
	GPRS	Back upward		0.485	1.054		0.511
		Face Upward		0.252			0.266
		Edge A		0.534			0.563
		Edge B		0.152			0.160
		Edge C		0.173		0.182	
	EDGE	Back upward		0.579	1.047	0.606	

Note:

1.The SAR test shall be performed at the high, middle and low frequency channels of each operating mode, when the SAR of highest power channel of each configurations is less than 0.8 W/kg, refer to KDB 648474, testing for the other channels is not required.

2.The main antenna to Edge D is greater than 2.5cm, so the Edge D configuration is not required.

Summary of Measurement Results (WCDMA 850MHz Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.					
Phantom Configurations	Device Test Positions	Device Test channel	SAR (W/Kg), 1g Peak	Scaling Factor	Scaled SAR (W/Kg), 1g Peak
Right Side Of Head	Cheek/Touch	4175	0.325	1.074	0.349
	Ear/Tilt		0.194		0.208
Left Side Of Head	Cheek/Touch		0.268		0.288
	Ear/Tilt		0.217		0.233
Body (10mm Separation)	Back upward		0.436		0.468
	Face Upward		0.297		0.319
	Edge A		0.078		0.084
	Edge B		0.572		0.614
	Edge C		0.587		0.630

Note:

1.The SAR test shall be performed at the high, middle and low frequency channels of each operating mode, when the SAR of highest power channel of each configurations is less than 0.8 W/kg, refer to KDB 648474, testing for the other channels is not required.

2.The main antenna to Edge D is greater than 2.5cm, so the Edge D configuration is not required.

3.Maximum SAR for 12.2kbps RMC is $0.587 \text{ W/Kg} \leq 75\%$ of the SAR limit (i.e. 1.2 W/Kg 1g) and maximum average output of each RF channel with HSUPA/HSDPA active is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2kbps RMC (refer to Page 24 of the report), according to KDB 941225D01v02, SAR is not required for this handset with HSPA capabilities.

Summary of Measurement Results (WCDMA 1900MHz Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.					
Phantom Configurations	Device Test Positions	Device Test channel	SAR(W/Kg), 1g Peak	Scaling Factor	Scaled SAR(W/Kg), 1g Peak
Right Side Of Head	Cheek/Touch	9262	0.995	1.052	1.047
		9400	0.938	1.079	1.012
		9538	0.902	1.076	0.971
	Ear/Tilt	9262	0.421	1.052	0.443
Left Side Of Head	Cheek/Touch	9262	0.972	1.052	1.023
		9400	1.020	1.079	1.101
		9538	0.976	1.076	1.050
	Ear/Tilt	9262	0.520	1.052	0.547
Body (10mm Separation)	Back upward		0.511		0.538
	Face Upward		0.356		0.375
	Edge A		0.726		0.764
	Edge B		0.222		0.234
	Edge C		0.168		0.177

Note:

- 1.The SAR test shall be performed at the high, middle and low frequency channels of each operating mode, when the SAR of highest power channel of each configurations is less than 0.8 W/kg, refer to KDB 648474, testing for the other channels is not required.
- 2.The main antenna to Edge D is greater than 2.5cm, so the Edge D configuration is not required.
- 3.Maximum SAR for 12.2kbps RMC is $1.020\text{W/Kg} \leq 75\%$ of the SAR limit (i.e. 1.2W/Kg 1g) and maximum average output of each RF channel with HSUPA/HSDPA active is less than 1/4 dB higher than that measured without HSUPA/HSDPA using 12.2kbps RMC (refer to Page 24 of the report), according to KDB 941225D01v02, SAR is not required for this handset with HSPA capabilities.

Summary of Measurement Results (WLAN 802.11 Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.					
Phantom Configurations	Device Test Positions	Antenna Positions	SAR(W/Kg), 1g Peak		
			Device Test channel		
			Channel 1	Channel 6	Channel 11
Right Side Of Head	Cheek/Touch	Internal	/	/	0.104
	Ear/Tilt	Internal	/	/	0.040
Left Side Of Head	Cheek/Touch	Internal	/	/	0.075
	Ear/Tilt	Internal	/	/	0.035
Body (10mm Separation)	Back upward	Internal	/	/	0.073
	Face Upward	Internal	/	/	0.026
	Edge C	Internal	/	/	0.035
	Edge D	Internal	/	/	0.031

Note:

1. Based on the Measurement Of Conducted Peak Output Power, the max power of 801.11b is 22.59mW>12mW ,the SAR test for 802.11b is required, but 802.11g/HT20 is not required, for the maximum average output power is not 1/4 dB higher than measured on the corresponding 802.11b channels; Bluetooth SAR is not required for the max power of BT is 1.346mW<12mW (60/f(GHz)mW)

2.Scales SAR calculation

Band	Tune-up power tolerance (dBm)	SAR test channel Power (dBm)	Scaling Factor
GSM 850	PCL = 5, PWR = 29±1	29.38	1.153
GPRS 850	Max output power <27	26.30	1.175
EDGE 850	Max output power <27	26.45	1.135
PCS 1900	PCL = 0, PWR = 25 ±1	25.87	1.030
GPRS 1900	Max output power <24	23.77	1.054
EDGE 1900	Max output power <24	23.80	1.047
WCDMA 850	Max output power =22 (+0.5/-2)	22.19	1.074
WCDMA 1900	Max output power =21 (+0.5/-1)	21.28	1.052
		21.17	1.079
		21.18	1.076

13. Multiple Transmitters Evaluation

The are three transmitters build in EUT, As follwing :



Stand-alone SAR

The output power of Wifi transmitter is 22.59mW (13.54dBm) >12mW ,stand-alone SAR evaluation is required for Wifi.

The BT Max. Peak output power is 1.346mW (1.289dBm) ≤ 12mW,and the distance between BT antenna and main antenna is 10.1 cm >2.5 cm, standalone SAR evaluation is not required for Bluetooth antenna .

Simultaneous SAR

The GSM and WCDMA can't simultaneous transmitting.

The BT and Wifi can't simultaneous transmitting.

Test Position	GSM&WCDMA SAR _{Max} (W/Kg)	Bluetooth SAR(W/Kg)	WiFi SAR(W/Kg)	Σ1-g SAR _{Max} (W/Kg)	
				BT&Main Ant	WiFi&Main Ant
Head SAR	1.020	0	0.104	1.020	1.124
Body SAR	0.762	0	0.073	0.762	0.835

Simultaneous Transmission SAR evaluation is not required for BT and GSM&WCDMA, because the sum of 1g SAR_{Max} is 1.020W/Kg < 1.6W/Kg for BT and GSM&WCDMA.

Simultaneous Transmission SAR evaluation is not required for WiFi and GSM&WCDMA, because the sum of 1g SAR_{Max} is 1.124W/Kg < 1.6W/Kg for BT and GSM&WCDMA.

Annex A EUT Setup Photos

1 EUT Left Head Touch Cheek Position



2 EUT Left Head Tilt15 Position



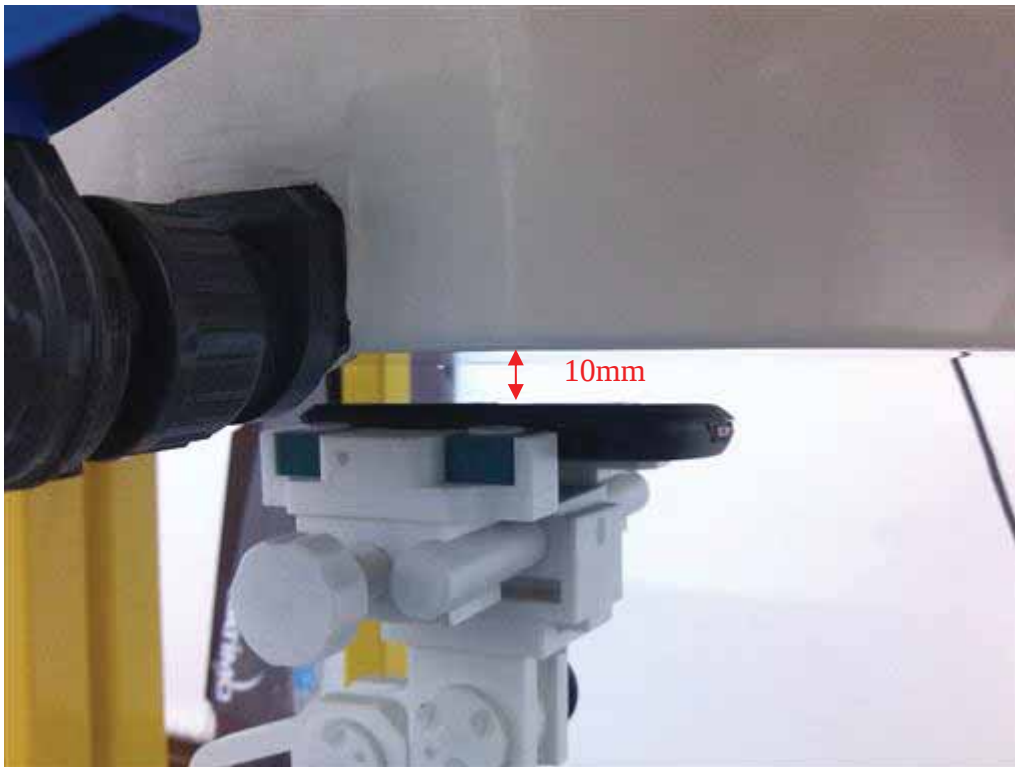
3 EUT Right Head Touch Cheek Position



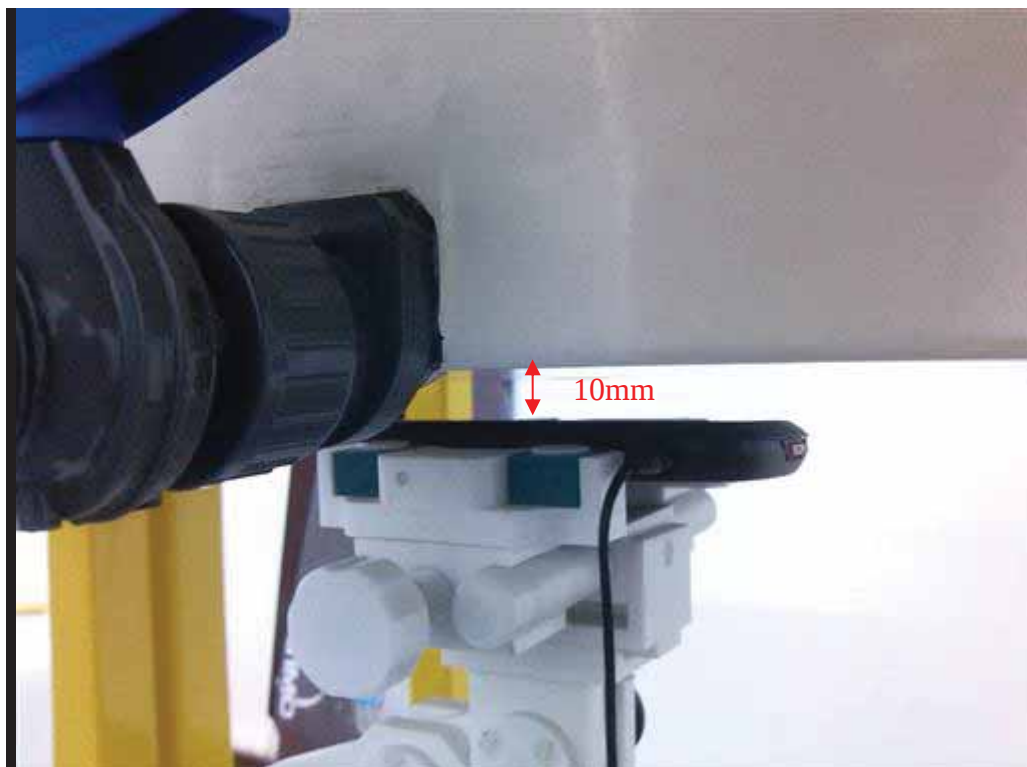
4 EUT Right Head Tilt15 Position



5 Side Position



6 Side Position (with earphone)



7 Edge A



8 Edge B



9 Edge C



10 Edge D



Liquid Level Photo



Annex B Graph Test Results

BAND	PARAMETERS
<u>GSM850</u>	<u>Measurement 1:</u> Right Head with Cheek device position on Low Channel in GSM mode <u>Measurement 2:</u> Right Head with Tilt device position on Low Channel in GSM mode <u>Measurement 3:</u> Left Head with Cheek device position on Low Channel in GSM mode <u>Measurement 4:</u> Left Head with Tilt device position on Low Channel in GSM mode <u>Measurement 5:</u> Body position on Low Channel in GSM mode <u>Measurement 6:</u> Body position on Low Channel in GSM mode <u>Measurement 7:</u> Body position on Low Channel in GPRS mode <u>Measurement 8:</u> Body position on Low Channel in GPRS mode <u>Measurement 9:</u> Body position on Low Channel in GPRS mode <u>Measurement 10:</u> Body position on Low Channel in GPRS mode <u>Measurement 11:</u> Body position on Low Channel in GPRS mode <u>Measurement 12:</u> Body position on Low Channel in EDGE mode
<u>GSM1900</u>	<u>Measurement 13:</u> Right Head with Cheek device position on Low Channel in GSM mode <u>Measurement 14:</u> Right Head with Tilt device position on Low Channel in GSM mode <u>Measurement 15:</u> Left Head with Cheek device position on Low Channel in GSM mode <u>Measurement 16:</u> Left Head with Tilt device position on Low Channel in GSM mode <u>Measurement 17:</u> Body position on Low Channel in GSM mode <u>Measurement 18:</u> Body position on Low Channel in GSM mode <u>Measurement 19:</u> Body position on Low Channel in GPRS mode <u>Measurement 20:</u> Body position on Low Channel in GPRS mode <u>Measurement 21:</u> Body position on Low Channel in GPRS mode <u>Measurement 22:</u> Body position on Low Channel in GPRS mode <u>Measurement 23:</u> Body position on Low Channel in GPRS mode <u>Measurement 24:</u> Body position on Low Channel in EDGE mode
<u>WCDMA 850</u>	<u>Measurement 25:</u> Right Head with Cheek device position on Middle Channel in CDMA mode <u>Measurement 26:</u> Right Head with Tilt device position on Middle Channel in CDMA mode <u>Measurement 27:</u> Left Head with Cheek device position on Middle Channel in CDMA mode <u>Measurement 28:</u> Left Head with Tilt device position on Middle Channel in CDMA mode <u>Measurement 29:</u> Body position on Middle Channel in CDMA

	mode <u>Measurement 30:</u> Body position on Middle Channel in CDMA mode <u>Measurement 31:</u> Body position on Middle Channel in CDMA mode <u>Measurement 32:</u> Body position on Middle Channel in CDMA mode <u>Measurement 33:</u> Body position on Middle Channel in CDMA mode
<u>WCDMA</u> <u>1900</u>	<u>Measurement 34:</u> Right Head with Cheek device position on Low Channel in CDMA mode <u>Measurement 35:</u> Right Head with Cheek device position on Middle Channel in CDMA mode <u>Measurement 36:</u> Right Head with Cheek device position on High Channel in CDMA mode <u>Measurement 37:</u> Right Head with Tilt device position on Low Channel in CDMA mode <u>Measurement 38:</u> Left Head with Cheek device position on Low Channel in CDMA mode <u>Measurement 39:</u> Left Head with Cheek device position on Middle Channel in CDMA mode <u>Measurement 40:</u> Left Head with Cheek device position on High Channel in CDMA mode <u>Measurement 41:</u> Left Head with Tilt device position on Low Channel in CDMA mode <u>Measurement 42:</u> Body position on Low Channel in CDMA mode <u>Measurement 43:</u> Body position on Low Channel in CDMA mode <u>Measurement 44:</u> Body position on Low Channel in CDMA mode <u>Measurement 45:</u> Body position on Low Channel in CDMA mode <u>Measurement 46:</u> Body position on Low Channel in CDMA mode
<u>802.11b</u>	<u>Measurement 47:</u> Right Head with Cheek device position on High Channel in DSSS mode <u>Measurement 48:</u> Right Head with Tilt device position on High Channel in DSSS mode <u>Measurement 49:</u> Left Head with Cheek device position on High Channel in DSSS mode <u>Measurement 50:</u> Left Head with Tilt device position on High Channel in DSSS mode <u>Measurement 51:</u> Body position on High Channel in DSSS mode <u>Measurement 52:</u> Body position on High Channel in DSSS mode <u>Measurement 53:</u> Body position on High Channel in DSSS mode <u>Measurement 54:</u> Body position on High Channel in DSSS mode

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: 14/6/2012

Measurement duration: 8 minutes 10 seconds

A. Experimental conditions.

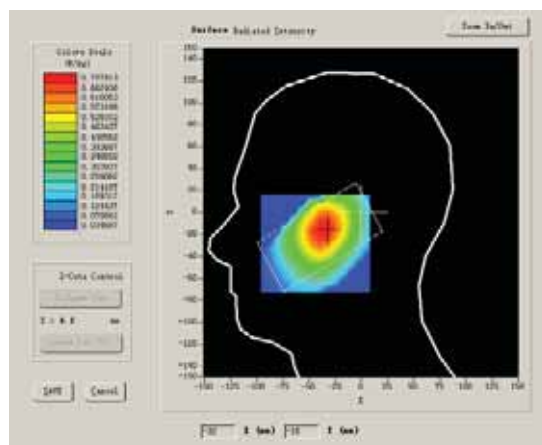
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

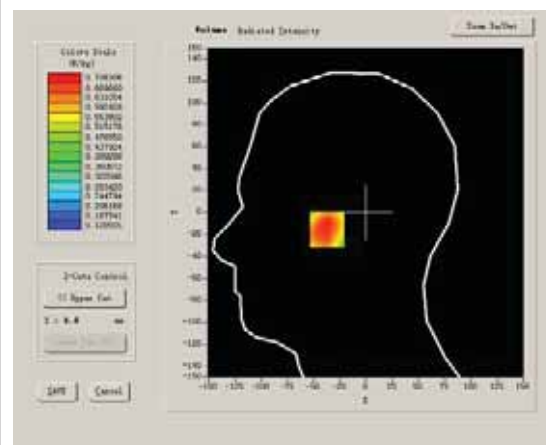
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001
Conductivity (S/m)	0.894409
Power drift(%)	-1.010000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.479,25.214,27.19
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



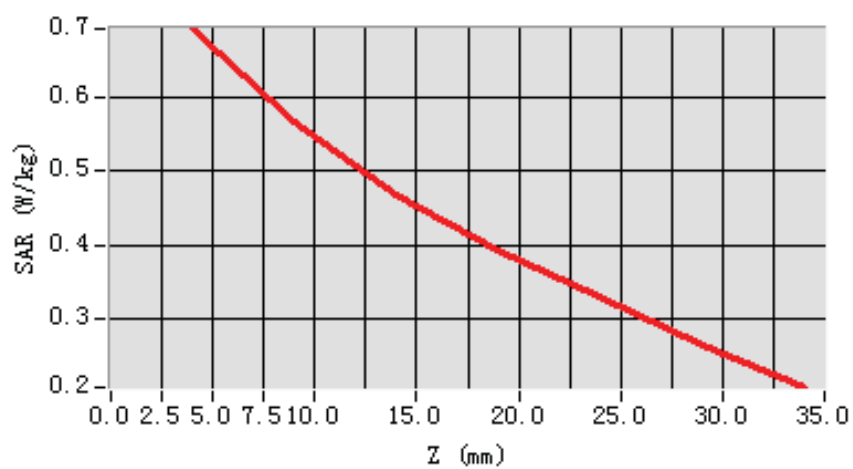
Maximum location: X=-34.00, Y=-16.00

SAR 10g (W/Kg)	0.526048
SAR 1g (W/Kg)	0.695165

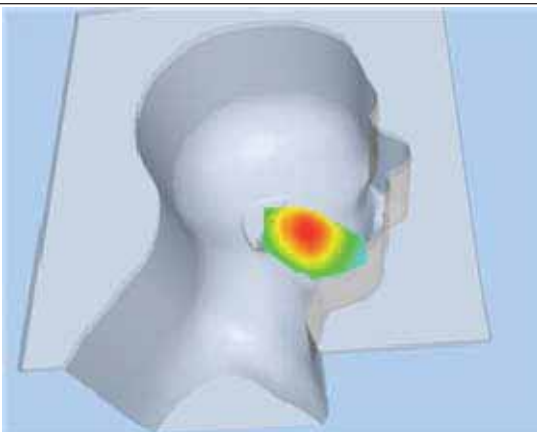
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6912	0.5656	0.4684	0.3932	0.3306	0.2644

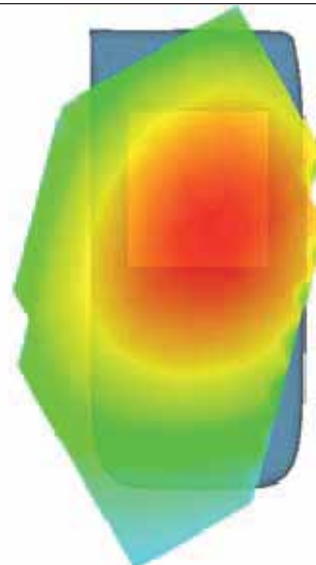
SAR, Z Axis Scan (X = -34, Y = -16)



3D scene shot



Hot spot position



MEASUREMENT 2

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 38 seconds

A. Experimental conditions.

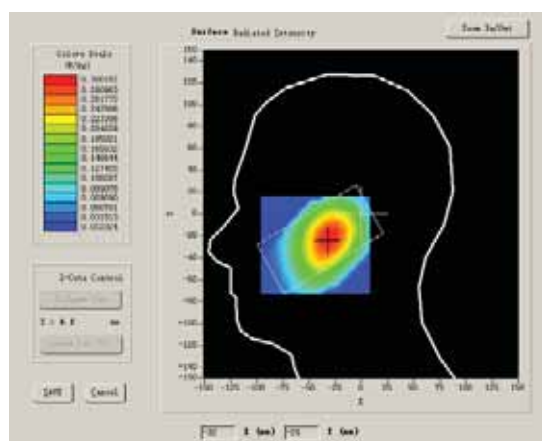
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

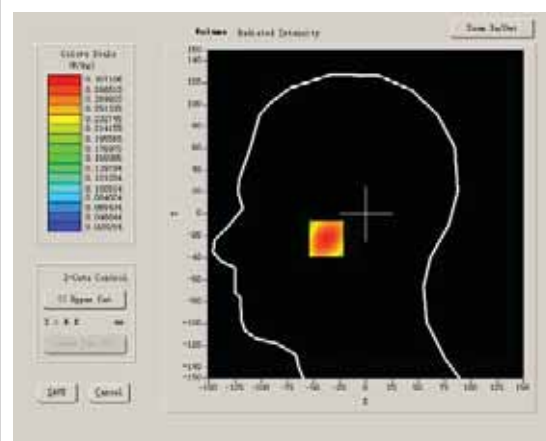
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001
Conductivity (S/m)	0.894409
Power drift(%)	-0.950000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.479,25.214,27.19
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



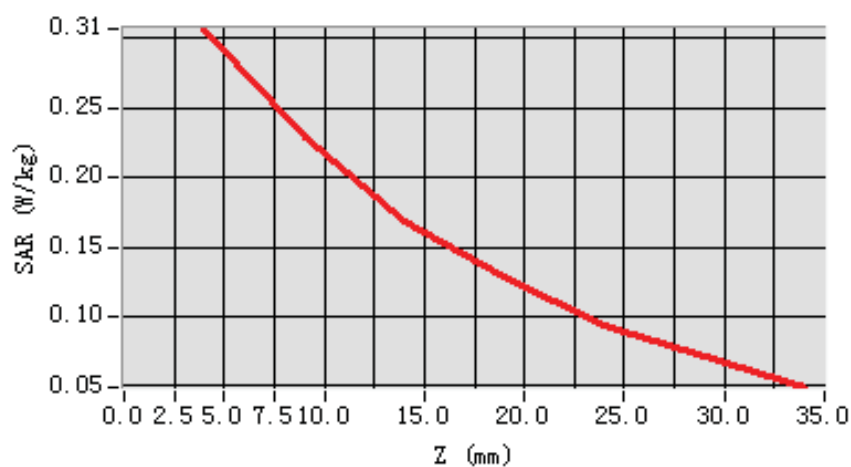
Maximum location: X=-32.00, Y=-23.00

SAR 10g (W/Kg)	0.208266
SAR 1g (W/Kg)	0.294675

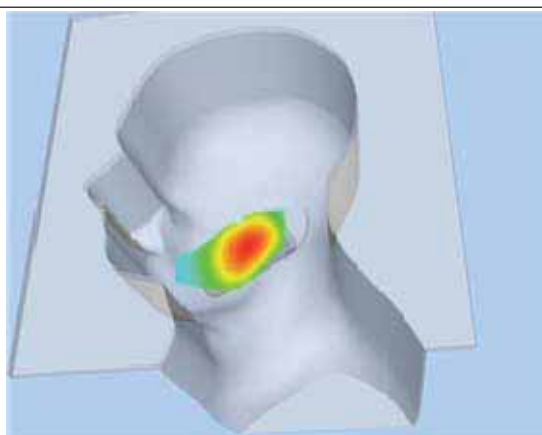
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3071	0.2293	0.1691	0.1285	0.0941	0.0711

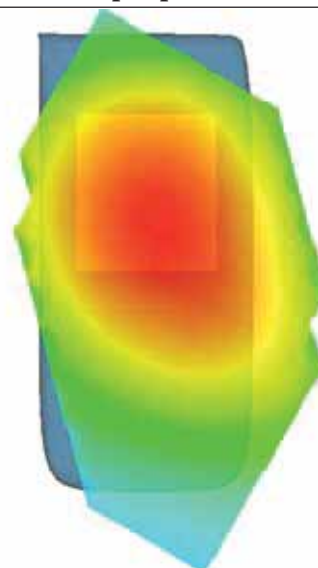
SAR, Z Axis Scan (X = -32, Y = -23)



3D sceen shot



Hot spot position



MEASUREMENT 3

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 59 seconds

A. Experimental conditions.

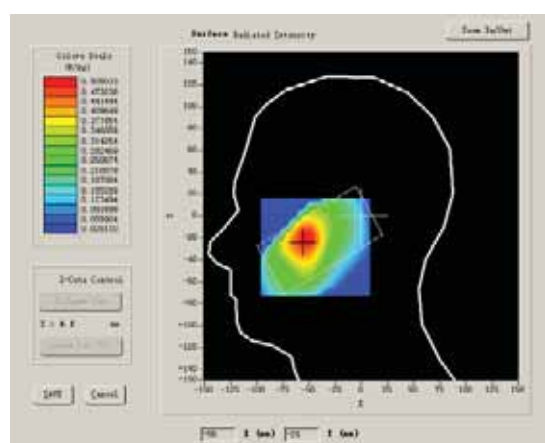
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

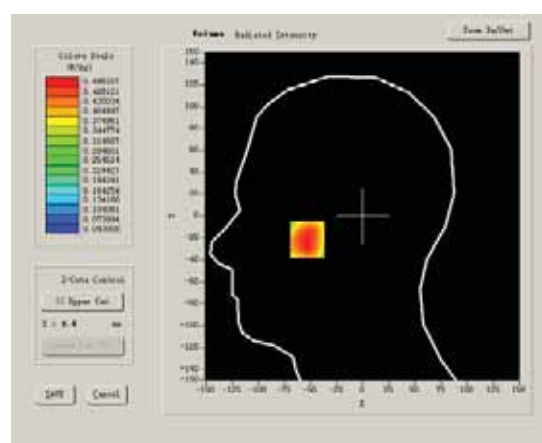
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001
Conductivity (S/m)	0.894409
Power drift(%)	-0.750000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.479,25.214,27.19
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



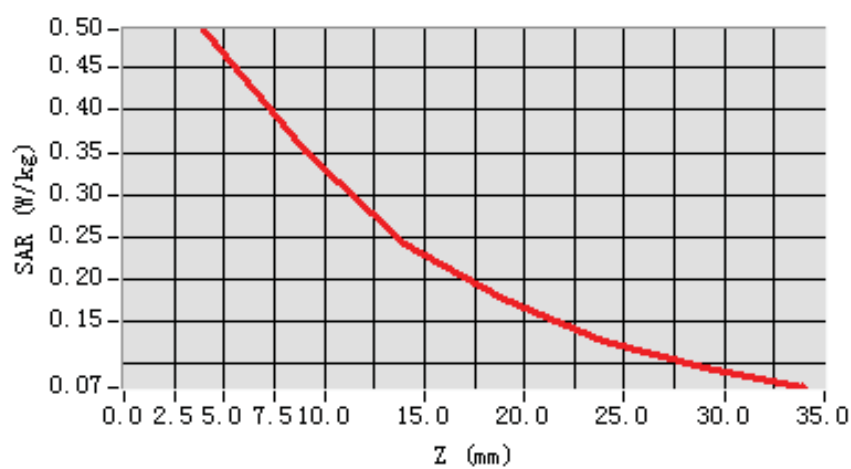
Maximum location: X=-53.00, Y=-21.00

SAR 10g (W/Kg)	0.321907
SAR 1g (W/Kg)	0.478174

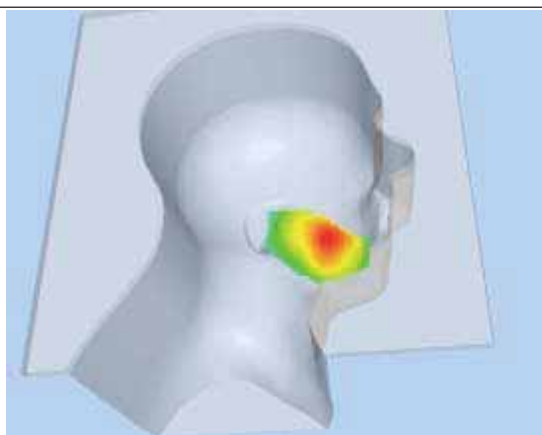
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4952	0.3522	0.2420	0.1753	0.1274	0.0958

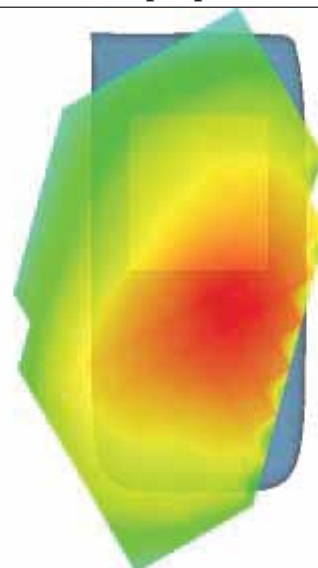
SAR, Z Axis Scan (X = -53, Y = -21)



3D sceen shot



Hot spot position



MEASUREMENT 4

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 31 seconds

A. Experimental conditions.

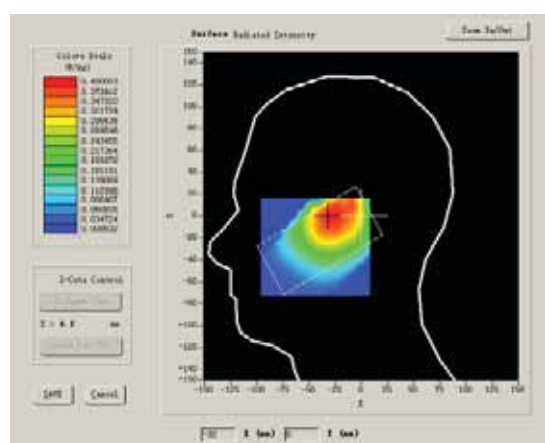
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

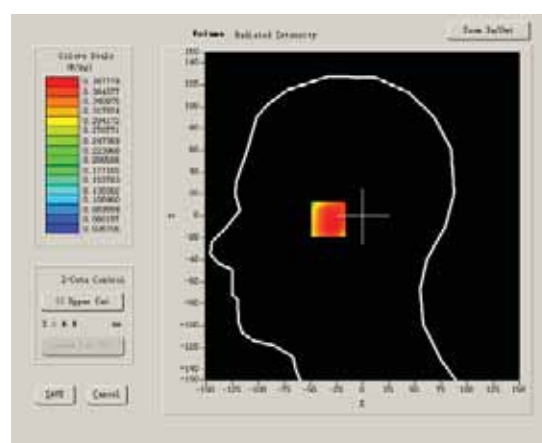
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	40.669998
Relative permittivity	19.120001
Conductivity (S/m)	0.894409
Power drift(%)	-0.680000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.479,25.214,27.19
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



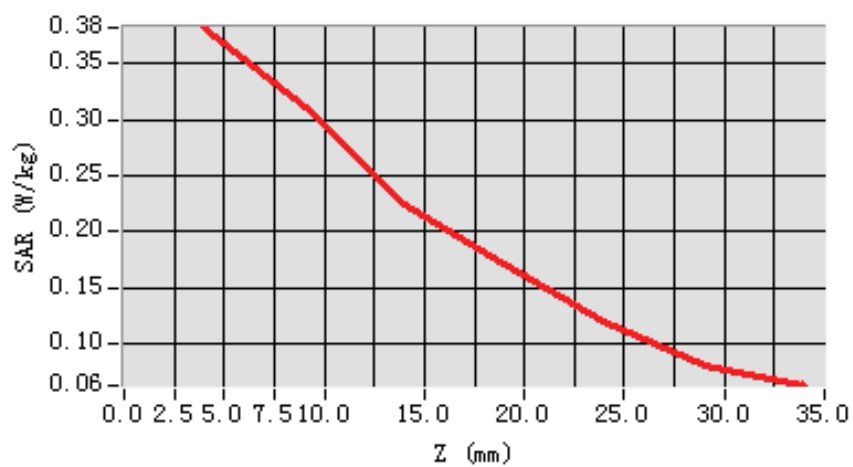
Maximum location: X=-31.00, Y=-1.00

SAR 10g (W/Kg)	0.276033
SAR 1g (W/Kg)	0.374077

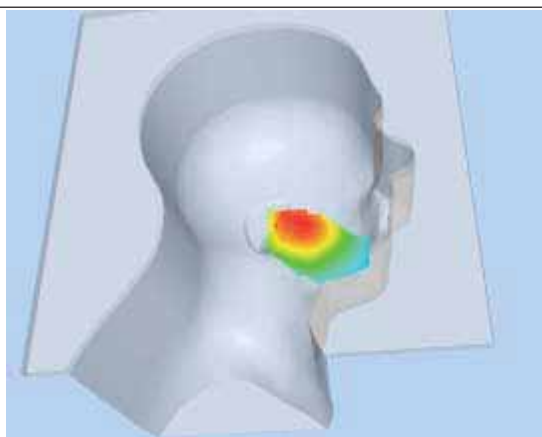
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3826	0.3120	0.2254	0.1706	0.1204	0.0800

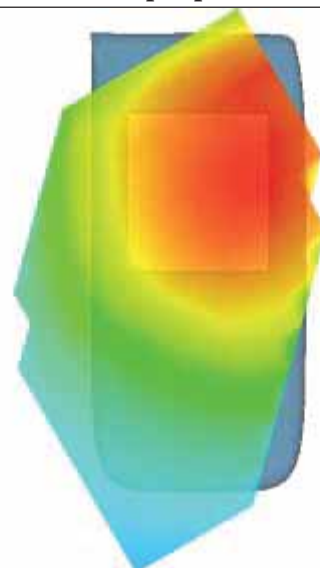
SAR, Z Axis Scan (X = -31, Y = -1)



3D scene shot



Hot spot position



MEASUREMENT 5

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 11 seconds

A. Experimental conditions.

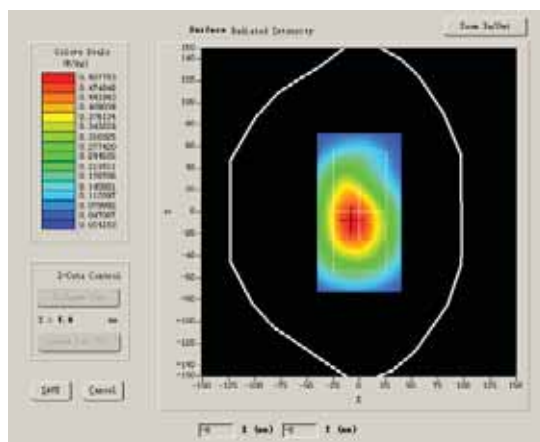
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

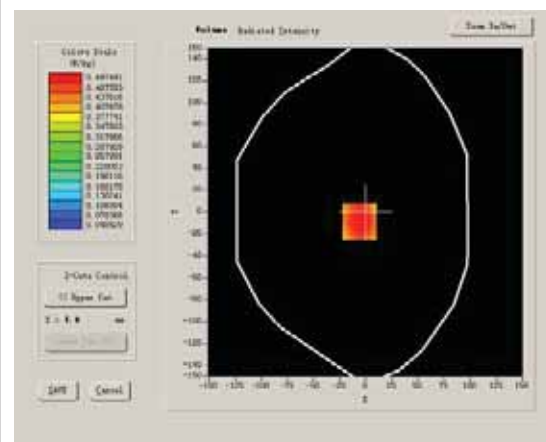
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift(%)	-1.890000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



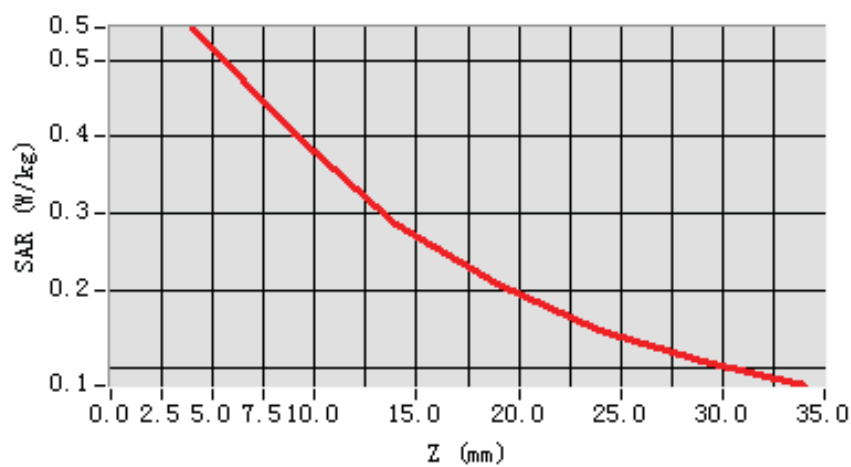
Maximum location: X=-6.00, Y=-9.00

SAR 10g (W/Kg)	0.372207
SAR 1g (W/Kg)	0.529727

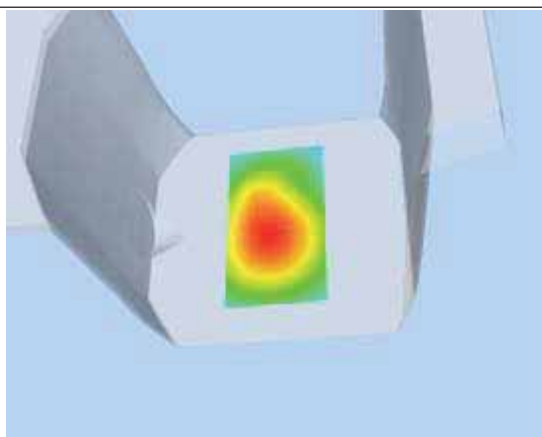
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5415	0.4047	0.2879	0.2092	0.1501	0.1087

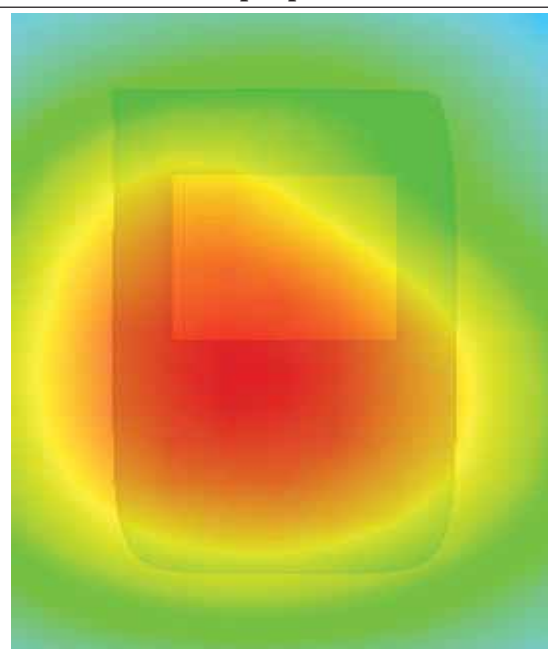
SAR, Z Axis Scan (X = -6, Y = -9)



3D scene shot



Hot spot position



MEASUREMENT 6

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 11 seconds

A. Experimental conditions.

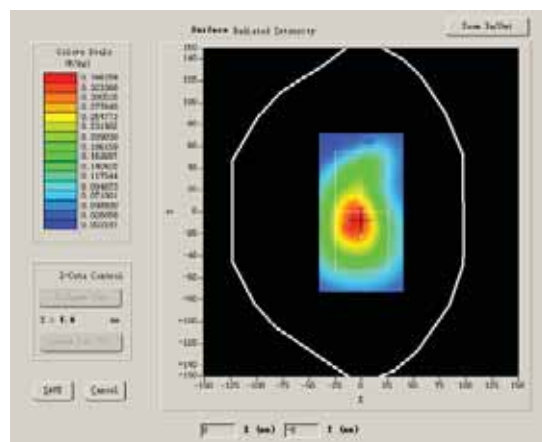
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GSM

B. SAR Measurement Results

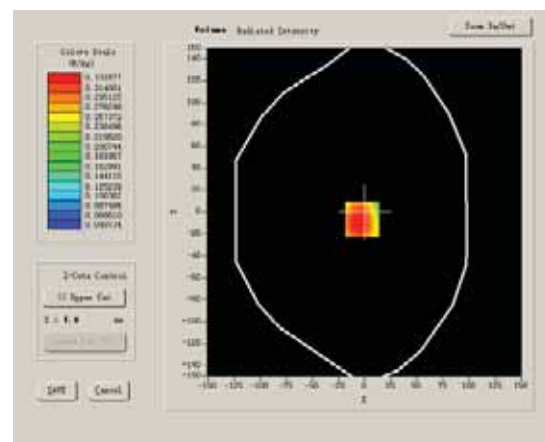
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift(%)	-0.140000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



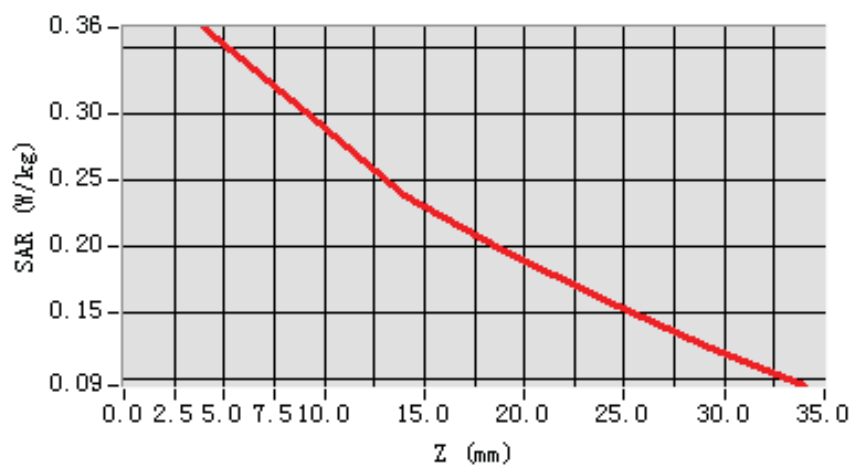
Maximum location: X=-2.00, Y=-7.00

SAR 10g (W/Kg)	0.275871
SAR 1g (W/Kg)	0.362573

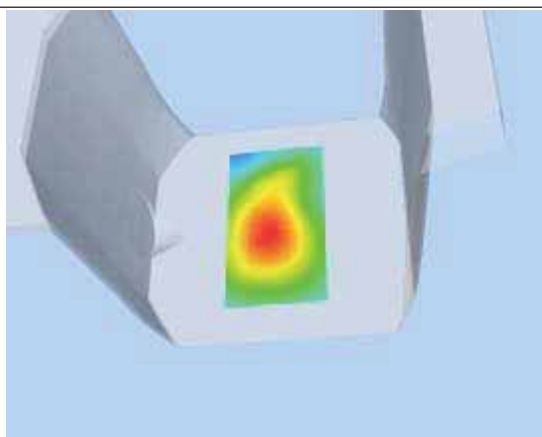
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3643	0.3005	0.2380	0.1962	0.1597	0.1237

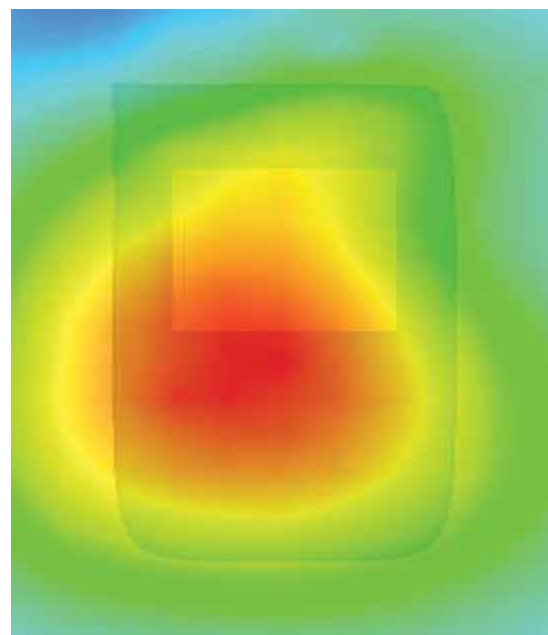
SAR, Z Axis Scan (X = -2, Y = -7)



3D scene shot



Hot spot position



MEASUREMENT 7

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

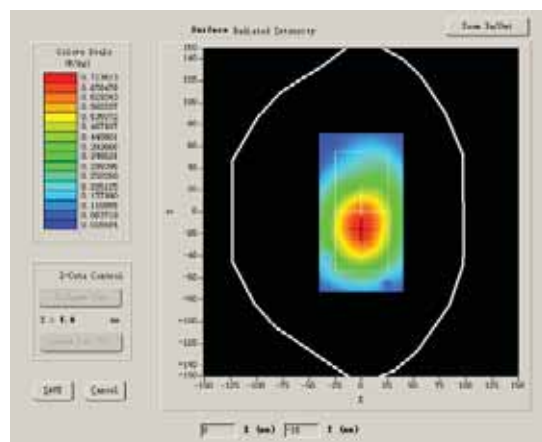
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

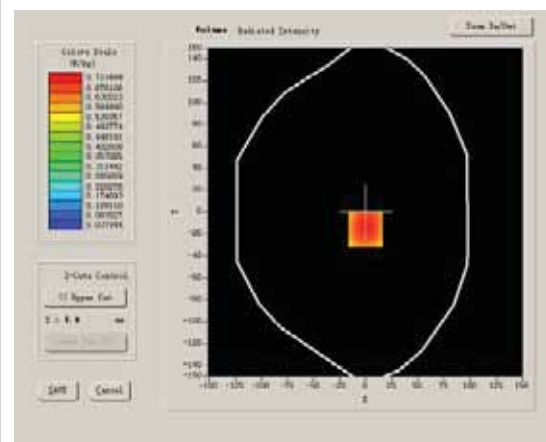
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift(%)	-3.820000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



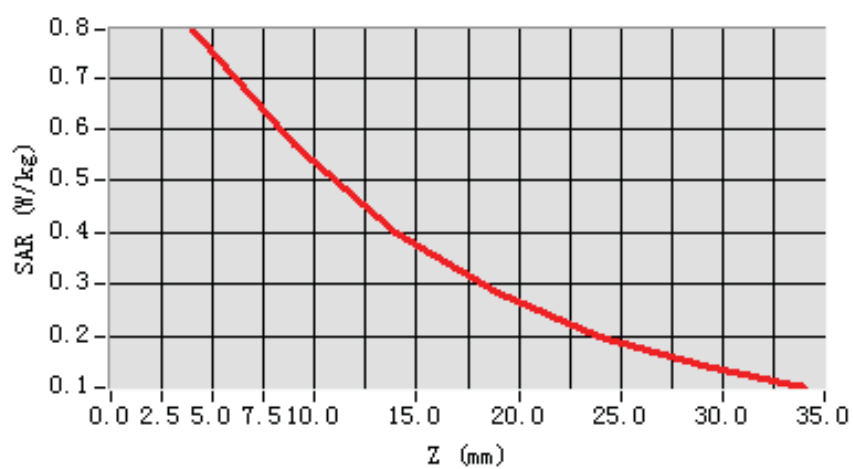
Maximum location: X=0.00, Y=-16.00

SAR 10g (W/Kg)	0.527181
SAR 1g (W/Kg)	0.761670

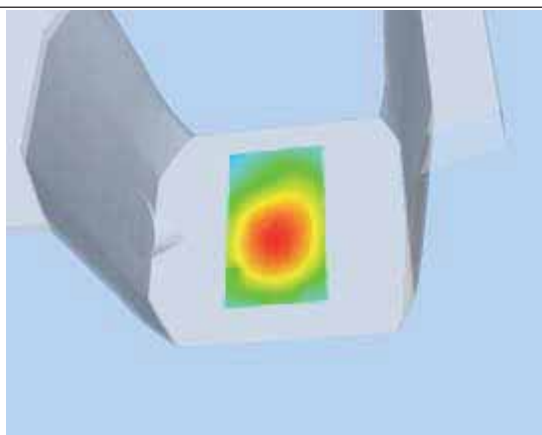
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7923	0.5712	0.3971	0.2826	0.1988	0.1435

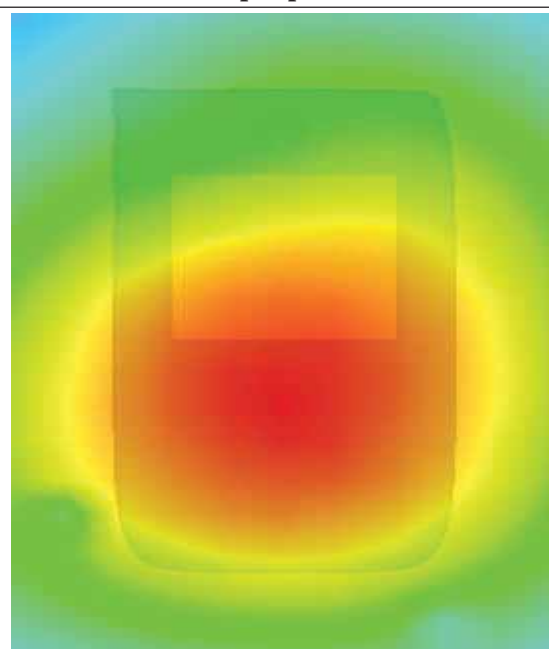
SAR, Z Axis Scan (X = 0, Y = -16)



3D scene shot



Hot spot position



MEASUREMENT 8

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 6 seconds

A. Experimental conditions.

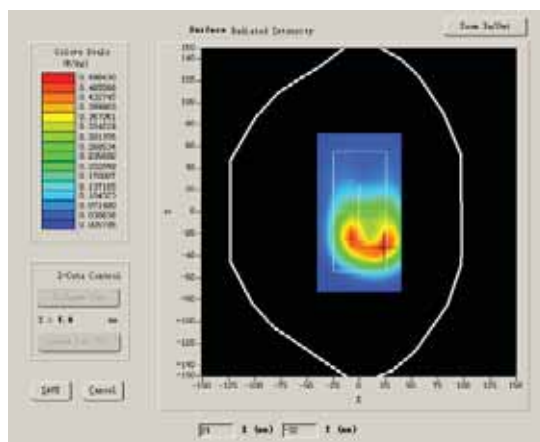
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

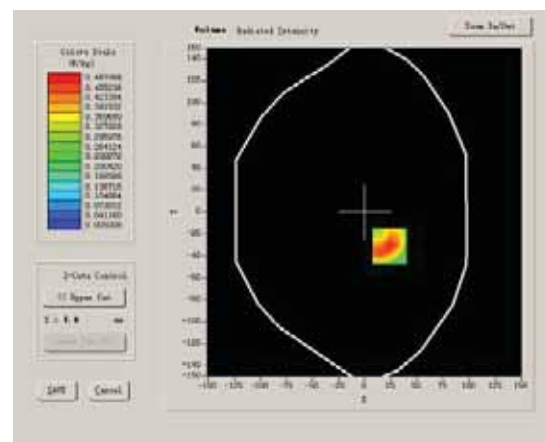
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift(%)	-2.730000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



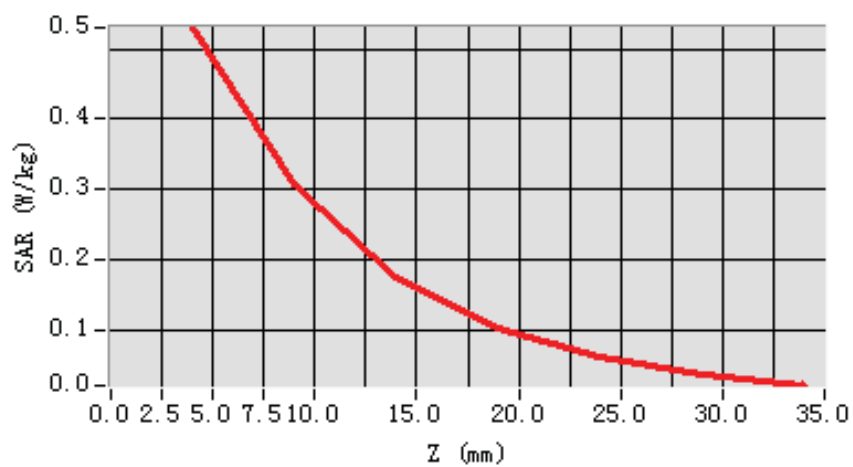
Maximum location: X=24.00, Y=-31.00

SAR 10g (W/Kg)	0.282804
SAR 1g (W/Kg)	0.496054

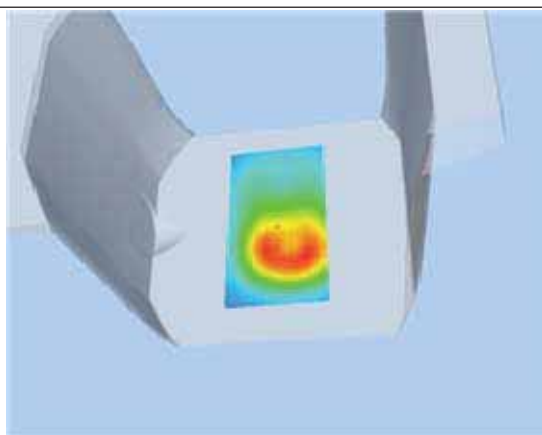
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5304	0.3074	0.1763	0.1017	0.0611	0.0366

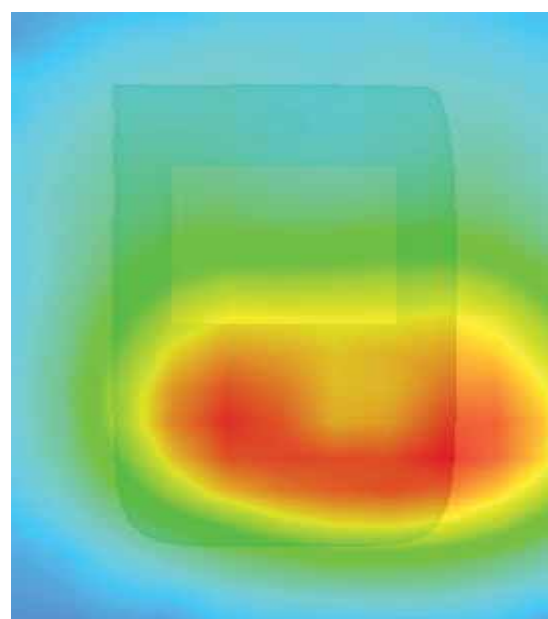
SAR, Z Axis Scan (X = 24, Y = -31)



3D scene shot



Hot spot position



MEASUREMENT 9

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

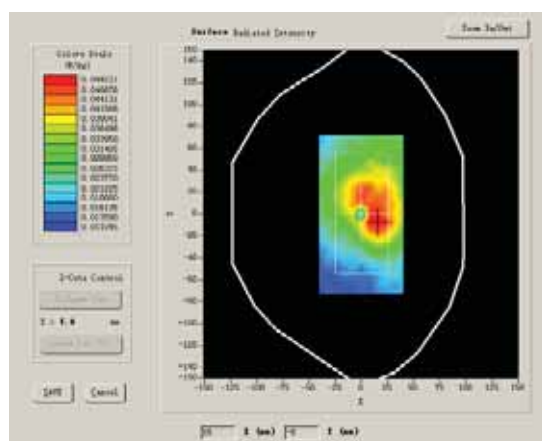
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

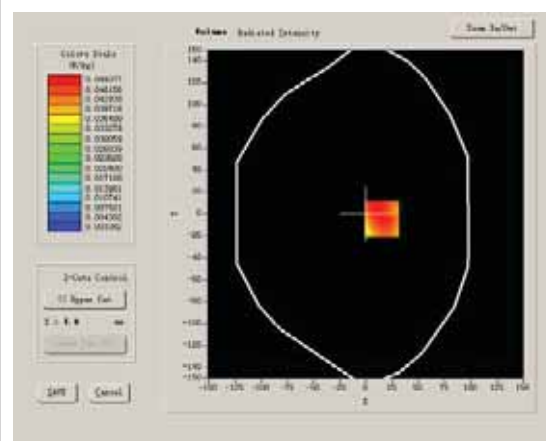
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.284550
Conductivity (S/m)	0.9809033
Power drift (%)	-4.450000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



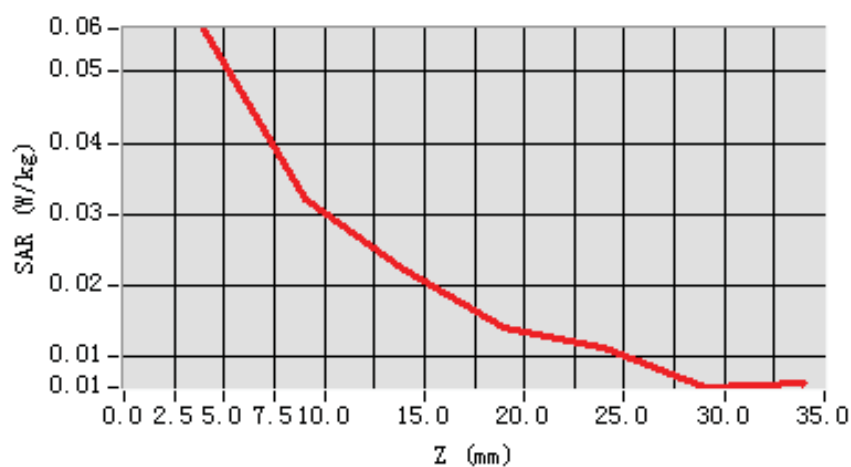
Maximum location: X=15.00, Y=-5.00

SAR 10g (W/Kg)	0.035042
SAR 1g (W/Kg)	0.062649

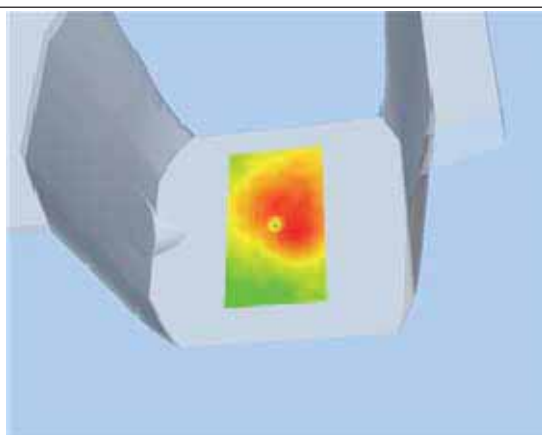
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0561	0.0322	0.0219	0.0141	0.0112	0.0056

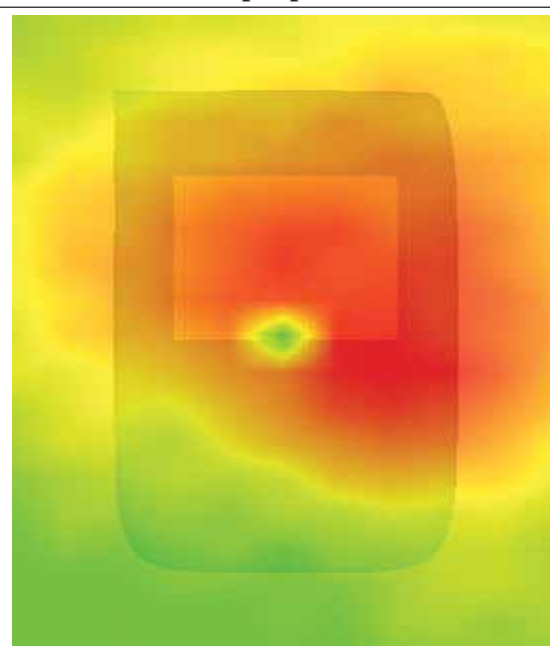
SAR, Z Axis Scan (X = 15, Y = -5)



3D sceen shot



Hot spot position



MEASUREMENT 10

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

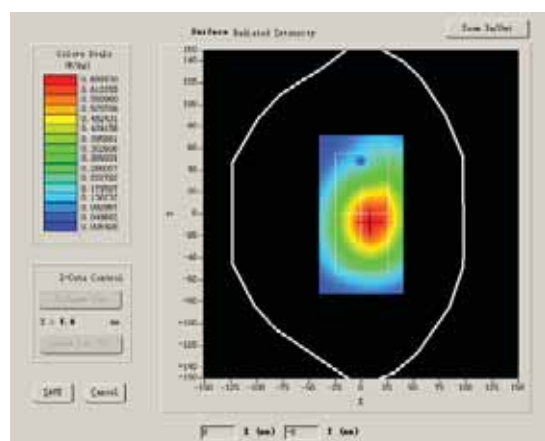
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

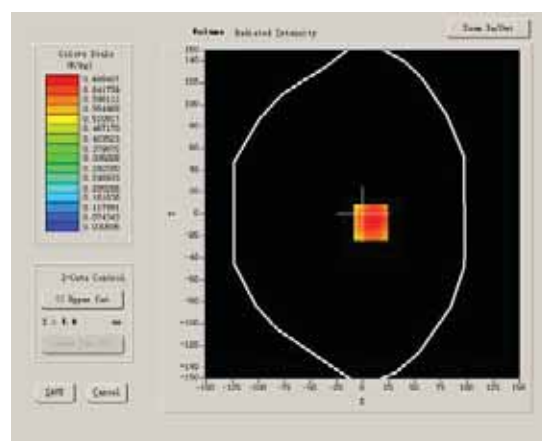
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift (%)	-1.390000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



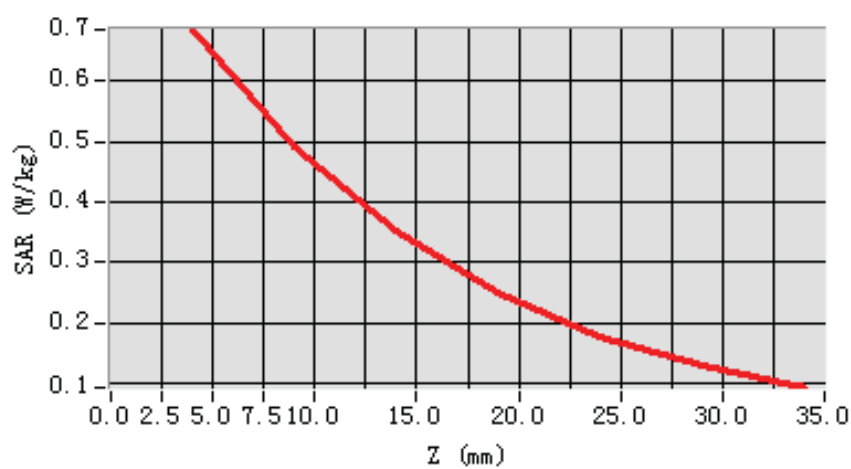
Maximum location: X=8.00, Y=-8.00

SAR 10g (W/Kg)	0.454134
SAR 1g (W/Kg)	0.639757

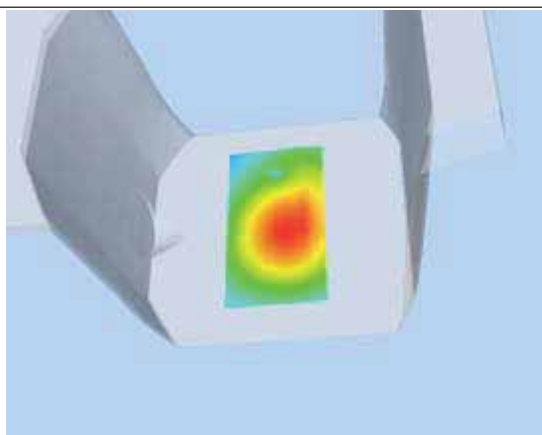
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6854	0.4932	0.3534	0.2492	0.1776	0.1278

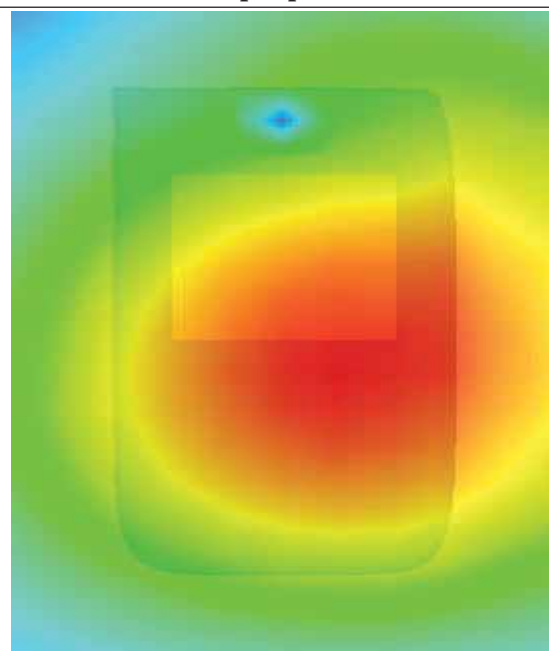
SAR, Z Axis Scan (X = 8, Y = -8)



3D scene shot



Hot spot position



MEASUREMENT 11

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

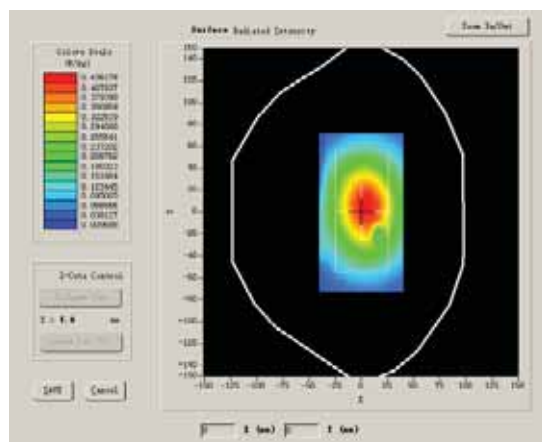
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	GPRS

B. SAR Measurement Results

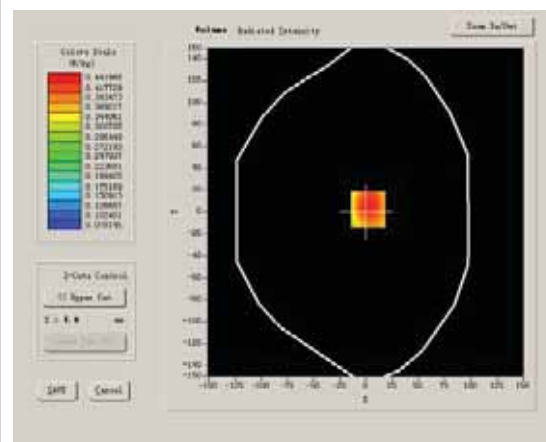
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.284550
Conductivity (S/m)	0.9809033
Power drift (%)	-1.390000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



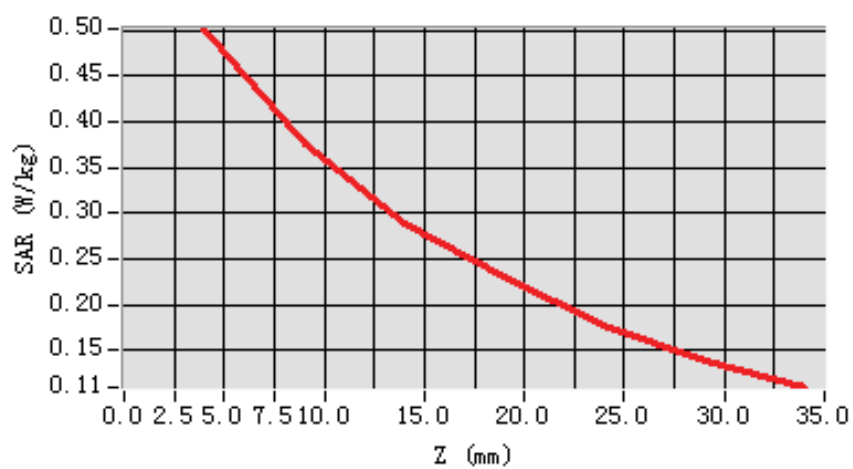
Maximum location: X=2.00, Y=2.00

SAR 10g (W/Kg)	0.354972
SAR 1g (W/Kg)	0.486573

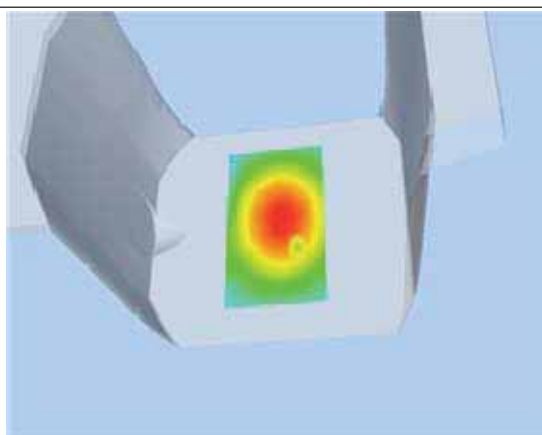
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5019	0.3756	0.2878	0.2301	0.1771	0.1376

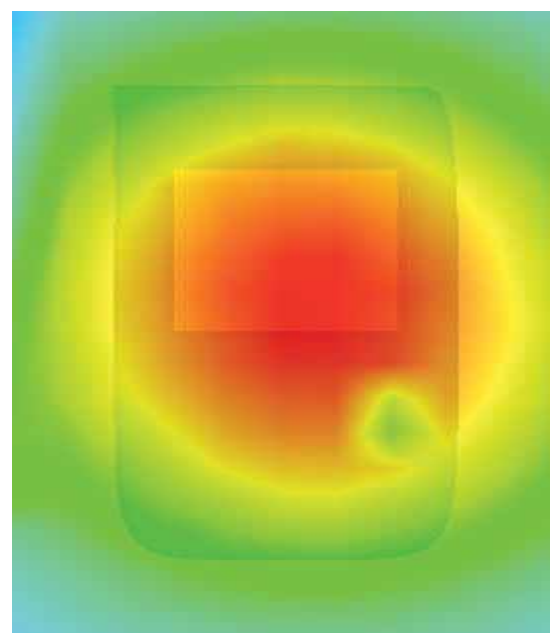
SAR, Z Axis Scan (X = 2, Y = 2)



3D sceen shot



Hot spot position



MEASUREMENT 12

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

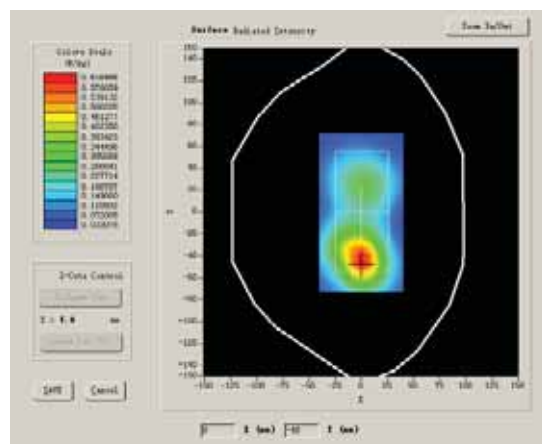
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM850
Channels	High
Signal	EDGE

B. SAR Measurement Results

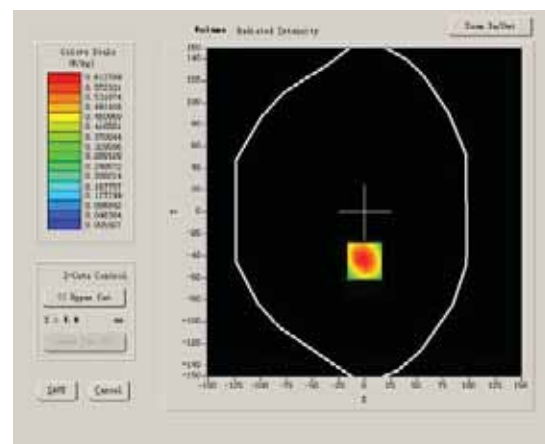
Higher Band SAR (Channel 251):

Frequency (MHz)	848.800000
Relative permittivity (real part)	55.709999
Relative permittivity	21.284550
Conductivity (S/m)	0.9809033
Power drift (%)	-0.380000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



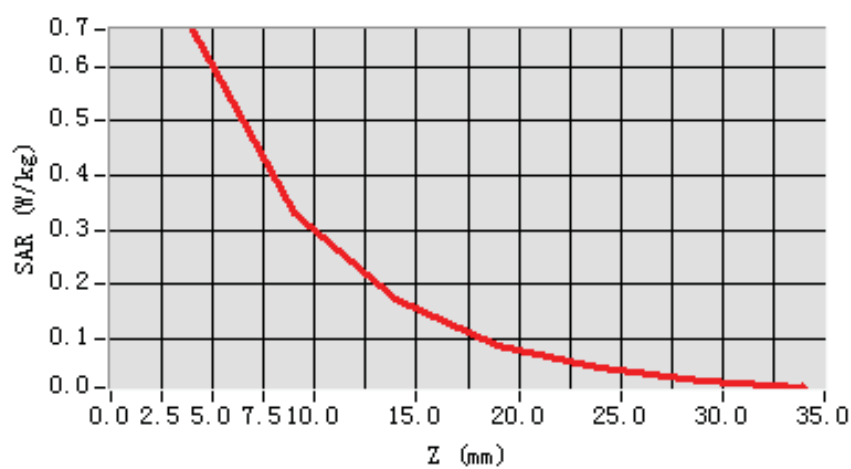
Maximum location: X=0.00, Y=-45.00

SAR 10g (W/Kg)	0.344419
SAR 1g (W/Kg)	0.648365

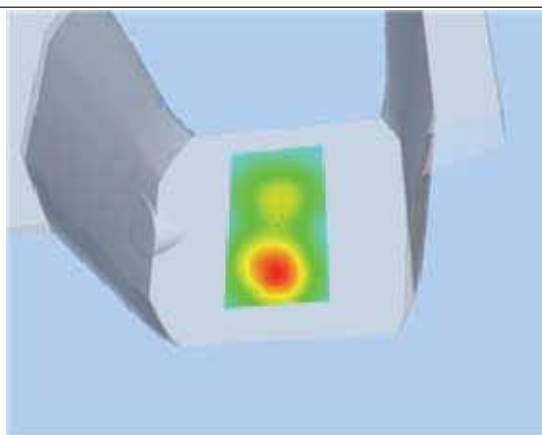
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6673	0.3301	0.1718	0.0858	0.0449	0.0232

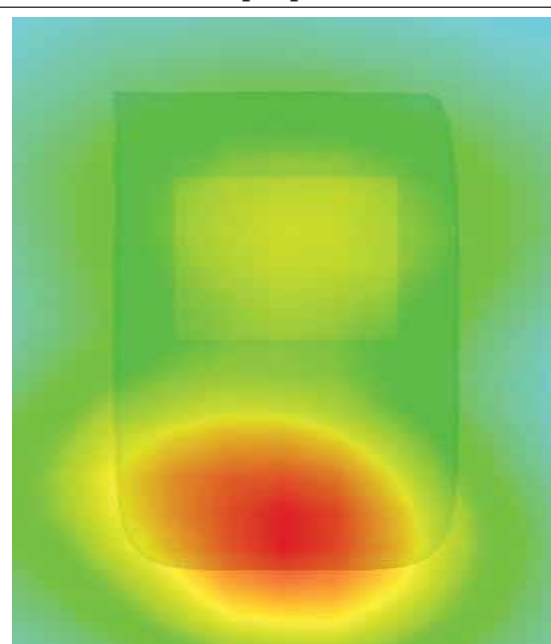
SAR, Z Axis Scan (X = 0, Y = -45)



3D scene shot



Hot spot position



MEASUREMENT 13

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 8 minutes 16 seconds

A. Experimental conditions.

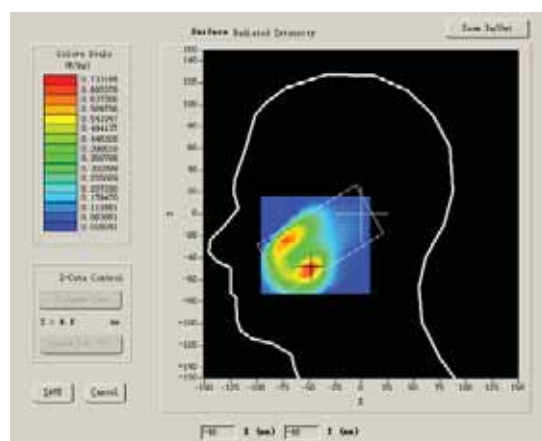
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

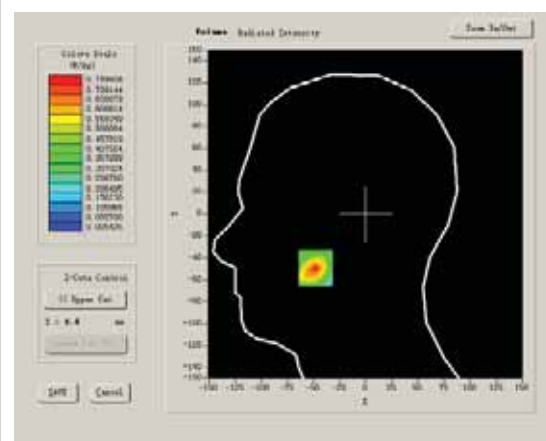
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000
Conductivity (S/m)	1.436111
Power drift(%)	0.360000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



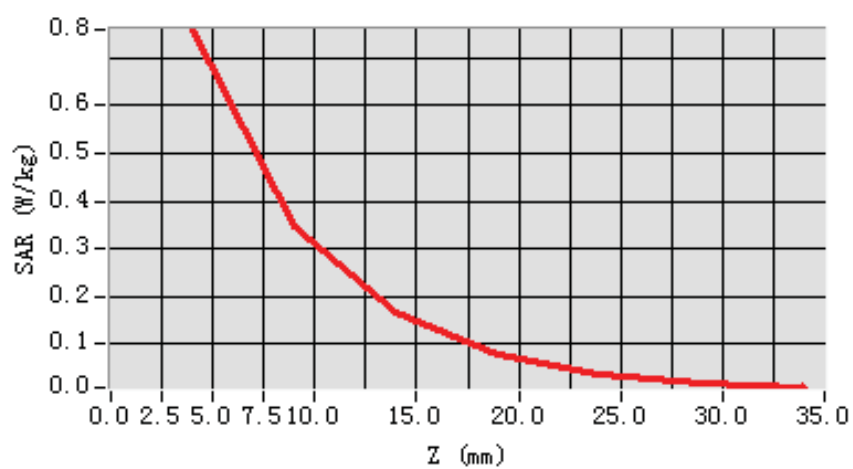
Maximum location: X=-48.00, Y=-49.00

SAR 10g (W/Kg)	0.334369
SAR 1g (W/Kg)	0.705188

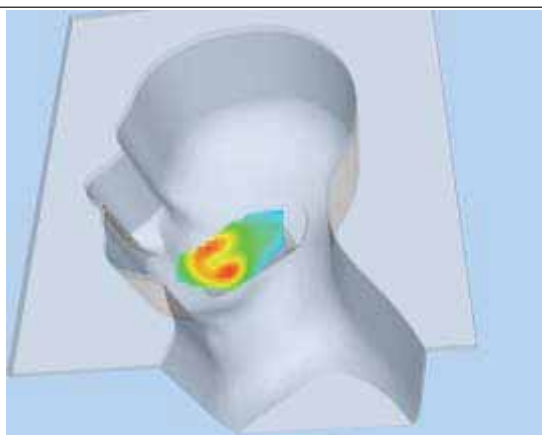
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7594	0.3448	0.1661	0.0797	0.0373	0.0188

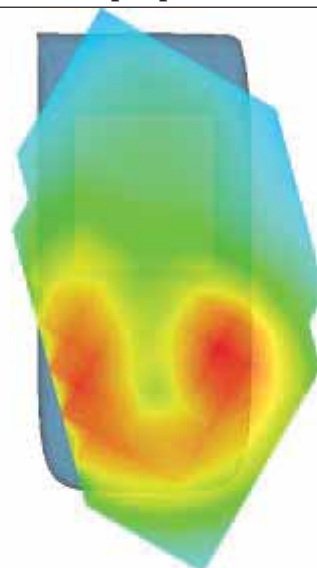
SAR, Z Axis Scan (X = -48, Y = -49)



3D scene shot



Hot spot position



MEASUREMENT 14

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 7 minutes 32 seconds

A. Experimental conditions.

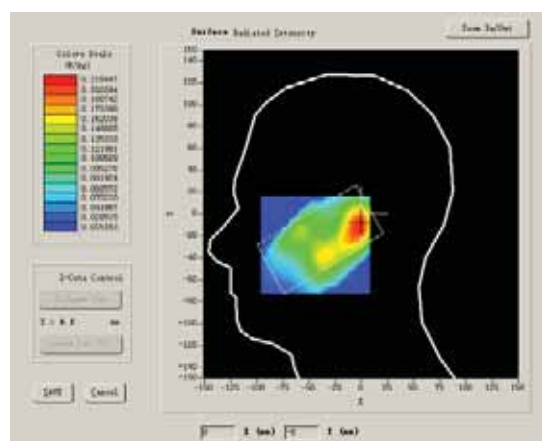
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

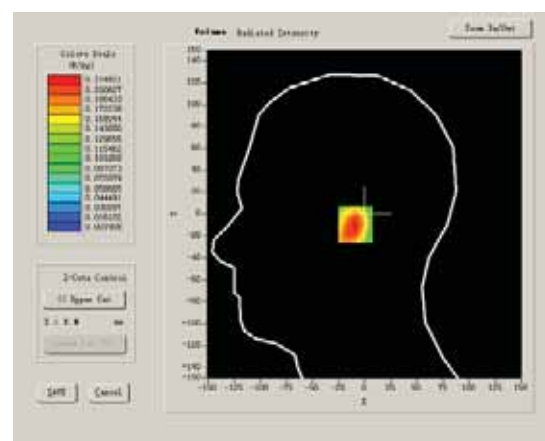
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000
Conductivity (S/m)	1.436111
Power drift(%)	-3.510000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



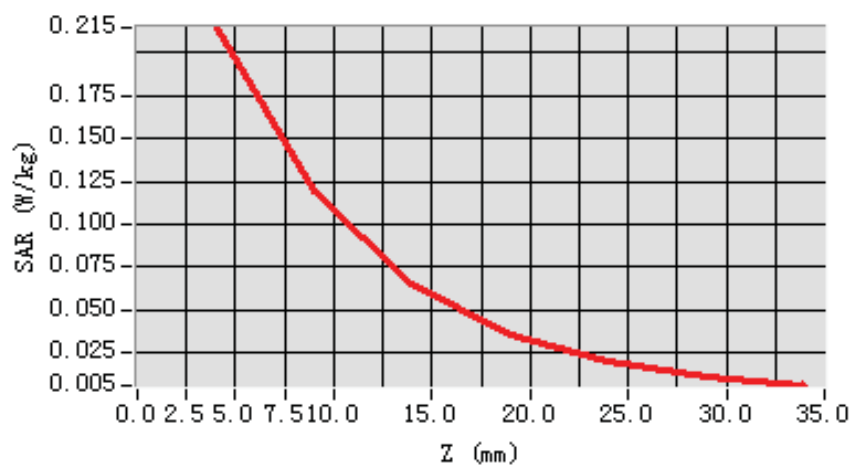
Maximum location: X=-1.00, Y=-10.00

SAR 10g (W/Kg)	0.114175
SAR 1g (W/Kg)	0.205243

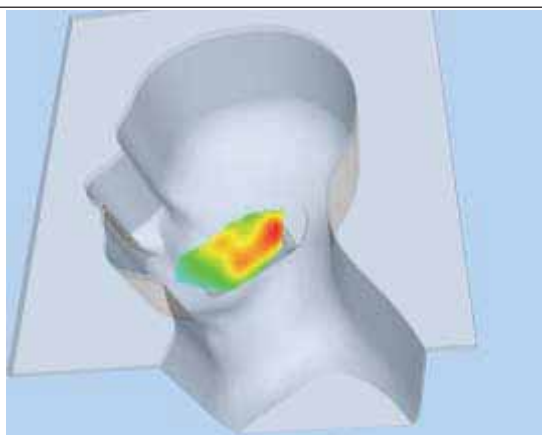
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2148	0.1191	0.0648	0.0356	0.0198	0.0112

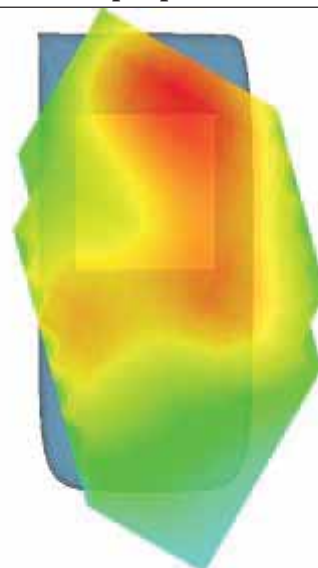
SAR, Z Axis Scan (X = -1, Y = -10)



3D sceen shot



Hot spot position



MEASUREMENT 15

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 49 seconds

A. Experimental conditions.

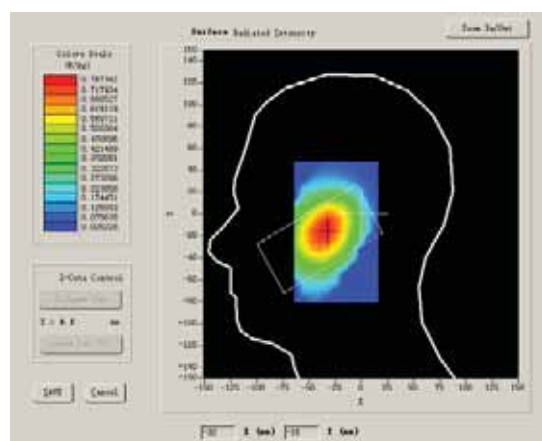
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

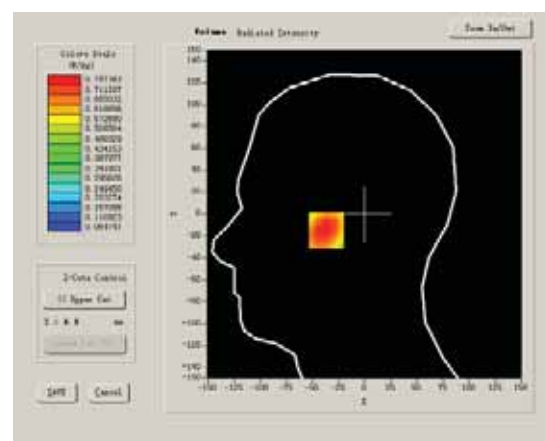
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000
Conductivity (S/m)	1.436111
Power drift(%)	-4.430000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



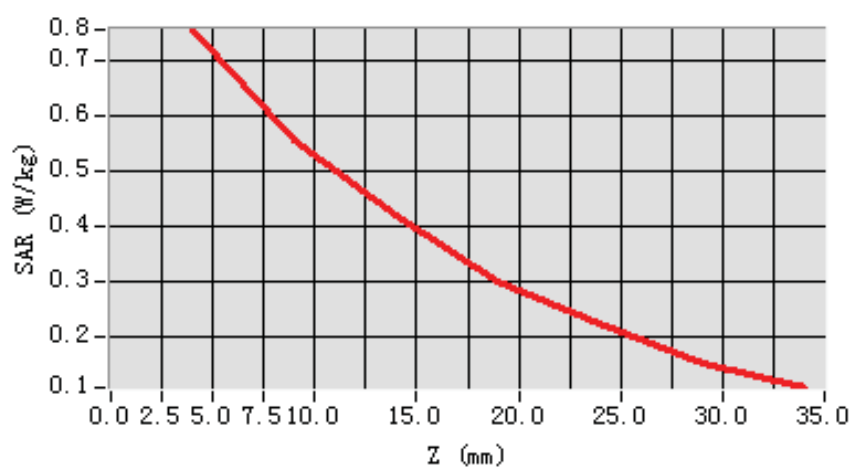
Maximum location: X=-33.00, Y=-15.00

SAR 10g (W/Kg)	0.514113
SAR 1g (W/Kg)	0.733830

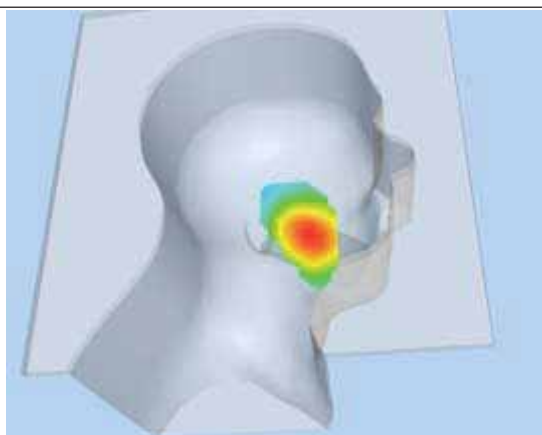
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7574	0.5582	0.4217	0.3023	0.2256	0.1525

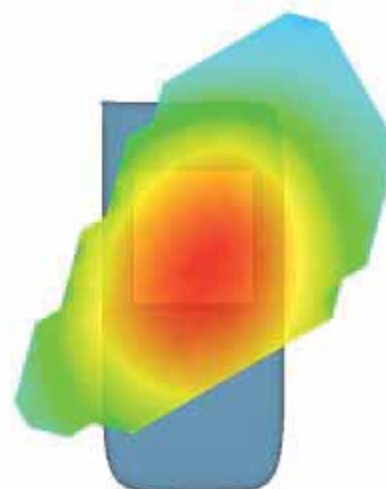
SAR, Z Axis Scan (X = -33, Y = -15)



3D scene shot



Hot spot position



MEASUREMENT 16

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 22 seconds

A. Experimental conditions.

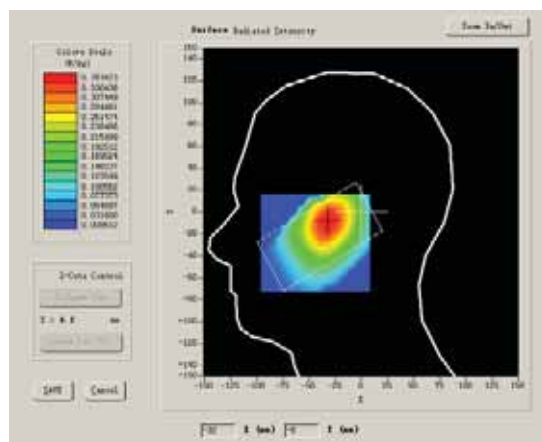
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

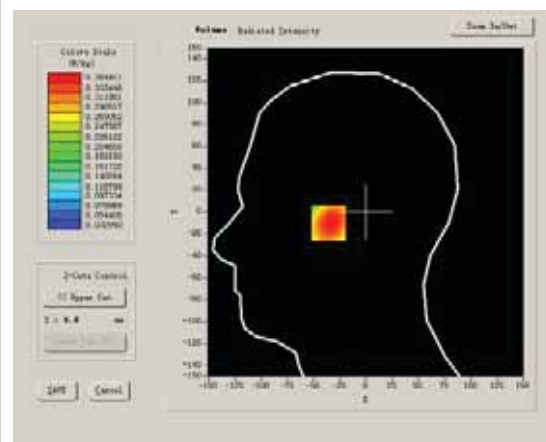
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	38.509998
Relative permittivity	13.750000
Conductivity (S/m)	1.436111
Power drift(%)	2.330000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



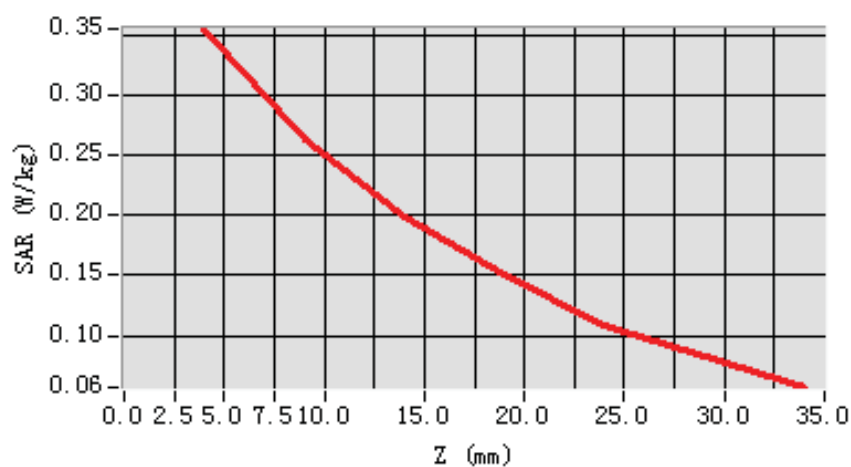
Maximum location: X=-34.00, Y=-10.00

SAR 10g (W/Kg)	0.244340
SAR 1g (W/Kg)	0.345187

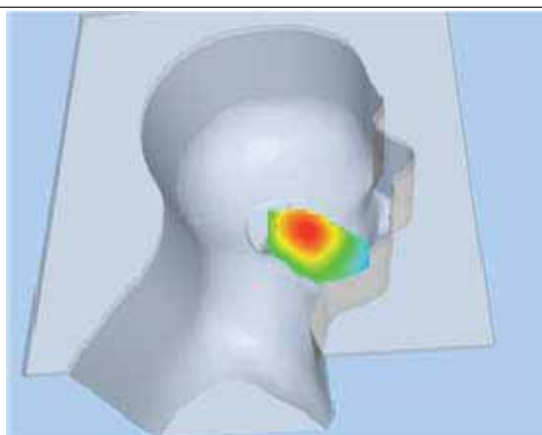
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3549	0.2629	0.1988	0.1512	0.1093	0.0820

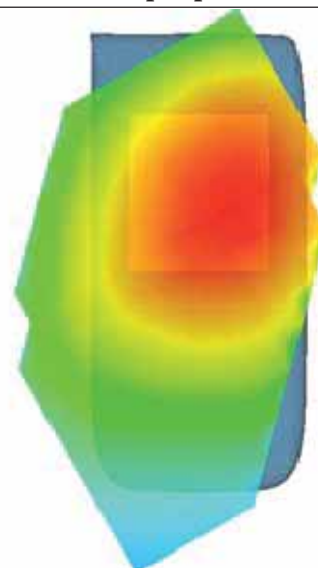
SAR, Z Axis Scan (X = -34, Y = -10)



3D sceen shot



Hot spot position



MEASUREMENT 17

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 7 seconds

A. Experimental conditions.

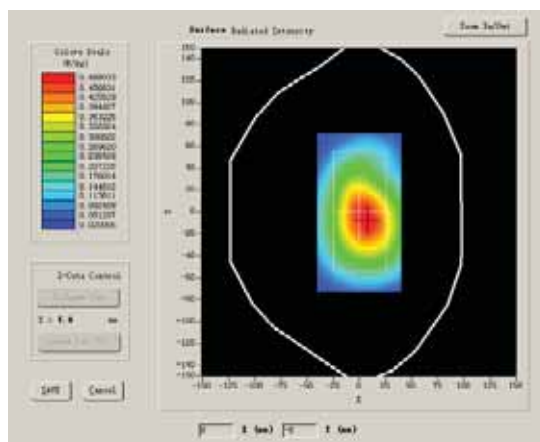
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

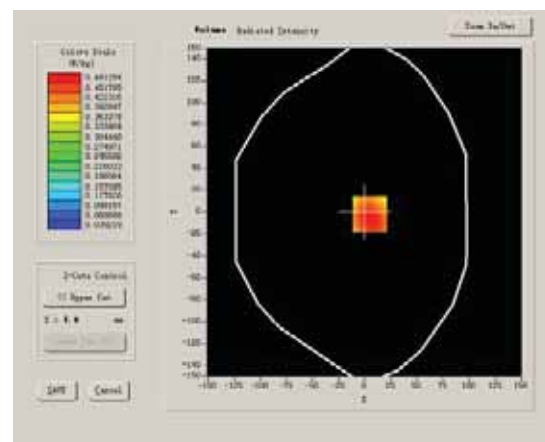
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift(%)	-2.170000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



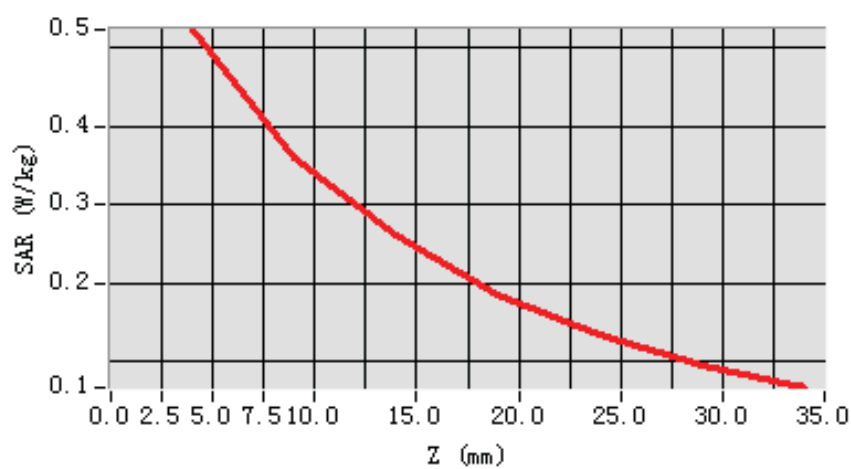
Maximum location: X=5.00, Y=-2.00

SAR 10g (W/Kg)	0.350051
SAR 1g (W/Kg)	0.510592

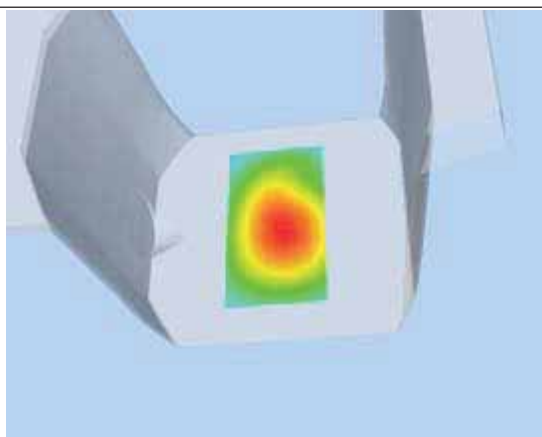
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5228	0.3592	0.2611	0.1857	0.1336	0.0946

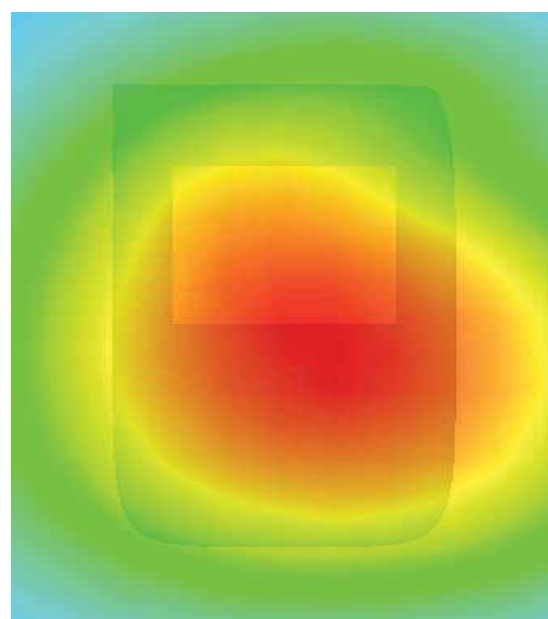
SAR, Z Axis Scan (X = 5, Y = -2)



3D scene shot



Hot spot position



MEASUREMENT 18

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 11 seconds

A. Experimental conditions.

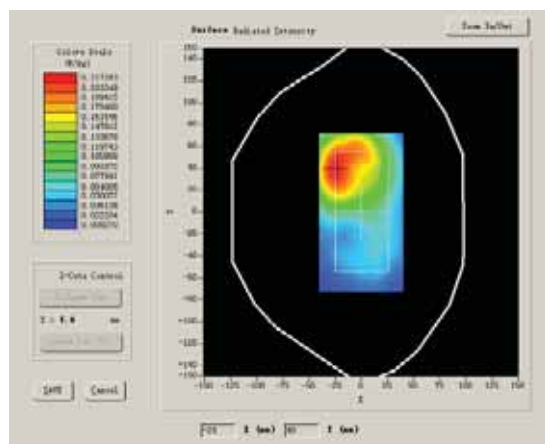
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GSM

B. SAR Measurement Results

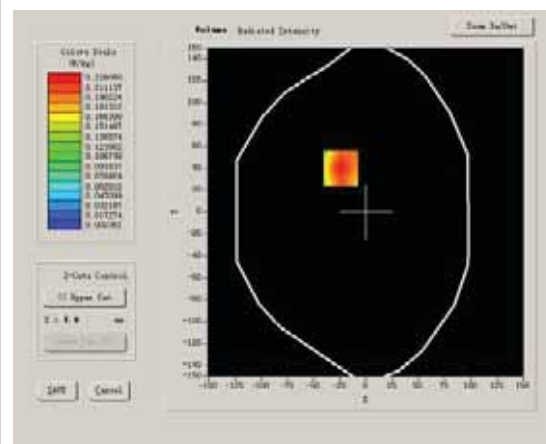
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift(%)	-3.150000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:8

SURFACE SAR



VOLUME SAR



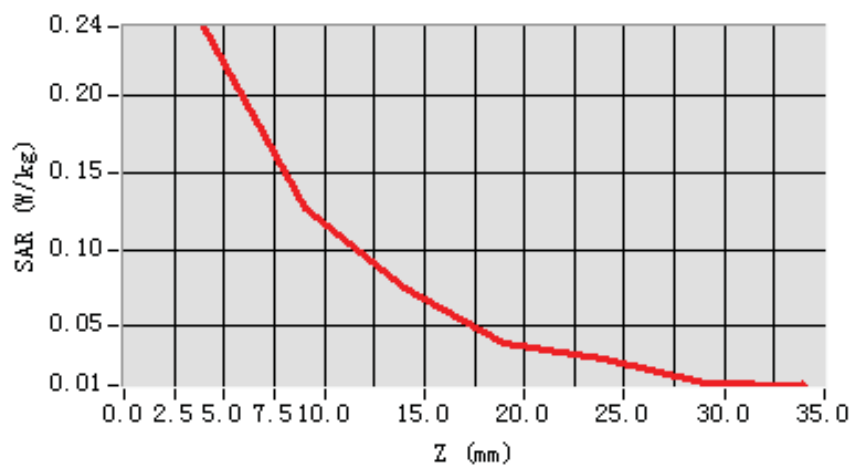
Maximum location: X=-24.00, Y=40.00

SAR 10g (W/Kg)	0.133992
SAR 1g (W/Kg)	0.234819

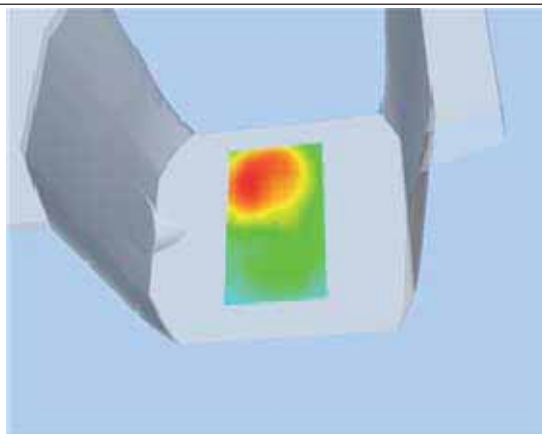
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2448	0.1268	0.0742	0.0393	0.0289	0.0124

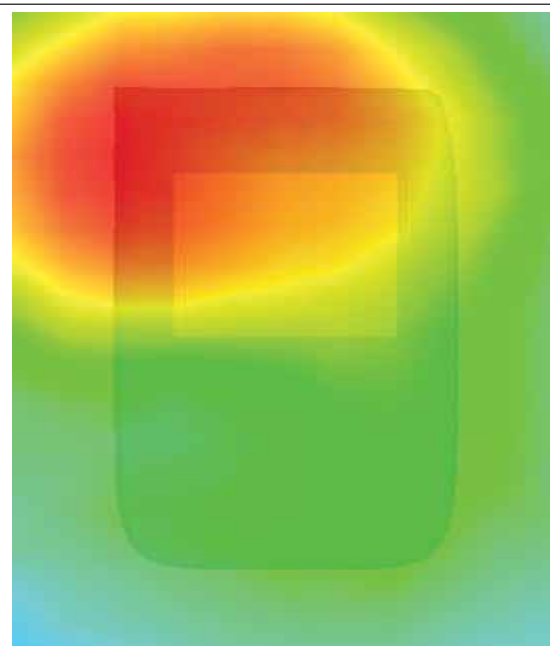
SAR, Z Axis Scan (X = -24, Y = 40)



3D sceen shot



Hot spot position



MEASUREMENT 19

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

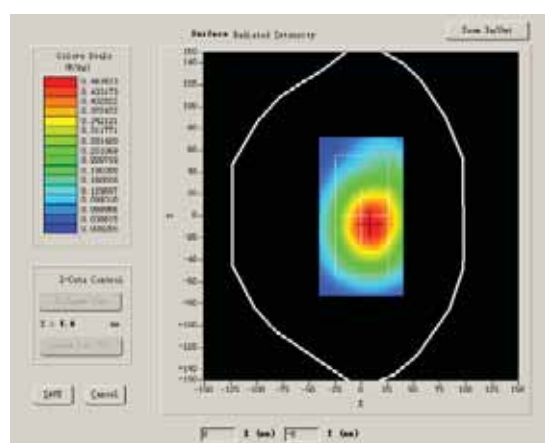
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GPRS

B. SAR Measurement Results

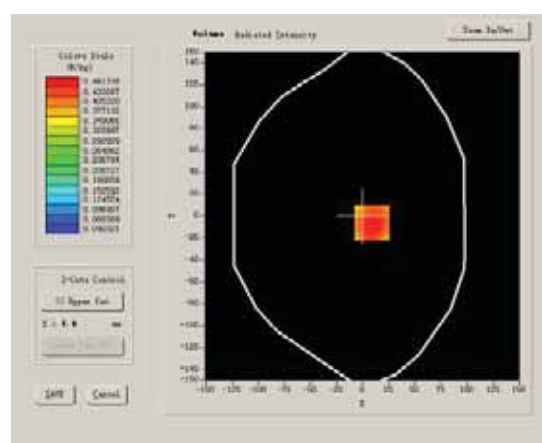
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.200000
Relative permittivity (real part)	52.548876
Relative permittivity	13.750000
Conductivity (S/m)	1.553978
Power drift(%)	1.020000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



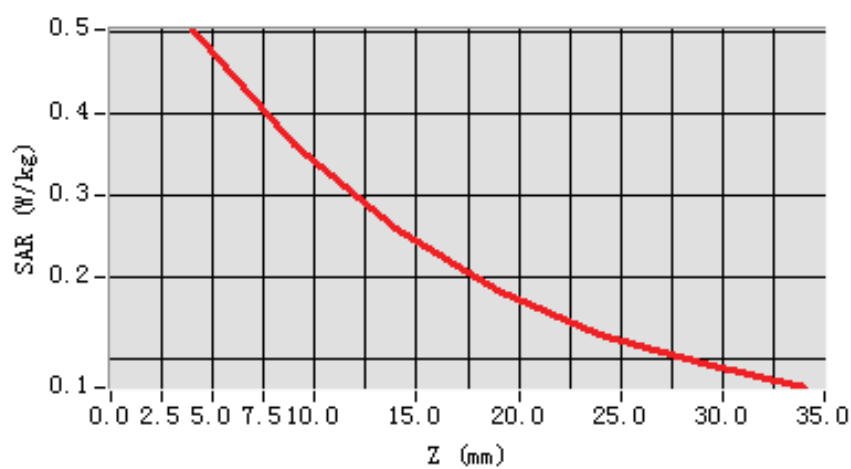
Maximum location: X=9.00, Y=-6.00

SAR 10g (W/Kg)	0.337030
SAR 1g (W/Kg)	0.484602

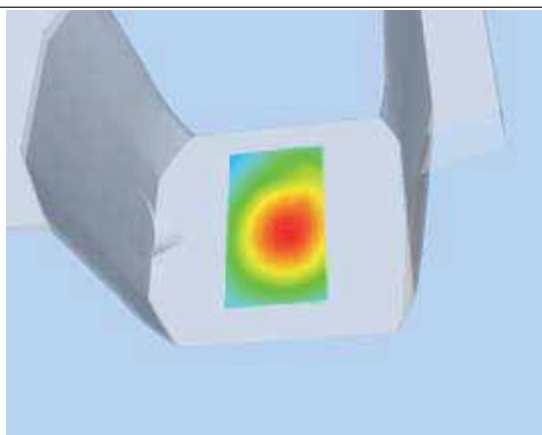
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5023	0.3614	0.2586	0.1833	0.1280	0.0926

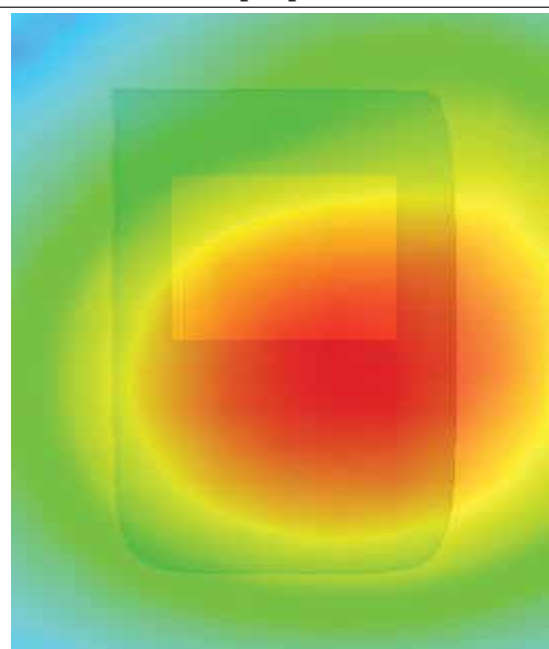
SAR, Z Axis Scan (X = 9, Y = -6)



3D scene shot



Hot spot position



MEASUREMENT 20

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 10 seconds

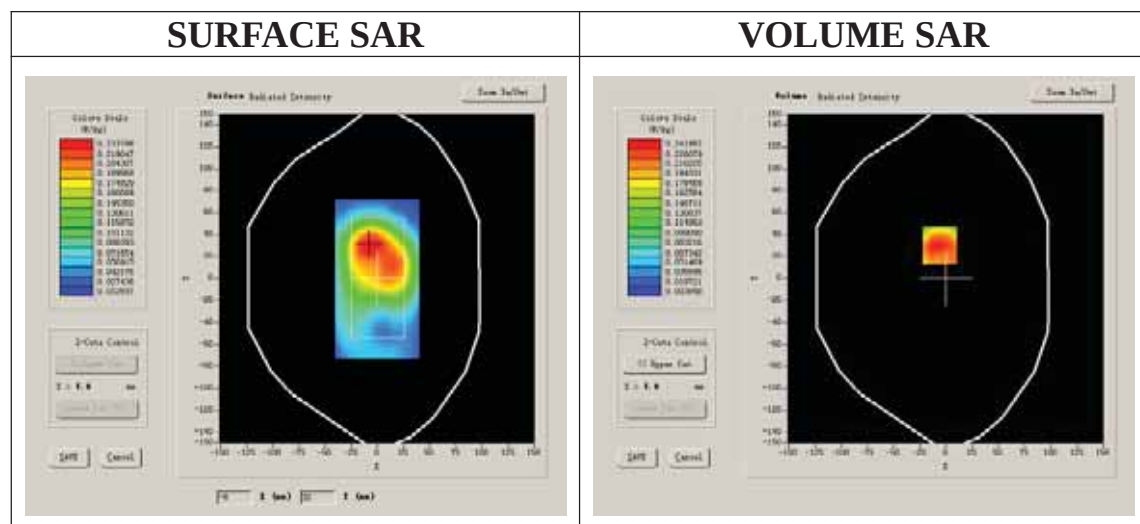
A. Experimental conditions.

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)	1850.200000
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift(%)	-1.580000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2



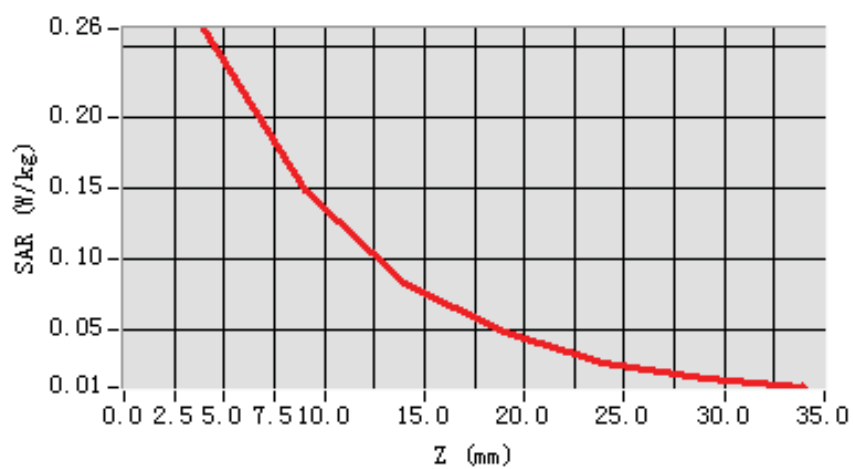
Maximum location: X=-6.00, Y=30.00

SAR 10g (W/Kg)	0.143713
SAR 1g (W/Kg)	0.252108

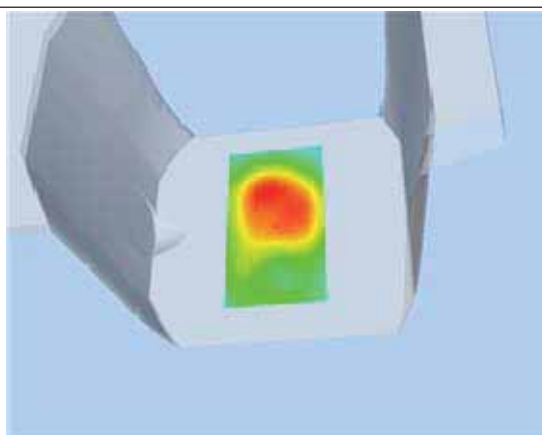
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2620	0.1478	0.0833	0.0490	0.0276	0.0164

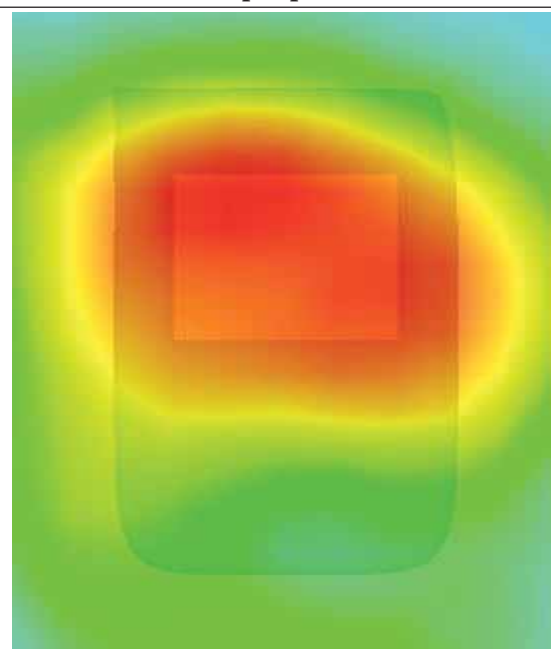
SAR, Z Axis Scan (X = -6, Y = 30)



3D sceen shot



Hot spot position



MEASUREMENT 21

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 7 seconds

A. Experimental conditions.

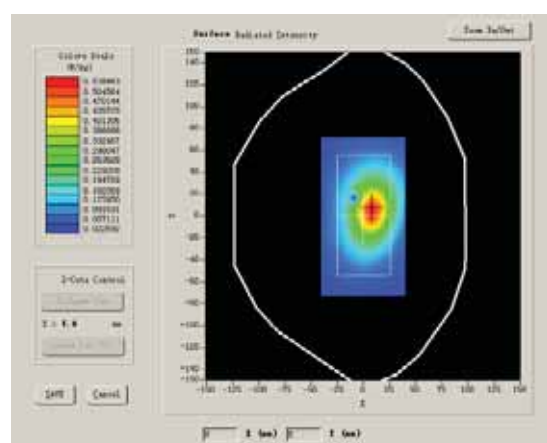
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GPRS

B. SAR Measurement Results

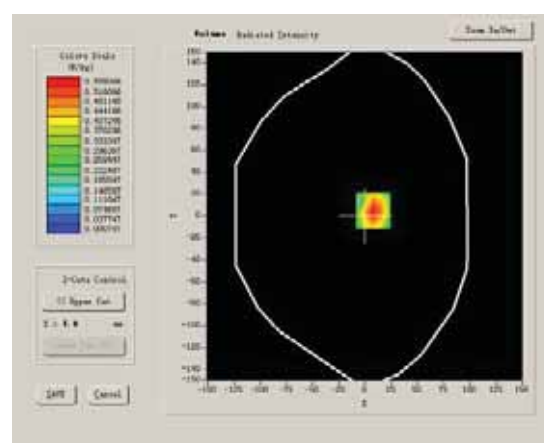
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift (%)	-0.520000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



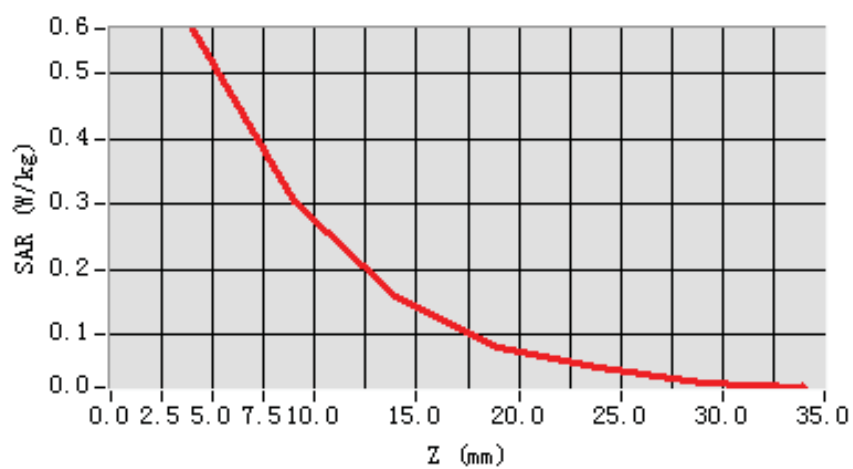
Maximum location: X=8.00, Y=5.00

SAR 10g (W/Kg)	0.283724
SAR 1g (W/Kg)	0.534129

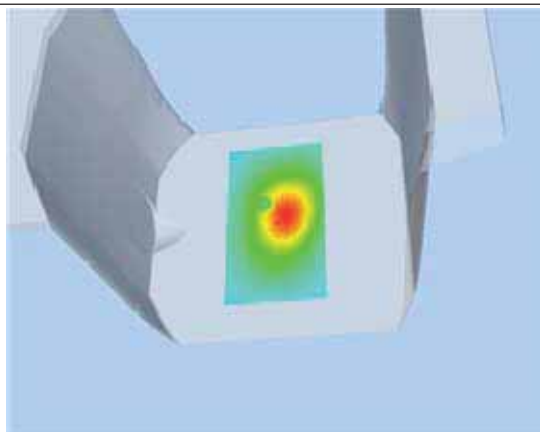
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5680	0.3024	0.1568	0.0814	0.0497	0.0251

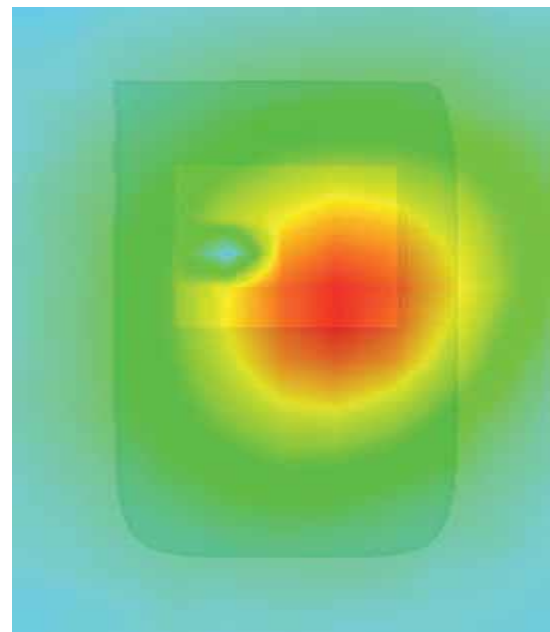
SAR, Z Axis Scan (X = 8, Y = 5)



3D scene shot



Hot spot position



MEASUREMENT 22

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

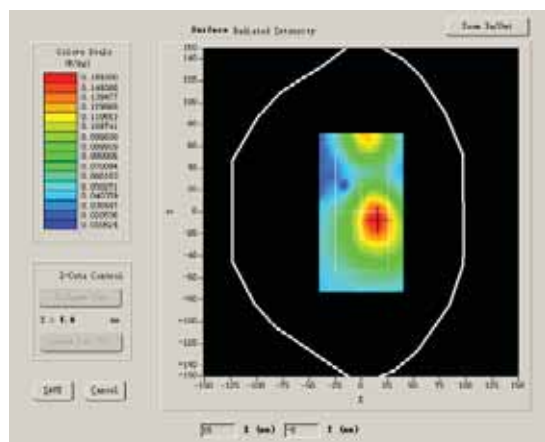
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GPRS

B. SAR Measurement Results

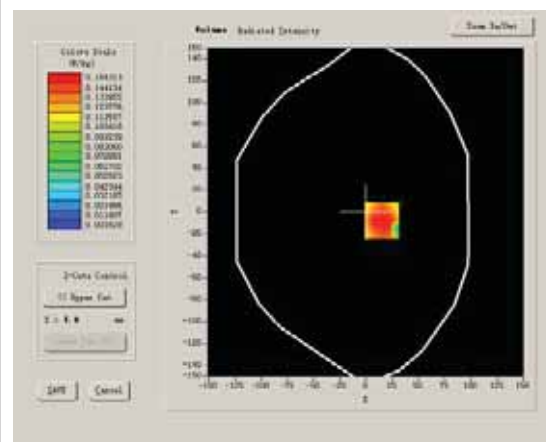
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift (%)	-2.100000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



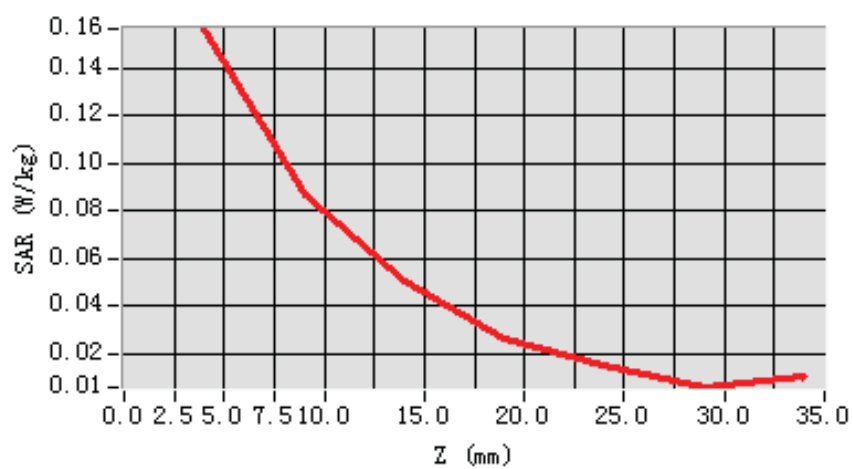
Maximum location: X=15.00, Y=-8.00

SAR 10g (W/Kg)	0.083955
SAR 1g (W/Kg)	0.151943

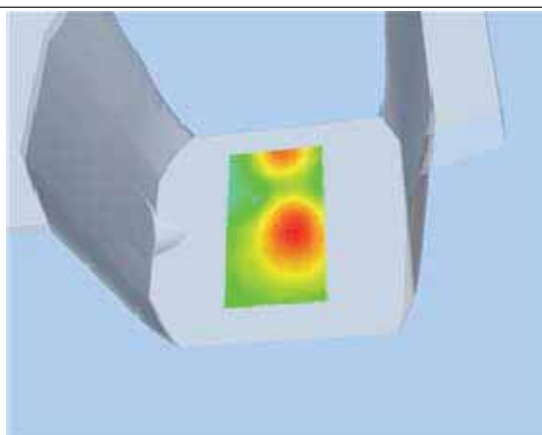
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1566	0.0865	0.0501	0.0263	0.0149	0.0058

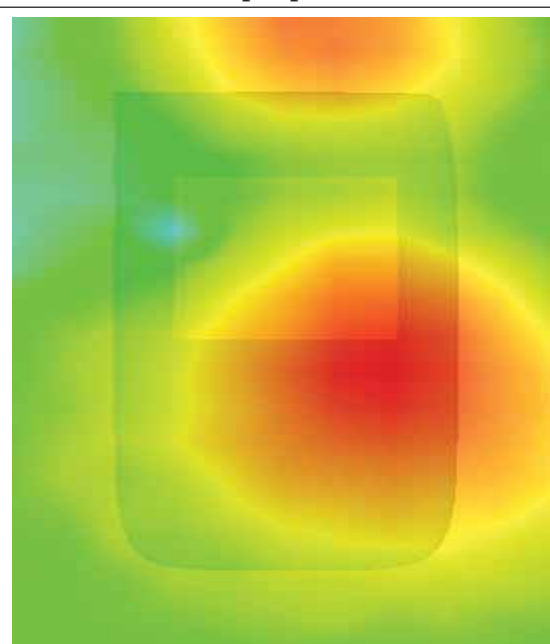
SAR, Z Axis Scan (X = 15, Y = -8)



3D sceen shot



Hot spot position



MEASUREMENT 23

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

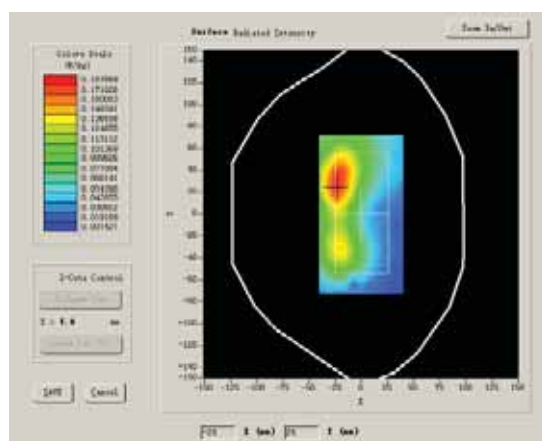
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	GPRS

B. SAR Measurement Results

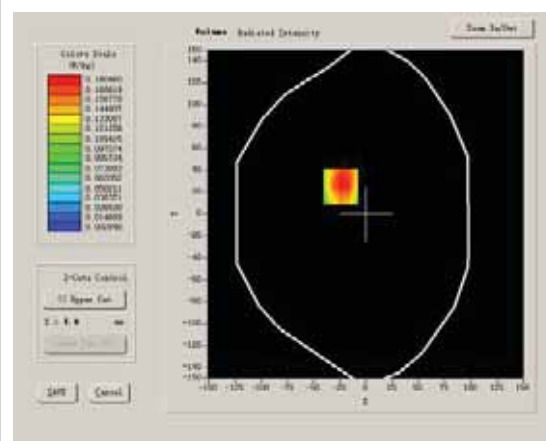
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift (%)	-0.460000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



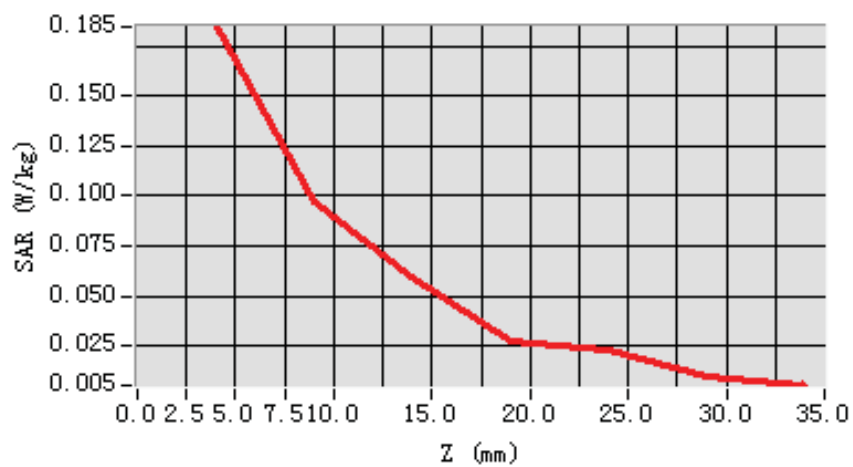
Maximum location: X=-24.00, Y=25.00

SAR 10g (W/Kg)	0.099228
SAR 1g (W/Kg)	0.172929

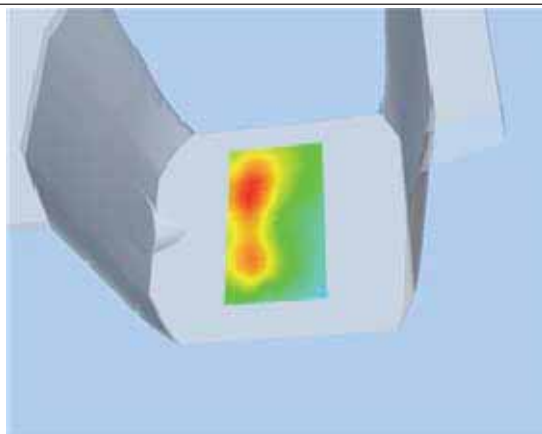
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1847	0.0977	0.0598	0.0269	0.0226	0.0098

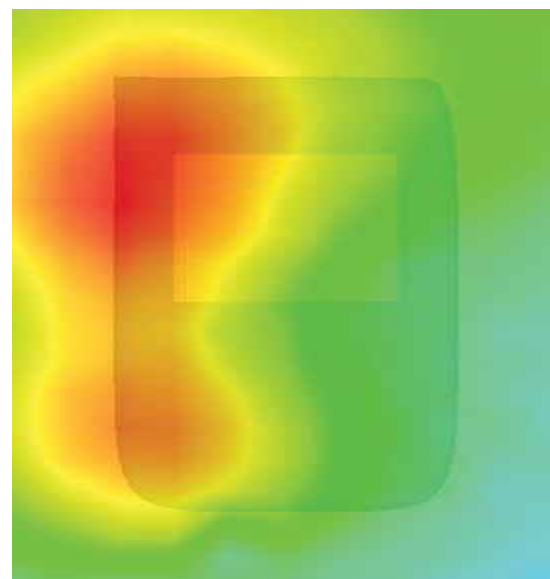
SAR, Z Axis Scan (X = -24, Y = 25)



3D scene shot



Hot spot position



MEASUREMENT 24

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

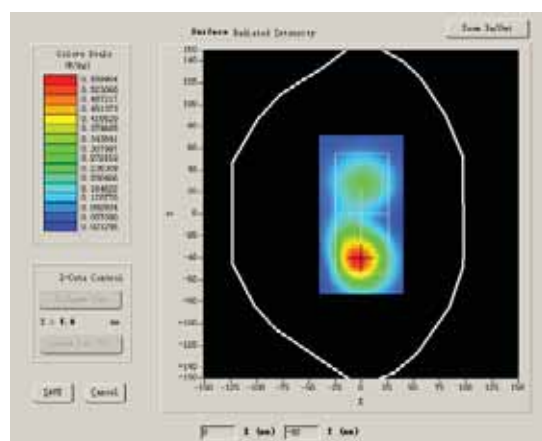
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	GSM1900
Channels	Low
Signal	EDGE

B. SAR Measurement Results

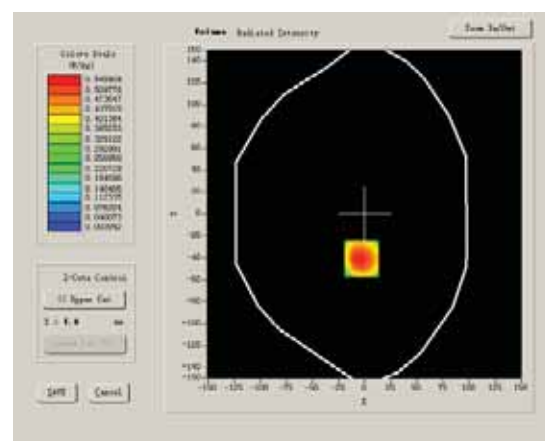
Lower Band SAR (Channel 512):

Frequency (MHz)	1850.199951
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift (%)	-0.410000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

SURFACE SAR



VOLUME SAR



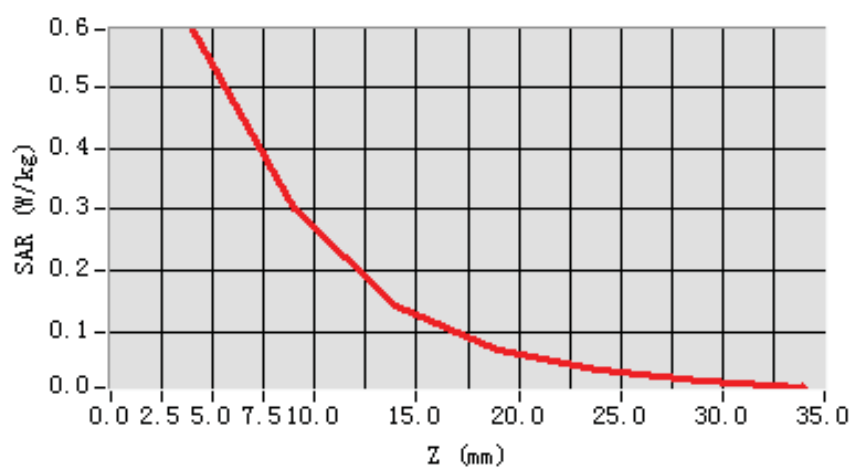
Maximum location: X=-3.00, Y=-41.00

SAR 10g (W/Kg)	0.304311
SAR 1g (W/Kg)	0.578816

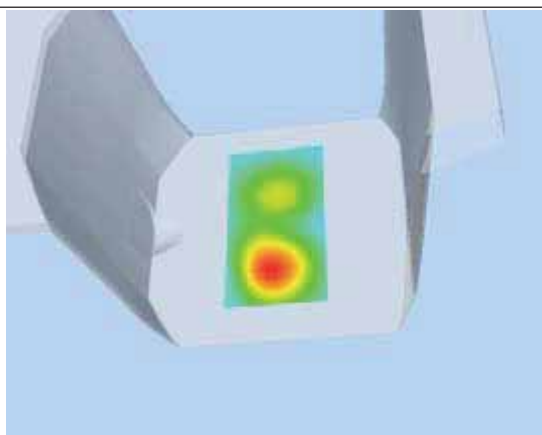
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5944	0.3024	0.1426	0.0704	0.0373	0.0188

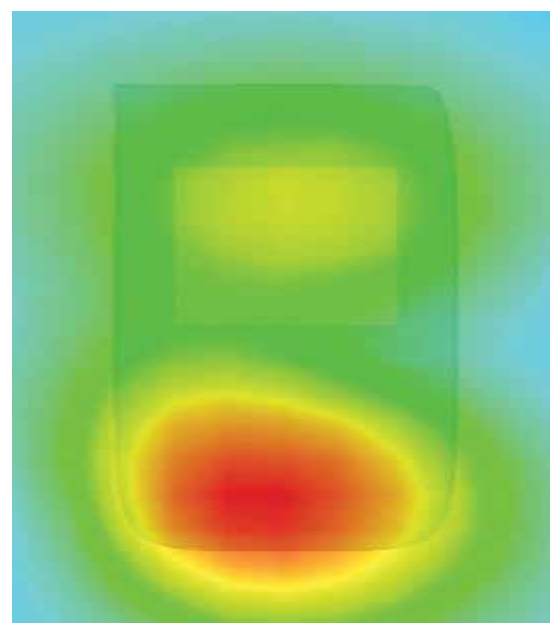
SAR, Z Axis Scan (X = -3, Y = -41)



3D scene shot



Hot spot position



MEASUREMENT 25

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 40 seconds

A. Experimental conditions.

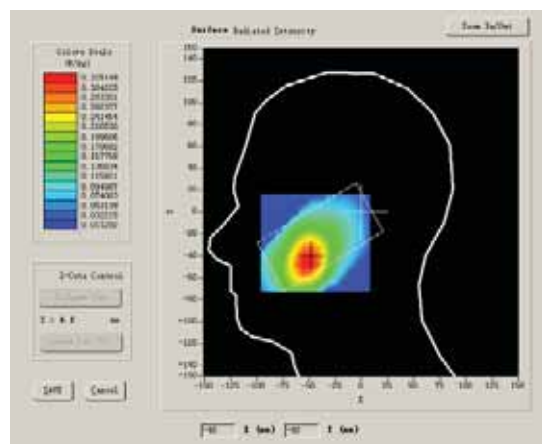
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

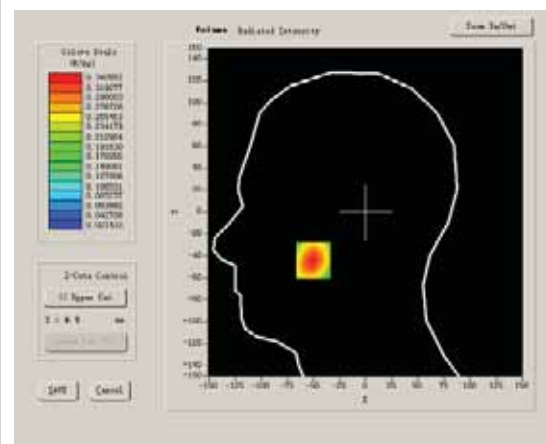
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.675999
Relative permittivity	13.230000
Conductivity (S/m)	0.894409
Power drift(%)	-0.820000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



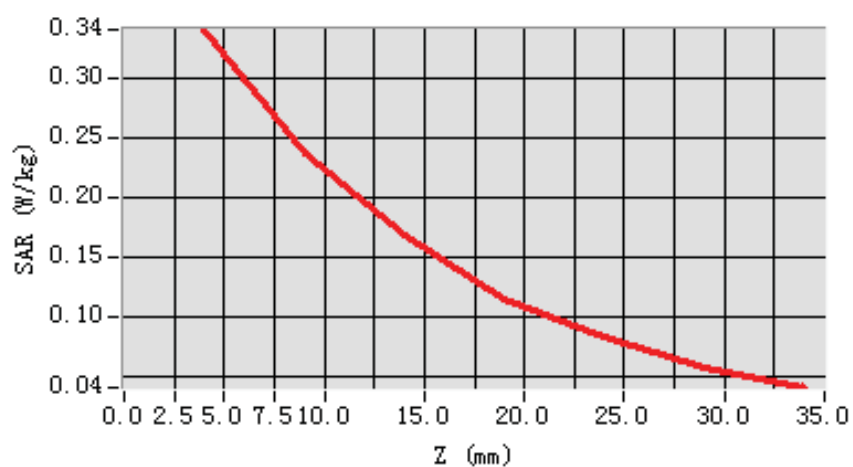
Maximum location: X=-50.00, Y=-44.00

SAR 10g (W/Kg)	0.213458
SAR 1g (W/Kg)	0.324785

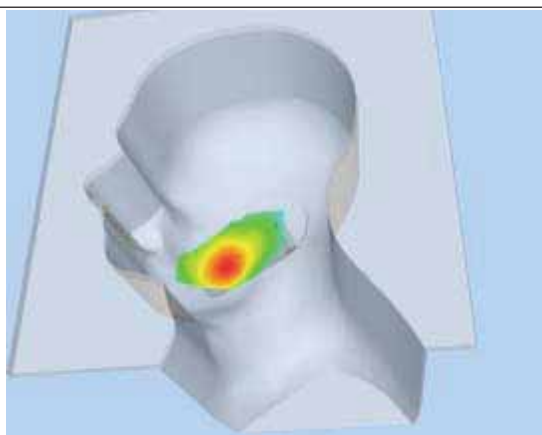
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3406	0.2370	0.1687	0.1141	0.0834	0.0579

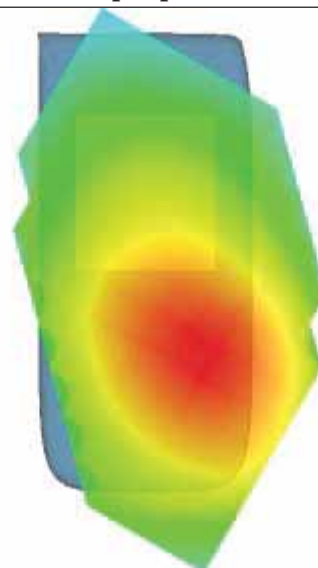
SAR, Z Axis Scan (X = -50, Y = -44)



3D sceen shot



Hot spot position



MEASUREMENT 26

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 56 seconds

A. Experimental conditions.

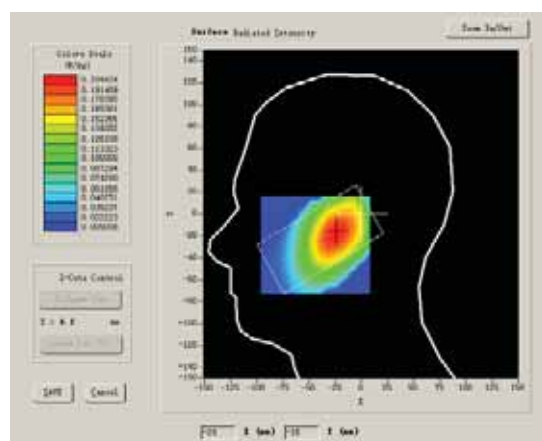
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

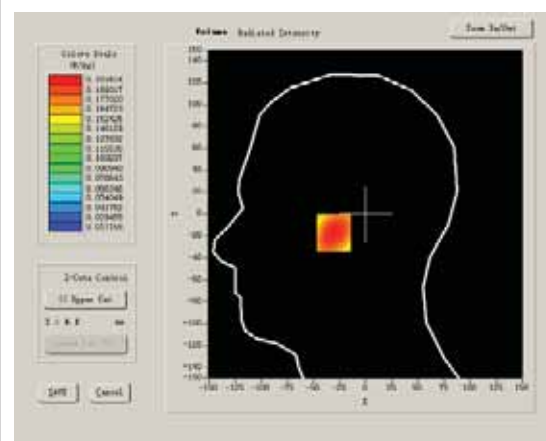
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.675999
Relative permittivity	13.230000
Conductivity (S/m)	0.894409
Power drift(%)	0.150000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



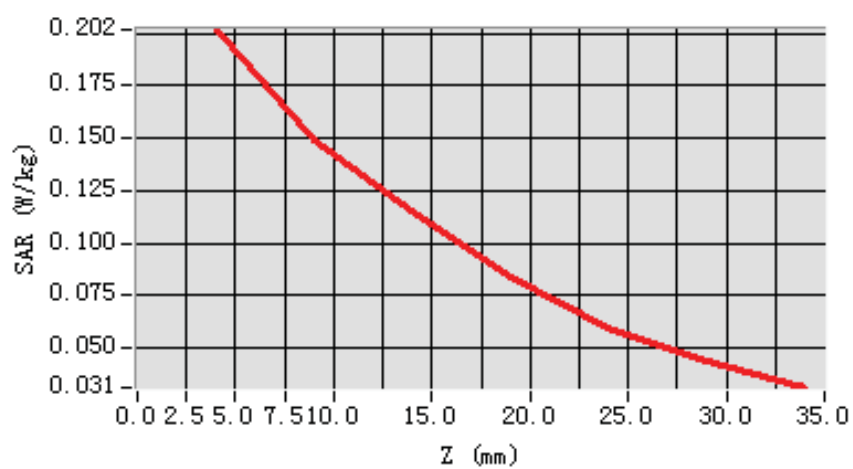
Maximum location: X=-24.00, Y=-17.00

SAR 10g (W/Kg)	0.139943
SAR 1g (W/Kg)	0.194471

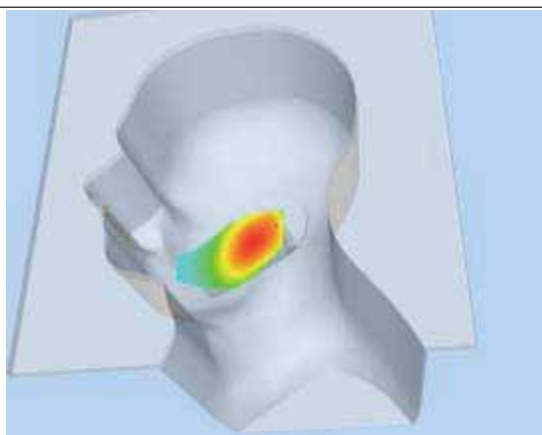
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2016	0.1495	0.1150	0.0833	0.0600	0.0437

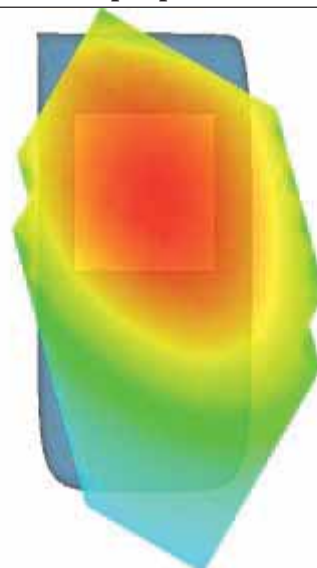
SAR, Z Axis Scan (X = -24, Y = -17)



3D sceen shot



Hot spot position



MEASUREMENT 27

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 59 seconds

A. Experimental conditions.

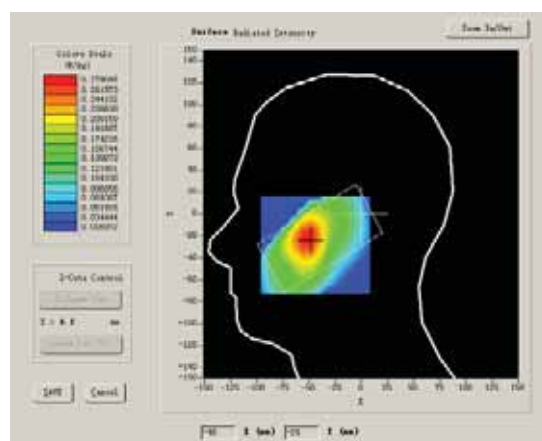
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

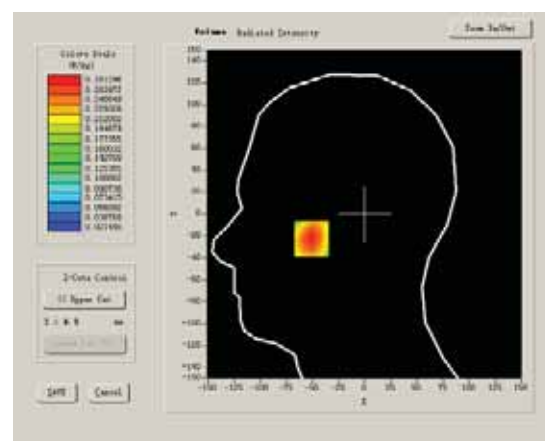
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.675999
Relative permittivity	13.230000
Conductivity (S/m)	0.894409
Power drift(%)	1.140000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



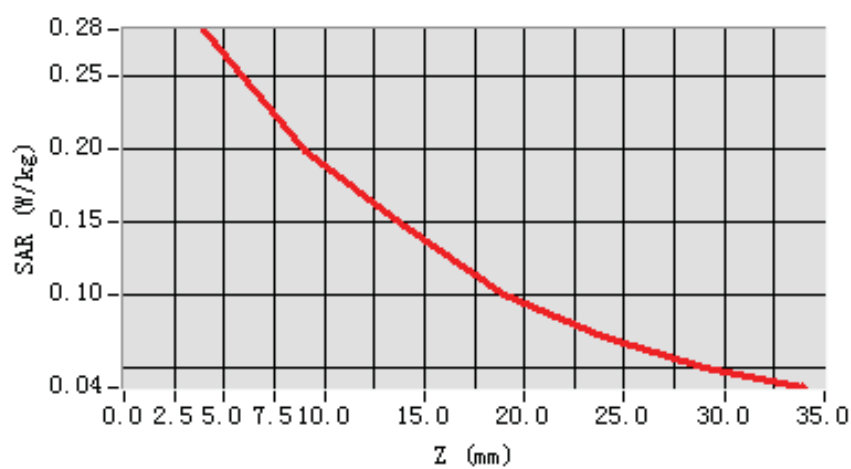
Maximum location: X=-51.00, Y=-23.00

SAR 10g (W/Kg)	0.181882
SAR 1g (W/Kg)	0.268362

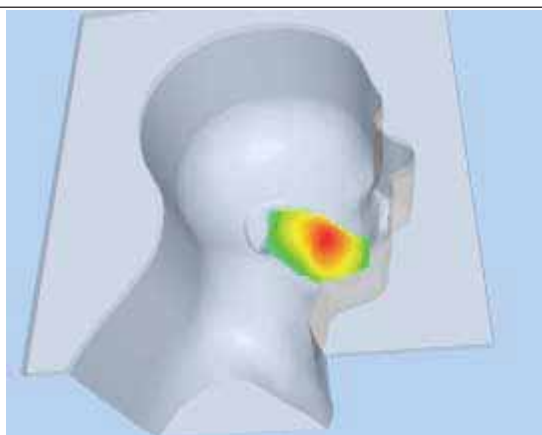
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2813	0.1979	0.1467	0.1011	0.0722	0.0512

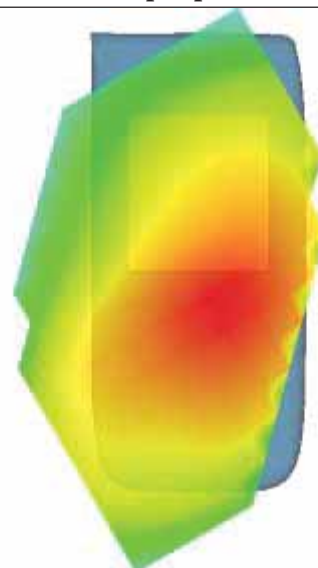
SAR, Z Axis Scan (X = -51, Y = -23)



3D sceen shot



Hot spot position



MEASUREMENT 28

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 7 minutes 41 seconds

A. Experimental conditions.

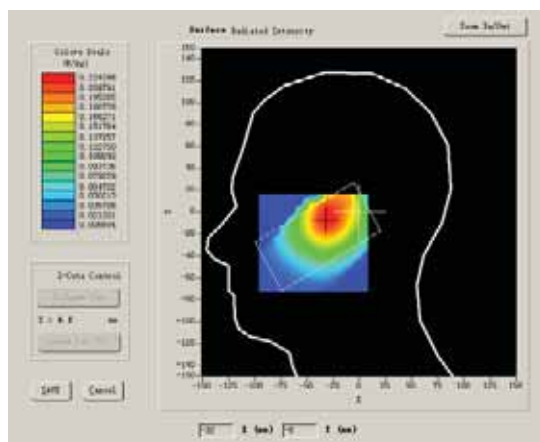
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

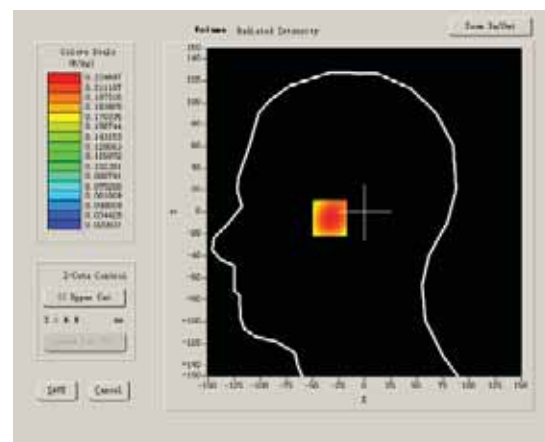
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.675999
Relative permittivity	13.230000
Conductivity (S/m)	0.894409
Power drift(%)	-0.310000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



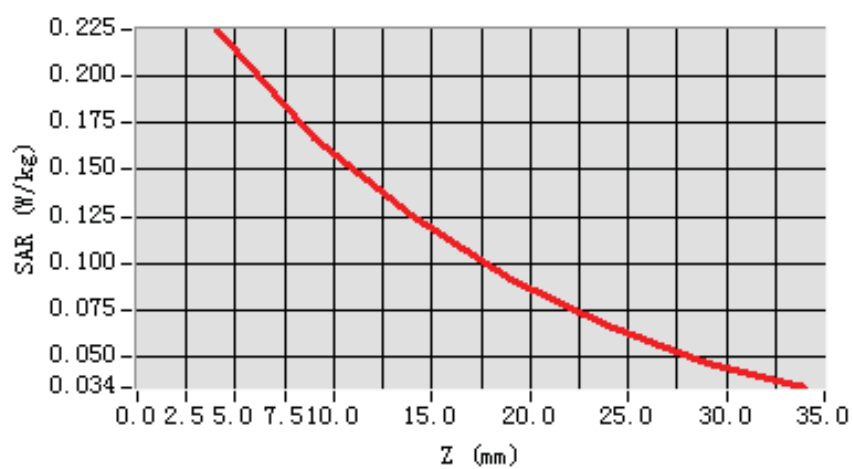
Maximum location: X=-31.00, Y=-5.00

SAR 10g (W/Kg)	0.154754
SAR 1g (W/Kg)	0.216807

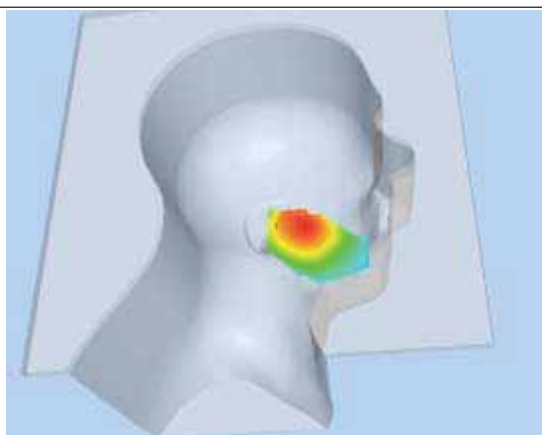
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2247	0.1673	0.1259	0.0919	0.0669	0.0472

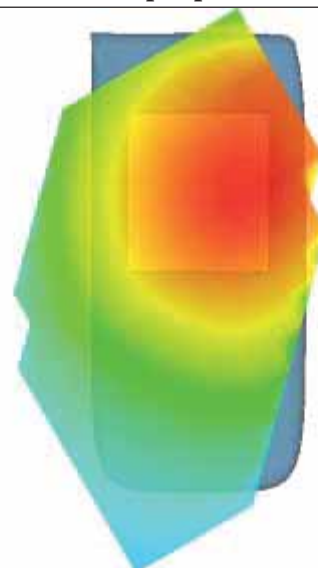
SAR, Z Axis Scan (X = -31, Y = -5)



3D scene shot



Hot spot position



MEASUREMENT 29

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

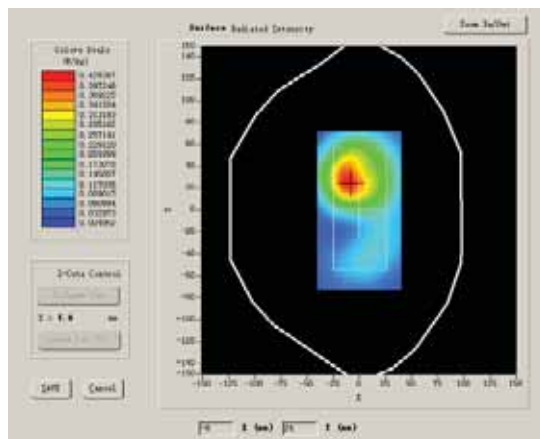
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

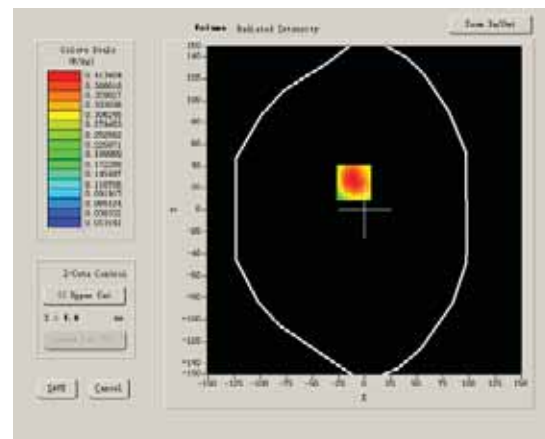
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.877050
Conductivity (S/m)	0.9809033
Power drift(%)	0.320000
Ambient Temperature:	22.2°C
Liquid Temperature:	22.6°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



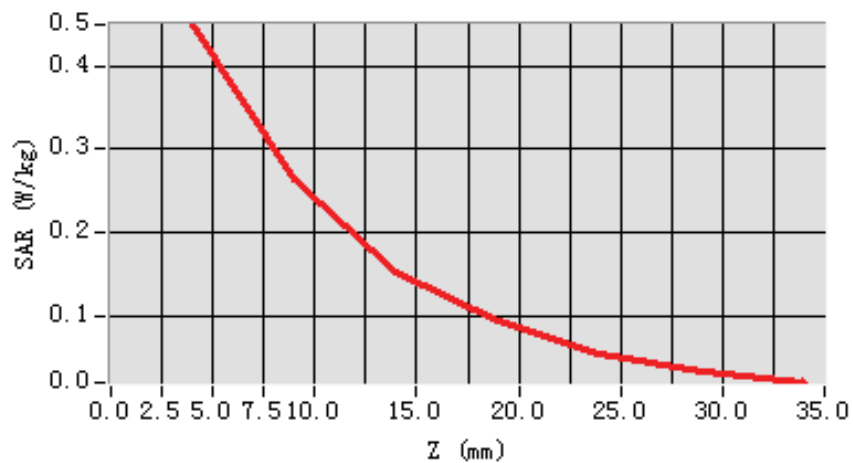
Maximum location: X=-10.00, Y=25.00

SAR 10g (W/Kg)	0.255300
SAR 1g (W/Kg)	0.436135

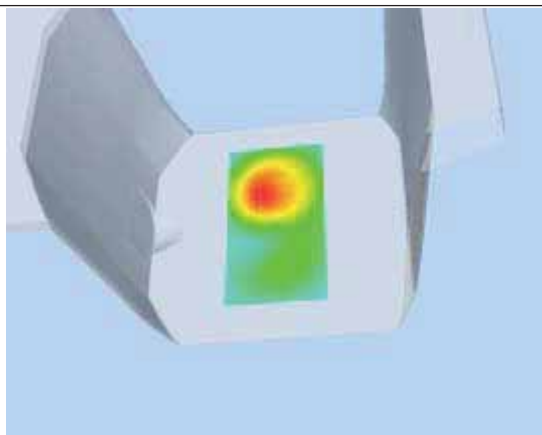
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4502	0.2648	0.1525	0.0925	0.0545	0.0317

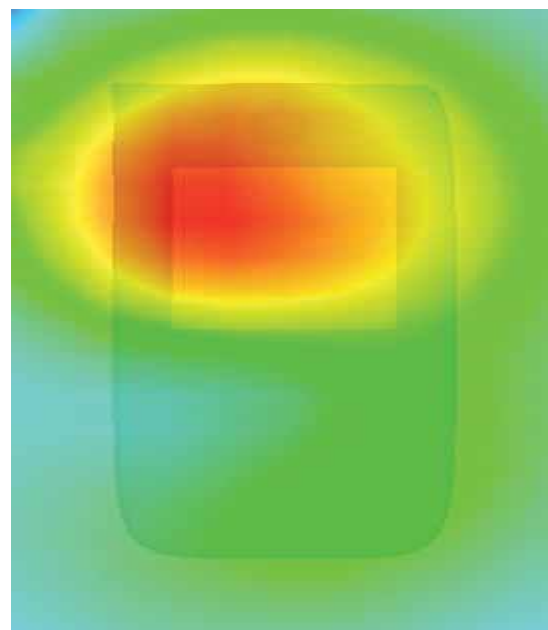
SAR, Z Axis Scan (X = -10, Y = 25)



3D scene shot



Hot spot position



MEASUREMENT 30

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

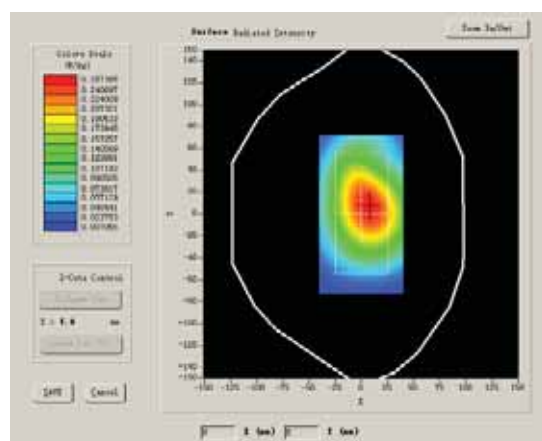
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

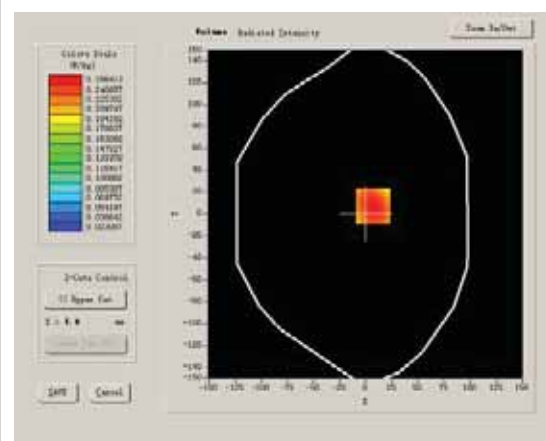
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.877050
Conductivity (S/m)	0.9809033
Power drift(%)	0.590000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



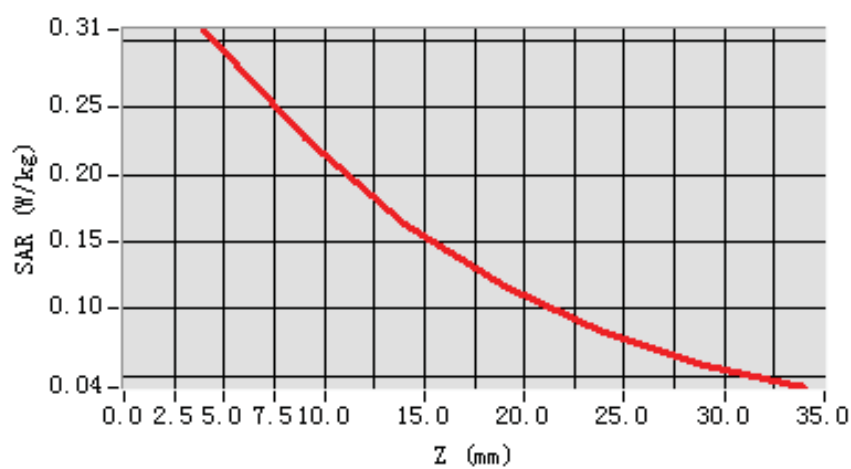
Maximum location: X=7.00, Y=7.00

SAR 10g (W/Kg)	0.209739
SAR 1g (W/Kg)	0.296847

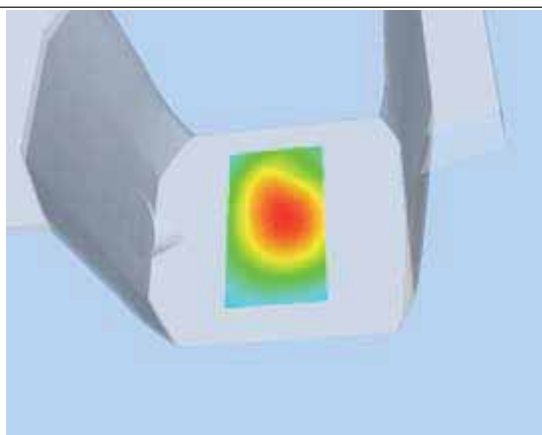
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3077	0.2268	0.1624	0.1173	0.0827	0.0586

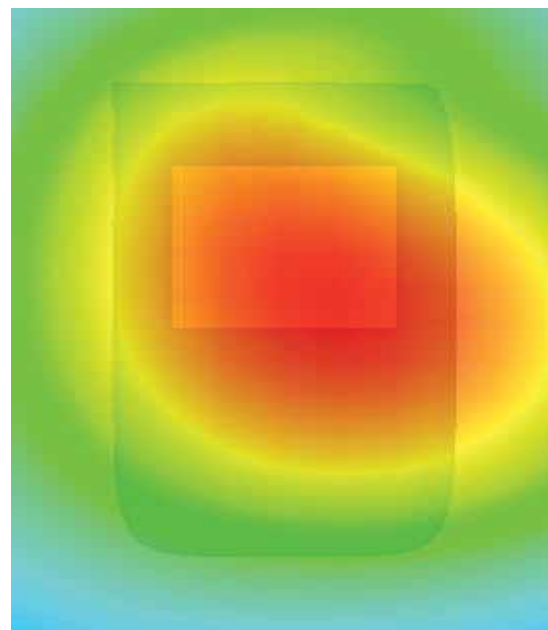
SAR, Z Axis Scan (X = 7, Y = 7)



3D scene shot



Hot spot position



MEASUREMENT 31

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 23 seconds

A. Experimental conditions.

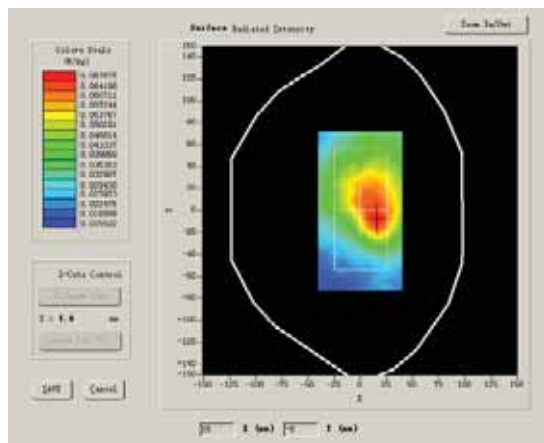
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

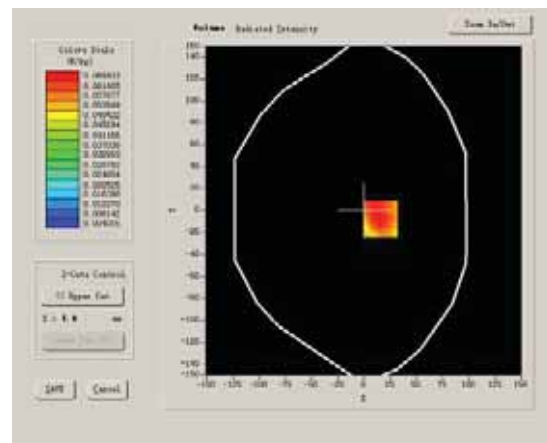
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.877050
Conductivity (S/m)	0.9809033
Power drift (%)	1.520000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



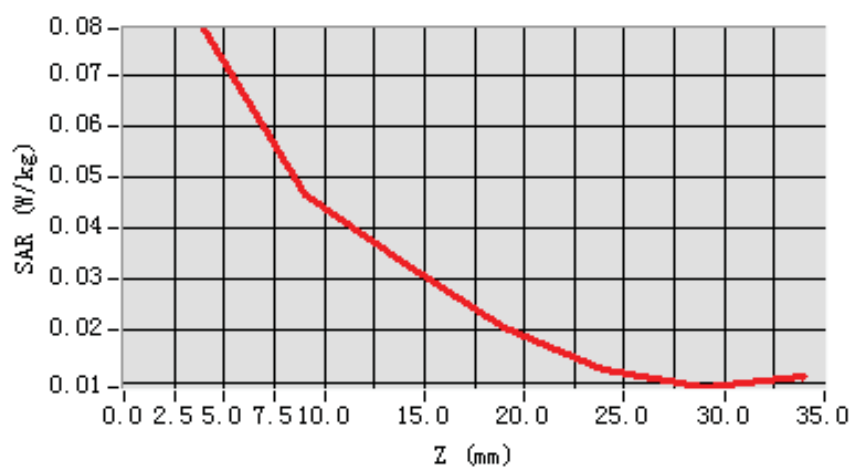
Maximum location: X=16.00, Y=-8.00

SAR 10g (W/Kg)	0.049356
SAR 1g (W/Kg)	0.077991

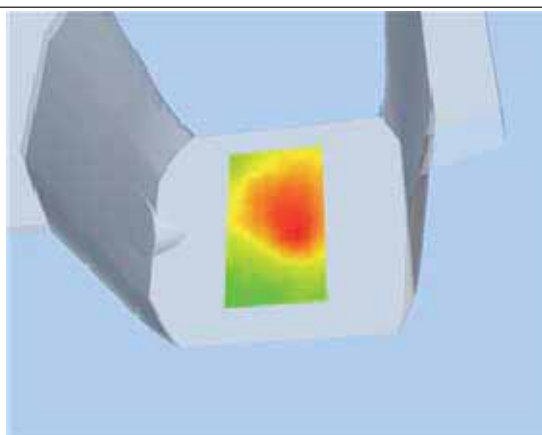
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0791	0.0467	0.0333	0.0205	0.0125	0.0090

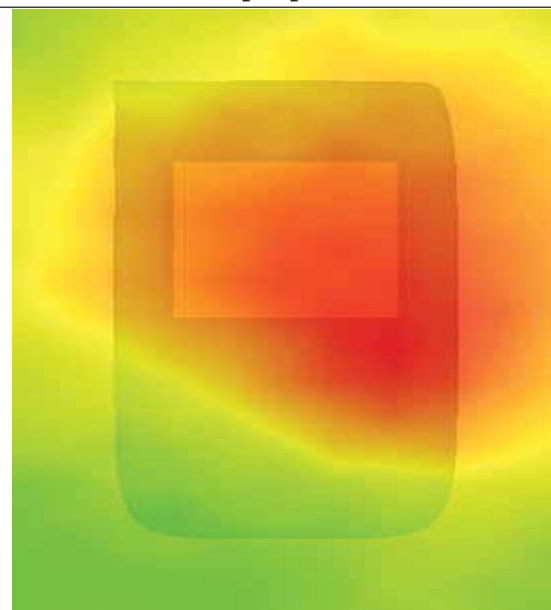
SAR, Z Axis Scan (X = 16, Y = -8)



3D sceen shot



Hot spot position



MEASUREMENT 32

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 11 seconds

A. Experimental conditions.

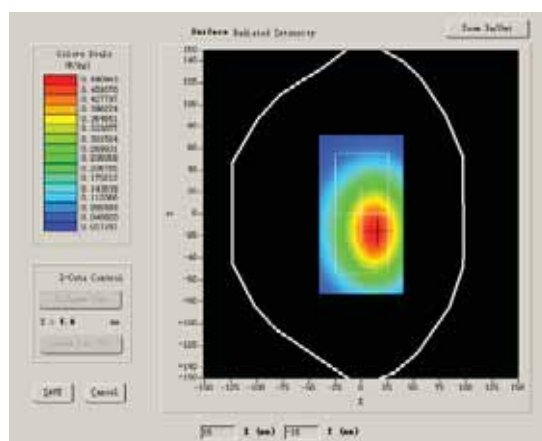
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

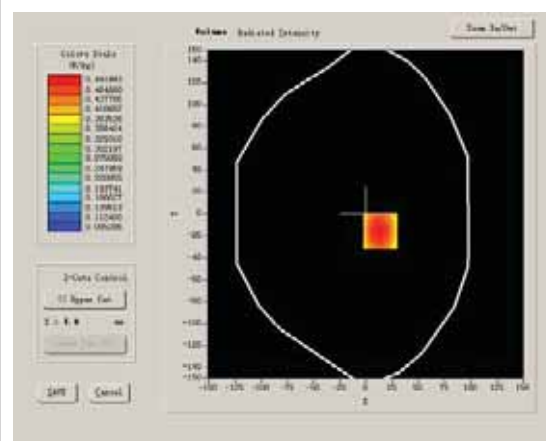
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.877050
Conductivity (S/m)	0.9809033
Power drift (%)	-1.350000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



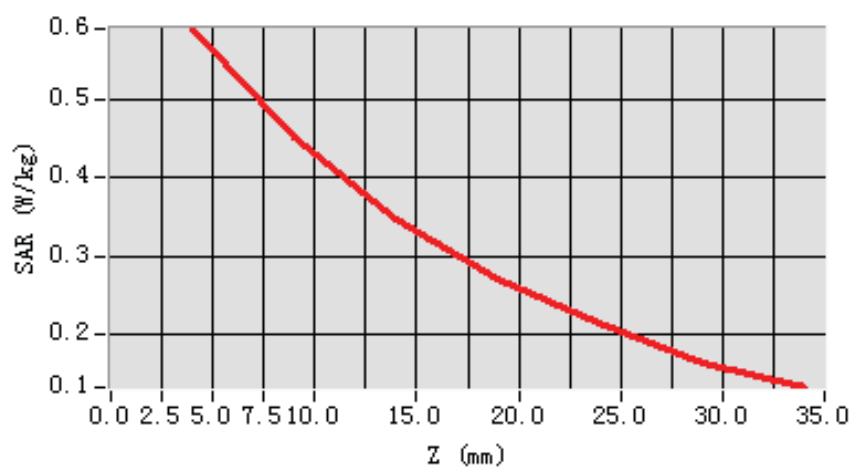
Maximum location: X=14.00, Y=-16.00

SAR 10g (W/Kg)	0.422460
SAR 1g (W/Kg)	0.571698

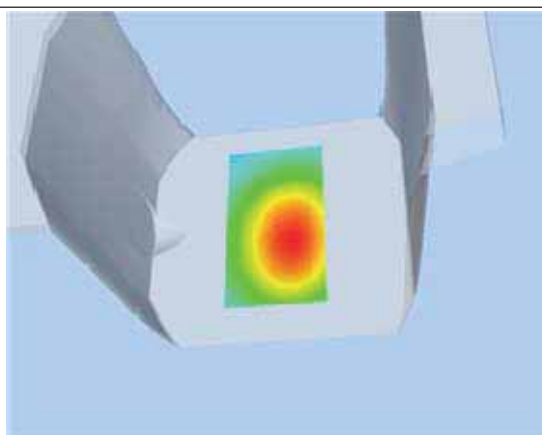
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5904	0.4521	0.3490	0.2710	0.2138	0.1654

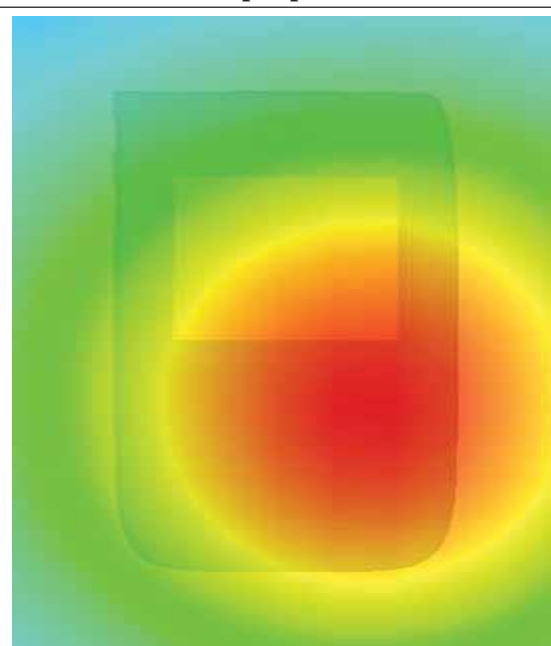
SAR, Z Axis Scan (X = 14, Y = -16)



3D scene shot



Hot spot position



MEASUREMENT 33

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/6/2012

Measurement duration: 9 minutes 23 seconds

A. Experimental conditions.

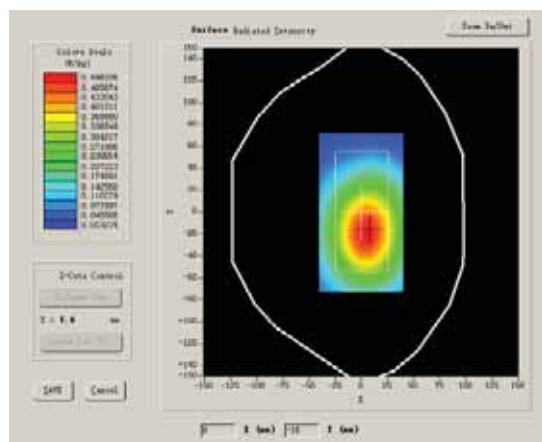
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

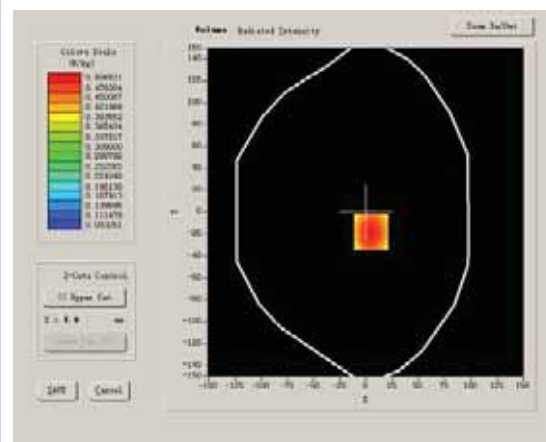
Middle Band SAR (Channel 4175):

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	15.877050
Conductivity (S/m)	0.9809033
Power drift (%)	-0.180000
Ambient Temperature:	22.9°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



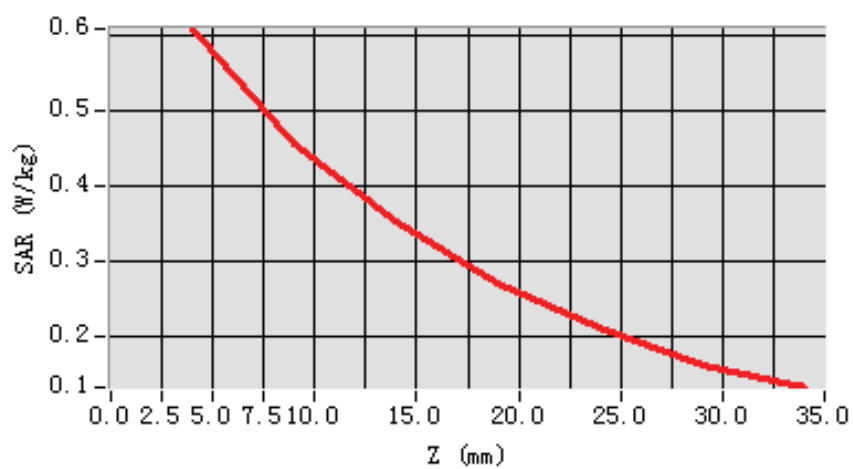
Maximum location: X=5.00, Y=-18.00

SAR 10g (W/Kg)	0.429422
SAR 1g (W/Kg)	0.587561

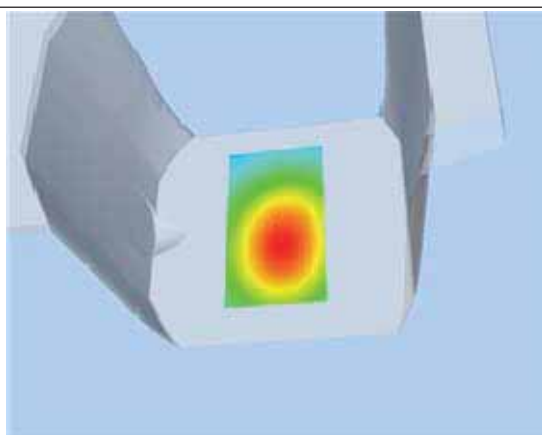
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6079	0.4562	0.3527	0.2698	0.2102	0.1623

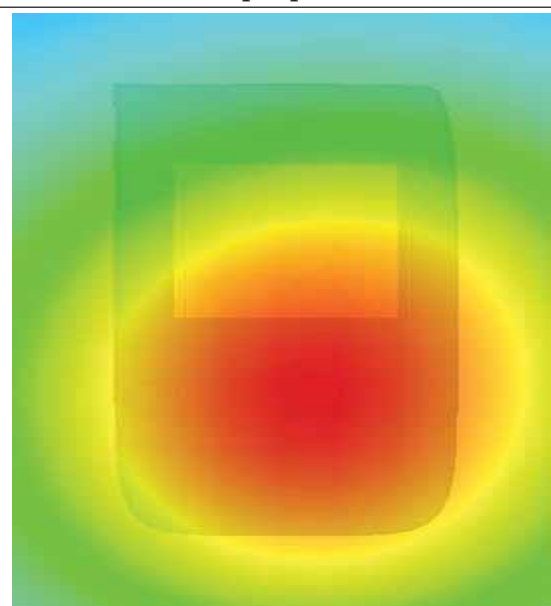
SAR, Z Axis Scan (X = 5, Y = -18)



3D scene shot



Hot spot position



MEASUREMENT 34

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 4 seconds

A. Experimental conditions.

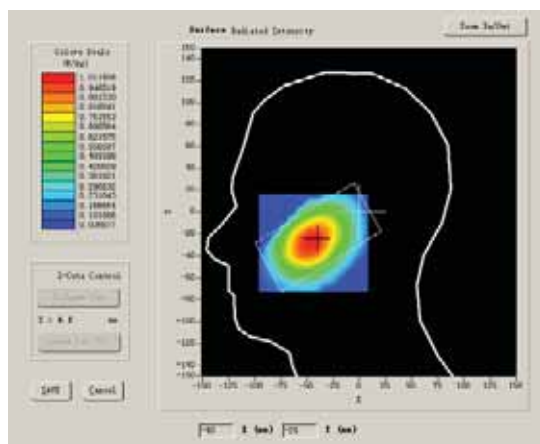
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

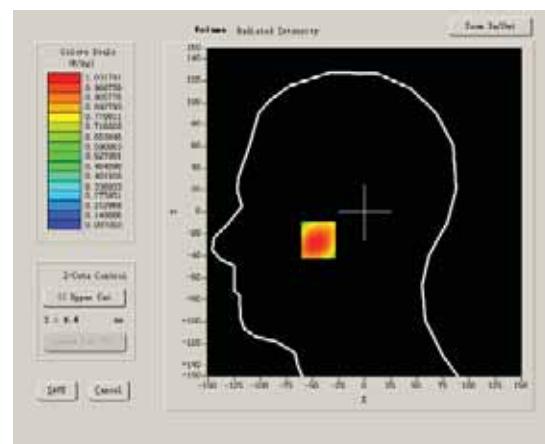
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-1.300000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



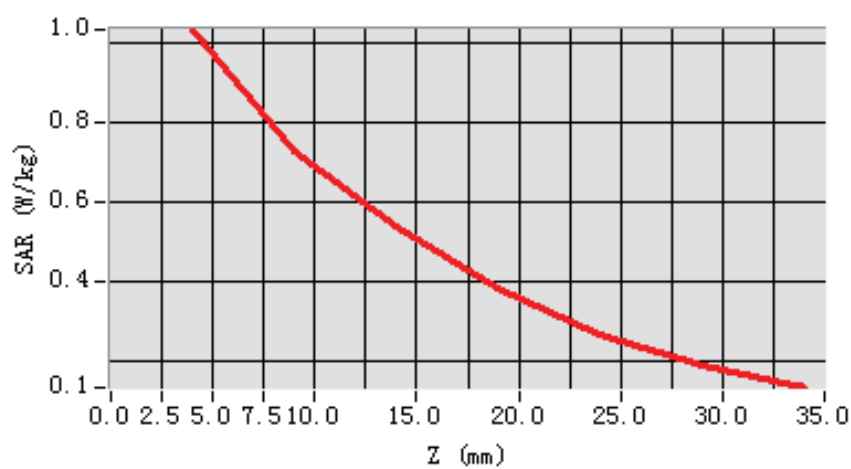
Maximum location: X=-44.00, Y=-26.00

SAR 10g (W/Kg)	0.678550
SAR 1g (W/Kg)	0.995005

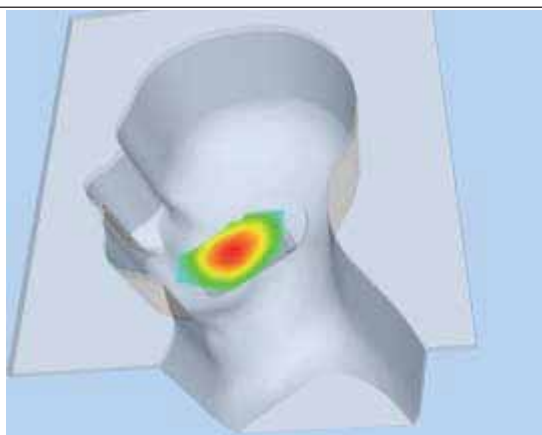
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0317	0.7257	0.5394	0.3840	0.2683	0.1905

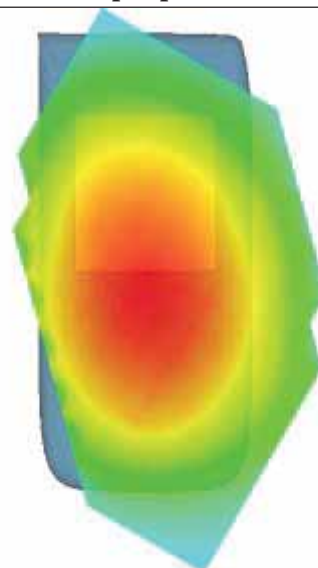
SAR, Z Axis Scan (X = -44, Y = -26)



3D scene shot



Hot spot position



MEASUREMENT 35

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 3 seconds

A. Experimental conditions.

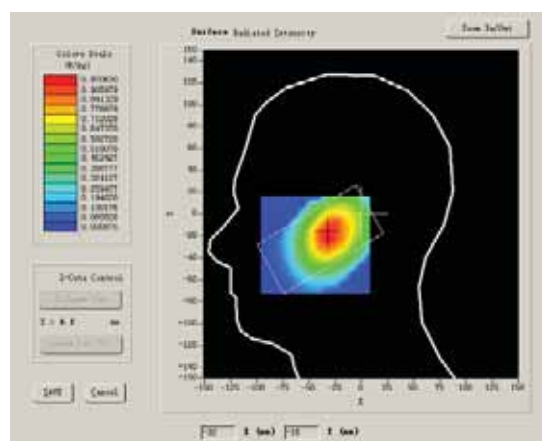
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

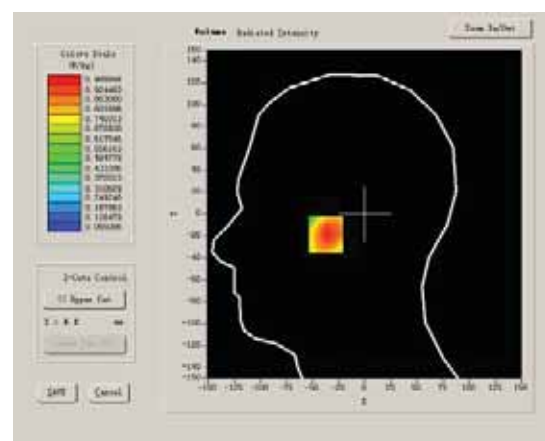
Middle Band SAR (Channel 9400):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-0.410000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



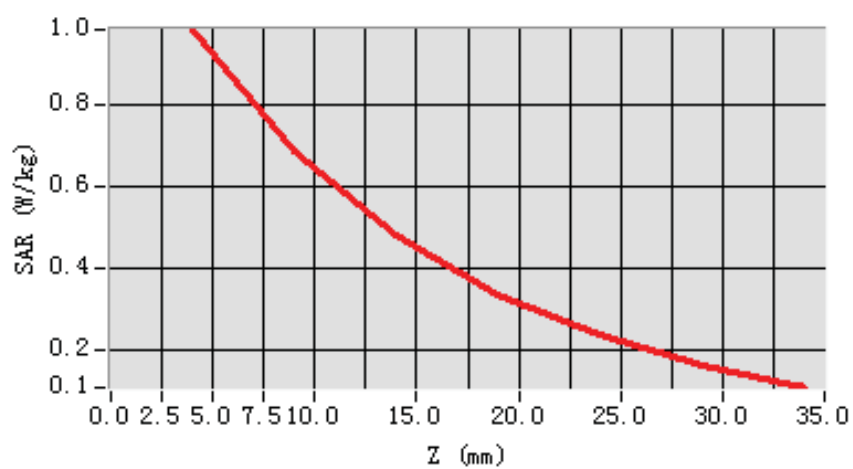
Maximum location: X=-32.00, Y=-19.00

SAR 10g (W/Kg)	0.625799
SAR 1g (W/Kg)	0.938348

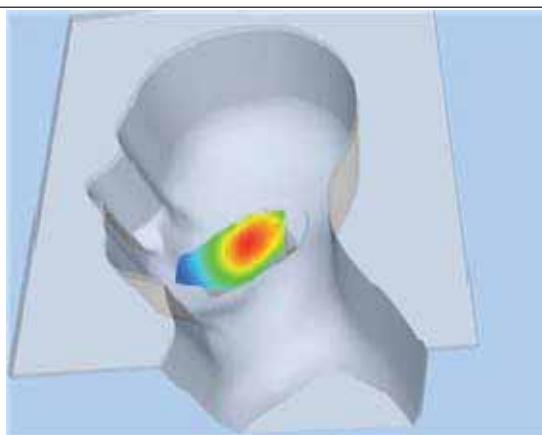
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9858	0.6893	0.4840	0.3339	0.2383	0.1629

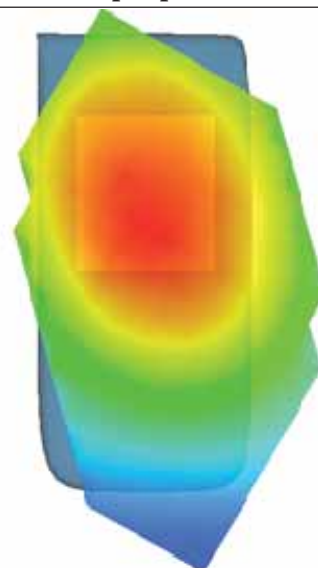
SAR, Z Axis Scan (X = -32, Y = -19)



3D scene shot



Hot spot position



MEASUREMENT 36

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 8 seconds

A. Experimental conditions.

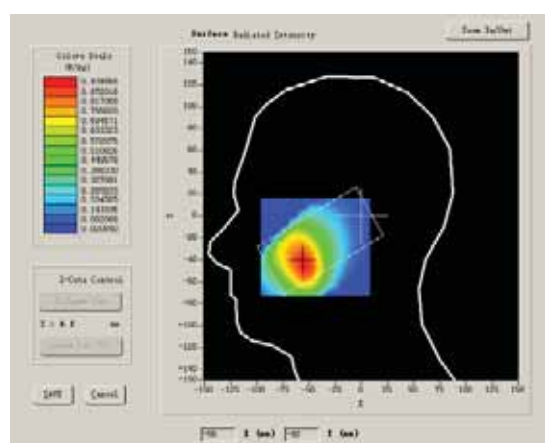
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Cheek
Band	WCDMA
Channels	High
Signal	CDMA

B. SAR Measurement Results

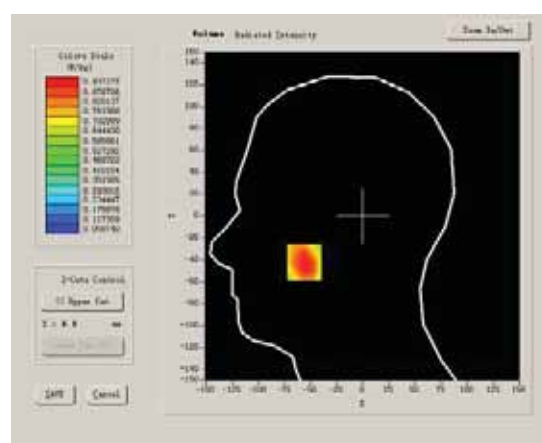
Higher Band SAR (Channel 9538):

Frequency (MHz)	1907.600000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-0.480000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



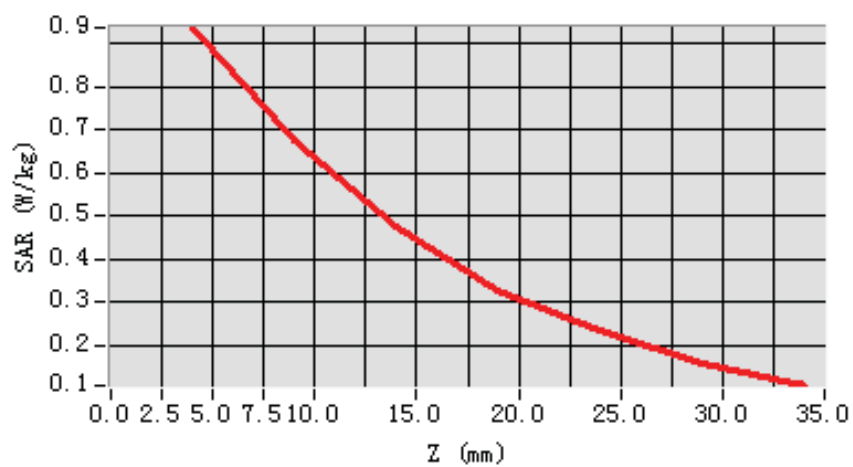
Maximum location: X=-56.00, Y=-42.00

SAR 10g (W/Kg)	0.603725
SAR 1g (W/Kg)	0.901627

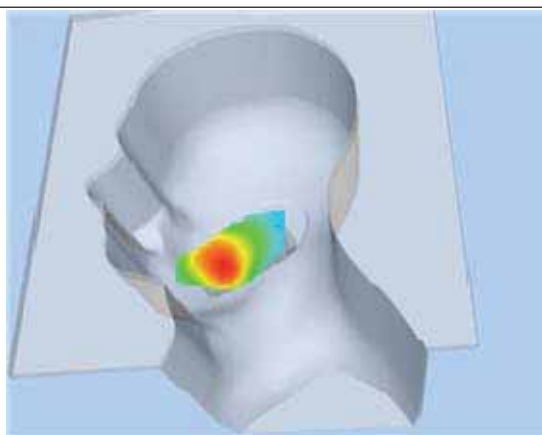
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9373	0.6779	0.4777	0.3272	0.2324	0.1585

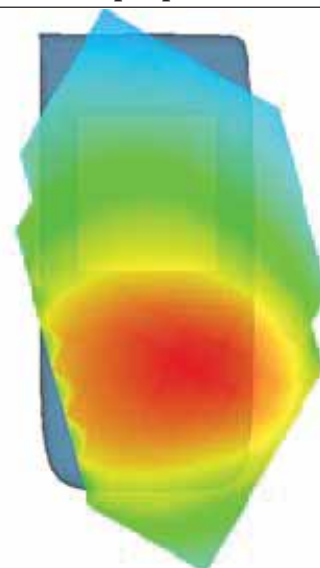
SAR, Z Axis Scan (X = -56, Y = -42)



3D scene shot



Hot spot position



MEASUREMENT 37

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 7 minutes 58 seconds

A. Experimental conditions.

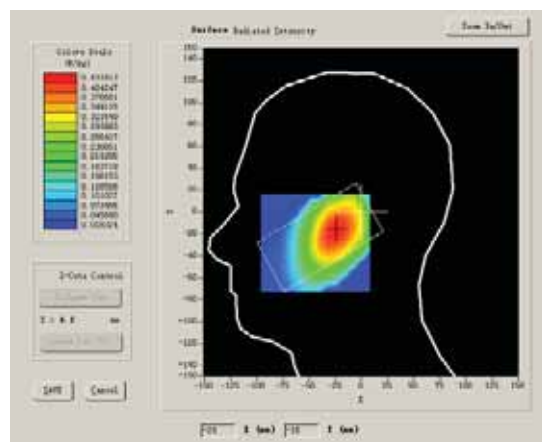
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Right head
Device Position	Tilt
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

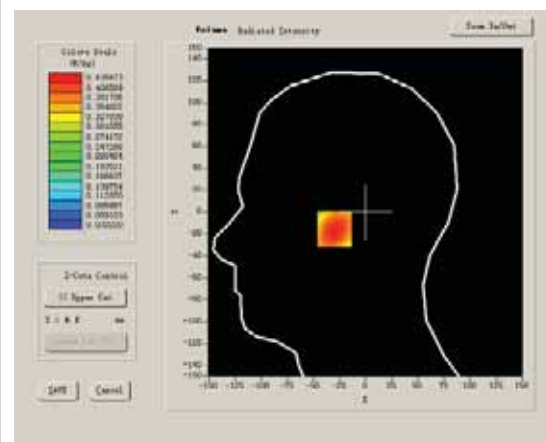
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-1.390000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



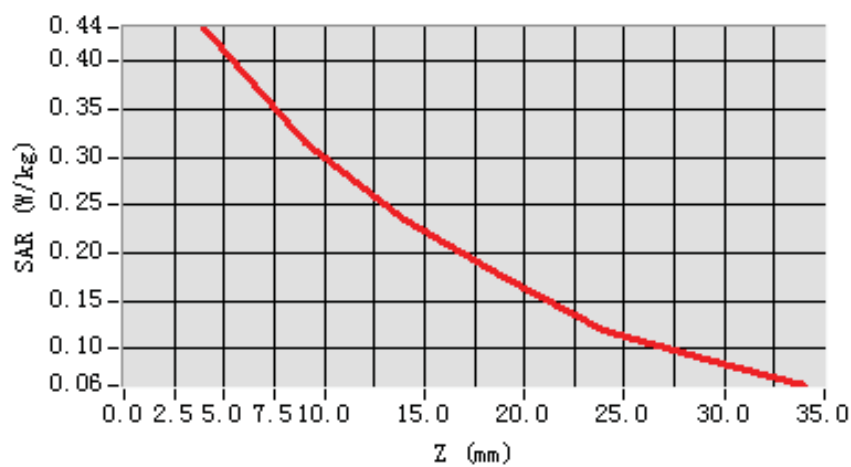
Maximum location: X=-24.00, Y=-16.00

SAR 10g (W/Kg)	0.294141
SAR 1g (W/Kg)	0.420915

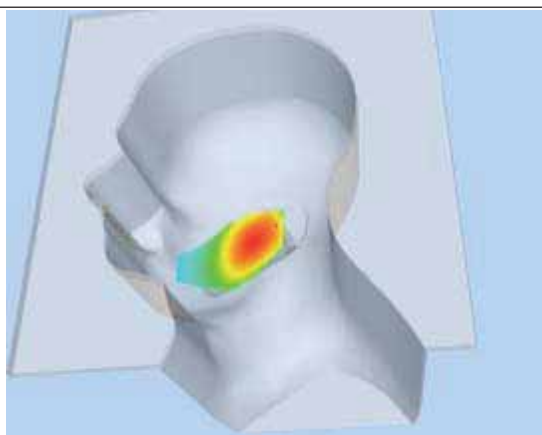
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.4355	0.3164	0.2338	0.1745	0.1198	0.0880

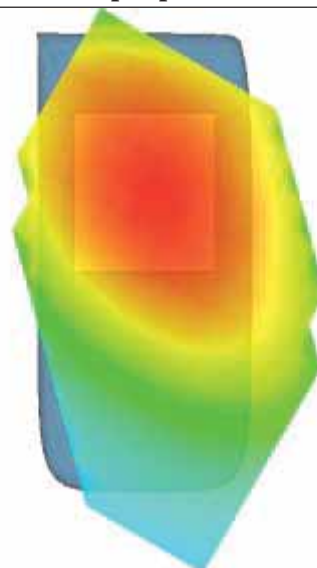
SAR, Z Axis Scan (X = -24, Y = -16)



3D sceen shot



Hot spot position



MEASUREMENT 38

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 8 seconds

A. Experimental conditions.

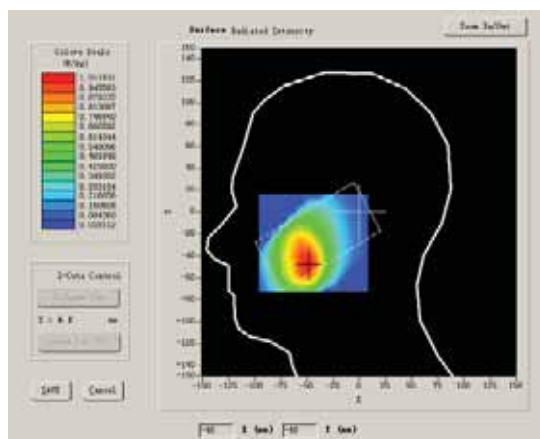
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

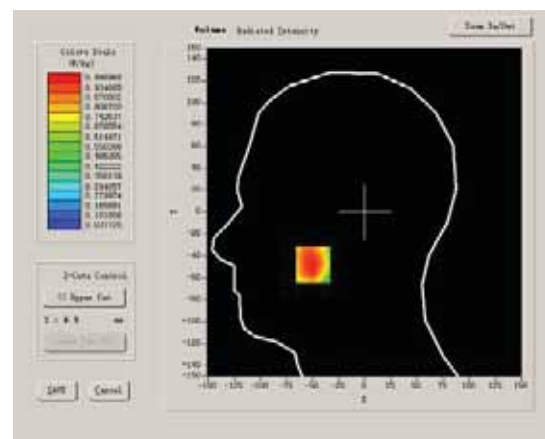
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-0.920000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



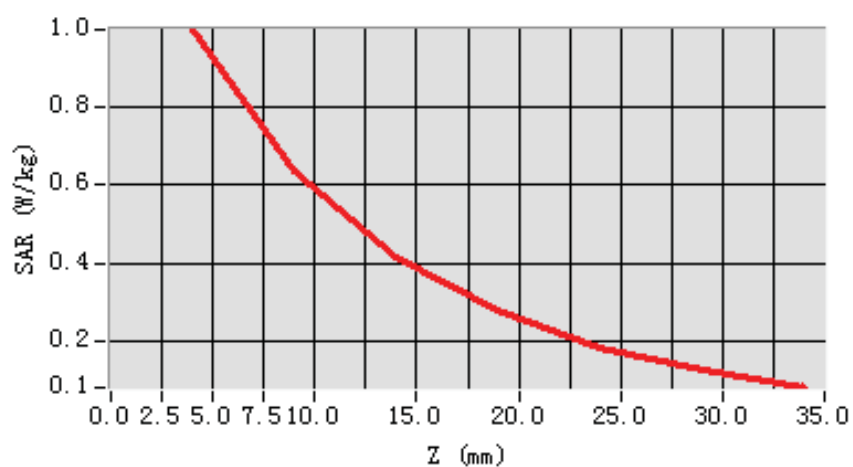
Maximum location: X=-49.00, Y=-48.00

SAR 10g (W/Kg)	0.618677
SAR 1g (W/Kg)	0.972322

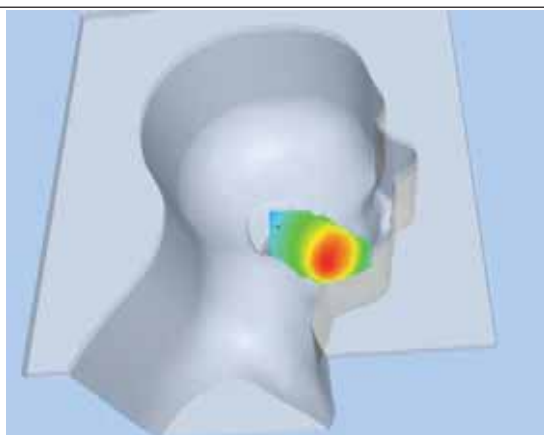
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.9990	0.6340	0.4136	0.2796	0.1841	0.1232

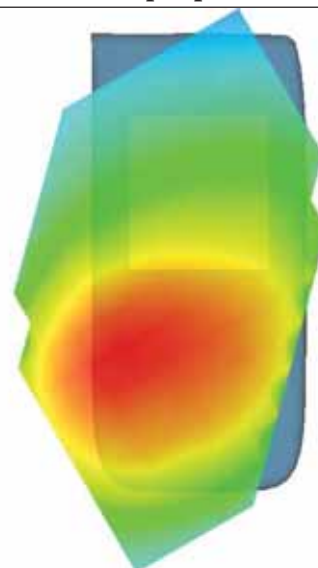
SAR, Z Axis Scan (X = -49, Y = -48)



3D scene shot



Hot spot position



MEASUREMENT 39

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 8 seconds

A. Experimental conditions.

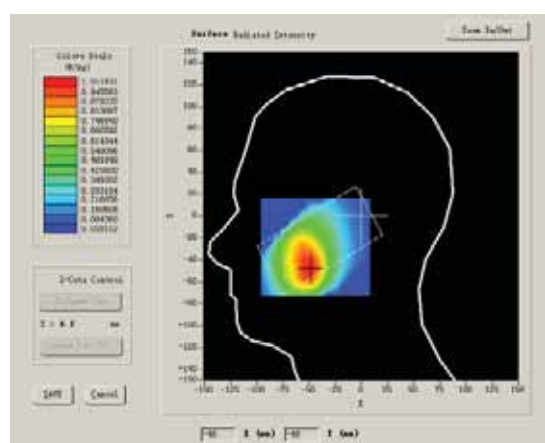
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	Middle
Signal	CDMA

B. SAR Measurement Results

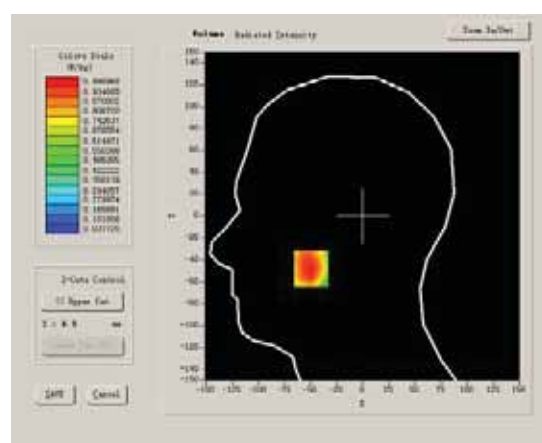
Middle Band SAR (Channel 9400):

Frequency (MHz)	1880.000000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-1.370000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



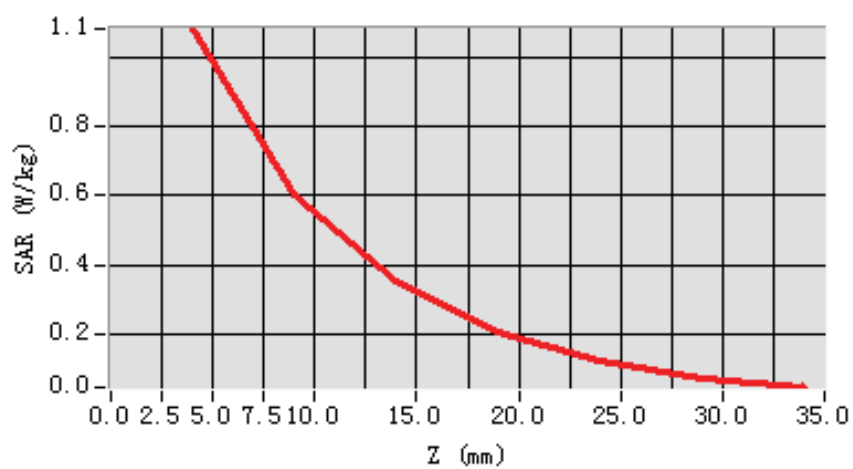
Maximum location: X=-56.00, Y=-43.00

SAR 10g (W/Kg)	0.554401
SAR 1g (W/Kg)	1.020438

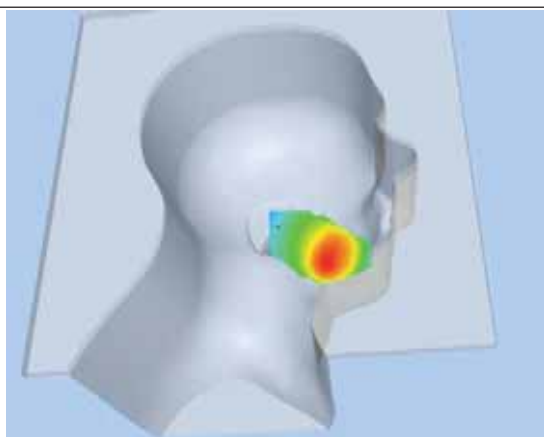
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0844	0.6020	0.3554	0.2080	0.1228	0.0715

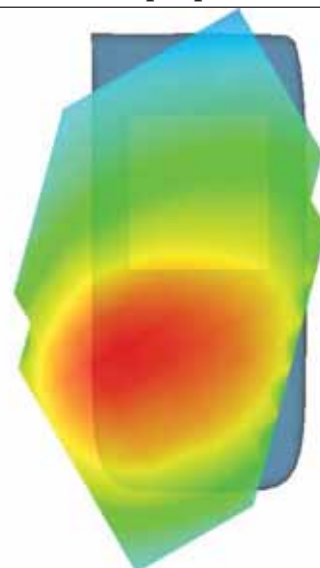
SAR, Z Axis Scan (X = -56, Y = -43)



3D scene shot



Hot spot position



MEASUREMENT 40

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 8 seconds

A. Experimental conditions.

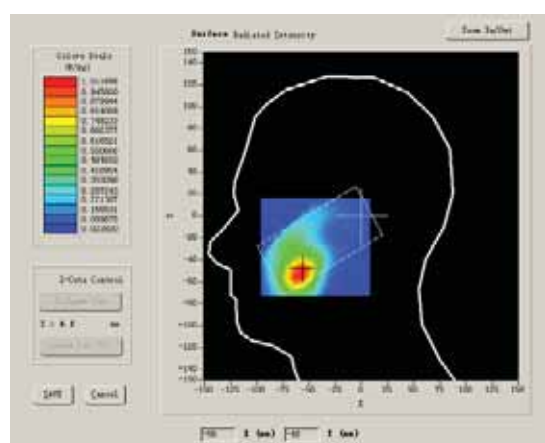
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Cheek
Band	WCDMA
Channels	High
Signal	CDMA

B. SAR Measurement Results

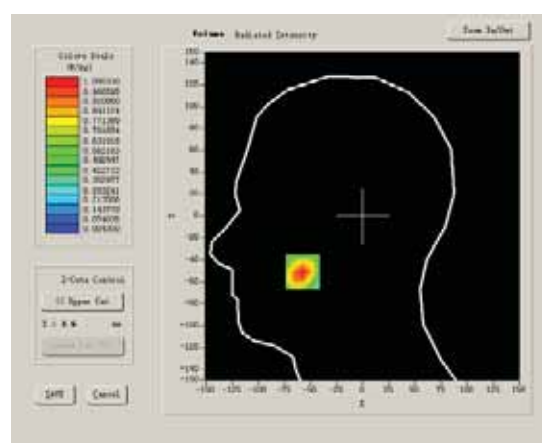
Higher Band SAR (Channel 9538):

Frequency (MHz)	1907.600000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	0.620000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



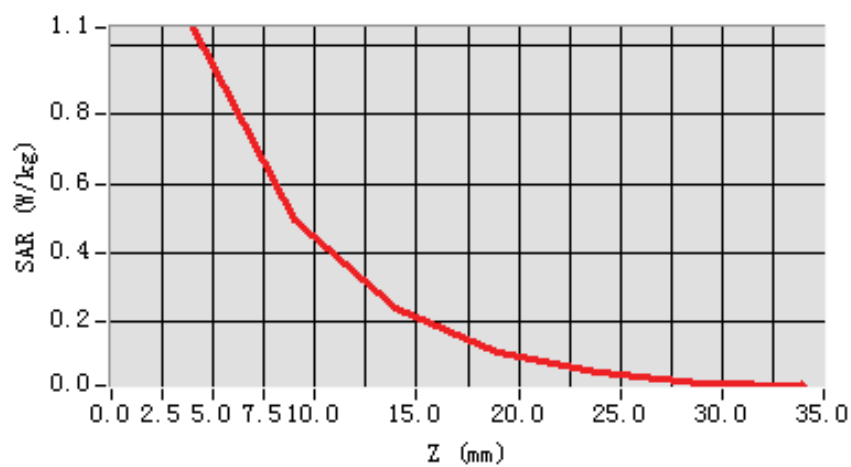
Maximum location: X=-57.00, Y=-51.00

SAR 10g (W/Kg)	0.501485
SAR 1g (W/Kg)	0.976351

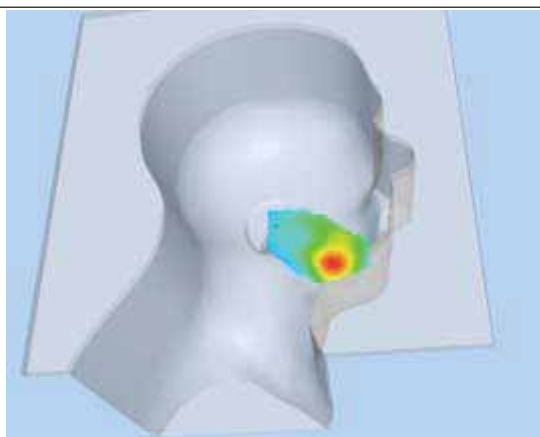
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	1.0317	0.5315	0.2517	0.1109	0.0603	0.0275

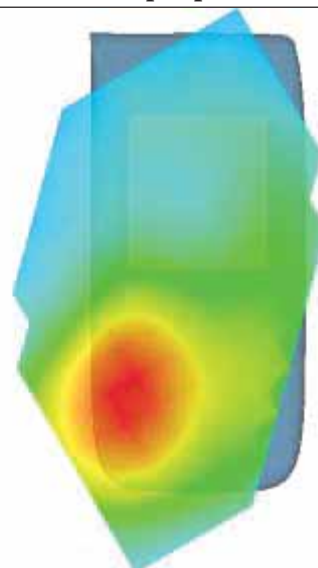
SAR, Z Axis Scan (X = -57, Y = -51)



3D scene shot



Hot spot position



MEASUREMENT 41

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 21 seconds

A. Experimental conditions.

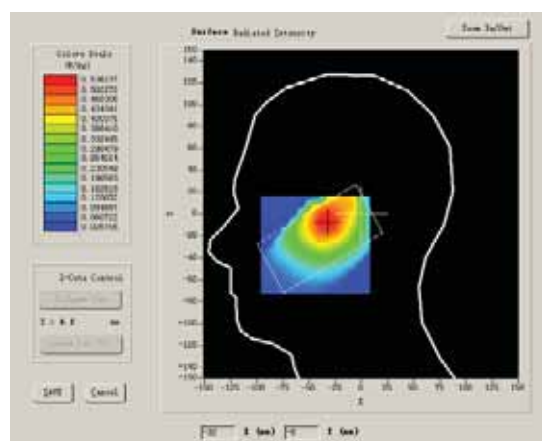
Phantom File	sam_direct_droit2_surf8mm.txt
Phantom	Left head
Device Position	Tilt
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

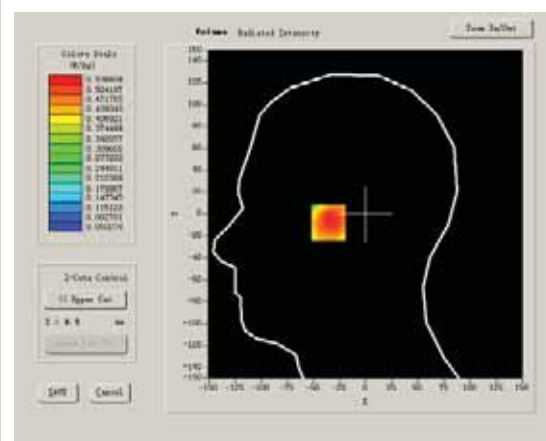
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	38.509998
Relative permittivity	13.170000
Conductivity (S/m)	1.436111
Power drift(%)	-1.700000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



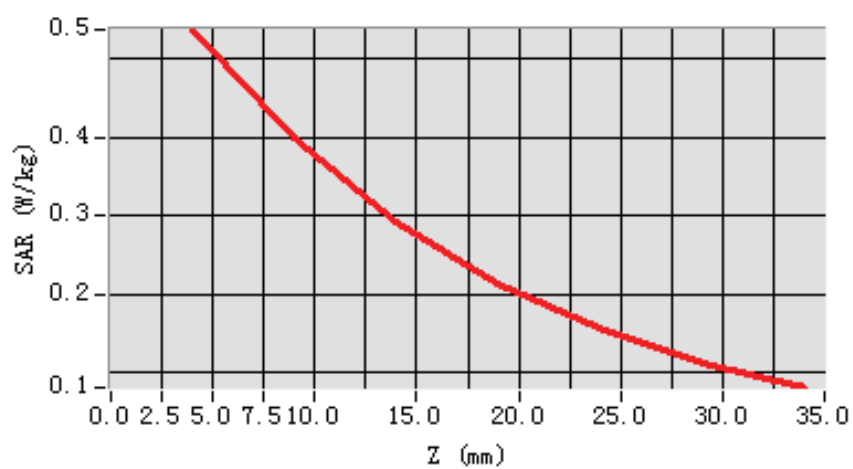
Maximum location: X=-35.00, Y=-7.00

SAR 10g (W/Kg)	0.363110
SAR 1g (W/Kg)	0.519720

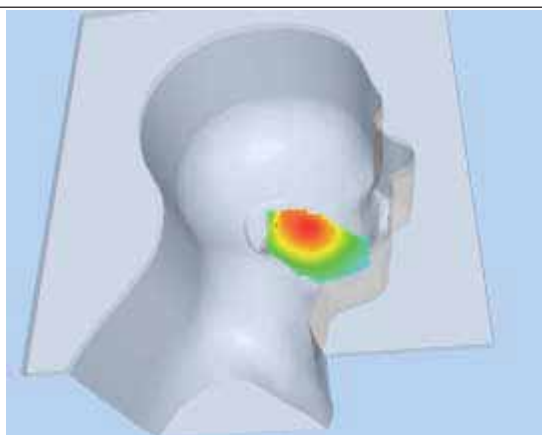
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5366	0.3996	0.2925	0.2135	0.1587	0.1139

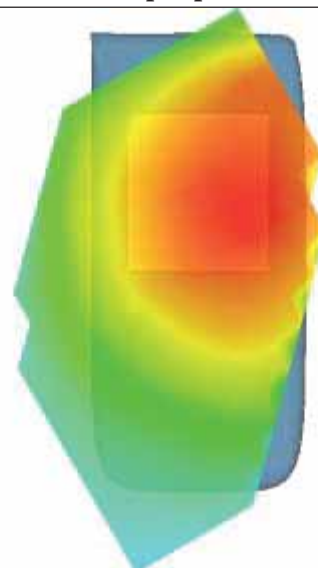
SAR, Z Axis Scan (X = -35, Y = -7)



3D scene shot



Hot spot position



MEASUREMENT 42

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 4 seconds

A. Experimental conditions.

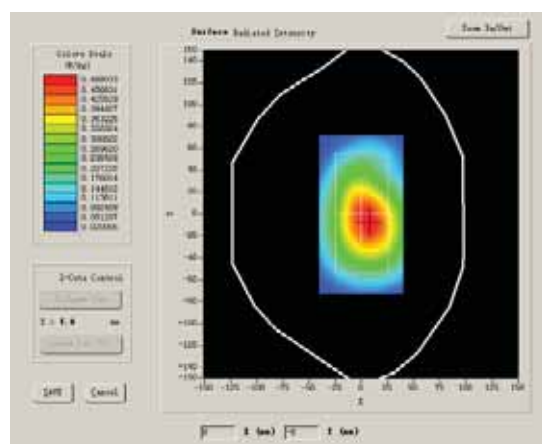
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

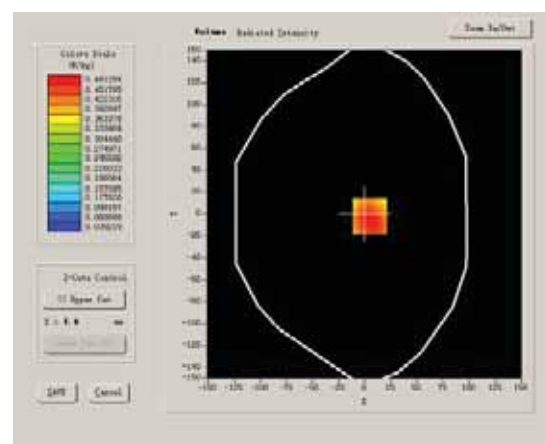
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	52.548876
Relative permittivity	15.877050
Conductivity (S/m)	1.553978
Power drift(%)	0.850000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



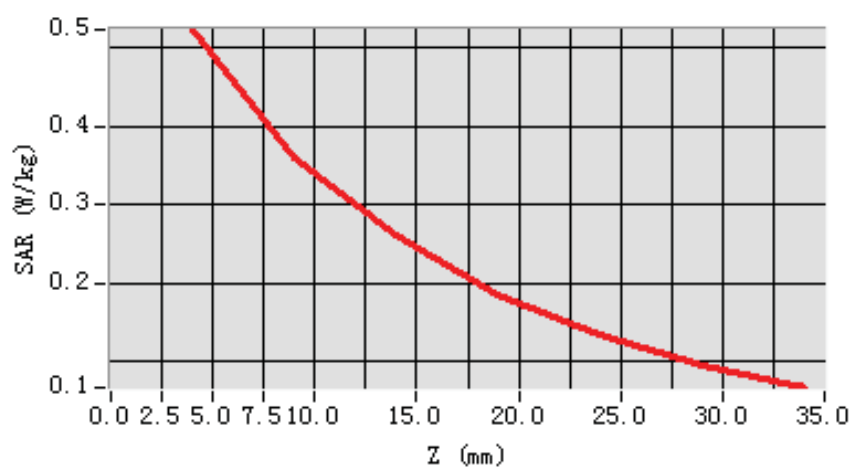
Maximum location: X=5.00, Y=-2.00

SAR 10g (W/Kg)	0.350051
SAR 1g (W/Kg)	0.510592

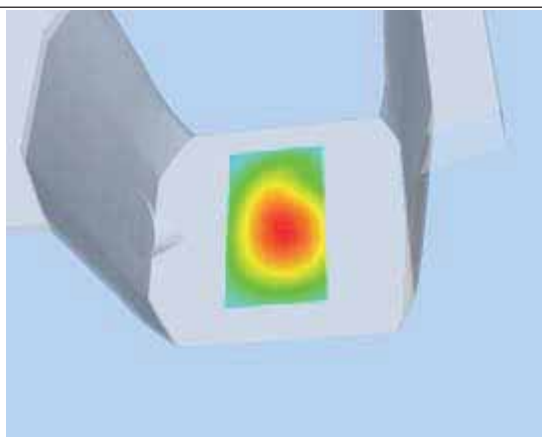
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5228	0.3592	0.2611	0.1857	0.1336	0.0946

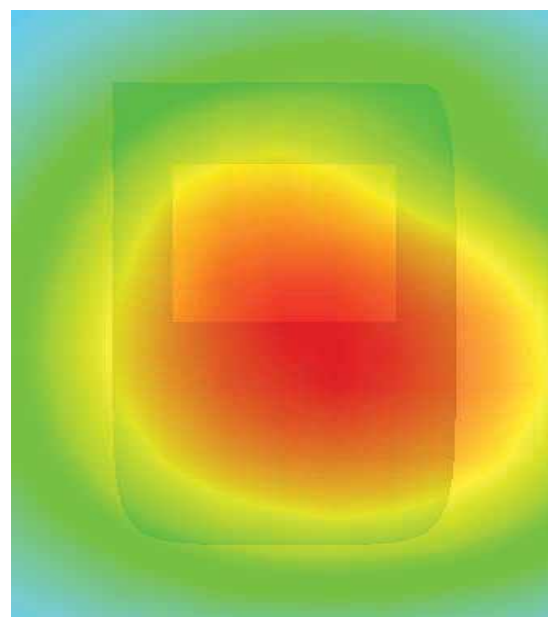
SAR, Z Axis Scan (X = 5, Y = -2)



3D scene shot



Hot spot position



MEASUREMENT 43

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

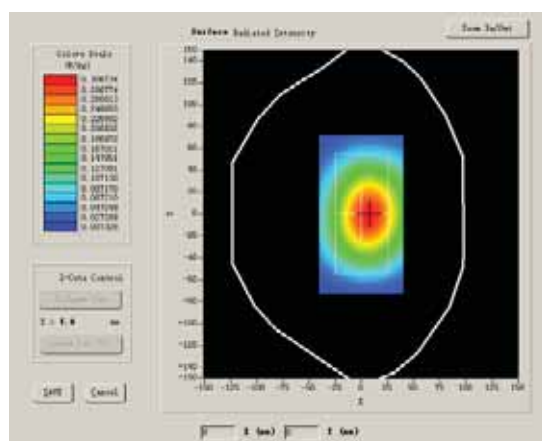
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

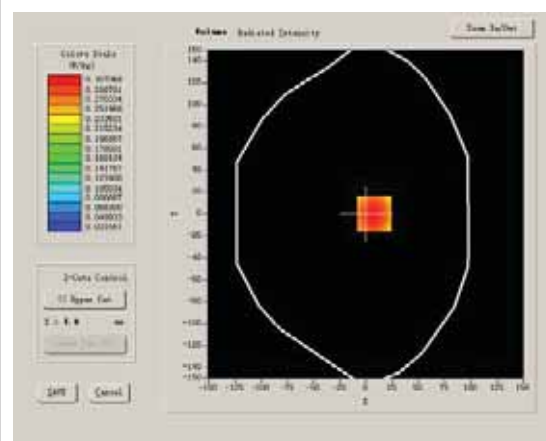
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	52.548876
Relative permittivity	15.877050
Conductivity (S/m)	1.553978
Power drift(%)	0.700000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



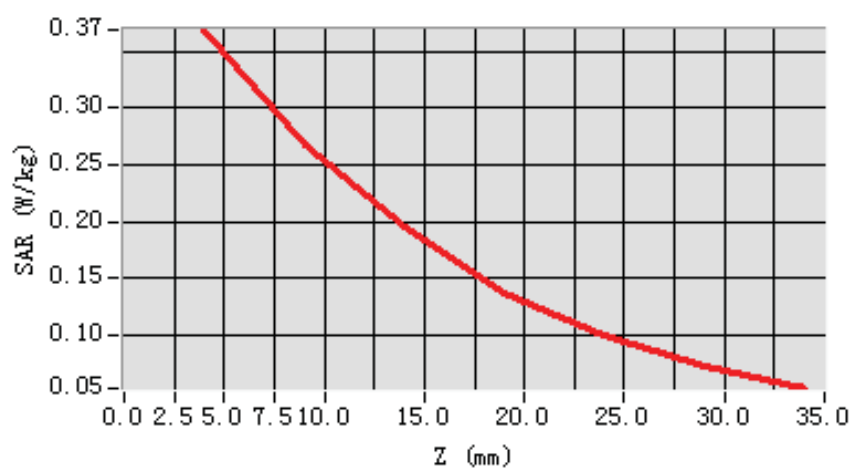
Maximum location: X=8.00, Y=0.00

SAR 10g (W/Kg)	0.249734
SAR 1g (W/Kg)	0.356114

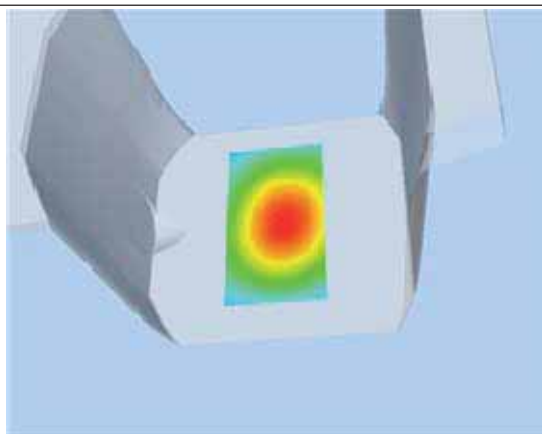
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.3685	0.2669	0.1946	0.1375	0.1003	0.0723

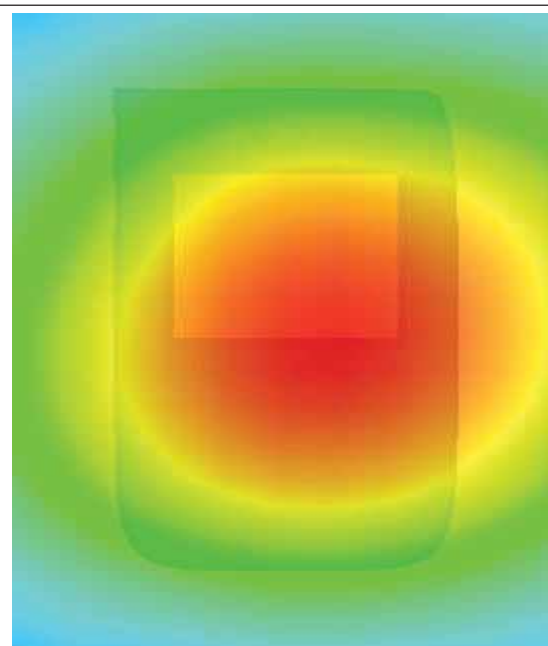
SAR, Z Axis Scan (X = 8, Y = 0)



3D scene shot



Hot spot position



MEASUREMENT 44

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

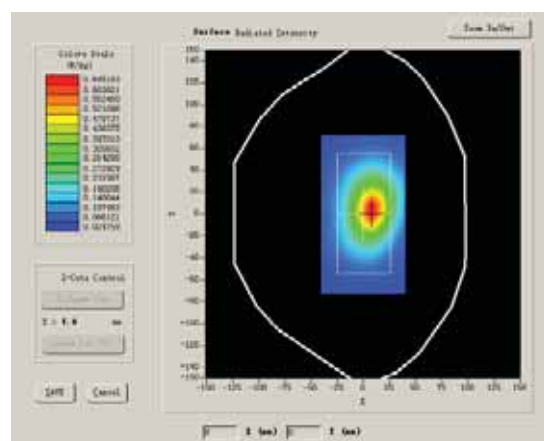
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

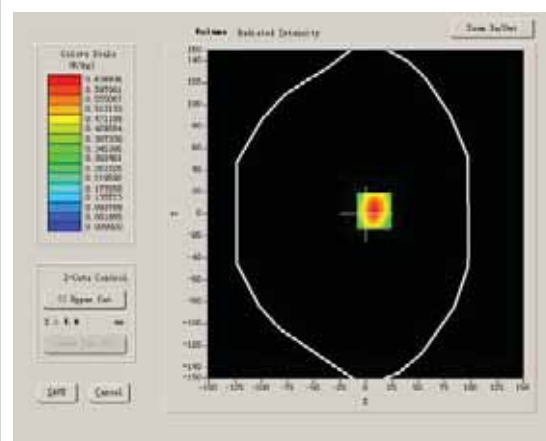
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	52.548876
Relative permittivity	15.877050
Conductivity (S/m)	1.553978
Power drift (%)	-0.790000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



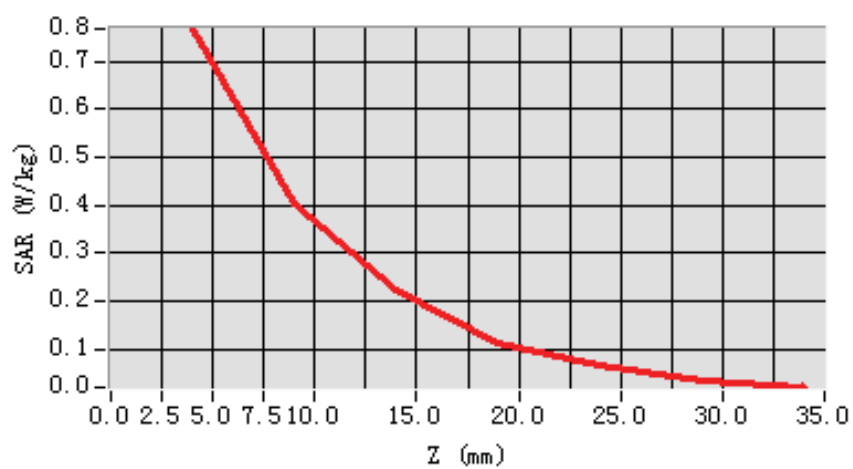
Maximum location: X=8.00, Y=3.00

SAR 10g (W/Kg)	0.394595
SAR 1g (W/Kg)	0.725581

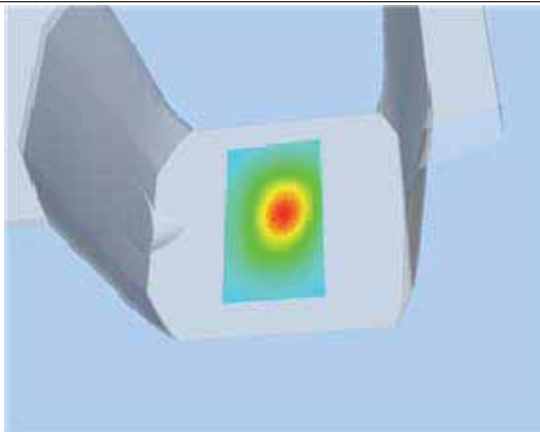
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.7668	0.4031	0.2220	0.1136	0.0681	0.0351

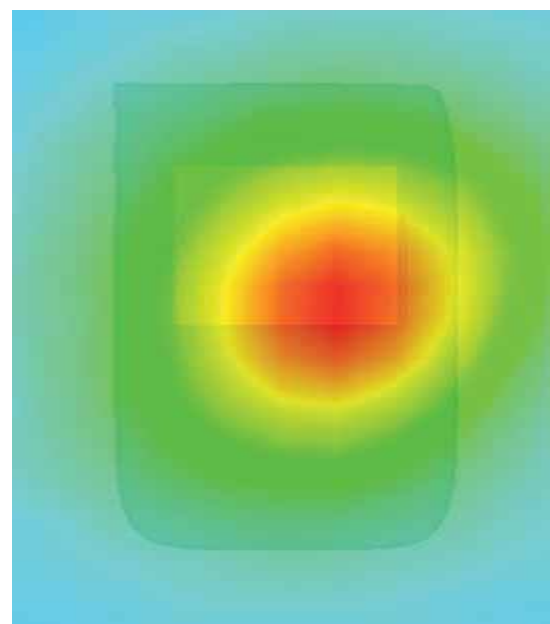
SAR, Z Axis Scan (X = 8, Y = 3)



3D scene shot



Hot spot position



MEASUREMENT 45

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 9 seconds

A. Experimental conditions.

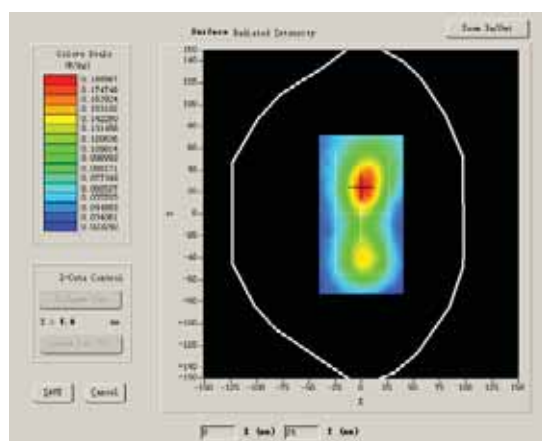
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

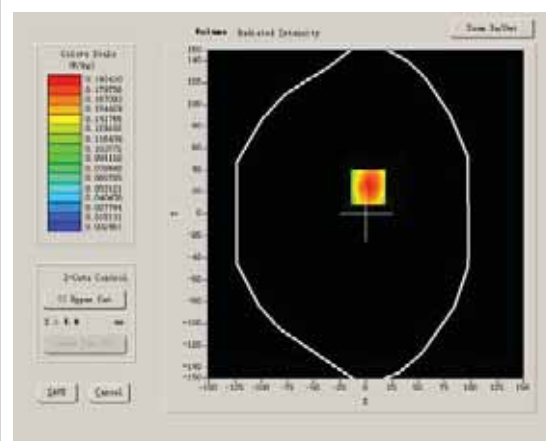
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	52.548876
Relative permittivity	15.877050
Conductivity (S/m)	1.553978
Power drift (%)	-2.890000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



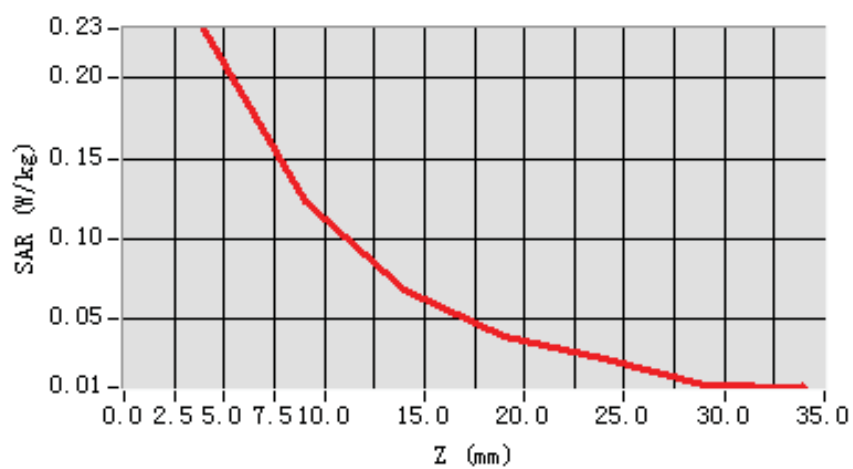
Maximum location: X=2.00, Y=24.00

SAR 10g (W/Kg)	0.124177
SAR 1g (W/Kg)	0.222039

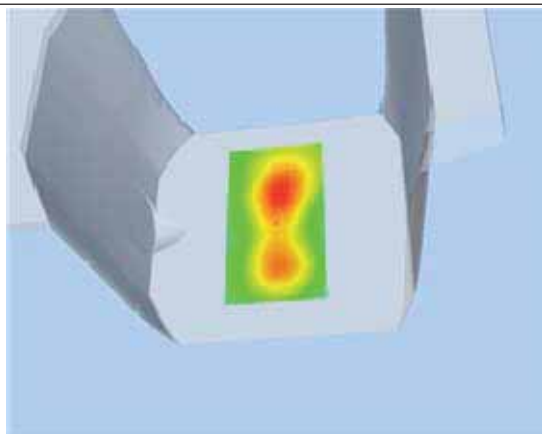
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.2309	0.1241	0.0686	0.0392	0.0251	0.0093

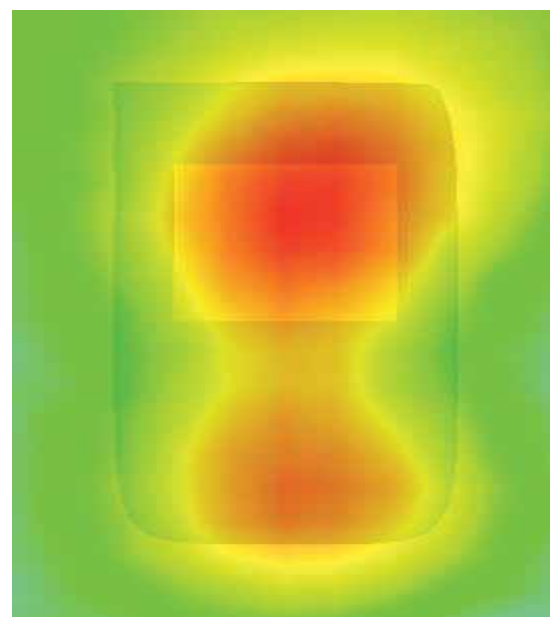
SAR, Z Axis Scan (X = 2, Y = 24)



3D scene shot



Hot spot position



MEASUREMENT 46

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 8 seconds

A. Experimental conditions.

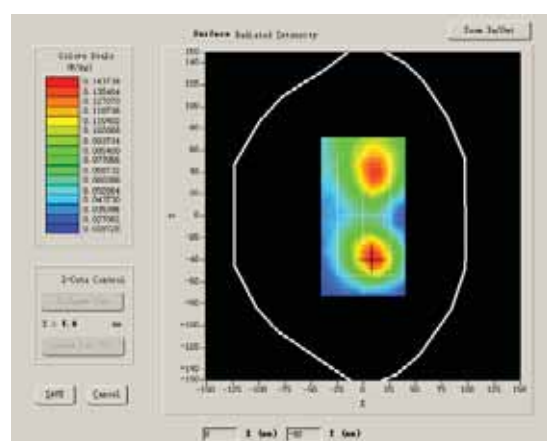
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	WCDMA
Channels	Low
Signal	CDMA

B. SAR Measurement Results

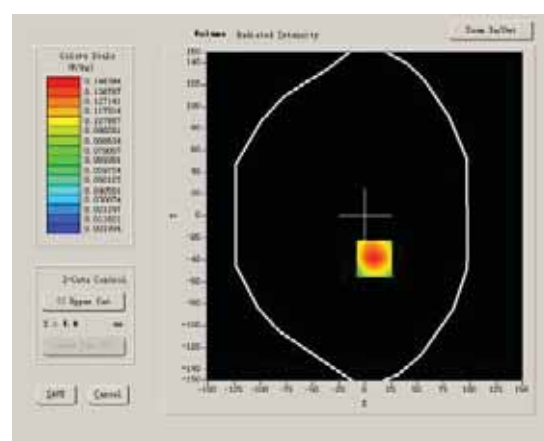
Lower Band SAR (Channel 9262):

Frequency (MHz)	1852.400000
Relative permittivity (real part)	52.548876
Relative permittivity	15.877050
Conductivity (S/m)	1.553978
Power drift (%)	-0.330000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.7°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



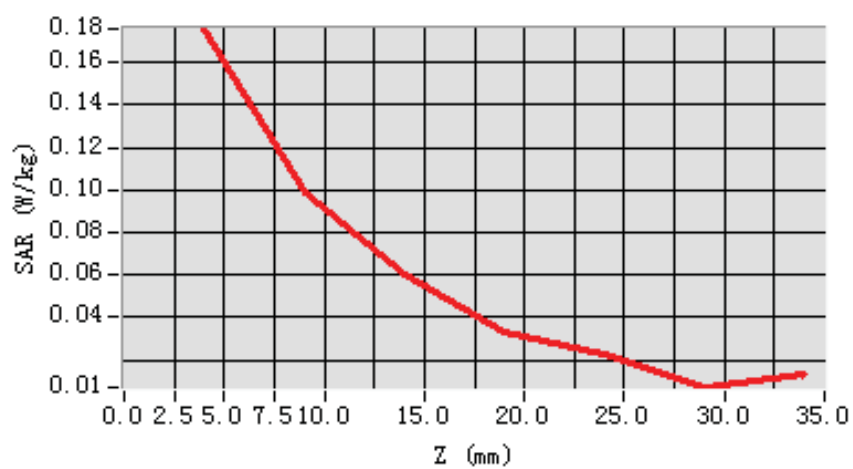
Maximum location: X=9.00, Y=-39.00

SAR 10g (W/Kg)	0.095141
SAR 1g (W/Kg)	0.168155

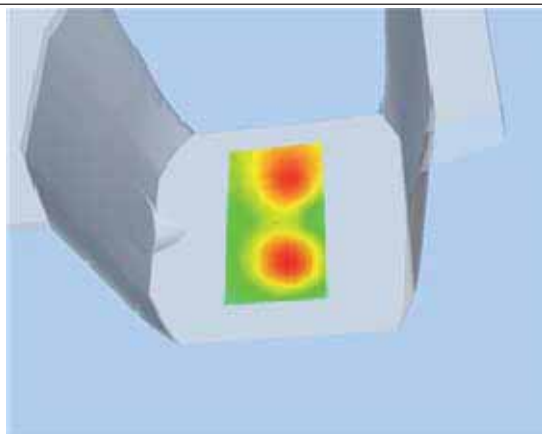
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1757	0.0986	0.0603	0.0328	0.0226	0.0072

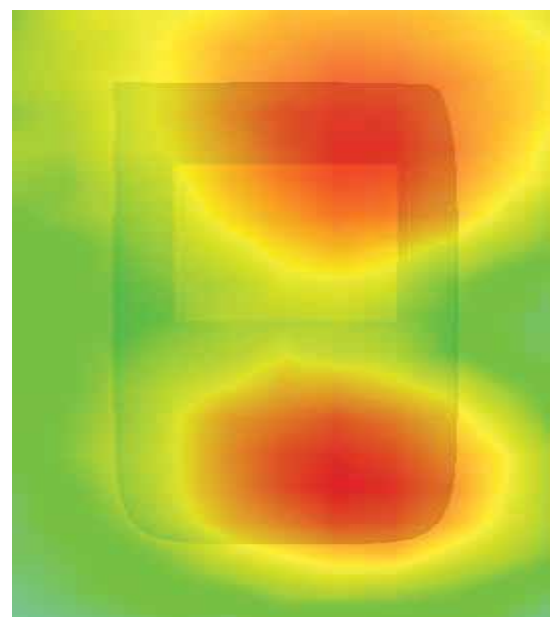
SAR, Z Axis Scan (X = 9, Y = -39)



3D sceen shot



Hot spot position



MEASUREMENT 47

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 17 seconds

A. Experimental conditions.

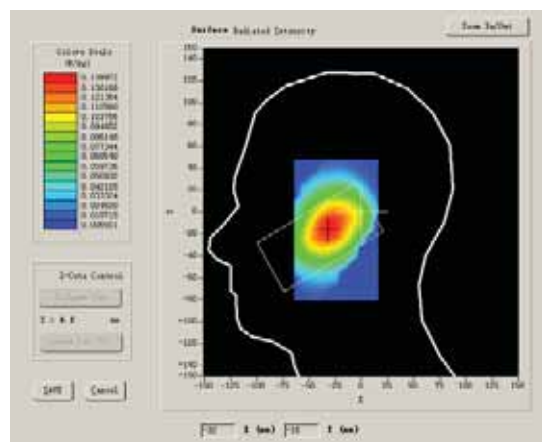
Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Cheek
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

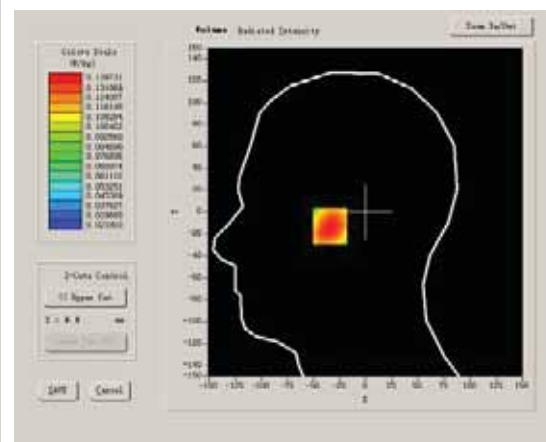
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.622857
Relative permittivity	15.490000
Conductivity (S/m)	1.964313
Power drift (%)	-0.430000
Ambient Temperature:	22.3°C
Liquid Temperature:	21.5°C
ConvF:	39.563,33.614,37.677
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



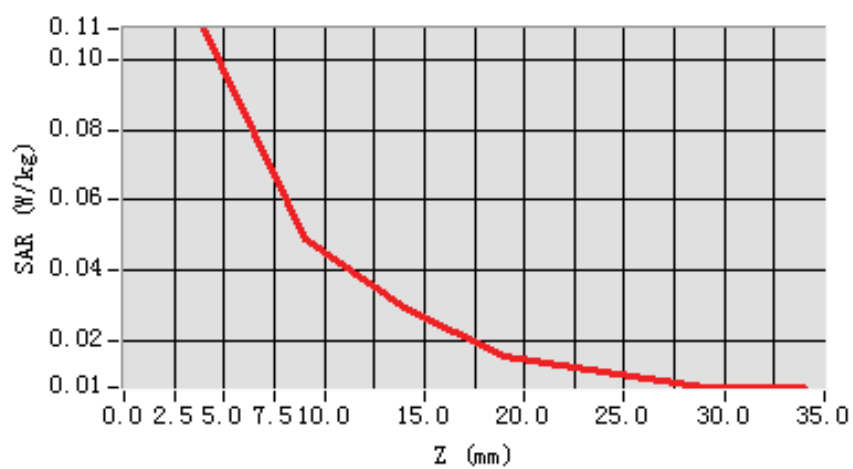
Maximum location: X=-50.00, Y=-66.00

SAR 10g (W/Kg)	0.053260
SAR 1g (W/Kg)	0.104272

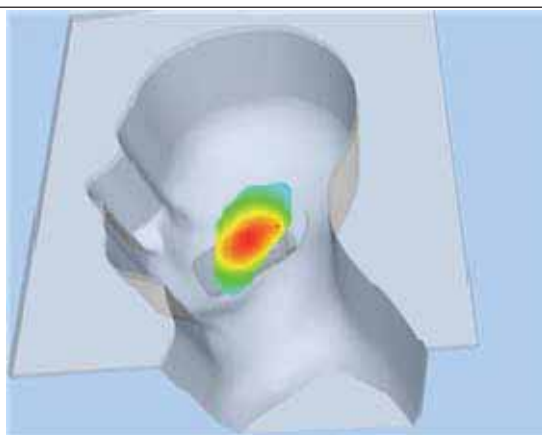
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1091	0.0488	0.0294	0.0153	0.0109	0.0064

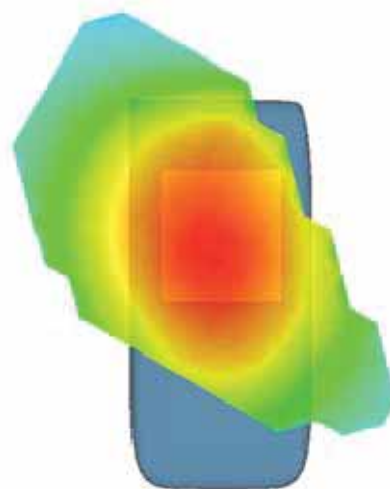
SAR, Z Axis Scan (X = -50, Y = -66)



3D scene shot



Hot spot position



MEASUREMENT 48

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 15 seconds

A. Experimental conditions.

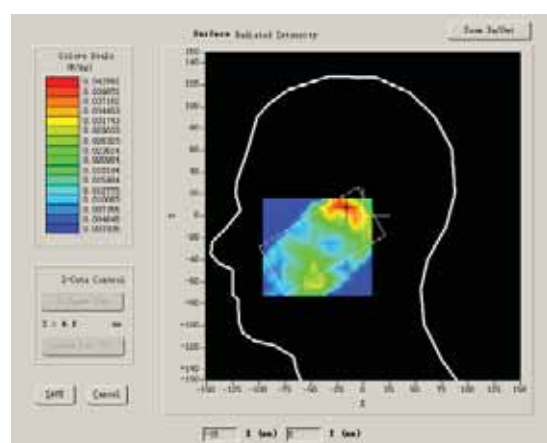
Phantom File	surf_sam_plan.txt
Phantom	Right head
Device Position	Tilt
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

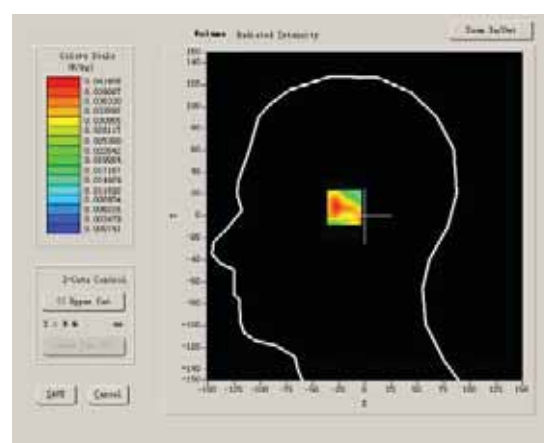
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.622857
Relative permittivity	15.490000
Conductivity (S/m)	1.964313
Power drift (%)	-0.630000
Ambient Temperature:	22.3°C
Liquid Temperature:	21.5°C
ConvF:	39.563,33.614,37.677
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



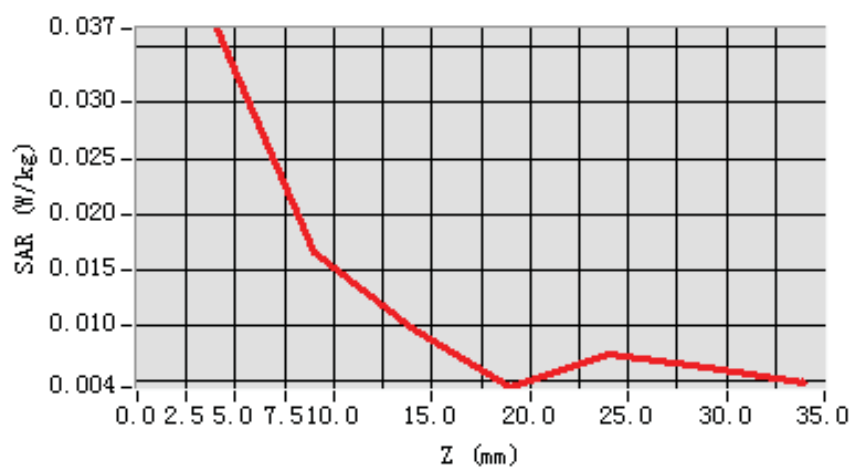
Maximum location: X=-16.00, Y=8.00

SAR 10g (W/Kg)	0.021193
SAR 1g (W/Kg)	0.039778

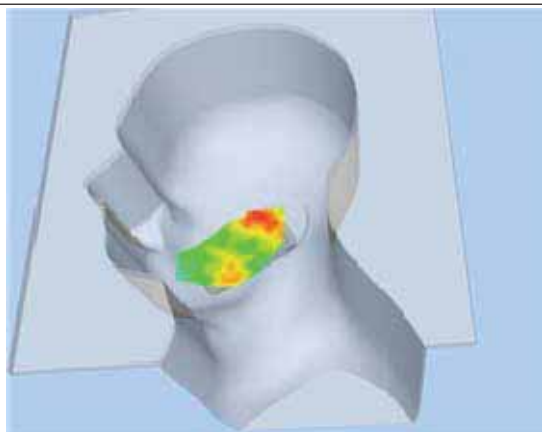
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0367	0.0166	0.0097	0.0044	0.0074	0.0061

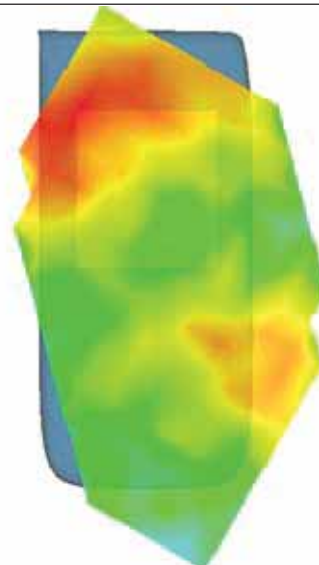
SAR, Z Axis Scan (X = -16, Y = 8)



3D sceen shot



Hot spot position



MEASUREMENT 49

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 17 seconds

A. Experimental conditions.

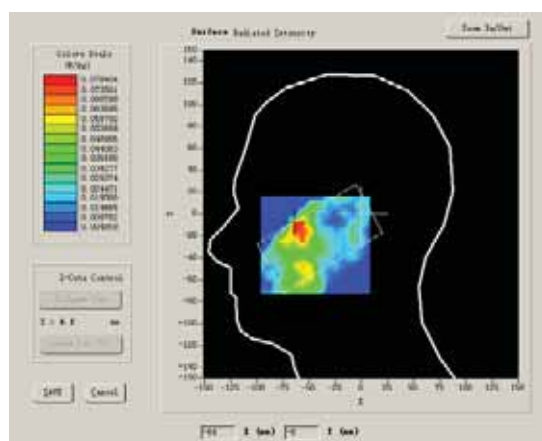
Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Cheek
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

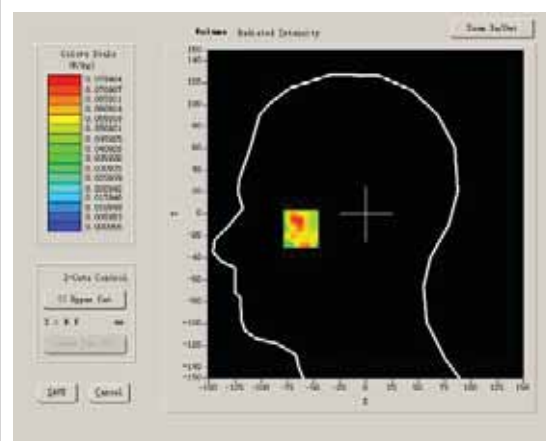
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.622857
Relative permittivity	15.490000
Conductivity (S/m)	1.964313
Power drift (%)	0.510000
Ambient Temperature:	22.3°C
Liquid Temperature:	21.5°C
ConvF:	39.563,33.614,37.677
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



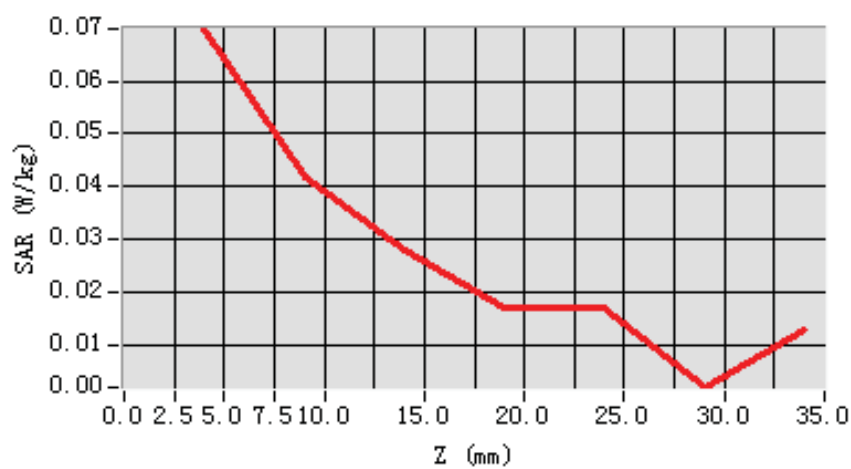
Maximum location: X=-62.00, Y=-11.00

SAR 10g (W/Kg)	0.037081
SAR 1g (W/Kg)	0.074511

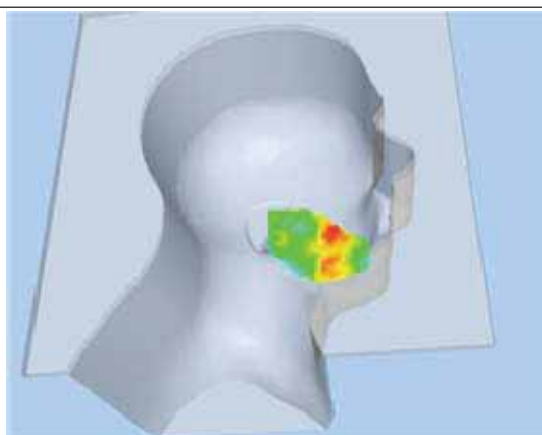
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0699	0.0417	0.0278	0.0171	0.0169	0.0019

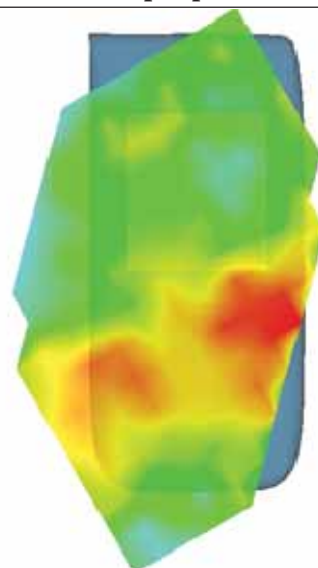
SAR, Z Axis Scan (X = -62, Y = -11)



3D scene shot



Hot spot position



MEASUREMENT 50

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 8 minutes 17 seconds

A. Experimental conditions.

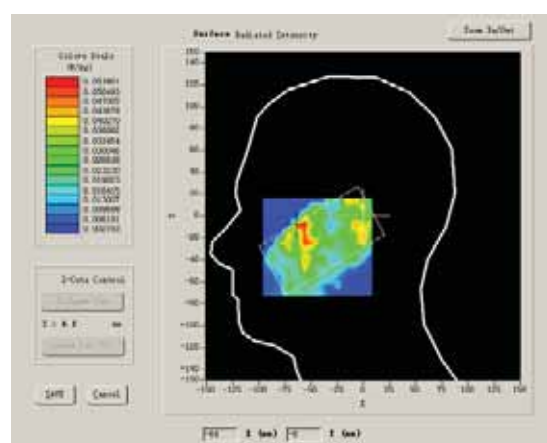
Phantom File	surf_sam_plan.txt
Phantom	Left head
Device Position	Tilt
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

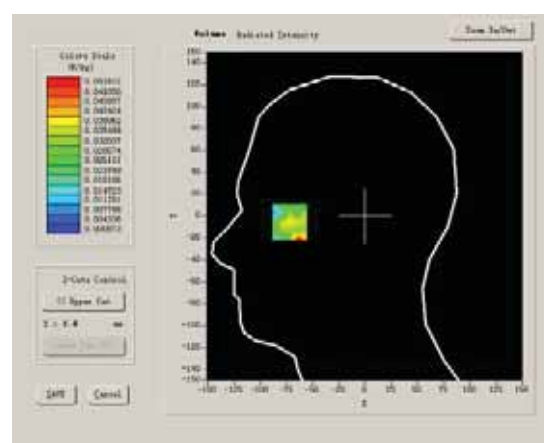
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	39.622857
Relative permittivity	15.490000
Conductivity (S/m)	1.964313
Power drift (%)	0.620000
Ambient Temperature:	22.3°C
Liquid Temperature:	21.5°C
ConvF:	39.563,33.614,37.677
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



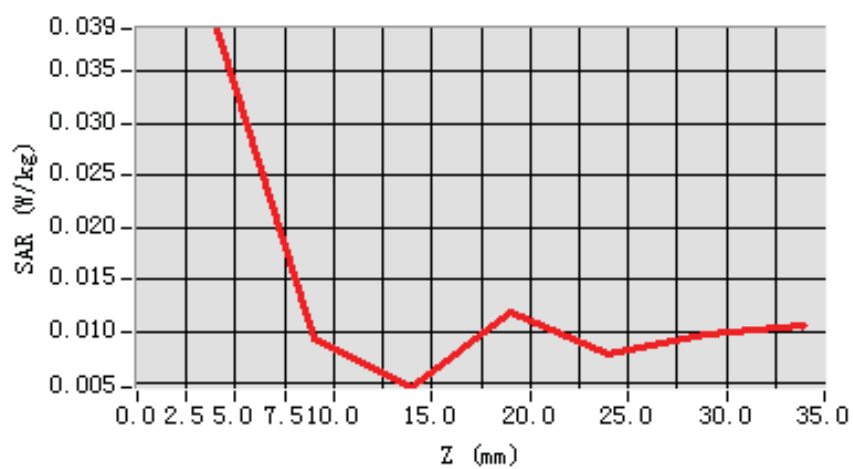
Maximum location: X=-72.00, Y=-2.00

SAR 10g (W/Kg)	0.022408
SAR 1g (W/Kg)	0.035254

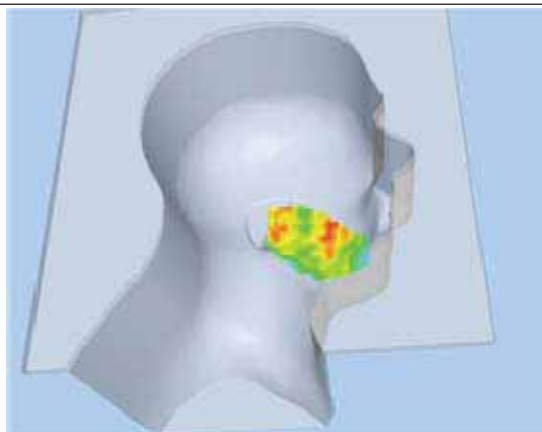
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0391	0.0092	0.0046	0.0118	0.0077	0.0097

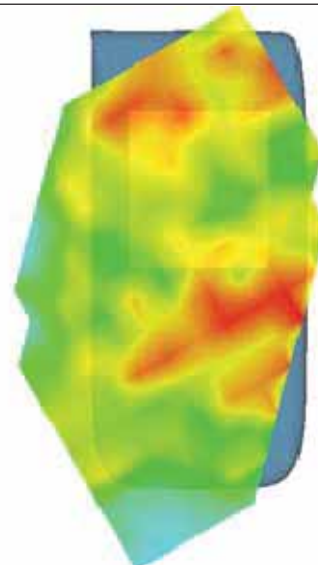
SAR, Z Axis Scan (X = -72, Y = -2)



3D sceen shot



Hot spot position



MEASUREMENT 51

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

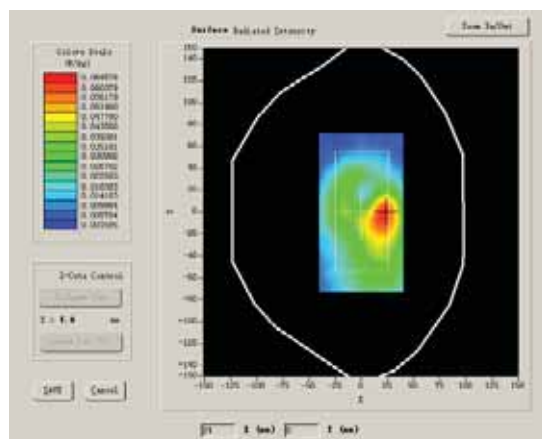
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

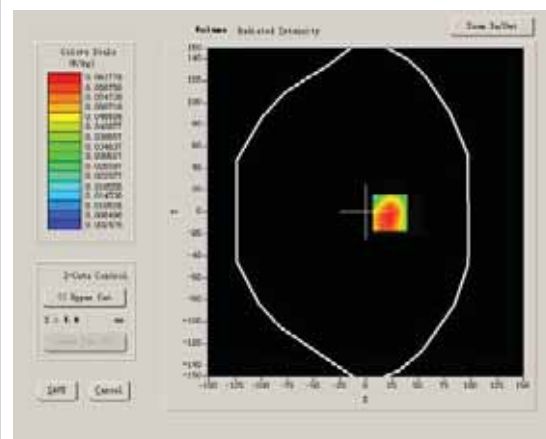
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	52.548876
Relative permittivity	15.500000
Conductivity (S/m)	1.974257
Power drift (%)	-0.910000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.772,33.946,37.835
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



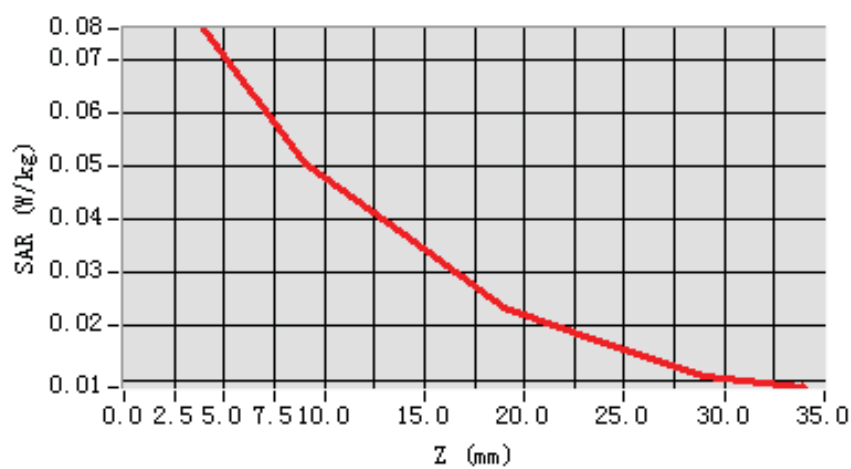
Maximum location: X=23.00, Y=-1.00

SAR 10g (W/Kg)	0.047776
SAR 1g (W/Kg)	0.072829

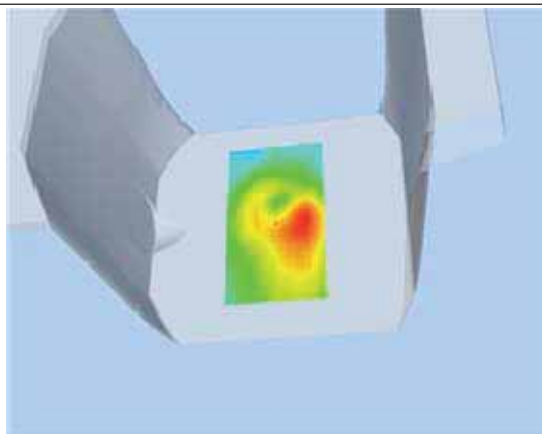
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0757	0.0505	0.0373	0.0233	0.0170	0.0108

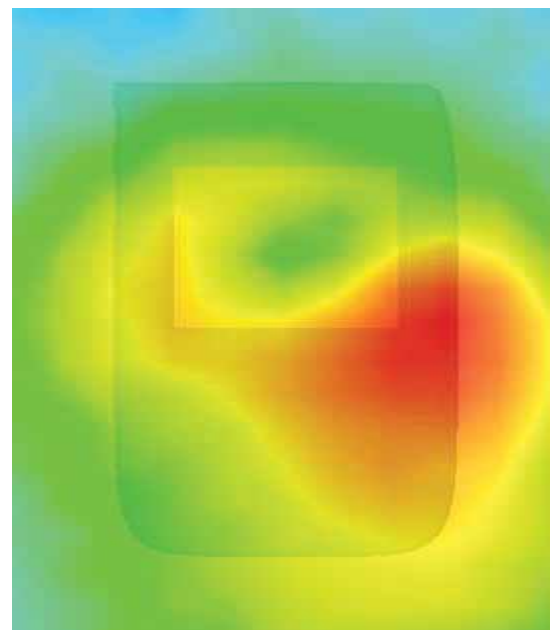
SAR, Z Axis Scan (X = 23, Y = -1)



3D sceen shot



Hot spot position



MEASUREMENT 52

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

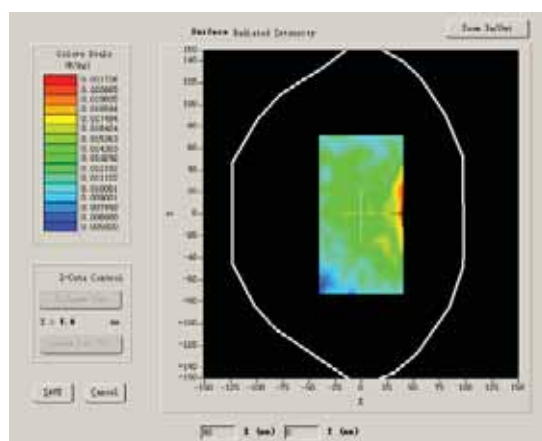
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

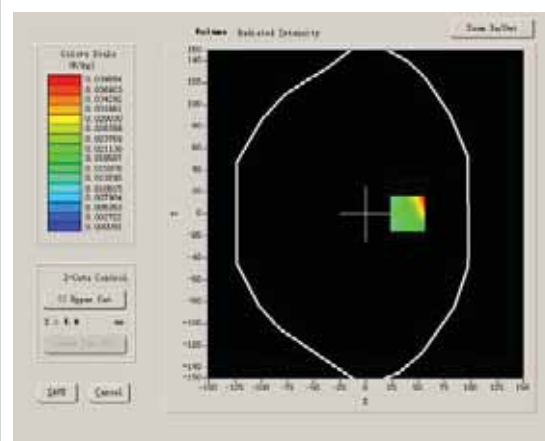
Higher Band SAR (Channel 6)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	52.548876
Relative permittivity	15.500000
Conductivity (S/m)	1.974257
Power drift (%)	-0.710000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.772,33.946,37.835
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



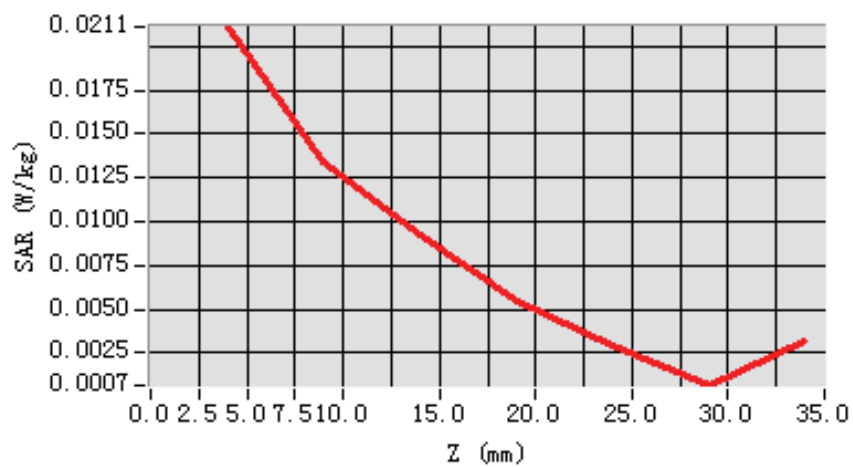
Maximum location: X=40.00, Y=0.00

SAR 10g (W/Kg)	0.017033
SAR 1g (W/Kg)	0.026071

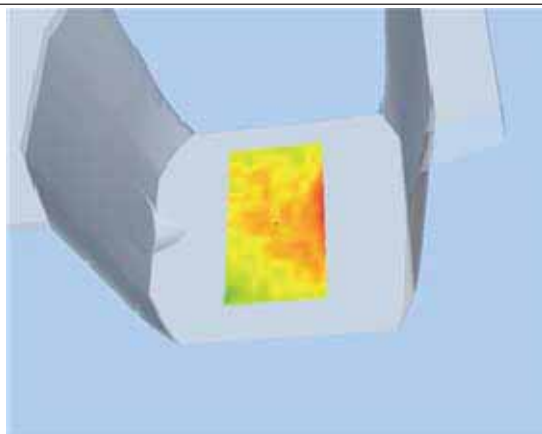
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0211	0.0134	0.0092	0.0054	0.0030	0.0007

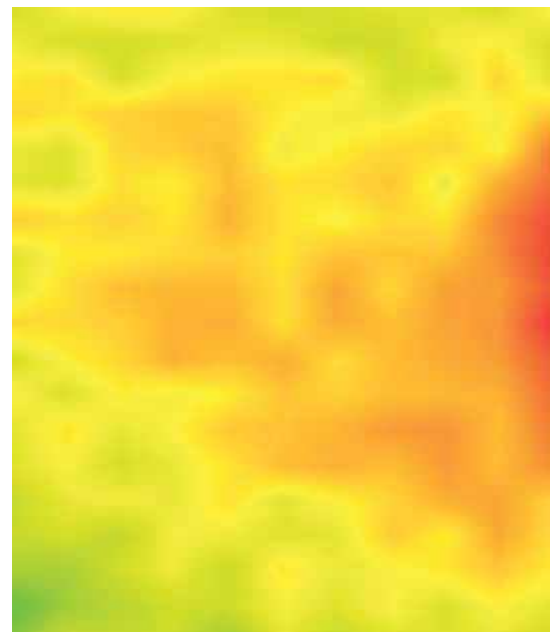
SAR, Z Axis Scan (X = 40, Y = 0)



3D scene shot



Hot spot position



MEASUREMENT 53

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

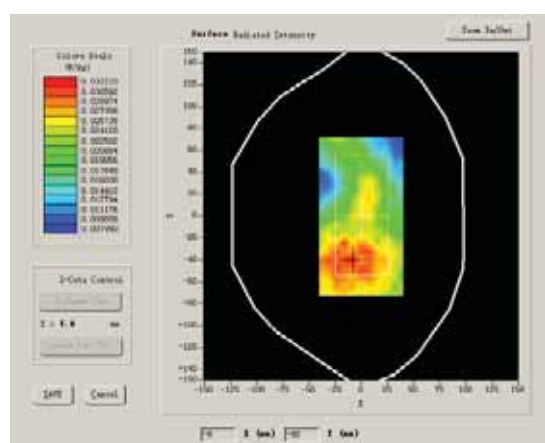
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

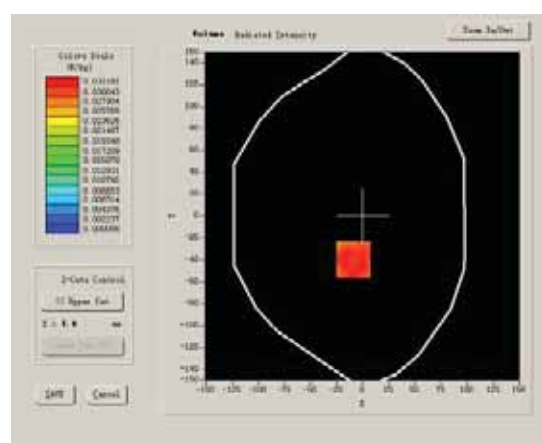
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	52.548876
Relative permittivity	15.500000
Conductivity (S/m)	1.974257
Power drift (%)	-1.360000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.772,33.946,37.835
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



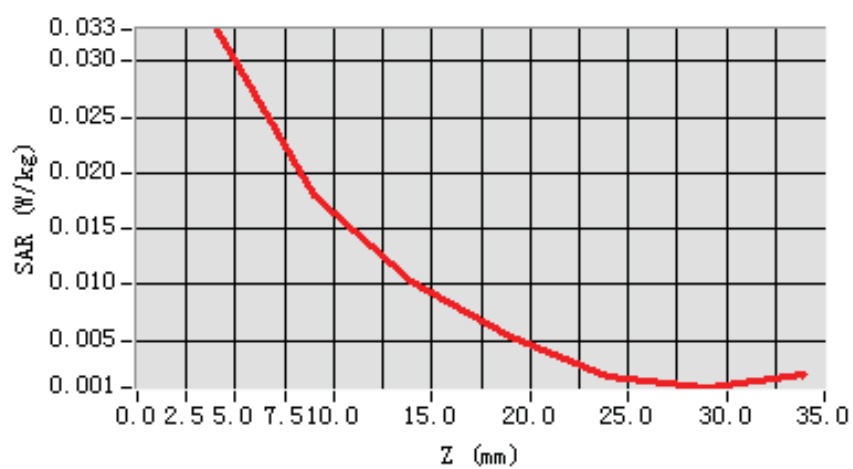
Maximum location: X=-9.00, Y=-40.00

SAR 10g (W/Kg)	0.019593
SAR 1g (W/Kg)	0.034585

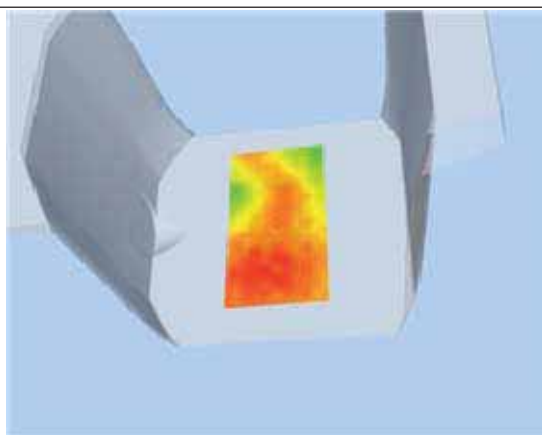
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0328	0.0181	0.0103	0.0053	0.0018	0.0008

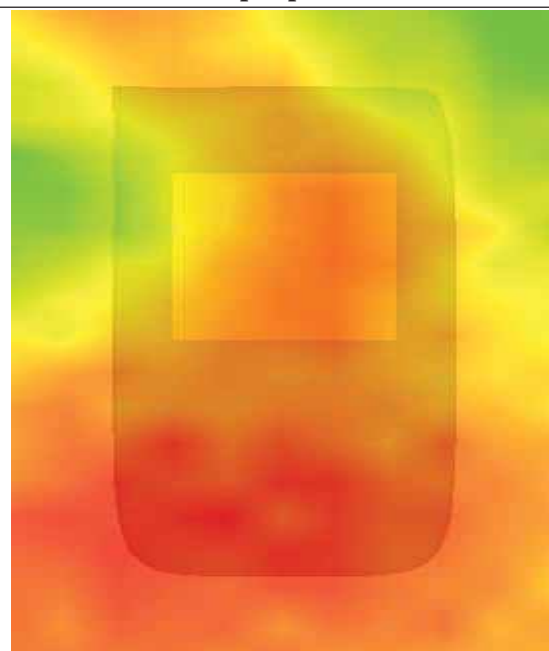
SAR, Z Axis Scan (X = -9, Y = -40)



3D sceen shot



Hot spot position



MEASUREMENT 54

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/6/2012

Measurement duration: 9 minutes 10 seconds

A. Experimental conditions.

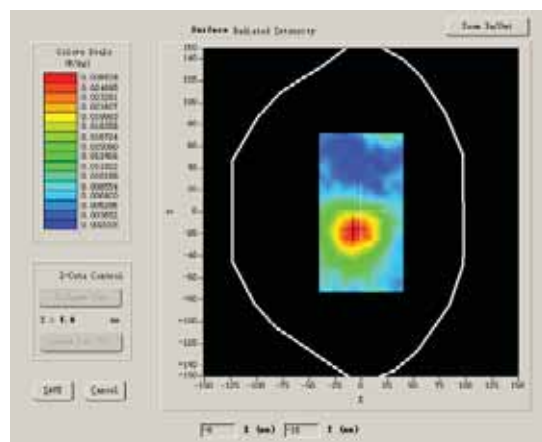
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	Body
Band	802.11B
Channels	High
Signal	DSSS

B. SAR Measurement Results

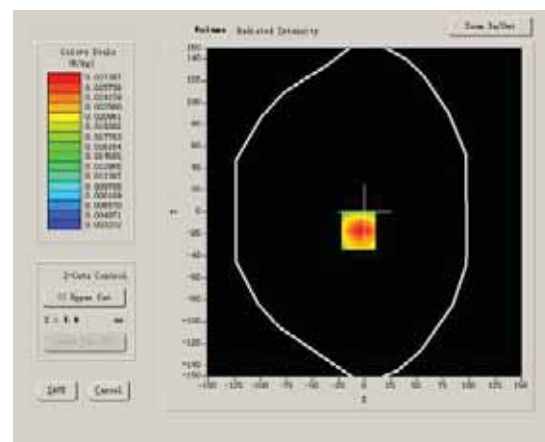
Higher Band SAR (Channel 11)

Frequency (MHz)	2462.000000
Relative permittivity (real part)	52.548876
Relative permittivity	15.500000
Conductivity (S/m)	1.974257
Power drift (%)	-1.090000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.772,33.946,37.835
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



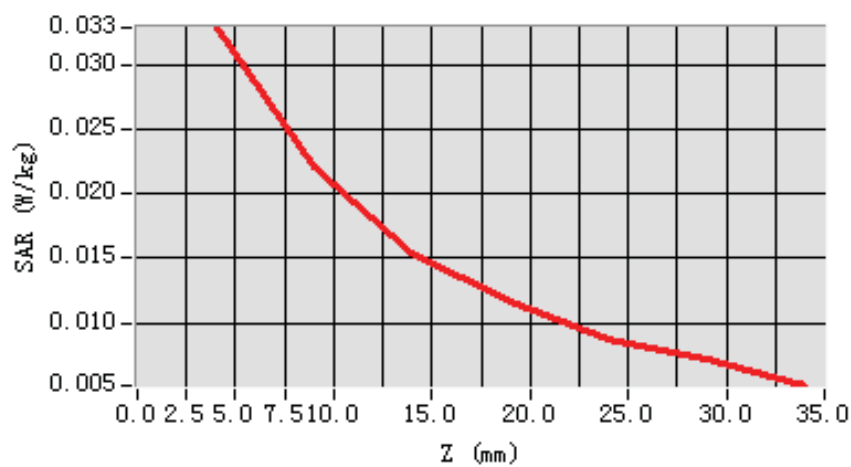
Maximum location: X=-6.00, Y=-17.00

SAR 10g (W/Kg)	0.020568
SAR 1g (W/Kg)	0.031370

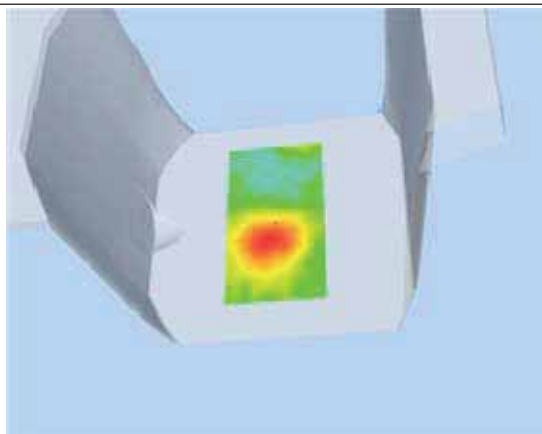
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0328	0.0221	0.0155	0.0117	0.0087	0.0073

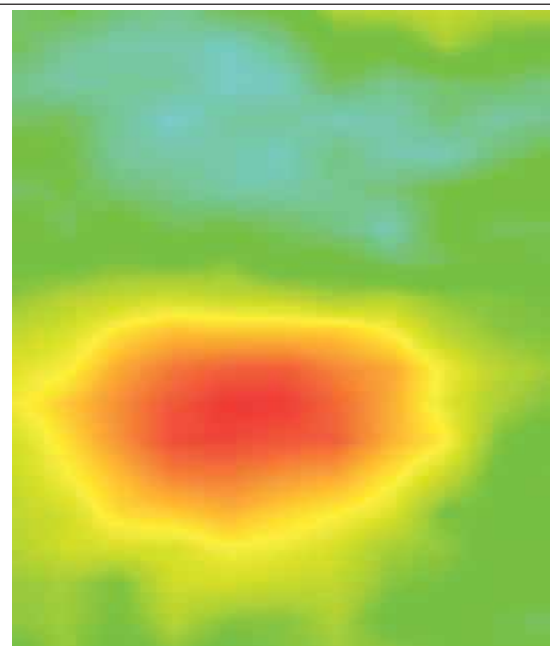
SAR, Z Axis Scan (X = -6, Y = -17)



3D sceen shot



Hot spot position



System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/5/2012

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

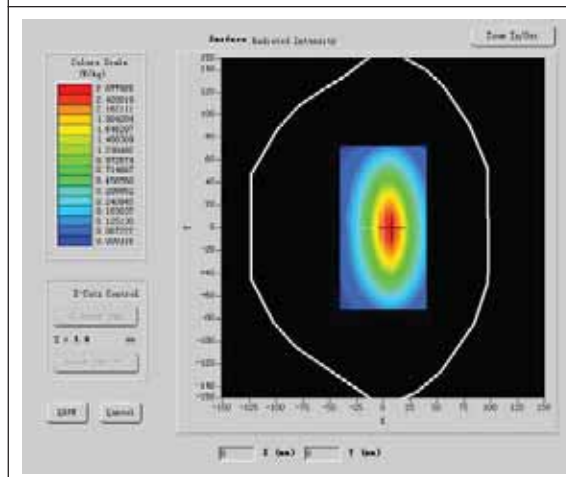
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

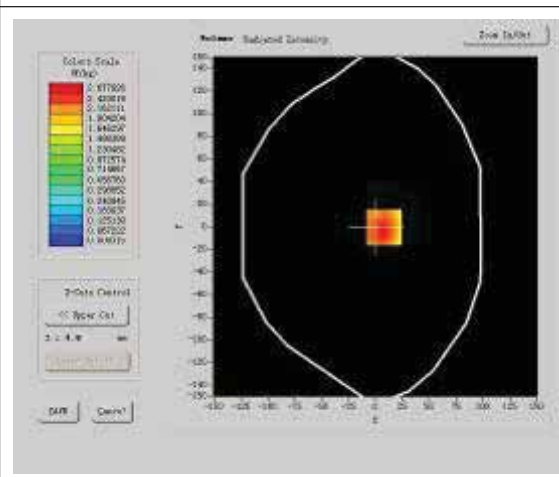
Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.675999
Relative permittivity	15.070000
Conductivity (S/m)	0.894409
Power drift (%)	-0.050000
Ambient Temperature:	22.4°C
Liquid Temperature:	21.5°C
ConvF:	28.479,25.214,27.196
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



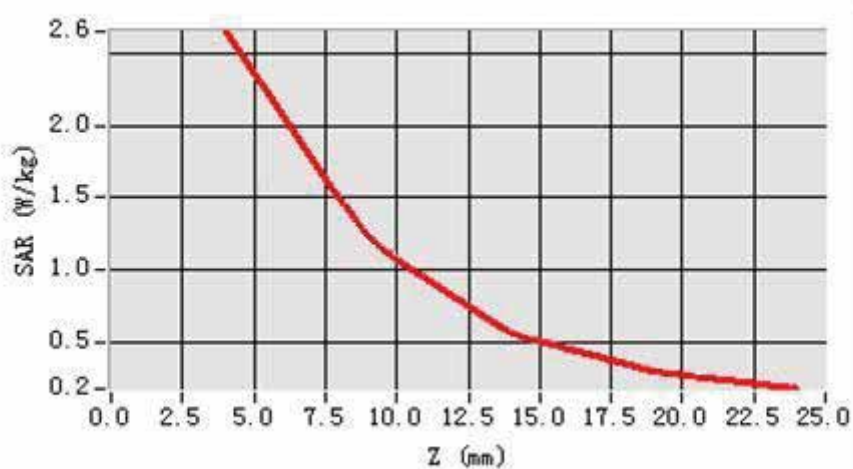
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.685732
SAR 1g (W/Kg)	2.478462

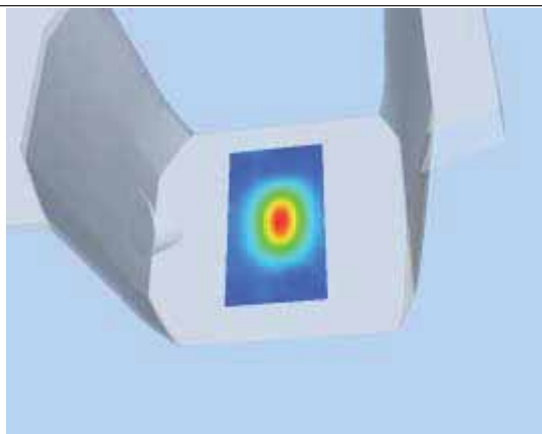
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	2.4754	1.2251	0.5257	0.2114

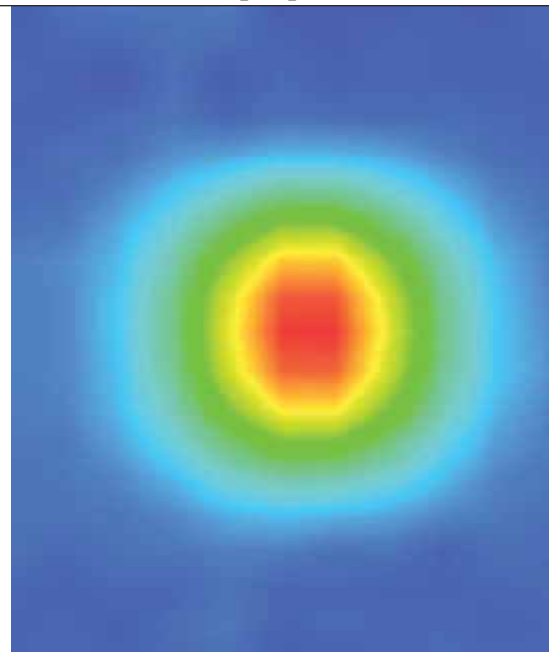
SAR, Z Axis Scan (X = 5, Y = 1)



3D scene shot



Hot spot position



System Performance Check Data(Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 14/5/2012

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

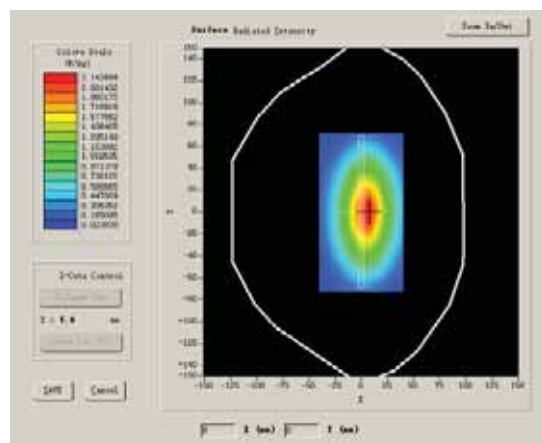
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

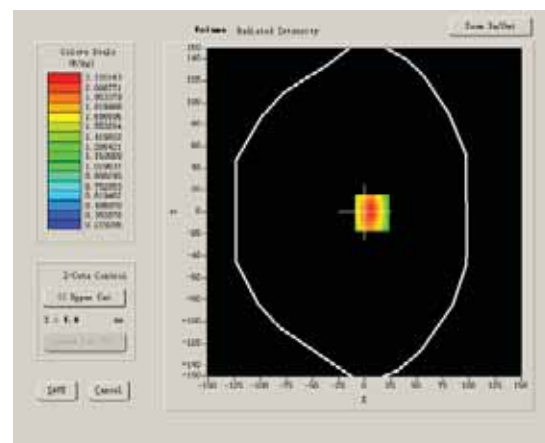
Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	0.9809033
Power drift (%)	-0.170000
Ambient Temperature:	22.4°C
Liquid Temperature:	21.5°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



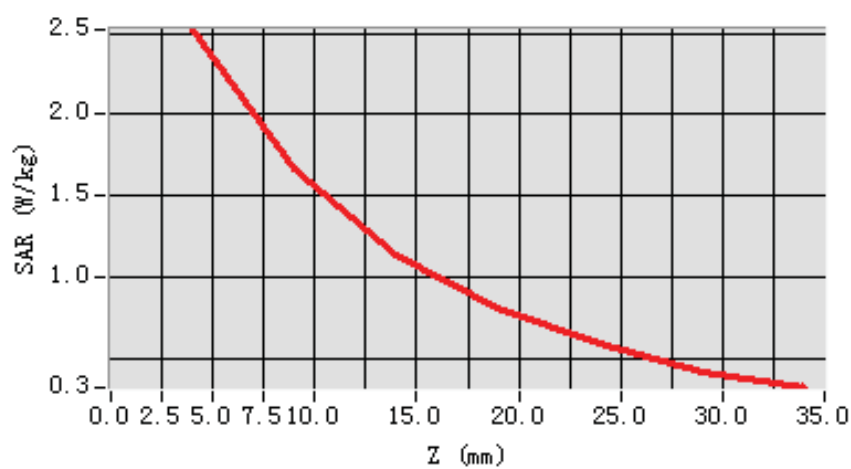
Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.539476
SAR 1g (W/Kg)	2.385979

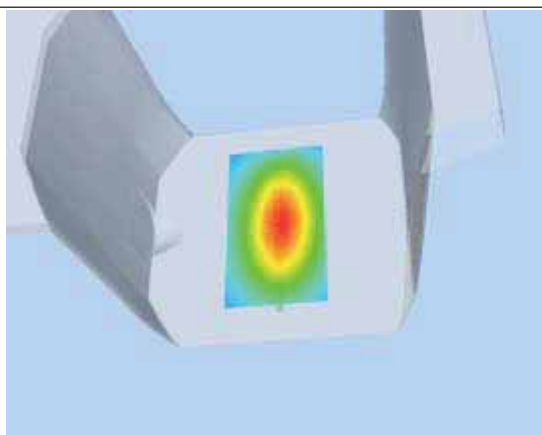
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5209	1.6629	1.1437	0.8075	0.5889	0.4143

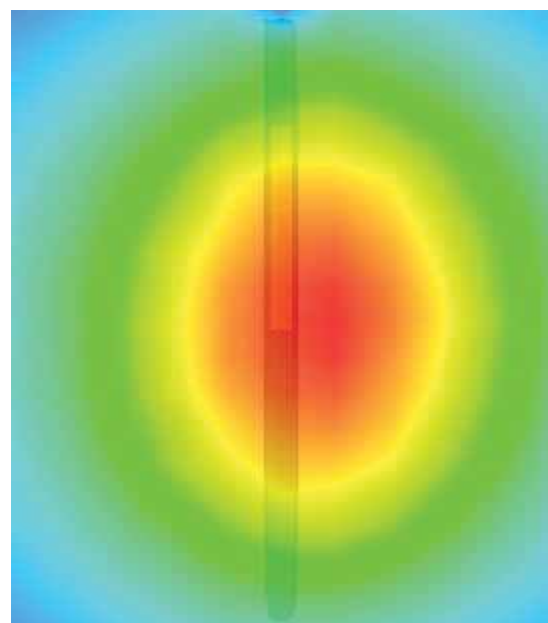
SAR, Z Axis Scan (X = 7, Y = -1)



3D scene shot



Hot spot position



System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/5/2012

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

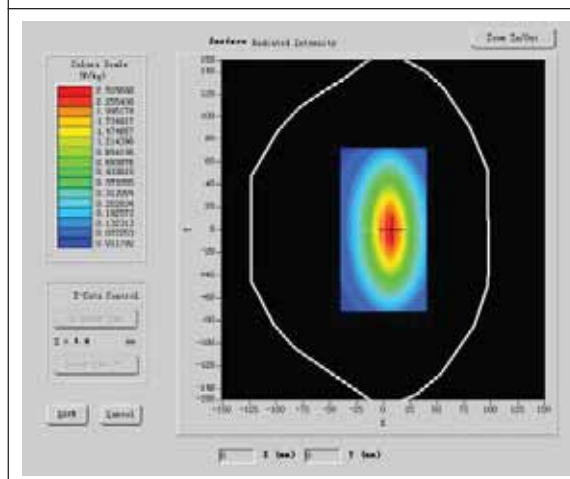
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1900MHz
Channels	
Signal	CW

B. SAR Measurement Results

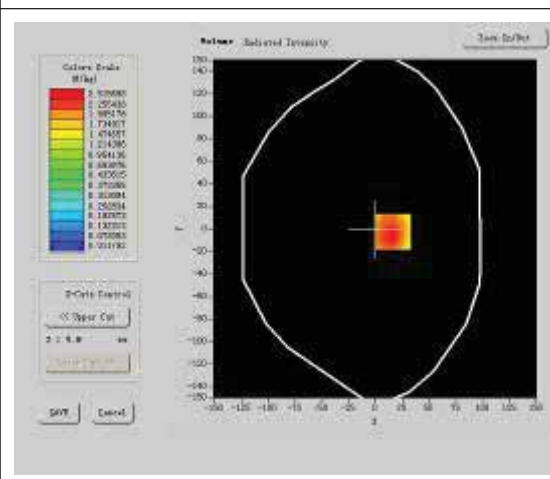
Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	38.509998
Relative permittivity	15.070000
Conductivity (S/m)	1.436111
Power drift (%)	-0.140000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.136,34.843,38.721
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



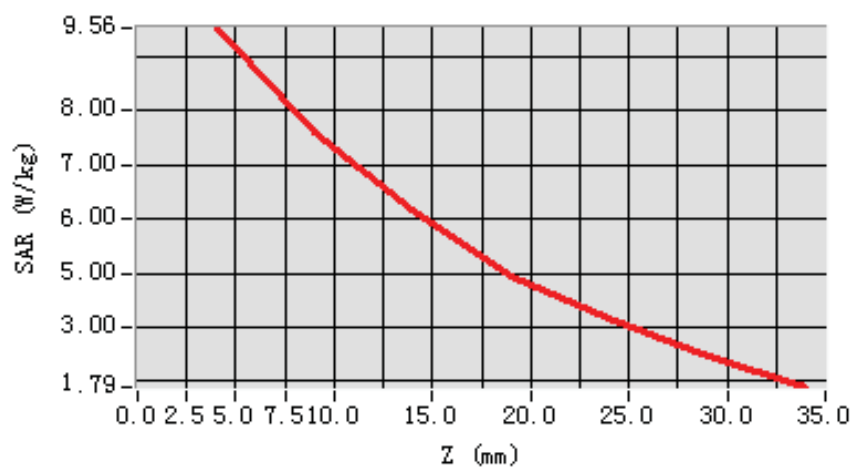
Maximum location: X=-1.00, Y=-50.00

SAR 10g (W/Kg)	4.884149
SAR 1g (W/Kg)	9.454628

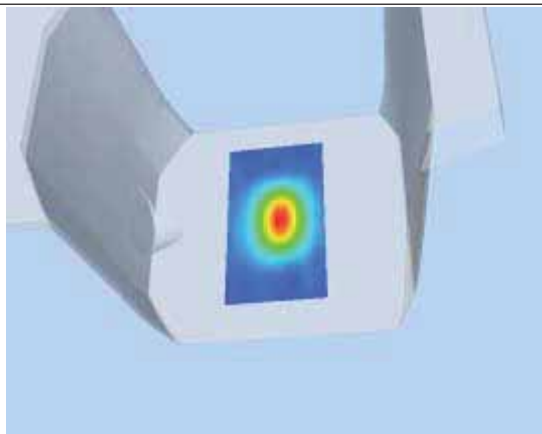
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	9.4148	7.3955	6.3646	4.3955

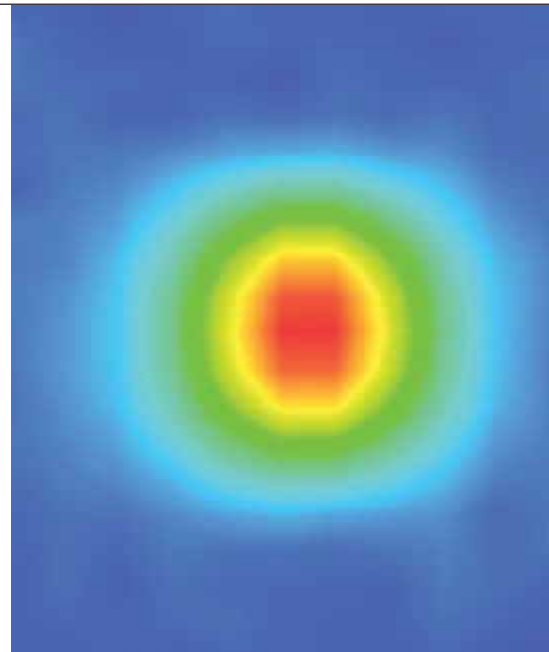
SAR, Z Axis Scan (X = -1, Y = -50)



3D scene shot



Hot spot position



System Performance Check Data(Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/5/2012

Measurement duration: 13 minutes 26 seconds

A. Experimental conditions.

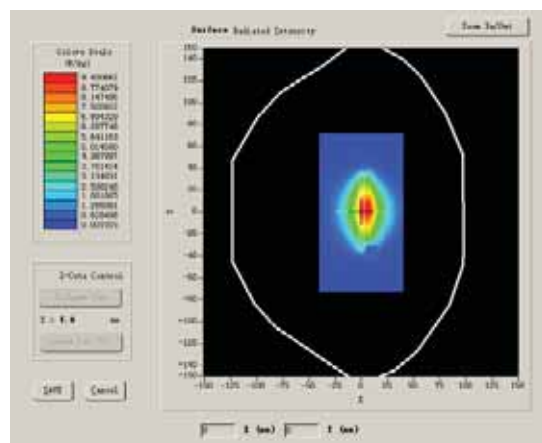
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	1900MHz
Channels	
Signal	CW

B. SAR Measurement Results

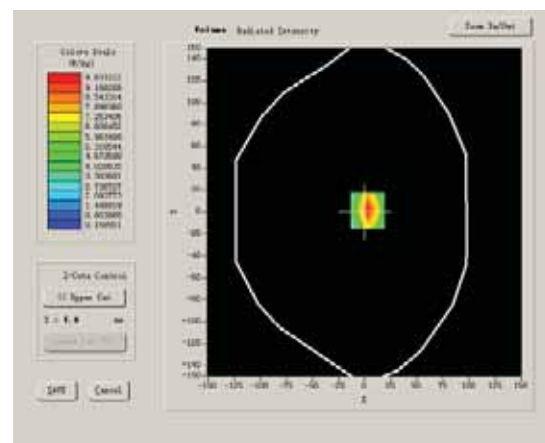
Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	52.548876
Relative permittivity	14.070000
Conductivity (S/m)	1.553978
Power drift (%)	-0.030000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.6°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



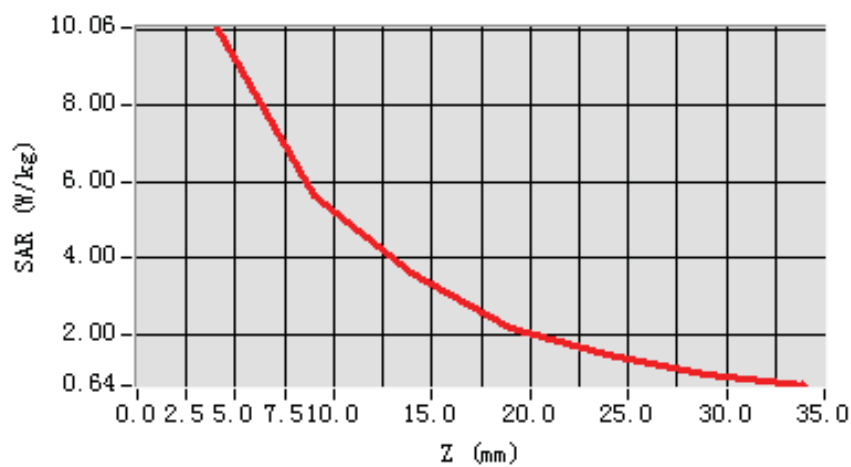
Maximum location: X=3.00, Y=1.00

SAR 10g (W/Kg)	4.981611
SAR 1g (W/Kg)	9.740177

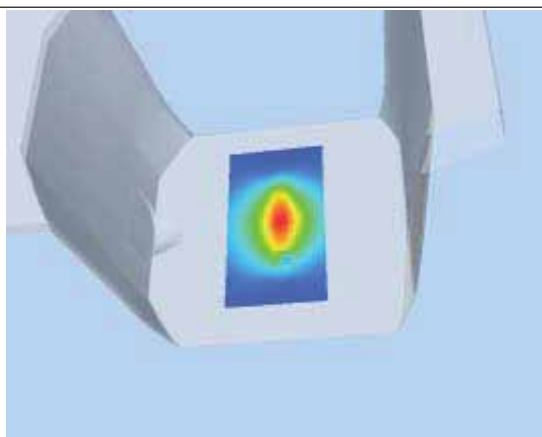
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.0621	5.6445	3.6226	2.1642	1.4521	0.9078

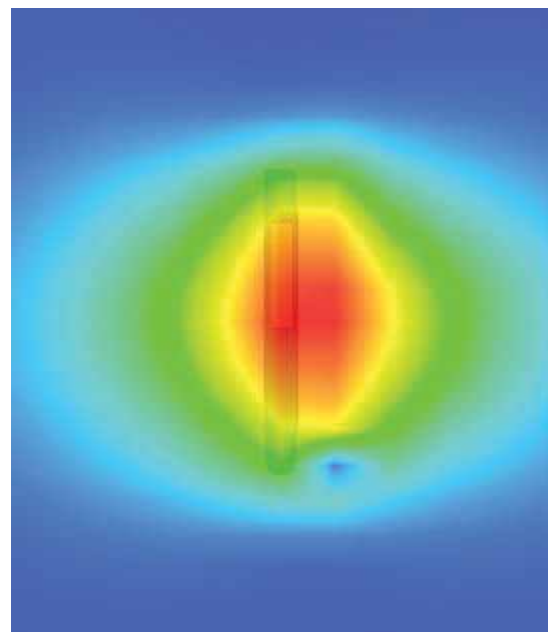
SAR, Z Axis Scan (X = 3, Y = 1)



3D sceen shot



Hot spot position



System Performance Check Data(Head)

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/5/2012

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

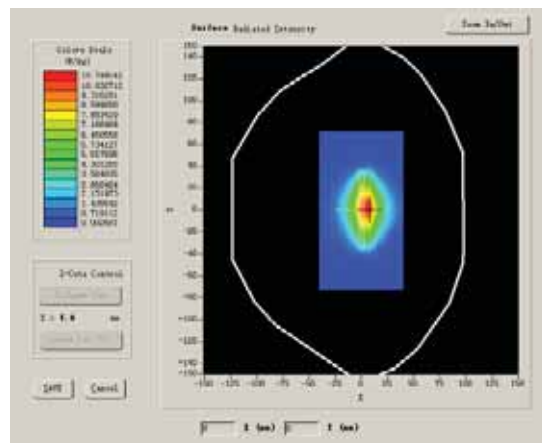
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	2450MHz
Channels	
Signal	CW

B. SAR Measurement Results

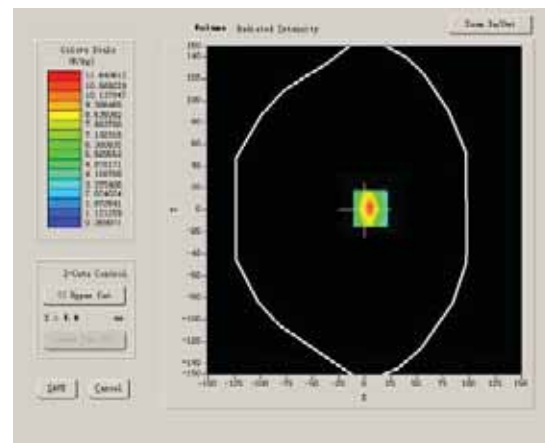
Band SAR

Frequency (MHz)	2450.000000
Relative permittivity (real part)	39.622857
Relative permittivity	12.991650
Conductivity (S/m)	1.964313
Power Drift (%)	0.560000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.563,33.614,37.677
Crest factor:	1:1

SURFACE SAR



VOLUME SAR

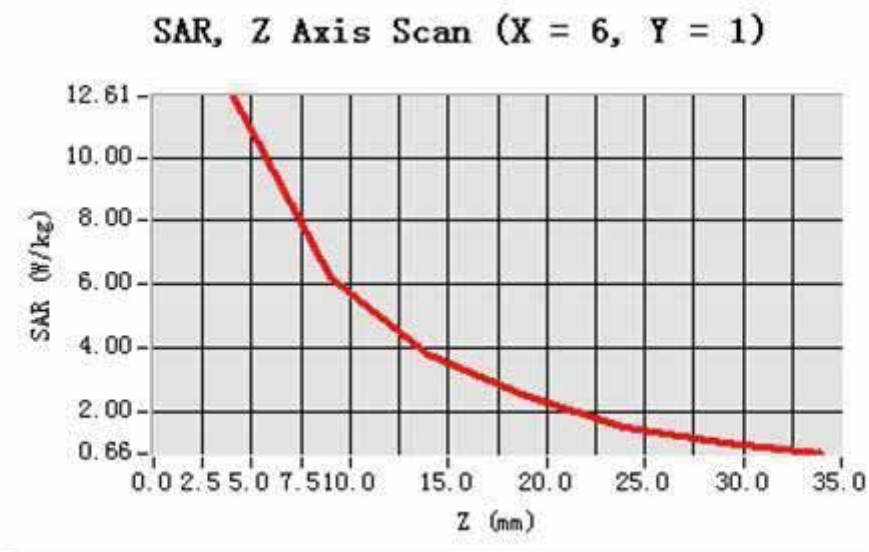


Maximum location: X=6.00, Y=1.00

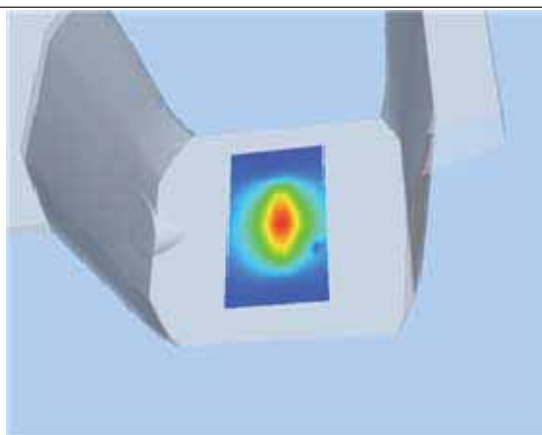
SAR 10g (W/Kg)	5.938478
SAR 1g (W/Kg)	12.442675

Z Axis Scan

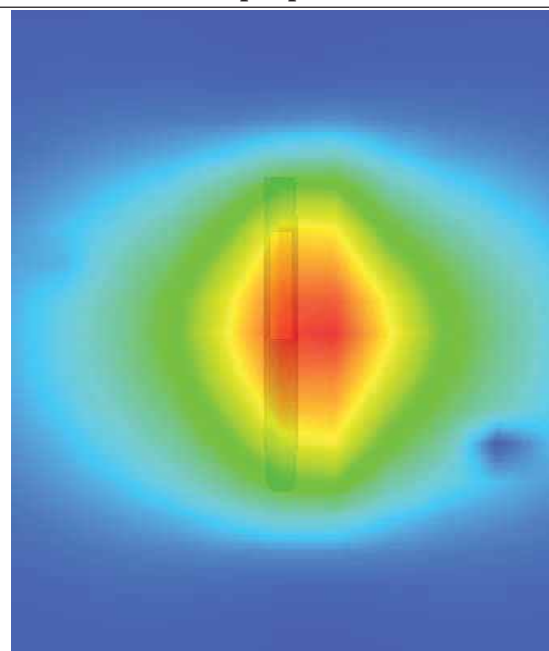
Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	12.7015	6.2096	3.8187	2.4504	1.5036	1.0219



3D sceen shot



Hot spot position



System Performance Check Data(Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 15/5/2012

Measurement duration: 13 minutes 27 seconds

A. Experimental conditions.

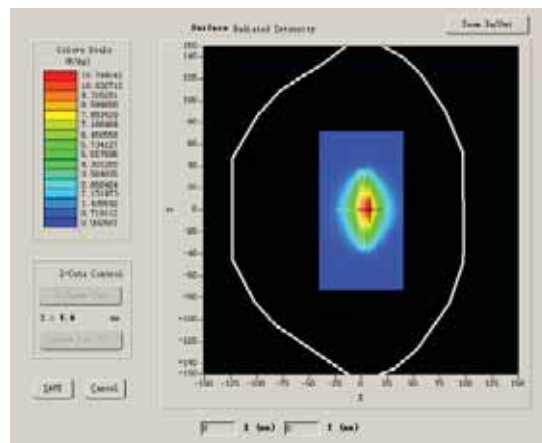
Phantom File	surf_sam_plan.txt
Phantom	Validation plane
Device Position	
Band	2450MHz
Channels	
Signal	CW

B. SAR Measurement Results

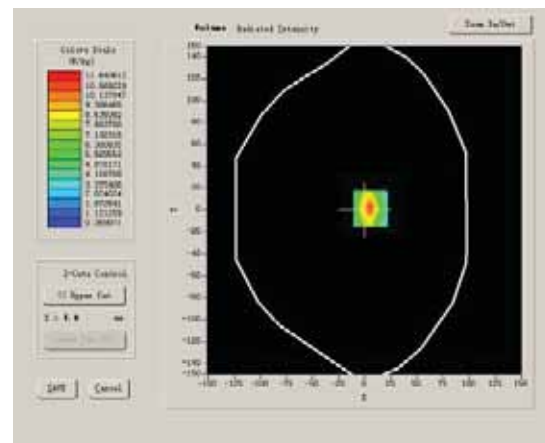
Band SAR

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.548876
Relative permittivity	12.991650
Conductivity (S/m)	1.974257
Power Drift (%)	1.080000
Ambient Temperature:	22.0°C
Liquid Temperature:	21.8°C
ConvF:	39.772,33.946,37.835
Crest factor:	1:1

SURFACE SAR



VOLUME SAR



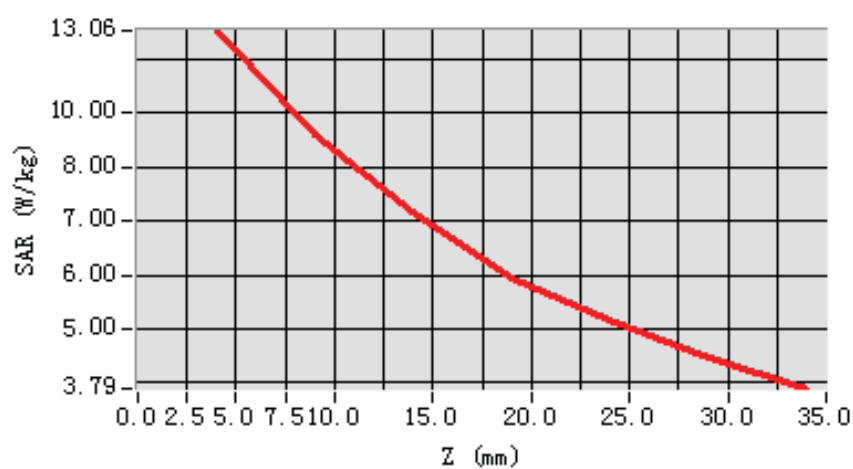
Maximum location: X=-1.00, Y=-50.00

SAR 10g (W/Kg)	6.256773
SAR 1g (W/Kg)	12.789110

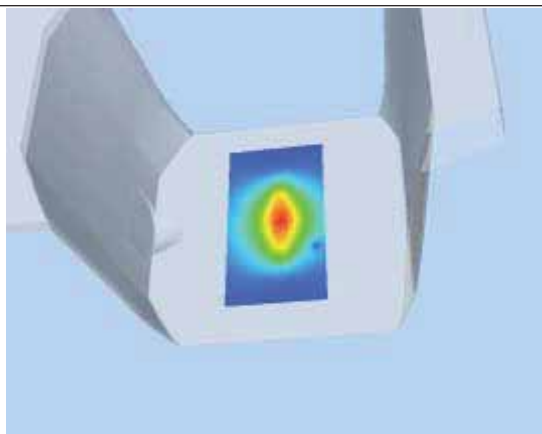
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	13.1279	6.8312	3.5991	1.3473

SAR, Z Axis Scan (X = -1, Y = -50)



3D scene shot



Hot spot position

