



# SAR TEST REPORT

Issued to

**ZTE Corporation**

For

**WCDMA Digital Mobile Phone**

Model Name : NX501  
 Trade Name : ZTE  
 Brand Name : ZTE  
 FCC ID : SRQ-NX501  
 Standard : FCC Oet65 Supplement C Jun.2001  
 47CFR 2.1093  
 ANSI C95.1-1999  
 IEEE 1528-2003  
 MAX SAR : Head: 0.225W/kg  
 Body: 1.095W/kg  
 Test date : 2013-8-19 to 2013-8-21  
 Issue date : 2013-8-29

**Shenzhen MORLAB Communication Technology Co., Ltd.**



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Date 2013.8.29

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Change History		
Issue	Date	Reason for change
1.0	Aug. 29, 2013	First edition

## 1. Testing Laboratory

### 1.1. Identification of the Responsible Testing Location

Name: Shenzhen Morlab Communications Technology Co., Ltd.  
Morlab Laboratory

Address: FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China 518101

### 1.2. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

### 1.3. 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	Aglient (8960, SN:10752)	2012-9-26	1year
3	Network Analyzer	Agilent(E5071B ,SN:MY42404762 )	2012-9-26	1year
4	Voltmeter	Keithley (2000, SN:1000572)	2012-9-24	1year
5	Signal Generator	Rohde&Schwarz (SMP_02 )	2012-9-24	1year
6	Power Amplifier	PRANA (Ap32 SV125AZ)	2012-9-24	1year
7	Power Meter	Agilent (E4416A, SN:MY45102093)	2013-5-07	1year
8	Power Sensor	Agilent (N8482A, SN:MY41091706)	2013-5-07	1year
9	Directional coupler	Giga-tronics(SN:1829112)	2012-9-24	1year
10	Probe	Satimo (SN:SN 37/08 EP80)	2012-10-04	1year
11	Dielectric Probe Kit	Agilent (85033E )	2012-9-24	1year
12	Phantom	Satimo (SN:SN_36_08_SAM62)	2012-9-24	1year
13	Liquid	Satimo(Last Calibration: 2013-7-23 to 2013-7-25)	N/A	N/A
14	Dipole 835MHz	Satimo (SN 36/08 DIPC 99)	2012-10-05	1year
15	Dipole 1900MHz	Satimo (SN 36/08 DIPF 102)	2012-10-05	1year
16	Dipole 2450MHz	Satimo (SN 36/08 DIPJ 103)	2012-10-05	1year

## 2. Technical Information

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

### 2.1. Identification of Applicant

Company Name: ZTE Corporation  
Address: ZTE Plaza, Keji Road South, Shenzhen, China

### 2.2. Identification of Manufacturer

Company Name: ZTE Corporation  
Address: ZTE Plaza, Keji Road South, Shenzhen, China

### 2.3. Equipment Under Test (EUT)

Model Name: NX501  
Trade Name: ZTE  
Brand Name: ZTE  
Hardware Version: NX501\_V1DMB\_A  
Software Version: NX501\_Z35\_EN\_XSRPL1DD00E102  
Frequency Bands: GSM 850MHz / PCS 1900MHz;  
WCDMA 850MHz/ 1900MHz; (Band II, V)  
Bluetooth; Wifi802.11B/G/N (2.4GHz)  
Modulation Mode: GSM/GPRS: GMSK; EDGE:8PSK;  
WCDMA/HSDPA/HSUPA: QPSK;  
WIFI802.11B: DSSS; WIFI802.11G: OFDM  
WIFI 802.11N: OFDM; BT: GFSK/ $\pi$ /4-DQPSK /8-DPSK  
Multislot Class: GPRS:Class 12; EDGE:Class 12  
GPRS Class: Class B  
DTM: Not support  
Antenna type: Fixed Internal Antenna  
Development Stage: Identical prototype  
Battery Model: N/A  
Battery specification: N/A  
3GPP Version: Release 7  
Hotspot function: Support

#### 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#	NX501_V1DMB_A	NX501_Z35_EN_XSRPL1DD00E102

### 2.4. Applied Reference Documents

Leading reference documents for testing:

No.	Identity	Document Title
1	<b>47 CFR§2.1093</b>	Radiofrequency Radiation Exposure Evaluation: Portable Devices
2	<b>FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01)</b>	Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields
3	<b>ANSI C95.1-1999</b>	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz
4	<b>IEEE 1528-2003</b>	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.
5	<b>KDB 447498 D1</b>	General RF Exposure Guidance v05
6	<b>KDB 648474 D1</b>	SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas
7	<b>KDB 248227 D1</b>	SAR Measurement Procedures for 802.11 a/b/g Transmitters
8	<b>KDB 941225 D1</b>	SAR Measurement Procedures for 3G Devices
9	<b>KDB 941225 D6</b>	Hot Spot SAR v01
10	<b>KDB 865664 D1</b>	SAR Measurement 100 MHz to 6 GHz v01
11	<b>KDB 865664 D2</b>	SAR Reporting v01

### 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/WCDMA 1900MHz; 802.11B(2.4GHz);
Operation mode:	Call established
Power Level:	GSM 850 MHz Maximum output power(level 5) PCS 1900 MHz Maximum output power(level 0) WCDMA 850MHz Maximum output power(All up bits) WCDMA 1900MHz Maximum output power(All up bits) 802.11B Maximum output power(2.4GHz)

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 1900, or to 4175, 4175 and 4233 respectively in the case of WCDMA 850MHz, or to 1, 6, 11 respectively in the case of 802.11B (2.4GHz). The EUT is commanded to operate at maximum transmitting power.

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

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

### 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 Middle 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 ( $\rho$ ). The equation description is as below:

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

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

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

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

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

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

, where  $\sigma$  is the conductivity of the tissue,  $\rho$  is the mass density of the tissue and E is the rms electrical field strength.

However for evaluating SAR of Middle 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

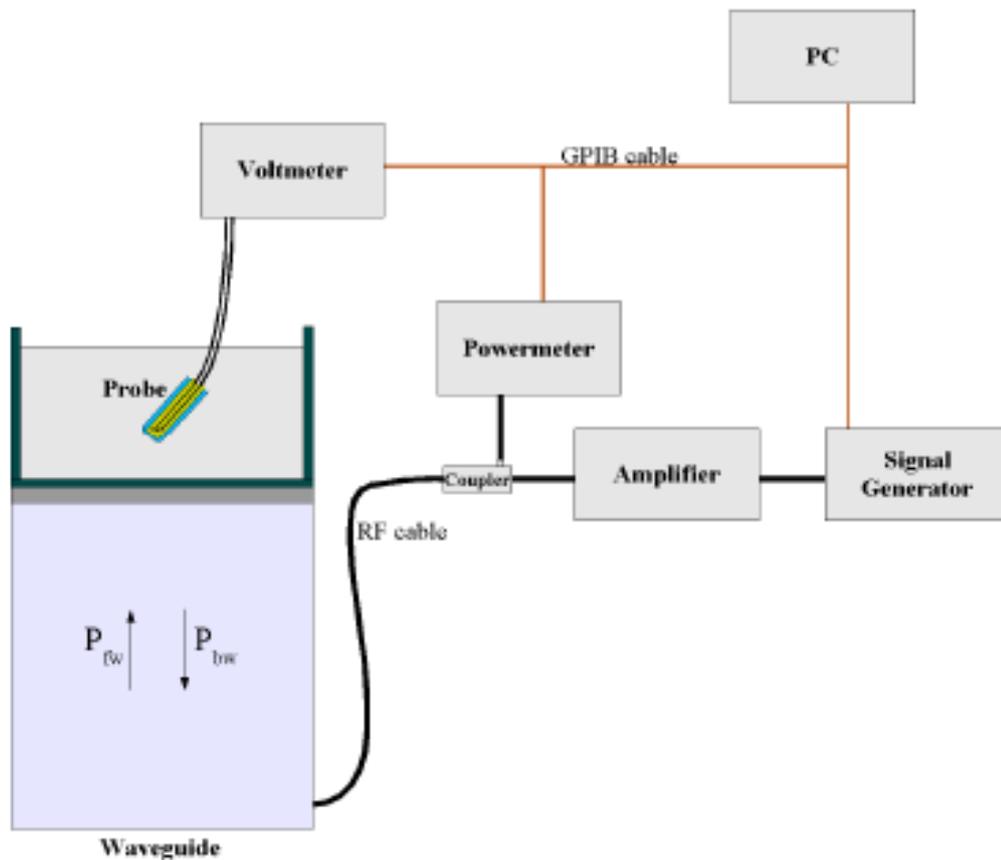
For the measurements the Specific Dosimetric E-Field Probe SN 37/08 EP80 with Following specifications is used

- 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 suFront normal line: less than 30°

Probe calibration is realized, in compliance with CENELEC EN 62209 and IEEE 1528 std, with CALISAR, Antenna 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

$\delta$  = Skin depth

Keithley configuration:

Rate = Medium; Filter =ON; RDGS=10; FILTER TYPE =MOVING AVERAGE; RANGE AUTO

After each calibration, a SAR measurement is performed on a validation dipole and compared with a NPL calibrated probe, to verify it.

The calibration factors, CF(N), for the 3 sensors corresponding to dipole 1, dipole 2 and dipole 3 are:

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

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

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

where DCP is the diode compression point in mV.

### 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/cm<sup>2</sup>) 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/cm<sup>2</sup>.

#### 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:

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

$\Delta t$  = exposure time (30 seconds),

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

$\Delta T$  = 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:

$\sigma$  = simulated tissue conductivity,

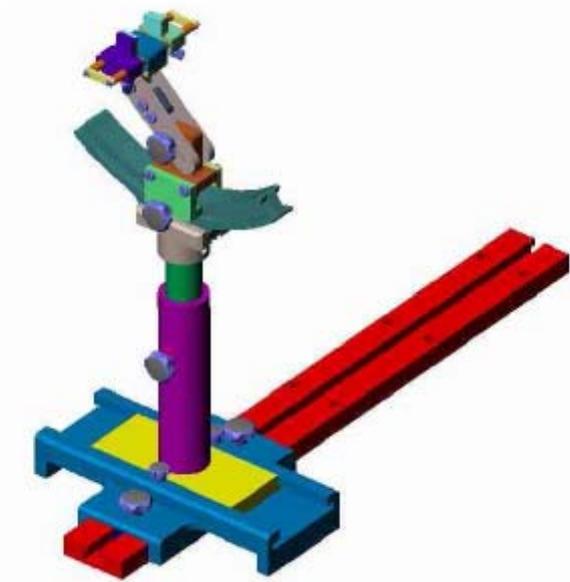
$\rho$  = Tissue density (1.25 g/cm<sup>3</sup> for brain tissue)

#### 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 better than 1°.



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005

## 5. Tissue Simulating Liquids

Simulant liquids used for testing at frequencies of 835MHz, 1900MHz and 2450MHz, 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 or from the flat phantom to the liquid top surface is 15cm.

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

Ingredients (% by weight )	Frequency Band 835MHz		Frequency Band 1900MHz		Frequency Band 2450MHz	
	Head	Body	Head	Body	Head	Body
Tissue Type						
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 X-100	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	1.97

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

Temperature: 22.0~23.8°C, humidity: 54~60%.						
Date	Freq.(MHz)	Liquid Parameters	Meas.	Target	Delta(%)	Limit±(%)
2013/8/19	Head 835	Relative Permittivity( $\epsilon_r$ ):	42.52	41.5	2.46	5
		Conductivity( $\sigma$ ):	0.92	0.90	2.22	5
	Body 835	Relative Permittivity( $\epsilon_r$ ):	55.14	55.2	-0.11	5
		Conductivity( $\sigma$ ):	0.95	0.97	-2.06	5
2013/8/20	Head 1900	Relative Permittivity( $\epsilon_r$ ):	41.27	40	3.18	5
		Conductivity( $\sigma$ ):	1.41	1.40	0.71	5
	Body 1900	Relative Permittivity( $\epsilon_r$ ):	53.21	53.3	-0.17	5
		Conductivity( $\sigma$ ):	1.51	1.52	-0.66	5
2013/8/21	Head 2450	Relative Permittivity( $\epsilon_r$ ):	40.15	39.2	2.42	5
		Conductivity( $\sigma$ ):	1.76	1.80	-2.22	5
	Body2450	Relative Permittivity( $\epsilon_r$ ):	52.49	52.7	-0.40	5
		Conductivity( $\sigma$ ):	1.90	1.95	-2.56	5

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

Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	$\infty$
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	$\infty$
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
<b>Measurement System</b>									
Probe calibration	E.2.1	4.76	N	1	1	1	4.76	4.76	$\infty$
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	0.7	0.7	1.01	1.01	$\infty$
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	0.7	0.7	1.62	1.62	$\infty$
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	$\infty$
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	$\infty$
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	$\infty$
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	$\infty$
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	$\infty$
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	$\infty$
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	$\infty$
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	$\infty$
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	$\infty$
Extrapolation, interpolation and integration Algorithms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	$\infty$
<b>Dipole</b>									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	$\infty$

Input power and SAR drift measurement	8,6.6.2	4.04	R	$\sqrt{3}$	1	1	2.33	2.33	$\infty$
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	$\infty$
Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	$\infty$
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	$\infty$
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

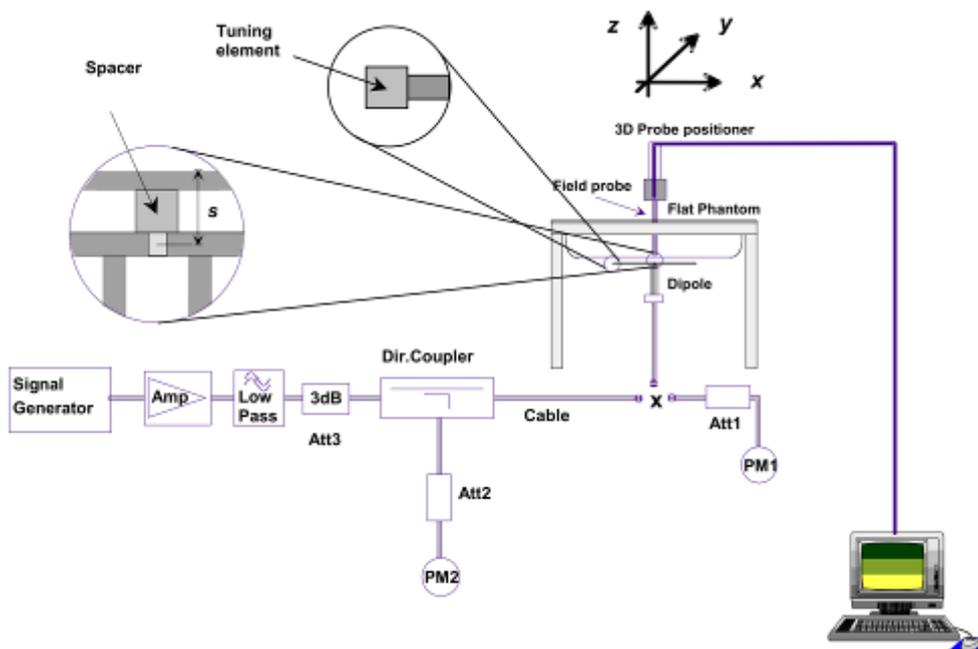
### 7.1. System Setup

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

Equipments:

name	Type and specification
Signal generator	Rohde&Schwarz (SMP_02 )
Directional coupler	Giga-tronics(SN:1829112)
Amplifier	PRANA (Ap32 SV125AZ)
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

After system check testing, the SAR result will be normalized to 1W forward input power and compared with the reference SAR value derived from validation dipole certificate report. The deviation of system check should be within 10 %.

<b>Frequency</b>	835MHz(H)	835MHz(B)	1900MHz(H)	1900MHz(B)
<b>Target value (1g)</b>	9.740 W/Kg	9.880 W/Kg	40.320 W/Kg	38.530 W/Kg
<b>Test value (1g 250 mW input)</b>	2.418 W/Kg (8.19)	2.459 W/Kg (8.19)	9.711 W/Kg (8.20)	9.674 W/Kg (8.20)
<b>Normalized value (1g)</b>	9.672 W/Kg	9.836W/Kg	38.844 W/Kg	38.696 W/Kg

<b>Frequency</b>	2450MHz(H)	2450MHz(B)
<b>Target value (1g)</b>	50.450 W/Kg	53.590 W/Kg
<b>Test value (1g 250 mW input)</b>	12.248 W/Kg (8.21)	12.851 W/Kg (8.21)
<b>Normalized value (1g)</b>	48.992 W/Kg	51.404 W/Kg

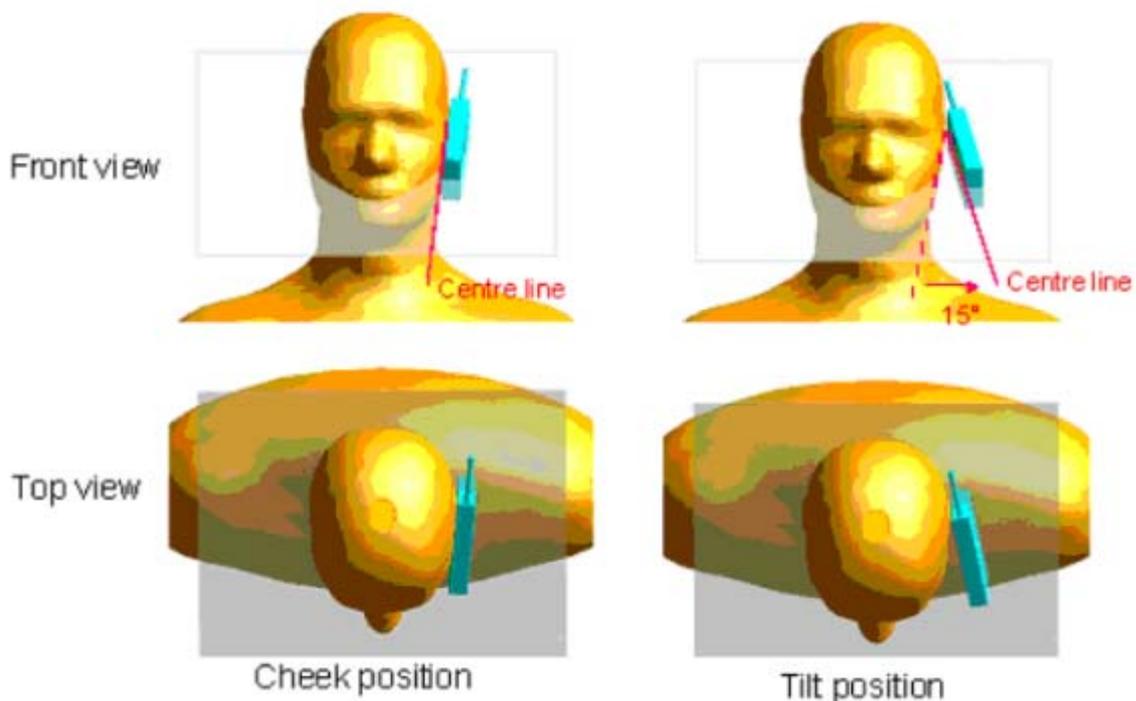
**Note:** System checks the specific test data please see page 140~151

## 8. Operational Conditions During Test

### 8.1. Information 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.

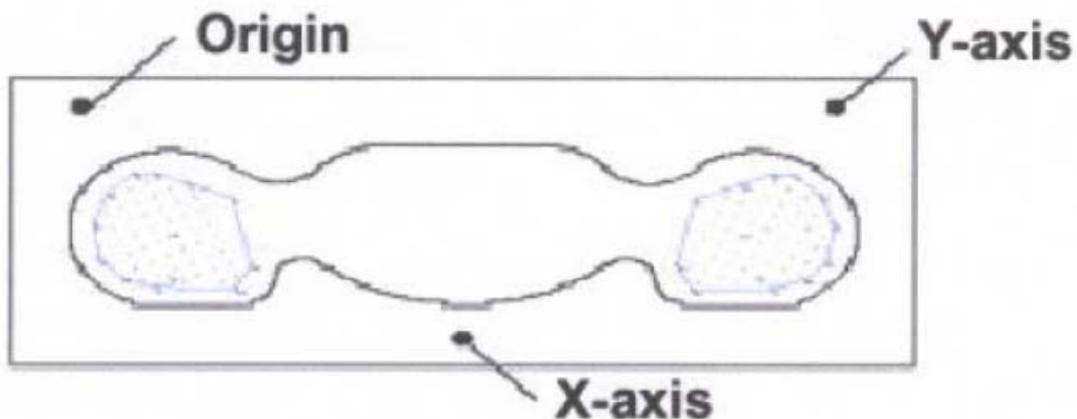
Remark: Please refer to Appendix B for the test setup photos.

## 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.

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 interFront
- 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 Middle. 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. Measurement Of Conducted Peak output power

### 1. WCDMA Conducted peak output power

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4175	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	24.67	24.75	24.79	23.57	23.59	23.48
HSDPA	1	24.65	24.72	24.75	23.55	23.56	23.47
	2	24.63	24.71	24.74	23.52	23.53	23.43
	3	24.17	24.23	24.23	23.07	23.09	22.95
	4	24.13	24.27	24.25	23.05	23.02	22.94
HSUPA	1	24.52	24.66	24.69	23.51	23.52	23.45
	2	22.73	22.75	22.61	21.51	21.44	21.47
	3	23.55	23.69	23.66	22.53	22.56	22.49
	4	22.03	22.73	22.63	21.49	21.45	21.47
	5	24.49	24.65	24.63	23.49	23.51	23.41
HSPA+	1	24.35	24.58	24.65	23.47	23.48	23.38

Note: The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA was tested by power meter.

### 2. GSM Conducted peak output power

Band	Channel	Frequency (MHz)	Output Power (dBm)
GSM 850	128	824.2	31.67
	190	836.6	31.87
	251	848.8	31.94
PCS 1900	512	1850.2	30.70
	661	1880.0	30.47
	810	1909.8	30.05

### 3. 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	31.54	28.62	27.28	26.51
	190	836.6	31.77	28.54	27.29	26.62
	251	848.8	31.77	28.47	27.31	26.47
PCS 1900	512	1850.2	30.18	26.51	25.27	24.61
	661	1880.0	29.54	26.42	25.26	24.70
	810	1909.8	28.90	26.41	25.11	24.52

## 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	22.54	22.60	23.02	23.50
	190	836.6	22.77	22.52	23.03	23.61
	251	848.8	22.77	22.45	23.05	23.46
PCS 1900	512	1850.2	21.18	20.49	21.01	21.60
	661	1880.0	20.54	20.40	21.00	21.69
	810	1909.8	19.90	20.39	20.85	21.51

## 4. EGPRS 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	31.70	28.54	27.31	26.32
	190	836.6	31.91	28.60	27.40	26.48
	251	848.8	32.01	28.52	27.36	26.41
PCS 1900	512	1850.2	30.33	26.29	25.32	24.51
	661	1880.0	29.62	26.12	25.51	24.42
	810	1909.8	28.93	26.41	25.08	24.41

## EGPRS Time-based Average Power

Band	Channel	Frequency (MHz)	Output Power(dBm)			
			Slot 1	Slot 2	Slot 3	Slot 4
GSM 850	128	824.2	22.70	22.52	23.05	23.31
	190	836.6	22.91	22.58	23.14	23.47
	251	848.8	23.01	22.50	23.10	23.40
PCS 1900	512	1850.2	21.33	20.27	21.06	21.50
	661	1880.0	20.62	20.10	21.25	21.41
	810	1909.8	19.93	20.39	20.82	21.40

Timeslot consignations:

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

5. Wifi peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			802.11B (DSSS)	802.11G (OFDM)	802.11N20 (OFDM)
Wifi	1	2412	11.52	7.48	7.36
	6	2437	11.32	7.45	7.34
	11	2462	11.11	7.61	7.49

Band	Channel	Frequency (MHz)	Output Power(dBm)
			802.11N40 (OFDM)
Wifi	3	2422	7.87
	6	2437	7.92
	9	2452	7.74

6. Bluetooth peak output power

Band	Channel	Frequency (MHz)	Output Power(dBm)		
			GFSK	$\Pi/4$ -DQPSK	8-DPSK
BT	0	2402	5.578	6.039	6.193
	39	2441	8.771	9.255	9.385
	78	2480	7.477	7.983	8.118

Band	Channel	Frequency (MHz)	Output Power(dBm)
			GFSK
BT	0	2402	-0.293
	19	2440	-0.554
	39	2480	-0.376

## 10. Test Results List

### Summary of Measurement Results (GSM 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
Right Side Of Head		Cheek/Touch	190	0.217	1.038	0.225
		Ear/Tilt		0.146		0.152
Left Side Of Head		Cheek/Touch		0.182		0.189
		Ear/Tilt		0.127		0.132
Body (10mm Separation)	GSM	Back upward		0.642	1.042	0.666
		Front upward		0.200		0.208
		Back upward		0.714		0.744
		Front upward		0.436		0.454
		Edge A	0.368	0.383		
		Edge B	0.392	0.408		
	EDGE	Back upward	0.377	0.393		
			0.653	1.028	0.671	

### 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/Kg), 1g	
Right Side Of Head		Cheek/Touch	512	0.053	1.005	0.053	
		Ear/Tilt		0.012		0.012	
Left Side Of Head		Cheek/Touch		0.036		0.036	
		Ear/Tilt		0.014		0.014	
Body (10mm Separation)	GSM	Back upward		0.527	1.072	0.530	
		Front upward		0.376		0.378	
	EDGE	Back upward		661	0.595	1.072	0.638
		Front upward			0.429		0.460
		Edge A	0.114		0.122		
		Edge B	0.198		0.212		
	Edge C	0.394	0.422				
GPRS	Front upward	0.530	1.067		0.566		

Note:

## 1. GPRS/EDGE test Scenario(Based on the Max. Time-based Average Power)

Band	Channel	Slots	Power level	Duty Cycle
<b>GPRS850</b>	190	4	5	1:2
<b>EDGE850</b>	190	4	5	1:2
<b>GPRS1900</b>	661	4	0	1:2
<b>EDGE1900</b>	661	4	0	1:2

## 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
Right Side Of Head	Cheek/Touch	4175	0.170	1.035	0.176
	Ear/Tilt		0.117		0.121
Left Side Of Head	Cheek/Touch		0.132		0.137
	Ear/Tilt		0.090		0.093
Body (10mm Separation)	Back upward		0.450		0.466
	Front upward		0.281		0.291
	Edge A		0.188		0.195
	Edge B		0.157		0.162
	Edge C		0.094		0.097

## 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
Right Side Of Head	Cheek/Touch	9400	0.132	1.099	0.145
	Ear/Tilt		0.026		0.029
Left Side Of Head	Cheek/Touch		0.077		0.085
	Ear/Tilt		0.026		0.029
	Back upward	9262	0.895	1.104	0.988
		9400	0.996	1.099	1.095
		9538	0.967	1.127	1.090
	Front upward	9400	0.614	1.099	0.675
	Edge A		0.097		0.107
	Edge B		0.130		0.143
Edge C	0.150		0.165		

## Summary of Measurement Results (WLAN 802.11B 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
Right Side Of Head	Cheek/Touch	11	0.176	1.091	0.192
	Ear/Tilt		0.100		0.109
Left Side Of Head	Cheek/Touch		0.182		0.199
	Ear/Tilt		0.068		0.074
Body (10mm Separation)	Back upward		0.150		0.164
	Front upward		0.060		0.065
	Edge C		0.147		0.160
	Edge D		0.135		0.147

## Note:

- When the 1-g SAR for the mid-band channel or the channel with the Highest output power satisfy the Following conditions, testing of the other channels in the band is not required. (Per KDB 447498 D01 General RF Exposure Guidance v05)
  - $\leq 0.8$  W/kg and transmission band  $\leq 100$  MHz
  - $\leq 0.6$  W/kg and,  $100$  MHz < transmission bandwidth  $\leq 200$  MHz
  - $\leq 0.4$  W/kg and transmission band > 200 MHz
- Per KDB447498, Supplement C 01-01 and IEEE Std 1528-2003 require the middle channel to be tested first. This generally applies to wireless devices that are designed to operate in technologies with tight tolerances for maximum output power variations across channels in the band. When the maximum output power variation across the required test channels is > ½ dB, instead of the middle channel, the highest output power channel must be used.
- The WCDMA mode is test with 12.2kbps RMC and TPC set to all "1", if maximum SAR for 12.2kbps RMC is  $\leq 75\%$  of the SAR limit (i.e. 1.2W/Kg 1g) and maximum average output of each RF channel with HSDPA/HSUPA active is less than 1/4 dB Middle than that measured without HSDPA/HSUPA using 12.2kbps RMC, according to KDB 941225D01v02, SAR is not required for this handset with HSPA capabilities.
- This module supports 3GPP release R7 HSPA+ using QPSK only without 16QAM in the up link, so PBA is not required.

5. During 802.11b(2.4GHz) testing, engineering testing software installed on the EUT can provide continuous transmitting RF signal. The RF signal utilized in SAR measurement has almost 100% duty cycle, and its crest factor is 1.

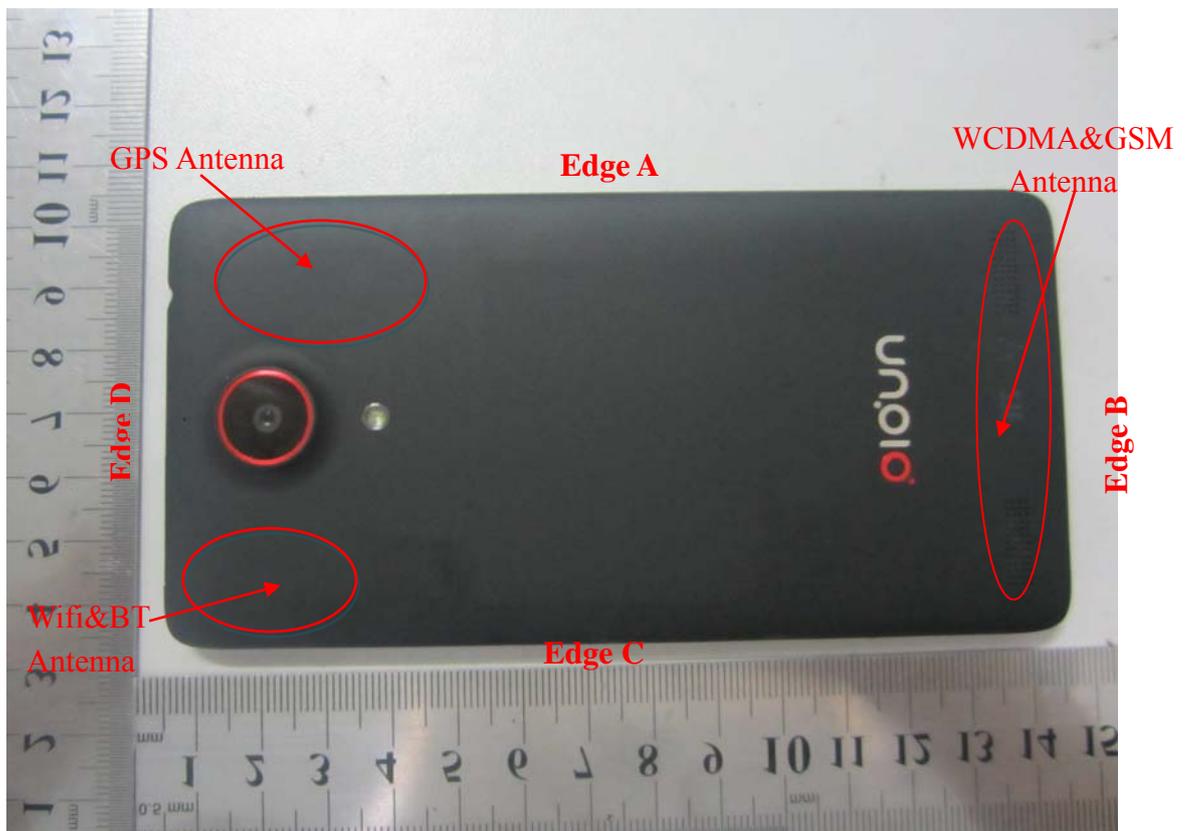
6. Scaling Factor calculation

<b>Band</b>	<b>Tune-up power tolerance (dBm)</b>	<b>SAR test channel Power (dBm)</b>	<b>Scaling Factor</b>
<b>GSM 850</b>	PCL = 5, PWR = 31.5+-0.5	31.84	1.038
<b>GPRS 850</b>	PCL = 5, PWR =26.2+-0.5(4 slots)	26.62	1.042
<b>EDGE 850</b>	PCL = 5, PWR =26+-0.5(4 slots)	26.48	1.028
<b>PCS 1900</b>	PCL = 0, PWR = 30.5+-0.5	30.70	1.005
<b>GPRS 1900</b>	PCL=0, PWR= 24.5+-0.5(4 slots)	24.70	1.072
<b>EDGE 1900</b>	PCL=0, PWR= 24.2+-0.5(4 slots)	24.42	1.067
<b>WCDMA 850</b>	Max output power =24(+1/-2)	24.75	1.059
<b>WCDMA 1900</b>	Max output power =23 (+1/-2)	23.57	1.104
		23.59	1.099
		23.48	1.127
<b>802.11(2.4GHz)</b>	Max output power =11.2+-0.5	11.32	1.091

## 11. Hotspot Mode Evaluation Procedure

The SAR evaluation procedures for Portable Devices with Wireless Router function is according to KDB 941225 D06 Hot Spot SAR v01.

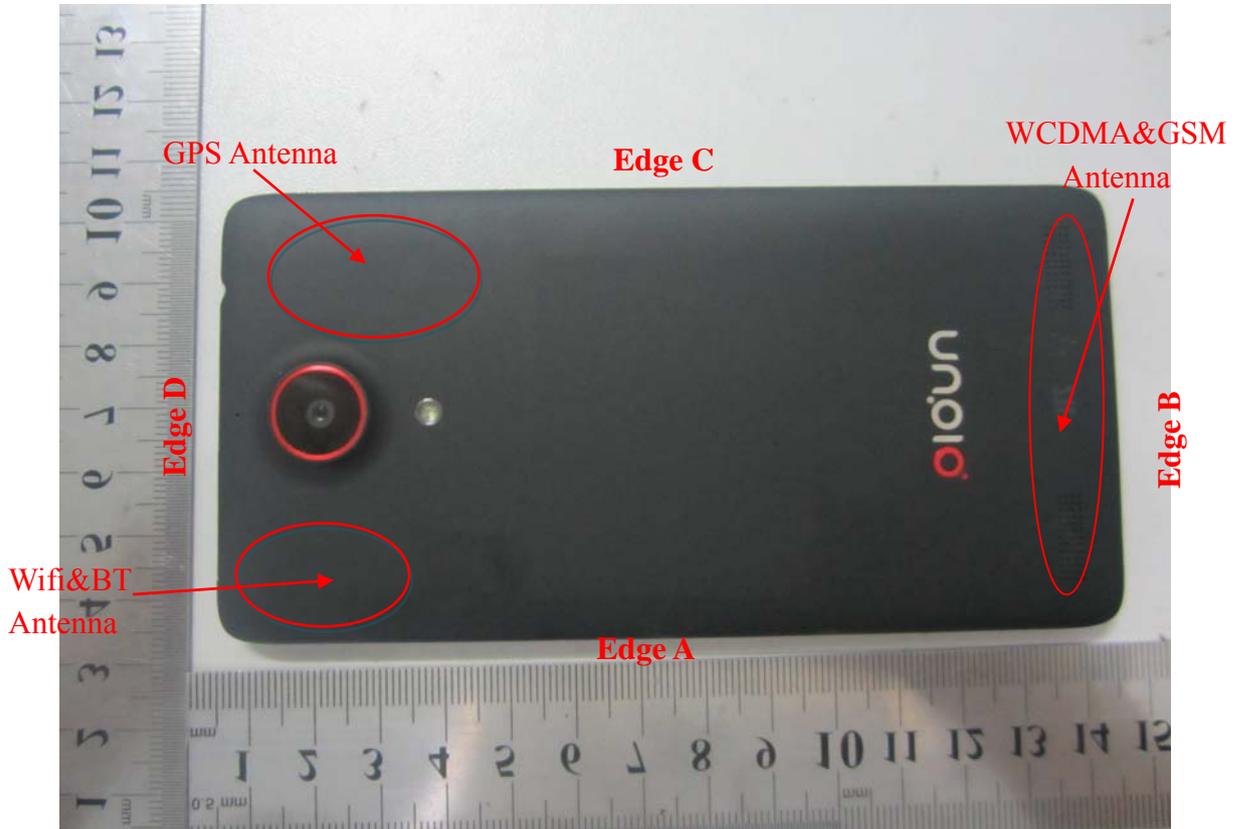
- SAR must be tested for all surfaces and edges (side) with a transmitting antenna with in 2.5 cm from that surface or edge, at a test separation distance of 10 mm, in the wireless modes that support wireless routing.
- Edge configurations:



Assessment	Hotspot side for SAR					
	Test distance: 10mm					
Antennas	Back	Front	Edge A	Edge B	Edge C	Edge D
WCDMA/GSM	Yes	Yes	Yes	Yes	Yes	No
WLAN&BT	Yes	Yes	No	No	Yes	Yes

## 12. Multiple Transmitters Evaluation

The are three transmitters build in EUT, as following:



### Stand-alone SAR

Test distance: 5mm		
Band	SAR Test Exclusion Threshold(mW) Per KDB 447498 D01v05	Highest power(mW) Per tune up
WIFI(2.4G)	10	14.791
BT	10	8.913

According to the chart above, WIFI2.4G is required for Stand-alone SAR test, BT is not required. The SAR test for 802.11b(2.4GHz) is required, 802.11g/HT20/HT40 is not required, for the maximum average output power is less than 1/4 dB Higher than measured on the corresponding 802.11b channels. As per KDB 248227

The SAR test for BT is not required for highest power is not exceed the power threshold for 2450MHz at the test distance of 5mm.

The BT stand-alone SAR is not required, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

$(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot \sqrt{\quad}$

$f(\text{GHz})/x]$  W/kg for *test separation distances*  $\leq 50$  mm;

where  $x = 7.5$  for 1-g SAR, and  $x = 18.75$  for 10-g SAR.

( Max power=8.913 mW(per tune up) ; *min. test separation distance*=5mm for head, 10mm for body;  
 $f=2.4\text{GHz}$  )

BT estimated Head SAR = 0.368 W/Kg (1g); BT estimated Body SAR = 0.184W/Kg (1g)

### Simultaneous SAR

Description of Simultaneous Transmit Capabilities				
No.	Transmitter Combinations	Scenario Supported?	Supported for Mobile Hotspot?	Explanation
1	GSM(Voice)+GSM(Data)	No	No	<b>Note 1</b>
2	WCDMA(Voice)+WCDMA(Data)	<b>Yes</b>	<b>Yes</b>	
3	GSM(Voice)+WCDMA(Data)	No	No	
4	WCDMA(Voice)+GSM(Data)	No	No	
5	GSM(Data)+WCDMA(Voice)	No	No	
6	GSM(Voice)+WCDMA(Voice)	No	No	
7	GSM(Voice)+WiFi (/ BT)	<b>Yes</b>	No	<b>Note 2</b>
8	WCDMA(Voice)+WiFi (/BT)	<b>Yes</b>	No	
9	WCDMA(Voice)+WCDMA(Data)+WiFi	<b>Yes</b>	<b>Yes</b>	<b>Note 3</b>
10	GSM(Data)+WiFi	<b>Yes</b>	<b>Yes</b>	
11	WCDMA(Data)+WiFi	<b>Yes</b>	<b>Yes</b>	

Not applicable	Applicable	Head	Body-worn	Hotspot
1,3,4,5,6	2,7,8,9,10,11	2,7,8,9	2,7,8,9	9,10,11

Note:

- EUT system architecture does not support simultaneous voice and data(except on WCDMA), multiple voice channels, or multiple data channels during a single session on the cellular net work.
- Supported for voice plus background data.
- Support for mobile hotspot operation.
- When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WiFi transmitter and another licensed transmitter. Both transmitter often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.
- The hotspot SAR result may overlap with the body-worn accessory SAR requirements, per KDB 941225 D06, the more conservative configurations can be considered, thus excluding some unnecessary body-worn accessory SAR tests.
- GSM supports voice and data transmission, though not simultaneously. WCDMA supports voice and data transmission simultaneously.
- Simultaneous Transmission SAR evaluation is not required for BT and WiFi, because the software mechanism have been incorporated to guarantee that the WLAN and Bluetooth transmitters would

not simultaneously operate.

8. For Scenario **No.2,8,9,11**, WCDMA and WiFi is tested separately, the WCDMA mode is test with 12.2kbps RMC and TPC set to all "1", if maximum SAR for 12.2kbps RMC is  $\leq 75\%$  of the SAR limit (i.e. 1.2W/Kg 1g) and maximum average output of each RF channel with HSDPA/HSUPA active is less than 1/4 dB Middle than that measured without HSDPA/HSUPA using 12.2kbps RMC, according to KDB 941225D01v02, SAR is not required for this handset with HSPA capabilities.
9. For Scenario **No.7,10**, GSM and WiFi is tested separately, the GSM mode do not supports voice and data transmission simultaneously, voice (GSM) and data (GPRS/EDGE) is tested separately.

#### 10. Applicable Multiple Scenario Evaluation

Test Position	WCDMA&GSM SAR <sub>Max</sub> (W/Kg)	Bluetooth SAR(W/Kg)	WiFi SAR <sub>Max</sub> (W/Kg)	$\sum$ 1-g SAR <sub>Max</sub> (W/Kg)	
				BT&Main Ant	WiFi&Main Ant
Head SAR	0.225	0.368	0.199	0.593	0.424
Body SAR	1.095	0.184	0.164	1.279	1.259

Simultaneous Transmission SAR evaluation is not required for Wifi and WCDMA&GSM, because the sum of 1g SAR<sub>Max</sub> is **1.259W/Kg** < 1.6W/Kg for Wifi and WCDMA&GSM.

Simultaneous Transmission SAR evaluation is not required for BT and WCDMA&GSM, because the sum of 1g SAR<sub>Max</sub> is **1.279W/Kg** < 1.6W/Kg for BT and WCDMA&GSM.

(According to KDB 447498D01v05, the sum of the Highest *reported* SAR of each antenna does not exceed the limit, simultaneous transmission SAR evaluation is not required.)

## Annex A Graph Test Results

<b>BAND</b>	<b><u>PARAMETERS</u></b>
<b><u>GSM850</u></b>	<p><u>Measurement 1:</u> Right Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 2:</u> Right Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 3:</u> Left Head with Cheek device position on Middle Channel in GSM mode</p> <p><u>Measurement 4:</u> Left Head with Tilt device position on Middle Channel in GSM mode</p> <p><u>Measurement 5:</u> Flat Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 6:</u> Flat Plane with Body device position on Middle Channel in GSM mode</p> <p><u>Measurement 7:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 8:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 9:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 10:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 11:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 12:</u> Flat Plane with Body device position on Middle Channel in EDGE mode</p>
<b><u>GSM1900</u></b>	<p><u>Measurement 13:</u> Right Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 14:</u> Right Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 15:</u> Left Head with Cheek device position on Low Channel in GSM mode</p> <p><u>Measurement 16:</u> Left Head with Tilt device position on Low Channel in GSM mode</p> <p><u>Measurement 17:</u> Flat Plane with Body device position Low Channel in GSM mode</p> <p><u>Measurement 18:</u> Flat Plane with Body device position on Low Channel in GSM mode</p> <p><u>Measurement 19:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 20:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p>

	<p><u>Measurement 21:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 22:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 23:</u> Flat Plane with Body device position on Middle Channel in GPRS mode</p> <p><u>Measurement 24:</u> Flat Plane with Body device position on Middle Channel in EDGE mode</p>
<p><b><u>WCDMA</u></b> <b><u>850</u></b></p>	<p><u>Measurement 25:</u> Right Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 26:</u> Right Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 27:</u> Left Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 28:</u> Left Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 29:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 30:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 31:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 32:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 33:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p>
<p><b><u>WCDMA</u></b> <b><u>1900</u></b></p>	<p><u>Measurement 34:</u> Right Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 35:</u> Right Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 36:</u> Left Head with Cheek device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 37:</u> Left Head with Tilt device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 38:</u> Flat Plane with Body device position on Low Channel in WCDMA mode</p> <p><u>Measurement 39:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 40:</u> Flat Plane with Body device position on High Channel in WCDMA mode</p> <p><u>Measurement 41:</u> Flat Plane with Body device position on Middle Channel in WMA mode</p> <p><u>Measurement 42:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p>

	<p><u>Measurement 43:</u> Flat Plane with Body device position on Middle Channel in WCDMA mode</p> <p><u>Measurement 44:</u> Flat Plane with Body device position on Middle Channel in WCMA mode</p>
<p><b><u>802.11B</u></b> <b><u>(2450)</u></b></p>	<p><u>Measurement 45:</u> Right Head with Cheek device position on Middle Channel in DSSS mode</p> <p><u>Measurement 46:</u> Right Head with Tilt device position on Middle Channel in DSSS mode</p> <p><u>Measurement 47:</u> Left Head with Cheek device position on Middle Channel in DSSS mode</p> <p><u>Measurement 48:</u> Left Head with Tilt device position on Middle Channel in DSSS mode</p> <p><u>Measurement 49:</u> Flat Plane with Body device position on Middle Channel in DSSS mode</p> <p><u>Measurement 50:</u> Flat Plane with Body device position on Middle Channel in DSSS mode</p> <p><u>Measurement 51:</u> Flat Plane with Body device position on Middle Channel in DSSS mode</p> <p><u>Measurement 52:</u> Flat Plane with Body device position on Middle Channel in DSSS mode</p>

# MEASUREMENT 1

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.19

Measurement duration: 7 minutes 49 seconds

## A. Experimental conditions.

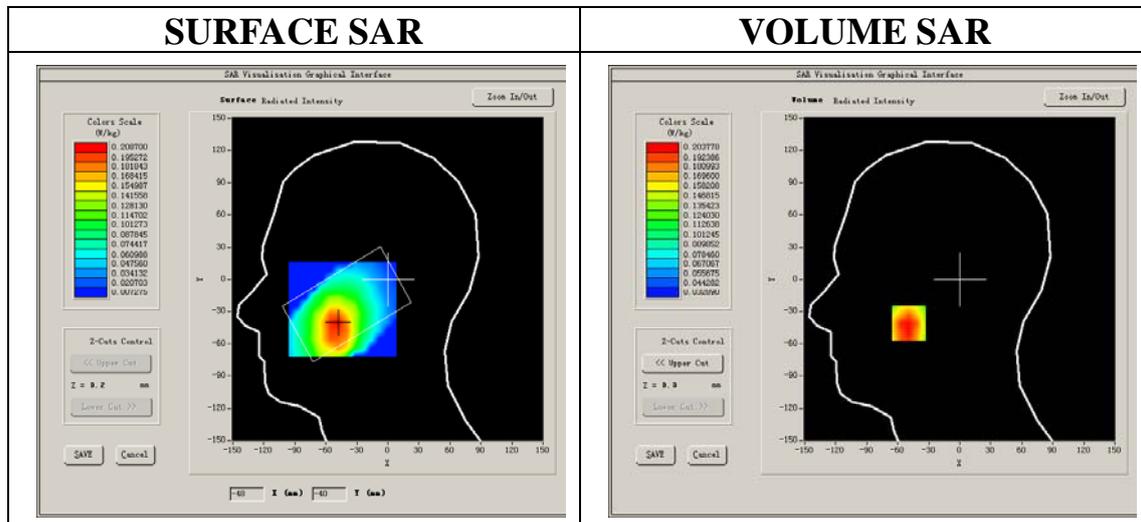
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

## B. SAR Measurement Results

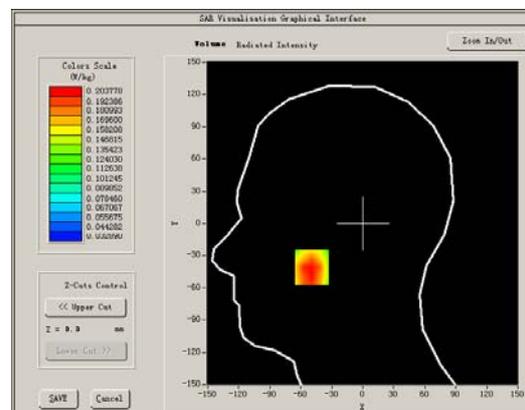
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.620000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479,25.214,27.19
<b>Crest factor:</b>	1:8

### SURFACE SAR

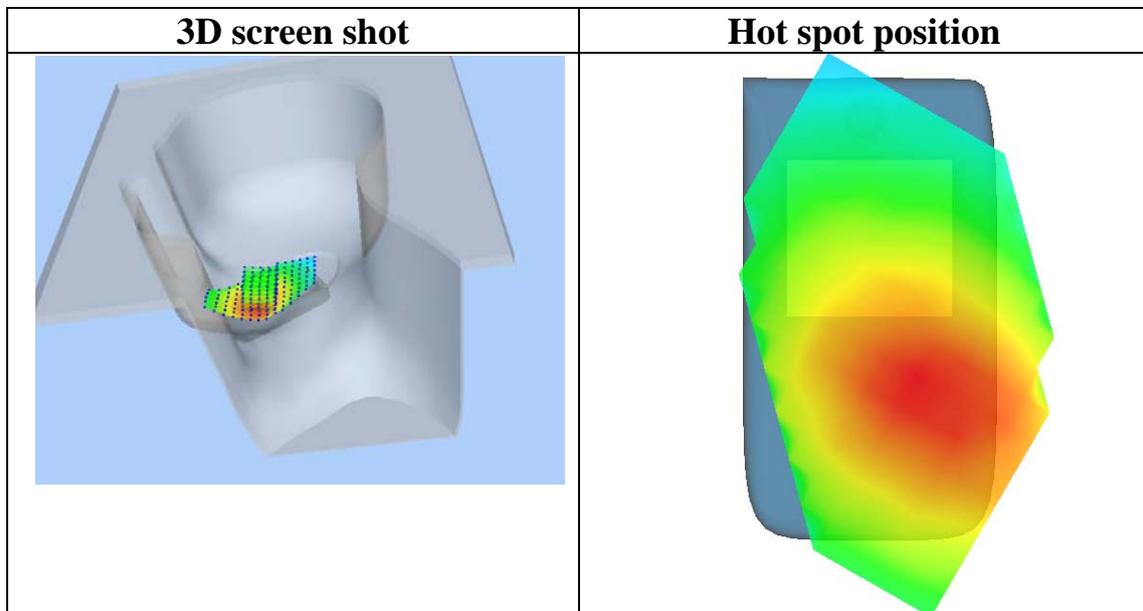
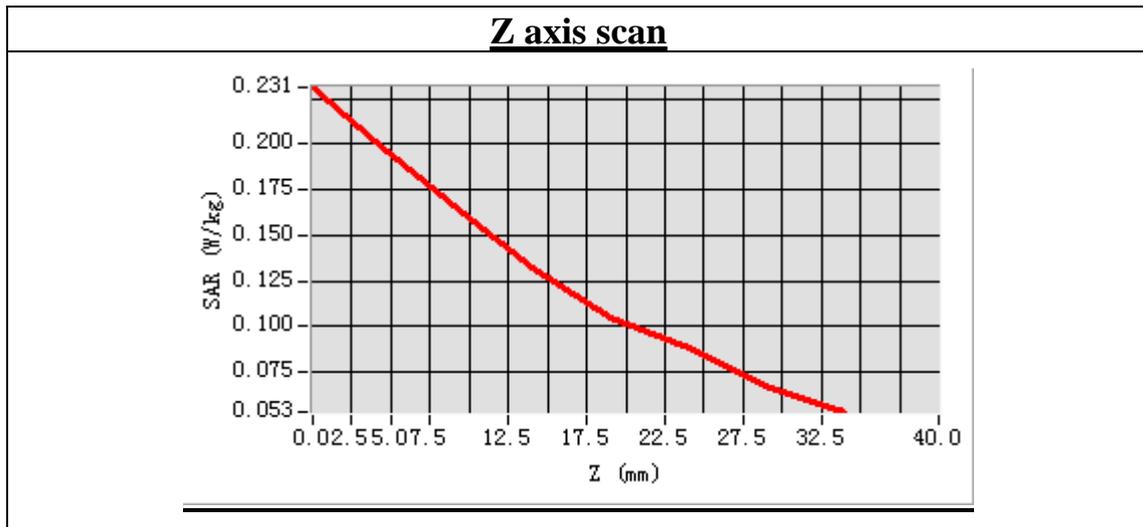


### VOLUME SAR



**Maximum location: X=-49.00, Y=-41.00**  
**SAR Peak: 0.26 W/kg**

<b>SAR 10g (W/Kg)</b>	0.147448
<b>SAR 1g (W/Kg)</b>	0.216765



## 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: 2013.8.19

Measurement duration: 7 minutes 33 seconds

### A. Experimental conditions.

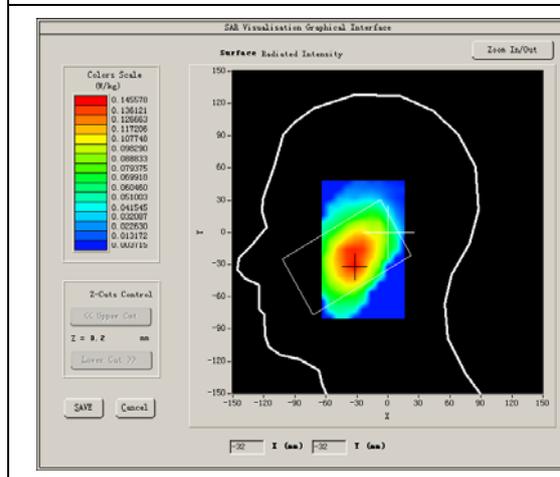
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

### B. SAR Measurement Results

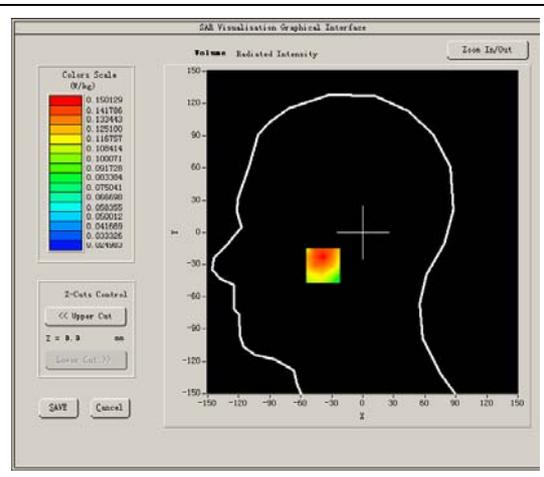
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift(%)</b>	-0.570000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479,25.214,27.19
<b>Crest factor:</b>	1:8

#### SURFACE SAR



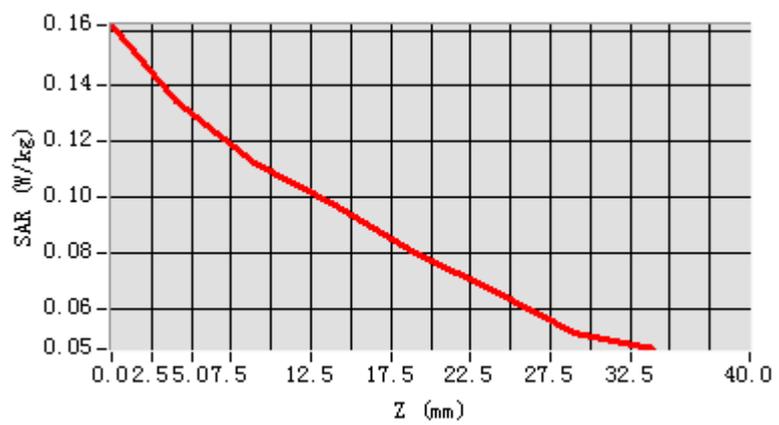
#### VOLUME SAR



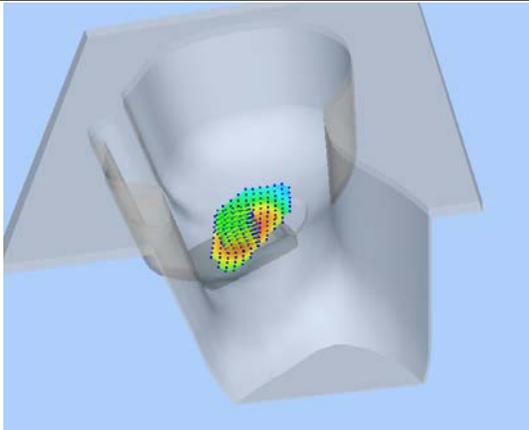
**Maximum location: X=-33.00, Y=-31.00**  
**SAR Peak: 0.19 W/kg**

<b>SAR 10g (W/Kg)</b>	0.109619
<b>SAR 1g (W/Kg)</b>	0.145923

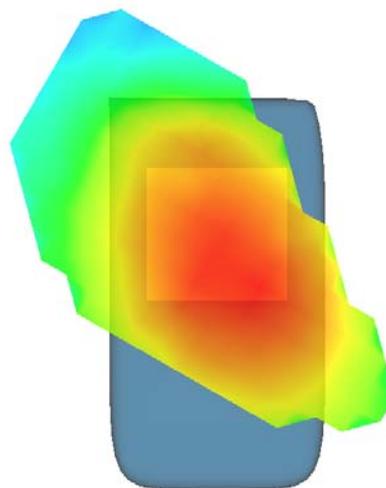
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 7 minutes 28 seconds

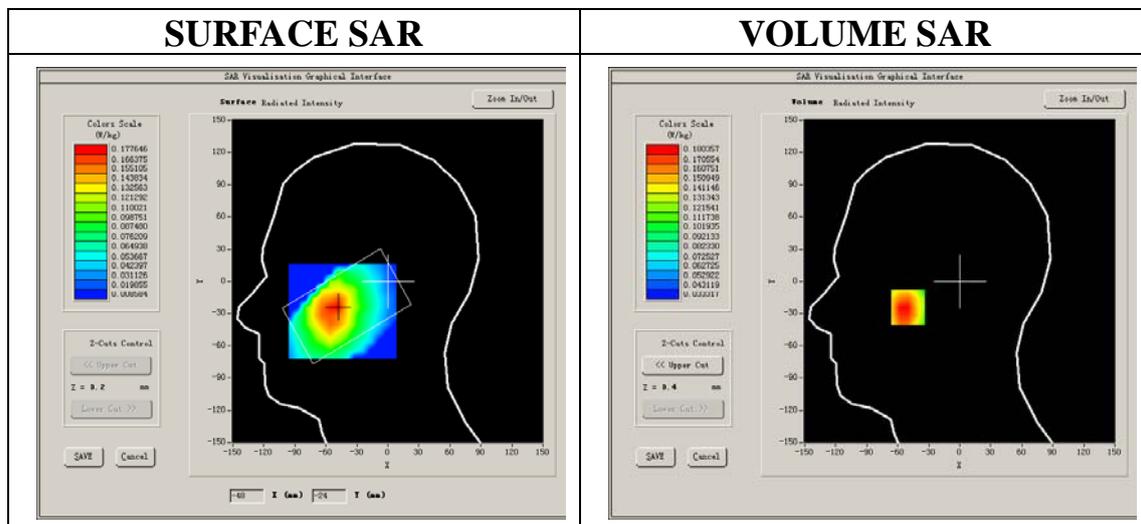
### A. Experimental conditions.

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

### B. SAR Measurement Results

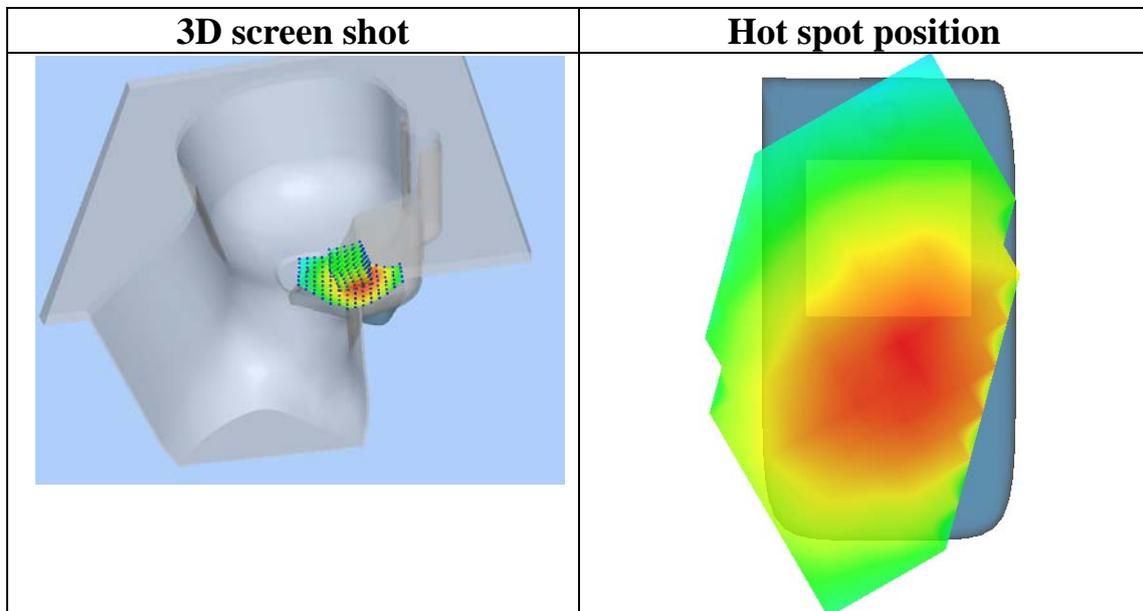
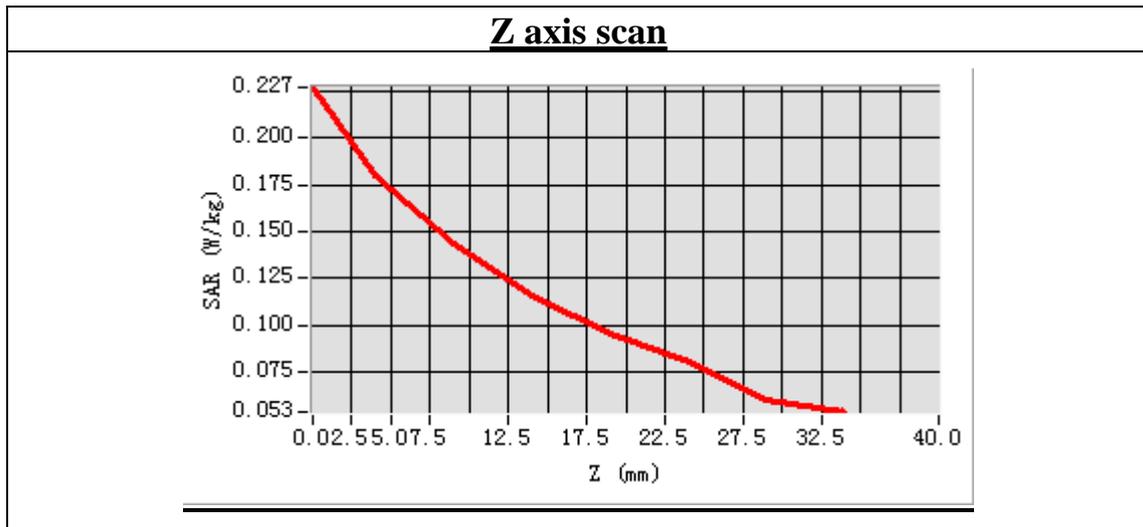
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.680000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479,25.214,27.19
<b>Crest factor:</b>	1:8



**Maximum location: X=-50.00, Y=-24.00**  
**SAR Peak: 0.25 W/kg**

<b>SAR 10g (W/Kg)</b>	0.131256
<b>SAR 1g (W/Kg)</b>	0.181968



## 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: 2013.8.19

Measurement duration: 8 minutes 33 seconds

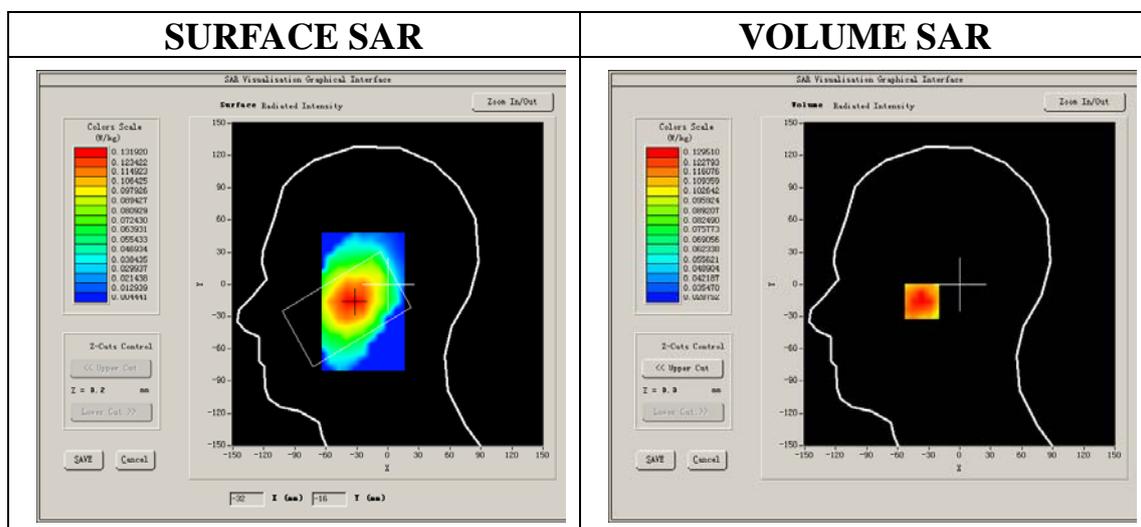
### A. Experimental conditions.

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

### B. SAR Measurement Results

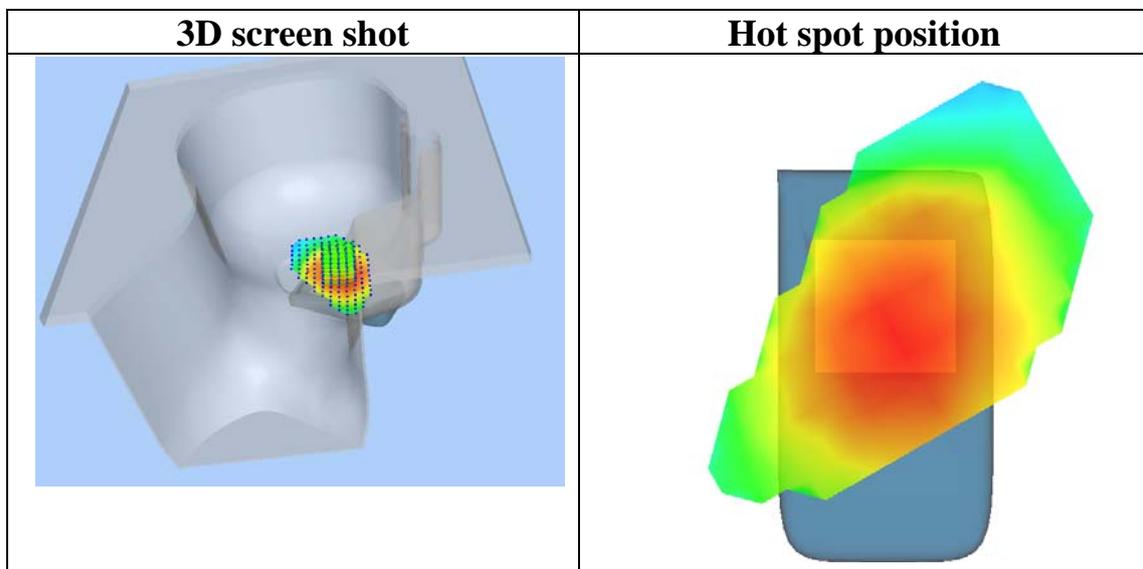
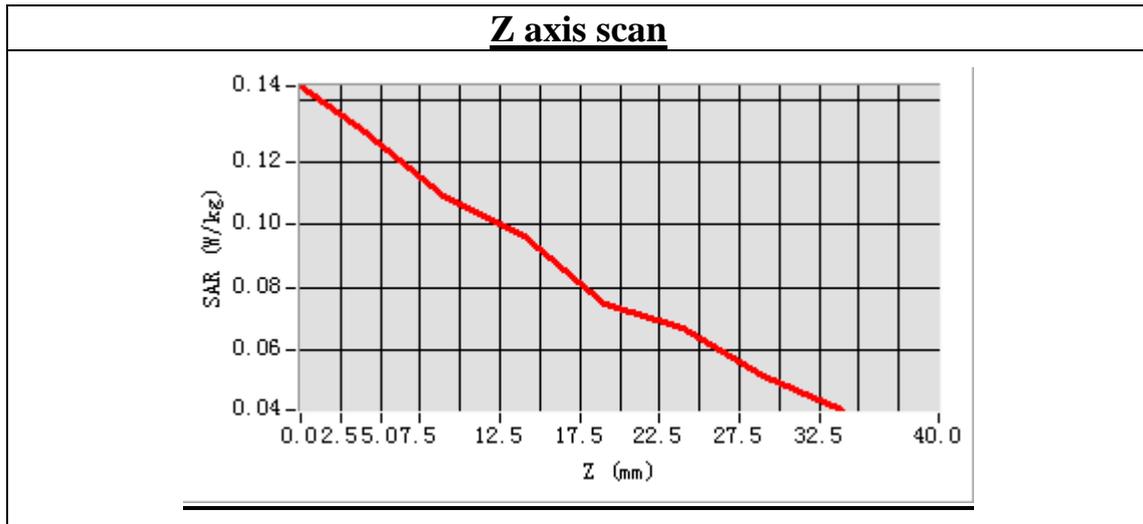
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift(%)</b>	-0.760000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479,25.214,27.19
<b>Crest factor:</b>	1:8



**Maximum location: X=-33.00, Y=-16.00**  
**SAR Peak: 0.16 W/kg**

<b>SAR 10g (W/Kg)</b>	0.100148
<b>SAR 1g (W/Kg)</b>	0.126930



## 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: 2013.8.19

Measurement duration: 9 minutes 11 seconds

### A. Experimental conditions.

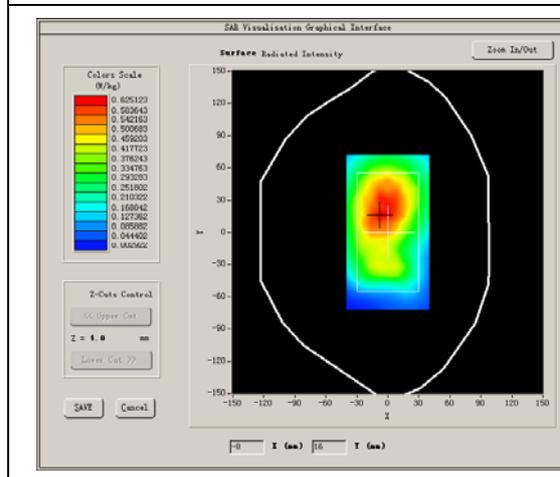
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

### B. SAR Measurement Results

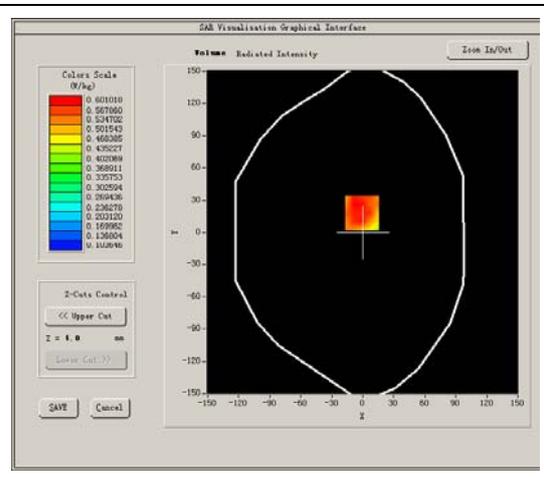
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	-0.540000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:8

#### SURFACE SAR

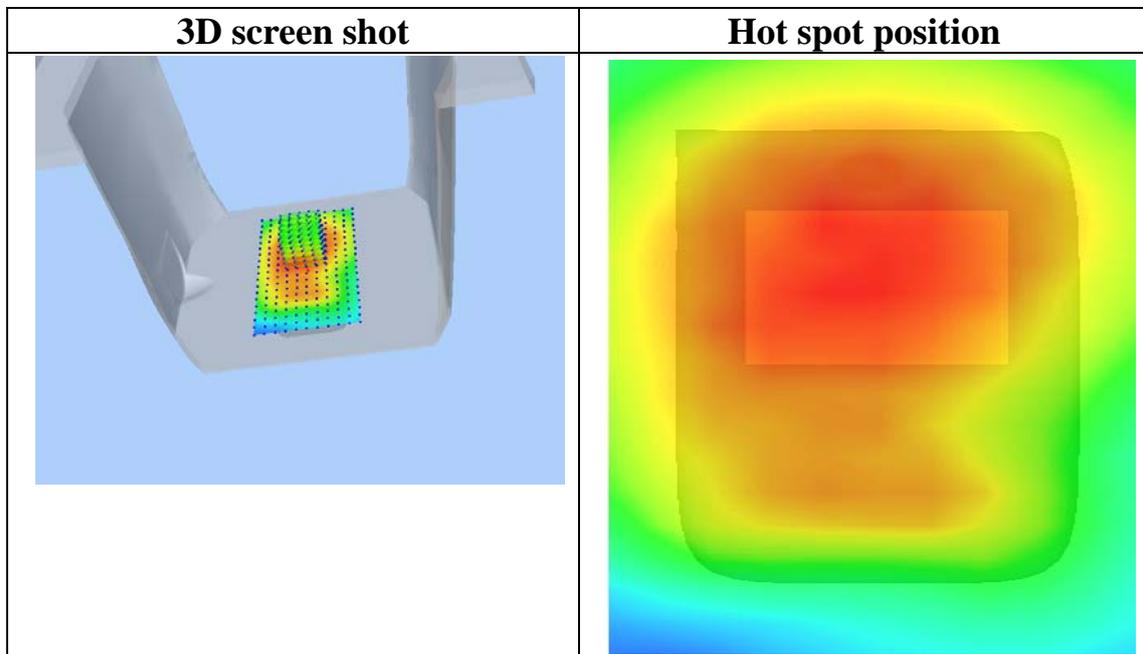
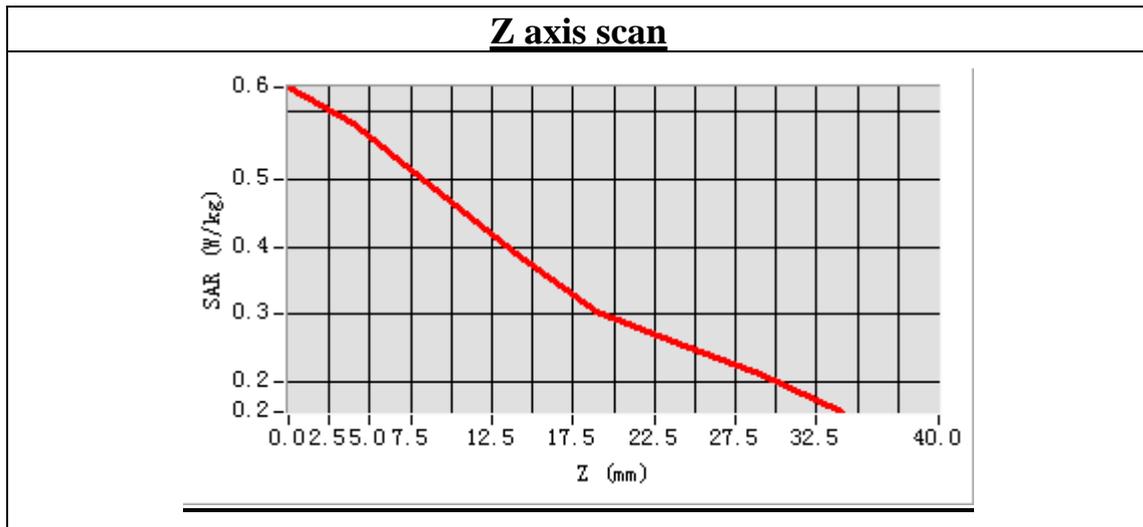


#### VOLUME SAR



**Maximum location: X=-1.00, Y=18.00**  
**SAR Peak: 0.87 W/kg**

<b>SAR 10g (W/Kg)</b>	0.486850
<b>SAR 1g (W/Kg)</b>	0.642298



## 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: 2013.8.19

Measurement duration: 9 minutes 10 seconds

### A. Experimental conditions.

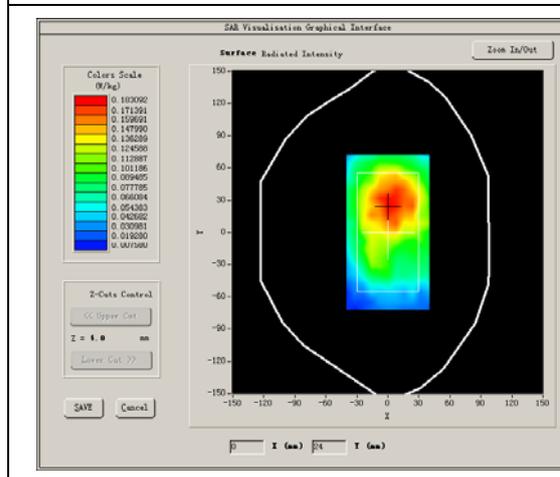
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GSM

### B. SAR Measurement Results

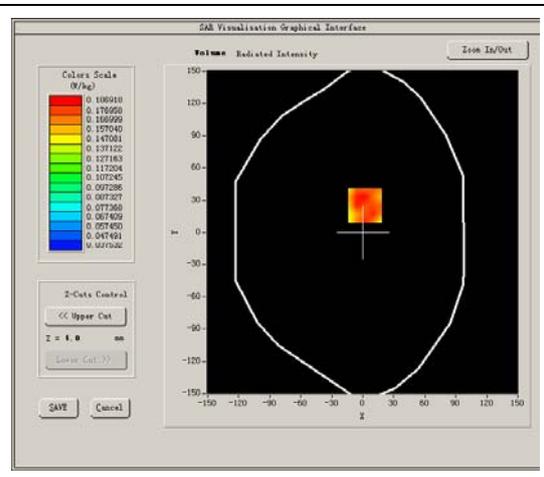
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-1.350000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:8

#### SURFACE SAR

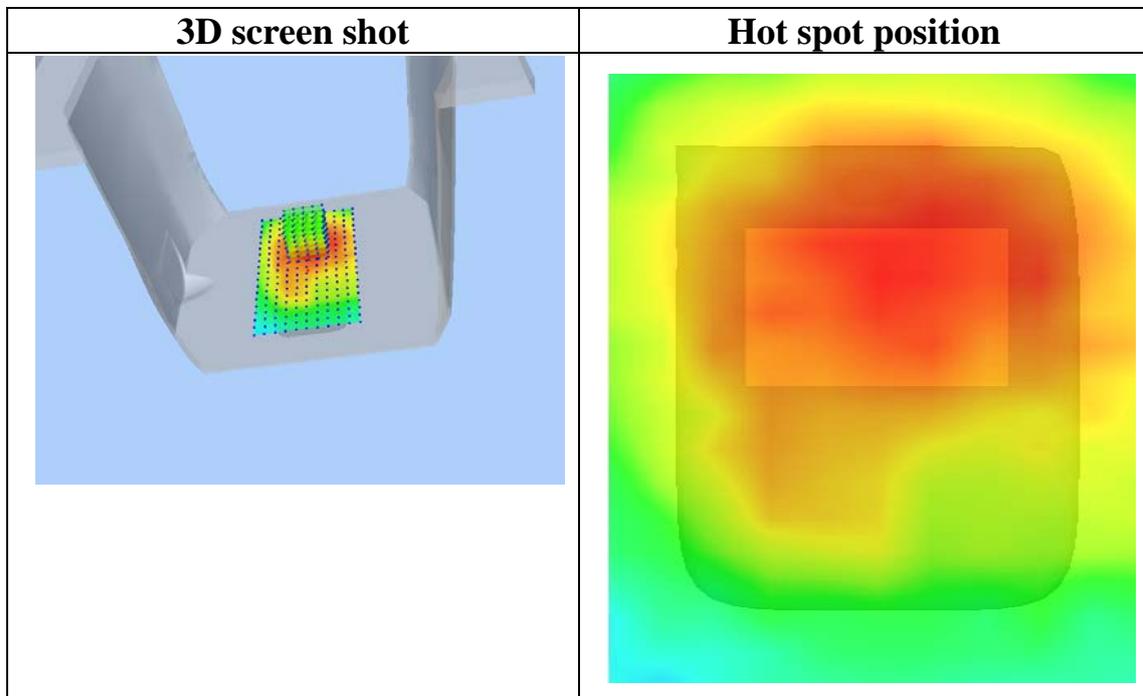
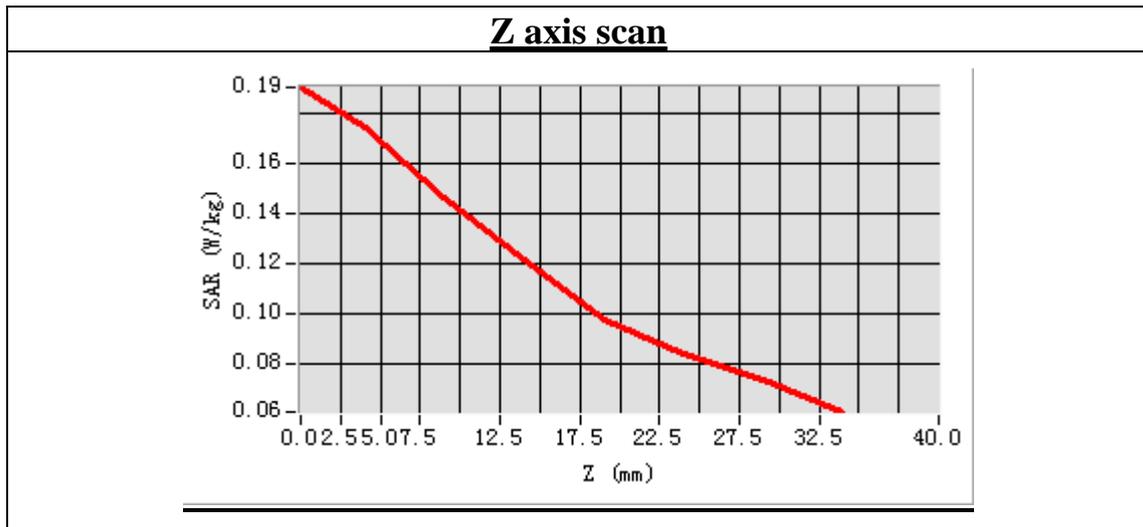


#### VOLUME SAR



**Maximum location: X=2.00, Y=25.00**  
**SAR Peak: 0.28 W/kg**

<b>SAR 10g (W/Kg)</b>	0.147601
<b>SAR 1g (W/Kg)</b>	0.200480



# 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: 2013.8.19

Measurement duration: 9 minutes 11 seconds

## A. Experimental conditions.

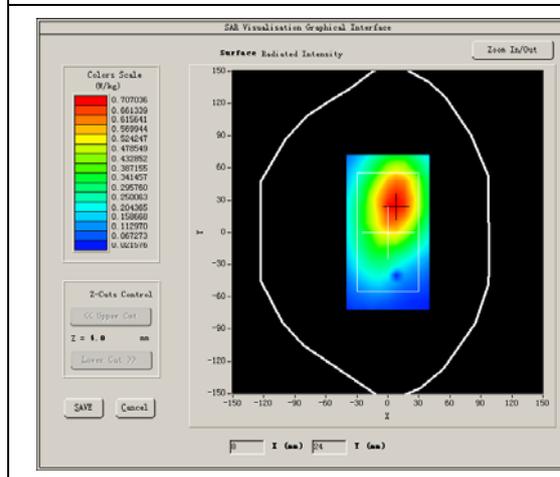
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

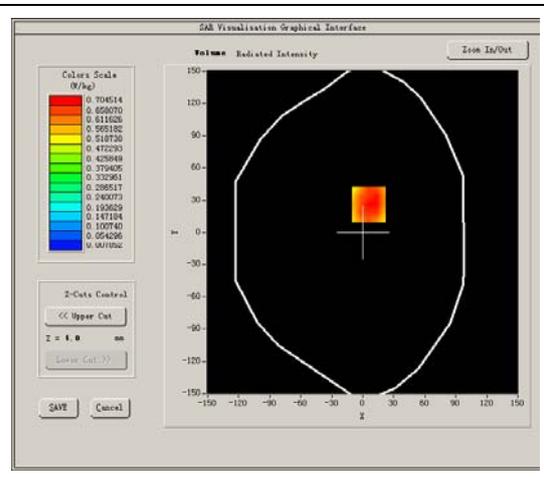
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-0.450000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

### SURFACE SAR



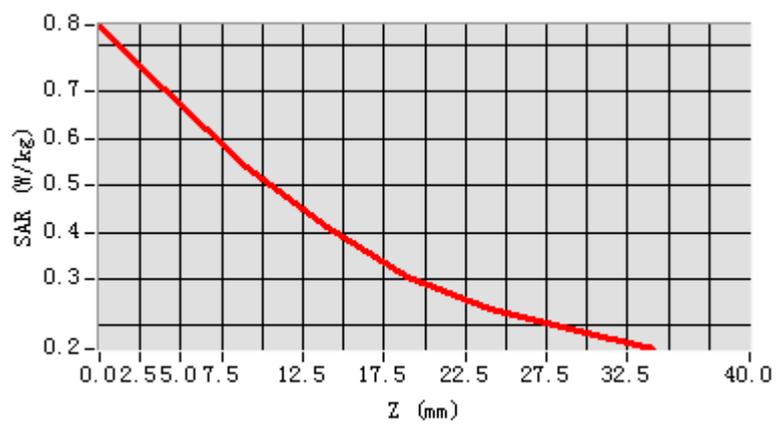
### VOLUME SAR



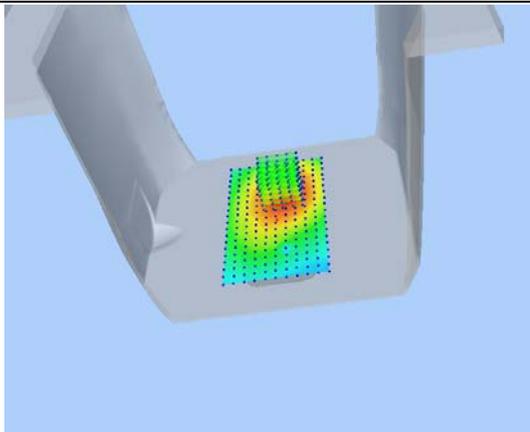
Maximum location: X=6.00, Y=26.00  
 SAR Peak: 1.14 W/kg

SAR 10g (W/Kg)	0.488907
SAR 1g (W/Kg)	0.713978

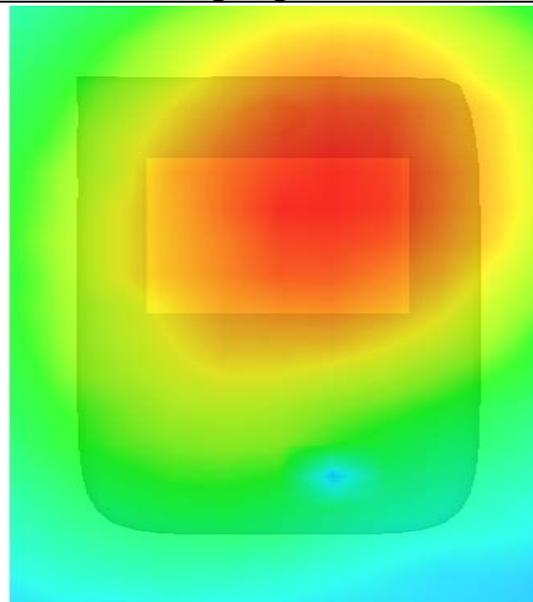
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 11 seconds

### A. Experimental conditions.

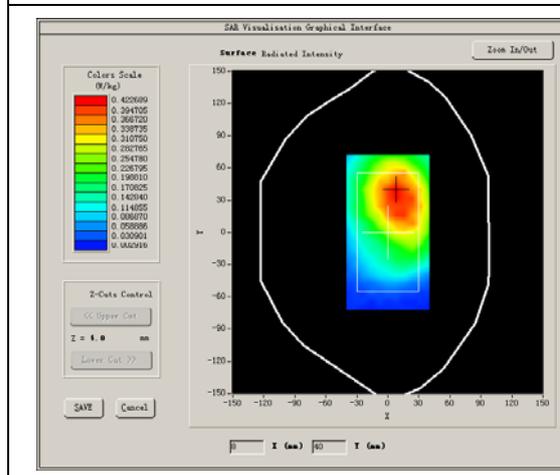
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Results

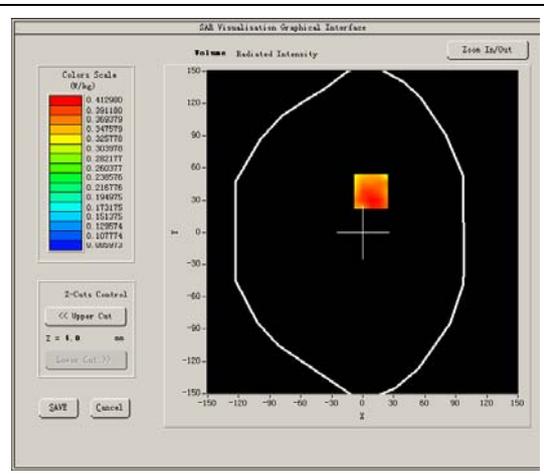
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-0.610000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

#### SURFACE SAR

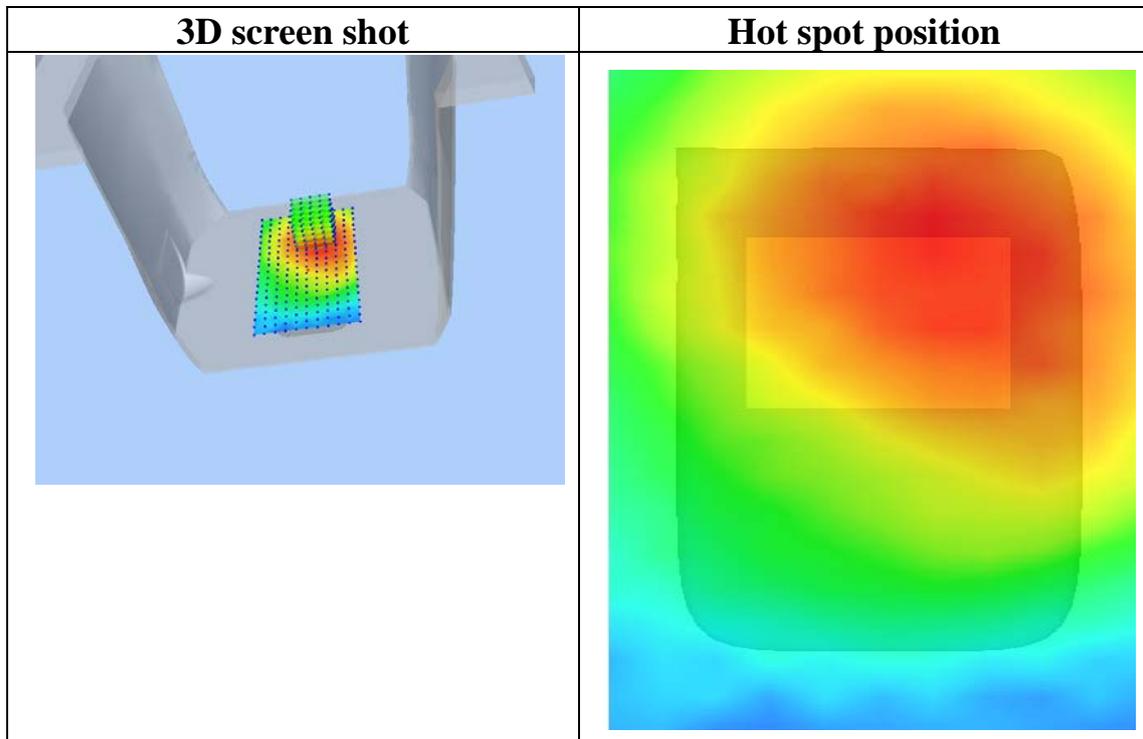
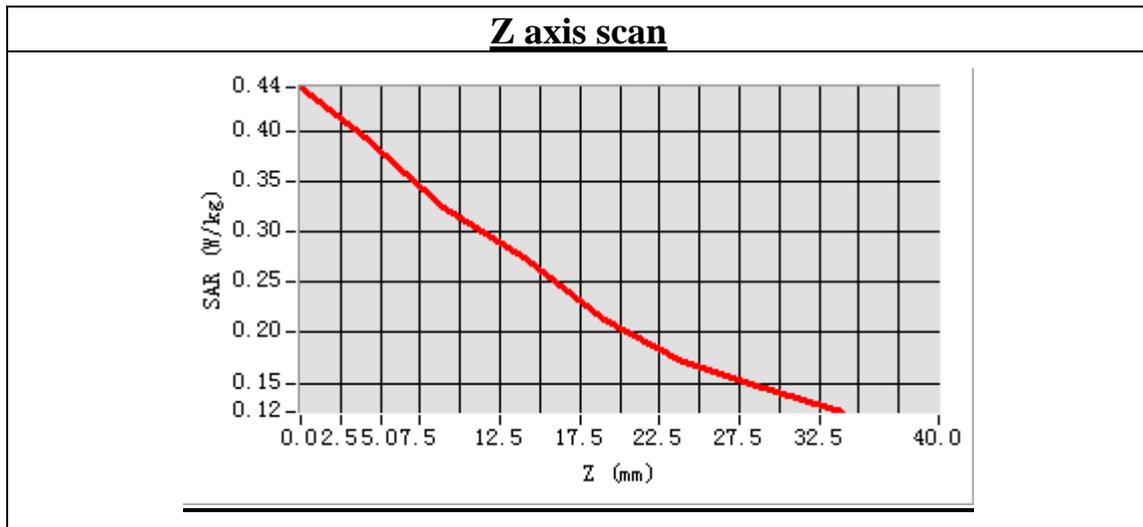


#### VOLUME SAR



Maximum location: X=8.00, Y=38.00  
 SAR Peak: 0.54 W/kg

SAR 10g (W/Kg)	0.330212
SAR 1g (W/Kg)	0.436157



# 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: 2013.8.19

Measurement duration: 9 minutes 10 seconds

## A. Experimental conditions.

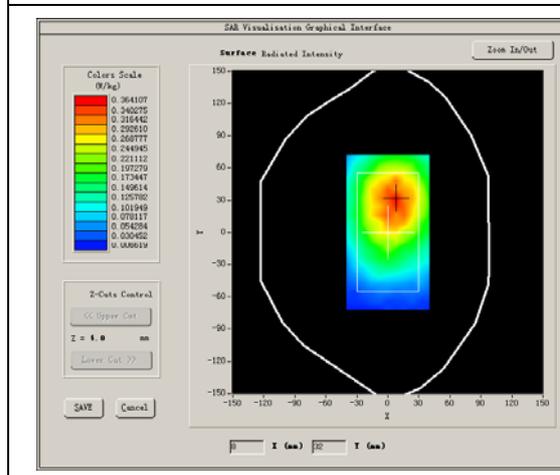
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

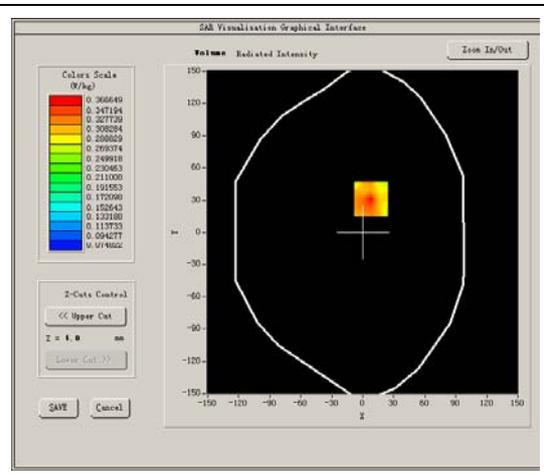
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-0.780000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

### SURFACE SAR



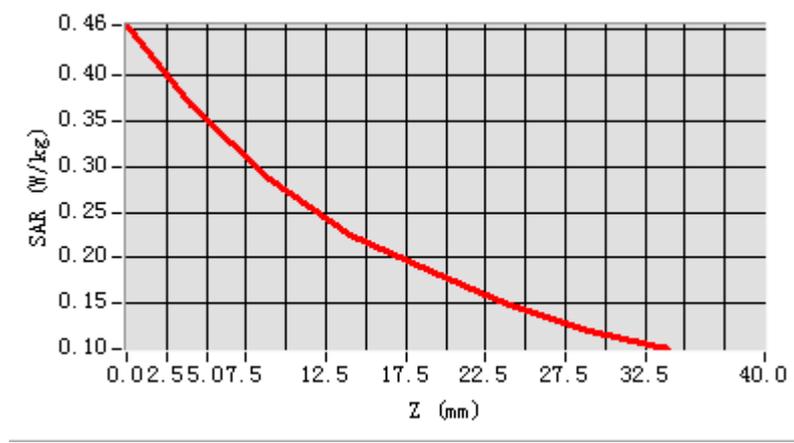
### VOLUME SAR



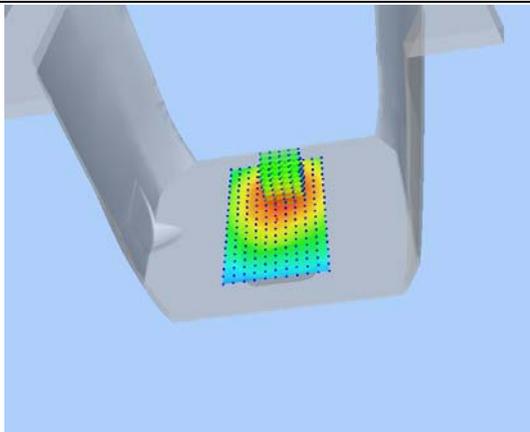
**Maximum location: X=8.00, Y=31.00**  
**SAR Peak: 0.50 W/kg**

<b>SAR 10g (W/Kg)</b>	0.274960
<b>SAR 1g (W/Kg)</b>	0.368070

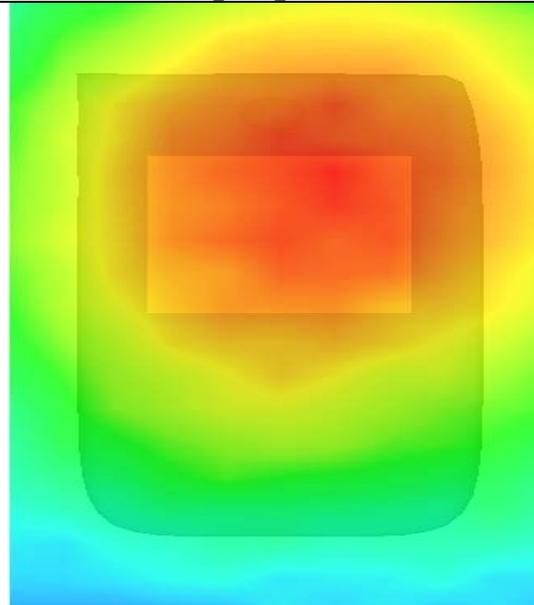
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 10 seconds

## A. Experimental conditions.

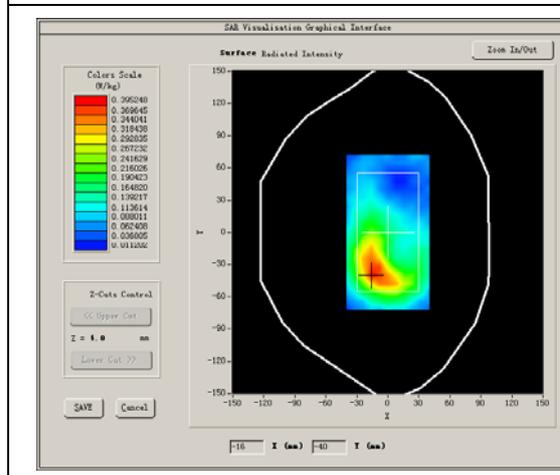
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

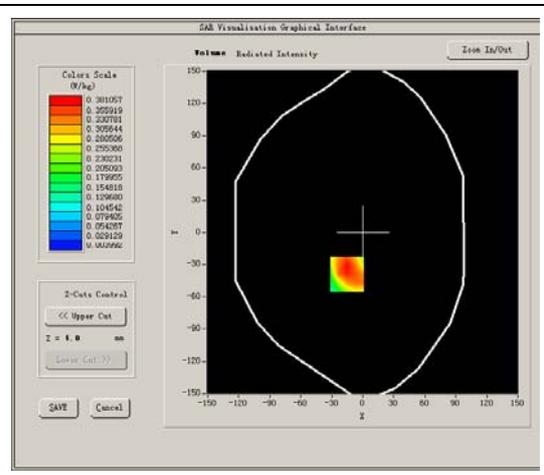
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-1.090000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

### SURFACE SAR



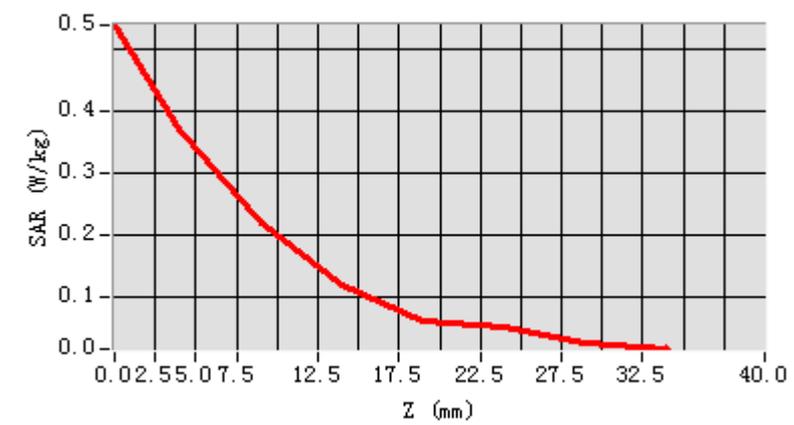
### VOLUME SAR



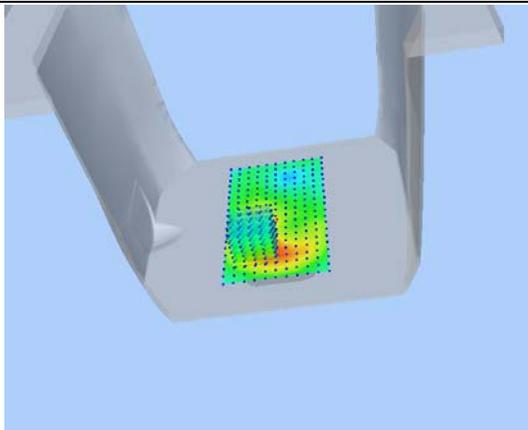
**Maximum location: X=-15.00, Y=-39.00**  
**SAR Peak: 0.64 W/kg**

<b>SAR 10g (W/Kg)</b>	0.224798
<b>SAR 1g (W/Kg)</b>	0.392195

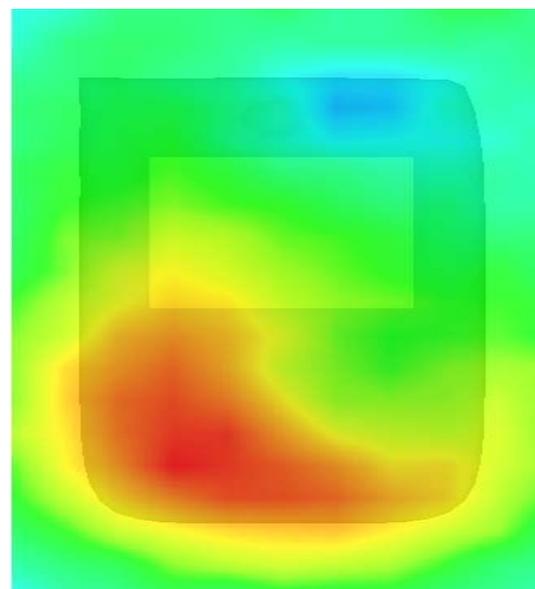
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 10 seconds

## A. Experimental conditions.

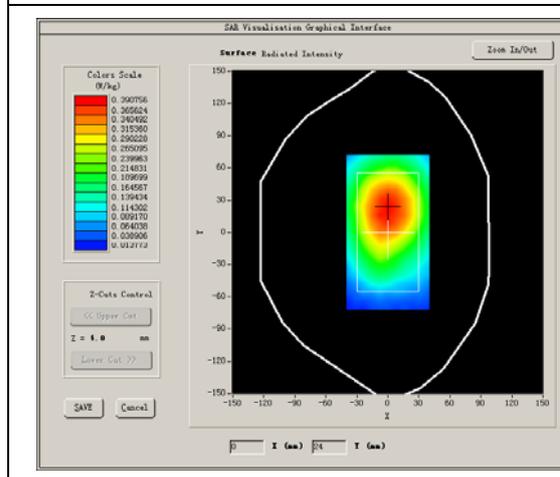
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

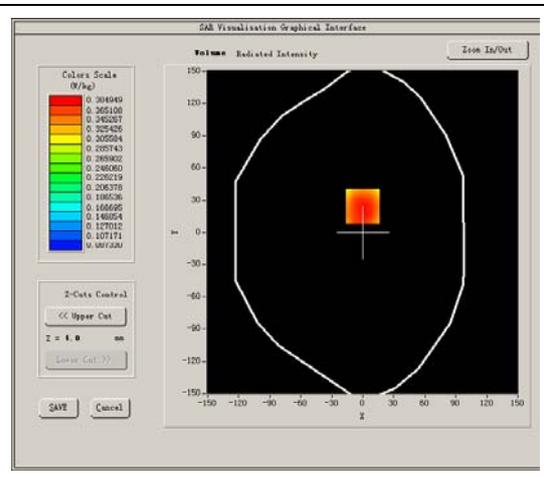
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-0.520000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

### SURFACE SAR



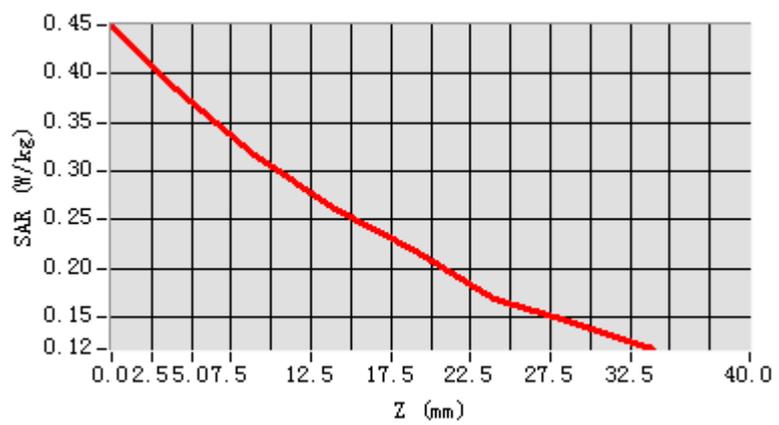
### VOLUME SAR



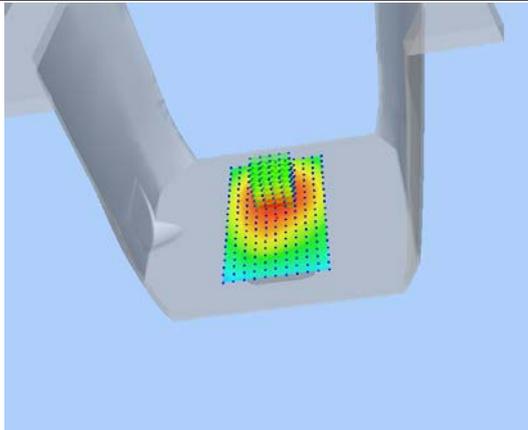
Maximum location: X=0.00, Y=24.00  
 SAR Peak: 0.47 W/kg

SAR 10g (W/Kg)	0.292170
SAR 1g (W/Kg)	0.377296

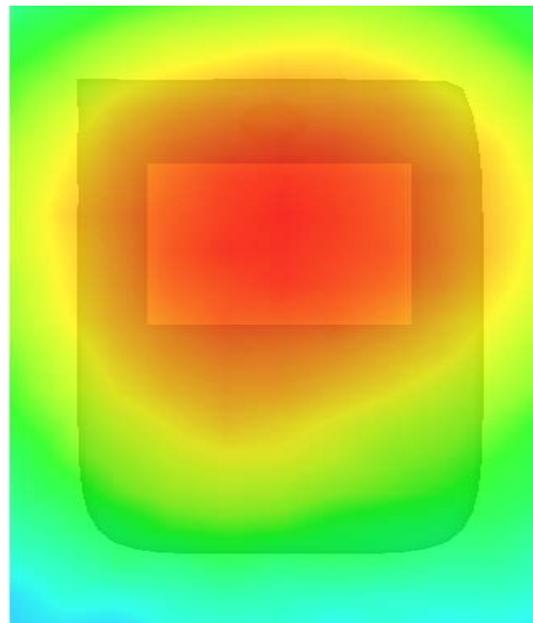
### Z axis scan



### 3D screen 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: 2013.8.19

Measurement duration: 9 minutes 10 seconds

### A. Experimental conditions.

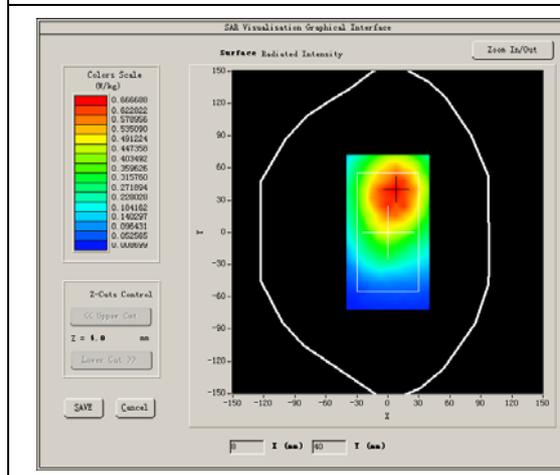
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM850
<b>Channels</b>	Middle
<b>Signal</b>	EDGE

### B. SAR Measurement Results

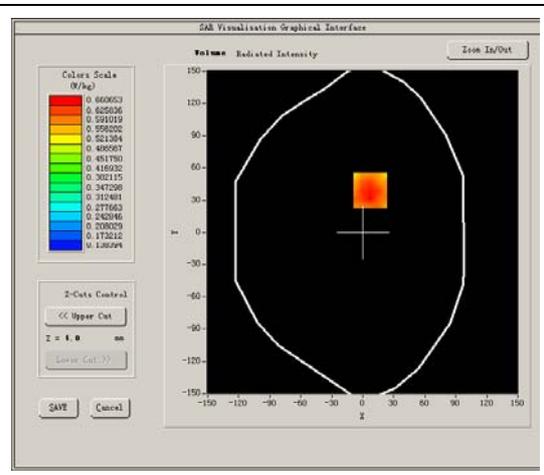
Middle Band SAR (Channel 190):

<b>Frequency (MHz)</b>	836.600000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift(%)</b>	-0.810000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:2

#### SURFACE SAR

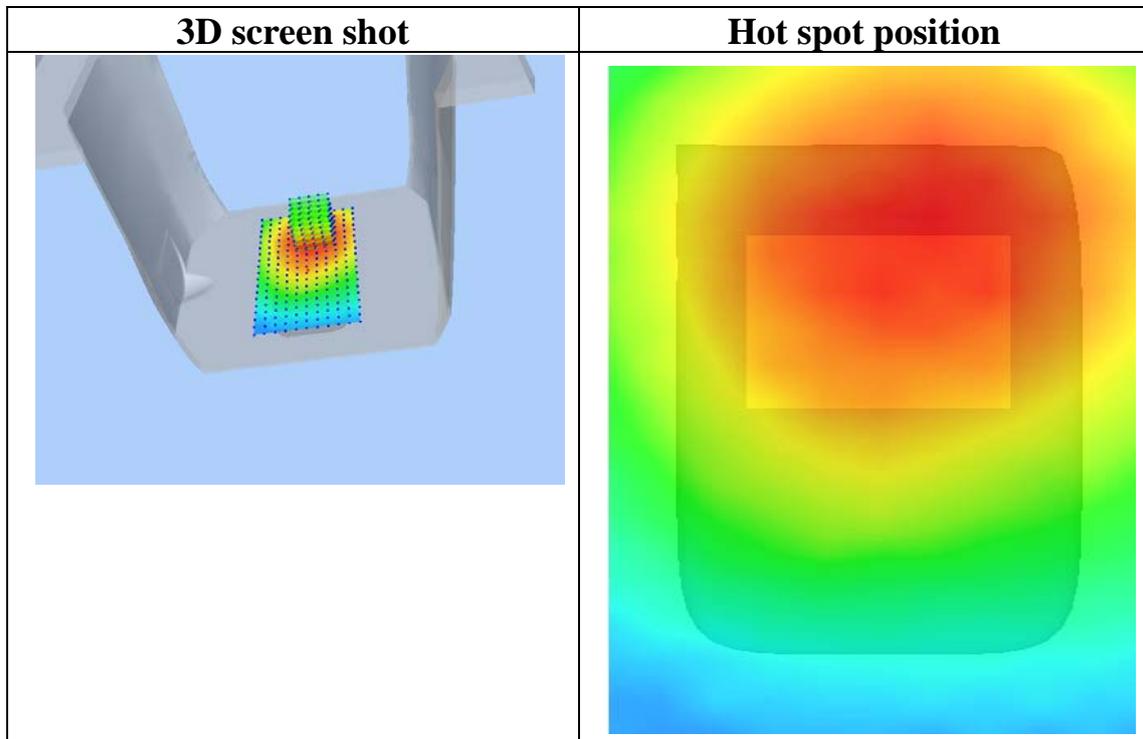
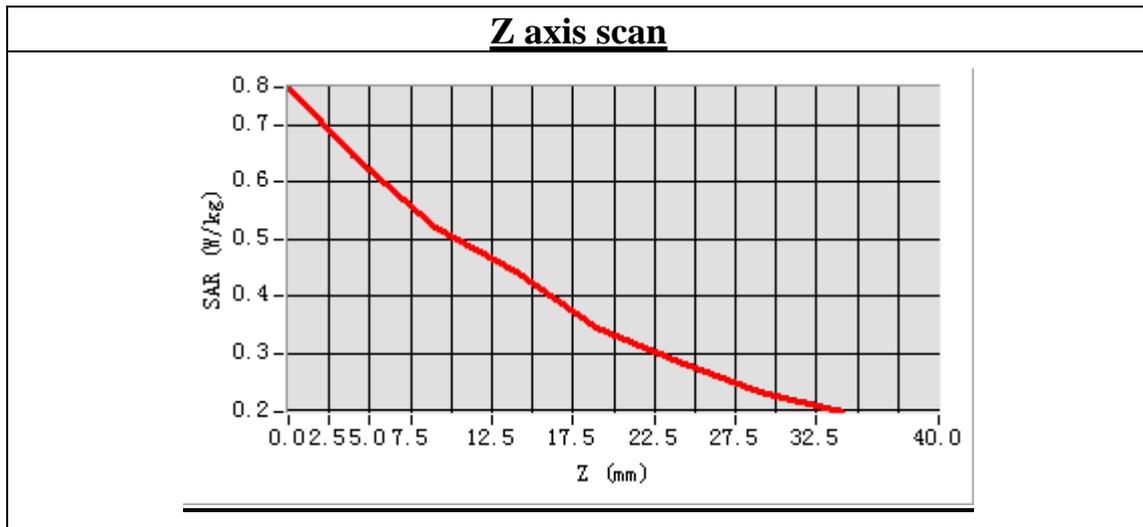


#### VOLUME SAR



Maximum location: X=7.00, Y=39.00  
 SAR Peak: 0.83 W/kg

SAR 10g (W/Kg)	0.493271
SAR 1g (W/Kg)	0.652576



## 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: 2013.8.20

Measurement duration: 7 minutes 52 seconds

### A. Experimental conditions.

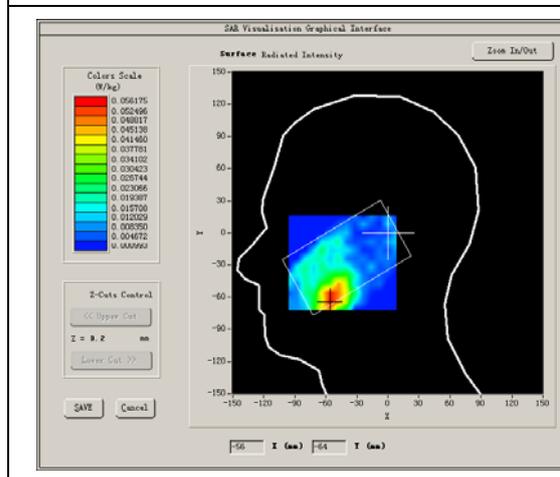
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

### B. SAR Measurement Results

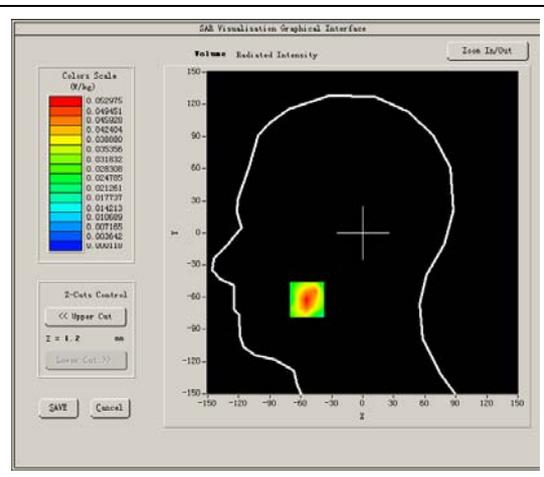
Lower Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.200000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift(%)</b>	-0.730000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

#### SURFACE SAR

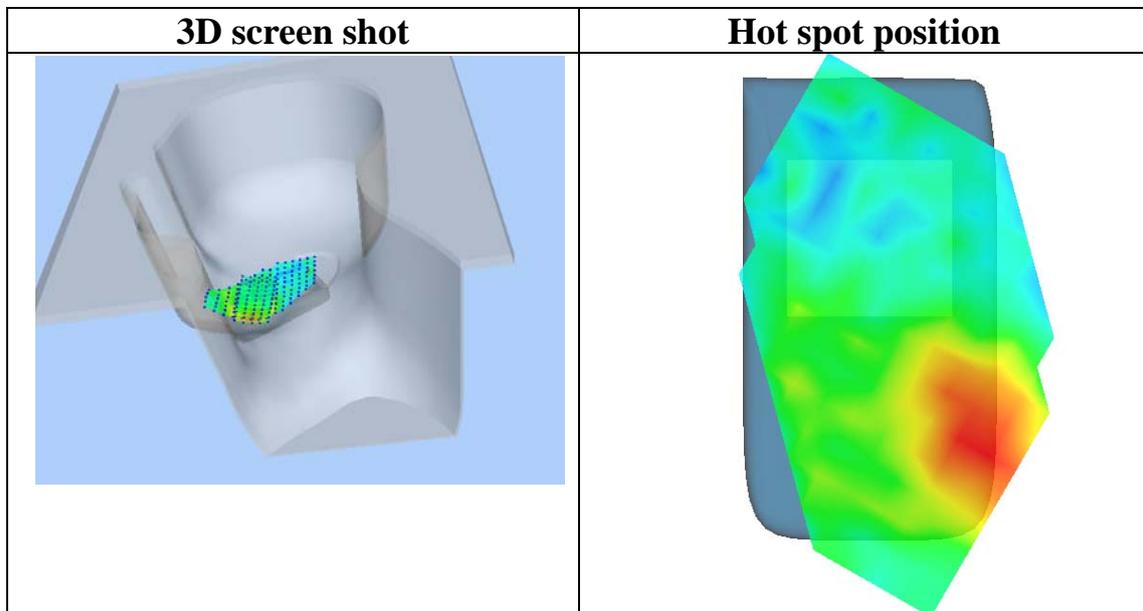
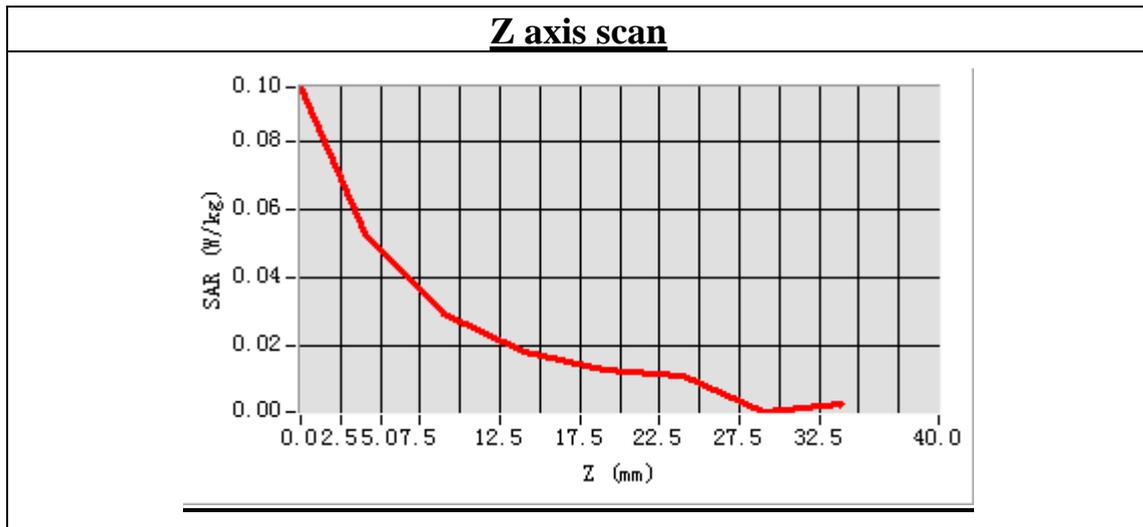


#### VOLUME SAR



**Maximum location: X=-54.00, Y=-62.00**  
**SAR Peak: 0.10 W/kg**

<b>SAR 10g (W/Kg)</b>	0.027541
<b>SAR 1g (W/Kg)</b>	0.052880



# 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: 2013.8.20

Measurement duration: 8 minutes 33 seconds

## A. Experimental conditions.

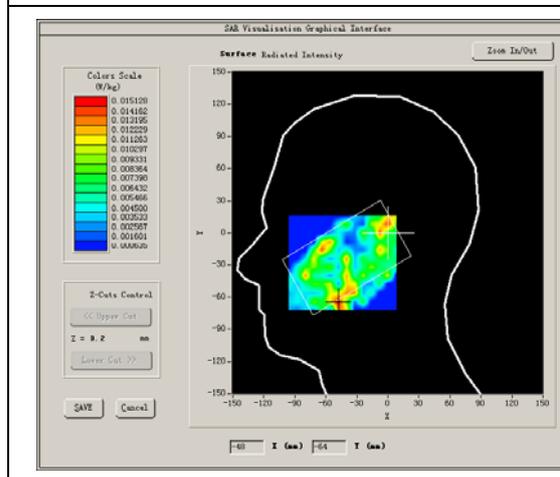
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

## B. SAR Measurement Results

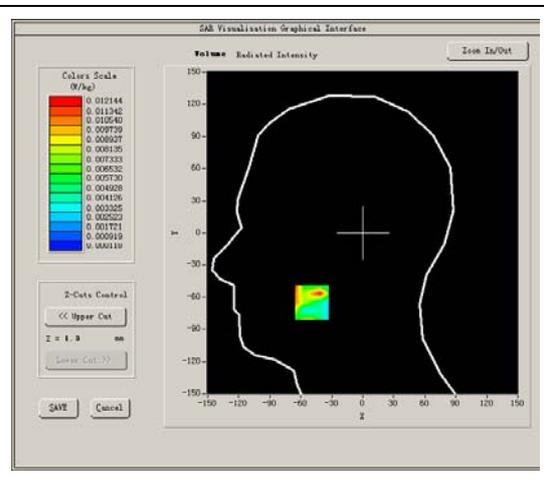
Lower Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.200000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift(%)</b>	-1.430000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

### SURFACE SAR

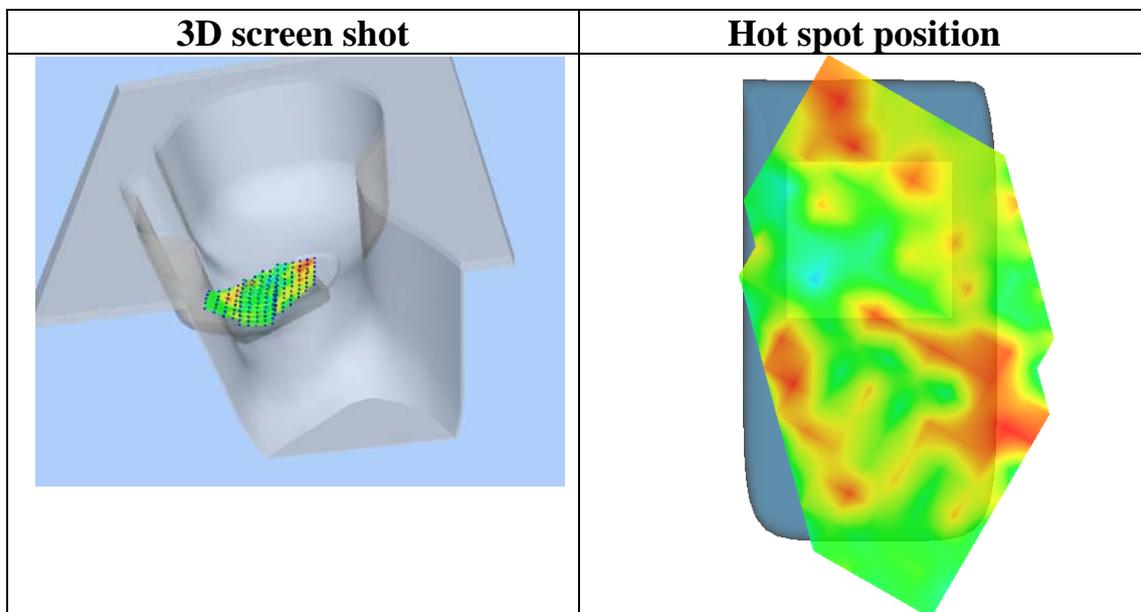
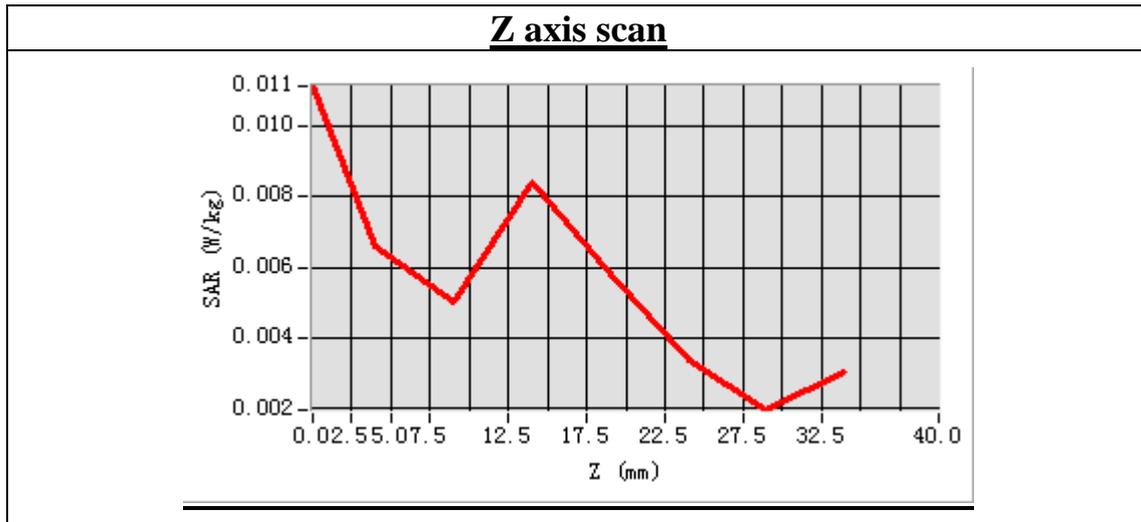


### VOLUME SAR



**Maximum location: X=-49.00, Y=-65.00**  
**SAR Peak: 0.03 W/kg**

<b>SAR 10g (W/Kg)</b>	0.005822
<b>SAR 1g (W/Kg)</b>	0.012400



# 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: 2013.8.20

Measurement duration: 8 minutes 24 seconds

## A. Experimental conditions.

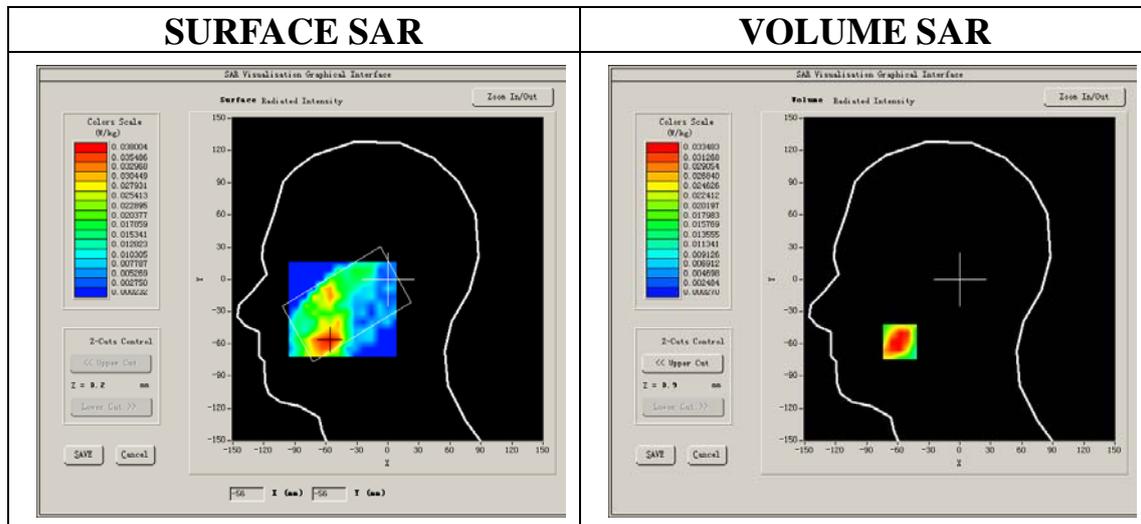
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

## B. SAR Measurement Results

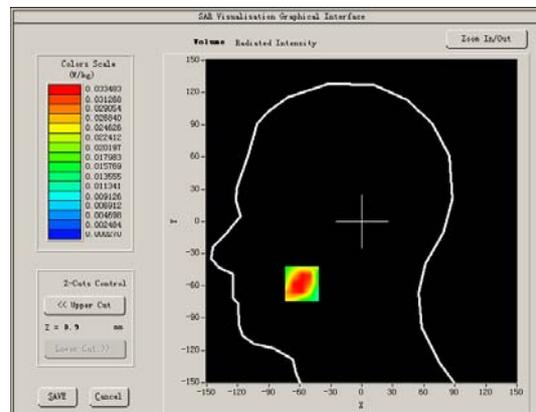
Low Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.200000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift(%)</b>	-0.590000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

### SURFACE SAR



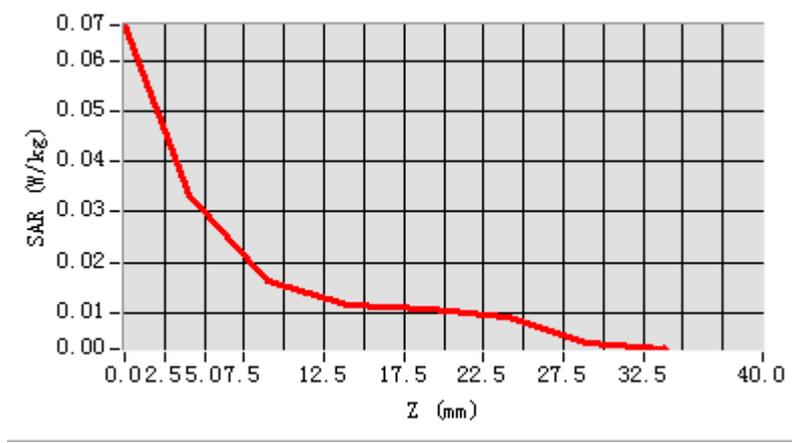
### VOLUME SAR



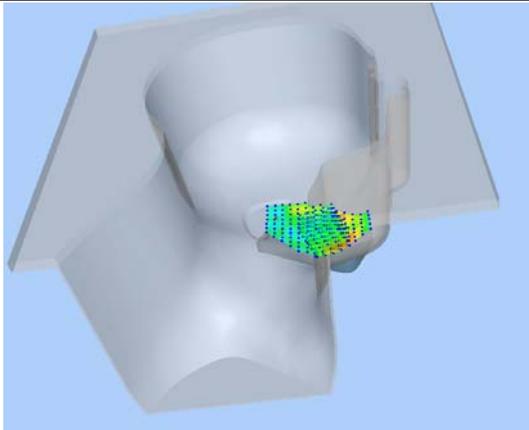
**Maximum location: X=-58.00, Y=-58.00**  
**SAR Peak: 0.07 W/kg**

<b>SAR 10g (W/Kg)</b>	0.018629
<b>SAR 1g (W/Kg)</b>	0.036387

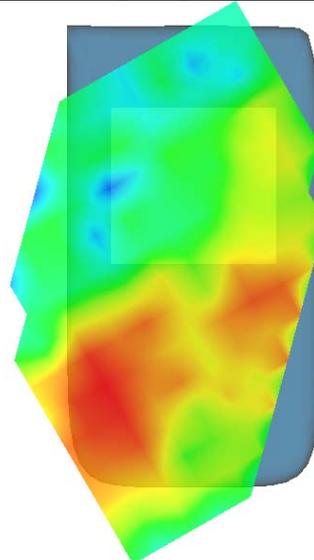
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 7 minutes 18 seconds

## A. Experimental conditions.

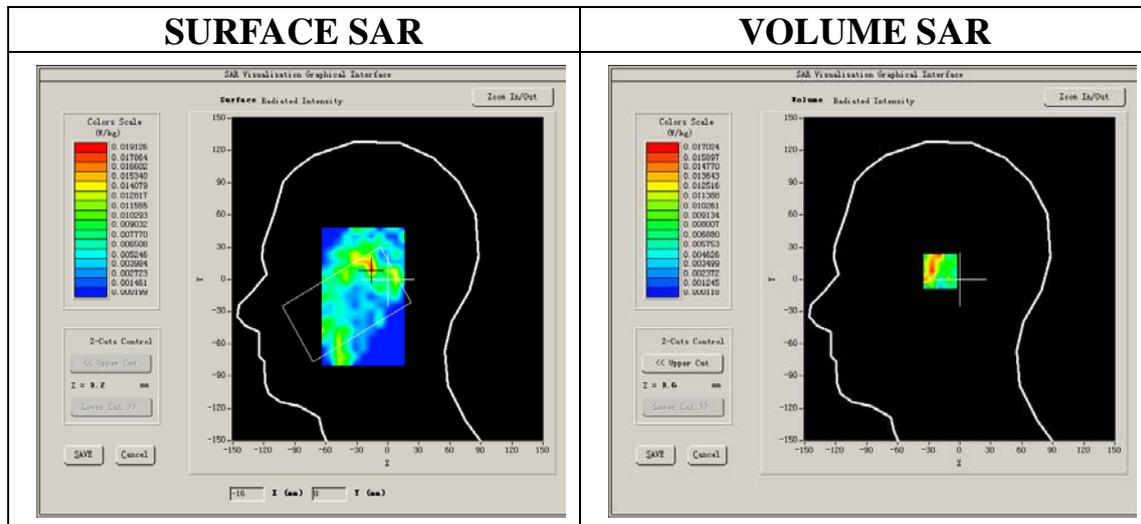
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

## B. SAR Measurement Results

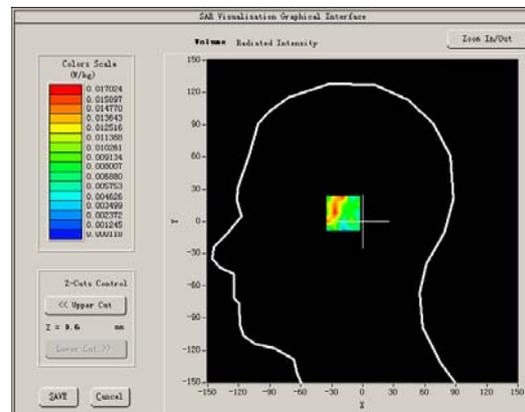
Lower Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift(%)</b>	-0.290000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:8

### SURFACE SAR

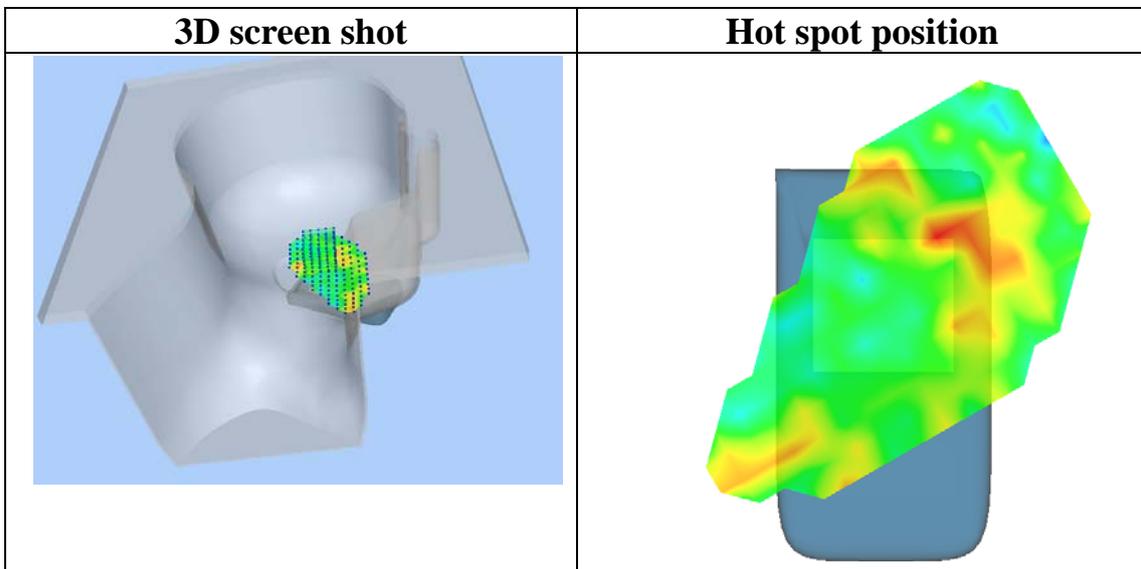
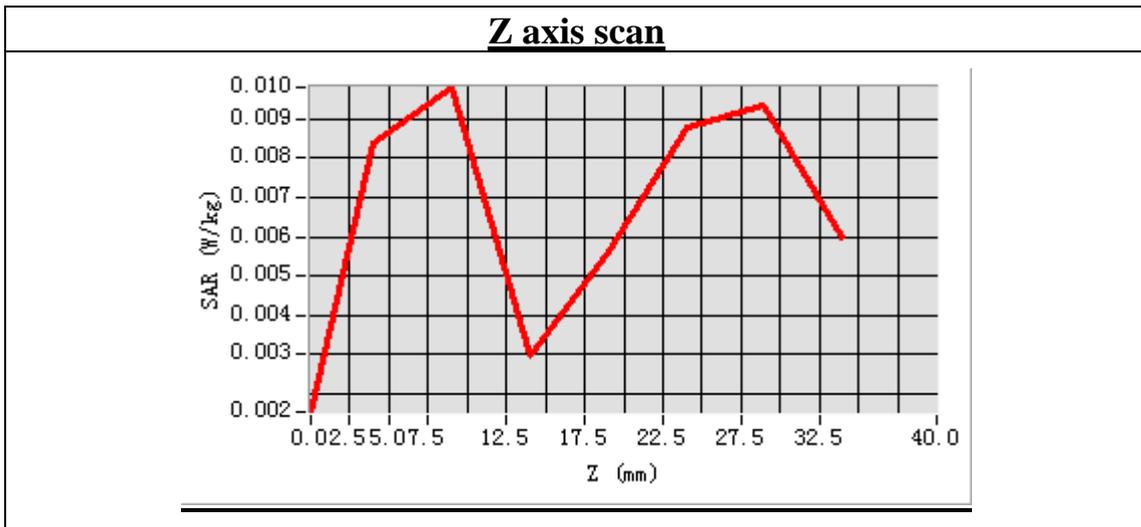


### VOLUME SAR



**Maximum location: X=-16.00, Y=9.00**  
**SAR Peak: 0.04 W/kg**

<b>SAR 10g (W/Kg)</b>	0.008037
<b>SAR 1g (W/Kg)</b>	0.014139



# 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: 2013.8.20

Measurement duration: 9 minutes 8 seconds

## A. Experimental conditions.

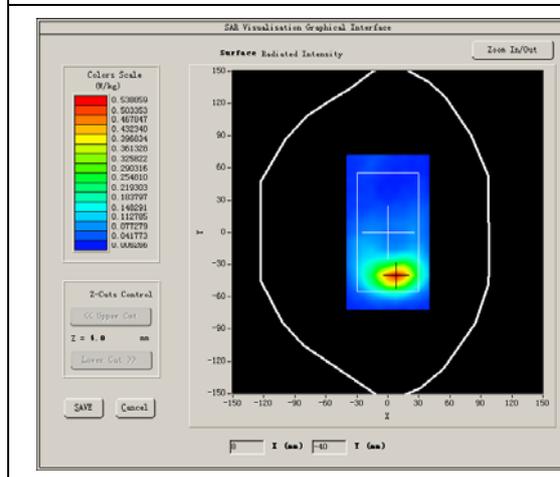
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

## B. SAR Measurement Results

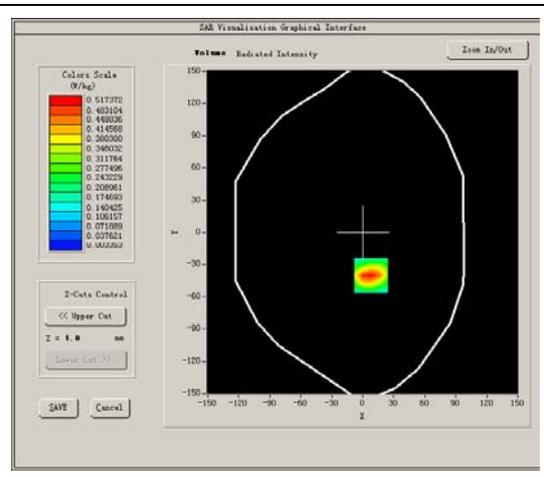
Low Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.200000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	-2.320000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:8

### SURFACE SAR

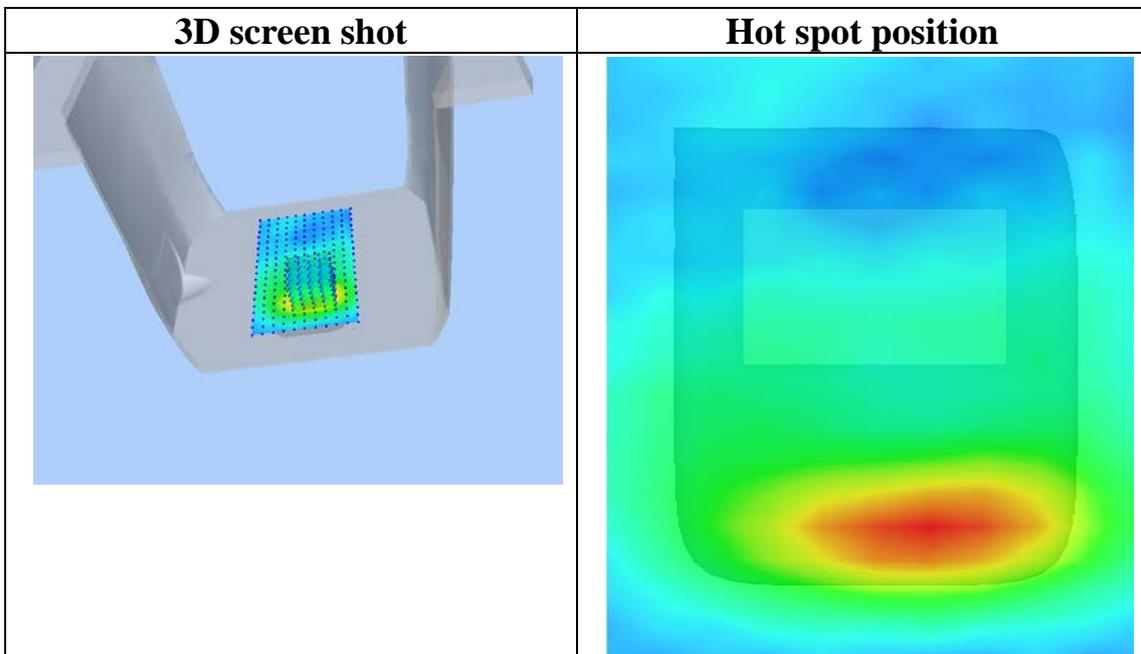
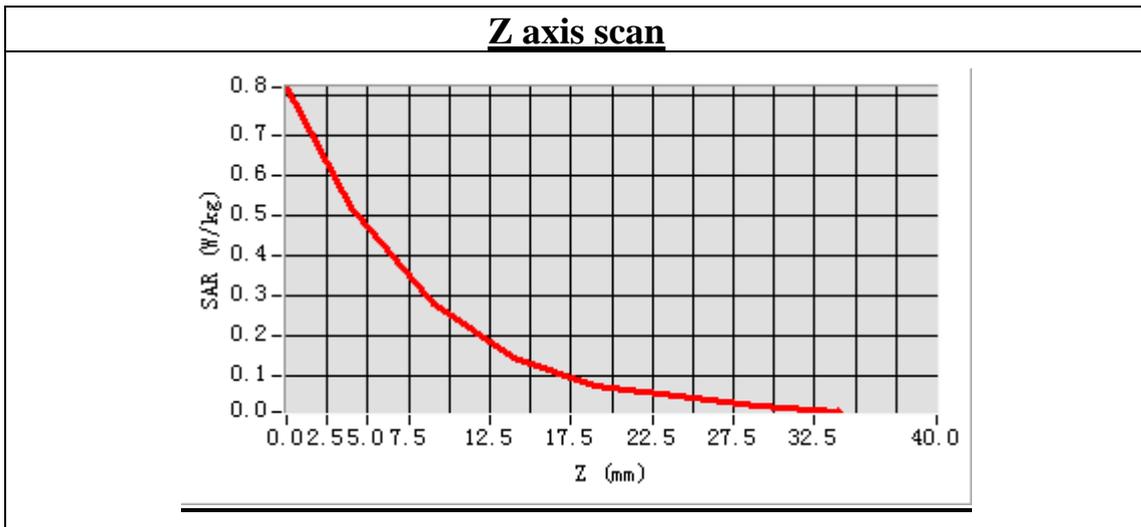


### VOLUME SAR



**Maximum location: X=8.00, Y=-40.00**  
**SAR Peak: 0.91 W/kg**

<b>SAR 10g (W/Kg)</b>	0.259603
<b>SAR 1g (W/Kg)</b>	0.527254



# 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: 2013.8.20

Measurement duration: 9 minutes 9 seconds

## A. Experimental conditions.

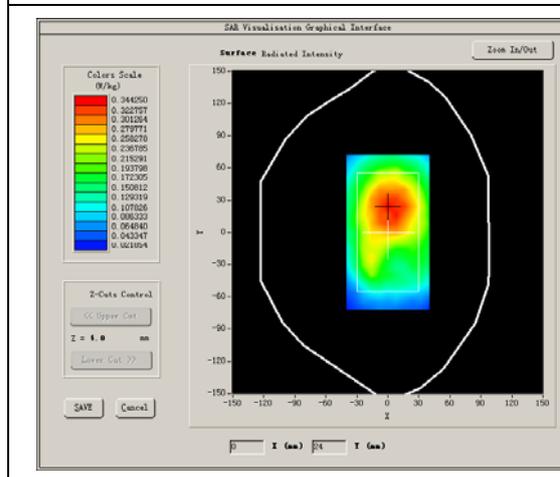
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Low
<b>Signal</b>	GSM

## B. SAR Measurement Results

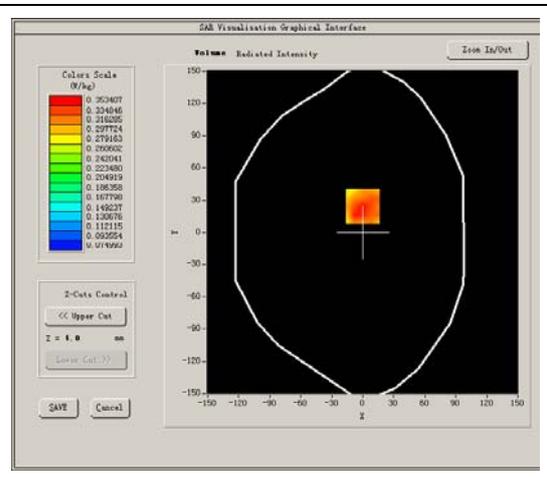
Lower Band SAR (Channel 512):

<b>Frequency (MHz)</b>	1850.200000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	0.110000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:8

### SURFACE SAR

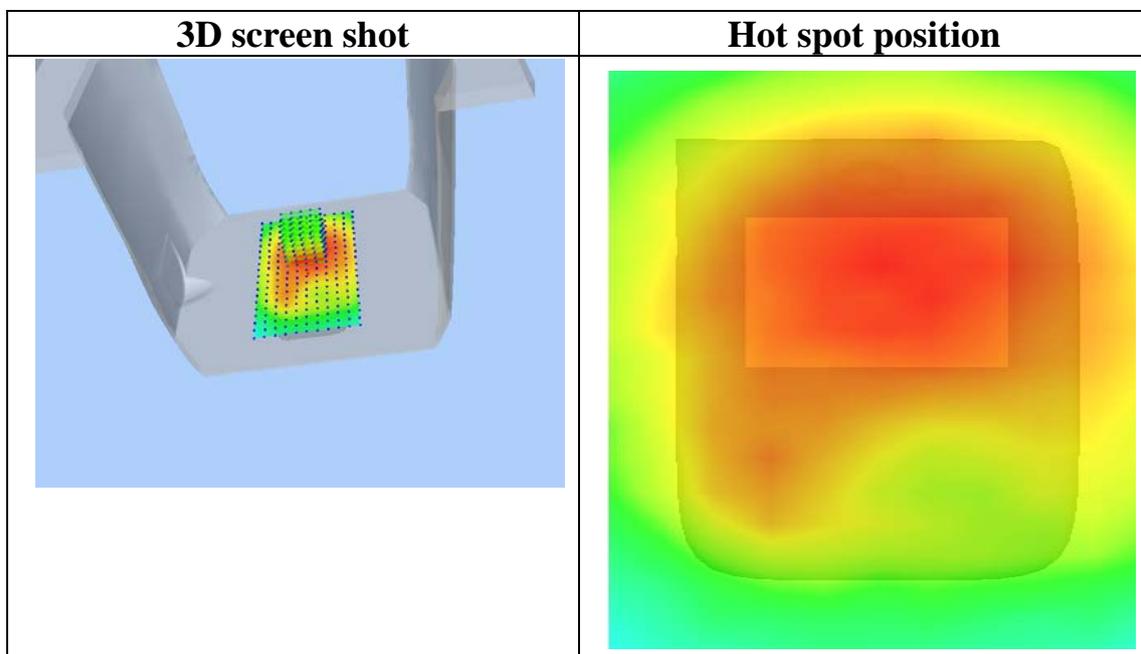
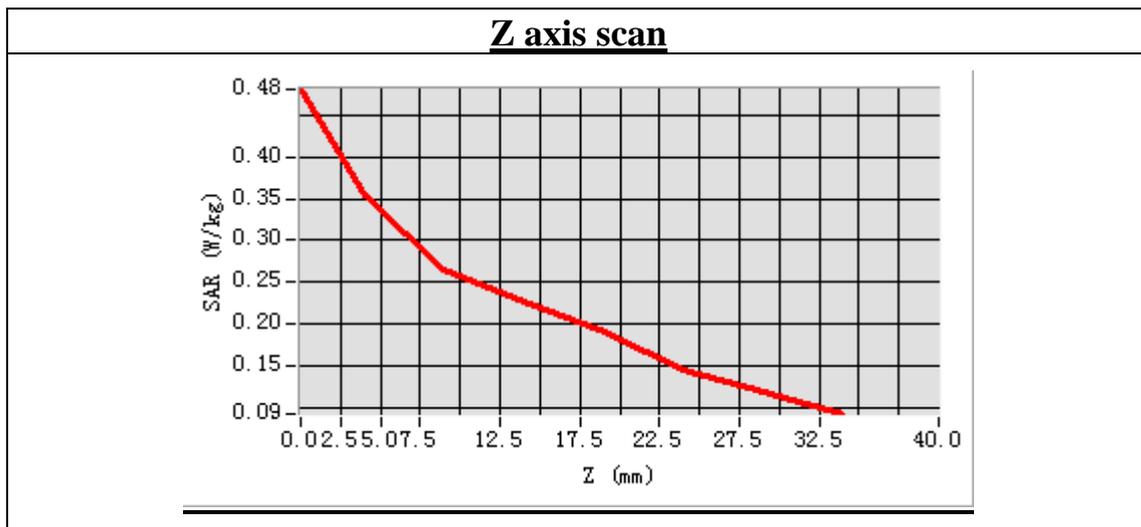


### VOLUME SAR



Maximum location: X=0.00, Y=24.00  
 SAR Peak: 0.52 W/kg

SAR 10g (W/Kg)	0.282606
SAR 1g (W/Kg)	0.375849



# 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: 2013.8.20

Measurement duration: 9 minutes 8 seconds

## A. Experimental conditions.

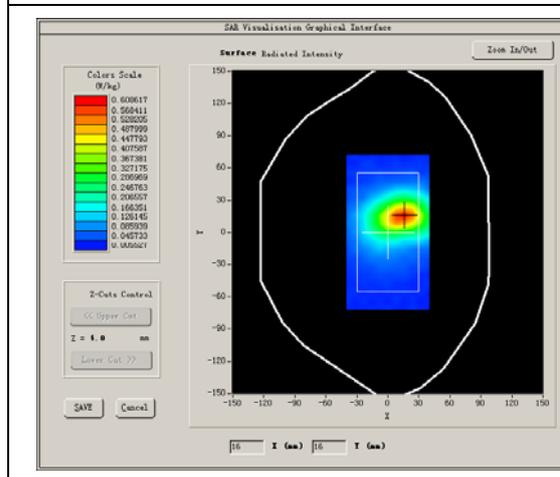
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

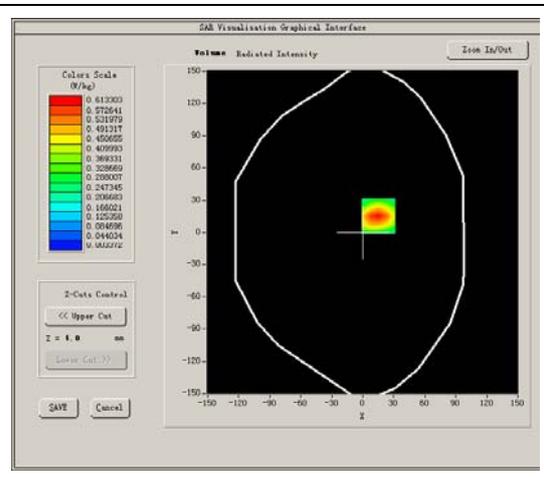
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	-0.710000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2

### SURFACE SAR

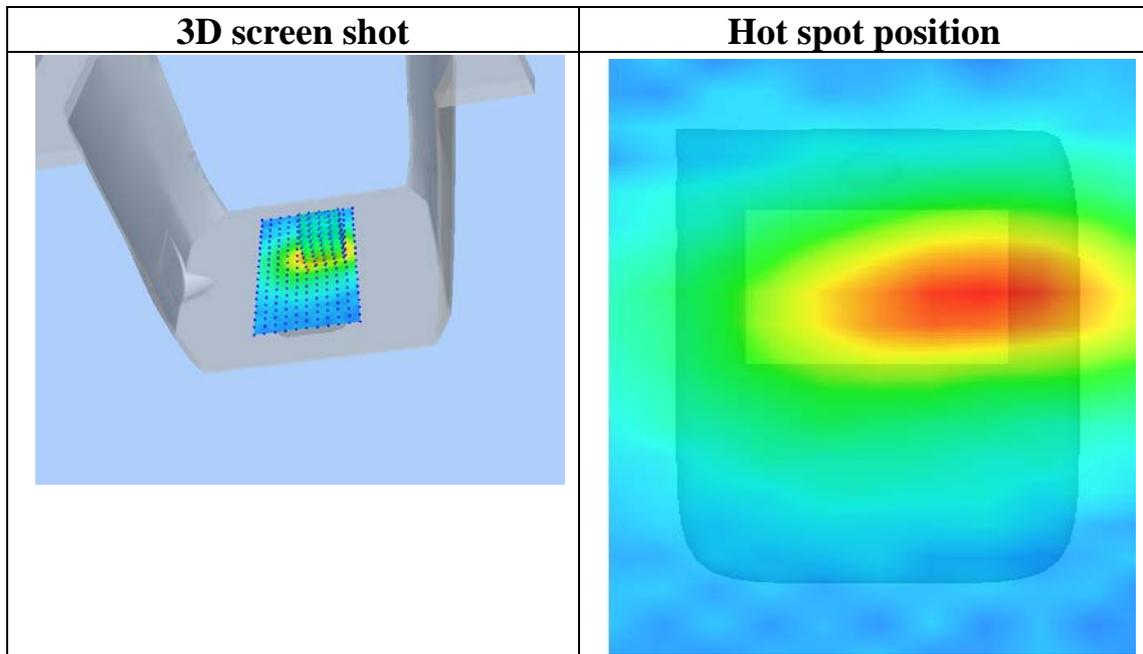
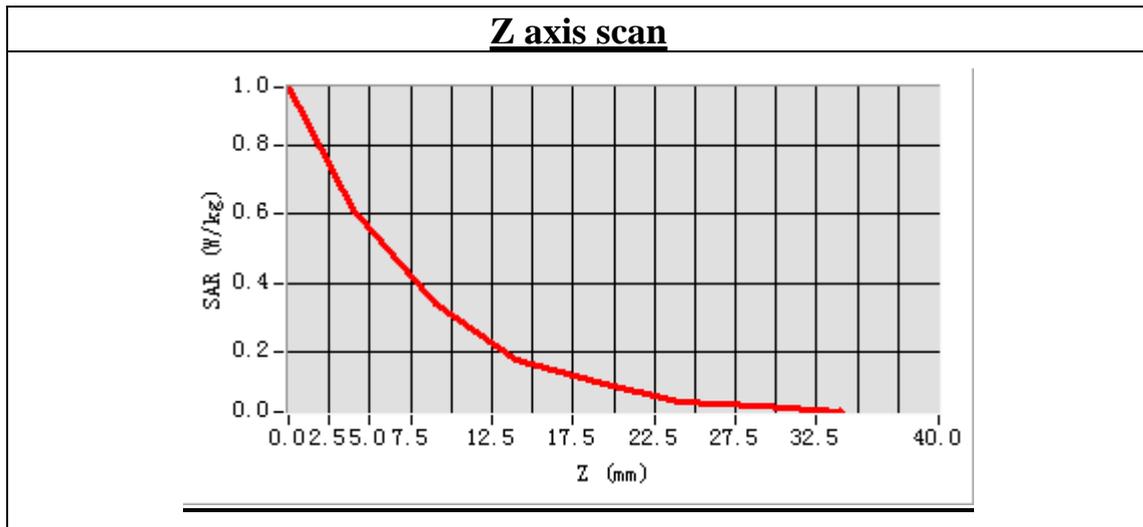


### VOLUME SAR



Maximum location: X=15.00, Y=15.00  
 SAR Peak: 0.99 W/kg

SAR 10g (W/Kg)	0.309762
SAR 1g (W/Kg)	0.594883



# 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: 2013.8.20

Measurement duration: 9 minutes 8 seconds

## A. Experimental conditions.

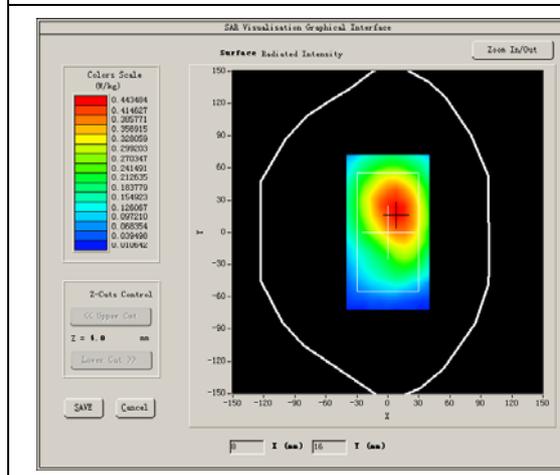
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

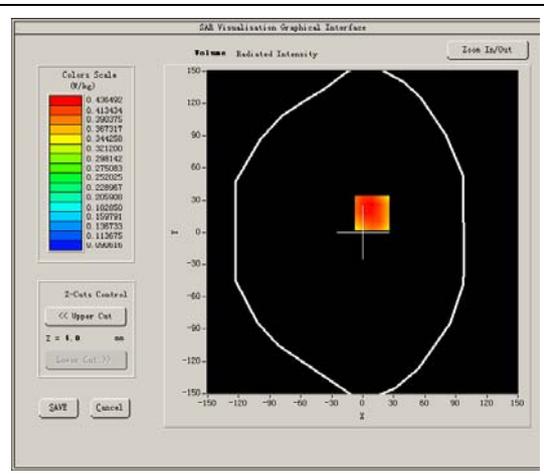
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	-0.860000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2

### SURFACE SAR



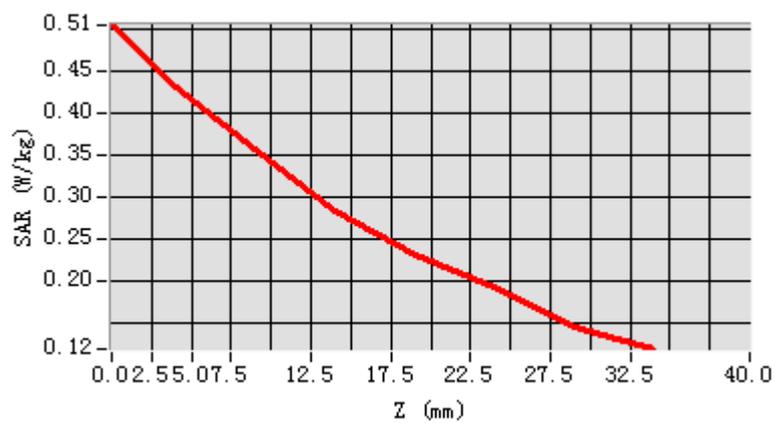
### VOLUME SAR



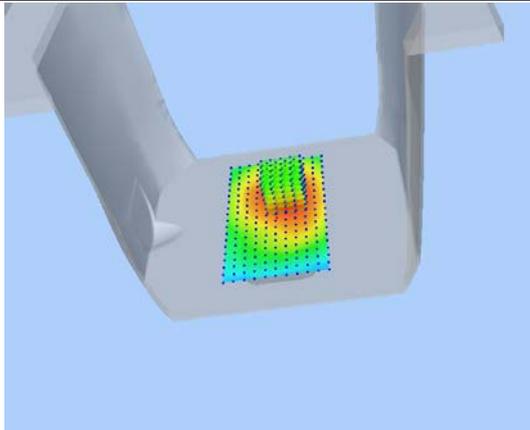
Maximum location: X=9.00, Y=18.00  
 SAR Peak: 0.55 W/kg

SAR 10g (W/Kg)	0.330506
SAR 1g (W/Kg)	0.428656

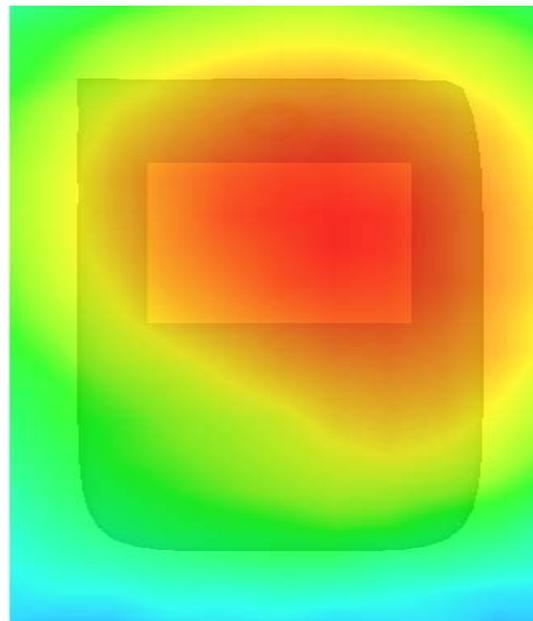
### Z axis scan



### 3D screen 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: 2013.8.20

Measurement duration: 9 minutes 8 seconds

## A. Experimental conditions.

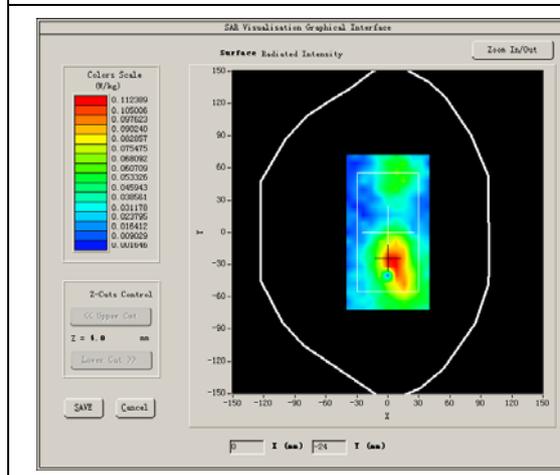
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

## B. SAR Measurement Results

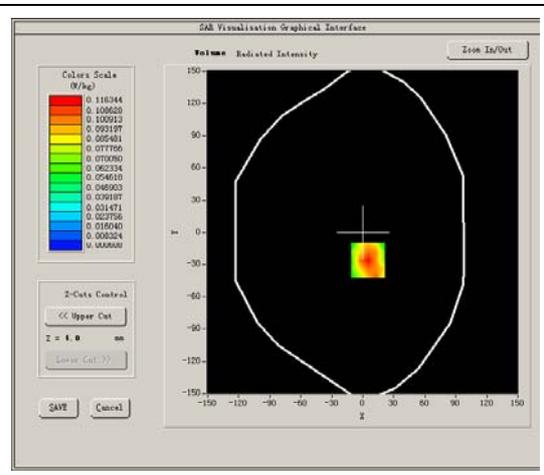
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	0.130000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2

### SURFACE SAR



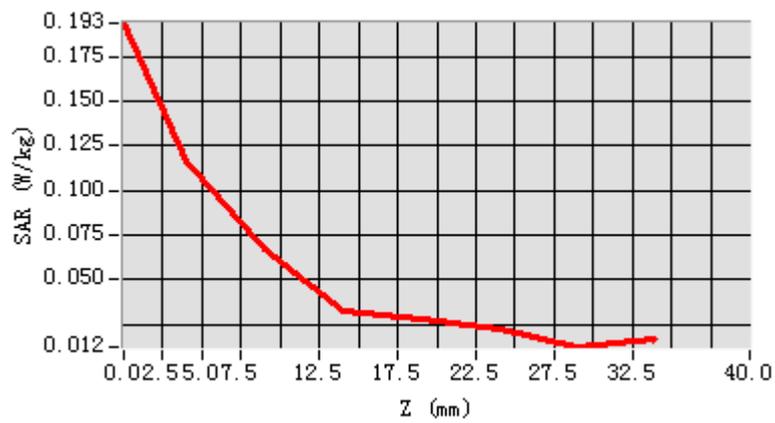
### VOLUME SAR



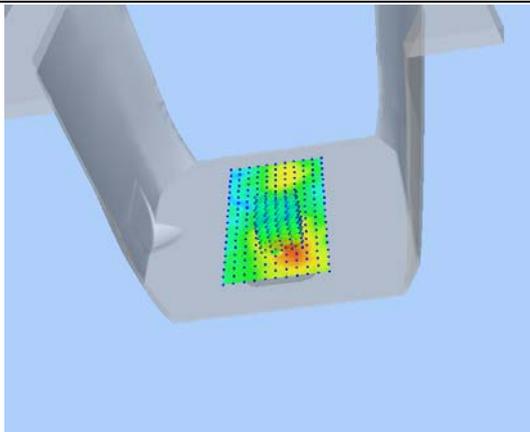
Maximum location: X=5.00, Y=-26.00  
 SAR Peak: 0.19 W/kg

SAR 10g (W/Kg)	0.062117
SAR 1g (W/Kg)	0.113536

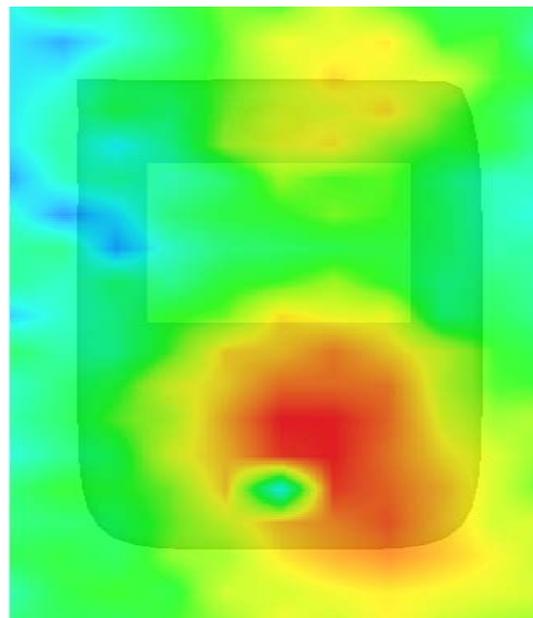
### Z axis scan



### 3D screen 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: 2013.8.20

Measurement duration: 9 minutes 9 seconds

### A. Experimental conditions.

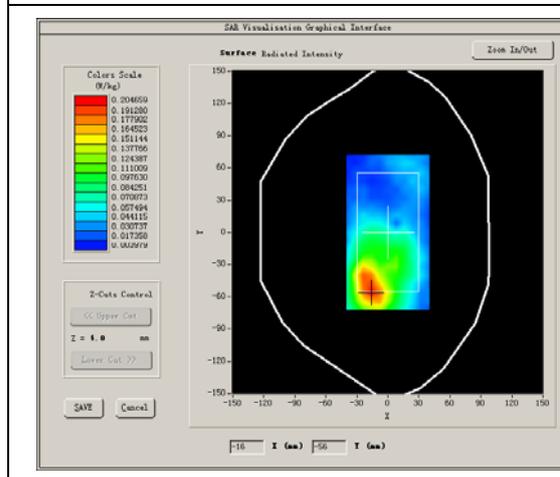
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Result

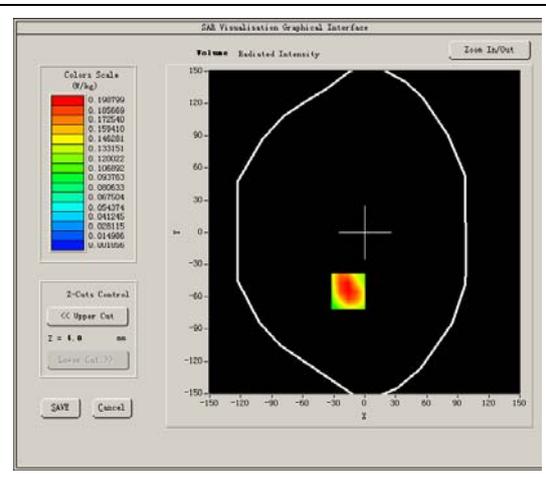
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	0.320000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2

#### SURFACE SAR

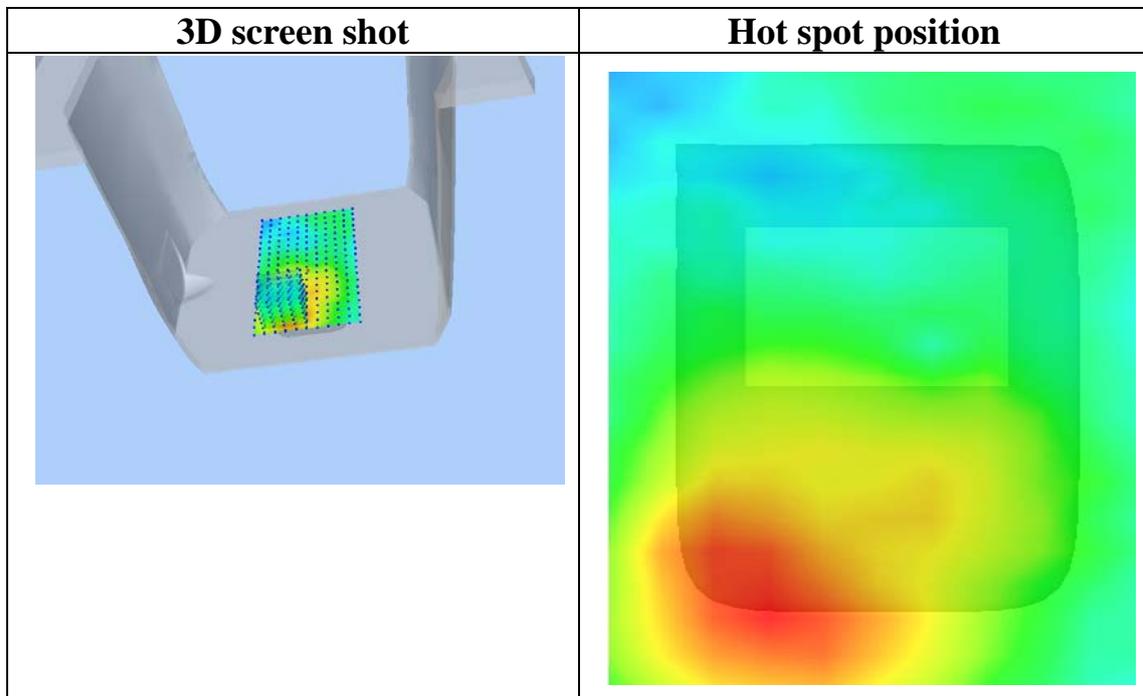
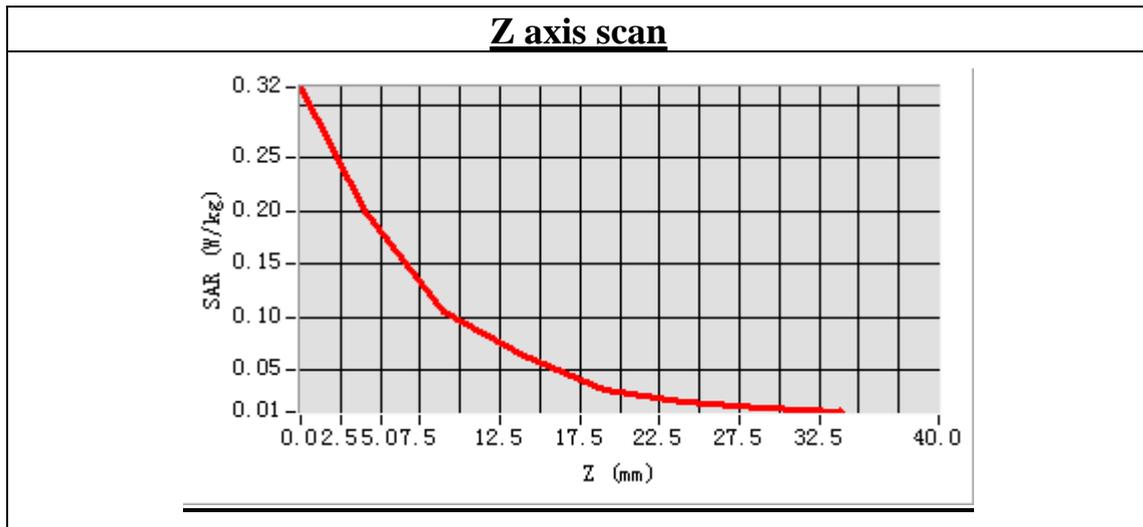


#### VOLUME SAR



**Maximum location: X=-16.00, Y=-55.00**  
**SAR Peak: 0.33 W/kg**

<b>SAR 10g (W/Kg)</b>	0.105228
<b>SAR 1g (W/Kg)</b>	0.198475



## 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: 2013.8.20

Measurement duration: 9 minutes 9 seconds

### A. Experimental conditions.

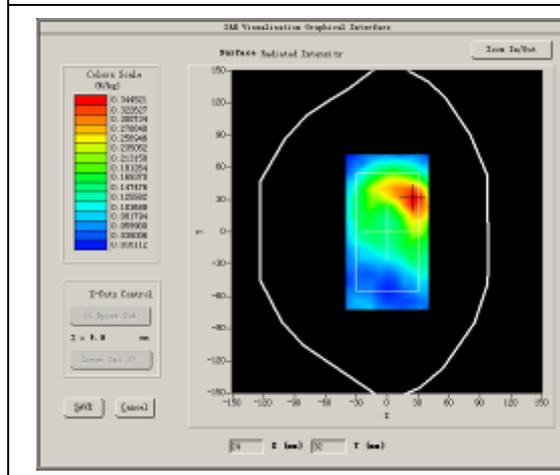
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	GPRS

### B. SAR Measurement Results

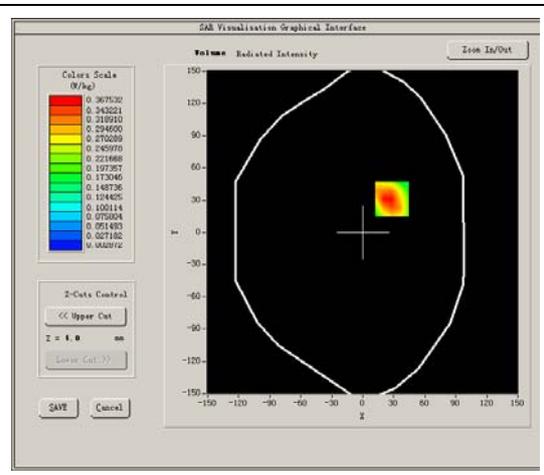
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	-0.800000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2

#### SURFACE SAR

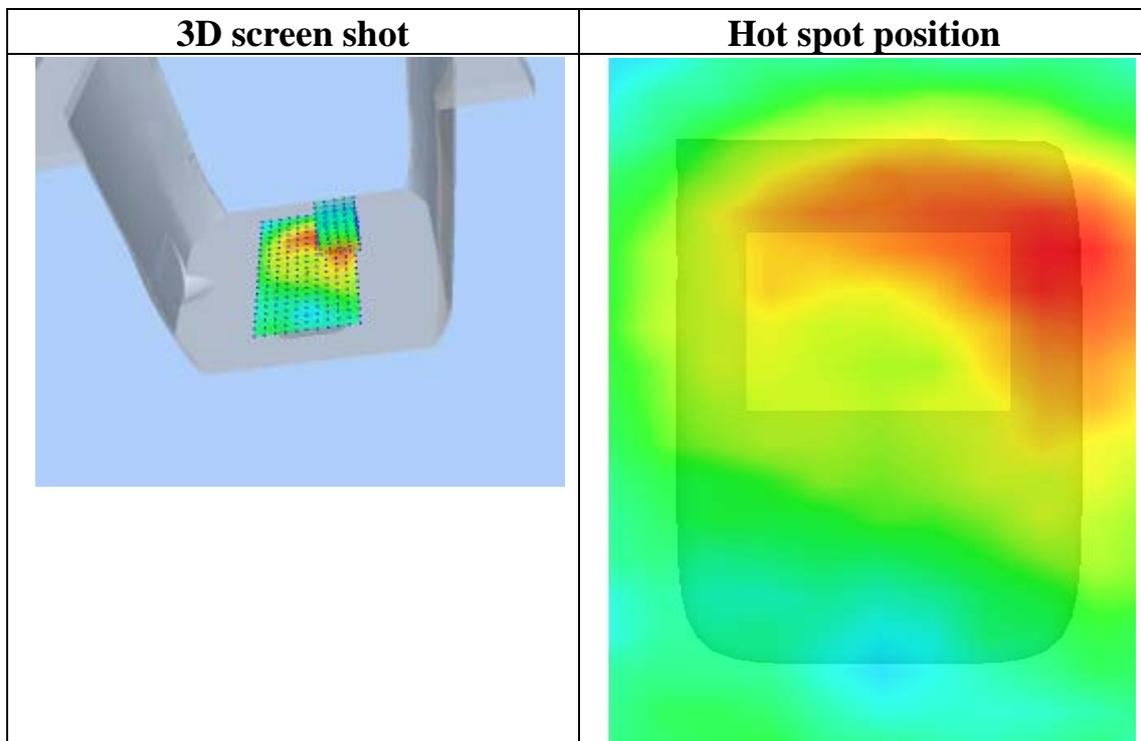
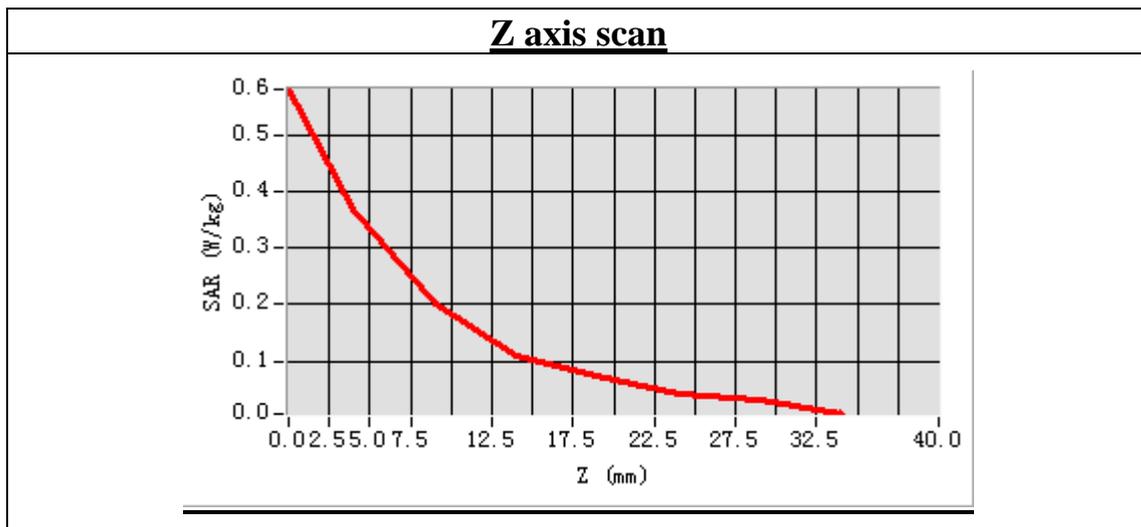


#### VOLUME SAR



Maximum location: X=28.00, Y=31.00  
 SAR Peak: 0.69 W/kg

SAR 10g (W/Kg)	0.209960
SAR 1g (W/Kg)	0.393763



# 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: 2013.8.20

Measurement duration: 9 minutes 9 seconds

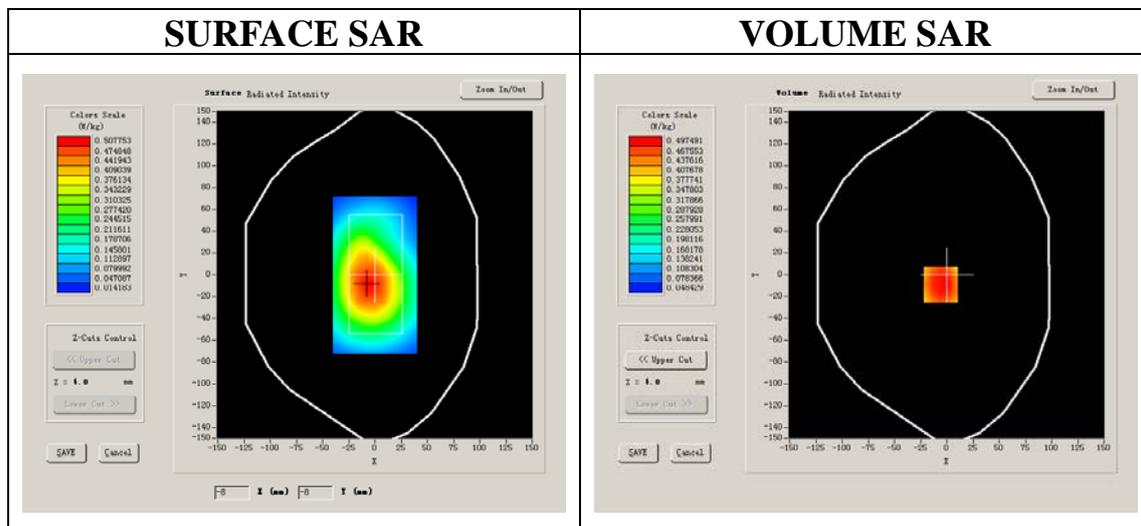
## A. Experimental conditions.

<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	Body
<b>Band</b>	GSM1900
<b>Channels</b>	Middle
<b>Signal</b>	EDGE

## B. SAR Measurement Results

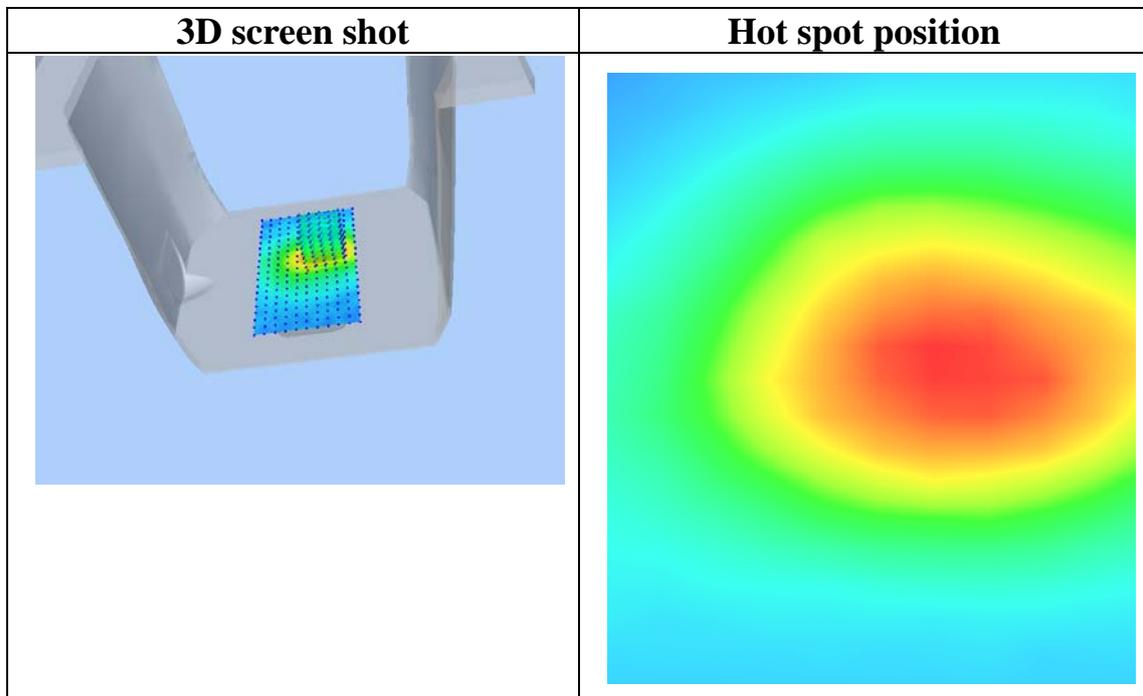
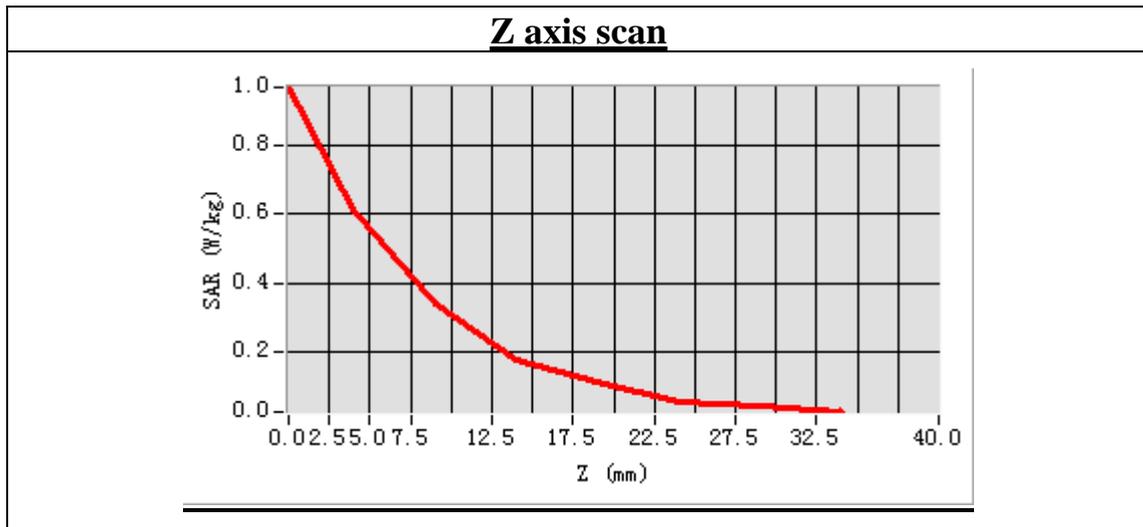
Middle Band SAR (Channel 661):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift(%)</b>	-0.950000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:2



Maximum location: X=6.00, Y=9.00  
 SAR Peak: 0.91 W/kg

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



## 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: 2013.8.19

Measurement duration: 7 minutes 59 seconds

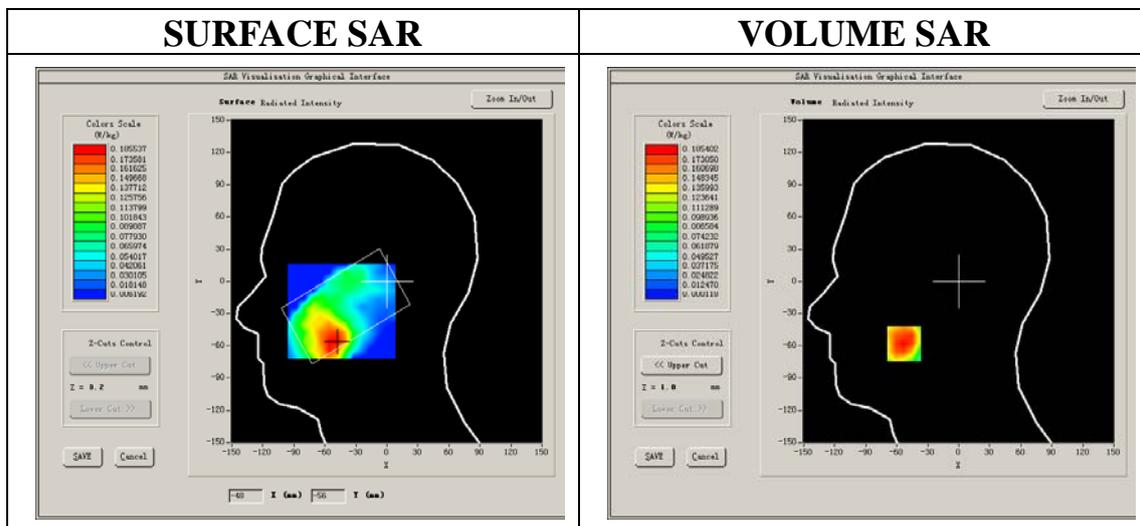
### A. Experimental conditions.

<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

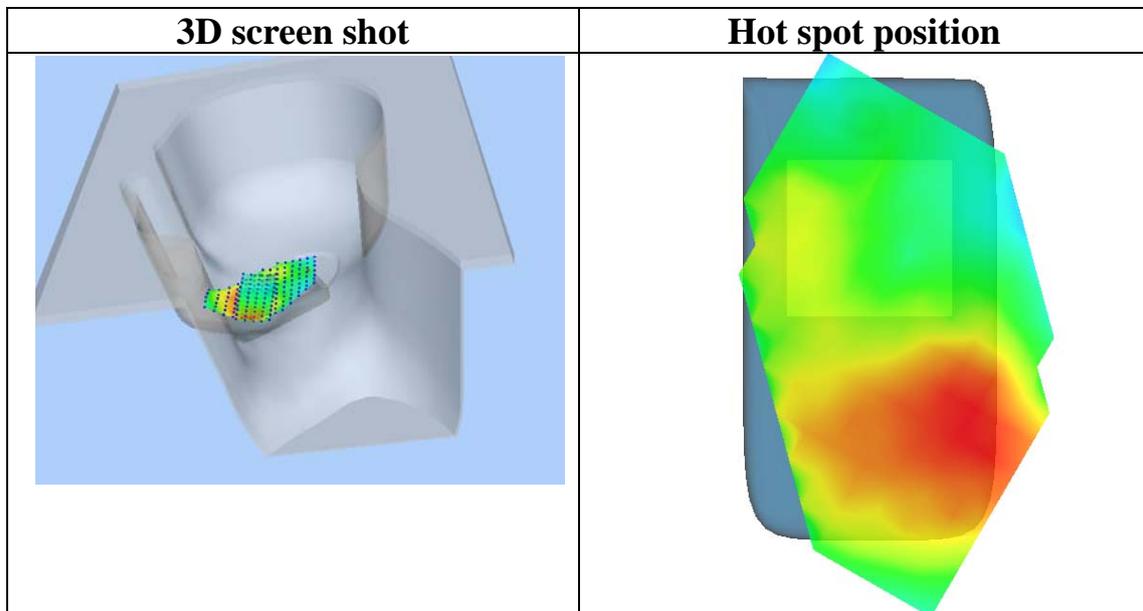
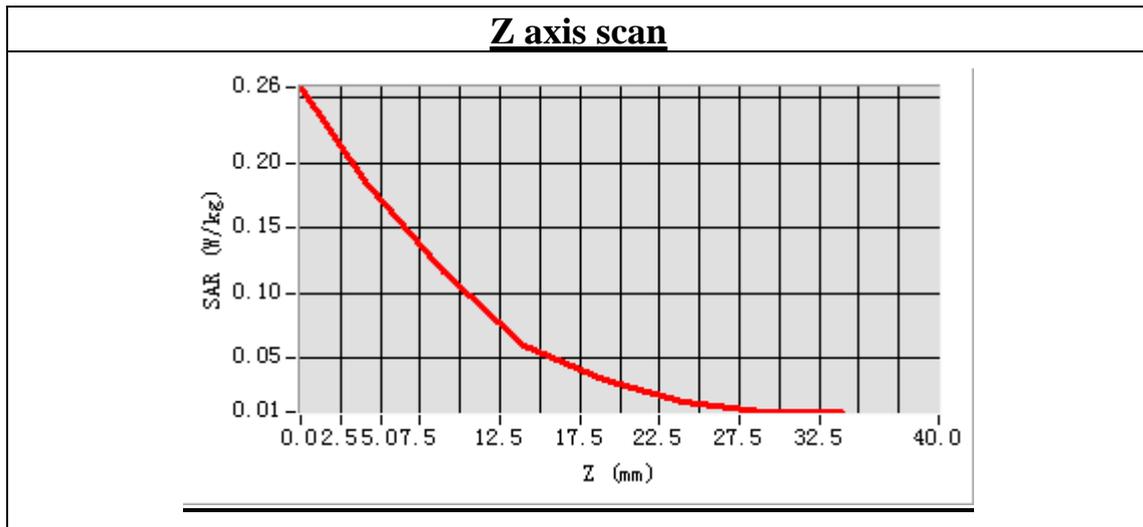
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.320000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479, 25.214, 27.196
<b>Crest factor:</b>	1:1



**Maximum location: X=-53.00, Y=-58.00**  
**SAR Peak: 0.28 W/kg**

<b>SAR 10g (W/Kg)</b>	0.101432
<b>SAR 1g (W/Kg)</b>	0.175769



## 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: 2013.8.19

Measurement duration: 7 minutes 41 seconds

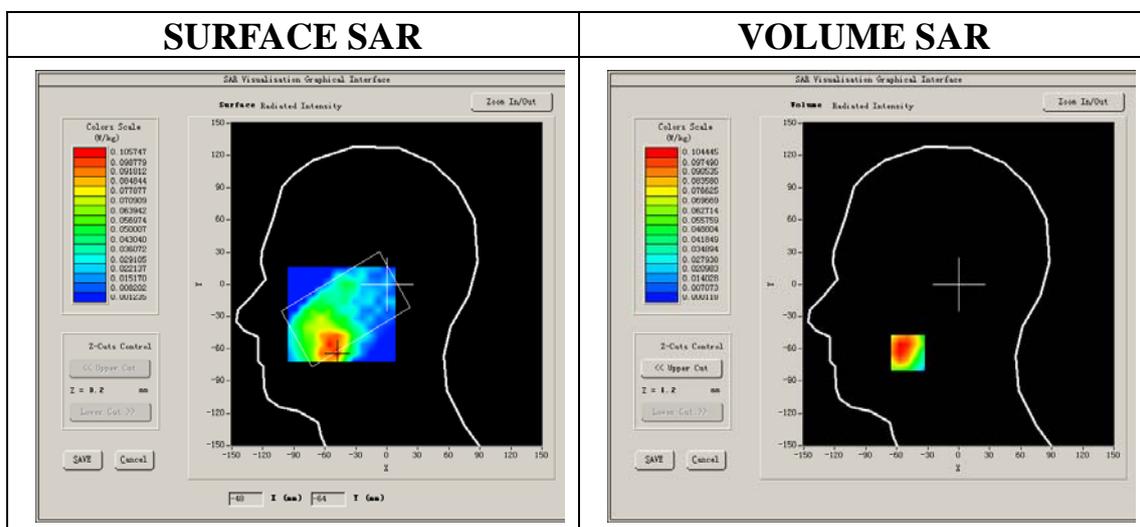
### A. Experimental conditions.

<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4175):

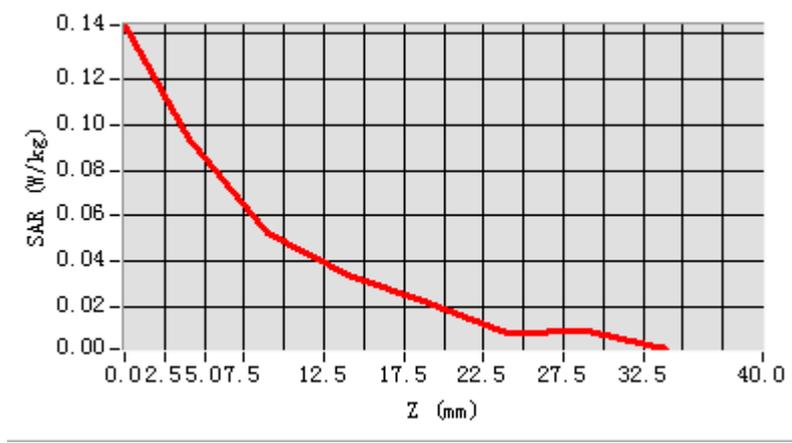
<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.320000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479, 25.214, 27.196
<b>Crest factor:</b>	1:1



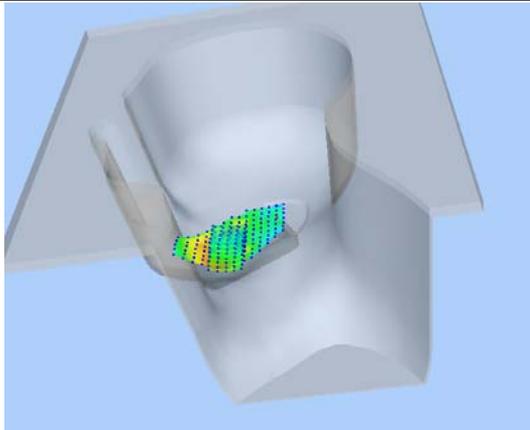
**Maximum location: X=-49.00, Y=-64.00**  
**SAR Peak: 0.17 W/kg**

<b>SAR 10g (W/Kg)</b>	0.057009
<b>SAR 1g (W/Kg)</b>	0.099850

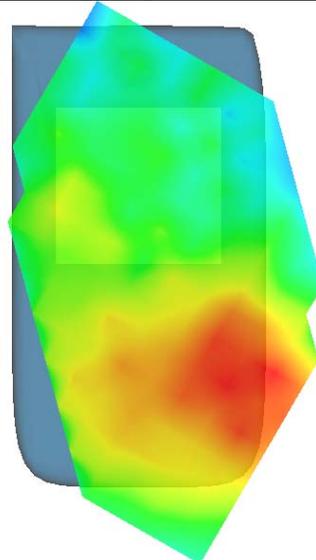
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 7 minutes 53 seconds

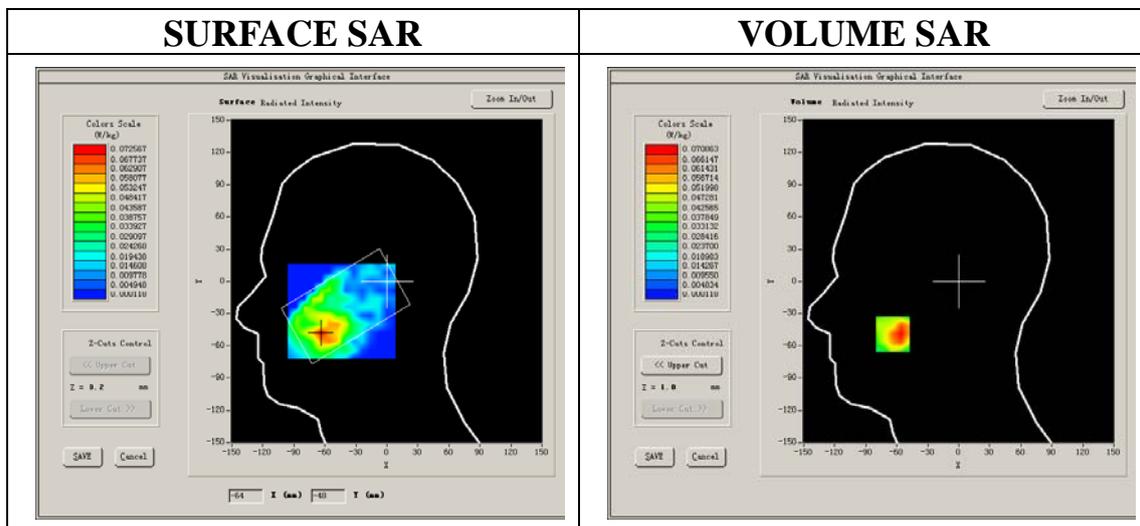
### A. Experimental conditions.

<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

Middle Band SAR (Channel 4175):

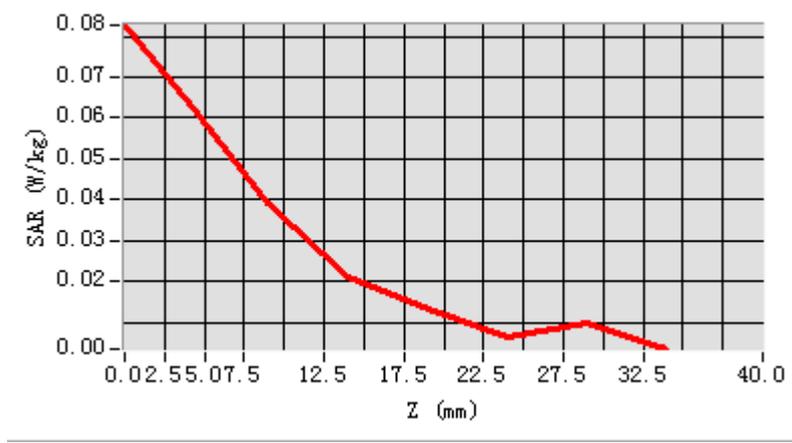
<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.080000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479, 25.214, 27.196
<b>Crest factor:</b>	1:1



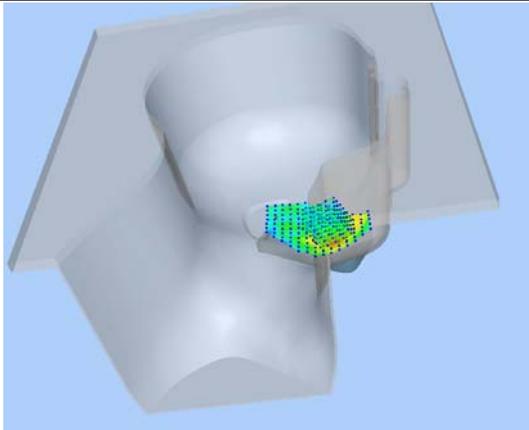
**Maximum location: X=-64.00, Y=-49.00**  
**SAR Peak: 0.11 W/kg**

<b>SAR 10g (W/Kg)</b>	0.037199
<b>SAR 1g (W/Kg)</b>	0.067946

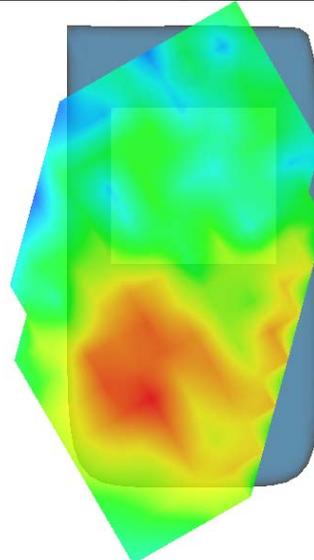
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 7 minutes 40 seconds

### A. Experimental conditions.

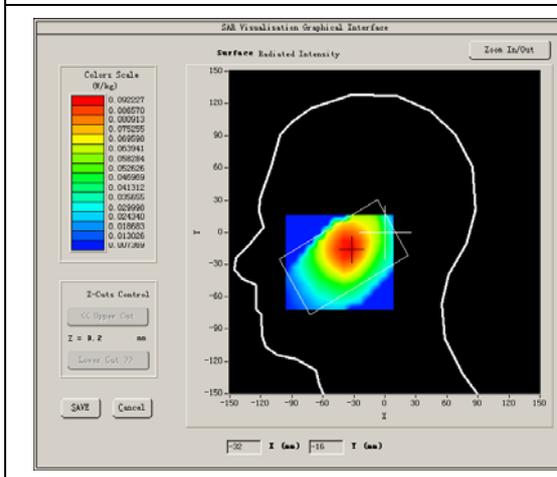
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

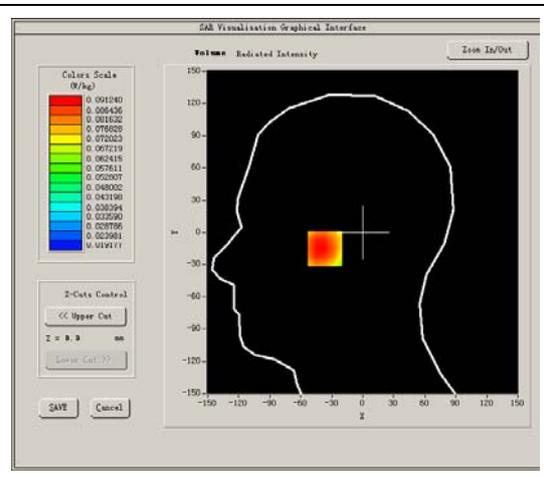
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.410000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479, 25.214, 27.196
<b>Crest factor:</b>	1:1

#### SURFACE SAR



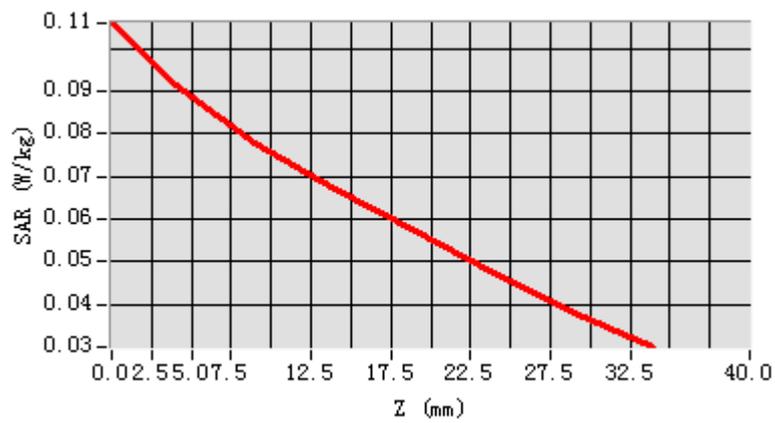
#### VOLUME SAR



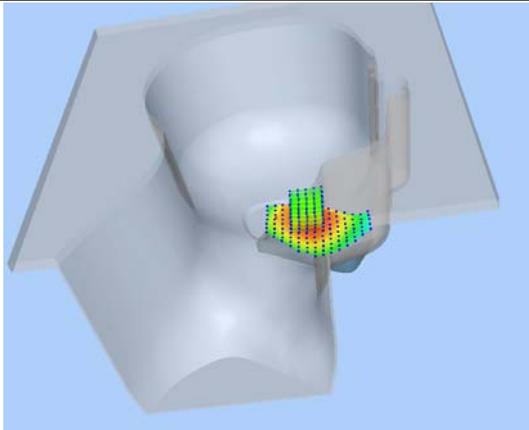
**Maximum location: X=-33.00, Y=-15.00**  
**SAR Peak: 0.11 W/kg**

<b>SAR 10g (W/Kg)</b>	0.072182
<b>SAR 1g (W/Kg)</b>	0.090024

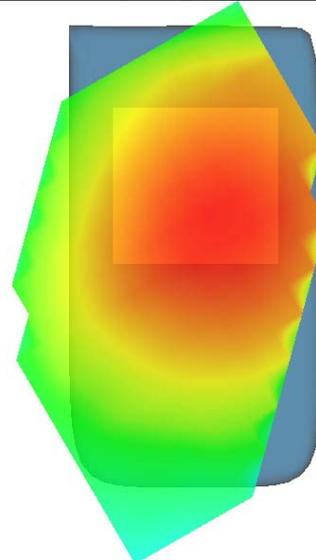
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 15 seconds

### A. Experimental conditions.

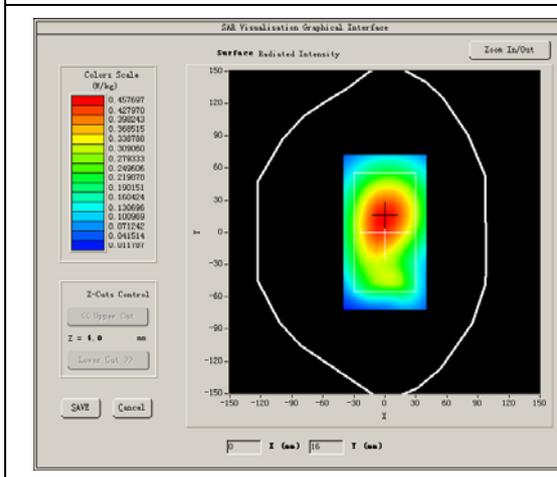
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

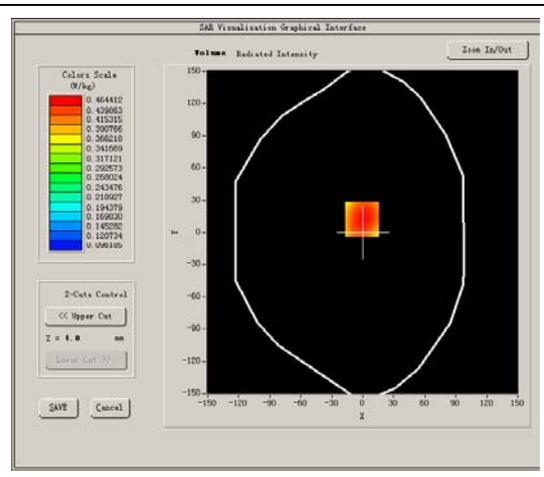
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	-0.130000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559, 25.681, 27.588
<b>Crest factor:</b>	1:1

#### SURFACE SAR



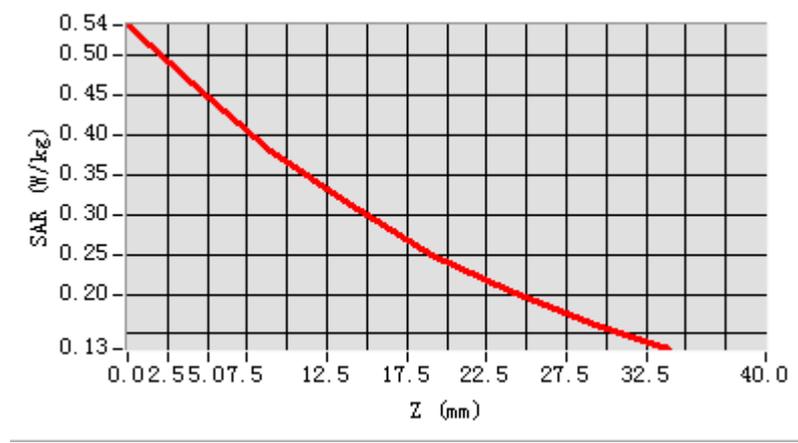
#### VOLUME SAR



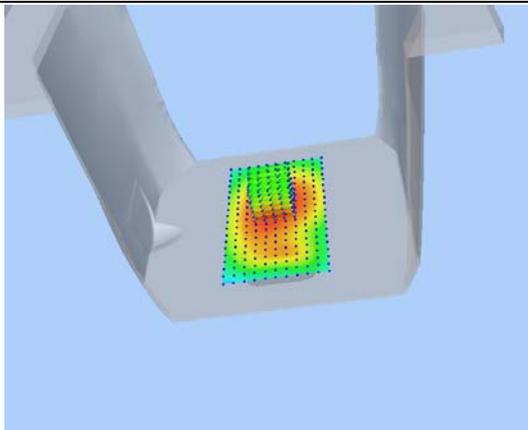
**Maximum location: X=-1.00, Y=12.00**  
**SAR Peak: 0.54 W/kg**

<b>SAR 10g (W/Kg)</b>	0.352139
<b>SAR 1g (W/Kg)</b>	0.450042

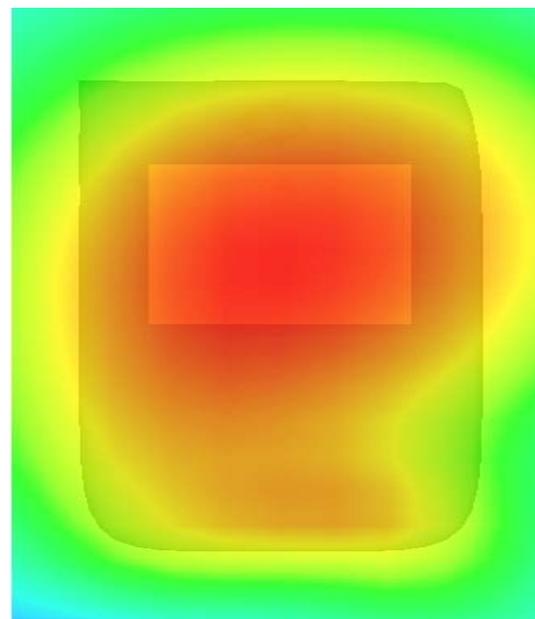
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 16 seconds

### A. Experimental conditions.

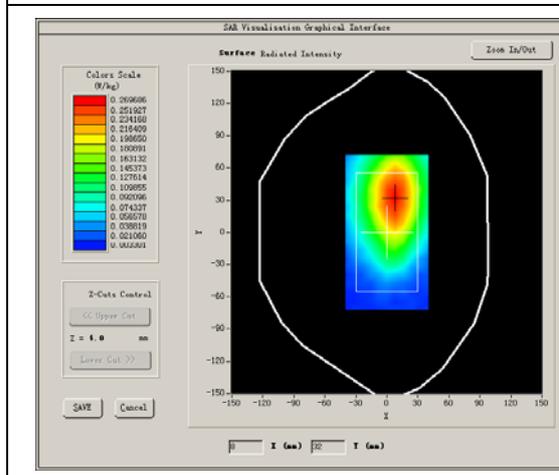
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

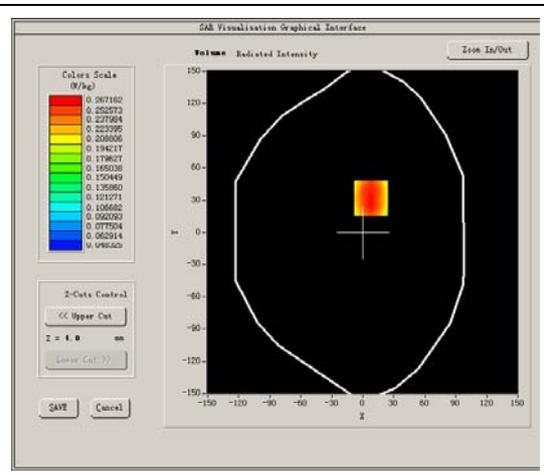
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	0.060000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559, 25.681, 27.588
<b>Crest factor:</b>	1:1

#### SURFACE SAR



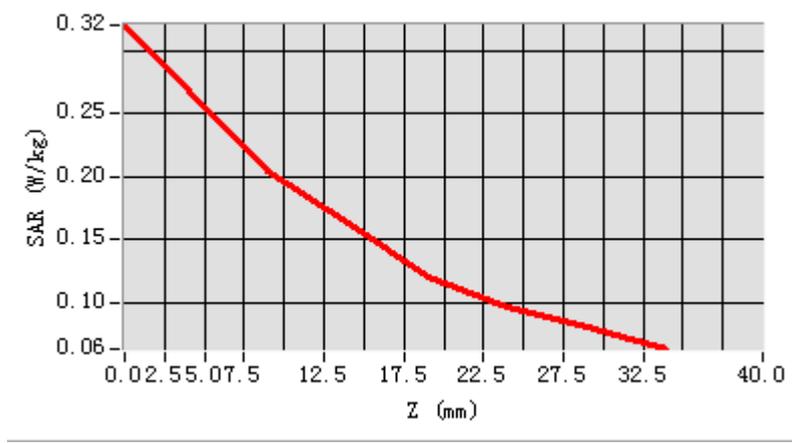
#### VOLUME SAR



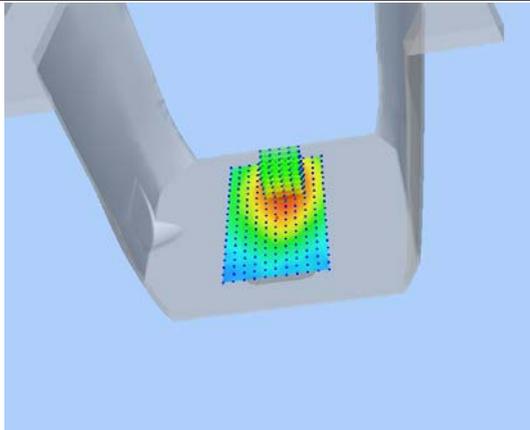
**Maximum location: X=8.00, Y=32.00**  
**SAR Peak: 0.38 W/kg**

<b>SAR 10g (W/Kg)</b>	0.203858
<b>SAR 1g (W/Kg)</b>	0.281045

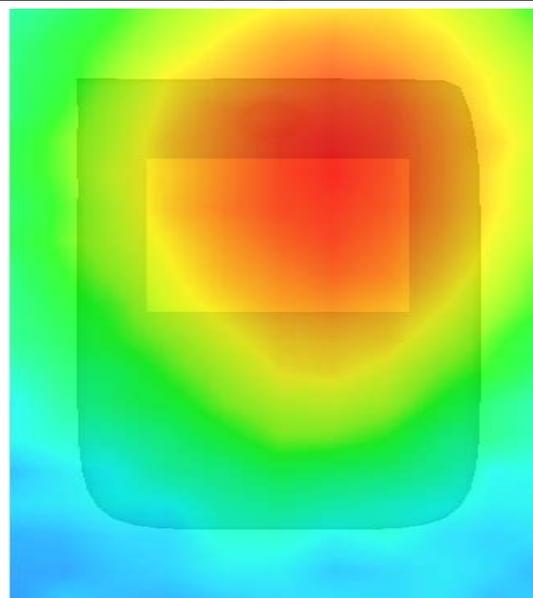
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 9 minutes 16 seconds

## A. Experimental conditions.

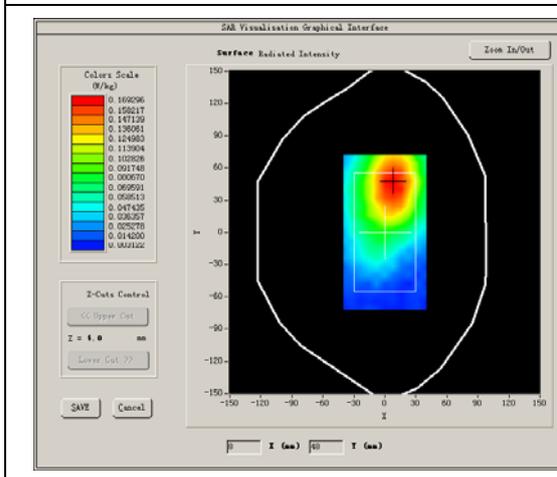
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

## B. SAR Measurement Results

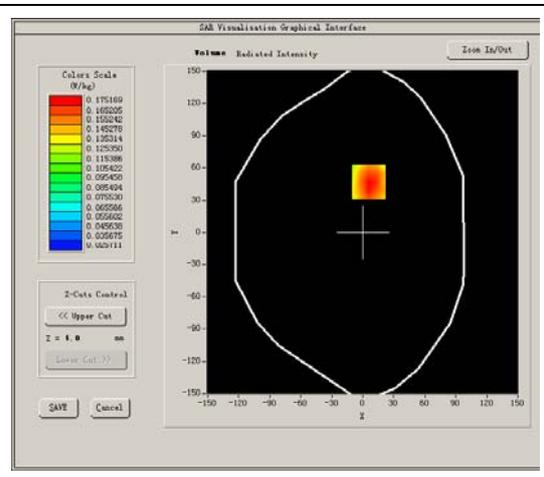
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	0.070000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559, 25.681, 27.588
<b>Crest factor:</b>	1:1

### SURFACE SAR

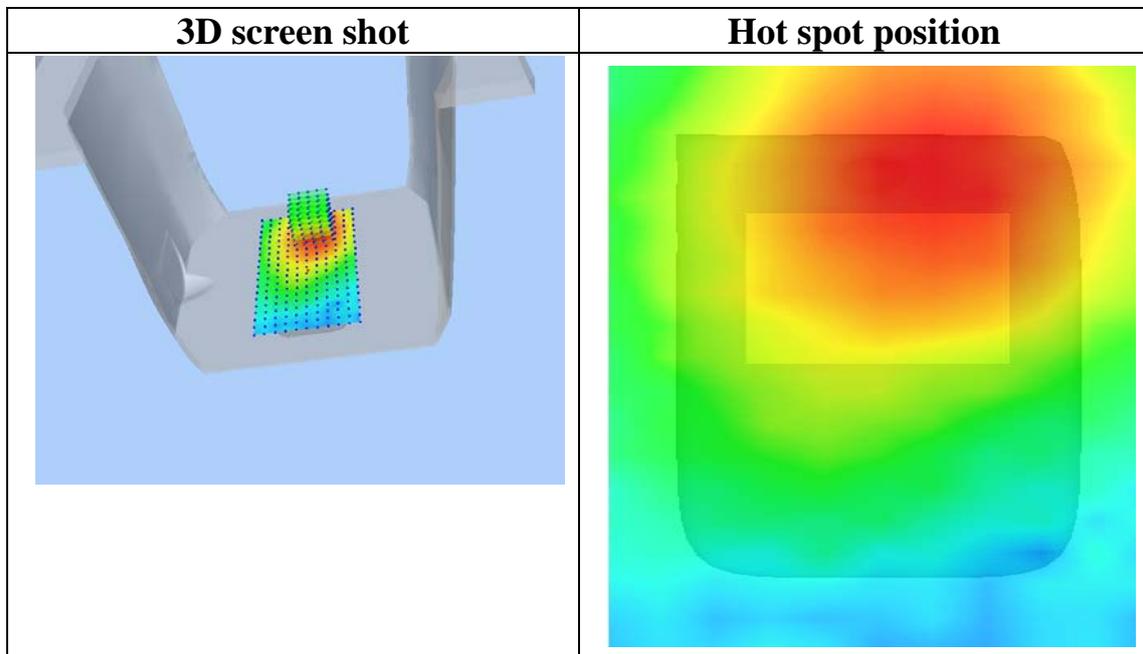
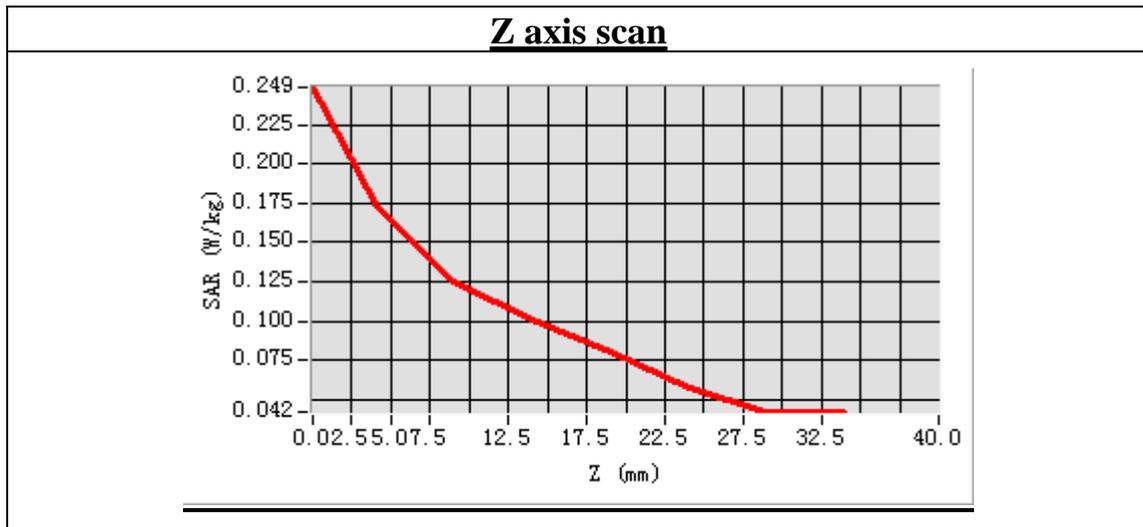


### VOLUME SAR



**Maximum location: X=6.00, Y=47.00**  
**SAR Peak: 0.27 W/kg**

<b>SAR 10g (W/Kg)</b>	0.129188
<b>SAR 1g (W/Kg)</b>	0.188068



## 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: 2013.8.19

Measurement duration: 9 minutes 16 seconds

### A. Experimental conditions.

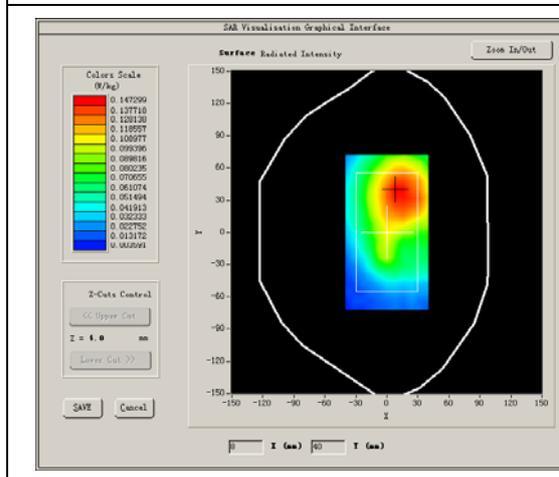
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

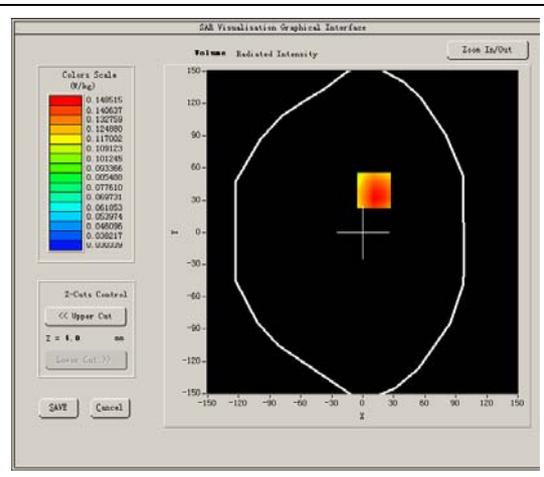
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	-1.230000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559, 25.681, 27.588
<b>Crest factor:</b>	1:1

#### SURFACE SAR



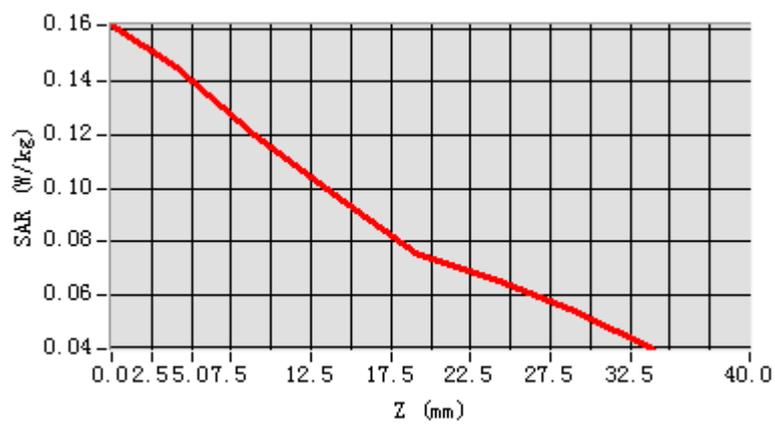
#### VOLUME SAR



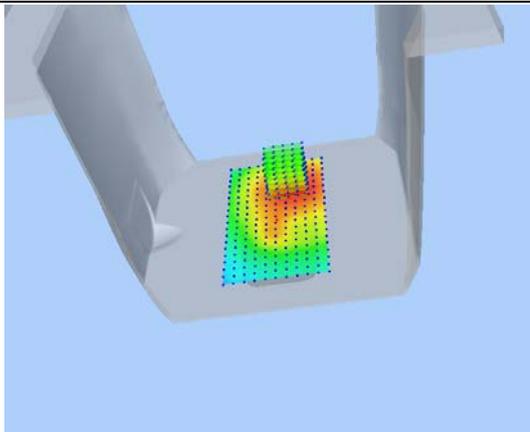
Maximum location: X=11.00, Y=39.00  
 SAR Peak: 0.21 W/kg

SAR 10g (W/Kg)	0.119343
SAR 1g (W/Kg)	0.157210

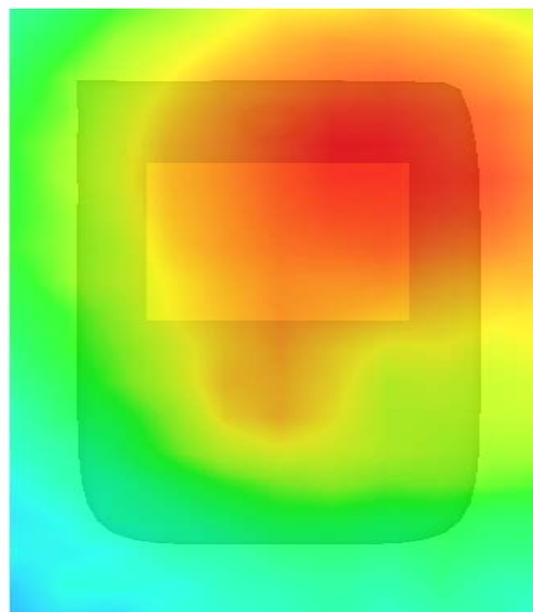
### Z axis scan



### 3D screen 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: 2013.8.19

Measurement duration: 9 minutes 16 seconds

### A. Experimental conditions.

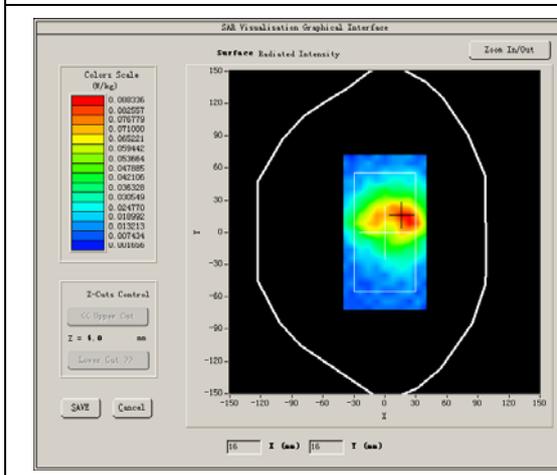
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA850
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

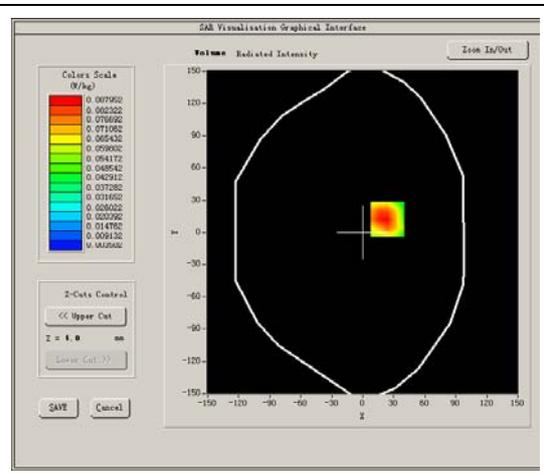
Middle Band SAR (Channel 4175):

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	0.160000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559, 25.681, 27.588
<b>Crest factor:</b>	1:1

#### SURFACE SAR



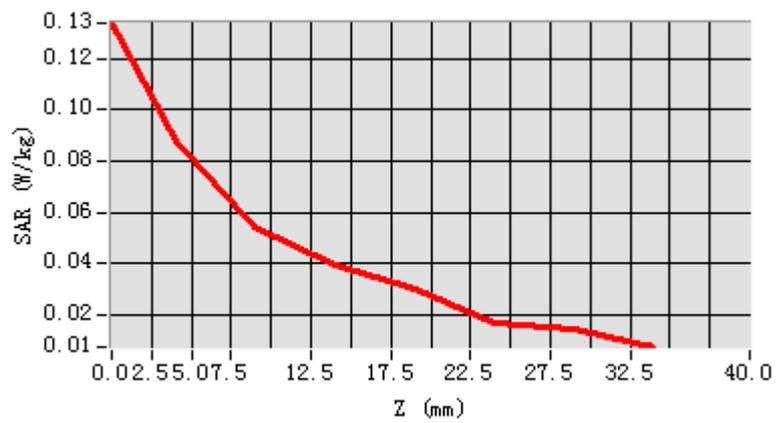
#### VOLUME SAR



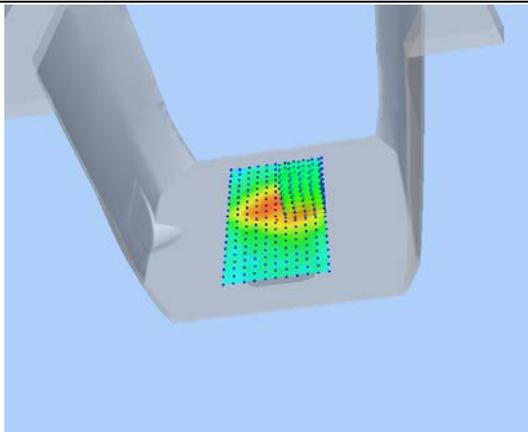
Maximum location: X=24.00, Y=12.00  
 SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.056706
SAR 1g (W/Kg)	0.093812

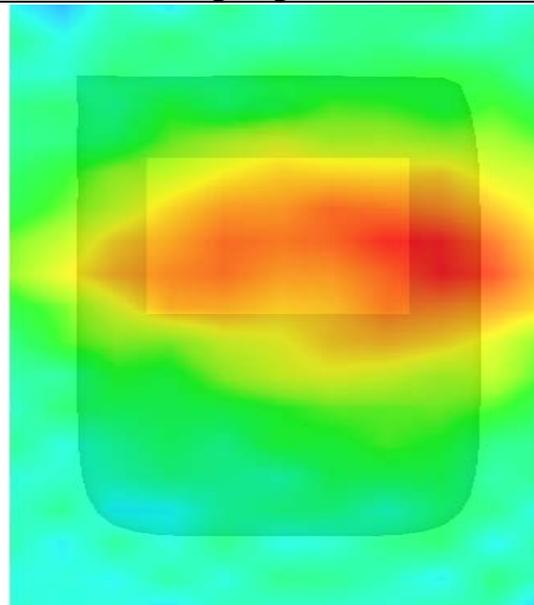
### Z axis scan



### 3D screen 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: 2013.8.20

Measurement duration: 8 minutes 9 seconds

### A. Experimental conditions.

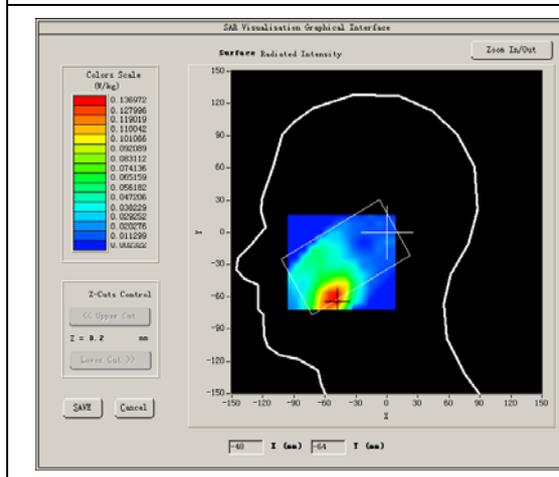
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

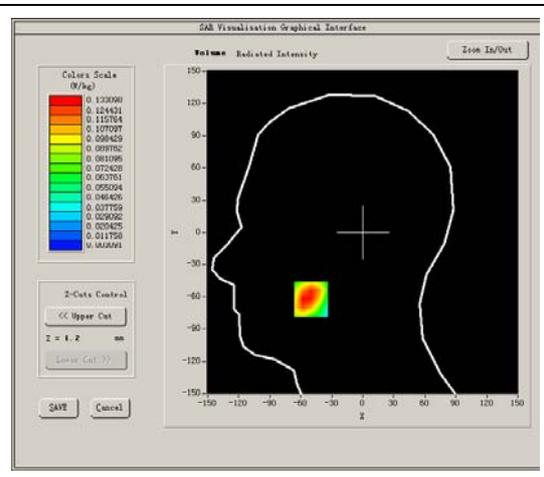
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift (%)</b>	0.350000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

#### SURFACE SAR



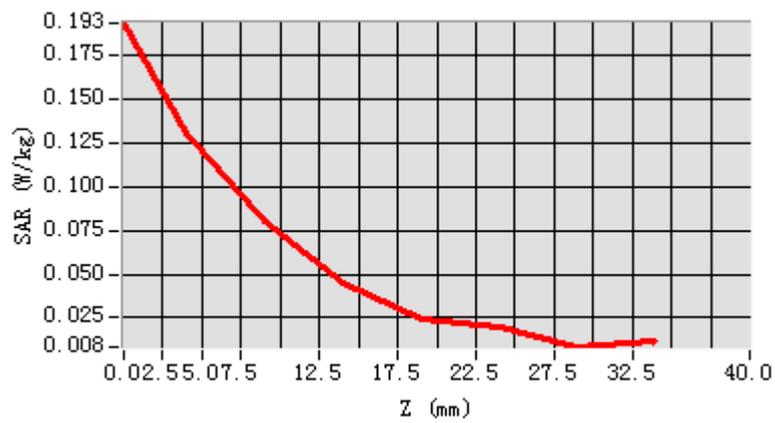
#### VOLUME SAR



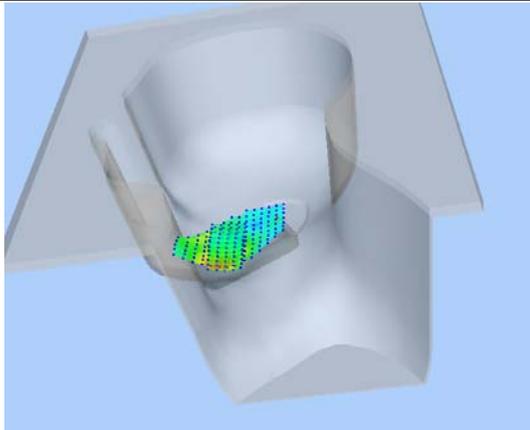
**Maximum location: X=-50.00, Y=-62.00**  
**SAR Peak: 0.23 W/kg**

<b>SAR 10g (W/Kg)</b>	0.071443
<b>SAR 1g (W/Kg)</b>	0.131879

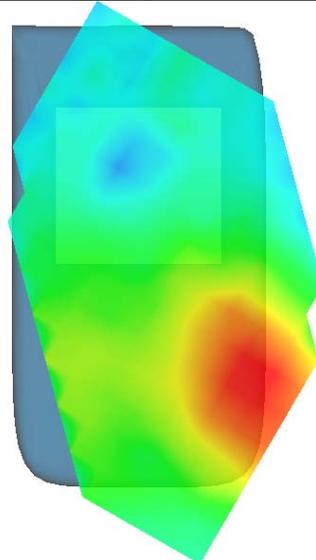
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 7 minutes 28 seconds

### A. Experimental conditions.

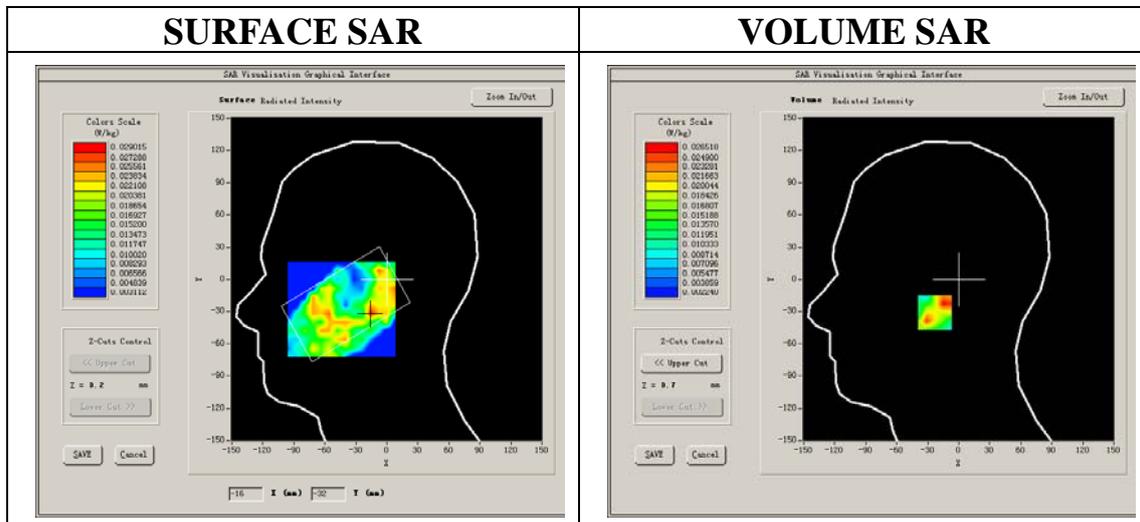
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

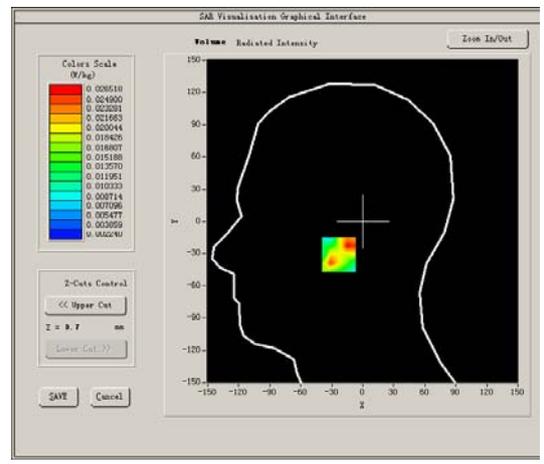
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift (%)</b>	0.850000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

#### SURFACE SAR

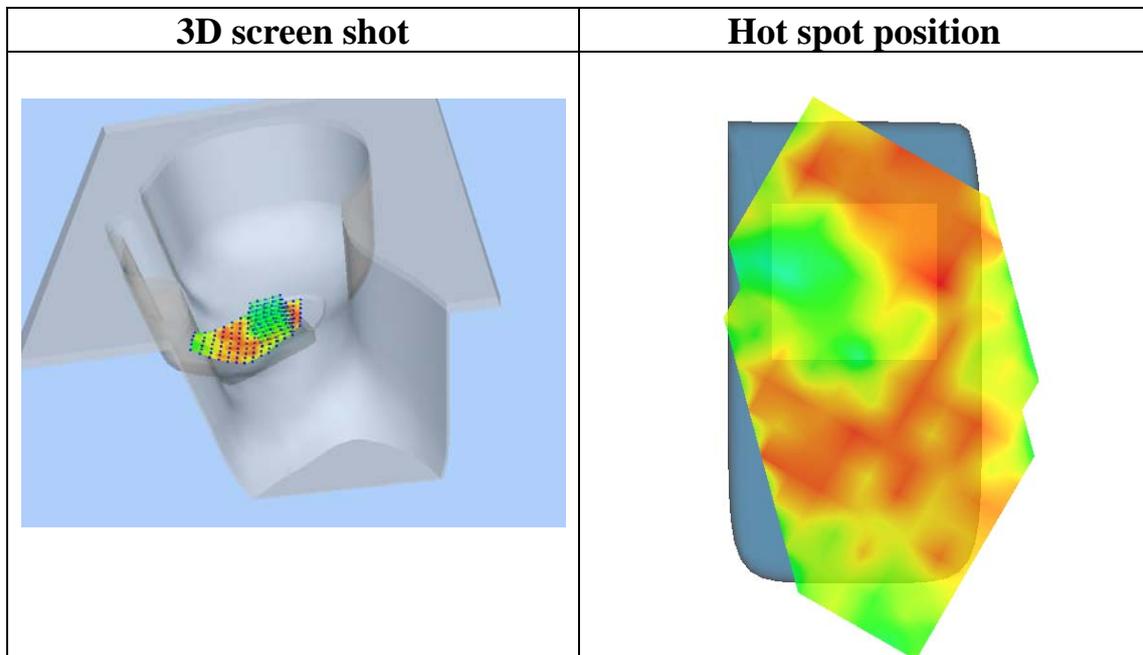
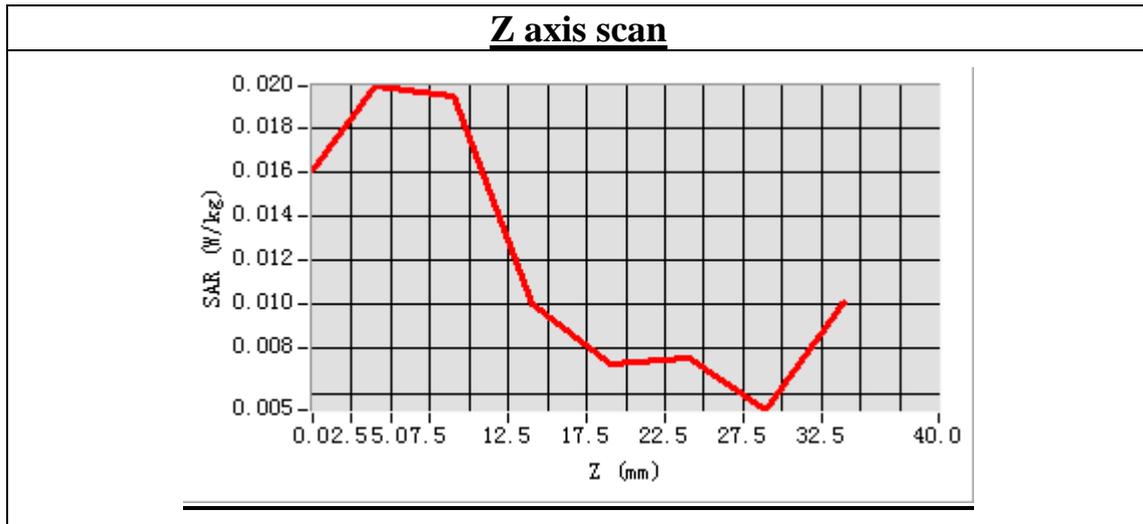


#### VOLUME SAR



**Maximum location: X=-15.00, Y=-31.00**  
**SAR Peak: 0.05 W/kg**

<b>SAR 10g (W/Kg)</b>	0.014540
<b>SAR 1g (W/Kg)</b>	0.026315



## 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: 2013.8.20

Measurement duration: 8 minutes 7 seconds

### A. Experimental conditions.

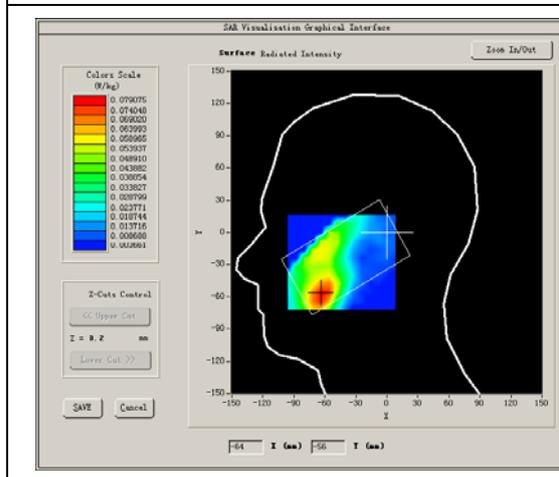
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

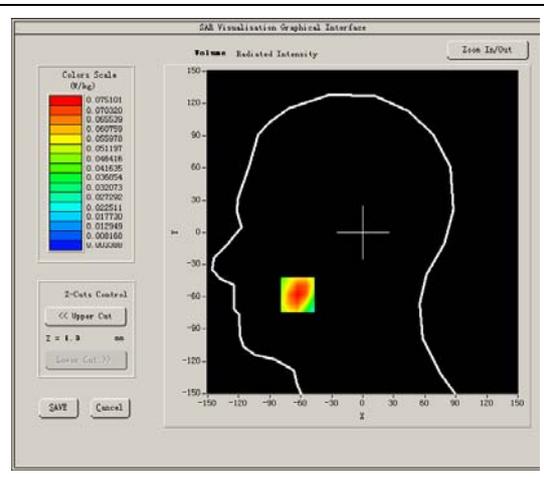
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift (%)</b>	-0.040000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

#### SURFACE SAR

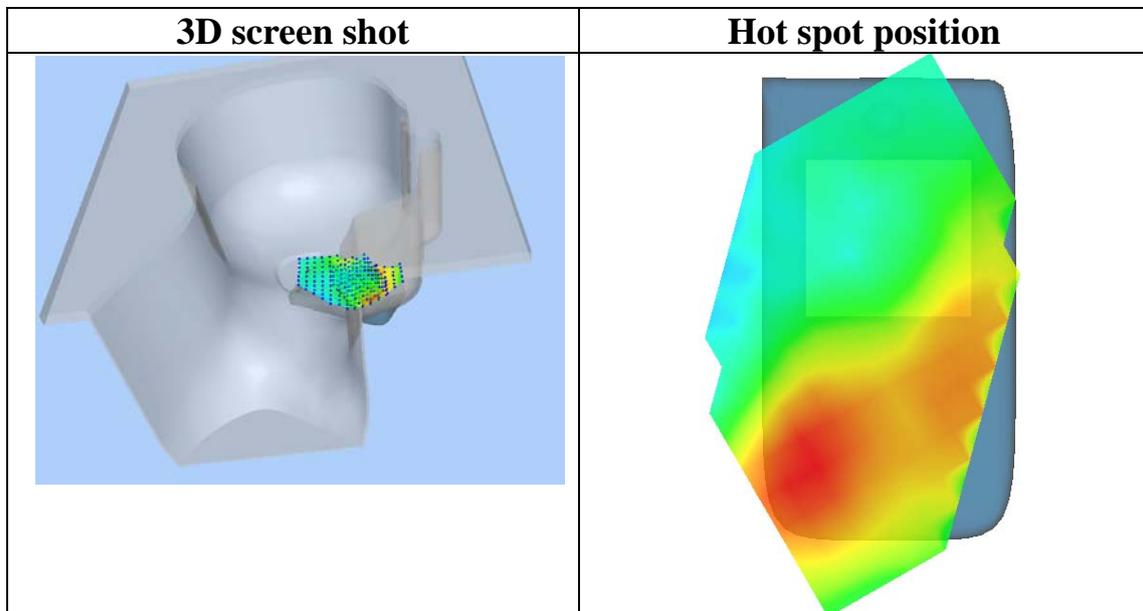
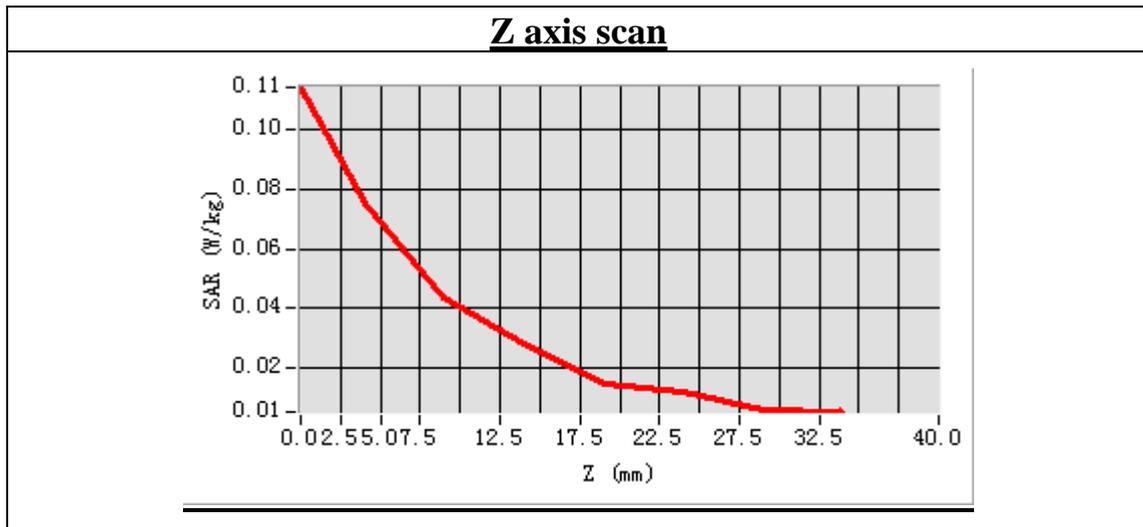


#### VOLUME SAR



**Maximum location: X=-63.00, Y=-58.00**  
**SAR Peak: 0.12 W/kg**

<b>SAR 10g (W/Kg)</b>	0.041296
<b>SAR 1g (W/Kg)</b>	0.072118



## 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: 2013.8.20

Measurement duration: 7 minutes 30 seconds

### A. Experimental conditions.

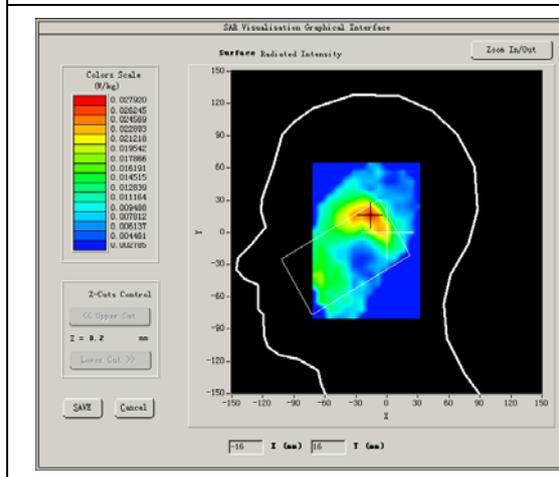
<b>Phantom File</b>	sam_direct_droit2_surf8mm.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

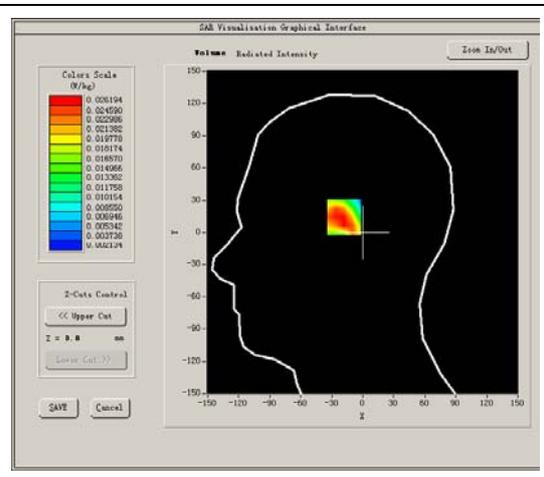
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift (%)</b>	-0.040000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

#### SURFACE SAR



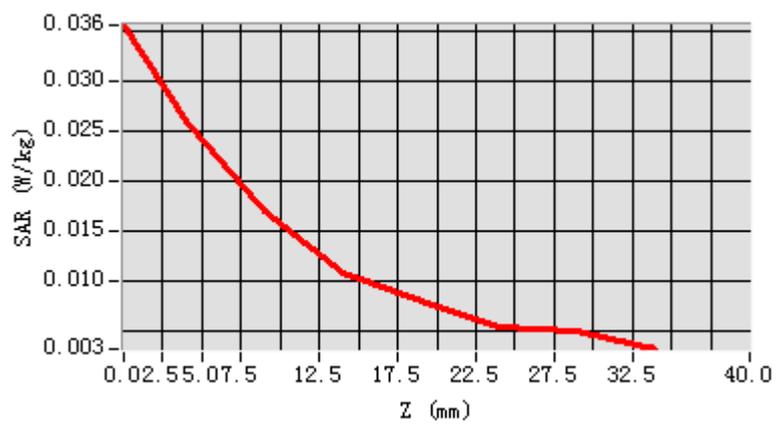
#### VOLUME SAR



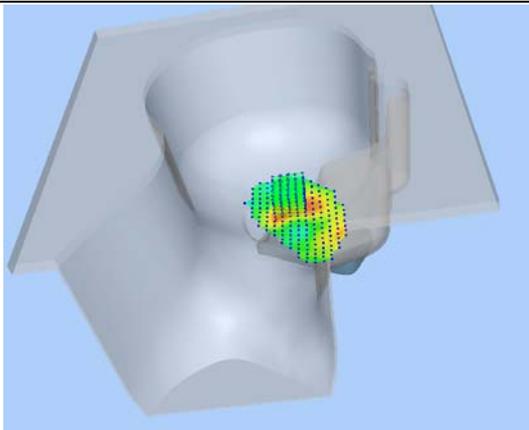
**Maximum location: X=-16.00, Y=16.00**  
**SAR Peak: 0.04 W/kg**

<b>SAR 10g (W/Kg)</b>	0.015159
<b>SAR 1g (W/Kg)</b>	0.025897

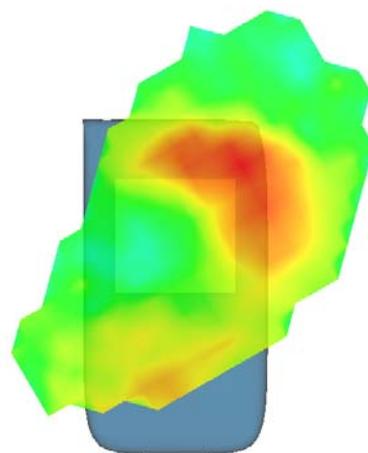
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

### A. Experimental conditions.

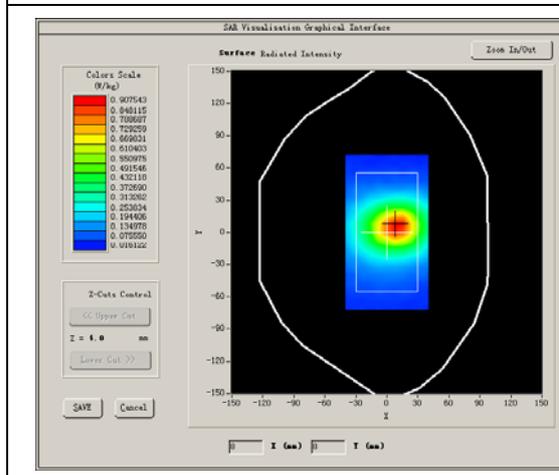
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Low
<b>Signal</b>	CDMA

### B. SAR Measurement Results

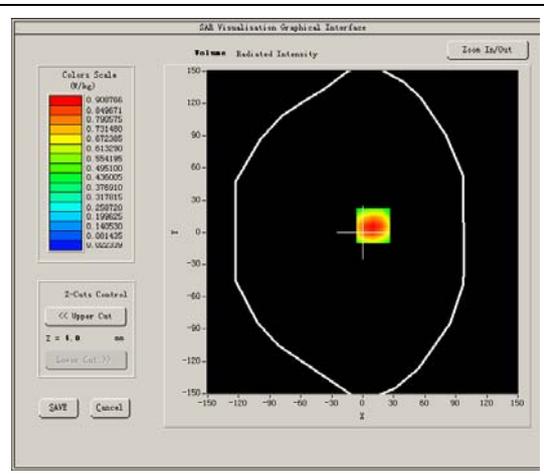
Lower Band SAR (Channel 9262):

<b>Frequency (MHz)</b>	1850.400000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.480000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

#### SURFACE SAR



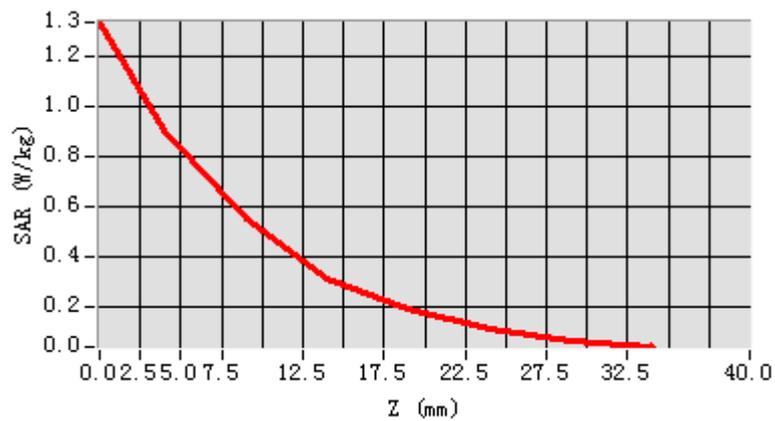
#### VOLUME SAR



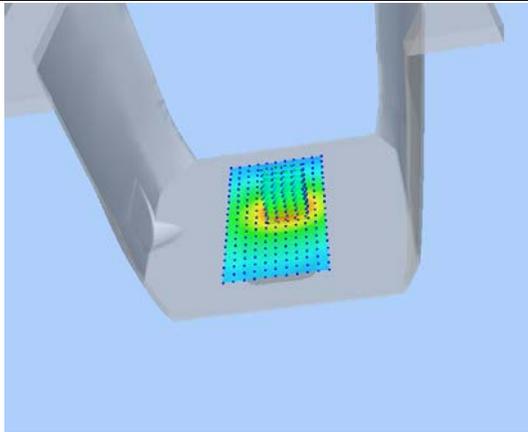
Maximum location: X=10.00, Y=6.00  
 SAR Peak: 1.39 W/kg

SAR 10g (W/Kg)	0.501616
SAR 1g (W/Kg)	0.895041

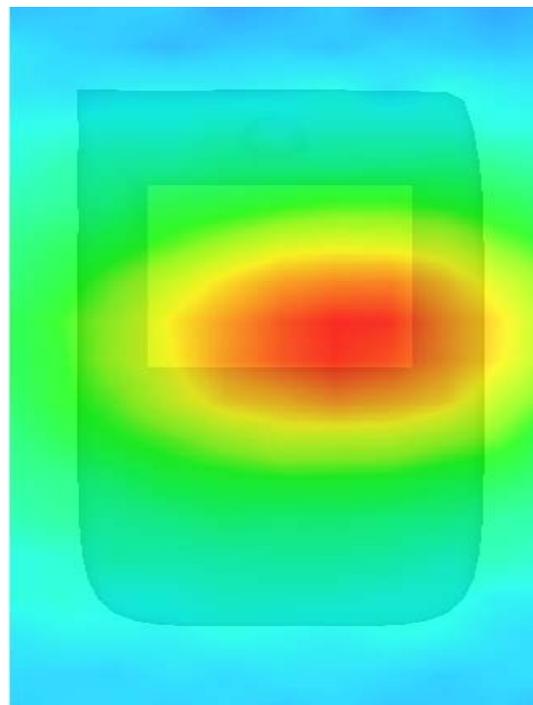
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

### A. Experimental conditions.

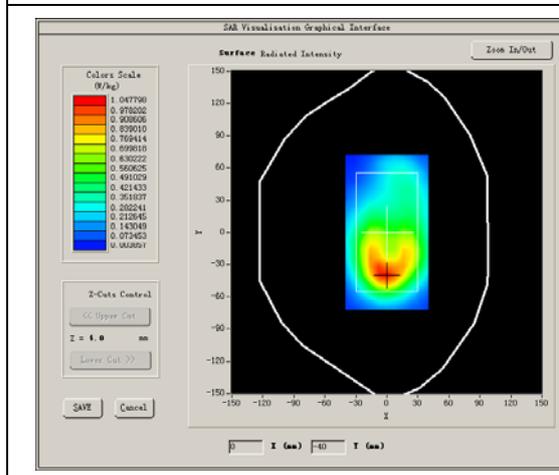
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

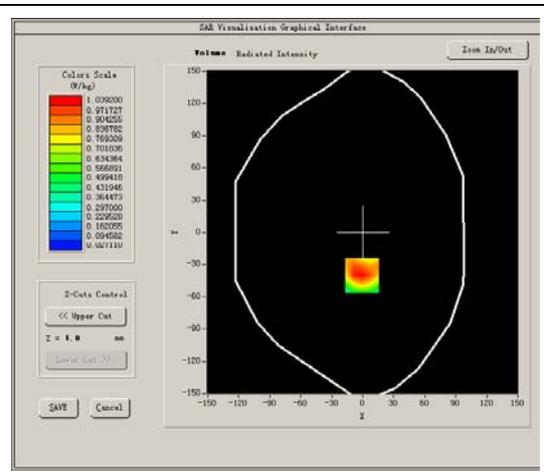
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-1.120000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

#### SURFACE SAR



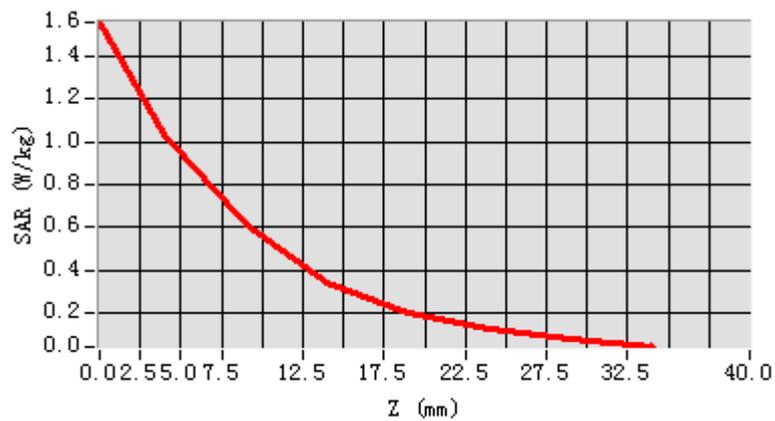
#### VOLUME SAR



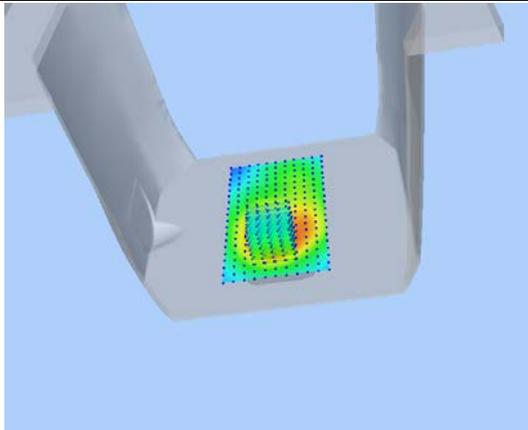
**Maximum location: X=-1.00, Y=-40.00**  
**SAR Peak: 1.63 W/kg**

<b>SAR 10g (W/Kg)</b>	0.565813
<b>SAR 1g (W/Kg)</b>	0.996427

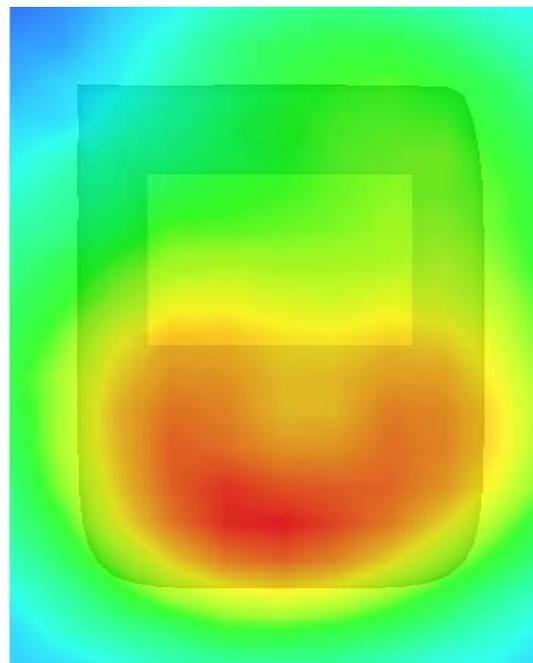
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

## A. Experimental conditions.

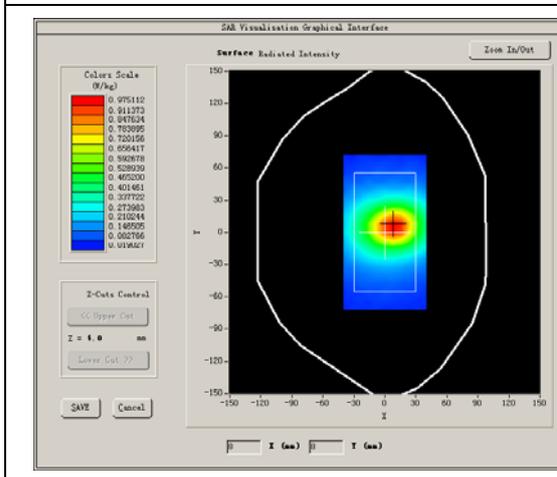
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	High
<b>Signal</b>	CDMA

## B. SAR Measurement Results

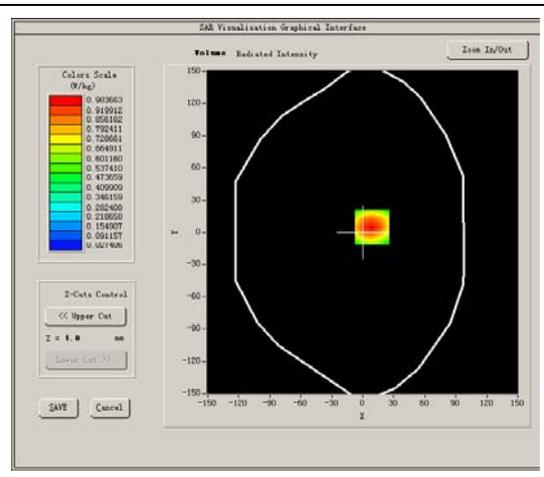
Higher Band SAR (Channel 9538):

<b>Frequency (MHz)</b>	1907.600000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.480000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

### SURFACE SAR



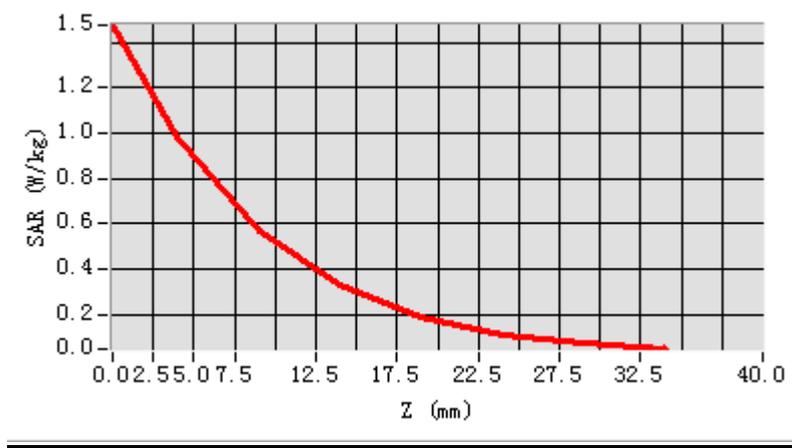
### VOLUME SAR



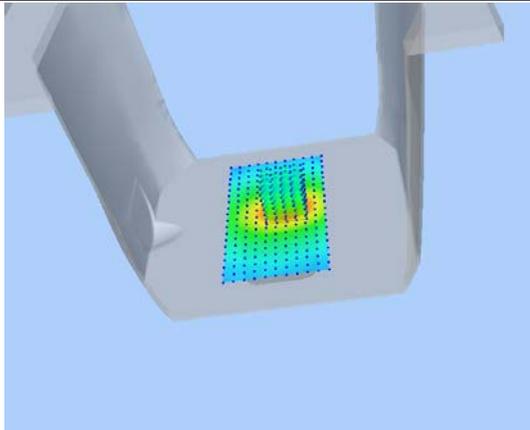
**Maximum location: X=9.00, Y=5.00**  
**SAR Peak: 1.53 W/kg**

<b>SAR 10g (W/Kg)</b>	0.539294
<b>SAR 1g (W/Kg)</b>	0.966699

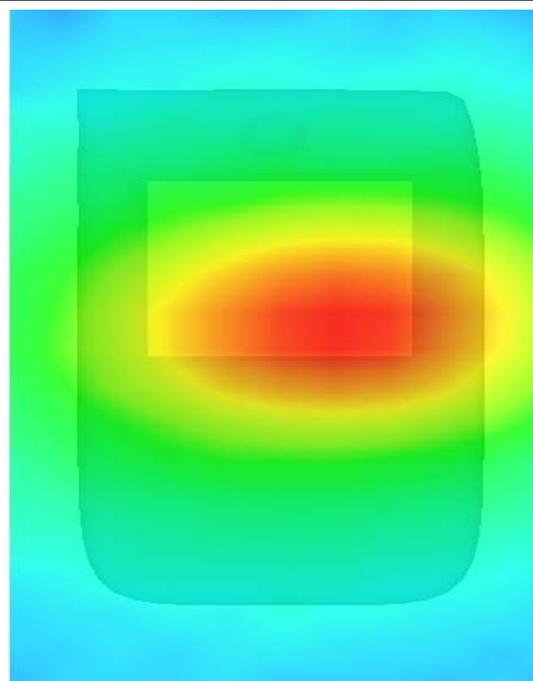
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

## A. Experimental conditions.

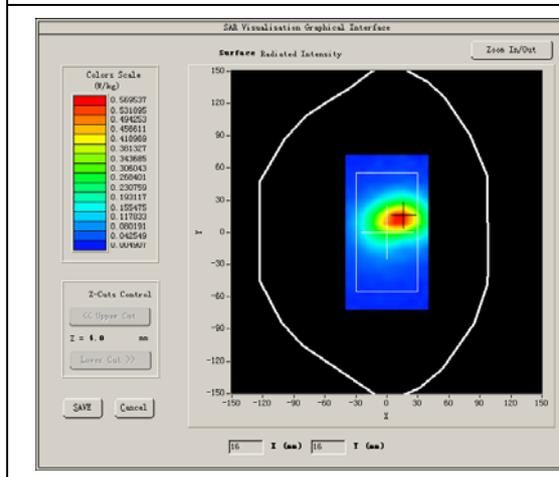
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

## B. SAR Measurement Results

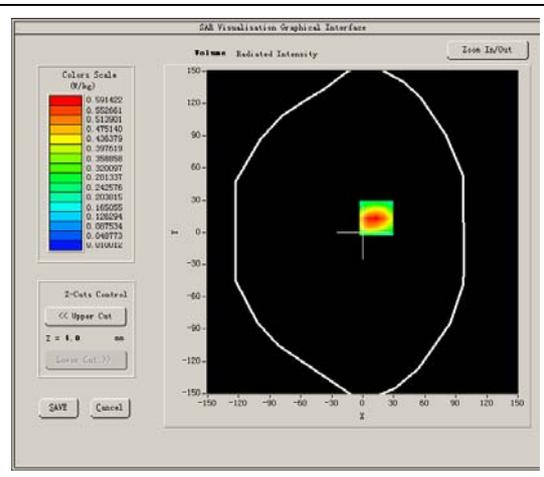
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.920000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

### SURFACE SAR



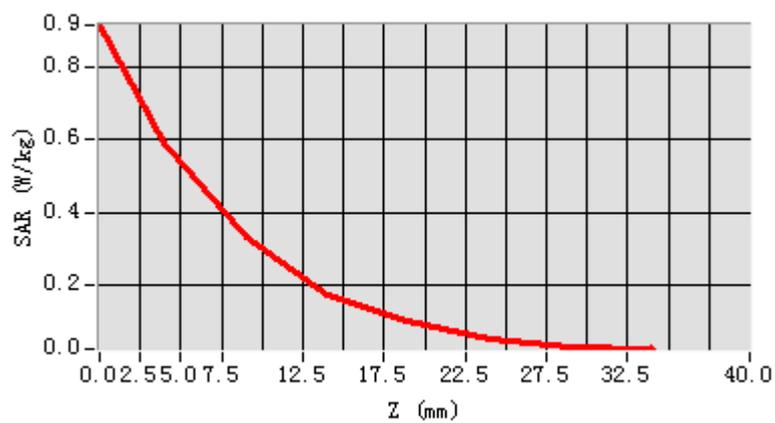
### VOLUME SAR



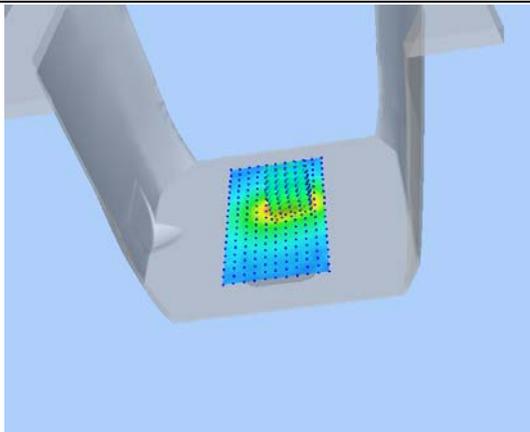
Maximum location: X=13.00, Y=13.00  
 SAR Peak: 1.01 W/kg

SAR 10g (W/Kg)	0.322018
SAR 1g (W/Kg)	0.613698

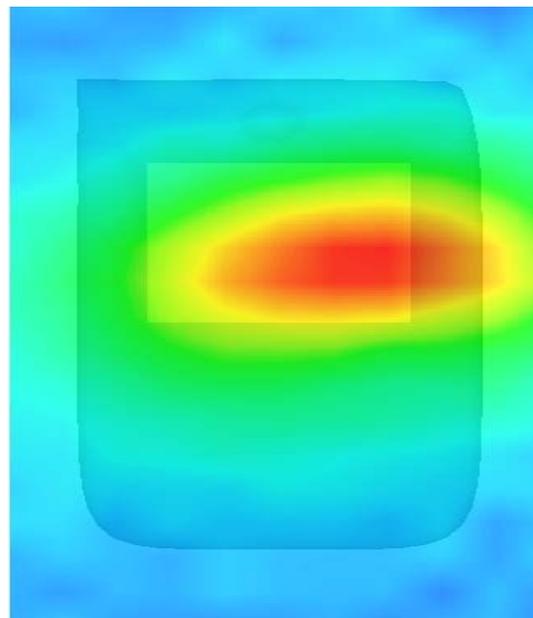
### Z axis scan



### 3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

### A. Experimental conditions.

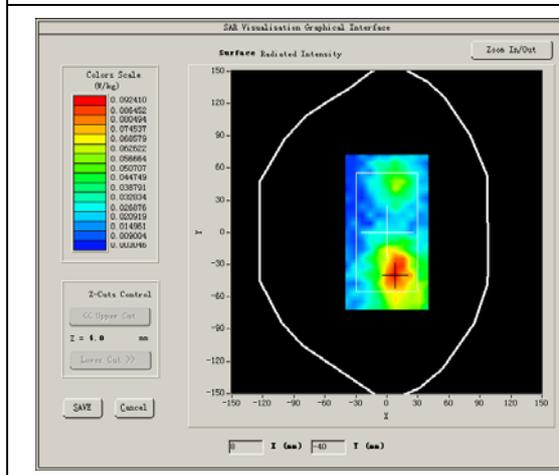
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

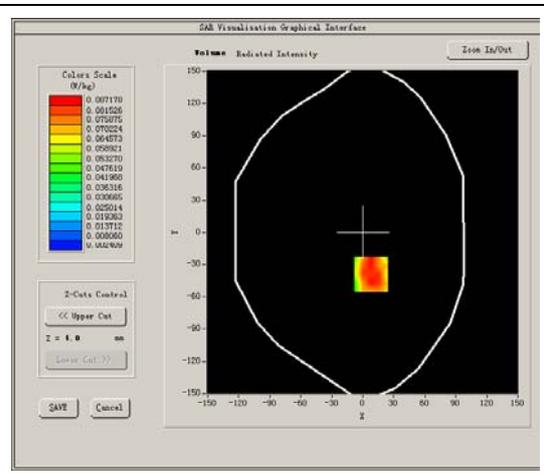
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-1.230000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

#### SURFACE SAR



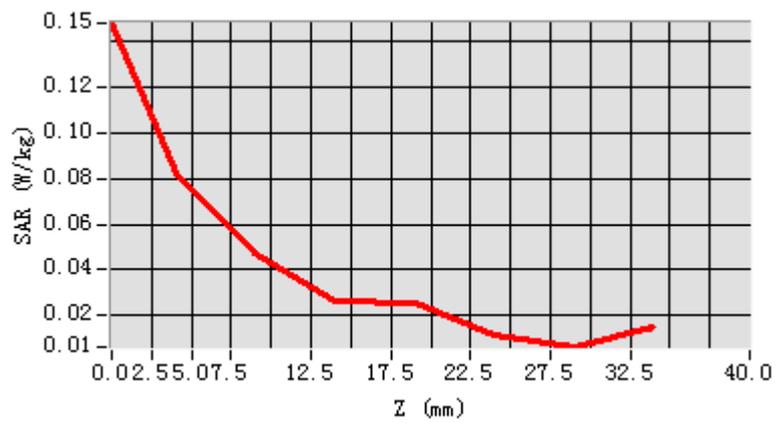
#### VOLUME SAR



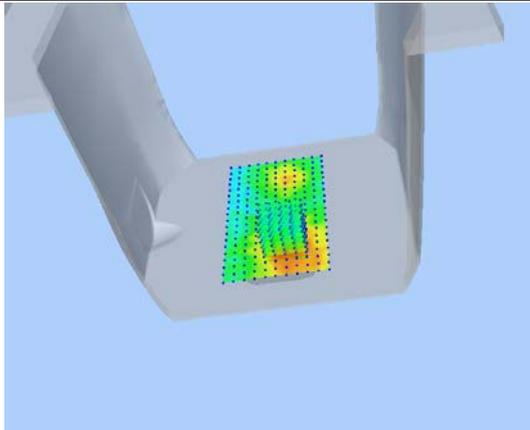
**Maximum location: X=8.00, Y=-39.00**  
**SAR Peak: 0.17 W/kg**

<b>SAR 10g (W/Kg)</b>	0.052844
<b>SAR 1g (W/Kg)</b>	0.096765

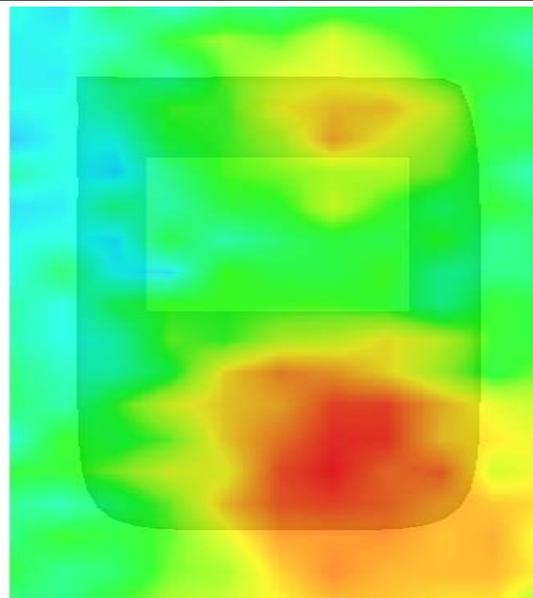
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

### A. Experimental conditions.

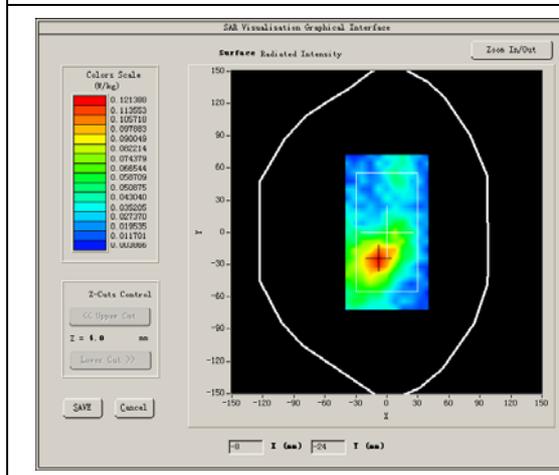
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

### B. SAR Measurement Results

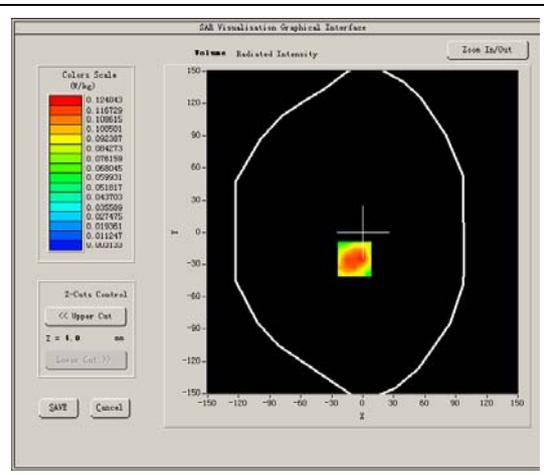
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.620000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

#### SURFACE SAR



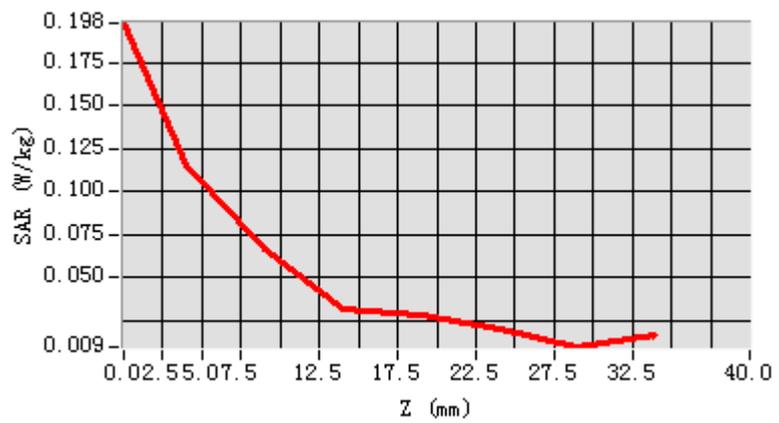
#### VOLUME SAR



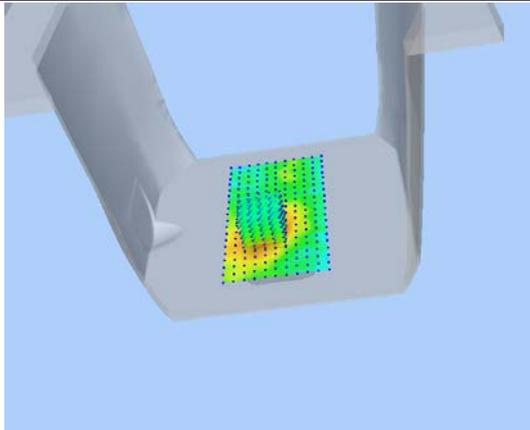
**Maximum location: X=-8.00, Y=-25.00**  
**SAR Peak: 0.23 W/kg**

<b>SAR 10g (W/Kg)</b>	0.070139
<b>SAR 1g (W/Kg)</b>	0.130057

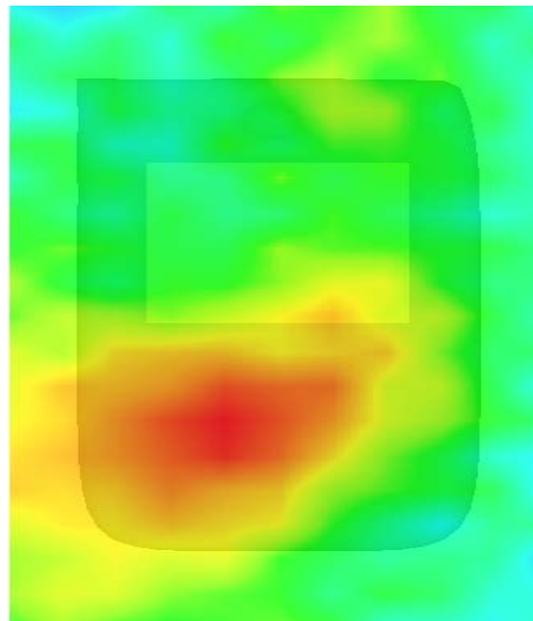
**Z axis scan**



**3D screen 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: 2013.8.20

Measurement duration: 9 minutes 14 seconds

## A. Experimental conditions.

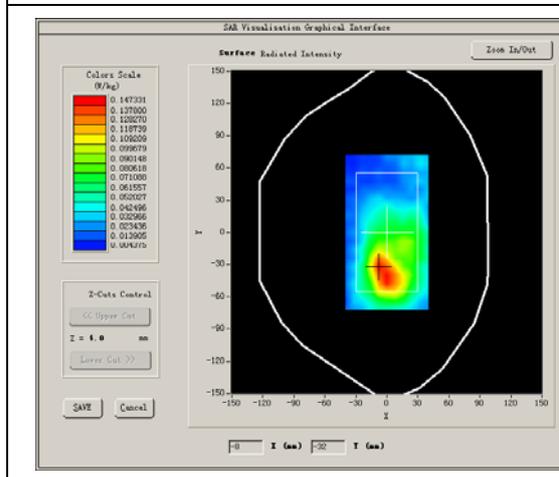
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	WCDMA1900
<b>Channels</b>	Middle
<b>Signal</b>	CDMA

## B. SAR Measurement Results

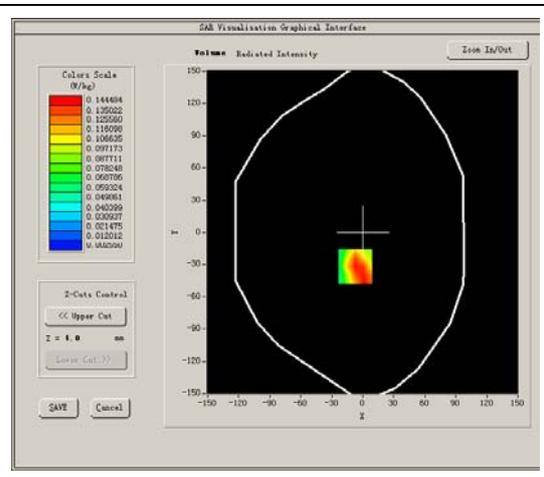
Middle Band SAR (Channel 9400):

<b>Frequency (MHz)</b>	1880.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.480000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

### SURFACE SAR

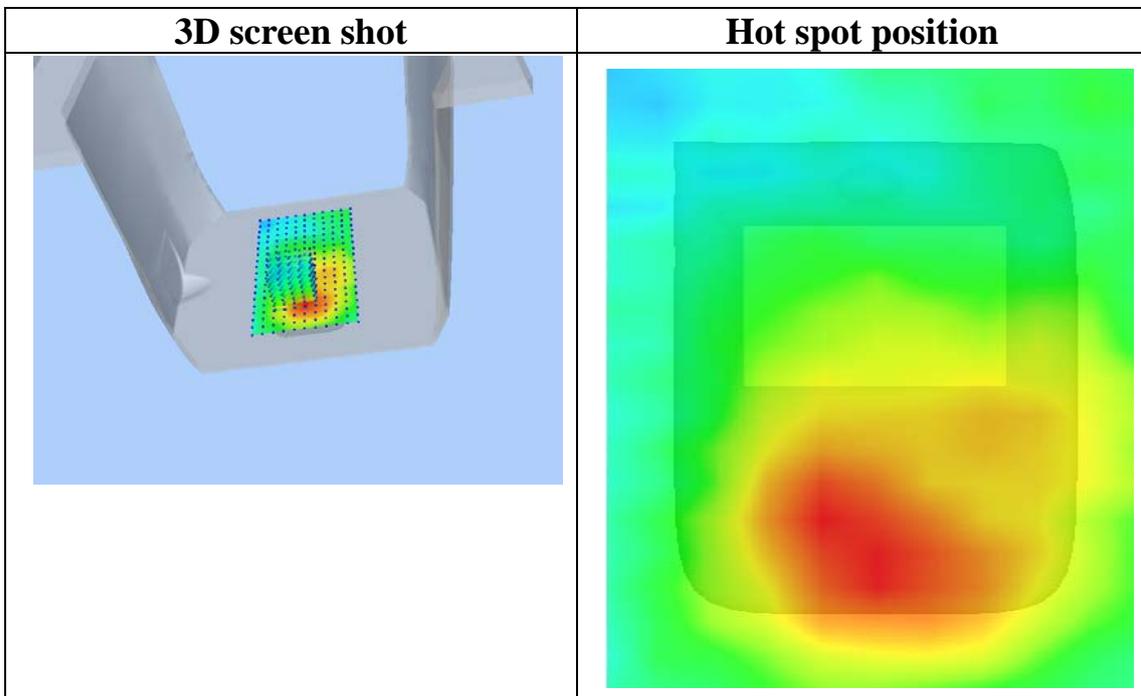
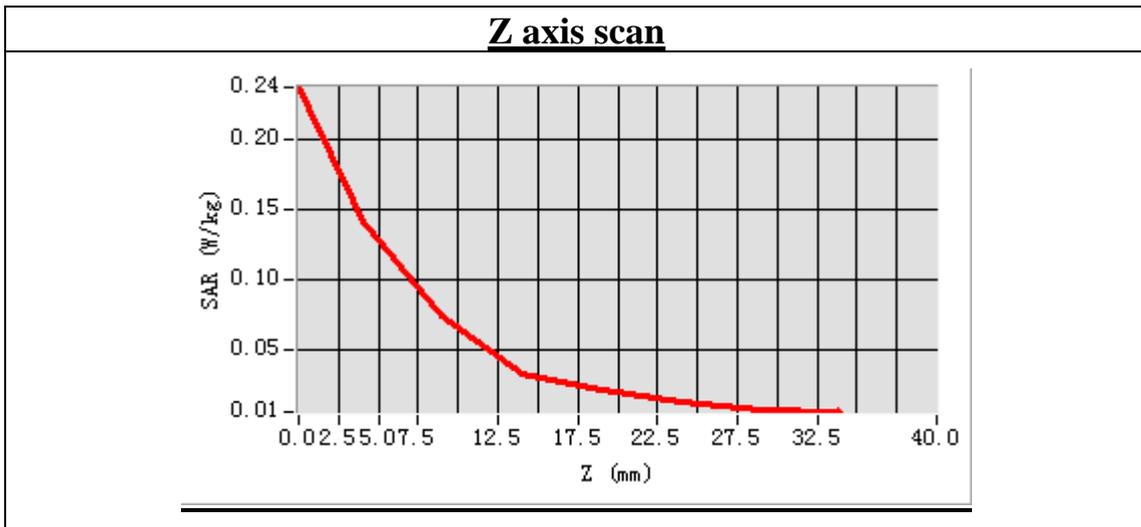


### VOLUME SAR



**Maximum location: X=-7.00, Y=-32.00**  
**SAR Peak: 0.26 W/kg**

<b>SAR 10g (W/Kg)</b>	0.082790
<b>SAR 1g (W/Kg)</b>	0.150294



## MEASUREMENT 45

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 8 minutes 17 seconds

### A. Experimental conditions.

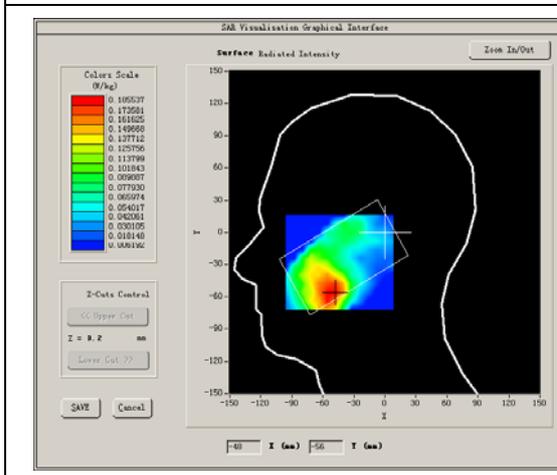
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Cheek
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

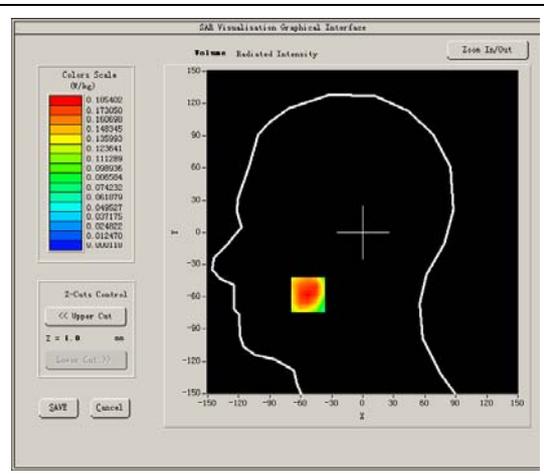
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	40.1487921
<b>Conductivity (S/m)</b>	1.760123
<b>Power drift (%)</b>	-0.480000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.563,33.614,37.677
<b>Crest factor:</b>	1:1

#### SURFACE SAR

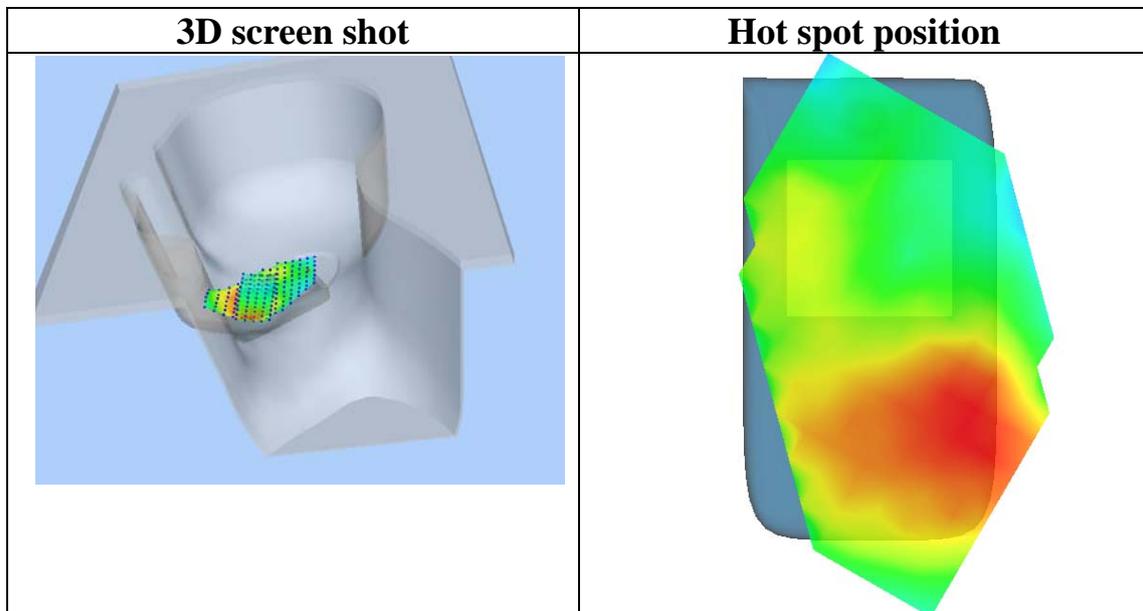
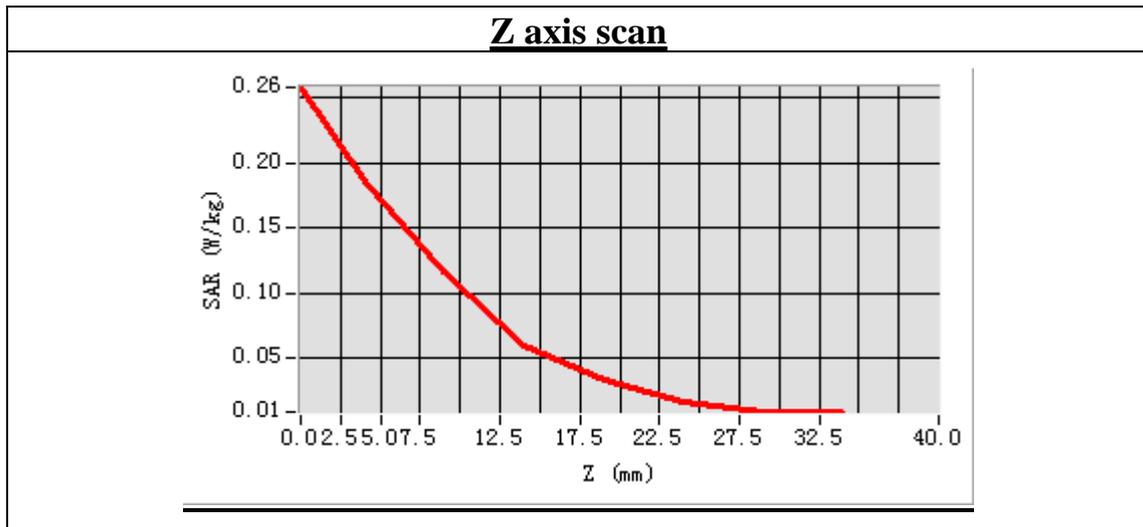


#### VOLUME SAR



**Maximum location: X=-53.00, Y=-58.00**  
**SAR Peak: 0.28 W/kg**

<b>SAR 10g (W/Kg)</b>	0.101432
<b>SAR 1g (W/Kg)</b>	0.175769



## MEASUREMENT 46

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 8 minutes 15 seconds

### A. Experimental conditions.

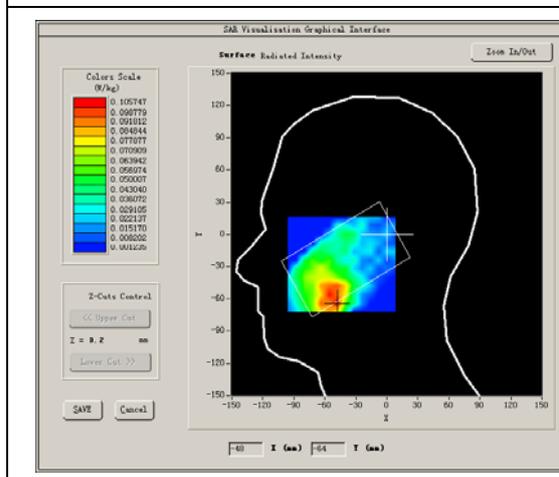
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Right head
<b>Device Position</b>	Tilt
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

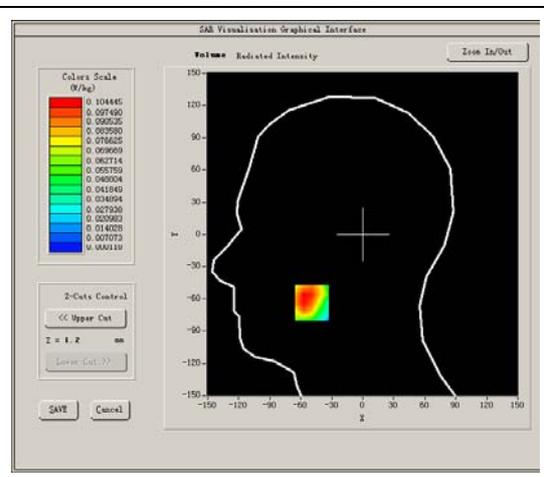
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	40.1487921
<b>Conductivity (S/m)</b>	1.760123
<b>Power drift (%)</b>	-0.310000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.563,33.614,37.677
<b>Crest factor:</b>	1:1

#### SURFACE SAR



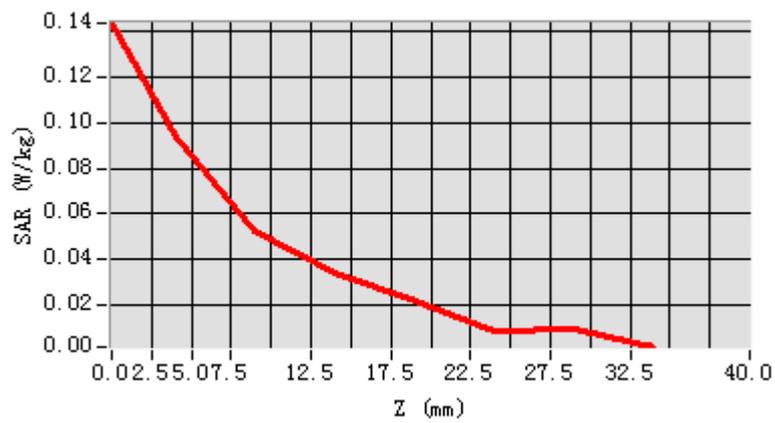
#### VOLUME SAR



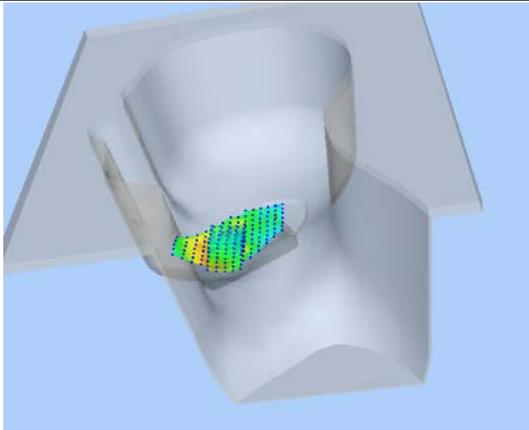
**Maximum location: X=-49.00, Y=-64.00**  
**SAR Peak: 0.17 W/kg**

<b>SAR 10g (W/Kg)</b>	0.057009
<b>SAR 1g (W/Kg)</b>	0.099850

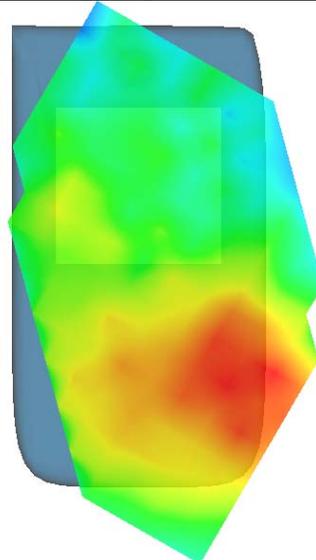
**Z axis scan**



**3D screen shot**



**Hot spot position**



## MEASUREMENT 47

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 8 minutes 17 seconds

### A. Experimental conditions.

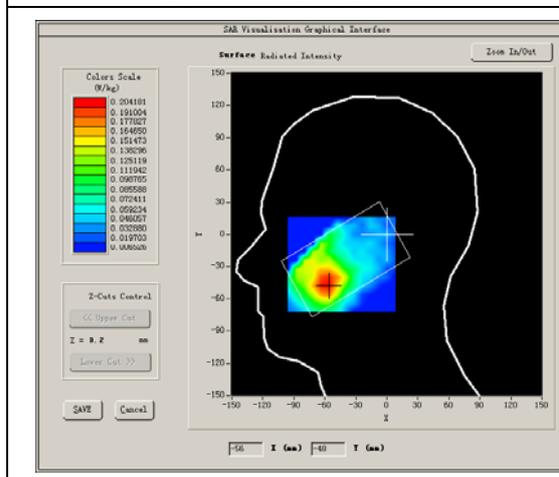
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Cheek
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

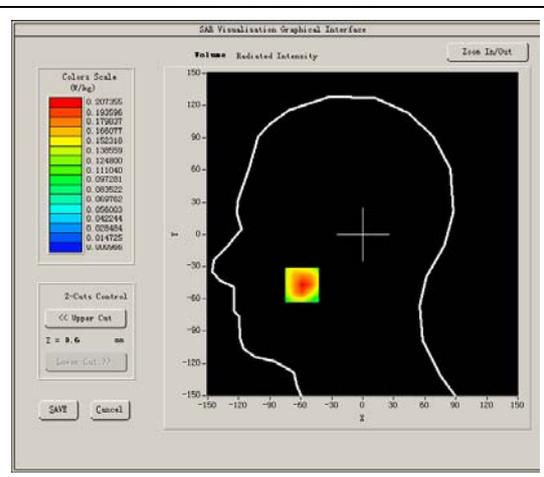
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	40.1487921
<b>Conductivity (S/m)</b>	1.760123
<b>Power drift (%)</b>	-1.600000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.563,33.614,37.677
<b>Crest factor:</b>	1:1

#### SURFACE SAR

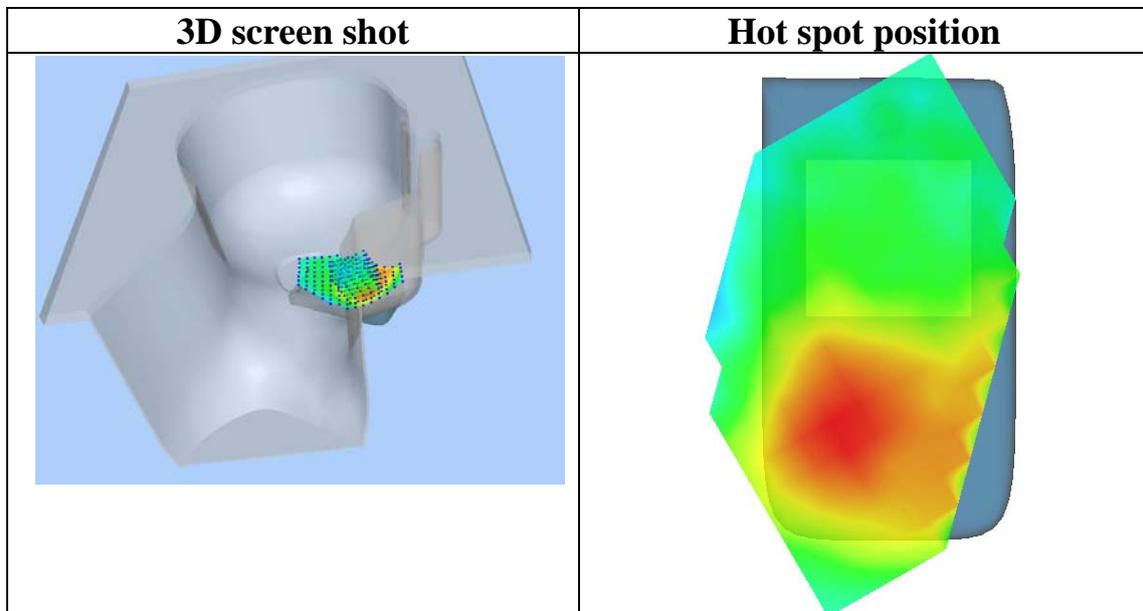
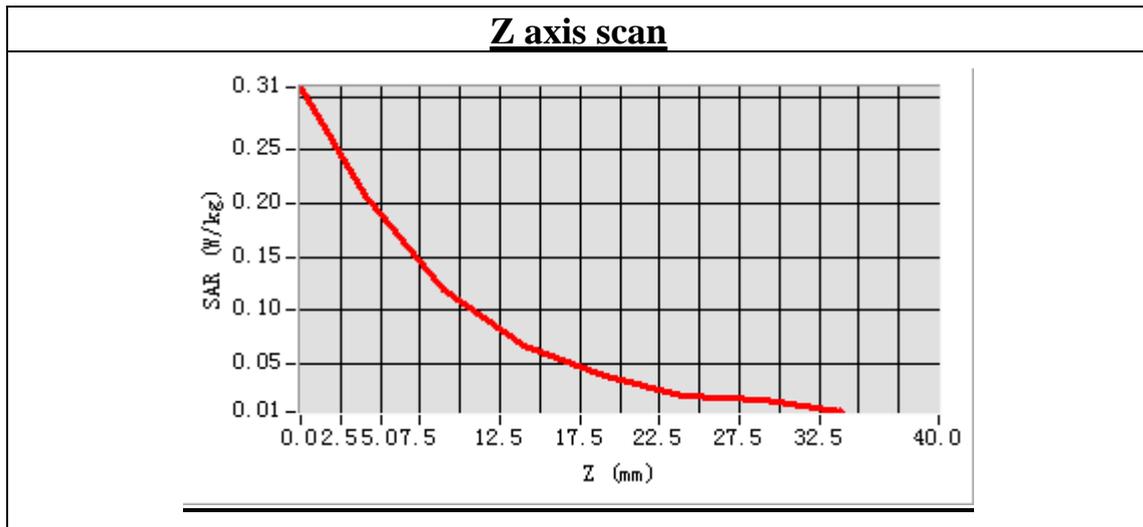


#### VOLUME SAR



**Maximum location: X=-59.00, Y=-47.00**  
**SAR Peak: 0.33 W/kg**

<b>SAR 10g (W/Kg)</b>	0.110300
<b>SAR 1g (W/Kg)</b>	0.181779



## MEASUREMENT 48

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 8 minutes 17 seconds

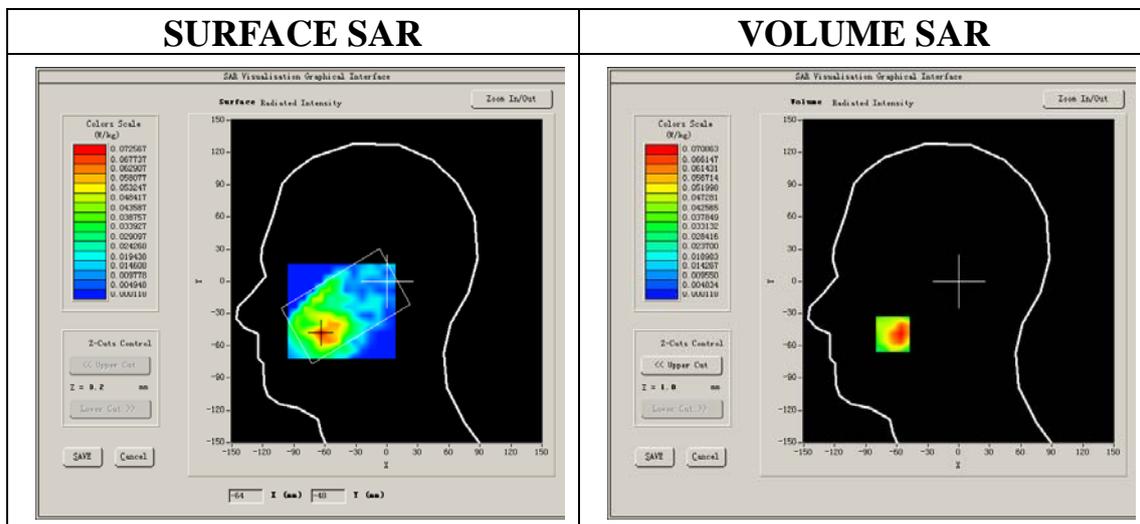
### A. Experimental conditions.

<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Left head
<b>Device Position</b>	Tilt
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

Middle Band SAR (Channel 6)

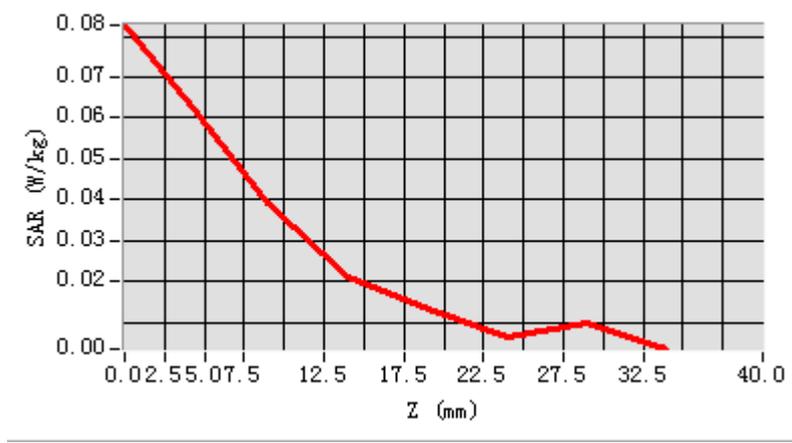
<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	40.1487921
<b>Conductivity (S/m)</b>	1.760123
<b>Power drift (%)</b>	-0.910000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.563,33.614,37.677
<b>Crest factor:</b>	1:1



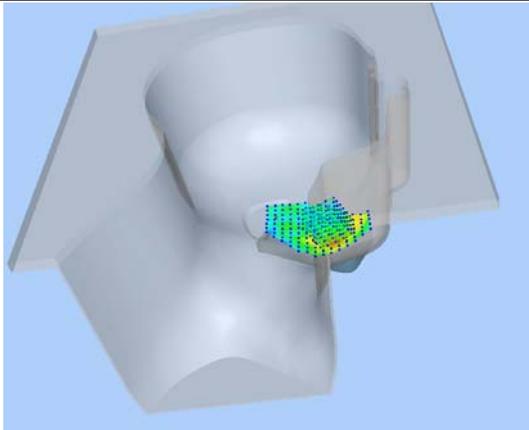
**Maximum location: X=-64.00, Y=-49.00**  
**SAR Peak: 0.11 W/kg**

<b>SAR 10g (W/Kg)</b>	0.037199
<b>SAR 1g (W/Kg)</b>	0.067946

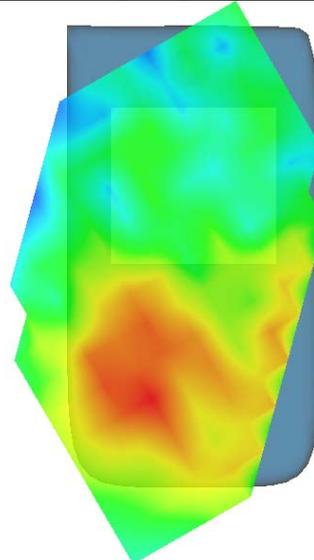
**Z axis scan**



**3D screen shot**



**Hot spot position**



## MEASUREMENT 49

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 9 minutes 10 seconds

### A. Experimental conditions.

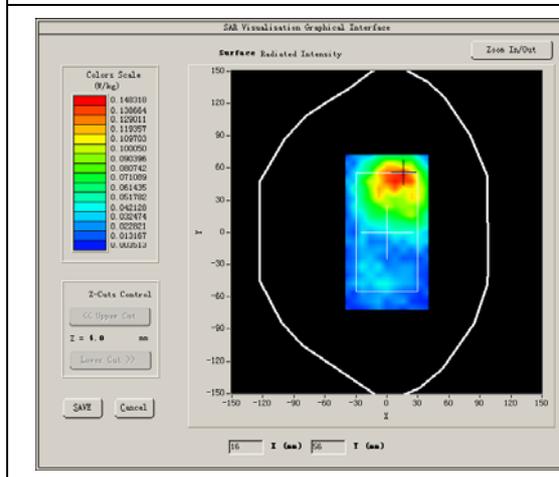
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

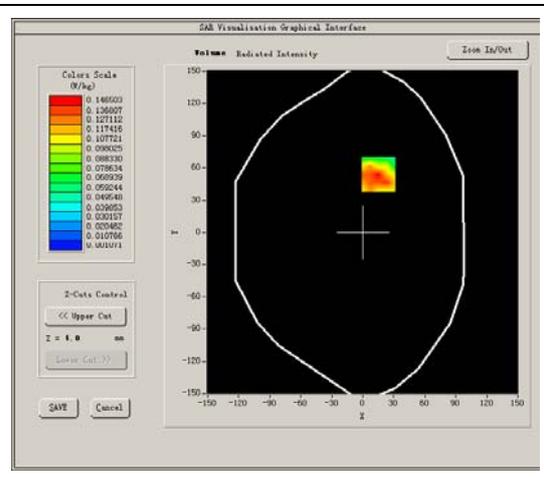
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	52.487031
<b>Conductivity (S/m)</b>	1.895902
<b>Power drift (%)</b>	-1.330000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.772,33.946,37.835
<b>Crest factor:</b>	1:1

#### SURFACE SAR



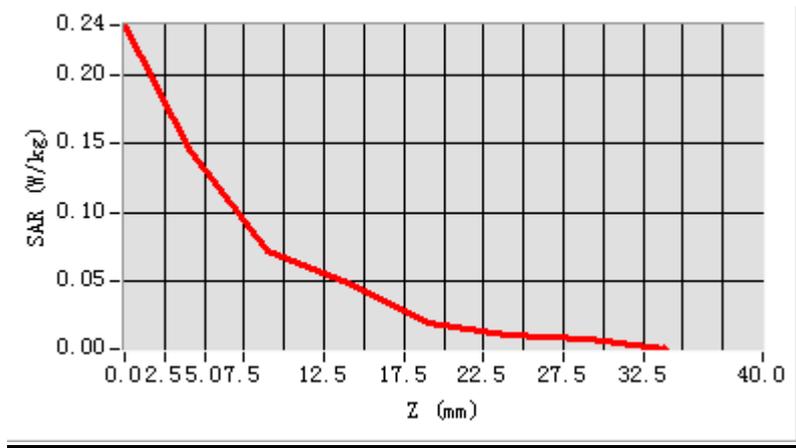
#### VOLUME SAR



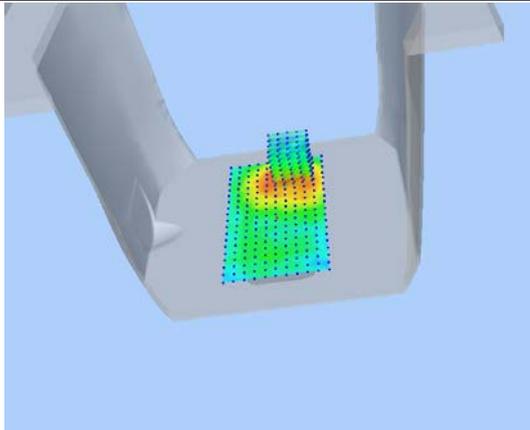
Maximum location: X=15.00, Y=54.00  
 SAR Peak: 0.26 W/kg

SAR 10g (W/Kg)	0.084247
SAR 1g (W/Kg)	0.150401

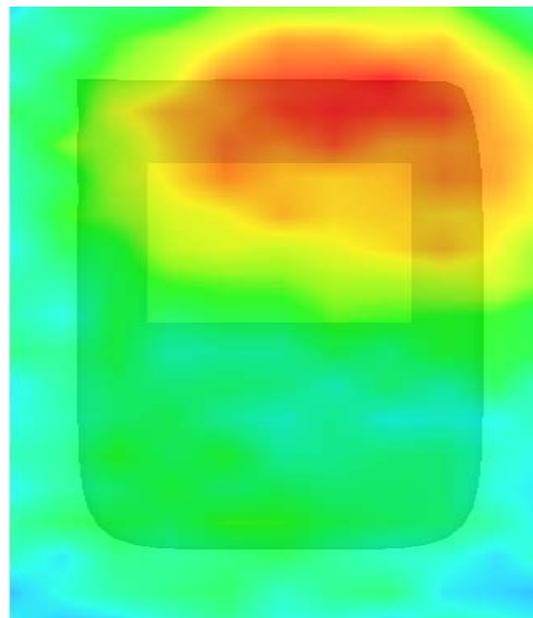
**Z axis scan**



**3D screen shot**



**Hot spot position**



# MEASUREMENT 50

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 9 minutes 10 seconds

## A. Experimental conditions.

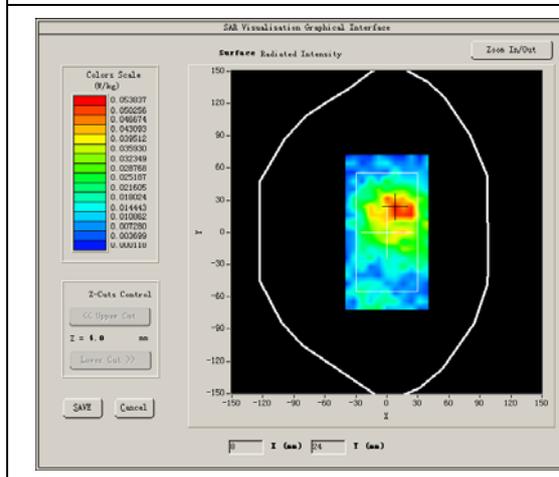
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

## B. SAR Measurement Results

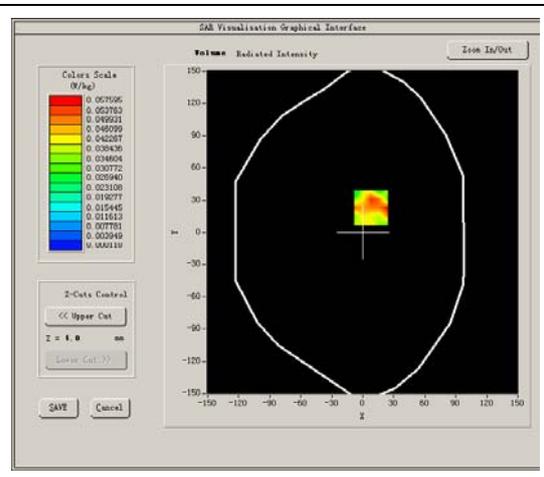
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	52.487031
<b>Conductivity (S/m)</b>	1.895902
<b>Power drift (%)</b>	-1.490000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.772,33.946,37.835
<b>Crest factor:</b>	1:1

### SURFACE SAR



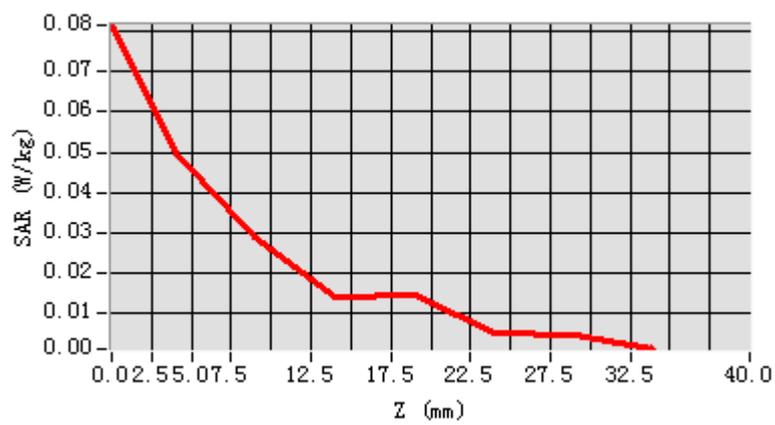
### VOLUME SAR



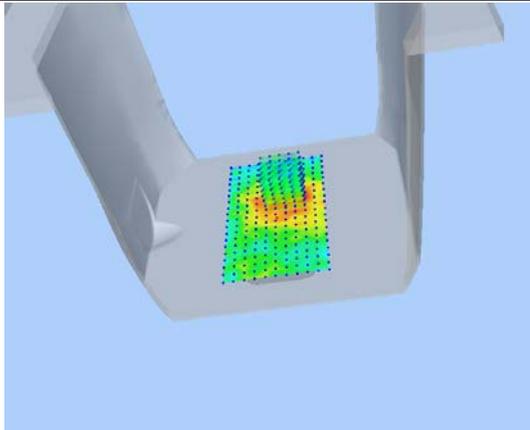
Maximum location: X=8.00, Y=23.00  
 SAR Peak: 0.15 W/kg

SAR 10g (W/Kg)	0.031311
SAR 1g (W/Kg)	0.060468

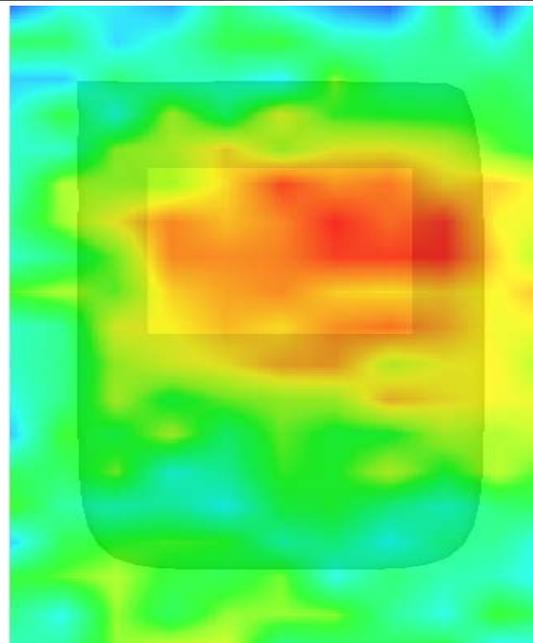
### Z axis scan



### 3D screen shot



### Hot spot position



# MEASUREMENT 51

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 9 minutes 10 seconds

## A. Experimental conditions.

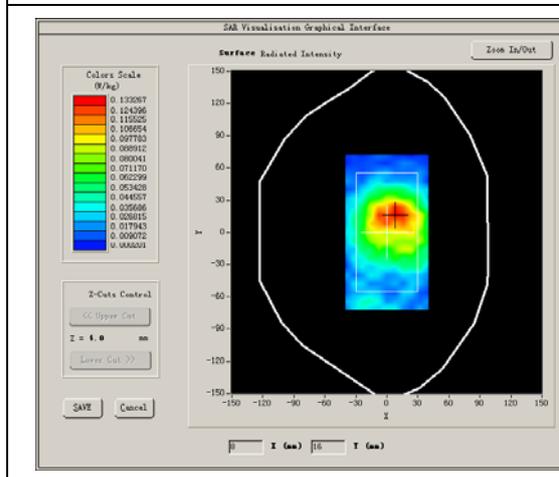
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

## B. SAR Measurement Results

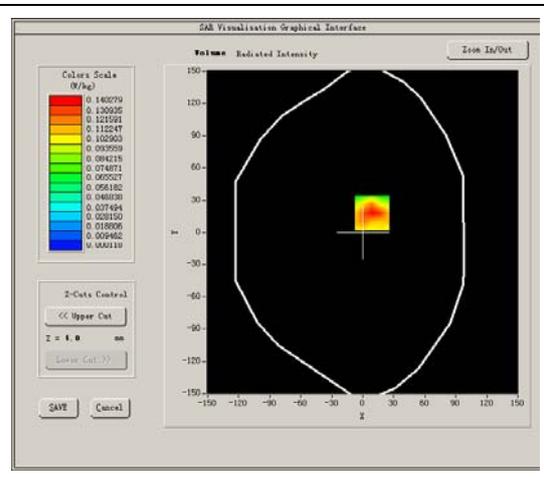
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	52.487031
<b>Conductivity (S/m)</b>	1.895902
<b>Power drift (%)</b>	-2.110000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.772,33.946,37.835
<b>Crest factor:</b>	1:1

### SURFACE SAR

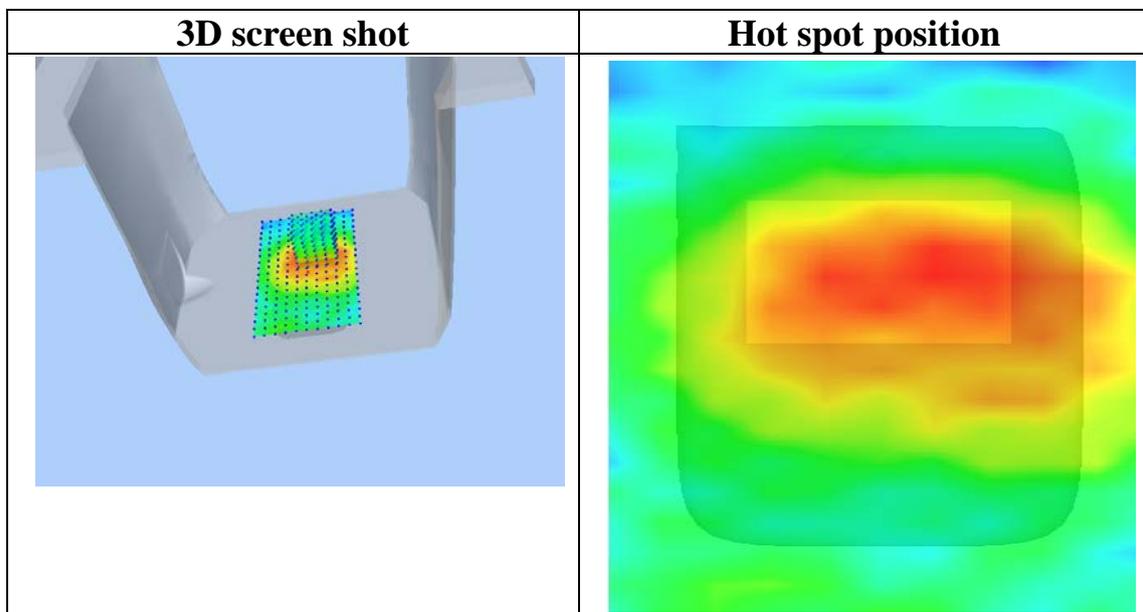
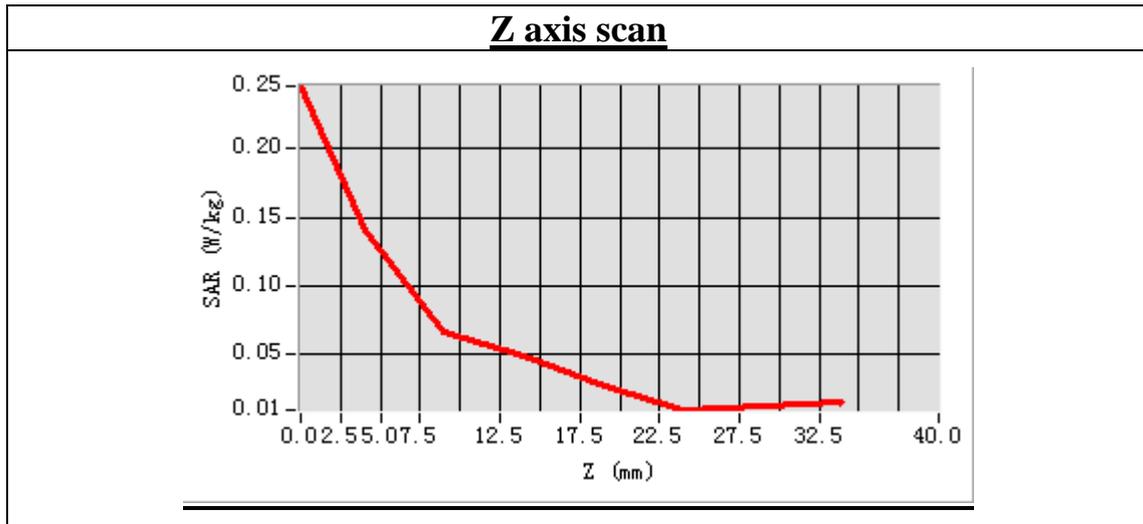


### VOLUME SAR



**Maximum location: X=9.00, Y=18.00**  
**SAR Peak: 0.27 W/kg**

<b>SAR 10g (W/Kg)</b>	0.077634
<b>SAR 1g (W/Kg)</b>	0.147335



## MEASUREMENT 52

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 9 minutes 10 seconds

### A. Experimental conditions.

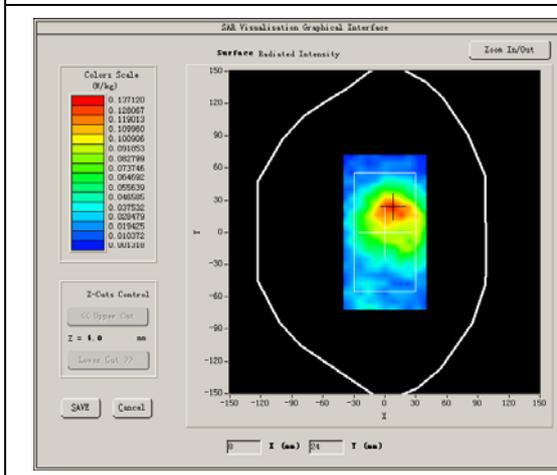
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	Body
<b>Band</b>	802.11B
<b>Channels</b>	Middle
<b>Signal</b>	DSSS

### B. SAR Measurement Results

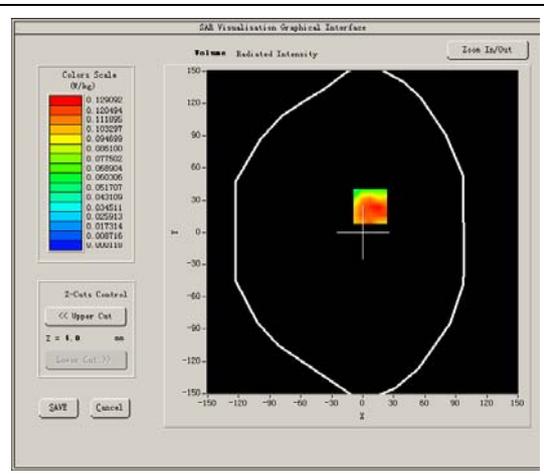
Middle Band SAR (Channel 6)

<b>Frequency (MHz)</b>	2437.000000
<b>Relative permittivity (real part)</b>	52.487031
<b>Conductivity (S/m)</b>	1.895902
<b>Power drift (%)</b>	-2.010000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.772,33.946,37.835
<b>Crest factor:</b>	1:1

#### SURFACE SAR



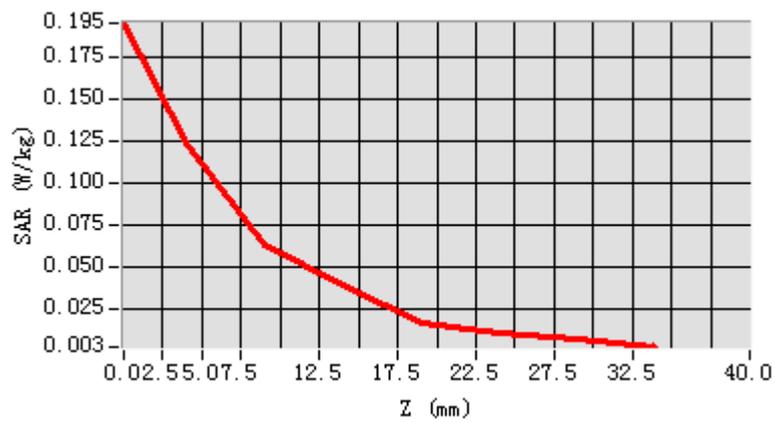
#### VOLUME SAR



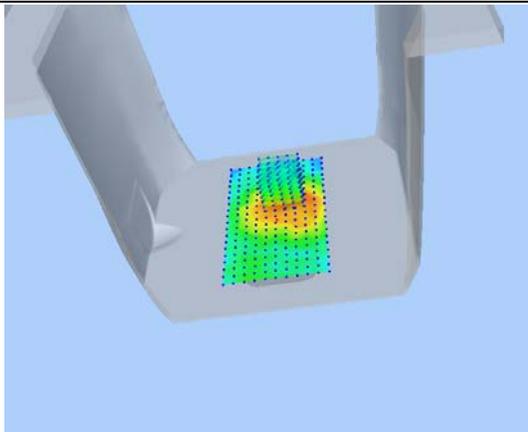
Maximum location: X=7.00, Y=24.00  
 SAR Peak: 0.23 W/kg

SAR 10g (W/Kg)	0.078216
SAR 1g (W/Kg)	0.134564

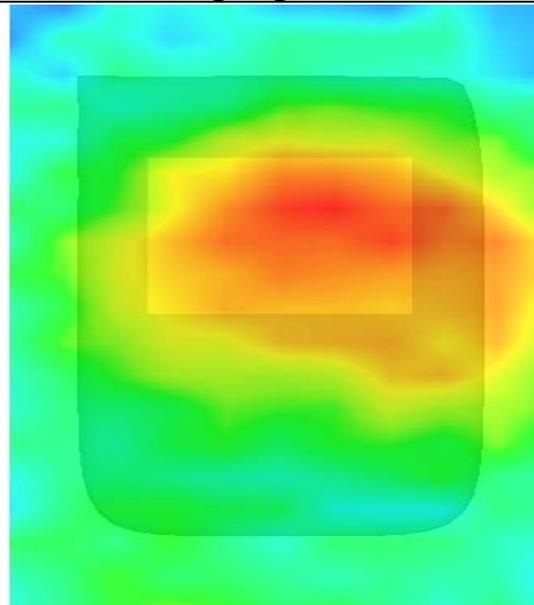
**Z axis scan**



**3D screen 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: 2013.8.19

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

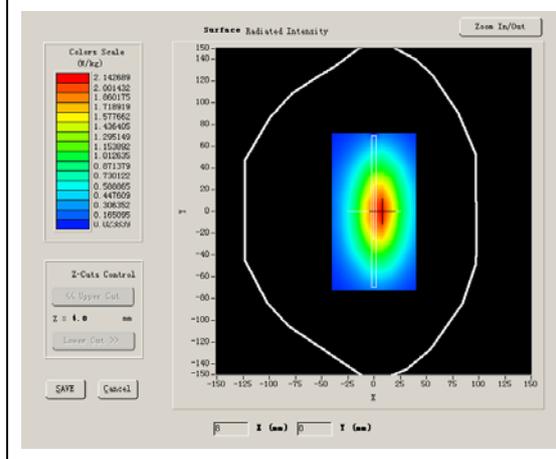
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

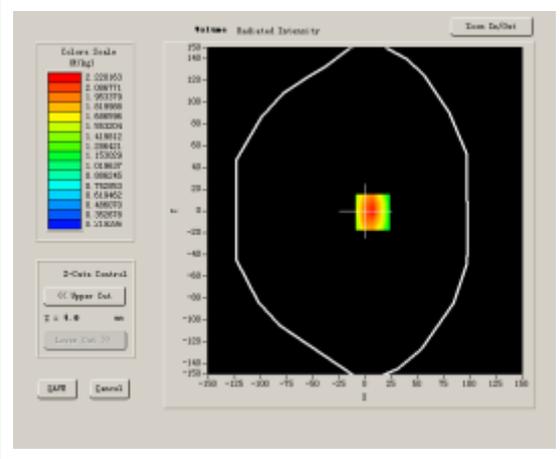
#### Band SAR

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	42.522765
<b>Conductivity (S/m)</b>	0.918504
<b>Power drift (%)</b>	-0.310000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.479,25.214,27.196
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



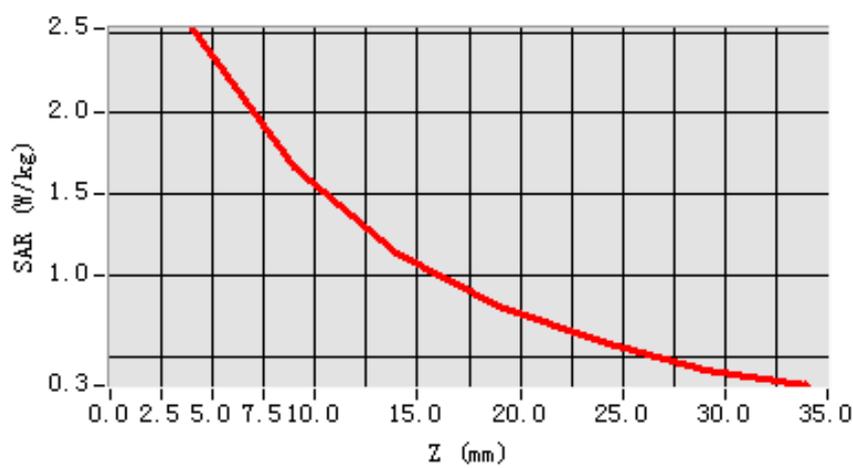
**Maximum location: X=7.00, Y=-1.00**

<b>SAR 10g (W/Kg)</b>	1.548473
<b>SAR 1g (W/Kg)</b>	2.418445

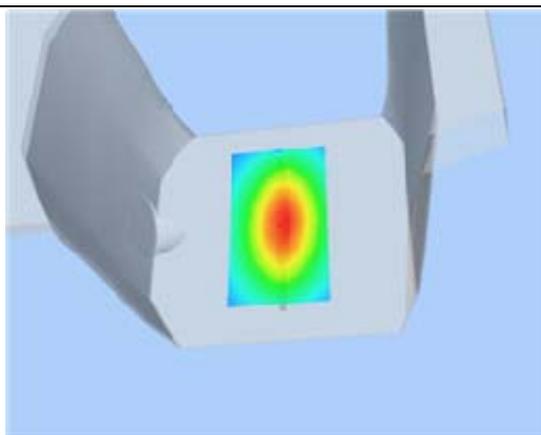
**Z Axis Scan**

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

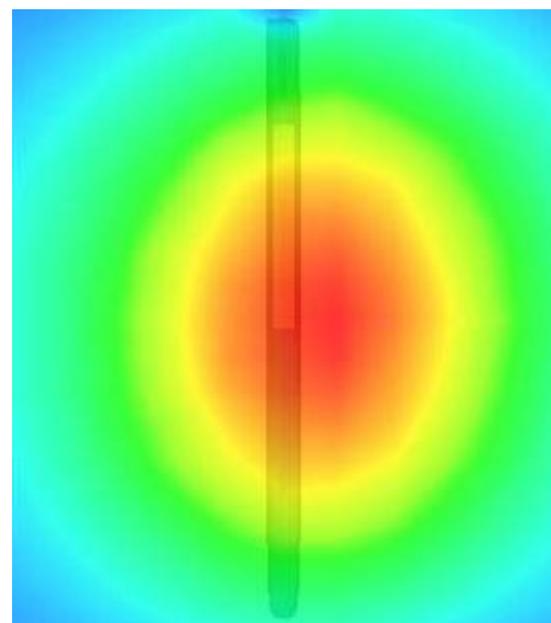
**SAR, Z Axis Scan (X = 7, Y = -1)**



**3D scen 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: 2013.8.19

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

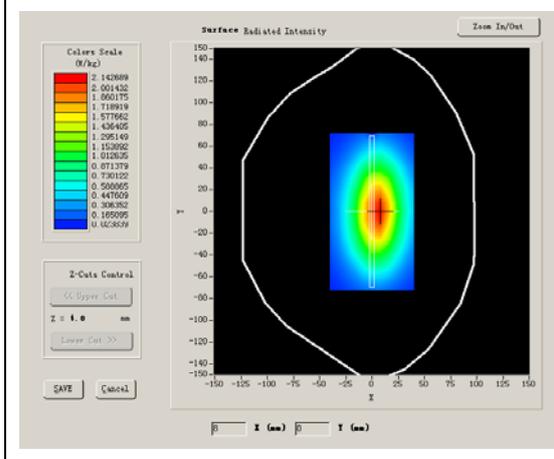
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	
<b>Band</b>	835MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

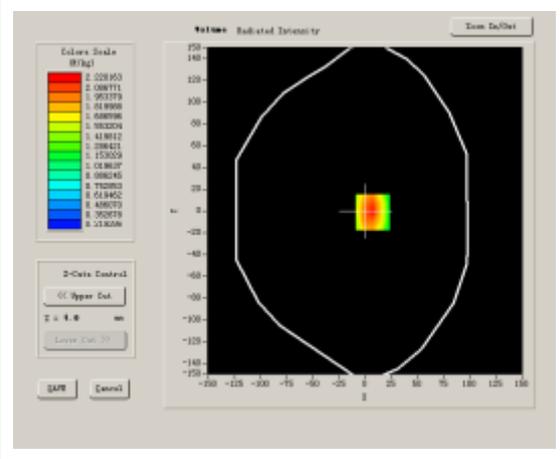
#### Band SAR

<b>Frequency (MHz)</b>	835.000000
<b>Relative permittivity (real part)</b>	55.140974
<b>Conductivity (S/m)</b>	0.950681
<b>Power drift (%)</b>	-1.700000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	28.559,25.681,27.588
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



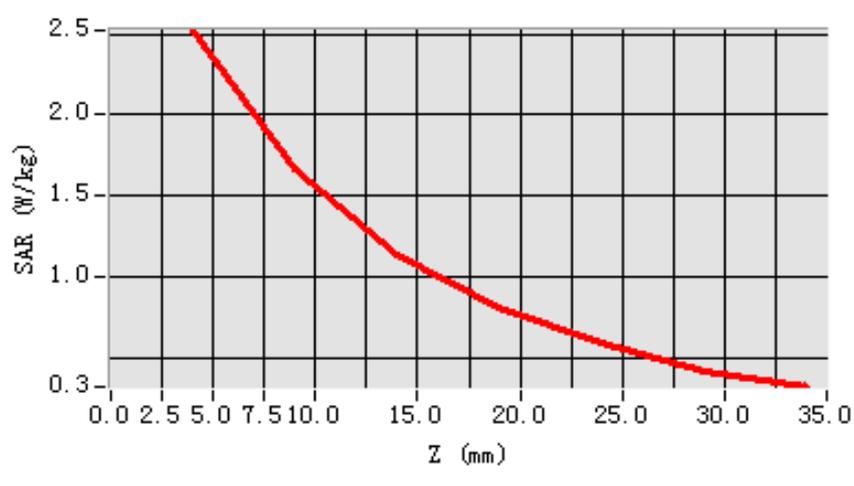
**Maximum location: X=7.00, Y=-1.00**

<b>SAR 10g (W/Kg)</b>	1.567132
<b>SAR 1g (W/Kg)</b>	2.459425

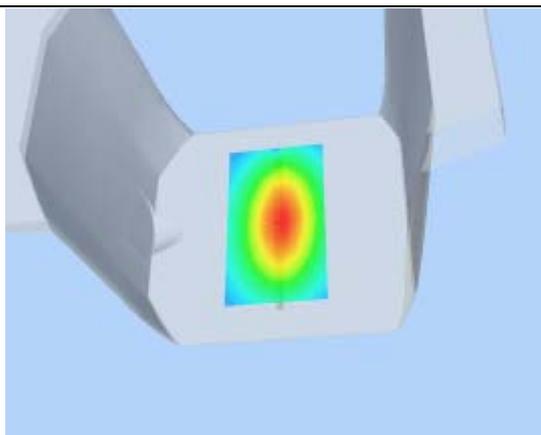
**Z Axis Scan**

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

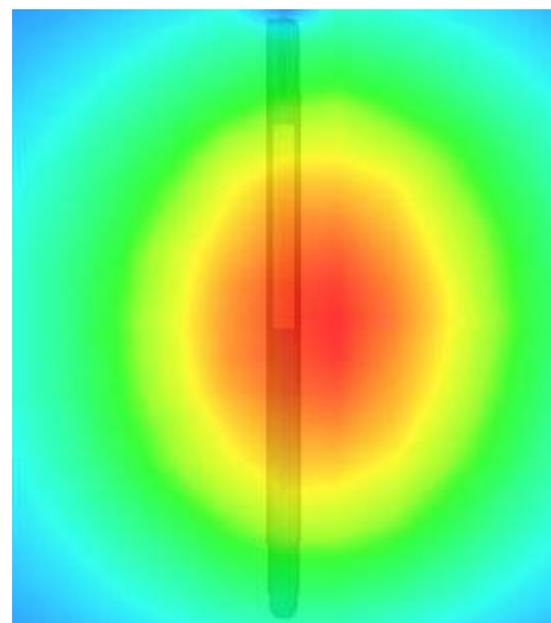
**SAR, Z Axis Scan (X = 7, Y = -1)**



**3D scen 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: 2013.8.20

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

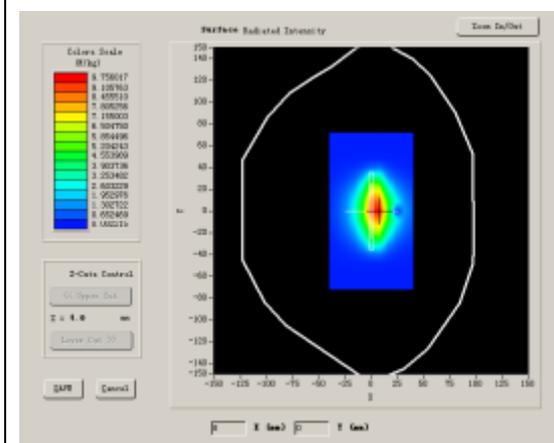
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	
<b>Band</b>	1900MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

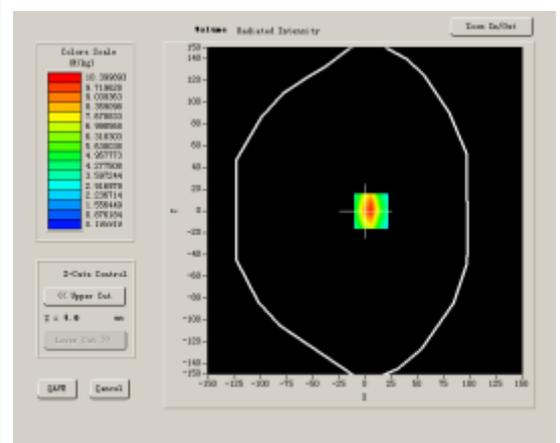
#### Band SAR

<b>Frequency (MHz)</b>	1900.000000
<b>Relative permittivity (real part)</b>	41.267921
<b>Conductivity (S/m)</b>	1.406817
<b>Power drift (%)</b>	-0.290000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.136,34.843,38.721
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



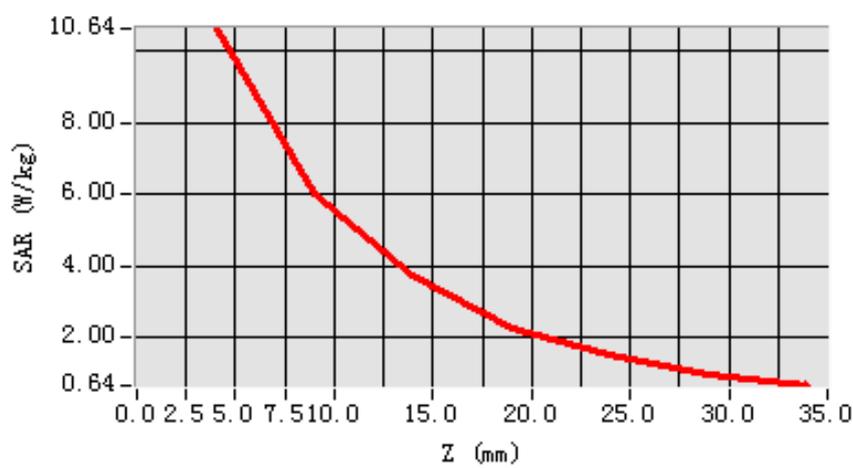
**Maximum location: X=6.00, Y=0.00**

<b>SAR 10g (W/Kg)</b>	6.325211
<b>SAR 1g (W/Kg)</b>	9.711043

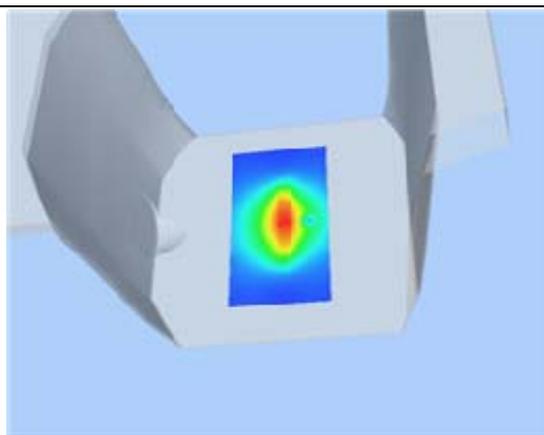
**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
<b>SAR (W/Kg)</b>	0.0000	10.6419	6.0043	3.7297	2.2606	1.5119	0.9792

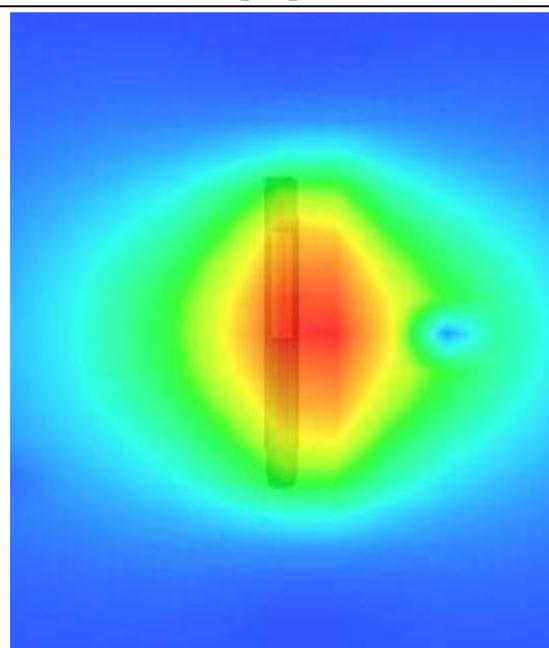
**SAR, Z Axis Scan (X = 6, Y = 0)**



**3D scen 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: 2013.8.20

Measurement duration: 13 minutes 26 seconds

### A. Experimental conditions.

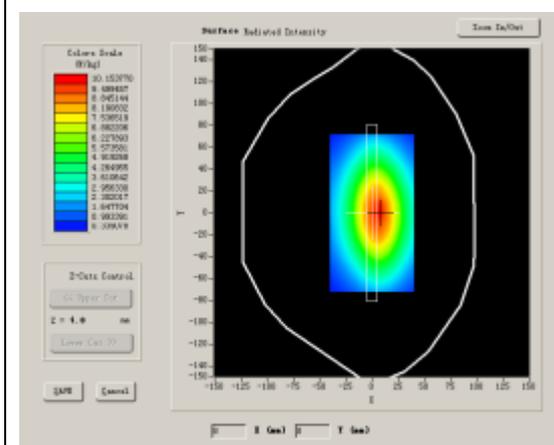
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Flat Plane
<b>Device Position</b>	
<b>Band</b>	1900MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

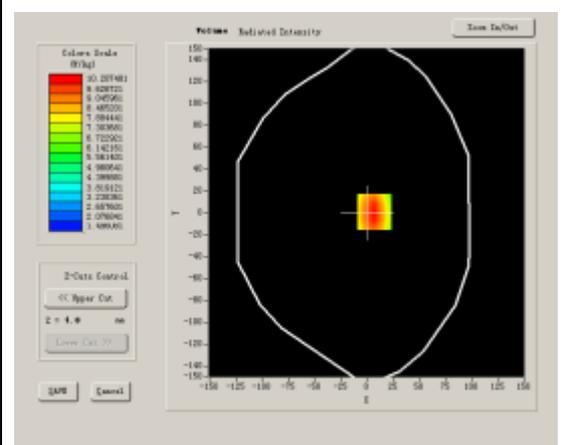
#### Band SAR

<b>Frequency (MHz)</b>	1900.000000
<b>Relative permittivity (real part)</b>	53.207082
<b>Conductivity (S/m)</b>	1.510328
<b>Power drift (%)</b>	-0.520000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	40.625,34.773,38.535
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



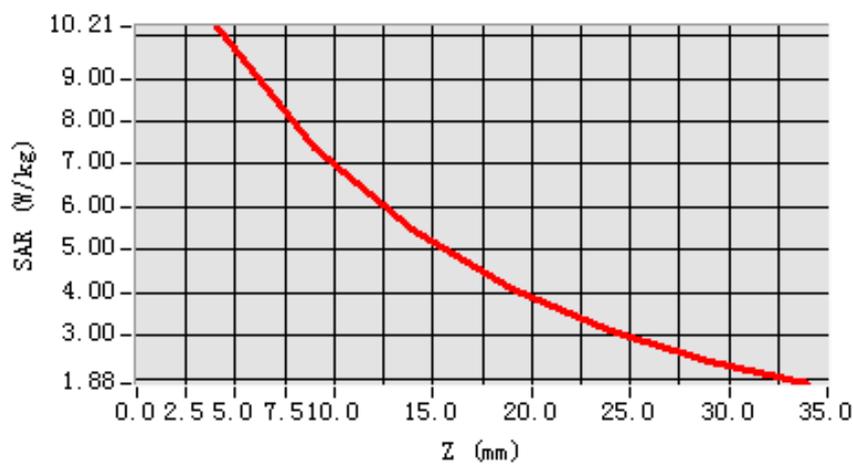
**Maximum location: X=7.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	6.478518
<b>SAR 1g (W/Kg)</b>	9.674012

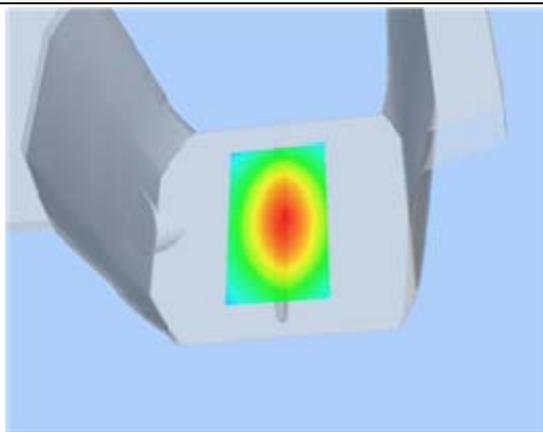
**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
<b>SAR (W/Kg)</b>	0.0000	10.2075	7.3996	5.4654	4.1101	3.1286	2.4128

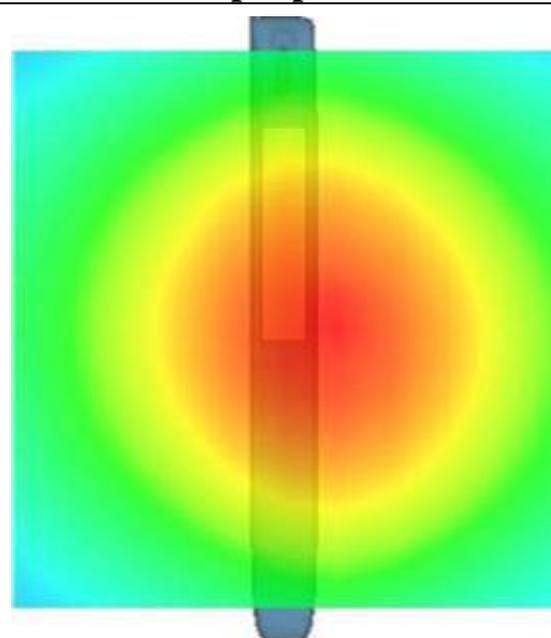
**SAR, Z Axis Scan (X = 7, Y = 1)**



**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=5mm, dy=5mm, dz=5mm

Date of measurement: 2013.8.21

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

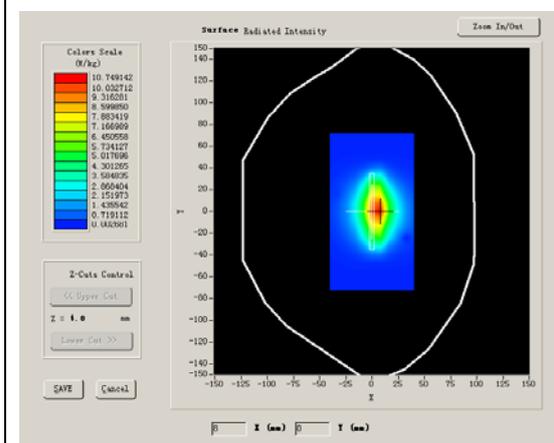
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	2450MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

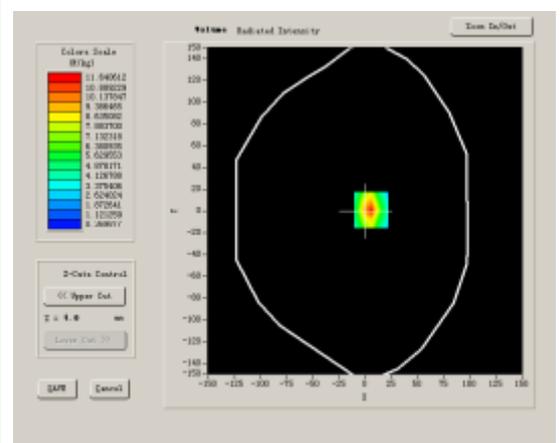
#### Band SAR

<b>Frequency (MHz)</b>	2450.000000
<b>Relative permittivity (real part)</b>	40.1487921
<b>Conductivity (S/m)</b>	1.760123
<b>Power Drift (%)</b>	-0.720000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.563,33.614,37.677
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



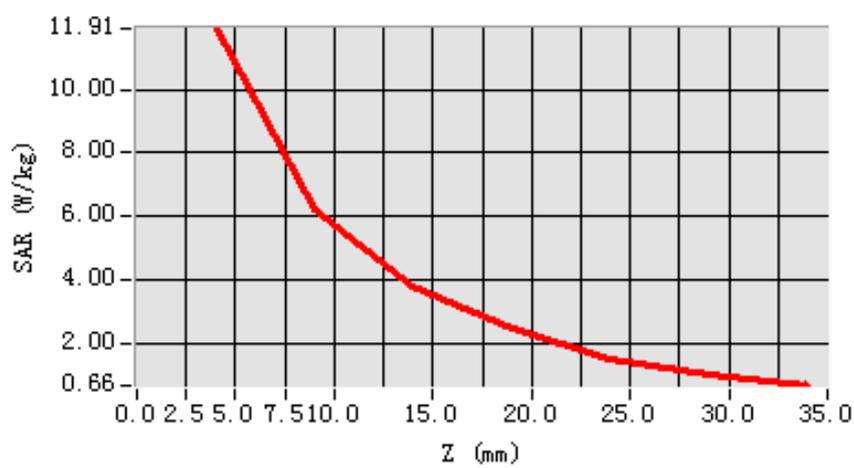
**Maximum location: X=6.00, Y=1.00**

<b>SAR 10g (W/Kg)</b>	7.659478
<b>SAR 1g (W/Kg)</b>	12.248492

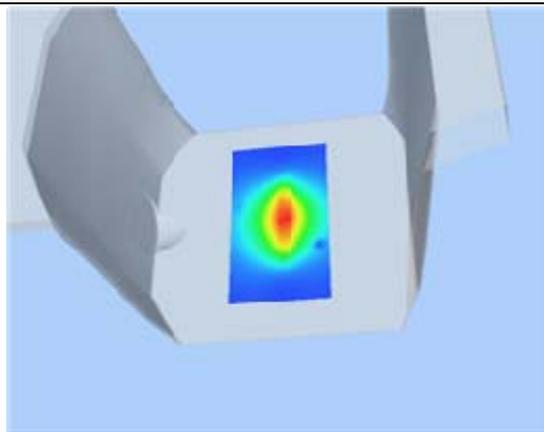
**Z Axis Scan**

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
<b>SAR (W/Kg)</b>	0.0000	11.9115	6.2096	3.8187	2.4504	1.5036	1.0219

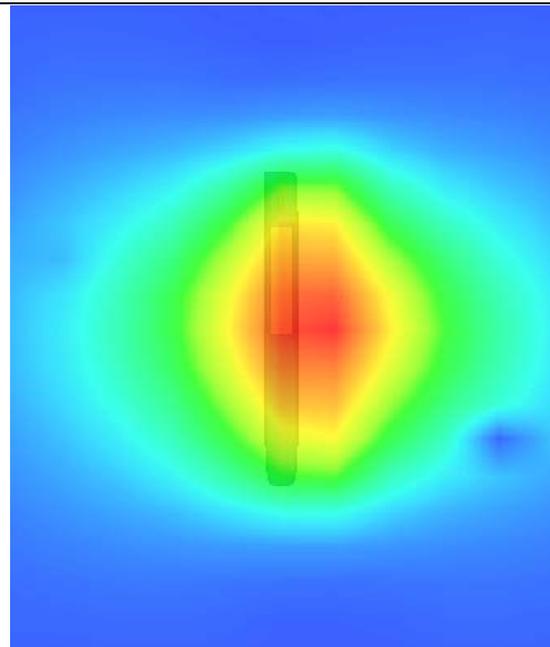
**SAR, Z Axis Scan (X = 6, Y = 1)**



**3D scen shot**



**Hot spot position**



## System Performance Check Data(Body)

Type: Phone measurement (Complete)

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

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

Date of measurement: 2013.8.21

Measurement duration: 13 minutes 27 seconds

### A. Experimental conditions.

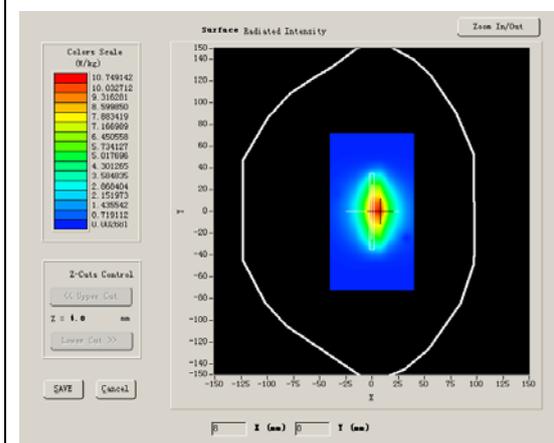
<b>Phantom File</b>	surf_sam_plan.txt
<b>Phantom</b>	Validation plane
<b>Device Position</b>	
<b>Band</b>	2450MHz
<b>Channels</b>	
<b>Signal</b>	CW

### B. SAR Measurement Results

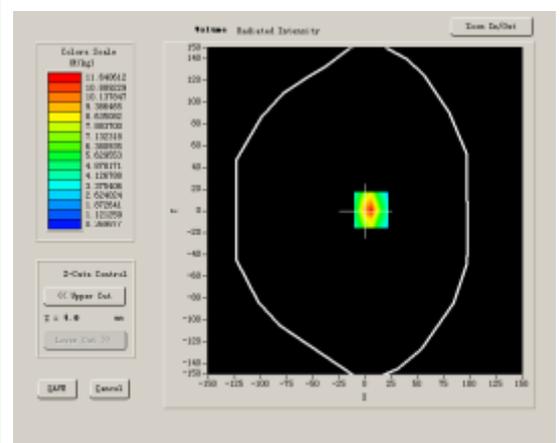
#### Band SAR

<b>Frequency (MHz)</b>	2450.000000
<b>Relative permittivity (real part)</b>	52.487031
<b>Conductivity (S/m)</b>	1.895902
<b>Power Drift (%)</b>	-1.170000
<b>Ambient Temperature:</b>	22.9°C
<b>Liquid Temperature:</b>	22.1°C
<b>ConvF:</b>	39.772,33.946,37.835
<b>Crest factor:</b>	1:1

#### SURFACE SAR



#### VOLUME SAR



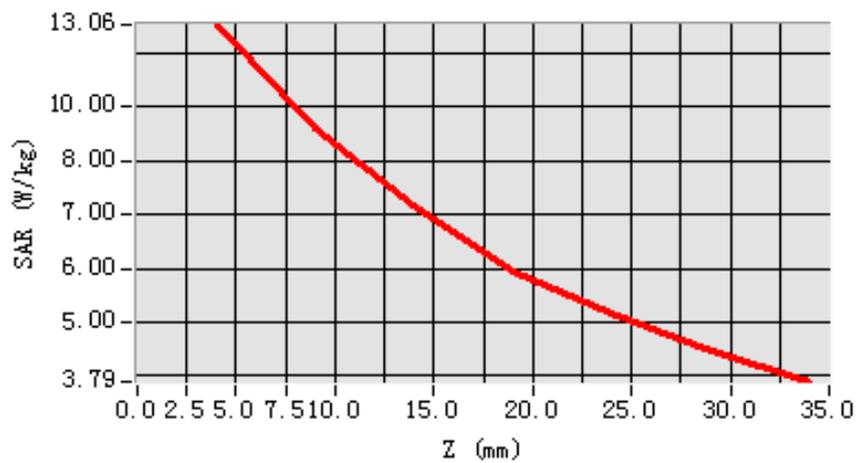
**Maximum location: X=-1.00, Y=-50.00**

<b>SAR 10g (W/Kg)</b>	7.176873
<b>SAR 1g (W/Kg)</b>	12.851461

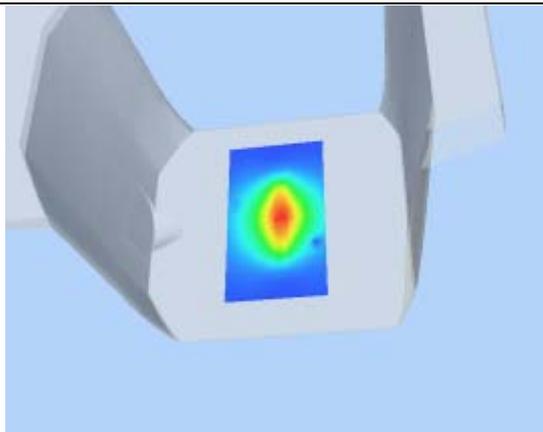
**Z Axis Scan**

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

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



**3D scen shot**



**Hot spot position**

