Report No.:SZ11090017S01







Issued to

TCT Mobile Limited

For

HSPA+ USB Modem

Model Name : One Touch X500Y

Trade Name : Alcatel Brand Name : Alcatel FCC ID : RAD227

Standard : FCC Oet65 Supplement C Jun.2001

47CFR 2.1093

ANSI C95.1-1999

IEEE 1528-2003

MAX SAR : Body: 1.095W/kg

Test date : 2011-10-29 Issue date : 2011-11-4

Shenzhen MORLAB Communication Technology Co., Ltd.

Approved b

Date

2011.11.4















BQTF

Reg. No. 741109

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	Change History					
Issue	Date Reason for change					
1.0	2011-11-4	First edition				



1. Testing Laboratory

1.1. Identification of the Responsible Testing Laboratory

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

Department: Morlab Laboratory

Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan

District, Shenzhen, 518055 P. R. China

Responsible Test Lab Manager: Mr. Shu Luan
Telephone: +86 755 86130268
Facsimile: +86 755 86130218

1.2. Identification of the Responsible Testing Location

Name: Shenzhen Morlab Communications Technology Co., Ltd.

Morlab Laboratory

Address: 3/F, Electronic Testing Building, Shahe Road, Nanshan

District, Shenzhen, 518055 P. R. China

1.3. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

1.4. List of Test Equipments

No.	Instrument	Type	Cal. Date	Cal. Due
1	PC	Dell (Pentium IV 2.4GHz, SN:X10-23533)	(n.a)	(n.a)
2	Network Emulator	Rohde&Schwarz (CMU200, SN:105894)	2011-9-26	1 year
3	Voltmeter	Keithley (2000, SN:1000572)	2011-9-24	1year
4	Synthetizer	Rohde&Schwarz (SML_03, SN:101868)	2011-9-24	1 year
5	Amplifier	Nucl udes (ALB216, SN:10800)	2011-9-24	1 year
6	Power Meter	Rohde&Schwarz (NRVD, SN:101066)	2011-9-24	1year
7	Probe	Satimo (SN:SN_3708_EP80)	2011-9-24	1year
8	Phantom	Satimo (SN:SN_36_08_SAM62)	2011-9-24	1year
9	Liquid	Satimo (Last Calibration:2011-10-8)	NA	NA
10	Dipole 835MHz	Satimo (SN 36/08 DIPC 99)	2011-9-23	1year
11	Dipole 1800MHz	Satimo (SN 36/08 DIPF 101)	2011-9-23	1year
12	Dipole 2450MHz	Satimo (SN 36/08 DIPJ 103)	2011-9-23	1 year



2. Technical Information

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

2.1. Identification of Applicant

Company Name: TCT Mobile Limited

Address: 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech

Park, Pudong Area Shanghai, P.R. China. 201203

2.2. Identification of Manufacturer

Company Name: TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED

Address: 70 Huifeng 4rd, Zhong Kai Hi-tech Development District,

Huizhou, Guangdong 516006 P.R. China

2.3. Equipment Under Test (EUT)

Brand Name: Alcatel Type Name: Alcatel

Marking Name: One Touch X500Y

Hardware Version: PIO

Software Version: S1_B15001S_1110000_B10001S Frequency Bands: GSM 850MHz / PCS 1900MHz

WCMDA 850MHz / WCMDA 1900MHz

Modulation Mode: GSM / GPRS : GMSK, EDGE : 8PSK

WCDMA: QPSK

HSDPA: QPSK / 16QAM, HSUPA: BPSK

Multislot Class GPRS: Multislot Class 12: EDGE: Multislot Class 12

GPRS operation mode: Class B HSPA release: Rel-7

Antenna type: Fixed Internal Antenna Development Stage: Identical prototype

2.3.1. Photographs of the EUT

Please see for photographs of the EUT.

2.3.2. Identification of all used EUTs

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

EUT Identity	Hardware Version	Software Version
1#	PIO	S1_B15001S_1110000_B10001S



2.4. Applied Reference Documents

Leading reference documents for testing:

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

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

7 m 11cssure. 900 ... 1020 m u

Test frequency: GSM 850MHz, PCS 1900MHz

WCDMA 850MHz, WCDMA 1900MHz

Operation mode: Data transmitting

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

PCS 1900 MHz Maximum output power(level 0)

WCDMA Maximum output power

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

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

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

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

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



3. Specific Absorption Rate (SAR)

3.1. Introduction

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

3.2. SAR Definition

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

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

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

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

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

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

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

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

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



4. SAR Measurement Setup

4.1. The Measurement System

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

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

The following figure shows the system.



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

4.2. Probe

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

- Dynamic range: 0.01-100 W/kg

- Tip Diameter: 6.5 mm

- Distance between probe tip and sensor center: 2.5mm

- Distance between sensor center and the inner phantom surface: 4 mm (repeatability better than +/- 1mm)

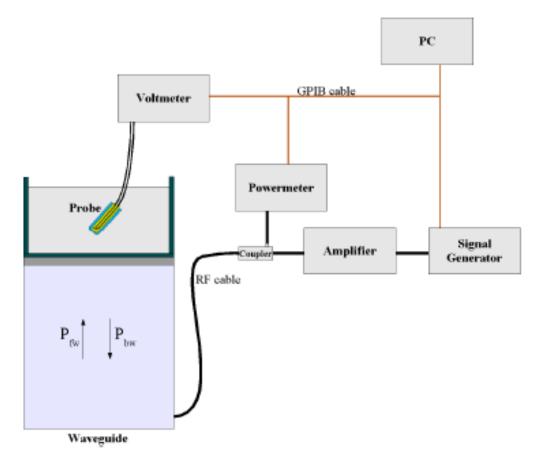


- Probe linearity: <0.25 dB
- Axial Isotropy: <0.25 dB
- Spherical Isotropy: <0.25 dB

- Calibration range: 835to 2500MHz for head & body simulating liquid.

Angle between probe axis (evaluation axis) and suface normal line:1ess than 30°

Probe calibration is realized, in compliance with CENELEC EN 62209 and IEEE 1528 std, with CALISAR, Antennessa proprietary calibration system. The calibration is performed with the EN 622091 annexe technique using reference guide at the five frequencies.



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

Where:

Pfw = Forward Power Pbw = Backward Power

a and b = Waveguide dimensions

Skin depthKeithley 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:

$$CF(N)=SAR(N)/Vlin(N)$$
 (N=1,2,3)

The linearised output voltage Vlin(N) is obtained from the displayed output voltage V(N) using

$$Vlin(N)=V(N)*(1+V(N)/DCP(N))$$
 (N=1,2,3)

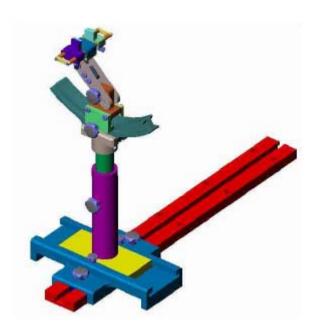
where DCP is the diode compression point in mV.

4.3. Phantom

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

4.4. Device Holder

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



Device holder

System Material	Permittivity	Loss Tangent
Delrin	3.7	0.005



5. Tissue Simulating Liquids

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

Gives the recipes for one liter of head and body tissue simulating liquid for frequency band 835 MHz and 1900 MHz.

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

Recipes for Tissue Simulating Liquid

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

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

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.0~23.8°C, humidity: 54~60%. **Permittivity ε** Conductivity σ (S/m) Frequency Target value 835 MHz 55. 2 0.97 Validation value 835 MHz 55, 709999 1.009033 (0ct. 29) Target value 1900 MHz 53.3 1.52



			SZ11090017S01
Validation value (Oct. 29)	1900 MHz	52. 548876	1. 573978



6. Uncertainty Assessment

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

6.1. UNCERTAINTY EVALUATION FOR HANDSET SAR TEST

	1.		1	(/ 11 \	C	T	1	T	T,
a	b	С	d	e=f(d,k)	f	g	$\begin{vmatrix} h = \\ c*f/e \end{vmatrix}$	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	i
Measurement System			•		4		_1		
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	0.7	0.7	1.01	1.01	
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	0.7	0.7	1.62	1.62	
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	<u> </u>
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	<u> </u>
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	\dagger
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	\dagger
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	\dagger
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	\dagger
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	
Test sample Related									_
Test sample positioning	E.4.2.1	0.03	N	1	1	1	0.03	0.03	1 -
Device Holder Uncertainty	E.4.1.1	5.00	N	1	1	1	5.00	5.00	Ì
Output power Power drift - SAR drift measurement	6.6.2	2.74	R	$\sqrt{3}$	1	1	1.58	1.58	
Phantom and Tissue Paramete	rs			<u> </u>		-	<u> </u>	<u> </u>	
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	
Liquid conductivity - deviation from target value	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	



Liquid conductivity -	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	M
measurement uncertainty									
Liquid permittivity - deviation	E.3.2	3.69	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	
from target value									
Liquid permittivity -	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
measurement uncertainty									
Combined Standard			RSS				12.52	11.71	
Uncertainty									
Expanded Uncertainty			k				25.05	23.42	
(95% Confidence interval)									

6.2. UNCERTAINTY FOR SYSTEM PERFORMANCE CHECK

a	b	С	d	e=f(d,k)	f	g	h= c*f/e	i= c*g/e	k
Uncertainty Component	Sec.	Tol (+- %	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	V
Measurement System				1	1	·I		-1	
Probe calibration	E.2.1	7.0	N	1	1	1	7.00	7.00	
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	0.7	0.7	1.01	1.01	
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	0.7	0.7	1.62	1.62	
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	t
Readout Electronics	E.2.6	0.02	N	1	1	1	0.02	0.02	t
Reponse Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.73	1.73	
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.89	2.89	
Dipole						<u> </u>			
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.58	0.58	N - 1
Input power and SAR drift measurement	8,6.6.2	2.74	R	$\sqrt{3}$	1	1	1.58	1.58	



Phantom and Tissue Paramete	rs								
Phantom Uncertainty (Shape	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	
and thickness tolerances)									
Liquid conductivity - deviation	E.3.2	4.57	R	$\sqrt{3}$	0.64	0.43	1.69	1.13	
from target value									
Liquid conductivity -	E.3.3	5.00	N	1	0.64	0.43	3.20	2.15	M
measurement uncertainty									
Liquid permittivity - deviation	E.3.2	3.69	R	$\sqrt{3}$	0.6	0.49	1.28	1.04	
from target value									
Liquid permittivity -	E.3.3	10.00	N	1	0.6	0.49	6.00	4.90	M
measurement uncertainty									
Combined Standard			RSS				11.50	10.61	
Uncertainty									
Expanded Uncertainty			k				23.00	21.21	
(95% Confidence interval)									



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

Equipments:

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

7.2. Validation Results

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

Frequency	835MHz	1900MHz
Target value (1g)	9.5 W/Kg	38.1 W/Kg
250 mW input power (Oct. 29, 2011)	2.678 W/Kg	9.846 W/Kg
Test value (1g)	10.712 W/Kg	39.612 W/Kg

Note: System checks the specific test data please see page 79-82

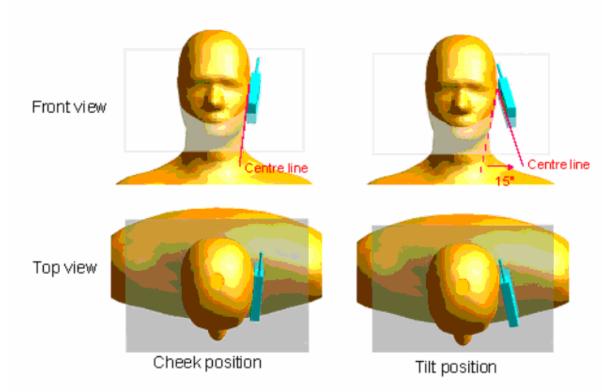


8. Operational Conditions During Test

8.1. Informations on the testing

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

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



Description of the "cheek" position:

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

Description of the "tilted" position:

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

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

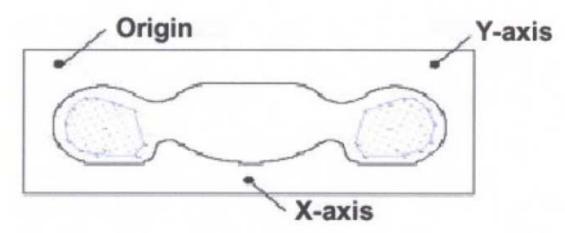
8.2. Body-worn Configurations

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



The depth of the body tissue was 15.1cm. The distance between the back of the device and the bottom of the flat phantom is 5mm(taking into account of the IEEE 1528 and the place of the antenna)

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



SAR Measurement Points in Area Scan

8.3. Measurement procedure

The following steps are used for each test position

- Establish a call with the maximum output power with a base station simulator. The connection between the mobile and the base station simulator is established via air interface
- Measurement of the local E-field value at a fixed location. This value serves as a reference value for calculating a possible power drift.
- Measurement of the SAR distribution with a grid of 8 to 16mm * 8 to 16 mm and a constant distance to the inner surface of the phantom. Since the sensors can not directly measure at the inner phantom surface, the values between the sensors and the inner phantom surface are extrapolated. With these values the area of the maximum SAR is calculated by an interpolation scheme.
- Around this point, a cube of 30 * 30 * 30 mm or 32 * 32 * 32 mm is assessed by measuring 5 or 8 * 5 or 8*4 or 5 mm. With these data, the peak spatial-average SAR value can be calculated.

8.4. Description of interpolation/extrapolation scheme

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

An extrapolation is using to determinate this highest local SAR values. The extrapolation is based on a fourth-order least-square polynomial fit of measured data. The local SAR value is then extrapolated



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



9. 3G MEASUREMENT PROCEDURES

9.1. Procedures Used To Establish Test Signal

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

9.2. SAR Measurement Conditions for WCDMA

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

9.3. Output Power Verification

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

9.4. Tablet PC with HSUPA

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

9.5. conducted output power

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT. For the GSM 850MHz operates at PCL=5 (where Power Class is 4), the rated conducted RF output power is 33dBm, and For the GSM 1900MHz operates at PCL=0 (where Power Class is 1), the rated conducted RF output power is 30dBm.



Dond	Chamal	Frequency	equency Measured Output I		Limit	Vandiat
Band	Channel	(MHz)	dBm	Refer to Plot	dBm	Verdict
GSM	128	824.2	32.31			PASS
850MHz	190	836.6	31.86	Plot A1 to A3	35	PASS
050WILIZ	251	848.8	32.05			PASS
GSM	512	1850.2	29.60			PASS
1900MHz	661	1880.0	29.82	Plot B1 to B3	32	PASS
190011112	810	1909.8	29.81			PASS
GPRS	128	824.2	28.57	Plot C1 to C3		PASS
850MHz	190	836.6	28.21	1down link	35	PASS
OJUMITZ	251	848.8	28.35	4up link		PASS
GPRS	512	1850.2	26.84	Plot D1 to D3		PASS
1900MHz	661	1880.0	27.02	1down link	32	PASS
1900WI11Z	810	1909.8	27.16	4up link		PASS
GPRS	128	824.2	28.50	Plot E1 to E3		PASS
850MHz	190	836.6	28.16	2down link	35	PASS
650IVII IZ	251	848.8	27.75	3up link		PASS
GPRS	512	1850.2	26.88	Plot F1 to F3		PASS
1900MHz	661	1880.0	27.07	2down link	32	PASS
ТЭООМПЕ	810	1909.8	27.17	3up link		PASS
GPRS	128	824.2	28.49	Plot G1 to G3		PASS
850MHz	190	836.6	28.14	3down link	35	PASS
830MIZ	251	848.8	28.33	2up link		PASS
CDDC	512	1850.2	26.87	Plot H1 to H3		PASS
GPRS 1900MHz	661	1880.0	27.07	3down link 32	32	PASS
ТЭООМПТ	810	1909.8	27.20	2up link		PASS
CDDC	128	824.2	32.28	Plot I1 to I3		PASS
GPRS 850MHz	190	836.6	31.95	4down link	35	PASS
830MIZ	251	848.8	32.19	1up link		PASS
CDDC	512	1850.2	29.71	Plot J1 to J3		PASS
GPRS 1900MHz	661	1880.0	29.97	4down link	32	PASS
1900МП2	810	1909.8	30.04	1up link		PASS
ECDDC	128	824.2	25.48	Plot K1 to K3		PASS
EGPRS	190	836.6	25.10	1down link	35	PASS
850MHz	251	848.8	25.36	4up link		PASS
ECDDC	512	1850.2	23.91	Plot L1 to L3		PASS
EGPRS	661	1880.0	23.89	1down link	32	PASS
1900MHz	810	1909.8	23.98	4up link		PASS
ECDDG	128	824.2	26.37	Plot M1 to M3		PASS
EGPRS	190	836.6	26.05	2down link	35	PASS
850MHz	251	848.8	26.34	3up link		PASS
EGPRS	512	1850.2	24.83	Plot N1 to N3	32	PASS
1900MHz	661	1880.0	24.85	2down link		PASS



Dand	Band Channel		Measured	Output Power	Limit	Verdict
Danu	Chamiei	(MHz)	dBm	Refer to Plot	dBm	verdict
	810	1909.8	24.97	3up link		PASS
ECDDC	128	824.2	28.33	Plot O1 to O3		PASS
EGPRS	190	836.6	28.02	3down link	35	PASS
850MHz	251	848.8	28.26	2up link		PASS
EGPRS	512	1850.2	28.68	Plot P1 to P3		PASS
1900MHz	661	1880.0	26.90	3down link	32	PASS
1900МП2	810	1909.8	26.94	2up link		PASS
ECDDC	128	824.2	32.12	Plot Q1 to Q3		PASS
EGPRS 850MHz	190	836.6	31.87	4down link	35	PASS
83011112	251	848.8	32.17	1up link		PASS
EGPRS	512	1850.2	29.76	Plot R1 to R3		PASS
1900MHz	661	1880.0	29.58	4down link	32	PASS
19001/11/12	810	1909.8	29.87	1up link		PASS

	band	WCDMA 850			WCDMA 1900			
ltem	ARFCN	4132	4175	4233	9262	9400	9538	
	subtest		dBm			dBm		
5.2(WCDMA)	non	22.60	22.76	22.62	23.41	22.33	22.26	
	1	21.42	21.64	21.50	22.73	21.95	21.86	
5 2 A A (HCDDA)	2	21.51	21.62	21.51	22.69	21.89	21.83	
5.2AA(HSDPA)	3	21.05	21.12	21.03	22.15	21.42	21.33	
	4	20.95	21.09	20.97	22.11	21.36	21.31	
	1	22.14	22.43	22.25	22.14	21.65	21.45	
	2	20.11	20.55	20.31	20.24	19.62	19.44	
5.2B(HSUPA)	3	21.21	21.42	21.25	21.21	20.59	20.38	
	4	20.15	20.58	20.25	20.17	19.72	19.49	
	5	22.09	22.42	22.22	22.24	21.58	21.40	
HSPA+	1	21.34	21.50	21.42	22.34	21.56	21.44	



10.Test Results List

Summary of Measurement Results (GSM 850MHz Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.								
			SAR(W/Kg), 1g Peak					
Phantom	Device Test	Antenna	De	vice Test chan	nel			
Configurations	Positions	Positions	Channel	Channel	Channel			
			128	190	251			
	Horizontal-Up	Internal	/	0.784	/			
Body	Horizontal-Down	Internal	/	0.788	/			
(GPRS)	Vertical-Front	Internal	/	0.338	/			
	Vertical-Back	Internal	/	0.330	/			
Body (EDGE)	Horizontal-Up	Internal	/	0.715	/			

Summary of Measurement Results (GSM 1900MHz Band)

Temperature: 21.0~23.8°C, humidity: 54~60%.								
			SAR(W/Kg), 1g Peak					
Phantom	Device Test	Antenna	De	vice Test chan	nel			
Configurations	Positions	Positions	Channel	Channel	Channel			
			512	661	810			
	Horizontal-Up	Internal	/	0.720	/			
Body	Horizontal-Down	Internal	0.817	0.926	0.904			
(GPRS)	Vertical-Front	Internal	/	0.276	/			
	Vertical-Back	Internal	/	0.497	/			
Body (EDGE)	Horizontal-Up	Internal	/	0.628	/			

Summary of Measurement Results (WCDMA Band V)

<u> </u>	and of the aburement results (the Bith i Build the							
Temperature: 21.0~23.8°C, humidity: 54~60%.								
			SAI	SAR(W/Kg), 1g Peak				
Phantom	Device Test	Antenna	De	vice Test channel				
Configurations	Positions	Positions	Channel	Channel	Channel			
			4132	4182	4233			
	Horizontal-Up	Internal	/	0.775	/			
Body	Horizontal-Down	Internal	/	0.684	/			
(WCDMA)	Vertical-Front	Internal	/	0.415	/			
	Vertical-Back	Internal	/	0.476	/			

Summary of Measurement Results (WCDMA Band II)

Temperature: 21.0~23.8°C, humidity: 54~60%.								
Dhantan	Davisa Tast	A	SAF	R(W/Kg), 1g F	Peak			
Phantom Configurations	Device Test	Antenna Positions	De	vice Test chan	nel			
Configurations	Positions	POSITIONS	Channel	Channel	Channel			



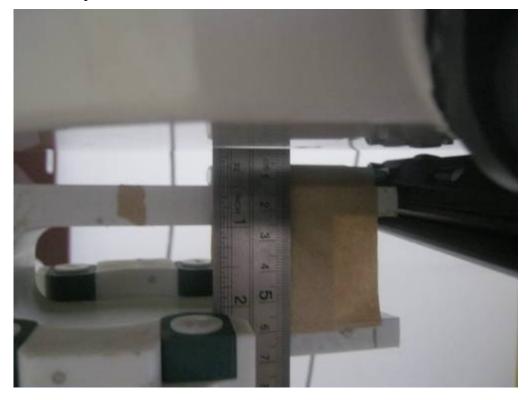
			9262	9400	9538
	Horizontal-Up	Internal	1.042	1.095	0.784
Body	Horizontal-Down	Internal	0.811	0.845	0.750
(WCDMA)	Vertical-Front	Internal	/	0.573	/
	Vertical-Back	Internal	/	0.489	/

Note: 1. er KDB 447498, when the SAR procedures require multiple channels to be tested and the 1-g SAR for the highest output channel is less than 0.8 W/kg and peak SAR is less than 1.6W/kg, where the transmission band corresponding to all channels is \leq 100 MHz, testing for the other channels is not required.



Annex A Photographs of the EUT

1 EUT Horizontal-Up



2 EUT Horizontal-Down





3 EUT Vertical-Front

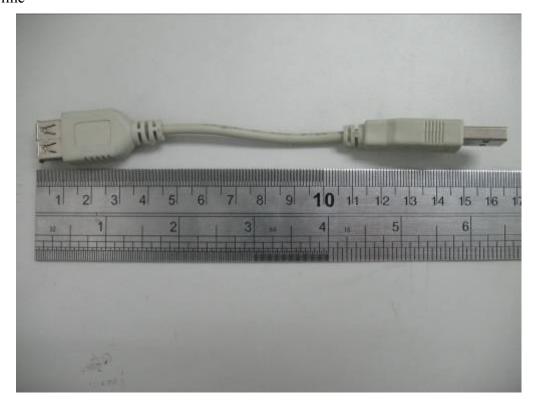


4 EUT Vertical-Back





5 Data line



Liquid Level Photo

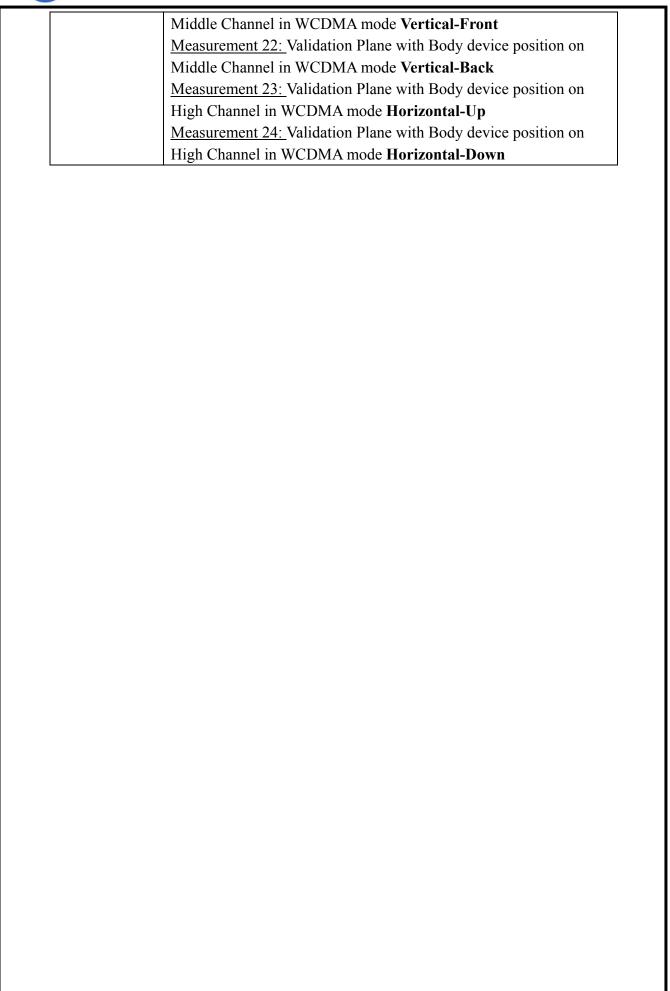




Annex B Graph Test Results

BAND	PARAMETERS
	Measurement 1: Validation Plane with Body device position on
CCMOZO	Middle Channel in GPRS mode Horizontal-Up
	Measurement 2: Validation Plane with Body device position on
	Middle Channel in GPRS mode Horizontal-Down
	Measurement 3: Validation Plane with Body device position on
<u>GSM850</u>	Middle Channel in GPRS mode Vertical-Front
	Measurement 4: Validation Plane with Body device position on
	Middle Channel in GPRS mode Vertical-Back
	Measurement 5: Validation Plane with Body device position on Low
	Channel in EDGE mode Horizontal-Up
	Measurement 6: Validation Plane with Body device position on Low
	Channel in GPRS mode Horizontal-Down
	Measurement 7: Validation Plane with Body device position on
	Middle Channel in GPRS mode Horizontal-Up
	Measurement 8: Validation Plane with Body device position on
	Middle Channel in GPRS mode Horizontal-Down
CCM1000	Measurement 9: Validation Plane with Body device position on
<u>GSM1900</u>	Middle Channel in GPRS mode Vertical-Front
	Measurement 10: Validation Plane with Body device position on
	Middle Channel in GPRS mode Vertical-Back
	Measurement 11: Validation Plane with Body device position on
	High Channel in GPRS mode Horizontal-Down
	Measurement 12: Validation Plane with Body device position on
	Middle Channel in EDGE mode Horizontal-Up
	Measurement 13: Validation Plane with Body device position on
	Middle Channel in WCDMA mode Horizontal-Up
	Measurement 14: Validation Plane with Body device position on
WCDMA	Middle Channel in WCDMA mode Horizontal-Down
<u>850</u>	Measurement 15: Validation Plane with Body device position on
	Middle Channel in WCDMA mode Vertical-Front
	Measurement 16: Validation Plane with Body device position on
	Middle Channel in WCDMA mode Vertical-Back
	Measurement 17: Validation Plane with Body device position on
	Low Channel in WCDMA mode Horizontal-Up
	Measurement 18: Validation Plane with Body device position on
WCDMA	Low Channel in WCDMA mode Horizontal-Down
	Measurement 19: Validation Plane with Body device position on
<u>1900</u>	Middle Channel in WCDMA mode Horizontal-Up
	Measurement 20: Validation Plane with Body device position on
	Middle Channel in WCDMA mode Horizontal-Down
	Measurement 21: Validation Plane with Body device position on







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: 29/10/2011

Measurement duration: 9 minutes 12 seconds

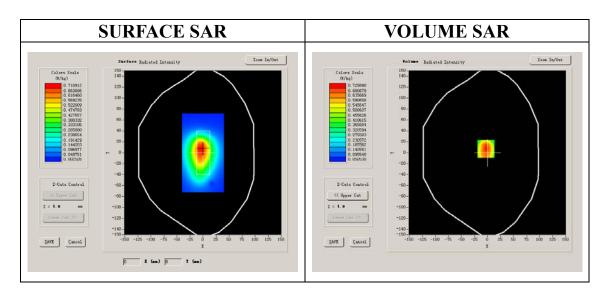
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

<u> </u>	
Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	1.009033
Power drift (%)	0.230000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2



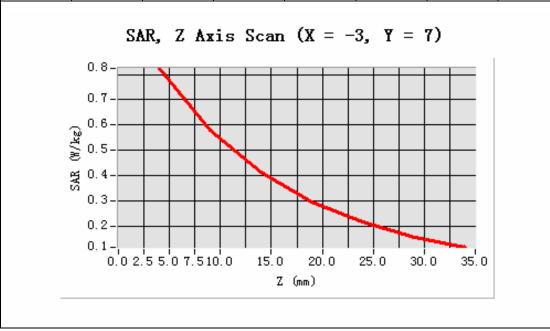


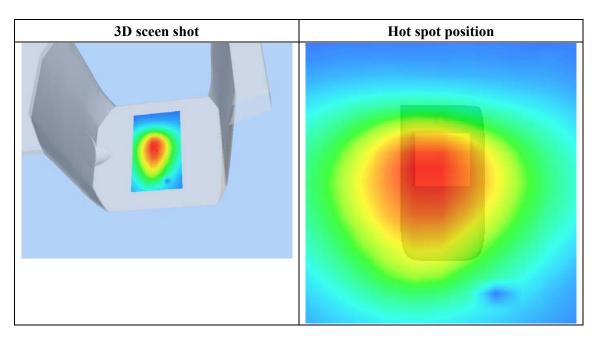
Maximum location: X=-3.00, Y=7.00

SAR 10g (W/Kg)	0.521913	
SAR 1g (W/Kg)	0.784331	

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.8240	0.5803	0.4132	0.2969	0.2164	0.1579
(W/Kg)							







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: 29/10/2011

Measurement duration: 9 minutes 8 seconds

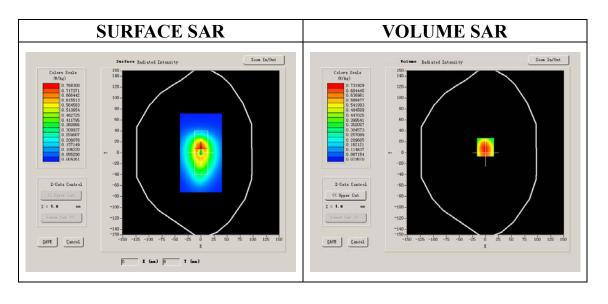
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

ire Build Stiff (Chaimer 190).	
Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	1.009033
Power drift (%)	-2.570000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2



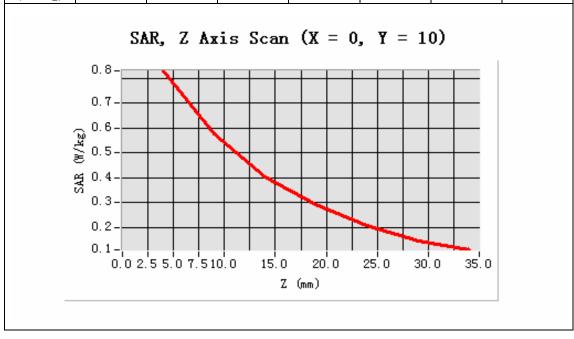


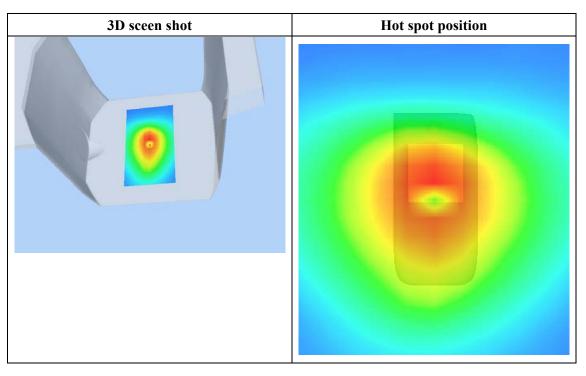
Maximum location: X=0.00, Y=10.00

SAR 10g (W/Kg)	0.535602
SAR 1g (W/Kg)	0.788034

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.8311	0.5790	0.4054	0.2931	0.2086	0.1467
(W/Kg)							







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: 29/10/2011

Measurement duration: 9 minutes 12 seconds

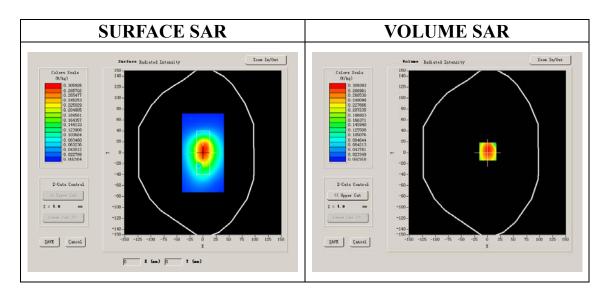
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

<u> </u>	
Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	1.009033
Power drift (%)	-11.180000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2



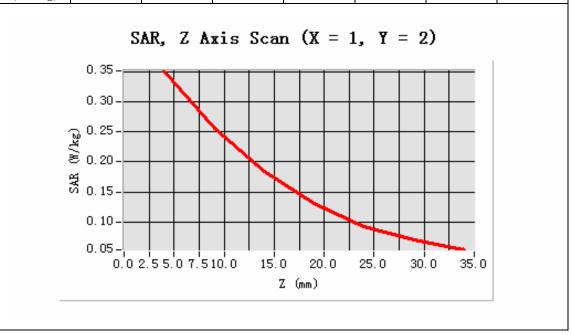


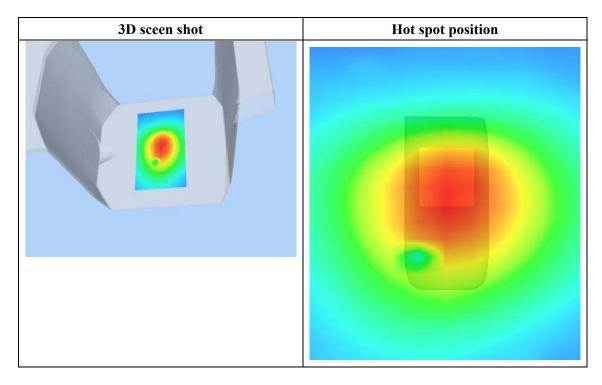
Maximum location: X=1.00, Y=2.00

SAR 10g (W/Kg)	0.228229
SAR 1g (W/Kg)	0.337951

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.3513	0.2566	0.1847	0.1310	0.0916	0.0697
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

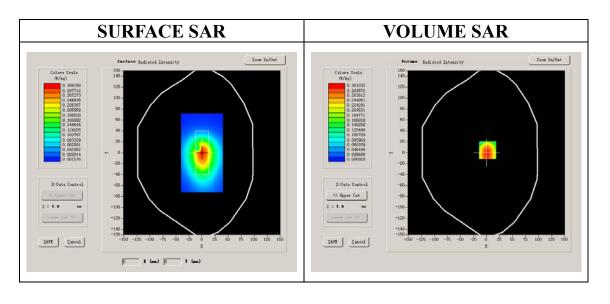
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

<u> </u>	
Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	1.009033
Power drift (%)	-0.970000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

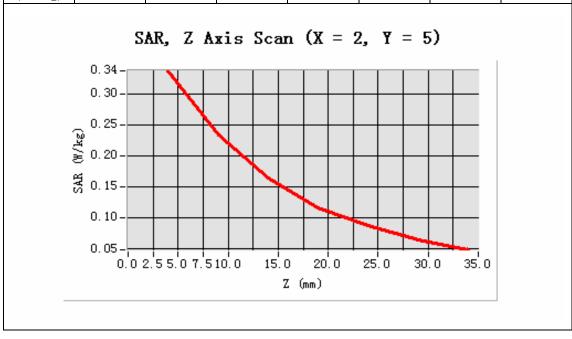


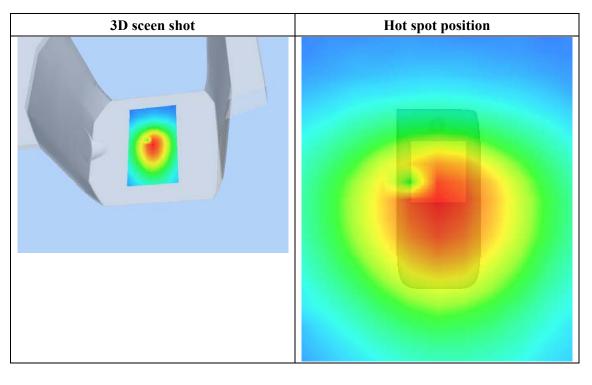


Maximum location: X=2.00, Y=5.00

SAR 10g (W/Kg)	0.220828		
SAR 1g (W/Kg)	0.329814		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.3369	0.2326	0.1634	0.1153	0.0871	0.0642
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 7 seconds

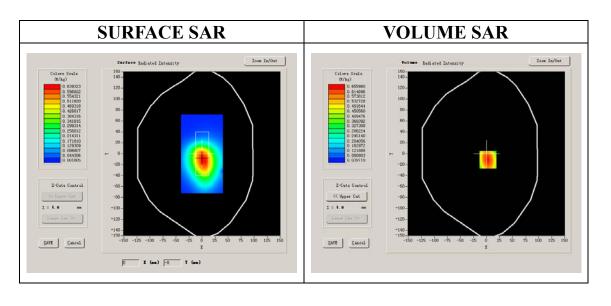
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 190):

<u> </u>	
Frequency (MHz)	836.599976
Relative permittivity (real part)	55.709999
Relative permittivity	21.709999
Conductivity (S/m)	1.009033
Power drift (%)	-0.990000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.5°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

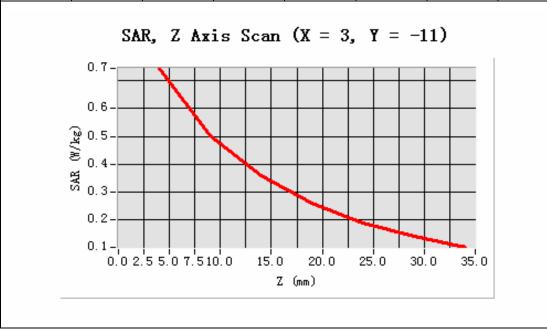


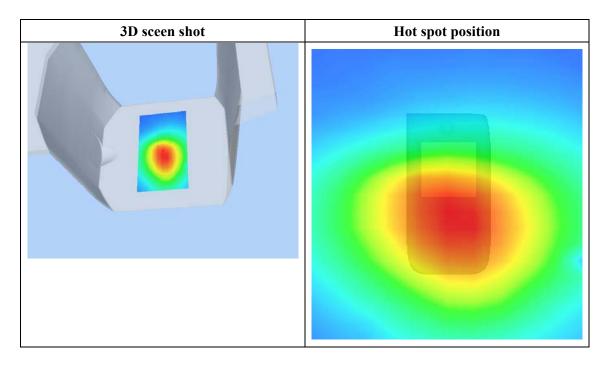


Maximum location: X=3.00, Y=-11.00

SAR 10g (W/Kg)	0.474410		
SAR 1g (W/Kg)	0.715475		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.7448	0.5023	0.3598	0.2584	0.1868	0.1384
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 7 seconds

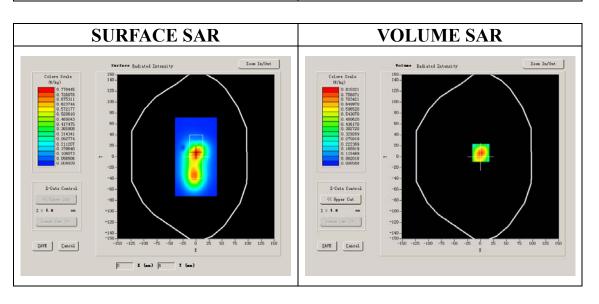
A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 512):

of Barra Strict (Chamier 512):				
Frequency (MHz)	1850.199951			
Relative permittivity (real part)	52.540001			
Relative permittivity	14.070000			
Conductivity (S/m)	1.446240			
Power drift (%)	-0.680000			
Ambient Temperature:	22.5°C			
Liquid Temperature:	22.3°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:2			

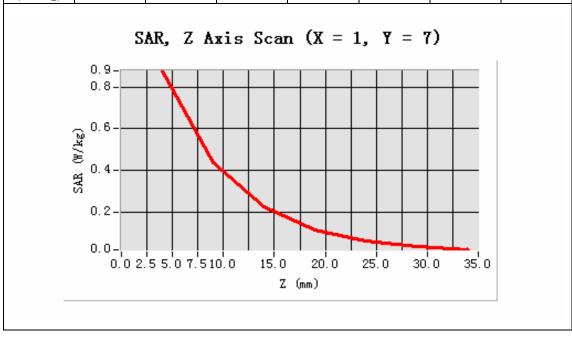


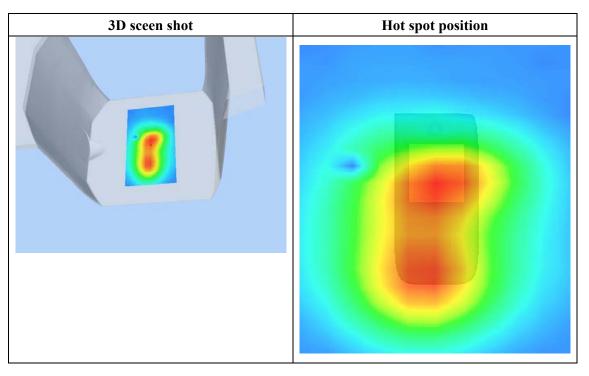


Maximum location: X=1.00, Y=7.00

SAR 10g (W/Kg)	0.417068		
SAR 1g (W/Kg)	0.816618		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.8776	0.4346	0.2226	0.1136	0.0586	0.0339
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

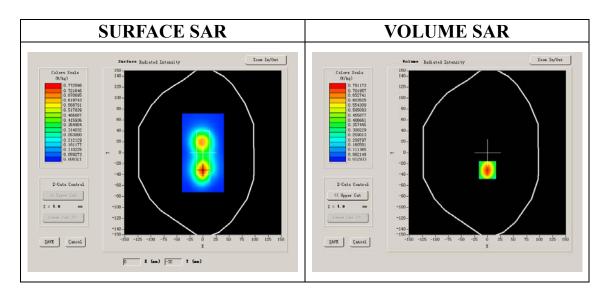
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

it Built Still (Chumilet Col).			
Frequency (MHz)	1880.000000		
Relative permittivity (real part)	52.540001		
Relative permittivity	14.070000		
Conductivity (S/m)	1.469533		
Power drift (%)	-3.000000		
Ambient Temperature:	22.5°C		
Liquid Temperature:	22.3°C		
ConvF:	40.625,34.773,38.535		
Crest factor:	1:2		

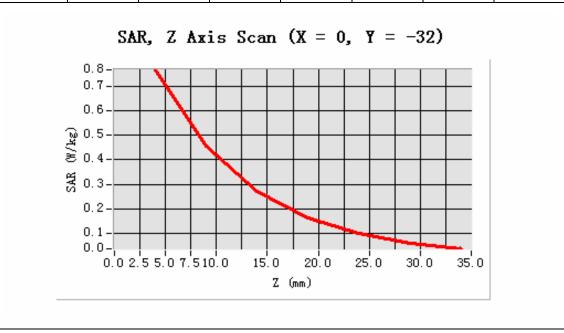


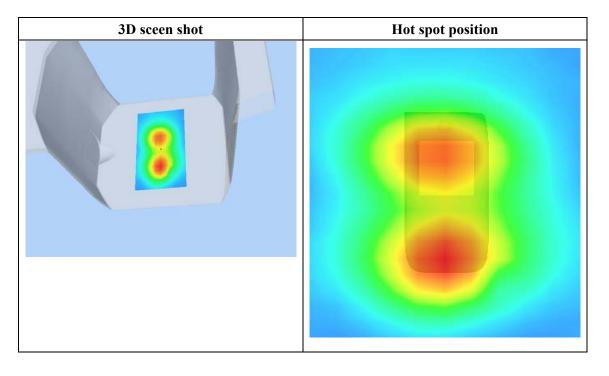


Maximum location: X=0.00, Y=-32.00

SAR 10g (W/Kg)	0.396237		
SAR 1g (W/Kg)	0.720090		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.7687	0.4576	0.2729	0.1609	0.0977	0.0580
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 9 seconds

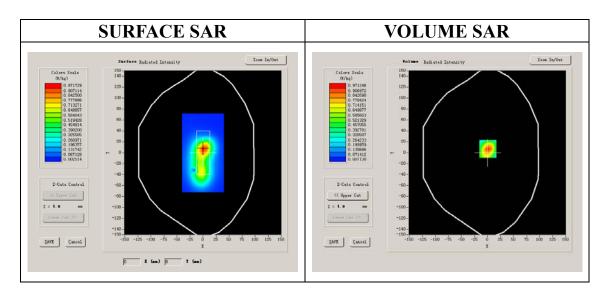
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

it Built Still (Chumilet Col).				
Frequency (MHz)	1880.000000			
Relative permittivity (real part)	52.540001			
Relative permittivity	14.070000			
Conductivity (S/m)	1.469533			
Power drift (%)	-3.280000			
Ambient Temperature:	22.5°C			
Liquid Temperature:	22.3°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:2			

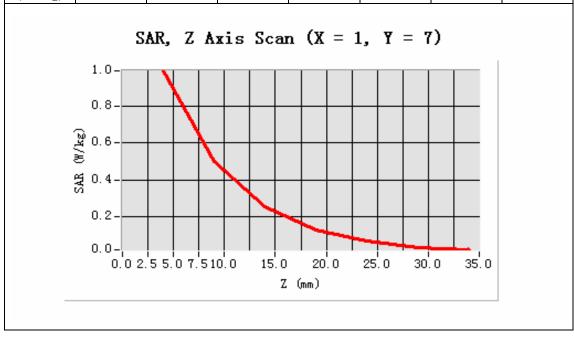


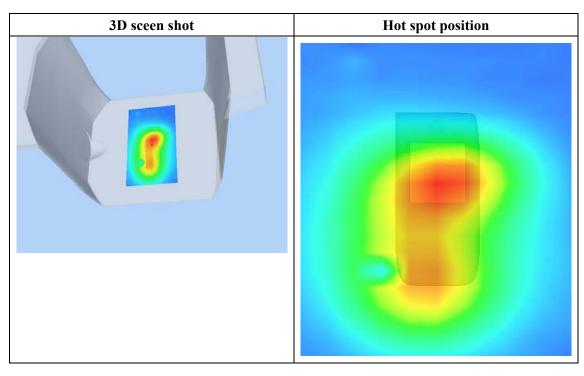


Maximum location: X=1.00, Y=7.00

SAR 10g (W/Kg)	0.467023		
SAR 1g (W/Kg)	0.926157		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.9938	0.5021	0.2516	0.1279	0.0689	0.0345
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 7 seconds

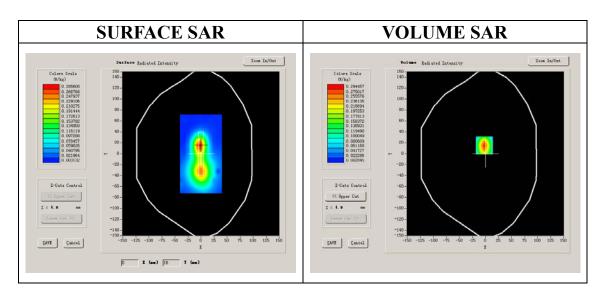
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

Frequency (MHz)	1880.000000		
Relative permittivity (real part)	52.540001		
Relative permittivity	14.070000		
Conductivity (S/m)	1.469533		
Power drift (%)	0.860000		
Ambient Temperature:	22.5°C		
Liquid Temperature:	22.3°C		
ConvF:	40.625,34.773,38.535		
Crest factor:	1:2		

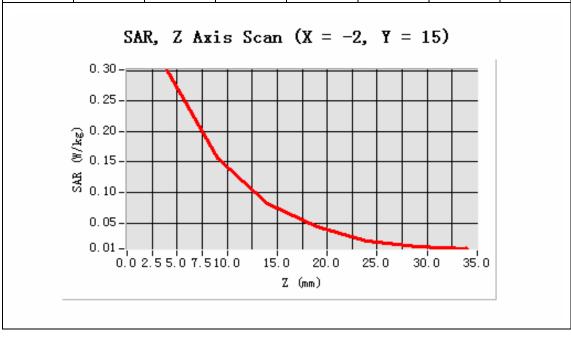


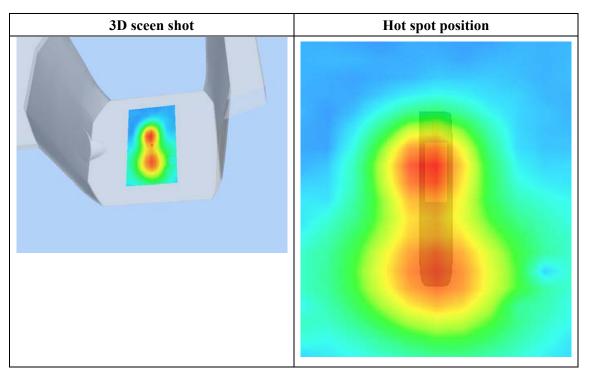


Maximum location: X=-2.00, Y=15.00

SAR 10g (W/Kg)	0.137398		
SAR 1g (W/Kg)	0.276342		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.3013	0.1559	0.0810	0.0439	0.0193	0.0119
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

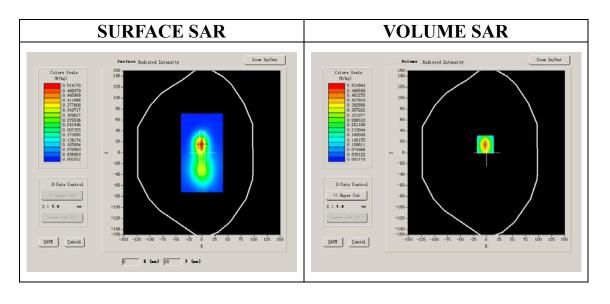
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

()	
Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.540001
Relative permittivity	14.070000
Conductivity (S/m)	1.469533
Power drift (%)	-0.460000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.3°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

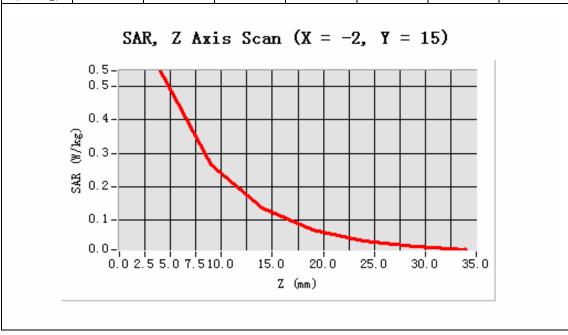


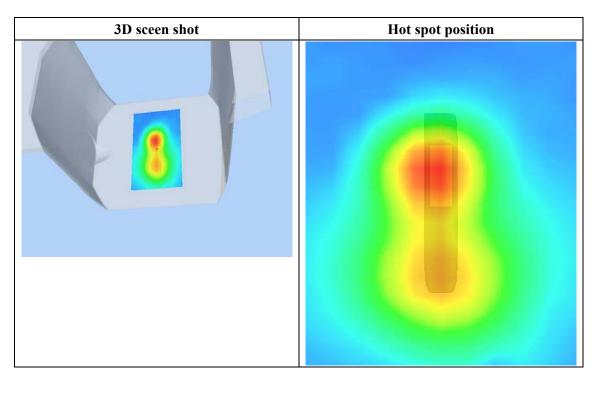


Maximum location: X=-2.00, Y=15.00

SAR 10g (W/Kg)	0.237570		
SAR 1g (W/Kg)	0.496793		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.5464	0.2651	0.1370	0.0719	0.0364	0.0197
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

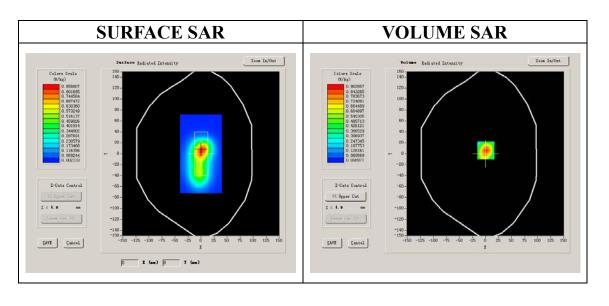
A. Experimental conditions.

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

B. SAR Measurement Results

Higher Band SAR (Channel 810):

Frequency (MHz)	1909.800049
Relative permittivity (real part)	52.540001
Relative permittivity	14.070000
Conductivity (S/m)	1.492827
Power drift (%)	1.440000
Ambient Temperature:	22.5°C
Liquid Temperature:	22.3°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

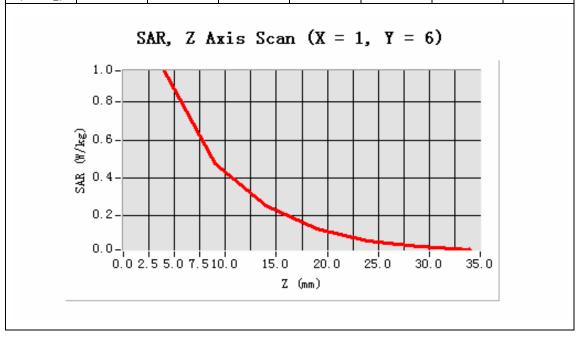


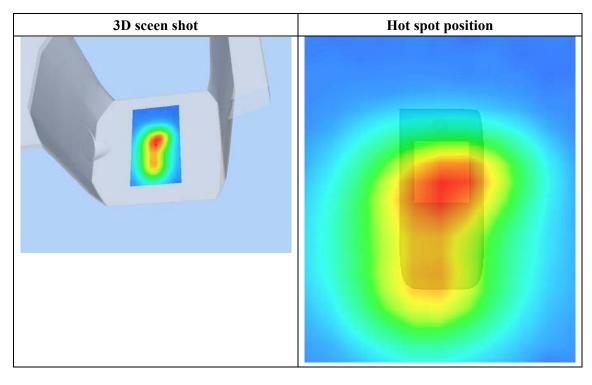


Maximum location: X=1.00, Y=6.00

SAR 10g (W/Kg)	0.457675		
SAR 1g (W/Kg)	0.904479		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.9655	0.4752	0.2508	0.1292	0.0678	0.0354
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 13 seconds

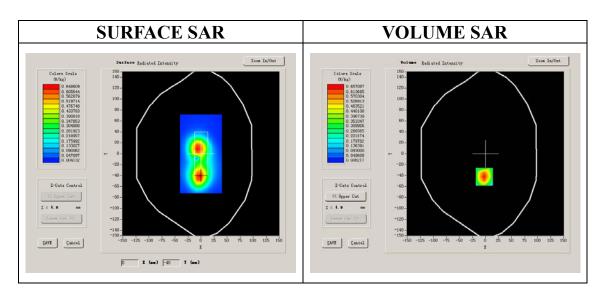
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 661):

it is the state (calculated only).	
Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.540001
Relative permittivity	14.070000
Conductivity (S/m)	1.469533
Power drift (%)	0.790000
Ambient Temperature:	22.6°C
Liquid Temperature:	22.3°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:2

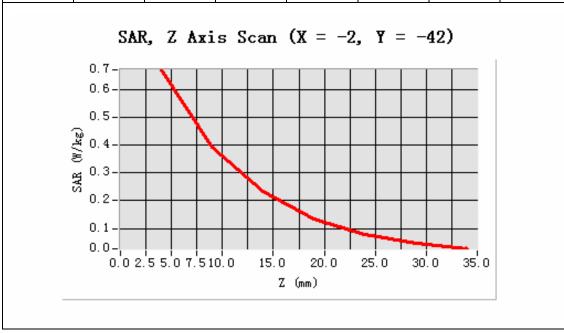


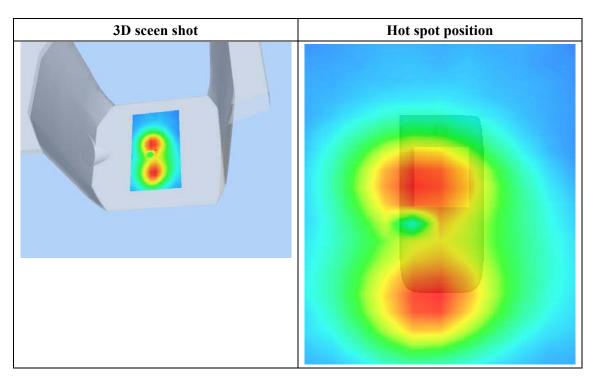


Maximum location: X=-2.00, Y=-42.00

SAR 10g (W/Kg)	0.343166		
SAR 1g (W/Kg)	0.628150		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.6724	0.3951	0.2327	0.1353	0.0791	0.0474
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 7 seconds

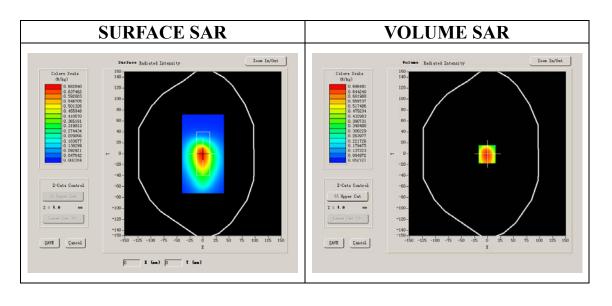
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

<u> </u>	
Frequency (MHz)	836.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050
Conductivity (S/m)	0.737401
Power drift (%)	0.270000
Ambient Temperature:	22.4°C
Liquid Temperature:	22.7°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

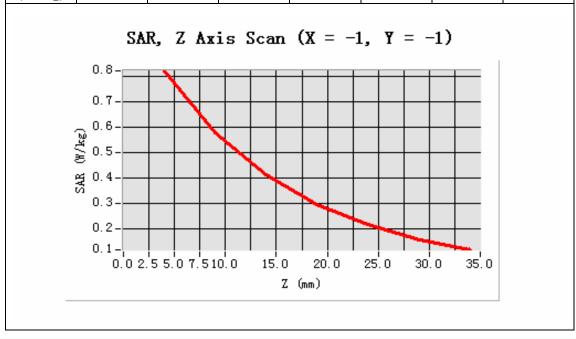


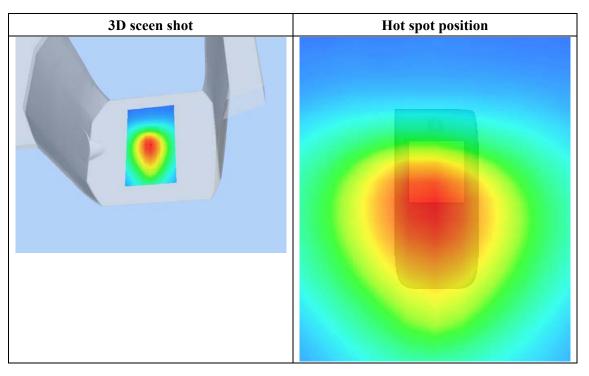


Maximum location: X=-1.00, Y=-1.00

SAR 10g (W/Kg)	0.484572		
SAR 1g (W/Kg)	0.774832		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.8238	0.5813	0.4148	0.2979	0.2167	0.1587
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 12 seconds

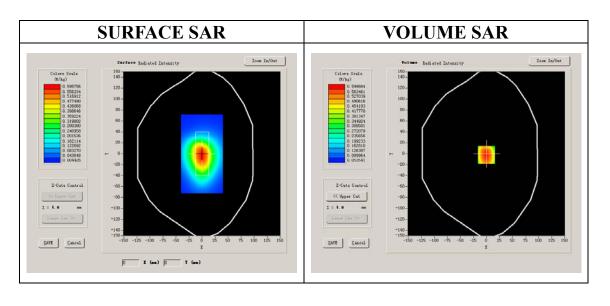
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

	02600000
Frequency (MHz)	836.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050
Conductivity (S/m)	0.737401
Power drift (%)	0.210000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.8°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

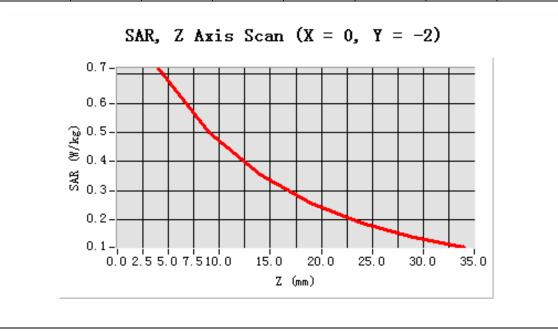


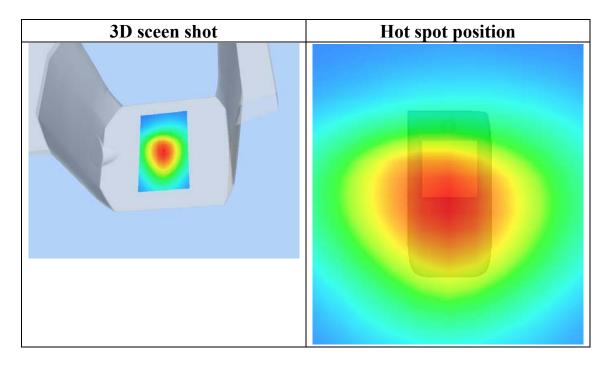


Maximum location: X=0.00, Y=-2.00

SAR 10g (W/Kg)	0.434523		
SAR 1g (W/Kg)	0.683742		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.7199	0.4990	0.3539	0.2570	0.1876	0.1395
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 19 seconds

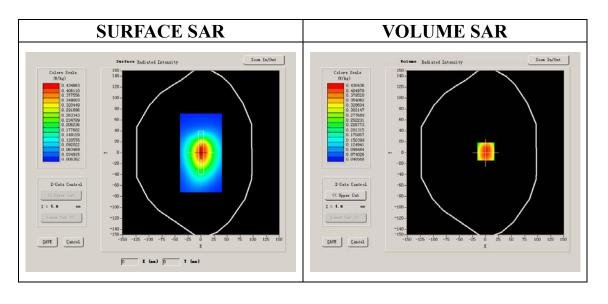
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

the Build Stiff (Chaimer 1102):	
Frequency (MHz)	836.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050
Conductivity (S/m)	0.737401
Power drift (%)	-0.110000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.8°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:2

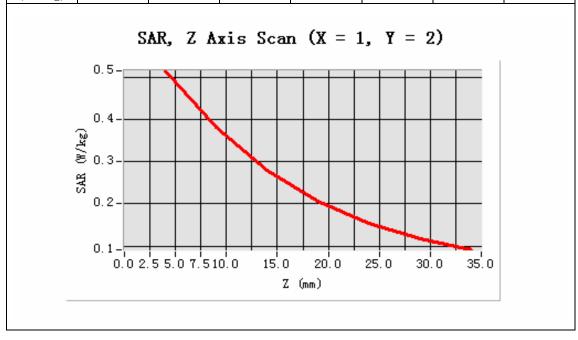


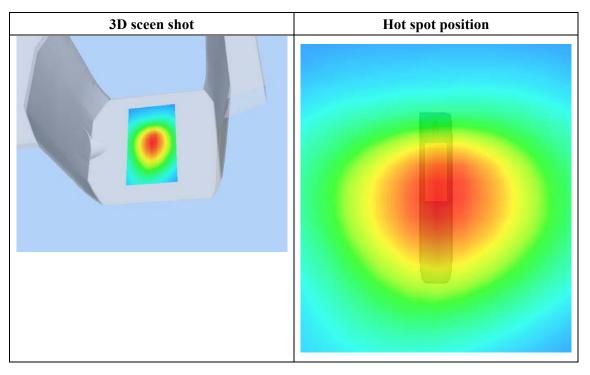


Maximum location: X=1.00, Y=2.00

SAR 10g (W/Kg)	0.273462		
SAR 1g (W/Kg)	0.415462		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.5166	0.3828	0.2800	0.2065	0.1546	0.1177
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 9 seconds

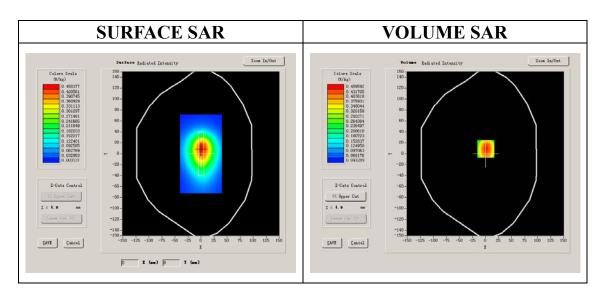
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 4182):

Frequency (MHz)	836.000000
Relative permittivity (real part)	51.341000
Relative permittivity	15.877050
Conductivity (S/m)	0.737401
Power drift (%)	0.260000
Ambient Temperature:	22.3°C
Liquid Temperature:	22.8°C
ConvF:	28.559,25.681,27.588
Crest factor:	1:1

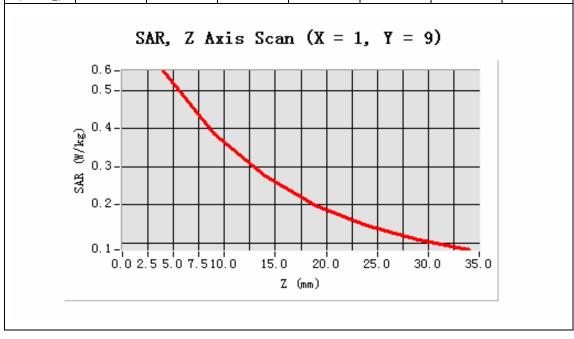


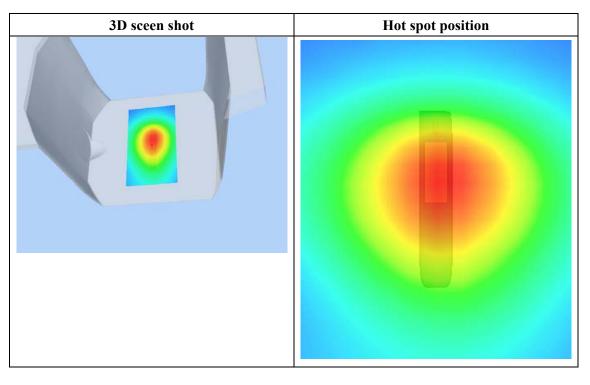


Maximum location: X=1.00, Y=9.00

SAR 10g (W/Kg)	0.295634		
SAR 1g (W/Kg)	0.476345		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.5515	0.3856	0.2747	0.1984	0.1451	0.1075
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 7 seconds

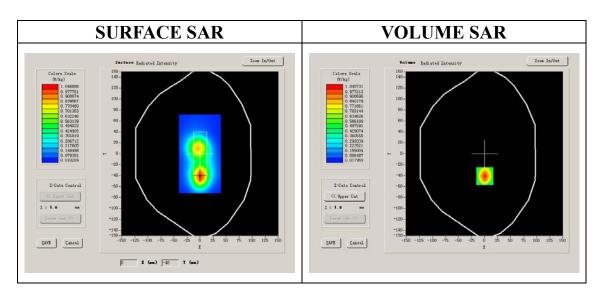
A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 9262):

er Bana Star (Chamier 9202):				
Frequency (MHz)	1852.000000			
Relative permittivity (real part)	52.663472			
Relative permittivity	15.877050			
Conductivity (S/m)	1.542600			
Power drift (%)	-1.590000			
Ambient Temperature:	22.7°C			
Liquid Temperature:	22.2°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:1			

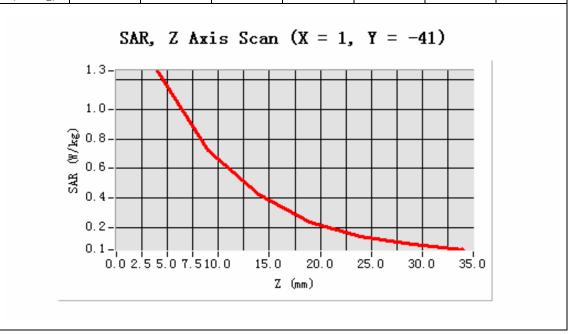


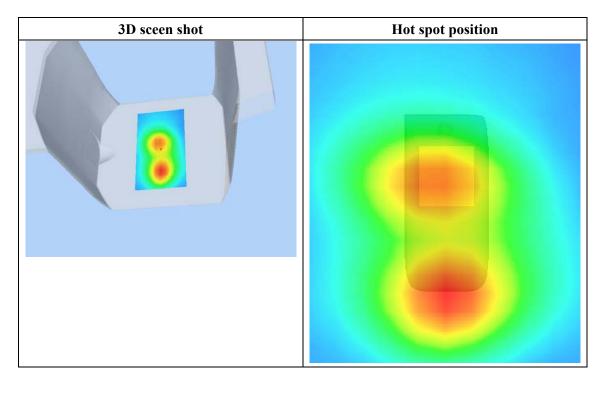


Maximum location: X=1.00, Y=-41.00

SAR 10g (W/Kg)	0.573452		
SAR 1g (W/Kg)	1.042153		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	1.2607	0.7256	0.4214	0.2401	0.1390	0.0843
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 4 seconds

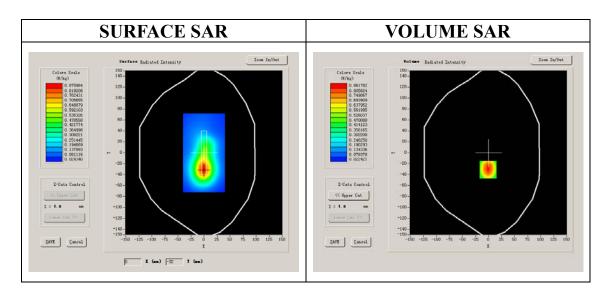
A. Experimental conditions.

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

B. SAR Measurement Results

Lower Band SAR (Channel 9262):

er Bana Star (Chamier 9202):				
Frequency (MHz)	1852.000000			
Relative permittivity (real part)	52.663472			
Relative permittivity	15.877050			
Conductivity (S/m)	1.542600			
Power drift (%)	-1.650000			
Ambient Temperature:	22.7°C			
Liquid Temperature:	22.2°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:1			

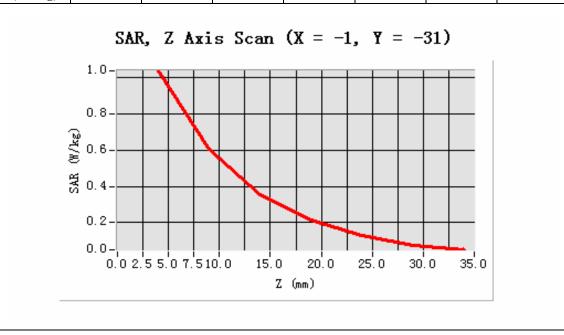




Maximum location: X=-1.00, Y=-31.00

SAR 10g (W/Kg)	0.452647		
SAR 1g (W/Kg)	0.811437		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	1.0389	0.6034	0.3573	0.2131	0.1271	0.0765
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 10 seconds

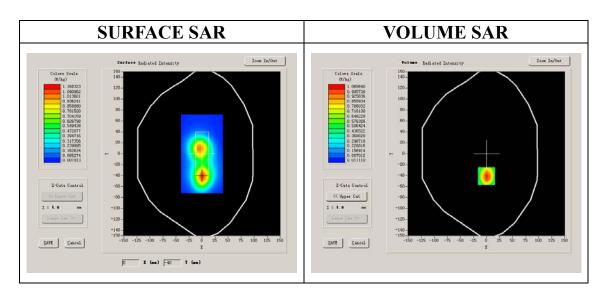
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<u> </u>	
Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.663472
Relative permittivity	15.877050
Conductivity (S/m)	1.542600
Power drift (%)	-7.610000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.2°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

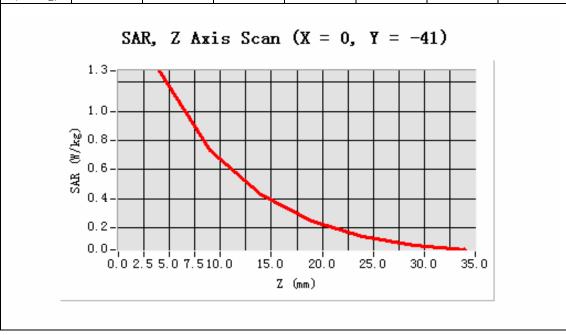


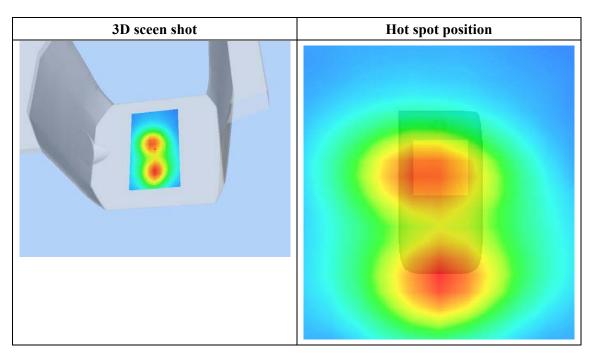


Maximum location: X=0.00, Y=-41.00

SAR 10g (W/Kg)	0.523644		
SAR 1g (W/Kg)	1.095325		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	1.2789	0.7291	0.4240	0.2420	0.1367	0.0797
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 9 seconds

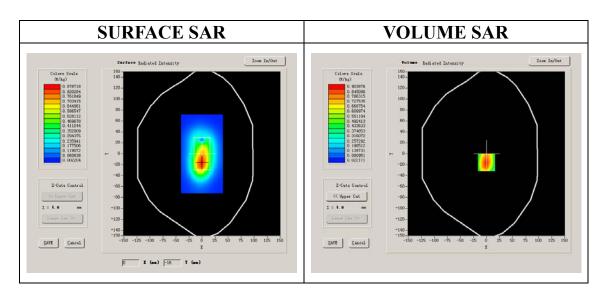
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

()	
Frequency (MHz)	1880.000000
Relative permittivity (real part)	52.663472
Relative permittivity	15.877050
Conductivity (S/m)	1.542600
Power drift (%)	0.170000
Ambient Temperature:	22.7°C
Liquid Temperature:	22.2°C
ConvF:	40.625,34.773,38.535
Crest factor:	1:1

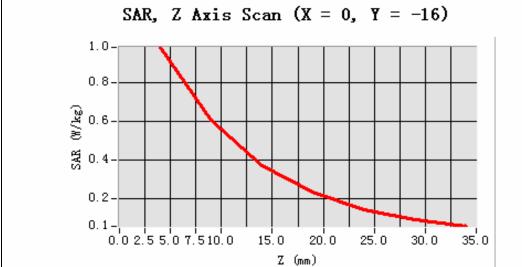


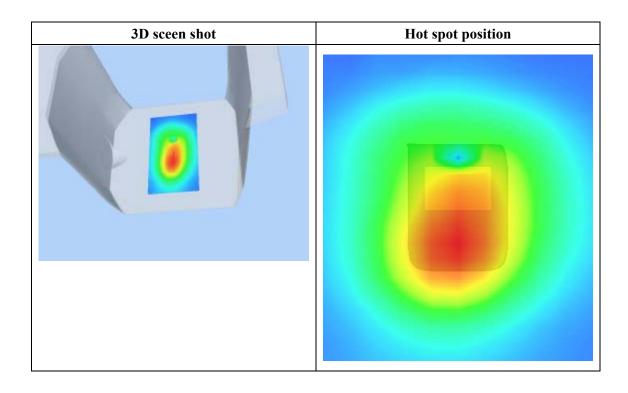


Maximum location: X=0.00, Y=-16.00

SAR 10g (W/Kg)	0.413542		
SAR 1g (W/Kg)	0.845123		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.9842	0.6073	0.3732	0.2309	0.1422	0.0915
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 4 seconds

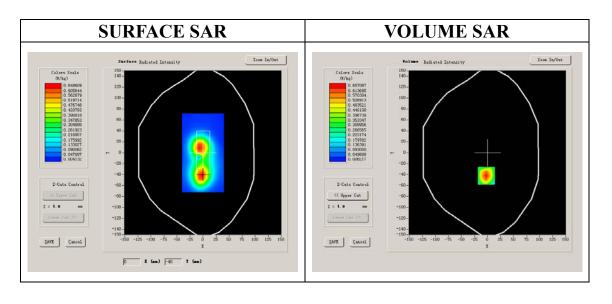
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

Frequency (MHz)	1880.000000		
Relative permittivity (real part)	52.663472		
Relative permittivity	15.877050		
Conductivity (S/m)	1.542600		
Power drift (%)	-4.000000		
Ambient Temperature:	22.7°C		
Liquid Temperature:	22.2°C		
ConvF:	40.625,34.773,38.535		
Crest factor:	1:1		

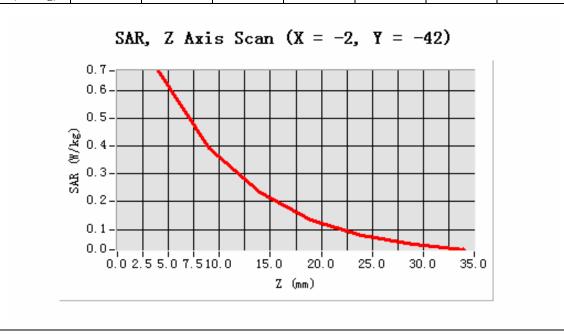


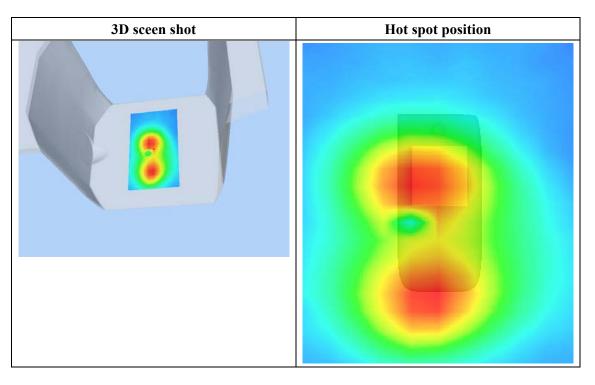


Maximum location: X=-2.00, Y=-42.00

SAR 10g (W/Kg)	0.316452		
SAR 1g (W/Kg)	0.573136		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.6724	0.3951	0.2327	0.1353	0.0791	0.0474
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

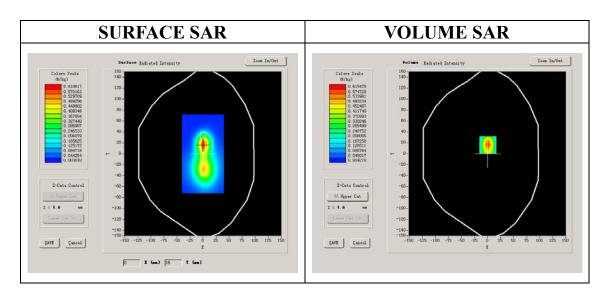
A. Experimental conditions.

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

B. SAR Measurement Results

Middle Band SAR (Channel 9400):

<u> </u>			
Frequency (MHz)	1880.000000		
Relative permittivity (real part)	52.663472		
Relative permittivity	15.877050		
Conductivity (S/m)	1.542600		
Power drift (%)	-0.180000		
Ambient Temperature:	22.5°C		
Liquid Temperature:	22.3°C		
ConvF:	40.625,34.773,38.535		
Crest factor:	1:1		

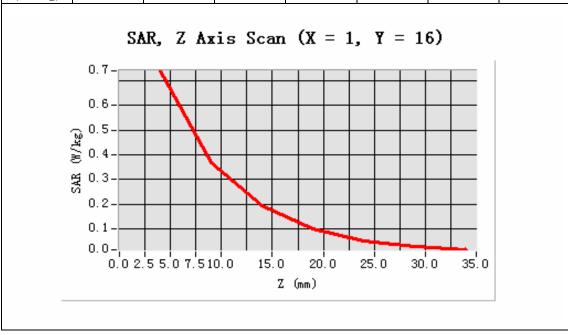


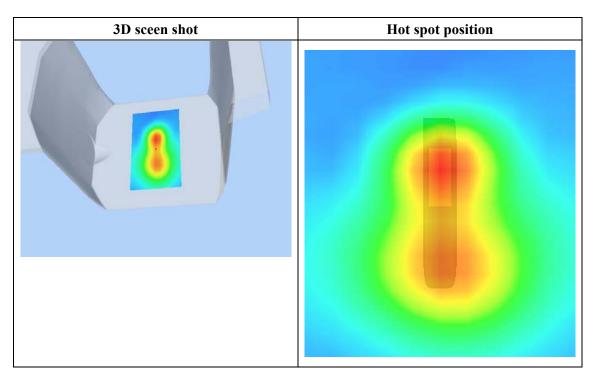


Maximum location: X=1.00, Y=16.00

SAR 10g (W/Kg)	0.263476		
SAR 1g (W/Kg)	0.489345		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.7386	0.3695	0.1928	0.1001	0.0545	0.0317
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 9 seconds

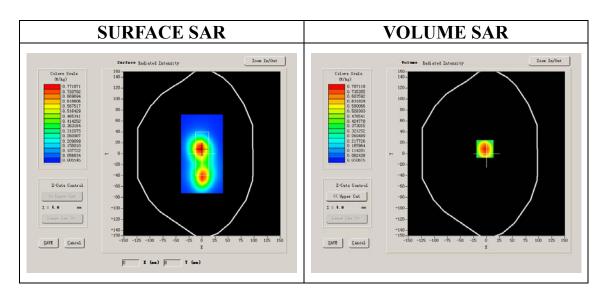
A. Experimental conditions.

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

B. SAR Measurement Results

Higher Band SAR (Channel 9538):

<u> </u>				
Frequency (MHz)	1907.000000			
Relative permittivity (real part)	52.663472			
Relative permittivity	15.877050			
Conductivity (S/m)	1.542600			
Power drift (%)	-0.880000			
Ambient Temperature:	22.5°C			
Liquid Temperature:	22.3°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:1			

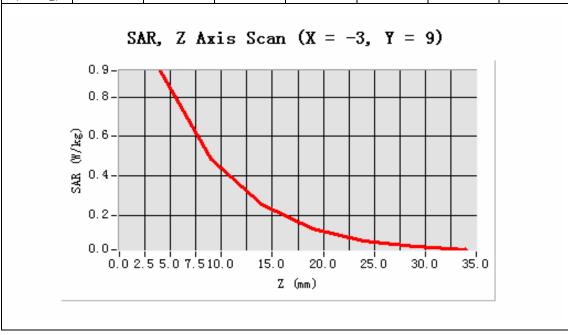


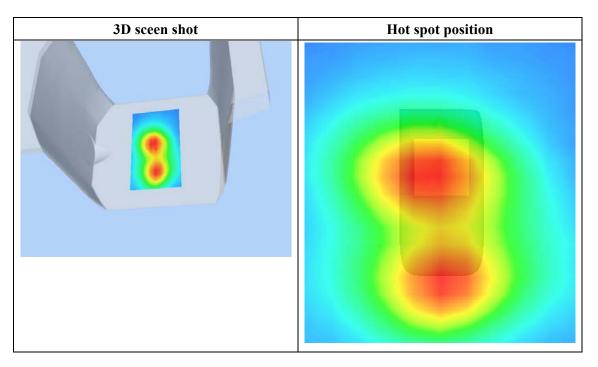


Maximum location: X=-3.00, Y=9.00

SAR 10g (W/Kg)	0.384562		
SAR 1g (W/Kg)	0.784125		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	0.9340	0.4853	0.2531	0.1329	0.0681	0.0397
(W/Kg)							







Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 9 minutes 8 seconds

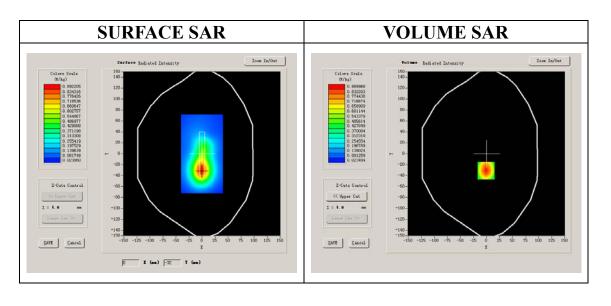
A. Experimental conditions.

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

B. SAR Measurement Results

Higher Band SAR (Channel 9538):

<u> </u>				
Frequency (MHz)	1907.000000			
Relative permittivity (real part)	52.663472			
Relative permittivity	15.877050			
Conductivity (S/m)	1.542600			
Power drift (%)	-0.590000			
Ambient Temperature:	22.5°C			
Liquid Temperature:	22.3°C			
ConvF:	40.625,34.773,38.535			
Crest factor:	1:1			

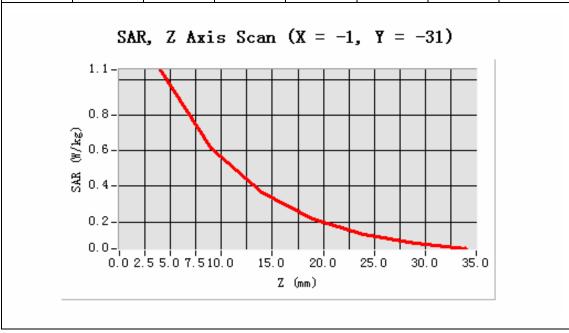


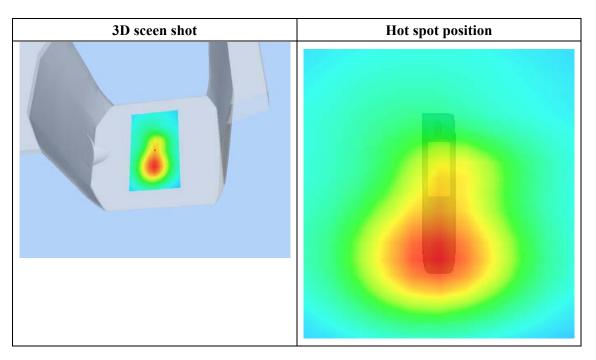


Maximum location: X=-1.00, Y=-31.00

SAR 10g (W/Kg)	0.384574		
SAR 1g (W/Kg)	0.750345		

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR	0.0000	1.0561	0.6144	0.3665	0.2174	0.1309	0.0774
(W/Kg)							







System Performance Check Data (835MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 13 minutes 27 seconds

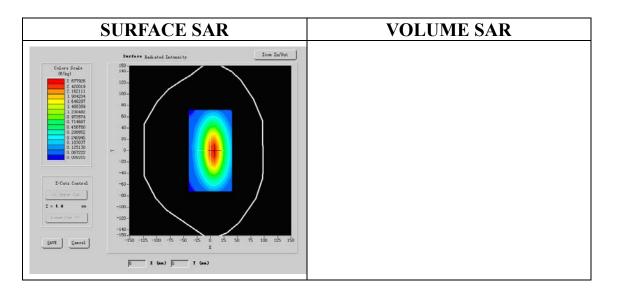
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000		
Relative permittivity (real part)	55.709999		
Relative permittivity	21.709999		
Conductivity (S/m)	1.009033		
Power Drift (%)	-0.050000		
Ambient Temperature:	23.2°C		
Liquid Temperature:	22.9°C		
ConvF:	28.559,25.681,27.588		
Crest factor:	1:1		

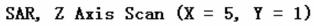


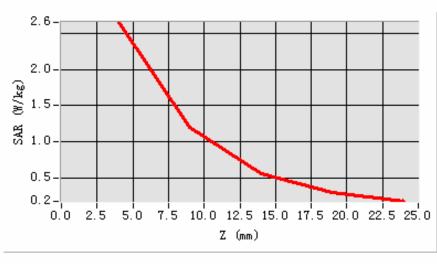


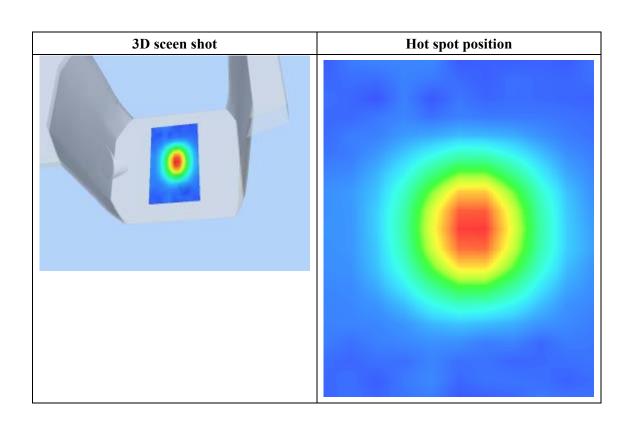
Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	1.715223		
SAR 1g (W/Kg)	2.677926		

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









System Performance Check Data(1900MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 29/10/2011

Measurement duration: 13 minutes 27 seconds

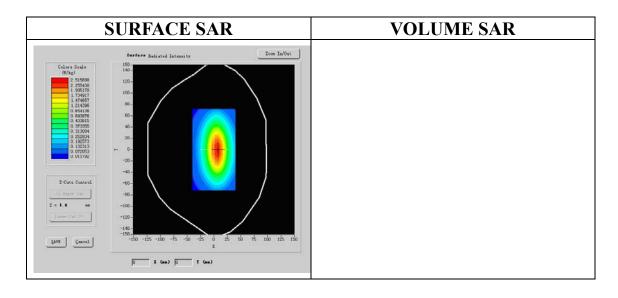
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1800.000000		
Relative permittivity (real part)	52.540001		
Relative permittivity	14.070000		
Conductivity (S/m)	1.469533		
Power Drift (%)	-0.140000		
Ambient Temperature:	23.2°C		
Liquid Temperature:	22.6°C		
ConvF:	40.625,34.773,38.535		
Crest factor:	1:1		





Maximum location: X=5.00, Y=1.00

SAR 10g (W/Kg)	4.910003		
SAR 1g (W/Kg)	8.455521		

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	
SAR (W/Kg)	0.0000	2.8536	1.3061	0.6041	0.3211	
SAR, Z Axis Scan $(X = 5, Y = 1)$						
	.9-					
2	.5-		+ + +		-	
2	0-					
2 (∦/kg) 1						
	.5-		+		-	
SAR 1	.0-	📏				
1	.0-					
0	.5-		+		-	
0	.2-				,	
	0.0 2.5 5	0 7.5 10.0	12.5 15.0 17.5	5 20.0 22.5 25	5.0	

Z (mm)

