



FCC SAR TEST REPORT

Report No.: SET2013-07611

Product: GSM/WCDMA MOBILE PHONE

Model No.: M4 SS1070

FCC ID: CLNSS1070

Applicant: MFOURTEL MEXICO S.A. DE C.V.

Address: Montecito 38, Piso 23, Oficina 15. Colonia Nápoles. C.P. 03810 Mexico

Issued by: CCIC-SET

Lab Location: Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055, P. R. China

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Test Report

Product.....: GSM/WCDMA MOBILE PHONE
Model No.: M4 SS1070
Brand Name.....: M4
FCC ID.....: CLNSS1070
Applicant.....: MFOURTEL MEXICO S.A. DE C.V.
Applicant Address.....: Montecito 38, Piso 23, Oficina 15. Colonia Nápoles. C.P. 03810 Mexico

Manufacturer.....: CK Telecom Limited
Manufacturer Address.....: Technology Road.High-Tech Development Zone. Heyuan, Guangdong,P.R.China.

Rating: 3.8V 2000mAh

Test Standards.....: **47CFR § 2.1093-** Radiofrequency Radiation Exposure Evaluation: Portable Devices;
FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01): Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields;
ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz;
RSS-102–2010: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

Test Result.....: Pass

Tested by: Mei Chun 2013-12-02
 Chun Mei, Test Engineer

Reviewed by.....: Shuangwen Zhang 2013-12-02
 Shuangwen Zhang, Senior EGINEER

Approved by.....: Wu Li'an 2013-12-02
 Wu Li'an , Manager



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1. GENERAL CONDITIONS

1.1 This report only refers to the item that has undergone the test.

1.2 This report standalone does not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities.

1.3 This document is only valid if complete; no partial reproduction can be made without written approval of CCIC-SET

1.4 This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of CCIC-SET and the Accreditation Bodies, if it applies.



2. Administrative Date

2.1. Identification of the Responsible Testing Laboratory

Company Name: CCIC-SET

Department: EMC & RF Department

Address: Electronic Testing Building, Shahe Road, Nanshan District,
ShenZhen, P. R. China

Telephone: +86-755-26629676

Fax: +86-755-26627238

**Responsible Test Lab
Managers:** Mr. Wu Li'an

2.2. Identification of the Responsible Testing Location(s)

Company Name: CCIC-SET

Address: Electronic Testing Building, Shahe Road, Nanshan District,
Shenzhen, P. R. China

2.3. Organization Item

CCIC-SET Report No.: SET2013-07611

CCIC-SET Project Leader: Mr. Li Sixiong

**CCIC-SET Responsible
for accreditation scope:** Mr. Wu Li'an

Start of Testing: 2013-11-26

End of Testing: 2013-11-27

2.4. Identification of Applicant

Company Name: MFOURTEL MEXICO S.A. DE C.V.

Address: Montecito 38, Piso 23, Oficina 15. Colonia Nápoles. C.P.
03810 Mexico

2.5. Identification of Manufacture

Company Name: CK Telecom Limited

Address: Technology Road.High-Tech Development Zone. Heyuan,
Guangdong,P.R.China.

Notes: This data is based on the information by the applicant.

3. Equipment Under Test (EUT)

3.1. Identification of the Equipment under Test

Sample Name: GSM/WCDMA MOBILE PHONE

Type Name: M4 SS1070

Brand Name: M4

	Support Band	GSM850MHz/1900MHz/900MHz/1800MHz WCDMA 850MHz/1900MHz/2100MHz Wi-Fi 802.11b, 802.11g, 802.11n-20, 802.11n-40, Bluetooth 2.4GHz
	Test Band	GSM 850MHz/ GSM 1900MHz WCDMA 850MHz/ WCDMA 1900MHz Wi-Fi 802.11b
	Multislot Class	GPRS: Class 12
	GPRS Class	Class B
General description:	Development Stage	Identical Prototype
	Accessories	Power Supply
	Battery type	HKC0055010-2A
	Battery specification	2000mAh 3.8V
	Antenna type	IFA Antenna
	Operation mode	GSM / GPRS/WCDMA / Bluetooth / WIFI
	Modulation mode	GMSK, 8PSK, DSSS, OFDM, GFSK/ π /4-DQPSK/8-DPSK
	Max. RF Power	31.78dBm
	Max. SAR Value	Head: 0.650w/kg; Body: 1.417w/kg

NOTE:

- a. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- b. This device supports GPRS operation up to class12
(max.uplink:4, max.downlink:4, total timeslots:5)
- c. The EUT does not support uplink function in EDGE mode.

4 Specific Absorption Rate (SAR)

4.1 Introduction

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

4.2 SAR Definition

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

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

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

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

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

where C is the specific heat capacity, δT is the temperature rise and δt the exposure duration, or related to the electrical field in the tissue by

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

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

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

4.3 Phantoms

The phantom used for all tests i.e. for both system checks and device testing, was the twin-headed "SAM Phantom", manufactured by SATIMO. The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region, where shell thickness increases to 6mm).

System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

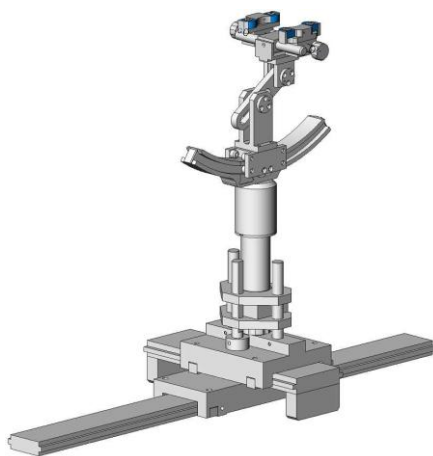


SAM Twin Phantom

4.4 Device Holder

The device was placed in the device holder (illustrated below) that is supplied by SATIMO as an integral part of the COMOSAR test system.

The device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.



Device holder

4.5 Probe Specification

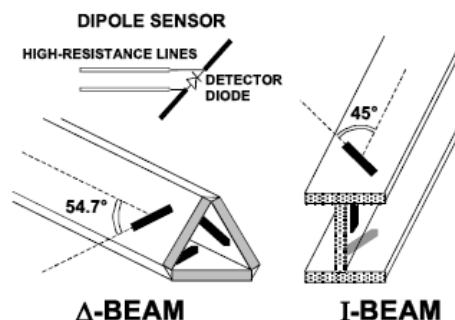


Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available.
Frequency	700 MHz to 3 GHz; Linearity: ± 0.5 dB (700 MHz to 3 GHz)
Directivity	± 0.25 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	1.5 μ W/g to 100 mW/g; Linearity: ± 0.5 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 5 mm (Body: 8 mm) Distance from probe tip to dipole centers: <2.7 mm
Application	General dosimetry up to 3 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones
Compatibility	COMOSAR

Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change.

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



5 OPERATIONAL CONDITIONS DURING TEST

5.1 Schematic Test Configuration

During SAR test, EUT was operating 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) was allocated to 128, 190 and 251 respectively in the case of GSM 850MHz, or to 512, 661 and 809 respectively in the case of PCS 1900MHz, or to 4132, 4182 and 4233 respectively in the case of WCDMA 850MHz, or to 9262, 9400 and 9538 respectively in the case of WCDMA 1900 MHz. The EUT was commanded to operate at maximum transmitting power.

The EUT should 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 was 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 should be lower than the output power level of the handset by at least 35 dB

5.2 SAR Measurement System

The SAR measurement system being used is the SATIMO system, the system is controlled remotely from a PC, which contains the software to control the robot and data acquisition equipment. The software also displays the data obtained from test scans.

In operation, the system first does an area (2D) scan at a fixed depth within the liquid from the inside wall of the phantom. When the maximum SAR point has been found, the system will then carry out a 3D scan centred at that point to determine volume averaged SAR level.

5.2.1 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness Power drifts in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

Table 1: Recommended Dielectric Performance of Tissue

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (Nacl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton x-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (s/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Table 2 Recommended Tissue Dielectric Parameters

Frequency (MHz)	Head Tissue		Body Tissue	
	ϵ_r	$\sigma(S/m)$	ϵ_r	$\sigma(S/m)$
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800-2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

5.2.2 Simulant liquids

For measurements against the phantom head, the “cheek” and “tilt” position on both the left hand and the right hand sides of the phantom. For body-worn measurements, the EUT was tested against flat phantom representing the user body. The EUT was put on in the belt holder. Simulant liquids that are used for testing at frequencies of GSM 850MHz, GSM 1900MHz, WCDMA 850MHz, WCDMA 1900MHz, and Wi-Fi 2.4GHz, which are made mainly of sugar, salt and water solutions may be left in the phantoms.

Table 3: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;					
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)	Deviation (%)	
Target value	835MHz	41.5	0.90	ϵ	σ
Validation value (November 26th, 2013)	835MHz	41.28	0.94	-0.5	4.4
Target value	1900MHz	40.0	1.40	--	--
Validation value (November 26th, 2013)	1900MHz	39.88	1.42	-0.3	1.4
Target value	2450MHz	39.2	1.80	--	--
Validation value (November 26th, 2013)	2450MHz	38.96	1.79	-0.5	-0.6

Table 4: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;					
/	Frequency	Permittivity ϵ	Conductivity σ (S/m)	Deviation (%)	
Target value	835MHz	55.2	0.97	ϵ	σ
Validation value (November 27th, 2013)	835MHz	55.38	0.99	0.3	2.1
Target value	1900MHz	53.3	1.52	--	--
Validation value (November 27th, 2013)	1900MHz	53.67	1.51	0.7	-0.7
Target value	2450MHz	52.7	1.95	--	--
Validation value (November 27th, 2013)	2450MHz	52.68	1.97	-0.0	1.0

Table 5: Dielectric Performance of Tissue Simulating Liquid at test channel

Band	Channel	Frequency (MHz)	Permittivity ϵ		Conductivity σ (S/m)	
			Head	Body	Head	Body
GSM 850	128	824.2	41.94	0.92	55.96	0.97
	189	836.4	41.28	0.94	55.38	0.99
	251	848.8	40.92	0.95	55.12	1.01
GSM 1900	512	1850.2	41.25	1.36	54.25	1.46
	661	1880.0	40.84	1.39	53.98	1.49
	810	1909.8	39.72	1.42	53.43	1.51
WCDMA 850	4132	826.4	41.94	0.92	55.96	0.97
	4182	836.4	41.28	0.94	55.38	0.99
	4182	846.6	40.92	0.95	55.12	1.01
WCDMA 1900	9262	1852.4	41.25	1.36	54.25	1.46
	9400	1880.0	40.84	1.39	53.98	1.49
	9538	1907.6	39.72	1.42	53.43	1.51
WLAN	1	2412	39.47	1.78	52.95	1.94
	6	2437	39.12	1.79	52.70	1.97
	11	2462	38.84	1.81	52.33	2.02

According to Annex F (IEC62209-2), the delta SAR refers to the percent change in SAR relative to the percent change in dielectric properties versus the target values. A negative delta SAR would translate to a lower measured SAR value than what would be measured if using dielectric properties equal to the target values. A positive delta SAR would translate to a higher measured SAR value than what would be measured if using dielectric properties equal to the target values. SAR correction shall not be made when the delta SAR has a positive sign to provide a conservative SAR value. The SAR is only corrected when delta SAR has a negative sign. The Δ SAR were given as follow:

 Table 6: Δ SAR of each band

Frequency	SAR correction formula	Δ SAR	
		Head	Body
835MHz	$0.7521 \cdot \Delta \sigma(\%) - 0.2194 \cdot \Delta \epsilon(\%)$	>0	>0
1900MHz	$0.594 \cdot \Delta \sigma(\%) - 0.1556 \cdot \Delta \epsilon(\%)$	>0	>0
2450MHz	$0.4801 \cdot \Delta \sigma(\%) - 0.225 \cdot \Delta \epsilon(\%)$	>0	>0

Since each band has a positive Δ SAR, the SAR correction is not required.



Fig. 1 Configuration of body tissue

5.3 Equipments and results of validation testing

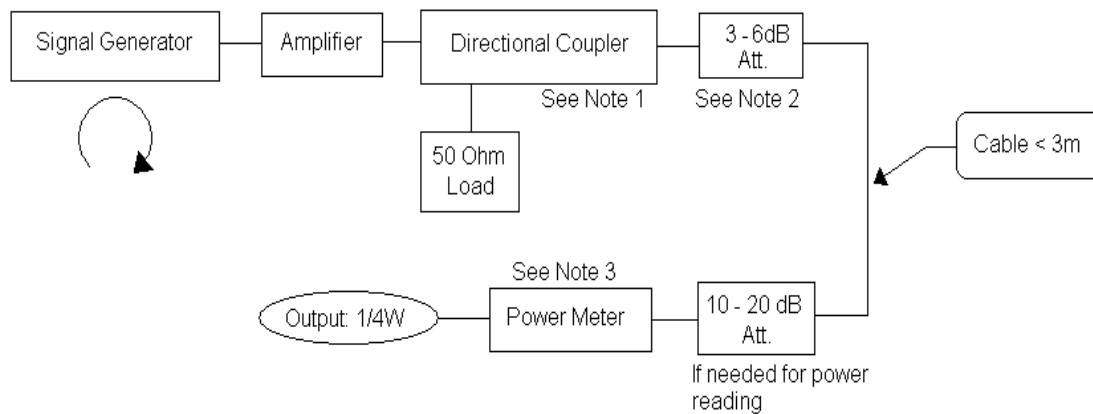
Important equipments :

Equipment description	Manufacturer/Model	Identification No.
System Simulator	E5515C	GB 47200710
SAR Probe	SATIMO	SN 09/13 EP169
Dipole	SID835	SN 09/13 DIP 0G835-217
Dipole	SID1900	SN 09/13 DIP 1G900-218
Dipole	SID2450	SN 09/13 DIP 2G450-220
Vector Network Analyzer	ZVB8	A0802530
Signal Generator	SMR27	A0304219
Amplifier	Nucletudes	143060
Power Meter	NRVS	1020.1809.02
Power Sensor	NRV-Z4	100069
Multimeter	Keithley-2000	4014020
Device Holder	SATIMO	SN 09/13 MSH80
SAM Phantom	SAM97	SN 09/13 SAM97

Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of $\pm 10\%$. The validation results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

The following procedure, recommended for performing validation tests using box phantoms is based on the procedures described in the draft IEEE standard P1528. Setup

according to the setup diagram below :



With the SG and Amp and with directional coupler in place, set up the source signal at the relevant frequency and use a power meter to measure the power at the end of the SMA cable that you intend to connect to the balanced dipole. Adjust the SG to make this, say, 0.25W (24 dBm). If this level is too high to read directly with the power meter sensor, insert a calibrated attenuator (e.g. 10 or 20 dB) and make a suitable correction to the power meter reading.

Note 1: In this method, the directional coupler is used for monitoring rather than setting the exact feed power level. If, however, the directional coupler is used for power measurement, you should check the frequency range and power rating of the coupler and measure the coupling factor (referred to output) at the test frequency using a VNA.

Note 2: Remember that the use of a 3dB attenuator (as shown in Figure 8.1 of P1528) means that you need an RF amplifier of 2 times greater power for the same feed power. The other issue is the cable length. You might get up to 1dB of loss per meter of cable, so the cable length after the coupler needs to be quite short.

Note 3: For the validation testing done using CW signals, most power meters are suitable. However, if you are measuring the output of a modulated signal from either a signal generator or a handset, you must ensure that the power meter correctly reads the modulated signals.

The measured 1-gram averaged SAR values of the device against the phantom are provided in Tables 7 and Table 8. The humidity and ambient temperature of test facility were 64% and 23.2°C respectively. The body phantom were full of the body tissue simulating liquid. The EUT was supplied with full-charged battery for each measurement.

The distance between the back of the EUT and the bottom of the flat phantom is 10 mm (taking into account of the IEEE 1528 and the place of the antenna).

Table 7: Head Liquid Verification Results (1g)

Frequency	Duty cycle	Target value (W/kg)	Test value (W/kg)		Deviation (%)
			250 mW	1W	
835MHz (November 26th, 2013)	1:1	9.72	2.47	9.88	3.3
1900MHz (November 26th, 2013)	1:1	40.95	9.79	39.16	-1.4
2450MHz (November 26th, 2013)	1:1	53.33	13.16	52.64	0.5

Note: Target value was referring to the measured value in the calibration certificate of reference dipole.

Note: All SAR values are normalized to 1W forward power.

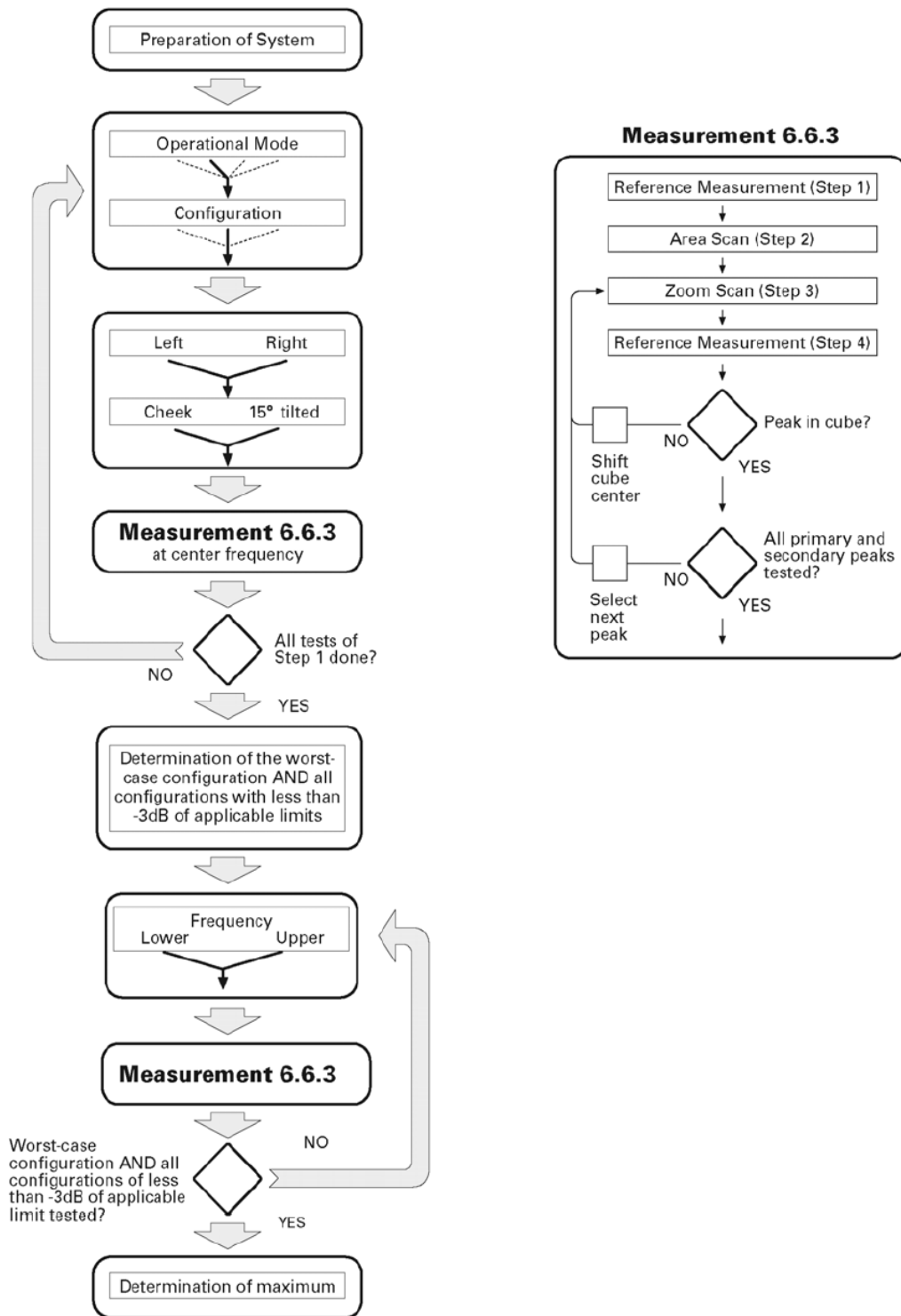
Table 8: Body Liquid Verification Results (1g)

Frequency	Duty cycle	Target value (W/kg)	Test value (W/kg)		Deviation (%)
			250 mW	1W	
835MHz (November 27th, 2013)	1:1	9.92	2.43	9.72	-0.6
1900MHz (November 27th, 2013)	1:1	40.29	9.99	39.96	-0.8
2450MHz (November 27th, 2013)	1:1	51.99	13.12	52.48	0.9

*Note: All SAR values are normalized to 1W forward power.

5.4 SAR measurement procedure

The SAR test against the head phantom was carried out as follow:



Establish a call with the maximum output power with a base station simulator, the connection between the EUT and the base station simulator is established via air interface.

After an area scan has been done at a fixed distance of 8mm from the surface of the phantom on the source side, a 3D scan is set up around the location of the maximum spot SAR. First, a point within the scan area is visited by the probe and a SAR reading taken at

the start of testing. At the end of testing, the probe is returned to the same point and a second reading is taken. Comparison between these start and end readings enables the power drift during measurement to be assessed.

Above is the scanning procedure flow chart and table from the IEEE p1528 standard. This is the procedure for which all compliant testing should be carried out to ensure that all variations of the device position and transmission behaviour are tested.

For body-worn measurement, the EUT was tested under two position: face upward and back upward.

5.5 Transmitting antenna information

There are two antennas (GSM & WCDMA antenna, WIFI & BT antenna) inside the EUT, the former two antennas are the transmitting source, and they are a type of IFA antenna.



Fig. 3 Position of the antennas

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 2.5cm from that surface or edge, at a test separation distance of 10mm, in the wireless modes that support wireless routing.

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

6 CHARACTERISTICS OF THE TEST

6.1 Applicable Limit Regulations

47CFR § 2.1093- Radiofrequency Radiation Exposure Evaluation: Portable Devices;

FCC OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01): Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields;

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz;

RSS-102–2010: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

6.2 Applicable Measurement Standards

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this is in accordance with the following standards:

FCC 47 CFR Part2 (2.1093)

ANSI/IEEE C95.1-1992

IEEE 1528-2003

IC RSS 102 Issue 4

FCC KDB 447498 D01 v05r01 General RF Exposure Guidance v05r01



FCC KDB 648474 D04 v01r01 SAR Evaluation Considerations for Wireless Handsets
 FCC KDB 248227 D01 v01r02 SAR Measurement Procedures-802.11a/b/g Transmitters
 FCC KDB 865664 D01 v01r01 SAR Measurement 100MHz to 6GHz
 FCC KDB 865664 D02 v01r01 SAR Reporting
 FCC KDB 941225 D03 v01 Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE
 FCC KDB 941225 D04 v01 Evaluating SAR for GSM/(E)GPRS Dual Transfer Mode
 FCC KDB 941225 D06 v01r01 Hot Spot SAR

7 LABORATORY ENVIRONMENT

7.1 The Ambient Conditions during SAR Test

Temperature	Min. = 15 ° C, Max. = 30 ° C
Atmospheric pressure	Min.=86 kPa, Max.=106 kPa
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
<p>Ambient noise is checked and found very low and in compliance with requirement of standards.</p> <p>Reflection of surrounding objects is minimized and in compliance with requirement of standards.</p>	

7.2 Test Configuration

For WWAN SAR testing, the device was controlled by using a base station emulator. Communication between the device and the emulator was established by air link. The distance between the EUT and the antenna of the emulator is larger than 50 cm and the output power radiated from the emulator antenna is at least 30dB smaller than output power of EUT.

During WLAN SAR testing EUT is configured with the WLAN continuous TX tool, and the transmission duty factor was monitored on the spectrum analyzer with zero-span setting

Duty factor observed as below:

WLAN 2.4GHz 802.11b, 1Mbps:97.5%

For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal.



8. Conducted RF Output Power

8.1 GSM Conducted Power

Band		Burst Average Power (dBm)			Frame-Average Power (dBm)		
GSM850	TX Channel	128	189	251	128	189	251
	Frequency(MHz)	824.2	836.4	848.8	824.2	836.4	848.8
	GSM (Slot 1)	31.76	31.76	31.78	22.73	22.73	22.75
	GPRS (Slot 1)	28.12	28.12	28.13	19.09	19.09	19.10
	GPRS (Slot 2)	29.47	29.48	29.49	20.44	20.45	20.46
	GPRS (Slot 3)	30.35	30.37	30.36	26.09	26.11	26.10
	GPRS (Slot 4)	31.39	31.42	31.39	28.38	28.41	28.38
GSM1900	TX Channel	512	661	810	512	661	810
	Frequency(MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
	GSM (Slot 1)	29.06	28.90	28.91	20.03	19.87	19.88
	GPRS (Slot 1)	25.42	25.56	25.58	16.39	16.53	16.55
	GPRS (Slot 2)	26.83	26.92	26.93	20.81	20.90	20.91
	GPRS (Slot 3)	27.45	27.57	27.64	23.19	23.31	23.38
	GPRS (Slot 4)	28.93	28.77	28.78	25.92	25.76	25.77

Note:

- Per KDB 447498 D01 v05r01, the maximum output power channel is used for SAR testing and for further SAR test reduction.

Timeslot consignations:

No. Of Slots	Slot 1	Slot 2	Slot 3	Slot 4
Slot Consignation	1Up4Down	2Up3Down	3Up2Down	4Up1Down
Duty Cycle	1:8	1:4	1:267	1:2
Crest Factor	-9.03dB	-6.02dB	-4.26dB	-3.01dB

8.2 WCDMA Conducted peak output Power

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
WCDMA		22.78	22.66	22.54	22.49	22.68	22.67
HSDPA	1	22.26	22.31	22.29	22.06	22.16	22.24
	2	22.21	22.29	22.25	22.23	22.37	22.56
	3	21.75	21.83	21.81	21.77	21.83	21.73
	4	21.72	21.80	21.79	21.73	22.49	21.78
HSUPA	1	22.25	22.29	22.23	21.89	22.47	21.80
	2	22.34	22.40	22.35	21.17	21.22	21.13
	3	22.26	22.37	22.34	22.21	22.24	22.17
	4	22.31	22.39	22.31	21.17	21.21	21.20
	5	22.23	22.29	22.28	22.07	22.19	22.09
Note:	The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA was tested by power meter.						

Note:

1. WCDMA SAR was tested under PMC 12.2kbps with HSPA Inactive per KDB Publication 941225 D01.HSPA SAR was not requires since the average output power of the HSPA subtests was not more than 0.25dB higher than the RMC level and SAR was less than 1.2W/kg.
2. It is expected by the manufacturer that MPR for some HSPA subtests may be up to 2dB more than specified by 3GPP, but also as low as 0dB according to the chipset implementation in this model.

8.3 WLAN 2.4GHz Band Conducted Power

Channel	Frequency (MHz)	WIFI Output Power(dBm)		
		802.11b	802.11g	802.11n-20
CH 01	2412	15.70	15.01	13.53
CH 06	2437	15.87	15.02	13.50
CH 11	2462	15.69	15.03	13.50

Channel	Frequency (MHz)	WIFI Output Power(dBm)
		802.11n-40
CH 03	2422	12.52
CH 06	2437	12.53
CH 09	2452	12.48

Note:

1. Per KDB 248227 D01 v01r02, choose the highest output power channel to test SAR and determine further SAR exclusion
2. For each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 1/4dB higher than those measured at lowest data rate
3. Per KDB 248227 D01 v01r02, 802.11g /11n-HT20/11n-HT40 is not required, for the maximum average output power is less than 1/4dB higher than measured on the corresponding 802.11b mode. Thus the SAR can be excluded.

Bluetooth Conducted Power

Channel	Frequency (MHz)	BT3.0 Output Power(dBm)		
		GFSK	Π /4-DQPSK	8-DPSK
CH 0	2402	6.89	6.26	6.20
CH 39	2441	7.54	6.59	6.52
CH 78	2480	7.74	6.69	6.59

Channel	Frequency (MHz)	BT 4.0
CH 0	2402	-0.84
CH 20	2442	-0.53
CH 39	2480	-0.63

Note:

- Per KDB 447498 D01v05r01, the 1-g and 10-g SAR test exclusion thresholds for 100MHz to 6GHz at test separation distances ≤ 50 mm are determined by: [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] $\cdot [\sqrt{f}$ (GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR

- (1) f(GHz) is the RF channel transmit frequency in GHz
- (2) Power and distance are round to the nearest mW and mm before calculation
- (3) The result is rounded to one decimal place for comparison
- (4) If the test separation distance(antenna-user) is < 5mm, 5mm is used for excluded SAR calculation

Bluetooth Max Power (dBm)	mW	Test Distance (mm)	Frequency(GHz)	Exclusion Thresholds
8	6.310	5	2.48	1.987

- Per KDB 447498 D01v05r01 exclusion thresholds is 1.987<3, RF exposure evaluation is not required.



General Note:

1. Per KDB 447498 D01v05r01, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power(mW)/EUT RF power(mW), where tune-up limit is the maximum rated power among all production units.
 - b. For SAR testing of WLAN signal with non-100% duty cycle , the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”
 - c. For WWAN: Reported SAR(W/kg)=Measured SAR(W/kg)*Tune-up Scaling Factor
 - d. For WLAN: Reported SAR(W/kg)=Measured SAR(W/kg)*Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v05r01, for each exposure position, if the highest output channel reported SAR≤0.8W/kg, other channels SAR testing is not necessary.
3. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to “1/(duty cycle)”
4. Body-worn SAR testing was performed at 10mm separation, and this distance is determined by the handset manufacturer that there will be body-worn accessories with the required minimum separation.
5. Per KDB 648474 D04v01r01,when the reported SAR for a body-worn accessory measured without a headset connected to the handset is ≤1.2W/kg, SAR testing with a headset connected to the handset is not required.
6. Scaling Factor calculation

Operation Mode	Channel	Max. Output Power(dBm)	Tune up Power in tolerance(dBm)	Scaling Factor
GSM 850	128	31.76	31.52±0.5	1.062
	189	31.76	31.52±0.5	1.062
	251	31.78	31.52±0.5	1.057
GPRS 850	128	31.39	31.52±0.5	1.167
	189	31.42	31.52±0.5	1.148
	251	31.39	31.52±0.5	1.167
GSM1900	512	29.06	28.95±0.5	1.094
	661	28.90	28.95±0.5	1.135
	810	28.91	28.95±0.5	1.132
GPRS1900	512	28.93	28.95±0.5	1.127
	661	28.77	28.95±0.5	1.169
	810	28.78	28.95±0.5	1.167
WCDMA850	4132	22.78	22±2	1.324
	4175	22.66	22±2	1.361
	4233	22.54	22±2	1.400
WCDMA1900	9262	22.49	22±1	1.125
	9400	22.68	22±1	1.076
	9538	22.67	22±1	1.079



802.11b	2412	15.70	15.50±0.5	1.072
	2437	15.87	15.50±0.5	1.030
	2462	15.69	15.50±0.5	1.074
BT 3.0 GFSK	2480	7.74	7.00±1	1.061

Simultaneous SAR

Description of Simultaneous Transmit Capabilities				
No.	Transmitter Combinations	Scenario Supported or not	Supported for Mobile Hotspot or not	Explanation
1	GSM(Voice)+GSM(Data)	No	No	Note1
2	WCDMA(Voice)+WCDMA(Data)	Yes	No	
3	GSM(Voice)+ WCDMA(Data)	No	No	
4	WCDMA(Voice)+GSM(Data)	No	No	
5	GSM(Voice)+ WCDMA(Voice)	No	No	
6	GSM(Voice)+Wifi(/BT)	Yes	Yes	Note 2
7	WCDMA(Voice) +Wifi(/BT)	Yes	Yes	
8	WCDMA(Voice)+WCDMA(Data)+ Wifi(/BT)	Yes	Yes	
9	GSM(Data)+wifi	Yes	Yes	
10	WCDMA(Data) +wifi	Yes	Yes	

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

Note :

1. EUT system architecture support simultaneous voice and data(except on WCDMA), multiple voice channels, or multiple data channels during a single session on the cellular net work.
2. Support for mobile hotspot operation.
3. 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.
4. 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.
5. WCDMA supports voice and data transmission simultaneously.

6. Simultaneous Transmission SAR evaluation is not required for BT and WiFi, because the software mechanism have been incorporated to gurantee that the WLAN and Bluetooth transmitters would not simultaneously operate.

7. For Scenario No.2,7.8,10 , 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 941224 D01v02, SAR is not required for this handset with HSPA capabilities.

8. For Scenario No.6 to 10, GSM, WCDMA, BT and WiFi is tested separately, the GSM mode do not supports voice and data transmission simultaneously, voic (GSM) and data(GPRS) is tested separately.

Applicable Multiple Scenario Evaluation

Test Position	WCDMA&GSM SAR Max.(W/Kg)	Wifi SAR Max.(W/Kg)	Bluetooth Max.(W/Kg)	Σ 1-gSARMAX.(W/Kg)	
				BT&Main Ant	Wifi&Main Ant
Head SAR	0.650	0.520	0.265	0.915	1.170
Body SAR	1.417	0.048	0.132	1.549	1.465

Simultaneous Transmission SAR evaluation is not required for Wifi and WCDMA&GSM, because the sum of 1g SAR Max is 1.465W/Kg<1.6 W/Kg for Wifi and WCDMA&GSM.

Simultaneous Transmission SAR evaluation is not required for BT and WCDMA&GSM, because the sum of 1g SAR Max is 1.549W/Kg<1.6 W/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.)

9 TEST RESULTS

9.1 Summary of Power Measurement Results

According the description above, the measurements against the head phantom were executed on the operation mode: GSM 850 MHz/1900MHz,GPRS 850 MHz /1900MHz, WCDMA850MHz and WCDMA1900MHz,,while the tests against the body-worn were carried out on the operation mode: GSM 850 MHz/1900MHz,GPRS 850 MHz /1900MHz, WCDMA850MHz and WCDMA1900MHz,WIFI 802.11b..



Table 1: SAR Values of GSM 850MHz Band

Temperature: 23.0~23.5°C, humidity: 62~64%.					
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)		
			SAR(W/Kg)1g Peak)	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek	128/824.2	0.449	0.477	
		189/836.6	0.405	0.430	
		251/848.8	0.454	0.480	
	Tilt 15 degrees	128/824.2	0.263	0.279	
		189/836.6	0.279	0.296	
		251/848.7	0.266	0.281	
Left Side of Head	Cheek	128/824.2	0.401	0.426	
		189/836.6	0.342	0.363	
		251/848.8	0.313	0.331	
	Tilt 15 degrees	128/824.2	0.241	0.256	
		189/836.6	0.269	0.286	
		251/848.8	0.240	0.254	
Body (10mm Separation)	GSM	Face Upward	128/824.2	0.189	0.201
			189/836.6	0.213	0.226
			251/848.8	0.192	0.203
		Back Upward	128/824.2	0.418	0.444
			189/836.6	0.376	0.399
			251/848.8	0.437	0.462
		Edge B	128/824.2	0.386	0.410
			189/836.6	0.336	0.357
			251/848.8	0.257	0.271
	Edge C	128/824.2	0.550	0.584	
		189/836.6	0.543	0.577	
		251/848.8	0.499	0.527	
	Edge D	128/824.2	0.191	0.203	
		189/836.6	0.187	0.198	
		251/848.8	0.184	0.194	
	GPRS	Face Upward	128/824.2	0.233	0.272
			189/836.6	0.235	0.270
			251/848.8	0.241	0.281
Back		128/824.2	0.398	0.464	



Body (10mm Separation)	GPRS	Upward	189/836.6	0.436	0.500
			251/848.8	0.457	0.533
		Edge B	128/824.2	0.295	0.344
			189/836.6	0.254	0.291
			251/848.8	0.207	0.241
		Edge C	128/824.2	0.416	0.485
			189/836.6	0.404	0.464
			251/848.8	0.363	0.423
		Edge D	128/824.2	0.141	0.164
			189/836.6	0.156	0.179
			251/848.8	0.158	0.184

Table 2: SAR Values of GSM1900 MHz Band

Temperature: 23.0~23.5°C, humidity: 62~64%.

Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)		
			SAR(W/Kg)1g Peak)	Scaled SAR(W/Kg),1g	
Right Side of Head	Cheek	512/1850.2	0.259	0.283	
		661/1880.0	0.445	0.505	
		810/1909.8	0.265	0.300	
	Tilt 15 degrees	512/1850.2	0.099	0.108	
		661/1880.0	0.135	0.153	
		810/1909.8	0.066	0.075	
Left Side of Head	Cheek	512/1850.2	0.364	0.398	
		661/1880.0	0.319	0.362	
		810/1909.8	0.274	0.310	
	Tilt 15 degrees	512/1850.2	0.178	0.195	
		661/1880.0	0.105	0.119	
		810/1909.8	0.116	0.131	
Body (10mm Separation)	GSM	Face Upward	512/1850.2	0.586	0.641
			661/1880.0	0.612	0.695
			810/1909.8	0.552	0.625
		Back Upward	512/1850.2	0.780	0.853
			661/1880.0	0.706	0.801
			810/1909.8	0.676	0.765
		Edge B	512/1850.2	0.003	0.003



		Edge C	661/1880.0	0.007	0.008
			810/1909.8	0.006	0.007
			512/1850.2	0.110	0.120
			661/1880.0	0.141	0.160
			810/1909.8	0.143	0.162
			512/1850.2	0.006	0.007
		Edge D	661/1880.0	0.007	0.008
			810/1909.8	0.007	0.008
			512/1850.2	0.306	0.357
		Face Upward	661/1880.0	0.295	0.339
			810/1909.8	0.293	0.342
			512/1850.2	0.568	0.686
			661/1880.0	0.539	0.619
			810/1909.8	0.542	0.632
			512/1850.2	0.013	0.015
Back Upward	661/1880.0	0.013	0.015		
	810/1909.8	0.014	0.016		
	512/1850.2	0.286	0.322		
Edge B	661/1880.0	0.044	0.051		
	810/1909.8	0.046	0.053		
	512/1850.2	0.003	0.003		
Edge C	661/1880.0	0.007	0.008		
	810/1909.8	0.008	0.009		
	512/1850.2	0.003	0.003		
Edge D	661/1880.0	0.007	0.008		
	810/1909.8	0.008	0.009		
	512/1850.2	0.003	0.003		

Body (10mm Separation)

GPRS

Edge C

Edge D

Table 3: SAR Values of WCDMA850

Temperature: 23.0~23.5°C, humidity: 62~64%.

Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)	
			SAR(W/Kg)1g Peak)	Scaled SAR(W/Kg),1g
Right Side of Head	Cheek	4132/826.4	0.364	0.428
		4182/836.6	0.439	0.597
		4233/846.6	0.464	0.650
	Tilt 15 degrees	4132/826.4	0.217	0.287
		4182/836.6	0.282	0.384
		4233/846.6	0.319	0.447
Left Side of Head	Cheek	4132/826.4	0.323	0.428
		4182/836.6	0.414	0.563
		4233/846.6	0.425	0.595
	Tilt 15 degrees	4132/826.4	0.244	0.323
		4182/836.6	0.310	0.422
		4233/846.6	0.300	0.420
Body (10mm Separation)	Face Upward	4132/826.4	0.192	0.254
		4182/836.6	0.186	0.253
		4233/846.6	0.173	0.242
	Back Upward	4132/826.4	0.718	0.951
		4182/836.6	0.697	0.949
		4233/846.6	0.676	0.946
	Edge B	4132/826.4	0.270	0.357
		4182/836.6	0.284	0.387
		4233/846.6	0.292	0.409
	Edge C	4132/826.4	0.477	0.632
		4182/836.6	0.474	0.645
		4233/846.6	0.483	0.676
	Edge D	4132/826.4	0.144	0.191
		4182/836.6	0.155	0.211
		4233/846.6	0.152	0.213



Table 4: SAR Values of WCDMA1900

Temperature: 23.0~23.5°C, humidity: 62~64%.

Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)	
			SAR(W/Kg)1g Peak	Scaled SAR(W/Kg),1g
Right Side of Head	Cheek	9262/1852.4	0.405	0.455
		9400/1880.0	0.365	0.393
		9538/1907.6	0.283	0.305
	Tilt 15 degrees	9262/1852.4	0.122	0.137
		9400/1880.0	0.114	0.123
		9538/1907.6	0.096	0.103
Left Side of Head	Cheek	9262/1852.4	0.490	0.551
		9400/1880.0	0.358	0.385
		9538/1907.6	0.323	0.348
	Tilt 15 degrees	9262/1852.4	0.181	0.204
		9400/1880.0	0.142	0.153
		9538/1907.6	0.154	0.166
Body (10mm Separation)	Face Upward	9262/1852.4	1.146	1.289
		9262/1852.4 (repeat measurement)	1.027	1.155
		9400/1880.0	1.009	1.085
		9538/1907.6	1.140	1.230
	Back Upward	9262/1852.4	1.260	1.417
		9262/1852.4 (repeat measurement)	1.048	1.179
		9400/1880.0	1.260	1.336
		9538/1907.6	1.253	1.352
	Edge B	9262/1852.4	0.009	0.010
		9400/1880.0	0.008	0.009
		9538/1907.6	0.011	0.012
	Edge C	9262/1852.4	0.112	0.126
		9400/1880.0	0.121	0.130
		9538/1907.6	0.122	0.132



	Edge D	9262/1852.4	0.007	0.008
		9400/1880.0	0.008	0.009
		9538/1907.6	0.007	0.008

Table 5:SAR Values of Wi-Fi 802.11b

Temperature: 23.0~23.5°C, humidity: 62~64%.				
Test Positions		Channel /Frequency (MHz)	SAR(W/Kg), 1.6 (1g average)	
			SAR(W/Kg)1g Peak	Scaled SAR(W/Kg),1g
Right Side of Head	Cheek	1/2412	0.474	0.508
		6/2437	0.479	0.493
		11/2462	0.484	0.520
	Tilt 15 degrees	1/2412	0.314	0.337
		6/2437	0.318	0.328
		11/2462	0.323	0.347
Left Side of Head	Cheek	1/2412	0.307	0.329
		6/2437	0.297	0.306
		11/2462	0.314	0.337
	Tilt 15 degrees	1/2412	0.216	0.232
		6/2437	0.217	0.224
		11/2462	0.221	0.237
802.11b(10mm Separation)	Edge A	6/2437	0.023	0.024
	Edge B	6/2437	0.027	0.029
	Back Upward	1/2412	0.042	0.045
		6/2437	0.047	0.048
		11/2462	0.041	0.044
	Face Upward	6/2437	0.031	0.032

Note:

a) According to KDB 941225 D01, since the maximum average output of each RF channel with HSDPA/HSUPA active is less than that measured without HSDPA/HSUPA using 12.2 kbps RMC and the maximum SAR for 12.2 kbps RMC is less 1.2 W/kg, the measurement against HSDPA and HSUPA were ignored in this report.



b) 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)

- ≤ 0.8 W/kg, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg, when the transmission band is ≥ 200 MHz

8.2 Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 6 of this report. Maximum localized SAR is **below** exposure limits specified in the relevant standards.

10 Measurement Uncertainty

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) $u_i(\%)$	Degree of freedom V_{eff} or v_i
Measurement System								
1	– Probe Calibration	B	7	N	3	1	3.5	∞
2	– Axial isotropy	B	4.7	R	$\sqrt{3}$	0.5	4.3	∞
3	– Hemispherical Isotropy	B	9.4	R	$\sqrt{3}$	0.5	4.3	∞
4	– Boundary Effect	B	11.0	R	$\sqrt{3}$	1	6.4	∞
5	– Linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
6	– System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
7	– Readout Electronics	B	1.0	N	3	1	1.00	∞
8	– Response Time	B	0.00	R	$\sqrt{3}$	1	0.00	∞
9	– Integration Time	B	0.00	R	$\sqrt{3}$	1	0.00	∞
10	– RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
11	– Probe Position Mechanical tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
12	– Probe Position with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
13	– Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞

Uncertainties of the DUT								
14	–Position of the DUT	A	4.8	N	3	1	4.8	5
15	–Holder of the DUT	A	7.1	N	3	1	7.1	5
16	–Output Power Variation –SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Phantom and Tissue Parameters								
17	–Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	$\sqrt{3}$	1	0.6	∞
18	–Liquid Conductivity Target –tolerance	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
19	–Liquid Conductivity –measurement Uncertainty)	B	0.23	N	3	1	0.23	9
20	–Liquid Permittivity Target tolerance	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
21	–Liquid Permittivity –measurement uncertainty	B	0.46	N	3	1	0.46	∞
Combined Standard Uncertainty				RSS			12.92	44.15
Expanded uncertainty (Confidence interval of 95 %)				K=2			25.84	

**11 MAIN TEST INSTRUMENTS**

No	EQUIPMENT	TYPE	Series No.	Due Date
1	System Simulator	E5515C	GB 47200710	2014/02/23
2	SAR Probe	SATIMO	SN 09/13 EP169	2014/04/04
3	Dipole	SID835	SN 09/13 DIP 0G835-217	2014/04/04
4	Dipole	SID1900	SN 09/13 DIP 1G900-218	2014/04/04
5	Dipole	SID2450	SN 09/13 DIP 2G450-220	2014/04/04
6	Vector Network Analyzer	ZVB8	A0802530	2014/06/13
7	Signal Generator	SMR27	A0304219	2014/06/10
8	Amplifier	Nucletudes	143060	2014/04/05
9	Power Meter	NRVS	1020.1809.02	2014/06/13
10	Power Sensor	NRV-Z4	100069	2014/06/10
11	Multimeter	Keithley-2000	4014020	2014/01/29
12	Device Holder	SATIMO	SN 09/13 MSH80	2014/04/04
13	SAM Phantom	SAM97	SN 09/13 SAM97	2014/04/04



ANNEX A
of
CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

CONFORMANCE TEST REPORT FOR
HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-07611

MFOURTEL MEXICO S.A. DE C.V.

GSM/WCDMA MOBILE PHONE

Type Name: M4 SS1070

Hardware Version: SLFA-V1.0

Software Version: M4_SS1070_S01_VER200

Accreditation Certificate

This Annex consists of 2 pages

Date of Report: 2013-11-08



China National Accreditation Service for Conformity Assessment

LABORATORY ACCREDITATION CERTIFICATE

(Registration No. CNAS L1659)

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

Building 28/29, Shigudong, Xili Industrial Area, Xili Street,

Nanshan District, Shenzhen, Guangdong, China

is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence of testing and calibration.

The scope of accreditation is detailed in the attached appendices bearing the same registration number as above. The appendices form an integral part of this certificate.

Date of Issue: 2012-09-29

Date of Expiry: 2015-09-28

Date of Initial Accreditation: 1999-08-03

Date of Update: 2012-09-29



Signed on behalf of China National Accreditation Service
for Conformity Assessment

China National Accreditation Service for Conformity Assessment (CNAS) is authorized by Certification and Accreditation Administration of the People's Republic of China (CNCA) to operate the national accreditation schemes for conformity assessment. CNAS is the signatory to International Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (ILAC MRA) and Asia Pacific Laboratory Accreditation Cooperation Multilateral Recognition Arrangement (APLAC MRA).

No.CNAS AL 2

0005210



ANNEX B

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-07611

MFOURTEL MEXICO S.A. DE C.V.

GSM/WCDMA MOBILE PHONE

Type Name: M4 SS1070

Hardware Version: SLFA-V1.0

Software Version: M4_SS1070_S01_VER200

TEST LAYOUT

This Annex consists of 6 pages

Date of Report: 2013-12-02

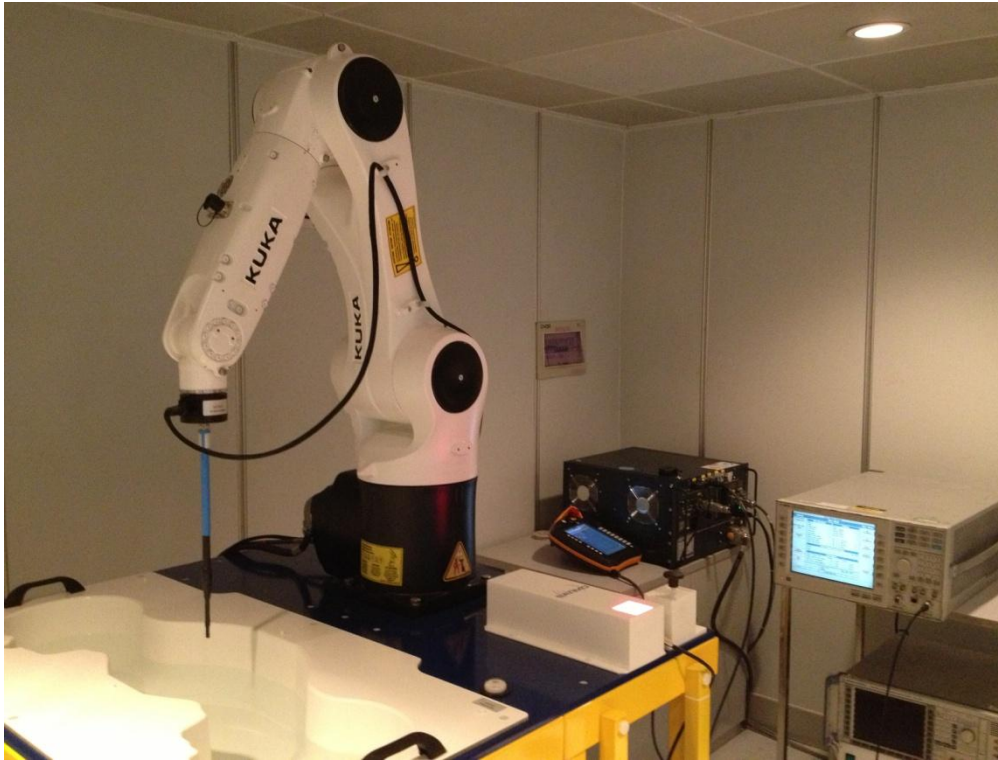


Fig.1 COMO SAR Test System

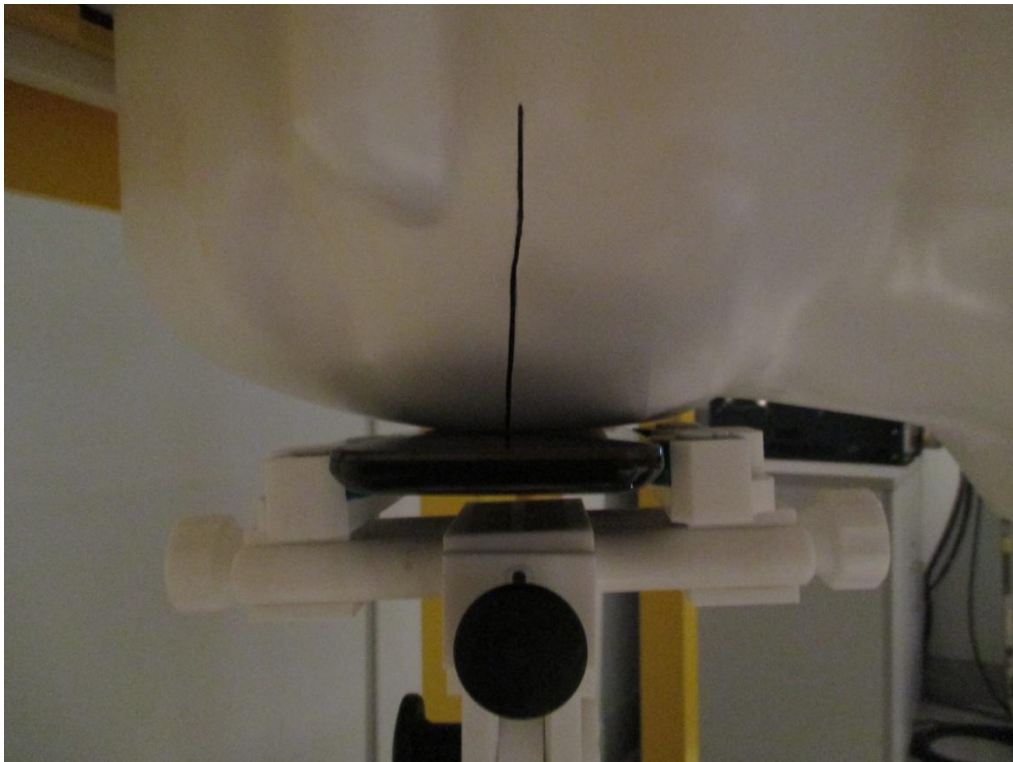


Fig.2 Right_Cheek

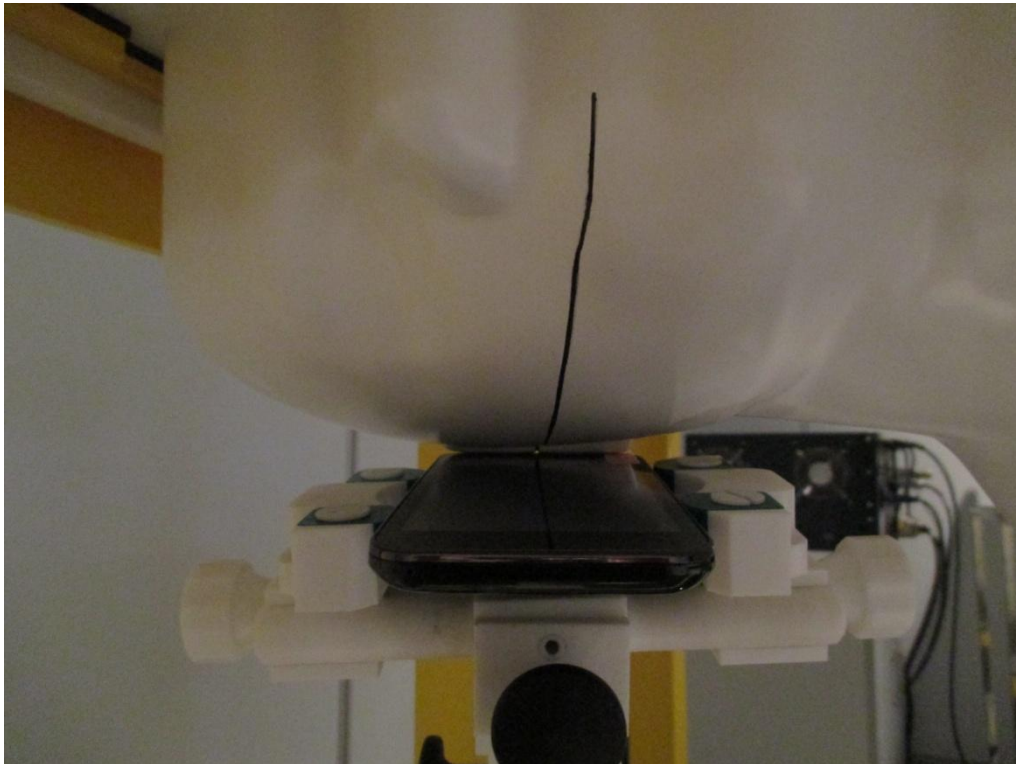


Fig.3 Right_Tilt

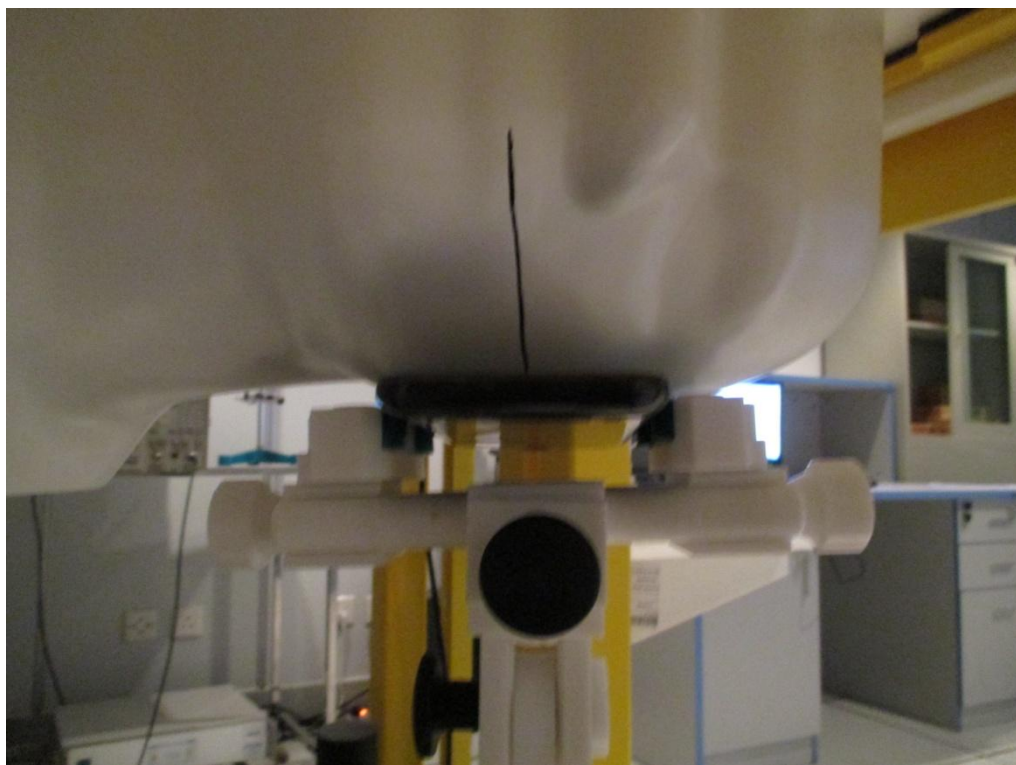


Fig.4 Left Cheek

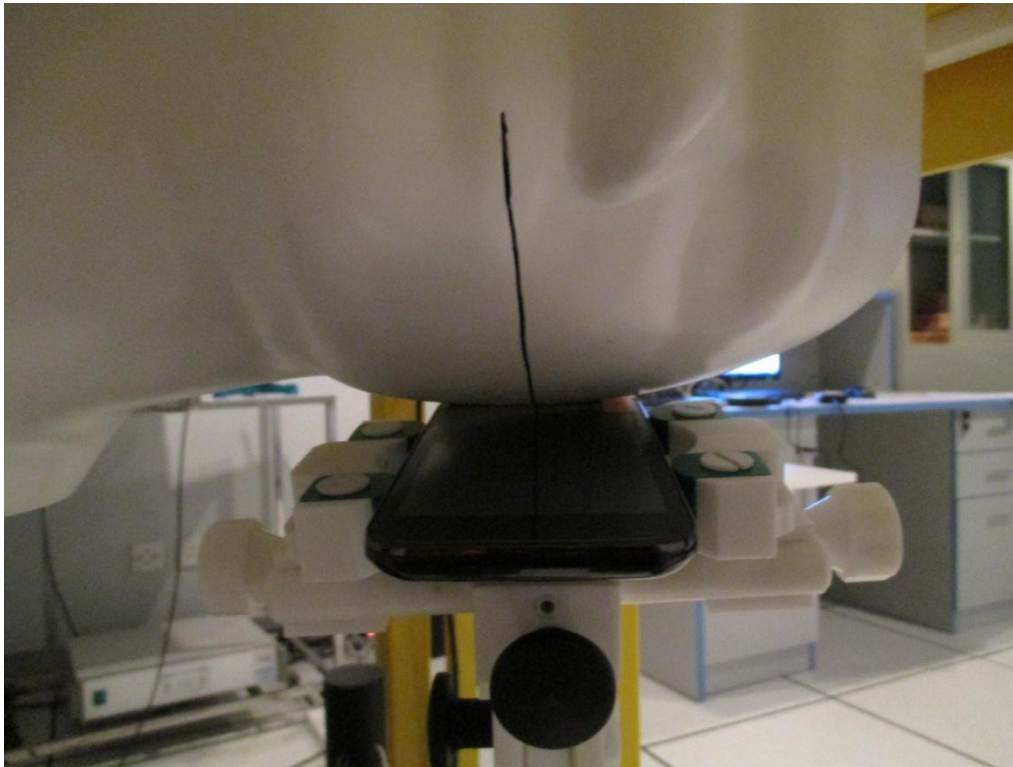


Fig.5 Left_Tilt



Fig.6 Body(Back upside,10mm separation)



Fig.7 Body Edge A(UP,10mm separation)



Fig.8 Body Edge B(Left upside,10mm separation)



Fig.9 Body Edge C(Down,10mm separation)



Fig.10 Body Edge d(Right upside,10mm separation)



ANNEX C

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-07611

GSM/WCDMA MOBILE PHONE

Type Name: M4 SS1070

Hardware Version: SLFA-V1.0

Software Version: M4_SS1070_S01_VER200

Sample Photographs

This Annex consists of 5 pages

Date of Report: 2013-12-02

1. Appearance



Appearance and size (obverse)



Appearance and size (reverse)



ANNEX D

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-07611

GSM/WCDMA MOBILE PHONE

Type Name: M4 SS1070

Hardware Version: SLFA-V1.0

Software Version: M4_SS1070_S01_VER200

System Performance Check Data and Highest SAR Plots

This Annex consists of 13 pages

Date of Report: 2013-12-02

**GRAPH TEST RESULTS**

BAND	PAPAMETERS
GSM 850	Right Head with Cheek device position on High Channel in GSM mode Left Head with Cheek device position on Low Channel in GSM mode Flat Plane with Back Body device position on High Channel in GSM mode Flat Plane with Edge C Body device position on Low Channel in GSM mode Flat Plane with Back Body device position on High Channel in GPRS mode Flat Plane with Edge C Body device position on Low Channel in GPRS mode
GSM 1900	Right Head with Cheek device position on Middle Channel in GSM mode Left Head with Cheek device position on Low Channel in GSM mode Flat Plane with Back Body device position on Low Channel in GSM mode Flat Plane with Edge C Body device position on High Channel in GSM mode Flat Plane with Back Body device position on Low Channel in GPRS mode Flat Plane with Edge C Body device position on Low Channel in GPRS mode
WCDMA 850	Right Head with Cheek device position on High Channel in WCDMA mode Left Head with Cheek device position on High Channel in WCDMA mode Flat Plane with Back Body device position on Low Channel in WCDMA mode Flat Plane with Edge C Body device position on High Channel in WCDMA mode
WCDMA 1900	Right Head with Cheek device position on Low Channel in WCDMA mode Left Head with Cheek device position on Low Channel in WCDMA mode Flat Plane with Back Body device position on Low Channel in WCDMA mode Flat Plane with Back Body device position on Low Channel in WCDMA mode(repeat) Flat Plane with Face Body device position on Low Channel in WCDMA mode Flat Plane with Face Body device position on Low Channel in WCDMA mode(repeat) Flat Plane with Edge C Body device position on High Channel in WCDMA mode
WIFI 802.11b	Right Head with Cheek device position on High Channel in DSSS mode Left Head with Cheek device position on High Channel in DSSS mode Flat Plane with Back Body device position on Middle Channel in DSSS mode

System Performance Check (Head, 835MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement:26/11/2013

Measurement duration: 12 minutes 57 seconds

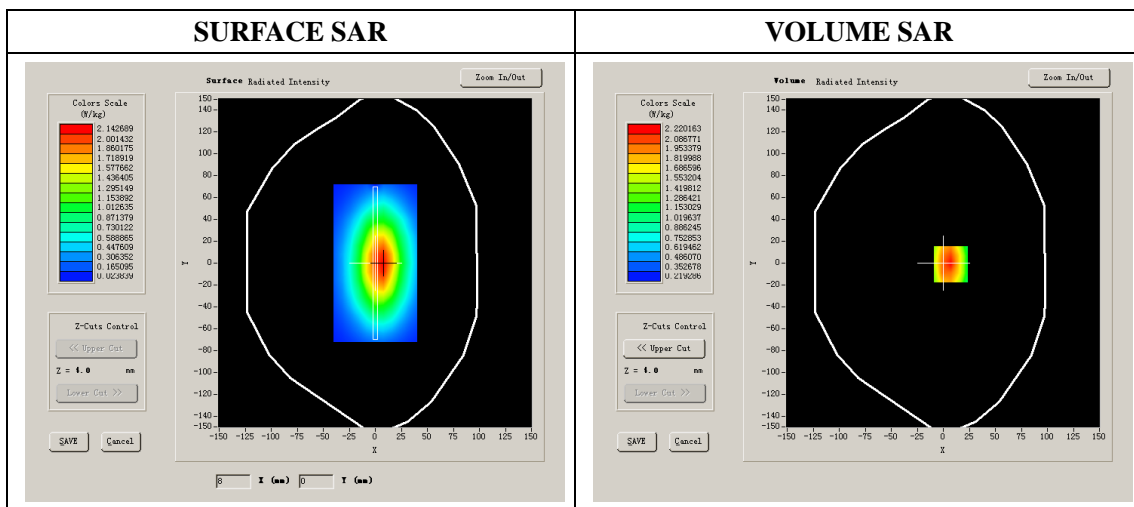
A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Flat Plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.281327
Relative permittivity	15.067700
Conductivity (S/m)	0.941371
Power drift (%)	-0.420000
Ambient Temperature:	23.2 °C
Liquid Temperature:	23.5 °C
ConvF:	5.52
Duty factor:	1:1



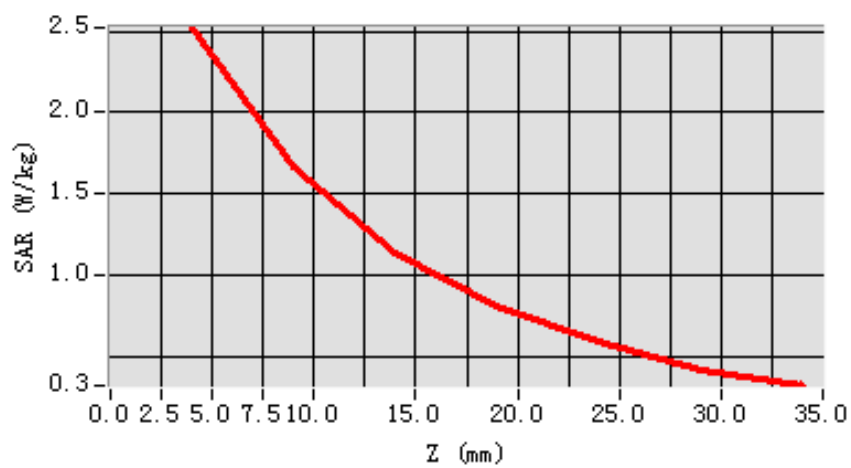
Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.810954
SAR 1g (W/Kg)	2.474578

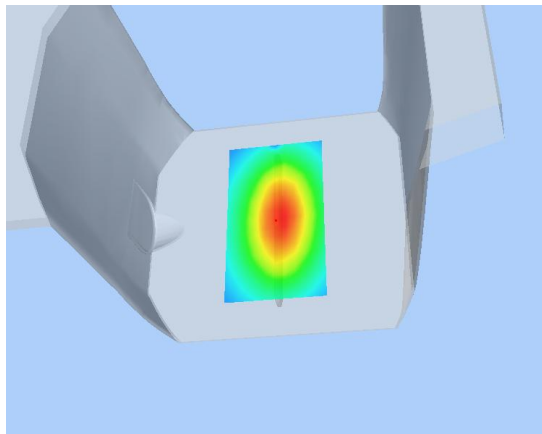
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5212	1.6625	1.1452	0.8068	0.5876	0.4154

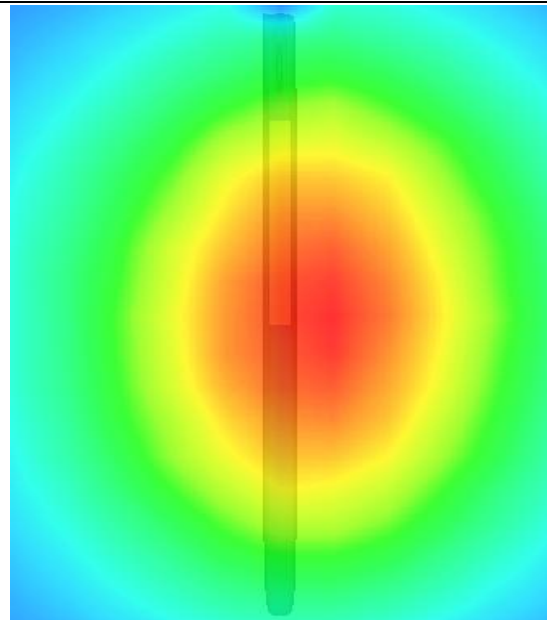
SAR, Z Axis Scan (X = 7, Y = -1)



3D scene shot



Hot spot position



System Performance Check (Head, 1900MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 26/11/2013

Measurement duration: 12 minutes 57 seconds

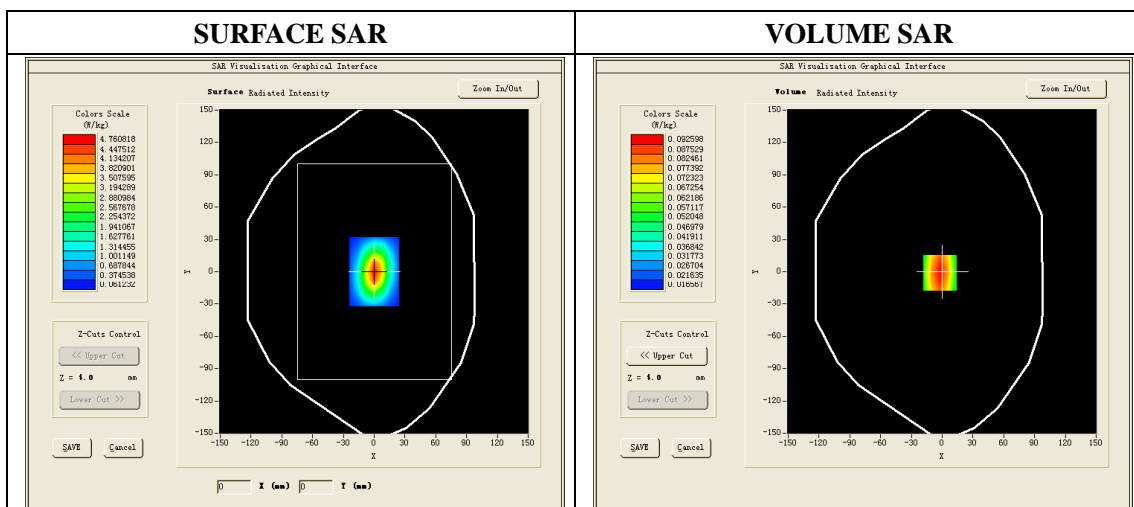
A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Flat Plane
Device Position	
Band	1900MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.878646
Relative permittivity	15.067700
Conductivity (S/m)	1.4198057
Power drift (%)	-0.440000
Ambient Temperature:	22.3 °C
Liquid Temperature:	22.6 °C
ConvF:	5.48
Duty factor:	1:1

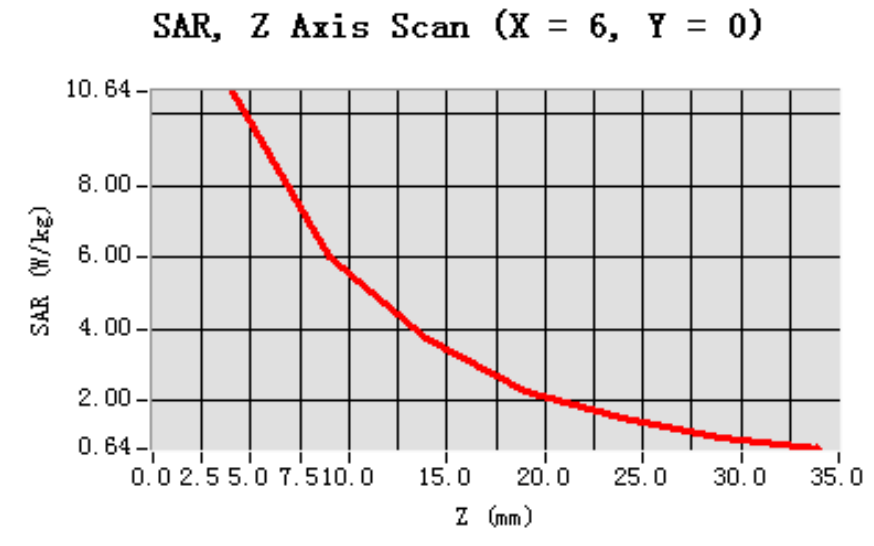
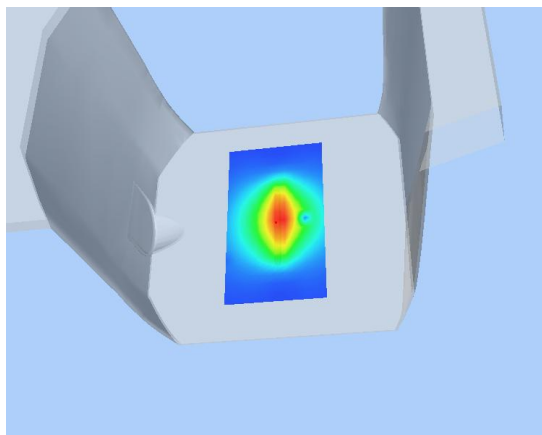
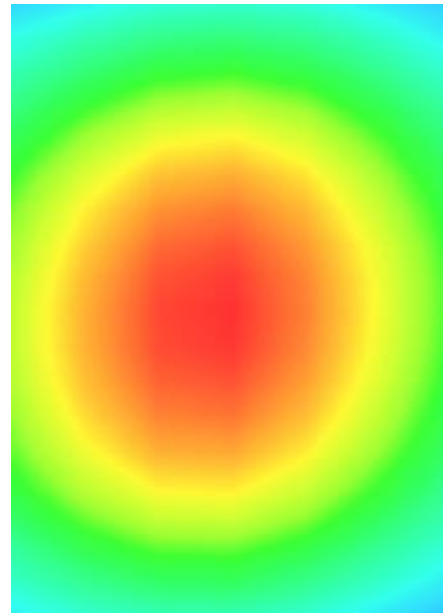


Maximum location: X=6.00, Y=0.00

SAR 10g (W/Kg)	5.170292
SAR 1g (W/Kg)	9.789262

Z Axis Scan

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


3D scene shot

Hot spot position


System Performance Check (Head, 2450MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 26/11/2013

Measurement duration: 15 minutes 24 seconds

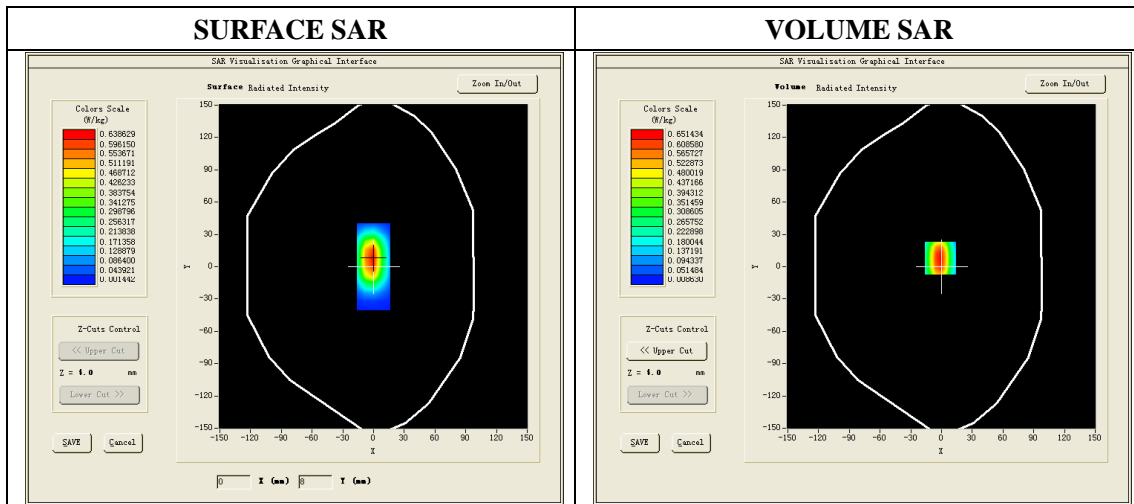
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	2450.000000
Relative permittivity (real part)	38.96
Relative permittivity	13.19
Conductivity (S/m)	1.79
Power Drift (%)	0.160000
ConvF:	4.80
Duty factor:	1:1

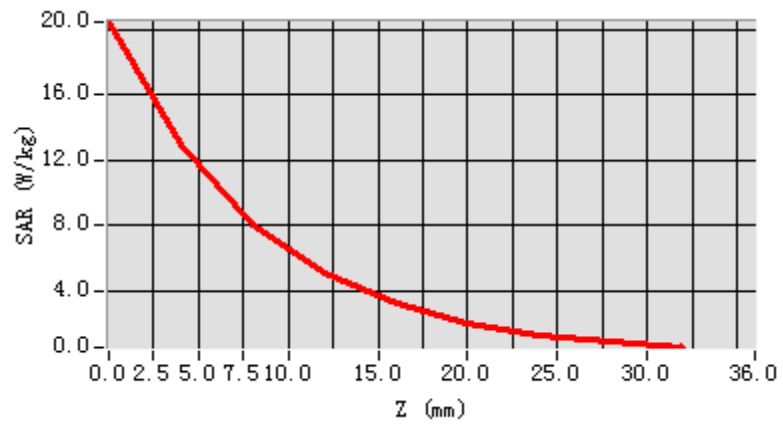


Maximum location: X=0.00, Y=8.00

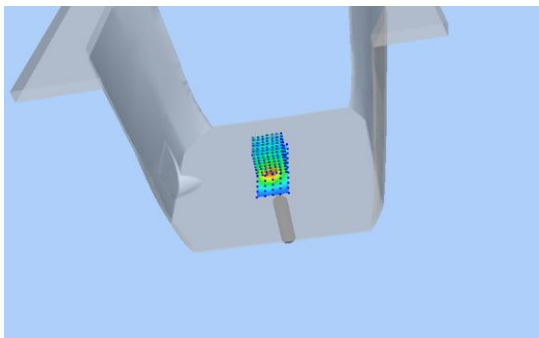
SAR 10g (W/Kg)	5.914682
SAR 1g (W/Kg)	13.160218

Z Axis Scan

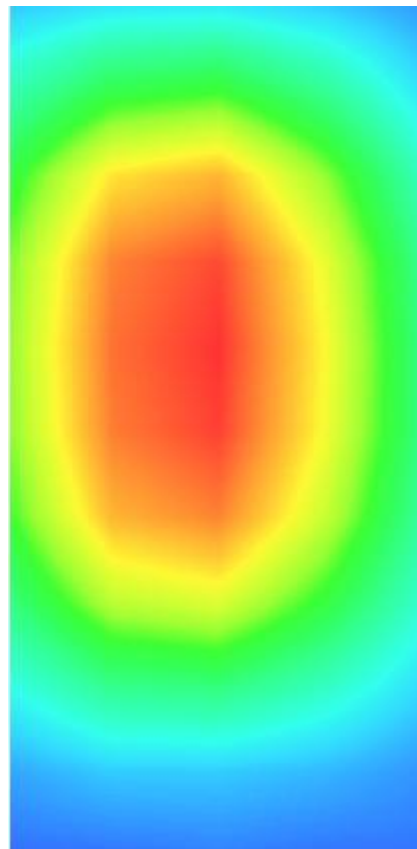
Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	20.3890	13.160218	3.8625	0.8019	0.2333



3D scene shot



Hot spot position



System Performance Check (Body, 835MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 27/11/2013

Measurement duration: 13 minutes 12 seconds

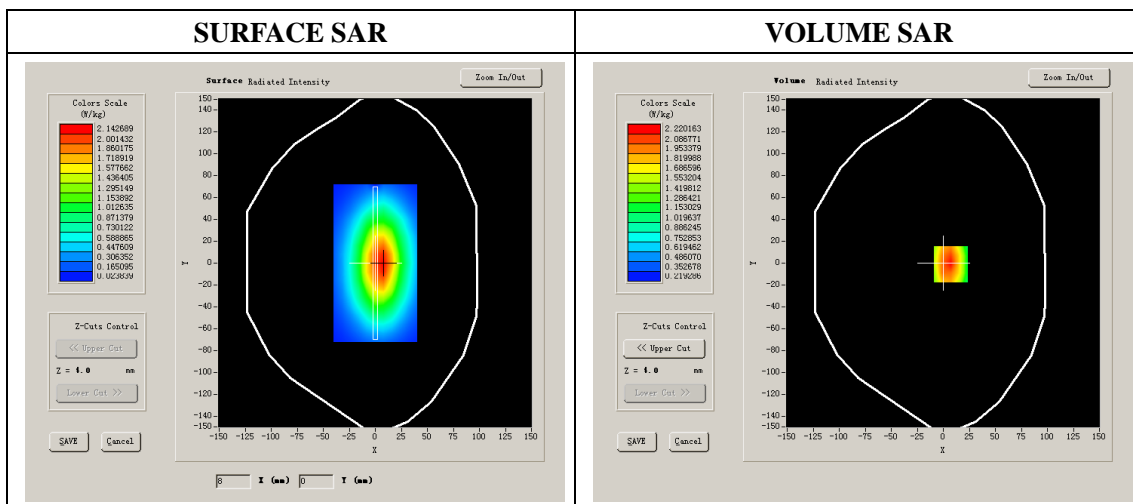
A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Flat Plane
Device Position	
Band	835MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.380112
Relative permittivity	21.709999
Conductivity (S/m)	0.984352
Power drift (%)	-0.190000
Ambient Temperature:	23.2 °C
Liquid Temperature:	23.5 °C
ConvF:	5.67
Duty factor:	1:1



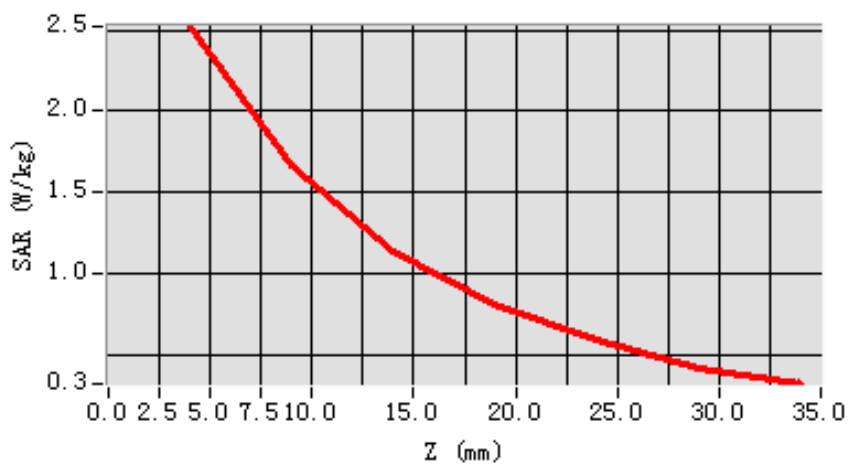
Maximum location: X=7.00, Y=-1.00

SAR 10g (W/Kg)	1.743219
SAR 1g (W/Kg)	2.430218

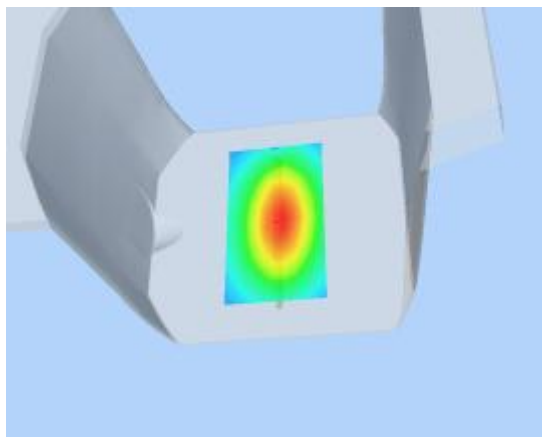
Z Axis Scan

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

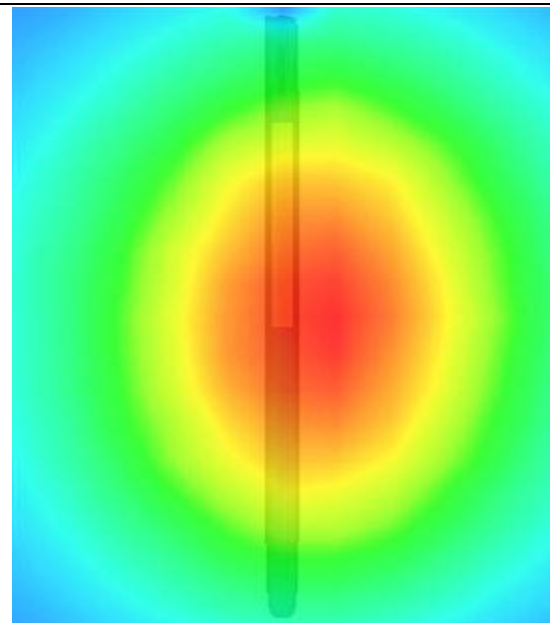
SAR, Z Axis Scan (X = 7, Y = -1)



3D scene shot



Hot spot position



System Performance Check (Body, 1900MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 27/11/2013

Measurement duration: 13 minutes 12 seconds

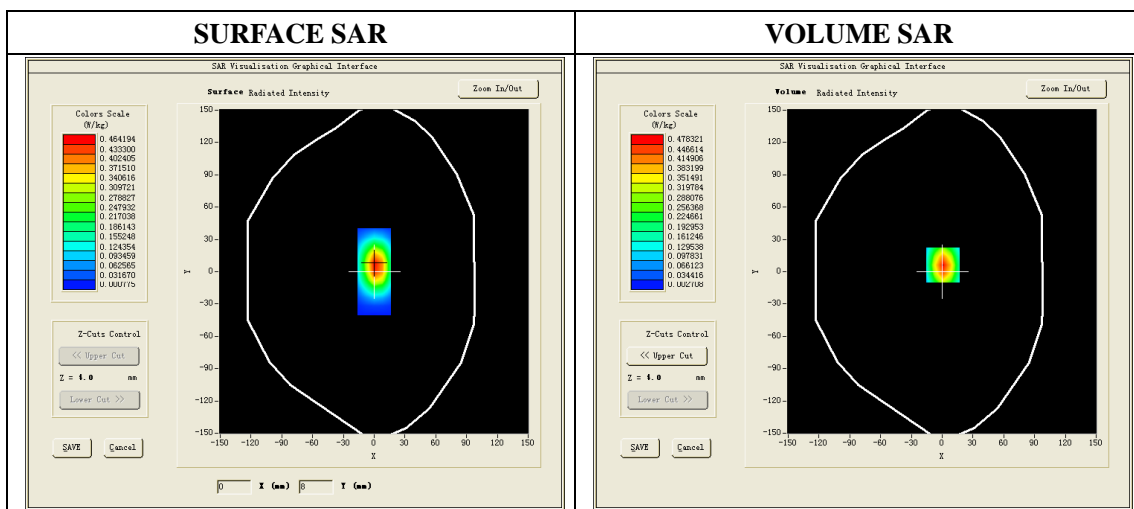
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	53.669264
Relative permittivity	12.991650
Conductivity (S/m)	1.512476
Power Drift (%)	0.080000
Ambient Temperature:	22.0 °C
Liquid Temperature:	21.8 °C
ConvF:	5.64
Duty factor:	1:1



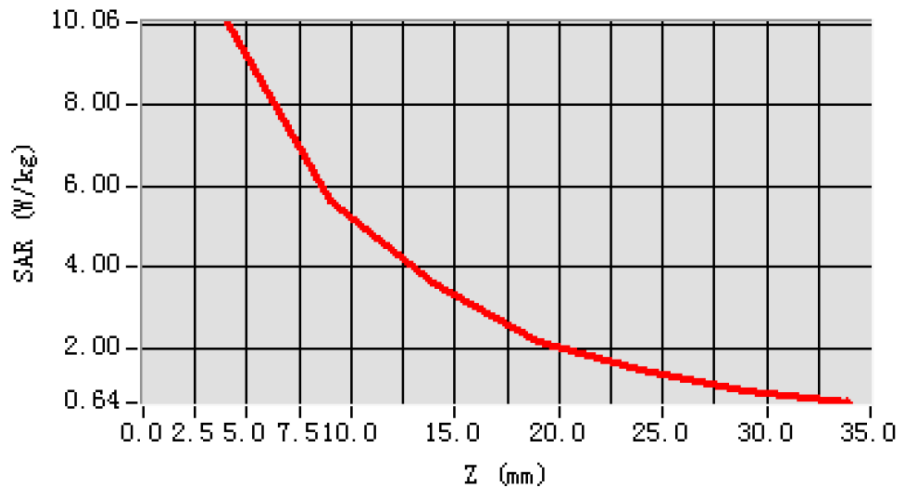
Maximum location: X=1.00, Y=6.00

SAR 10g (W/Kg)	5.215643
SAR 1g (W/Kg)	9.985105

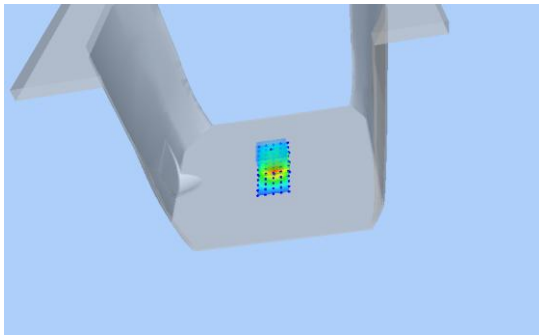
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	10.0613	5.7282	3.6529	2.0314

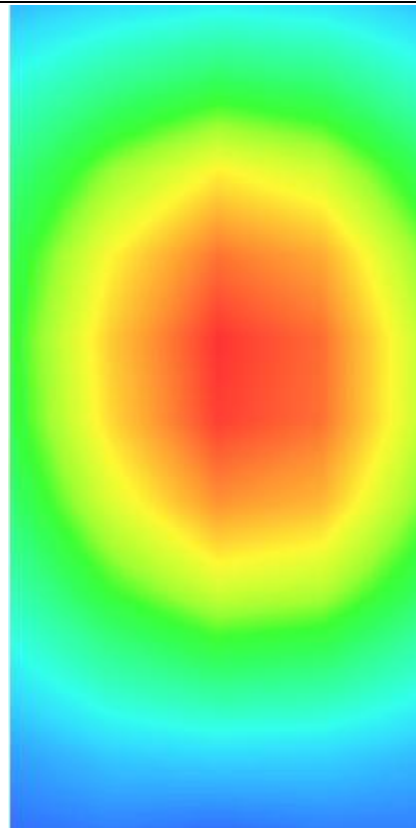
SAR, Z Axis Scan (X = 1, Y = 6)



3D scene shot



Hot spot position



System Performance Check (Body, 2450MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 27/11/2013

Measurement duration: 13 minutes 21 seconds

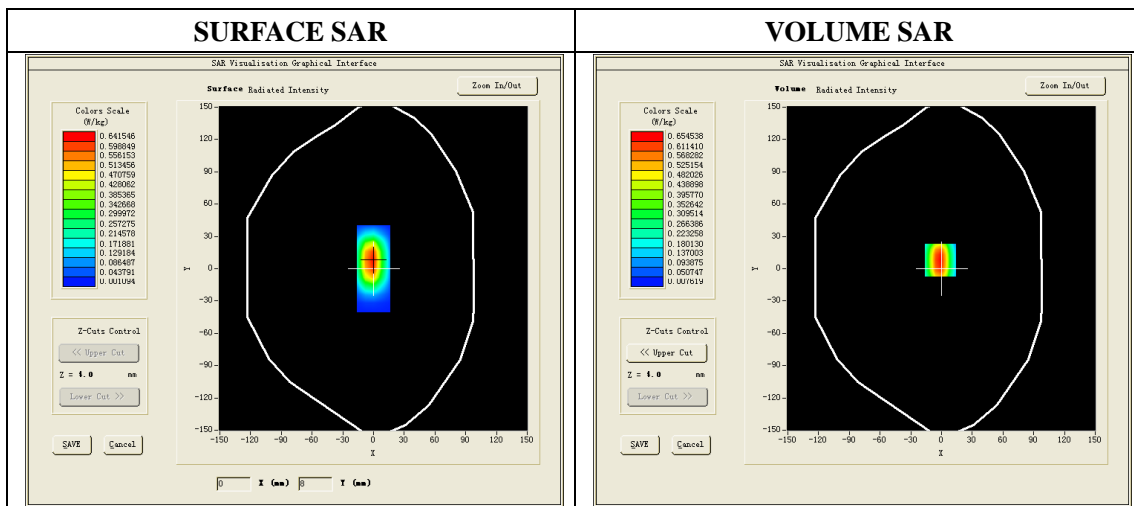
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.683241
Relative permittivity	13.024236
Conductivity (S/m)	1.972160
Power Drift (%)	-0.070000
Duty factor:	1:1
ConvF:	4.90



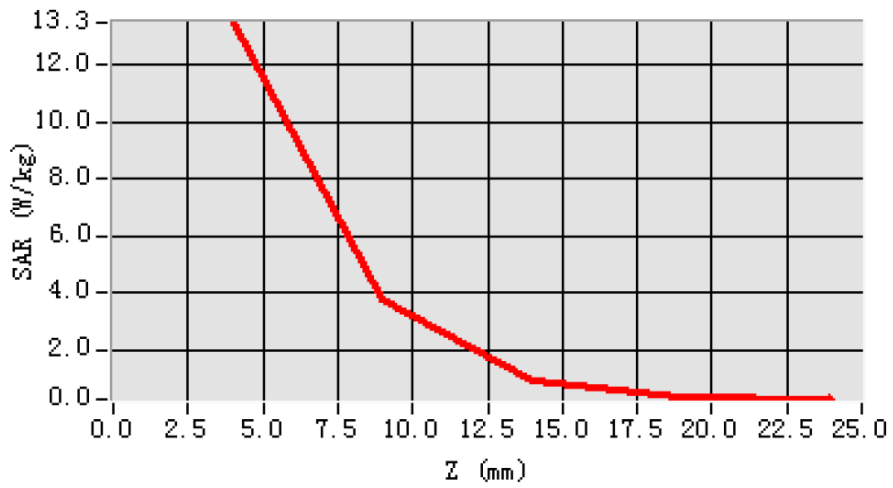
Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.951243
SAR 1g (W/Kg)	13.119628

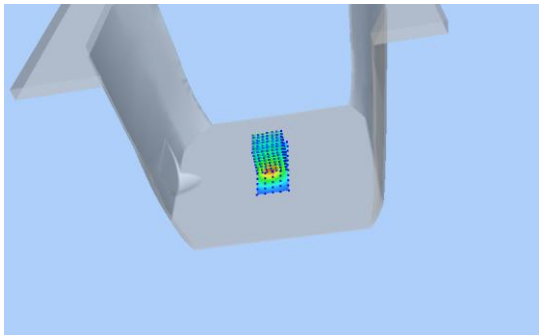
Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	13.3122	3.8625	0.8019	0.2333

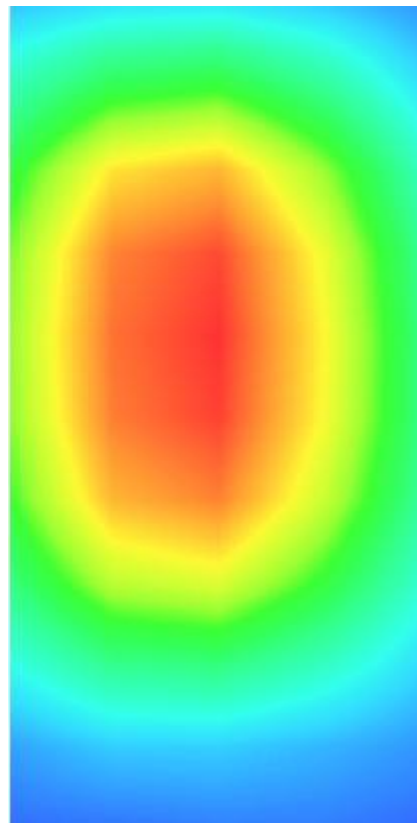
SAR, Z Axis Scan (X = 0, Y = 8)



3D scene shot



Hot spot position



GSM850 ,Right Cheek, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 5 minutes 3 seconds

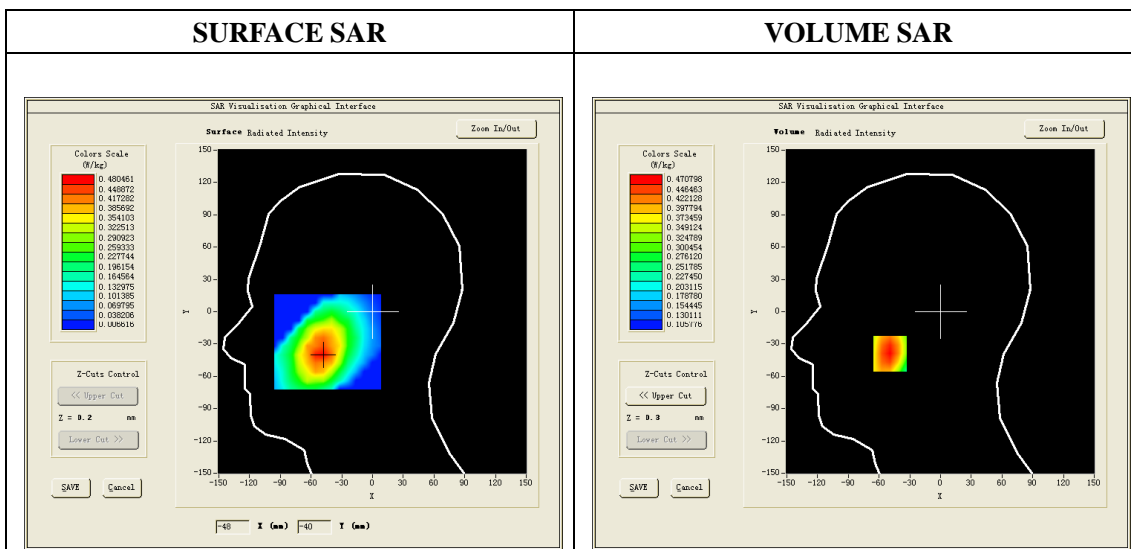
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	GSM850
Channels	251
Signal	GSM (Crest factor: 1:8)

B. C. SAR Measurement Results

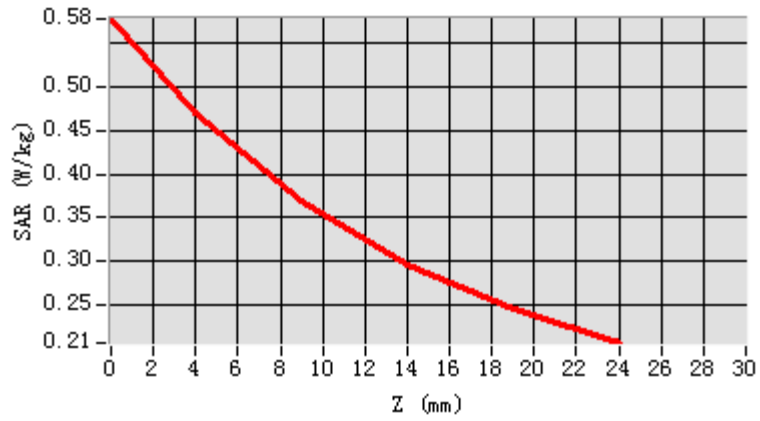
Frequency (MHz)	848.8
Relative permittivity (real part)	41.281327
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	0.941371
Variation (%)	-0.480000
ConvF:	5.52



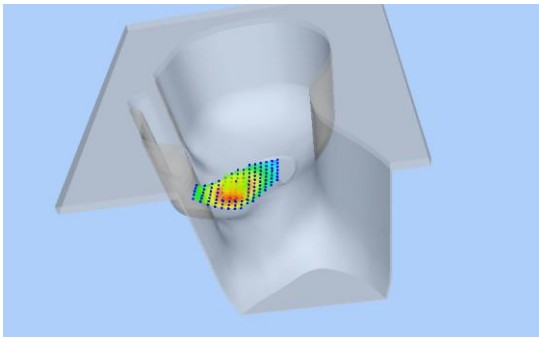
Maximum location: X=-49.00, Y=-39.00

SAR 10g (W/Kg)	0.340492
SAR 1g (W/Kg)	0.453778

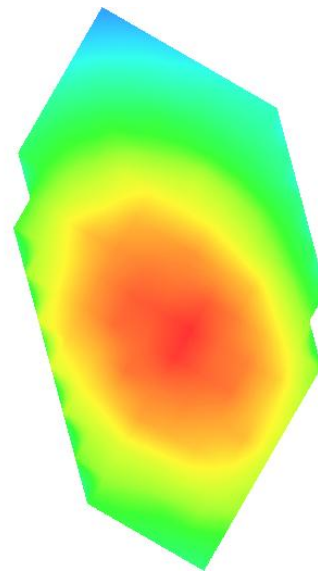
Z axis scan



3D screen shot



Hot spot position



GSM850, Left Cheek, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 6 minutes 35 seconds

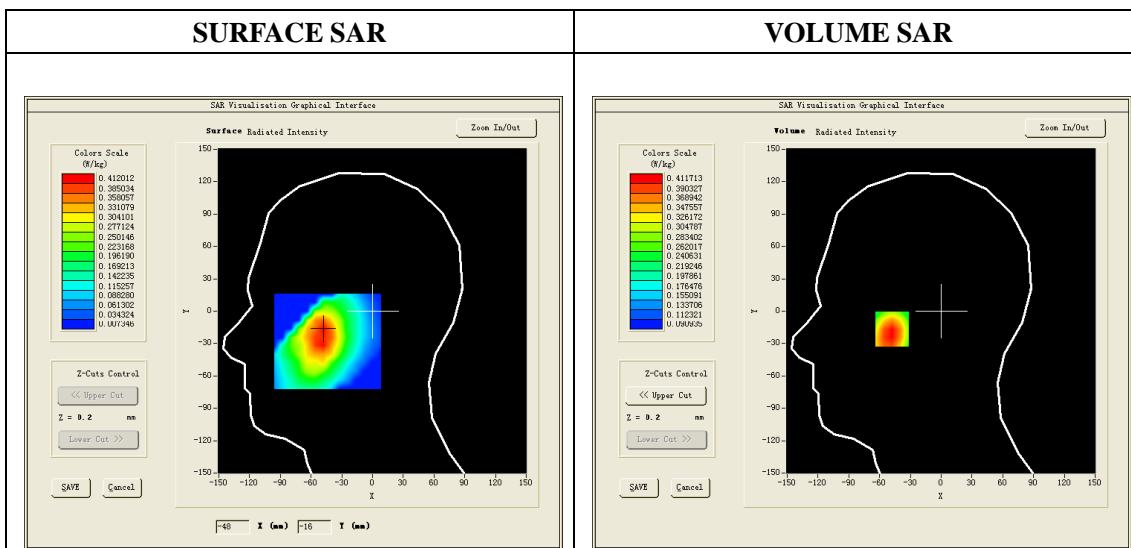
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	GSM850
Channels	128
Signal	GSM (Crest factor: 1:8)

B. SAR Measurement Results

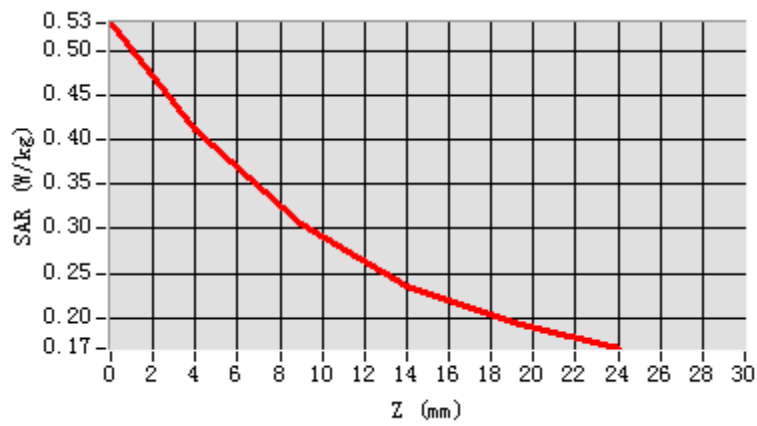
Frequency (MHz)	824.2
Relative permittivity (real part)	41.281327
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	0.941371
Variation (%)	-1.510000
ConvF:	5.52



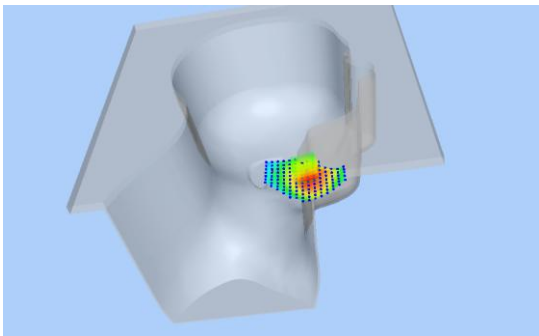
Maximum location: X=-48.00, Y=-16.00

SAR 10g (W/Kg)	0.291525
SAR 1g (W/Kg)	0.400617

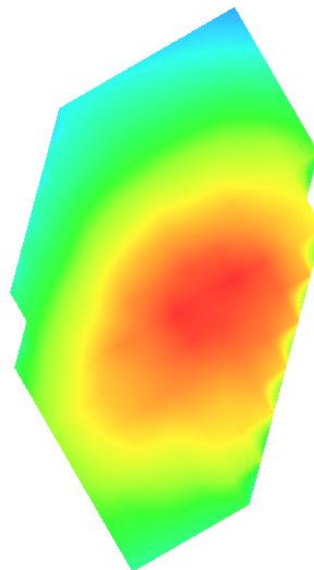
Z axis scan



3D screen shot



Hot spot position



GSM850, Back, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 32 seconds

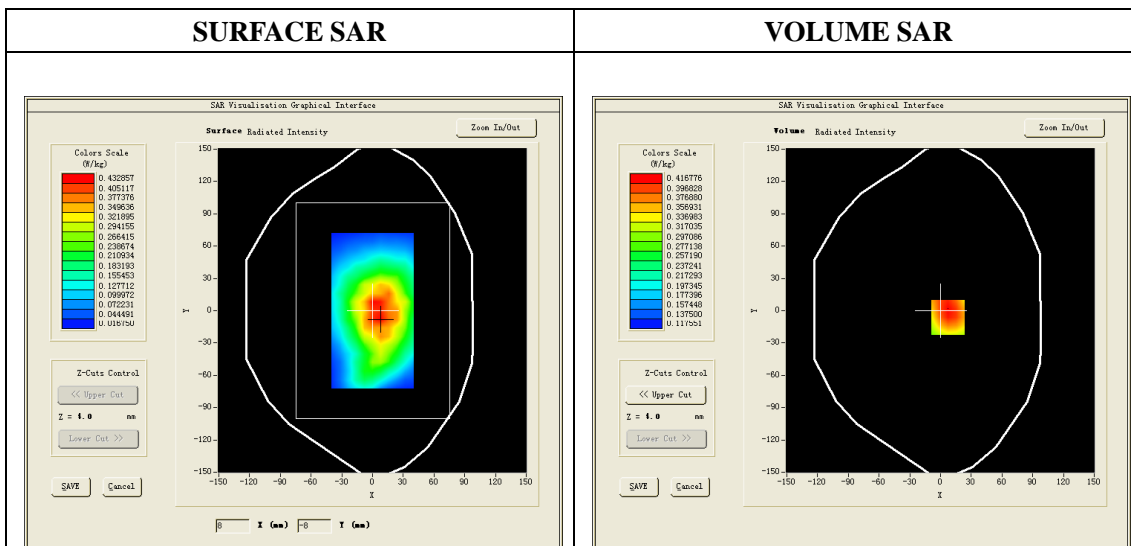
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	GSM850
Channels	251
Signal	GSM(Crest factor: 1:8)

B. SAR Measurement Results

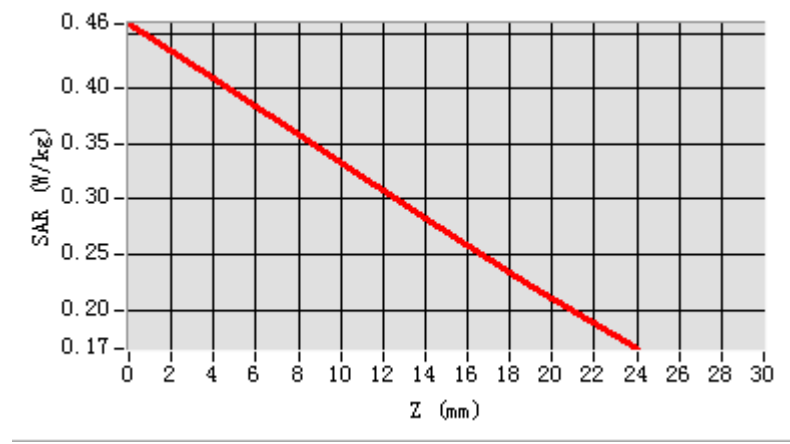
Frequency (MHz)	848.8
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	-1.440000
ConvF:	5.67



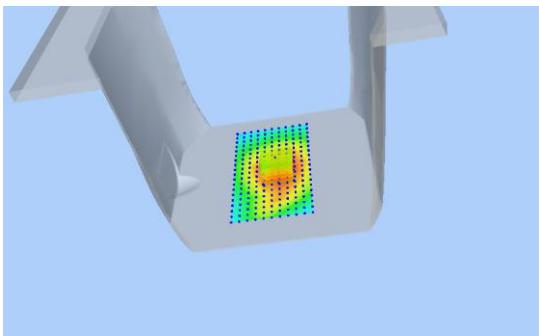
Maximum location: X=7.00, Y=-6.00

SAR 10g (W/Kg)	0.336954
SAR 1g (W/Kg)	0.437412

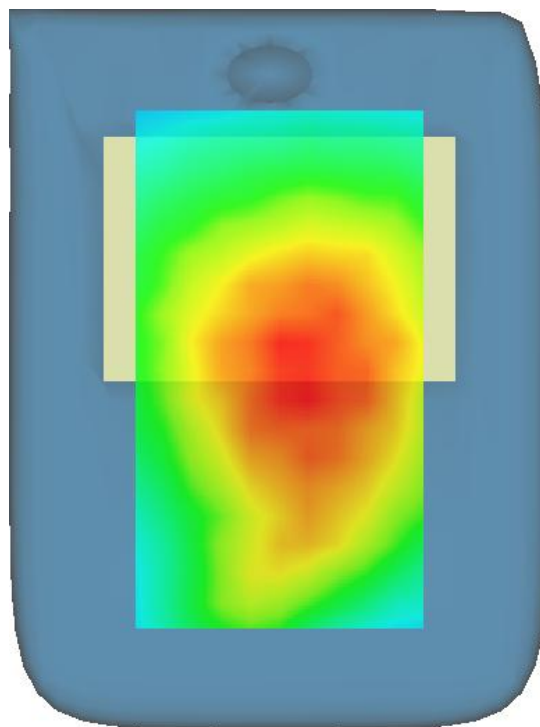
Z axis scan



3D screen shot



Hot spot position



GSM850, Edge C, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 32 seconds

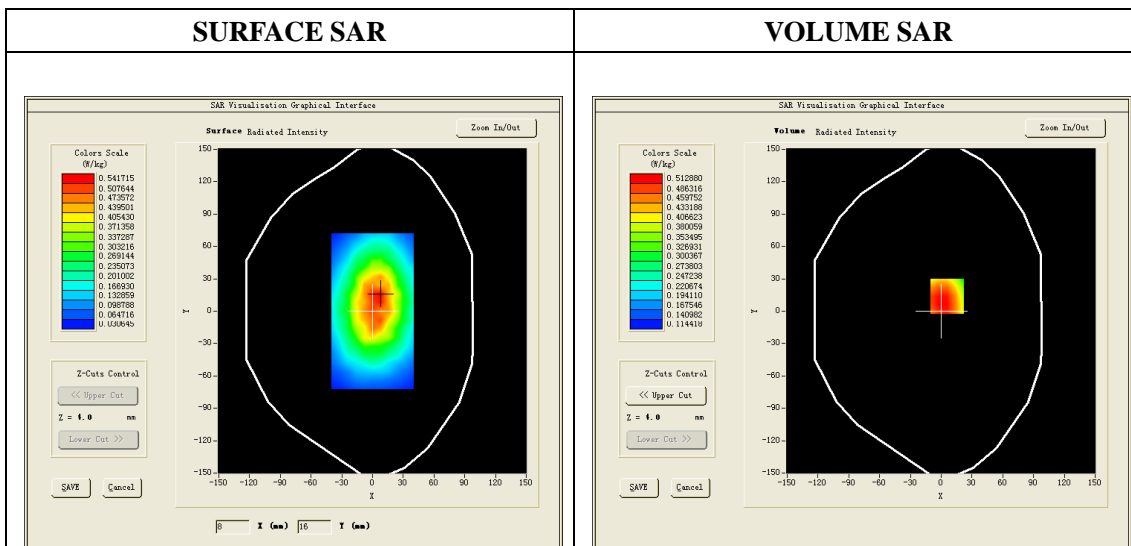
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Edge C
Band	GSM850
Channels	128
Signal	GSM (Crest factor: 1:8)

B. SAR Measurement Results

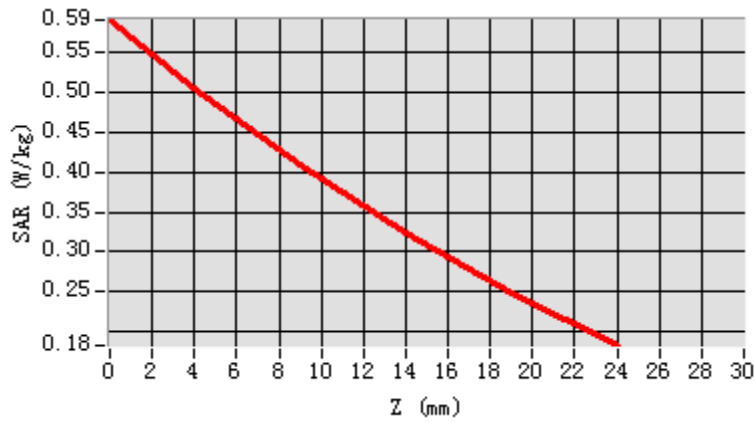
Frequency (MHz)	824.2
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	-1.120000
ConvF:	5.67



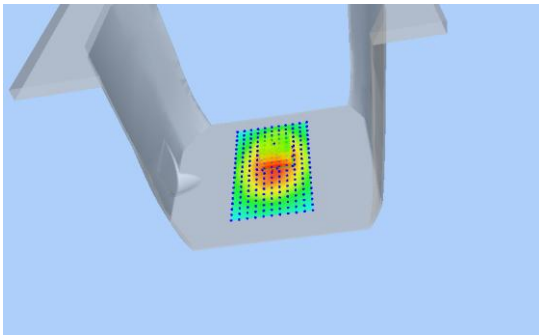
Maximum location: X=6.00, Y=14.00

SAR 10g (W/Kg)	0.413491
SAR 1g (W/Kg)	0.550472

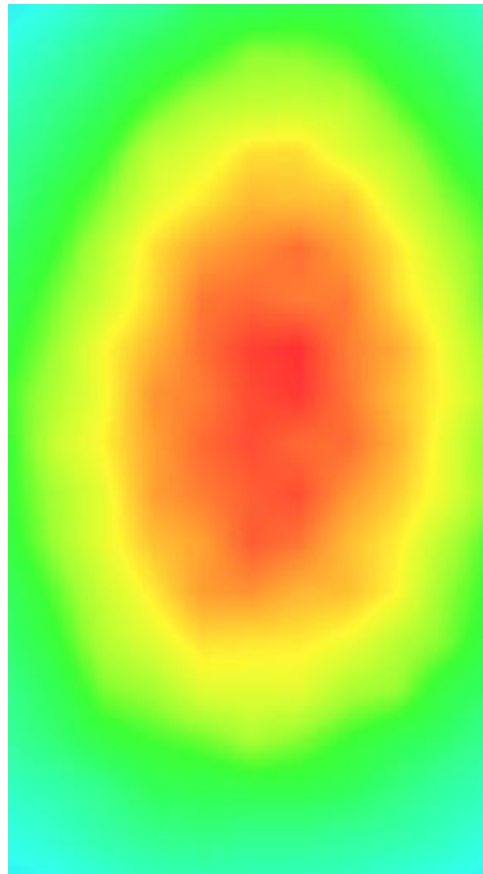
Z axis scan



3D screen shot



Hot spot position



GPRS 850, Back, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 33 seconds

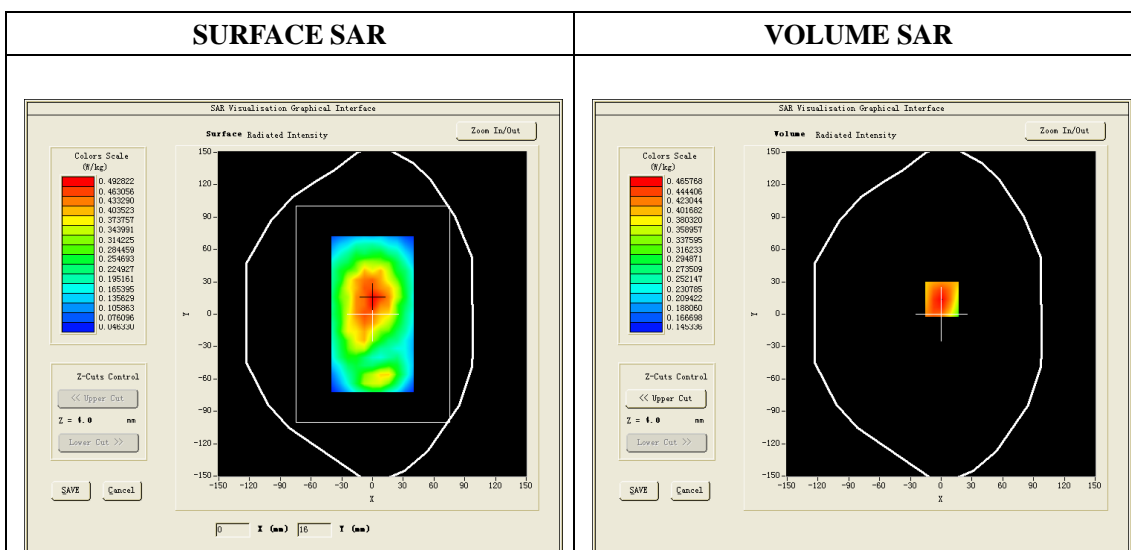
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	CUSTOM (GPRS850_4Tx)
Channels	251
Signal	GPRS(Crest factor: 1:2)

B.SAR Measurement Results

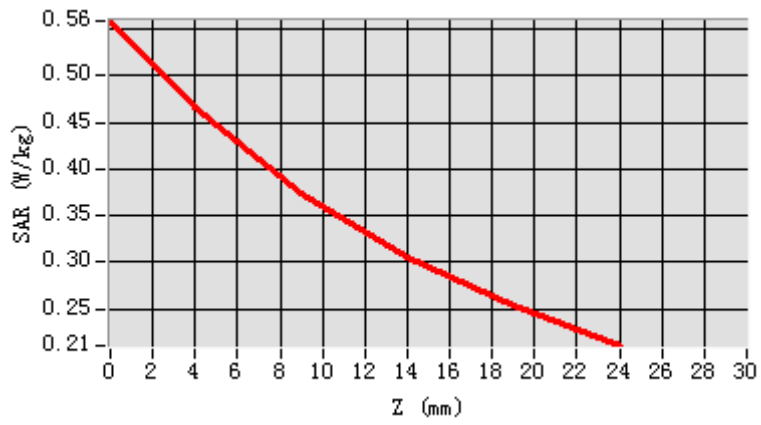
Frequency (MHz)	848.8
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	-0.990000
ConvF:	5.67



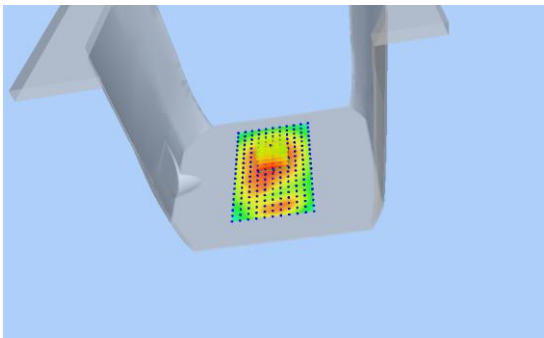
Maximum location: X=1.00, Y=14.00

SAR 10g (W/Kg)	0.348725
SAR 1g (W/Kg)	0.457321

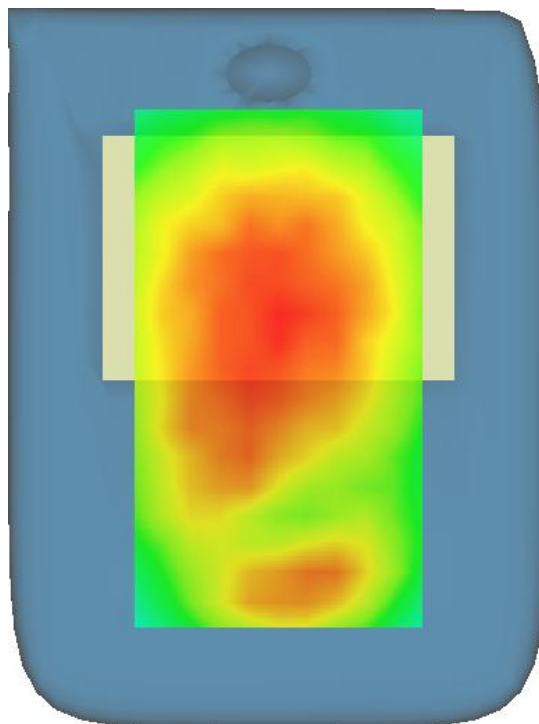
Z axis scan



3D screen shot



Hot spot position



GPRS 850, Edge C, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 33 seconds

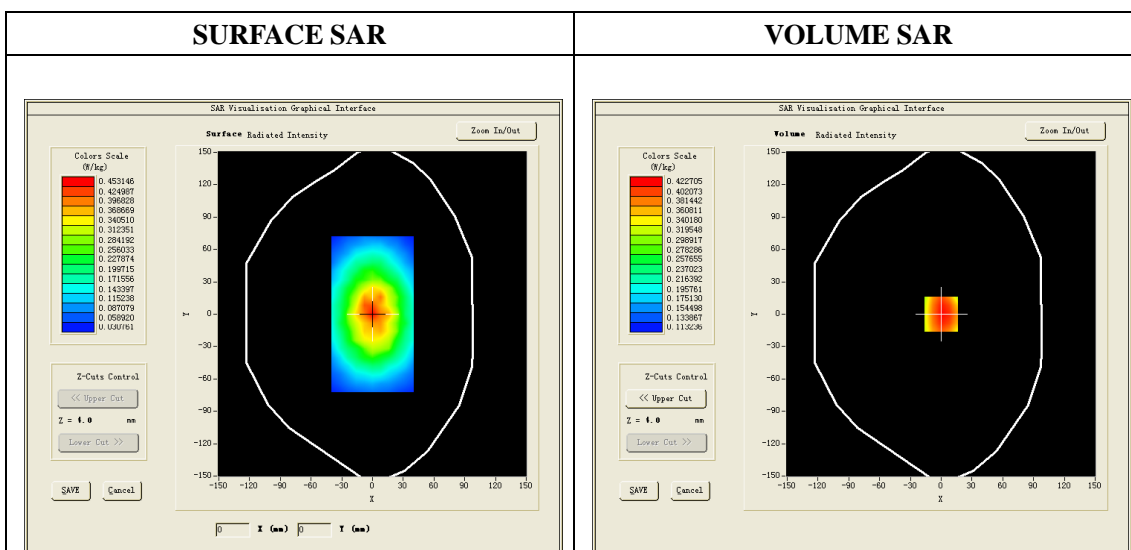
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Edge C
Band	CUSTOM (GPRS850_4Tx)
Channels	128
Signal	GPRS (Crest factor: 1:2)

B.SAR Measurement Results

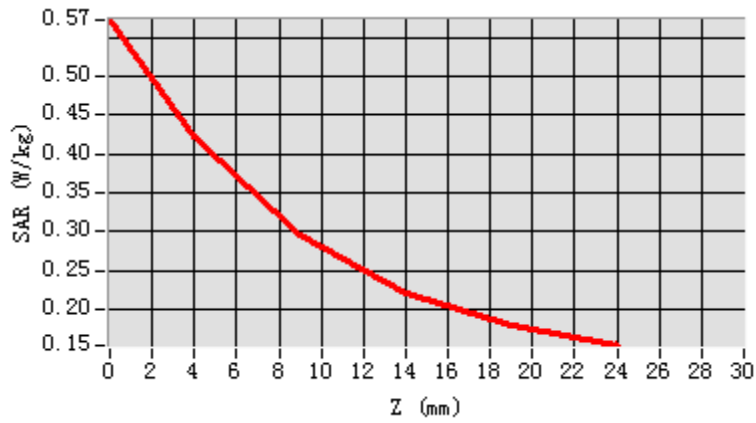
Frequency (MHz)	824.2
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	1.100000
ConvF:	5.67



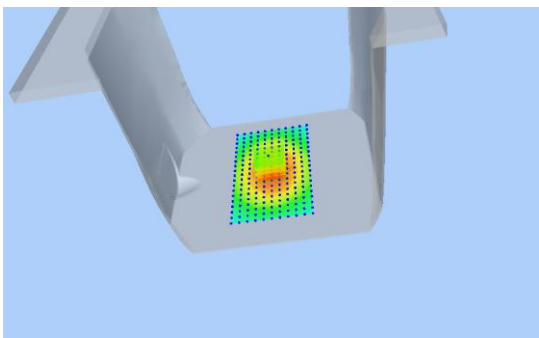
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.294897
SAR 1g (W/Kg)	0.415841

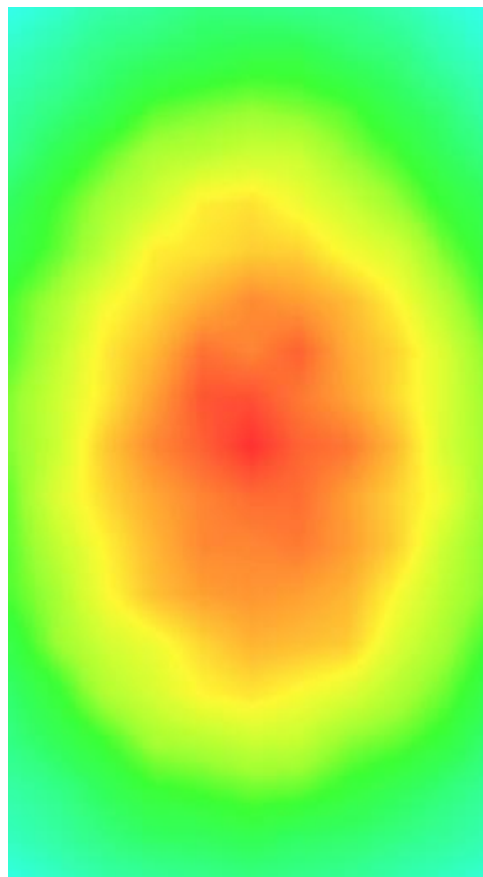
Z axis scan



3D screen shot



Hot spot position



GSM1900, Right Cheek, Middle

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 5 minutes 37 seconds

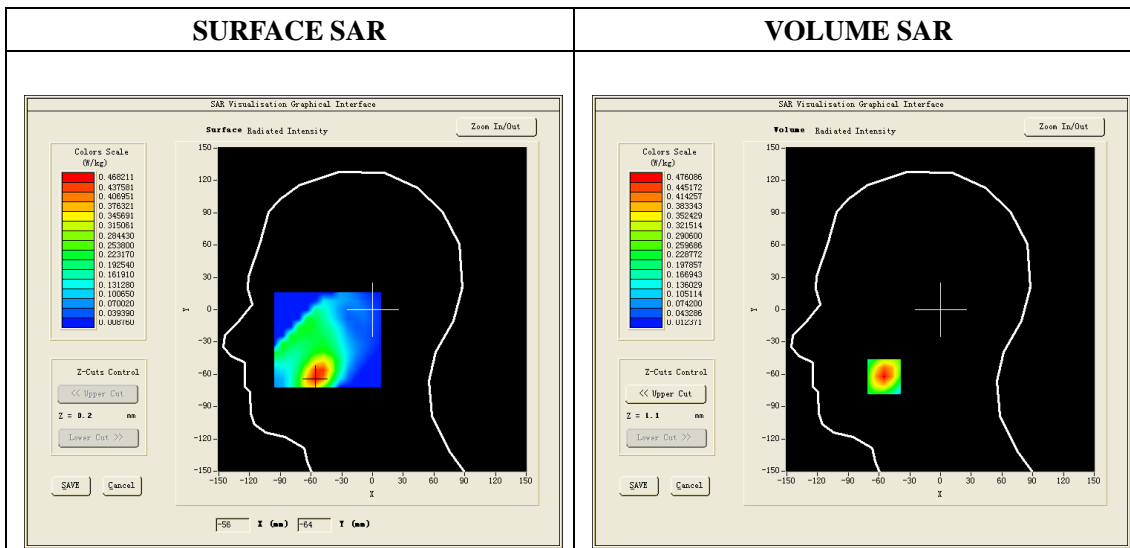
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	GSM1900
Channels	661
Signal	GSM (Crest factor: 1:8)

B.SAR Measurement Results

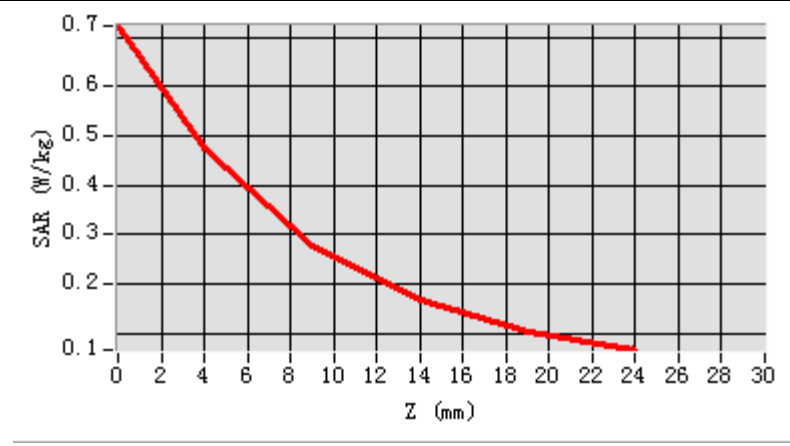
Frequency (MHz)	1880.0
Relative permittivity (real part)	39.878646
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	1.4198057
Variation (%)	-0.010000
ConvF:	5.48



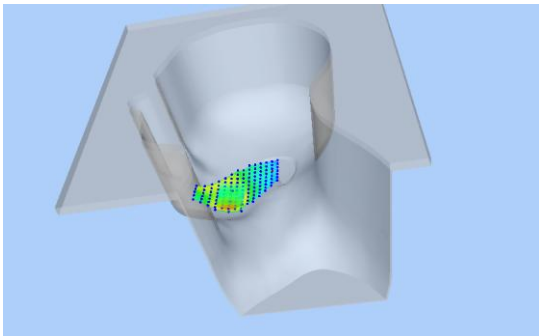
Maximum location: X=-55.00, Y=-62.00

SAR 10g (W/Kg)	0.247214
SAR 1g (W/Kg)	0.445370

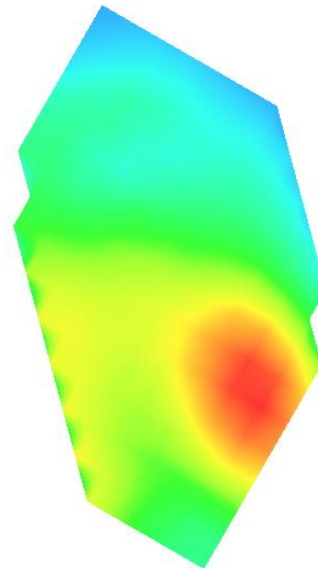
Z axis scan



3D screen shot



Hot spot position



GSM1900, Left Cheek, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 5 minutes 51 seconds

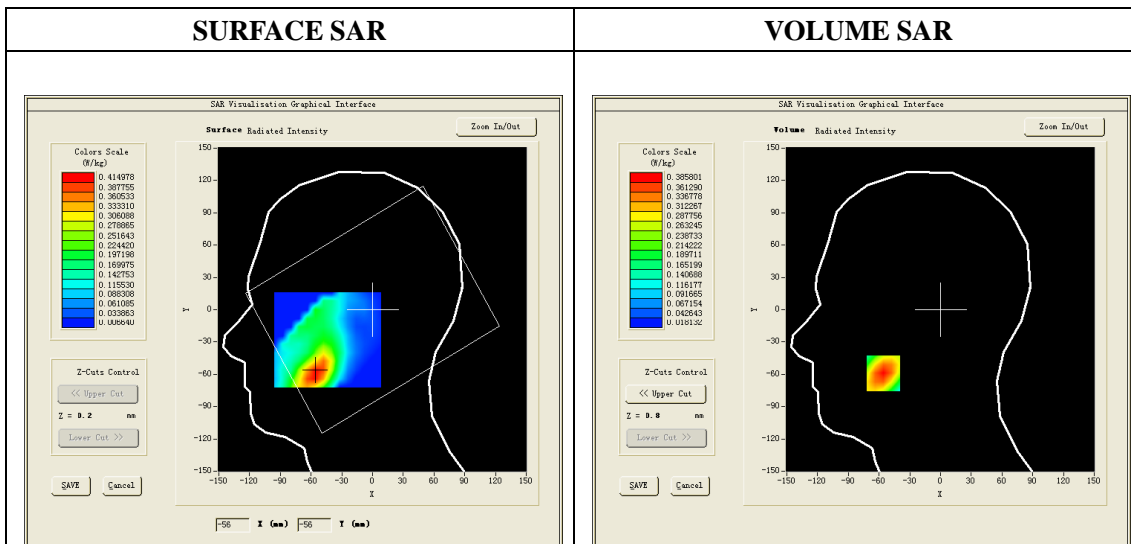
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	GSM1900
Channels	512
Signal	GSM (Crest factor: 1:8)

B. SAR Measurement Results

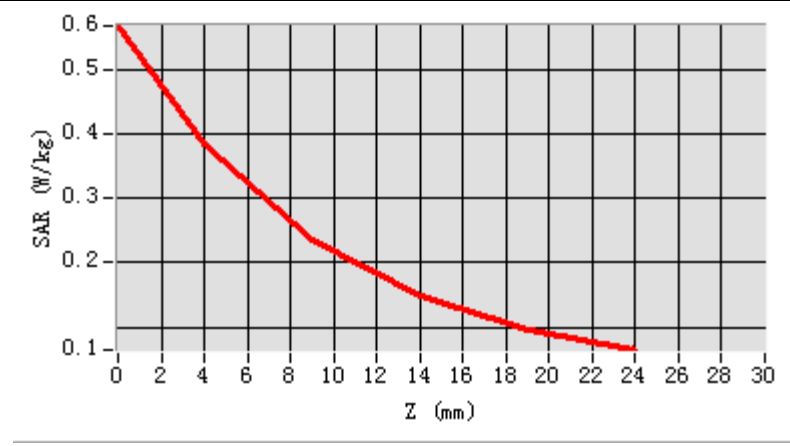
Frequency (MHz)	1850.2
Relative permittivity (real part)	39.878646
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	1.4198057
Variation (%)	-3.780000
ConvF:	5.48



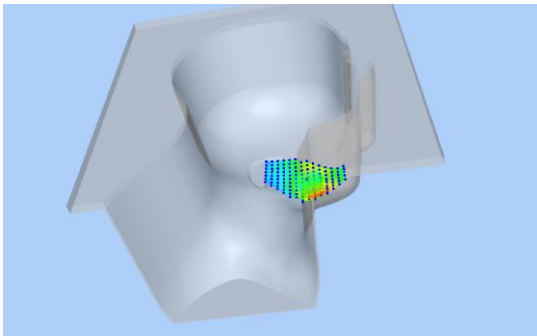
Maximum location: X=-56.00, Y=-59.00

SAR 10g (W/Kg)	0.217646
SAR 1g (W/Kg)	0.364448

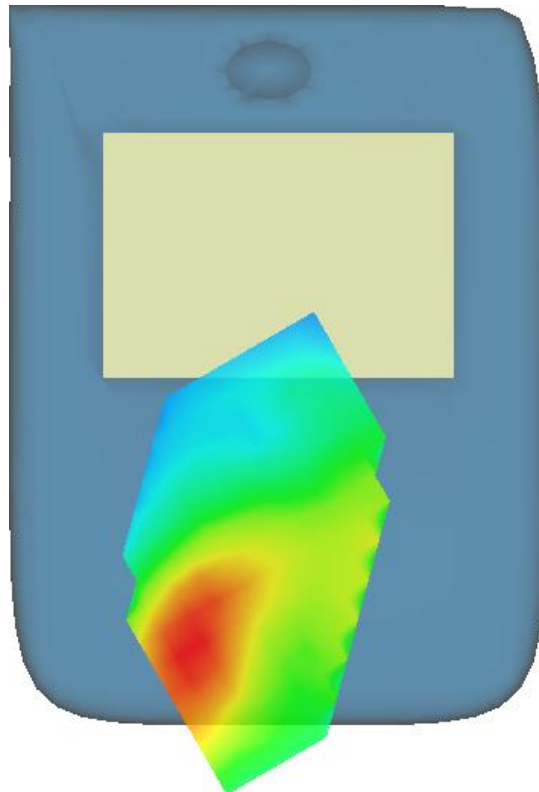
Z axis scan



3D screen shot



Hot spot position



GSM1900, Back, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 6 minutes 52 seconds

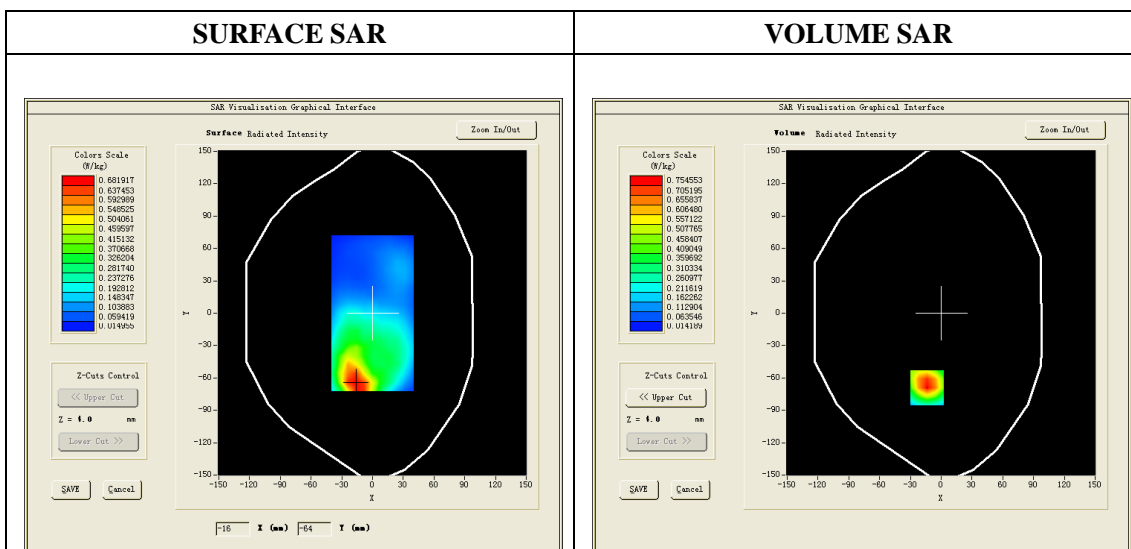
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	GSM1900
Channels	512
Signal	GSM (Crest factor: 1:8)

B. SAR Measurement Results

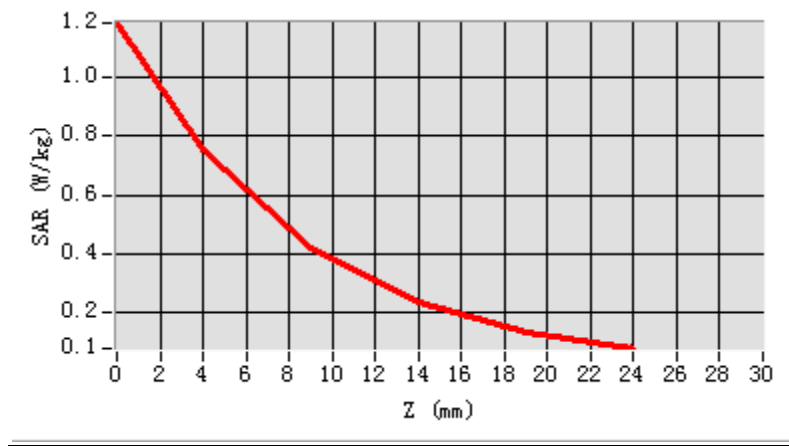
Frequency (MHz)	1850.2
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-1.670000
ConvF:	5.64



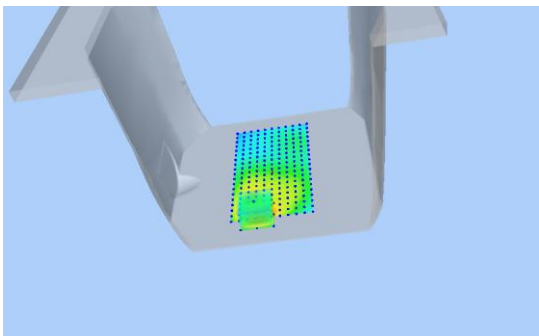
Maximum location: X=-14.00, Y=-69.00

SAR 10g (W/Kg)	0.412748
SAR 1g (W/Kg)	0.779880

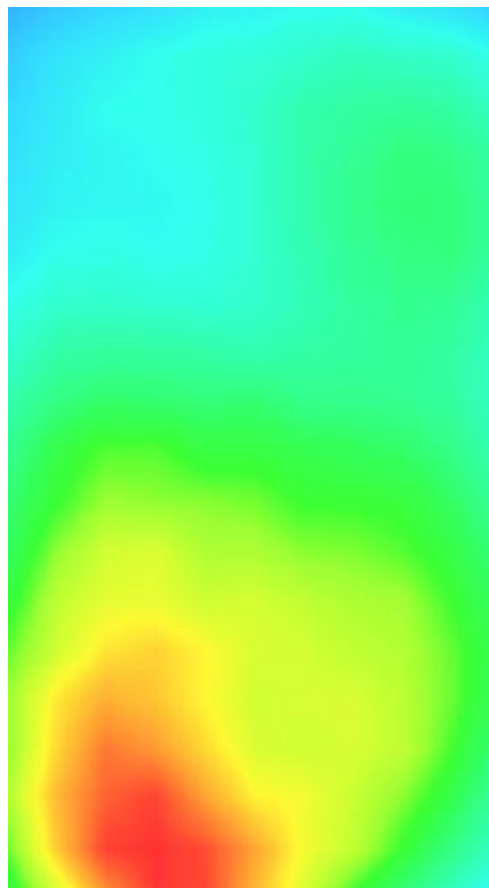
Z axis scan



3D screen shot



Hot spot position



GSM1900, Edge C, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 6 minutes 52 seconds

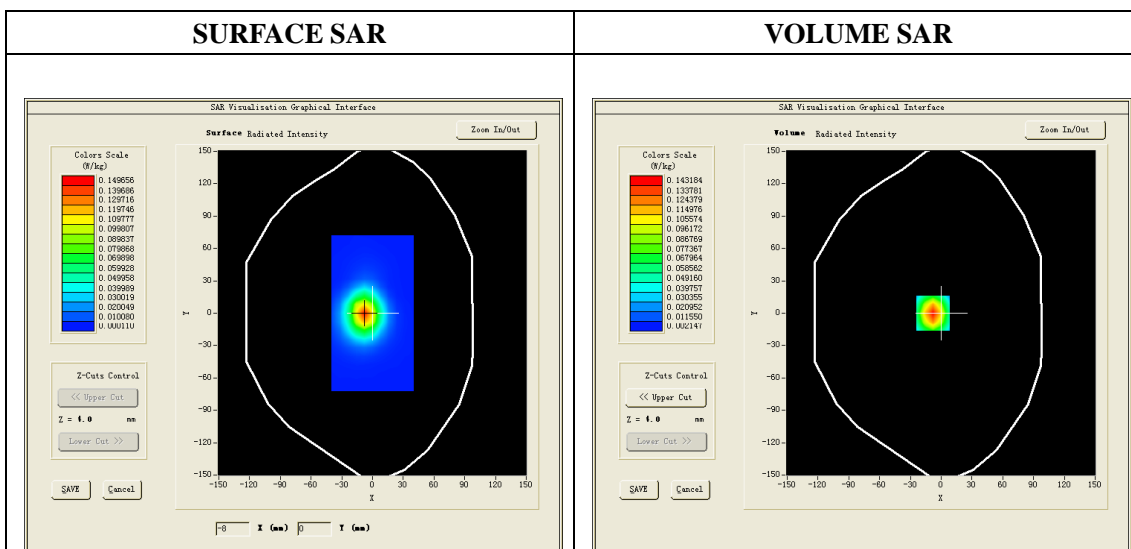
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Edge C
Band	GSM1900
Channels	810
Signal	GSM(Crest factor: 1:8)

B. SAR Measurement Results

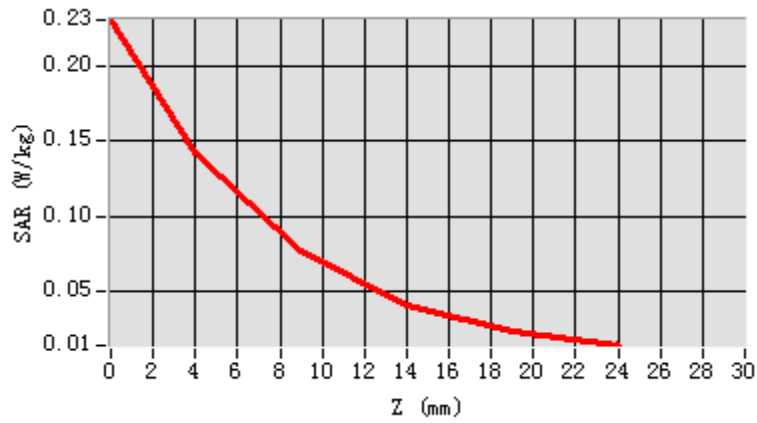
Frequency (MHz)	1909.8
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-2.080000
ConvF:	5.64



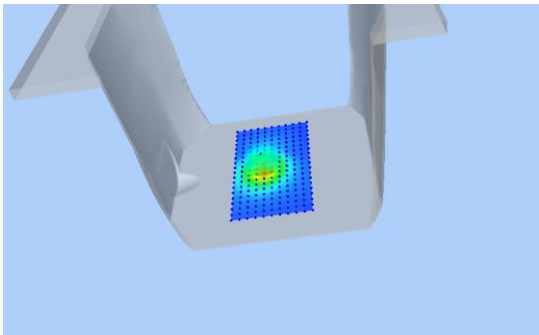
Maximum location: X=-8.00, Y=0.00

SAR 10g (W/Kg)	0.071469
SAR 1g (W/Kg)	0.142826

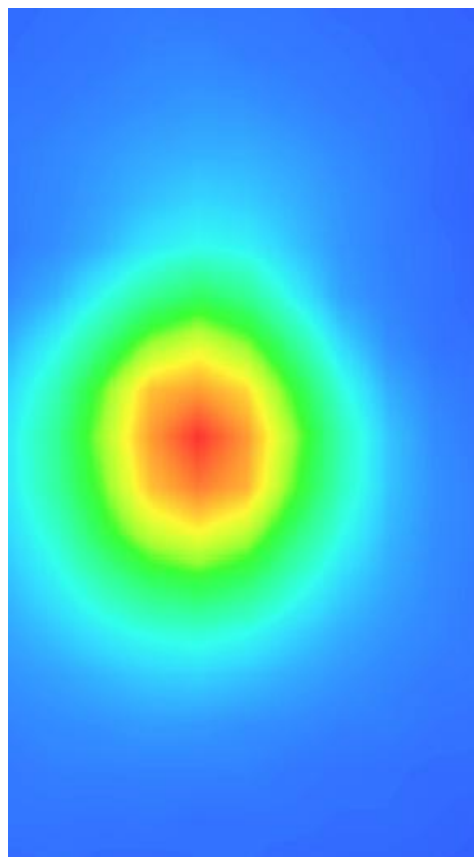
Z axis scan



3D screen shot



Hot spot position



GPRS1900, Back, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 31 seconds

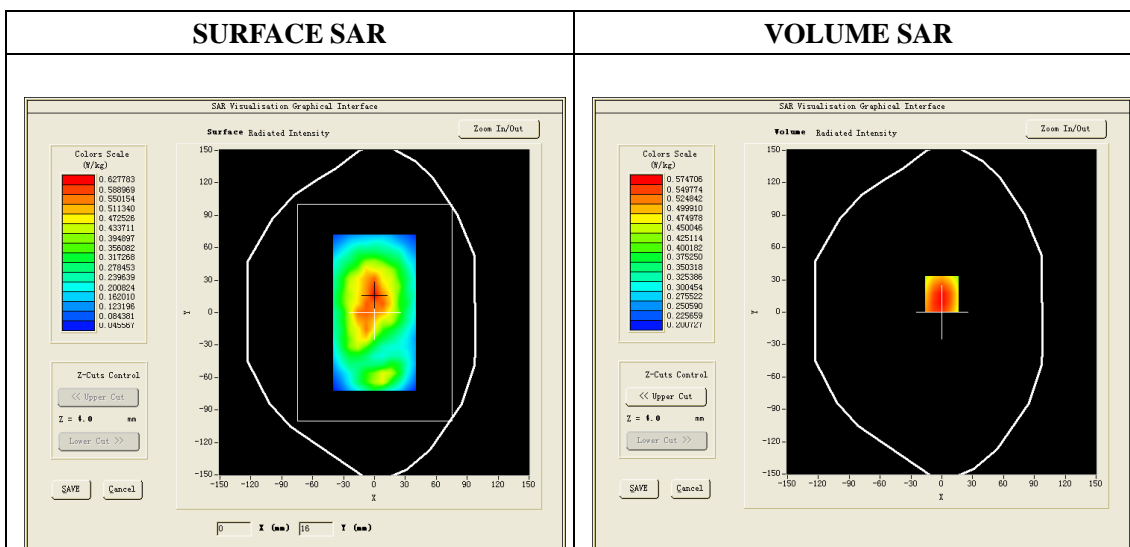
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	CUSTOM (GPRS1900_4Tx)
Channels	512
Signal	GPRS (Crest factor:1:2)

B. SAR Measurement Results

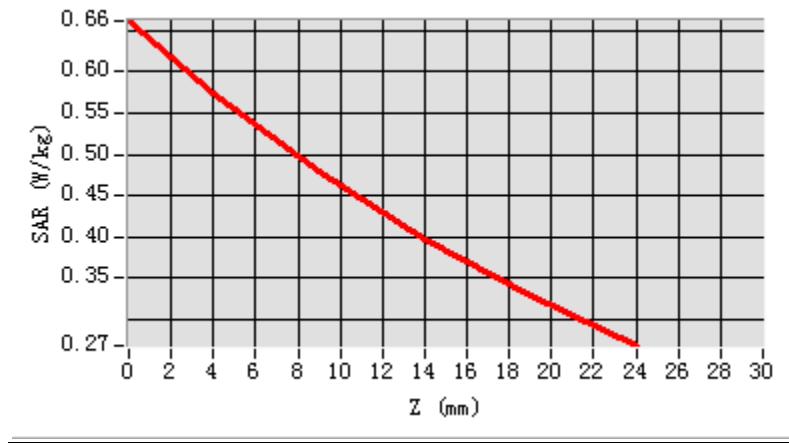
Frequency (MHz)	1850.2
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-4.040000
ConvF:	5.64



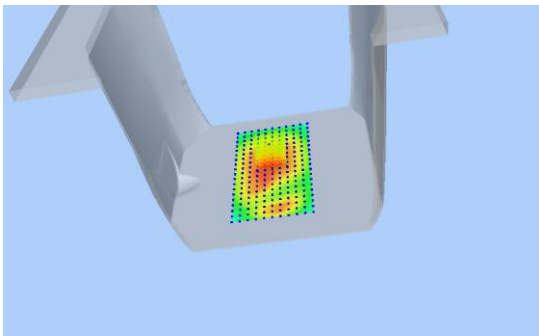
Maximum location: X=0.00, Y=17.00

SAR 10g (W/Kg)	0.443744
SAR 1g (W/Kg)	0.568046

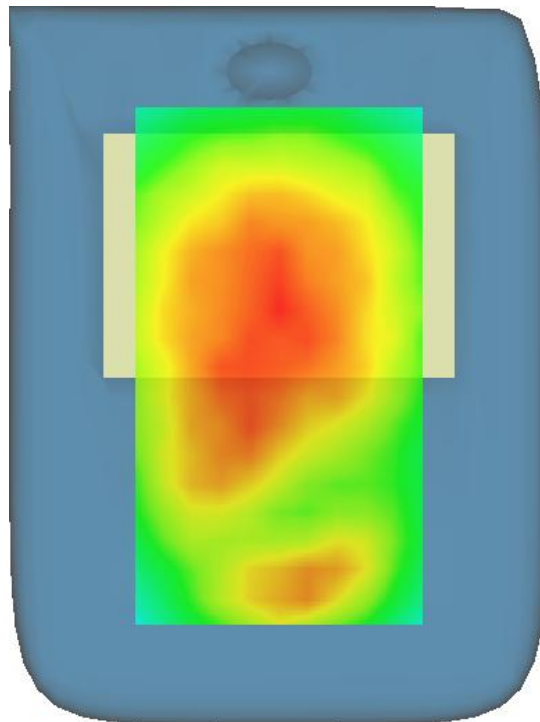
Z axis scan



3D screen shot



Hot spot position



GPRS1900, Edge C, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 31 seconds

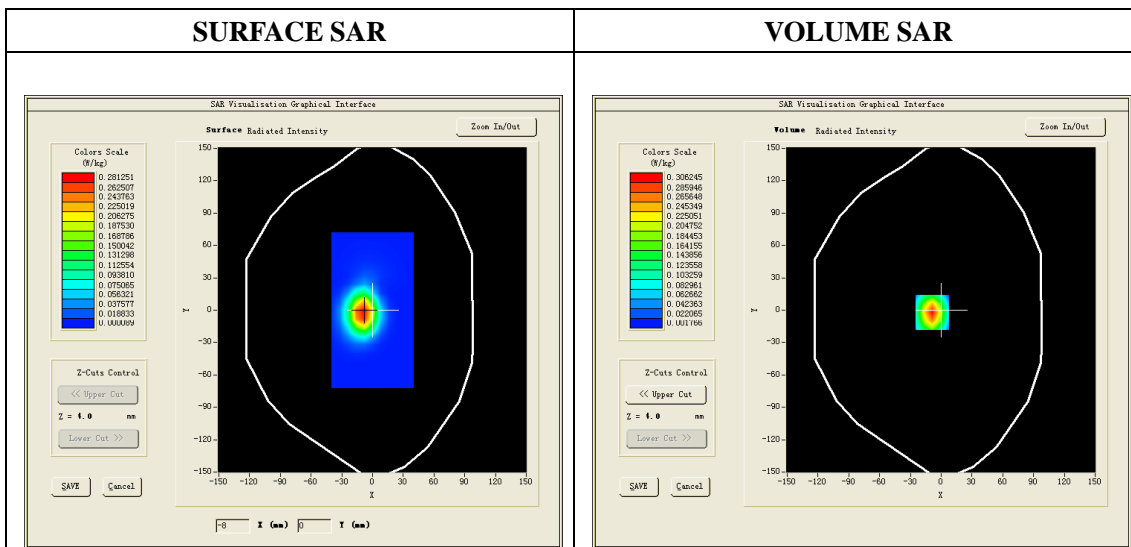
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	CUSTOM (GPRS1900_4Tx)
Channels	512
Signal	GPRS (Crest factor: 1:2)

B. SAR Measurement Results

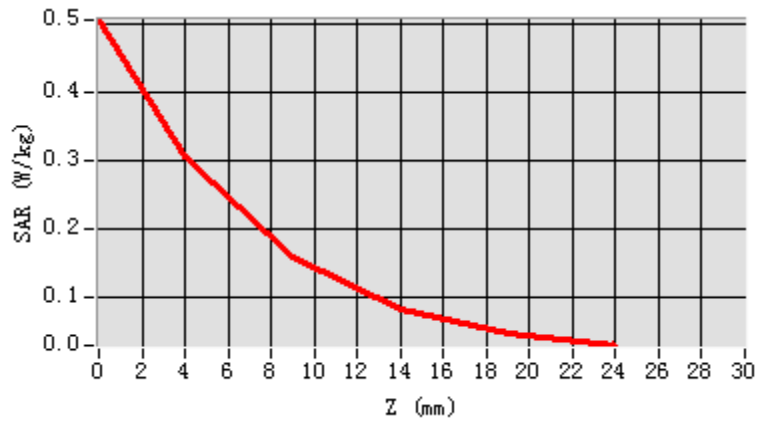
Frequency (MHz)	1850.2
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-3.740000
ConvF:	5.64



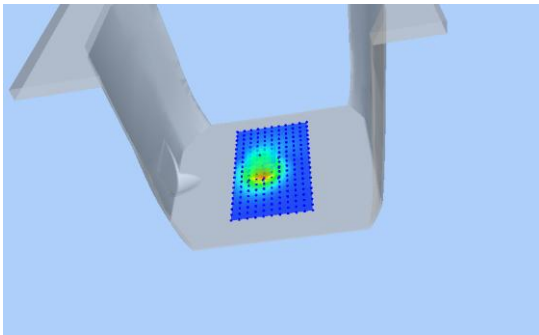
Maximum location: X=-9.00, Y=-2.00

SAR 10g (W/Kg)	0.136097
SAR 1g (W/Kg)	0.286388

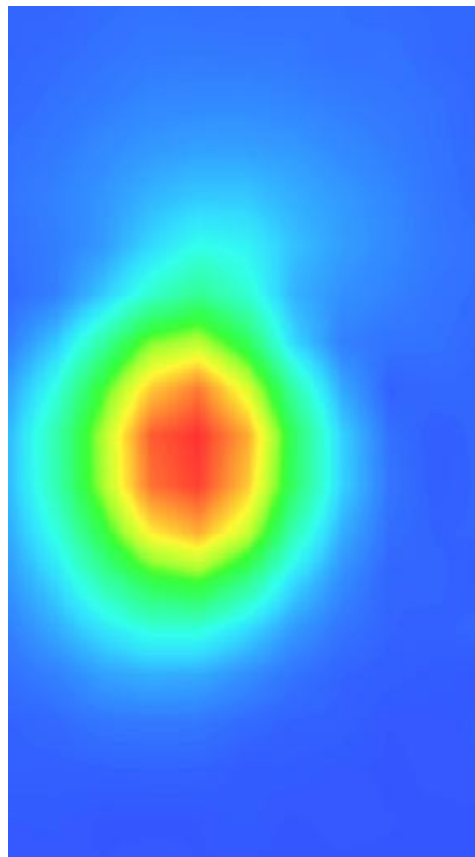
Z axis scan



3D screen shot



Hot spot position



WCDMA850, Right Cheek, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 5 minutes 9 seconds

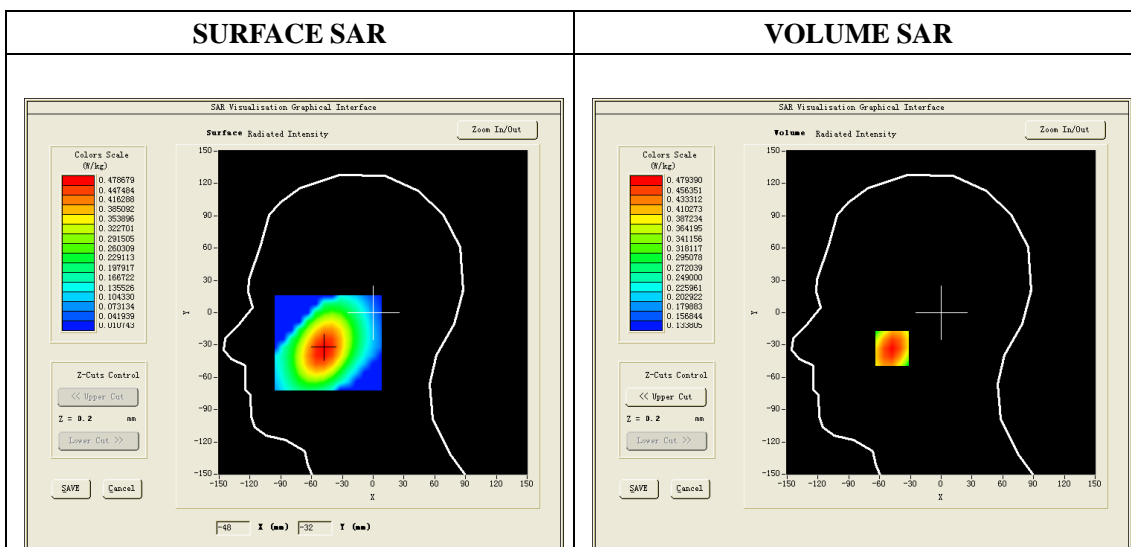
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	Band5_WCDMA850
Channels	4233
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

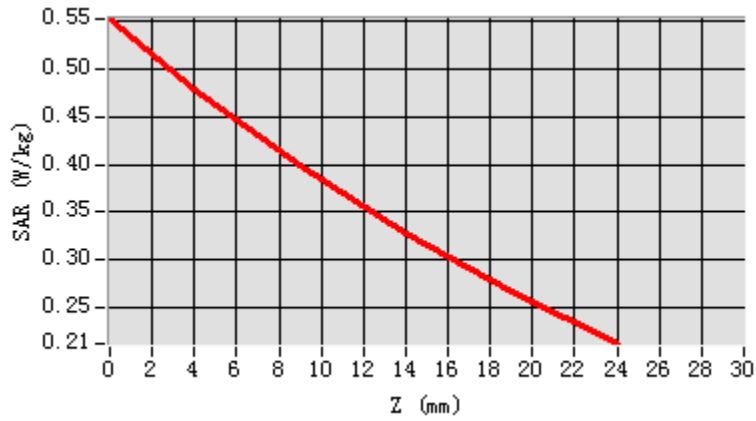
Frequency (MHz)	846.6
Relative permittivity (real part)	41.281327
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	0.941371
Variation (%)	0.410000
ConvF:	5.52



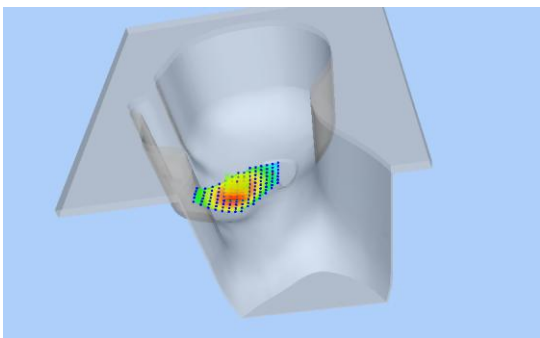
Maximum location: X=-48.00, Y=-33.00

SAR 10g (W/Kg)	0.358785
SAR 1g (W/Kg)	0.463510

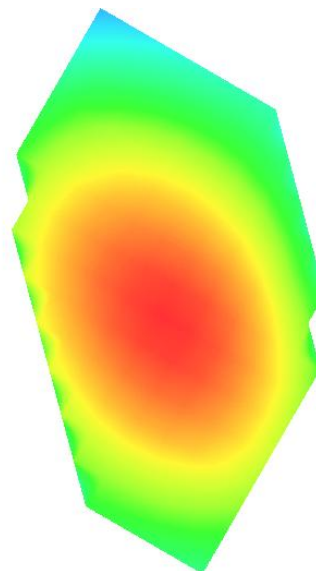
Z axis scan



3D screen shot



Hot spot position



WCDMA850, Left Cheek, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 5 minutes 19 seconds

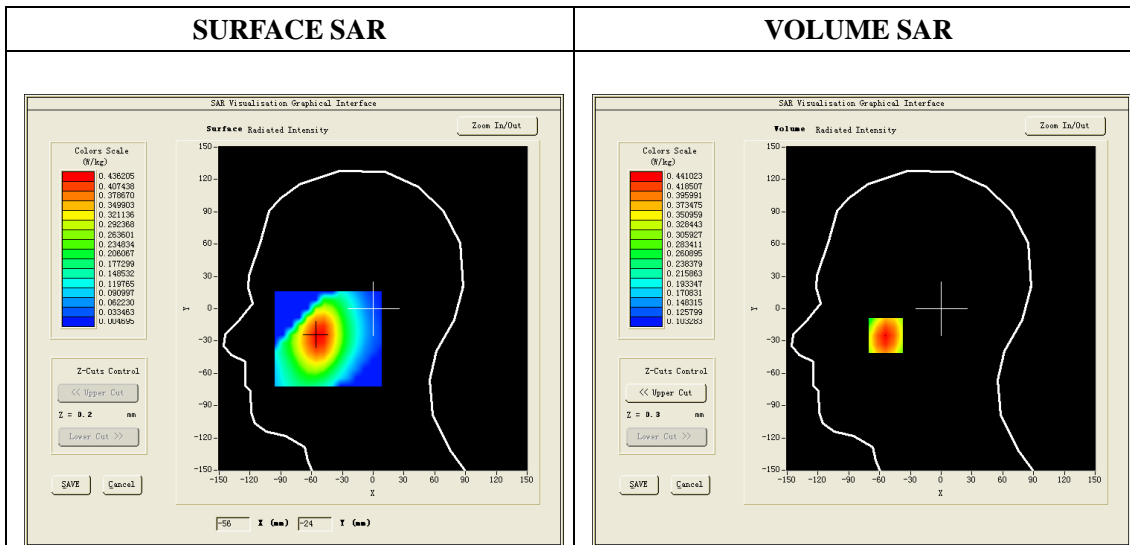
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	Band5_WCDMA850
Channels	4233
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

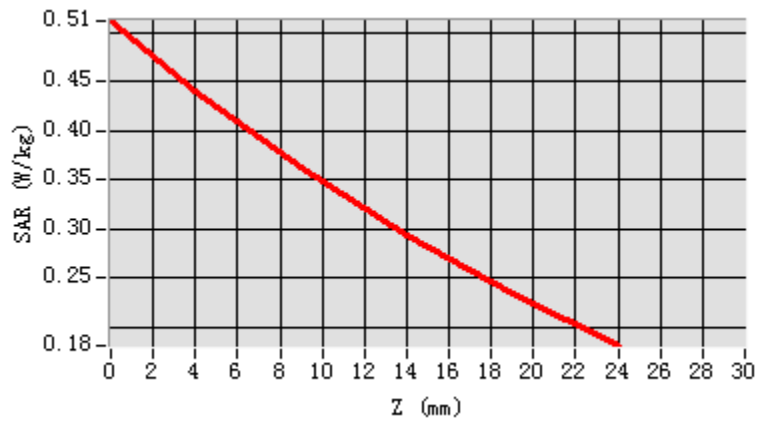
Frequency (MHz)	846.6
Relative permittivity (real part)	41.281327
Relative permittivity (imaginary part)	15.067700
Conductivity (S/m)	0.941371
Variation (%)	-1.770000
ConvF:	5.52



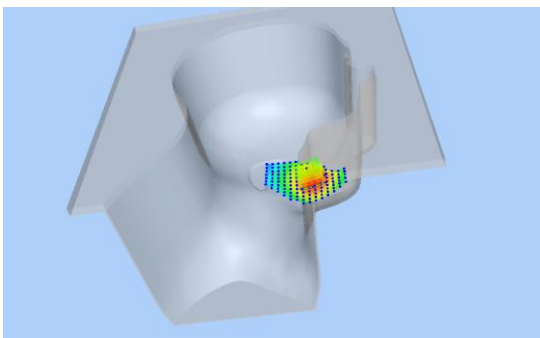
Maximum location: X=-54.00, Y=-25.00

SAR 10g (W/Kg)	0.321177
SAR 1g (W/Kg)	0.424790

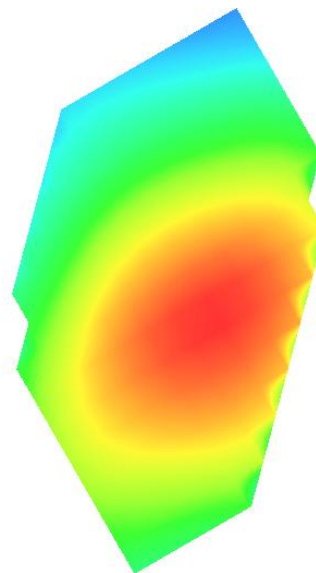
Z axis scan



3D screen shot



Hot spot position



WCDMA850, Back, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 26 seconds

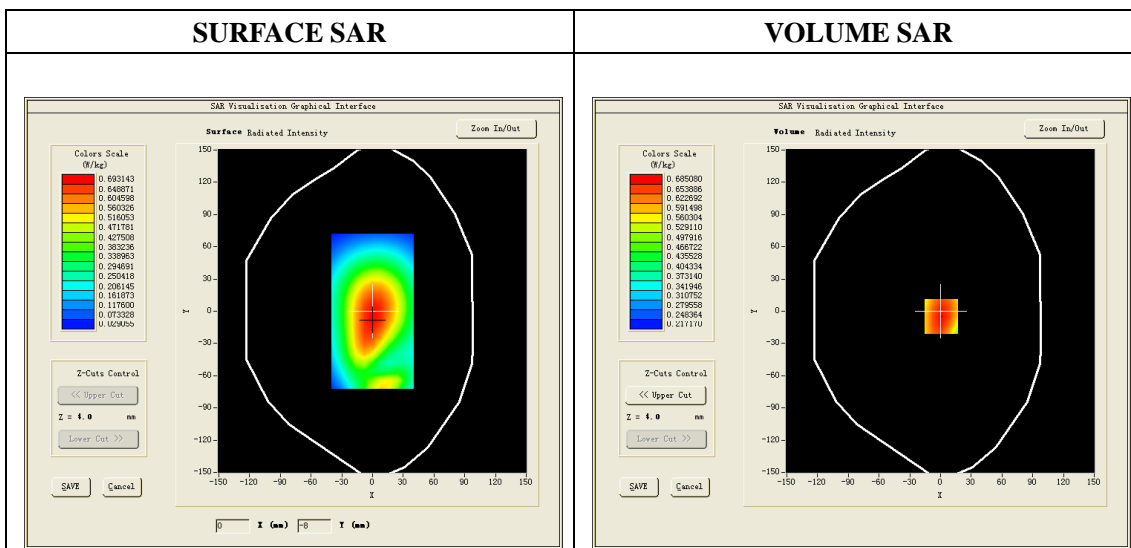
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	Band5_WCDMA850
Channels	4132
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

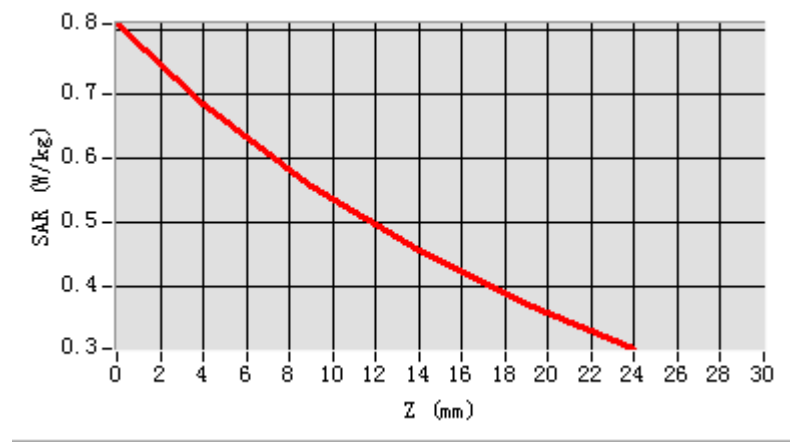
Frequency (MHz)	826.4
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	-1.480000
ConvF:	5.67



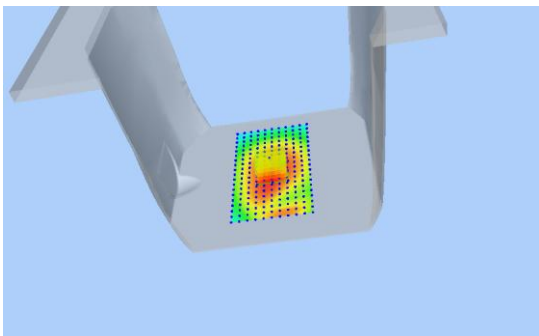
Maximum location: X=1.00, Y=-5.00

SAR 10g (W/Kg)	0.559976
SAR 1g (W/Kg)	0.718002

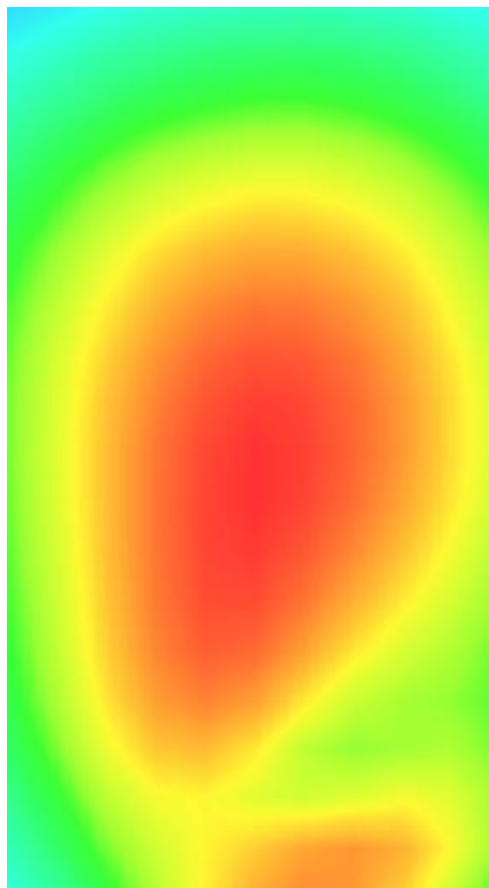
Z axis scan



3D screen shot



Hot spot position



WCDMA850, Edge C, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 26 seconds

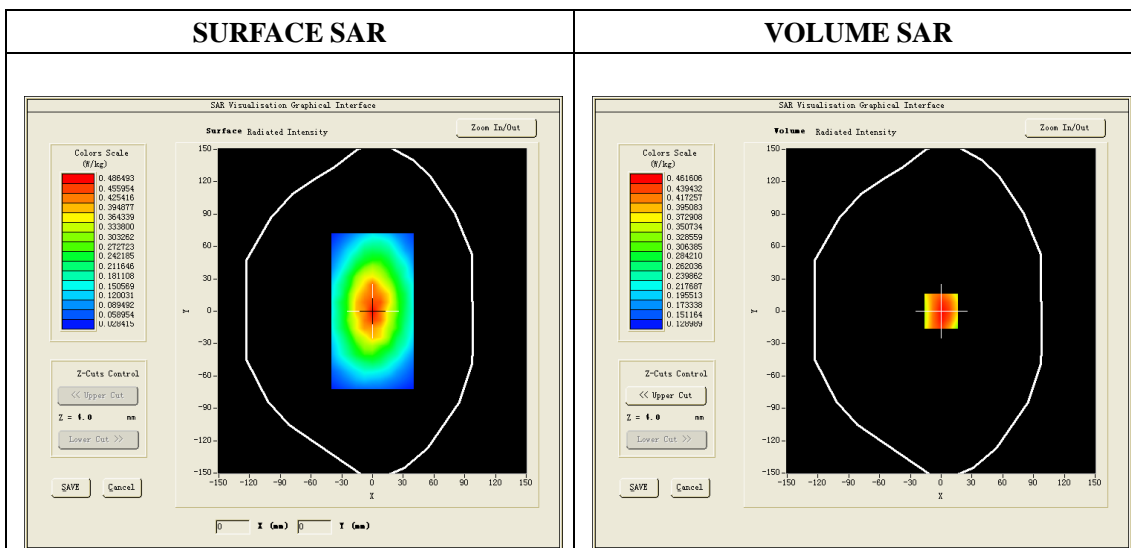
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Edge C
Band	Band5_WCDMA850
Channels	4233
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

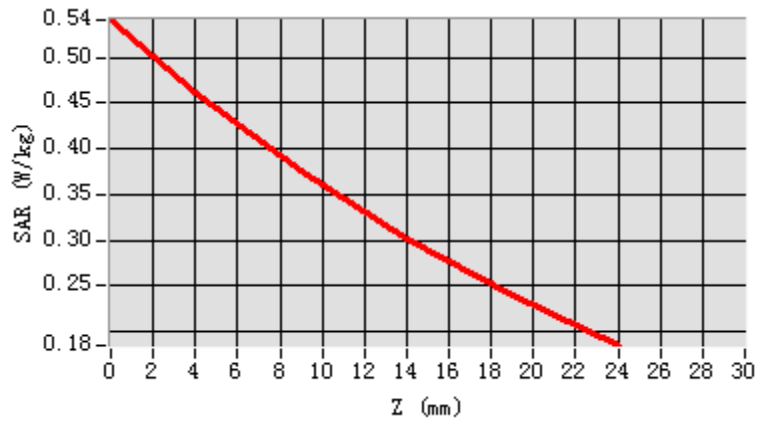
Frequency (MHz)	846.6
Relative permittivity (real part)	55.380112
Relative permittivity (imaginary part)	21.709999
Conductivity (S/m)	0.984352
Variation (%)	-0.240000
ConvF:	5.67



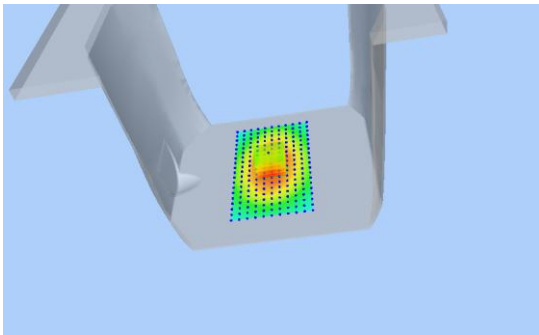
Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.367626
SAR 1g (W/Kg)	0.483109

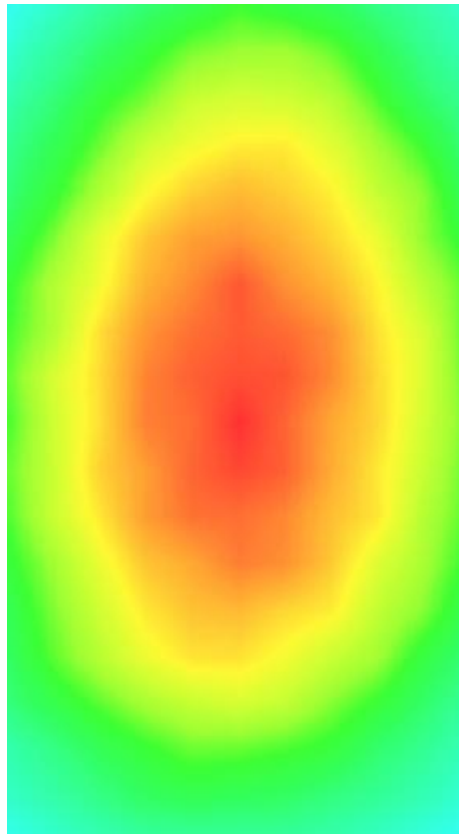
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Right Cheek, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 6 minutes 6 seconds

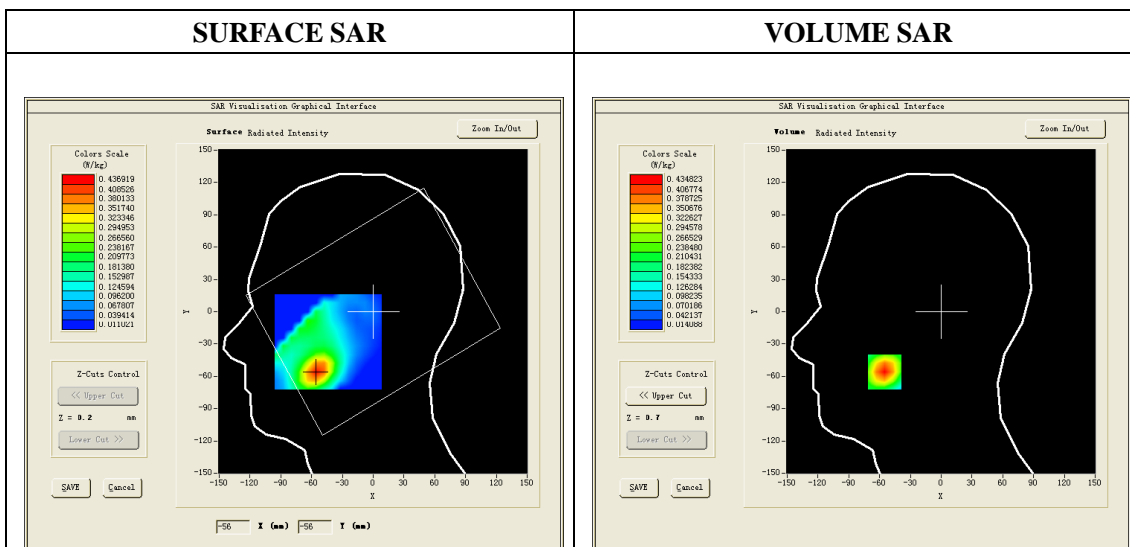
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

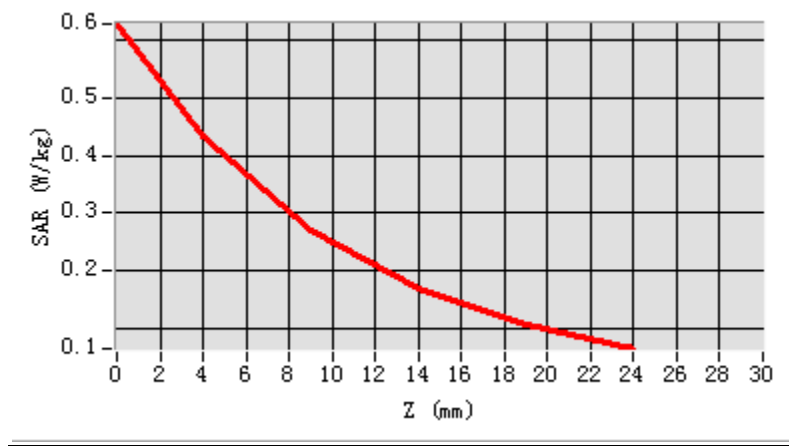
Frequency (MHz)	1852.4
Relative permittivity (real part)	39.878646
Relative permittivity (imaginary)	15.067700
Conductivity (S/m)	1.4198057
Variation (%)	0.300000
ConvF:	5.48



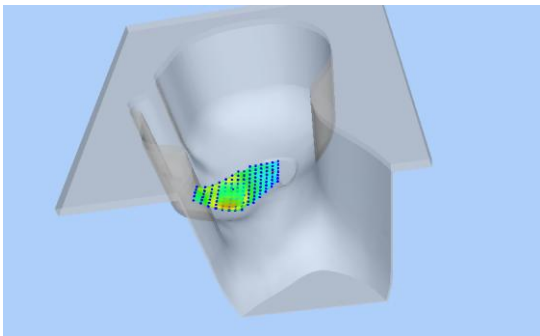
Maximum location: X=-55.00, Y=-56.00

SAR 10g (W/Kg)	0.229808
SAR 1g (W/Kg)	0.405366

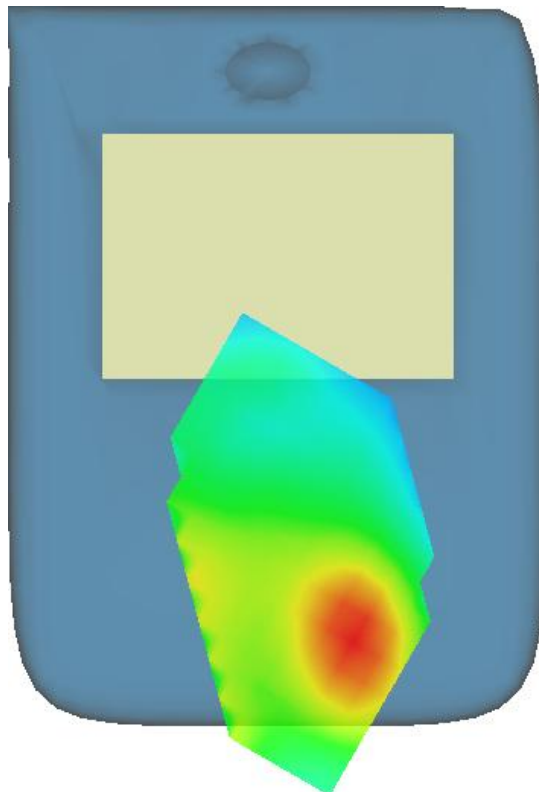
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Left Cheek, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 6 minutes 8 seconds

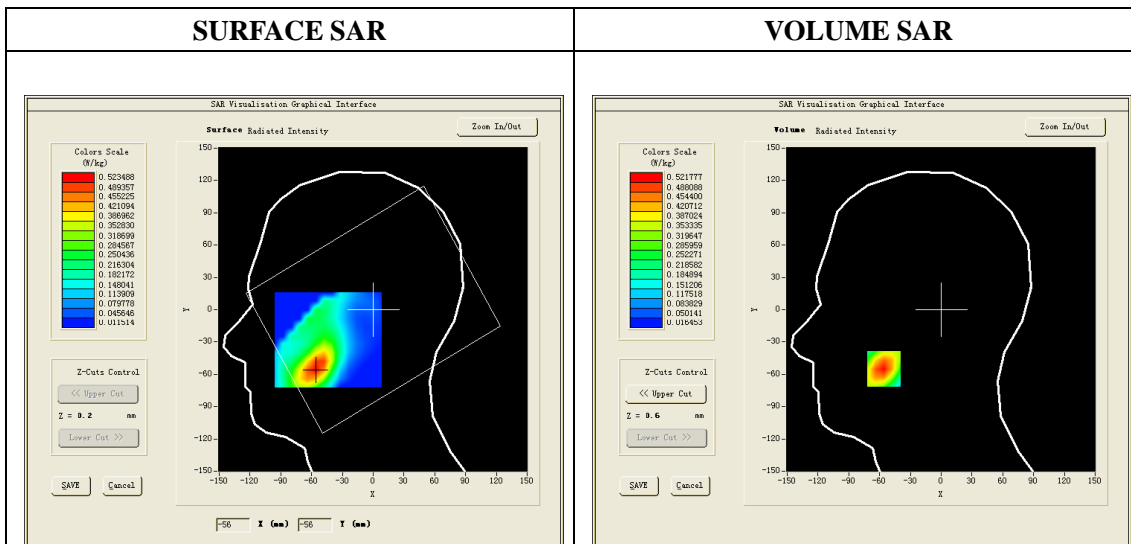
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

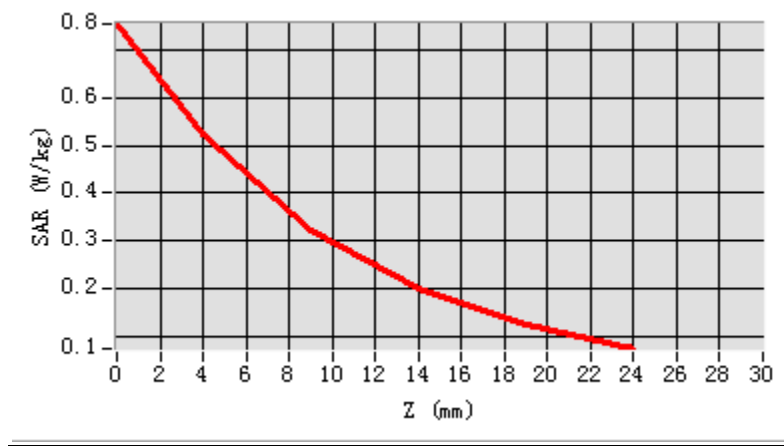
Frequency (MHz)	1852.4
Relative permittivity (real part)	39.878646
Relative permittivity (imaginary)	15.067700
Conductivity (S/m)	1.4198057
Variation (%)	0.340000
ConvF:	5.48



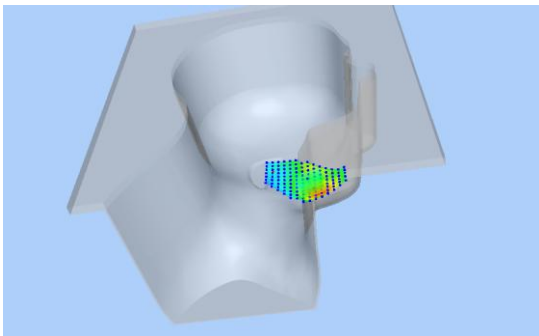
Maximum location: X=-56.00, Y=-55.00

SAR 10g (W/Kg)	0.284690
SAR 1g (W/Kg)	0.489976

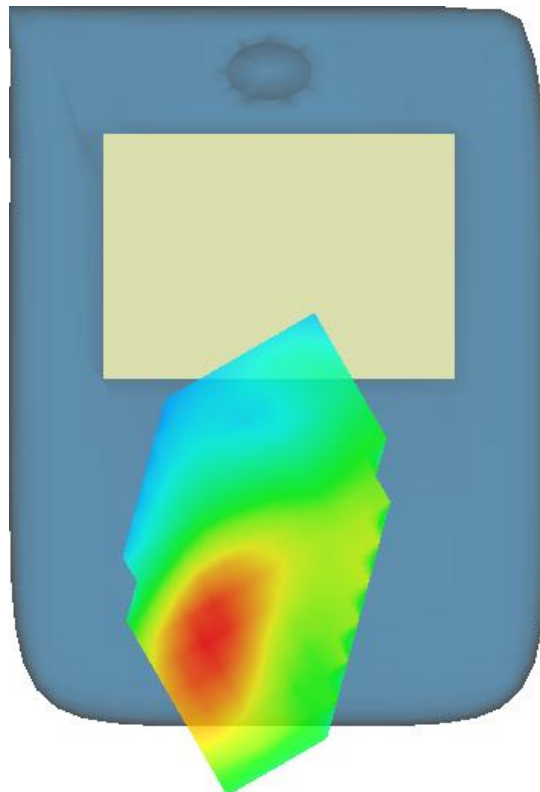
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Back, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 37 seconds

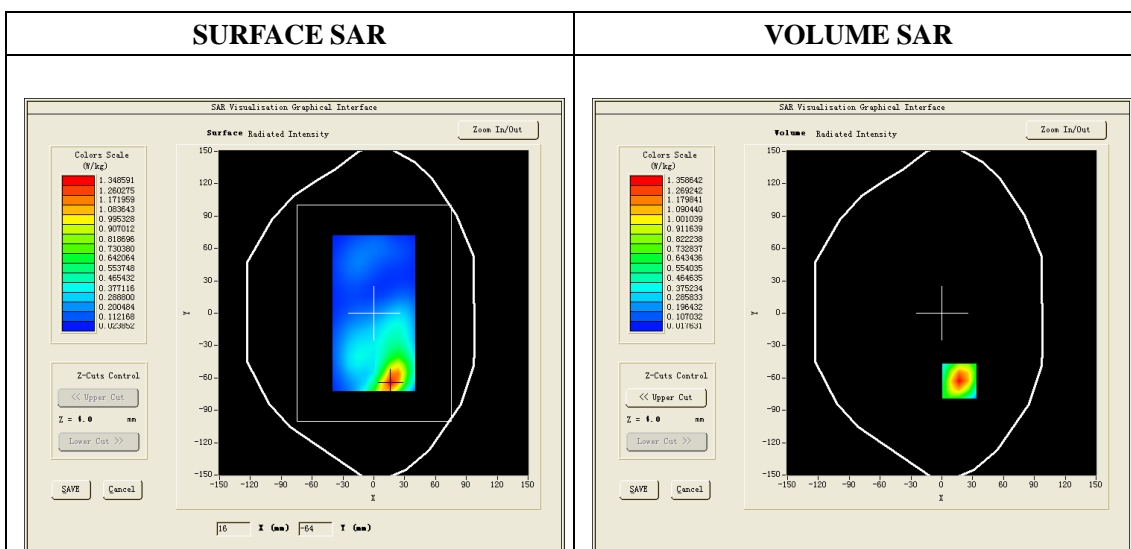
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

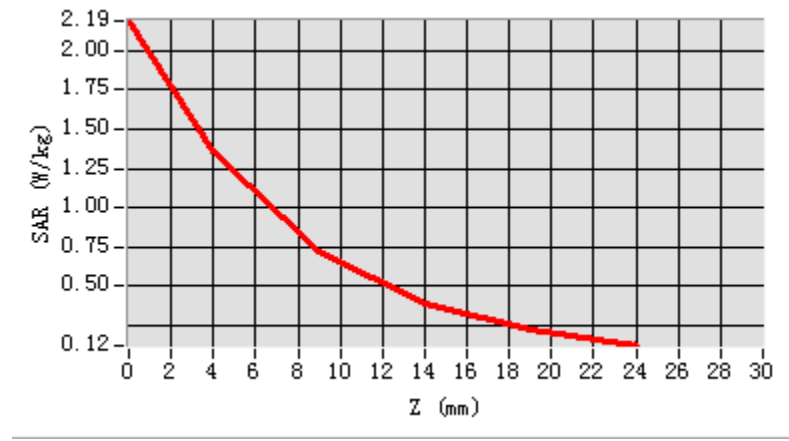
Frequency (MHz)	1852.4
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-0.670000
ConvF:	5.64



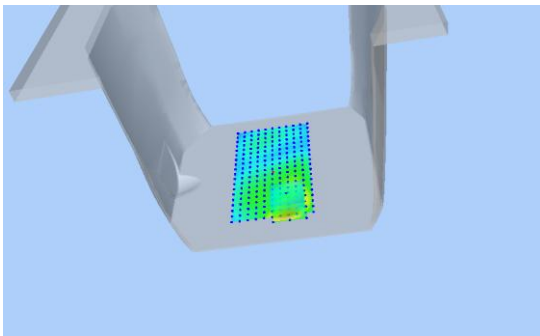
Maximum location: X=17.00, Y=-63.00

SAR 10g (W/Kg)	0.639909
SAR 1g (W/Kg)	1.259552

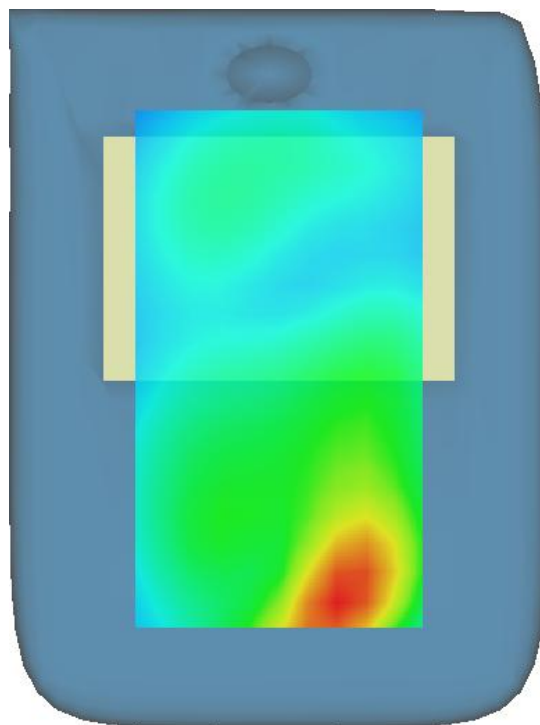
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Back, Low, repeat measurement

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 6 minutes 52 seconds

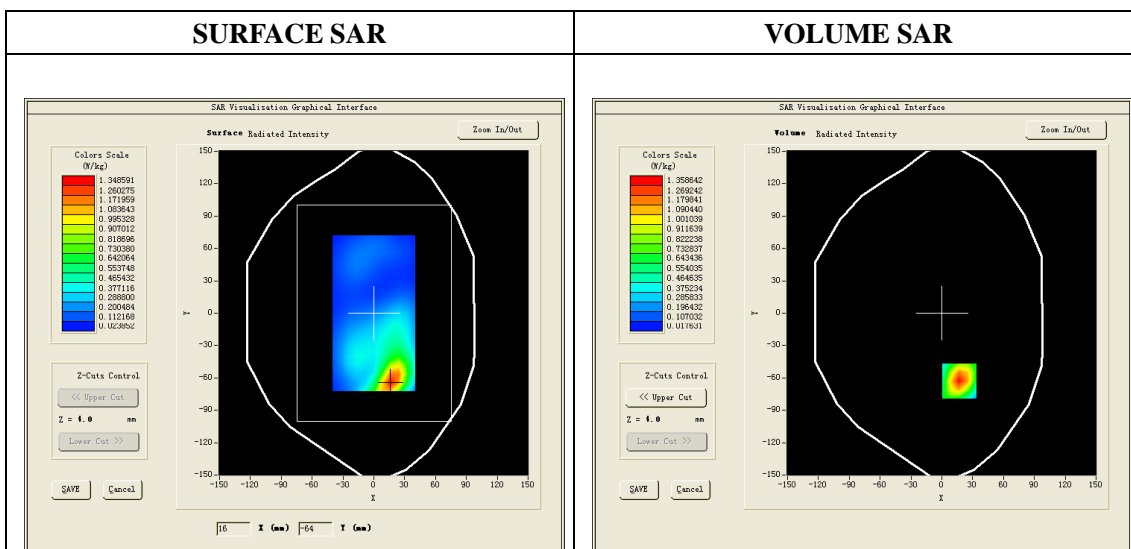
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Back
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

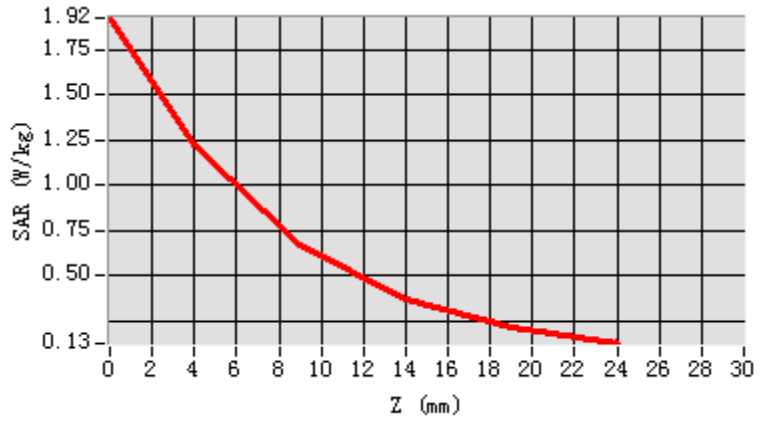
Frequency (MHz)	1852.4
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-2.780000
ConvF:	5.64



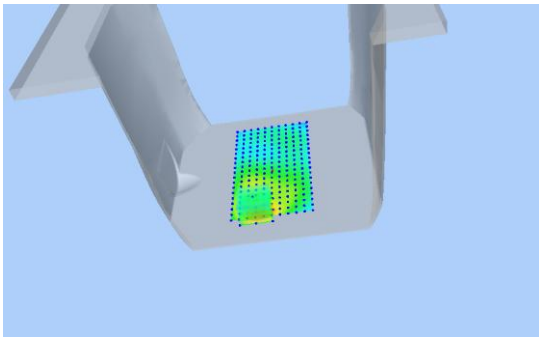
Maximum location: X=-15.00, Y=-64.00

SAR 10g (W/Kg)	0.547582
SAR 1g (W/Kg)	1.048356

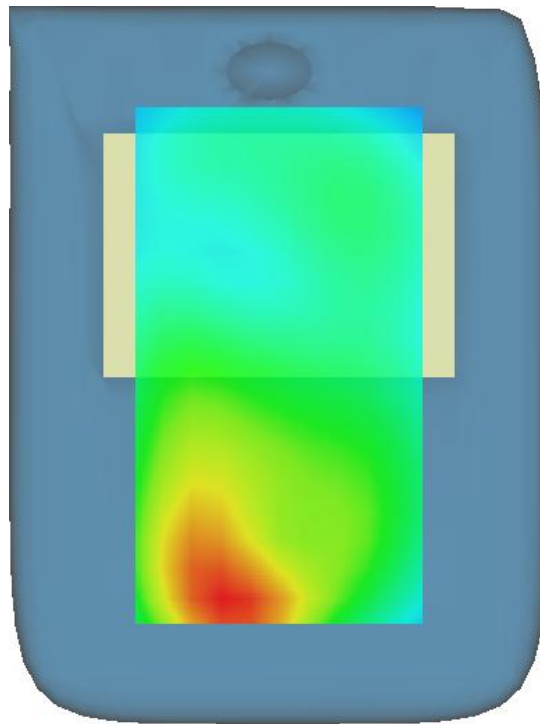
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Face, Low

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 37 seconds

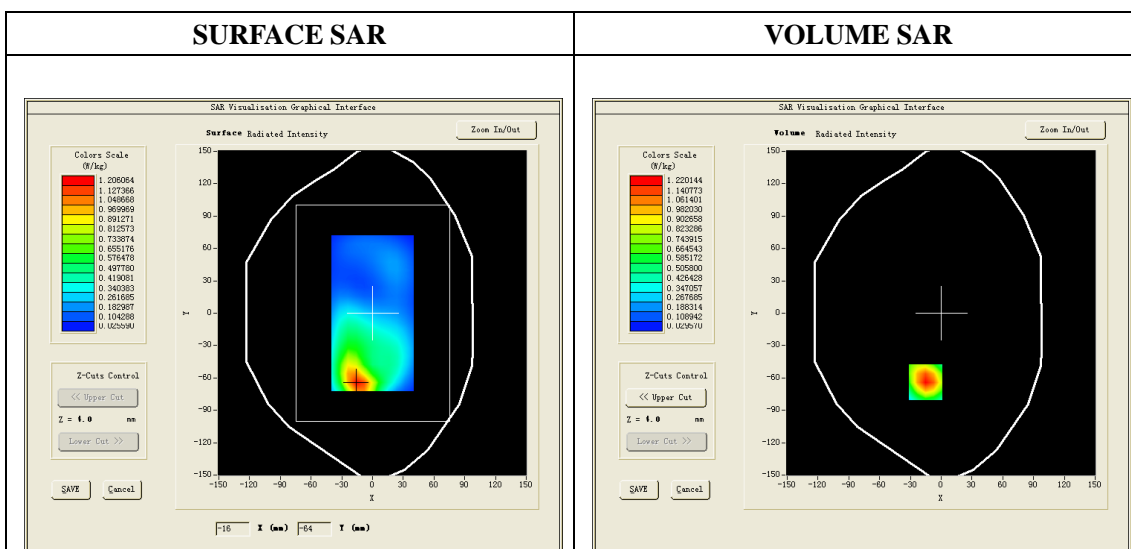
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Face
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

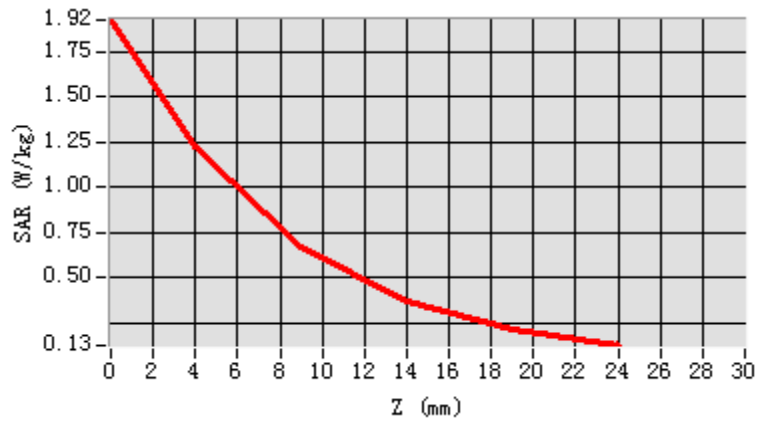
Frequency (MHz)	1852.4
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-0.310000
ConvF:	5.64



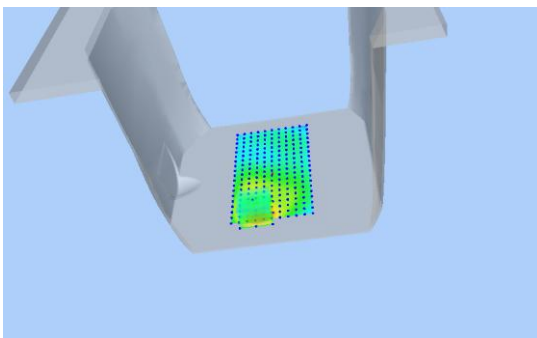
Maximum location: X=-15.00, Y=-64.00

SAR 10g (W/Kg)	0.617473
SAR 1g (W/Kg)	1.146399

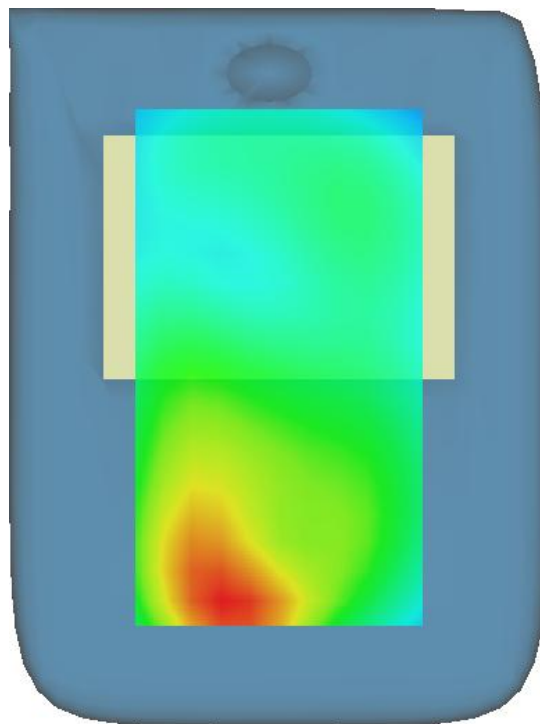
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Face, Low, repeat measurement

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 6 minutes 52 seconds

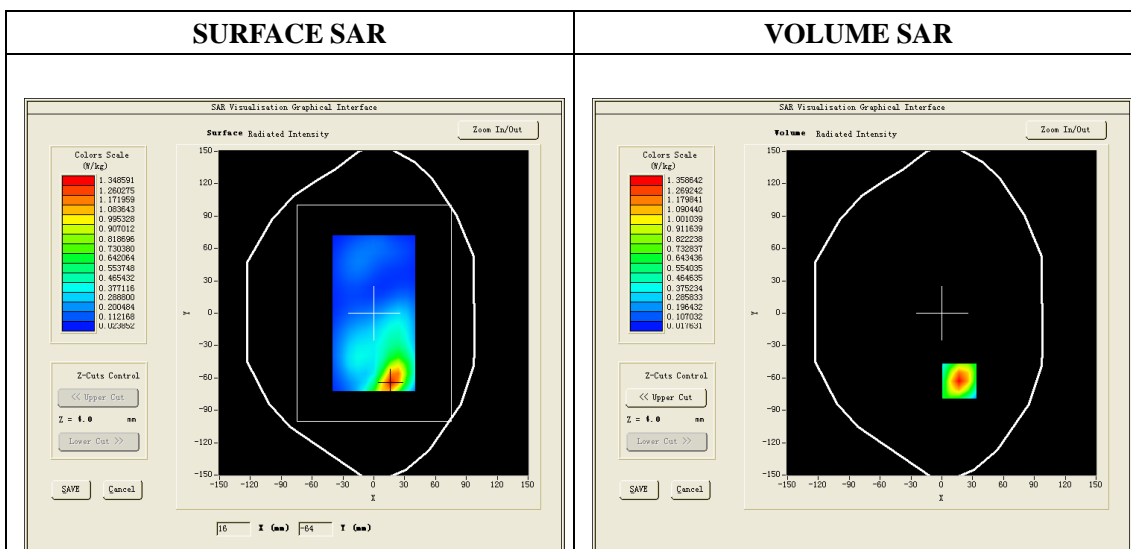
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Face
Band	Band2_WCDMA1900
Channels	9262
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

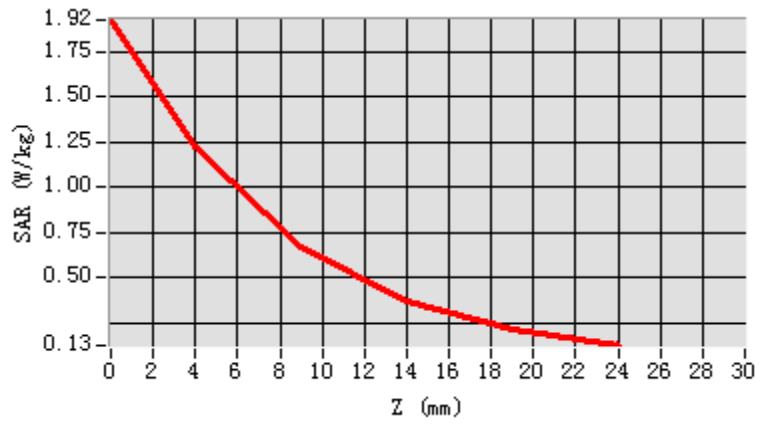
Frequency (MHz)	1852.4
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary part)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-1.650000
ConvF:	5.64



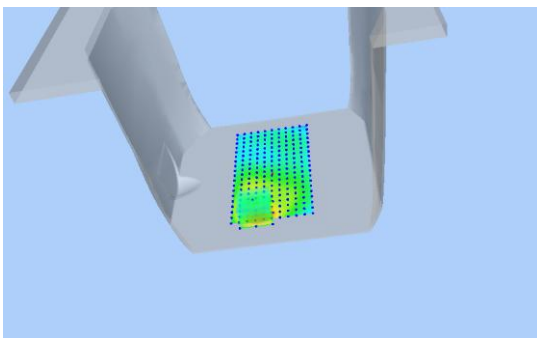
Maximum location: X=-15.00, Y=-64.00

SAR 10g (W/Kg)	0.547582
SAR 1g (W/Kg)	1.027235

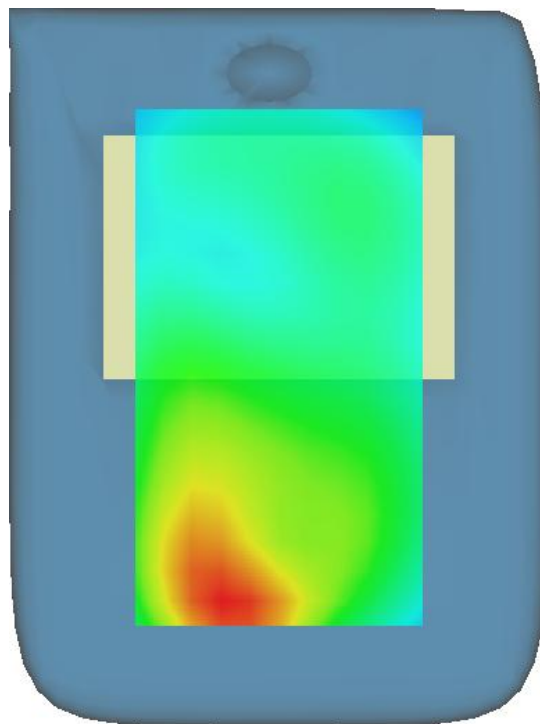
Z axis scan



3D screen shot



Hot spot position



WCDMA1900, Edge C, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 27/11/2013

Measurement duration: 7 minutes 37 seconds

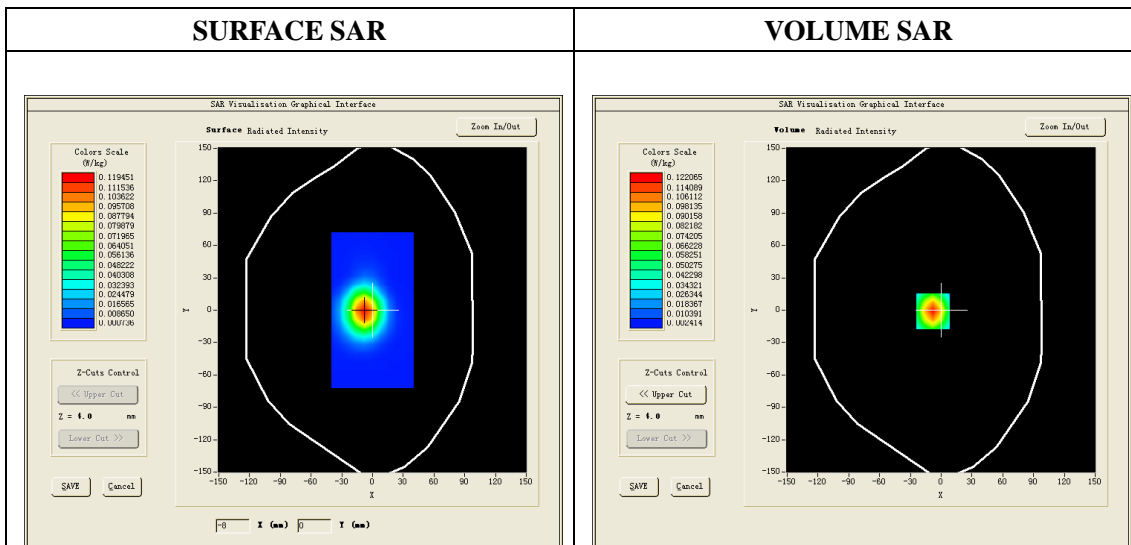
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Edge C
Band	Band2_WCDMA1900
Channels	9538
Signal	WCDMA (Crest factor: 1:1)

B. SAR Measurement Results

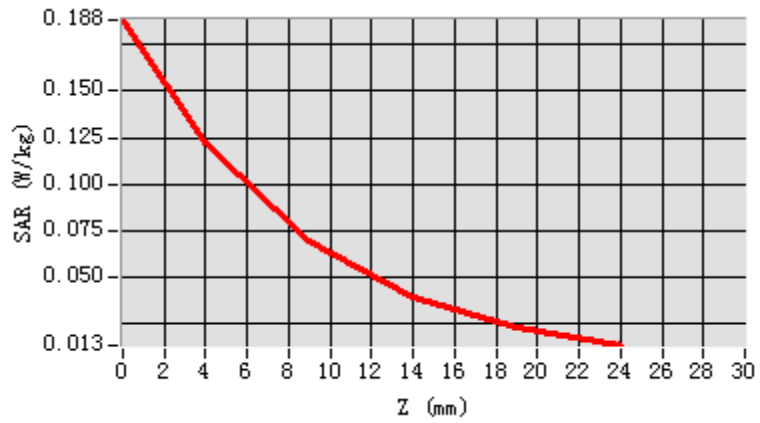
Frequency (MHz)	1907.6
Relative permittivity (real part)	53.669264
Relative permittivity (imaginary)	12.991650
Conductivity (S/m)	1.512476
Variation (%)	-1.060000
ConvF:	5.64



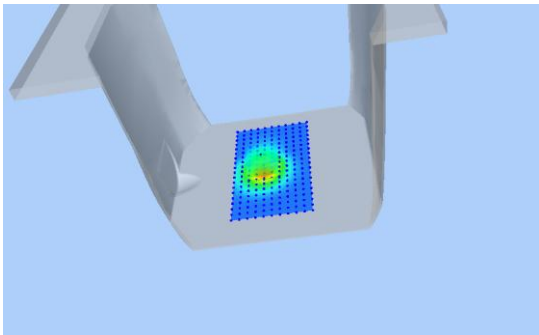
Maximum location: X=-8.00, Y=-1.00

SAR 10g (W/Kg)	0.063230
SAR 1g (W/Kg)	0.122048

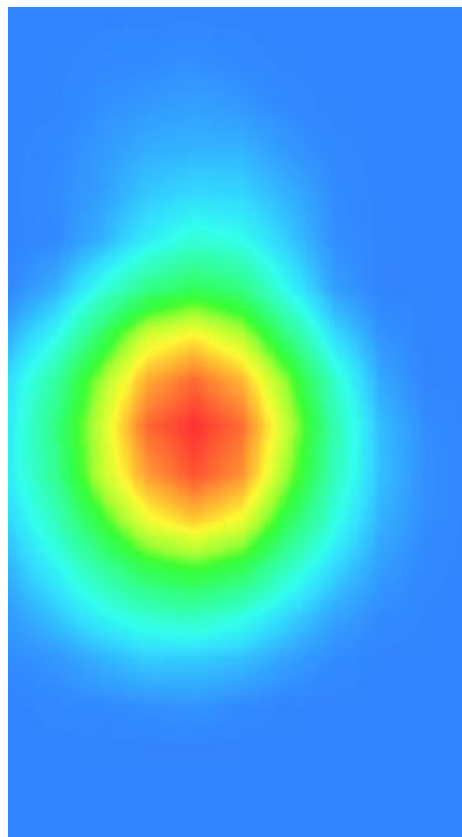
Z axis scan



3D screen shot



Hot spot position



Wi-Fi 802.11b ,Right Cheek, High

Type: Phone measurement (Very fast, 11 points in the volume)

Date of measurement: 26/11/2013

Measurement duration: 7 minutes 21 seconds

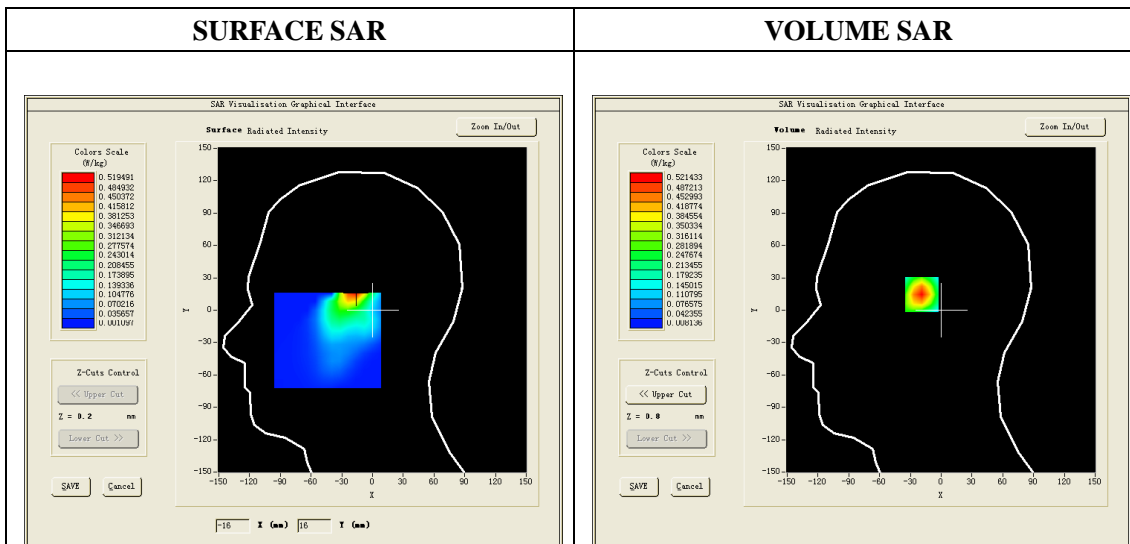
Mobile Phone IMEI number: --

A. Experimental conditions.

Area Scan	dx=8mm dy=8mm
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	IEEE 802.11b ISM
Channels	11
Signal	DSSS (Crest factor: 1:1)

B. SAR Measurement Results

Frequency (MHz)	2462
Relative permittivity (real part)	38.96
Relative permittivity (imaginary part)	13.19
Conductivity (S/m)	1.79
Variation (%)	-0.160000
ConvF:	4.80



Maximum location: X=-17.00, Y=16.00

SAR 10g (W/Kg)	0.244030
SAR 1g (W/Kg)	0.484140