SAR Test Report

Report No.: AGC00068140305FH01

FCC ID	:	O5531103210
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	GSM Mobile Phone
BRAND NAME	:	iSWAG
MODEL NAME	:	iSwag Rock,IS-T3110 ,IS-T3210, Logic X1, G53511, G5350, VOS2000, VOS2002, V3100, V3101, U3501,U3502
CLIENT	:	SWAGTEK
DATE OF ISSUE	:	Apr.01,2014
STANDARD(S)	:	IEEE Std. 1528:2003 47CFR § 2.1093 IEEE/ANSI C95.1
REPORT VERSION	:	V1.0

Attestation of Global Compliance(Shenzhen) Co., Ltd.

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Apr.01,2014	Valid	Original Report

The test plans were performed in accordance with IEEE Std. 1528:2003; 47CFR § 2.1093; IEEE/ANSI C95.1 and the following specific FCC Test Procedures:

- KDB 447498 D01 General RF Exposure Guidance v05r01
- KDB 648474 D04 SAR Handsets Multi Xmiter and Ant v01
- KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01
- KDB 941225 D01 SAR test for 3G devices v02
- KDB 941225 D02 Guidance for 3GPP R6 and R7 HSPA v02v01
- KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- KDB 941225 D06 Hot Spot SAR v01
- KDB 248227 D01 SAR meas for 802 11 a b g v01r02

Test Report Certification

Applicant Name	SWAGTEK
Applicant Address	10205 NW 19th Street, STE 101, Miami, FL33172, USA
Manufacturer Name	Kingtech Telecom (Shenzhen) Co., Ltd.
Manufacturer Address	Floor 3, Building A, No.3, Road 1 of Shangxue Dengxinkeng Industry Park, Bantian Street, Longgang District, Shenzhen City, PRC
Product Designation	GSM Mobile Phone
Brand Name	iSWAG
Model Name	iSwag Rock,IS-T3110 IS-T3210, Logic X1, G53511, G5350, VOS2000, VOS2002, V3100, V3101, U3501,U3502
Different Description	All the same, except for the model name. The test model is iSwag Rock.
EUT Voltage	DC3.7V by battery
Applicable Standard	IEEE Std. 1528:2003 47CFR § 2.1093 IEEE/ANSI C95.1
Test Date	Mar.24,2014
Performed Location	Attestation of Global Compliance(Shenzhen) Co., Ltd. 2 F, Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen, China
Report Template	AGCRT-US-2.5G/SAR (2013-03-01)

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1. SUMMARY OF MAXIMUM SAR VALUE

The maximum results of Specific Absorption Rate (SAR) found during testing for EUT are as follows:

Highest tested and scaled SAR Summary

Exposure Position	Frequency Band	Highest Tested 1g-SAR(W/Kg)	Highest Scaled Maximum SAR(W/Kg)
Head	GSM 835	**0.306**	**0.385**
	PCS 1900	**0.369**	**0.465**
	WCDMA Band II	**0.409**	**0.409**
	WCDMA Band V	**0.487**	**0.487**
Body- worn	GSM 835	**0.681**	**0.857**
	PCS 1900	**0.742**	**0.934**
	WCDMA Band II	**1.006**	**1.006**
	WCDMA Band V	**1.106**	**1.106**

Exposure Position	Test Mode	Highest Tested 1g-SAR(W/Kg)	Highest Scaled Maximum SAR(W/Kg)
Head	802.11b	**0.412**	**0.412**
	HOTSPOT	**0.252**	**0.252**
Body	802.11b	**0.412**	**0.412**
	HOTSPOT	**0.136**	**0.136**

Highest Simultaneous transmission SAR Summary

Exposure Position	Frequency Band	Highest Simultaneous SAR(W/Kg)
Head	GSM 835+WLAN	**0.797**
	PCS 1900+WLAN	**0.877**
	WCDMA Band II+WLAN	**0.821**
	WCDMA Band V+WLAN	**0.899**
Body- worn	GSM 835+WLAN	**1.269**
	PCS 1900+WLAN	**1.346**
	WCDMA Band II+WLAN	**1.418**
	WCDMA Band V+WLAN	**1.518**

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/Kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1, and had been tested in accordance with measurement methods and procedures specified in IEEE 1528-2003 and the relevant KDB files like KDB 941225 D01 , KDB 941225 D03 ,KDB 865664 D02….etc.

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	GSM Mobile Phone
Test Model	iSwag Rock
Hardware Version	Z35_MB_V2.0
Software Version	N/A
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GSM and GPRS&EGPRS	
Support Band	☒GSM 850 ☒PCS 1900 (U.S. Bands) ☒GSM 900 ☒DCS 1800 (Non-U.S. Bands)
GPRS & EGPRS Type	Class B
GPRS & EGPRS Class	Class12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx)
TX Frequency Range	GSM 850 : 824.2~848.8MHz; PCS 1900: 1850.2~1909.8MHz;
RX Frequency Range	GSM 850 : 869~894MHz PCS 1900: 1930~1990MHz
Release Version	R99
Type of modulation	GMSK for GSM/GPRS;GMSK&8-PSK for EGPRS
Antenna Gain	-1.0dBi(GSM 850), -0.8dBi (GSM 1900)
Max. Average Power (Max. Peak Power)	GSM850: 31.76dBm(32.67dBm- Peak Power) PCS1900: 28.79dBm(29.74dBm-Peak Power)

EUT Description(Continue)

WCDMA	
Support Band	U.S. Bands: ☒UMTS FDD Band II ☒UMTS FDD Band V Non-U.S. Bands: ☐UMTS FDD Band I ☐UMTS FDD Band III ☐UMTS FDD Band VIII
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	WCDMA FDD Band II: 1852.4 -1907.6MHz WCDMA FDD Band V: 826.4-846.6MHz
RX Frequency Range	WCDMA FDD Band II: 1930-1990MHz WCDMA FDD Band V: 869-894MHz
Release Version	Rel-6
Type of modulation	QPSK
Antenna Gain	-1.0dBi(WCDMA 850), -0.8dBi (WCDMA 1900)
Max. Average Power (Max. Peak Power)	Band II: 22.77dBm (23.66dBm- Peak Power) Band V: 22.66dBm (23.52dBm- Peak Power)
Bluetooth	
Bluetooth Version	☐V2.0 ☐V2.1 ☐V2.1+EDR ☒V3.0 ☐V3.0+HS ☒V4.0
Operation Frequency	2402~2480MHz
Type of modulation	☒GFSK ☒Π/4-DQPSK ☒8-DPSK
Avg. Burst Power	-0.9dBm
Antenna Gain	1.2dBi
WIFI	
WIFI Specification	☐802.11a ☒802.11b ☒802.11g ☒802.11n(20) ☒802.11n(40)
Operation Frequency	2412~2462MHz
Avg. Burst Power	11b:9.53dBm,11g:6.52dBm,11n(20):5.02dBm,11n(40):3.87dBm
Antenna Gain	1.2dBi
Accessories	
Battery	Brand name: iSWAG Model No. : iSwag Rock,IS-T3110 ,IS-T3210, Logic X1, G53511, G5350, VOS2000, VOS2002, V3100, V3101, U3501,U3502 Voltage and Capacitance: 3.7 V & 2000mAh
Adapter	Brand name: iSWAG Model No. : iSwag Rock,IS-T3110, IS-T3210, Logic X1, G53511, G5350, VOS2000, VOS2002, V3100, V3101, U3501,U3502 Input: AC 100-240V, 50/60Hz, 0.1A Output: DC 5V, 700mA
Earphone	Brand name: N/A Model No. : N/A

Note: 1.The sample used for testing is end product.

2. CMU200 can measure average power and peak power at the same time

2.2. Test Procedure

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	EUT Communicate with 8960, and test them respectively at U.S. bands

2.3. Test Environment

Ambient conditions in the laboratory:

Items	Required	Actual
Temperature (°C)	18-25	21± 2
Humidity (%RH)	30-70	55±2

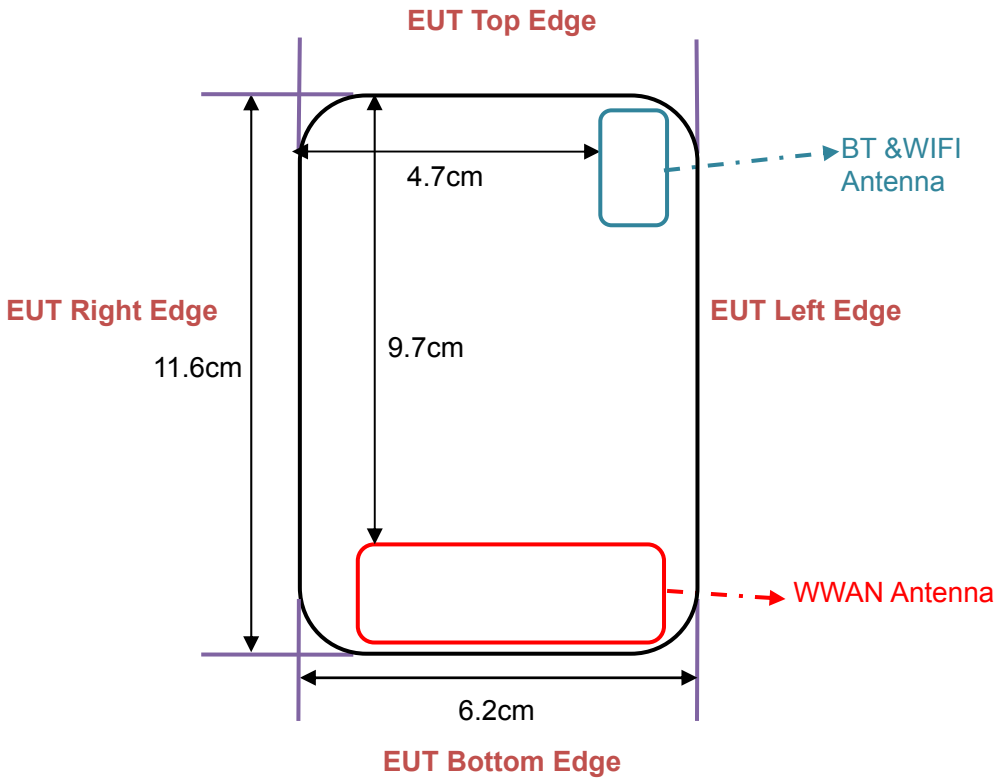
2.4. Test Configuration and setting

The EUT is a model of GSM Portable Mobile Station (MS). It supports GSM/GPRS/EGPRS, WCDMA, BT, WIFI, and support hot spot mode.

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

For WLAN testing, the EUT is configured with the WLAN continuous TX tool through engineering command.

Antenna Location:



The separation distance for antenna to edge:

Antenna	To Top Side(cm)	To Bottom Side(cm)	To Left Side(cm)	To Right Side(cm)
WWAN	9.7	0.1	0.2	0.5
BT/WIFI	0.2	8.9	0.2	4.7

The simultaneous transmission possibilities are listed as below:

Simultaneous TX Combination	Configuration	Head	Body	Hotspot
1	GSM835(Voice)+WLAN/BT	Yes	Yes	Yes
2	PCS 1900(Voice)+WLAN/BT	Yes	Yes	Yes
3	WCDMA Band II+WLAN/BT	Yes	Yes	Yes
4	WCDMA Band V +WLAN/BT	Yes	Yes	Yes

3. SAR MEASUREMENT SYSTEM

3.1. Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in 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 occupational/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.

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 (dv) of given mass density (ρ). The equation description is as below:

$$\mathrm{SAR} = \frac{\mathrm{d}}{\mathrm{d}t}\left(\frac{\mathrm{d}W}{\mathrm{d}m}\right) = \frac{\mathrm{d}}{\mathrm{d}t}\left(\frac{\mathrm{d}W}{\rho \mathrm{d}V}\right)$$

SAR is expressed in units of Watts per kilogram (W/Kg)
SAR can be obtained using either of the following equations:

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

$$\mathrm{SAR} = c_h \left.\frac{\mathrm{d}T}{\mathrm{d}t}\right|_{t=0}$$

Where

SAR	is the specific absorption rate in watts per kilogram;
E	is the r.m.s. value of the electric field strength in the tissue in volts per meter;
σ	is the conductivity of the tissue in siemens per metre;
ρ	is the density of the tissue in kilograms per cubic metre;
c_h	is the heat capacity of the tissue in joules per kilogram and Kelvin;
$\frac{\mathrm{dT}}{\mathrm{dt}} \mid \mathrm{t} = 0$	is the initial time derivative of temperature in the tissue in kelvins per second

3.2. SAR Measurement Procedure

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

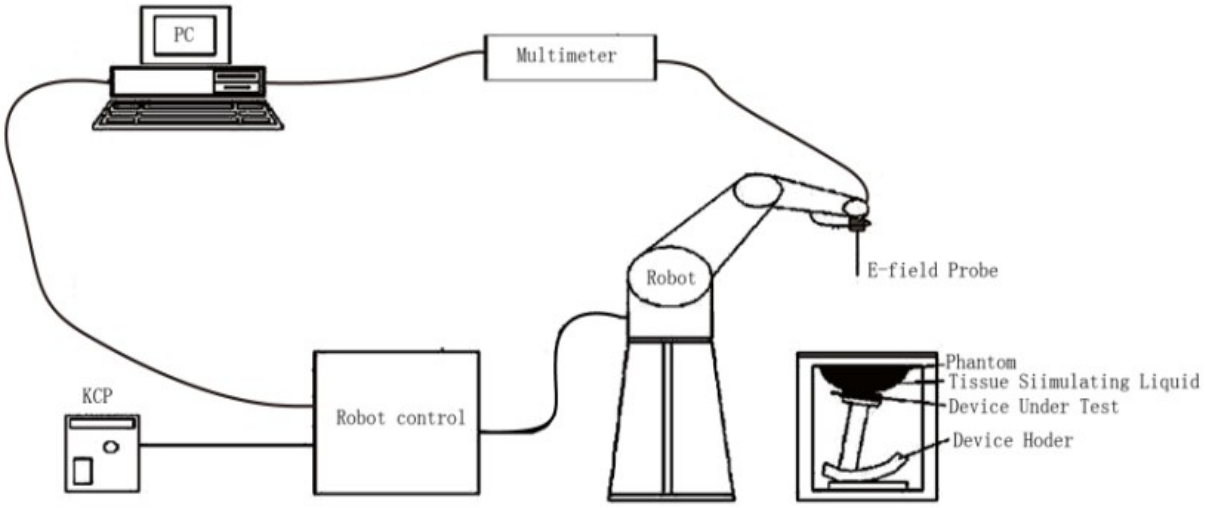
Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at $1mm^2$) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at $1mm^3$).

When multiple peak SAR location were found during the same configuration or test mode, Zoom scan shall performed on each peak SAR location, only the peak point with maximum SAR value will be reported for the configuration or test mode.

3.3. COMOSAR System Description



The COMOSAR system for performing compliance tests consists of the following items:

- The PC. It controls most of the bench devices and stores measurement data. A computer running WinXP and the Opensar software.
- The E-Field probe. The probe is a 3-axis system made of 3 distinct dipoles. Each dipole returns a voltage in function of the ambient electric field.
- The Keithley multimeter measures each probe dipole voltages.
- The SAM phantom simulates a human head. The measurement of the electric field is made inside the phantom.
- The liquids simulate the dielectric properties of the human head tissues.
- The network emulator controls the mobile phone under test.
- The validation dipoles are used to measure a reference SAR. They are used to periodically check the bench to make sure that there is no drift of the system characteristics over time.
- The phantom, the device holder and other accessories according to the targeted measurement.

3.3.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEEE 1528, OET 65, IEC 62209-1, IEC 62209-2, EN 50360, EN 50383 and others.

3.3.2. Area Scans

Area scans are defined prior to the measurement process being executed with a user
defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm² step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

When an Area Scan has measured all reachable points, it computes the field maxima found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE 1528-2003, EN 50361 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan).

3.3.3. Zoom Scan (Cube Scan Averaging)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. A density of 1000 kg/m³ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications utilize a physical step of 7x7x7 (5mmx5mmx5mm) providing a volume of 30mm in the X & Y axis, and 30mm in the Z axis.

3.3.4. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Post processor, COMOSAR allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEEE 1528.The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}} \cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2+y'^2}}{5a}\right)$$

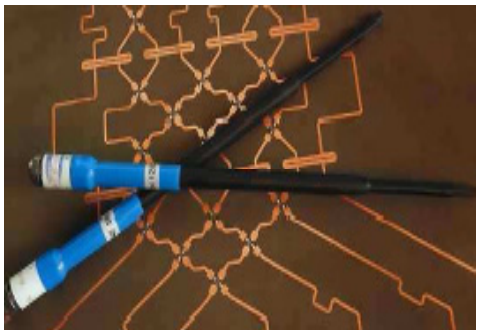
$$f_2(x,y,z) = Ae^{-\frac{z}{a}} \frac{a^2}{a^2+x'^2}\left(3-e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4}+x'^2+y'^2}\left(e^{-\frac{2z}{a}}+\frac{a^2}{2(a+2z)^2}\right)$$

3.4. COMOSAR E-Field Probe

The SAR measurement is conducted with the dissymmetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dissymmetric probe has special calibration in liquid at different frequency. SATIMO conducts the probe calibration in compliance with international and national standards (e.g. IEEE 1528, EN62209-1, IEC 62209, etc.) under ISO17025. The calibration data are in Appendix D.

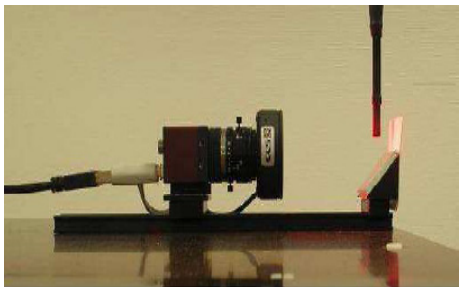
3.5. Isotropic E-Field Probe Specification

Model	EP159	
Manufacture	SATIMO	
Frequency	0.3GHz-3GHz Linearity:±0.09dB(300MHz-3GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity:±0.09dB	
Dimensions	Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 3 GHz with precision of better 30%.	

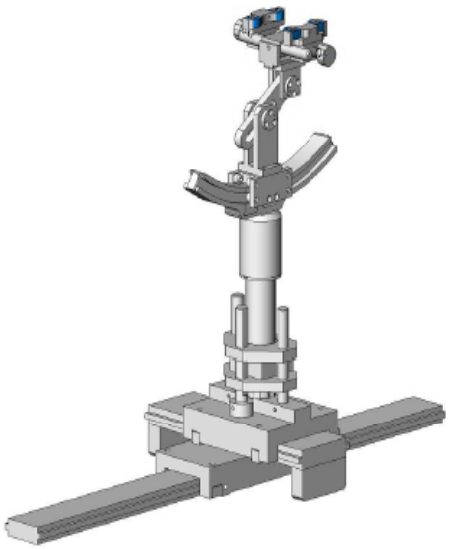
3.6. Robot

The COMOSAR system uses the KUKA robot from SATIMO SA (France).For the 6-axis controller COMOSAR system, the KUKA robot controller version from SATIMO is used. The XL robot series have many features that are important for our application: □ High precision (repeatability 0.02 mm) □ High reliability (industrial design) □ Jerk-free straight movements □ Low ELF interference (the closed metallic construction shields against motor control fields) □ 6-axis controller	

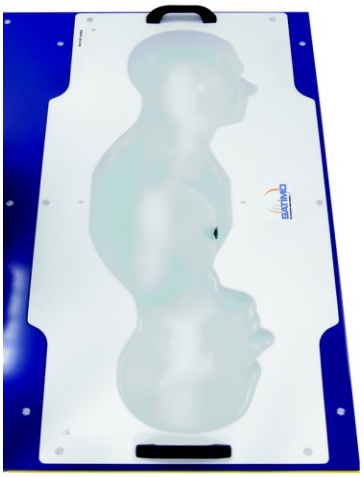
3.7. Video Positioning System

The video positioning system is used in OpenSAR to check the probe. Which is composed of a camera, LED, mirror and mechanical parts. The camera is piloted by the main computer with firewire link. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.	

3.8. Device Holder

The COMOSAR device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR). Thus the device needs no repositioning when changing the angles. The COMOSAR device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.	

3.9. SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas: □ Left head □ Right head □ Flat phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

4. TISSUE SIMULATING LIQUID

For SAR measurement of the field distribution inside the phantom, the phantom must be filled with homogeneous tissue simulating liquid to a depth of at least 15cm. For head SAR testing the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15cm For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15cm.The nominal dielectric values of the tissue simulating liquids in the phantom and the tolerance of 5% are listed in 4.2

4.1. The composition of the tissue simulating liquid

Ingredient	835MHz	835MHz	1900MHz	1900MHz	2450MHz	2450MHz
(% Weight)	Head	Body	Head	Body	Head	Body
Water	40.45	52.4	54.90	40.5	46.7	73.2
Salt	1.42	1.40	0.18	0.50	0.00	0.04
Sugar	57.6	45.0	0.00	58.0	0.00	0.00
HEC	0.40	1.00	0.00	0.50	0.00	0.00
Preventol	0.10	0.20	0.00	0.50	0.00	0.00
DGBE	0.00	0.00	44.92	0.00	53.3	26.7
TWEEN	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using COMOSAR Dielectric Probe Kit and R&S Network Analyzer ZVL6 .

Tissue Stimulant Measurement for 835MHZ							
Fr. (MHz)	Ch.	Dielectric Parameters (±5%)				Tissue Temp [°C]	Test time
		head		body			
		εr 41.5 39.425-43.575	δ[s/m] 0.90 0.855-0.945	εr 55.20 52.44-57-96	δ[s/m] 0.97 0.9215-1.0185		
835	Low	42.11	0.92	54.96	1.00	21	Mar.24,2014
835	Mid	40.81	0.88	55.01	0.99	21	Mar.24,2014
835	High	41.78	0.90	53.28	0.95	21	Mar.24,2014

Tissue Stimulant Measurement for 1900MHZ							
Fr. (MHz)	Ch.	Dielectric Parameters (±5%)				Tissue Temp [°C]	Test time
		head		body			
		εr 40.00 38.00-42.00	δ[s/m] 1.40 1.33-1.47	εr 53.30 50.635-55.965	δ[s/m] 1.52 1.444-1.596		
1900	Low	40.06	1.41	53.11	1.48	21	Mar.24,2014
1900	Mid	39.10	1.44	54.13	1.53	21	Mar.24,2014
1900	High	41.05	1.37	52.76	1.51	21	Mar.24,2014

Tissue Stimulant Measurement for 2450MHz							
Fr. (MHz)	Ch.	Dielectric Parameters (±5%)				Tissue Temp [°C]	Test time
		head		body			
		εr 39.2 37.24-41.16	δ[s/m] 1.80 1.71-1.89	εr 52.7 50.065-55.335	δ[s/m] 1.95 1.8525-2.0475		
2450	Low	38.55	1.83	53.46	1.89	21	Mar.24,2014
2450	Mid	40.01	1.77	50.48	1.97	21	Mar.24,2014
2450	High	39.12	1.80	52.09	1.95	21	Mar.24,2014

4.3. 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 variations 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.

Target Frequency (MHz)	head		body	
	εr	σ (S/m)	εr	σ (S/m)
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	1.01	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

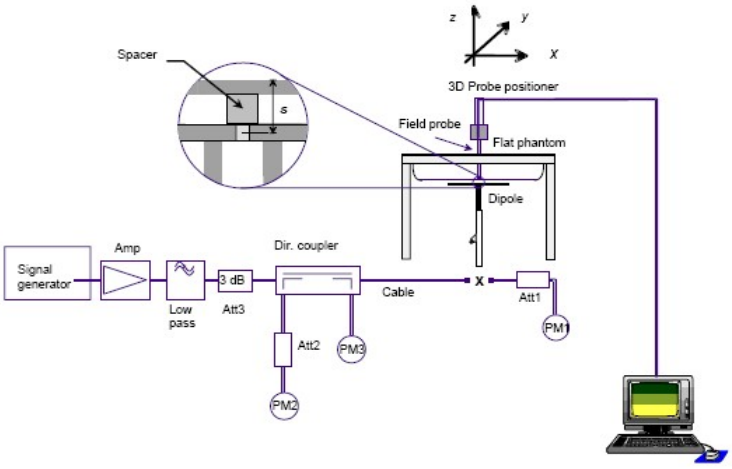
(εr = relative permittivity, σ = conductivity and ρ = 1000 kg/m3)

5. SAR MEASUREMENT PROCEDURE

5.1. SAR System Validation Procedures

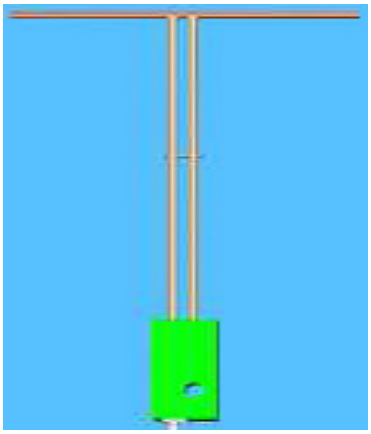
Each SATIMO system is equipped with one or more system validation kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system performance check and system validation. System kit includes a dipole, and dipole device holder.

The system check verifies that the system operates within its specifications. It's performed daily or before every SAR measurement. The system check uses normal SAR measurement in the flat section of the phantom with a matched dipole at a specified distance. The system validation setup is shown as below.



5.2. SAR System Validation

5.2.1. Validation Dipoles



The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical
and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical Specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
900 MHz	149.0	83.3	3.6
1900MHz	68	39.5	3.6
2450MHz	51.5	30.4	3.6

5.2.2. Validation Result

System Performance Check at 835 MHz &1900MHz & 2450MHz for Head								
Validation Kit: SN 46/11DIP 0G900-185 & SN 46/11DIP 1G900-187 &SN 46/11DIP 2G450-189								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 10%)		Tested Value(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
835	10.70	6.72	9.63-11.77	6.05-7.39	10.95	6.88	21	Mar.24,2014
1900	39.65	20.24	35.69-43.61	18.22-22.26	39.45	21.10	21	Mar.24,2014
2450	54.40	23.75	48.96-59.84	21.34-26.13	49.77	23.50	21	Mar.24,2014

System Performance Check at 835 MHz &1900MHz & 2450MHz for Body								
Validation Kit: SN 46/11DIP 0G900-185 & SN 46/11DIP 1G900-187 &SN 46/11DIP 2G450-189								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 10%)		Tested Value(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
835	11.27	7.18	10.14-12.40	6.46-7.90	10.93	6.82	21	Mar.24,2014
1900	40.74	21.43	36.67-44.81	19.29-23.57	39.76	20.49	21	Mar.24,2014
2450	54.19	24.96	48.77-59.61	22.46-27.46	49.24	23.86	21	Mar.24,2014

6. EUT TEST POSITION

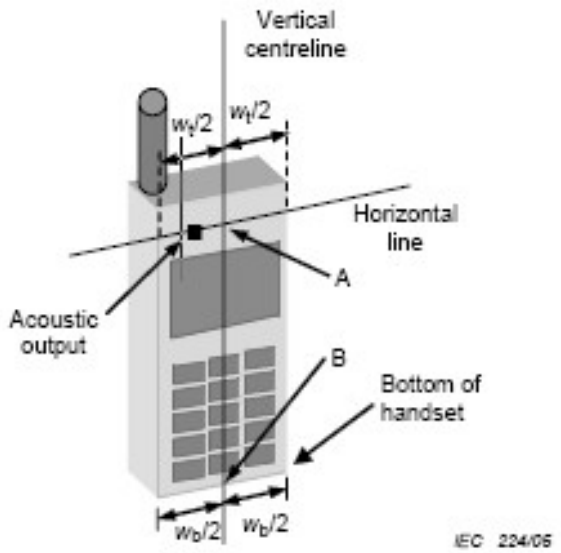
This EUT was tested in **Right Cheek, Right Titled, Left Cheek, Left Titled, Front Face and Rear Face.**

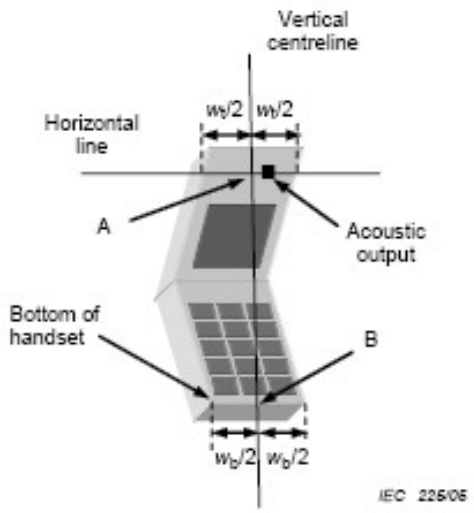
6.1. Define Two Imaginary Lines on the Handset

(1)The vertical centerline passes through two points on the front side of the handset the midpoint of the width wt of the handset at the level of the acoustic output, and the midpoint of the width wb of the handset.

(2)The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output. The horizontal line is also tangential to the face of the handset at point A.

(3)The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily to the front face of the handset, especially for clamshell handsets, handsets with flip covers, and other irregularly shaped handsets.

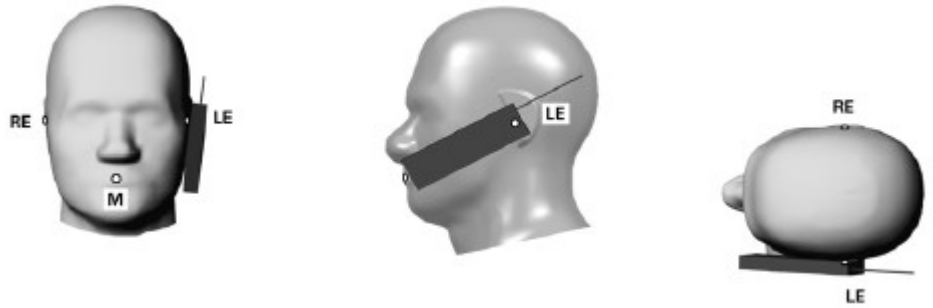




6.2. Cheek Position

(1) To position the device with the vertical center line of the body of the device and the horizontal line crossing the center picec in a plane parallel to the sagittal plane of the phantom. While maintaining the device in this plane, align the vertical center line with the reference plane containing the ear and mouth reference point (M: Mouth, RE: Right Ear, and LE: Left Ear) and align the center of the ear piece with the line RE-LE.

(2) To move the device towards the phantom with the ear piece aligned with the the line LE-RE until the phone touched the ear. While maintaining the device in the reference plane and maintaining the phone contact with ear, move the bottom of the phone until any point on the front side is in contact with the cheek of the phantom or until contact with the ear is lost



6.3. Title Position

(1) To position the device in the “cheek” position described above.

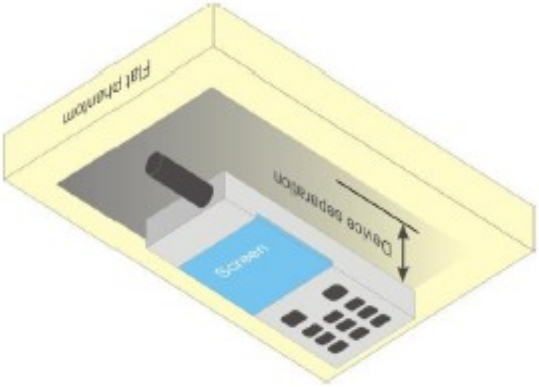
(2) While maintaining the device in the reference plane described above and pivoting against the ear, moves it outward away from the mouth by an angle of 15 degrees or until with the ear is lost.

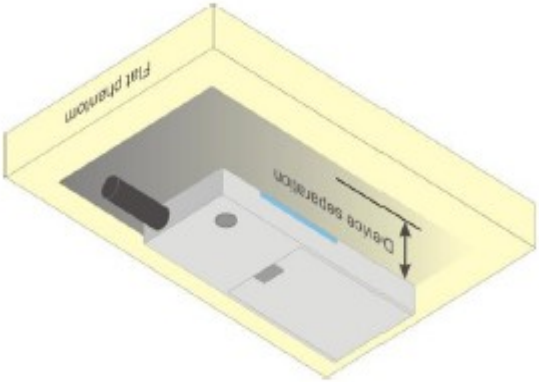
6.4. Body Worn Position

(1) To position the EUT parallel to the phantom surface.

(2) To adjust the EUT parallel to the flat phantom.

(3) To adjust the distance between the EUT surface and the flat phantom to **5mm.** (Hotspot mode the distance of **10mm**).





7. SAR EXPOSURE LIMITS

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	1.60 W/kg

8. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	SATIMO	SN 22/12 EP159	01/12/2014	01/11/2015
Phantom	SATIMO	SN_4511_SAM90	Validated. No cal required.	Validated. No cal required.
Liquid	SATIMO	-	Validated. No cal required.	Validated. No cal required.
Comm Tester	R&S - CMU200	069Y7-158-13-712	02/17/2014	02/16/2015
Comm Tester	Agilent-8960	GB46310822	02/17/2014	02/16/2015
Multimeter	Keithley 2000	1188656	02/17/2014	02/16/2015
Dipole	SATIMO SID900	SN46/11 DIP 0G900-185	11/14/2013	11/13/2015
Dipole	SATIMO SID1900	SN46/11 DIP 1G900-187	11/14/2013	11/13/2015
Dipole	SATIMO SID2450	SN46/11 DIP 2G450-189	11/14/2013	11/13/2015
Amplifier	Aethercomm	SN 046	12/08/2013	12/07/2014
Signal Generator	Agilent-E4421B	MY43351603	05/13/2013	05/12/2014
Power Probe	HP E4418A	US38261498	02/17/2014	02/16/2015
SPECTRUM ANALYZER	Agilent/E4440A	MY44303916	10/22/2013	10/21/2014
Power Attenuator	BED	DLA-5W	07/30/2013	07/29/2014
Network Analyzer	Rhode & Schwarz ZVA	SN100132	02/17/2014	02/16/2015

Note: Per KDB 50824 Dipole SAR Validation Verification, AGC Lab has adopted 3 years calibration intervals. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:
1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement;
4. Impedance is within 5Ω of calibrated measurement.

9. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty Measurement uncertainty for 300MHz to 3GHz averaged over 1 gram / 10 gram.									
Error Description	Sec	Sec	Tol (±%)	Prob. Dist.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g) (±%)	Std. Unc. (10g)(±%)	(Vi) Veff
Measurement System									
Probe Calibration	E.2.1	6	N	1	1	1	6	6	∞
Axial Isotropy	E.2.2	3	R	$\sqrt{3}$	$(1-C_p)^{1/2}$	$(1-C_p)^{1/2}$	1.22474	1.22474	∞
Hemispherical Isotropy	E.2.2	5	R	$\sqrt{3}$	$\sqrt{C_p}$	$\sqrt{C_p}$	2.04124	2.04124	∞
Boundary Effects	E.2.3	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Linearity	E.2.4	5	R	$\sqrt{3}$	1	1	2.88675	2.88675	∞
System Detection Limits	E.2.5	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Readout Electronics	E.2.6	0.5	N	1	1	1	0.5	0.5	∞
Response Time	E.2.7	0.2	R	$\sqrt{3}$	1	1	0.11547	0.11547	∞
Integration Time	E.2.8	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
RF Ambient Noise	E.6.1	3	R	$\sqrt{3}$	1	1	1.73205	1.73205	∞
Probe Positioner Mechanical Tolerance	E.6.2	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
Probe Positioning with Respect to Phantom Shell	E.6.3	1	R	$\sqrt{3}$	1	1	0.57735	0.57735	∞
Extrapolation,interpolation and Integration Algorithms for Max. SAR Evaluation	E.5.2	1.5	R	$\sqrt{3}$	1	1	0.86603	0.86603	∞
Dipole									
Device Positioning	8,E.4.2	1	N	$\sqrt{3}$	1	1	0.57735	0.57735	N-1
Power Drift	8.6.6.2	2	R	$\sqrt{3}$	1	1	1.1547	1.1547	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4	R	$\sqrt{3}$	1	1	2.3094	2.3094	∞
Liquid Conductivity (target)	E.3.2	5	R	$\sqrt{3}$	0.64	0.43	1.84752	1.2413	∞
Liquid Conductivity (meas.)	E.3.3	2.5	N	1	0.64	0.43	1.6	1.075	∞
Liquid Permittivity (target)	E.3.2	3	R	$\sqrt{3}$	0.6	0.49	1.03923	0.8487	∞
Liquid Permittivity (meas.)	E.3.3	2.5	N	1	0.6	0.49	1.5	1.225	M
Combined Standard Uncertainty			RSS				8.09272	7.9296	
Expanded Uncertainty (95%CONFIDENCE INTERVAL)			k				16.18544	15.8592	

10. CONDUCTED POWER MEASUREMENT

GSM BAND

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GSM 835	824.2	**31.76**	-9	22.76
	836.6	31.62	-9	22.62
	848.8	31.56	-9	22.56
GPRS 835 （1 Slot）	824.2	31.51	-9	22.51
	836.6	31.42	-9	22.42
	848.8	31.37	-9	22.37
GPRS 835 （2 Slot）	824.2	28.54	-6	22.54
	836.6	28.42	-6	22.42
	848.8	28.31	-6	22.31
GPRS 835 （3 Slot）	824.2	26.42	-4.26	22.16
	836.6	26.32	-4.26	22.06
	848.8	26.31	-4.26	22.05
GPRS 835 （4 Slot）	824.2	25.42	-3	22.42
	836.6	25.33	-3	22.33
	848.8	25.27	-3	22.27
EGPRS 835 （1 Slot）	824.2	26.42	-9	17.42
	836.6	26.39	-9	17.39
	848.8	26.28	-9	17.28
EGPRS 835 （2 Slot）	824.2	24.86	-6	18.86
	836.6	24.79	-6	18.79
	848.8	24.64	-6	18.64
EGPRS 835 （3 Slot）	824.2	22.83	-4.26	18.57
	836.6	22.74	-4.26	18.48
	848.8	22.65	-4.26	18.39
EGPRS 835 （4 Slot）	824.2	21.82	-3	18.82
	836.6	20.68	-3	17.68
	848.8	21.61	-3	18.61

Continue GSM BAND

PCS1900	1850.2	28.71	-9	19.71
	1880	**28.79**	-9	19.79
	1909.8	28.56	-9	19.56
GPRS1900 （1 Slot）	1850.2	28.48	-9	19.48
	1880	28.59	-9	19.59
	1909.8	28.42	-9	19.42
GPRS1900 （2 Slot）	1850.2	25.38	-6	19.38
	1880	25.52	-6	19.52
	1909.8	25.33	-6	19.33
GPRS1900 （3 Slot）	1850.2	24.55	-4.26	20.29
	1880	24.62	-4.26	20.36
	1909.8	24.47	-4.26	20.21
GPRS1900 （4 Slot）	1850.2	22.56	-3	19.56
	1880	22.66	-3	19.66
	1909.8	22.47	-3	19.47
EGPRS1900 （1 Slot）	1850.2	25.32	-9	16.32
	1880	25.38	-9	16.38
	1909.8	25.17	-9	16.17
EGPRS1900 （2 Slot）	1850.2	23.86	-6	17.86
	1880	23.91	-6	17.91
	1909.8	23.73	-6	17.73
EGPRS1900 （3 Slot）	1850.2	22.28	-4.26	18.02
	1880	22.36	-4.26	18.10
	1909.8	22.15	-4.26	17.89
EGPRS1900 （4 Slot）	1850.2	20.73	-3	17.73
	1880	20.84	-3	17.84
	1909.8	20.61	-3	17.61
Maximum Power <2>				
GSM 835	824.2	31.42	-9	22.42
PCS1900	1880	28.37	-9	19.37

Note 1:
The Frame Power (Source-based time-averaged Power) is scaled the maximum burst average power based on time slots. The calculated methods are show as following:
Frame Power = Max burst power (1 Up Slot) – 9 dB
Frame Power = Max burst power (2 Up Slot) – 6 dB
Frame Power = Max burst power (3 Up Slot) -4.26dB
Frame Power = Max burst power (4 Up Slot) – 3 dB

UMTS BAND II

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 1900 RMC	1852.4	**22.77**
	1880	22.56
	1907.6	22.45
WCDMA 1900 AMR	1852.4	22.33
	1880	22.28
	1907.6	22.15
HSDPA Subtest 1	1852.4	22.37
	1880	22.26
	1907.6	22.23
HSDPA Subtest 2	1852.4	22.37
	1880	22.34
	1907.6	22.14
HSDPA Subtest 3	1852.4	22.33
	1880	22.23
	1907.6	22.18
HSDPA Subtest 4	1852.4	22.38
	1880	22.34
	1907.6	22.22
HSUPA Subtest 1	1852.4	22.37
	1880	22.21
	1907.6	22.18
HSUPA Subtest 2	1852.4	22.24
	1880	22.12
	1907.6	22.09
HSUPA Subtest 3	1852.4	22.23
	1880	22.18
	1907.6	22.16
HSUPA Subtest 4	1852.4	22.37
	1880	22.24
	1907.6	22.16
HSUPA Subtest 5	1852.4	22.37
	1880	22.25
	1907.6	22.14

UMTS BAND V

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 835 RMC	826.4	**22.66**
	835.0	22.58
	846.6	22.43
WCDMA 835 AMR	826.4	22.38
	835.0	22.28
	846.6	22.21
HSDPA Subtest 1	826.4	22.36
	835.0	22.24
	846.6	22.16
HSDPA Subtest 2	826.4	22.44
	835.0	22.34
	846.6	22.35
HSDPA Subtest 3	826.4	22.35
	835.0	22.28
	846.6	22.26
HSDPA Subtest 4	826.4	22.47
	835.0	22.26
	846.6	22.38
HSUPA Subtest 1	826.4	22.26
	835.0	22.17
	846.6	22.27
HSUPA Subtest 2	826.4	22.25
	835.0	22.18
	846.6	22.16
HSUPA Subtest 3	826.4	22.22
	835.0	22.17
	846.6	22.18
HSUPA Subtest 4	826.4	22.36
	835.0	22.24
	846.6	22.17
HSUPA Subtest 5	826.4	22.36
	835.0	22.18
	846.6	22.13

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Avg. Burst Power(dBm)
802.11b	1	01	2412	8.66
		06	2437	9.18
		11	2462	**9.53**
802.11g	6	01	2412	4.03
		06	2437	6.52
		11	2462	5.2
802.11n(20)	6.5	01	2412	4.09
		06	2437	4.77
		11	2462	5.02
802.11n(40)	13.5	03	2422	2.2
		06	2437	3.87
		09	2452	3.53

Bluetooth_V3.0

Modulation	Channel	Frequency(MHz)	Average Power (dBm)
GFSK	0	2402	-2.96
	39	2441	-1.63
	78	2480	**-0.9**
π /4-DQPSK	0	2402	-3.63
	39	2441	-2.44
	78	2480	-1.81
8-DPSK	0	2402	-3.63
	39	2441	-2.42
	78	2480	-1.9

According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.

Table 6.1aA: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for β_c/β_d=12/15, β_{hs}/β_c=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensation for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

11. TEST RESULTS

11.1. SAR Test Results Summary

11.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to IEEE1528, and Body SAR was performed with the device 5mm from the phantom; Body SAR was also performed with the headset attached and without. The overall device length and width(11.6cm×6.2cm) are＞9cm×5cm, Hotspot mode with a test separation distance of 10mm.

11.1.2. Operation Mode

- According to KDB 447498 D01 v05r01 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
- Per KDB 865664 D01 v01r01,for each frequency band, if the measured SAR is ≥0.8W/Kg, testing for repeated SAR measurement is required , that the highest measured SAR is only to be tested. When the SAR results are near the limit, the following procedures are required for each device to verify these types of SAR measurement related variation concerns by repeating the highest measured SAR configuration in each frequency band.

(1) When the original highest measured SAR is ≥0.8W/Kg, repeat that measurement once.
(2) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is ＞1.20 or when the original or repeated measurement is ≥1.45 W/Kg.
(3) Perform a third repeated measurement only if the original, first and second repeated measurement is ≥ 1.5 W/Kg and ratio of largest to smallest SAR for the original, first and second measurement is ≥1.20.

- Body-worn exposure conditions are intended to voice call operations, therefore GSM voice call mode is selected to be test.
- According to KDB 648474 D04 v01r01,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 is not required.
- According to 941225 D06, when the overall device length and width are＞9cm×5cm, Hotspot mode with a test separation distance of 10mm. For device with form factors smaller than 9cm×5cm, Hotspot mode with a test separation distance of 5mm. Body SAR was also performed with the headset attached and without.
- According to 248227 D01, SAR is not required for 802.11g channels when the maximum average output power is less than 1/4dB higher than measured on the corresponding 802.11b channels.
- Maximum Scaling SAR in order to calculate the Maximum SAR values to test under the standard Peak Power, Calculation method is as follows:
  Maximum Scaling SAR =tested SAR (Max.) ×[maximum turn-up power (mw)/ maximum measurement output power(mw)]

11.1.3. Test Result

SAR MEASUREMENT									
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55					
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15					
Product: GSM Mobile Phone									
Test Mode: GSM835 with GMSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Turn-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit W/kg**
SIM 1 Card									
Left Cheek	voice	190	836.6	-1.03	**0.306**	32.62	31.62	**0.385**	1.6
Left Tilt	voice	190	836.6	0.26	0.289	32.62	31.62	0.364	1.6
Right Cheek	voice	190	836.6	-0.38	0.287	32.62	31.62	0.361	1.6
Right Tilt	voice	190	836.6	1.02	0.262	32.62	31.62	0.330	1.6
Body back	voice	190	836.6	0.15	**0.681**	32.62	31.62	**0.857**	1.6
Body front	voice	190	836.6	-0.49	0.375	32.62	31.62	0.472	1.6
SIM 2 Card									
Left Cheek	voice	190	836.6	-0.19	0.246	32.62	31.62	0.310	1.6

Note:
- The test separation of all above table for body part is 5mm.
- The worst mode is voice mode.

SAR MEASUREMENT									
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55					
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15					
Product: GSM Mobile Phone									
Test Mode: GSM1900 with GMSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Turn-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit W/kg**
SIM 1 Card									
Left Cheek	voice	661	1880.0	-0.33	0.263	29.79	28.79	0.331	1.6
Left Tilt	voice	661	1880.0	1.02	0.072	29.79	28.79	0.091	1.6
Right Cheek	voice	661	1880.0	0.06	**0.369**	29.79	28.79	**0.465**	1.6
Right Tilt	voice	661	1880.0	-0.88	0.088	29.79	28.79	0.111	1.6
Body back	voice	661	1880.0	1.03	**0.742**	29.79	28.79	**0.934**	1.6
Body front	voice	661	1880.0	-1.64	0.347	29.79	28.79	0.437	1.6
SIM 2 Card									
Right Cheek	voice	661	1880.0	-1.52	0.308	29.79	28.79	0.388	1.6

Note:
- The test separation of all above table for body part is 5mm.
- The worst mode is voice mode.

SAR MEASUREMENT									
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55					
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15					
Product: GSM Mobile Phone									
Test Mode: WCDMA Band II with QPSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Turn-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit W/kg**
SIM 1 Card									
Left Cheek	voice	9400	1880	-1.02	0.356	22.56	22.56	0.356	1.6
Left Tilt	voice	9400	1880	1.34	0.303	22.56	22.56	0.303	1.6
Right Cheek	voice	9400	1880	-0.48	**0.409**	22.56	22.56	**0.409**	1.6
Right Tilt	voice	9400	1880	1.59	0.279	22.56	22.56	0.279	1.6
Body back	RMC 12.2kbps	9262	1852.4	-1.34	**1.006**	22.77	22.77	**1.006**	1.6
Body back	RMC 12.2kbps	9400	1880	0.95	0.917	22.56	22.56	0.917	1.6
Body back	RMC 12.2kbps	9538	1907.6	-1.34	0.949	22.45	22.45	0.949	1.6
Body front	RMC 12.2kbps	9400	1880	0.61	0.617	22.56	22.56	0.617	1.6

Note:
- The test separation of all above table for body part is 5mm.
- The worst mode is voice mode.

SAR MEASUREMENT									
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55					
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15					
Product: GSM Mobile Phone									
Test Mode: WCDMA Band V with QPSK modulation									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Turn-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit W/kg**
SIM 1 Card									
Left Cheek	voice	4182	835.0	-1.05	0.457	22.58	22.58	0.457	1.6
Left Tilt	voice	4182	835.0	0.24	0.417	22.58	22.58	0.417	1.6
Right Cheek	voice	4182	835.0	-0.78	0.464	22.58	22.58	0.464	1.6
Right Tilt	voice	4182	835.0	-0.98	**0.487**	22.58	22.58	**0.487**	1.6
Body back	RMC 12.2kbps	4132	826.4	0.25	1.087	22.66	22.66	1.087	1.6
Body back	RMC 12.2kbps	4182	835.0	-0.36	0.995	22.58	22.58	0.995	1.6
Body back	RMC 12.2kbps	4233	846.6	-1.54	**1.106**	22.43	22.43	**1.106**	1.6
Body front	RMC 12.2kbps	4182	835.0	0.39	0.525	22.58	22.58	0.525	1.6

Note:
- The test separation of all above table for body part is 5mm.
- The worst mode is voice mode.

SAR MEASUREMENT									
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55					
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15					
Product: GSM Mobile Phone									
Test Mode: Hotspot									
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**SAR (1g) (W/kg)**	**Max. Turn-up Power (dBm)**	**Meas. output Power (dBm)**	**Scaled SAR (W/Kg)**	**Limit W/kg**
SIM 1 Card									
Left Cheek	DTS	6	2437	-0.13	0.142	9.18	9.18	0.142	1.6
Left Tilt	DTS	6	2437	0.23	0.163	9.18	9.18	0.163	1.6
Right Cheek	DTS	6	2437	-0.56	0.205	9.18	9.18	0.205	1.6
Right Tilt	DTS	6	2437	-1.26	**0.252**	9.18	9.18	**0.252**	1.6
Body back	DTS	6	2437	1.25	**0.136**	9.18	9.18	**0.136**	1.6
Body front	DTS	6	2437	0.34	0.063	9.18	9.18	0.063	1.6

Note:
- According to KDB248227, SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels.
- All of above “DTS” means data transmitters.
- The test separation of all above table for body part is 10mm.

Repeated SAR								
Ambient Temperature (°C) : 21 ± 2				Relative Humidity (%): 55				
Liquid Temperature (°C) : 21 ± 2				Depth of Liquid (cm):>15				
Product: GSM Mobile Phone								
Test Mode: WCDMA Band II & WCDMA Band V with QPSK modulation								
Position	**Mode**	**Ch.**	**Fr. (MHz)**	**Power Drift (<±5%)**	**Once SAR (1g) (W/kg)**	**Twice SAR (1g) (W/kg)**	**Third SAR (1g) (W/kg)**	**Limit W/kg**
Body back	RMC 12.2kbps	9262	1852.4	0.26	0.968	--	--	1.6
Body back	RMC 12.2kbps	4233	846.6	1.02	1.097	--	--	1.6

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

Position	Simultaneous state
Head	**1.WWAN(voice)+WLAN 2.4GHz band**
	2.WWAN(voice)+Bluetooth
	3.WWAN(voice)+ HOTSPOT 2.4GHz band
Body	**4. WWAN(voice)+WLAN 2.4GHz band**
	5. WWAN(voice)+Bluetooth
	6.WWAN(voice)+ HOTSPOT 2.4GHz band

NOTE:

1. WLAN and BT share the same antenna, and cannot transmit simultaneously.
2. Simultaneous with every transmitter must be the same test position.
3. Based upon KDB 447498 D01 v05, BT SAR is excluded as below table.
4. Based upon KDB 447498 D01 v05,for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user; which is 0mm for head SAR AND 5mm for body-worn SAR.
5. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
6. For minimum test separation distance≦50mm,Bluetooth standalone SAR is excluded according to *[(max. power of channel, including tune-up tolerance, mW)/ (min. test separation distance, mm) ·[√f (GHz) /x] ≦3.0 for 1-g SAR and ≦7.5 for 10-g extremity SAR*
7. KDB 447498 / 4.3.2 (2) when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
   a) (max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)]·[√f (GHz) /x] W/kg for test separation distances≤ 50 mm; Where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
   b) 0.4W/Kg for 1-g SAR and 1.0W/Kg for 10-g SAR, when the separation distance is >50mm.

Estimated SAR		Maximum Average Power		Antenna to user (mm)	SAR exclusion threshold (mW)	SAR testing required（Yes/No）	Head (0mm gap)	Body (5mm gap)
		dBm	mW					
BT	Head	0.1	1.023	5	10	NO	0.043 W/kg	0.043 W/kg
	Body			5	10	NO		
WIFI	Head	9.93	9.840	5	10	NO	0.412 W/kg	0.412 W/kg
	Body			5	10	NO		

Maximum test results (WWAN) with BT and WIFI/ HOTSPOT SAR:
BT: Head (0 cm gap): 0.043 W/kg and Body (0.5 cm gap): 0.043 W/kg
WIFI: Head (0 cm gap): 0.412 W/kg and Body (0.5 cm gap): 0.412 W/kg
HOTSPOT: Head (0 cm gap): 0.252 W/kg and Body (1.0 cm gap):0.136 W/kg

WIFI
802.11b

Position	Max. WWAN SAR (W/Kg)	Max. WLAN SAR (W/Kg)	SAR Summation	Limit (W/kg)	SPLSR ≦0.04 (Yes/No)
GSM850+WLAN 2.4G-DTS					
Left Cheek	0.385	0.412	**0.797**	1.6	No
Left Tilt	0.364	0.412	0.776	1.6	No
Right Cheek	0.361	0.412	0.773	1.6	No
Right Tilt	0.330	0.412	0.742	1.6	No
Body back	0.857	0.412	**1.269**	1.6	No
Body front	0.472	0.412	0.884	1.6	No
PCS1900+WLAN 2.4G-DTS					
Left Cheek	0.331	0.412	0.743	1.6	No
Left Tilt	0.091	0.412	0.503	1.6	No
Right Cheek	0.465	0.412	**0.877**	1.6	No
Right Tilt	0.111	0.412	0.523	1.6	No
Body back	0.934	0.412	**1.346**	1.6	No
Body front	0.437	0.412	0.849	1.6	No
WCDMA Band II+WLAN 2.4G-DTS					
Left Cheek	0.356	0.412	0.768	1.6	No
Left Tilt	0.303	0.412	0.715	1.6	No
Right Cheek	0.409	0.412	**0.821**	1.6	No
Right Tilt	0.279	0.412	0.691	1.6	No
Body back	1.006	0.412	**1.418**	1.6	No
Body front	0.617	0.412	1.029	1.6	No
WCDMA Band V+WLAN 2.4G-DTS					
Left Cheek	0.457	0.412	0.869	1.6	No
Left Tilt	0.417	0.412	0.829	1.6	No
Right Cheek	0.464	0.412	0.876	1.6	No
Right Tilt	0.487	0.412	**0.899**	1.6	No
Body back	1.106	0.412	**1.518**	1.6	No
Body front	0.525	0.412	0.937	1.6	No

Note:

• According to KDB 447498 D01 General RF Exposure Guidance v05, when the simultaneous transmission SAR is less than1.6 W/Kg, SPLSR assessment is not required.

• SPLSR mean is “The SAR to Peak Location Separation Ratio “

Hotspot

Position	Max. WWAN SAR (W/Kg)	Max. Hotspot SAR (W/Kg)	SAR Summation	Limit (W/kg)	SPLSR ≦0.04 (Yes/No)
GSM850+Hotspot 2.4G-DTS					
Left Cheek	0.385	0.142	0.527	1.6	No
Left Tilt	0.364	0.163	0.527	1.6	No
Right Cheek	0.361	0.205	0.566	1.6	No
Right Tilt	0.330	0.252	**0.582**	1.6	No
Body back	0.857	0.136	**0.993**	1.6	No
Body front	0.472	0.063	0.535	1.6	No
PCS1900+Hotspot 2.4G-DTS					
Left Cheek	0.331	0.142	0.473	1.6	No
Left Tilt	0.091	0.163	0.254	1.6	No
Right Cheek	0.465	0.205	**0.670**	1.6	No
Right Tilt	0.111	0.252	0.363	1.6	No
Body back	0.934	0.136	**1.070**	1.6	No
Body front	0.437	0.063	0.500	1.6	No
WCDMA Band II+ Hotspot 2.4G-DTS					
Left Cheek	0.356	0.142	0.498	1.6	No
Left Tilt	0.303	0.163	0.466	1.6	No
Right Cheek	0.409	0.205	**0.614**	1.6	No
Right Tilt	0.279	0.252	0.531	1.6	No
Body back	1.006	0.136	**1.142**	1.6	No
Body front	0.617	0.063	0.680	1.6	No
WCDMA Band V+ Hotspot 2.4G-DTS					
Left Cheek	0.457	0.142	0.599	1.6	No
Left Tilt	0.417	0.163	0.580	1.6	No
Right Cheek	0.464	0.205	0.669	1.6	No
Right Tilt	0.487	0.252	**0.739**	1.6	No
Body back	1.106	0.136	**1.242**	1.6	No
Body front	0.525	0.063	0.588	1.6	No

Note:

• According to KDB 447498 D01 General RF Exposure Guidance v05, when the simultaneous transmission SAR is less than1.6 W/Kg, SPLSR assessment is not required.

• SPLSR mean is “The SAR to Peak Location Separation Ratio “

BT

Position	Max. WWAN SAR (W/Kg)	Estimated SAR (W/Kg)	SAR Summation	Limit (W/kg)	SPLSR ≦0.04 (Yes/No)
GSM850+Bluetooth-DSS					
Left Cheek	0.385	0.043	**0.428**	1.6	No
Left Tilt	0.364	0.043	0.407	1.6	No
Right Cheek	0.361	0.043	0.404	1.6	No
Right Tilt	0.330	0.043	0.373	1.6	No
Body back	0.857	0.043	**0.900**	1.6	No
Body front	0.472	0.043	0.515	1.6	No
PCS1900+ Bluetooth-DSS					
Left Cheek	0.331	0.043	0.374	1.6	No
Left Tilt	0.091	0.043	0.134	1.6	No
Right Cheek	0.465	0.043	**0.508**	1.6	No
Right Tilt	0.111	0.043	0.154	1.6	No
Body back	0.934	0.043	**0.977**	1.6	No
Body front	0.437	0.043	0.480	1.6	No
WCDMA Band II+ Bluetooth-DSS					
Left Cheek	0.356	0.043	0.399	1.6	No
Left Tilt	0.303	0.043	0.346	1.6	No
Right Cheek	0.409	0.043	**0.452**	1.6	No
Right Tilt	0.279	0.043	0.322	1.6	No
Body back	1.006	0.043	**1.049**	1.6	No
Body front	0.617	0.043	0.660	1.6	No
WCDMA Band V+ Bluetooth-DSS					
Left Cheek	0.457	0.043	0.500	1.6	No
Left Tilt	0.417	0.043	0.460	1.6	No
Right Cheek	0.464	0.043	0.507	1.6	No
Right Tilt	0.487	0.043	**0.530**	1.6	No
Body back	1.106	0.043	**1.149**	1.6	No
Body front	0.525	0.043	0.568	1.6	No

Note:

• According to KDB 447498 D01 General RF Exposure Guidance v05, when the Sum of the simultaneous transmission SAR is lesser than1.6 W/Kg, SPLSR assessment is not required.

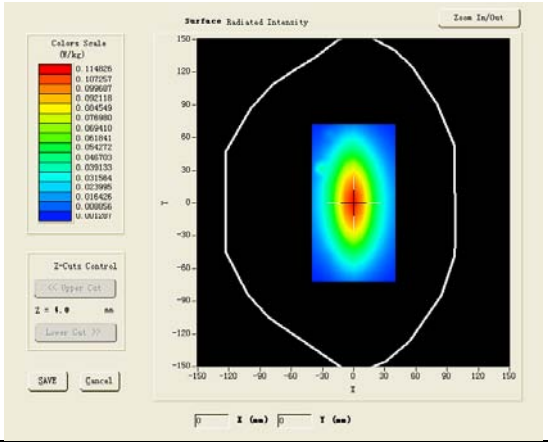
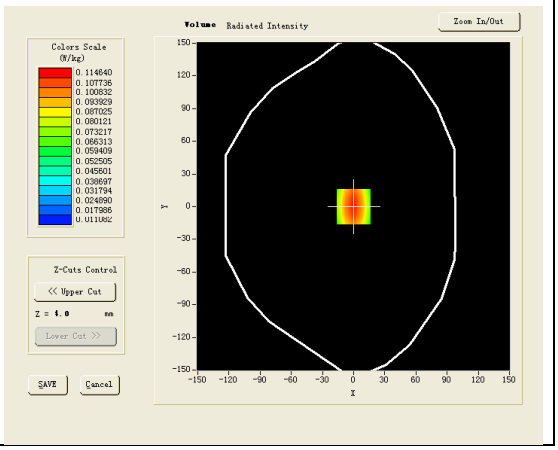
• SPLSR mean is “The SAR to Peak Location Ratio “ .

APPENDIX A. SAR SYSTEM VALIDATION DATA

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Head 835 MHz
DUT: Dipole 900 MHz Type: SID 900
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=5.27
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

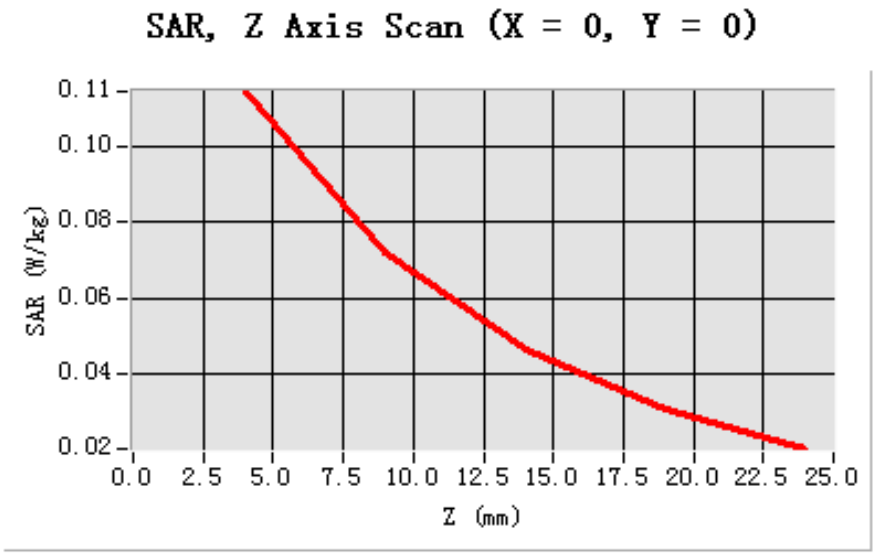
Configuration/System Check GSM 835 Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check GSM 835 Head/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

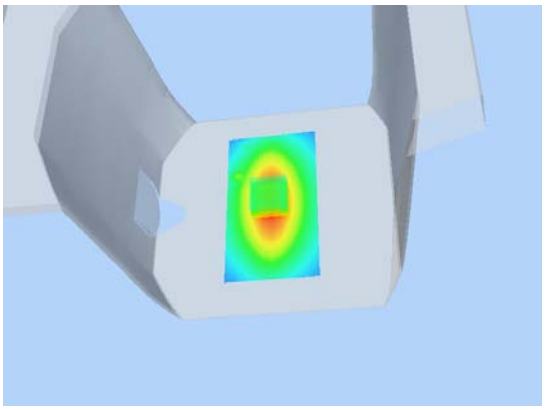
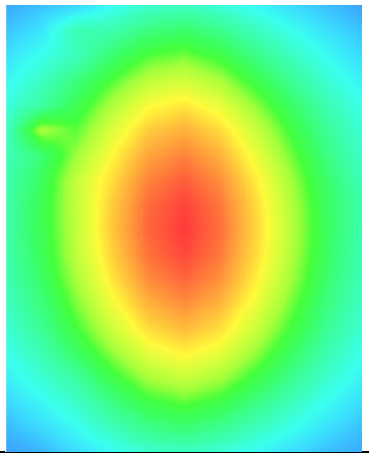
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.068783
SAR 1g (W/Kg)	0.109462

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1169	0.0755	0.0481	0.0317

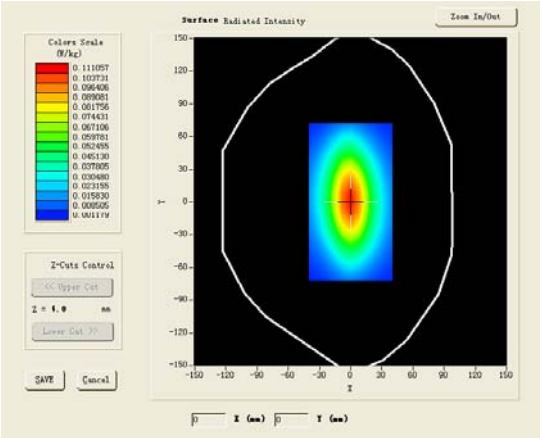
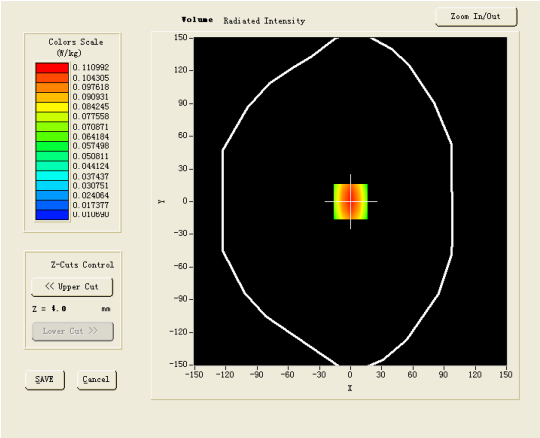


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Body 835 MHz
DUT: Dipole 900 MHz Type: SID 900
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=5.48
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.99 mho/m; εr =55.01; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

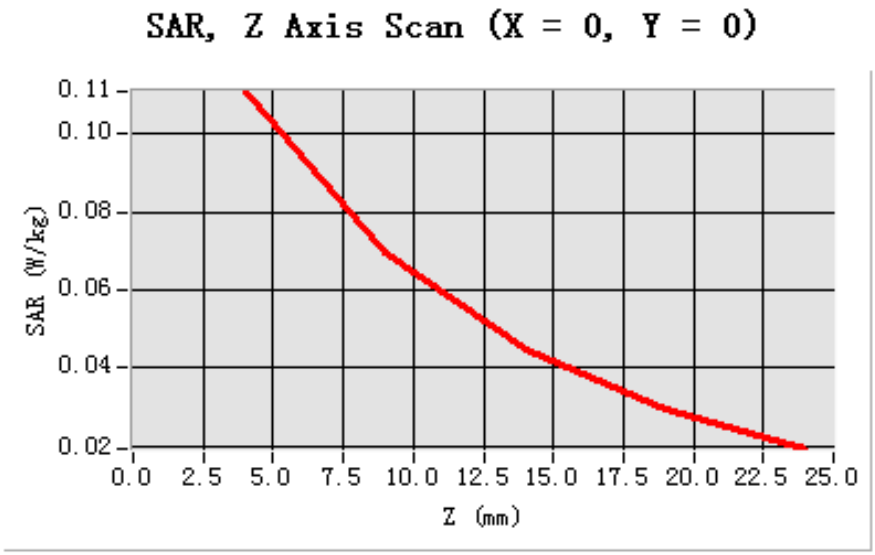
Configuration/System Check GSM 835 Body/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check GSM 835 Body/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

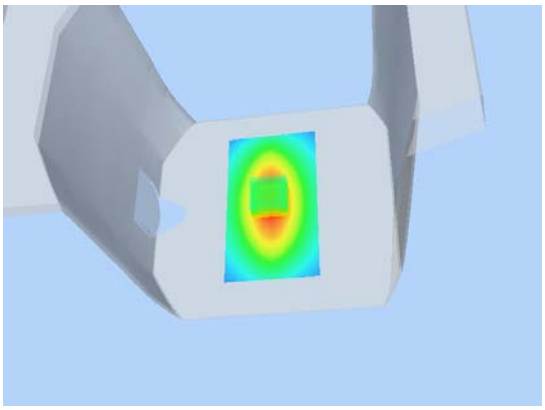
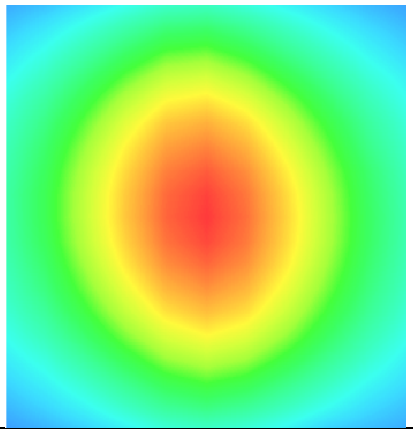
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.068219
SAR 1g (W/Kg)	0.109278

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1137	0.0722	0.0465	0.0314

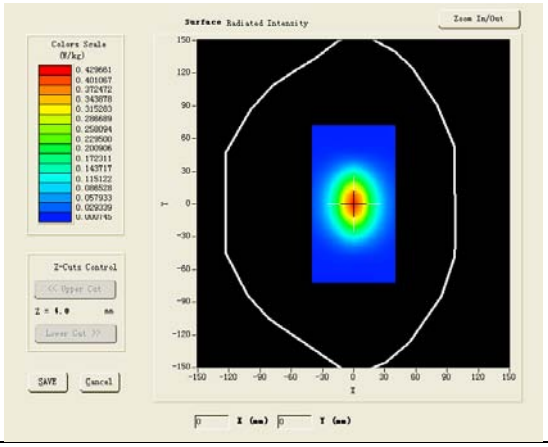
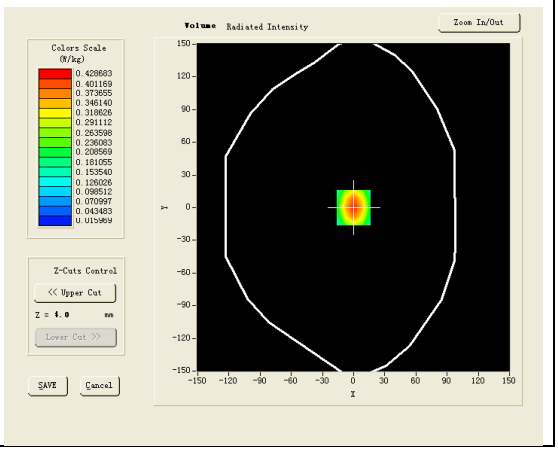


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Head 1900MHz
DUT: Dipole 1900 MHz; Type: SID 1900
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1; Conv.F=4.51
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

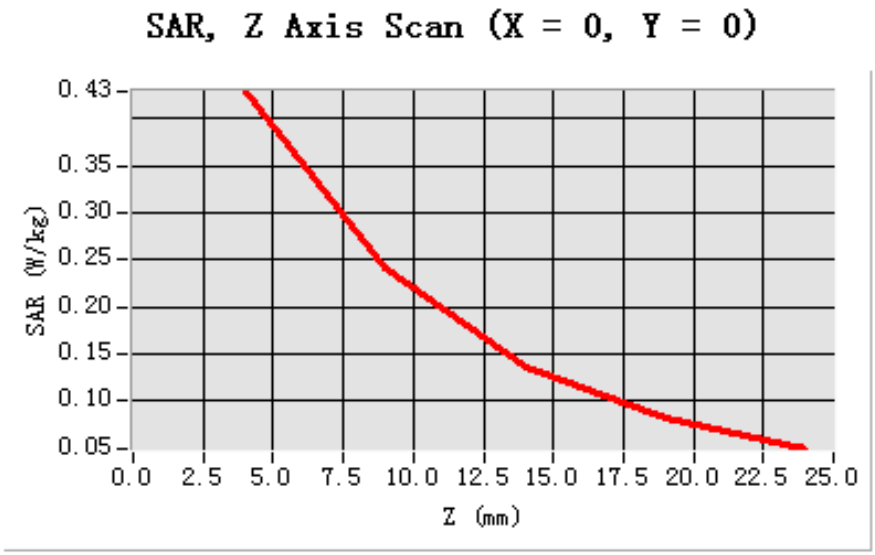
Configuration/System Check PCS1900 Head/Area Scan: Measurement grid: dx=8mm,dy=8mm
Configuration/System Check PCS1900 Head/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

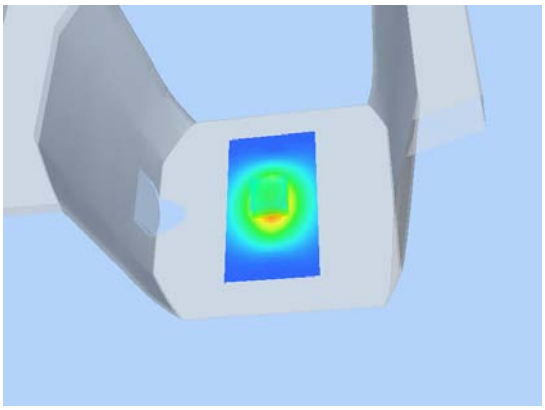
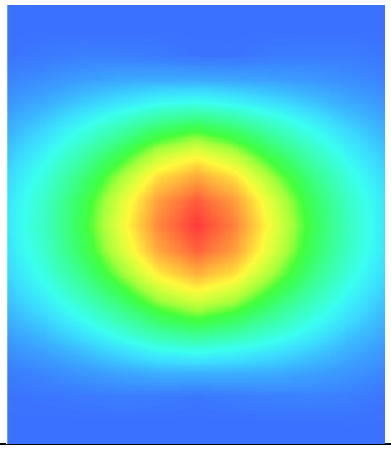
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.210986
SAR 1g (W/Kg)	0.394512

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4255	0.2389	0.1347	0.0808

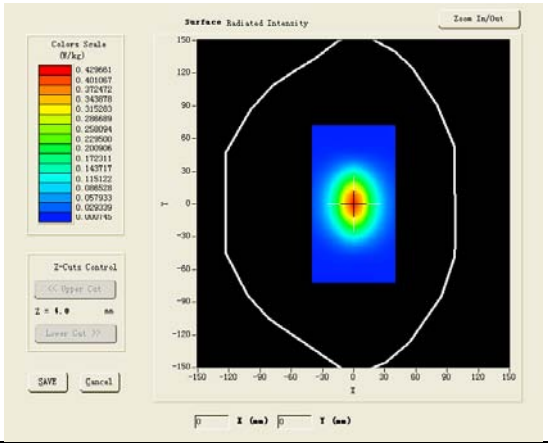
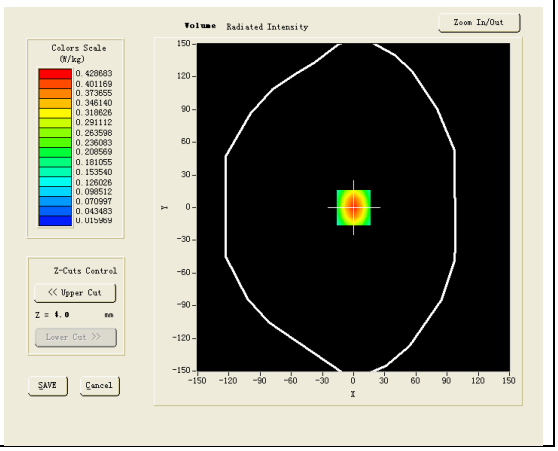


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Body 1900MHz
DUT: Dipole 1900 MHz; Type: SID 1900
Communication System: CW; Communication System Band: D1900 (1900.0 MHz); Duty Cycle:1:1; Conv.F=4.45
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.53 mho/m; εr =54.13; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

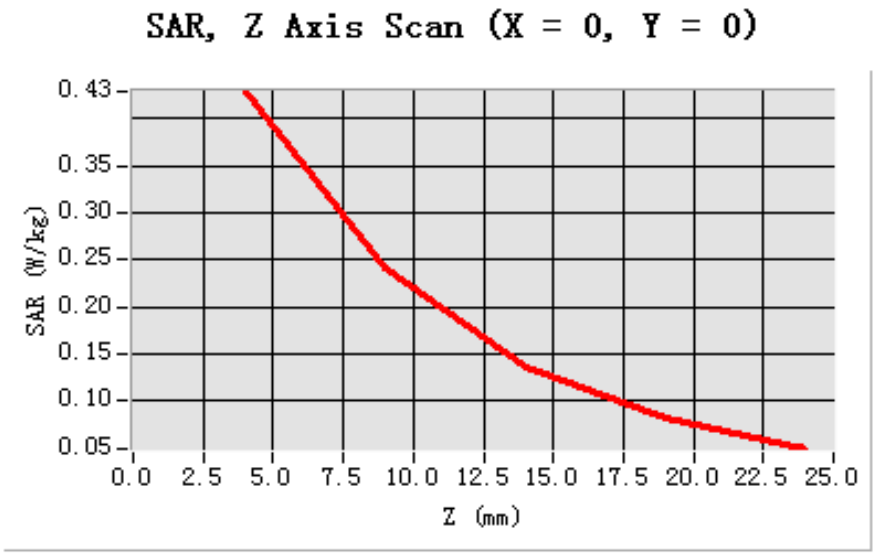
Configuration/System Check PCS1900 Body/Area Scan: Measurement grid: dx=8mm,dy=8mm
Configuration/System Check PCS1900 Body/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

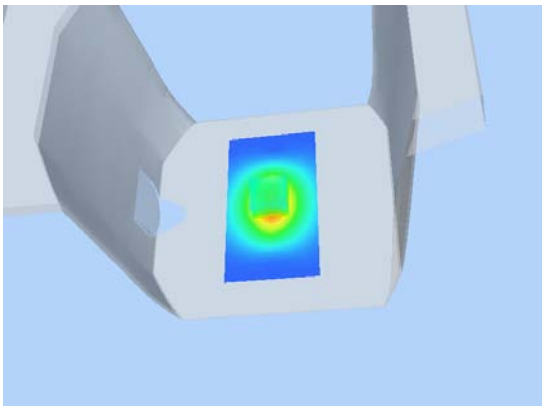
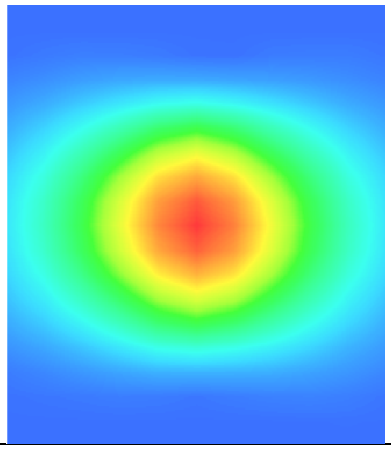
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	0.204875
SAR 1g (W/Kg)	0.397631

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4267	0.2391	0.1339	0.0815

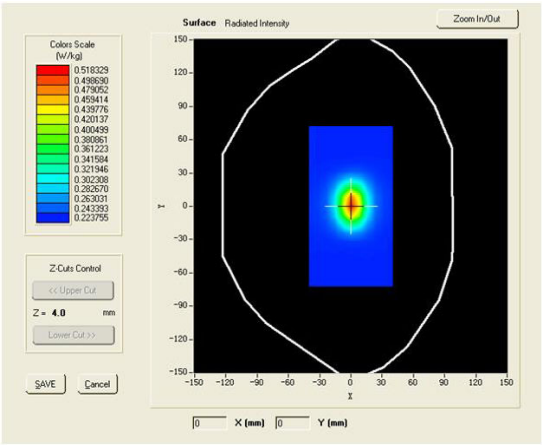
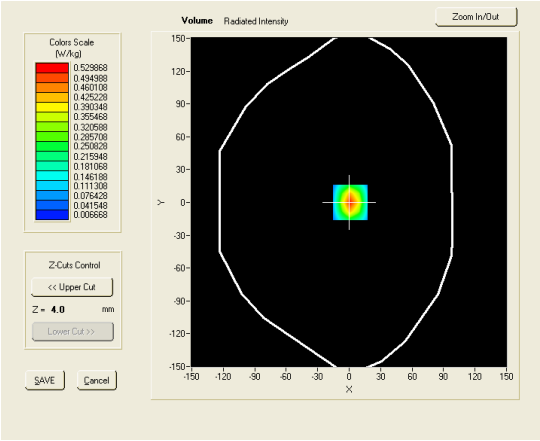


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Head 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.42
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ =1.77 mho/m; εr =40.01; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

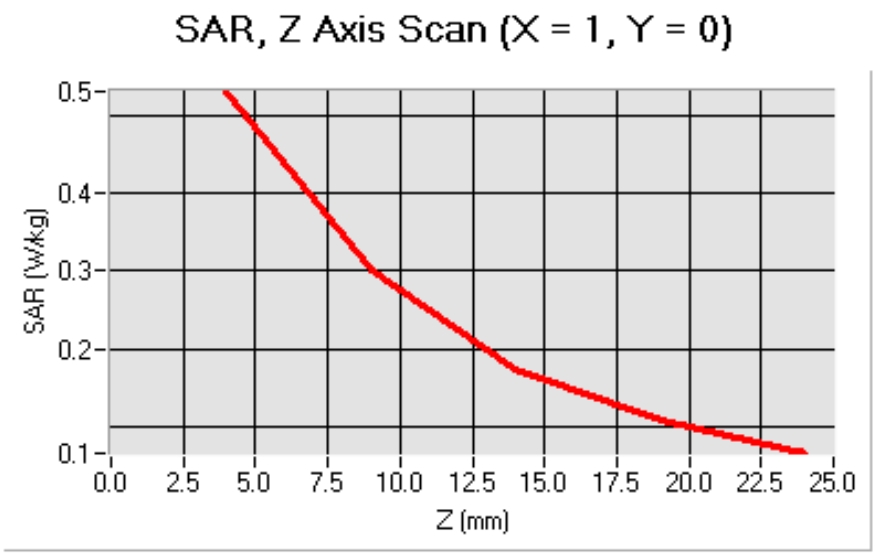
Configuration/System Check 2450 MHz Head/Area Scan: Measurement grid: dx=8mm,dy=8mm
Configuration/System Check 2450 MHz Head/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

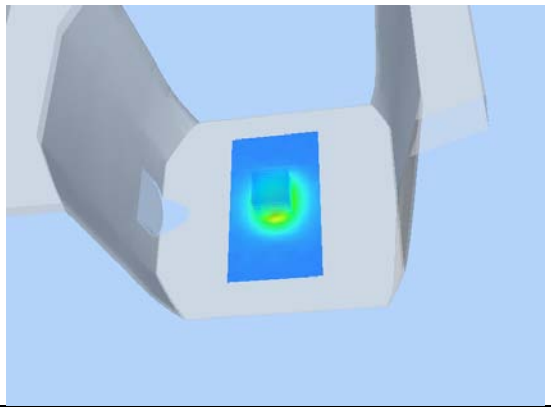
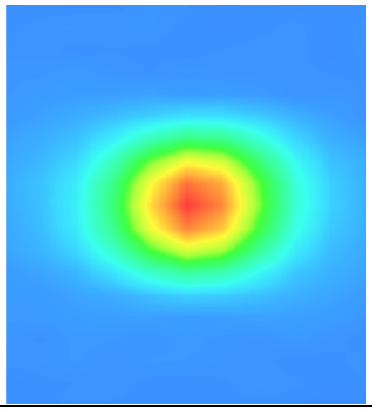
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	0.234972
SAR 1g (W/Kg)	0.497688

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5305	0.3027	0.1751	0.1087

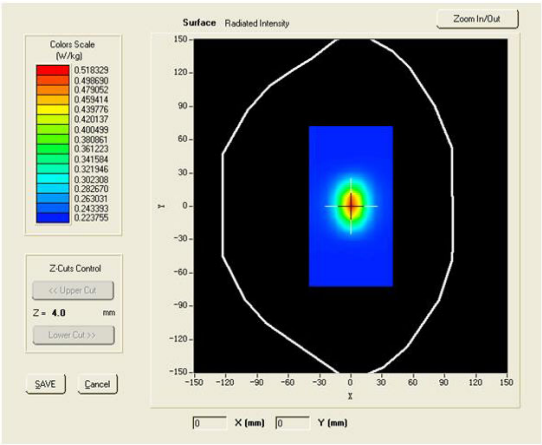
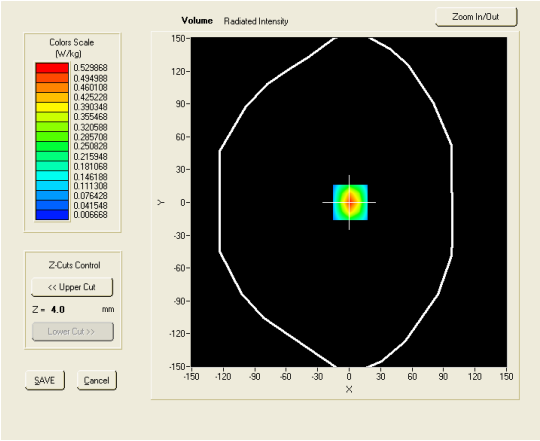


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**
System Check Body 2450 MHz
DUT: Dipole 2450 MHz Type: SID 2450
Communication System: CW; Communication System Band: D2450 (2450.0 MHz); Duty Cycle: 1:1; Conv.F=4.31
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ =1.97 mho/m; εr =50.48; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=10dBm
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

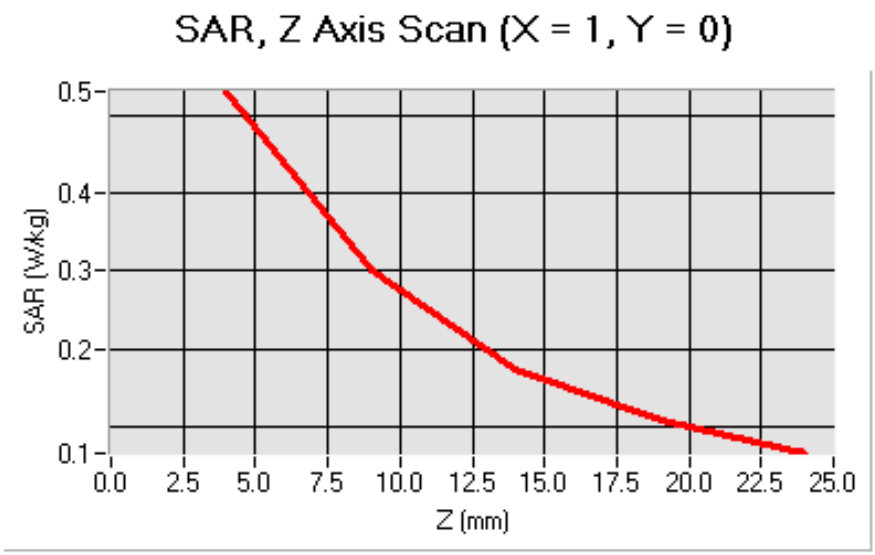
Configuration/System Check 2450 MHz Body/Area Scan: Measurement grid: dx=8mm,dy=8mm
Configuration/System Check 2450 MHz Body/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm

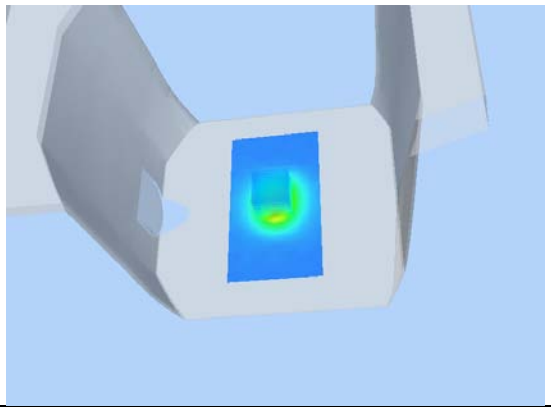
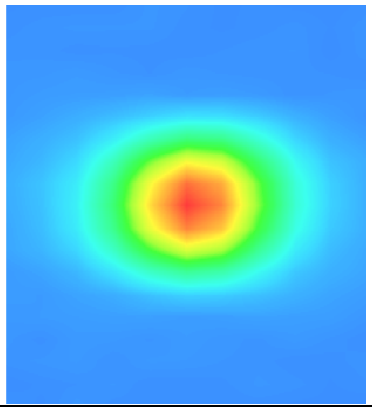
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	0.238575
SAR 1g (W/Kg)	0.492425

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5308	0.3021	0.1755	0.1087



3D screen shot	Hot spot position
	

APPENDIX B. SAR MEASUREMENT DATA

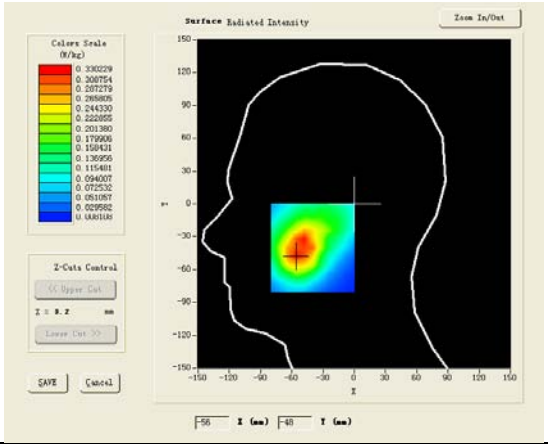
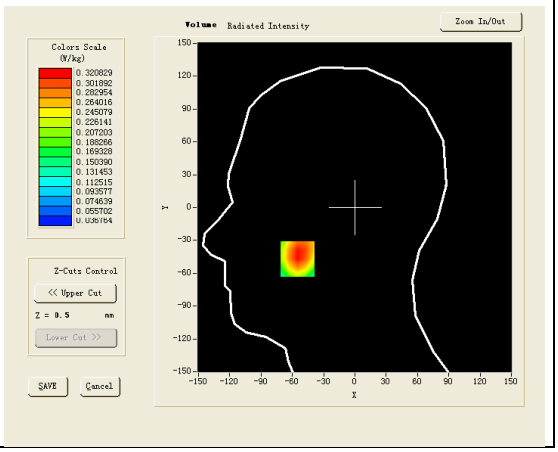
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid-Touch-Left <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.27
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Touch-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

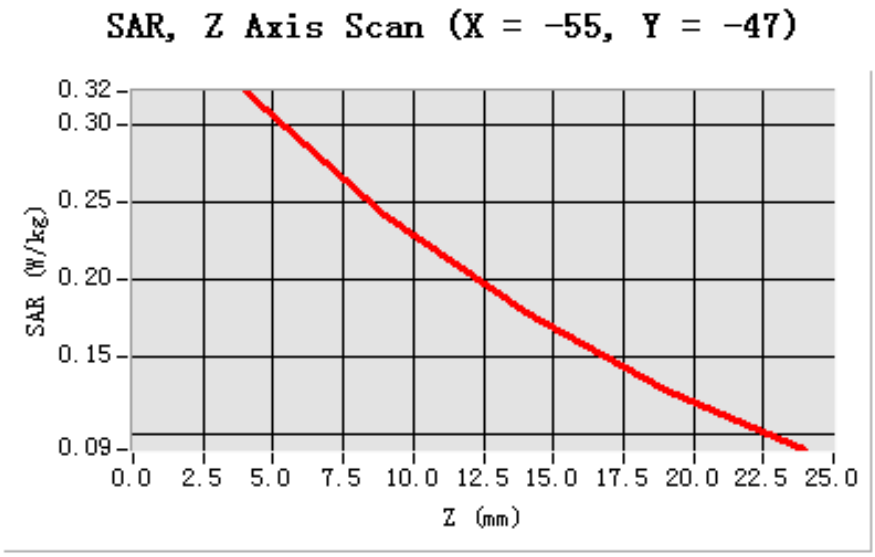
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

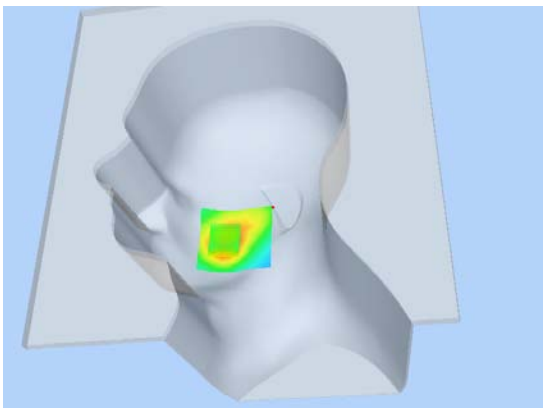
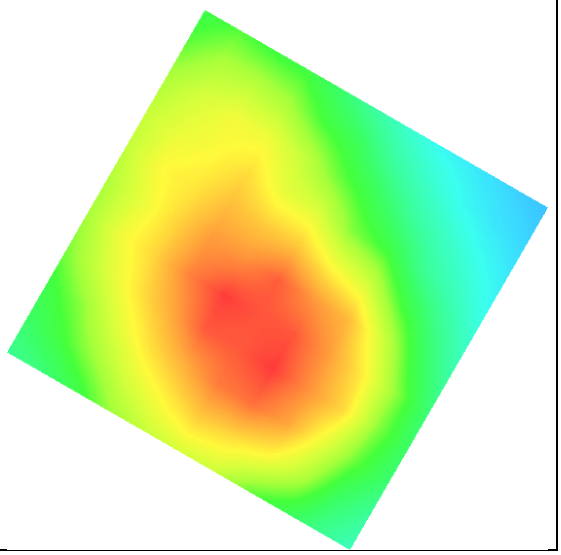
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-55.00, Y=-47.00

SAR 10g (W/Kg)	0.218359
SAR 1g (W/Kg)	0.306138

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3238	0.2495	0.1741	0.1237



3D screen shot	Hot spot position
	

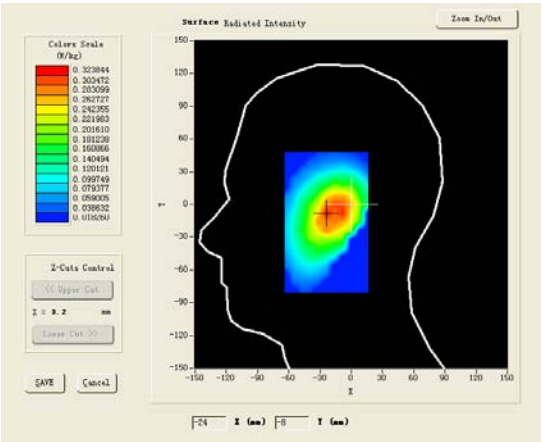
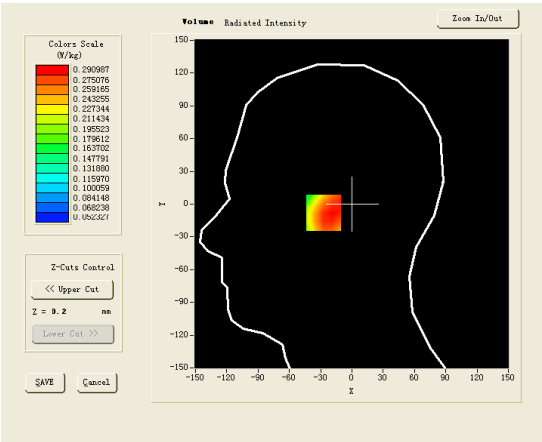
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid-Tilt-Left <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.27; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81 ; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.0, Liquid temperature(℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Tilt-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,dz=5mm;

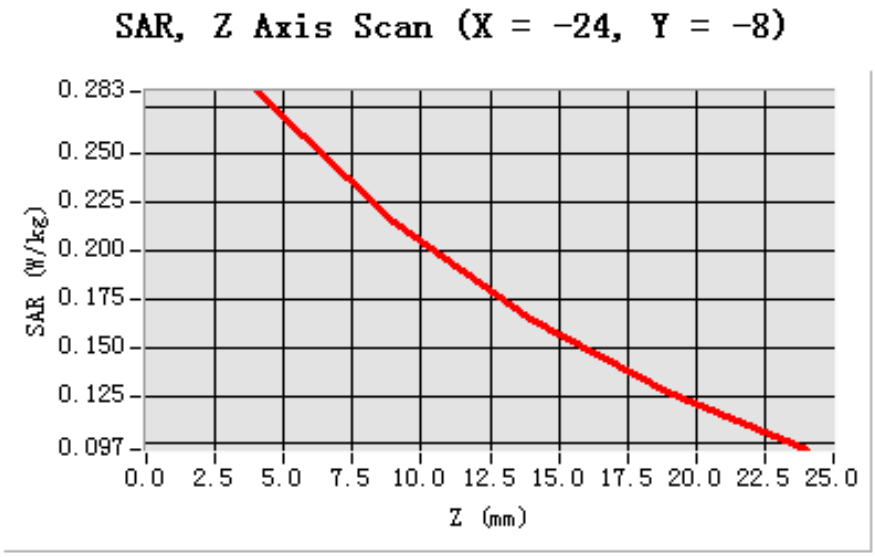
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Tilt
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

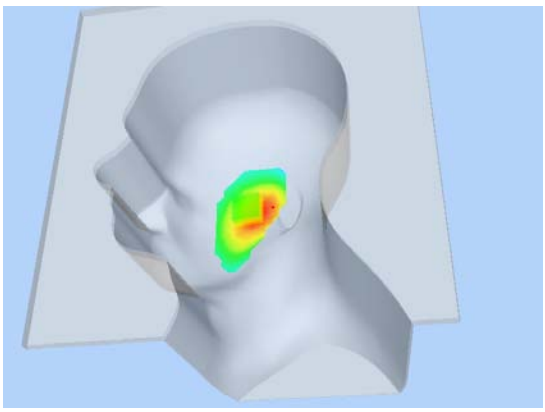
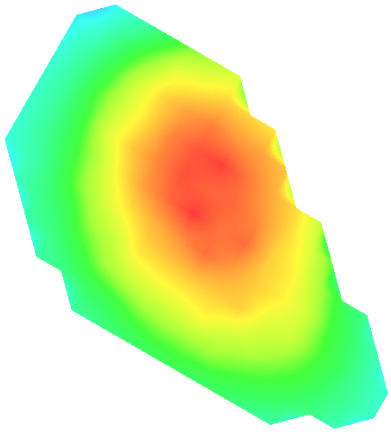
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-24.00, Y=-8.00

SAR 10g (W/Kg)	0.209541
SAR 1g (W/Kg)	0.289448

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2873	0.2151	0.1669	0.1271



3D screen shot	Hot spot position
	

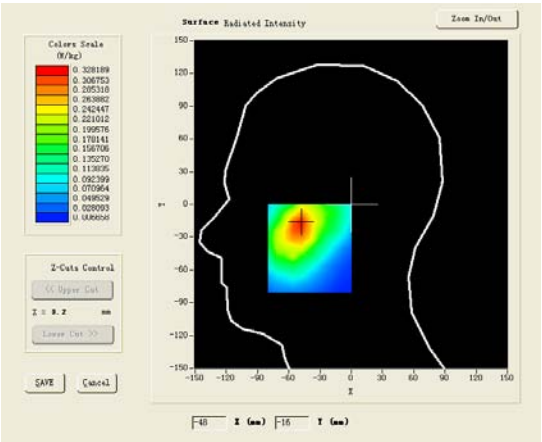
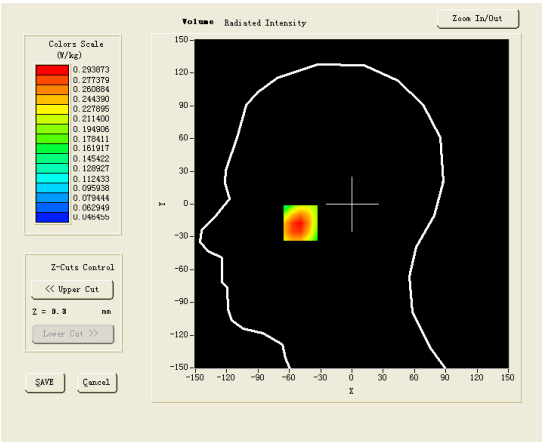
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid-Touch-Right <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.27; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.88 mho/m; εr = 40.81; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

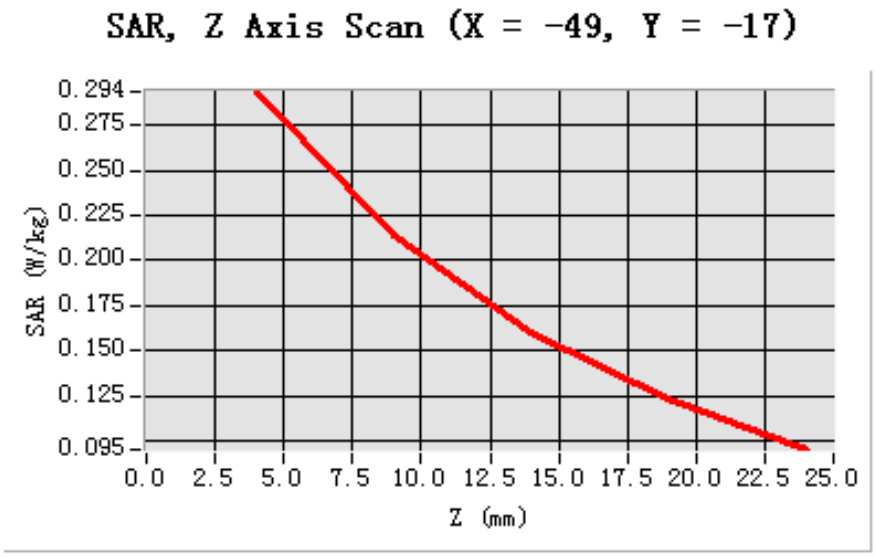
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

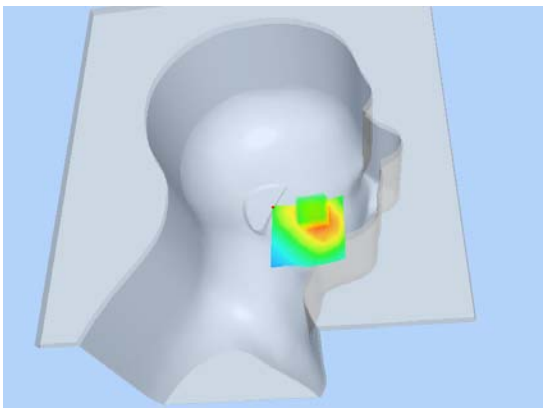
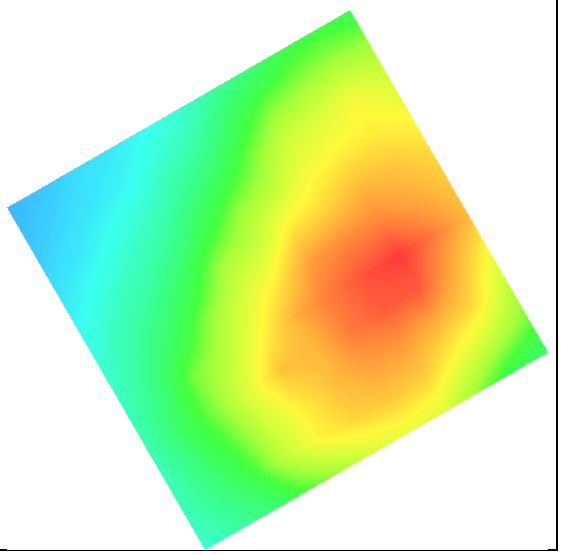
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-49.00, Y=-17.00

SAR 10g (W/Kg)	0.193397
SAR 1g (W/Kg)	0.286940

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2994	0.2138	0.1561	0.1228



3D screen shot	Hot spot position
	

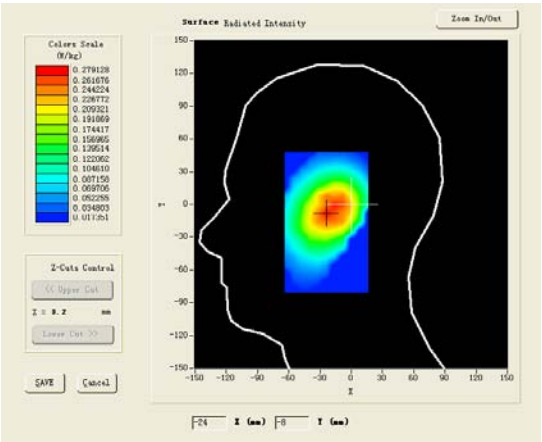
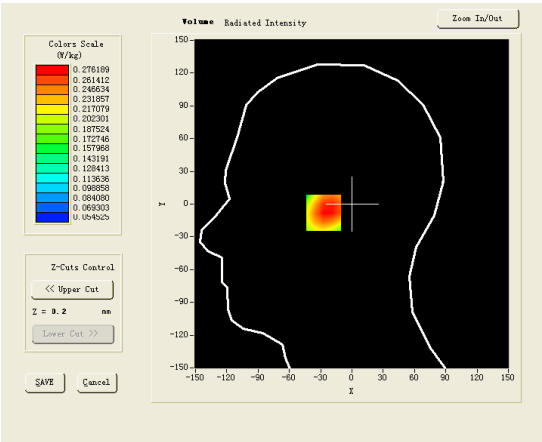
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid-Tilt-Right <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.27; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81 ; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Tilt-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

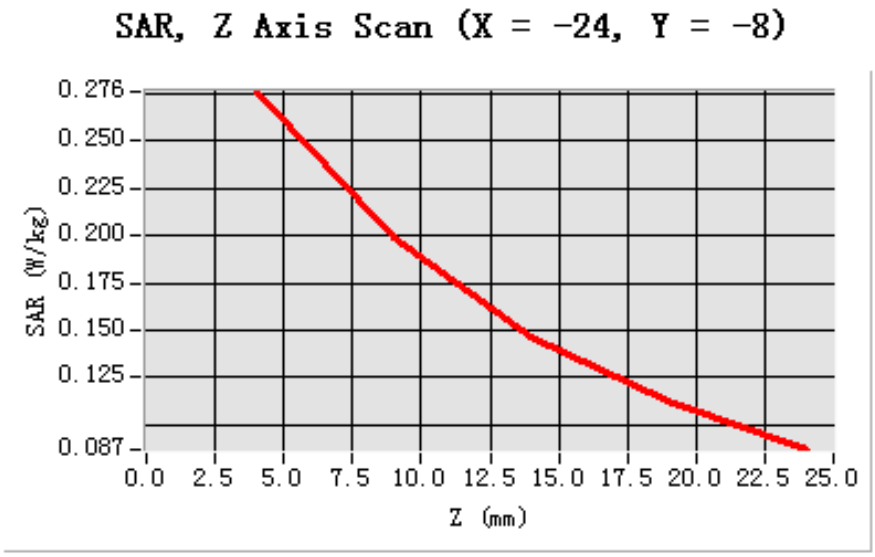
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Tilt
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

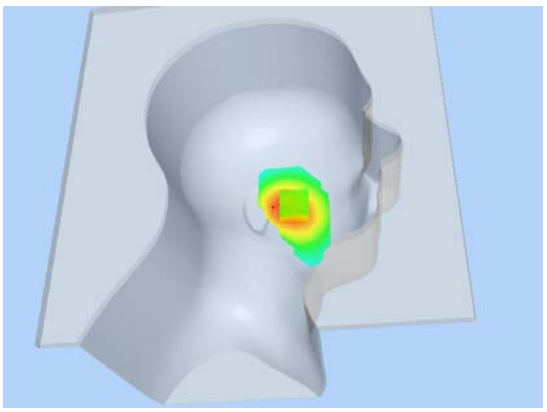
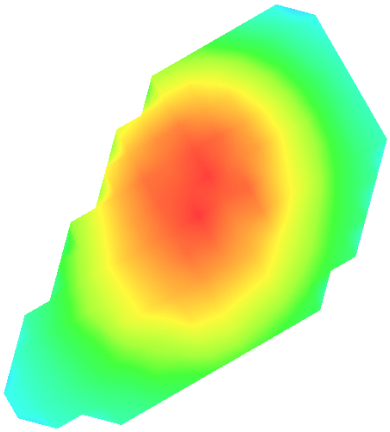
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-24.00, Y=-8.00

SAR 10g (W/Kg)	0.185083
SAR 1g (W/Kg)	0.262468

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2748	0.1993	0.1438	0.1125



3D screen shot	Hot spot position
	

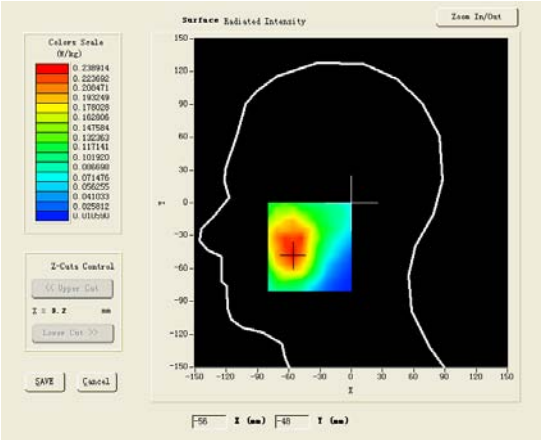
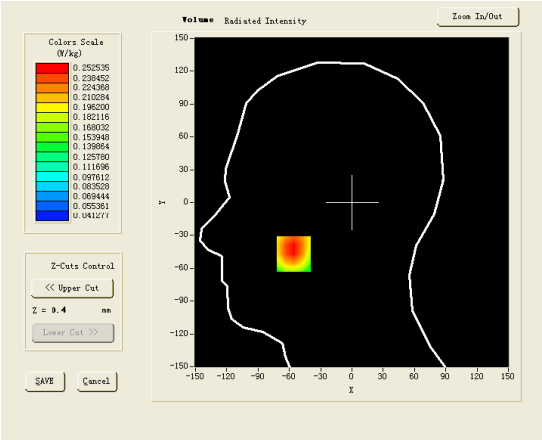
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid-Touch-Left <SIM 2>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.27
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Touch-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

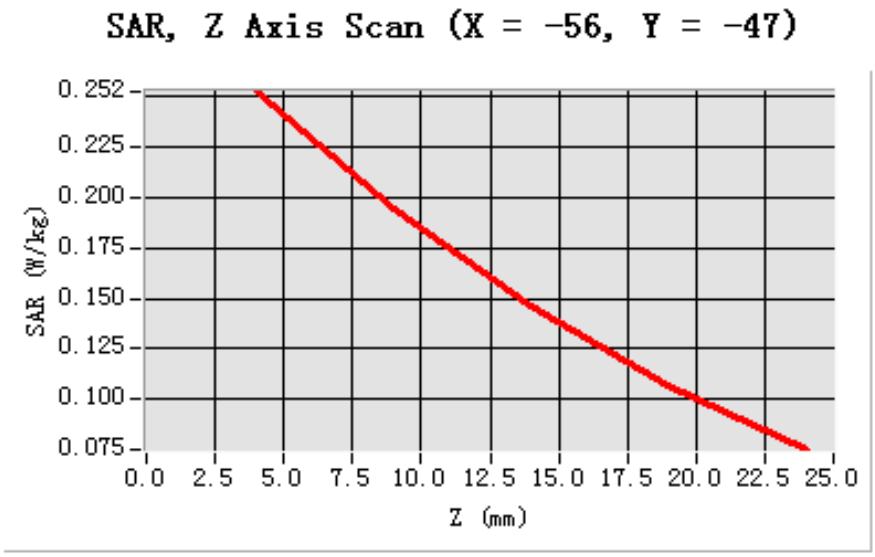
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

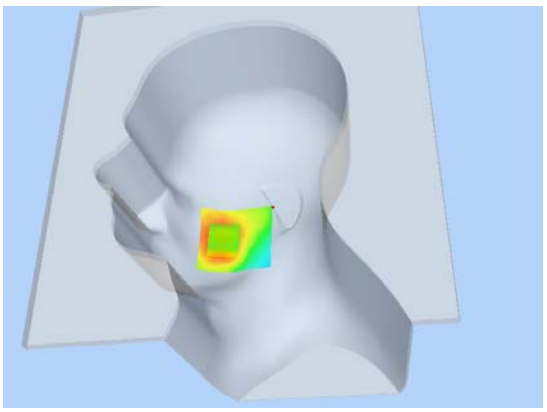
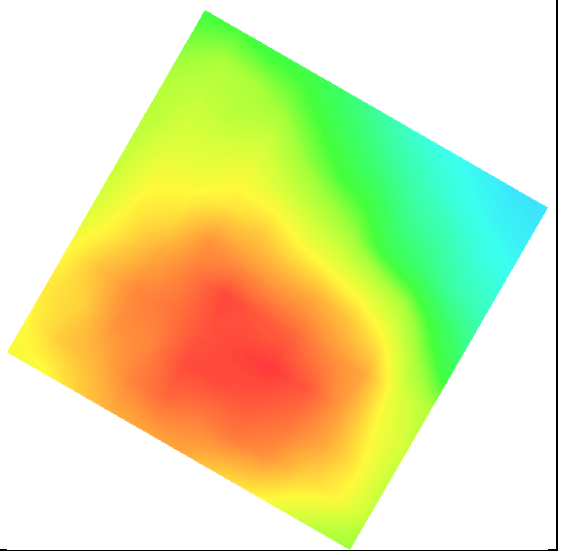
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-56.00, Y=-47.00

SAR 10g (W/Kg)	0.178259
SAR 1g (W/Kg)	0.246275

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2538	0.1996	0.1426	0.1041



3D screen shot	Hot spot position
	

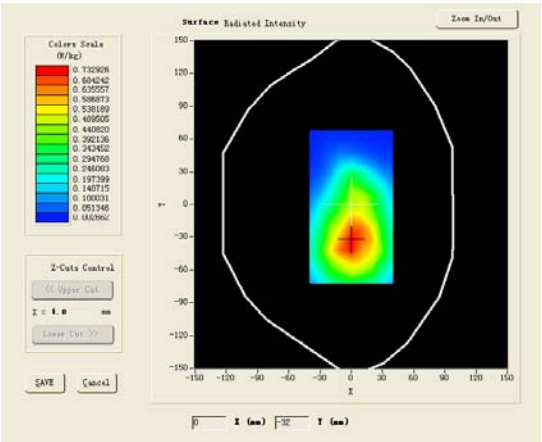
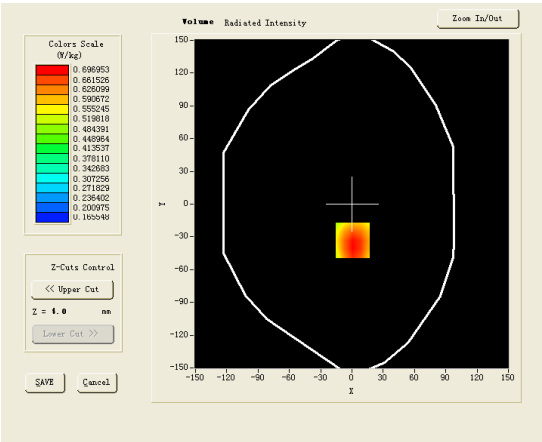
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid- Body- Back <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.48; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.99mho/m; εr = 55.01; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Body-Back/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

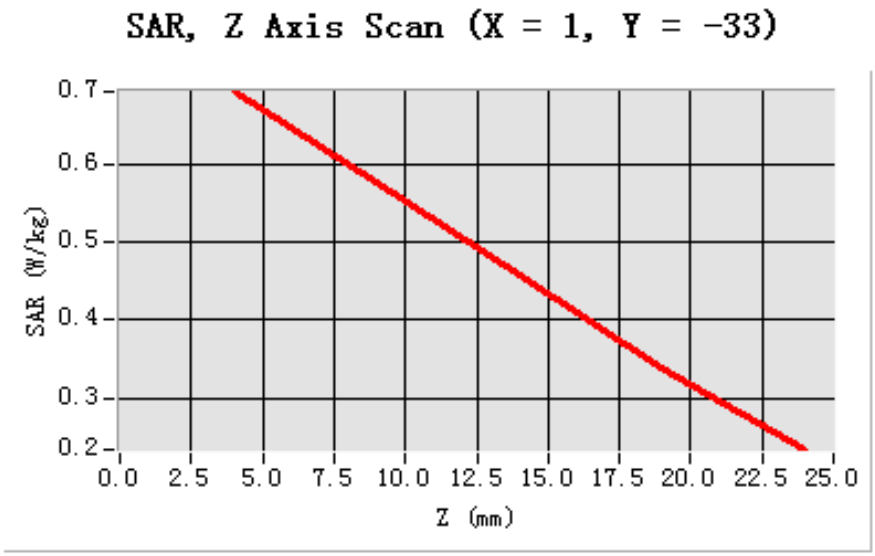
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

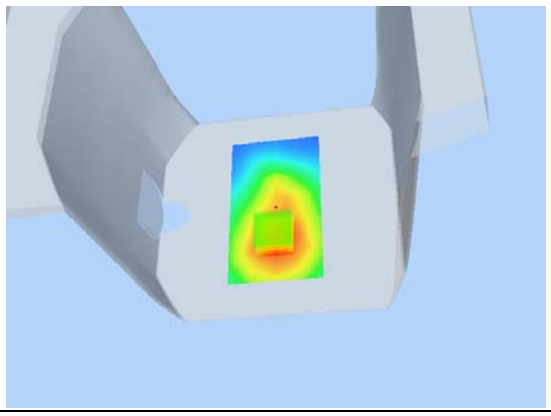
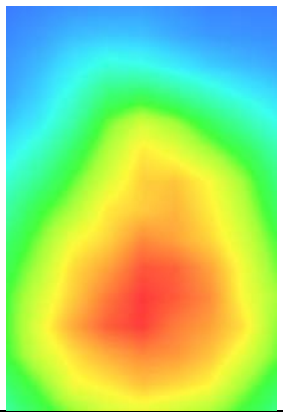
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-33.00

SAR 10g (W/Kg)	0.509360
SAR 1g (W/Kg)	0.680683

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.6962	0.5780	0.4557	0.3349



3D screen shot	Hot spot position
	

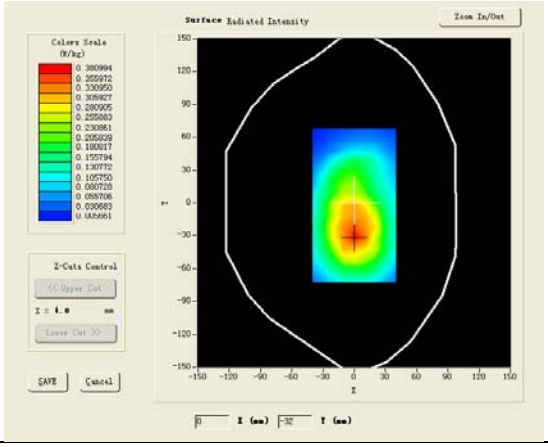
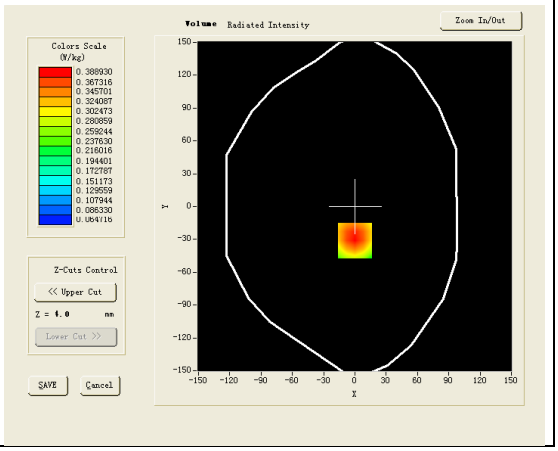
Test Laboratory: AGC Lab **Date: Mar.24,2014**
GSM 835 Mid- Body- Front (MS) <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: GSM 835; Duty Cycle: 1:8.3; Conv.F=5.48; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.99mho/m; εr = 55.01; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 835 Mid-Body- Front /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 835 Mid-Body- Front Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

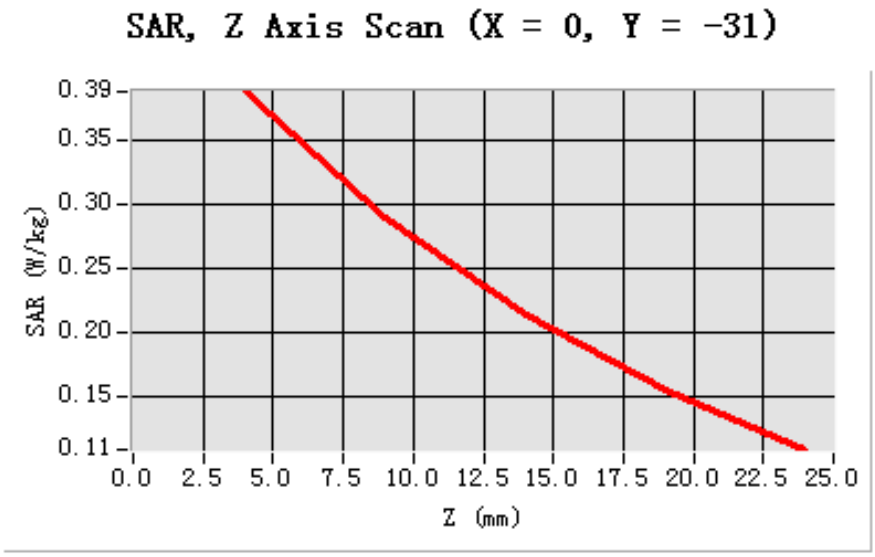
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	GSM 835
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

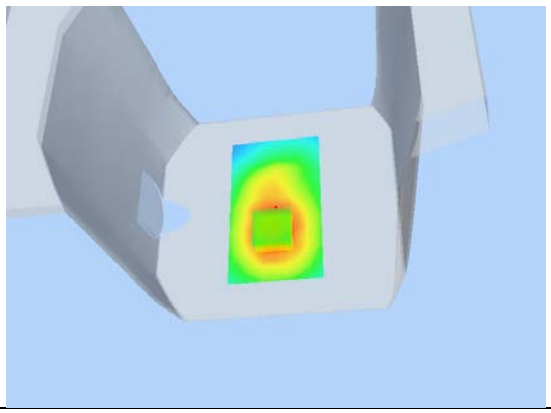
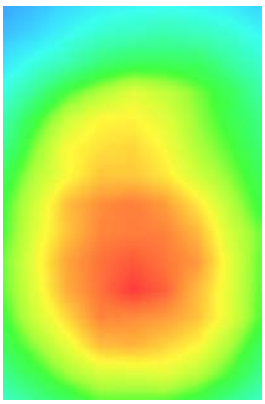
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-31.00

SAR 10g (W/Kg)	0.265930
SAR 1g (W/Kg)	0.375174

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3885	0.2874	0.2164	0.1550



3D screen shot	Hot spot position
	

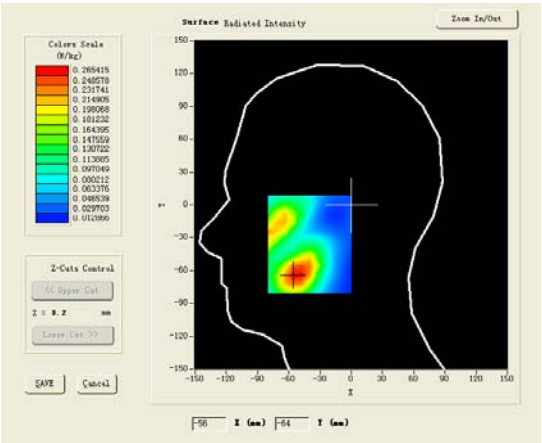
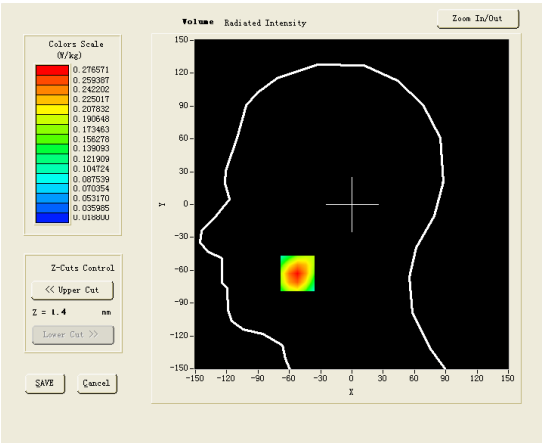
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Touch-Left <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.51; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Touch-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

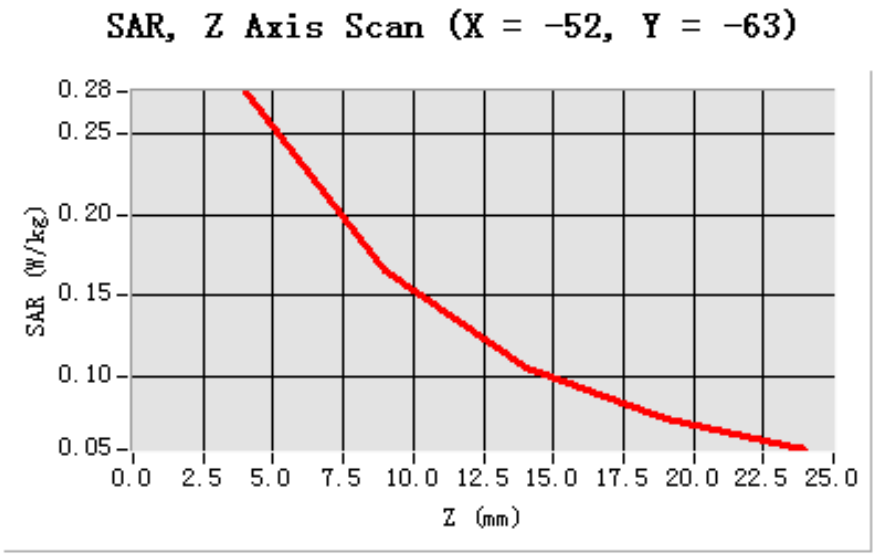
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

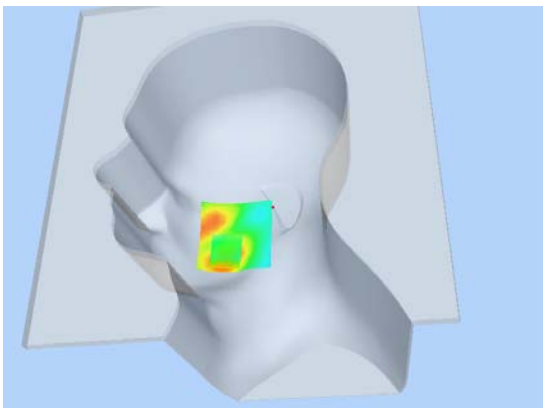
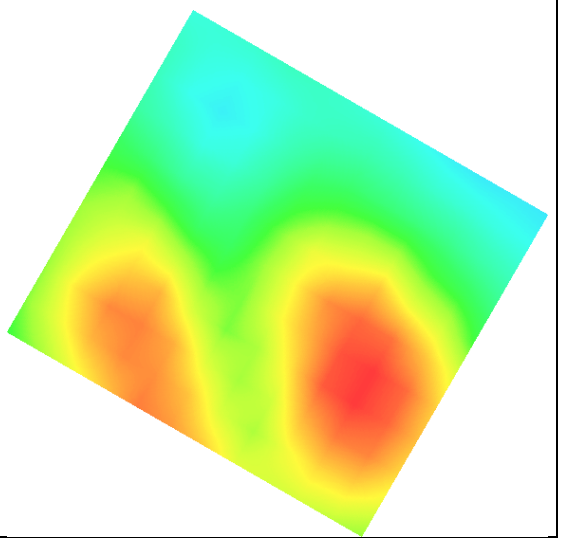
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-52.00, Y=-63.00

SAR 10g (W/Kg)	0.158359
SAR 1g (W/Kg)	0.263471

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2772	0.1645	0.1059	0.0762



3D screen shot	Hot spot position
	

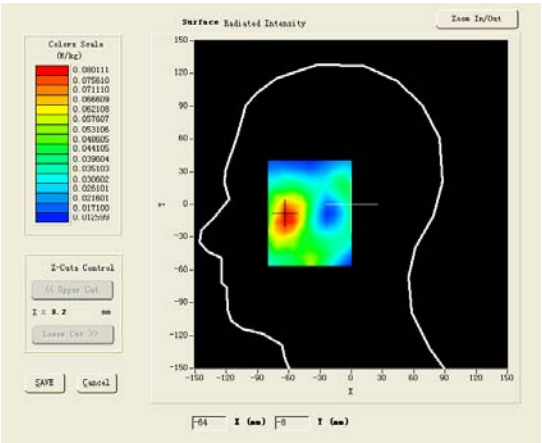
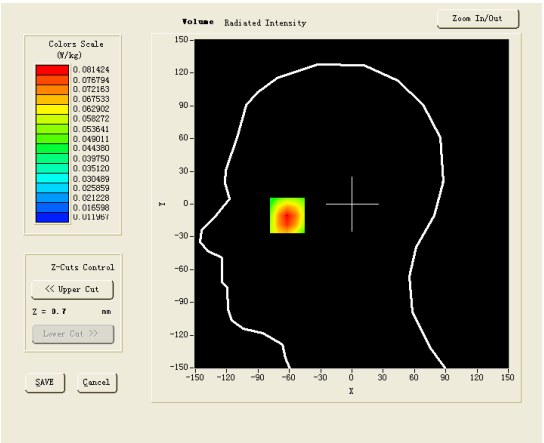
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Tilt-Left <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.51; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Tilt-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Tilt-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm,dz=5mm;

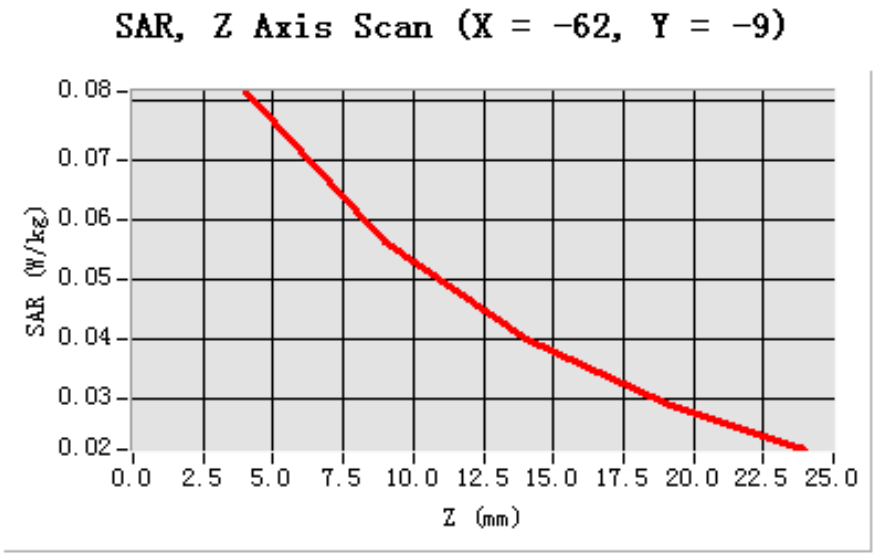
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Tilt
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

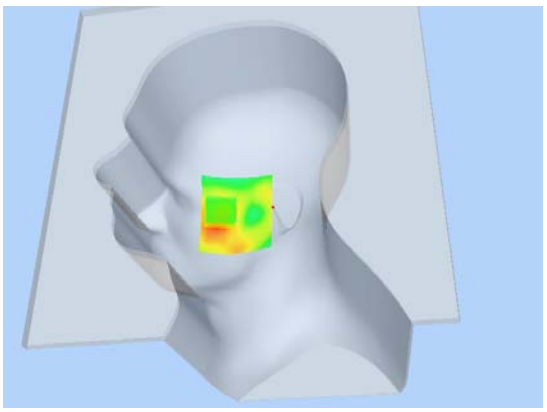
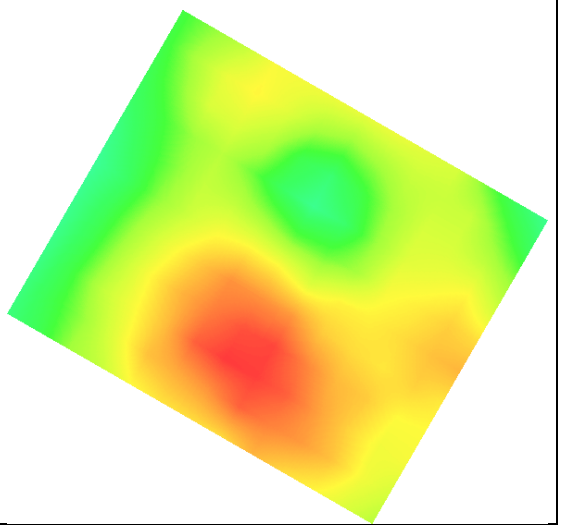
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-62.00, Y=-9.00

SAR 10g (W/Kg)	0.059548
SAR 1g (W/Kg)	0.072478

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0883	0.0565	0.0401	0.0294



3D screen shot	Hot spot position
	

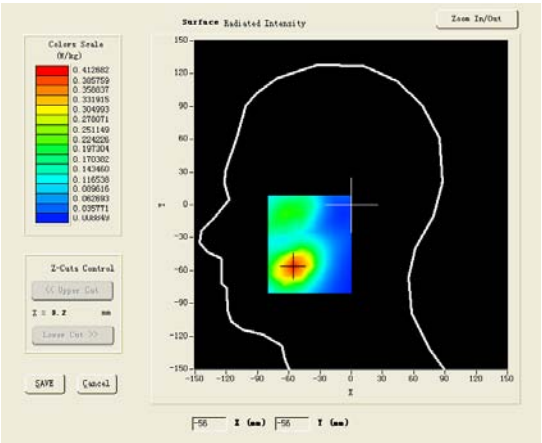
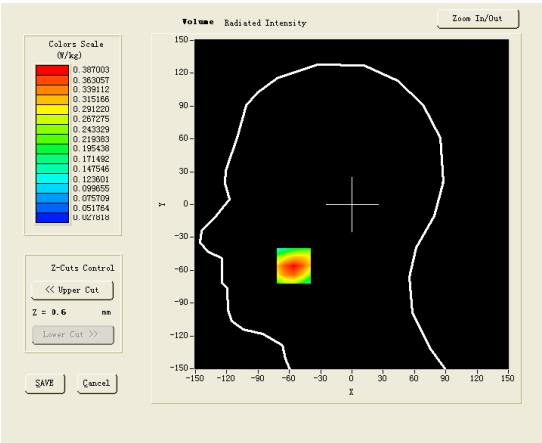
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Touch-Right <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.51; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

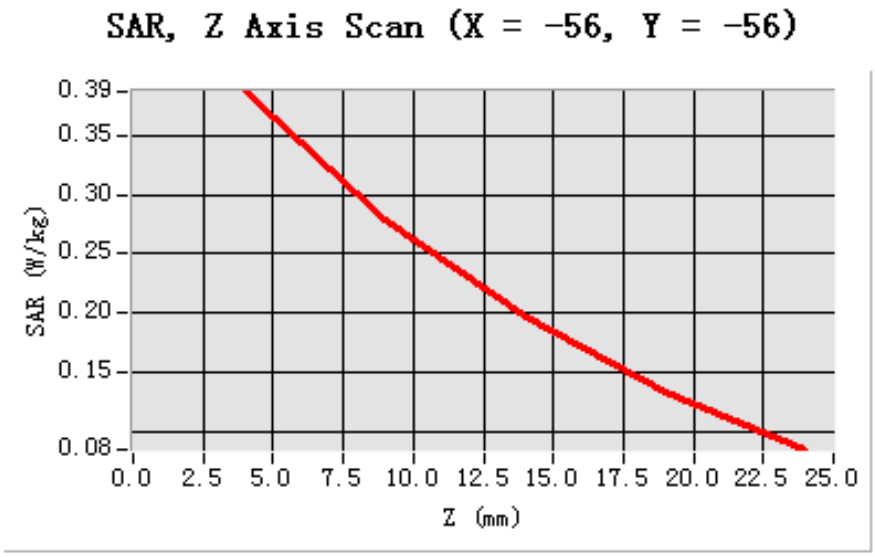
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

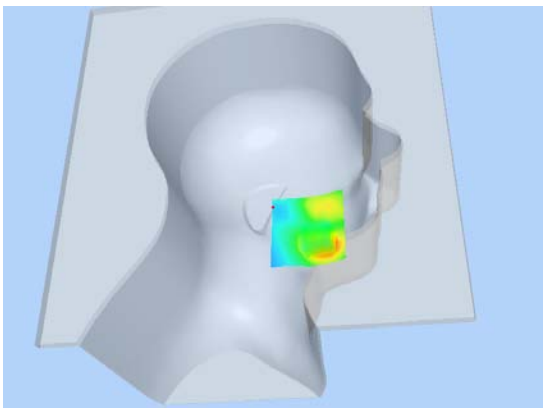
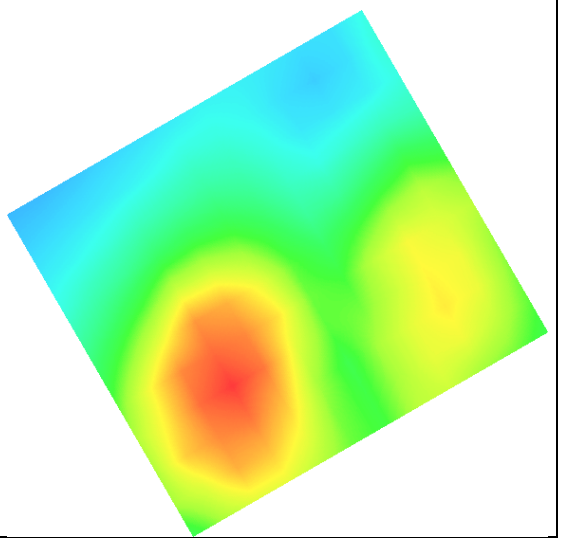
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.237359
SAR 1g (W/Kg)	0.369306

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3845	0.2762	0.1959	0.1351



3D screen shot	Hot spot position
	

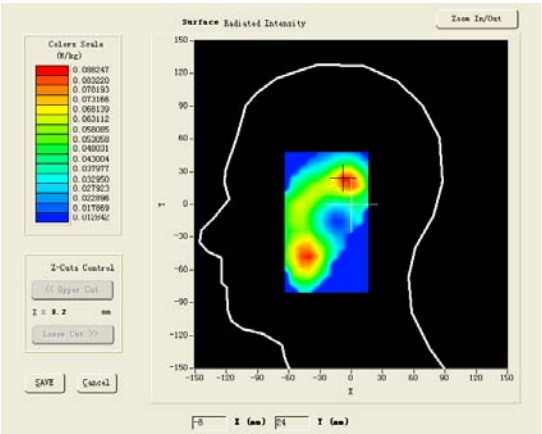
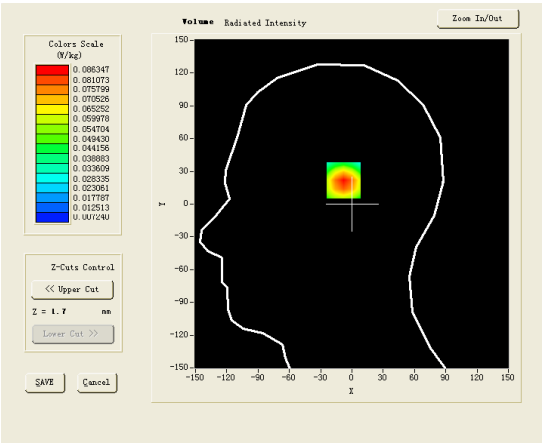
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Tilt-Right <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.51; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Tilt-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

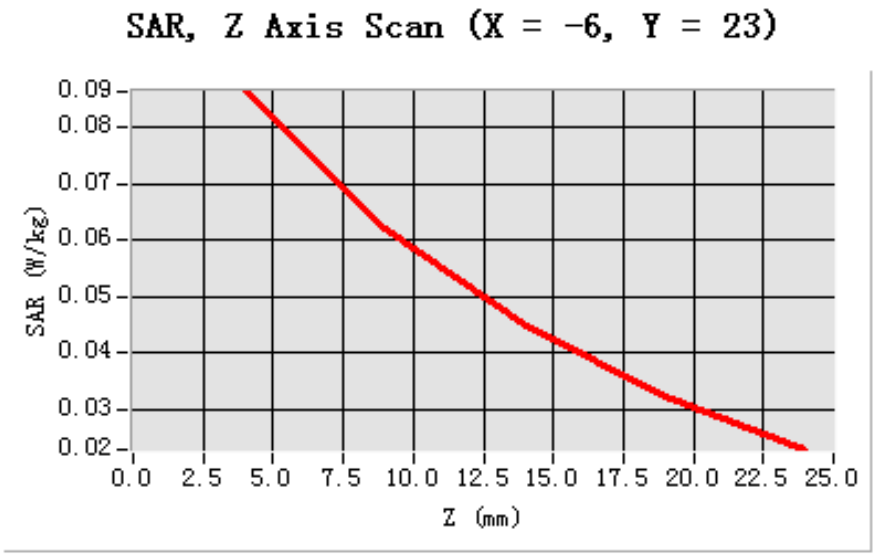
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Tilt
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

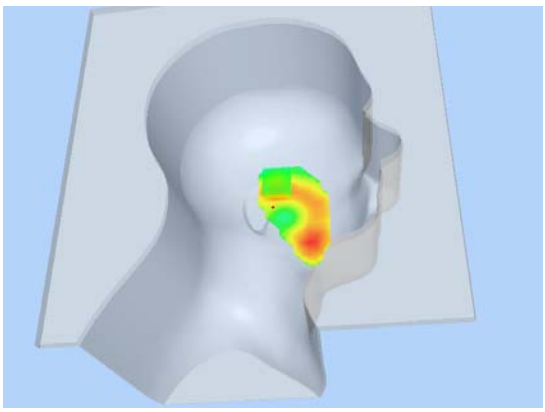
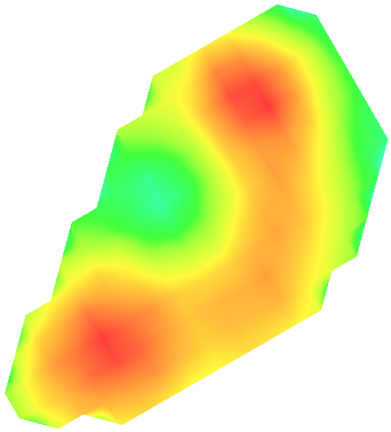
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-6.00, Y=23.00

SAR 10g (W/Kg)	0.055714
SAR 1g (W/Kg)	0.088249

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0842	0.0638	0.0447	0.0323



3D screen shot	Hot spot position
	

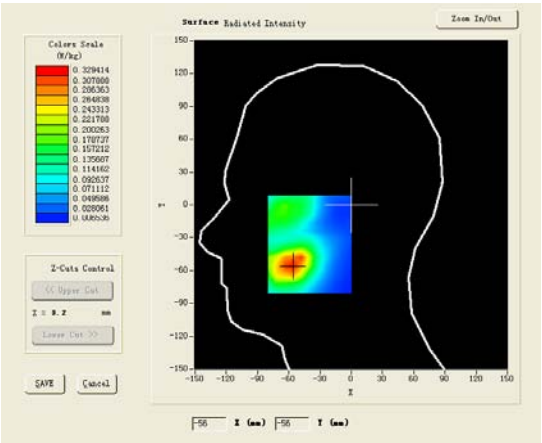
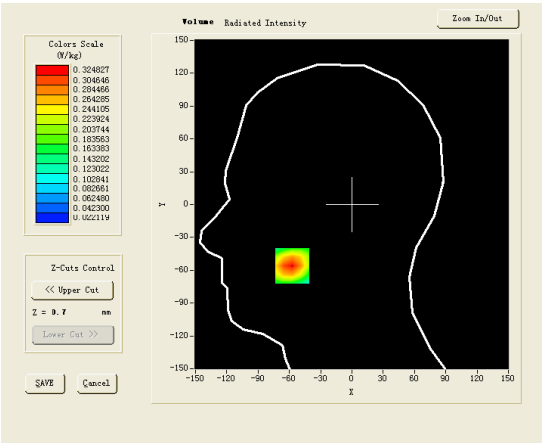
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Touch-Right <SIM 2>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.51; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

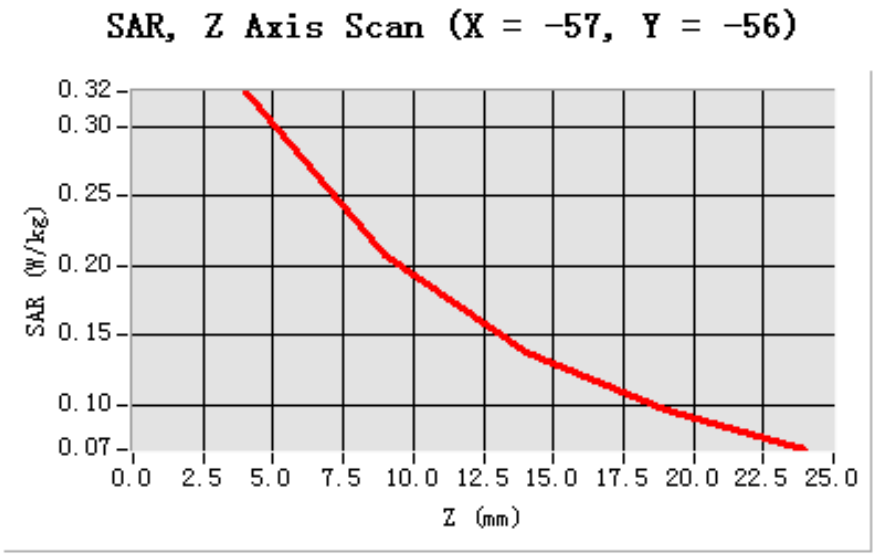
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

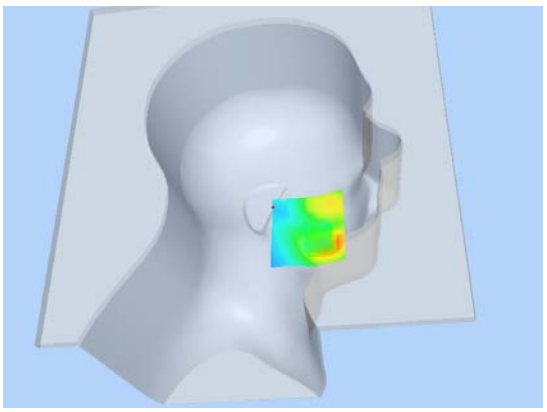
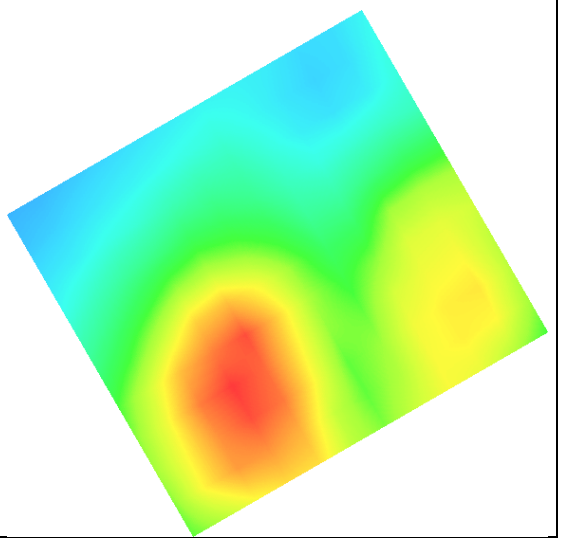
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-57.00, Y=-56.00

SAR 10g (W/Kg)	0.180538
SAR 1g (W/Kg)	0.307824

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3262	0.2080	0.1373	0.0956



3D screen shot	Hot spot position
	

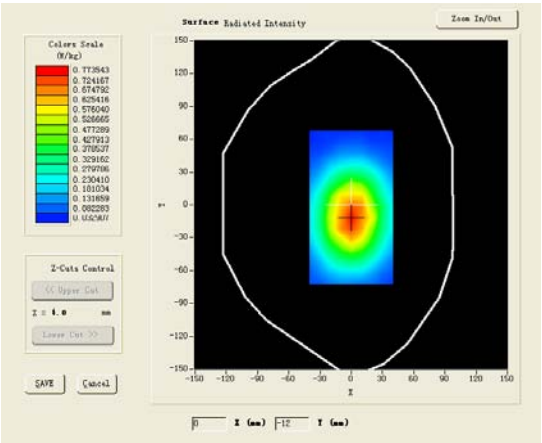
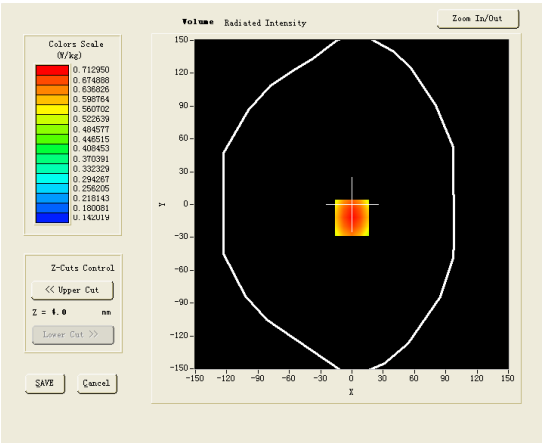
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Body- Back <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.45; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.53 mho/m; εr =54.13; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

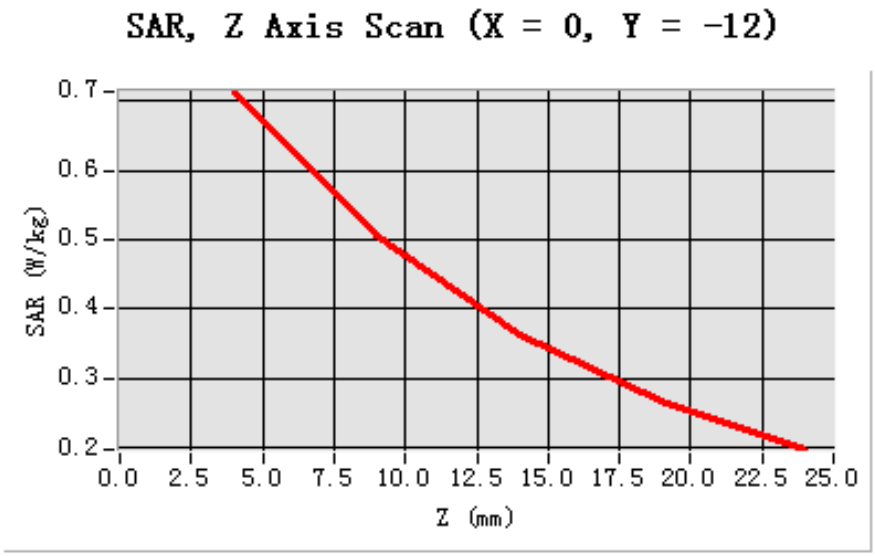
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

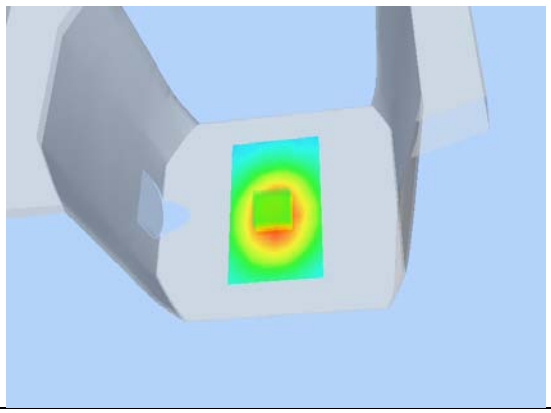
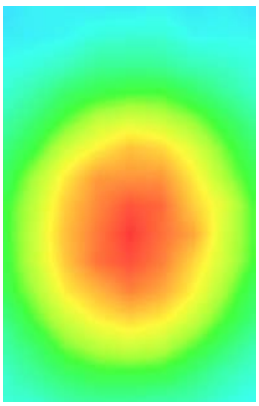
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-12.00

SAR 10g (W/Kg)	0.518593
SAR 1g (W/Kg)	0.742418

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.7183	0.5028	0.3666	0.2632



3D screen shot	Hot spot position
	

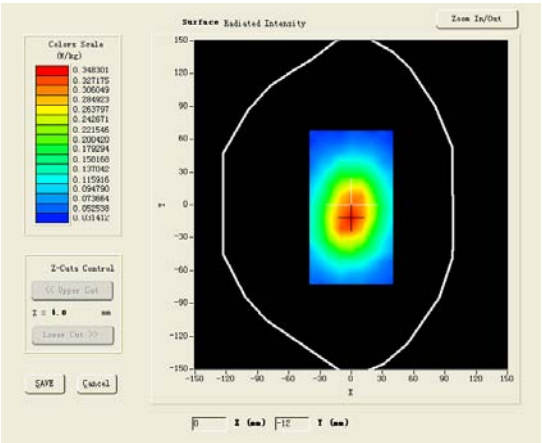
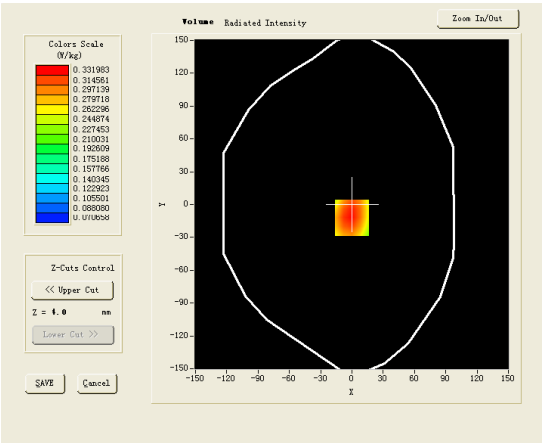
Test Laboratory: AGC Lab **Date: Mar.24,2014**
PCS 1900 Mid-Body -Front (MS) <SIM 1>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=4.45; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.53 mho/m; εr =54.13; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.0, Liquid temperature (℃): 21.0

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Body- Front /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Body- Front /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

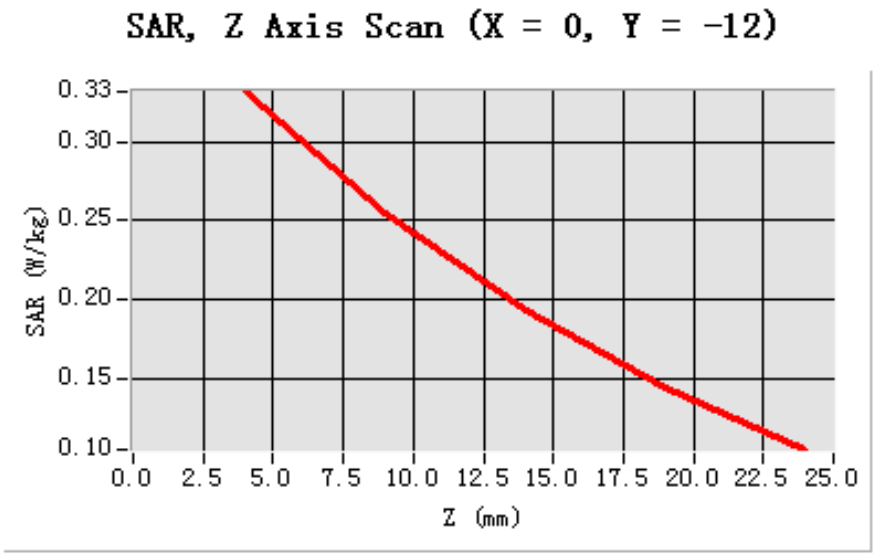
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

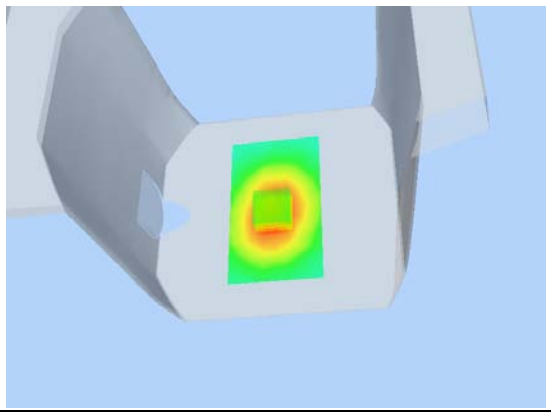
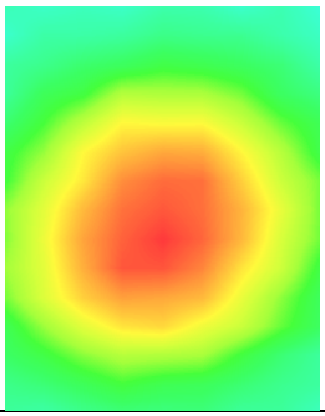
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-12.00

SAR 10g (W/Kg)	0.257396
SAR 1g (W/Kg)	0.347094

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3369	0.2563	0.1936	0.1428



3D screen shot	Hot spot position
	

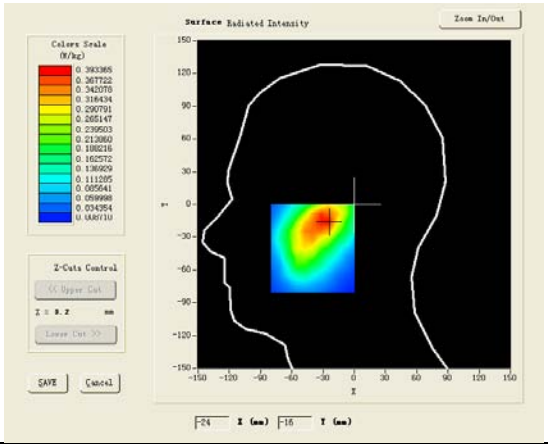
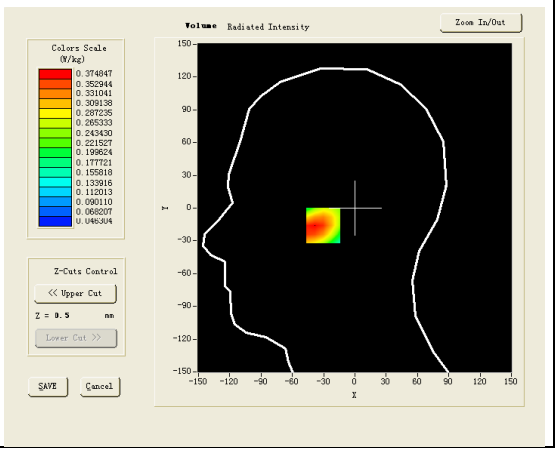
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Touch-Left (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1;Conv.F=4.51
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA Band Ⅱ Mid-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA Band Ⅱ Mid-Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm,dz=5mm;

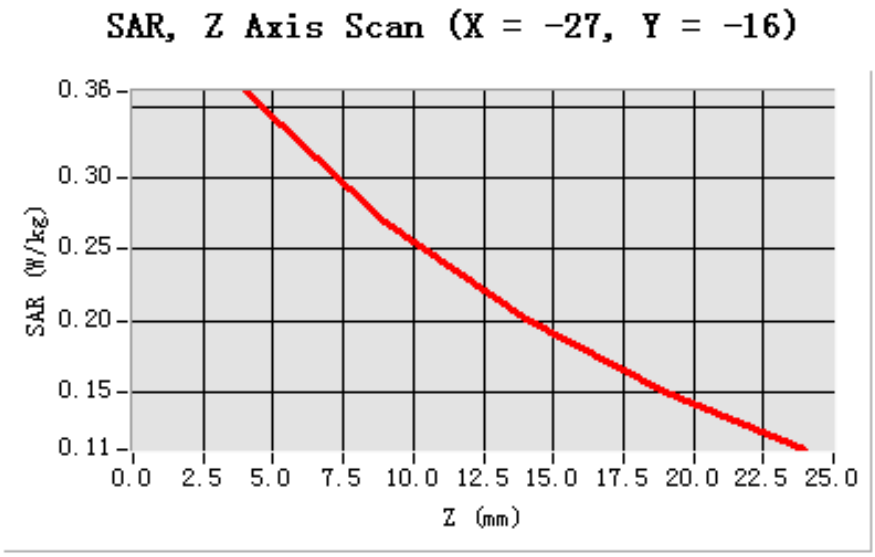
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	WCDMA Band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

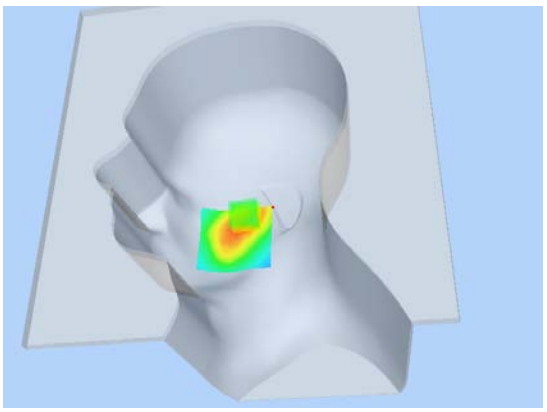
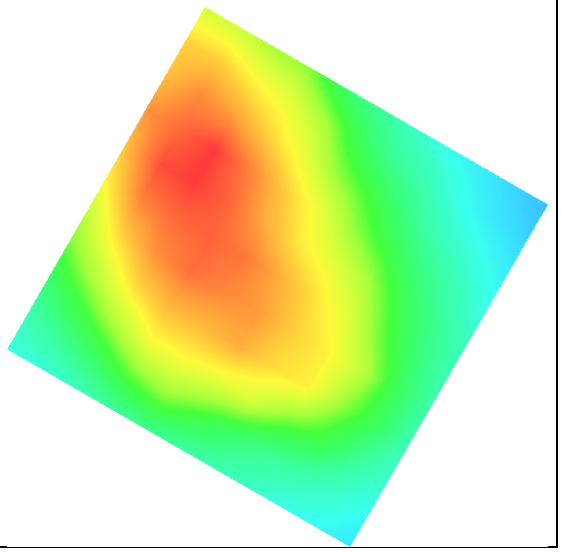
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-27.00, Y=-16.00

SAR 10g (W/Kg)	0.247259
SAR 1g (W/Kg)	0.356134

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3612	0.2698	0.2014	0.1500



3D screen shot	Hot spot position
	

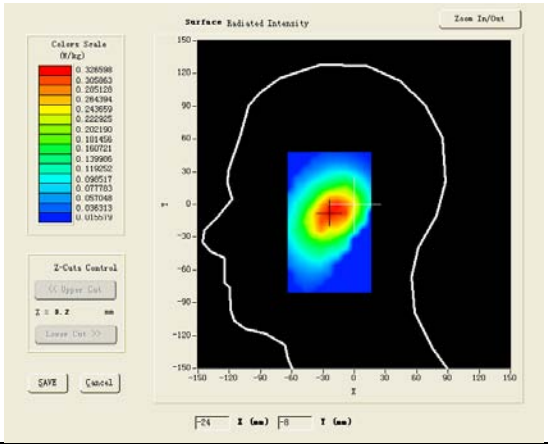
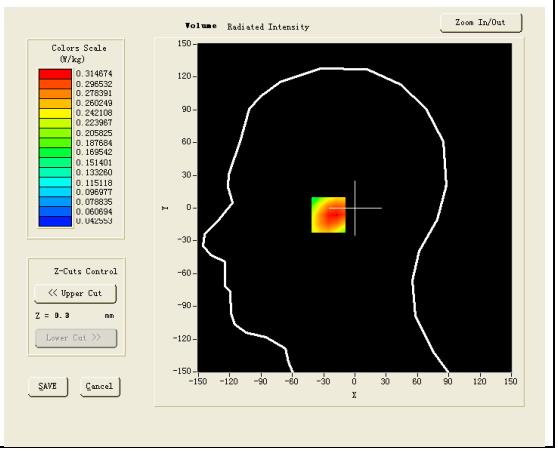
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Tilt-Left (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.51
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m;εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA Band Ⅱ Mid-Tilt-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA Band Ⅱ Mid-Tilt-Left/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

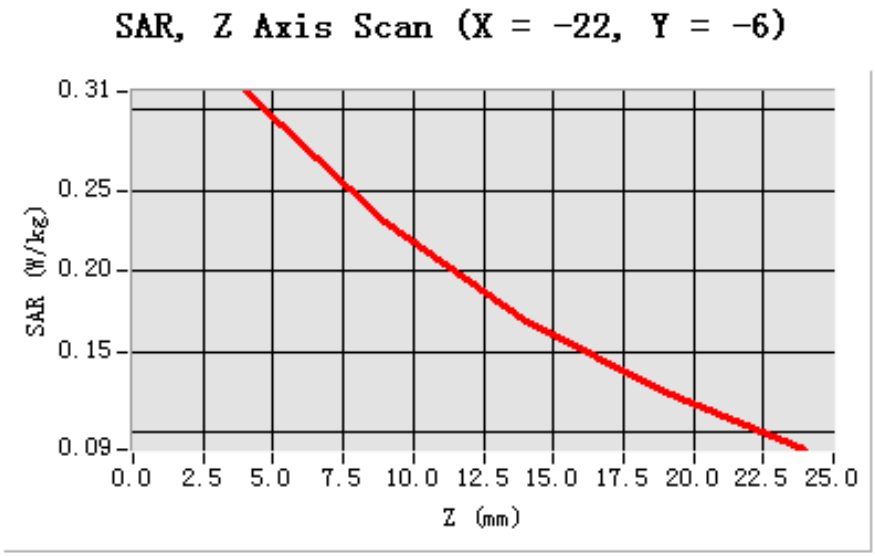
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Tilt
Band	WCDMA Band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

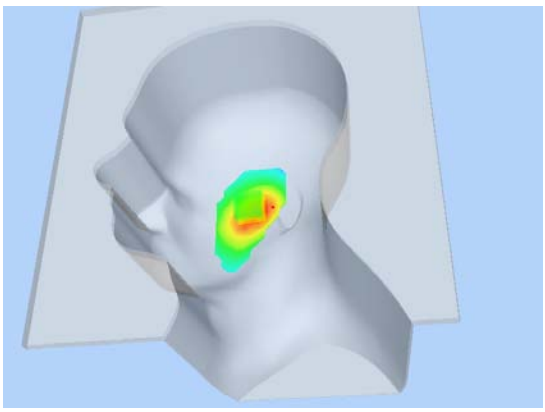
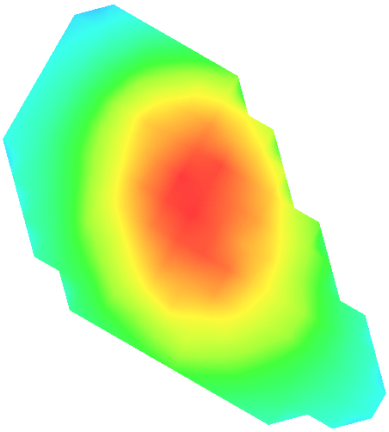
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-22.00, Y=-6.00

SAR 10g (W/Kg)	0.217248
SAR 1g (W/Kg)	0.302658

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.3114	0.2298	0.1693	0.1243



3D screen shot	Hot spot position
	

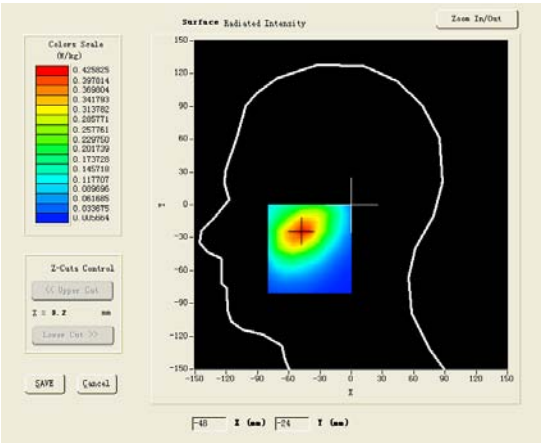
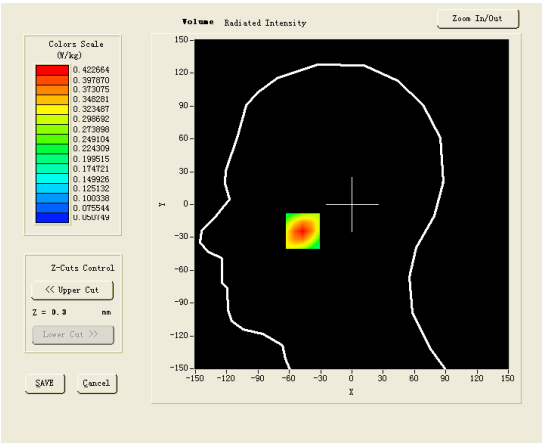
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Touch-Right (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.51
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m; εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

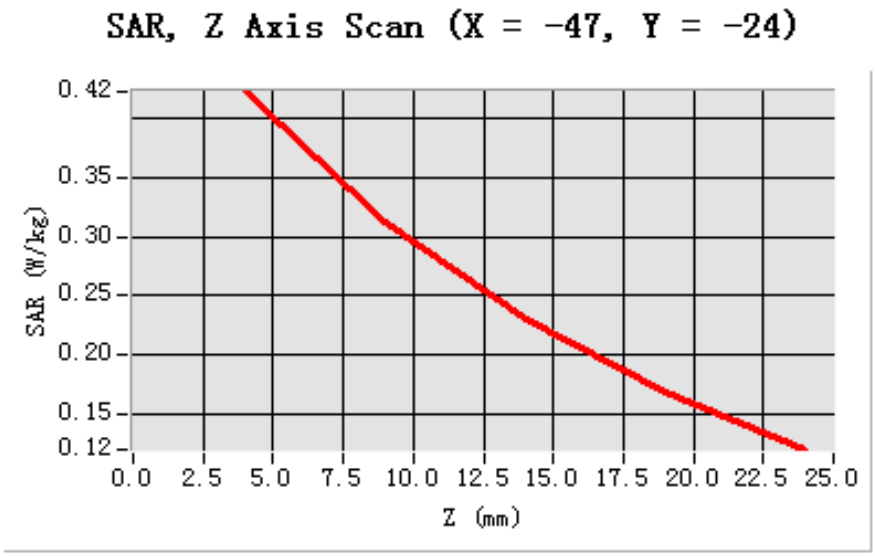
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	WCDMA band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

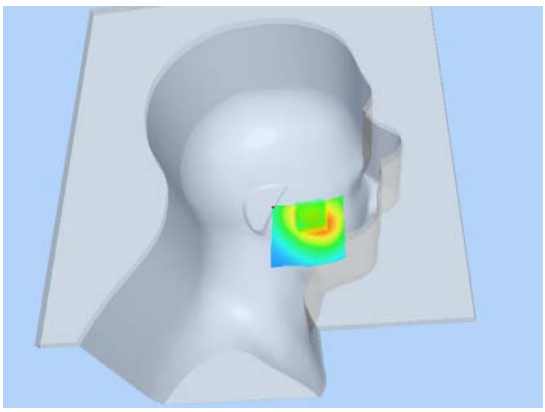
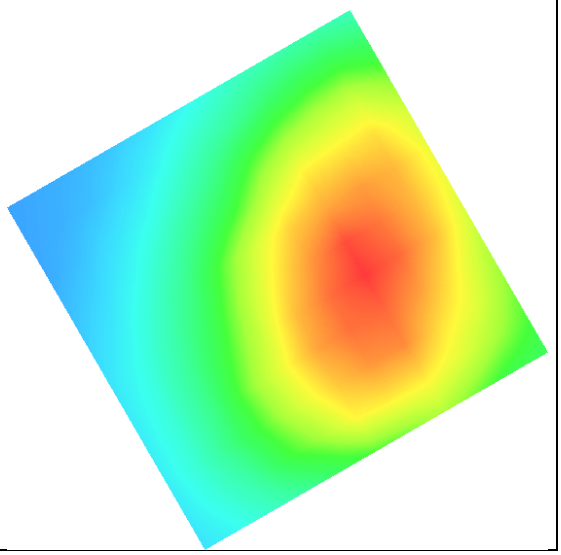
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-47.00, Y=-24.00

SAR 10g (W/Kg)	0.267248
SAR 1g (W/Kg)	0.409460

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4262	0.3162	0.2359	0.1693



3D screen shot	Hot spot position
	

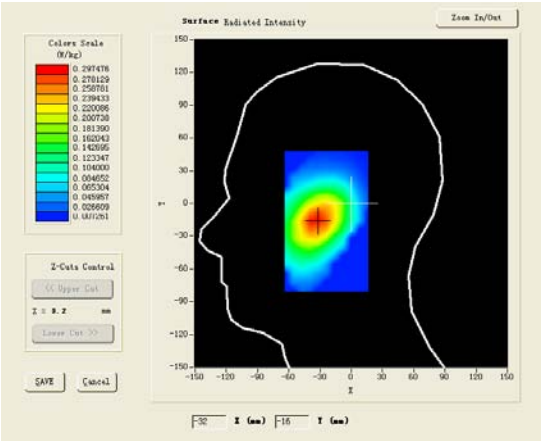
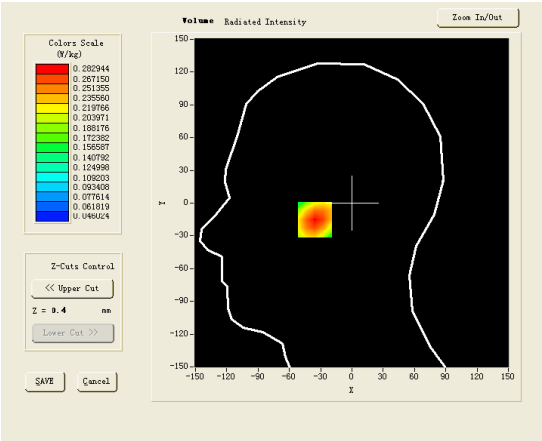
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Tilt-Right <RMC>
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.51
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.44 mho/m;εr =39.10; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/PCS1900 Mid-Tilt-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/PCS1900 Mid-Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

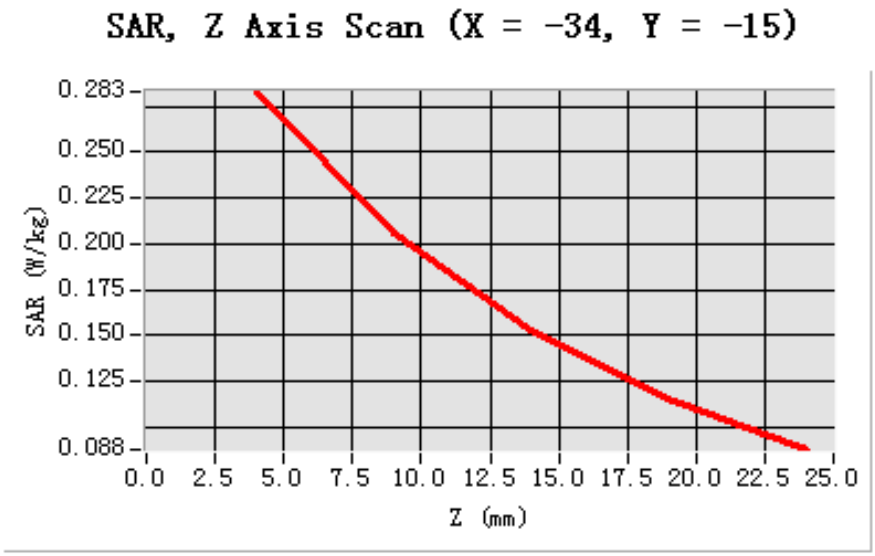
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Tilt
Band	WCDMA band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

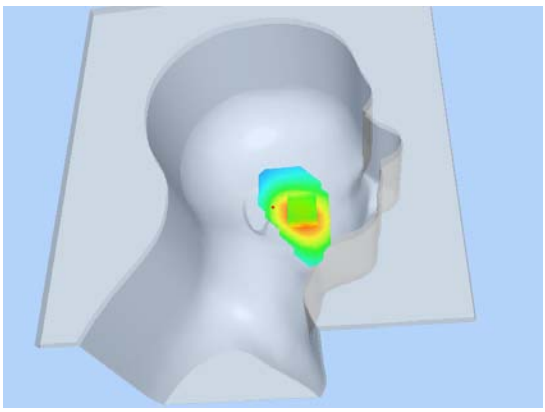
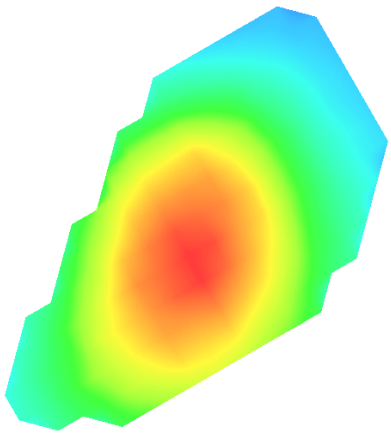
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-34.00, Y=-15.00

SAR 10g (W/Kg)	0.186138
SAR 1g (W/Kg)	0.279360

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2871	0.2027	0.1528	0.1159



3D screen shot	Hot spot position
	

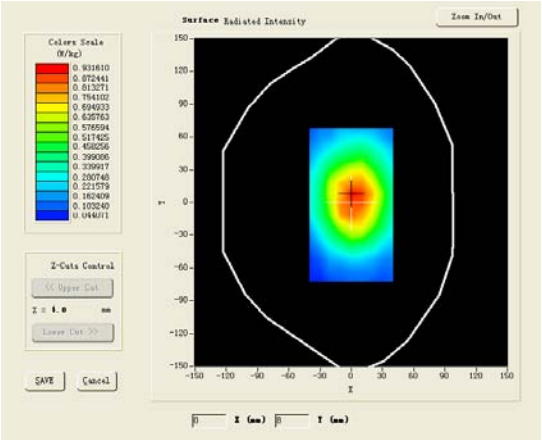
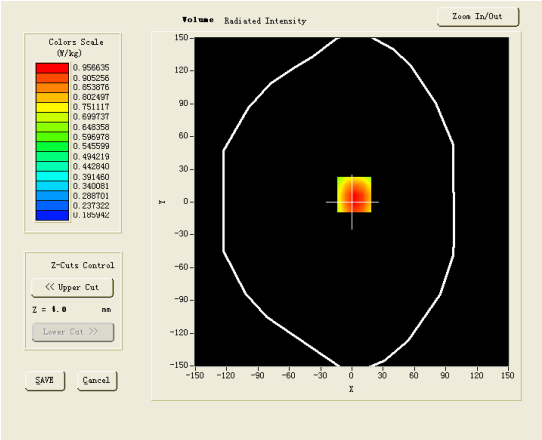
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Low-Body-Towards Grounds (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.45
Frequency: 1852.4 MHz; Medium parameters used: f = 1900 MHz; σ=1.48mho/m; εr =53.11; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Low-Body-back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Low-Body-back/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5m;

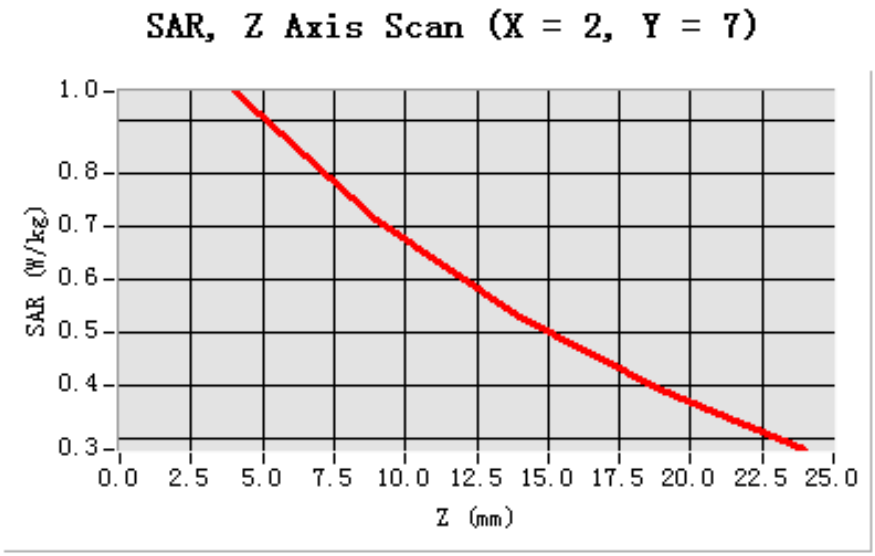
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA band Ⅱ
Channels	Low
Signal	TDMA (Crest factor: 1.0)

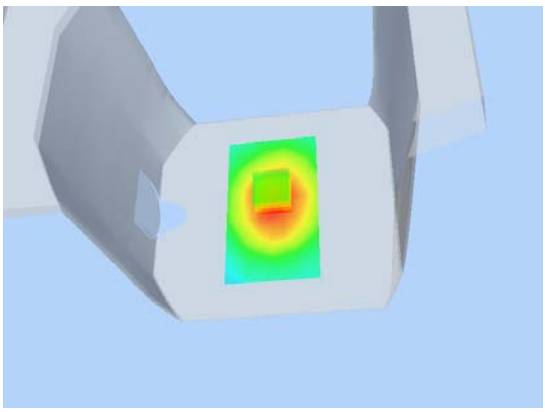
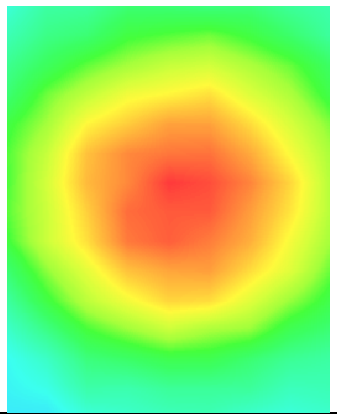
SURFACE SAR	VOLUME SAR
	

Maximum location: X=2.00, Y=7.00

SAR 10g (W/Kg)	0.703096
SAR 1g (W/Kg)	1.006137

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.9561	0.7128	0.5236	0.3902



3D screen shot	Hot spot position
	

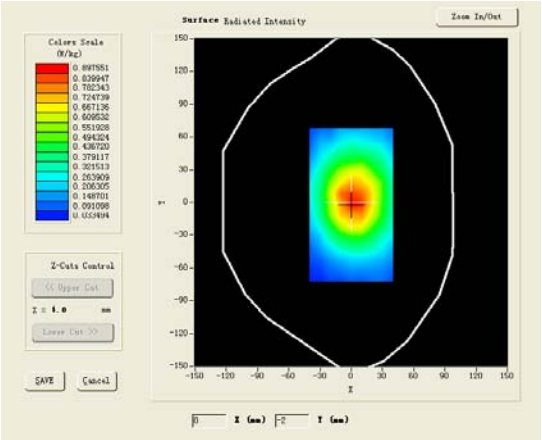
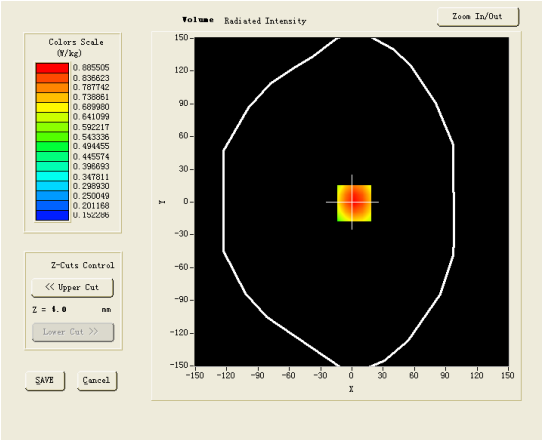
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Body-Towards Grounds (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.45
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ=1.53 mho/m; εr =54.13; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Mid-Body-back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Mid-Body-back/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5m;

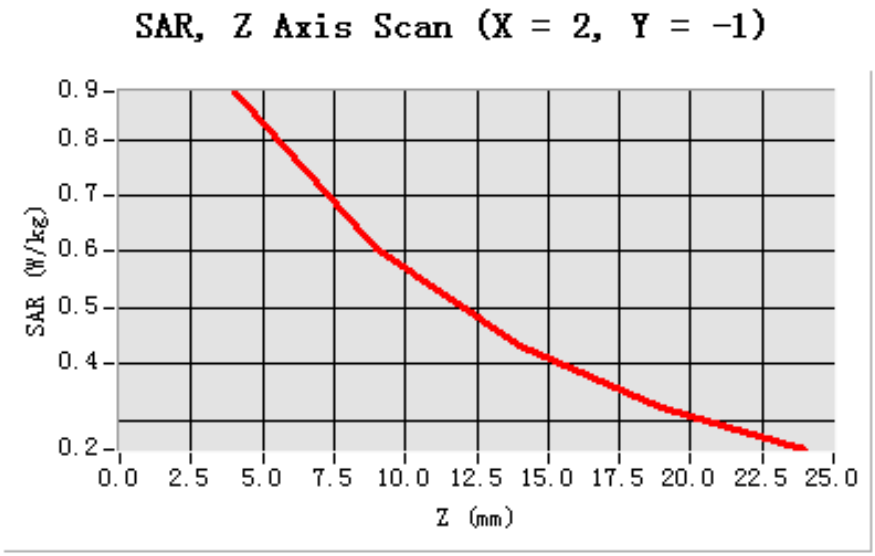
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

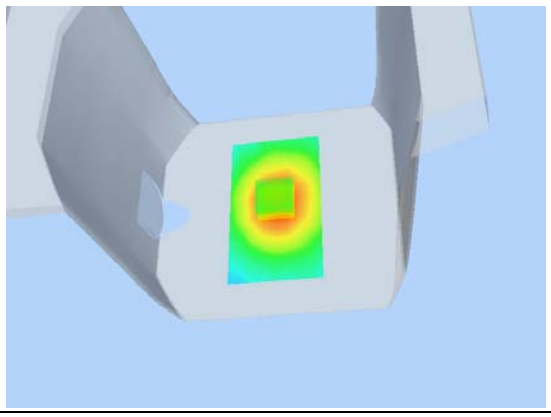
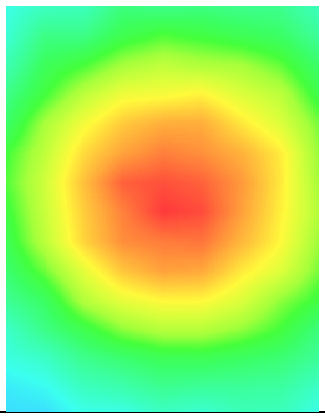
SURFACE SAR	VOLUME SAR
	

Maximum location: X=2.00, Y=-1.00

SAR 10g (W/Kg)	0.624960
SAR 1g (W/Kg)	0.917148

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.8872	0.6039	0.4311	0.3231



3D screen shot	Hot spot position
	

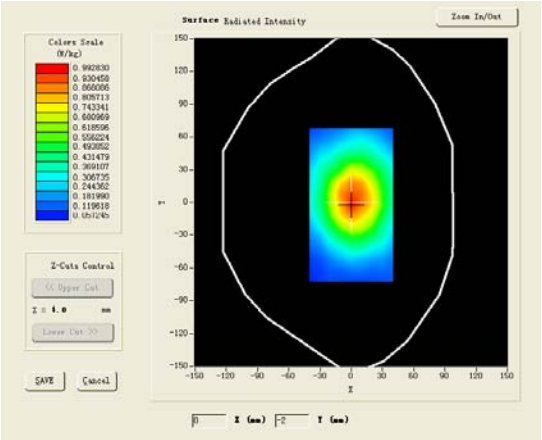
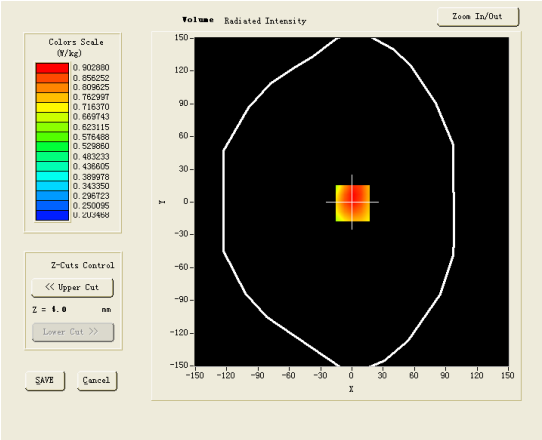
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ High-Body-Towards Grounds (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.45
Frequency: 1907.6MHz; Medium parameters used: f = 1900 MHz; σ=1.51mho/m; εr =52.76; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ High-Body-back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ High-Body-back/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5m;

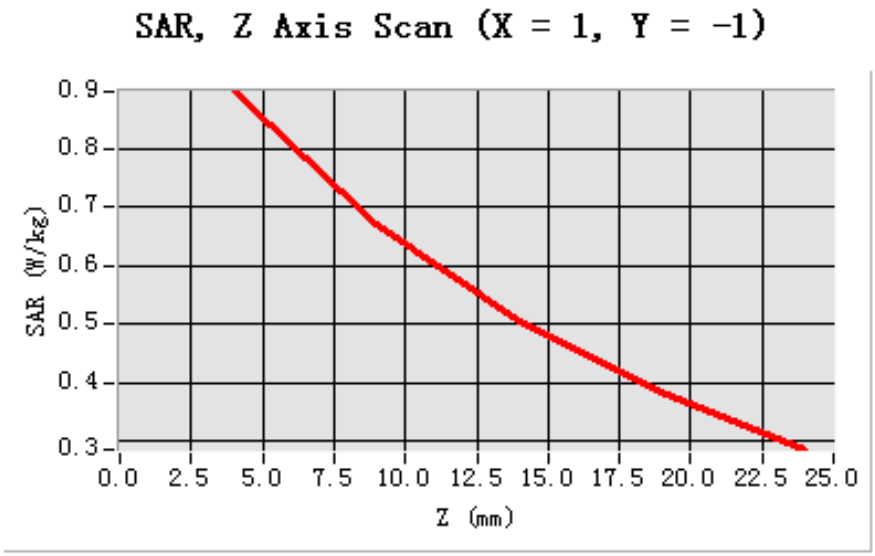
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA band Ⅱ
Channels	High
Signal	TDMA (Crest factor: 1.0)

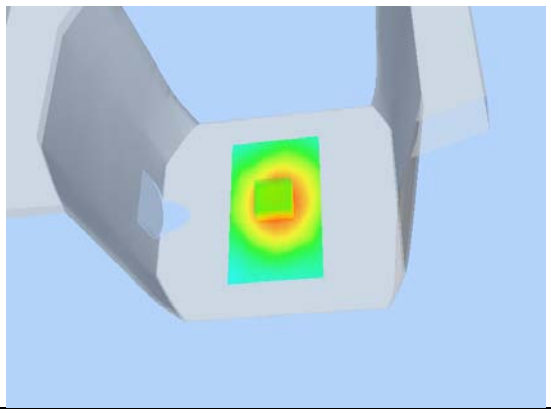
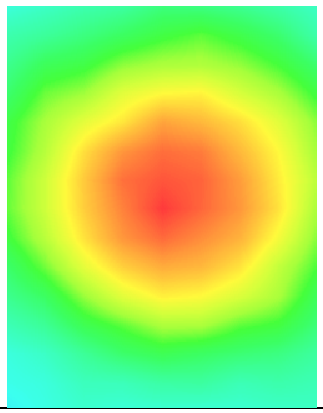
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=-1.00

SAR 10g (W/Kg)	0.678350
SAR 1g (W/Kg)	0.949364

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.8978	0.6705	0.5039	0.3815



3D screen shot	Hot spot position
	

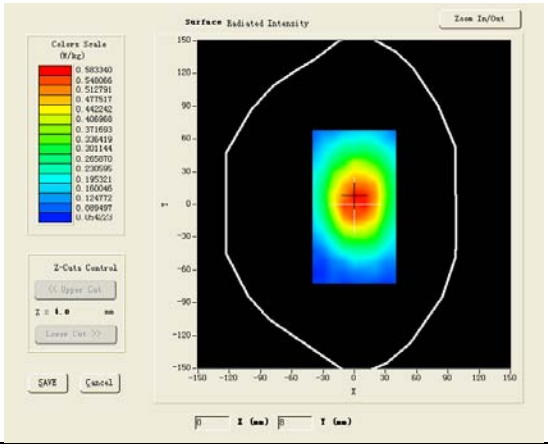
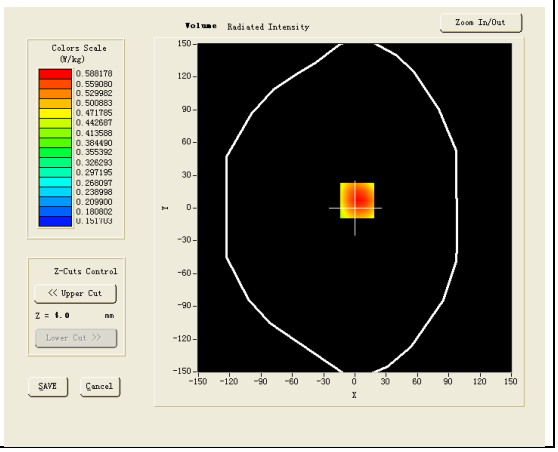
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Mid-Body-Towards Phantom (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.45
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ=1.53 mho/m; εr =54.13; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Mid-Body-Front/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Mid-Body-Front/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

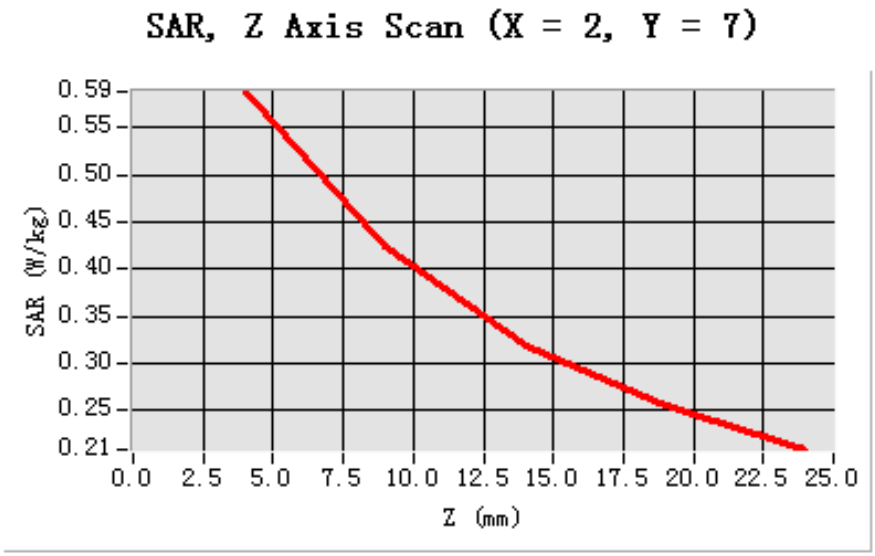
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	WCDMA band Ⅱ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

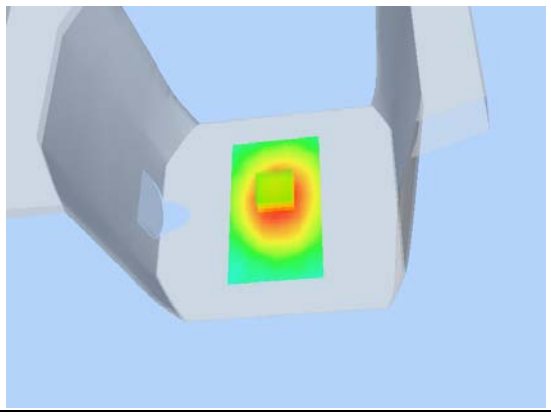
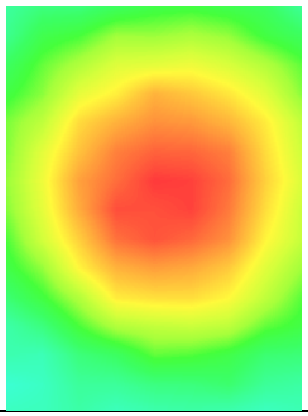
SURFACE SAR	VOLUME SAR
	

Maximum location: X=2.00, Y=7.00

SAR 10g (W/Kg)	0.446137
SAR 1g (W/Kg)	0.616941

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5847	0.4283	0.3198	0.2550



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid-Touch-Left (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

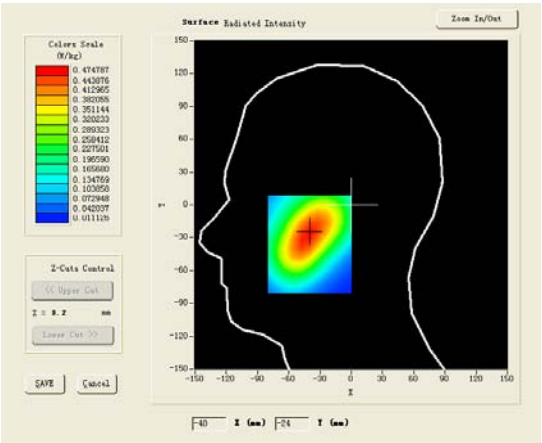
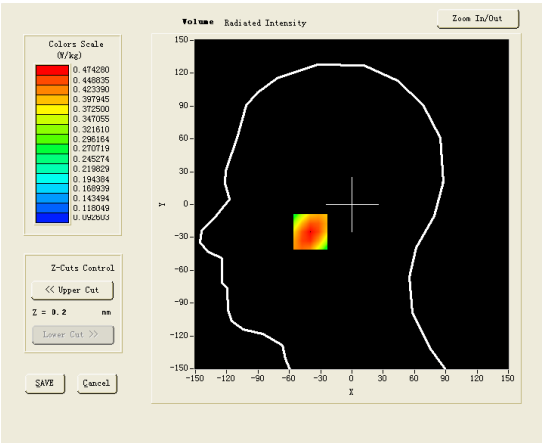
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=5.27
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Touch-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

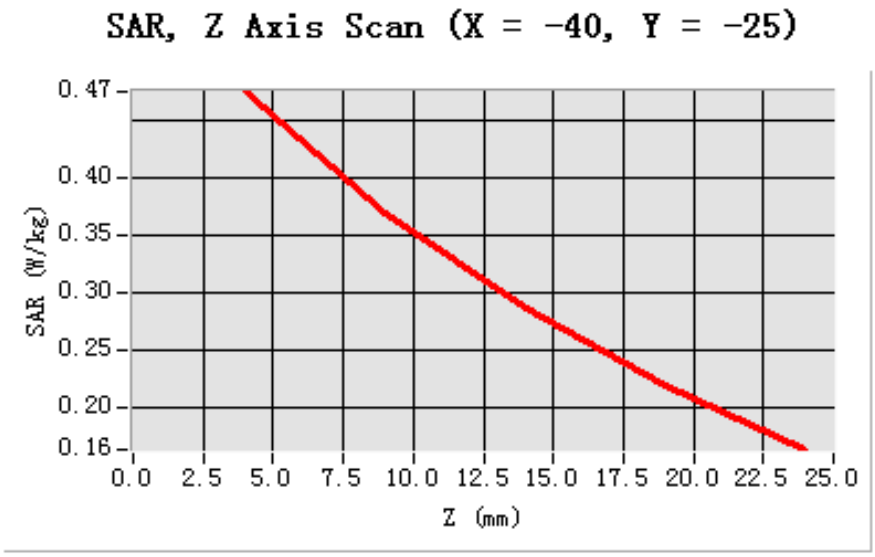
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

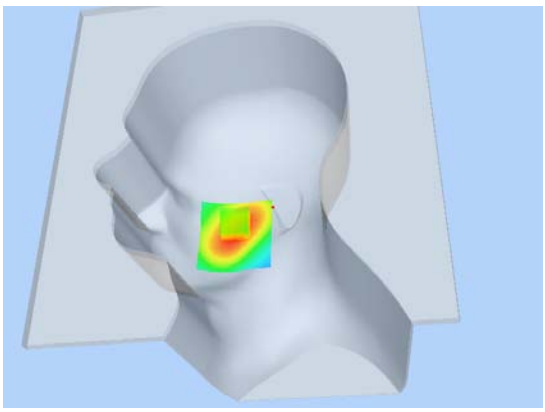
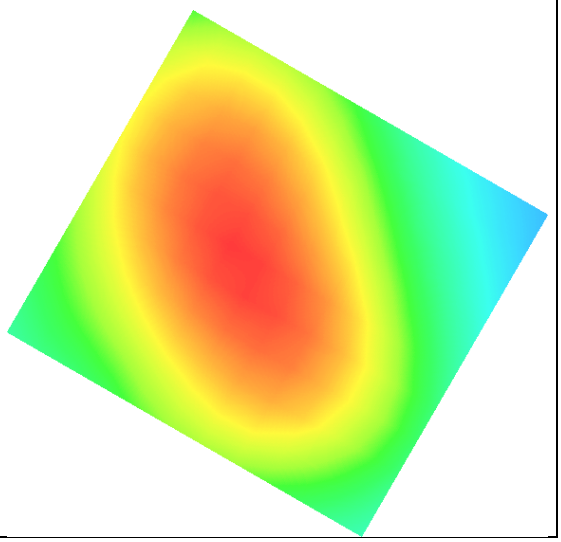
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-40.00, Y=-25.00

SAR 10g (W/Kg)	0.338296
SAR 1g (W/Kg)	0.457204

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4768	0.3663	0.2857	0.2186



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid-Tilt-Left (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

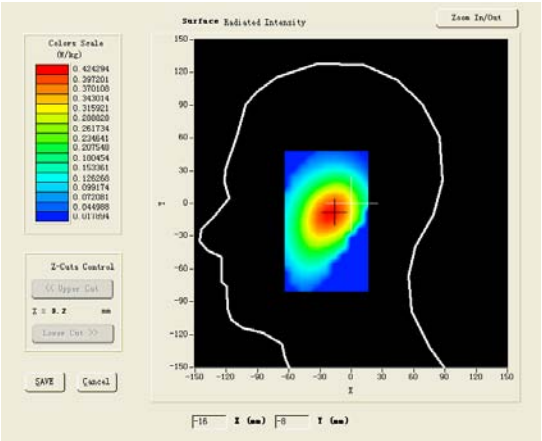
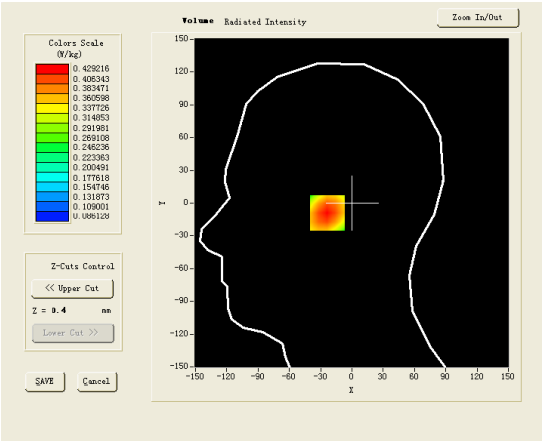
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=5.27
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Tilt-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

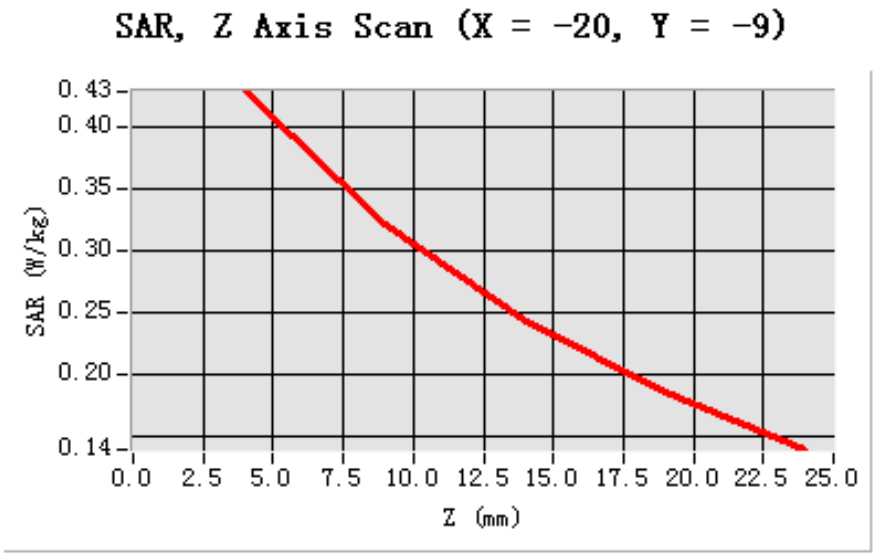
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Tilt
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

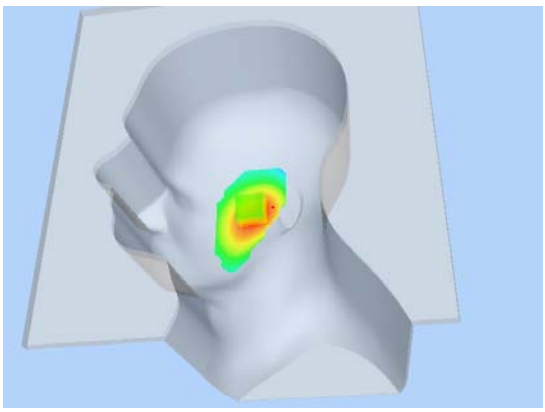
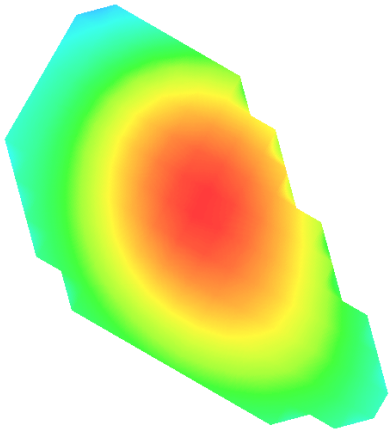
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-20.00, Y=-9.00

SAR 10g (W/Kg)	0.293907
SAR 1g (W/Kg)	0.417144

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4262	0.3296	0.2427	0.1848



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid- Touch-Right (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

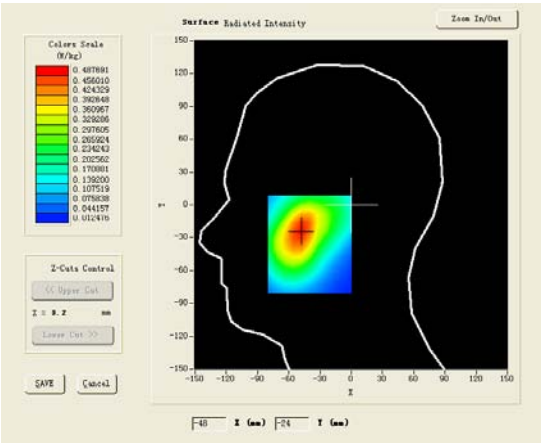
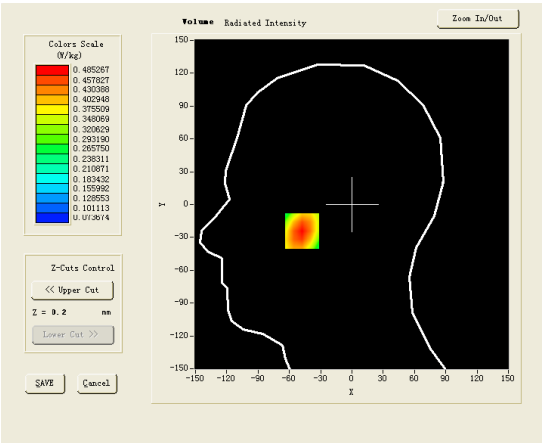
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=5.27
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

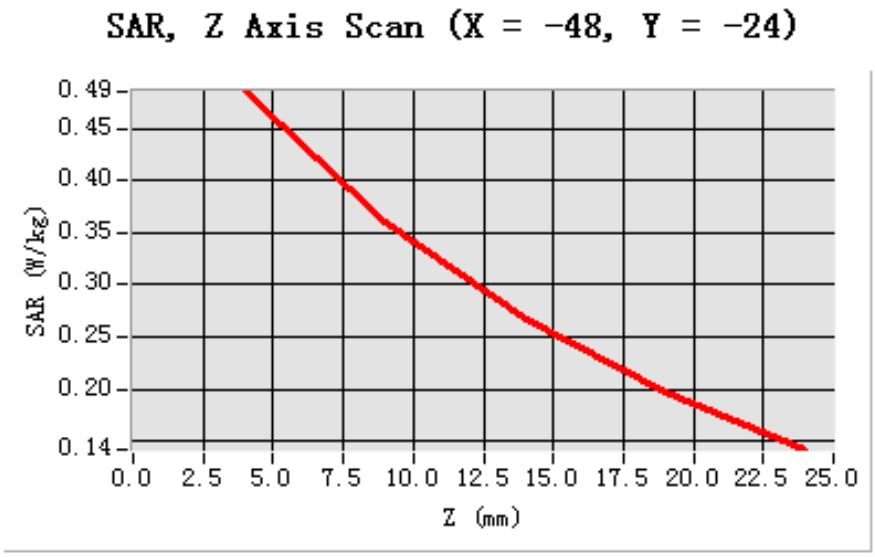
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

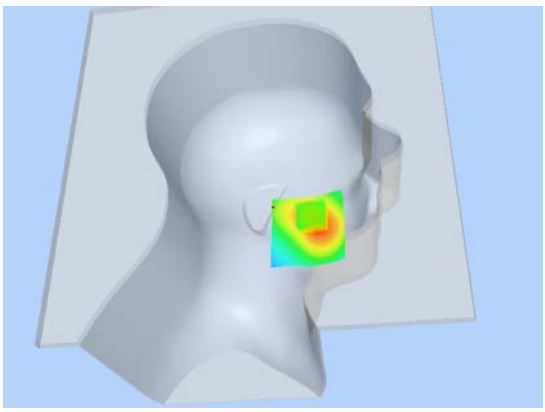
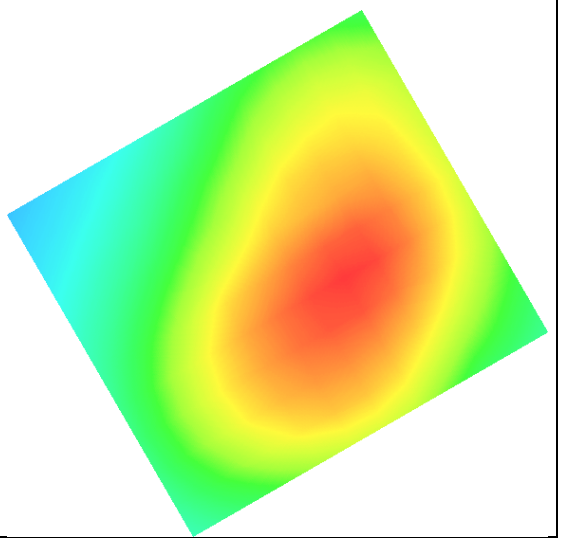
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-48.00, Y=-24.00

SAR 10g (W/Kg)	0.323604
SAR 1g (W/Kg)	0.463785

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.4852	0.3636	0.2684	0.1969



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid-Tilt-Right (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

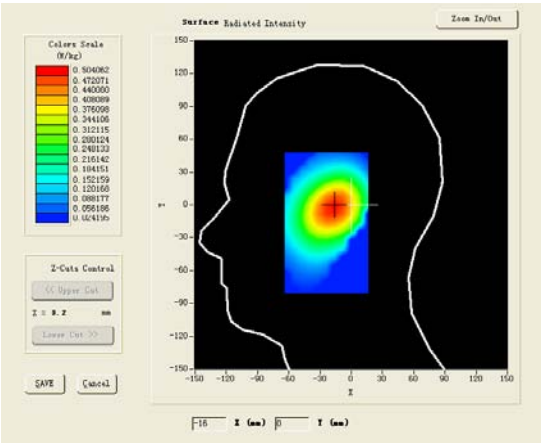
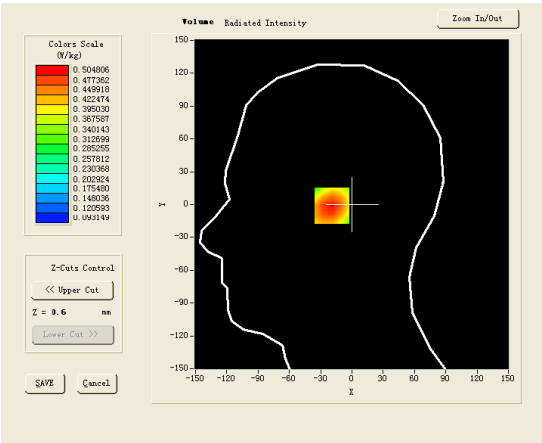
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=5.27
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.88 mho/m; εr =40.81; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Tilt-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

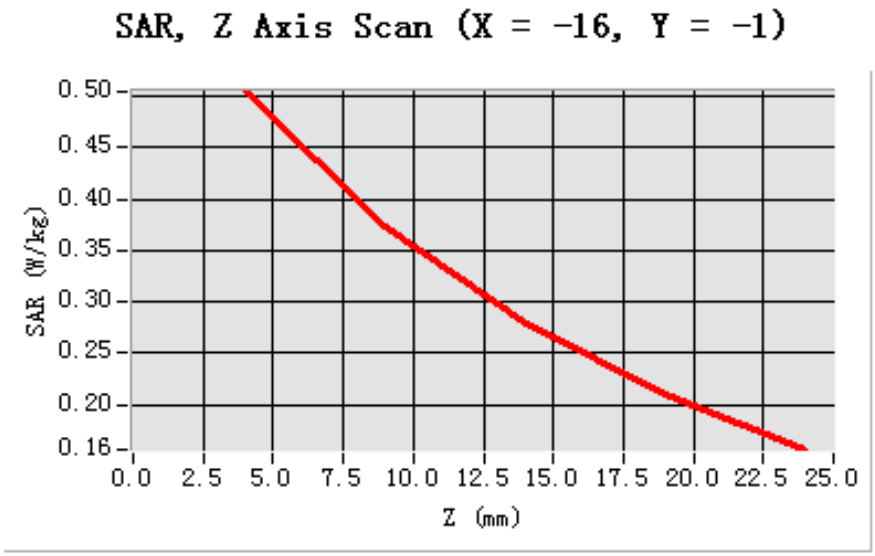
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Tilt
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

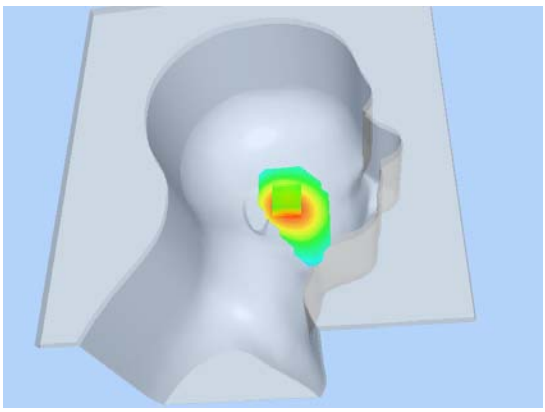
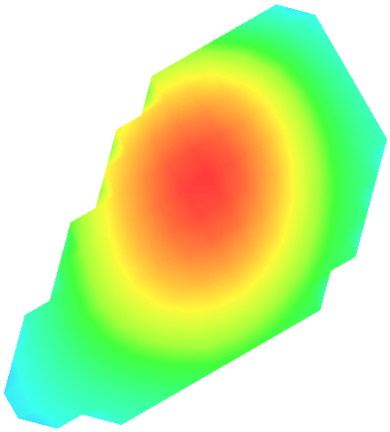
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.349360
SAR 1g (W/Kg)	0.487143

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5027	0.3762	0.2786	0.2098



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Low-Body-Towards Grounds (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

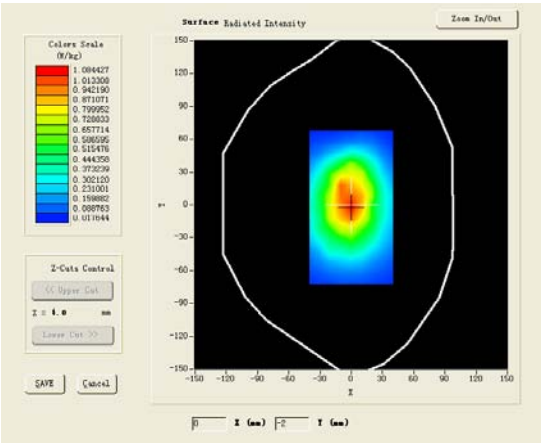
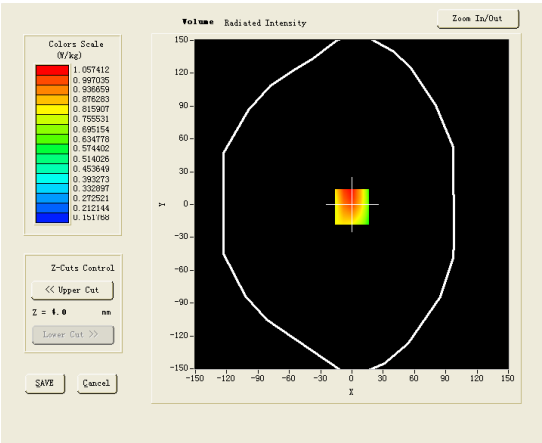
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD; Duty Cycle:1: 1; Conv.F=5.48
Frequency: 826.4MHz; Medium parameters used: f = 835 MHz; σ=1.00mho/m; εr =54.96; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤLow-Body-Back/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤLow-Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

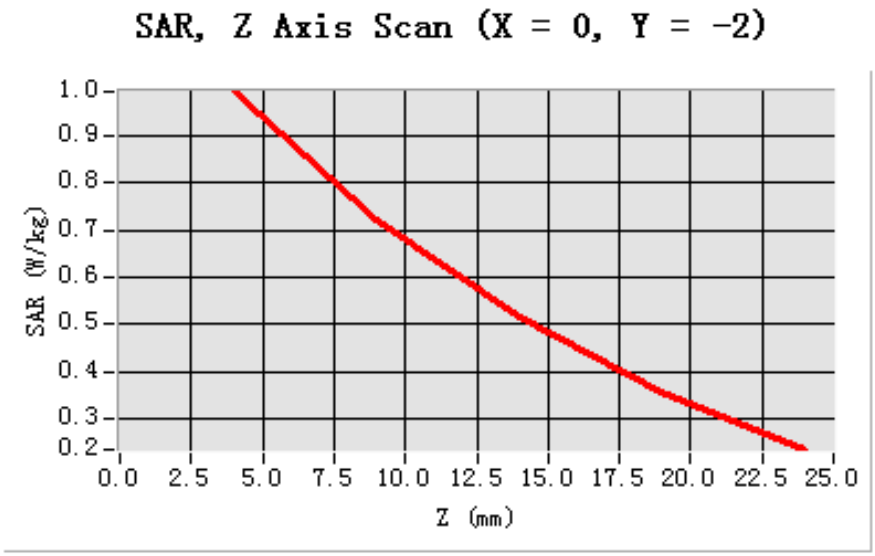
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band Ⅴ
Channels	Low
Signal	TDMA (Crest factor: 1.0)

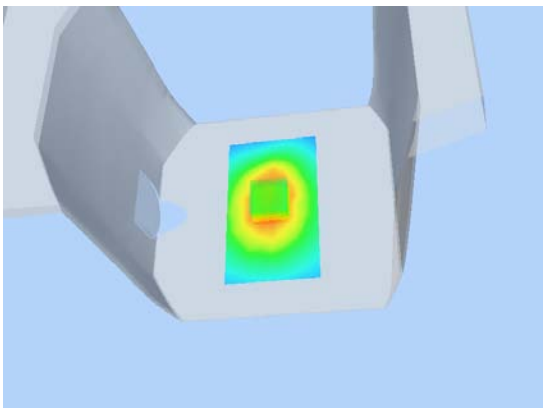
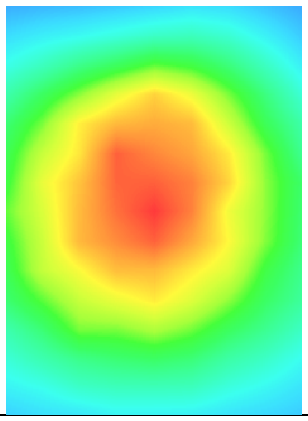
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=-2.00

SAR 10g (W/Kg)	0.720467
SAR 1g (W/Kg)	1.087148

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.9963	0.7286	0.5164	0.3592



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid-Body-Towards Grounds (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

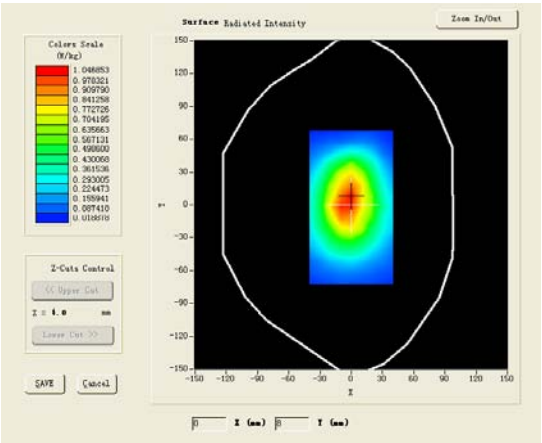
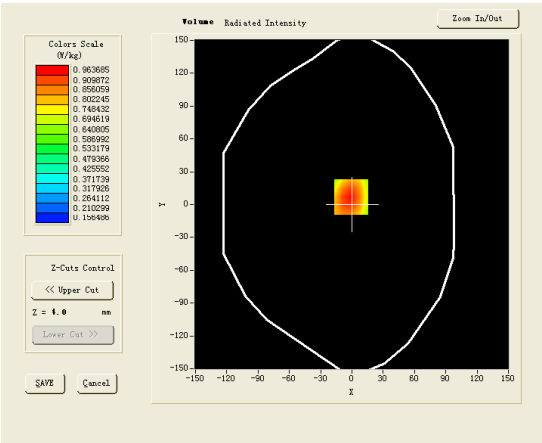
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD; Duty Cycle:1: 1; Conv.F=5.48
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.99 mho/m; εr =55.01; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Body-Back/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

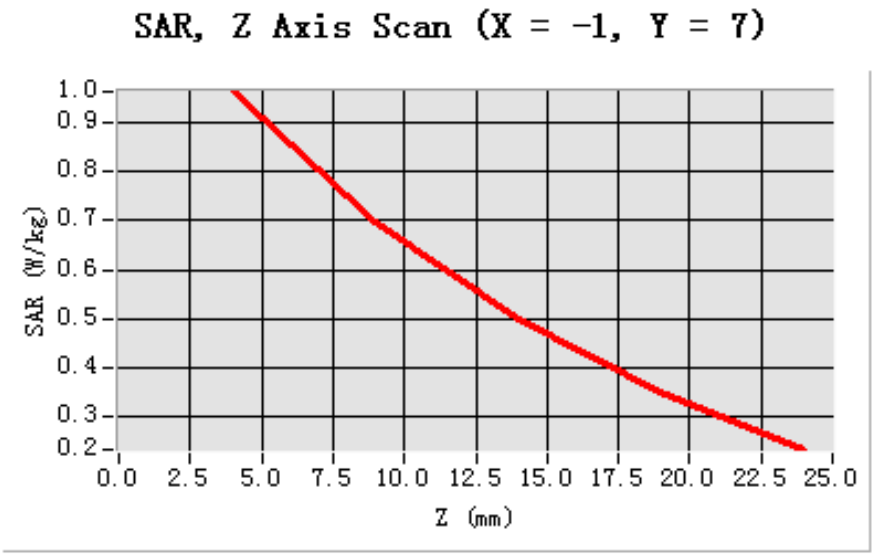
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

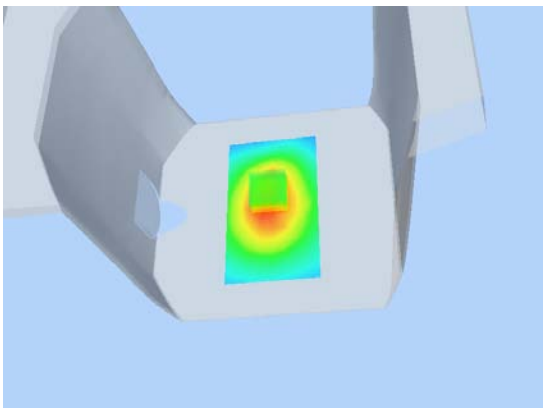
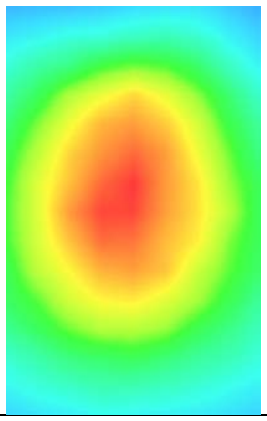
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=7.00

SAR 10g (W/Kg)	0.678359
SAR 1g (W/Kg)	0.995136

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.9682	0.6951	0.4938	0.3486



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ High-Body-Towards Grounds (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

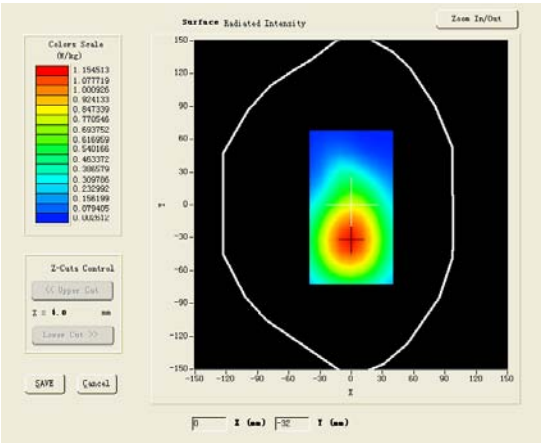
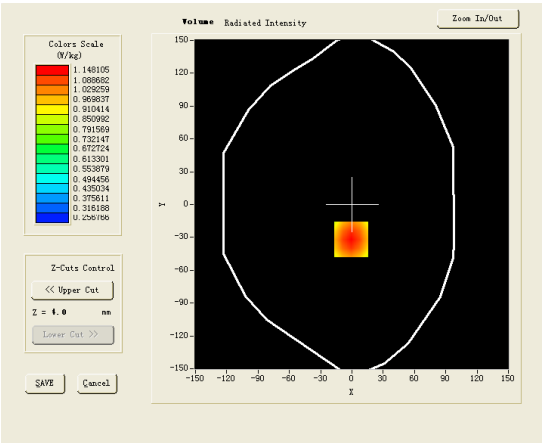
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD; Duty Cycle:1: 1; Conv.F=5.48
Frequency: 846.6 MHz; Medium parameters used: f = 835 MHz; σ=0.95 mho/m; εr =53.28; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤHigh-Body-Back/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤHigh-Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

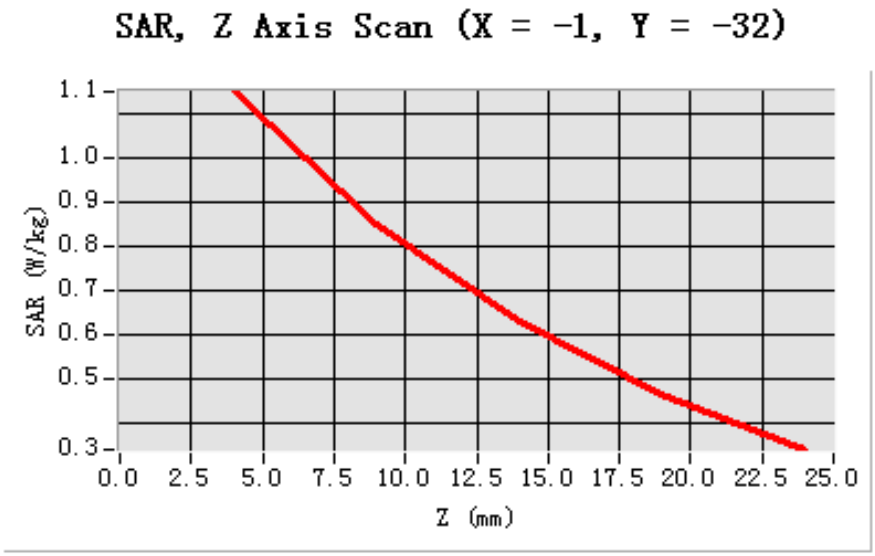
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band Ⅴ
Channels	High
Signal	TDMA (Crest factor: 1.0)

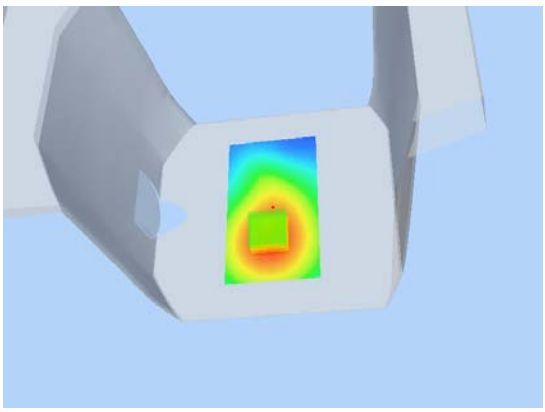
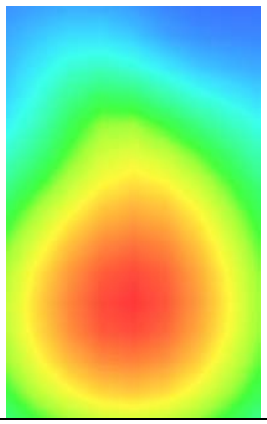
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=-32.00

SAR 10g (W/Kg)	0.788359
SAR 1g (W/Kg)	1.106134

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.1449	0.8492	0.6299	0.4689



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ Mid- Body - Towards Phantom (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

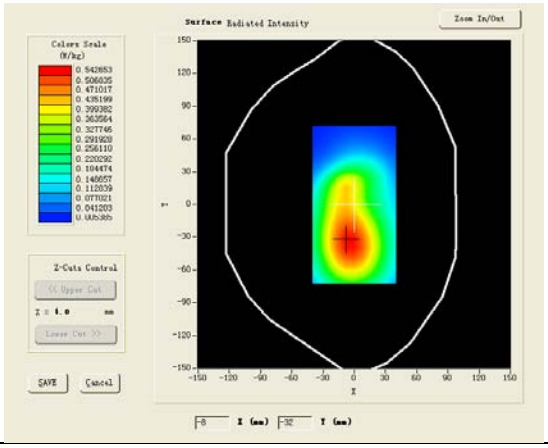
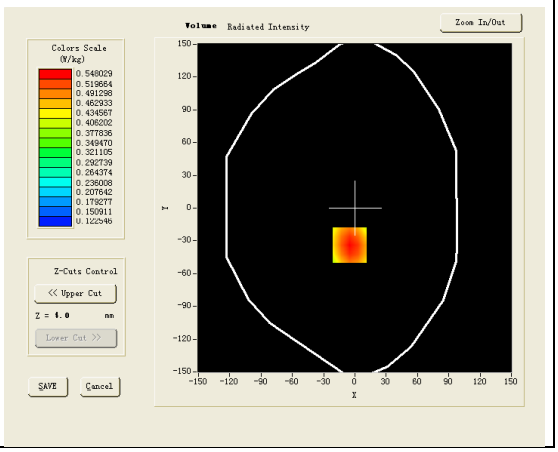
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=5.48
Frequency: 835 MHz; Medium parameters used: f = 835 MHz;σ=0.99 mho/m; εr =55.01; ρ= 1000kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤMid-Body-Front/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤMid-Body-Front/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

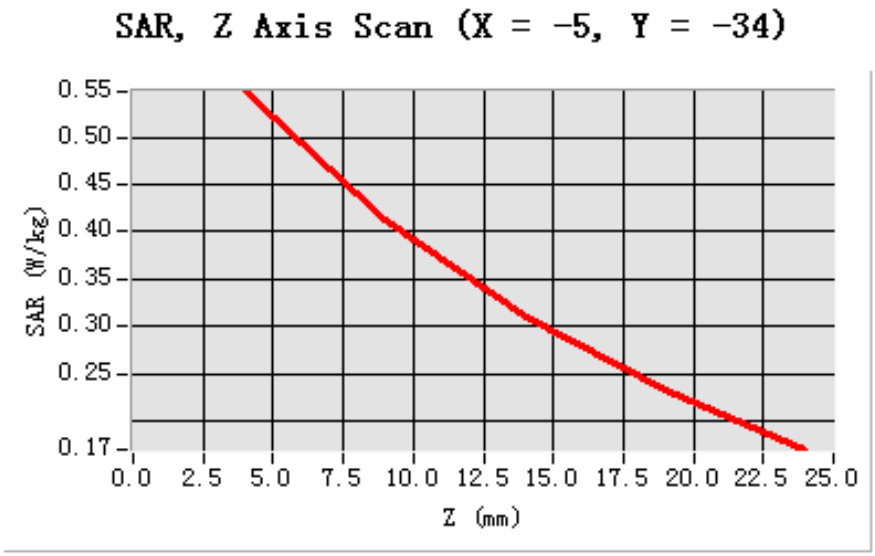
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	TDMA (Crest factor: 1.0)

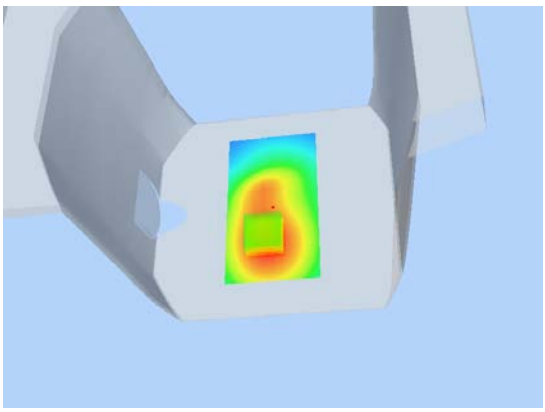
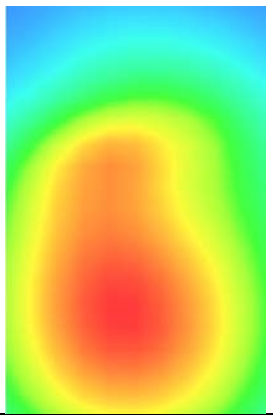
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-5.00, Y=-34.00

SAR 10g (W/Kg)	0.374067
SAR 1g (W/Kg)	0.525273

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.5442	0.4124	0.3098	0.2319



3D screen shot	Hot spot position
	

HOTSPOT MODE

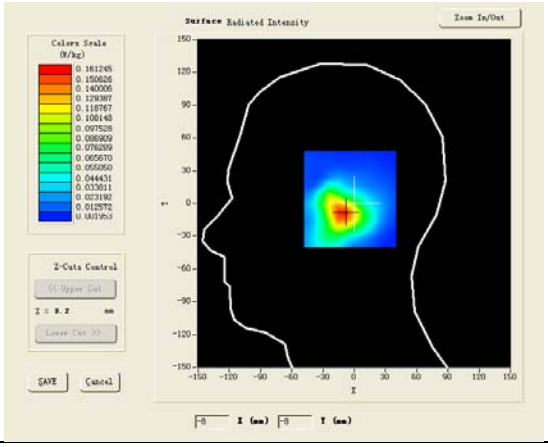
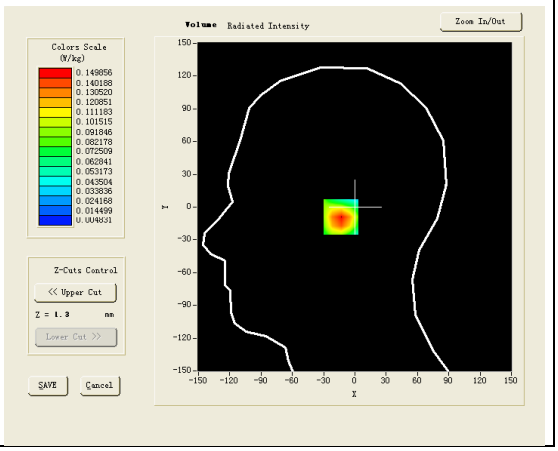
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid-Touch-Left
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.42;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.77 mho/m; εr =40.01; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid- Touch-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid- Touch-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

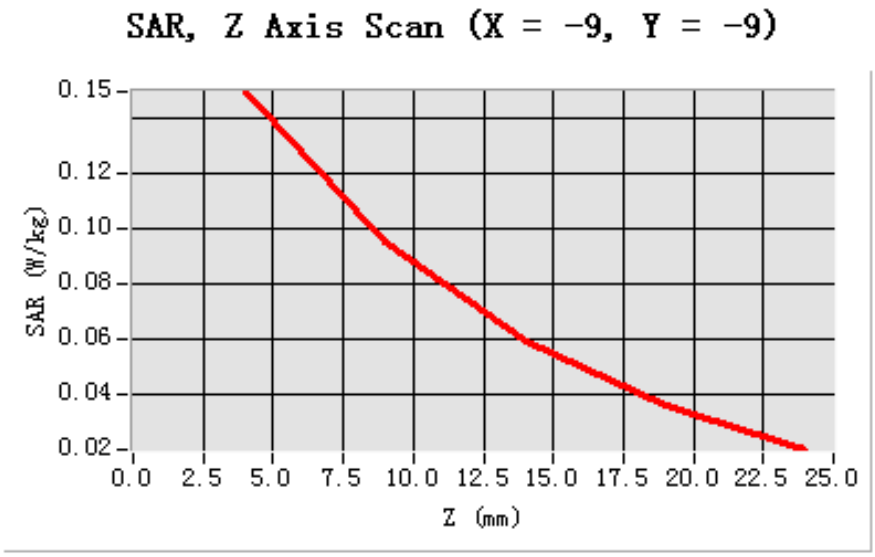
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Cheek
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

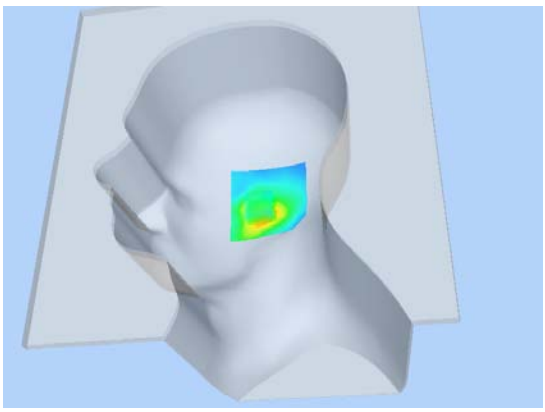
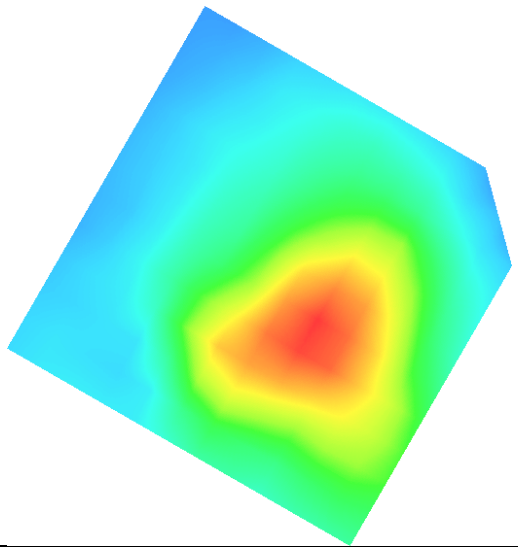
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.077215
SAR 1g (W/Kg)	0.141853

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1499	0.0954	0.0595	0.0362



3D screen shot	Hot spot position
	

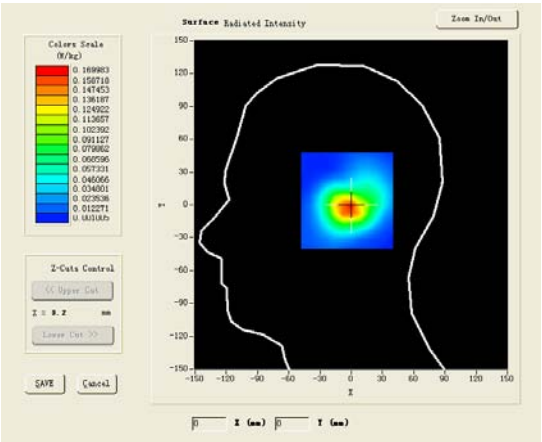
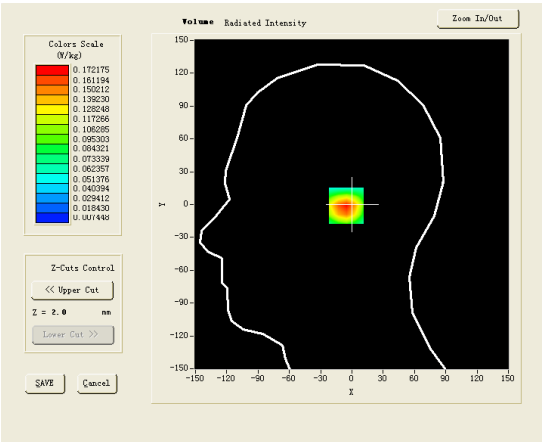
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid -Tilt-Left
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.42;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.77 mho/m; εr =40.01; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid- Tilt-Left/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid- Tilt-Left/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm,dz=5mm;

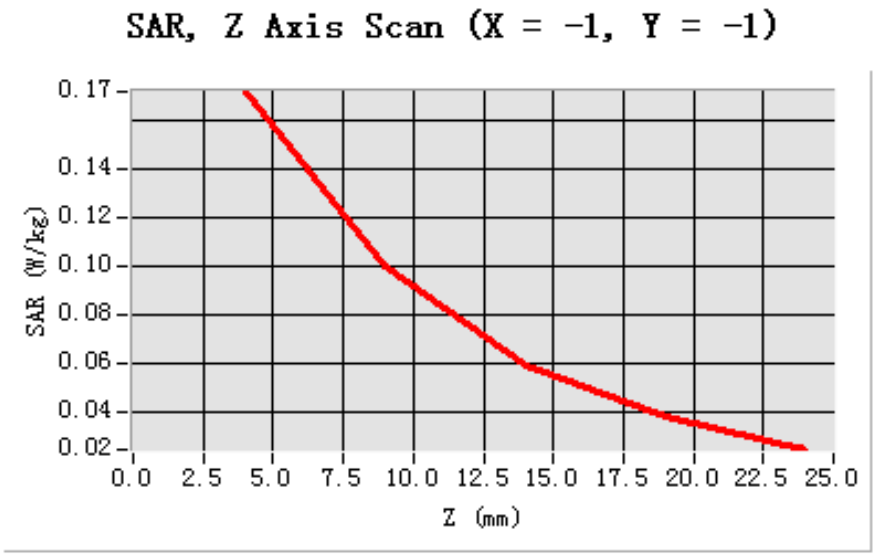
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Left head
Device Position	Tilt
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

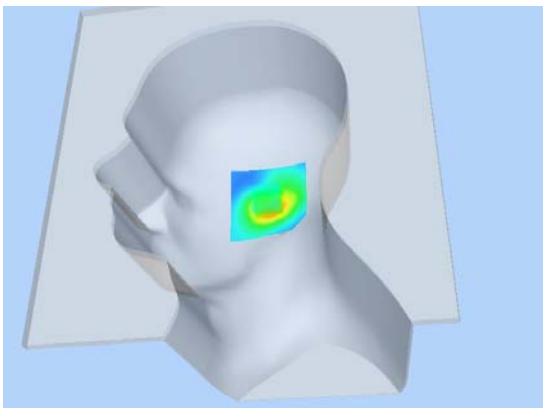
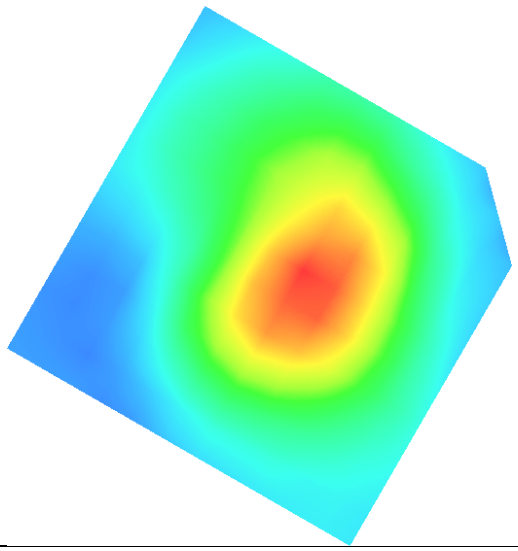
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.087416
SAR 1g (W/Kg)	0.163179

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1722	0.1000	0.0596	0.0380



3D screen shot	Hot spot position
	

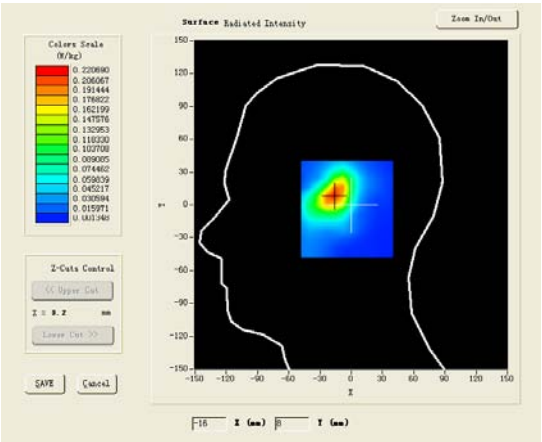
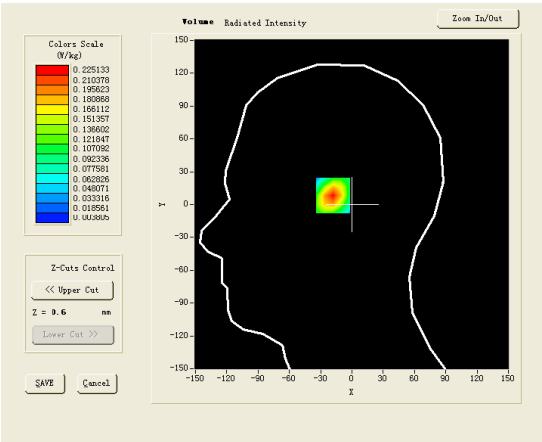
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid- Touch-Right
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.42;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.77 mho/m; εr =40.01; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid- Touch-Right /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

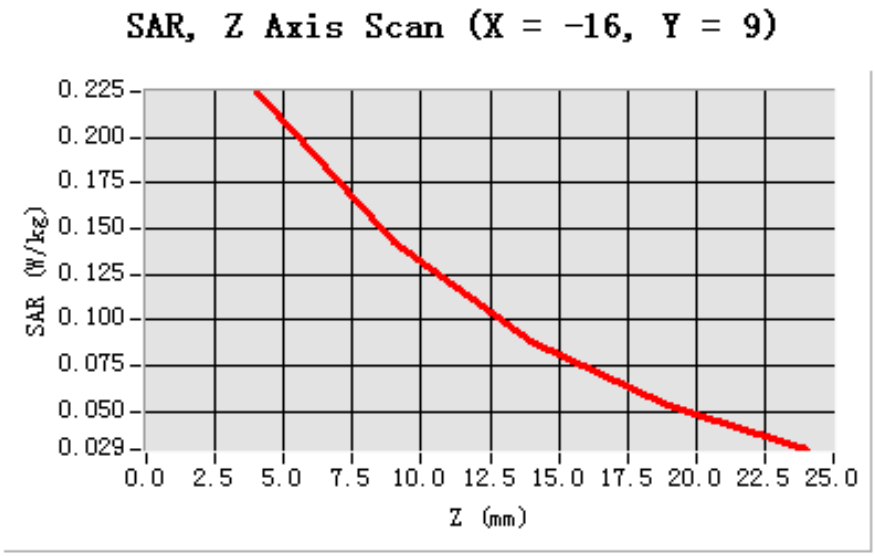
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Cheek
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

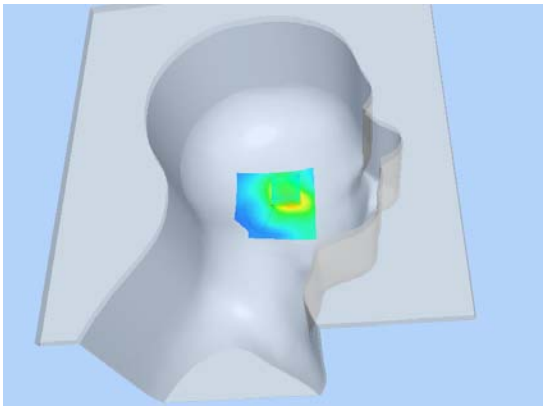
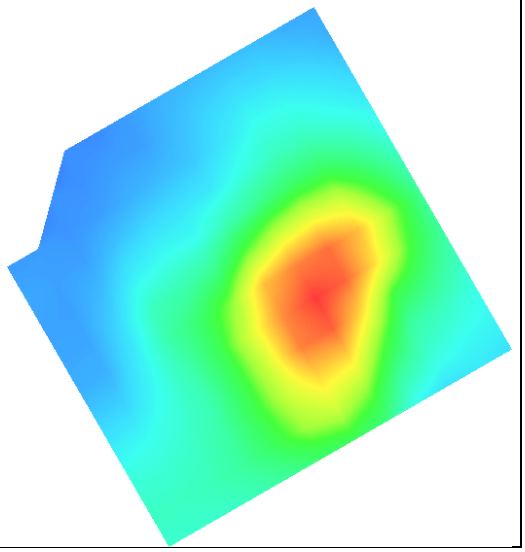
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-16.00, Y=9.00

SAR 10g (W/Kg)	0.116217
SAR 1g (W/Kg)	0.205363

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2251	0.1425	0.0881	0.0530



3D screen shot	Hot spot position
	

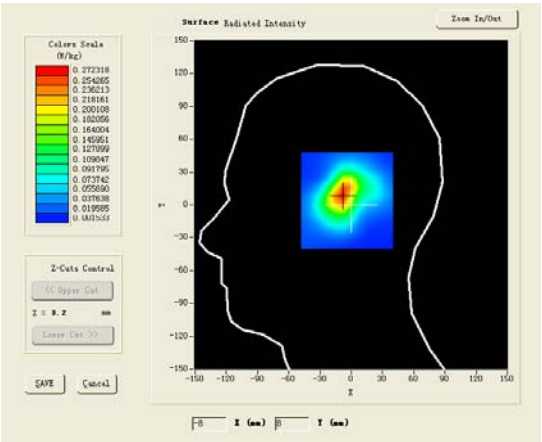
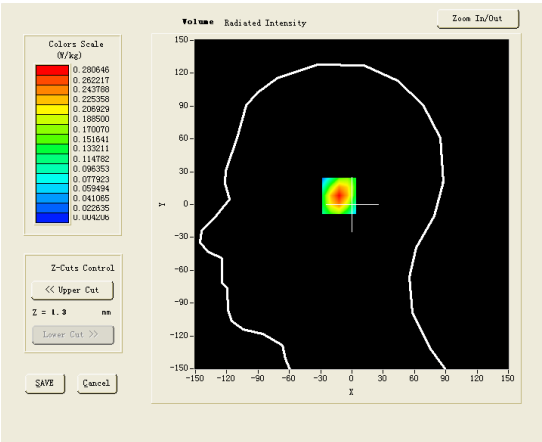
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid-Tilt-Right
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.42;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.77 mho/m; εr =40.01; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21, Liquid temperature (℃): 21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid- Tilt-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid- Tilt-Right/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

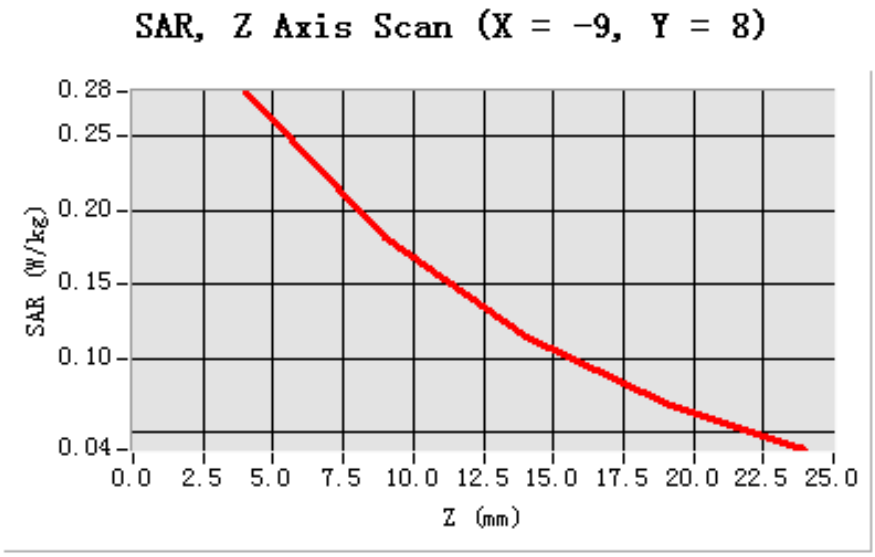
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Right head
Device Position	Tilt
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

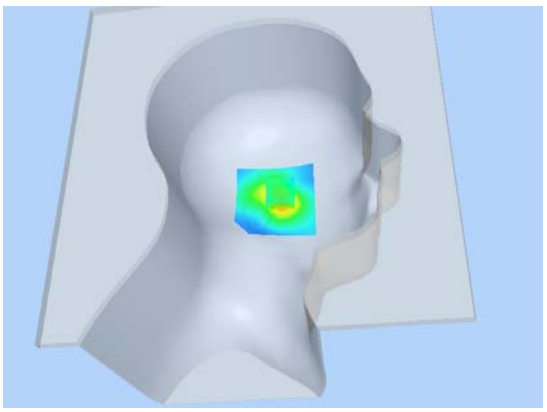
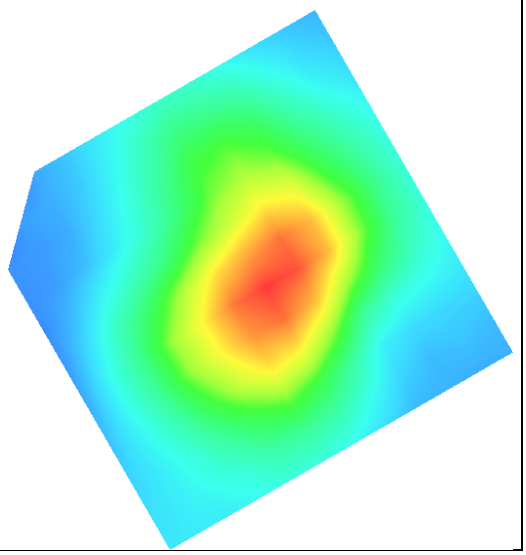
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-9.00, Y=8.00

SAR 10g (W/Kg)	0.144217
SAR 1g (W/Kg)	0.252175

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.2806	0.1817	0.1143	0.0693



3D screen shot	Hot spot position
	

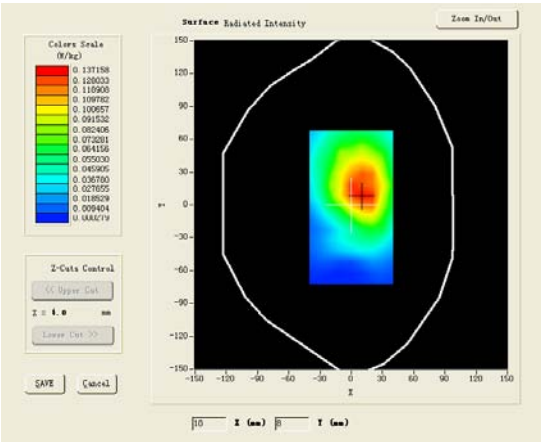
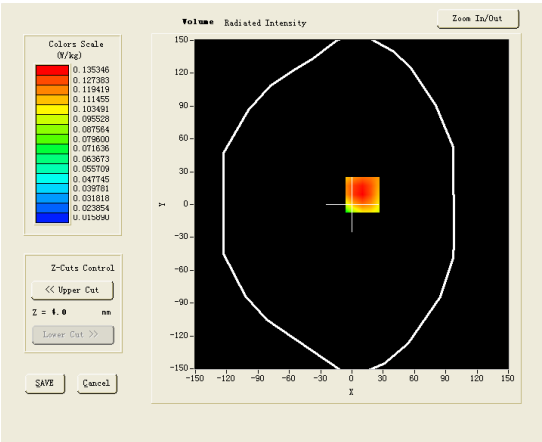
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid-Body-Worn- Back (DTS)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.31;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ=1.97 mho/m; εr =50.48; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid- Body- Back /Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid- Body- Back /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

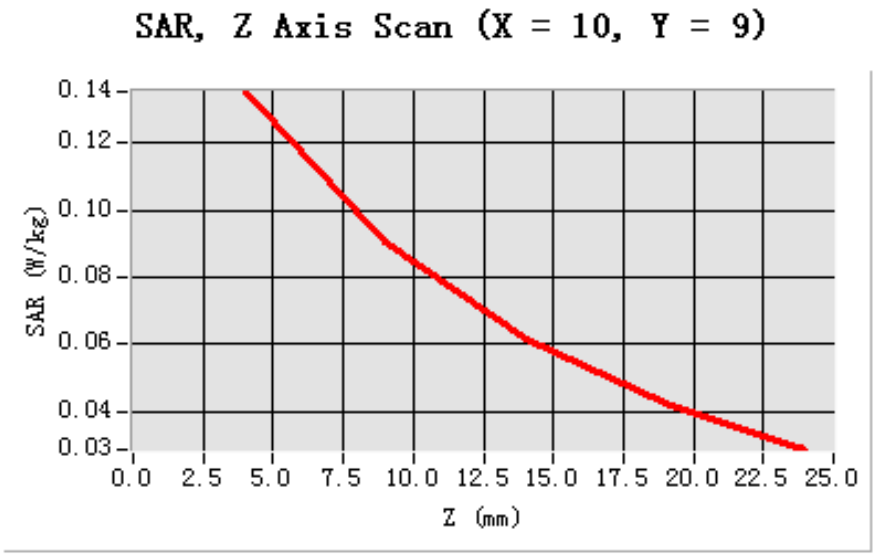
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

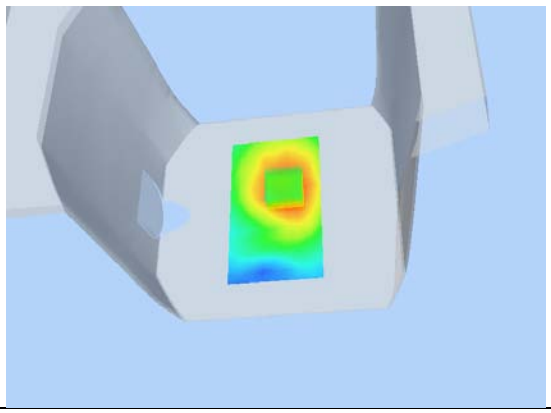
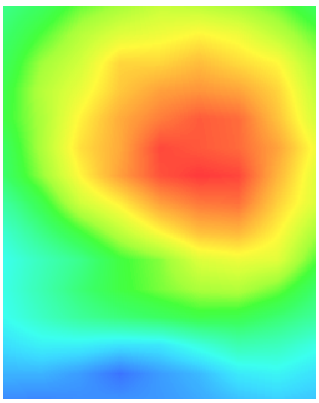
SURFACE SAR	VOLUME SAR
	

Maximum location: X=10.00, Y=9.00

SAR 10g (W/Kg)	0.083126
SAR 1g (W/Kg)	0.135973

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.1497	0.0925	0.0641	0.0427



3D screen shot	Hot spot position
	

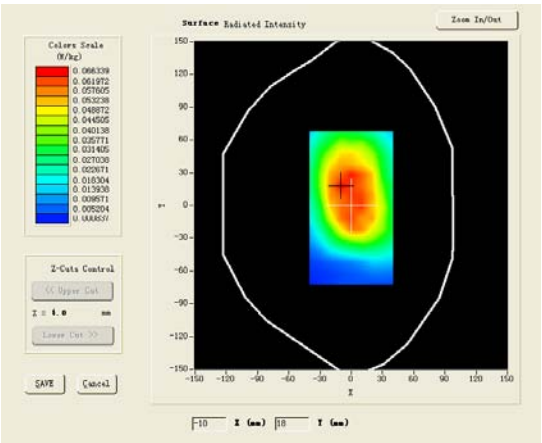
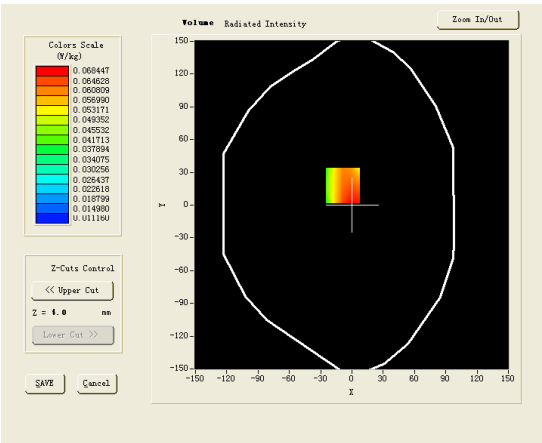
Test Laboratory: AGC Lab **Date: Mar.24,2014**
Hotspot Mid-Body -Front (DTS)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: Wi-Fi; Communication System Band: Hotspot; Duty Cycle: 1:1; Conv.F=4.31;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ=1.97 mho/m; εr =50.48; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/Hotspot Mid-Body- Front /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/Hotspot Mid-Body- Front /Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5mm;

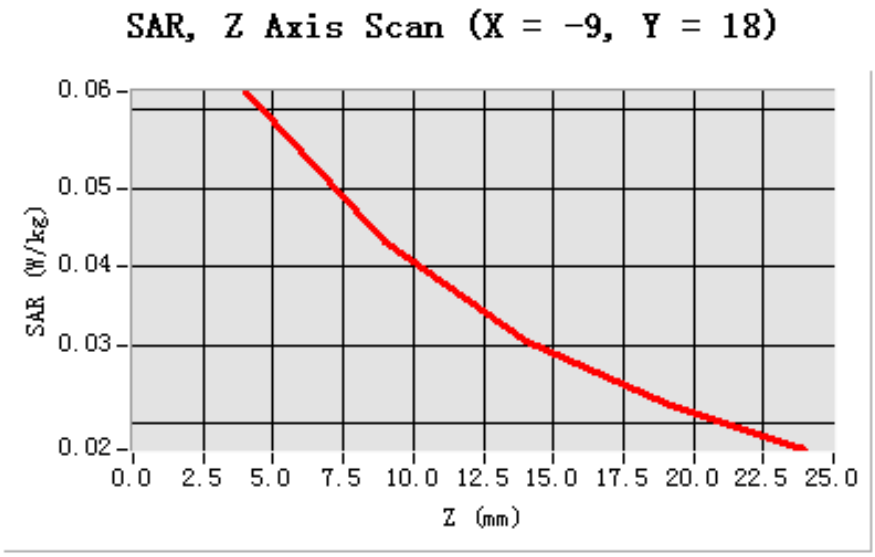
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Front
Band	2450MHz
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

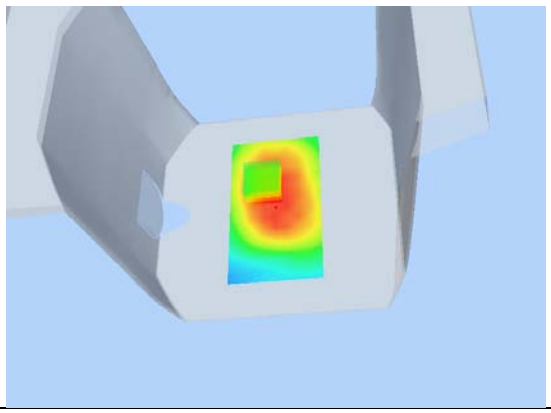
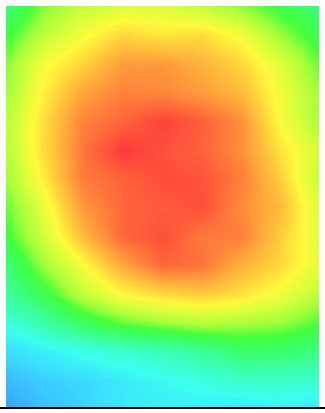
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-9.00, Y=18.00

SAR 10g (W/Kg)	0.041635
SAR 1g (W/Kg)	0.062541

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0690	0.0467	0.035	0.0233



3D screen shot	Hot spot position
	

Repeated SAR

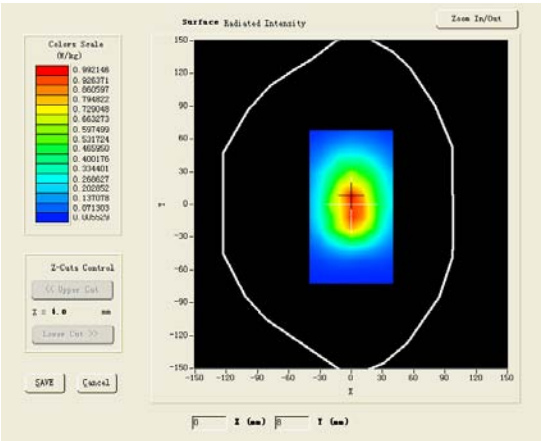
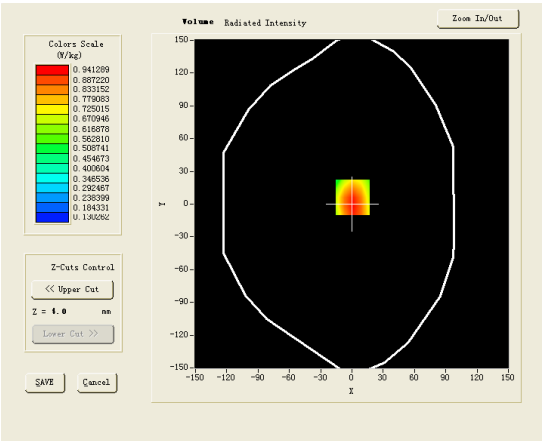
Test Laboratory: AGC Lab **Date: Mar.24,2014**
WCDMA Band Ⅱ Low-Body-Towards Grounds (RMC)
DUT: GSM Mobile Phone; Type: iSwag Rock

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=4.45
Frequency: 1852.4 MHz; Medium parameters used: f = 1900 MHz; σ=1.48mho/m; εr =53.11; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:
- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Low-Body-back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Low-Body-back/Zoom Scan: Measurement grid: dx=8mm, dy=8mm, dz=5m;

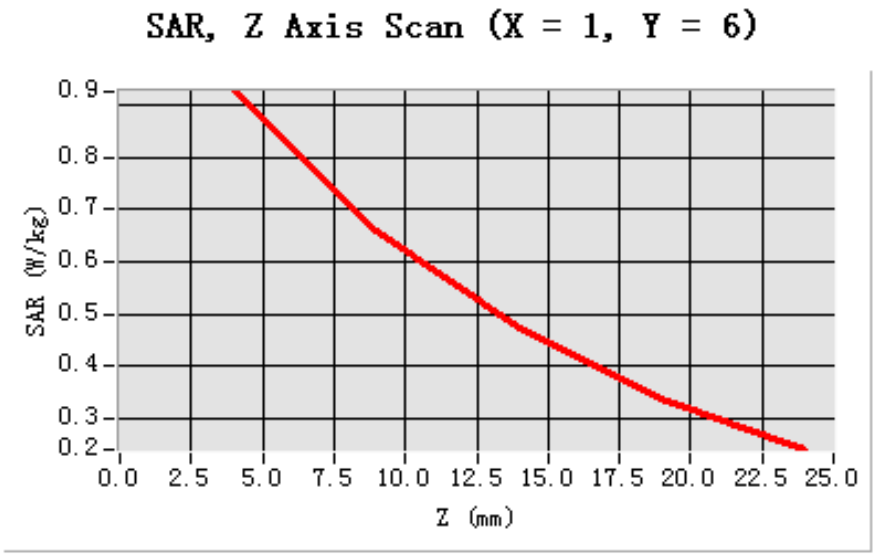
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA band Ⅱ
Channels	Low
Signal	TDMA (Crest factor: 1.0)

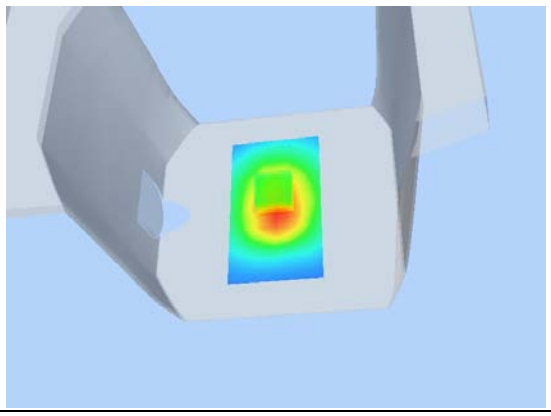
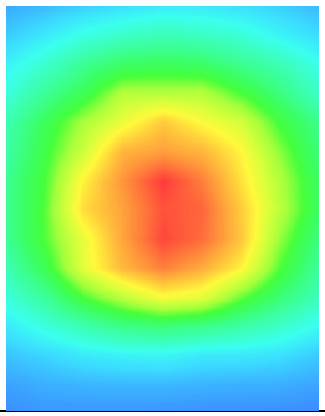
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=6.00

SAR 10g (W/Kg)	0.657125
SAR 1g (W/Kg)	0.968423

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.9252	0.6581	0.4706	0.3393



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Mar.24,2014**

WCDMA Band Ⅴ High-Body-Towards Grounds (RMC)

DUT: GSM Mobile Phone; Type: iSwag Rock

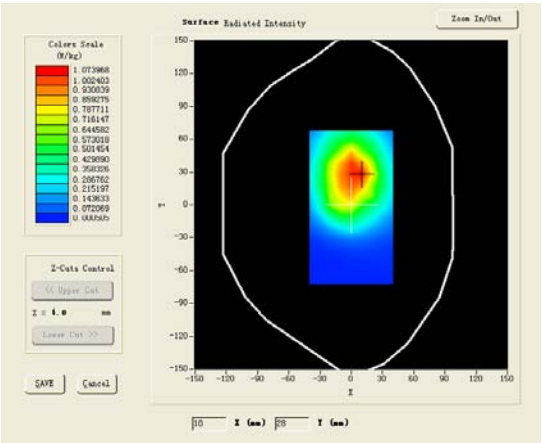
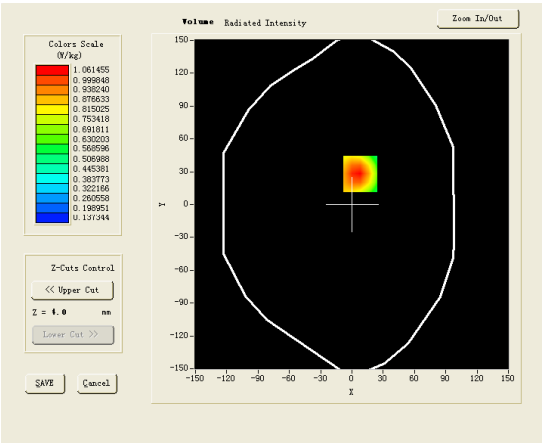
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD; Duty Cycle:1: 1; Conv.F=5.48
Frequency: 846.6 MHz; Medium parameters used: f = 835 MHz; σ=0.95 mho/m; εr =53.28; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃):21, Liquid temperature (℃):21

SATIMO Configuration:

- Probe: EP159; Calibrated: 01/12/2014
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: Flat Phantom; Type: Elliptical Phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA BandⅤHigh-Body-Back/Area Scan (6x8x1): Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA BandⅤHigh-Body-Back/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

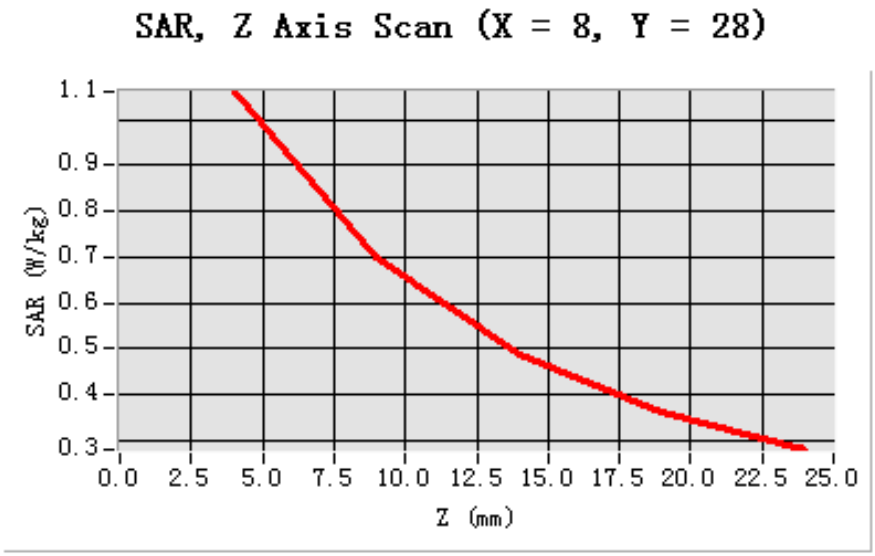
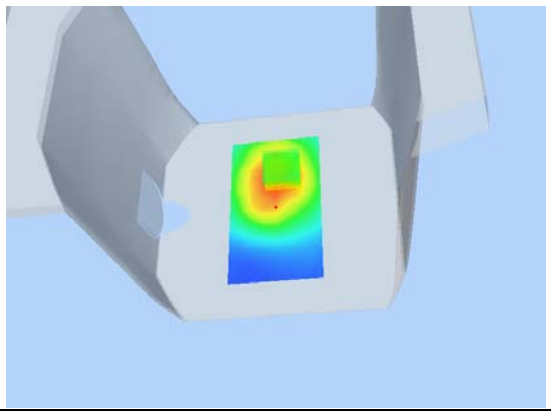
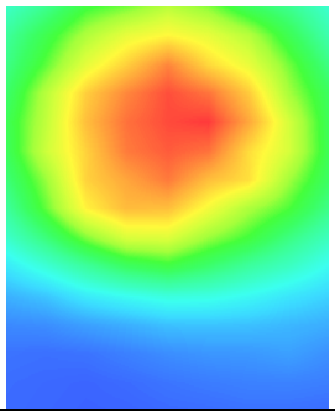
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Very fast
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band Ⅴ
Channels	High
Signal	TDMA (Crest factor: 1.0)

SURFACE SAR	VOLUME SAR
	

Maximum location: X=8.00, Y=28.00

SAR 10g (W/Kg)	0.713724
SAR 1g (W/Kg)	1.096843

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	1.0615	0.7041	0.4863	0.3624



3D screen shot	Hot spot position