SAR Test Report

Report No.: AGC05426151101FH01

FCC ID	:	2ACCL-MAXPLUS55
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	MOBILE PHONE
BRAND NAME	:	IONE
MODEL NAME	:	MAX PLUS 5.5
CLIENT	:	IMAXX INTERNATIONAL INC.
DATE OF ISSUE	:	Jan. 05,2016
STANDARD(S)	:	IEEE Std. 1528:2013 FCC 47CFR § 2.1093 IEEE/ANSI C95.1:1992
REPORT VERSION	:	V1.0

*A*ttestation of Global Compliance(Shenzhen) Co., Ltd.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan. 05,2016	Valid	Original Report

Test Report Certification

Applicant Name	IMAXX INTERNATIONAL INC.
Applicant Address	9024 KENNEDY DR DES PLAINESDES PLAINES, IL 60016United States
Manufacturer Name	IMAXX INTERNATIONAL INC.
Manufacturer Address	9024 KENNEDY DR DES PLAINESDES PLAINES, IL 60016United States
Product Designation	MOBILE PHONE
Brand Name	IONE
Model Name	MAX PLUS 5.5
Different Description	N/A
EUT Voltage	DC3.7V by battery
Applicable Standard	IEEE Std. 1528:2013 FCC 47CFR § 2.1093 IEEE/ANSI C95.1:1992
Test Date	Dec. 26,2015 to Jan. 04,2015
Performed Location	Attestation of Global Compliance(Shenzhen) Co., Ltd.
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Report Template	AGCRT-US-3G3/SAR (2015-05-01)

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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:

Frequency Band	Highest Reported 1g-SAR(W/Kg)	
	Head	Body-worn(with 10mm separation)
GSM 850	0.106	0.128
PCS 1900	0.073	0.616
UMTS Band V	0.064	0.123
UMTS Band II	0.110	0.718
WIFI 2.4G	0.139	0.201
Simultaneous Reported SAR	0.760	

This device is compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6W/Kg) specified in IEEE Std. 1528:2013; FCC 47CFR § 2.1093; IEEE/ANSI C95.1:1992 and the following specific FCC Test Procedures:

- KDB 447498 D01 General RF Exposure Guidance v06
- KDB 648474 D04 Handset SAR v01r03
- KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- KDB 941225 D01 3G SAR Procedures v03r01
- KDB 941225 D06 Hot Spot SAR v02r01
- KDB 248227 D01 802.11 Wi-Fi SAR v02r02

2. GENERAL INFORMATION

2.1. EUT Description

General Information	
Product Designation	MOBILE PHONE
Test Model	MAX PLUS 5.5
Hardware Version	G5 3.0
Software Version	201511V1.0
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
GSM and GPRS&EGPRS	
Support Band	☒GSM 850 ☒PCS 1900 ☒GSM 900 ☒DCS 1800
GPRS &EGPRS Type	Class B
GPRS &EGPRS Class	Class 12(1Tx+4Rx, 2Tx+3Rx, 3Tx+2Rx, 4Tx+1Rx)
TX Frequency Range	GSM 850 : 820~850MHz; PCS 1900: 1850~1910MHz;
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
Max. Average Power (Max. Peak Power)	GSM850: 31.26dBm(32.83dBm); PCS1900: 28.26dBm(29.61dBm)
WCDMA	
Support Band	☒UMTS FDD Band II ☒UMTS FDD Band V ☐UMTS FDD Band IV ☐UMTS FDD Band I ☐UMTS FDD Band III ☐UMTS FDD Band VIII
HS Type	HSPA(HSUPA/HSDPA)
TX Frequency Range	WCDMA FDD Band II: 1850-1910MHz; WCDMA FDD Band V: 820-850MHz
RX Frequency Range	WCDMA FDD Band II: 1930-1990MHz WCDMA FDD Band V: 869-894MHz
Release Version	Rel-6
Type of modulation	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Gain	-1.0dBi
Max. Average Power (Max. Peak Power)	Band II: 21.48dBm (23.52dBm); Band V: 21.21dBm (23.32dBm)

EUT Description(Continue)

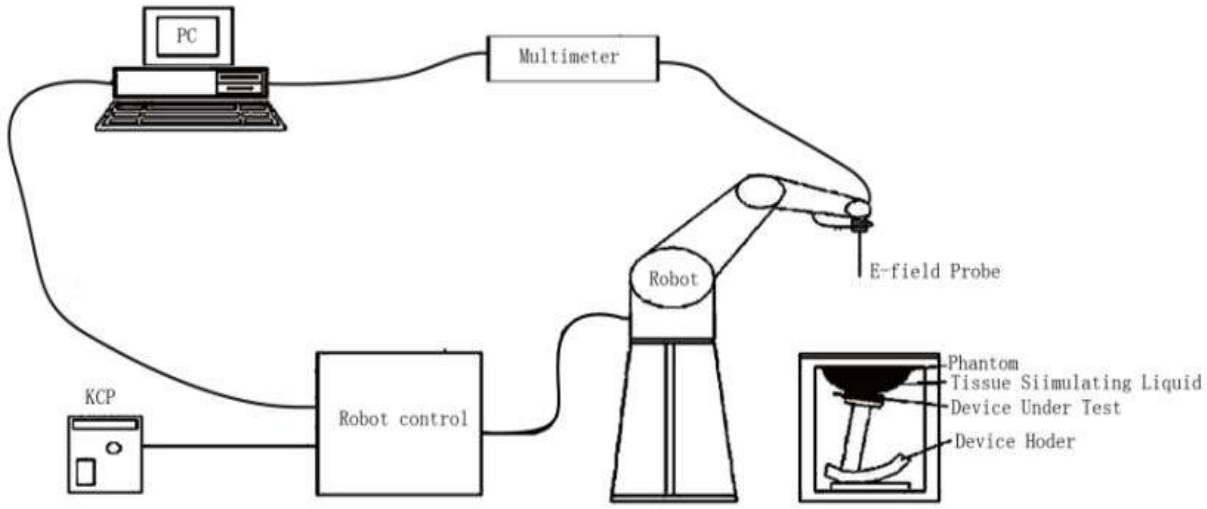
Bluetooth	
Bluetooth Version	☐V2.0 ☐V2.1 ☐V2.1+EDR ☒V3.0 ☐V3.0+HS ☐V4.0 ☒V4.1
Operation Frequency	2402~2480MHz
Type of modulation	☒GFSK ☒Π/4-DQPSK ☒8-DPSK
Avg. Burst Power	2.61dBm
Antenna Gain	0.8dBi
WIFI	
WIFI Specification	☐802.11a ☒802.11b ☒802.11g ☒802.11n(20) ☒802.11n(40)
Operation Frequency	2412~2462MHz
Avg. Burst Power	11b:10.89dBm,11g:9.34dBm,11n(20):8.89dBm,11n(40):7.46dBm
Antenna Gain	0.8dBi
Accessories	
Battery	Brand name: IONE Model No. : MAX PLUS 5.5 Voltage and Capacitance: 3.7 V & 2000mAh
Adapter	Brand name: IONE Model No. : MAX PLUS 5.5 Input: AC 100-240V, 50/60Hz, 0.15A Output: DC 5V, 1A
Earphone	Brand name: N/A Model No. : N/A

Note: CMU200 can measure the average power and Peak power at the same time

Product	Type
	☒ Production unit ☐ Identical Prototype

3. SAR MEASUREMENT SYSTEM

3.1. The SATIMO system used for performing compliance tests consists of following items



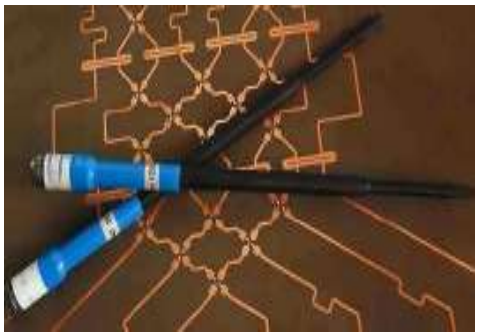
The COMOSAR system for performing compliance tests consists of the following items:

- 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.

3.2. COMOSAR E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SATIMO. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric 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 and relevant KDB files.) The calibration data are in Appendix D.

Isotropic E-Field Probe Specification

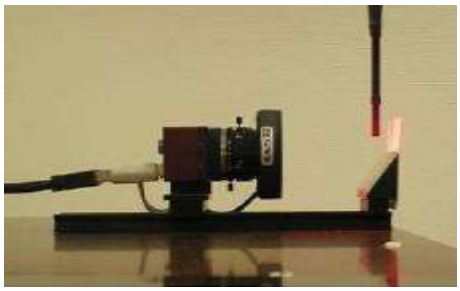
Model	SSE5	
Manufacture	MVG	
Frequency	0.3GHz-3GHz Linearity:±0.12dB(300MHz-3GHz)	
Dynamic Range	0.01W/Kg-100W/Kg Linearity:±0.12dB	
Dimensions	Overall length:330mm Length of individual dipoles:4.5mm Maximum external diameter:8mm Probe Tip external diameter:5mm Distance between dipoles/ probe extremity:2.7mm	
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%.	

3.3. 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	

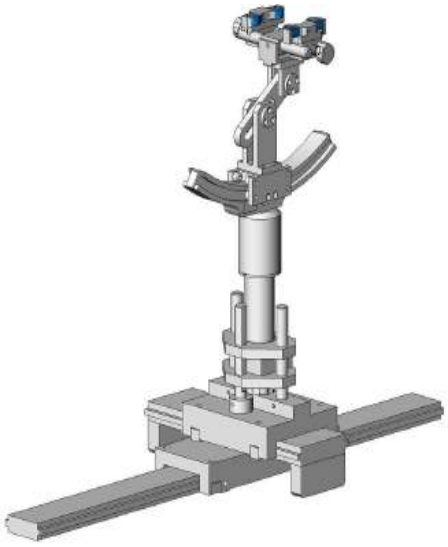
3.4. Video Positioning System

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.



3.5. 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 $\varepsilon r = 3$ and loss tangent $\delta = 0.02$. 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.



3.6. 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. SAR MEASUREMENT PROCEDURE

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

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

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

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

$$SAR = c_h \left.\frac{dT}{dt}\right|_{t=0}$$

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;
$\frac{dT}{dt} \mid t = 0$	is the initial time derivative of temperature in the tissue in kelvins per second

4.2. SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurement are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface is 2.7mm This distance cannot be smaller than the distance os sensor calibration points to probe tip as `defined in the probe properties,

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in SATIMO software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal 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 2db range is required in IEEE Standard 1528 and IEC62209 standards, whereby 3db is a requirement when compliance is assessed in accordance with the ARIB standard (Japan) If one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximum are detected, the number of Zoom Scan has to be increased accordingly.

Area Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100MHz to 6GHz

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 3: Zoom Scan

Zoom Scan are used to assess the peak spatial SAR value within a cubic average volume containing 1g abd 10g of simulated tissue. The Zoom Scan measures points(refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1g and 10g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB865664 D01 SAR Measurement 100MHz to 6GHz

Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

Step 4: Power Drift Measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the same settings. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

4.3. RF Exposure Conditions

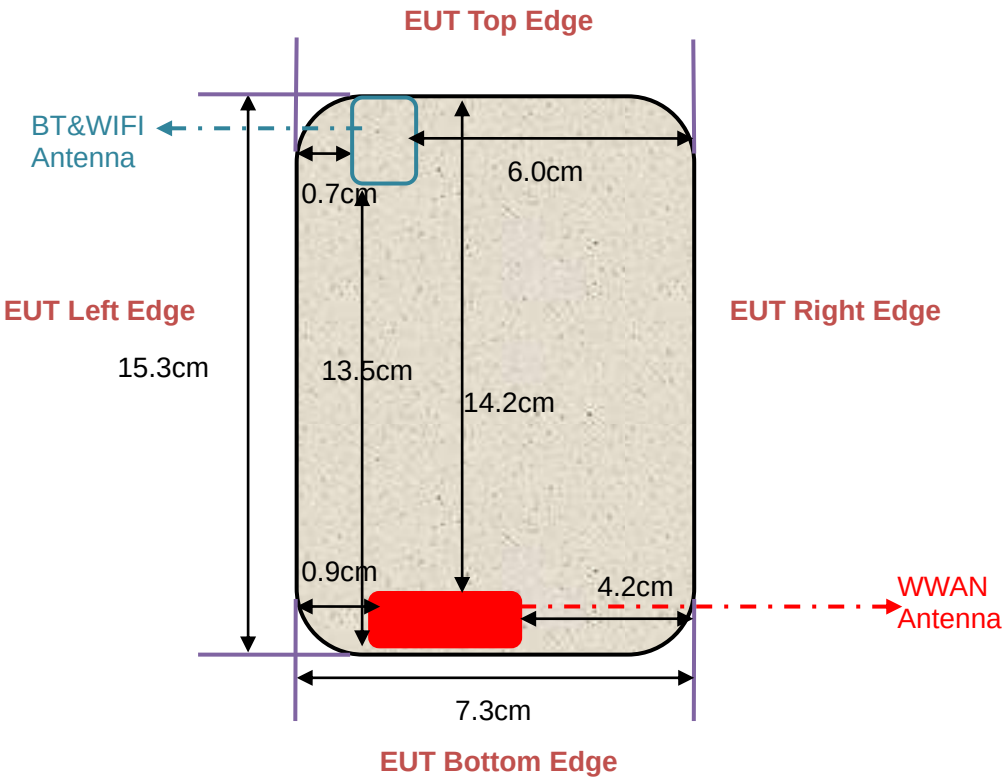
Test Configuration and setting:

The EUT is a model of GSM Portable Mobile Station (MS). It supports GSM/GPRS/EGPRS, WCDMA/HSPA, BT, WIFI, and support hotspot 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: (front view)



For WWAN mode:

Test Configurations	Antenna to edges/surface	SAR required	Note
Head			
Left Touch		Yes	
Left Tilt		Yes	
Right Touch		Yes	
Right Tilt		Yes	
Body			
Back	<25mm	Yes	
Front	<25mm	Yes	
Hotspot			
Back	<25mm	Yes	
Front	<25mm	Yes	
Edge 1 (Top)	142	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225D06 Hotspot SAR
Edge 2 (Right)	42	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225D06 Hotspot SAR
Edge 3 (Bottom)	1	Yes	
Edge 4 (Left)	9	Yes	

For WLAN mode:

Test Configurations	Antenna to edges/surface	SAR required	Note
Head			
Left Touch		Yes	
Left Tilt		Yes	
Right Touch		Yes	
Right Tilt		Yes	
Body			
Back	<25mm	Yes	
Front	<25mm	Yes	
Hotspot			
Back	<25mm	Yes	
Front	<25mm	Yes	
Edge 1 (Top)	1	Yes	
Edge 2 (Right)	6	Yes	
Edge 3 (Bottom)	135	No	SAR is not required for the distance between the antenna and the edge is >25mm as per KDB 941225D06 Hotspot SAR
Edge 4 (Left)	7	Yes	

5. 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

5.1. The composition of the tissue simulating liquid

Ingredient	Water	Salt	Sugar	HEC	Preventol	DGBE	TWEEN	Triton X-100
835MHz Head	√	√	√	√	√	--	--	--
835MHz Body	√	√	√	√	√	--	--	--
1900MHz Head	√	√	--	--	--	√	--	--
1900MHz Body	√	√	√	√	√	--	--	--
2450MHz Head	√	√	--	--	--	--	--	√
2450MHz Body	√	√	--	--	--	√	--	--

5.2. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE 1528 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 IEEE 1528 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 IEEE 1528.

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

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

5.3. Tissue Calibration Result

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

Tissue Stimulant Measurement for 835MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 41.5 (39.425-43.575)	δ[s/m] 0.90(0.855-0.945)		
Head	824.2	42.03	0.87	21.2	Dec. 26,2015
	826.4	41.95	0.87		
	835	41.76	0.90		
	836.6	41.32	0.91		
	846.6	41.07	0.91		
	848.8	40.93	0.91		
Body	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr 55.20(52.44-57-96)	δ[s/m]0.97(0.9215-1.0185)		
	824.2	56.77	0.94	21.3	Dec. 26,2015
	826.4	56.41	0.95		
	835	55.98	0.96		
	836.6	55.63	0.96		
	846.6	55.18	0.97		
	848.8	55.00	0.98		

Tissue Stimulant Measurement for 1900MHz					
	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr40.00(38.00-42.00)	δ[s/m]1.40(1.33-1.47)		
Head	1850.2	41.33	1.36	21.3	Dec. 30,2015
	1852.4	41.02	1.37		
	1880	40.91	1.40		
	1900	40.68	1.40		
	1907.6	40.32	1.43		
	1909.8	40.01	1.45		
Body	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr53.30(50.635-55.965)	δ[s/m]1.52(1.444-1.596)		
	1850.2	53.99	1.47	21.3	Dec. 30,2015
	1852.4	53.76	1.49		
	1880	53.05	1.50		
	1900	53.00	1.53		
	1907.6	52.83	1.53		
	1909.8	52.69	1.54		

Tissue Stimulant Measurement for 2450MHz					
Head	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr39.2(37.24-41.16)	δ[s/m]1.80(1.71-1.89)		
	2412	39.79	1.77	21.2	Jan. 01,2016
	2437	39.53	1.80		
	2450	39.12	1.80		
	2462	39.07	1.86		
Body	Fr. (MHz)	Dielectric Parameters (±5%)		Tissue Temp [°C]	Test time
		εr52.7(50.065-55.335)	δ[s/m]1.95(1.8525-2.0475)		
	2412	53.44	1.89	21.5	Jan. 01,2016
	2437	53.20	1.92		
	2450	52.86	1.93		
	2462	52.71	1.96		

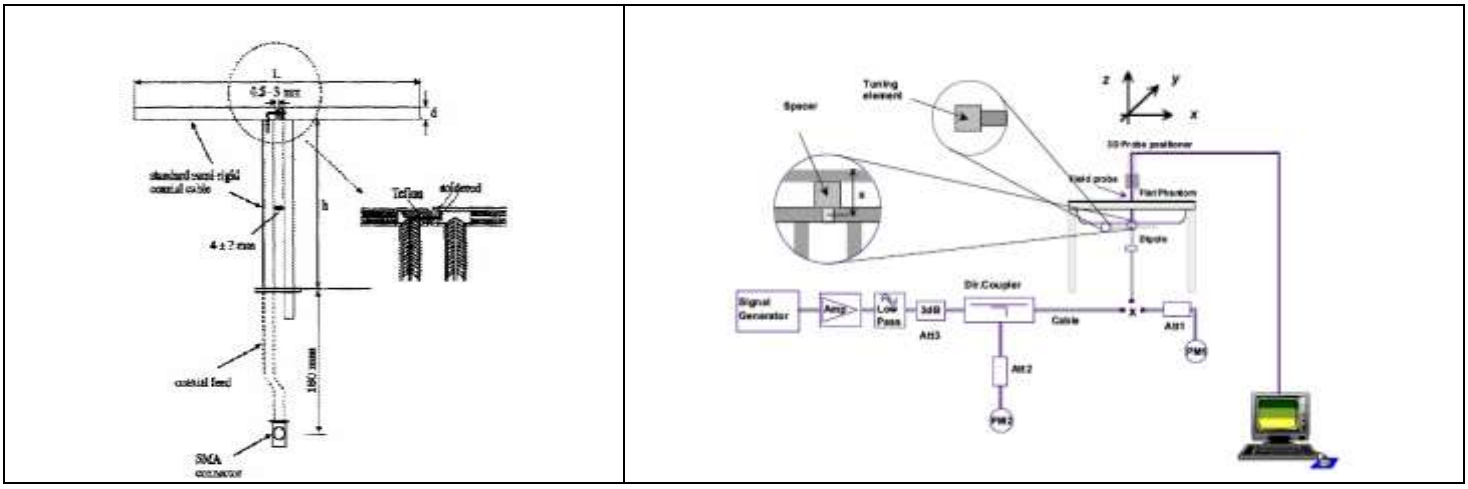
6. SAR SYSTEM CHECK PROCEDURE

6.1. SAR System Check Procedures

SAR system check is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

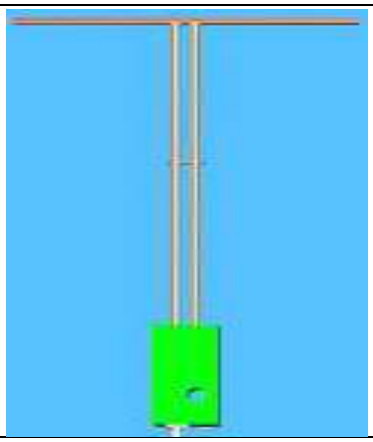
Each SATIMO system is equipped with one or more system check kits. These units, together with the predefined measurement procedures within the SATIMO software, enable the user to conduct the system check and system validation. System kit includes a dipole, and dipole device holder.

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 check setup is shown as below.



6.2. SAR System Check

6.2.1. 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 IEEE. the table below provides details for the mechanical and electrical Specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
835MHz	161.0	89.8	3.6
1900MHz	68	39.5	3.6
2450MHz	51.5	30.4	3.6

6.2.2. System Check Result

System Performance Check at 835MHz&1900MHz &2450MHz for Head								
Validation Kit: SN 46/11DIP 0G835-190 & SN 46/11DIP 1G900-187& SN 46/11 DIP 2G450-189								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 10%)		Normalized to 1W(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
835	9.60	6.20	8.64-10.56	5.58-6.82	9.946	6.310	21.2	Dec. 26,2015
1900	39.65	20.24	35.685-43.615	18.216-22.264	38.211	19.834	21.3	Dec. 30,2015
2450	54.40	23.75	48.96-59.84	21.375-26.125	55.654	25.024	21.2	Jan. 01,2016
System Performance Check at 835 MHz &1900MHz & 2450MHz for Body								
Frequency [MHz]	Target Value(W/Kg)		Reference Result (± 10%)		Normalized to 1W(W/Kg)		Tissue Temp. [°C]	Test time
	1g	10g	1g	10g	1g	10g		
835	9.90	6.39	8.91-10.89	5.75-7.03	10.305	6.463	21.3	Dec. 26,2015
1900	40.74	21.43	36.666-44.814	19.287-23.573	41.464	21.539	21.3	Dec. 30,2015
2450	54.19	24.96	48.771-59.609	22.464-27.456	56.841	25.364	21.5	Jan. 01,2016

7. EUT TEST POSITION

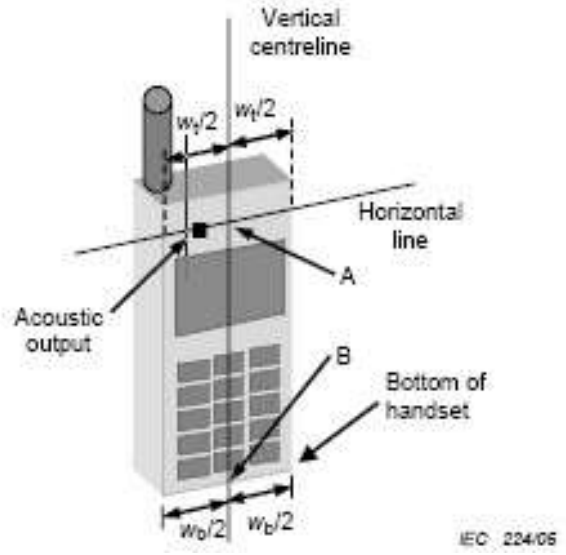
This EUT was tested in **Right Cheek, Right Titled, Left Cheek, Left Titled, Body back and Body front and 4 edges.**

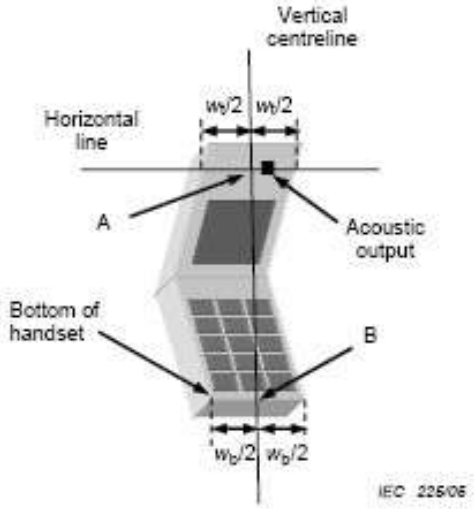
7.1. Define Two Imaginary Lines on the Handset

(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.





7.2. 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

7.3. 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.

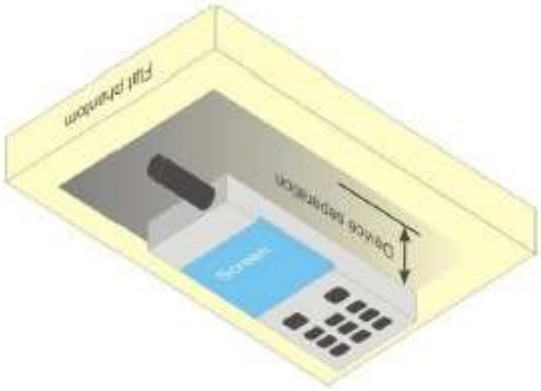
7.4. Body Worn Position

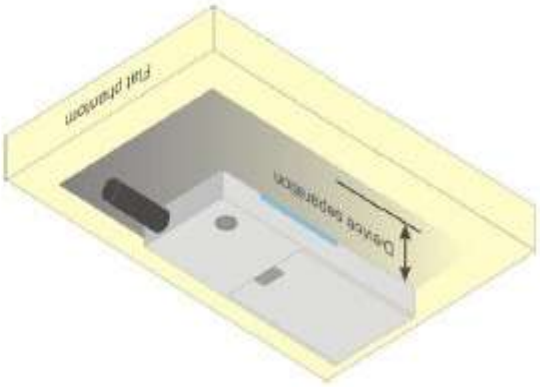
(1) To position the EUT parallel to the phantom surface.

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

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

General Note：Referring KDB941225 D06 v02r01, when the overall device length and width are ≥ 9cm *5cm, the test distance is 10mm. SAR must be measured for all sides and surfaces with a transmitting antenna within 25mm from that surface or edge.





8. SAR EXPOSURE LIMITS

SAR assessments have been made in line with the requirements of IEEE-1528, 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 (W/kg)
Spatial Peak SAR (1g cube tissue for brain or body)	1.60
Spatial Average SAR (Whole body)	0.08
Spatial Peak SAR (Limbs)	4.0

9. TEST EQUIPMENT LIST

Equipment description	Manufacturer/ Model	Identification No.	Current calibration date	Next calibration date
SAR Probe	MVG	SN 19/15 EP254	07/10/2015	07/09/2016
TISSUE Probe	SATIMO	SN 45/11 OCPG45	12/02/2015	12/01/2016
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	03/06/2015	03/05/2016
Comm Tester	Agilent-8960	GB46310822	03/06/2015	03/05/2016
Multimeter	Keithley 2000	1188656	03/06/2015	03/05/2016
Dipole	SATIMO SID835	SN46/11 DIP 0G835-190	10/02/2014	10/01/2017
Dipole	SATIMO SID1900	SN46/11 DIP 1G900-187	11/14/2013	11/13/2016
Dipole	SATIMO SID2450	SN46/11 DIP 2G450-189	11/14/2013	11/13/2016
Signal Generator	Agilent-E4438C	MY44260051	03/06/2015	03/05/2016
Spectrum Analyzer E4440	Agilent	US41421290	07/23/2015	07/22/2016
Network Analyzer	Rhode & Schwarz ZVL6	SN100132	03/06/2015	03/05/2016
Attenuator	Warison /WATT-6SR1211	N/A	N/A	N/A
Attenuator	Mini-circuits / VAT-10+	N/A	N/A	N/A
Amplifier	EM30180	SN060552	03/06/2015	03/05/2016
Directional Couple	Werlatone/ C5571-10	SN99463	07/29/2015	07/28/2016
Directional Couple	Werlatone/ C6026-10	SN99482	07/29/2015	07/28/2016
Power Sensor	NRP-Z21	1137.6000.02	10/20/2015	10/19/2016
Power Sensor	NRP-Z23	US38261498	03/06/2015	03/05/2016
Power Viewer	R&S	V2.3.1.0	N/A	N/A

Note: Per KDB 865664 Dipole SAR Validation, 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.

10. MEASUREMENT UNCERTAINTY

SATIMO Uncertainty Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	6.98	6.98	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	1	1	1.16	1.16	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	1	1	2.33	2.33	∞
Boundary effect	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.87	2.87	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.03	0.03	∞
Response Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.16	1.16	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.71	1.71	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.91	2.91	∞
Test sample Related									
Test sample positioning	E.4.2.1	0.03	N	1	1	1	0.05	0.05	N-1
Device Holder Uncertainty	E.4.1.1	5.00	N	1	1	1	4.95	4.95	∞
Output power Variation - SAR drift measurement	6.6.2	0.65	R	$\sqrt{3}$	1	1	0.36	0.36	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.02	0.02	∞
Liquid conductivity deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.83	1.23	∞
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.18	2.14	∞
Liquid permittivity - deviation from target value	E.3.2	0.03	R	$\sqrt{3}$	0.6	0.49	0.01	0.01	∞
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.06	4.95	M
Combined Standard Uncertainty			RSS				11.17	10.63	∞
Expanded Uncertainty (95% Confidence interval)			k				22.34	21.26	

SATIMO Uncertainty System uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram.									
Uncertainty Component	Sec.	Tol (+- %)	Prob. Dist.	Div.	Ci (1g)	Ci (10g)	1g Ui (+-%)	10g Ui (+-%)	Vi
Measurement System									
Probe calibration	E.2.1	7.0	N	1	1	1	6.98	6.98	∞
Axial Isotropy	E.2.2	2.5	R	$\sqrt{3}$	1	1	1.16	1.16	∞
Hemispherical Isotropy	E.2.2	4.0	R	$\sqrt{3}$	1	1	2.33	2.33	∞
Boundary Effects	E.2.3	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Linearity	E.2.4	5.0	R	$\sqrt{3}$	1	1	2.87	2.87	∞
System detection limits	E.2.5	1.0	R	$\sqrt{3}$	1	1	0.58	0.58	∞
Readout Electronics	E.2.6	0.02	N	1	1	1	0.03	0.03	∞
Response Time	E.2.7	3.0	R	$\sqrt{3}$	1	1	1.70	1.70	∞
Integration Time	E.2.8	2.0	R	$\sqrt{3}$	1	1	1.16	1.16	∞
RF ambient Conditions	E.6.1	3.0	R	$\sqrt{3}$	1	1	1.71	1.71	∞
Probe positioner Mechanical Tolerance	E.6.2	2.0	R	$\sqrt{3}$	1	1	1.15	1.15	∞
Probe positioning with respect to Phantom Shell	E.6.3	0.05	R	$\sqrt{3}$	1	1	0.03	0.03	∞
Extrapolation, interpolation and integration Algoritms for Max. SAR Evaluation	E.5.2	5.0	R	$\sqrt{3}$	1	1	2.91	2.91	∞
Dipole									
Dipole axis to liquid Distance	8,E.4.2	1.00	N	$\sqrt{3}$	1	1	0.55	0.55	N-1
Input power and SAR drift measurement	8,6.6.2	0.65	R	$\sqrt{3}$	1	1	0.36	0.36	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (Shape and thickness tolerances)	E.3.1	0.05	R	$\sqrt{3}$	1	1	0.02	0.02	∞
Liquid conductivity - deviation from target value	E.3.2	5.00	R	$\sqrt{3}$	0.64	0.43	1.83	1.23	∞
Liquid conductivity - measurement uncertainty	E.3.3	5.00	N	1	0.64	0.43	3.18	2.14	∞
Liquid permittivity - deviation from target value	E.3.2	0.03	R	$\sqrt{3}$	0.6	0.49	0.01	0.01	∞
Liquid permittivity - measurement uncertainty	E.3.3	10.00	N	1	0.6	0.49	6.06	4.95	M
Combined Standard Uncertainty			RSS				10.03	9.42	
Expanded Uncertainty (95% Confidence interval)			k				20.05	18.85	

11. CONDUCTED POWER MEASUREMENT

GSM BAND

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
Maximum Power <1>				
GSM 850	824.2	**31.26**	-9	22.26
	836.6	31.23	-9	22.23
	848.8	31.18	-9	22.18
GPRS 850 （1 Slot）	824.2	30.69	-9	21.69
	836.6	30.64	-9	21.64
	848.8	30.55	-9	21.55
GPRS 850 （2 Slot）	824.2	28.21	-6	22.21
	836.6	28.18	-6	22.18
	848.8	28.15	-6	22.15
GPRS850 （3 Slot）	824.2	26.19	-4.26	21.93
	836.6	26.16	-4.26	21.9
	848.8	26.11	-4.26	21.85
GPRS 850 （4 Slot）	824.2	25.27	-3	22.27
	836.6	25.21	-3	22.21
	848.8	25.19	-3	22.19
EGPRS 850 （1 Slot）	824.2	26.72	-9	17.72
	836.6	26.69	-9	17.69
	848.8	26.58	-9	17.58
EGPRS 850 （2 Slot）	824.2	22.21	-6	16.21
	836.6	22.15	-6	16.15
	848.8	22.12	-6	16.12
EGPRS 850 （3 Slot）	824.2	21.37	-4.26	17.11
	836.6	21.32	-4.26	17.06
	848.8	21.31	-4.26	17.05
EGPRS 850 （4 Slot）	824.2	20.39	-3	17.39
	836.6	20.26	-3	17.26
	848.8	20.21	-3	17.21

GSM BAND CONTINUE

Mode	Frequency(MHz)	Avg. Burst Power(dBm)	Duty cycle Factor(dBm)	Frame Power(dBm)
PCS1900	1850.2	**28.26**	-9	19.26
	1880	28.23	-9	19.23
	1909.8	28.21	-9	19.21
GPRS1900 （1 Slot）	1850.2	27.78	-9	18.78
	1880	27.72	-9	18.72
	1909.8	27.69	-9	18.69
GPRS1900 （2 Slot）	1850.2	25.33	-6	19.33
	1880	25.31	-6	19.31
	1909.8	25.28	-6	19.28
GPRS1900 （3 Slot）	1850.2	23.29	-4.26	19.03
	1880	23.25	-4.26	18.99
	1909.8	23.22	-4.26	18.96
GPRS1900 （4 Slot）	1850.2	22.37	-3	19.37
	1880	22.35	-3	19.35
	1909.8	22.32	-3	19.32
EGPRS1900 （1 Slot）	1850.2	25.41	-9	16.41
	1880	25.38	-9	16.38
	1909.8	25.32	-9	16.32
EGPRS1900 （2 Slot）	1850.2	22.71	-6	16.71
	1880	23.65	-6	17.65
	1909.8	22.62	-6	16.62
EGPRS1900 （3 Slot）	1850.2	22.53	-4.26	18.27
	1880	22.47	-4.26	18.21
	1909.8	22.44	-4.26	18.18
EGPRS1900 （4 Slot）	1850.2	20.25	-3	17.25
	1880	20.23	-3	17.23
	1909.8	20.18	-3	17.18
Maximum Power <2>				
GSM 850	1880	31.34	-9	22.34
PCS1900	1880	28.25	-9	19.25

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) – 4.26 dB
Frame Power = Max burst power (4 Up Slot) – 3 dB

HSDPA Setup Configuration:

The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
The RF path losses were compensated into the measurements.
A call was established between EUT and Based Station with following setting:
Set Gain Factors(βc and βd) parameters set according to each
Specific sub-test in the following table.C10.1.4.quoted from the TS34.121
Set RMC 12.2Kbps + HSDPA mode
Set Cell Power=-86dBm
Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
Select HSDPA Uplink Parameters
Set Delta ACK, Delta NACK and Delta CQI=8
Set Ack-Nack Repetition Factor to 3
Set CQI Feedback Cycle (k) to 4ms
Set CQI Repetition Factor to 2
Power Ctrl Mode=All Up bits
The transmitted maximum output power was recorded.
Table C.10.2.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	βc (Note5)	βd	βd (SF)	βc/βd	βHS (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15(Note 4)	15/15(Note 4)	64	12/15(Note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: ΔACK, ΔNACK and ΔCQI = 30/15 with β_{hs} = 30/15 * β_c .
Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, ΔACK and ΔNACK = 30/15 with β_{hs} = 30/15 * β_c , and ΔCQI = 24/15 with β_{hs} = 24/15 * β_c .
Note 3: CM = 1 for βc/βd =12/15, hs/ c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.
Note 4: For subtest 2 the c/ d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to c = 11/15 and d = 15/15.

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
ii. Set the Gain Factors (βc and βd) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
iii. Set Cell Power = -86 dBm
iv. Set Channel Type = 12.2k + HSPA
v. Set UE Target Power
vi. Power Ctrl Mode= Alternating bits
vii. Set and observe the E-TFCI
viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	βc	βd	βd (SF)	βc/βd	βHS (Note1)	βec	βed (Note 4) (Note 5)	βed (SF)	βed (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2) (Note 6)	AG Index (Note 5)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	βed1: 47/15 βed2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15	0	-	-	5/15	5/15	47/15	4	1	1.0	0.0	12	67

Note 1: For sub-test 1 to 4, ΔACK, ΔNACK and ΔCQI = 30/15 with β_{hs} = 30/15 * β_c . For sub-test 5, ΔACK, ΔNACK and ΔCQI = 5/15 with β_{hs} = 5/15 * β_c .
Note 2: CM = 1 for βc/βd =12/15, hs/ 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.
Note 3: For subtest 1 the c/ d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to c = 10/15 and d = 15/15.
Note 4: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 5: βed can not be set directly; it is set by Absolute Grant Value.
Note 6: For subtests 2, 3 and 4, UE may perform E-DPDCH power scaling at max power which could results in slightly smaller MPR values.

UMTS BAND II

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 1900 RMC	1852.4	**21.48**
	1880	21.42
	1907.6	21.38
WCDMA 1900 AMR	1852.4	21.22
	1880	21.19
	1907.6	21.15
HSDPA Subtest 1	1852.4	20.24
	1880	20.21
	1907.6	20.18
HSDPA Subtest 2	1852.4	20.33
	1880	20.29
	1907.6	20.26
HSDPA Subtest 3	1852.4	20.25
	1880	20.22
	1907.6	20.18
HSDPA Subtest 4	1852.4	20.27
	1880	20.24
	1907.6	20.22
HSUPA Subtest 1	1852.4	20.39
	1880	20.35
	1907.6	20.37
HSUPA Subtest 2	1852.4	20.22
	1880	20.18
	1907.6	20.16
HSUPA Subtest 3	1852.4	20.34
	1880	20.32
	1907.6	20.26
HSUPA Subtest 4	1852.4	20.39
	1880	20.28
	1907.6	20.25
HSUPA Subtest 5	1852.4	20.35
	1880	20.32
	1907.6	20.26

UMTS BAND V

Mode	Frequency (MHz)	Avg. Burst Power (dBm)
WCDMA 850 RMC	826.4	**21.21**
	836.6	21.18
	846.6	21.16
WCDMA 850 AMR	826.4	21.15
	836.6	21.13
	846.6	21.09
HSDPA Subtest 1	826.4	20.33
	836.6	20.26
	846.6	20.22
HSDPA Subtest 2	826.4	20.28
	836.6	20.22
	846.6	20.21
HSDPA Subtest 3	826.4	20.36
	836.6	20.32
	846.6	20.29
HSDPA Subtest 4	826.4	20.31
	836.6	20.25
	846.6	20.23
HSUPA Subtest 1	826.4	20.35
	836.6	20.29
	846.6	20.27
HSUPA Subtest 2	826.4	20.26
	836.6	20.23
	846.6	20.21
HSUPA Subtest 3	826.4	20.28
	836.6	20.24
	846.6	20.21
HSUPA Subtest 4	826.4	20.29
	836.6	20.27
	846.6	20.23
HSUPA Subtest 5	826.4	20.34
	836.6	20.31
	846.6	20.25

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.

WIFI

Mode	Data Rate (Mbps)	Channel	Frequency(MHz)	Avg. Burst Power(dBm)
802.11b	1	01	2412	**10.89**
		06	2437	10.68
		11	2462	10.63
802.11g	6	01	2412	9.34
		06	2437	9.29
		11	2462	9.21
802.11n(20)	6.5	01	2412	8.89
		06	2437	8.85
		11	2462	8.69
802.11n(40)	13.5	03	2422	7.46
		06	2437	7.32
		09	2452	7.18

Bluetooth_V3.0

Modulation	Channel	Frequency(MHz)	Average Power (dBm)
GFSK	0	2402	1.68
	39	2441	2.31
	78	2480	2.61
π /4-DQPSK	0	2402	0.89
	39	2441	1.48
	78	2480	1.78
8-DPSK	0	2402	0.85
	39	2441	1.46
	78	2480	1.75

Bluetooth_V4.1

Modulation	Channel	Frequency(MHz)	Peak Power (dBm)
GFSK	0	2402	-4.69
	19	2440	-4.31
	39	2480	-4.13

12. TEST RESULTS

12.1. SAR Test Results Summary

12.1.1. Test position and configuration

Head SAR was performed with the device configured in the positions according to IEEE 1528-2013, and Body SAR was performed with the device 10mm from the phantom.

12.1.2. Operation Mode

1. Per KDB 447498 D01 v06 ,for each exposure position, if the highest 1-g SAR is ≤ 0.8 W/kg, testing for low and high channel is optional.
2. Per KDB 865664 D01 v01r04,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.
3. Body-worn exposure conditions are intended to voice call operations, therefore GSM voice call mode is selected to be test.
4. Per KDB 648474 D04 v01r03,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.
5. Per 941225 D06 v02r01, 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.
6. Per 248227 D01 v02r02, 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.
7. 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)]

12.1.3. Test Result

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 46.7					
Product: MOBILE PHONE									
Test Mode: GSM850 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	-0.02	**0.057**	32	31.23	**0.068**	1.6
Left Tilt	voice	190	836.6	0.16	0.026	32	31.23	0.031	1.6
Right Cheek	voice	190	836.6	-0.09	0.032	32	31.23	0.038	1.6
Right Tilt	voice	190	836.6	0.34	0.032	32	31.23	0.038	1.6
Body back	voice	190	836.6	0.11	**0.097**	32	31.23	**0.116**	1.6
Body front	voice	190	836.6	1.02	0.090	32	31.23	0.107	1.6
Left Cheek	GPRS-4 slot	190	836.6	0.05	**0.088**	26	25.21	**0.106**	1.6
Left Tilt	GPRS-4 slot	190	836.6	-0.03	0.040	26	25.21	0.048	1.6
Right Cheek	GPRS-4 slot	190	836.6	-0.09	0.049	26	25.21	0.059	1.6
Right Tilt	GPRS-4 slot	190	836.6	-0.05	0.047	26	25.21	0.056	1.6
Body back	GPRS-4 slot	190	836.6	0.00	**0.107**	26	25.21	**0.128**	1.6
Body front	GPRS-4 slot	190	836.6	-0.07	0.105	26	25.21	0.126	1.6
Edge 1 (Top)	GPRS-4 slot	190	836.6	0.12	0.006	26	25.21	0.007	1.6
Edge 2(Right)	GPRS-4 slot	190	836.6	0.09	0.026	26	25.21	0.031	1.6
Edge 3(Bottom)	GPRS-4 slot	190	836.6	0.23	0.083	26	25.21	0.100	1.6
Edge 4(Left)	GPRS-4 slot	190	836.6	-0.05	0.101	26	25.21	0.121	1.6
SIM 2 Card									
Left Cheek	GPRS-4 slot	190	836.6	0.04	0.052	26	25.21	0.062	1.6
Body back	GPRS-4 slot	190	836.6	0.06	0.089	26	25.21	0.107	1.6

Note:

· When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.

·The test separation for body is 10mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 53.2					
Product: MOBILE PHONE									
Test Mode: PCS1900 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	0.03	0.019	29	28.23	0.023	1.6
Left Tilt	voice	661	1880.0	0.16	0.016	29	28.23	0.019	1.6
Right Cheek	voice	661	1880.0	0.09	**0.048**	29	28.23	**0.057**	1.6
Right Tilt	voice	661	1880.0	0.02	0.020	29	28.23	0.024	1.6
Body back	voice	661	1880.0	0.01	**0.132**	29	28.23	**0.158**	1.6
Body front	voice	661	1880.0	0.11	0.118	29	28.23	0.141	1.6
Left Cheek	GPRS-4 slot	661	1880.0	0.07	0.026	23	22.35	0.030	1.6
Left Tilt	GPRS-4 slot	661	1880.0	0.01	0.021	23	22.35	0.024	1.6
Right Cheek	GPRS-4 slot	661	1880.0	0.05	**0.063**	23	22.35	**0.073**	1.6
Right Tilt	GPRS-4 slot	661	1880.0	0.12	0.032	23	22.35	0.037	1.6
Body back	GPRS-4 slot	661	1880.0	0.18	0.209	23	22.35	0.243	1.6
Body front	GPRS-4 slot	661	1880.0	0.05	0.200	23	22.35	0.232	1.6
Edge 1 (Top)	GPRS-4 slot	661	1880.0	1.06	0.011	23	22.35	0.013	1.6
Edge 2(Right)	GPRS-4 slot	661	1880.0	0.06	0.041	23	22.35	0.048	1.6
Edge 3(Bottom)	GPRS-4 slot	661	1880.0	0.07	**0.530**	23	22.35	**0.616**	1.6
Edge 4(Left)	GPRS-4 slot	661	1880.0	0.12	0.039	23	22.35	0.045	1.6
SIM 2 Card									
Right Cheek	GPRS-4 slot	661	1880.0	0.03	0.043	23	22.35	0.050	1.6
Edge 3(Bottom)	GPRS-4 slot	661	1880.0	0.07	0.522	23	22.35	0.606	1.6

Note:
・When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.
・The test separation for body is 10mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 53.2					
Product: 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	RMC 12.2kbps	9400	1880	-0.02	0.032	22	21.42	0.037	1.6
Left Tilt	RMC 12.2kbps	9400	1880	0.19	0.028	22	21.42	0.032	1.6
Right Cheek	RMC 12.2kbps	9400	1880	-0.05	**0.096**	22	21.42	**0.110**	1.6
Right Tilt	RMC 12.2kbps	9400	1880	-0.04	0.017	22	21.42	0.019	1.6
Body back	RMC 12.2kbps	9400	1880	0.08	0.399	22	21.42	0.456	1.6
Body front	RMC 12.2kbps	9400	1880	-0.05	0.251	22	21.42	0.287	1.6
Edge 1 (Top)	RMC 12.2kbps	9400	1880	1.06	0.004	22	21.42	0.005	1.6
Edge 2(Right)	RMC 12.2kbps	9400	1880	0.17	0.073	22	21.42	0.083	1.6
Edge 3(Bottom)	RMC 12.2kbps	9400	1880	-0.04	**0.628**	22	21.42	**0.718**	1.6
Edge 4(Left)	RMC 12.2kbps	9400	1880	-0.02	0.019	22	21.42	0.022	1.6

Note:

・When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.

・The test separation for body is 10mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 46.7					
Product: 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	RMC 12.2kbps	4183	836.6	1.00	**0.059**	21.50	21.18	**0.064**	1.6
Left Tilt	RMC 12.2kbps	4183	836.6	-0.06	0.028	21.50	21.18	0.030	1.6
Right Cheek	RMC 12.2kbps	4183	836.6	-0.04	0.040	21.50	21.18	0.043	1.6
Right Tilt	RMC 12.2kbps	4183	836.6	0.19	0.028	21.50	21.18	0.030	1.6
Body back	RMC 12.2kbps	4183	836.6	0.22	**0.114**	21.50	21.18	**0.123**	1.6
Body front	RMC 12.2kbps	4183	836.6	-0.05	0.107	21.50	21.18	0.115	1.6
Edge 1 (Top)	RMC 12.2kbps	4183	836.6	0.18	0.004	21.50	21.18	0.004	1.6
Edge 2(Right)	RMC 12.2kbps	4183	836.6	-0.04	0.024	21.50	21.18	0.026	1.6
Edge 3(Bottom)	RMC 12.2kbps	4183	836.6	0.09	0.042	21.50	21.18	0.045	1.6
Edge 4(Left)	RMC 12.2kbps	4183	836.6	0.01	0.074	21.50	21.18	0.080	1.6

Note:

・When the 1-g Reported SAR is ≤ 0.8 W/kg, testing for low and high channel is optional. Refer to KDB 447498.

・The test separation for body is 10mm of all above table.

SAR MEASUREMENT									
Depth of Liquid (cm):>15				Relative Humidity (%): 43.9					
Product: MOBILE PHONE									
Test Mode:802.11b									
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**
Left Cheek	DTS	6	2437	0.03	0.065	11	10.68	0.070	1.6
Left Tilt	DTS	6	2437	0.16	0.054	11	10.68	0.058	1.6
Right Cheek	DTS	6	2437	-0.05	**0.129**	11	10.68	**0.139**	1.6
Right Tilt	DTS	6	2437	-0.09	0.078	11	10.68	0.084	1.6
Body back	DTS	6	2437	0.24	0.084	11	10.68	0.090	1.6
Body front	DTS	6	2437	-0.05	0.057	11	10.68	0.061	1.6
Edge 1 (Top)	DTS	6	2437	-0.01	0.168	11	10.68	0.181	1.6
Edge 2(Right)	DTS	6	2437	1.09	**0.187**	11	10.68	**0.201**	1.6
Edge 3(Bottom)	DTS	6	2437	-0.02	0.016	11	10.68	0.017	1.6
Edge 4(Left)	DTS	6	2437	0.08	0.017	11	10.68	0.018	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.

Simultaneous Multi-band Transmission Evaluation:

Application Simultaneous Transmission information:

NO	Simultaneous state	Portable Handset		
		Head	Body-worn	Hotspot
1	GSM(voice)+WLAN 2.4GHz (data)	Yes	Yes	-
2	WCDMA(voice)+WLAN 2.4GHz (data)	Yes	Yes	-
3	GSM(voice)+Bluetooth(data)	-	Yes	-
4	WCDMA(voice)+Bluetooth(data)	-	Yes	-
5	GSM (Data) + Bluetooth(data)	-	Yes	
6	GSM (Data) + WLAN 2.4GHz (data)	Yes	Yes	Yes
7	WCDMA (Data) + Bluetooth(data)	--	Yes	
8	WCDMA (Data) + WLAN 2.4GHz (data)	Yes	Yes	Yes

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. KDB 447498 D01, BT SAR is excluded as below table.
4. KDB 447498 D01, 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 10mm for body-worn SAR.
5. If the test separation distance is <5mm, 5mm is used for excluded SAR calculation.
6. According to KDB447497 D01 4.3.2, simultaneous transmission SAR test exclusion is as follow:
   (1) Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the reported standalone SAR of each applicable simultaneous transmitting antenna.
   (2) Any transmitters and antennas should be considered when calculating simultaneous mode.
   (3) For mobile phone and PC, it's the sum of all transmitters and antennas at the same mode with same position in each applicable exposure condition
   (4) When the standalone SAR test exclusion of section 4.3.1 is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to the following to determine simultaneous transmission SAR test exclusion:

   (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.
7. When the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The simultaneous transmitting antennas in each operating mode and exposure condition combination must be considered one pair at a time to determine the SAR to peak location separation ratio to qualify for test exclusion. The ratio is determined by (SAR1 + SAR2)1.5/Ri, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

Estimated SAR		Max Power including Tune-up Tolerance		Separation Distance (mm)	Estimated SAR (W/kg)
		dBm	mW		
BT	Head	3	1.995	0	0.0838
	Body	3	1.995	10	0.0419

Maximum test results (WWAN) with BT SAR:
BT: Head (0 cm gap): 0.0838W/kg and Body (1.0cm gap): 0.0419 W/kg

Sum of the SAR for GSM 850 &Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		GSM 850 Band	WI-Fi DTS Band	Bluetooth		
Head (voice)	Left Touch	0.068	0.070		0.138	No
	Left Tilt	0.031	0.058		0.089	No
	Right Touch	0.038	0.139		0.177	No
	Right Tilt	0.038	0.084		0.122	No
Body-worn	Rear	0.116	0.090		0.206	No
		0.116		0.0419	0.158	No
	Front	0.107	0.061		0.168	No
		0.107		0.0419	0.149	No
Head (VoIP)	Left Touch	0.106	0.070		0.176	No
	Left Tilt	0.048	0.058		0.106	No
	Right Touch	0.059	0.139		0.198	No
	Right Tilt	0.056	0.084		0.140	No
Hotspot	Rear	0.128	0.090		0.218	No
	Front	0.126	0.061		0.187	No
	Edge 1	0.007	0.181		0.188	No
	Edge 2	0.031	0.201		0.232	No
	Edge 3	0.100	0.017		0.117	No
	Edge 4	0.121	0.018		0.139	No
	Rear	0.128		0.0419	0.170	No
	Front	0.126		0.0419	0.168	No
	Edge 1	0.007		0.0419	0.049	No
	Edge 2	0.031		0.0419	0.073	No
	Edge 3	0.100		0.0419	0.142	No
	Edge 4	0.121		0.0419	0.163	No

Note:

- According to KDB 447498 D01 General RF Exposure Guidance, 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 “

Sum of the SAR for GSM 1900 &Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		GSM 1900 Band	WI-Fi DTS Band	Bluetooth		
Head (voice)	Left Touch	0.023	0.070		0.093	No
	Left Tilt	0.019	0.058		0.077	No
	Right Touch	0.057	0.139		0.196	No
	Right Tilt	0.024	0.084		0.108	No
Body-worn	Rear	0.158	0.090		0.248	No
		0.158		0.0419	0.200	No
	Front	0.141	0.061		0.202	No
		0.141		0.0419	0.183	No
Head (VoIP)	Left Touch	0.030	0.070		0.100	No
	Left Tilt	0.024	0.058		0.082	No
	Right Touch	0.073	0.139		0.212	No
	Right Tilt	0.037	0.084		0.121	No
Hotspot	Rear	0.243	0.090		0.333	No
	Front	0.232	0.061		0.293	No
	Edge 1	0.013	0.181		0.194	No
	Edge 2	0.048	0.201		0.249	No
	Edge 3	0.616	0.017		0.633	No
	Edge 4	0.045	0.018		0.063	No
	Rear	0.243		0.0419	0.285	No
	Front	0.232		0.0419	0.274	No
	Edge 1	0.013		0.0419	0.055	No
	Edge 2	0.048		0.0419	0.090	No
	Edge 3	0.616		0.0419	0.658	No
	Edge 4	0.045		0.0419	0.087	No

Note:

- According to KDB 447498 D01 General RF Exposure Guidance, 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 “

Sum of the SAR for WCDMA Band II &Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band II	Wi-Fi DTS Band	Bluetooth		
Head	Left Touch	0.037	0.070		0.107	No
	Left Tilt	0.032	0.058		0.090	No
	Right Touch	0.110	0.139		0.249	No
	Right Tilt	0.019	0.084		0.103	No
Hotspot	Rear	0.456	0.090		0.546	No
	Front	0.287	0.061		0.348	No
	Edge 1	0.005	0.181		0.186	No
	Edge 2	0.083	0.201		0.284	No
	Edge 3	0.718	0.017		0.735	No
	Edge 4	0.022	0.018		0.040	No
	Rear	0.456		0.0419	0.498	No
	Front	0.287		0.0419	0.329	No
	Edge 1	0.005		0.0419	0.047	No
	Edge 2	0.083		0.0419	0.125	No
	Edge 3	0.718		0.0419	**0.760**	No
	Edge 4	0.022		0.0419	0.064	No

Note:

- According to KDB 447498 D01 General RF Exposure Guidance, 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 “

Sum of the SAR for WCDMA Band V &Wi-Fi & BT:

RF Exposure Conditions	Test Position	Simultaneous Transmission Scenario			Σ1-g SAR (W/Kg)	SPLSR (Yes/No)
		WCDMA Band V	Wi-Fi DTS Band	Bluetooth		
Head	Left Touch	0.064	0.070		0.134	No
	Left Tilt	0.030	0.058		0.088	No
	Right Touch	0.043	0.139		0.182	No
	Right Tilt	0.030	0.084		0.114	No
Hotspot	Rear	0.123	0.090		0.213	No
	Front	0.115	0.061		0.176	No
	Edge 1	0.004	0.181		0.185	No
	Edge 2	0.026	0.201		0.227	No
	Edge 3	0.045	0.017		0.062	No
	Edge 4	0.080	0.018		0.098	No
	Rear	0.123		0.0419	0.165	No
	Front	0.115		0.0419	0.157	No
	Edge 1	0.004		0.0419	0.046	No
	Edge 2	0.026		0.0419	0.068	No
	Edge 3	0.045		0.0419	0.087	No
	Edge 4	0.080		0.0419	0.122	No

Note:

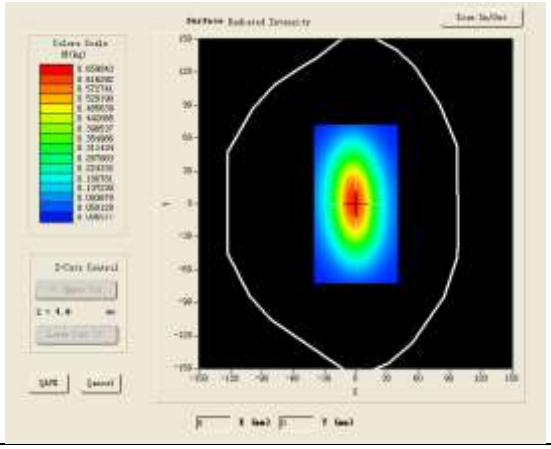
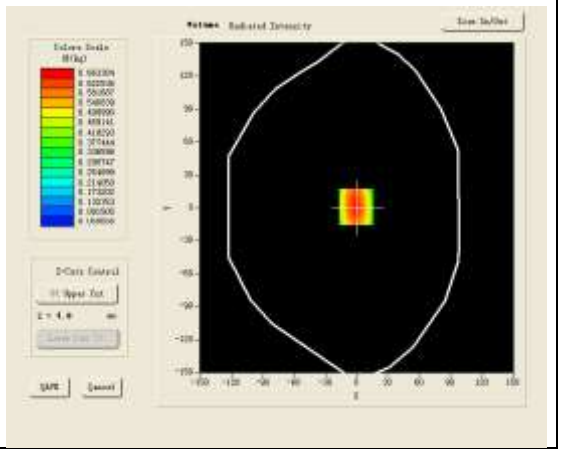
- According to KDB 447498 D01 General RF Exposure Guidance, when the simultaneous transmission SAR is less than1.6 W/Kg, SPLSR assessment is not required.
- SPLSR mean is “The SAR to Peak Location Separation Ratio “

APPENDIX A. SAR SYSTEM CHECK DATA

Test Laboratory: AGC Lab **Date: Dec. 26,2015**
System Check Head 835 MHz
DUT: Dipole 835 MHz Type: SID 835
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=6.36
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.90 mho/m; εr =41.76; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.3, Liquid temperature (℃): 21.2

SATIMO Configuration
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

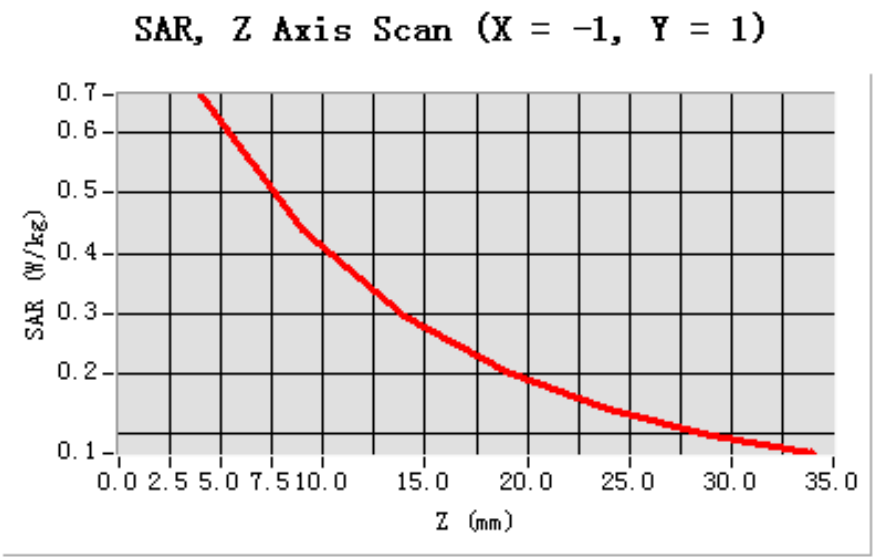
Configuration/System Check 835MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 835MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

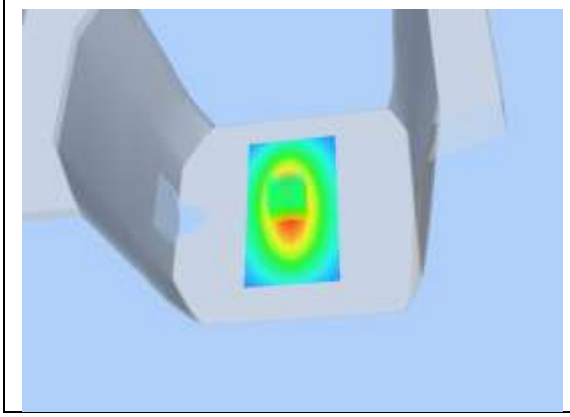
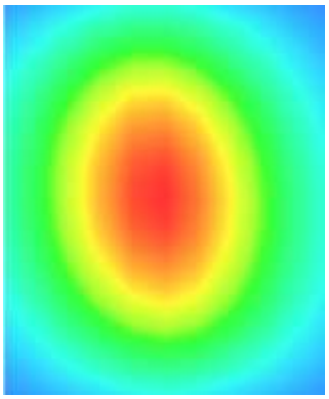
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=1.00

SAR 10g (W/Kg)	0.398151
SAR 1g (W/Kg)	0.627548

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6634	0.4393	0.2970	0.2030	0.1395	0.0963

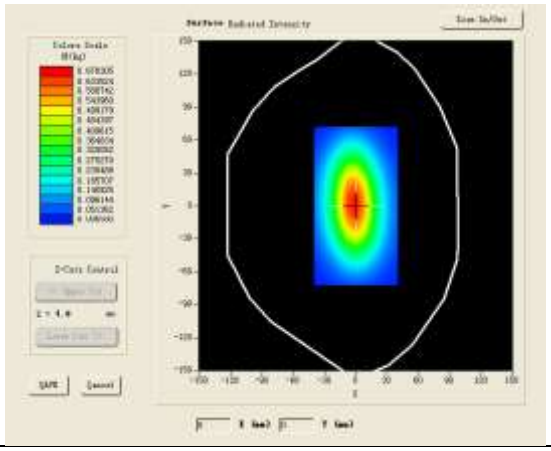
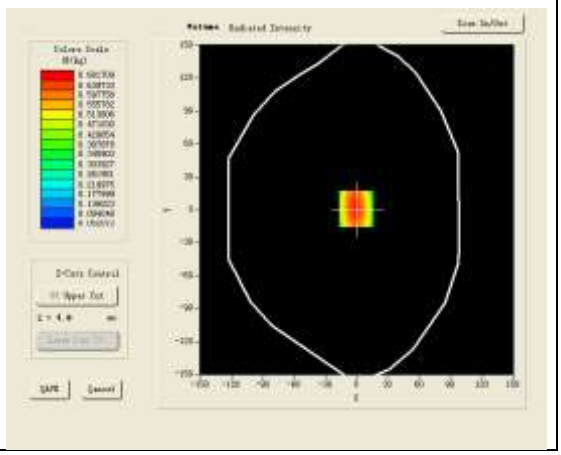


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Dec. 26,2015**
System Check Body 835 MHz
DUT: Dipole 835 MHz Type: SID 835
Communication System CW; Communication System Band: D835 (835.0 MHz); Duty Cycle: 1:1; Conv.F=6.56
Frequency: 835 MHz; Medium parameters used: f = 835 MHz; σ=0.96 mho/m; εr =55.98; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.3, Liquid temperature (℃): 21.3

SATIMO Configuration
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

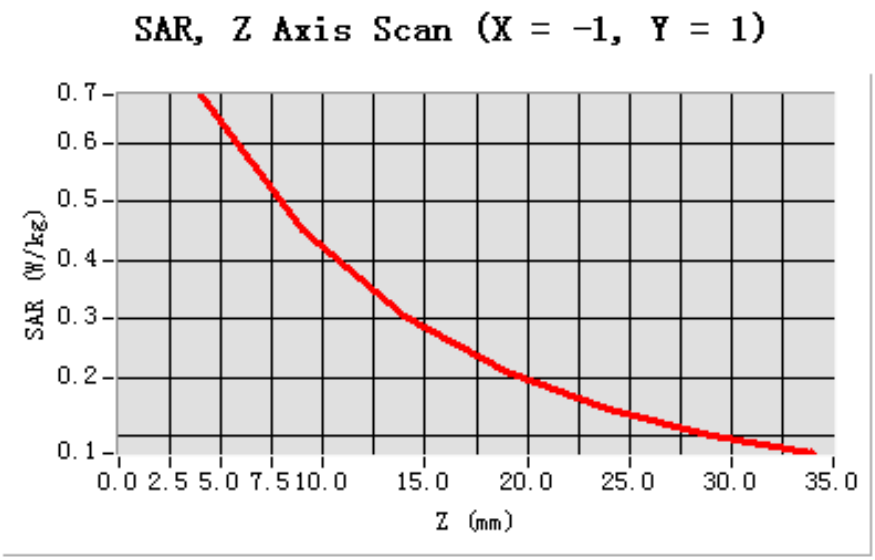
Configuration/System Check 835MHz Body/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 835MHz Body/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

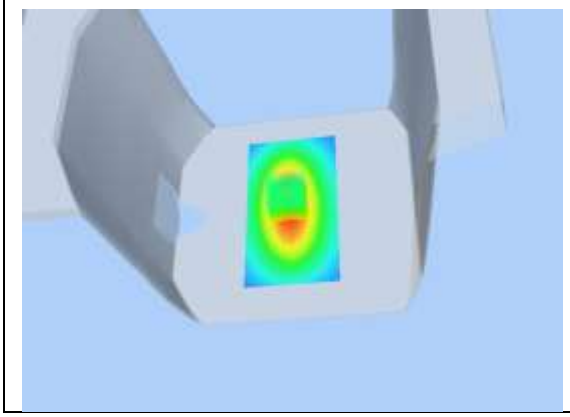
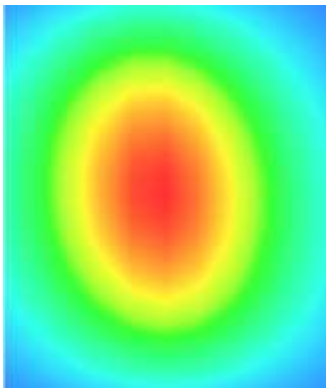
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-1.00, Y=1.00

SAR 10g (W/Kg)	0.407780
SAR 1g (W/Kg)	0.650210

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6817	0.4488	0.3051	0.2090	0.1432	01002

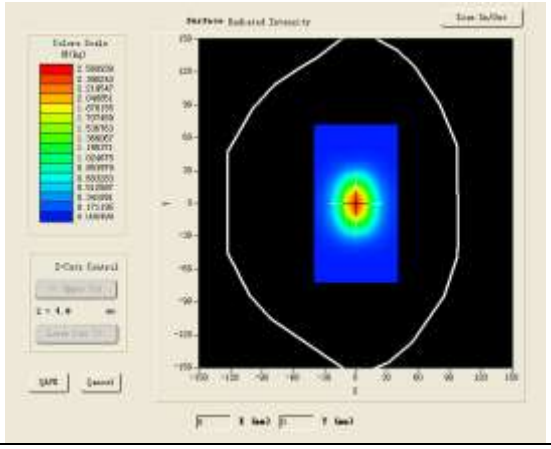
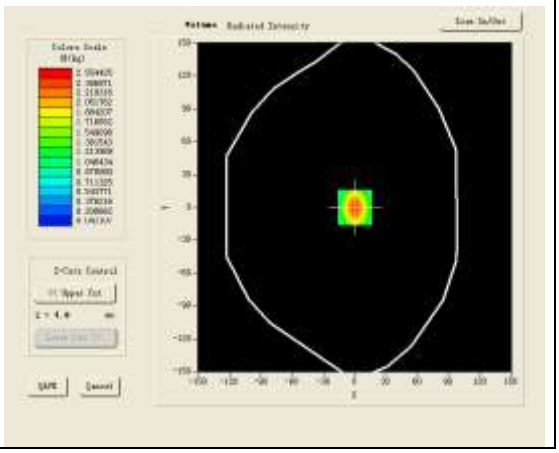


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Dec. 30,2015**
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=5.40
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.40 mho/m; εr =40.68; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

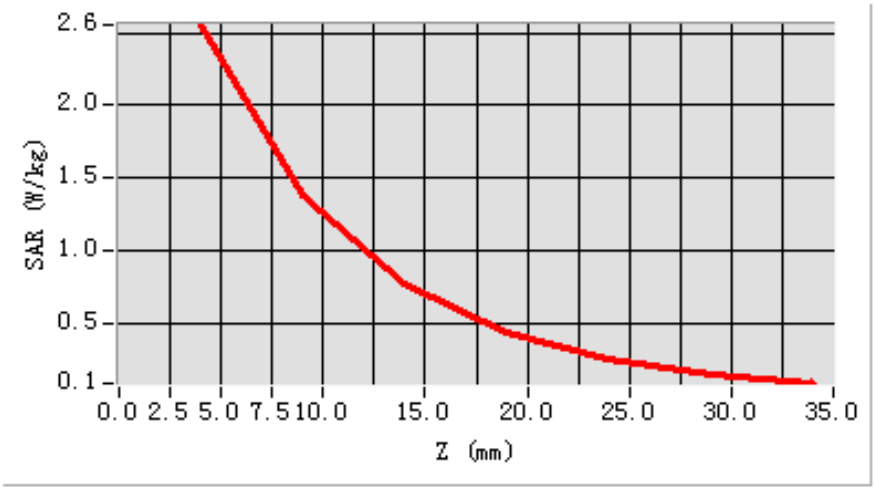
Configuration/System Check 1900MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 1900MHz Head/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

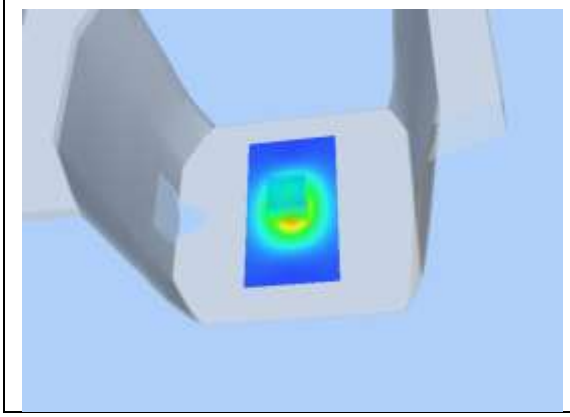
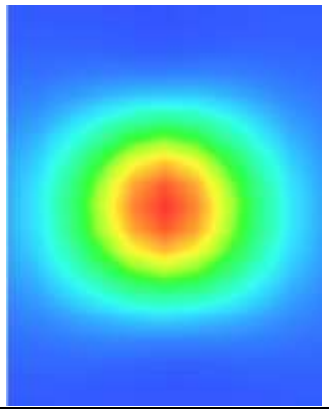
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.251442
SAR 1g (W/Kg)	2.410952

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.5544	1.3780	0.7676	0.4325	0.2466	0.1423

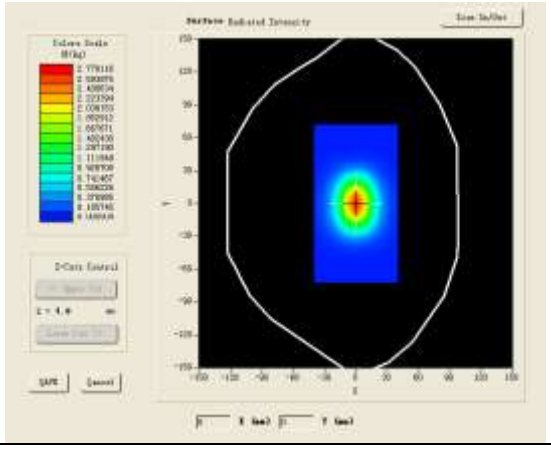
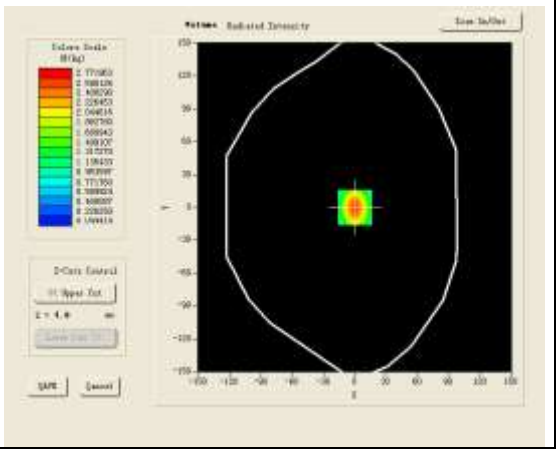


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Dec. 30,2015**
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=5.61
Frequency: 1900 MHz; Medium parameters used: f = 1900 MHz; σ=1.53 mho/m; εr =53.00; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

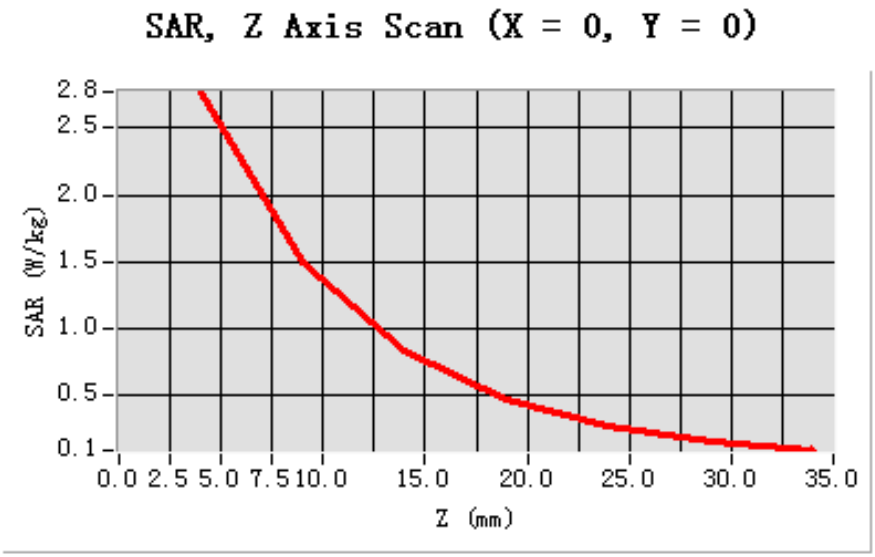
Configuration/System Check 1900MHz Body/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 1900MHz Body/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

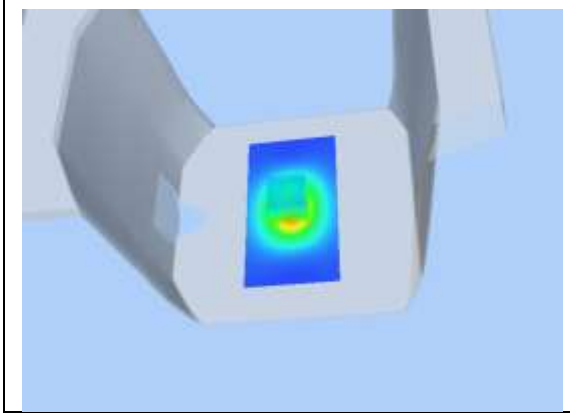
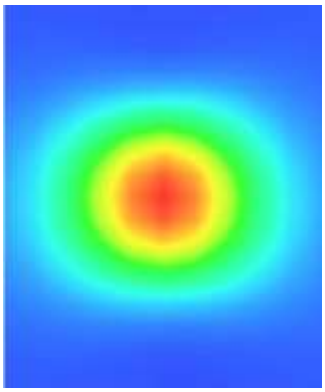
SURFACE SAR	VOLUME SAR
	

Maximum location: X=0.00, Y=0.00

SAR 10g (W/Kg)	1.359046
SAR 1g (W/Kg)	2.616215

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	2.7720	1.4971	0.8345	0.4704	0.2685	0.1544

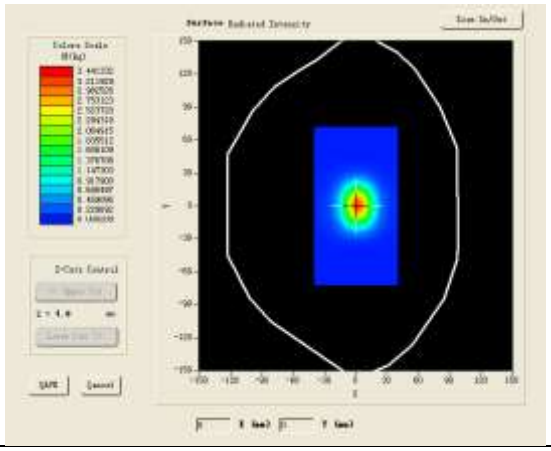
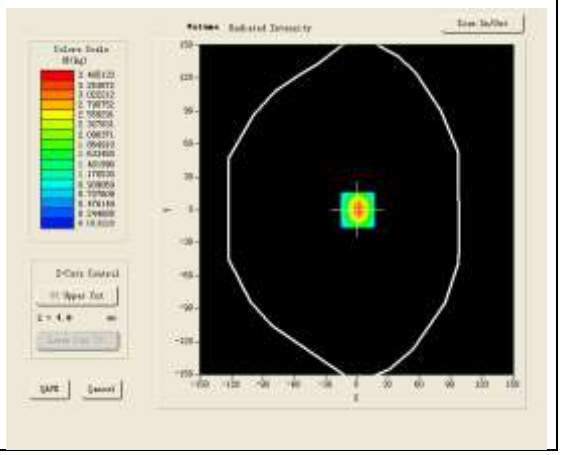


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Jan. 01,2016**
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=4.84
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ=1.80 mho/m; εr =39.12; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.2

SATIMO Configuration
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

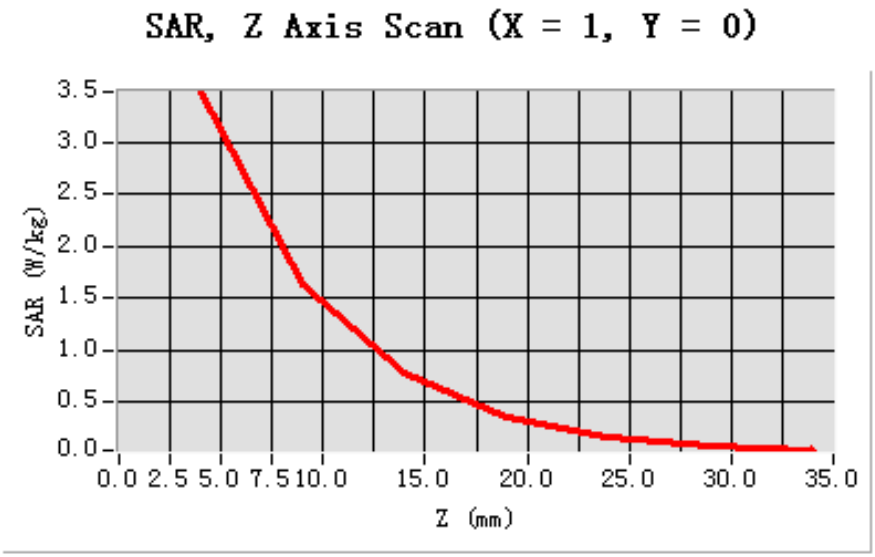
Configuration/System Check 2450MHz Head/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 2450MHz Head/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm

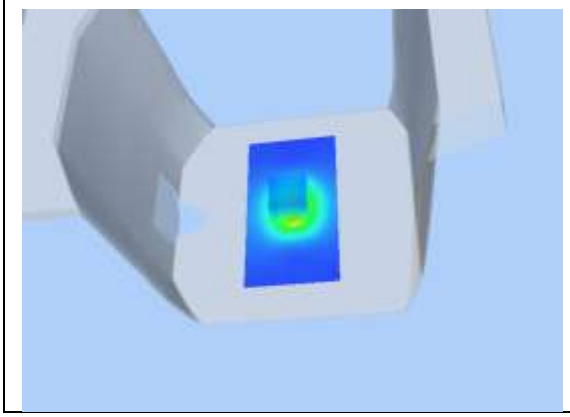
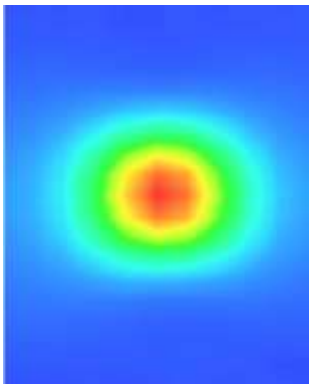
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	1.578930
SAR 1g (W/Kg)	3.511525

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	3.4851	1.6351	0.7748	0.3705	0.1790	0.0854

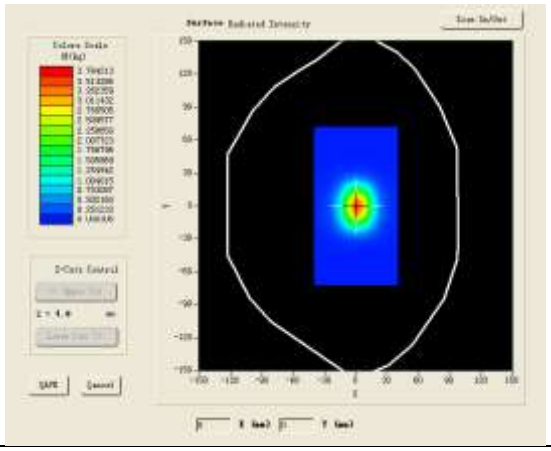
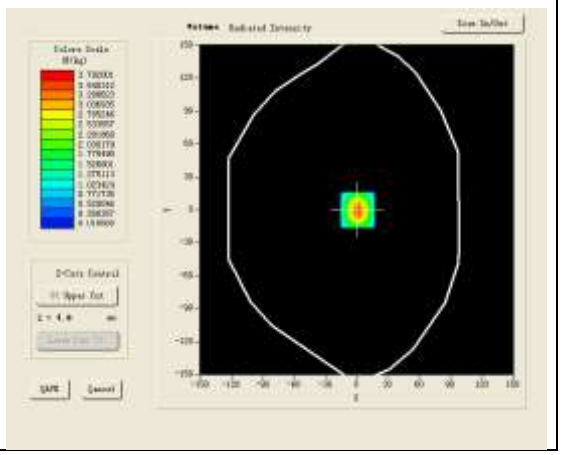


3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Jan. 01,2016**
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=4.97
Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ=1.93 mho/m; εr =52.86; ρ= 1000 kg/m³ ;
Phantom section: Flat Section; Input Power=18dBm
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.5

SATIMO Configuration
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

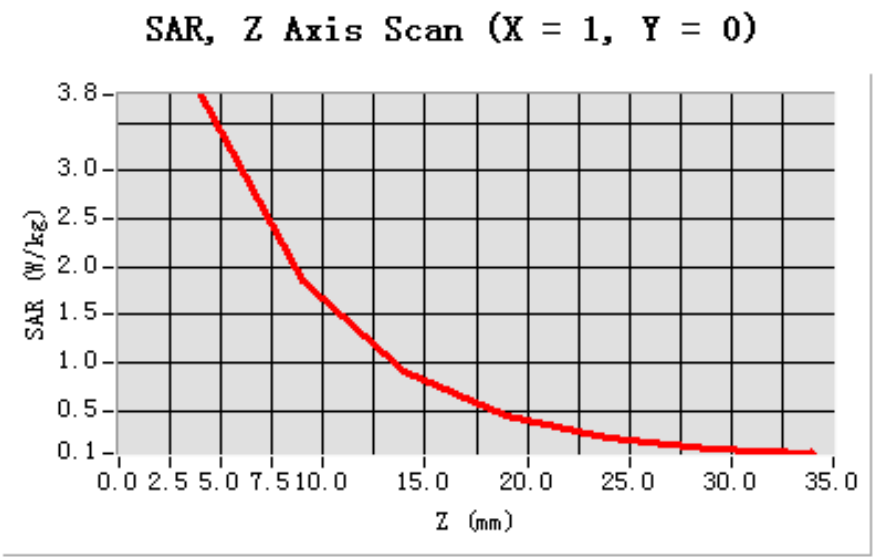
Configuration/System Check 2450MHz Body/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/System Check 2450MHz Body/Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm

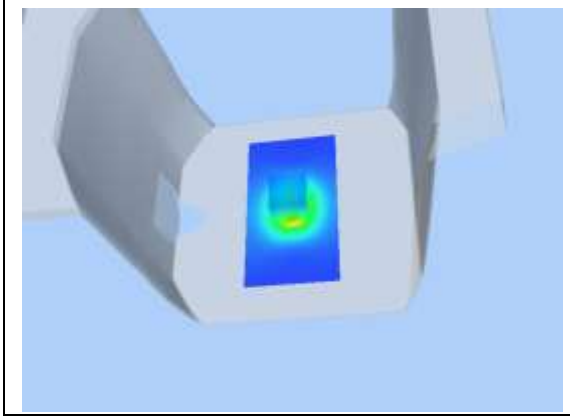
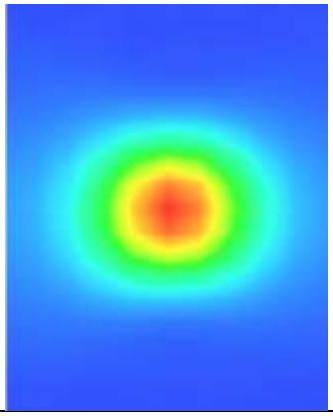
SURFACE SAR	VOLUME SAR
	

Maximum location: X=1.00, Y=0.00

SAR 10g (W/Kg)	1.600371
SAR 1g (W/Kg)	3.586440

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	3.7920	1.8483	0.9123	0.4571	0.2261	0.1138



3D screen shot	Hot spot position
	

APPENDIX B. SAR MEASUREMENT DATA

Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GSM 850 Mid-Touch-Left <SIM 1>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

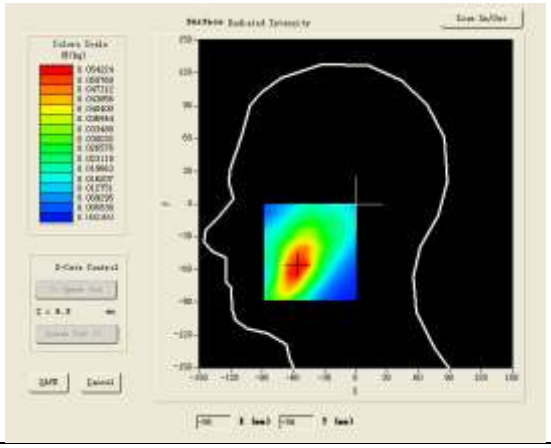
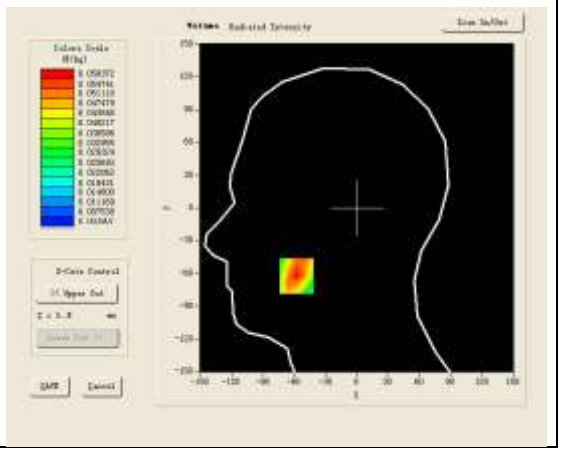
Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Conv.F=6.36; Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.91 mho/m; εr =41.32; ρ= 1000 kg/m³;
Phantom section: Left Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.2

SATIMO Configuration:

- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 850 Mid-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 850 Mid-Touch-Left/Zoom Scan : Measurement grid: dx=8mm,dy=8mm, dz=5mm

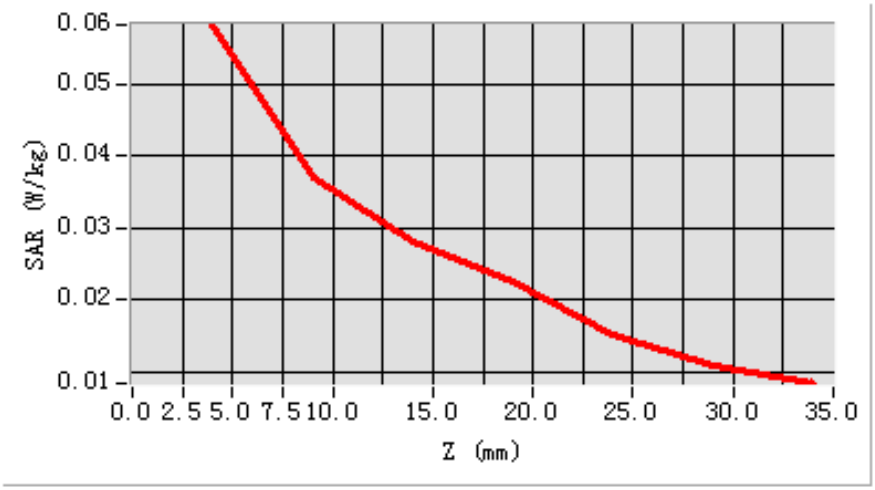
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

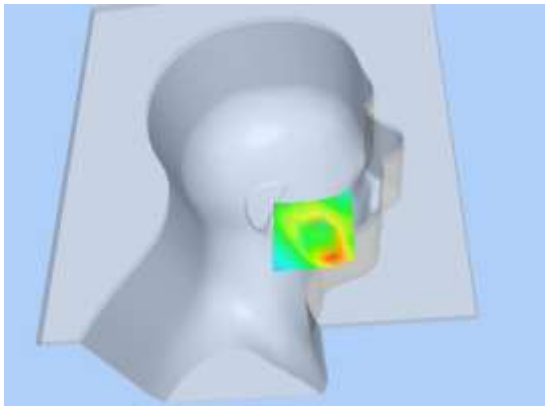
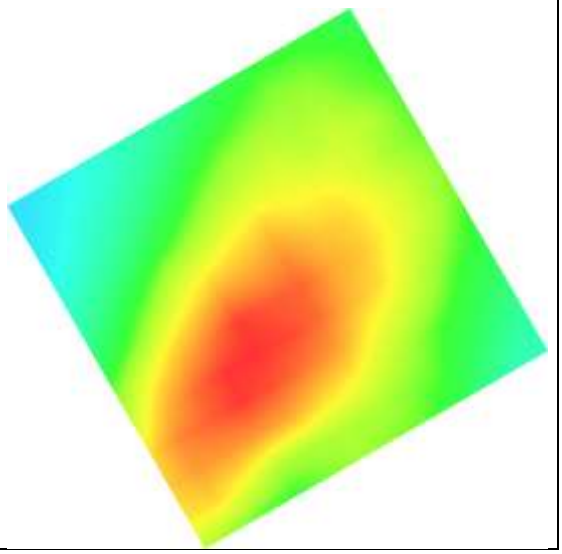
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-58.00, Y=-62.00

SAR 10g (W/Kg)	0.036762
SAR 1g (W/Kg)	0.057004

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0584	0.0370	0.0282	0.0226	0.0152	0.0110



3D screen shot	Hot spot position
	

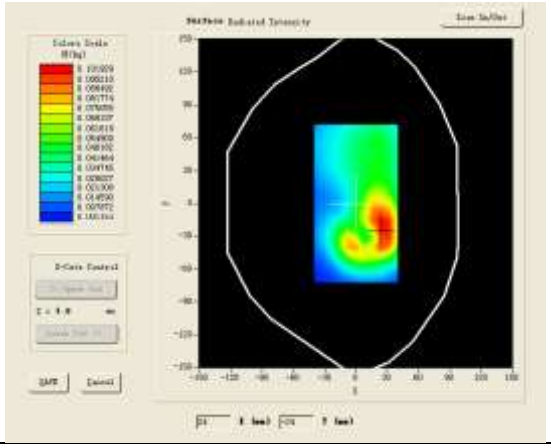
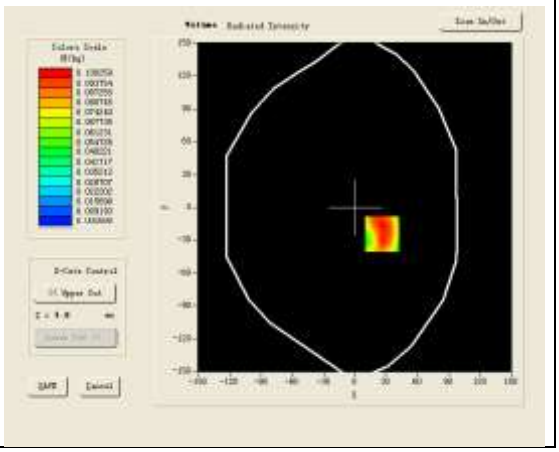
Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GSM 850 Mid- Body- Back (MS)<SIM 1>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: Generic GSM; Communication System Band: GSM 850; Duty Cycle: 1:8.3; Conv.F=6.56;
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.96 mho/m; εr = 55.63; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GSM 850 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GSM 850 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

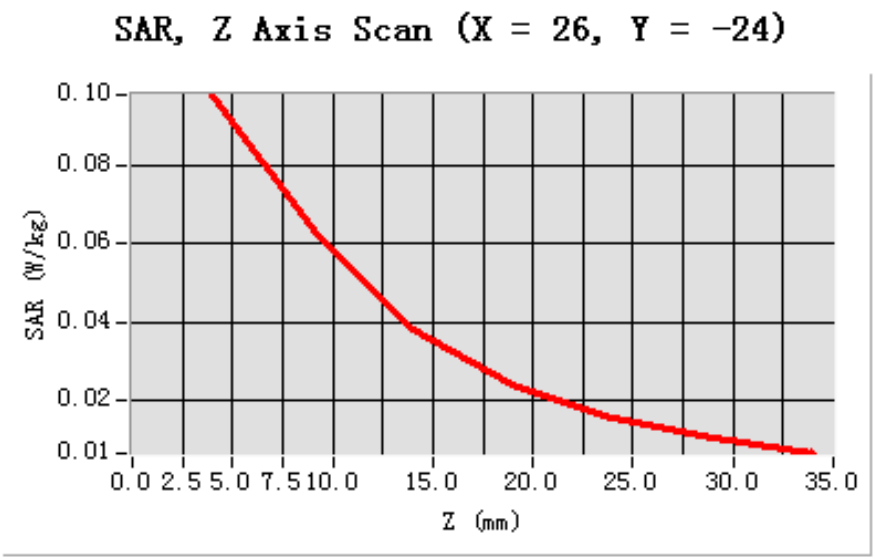
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

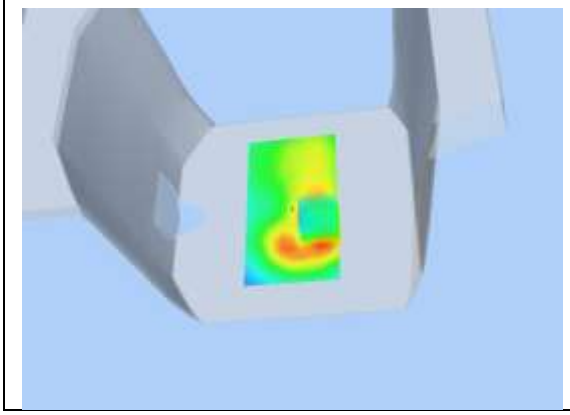
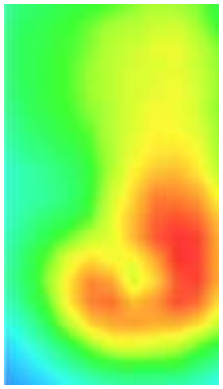
SURFACE SAR	VOLUME SAR
	

Maximum location: X=26.00, Y=-24.00

SAR 10g (W/Kg)	0.058315
SAR 1g (W/Kg)	0.097377

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0979	0.0636	0.0384	0.0243	0.0157	0.0104



3D screen shot	Hot spot position
	

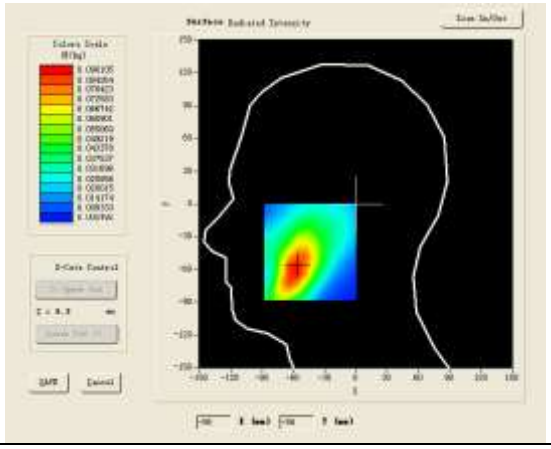
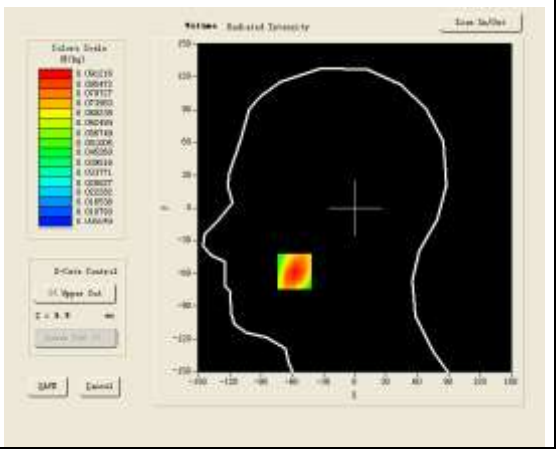
Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GPRS 850 Mid-Touch-Left (4up)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1; Conv.F=6.36
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.91 mho/m; εr =41.32; ρ= 1000 kg/m^3;
Phantom section: Left Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.2

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS 850 Mid-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 850 Mid-Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

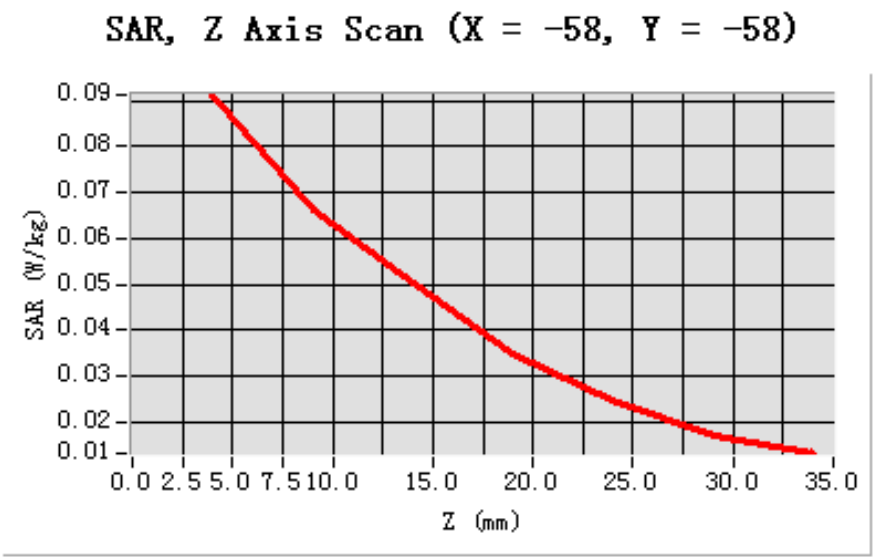
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

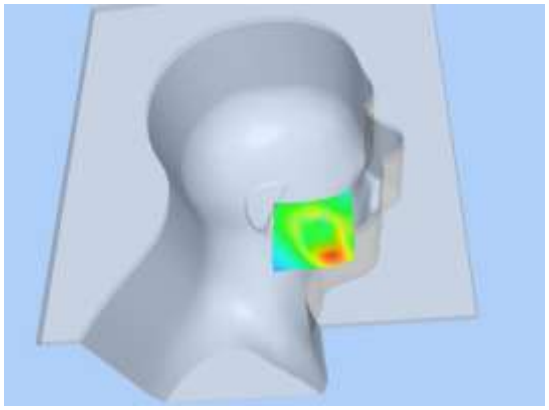
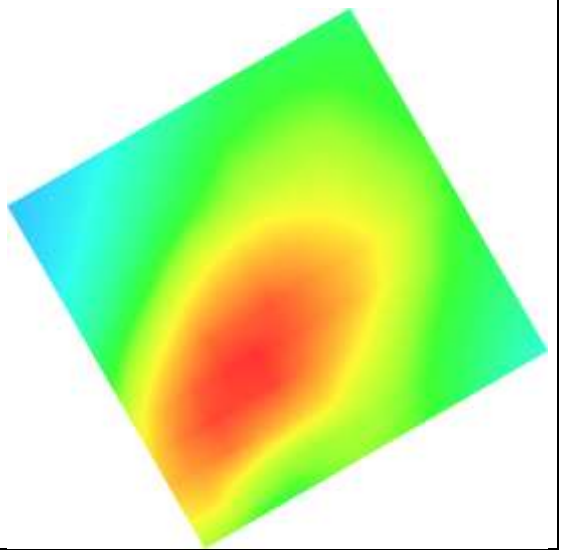
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-58.00, Y=-58.00

SAR 10g (W/Kg)	0.059026
SAR 1g (W/Kg)	0.088075

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0912	0.0663	0.0501	0.0351	0.0250	0.0170



3D screen shot	Hot spot position
	

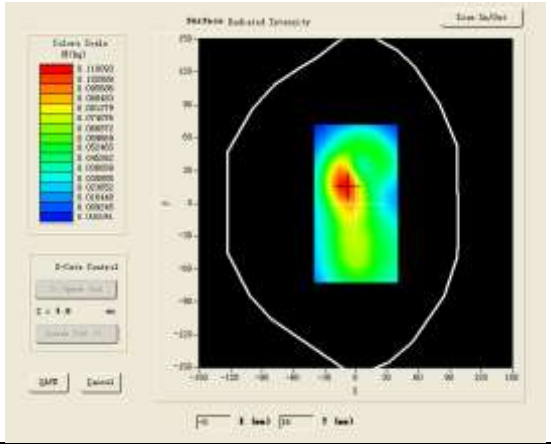
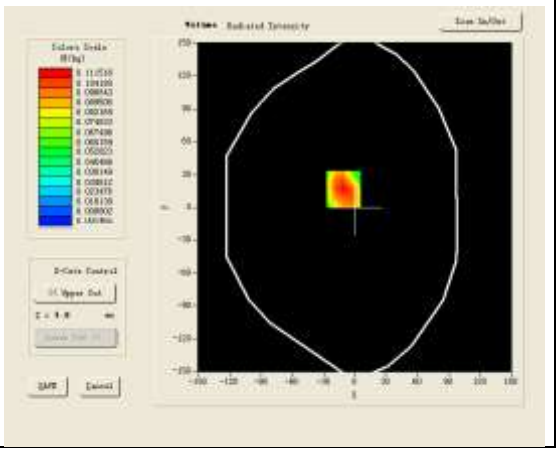
Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GPRS 850 Mid- Body- Back (4up)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1; Conv.F=6.56;
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.96 mho/m; εr = 55.63; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS 850 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 850 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

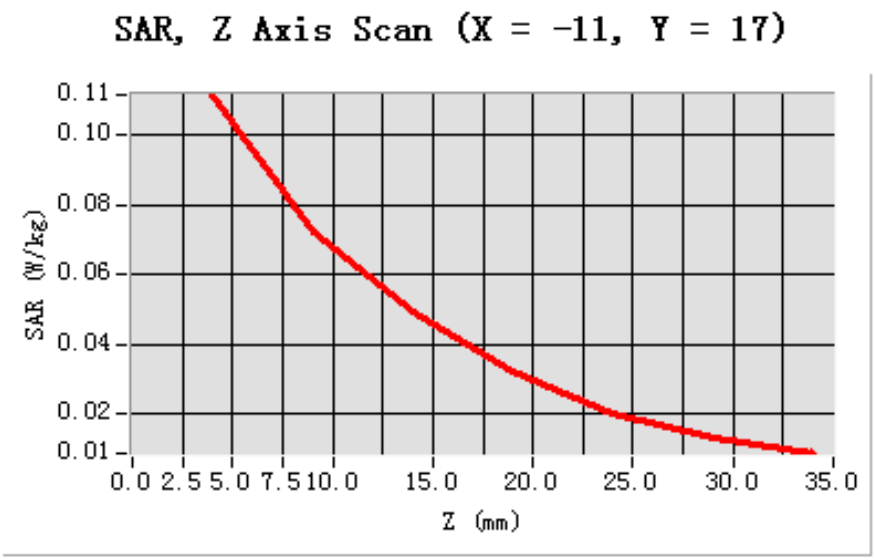
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

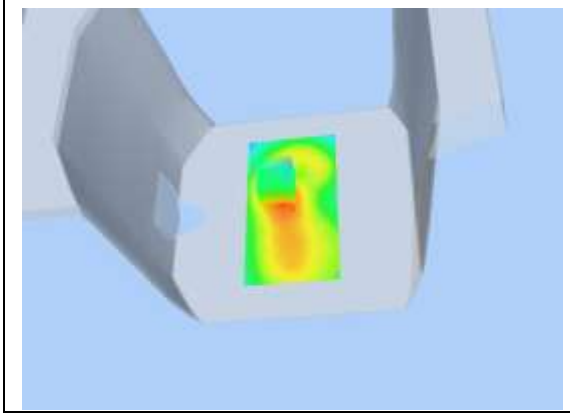
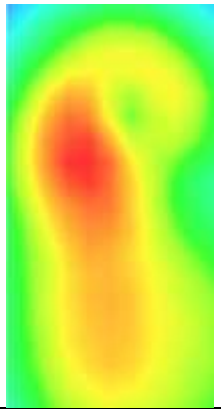
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-11.00, Y=17.00

SAR 10g (W/Kg)	0.067750
SAR 1g (W/Kg)	0.106727

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1115	0.0725	0.0495	0.0324	0.0205	0.0132



3D screen shot	Hot spot position
	

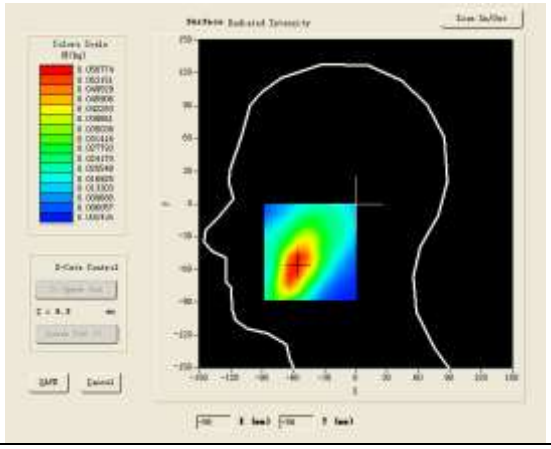
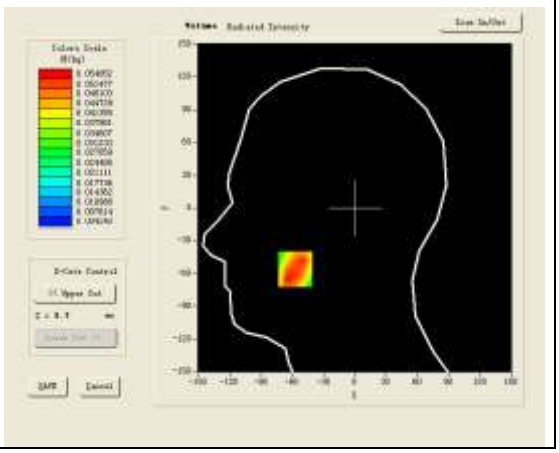
Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GPRS 850 Mid-Touch-Left (4up) - <SIM 2>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1; Conv.F=6.36
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ=0.91 mho/m; εr =41.32; ρ= 1000 kg/m^3;
Phantom section: Left Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.2

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS 850 Mid-Touch-Left/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 850 Mid-Touch-Left/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm

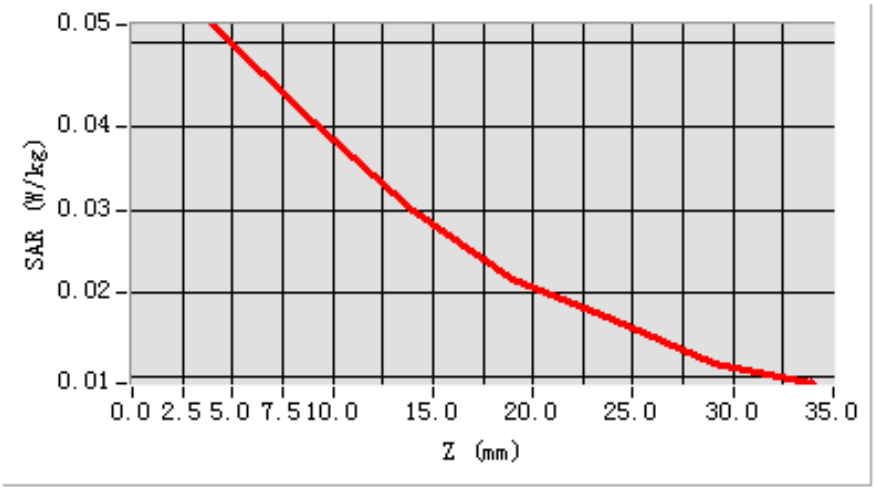
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

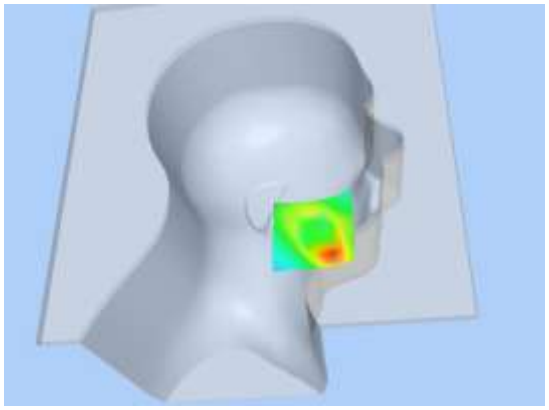
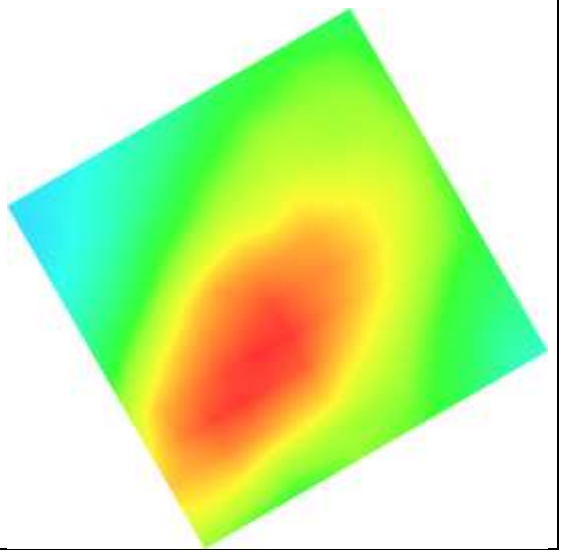
SURFACE SAR	VOLUME SAR
	

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

SAR 10g (W/Kg)	0.035269
SAR 1g (W/Kg)	0.052102

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0522	0.0404	0.0299	0.0217	0.0169	0.0116



3D screen shot	Hot spot position
	

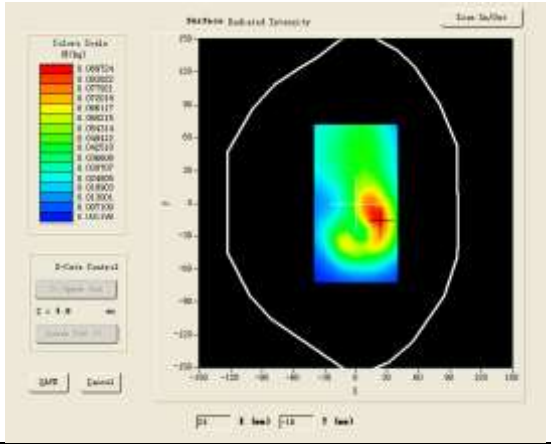
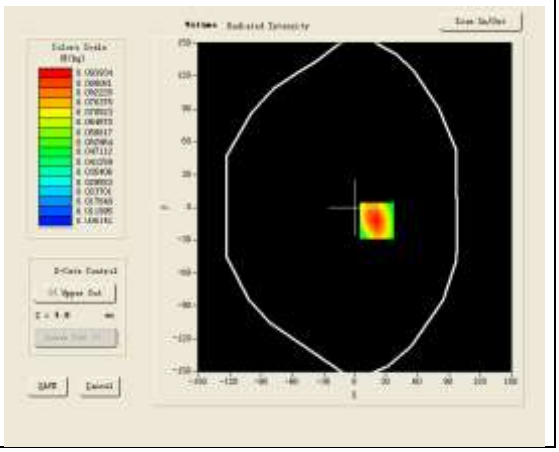
Test Laboratory: AGC Lab **Date: Dec. 26,2015**
GPRS 850 Mid- Body- Back (4up) - <SIM 2>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: GSM 850; Duty Cycle: 1:2.1; Conv.F=6.56;
Frequency: 836.6 MHz; Medium parameters used: f = 835 MHz; σ= 0.96 mho/m; εr = 55.63; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS 850 Mid-Body-Back/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS 850 Mid-Body-Back/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

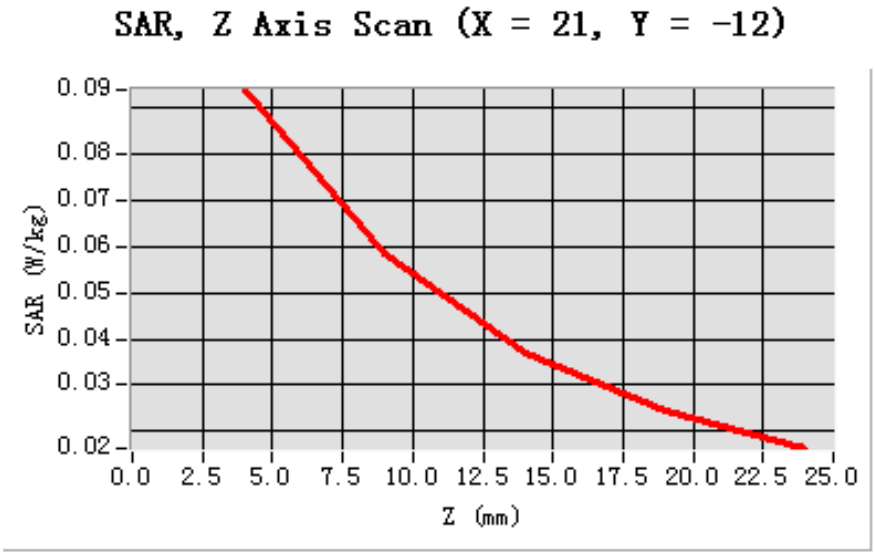
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	GSM 850
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

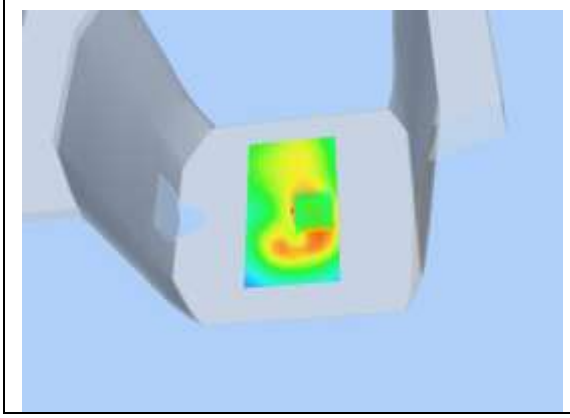
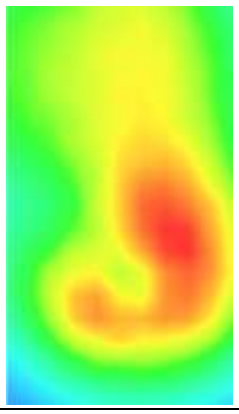
SURFACE SAR	VOLUME SAR
	

Maximum location: X=21.00, Y=-12.00

SAR 10g (W/Kg)	0.053503
SAR 1g (W/Kg)	0.088910

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	0.0939	0.0583	0.0370	0.0245



3D screen shot	Hot spot position
	

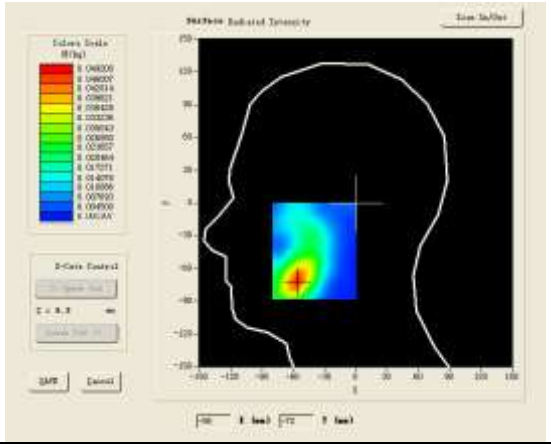
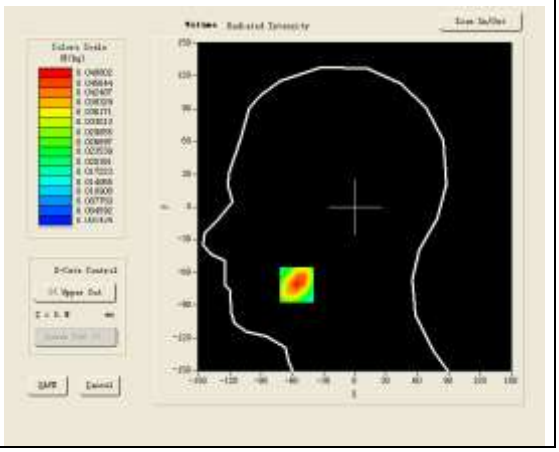
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
PCS 1900 Mid-Touch-Right <SIM 1>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=5.40; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.40 mho/m; εr =40.91; ρ= 1000 kg/m^3 ; Phantom section: Right Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin 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;

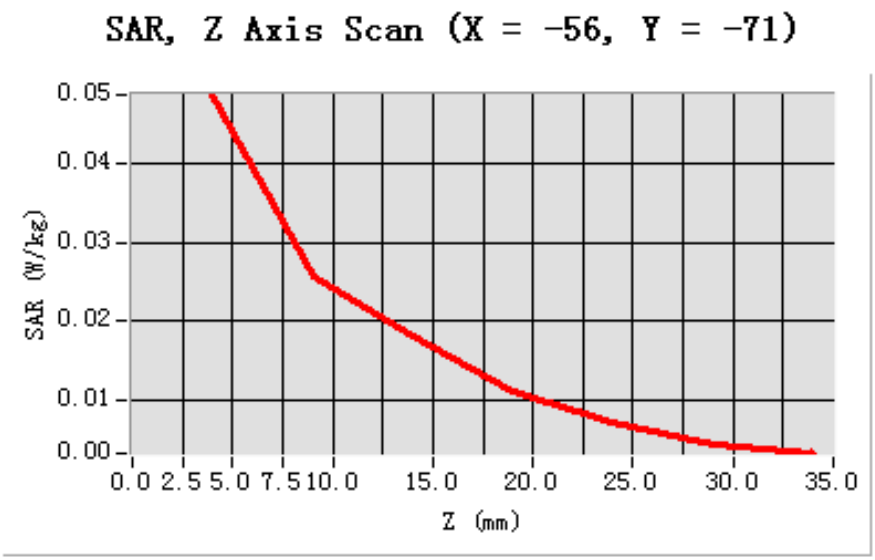
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

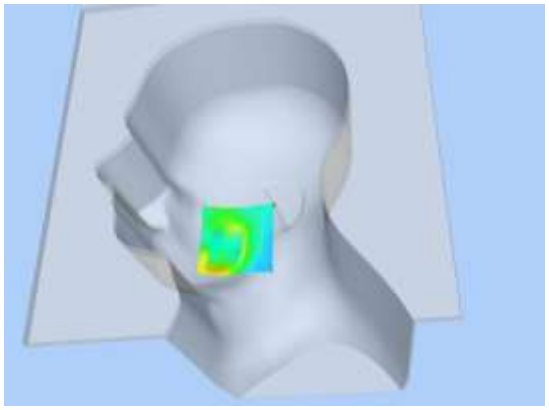
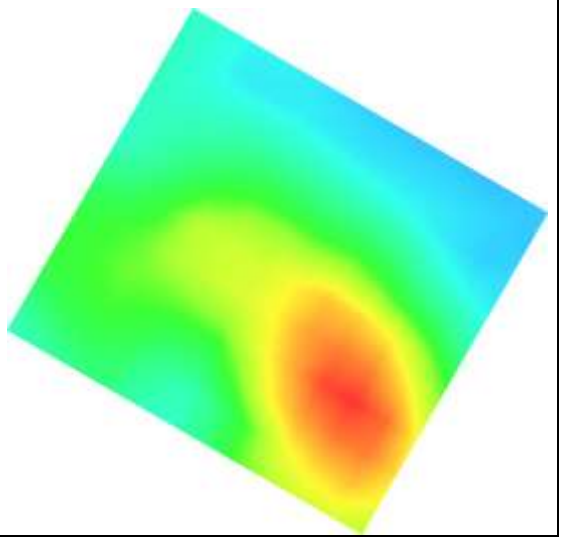
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-56.00, Y=-71.00

SAR 10g (W/Kg)	0.025251
SAR 1g (W/Kg)	0.047738

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0488	0.0257	0.0181	0.0110	0.0070	0.0043



3D screen shot	Hot spot position
	

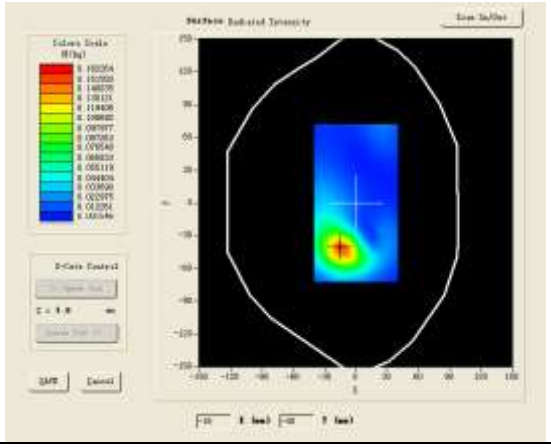
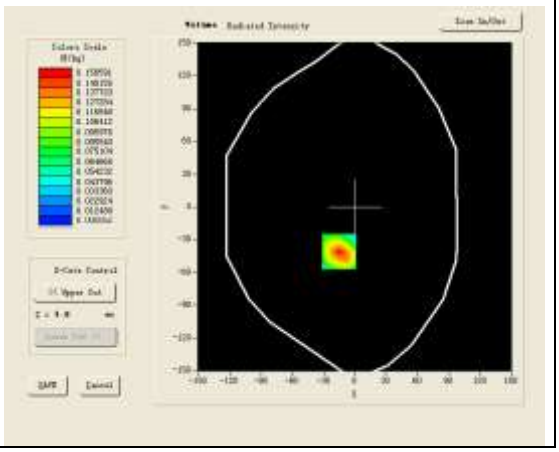
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
PCS 1900 Mid-Body-Back (MS)<SIM 1>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: Generic GSM; Communication System Band: PCS 1900; Duty Cycle: 1:8.3; Conv.F=5.61;
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.50 mho/m; εr =53.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin 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;

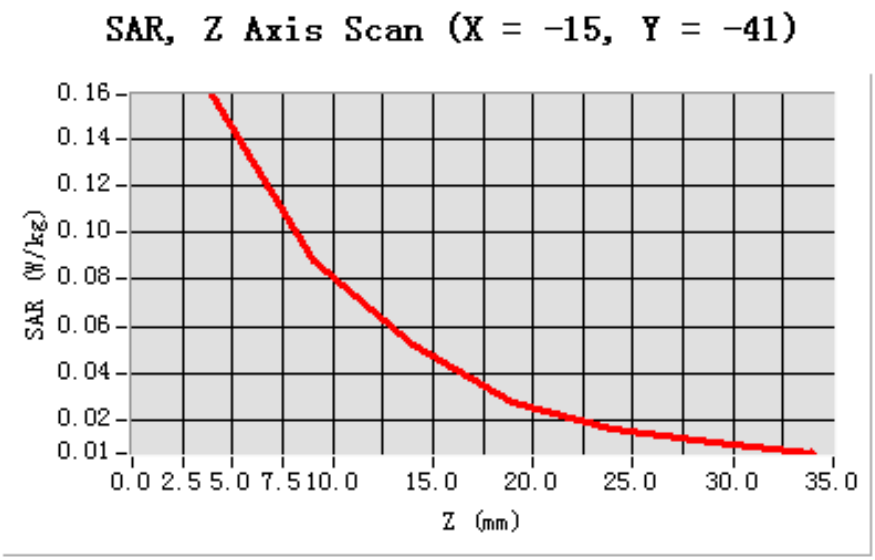
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 8.0)

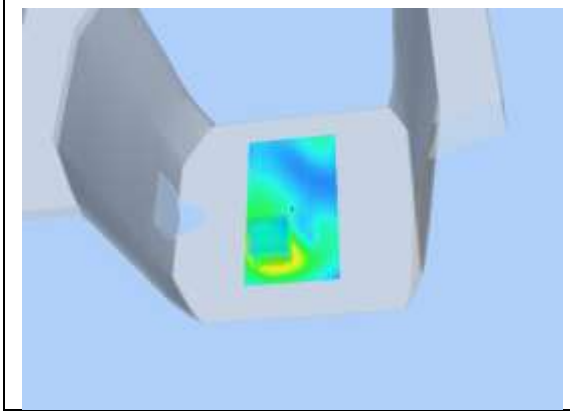
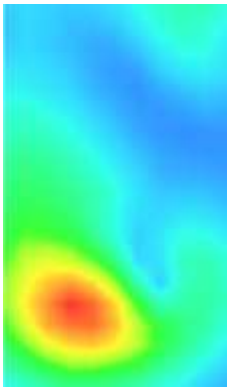
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-15.00, Y=-41.00

SAR 10g (W/Kg)	0.070124
SAR 1g (W/Kg)	0.132115

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1586	0.0877	0.0524	0.0280	0.0162	0.0106



3D screen shot	Hot spot position
	

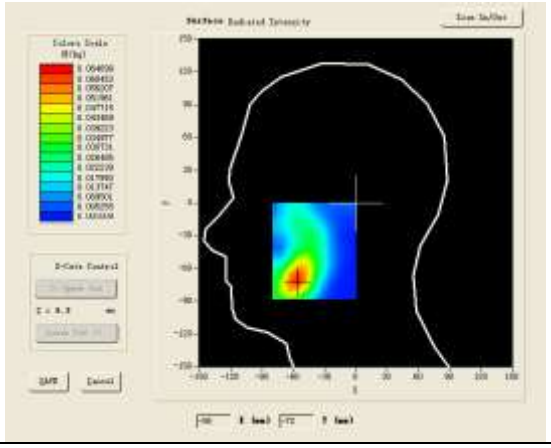
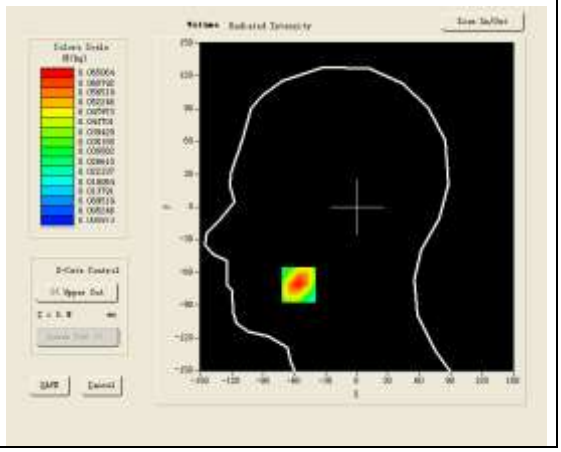
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
GPRS1900 Mid-Touch-Right (4up)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1; Conv.F=5.40; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.40 mho/m; εr =40.91; ρ= 1000 kg/m^3 ; Phantom section: Right Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS1900 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS1900 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

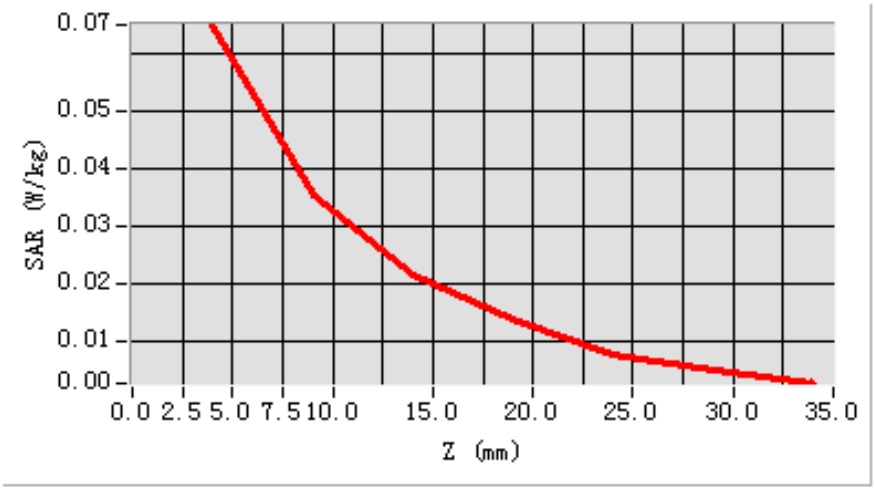
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

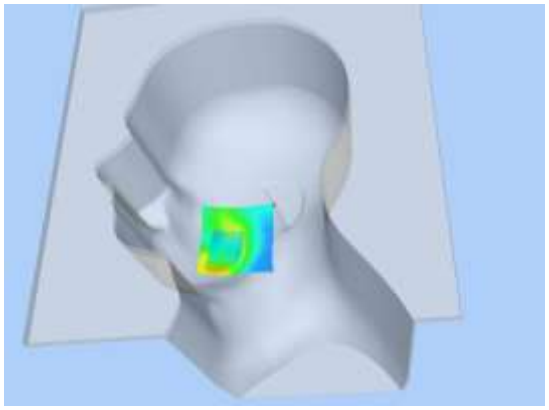
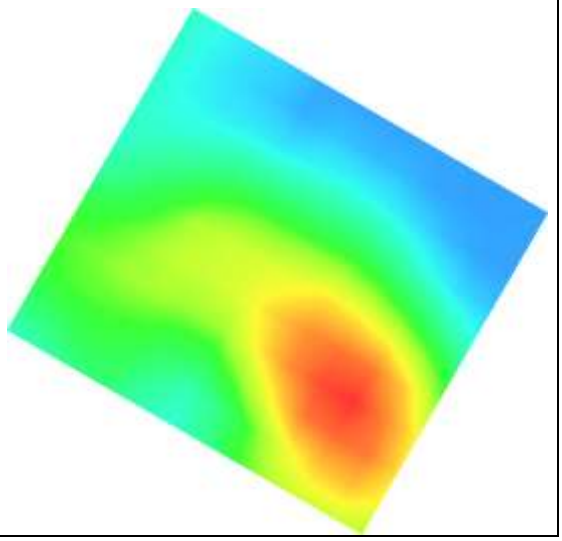
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-56.00, Y=-71.00

SAR 10g (W/Kg)	0.033386
SAR 1g (W/Kg)	0.062782

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0651	0.0353	0.0215	0.0136	0.0077	0.0048



3D screen shot	Hot spot position
	

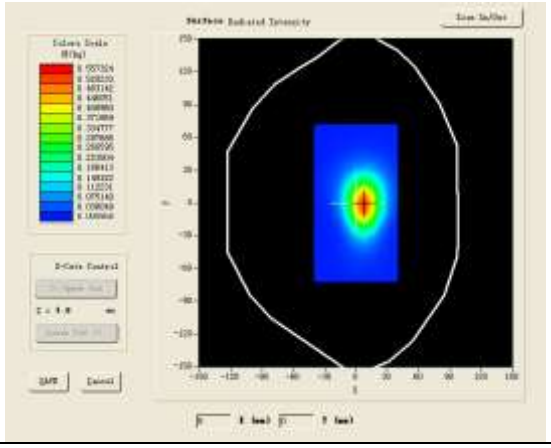
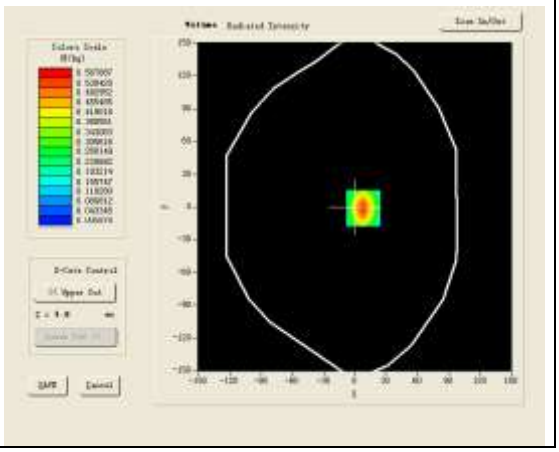
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
GPRS 1900 Mid-Edge 3(4up)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1; Conv.F=5.61; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.50 mho/m; εr =53.05; ρ= 1000 kg/m^3 ; Phantom section: Flat Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS1900 Mid-Edge 3/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS1900 Mid-Edge 3/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

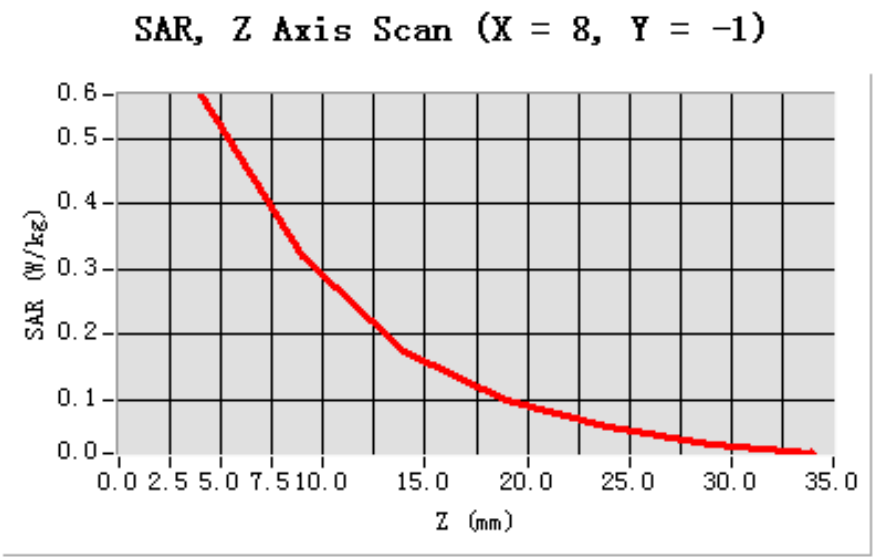
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Edge 3
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

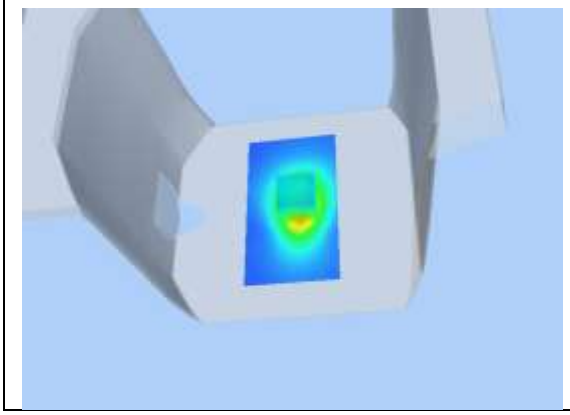
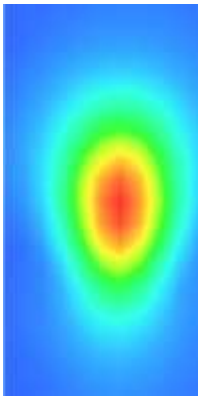
SURFACE SAR	VOLUME SAR
	

Maximum location: X=8.00, Y=-1.00

SAR 10g (W/Kg)	0.274689
SAR 1g (W/Kg)	0.530071

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5679	0.3195	0.1730	0.0982	0.0575	0.0323



3D screen shot	Hot spot position
	

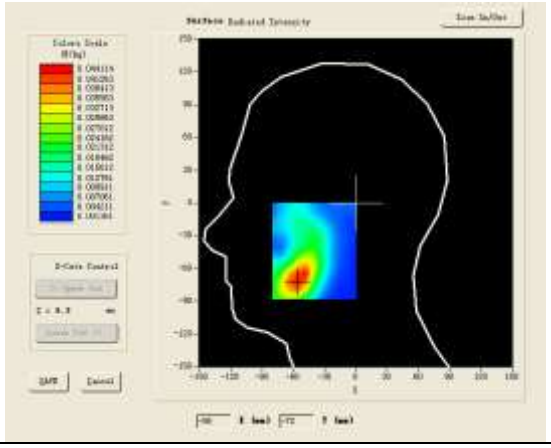
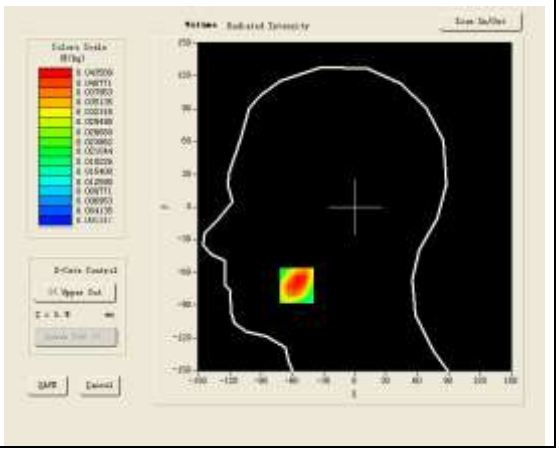
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
GPRS1900 Mid-Touch-Right (4up) <SIM 2>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1; Conv.F=5.40; Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.40 mho/m; εr =40.91; ρ= 1000 kg/m^3 ; Phantom section: Right Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS1900 Mid-Touch-Right/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS1900 Mid-Touch-Right/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

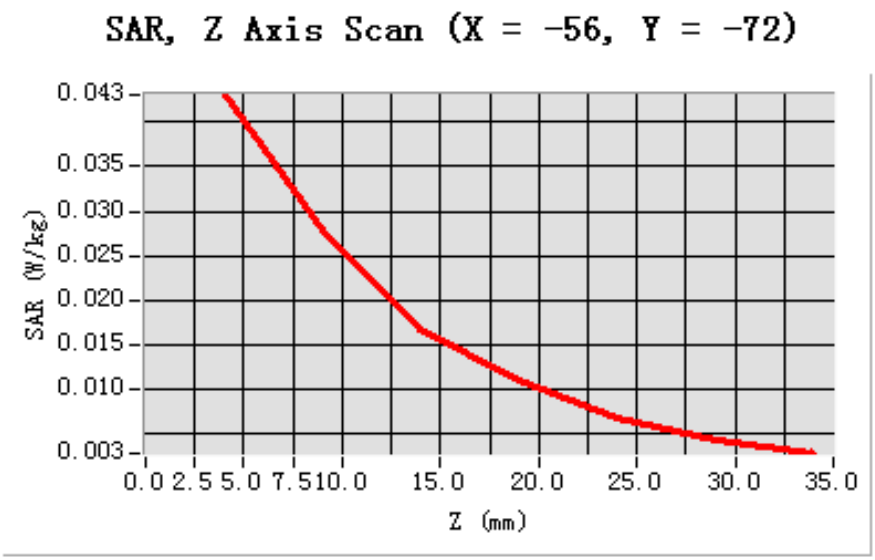
Area Scan	sam_direct_droit2_surf8mm.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

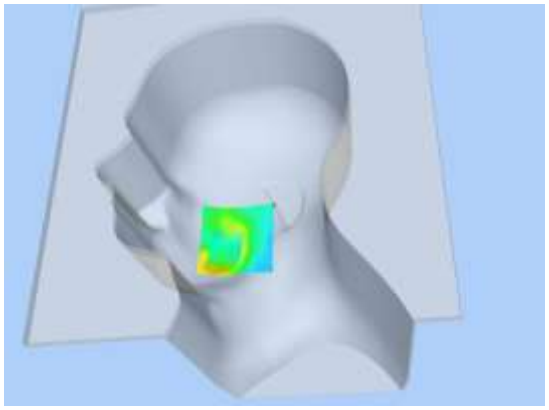
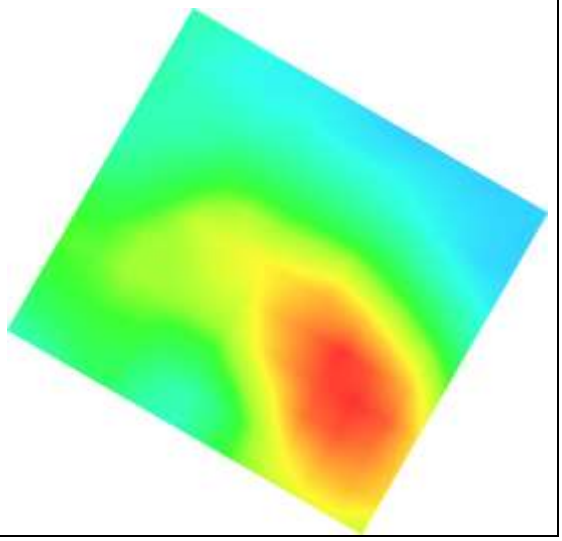
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-56.00, Y=-72.00

SAR 10g (W/Kg)	0.024442
SAR 1g (W/Kg)	0.043064

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0431	0.0280	0.0168	0.0109	0.0068	0.0042



3D screen shot	Hot spot position
	

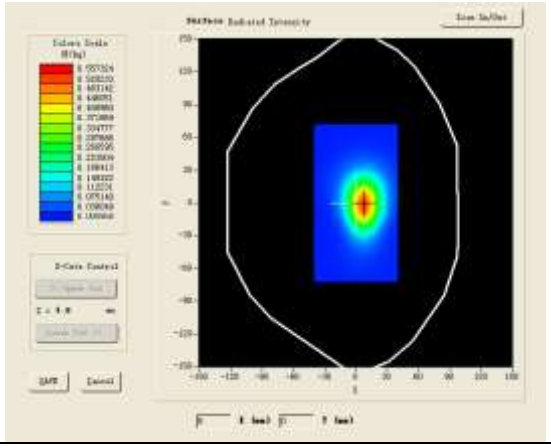
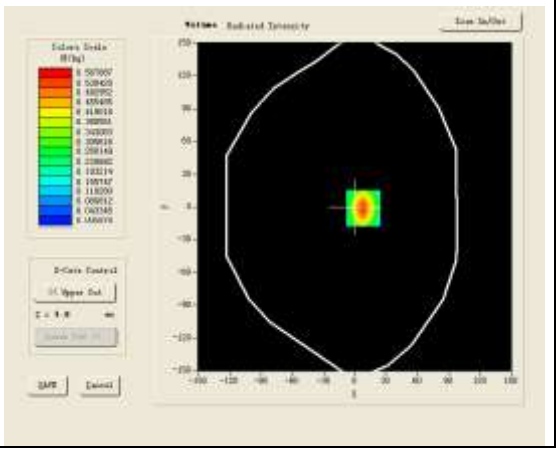
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
GPRS 1900 Mid-Edge 3(4up) <SIM 2>
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: GPRS-4 Slot; Communication System Band: PCS 1900; Duty Cycle: 1:2.1; Conv.F=5.61;
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.50 mho/m; εr =53.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/GPRS1900 Mid-Edge 3/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/GPRS1900 Mid-Edge 3/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

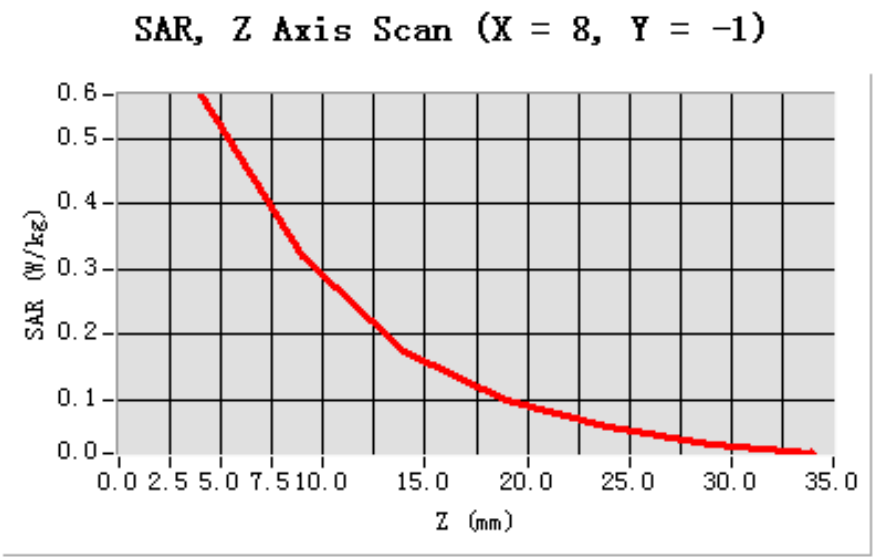
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Edge 3
Band	PCS 1900
Channels	Middle
Signal	TDMA (Crest factor: 2.0)

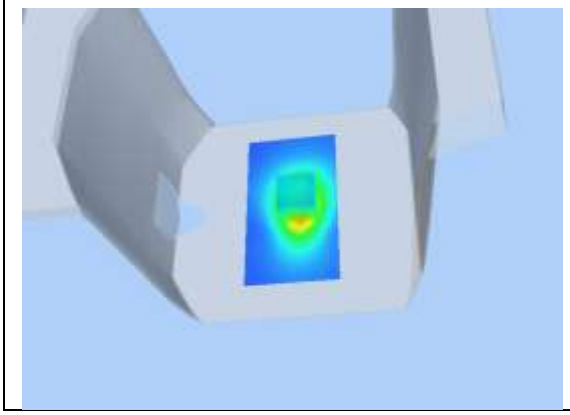
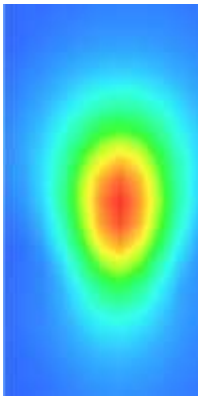
SURFACE SAR	VOLUME SAR
	

Maximum location: X=8.00, Y=-1.00

SAR 10g (W/Kg)	0.271904
SAR 1g (W/Kg)	0.522370

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.5679	0.3189	0.1725	0.0978	0.0570	0.0319



3D screen shot	Hot spot position
	

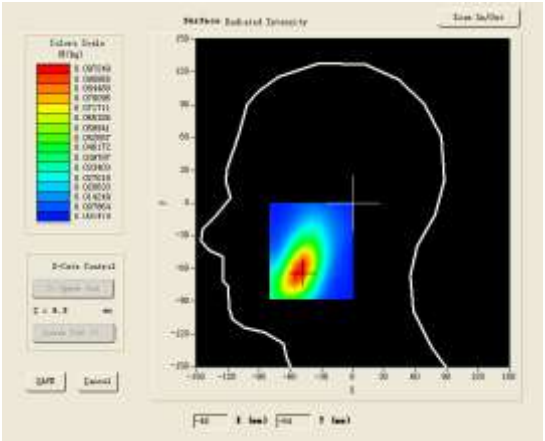
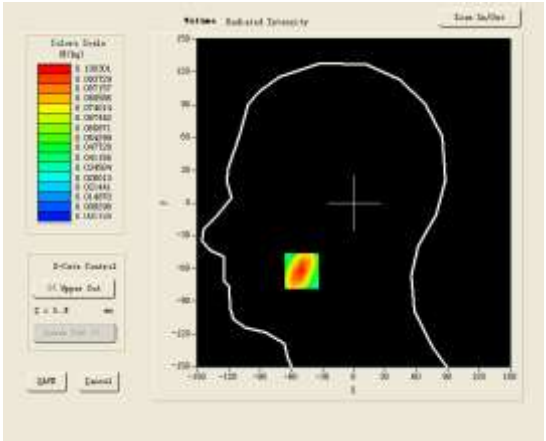
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
WCDMA Band Ⅱ Mid-Touch-Right (RMC)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.40;
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ= 1.40 mho/m; εr =40.91; ρ= 1000 kg/m³ ;
Phantom section: Right Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin 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;

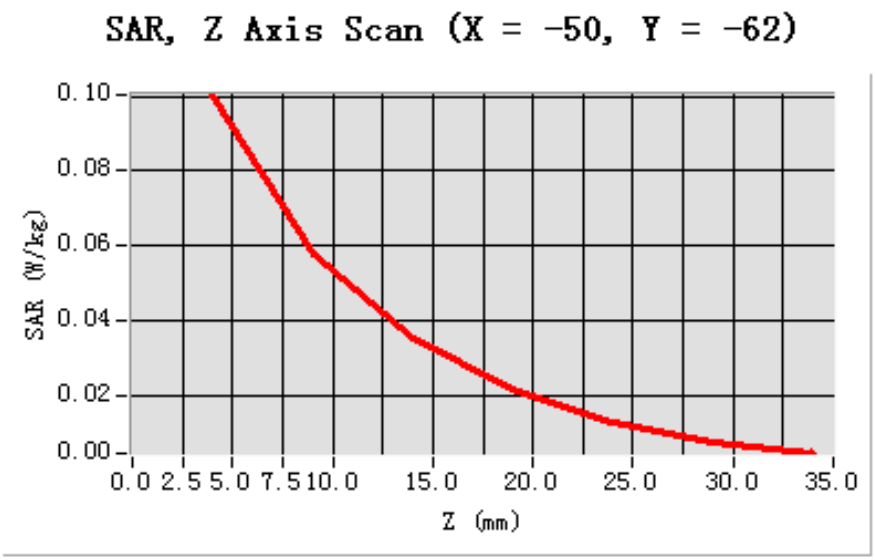
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Right head
Device Position	Cheek
Band	WCDMA band Ⅱ
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

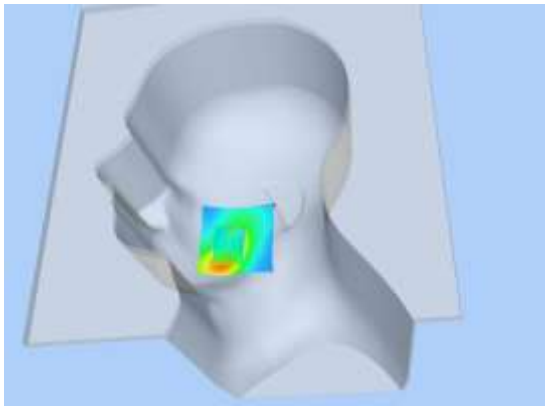
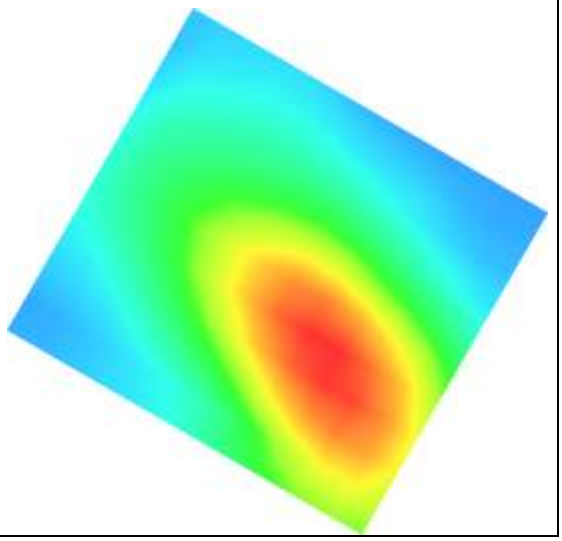
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-50.00, Y=-62.00

SAR 10g (W/Kg)	0.052991
SAR 1g (W/Kg)	0.095572

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1003	0.0578	0.0355	0.0217	0.0128	0.0079



3D screen shot	Hot spot position
	

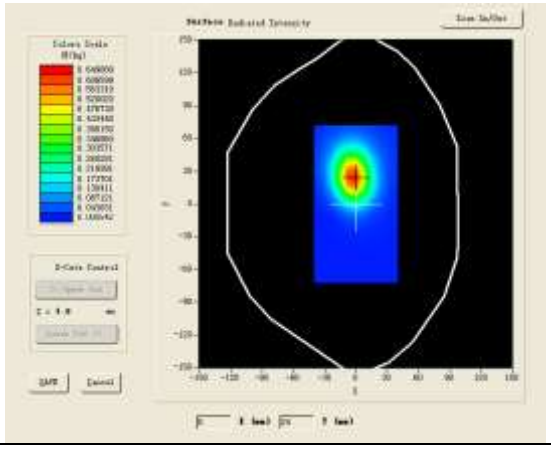
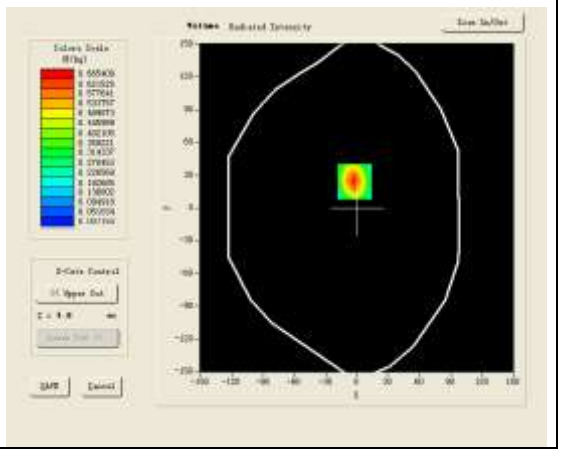
Test Laboratory: AGC Lab **Date: Dec. 30,2015**
WCDMA Band Ⅱ Mid-Edge 3(RMC)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: UMTS; Communication System Band: Band Ⅱ UTRA/FDD ;Duty Cycle:1:1; Conv.F=5.61
Frequency: 1880 MHz; Medium parameters used: f = 1900 MHz; σ=1.50 mho/m; εr =53.05; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.5, Liquid temperature (℃): 21.3

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/ WCDMA band Ⅱ Mid-Edge 3/Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/ WCDMA band Ⅱ Mid-Edge 3/Zoom Scan: Measurement grid: dx=8mm,dy=8mm, dz=5mm;

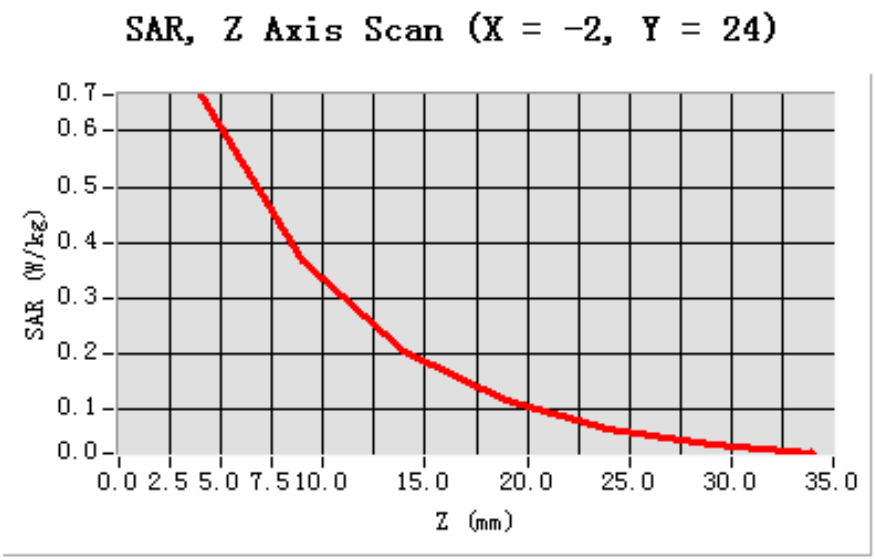
Area Scan	surf_sam_plan.txt
Zoom Scan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Edge 3
Band	WCDMA band Ⅱ
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

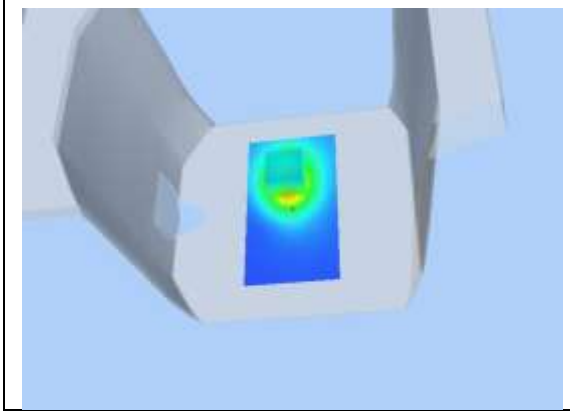
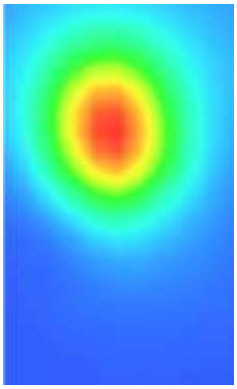
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-2.00, Y=24.00

SAR 10g (W/Kg)	0.326117
SAR 1g (W/Kg)	0.627756

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.6654	0.3659	0.2054	0.1146	0.0645	0.0361



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Dec. 26,2015**

WCDMA Band Ⅴ Mid-Touch-Left (RMC)

DUT: MOBILE PHONE; Type: MAX PLUS 5.5

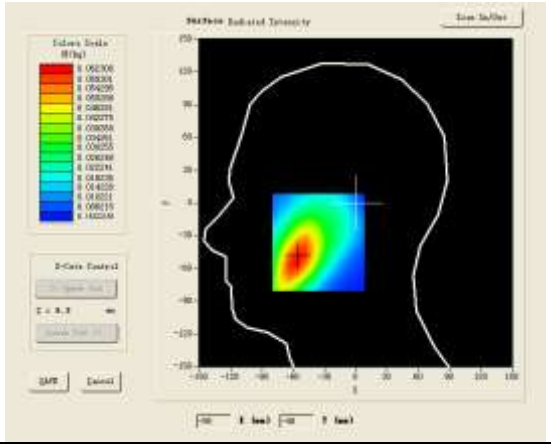
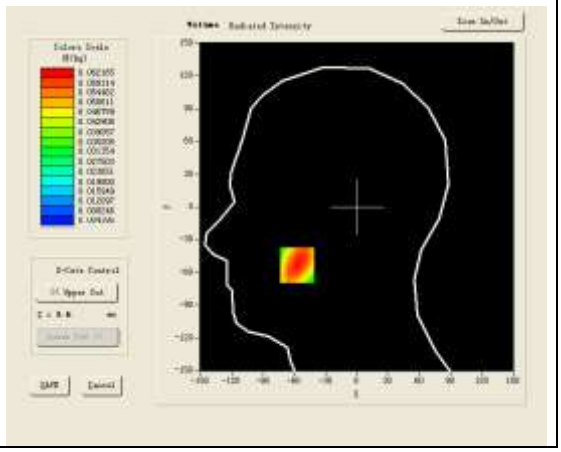
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD ; Duty Cycle:1: 1; Conv.F=6.36; Frequency: 836.6 MHz; Medium parameters used: f = 835MHz; σ=0.91 mho/m; εr =41.32; ρ= 1000 kg/m³ ;
Phantom section: Left Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.2

SATIMO Configuration:

- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

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

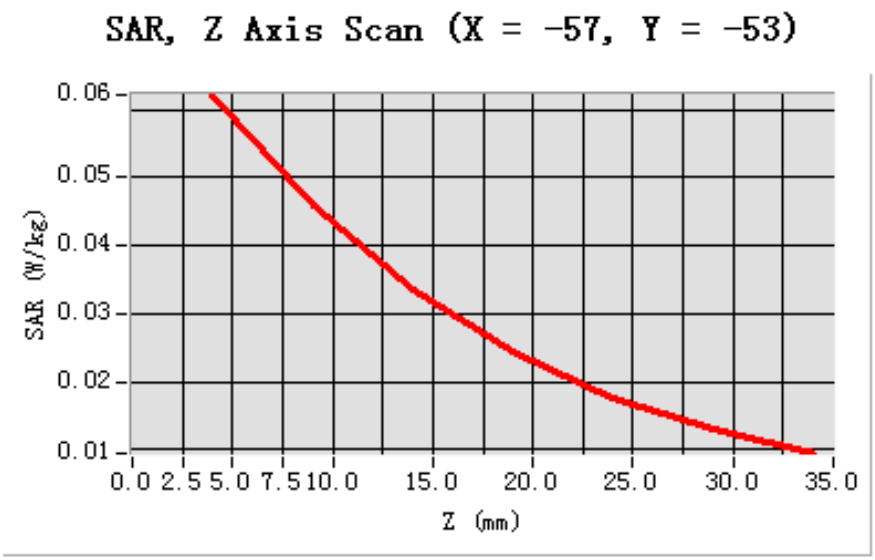
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Left head
Device Position	Cheek
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

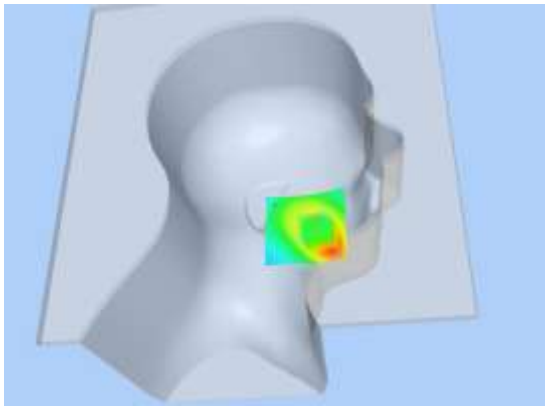
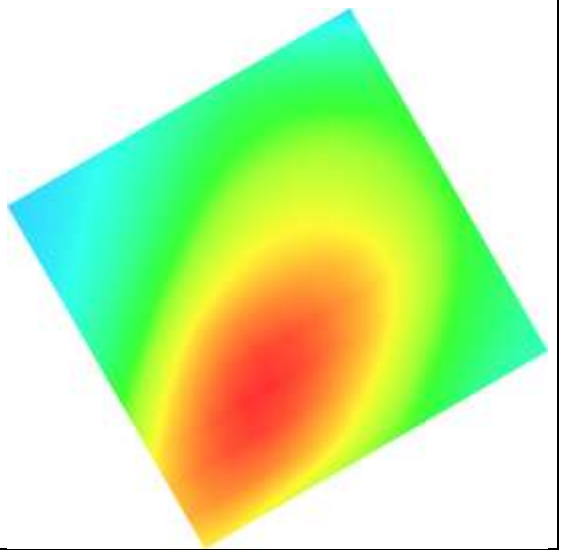
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-57.00, Y=-53.00

SAR 10g (W/Kg)	0.041124
SAR 1g (W/Kg)	0.059342

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.0622	0.0458	0.0336	0.0245	0.0177	0.0131



3D screen shot	Hot spot position
	

Test Laboratory: AGC Lab **Date: Dec. 26,2015**

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

DUT: MOBILE PHONE; Type: MAX PLUS 5.5

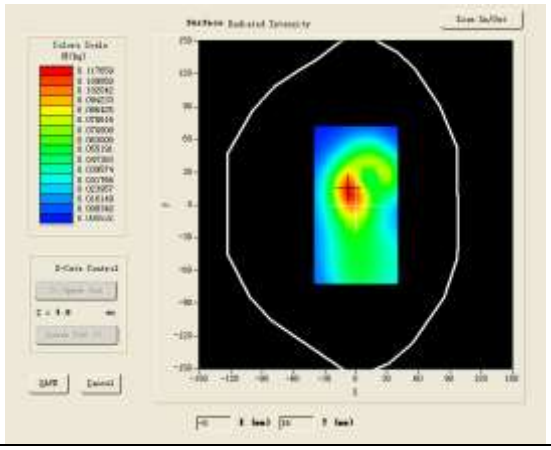
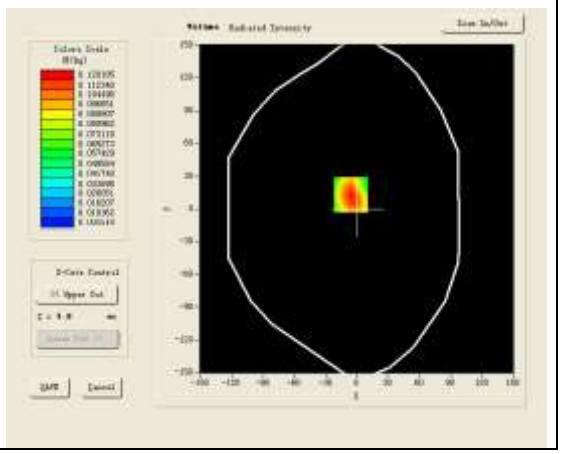
Communication System: UMTS; Communication System Band: BAND Ⅴ UTRA/FDD; Duty Cycle:1: 1; Conv.F=6.56; Frequency: 836.6 MHz; Medium parameters used: f = 835MHz; σ=0.96 mho/m; εr =55.63; ρ= 1000 kg/m³ ;
Phantom section: Flat Section
Ambient temperature (℃): 21.3, Liquid temperature (℃): 21.3

SATIMO Configuration:

- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

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

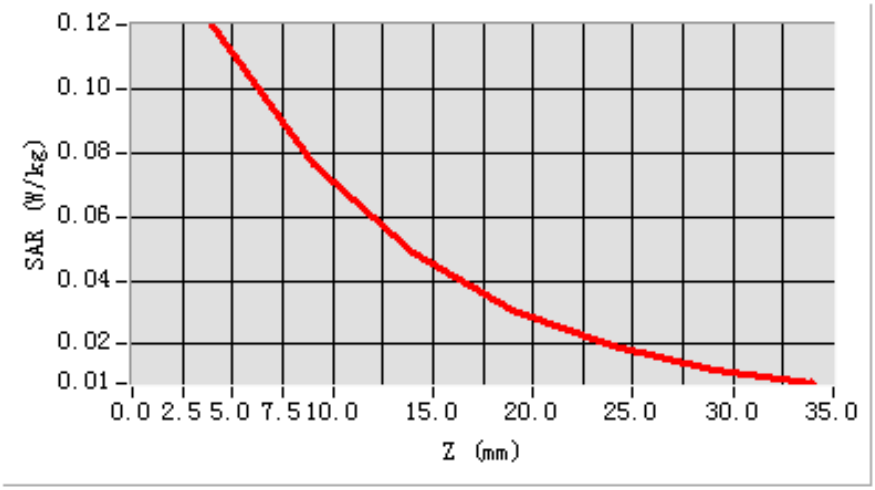
Area Scan	surf_sam_plan.txt
ZoomScan	5x5x7,dx=8mm dy=8mm dz=5mm,Complete
Phantom	Validation plane
Device Position	Body Back
Band	WCDMA Band Ⅴ
Channels	Middle
Signal	CDMA (Crest factor: 1.0)

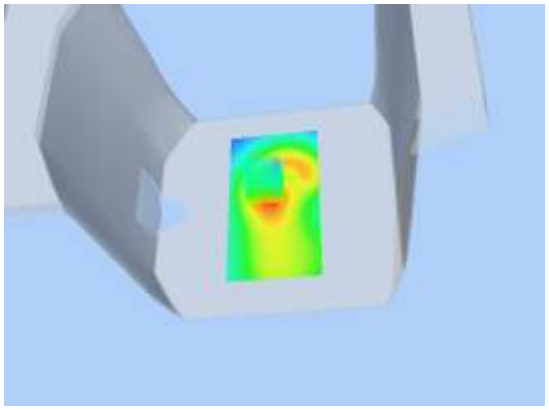
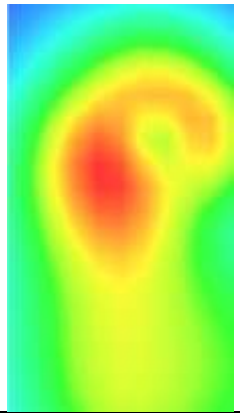
SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-6.00, Y=13.00

SAR 10g (W/Kg)	0.069977
SAR 1g (W/Kg)	0.114328

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1202	0.0765	0.0485	0.0306	0.0193	0.0122



3D screen shot	Hot spot position
	

WIFI MODE

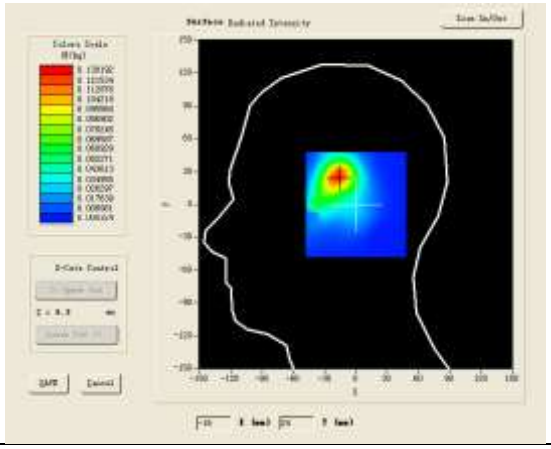
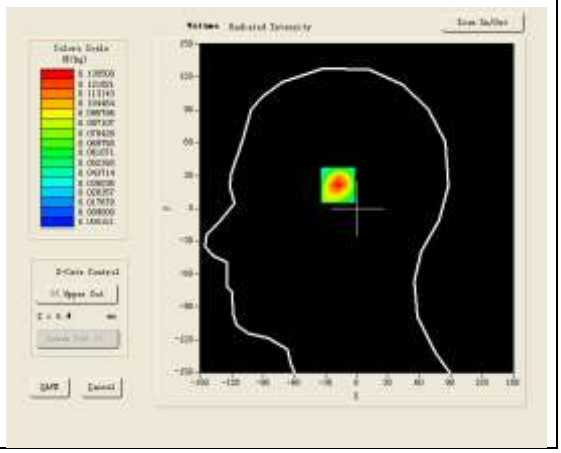
Test Laboratory: AGC Lab **Date: Jan. 01,2016**
802.11b Mid- Touch-Right
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.84;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.80mho/m; εr =39.53; ρ= 1000 kg/m^3 ;
Phantom section: Right Section
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.2

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11b Mid- Touch-Right /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid- Touch-Right /Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm;

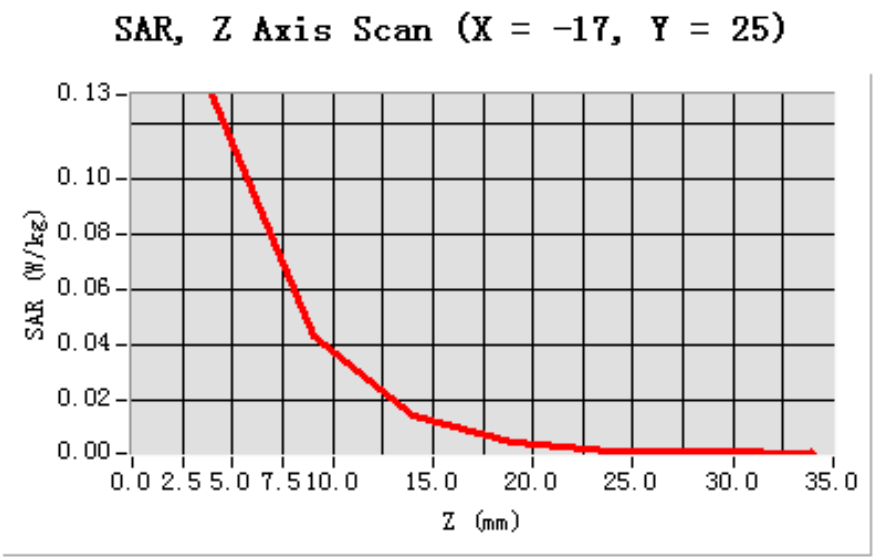
Area Scan	sam_direct_droit2_surf8mm.txt
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Right head
Device Position	Cheek
Band	2450MHz
Channels	Middle
Signal	Crest factor: 1.0

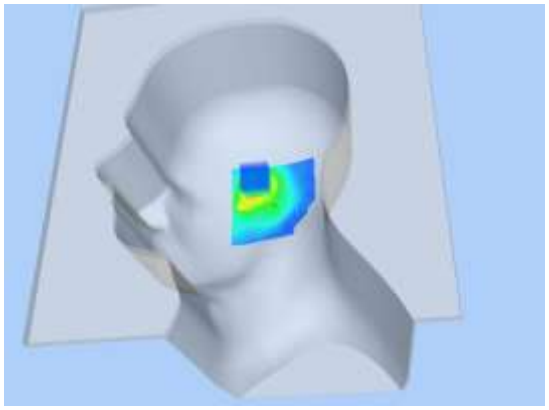
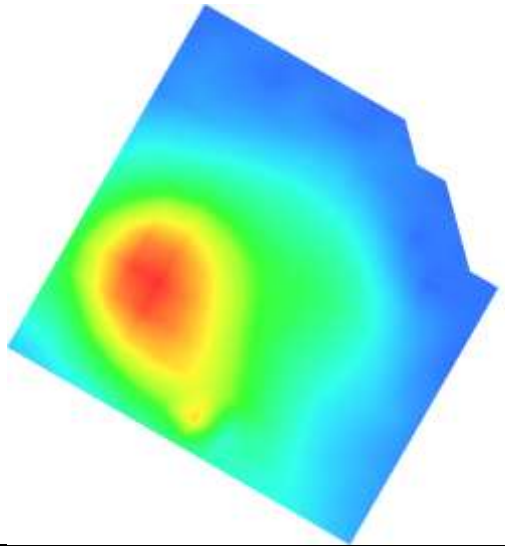
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-17.00, Y=25.00

SAR 10g (W/Kg)	0.055892
SAR 1g (W/Kg)	0.129436

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1341	0.0437	0.0172	0.0039	0.0062	0.0008



3D screen shot	Hot spot position
	

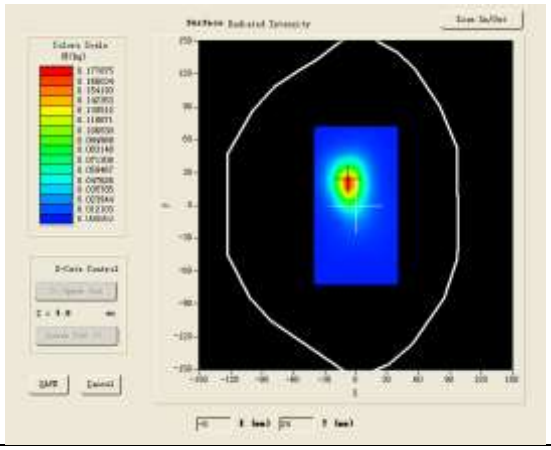
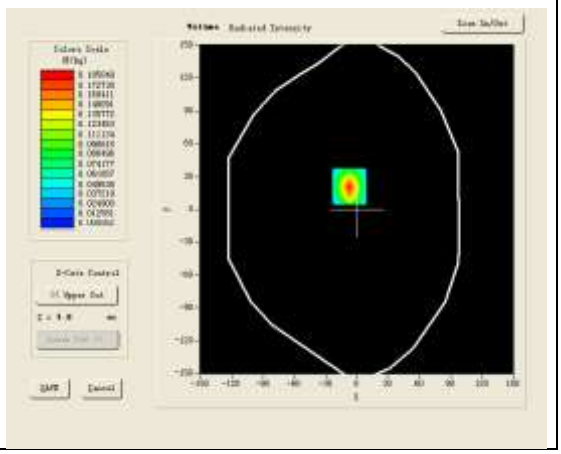
Test Laboratory: AGC Lab **Date: Jan. 01,2016**
802.11b Mid-Edge 2(DTS)
DUT: MOBILE PHONE; Type: MAX PLUS 5.5

Communication System: Wi-Fi; Communication System Band: 802.11b; Duty Cycle: 1:1; Conv.F=4.97;
Frequency: 2437 MHz; Medium parameters used: f = 2450 MHz; σ =1.92 mho/m; εr =53.20; ρ= 1000 kg/m^3 ;
Phantom section: Flat Section
Ambient temperature (℃):21.6, Liquid temperature (℃): 21.5

SATIMO Configuration:
- Probe: SSE5; Calibrated: 07/10/2015; Serial No.: SN 19/15 EP254
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Phantom: SAM twin phantom
- Measurement SW: OpenSAR V4_02_01

Configuration/802.11b Mid- Edge 2 /Area Scan: Measurement grid: dx=8mm, dy=8mm
Configuration/802.11b Mid- Edge 2 /Zoom Scan: Measurement grid: dx=5mm,dy=5mm, dz=5mm;

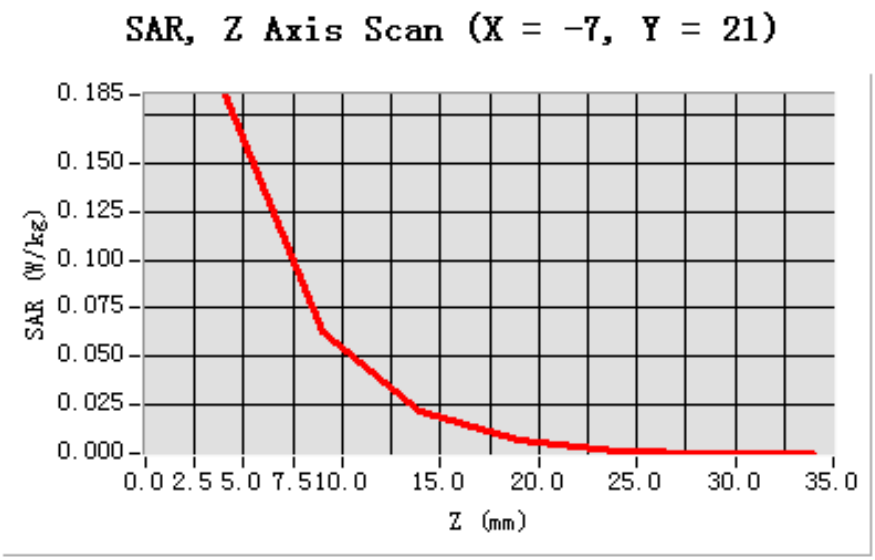
Area Scan	surf_sam_plan.txt
ZoomScan	7x7x7,dx=5mm dy=5mm dz=5mm
Phantom	Validation plane
Device Position	Edge 2
Band	2450MHz
Channels	Middle
Signal	Crest factor: 1.0

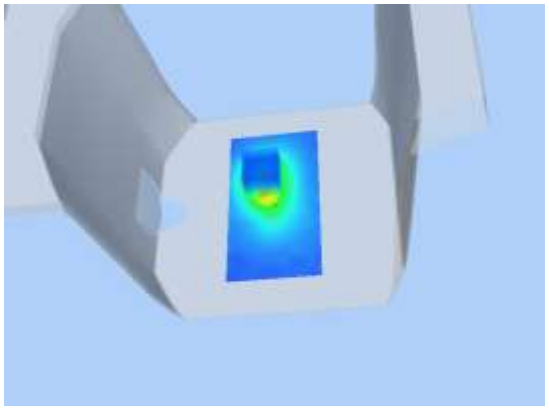
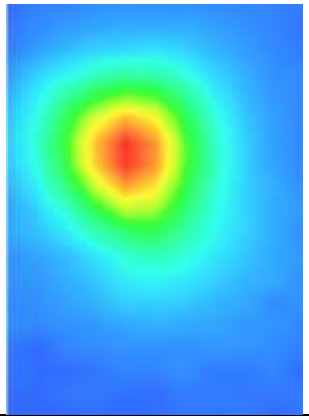
SURFACE SAR	VOLUME SAR
	

Maximum location: X=-7.00, Y=21.00

SAR 10g (W/Kg)	0.075904
SAR 1g (W/Kg)	0.187248

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	0.1850	0.0651	0.0236	0.0038	0.0020	0.0008



3D screen shot	Hot spot position
	

APPENDIX C. TEST SETUP PHOTOGRAPHS &EUT PHOTOGRAPHS

Refer to Attached files.

APPENDIX D. CALIBRATION DATA

Refer to Attached files.