SAR TEST REPORT

Report No.:	SET2013-05214
Product:	Coolpad Flo
Model No.:	Coolpad 7560T
Brand Name:	Coolpad
FCC ID:	R38YL7560T
IC ID:	10367A-YL7560T
Applicant:	Yulong Computer Telecommunication Scientific (Shenzhen) Co. LTD
Address:	Hi-Tech Industry Park(North),Nanshan District, Shenzhen City,Guangdong Province,P.R.C
Issued by:	CCIC-SET
Lab Location:	Electronic Testing Building, Shahe Road，Xili, Nanshan District, Shenzhen, 518055, P. R. China
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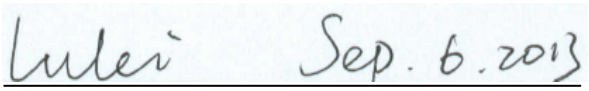
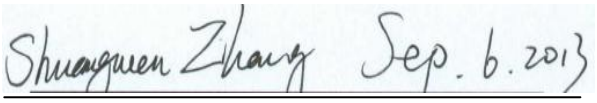
Applicant Address.....:	Hi-Tech Industry Park(North),Nanshan District, Shenzhen City,Guangdong Province,P.R.C
Manufacturer.....:	Yulong Computer Telecommunication Scientific (Shenzhen) Co. LTD
Manufacturer Address.....:	Hi-Tech Industry Park(North),Nanshan District, Shenzhen City,Guangdong Province,P.R.C
Rating .....:	5Vdc 900mA(Charger) or 3.7V 1880mAh(Battery)
Test Standards.....:	IEEE Std. 1528-2003, 47CFR § 2.1093 FCC Oet65 Supplement C June 2001; RSS-102 Issue 4 March 2010
Test Result.....:	Pass

Tested by .....:



Signature, Date

Reviewed by.....:



Signature, Date

Approved by.....:

Signature, Date

Contents

This Test Report consists of the following Annexes:

1. GENERAL CONDITIONS

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

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

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

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

2. Administrative Date

2.1. Identification of the Responsible Testing Laboratory

Company Name:	CCIC-SET
Department:	EMC & RF Department
Address:	Electronic Testing Building, Shahe Road, Nanshan District, ShenZhen, P. R. China
Telephone:	+86-755-26629676
Fax:	+86-755-26627238
Responsible Test Lab Managers:	Mr. Wu Li'an

2.2. Identification of the Responsible Testing Location(s)

Company Name:	CCIC-SET
Address:	Electronic Testing Building, Shahe Road, Nanshan District, Shenzhen, P. R. China

2.3. Organization Item

CCIC-SET Report No.:	SET2013-05214
CCIC-SET Project Leader:	Mr. Li Sixiong
CCIC-SET Responsible for accreditation scope:	Mr. Wu Li'an
Start of Testing:	2013-08-30
End of Testing:	2012-09-04

2.4. Identification of Applicant

Company Name:	Yulong Computer Telecommunication Scientific (Shenzhen) Co. LTD
Address:	Hi-Tech Industry Park(North),Nanshan District, Shenzhen City,Guangdong Province,P.R.C

2.5. Identification of Manufacture

Company Name:	Yulong Computer Telecommunication Scientific (Shenzhen) Co. LTD
Address:	Hi-Tech Industry Park(North),Nanshan District, Shenzhen City,Guangdong Province,P.R.C

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

3. General Information

3.1. Description Of Equipment Under Test (EUT)

Sample Name:	Coolpad Flo	
Type Name:	Coolpad 7560T	
Brand Name:	Coolpad	
Mobile phone capability	Class B	
Dual Transfer Mode (DTM) per 3GPP 51.010	Not supported	
Simultaneous transmission	3G can transmit simultaneously with WLAN 3G can transmit simultaneously with Bluetooth WLAN can not transmit simultaneously with Bluetooth	
General description:	Support Band and Frequency Range	GSM 850MHz: 824.2MHz -848.8MHz GSM 1900MHz: 1850.2MHz-1909.8MHz WCDMA/HSPA Band V: 826.4MHz-846.6MHz WCDMA/HSPA Band IV: 1712.4MHz-1752.6MHz WCDMA/HSPA Band II: 1852.4MHz-1907.6MHz WLAN 2.4GHz: 2412MHz-2472MHz Bluetooth: 2402MHz-2480MHz
	Development Stage	Identical Prototype
	Accessories	Power Supply
	Battery type	CPLD-315
	Battery specification	1880mAh 3.7V
	Antenna type	IFA Antenna
	Modulation mode	GMSK, 8PSK, QPSK, 16QAM, DSSS, OFDM, GFSK/∏/4-DQPSK/8-DPSK

NOTE:

a. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

b. This device supports GPRS/EGPRS operation up to class12 (max.uplink:4,max.downlink:4,total timeslots:5).

4 Specific Absorption Rate (SAR)

4.1 Introduction

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

4.2 SAR Definition

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

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

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

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

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

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

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

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

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

4.3 Phantoms

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

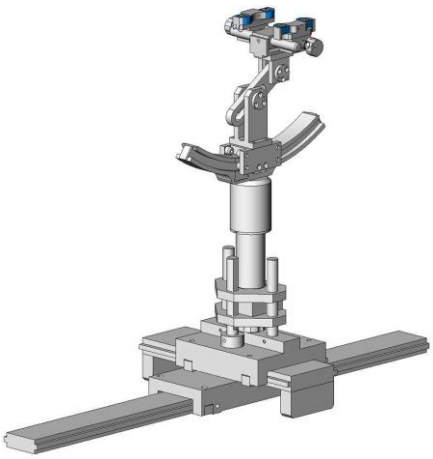
System checking was performed using the flat section, whilst Head SAR tests used the left and right head profile sections. Body SAR testing also used the flat section between the head profiles.

SAM Twin Phantom

4.4 Device Holder

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

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



Device holder

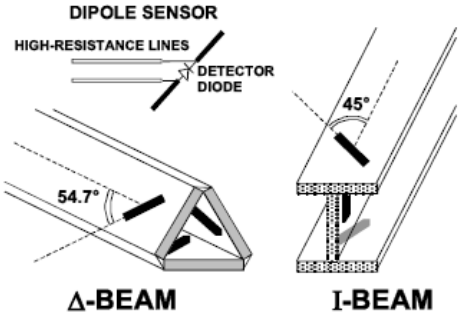
4.5 Probe Specification

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

Isotropic E-Field Probe

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

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



5 OPERATIONAL CONDITIONS DURING TEST

5.1 Schematic Test Configuration

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

The Absolute Radio Frequency Channel Number (ARFCN) was allocated to 128, 189 and 251 respectively in the case of GSM 850MHz, or to 512, 661 and 809 respectively in the case of PCS 1900MHz, or to 4357, 4400 and 4458 respectively in the case of WCCDMA 850MHz, or to 1537, 1637 and 1738 respectively in the case of WCDMA 1700 MHz, or to 9662, 9800 and 9938 respectively in the case of WCDMA 1900 MHz. The EUT was commanded to operate at maximum transmitting power.

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

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

5.2 SAR Measurement System

The SAR measurement system being used is the DASY4 system, the system is controlled remotely from a PC, which contains the software to control the robot and data acquisition equipment. The software also displays the data obtained from test scans.

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

5.2.1 Tissue Dielectric Parameters for Head and Body Phantoms

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

Table 1: Recommended Dielectric Performance of Tissue

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

Table 2 Recommended Tissue Dielectric Parameters

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

5.2.2 Simulant liquids

For measurements against the phantom head, the “cheek” and “tilt” position on both the left hand and the right hand sides of the phantom. For body-worn measurements, the EUT was tested against flat phantom representing the user body. The EUT was put on in the belt holder. Simulant liquids that are used for testing at frequencies of GSM 850MHz, GSM 1900MHz, WCDMA 850MHz, WCDMA 1700MHz, WCDMA 1900MHz and Wi-Fi 2.4GHz, which are made mainly of sugar, salt and water solutions may be left in the phantoms.

Table 3: Dielectric Performance of Head Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;					
/	Frequency	Permittivity ε	Conductivity σ (S/m)	Deviation (%)	
Target value	835MHz	41.5	0.90	ε	σ
Validation value (September 28th, 2013)	835MHz	41.28	0.94	-0.5	4.4
Target value	1750 MHz	40.2	1.40	--	--
Validation value (September 28th, 2013)	1750 MHz	40.08	1.39	-0.3	-0.7
Target value	1900MHz	40.0	1.40	--	--
Validation value (September 28th, 2013)	1900MHz	39.88	1.42	-0.3	1.4
Target value	2450MHz	39.2	1.80	--	--
Validation value (September 28th, 2013)	2450MHz	38.96	1.79	-0.5	-0.6

Table 4: Dielectric Performance of Body Tissue Simulating Liquid

Temperature: 23.2°C; Humidity: 64%;					
/	Frequency	Permittivity ε	Conductivity σ (S/m)	Deviation (%)	
Target value	835MHz	55.2	0.97	ε	σ
Validation value (September 29th, 2013)	835MHz	55.38	0.99	0.3	2.1
Target value	1750 MHz	53.4	1.53	--	--
Validation value (September 29th, 2013)	1750 MHz	53.76	1.51	0.7	-0.3
Target value	1900MHz	53.3	1.52	--	--
Validation value (September 29th, 2013)	1900MHz	53.67	1.51	0.7	-0.7
Target value	2450MHz	52.7	1.95	--	--
Validation value (September 29th, 2013)	2450MHz	52.68	1.97	-0.0	1.0

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

Band	Channel	Frequency (MHz)	Permittivity ε		Conductivity σ (S/m)	
			Head	Body	Head	Body
GSM 850	128	824.2	41.94	0.92	55.96	0.97
	189	836.4	41.28	0.94	55.38	0.99
	251	848.8	40.92	0.95	55.12	1.01
GSM 1900	512	1850.2	41.25	1.36	54.25	1.46
	661	1880.0	40.84	1.39	53.98	1.49
	810	1909.8	39.72	1.42	53.43	1.51
WCDMA 850	4132	826.4	41.94	0.92	55.96	0.97
	4182	836.4	41.28	0.94	55.38	0.99
	4182	846.6	40.92	0.95	55.12	1.01
WCDMA 1700	1312	1712.4	40.46	1.35	54.32	1.46
	1412	1732.4	40.22	1.37	54.14	1.48
	1513	1752.6	40.08	1.39	53.85	1.51
WCDMA 1900	9262	1852.4	41.25	1.36	54.25	1.46
	9400	1880.0	40.84	1.39	53.98	1.49
	9538	1907.6	39.72	1.42	53.43	1.51
WLAN	1	2412	39.47	1.78	52.95	1.94
	7	2442	39.12	1.79	52.70	1.97
	13	2472	38.84	1.81	52.33	2.02

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

Table 6: Δ SAR of each band

Frequency	SAR correction formula	Δ SAR	
		Head	Body
835MHz	0.7521*Δ σ(%) - 0.2194*Δ ε(%)	>0	>0
1750 MHz	0.6224*Δ σ(%) - 0.226*Δ ε(%)	>0	>0
1900MHz	0.594*Δ σ(%) - 0.1556*Δ ε(%)	>0	>0
2450MHz	0.4801*Δ σ(%) - 0.225*Δ ε(%)	>0	>0

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

Fig. 1 Configuration of body tissue

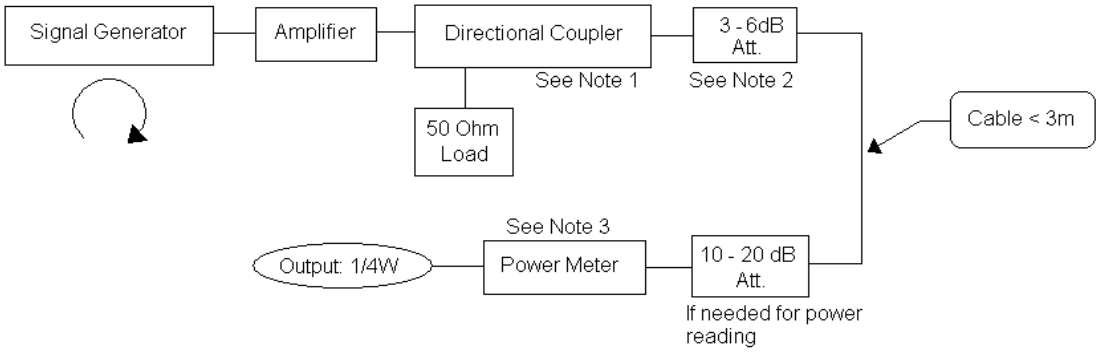
5.2.3 Equipments and results of validation testing

Important equipments :

Equipment description	Manufacturer/Model	Identification No.
SAR Probe	SATIMO	SN_0913_EP169
Phantom	SATIMO	SN_0913_SAM97
Liquid	SATIMO	-
Dipole	SATIMO-SID835	SN_0913_DIP0G835-217
Dipole	SATIMO-SID1800	SN_0913_DIP1G800-216
Dipole	SATIMO-SID1900	SN_0913_DIP1G900-218
Dipole	SATIMO-SID2450	SN_0913_DIP2G450-220
Vector Network Analyzer	Rohde & Schwarz - ZVB8	1145.1010.08
Amplifier	Nucletudes	143060
Power Meter	Rohde & Schwarz - NRVS	1020.1809.02
Multimeter	Keithley - 2000	4014020

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

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



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

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

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

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

The measured 1-gram averaged SAR values of the device against the phantom are provided in Tables 5 and Table 6. The humidity and ambient temperature of test facility were 64% and 23.2°C respectively. The body phantom were full of the body tissue simulating liquid. The EUT was supplied with full-charged battery for each measurement.

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

Table 7: Head Liquid Verification Results (1g)

Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)		Deviation (%)
			250 mW	1W	
835MHz (September 28th, 2013)	1:1	9.56	2.47	9.88	3.3
1750MHz (September 28th, 2013)	1:1	36.4	9.28	37.12	2.0
1900MHz (September 28th, 2013)	1:1	39.7	9.79	39.16	-1.4
2450MHz (September 28th, 2013)	1:1	52.4	13.16	52.64	0.5

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

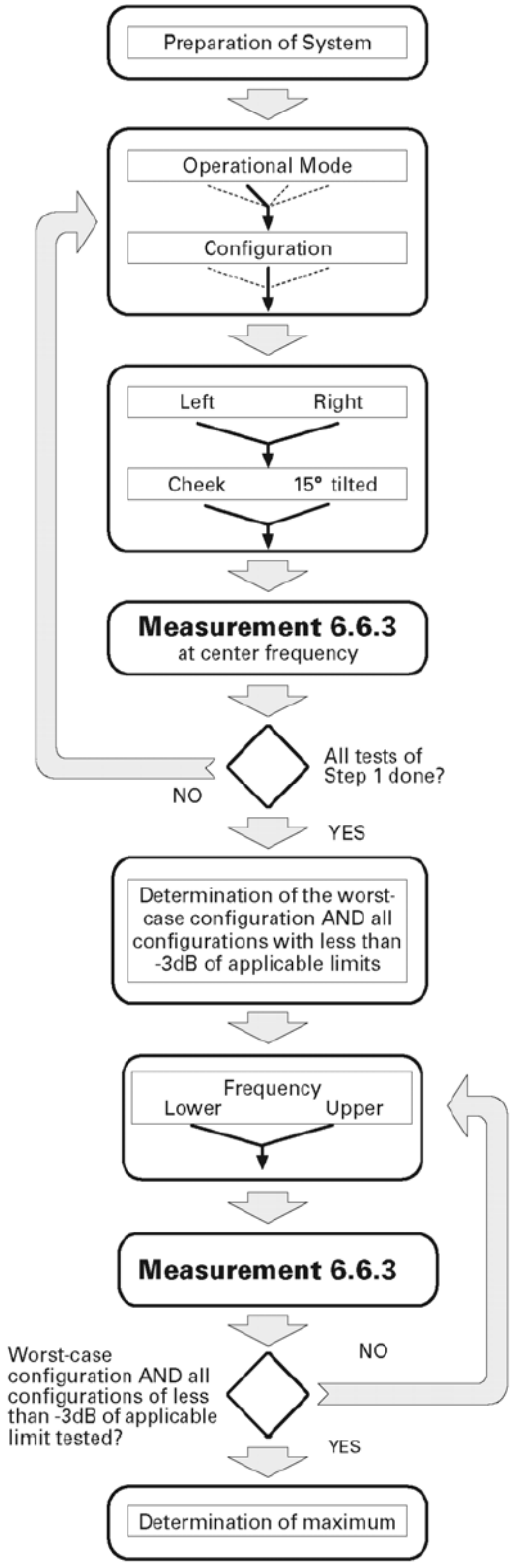
Note: All SAR values are normalized to 1W forward power.

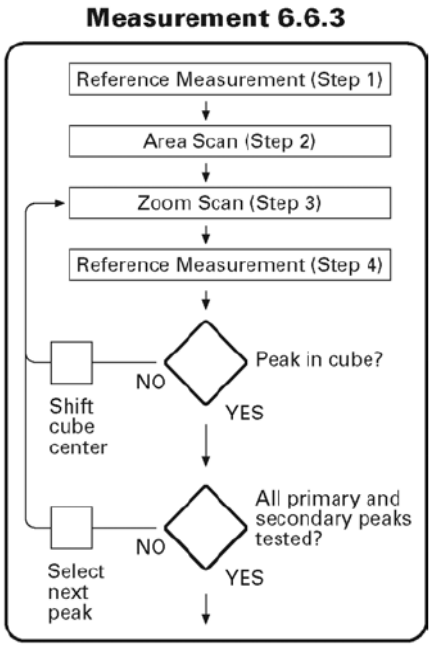
Table 8: Body Liquid Verification Results (1g)

Frequency	Duty cycle	Target value （W/kg）	Test value (W/kg)		Deviation (%)
			250 mW	1W	
835MHz (September 29th, 2013)	1:1	9.92	2.43	9.76	-0.6
1750MHz (September 29th, 2013)	1:1	39.19	9.28	38.92	-0.7
1900MHz (September 29th, 2013)	1:1	40.29	9.99	39.96	-0.8
2450MHz (September 29th, 2013)	1:1	51.99	13.12	52.48	0.9

5.2.4 SAR measurement procedure

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





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

After an area scan has been done at a fixed distance of 8mm from the surface of the phantom on the source side, a 3D scan is set up around the location of the maximum spot SAR. First, a point within the scan area is visited by the probe and a SAR reading taken at the start of testing. At the end of testing, the probe is returned to the same point and a second reading is taken. Comparison between these start and end readings enables the power drift during measurement to be assessed.

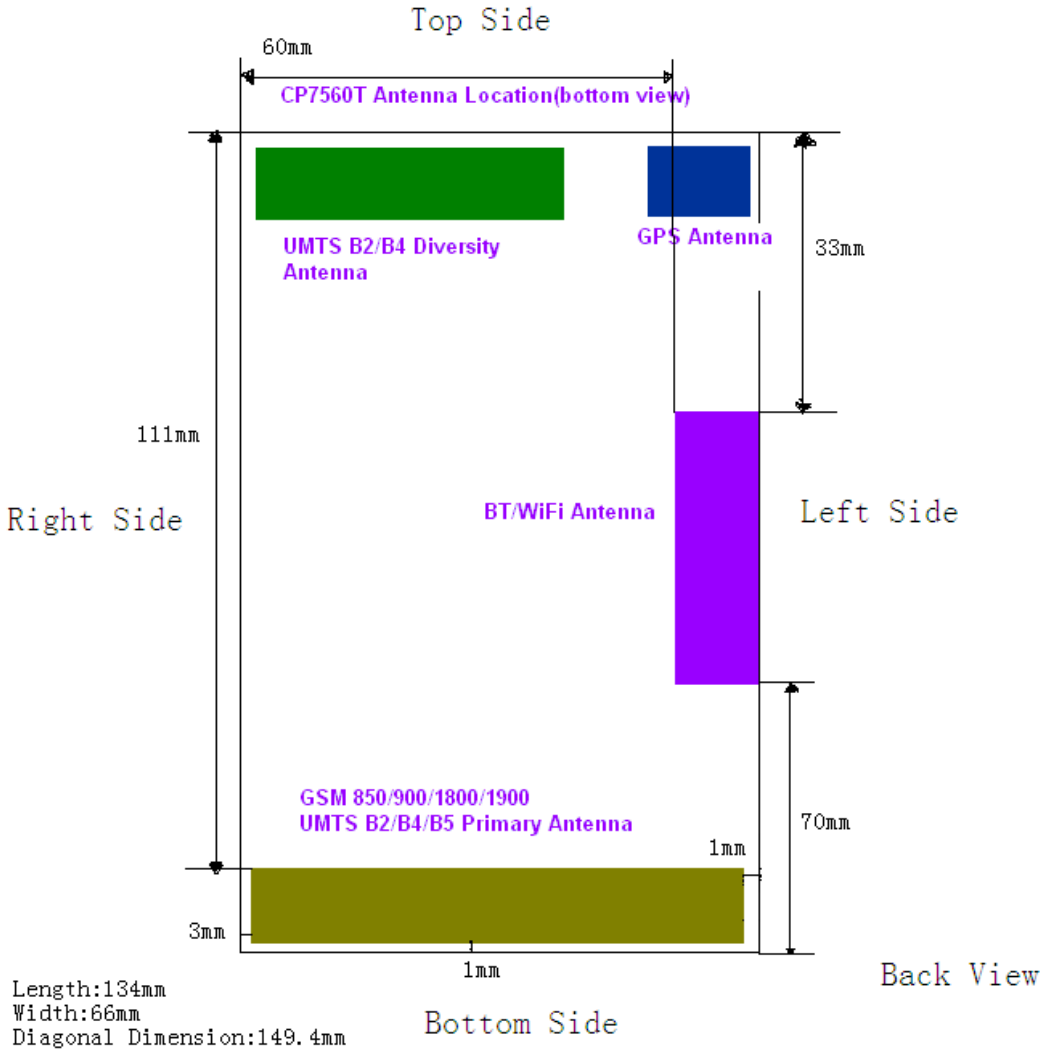
Above is the scanning procedure flow chart and table from the IEEEp1528 standard. This is the procedure for which all compliant testing should be carried out to ensure that all variations of the device position and transmission behaviour are tested.

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

5.2.5 Transmitting antenna information

There are four antennas (GSM /WCDMA primary antenna, BT/Wi-Fi antenna, UMTS B2/B4 diversity antenna and GPS antenna) inside the EUT, the former tow antennas are the transmitting source, and they are a type of IFA antenna, the following picture shows the position of the antennas.

For more information, please refer to the file named “R38YL7560T_SAR Setup Photos ”.



Note: The GPS antenna and UMTS B2/B4 diversity antenna are charged for receive, the SAR result would not be affected by them.

Antennas	Wireless Interface
WWAN Antenna <Tx / Rx>	GSM 1900/850 UMTS Band II/IV/V
Bluetooth & WLAN Antenna <Tx / Rx>	WLAN 2.4GHz Band Bluetooth

Distance of the Antenna to the EUT surface/edge						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	≤ 25mm	≤ 25mm	111mm	≤ 25mm	≤ 25mm	≤ 25mm
Bluetooth & WLAN	≤ 25mm	≤ 25mm	33mm	70mm	60mm	≤ 25mm

Positions for SAR tests; Body worn mode Test distance: 10mm						
Antennas	Back	Front	Top Side	Bottom Side	Right Side	Left Side
WWAN	Yes	Yes	No	Yes	Yes	Yes
Bluetooth & WLAN	Yes	Yes	No	No	No	Yes

Note: Per KDB 941225 D06 v01 r01, when the overall device length and width are ≥ 9cm＊5cm, the test distance is 10mm. SAR must be measured for all sides and surface with a transmitting antenna located within 25mm from that surface or edge.

6 CHARACTERISTICS OF THE TEST

6.1 Applicable Limit Regulations

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

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

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

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

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

6.2 Applicable Measurement Standards

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

FCC 47 CFR Part2 (2.1093)
ANSI/IEEE C95.1-1992
IEEE 1528-2003
IC RSS 102 Issue 4
FCC KDB 447498 D01 v05r01
FCC KDB 648474 D04 v01r01
FCC KDB 248227 D01 v01r02
FCC KDB 941225 D03 v01
FCC KDB 941225 D04 v01
FCC KDB 941225 D06 v01r01

7 LABORATORY ENVIRONMENT

7.1 The Ambient Conditions during SAR Test

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

7.2 Test Configuration

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

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

Duty factor observed as below:

WLAN 2.4GHz 802.11b, 1Mbps:97.5%

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

8.Conducted RF Output Power

8.1 GSM Conducted Power

Band		Burst Average Power (dBm)			Frame-Average Power (dBm)		
GSM850	TX Channel	128	189	251	128	189	251
	Frequency(MHz)	824.2	836.4	848.8	824.2	836.4	848.8
	GSM (GMSK, 1 Tx slot) CS1	31.70	31.70	31.68	22.70	**22.70**	22.68
	GPRS(GMSK, 1 Tx slot) CS1	31.41	31.42	31.53	22.41	22.42	22.53
	GPRS(GMSK, 2 Tx slot) CS1	29.75	29.73	29.73	**23.75**	23.73	23.73

	GPRS(GMSK, 3 Tx slot) CS1	24.37	24.51	24.42	20.11	20.25	20.16
	GPRS(GMSK, 4 Tx slot) CS1	23.65	23.66	23.61	20.65	20.66	20.61
	EDGE(8PSK, 1 Tx slot) CS5	27.09	27.08	27.04	18.09	18.08	18.04
	EDGE(8PSK, 2Tx slot) CS5	24.55	24.51	24.46	18.55	18.51	18.46
	EDGE(8PSK, 3 Tx slot) CS5	23.68	23.74	23.71	19.42	19.48	19.45
	EDGE(8PSK, 4 Tx slot) CS5	23.21	23.13	23.08	20.21	20.13	20.08
GSM1900	TX Channel	512	661	810	512	661	810
	Frequency(MHz)	1850.2	1880	1909.8	1850.2	1880	1909.8
	GSM (GMSK, 1 Tx slot) CS1	29.04	29.35	29.33	20.04	**20.35**	20.33
	GPRS(GMSK, 1 Tx slot) CS1	27.97	28.04	27.82	18.97	19.04	18.82
	GPRS(GMSK, 2 Tx slot) CS1	26.65	26.51	26.60	**20.65**	20.51	20.60
	GPRS(GMSK, 3 Tx slot) CS1	23.56	23.55	23.26	19.28	19.27	19.00
	GPRS(GMSK, 4 Tx slot) CS1	21.78	22.21	21.85	18.78	19.21	18.85
	EDGE(8PSK, 1 Tx slot) CS5	26.51	26.52	26.42	17.51	17.52	17.42
	EDGE(8PSK, 2Tx slot)	24.79	24.76	24.87	18.79	18.76	18.87

	CS5						
	EDGE(8PSK, 3 Tx slot) CS5	23.31	23.42	23.12	19.05	19.16	18.76
	EDGE(8PSK, 4 Tx slot) CS5	21.98	22.01	21.87	18.98	19.01	18.87

Note:

1. Per KDB 447498 D01 v05r01, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. The bolded EDGE modes were selected according to the highest frame-averaged output table according to KDB 941225 D03
3. CS1 coding scheme was used in GPRS output power measurements and SAR Testing, as a condition where GMSK, modulation was ensured. Investigation has shown that CS1-CS4 settings do not have any impact on the output levels in the GPRS modes.
4. MCS5 coding scheme was used to measure the output powers for EDGE since investigation has shown that choosing MCS5 coding scheme will ensure 8-PSK modulation and that MCS levels that produce 8-PSK modulation do not have any impact on the output power levels

8.2 HSPA Conducted Power

3GPP Release Version	Mode	3GPP 34.121 Subtest	Band V			MPR [dB]
			4132	4183	4233	
99	WCDMA	12.2 kbps RMC	23.64	**23.71**	23.68	-
		12.2 kbps AMR	22.89	23.02	22.78	-
5	HSDPA	Subtest 1	22.62	22.11	22.65	0
		Subtest 2	22.6	22.45	22.59	0
		Subtest 3	21.58	21.44	22.06	0.5
		Subtest 4	21.56	21.48	21.35	0.5
6	HSUPA	Subtest 1	21.86	21.76	21.72	0
		Subtest 2	21.76	21.68	21.62	2
		Subtest 3	21.43	21.54	21.36	1
		Subtest 4	21.11	20.95	20.97	2
		Subtest 5	20.97	20.88	20.88	0

3GPP Release Version	Mode	3GPP 34.121 Subtest	Band IV			MPR [dB]
			1312	1412	1513	
99	WCDMA	12.2 kbps RMC	23.28	**23.45**	23.27	-
		12.2 kbps AMR	22.45	22.57	22.68	-
5	HSDPA	Subtest 1	21.45	21.73	21.64	0
		Subtest 2	20.42	21.69	20.61	0
		Subtest 3	20.31	21.65	20.59	0.5
		Subtest 4	20.29	21.61	20.56	0.5
6	HSUPA	Subtest 1	20.43	21.74	20.64	0
		Subtest 2	20.36	21.62	20.57	2
		Subtest 3	20.34	21.59	20.54	1

		Subtest 4	20.25	21.46	20.51	2
		Subtest 5	20.19	21.42	20.49	0

3GPP Release Version	Mode	3GPP 34.121 Subtest	Band II			MPR [dB]
			9296	9400	9538	
99	WCDMA	12.2 kbps RMC	23.08	**23.22**	23.15	-
		12.2 kbps AMR	22.17	22.05	21.98	-
5	HSDPA	Subtest 1	21.42	21.95	22.12	0
		Subtest 2	21.39	21.93	22.09	0
		Subtest 3	21.35	21.89	22.05	0.5
		Subtest 4	21.3	21.84	21.95	0.5
6	HSUPA	Subtest 1	21.48	21.98	21.98	0
		Subtest 2	21.42	21.92	21.89	2
		Subtest 3	21.36	21.89	21.82	1
		Subtest 4	21.27	21.85	21.78	2
		Subtest 5	21.24	21.81	21.72	0

Note:

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

8.3 WLAN 2.4GHz Band Conducted Power

802.11b Average Power (dBm)					
Channel	Frequency (MHz)	Data Rate(bps)			
		1M bps	2M bps	5.5M bps	11M bps
CH 01	2412	**15.33**	15.07	14.95	15.09
CH 06	2437	14.87	15.01	15.08	13.98
CH 13	2472	13.79	14.38	14.09	13.88

802.11g Average Power (dBm)									
Channel	Frequency (MHz)	Data Rate(bps)							
		6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
CH 01	2412	14.68	14.59	14.58	14.78	14.52	14.56	14.54	14.67
CH 06	2437	14.71	14.66	14.72	14.82	14.79	14.78	14.92	14.95
CH 13	2472	14.89	14.76	14.13	14.78	14.69	14.72	14.73	**15.02**

WLAN 2.4GHz Band 802.11n-HT20 Average Power (dBm)									
Channel	Frequency (MHz)	MCS Index							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
CH 01	2412	14.59	14.72	14.72	14.82	14.68	14.48	14.56	14.73
CH 06	2437	14.82	14.73	14.73	14.84	14.69	14.78	14.94	14.95
CH 13	2472	15.01	14.98	15.04	14.98	14.88	15.10	14.83	**15.21**

Note:

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

mode. Thus the SAR can be excluded.

Bluetooth Conducted Power

Bluetooth Avage Power (dBm)										
Channel	Frequency (MHz)	Data Rate								
		DH1	DH3	DH5	2DH1	2DH3	2DH5	3DH1	3DH3	3 DH5
CH 0	2402	4.56	4.87	4.54	4.47	4.78	4.76	4.31	4.65	4.55
CH 39	2441	4.86	4.79	5.12	4.43	4.65	4.46	4.96	4.88	4.43
CH 78	2480	4.87	**4.98**	4.75	4.25	4.68	4.70	4.88	4.67	4.71

Note:

1. Per KDB 447498 D01v05r01, the 1-g and 10-g SAR test exclusion thrssholds for 100MHz to 6GHz at test separation distances $\leqslant$ 50mm are determined by:
   [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [$\sqrt{f}$ (GHz)] $\leqslant$3.0 for 1-g SAR and $\leqslant$7.5 for 10-g extremity SAR
   (1) f(GHz) is the RF channel transmit frequency in GHz
   (2) Power and distance are round to the nearest mW and mm before calculation
   (3) The result is rounded to one decimal place for comparison
   (4) If the test separation diatance(antenna-user) is < 5mm, 5mm is used for excluded SAR calculation

Bluetooth Max Power (dBm)	mW	Test Distance (mm)	Frequency(Ghz)	Exclusion Thresholds
5	3.16	0	2.48	0.99

2. Per KDB 447498 D01v05r01 exclusion thresholds is 0.99<3, RF exposure evaluation is not required.

9. SAR DATA SUMMARY

General Note:

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

9.1 Standalone Head SAR DATA

GSM SAR DATA:

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
GSM850	GMSK 1 Tx slot	Right Cheek	189	836.4	31.70	33.5	1.51	0.21	**0.32**
GSM850	GMSK 1 Tx slot	Right Tilted	189	836.4	31.70	33.5	1.51	0.209	**0.32**
GSM850	GMSK 1 Tx slot	Left Cheek	189	836.4	31.70	33.5	1.51	0.084	0.13
GSM850	GMSK 1 Tx slot	Left Tilted	189	836.4	31.70	33.5	1.51	0.063	0.10

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
GSM1900	GMSK 1 Tx slot	Right Cheek	661	1880	29.35	30.5	1.30	0.207	0.269
GSM1900	GMSK 1 Tx slot	Right Tilted	661	1880	29.35	30.5	1.30	0.043	0.056
GSM1900	GMSK 1 Tx slot	Left Cheek	661	1880	29.35	30.5	1.30	0.245	**0.319**
GSM1900	GMSK 1 Tx slot	Left Tilted	661	1880	29.35	30.5	1.30	0.055	0.072

WCDMA SAR DATA:

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band V	12.2 kbps RMC	Right Cheek	4183	836.4	23.71	25	1.35	0.085	0.115
WCDMA Band V	12.2 kbps RMC	Right Tilted	4183	836.4	23.71	25	1.35	0.074	0.10
WCDMA Band V	12.2 kbps RMC	Left Cheek	4183	836.4	23.71	25	1.35	0.09	**0.122**
WCDMA Band V	12.2 kbps RMC	Left Tilted	4183	836.4	23.71	25	1.35	0.073	0.10

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band IV	12.2 kbps RMC	Right Cheek	1412	1732.4	23.45	25	1.43	0.366	**0.523**
WCDMA Band IV	12.2 kbps RMC	Right Tilted	1412	1732.4	23.45	25	1.43	0.074	0.106
WCDMA Band IV	12.2 kbps RMC	Left Cheek	1412	1732.4	23.45	25	1.43	0.09	0.129
WCDMA Band IV	12.2 kbps RMC	Left Tilted	1412	1732.4	23.45	25	1.43	0.073	0.104

Band	Mode	Test Position	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band II	12.2 kbps RMC	Right Cheek	9400	1880	23.22	25	1.51	0.512	**0.773**
WCDMA Band II	12.2 kbps RMC	Right Tilted	9400	1880	23.22	25	1.51	0.136	0.205
WCDMA Band II	12.2 kbps RMC	Left Cheek	9400	1880	23.22	25	1.51	0.402	0.607
WCDMA Band II	12.2 kbps RMC	Left Tilted	9400	1880	23.22	25	1.51	0.155	0.234

WLAN SAR DATA:

Band	Mode	Test Position	Ch	Freq. MHz	Average Power (dBm)	Tune -up Limit dBm	Scaling Factor	Duty Cycle %	Duty Cycle compen sate	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WLAN 2.4GHz	802.11b 1Mbps	Right Cheek	1	2412	15.33	17	1.469	97.5	1.026	0.134	**0.202**
		Right Tilted	1	2412	15.33	17	1.469	97.5	1.026	0.073	0.110
		Left Cheek	1	2412	15.33	17	1.469	97.5	1.026	0.097	0.146
		Left Tilted	1	2412	15.33	17	1.469	97.5	1.026	0.112	0.169

9.2 Standalone Body Worn SAR DATA

GSM SAR DATA:

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
GSM850	GMSK 1Tx slot	Back	1	189	824.2	31.70	33.5	1.51	0.255	0.386
GSM850	GMSK 1Tx slot	Front	1	189	824.2	31.70	33.5	1.51	0.127	0.192
GSM850	GMSK 1Tx slot	Left Side	1	189	824.2	31.70	33.5	1.51	0.222	0.336
GSM850	GMSK 1Tx slot	Right Side	1	189	824.2	31.70	33.5	1.51	0.127	0.192
GSM850	GMSK 1Tx slot	Bottom Side	1	189	824.2	31.70	33.5	1.51	0.789	**1.195**
GPRS850	GMSK 2Tx slot	Back	1	128	824.2	29.75	30.5	1.19	0.091	0.108
GPRS850	GMSK 2Tx slot	Front	1	128	824.2	29.75	30.5	1.19	0.093	0.111
GPRS850	GMSK 2Tx slot	Left Side	1	128	824.2	29.75	30.5	1.19	0.186	0.221
GPRS850	GMSK 2Tx slot	Right Side	1	128	824.2	29.75	30.5	1.19	0.113	0.134
GPRS850	GMSK 2Tx slot	Bottom Side	1	128	824.2	29.75	30.5	1.19	0.118	0.140

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
GSM1900	GMSK 1Tx slot	Back	1	661	1880	29.35	30.5	1.303	0.497	**0.648**
GSM1900	GMSK 1Tx slot	Front	1	661	1880	29.35	30.5	1.303	0.480	0.625
GSM1900	GMSK 1Tx slot	Left Side	1	661	1880	29.35	30.5	1.303	0.337	0.439
GSM1900	GMSK 1Tx slot	Right Side	1	661	1880	29.35	30.5	1.303	0.285	0.371
GSM1900	GMSK 1Tx slot	Bottom Side	1	661	1880	29.35	30.5	1.303	0.438	**0.766**
GPRS1900	GMSK 2Tx slot	Back	1	512	1850.2	26.65	28.5	1.585	0.413	0.655
GPRS1900	GMSK 2Tx slot	Front	1	512	1850.2	26.65	28.5	1.585	0.352	0.558
GPRS1900	GMSK 2Tx slot	Left Side	1	512	1850.2	26.65	28.5	1.585	0.190	0.301
GPRS1900	GMSK 2Tx slot	Right Side	1	512	1850.2	26.65	28.5	1.585	0.154	0.244
GPRS1900	GMSK 2Tx slot	Bottom Side	1	512	1850.2	26.65	28.5	1.585	0.085	0.135

WCDMA SAR DATA:

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band V	12.2 kbps RMC	Back	1	4183	836.4	23.71	25	1.35	0.230	0.311
WCDMA Band V	12.2 kbps RMC	Front	1	4183	836.4	23.71	25	1.35	0.108	0.146
WCDMA Band V	12.2 kbps RMC	Left Side	1	4183	836.4	23.71	25	1.35	0.228	0.307
WCDMA Band V	12.2 kbps RMC	Right Side	1	4183	836.4	23.71	25	1.35	0.138	0.186
WCDMA Band V	12.2 kbps RMC	Bottom Side	1	4183	836.4	23.71	25	1.35	0.713	**0.963**

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band IV	12.2 kbps RMC	Back	1	1412	1732.4	23.45	25	1.43	0.366	0.523
WCDMA Band IV	12.2 kbps RMC	Front	1	1412	1732.4	23.45	25	1.43	0.552	**0.789**
WCDMA Band IV	12.2 kbps RMC	Left Side	1	1412	1732.4	23.45	25	1.43	0.233	0.333
WCDMA Band IV	12.2 kbps RMC	Right Side	1	1412	1732.4	23.45	25	1.43	0.159	0.227
WCDMA Band IV	12.2 kbps RMC	Bottom Side	1	1412	1732.4	23.45	25	1.43	0.512	0.732

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WCDMA Band II	12.2 kbps RMC	Back	1	9400	1880	23.22	25	1.51	0.397	**0.599**
WCDMA Band II	12.2 kbps RMC	Front	1	9400	1880	23.22	25	1.51	0.341	0.515
WCDMA Band II	12.2 kbps RMC	Left Side	1	9400	1880	23.22	25	1.51	0.395	0.596
WCDMA Band II	12.2 kbps RMC	Right Side	1	9400	1880	23.22	25	1.51	0.372	0.562
WCDMA Band II	12.2 kbps RMC	Bottom Side	1	9400	1880	23.22	25	1.51	0.382	0.577

WLAN SAR DATA:

Band	Mode	Test Position	Ch	Freq. MHz	Average Power (dBm)	Tune -up Limit dBm	Scaling Factor	Duty Cycle %	Duty Cycle compen sate	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
WLAN 2.4GHz	802.11b 1Mbps	Front	1	2412	15.33	17	1.850	97.5	1.026	0.065	0.123
		Back	1	2412	15.33	17	1.850	97.5	1.026	0.249	0.473
		Left Side	1	2412	15.33	17	1.850	97.5	1.026	0.356	**0.676**

9.3 Repeated SAR Measurement

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
GSM 850	GMSK 1Tx slot	Bottom Side	1	189	824.2	31.70	33.5	1.51	0.789	1	1.195
GSM 850	GMSK 1Tx slot	Bottom Side	1	189	824.2	31.70	33.5	1.51	0.778	1.011	1.175

Band	Mode	Test Position	Gap (cm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Scaling Factor	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
WCDMA Band V	12.2 kbps RMC	Bottom Side	1	4183	836.4	23.71	25	1.35	0.713	1	0.963
WCDMA Band V	12.2 kbps RMC	Bottom Side	1	4183	836.4	23.71	25	1.35	0.721	1.008	0.973

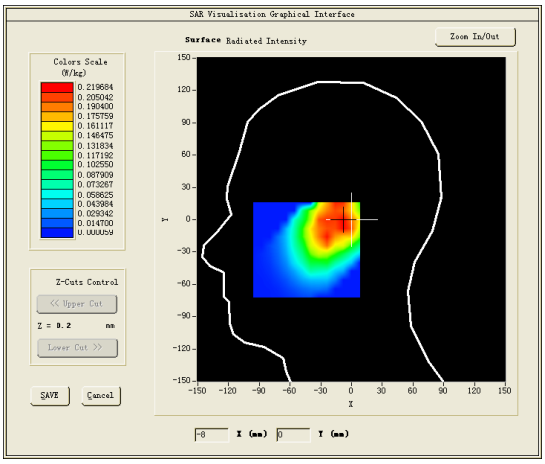
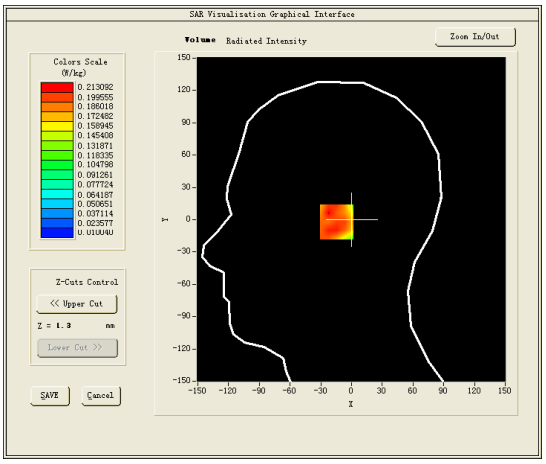
Note:

1. Per KDB 865664 D01V01r01, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg
2. Per KDB 865664 D01V01r01, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR<1.45W/Kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated measured SAR.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

9.3 Highest SAR Plots

GSM850_GMSK(1 Tx slot)_Right Cheek_Channel189:

Frequency (MHz)	836.400024
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	1.290000

SURFACE SAR	**VOLUME SAR**
	

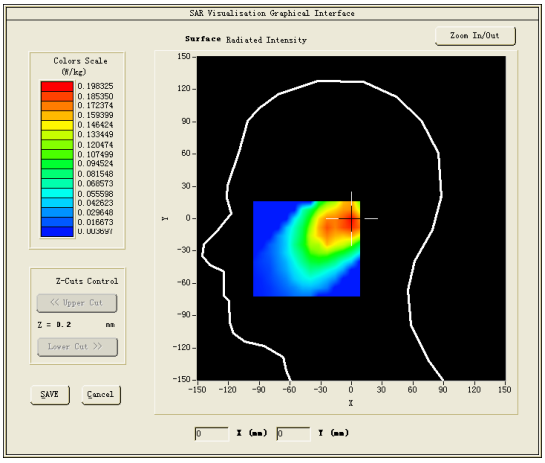
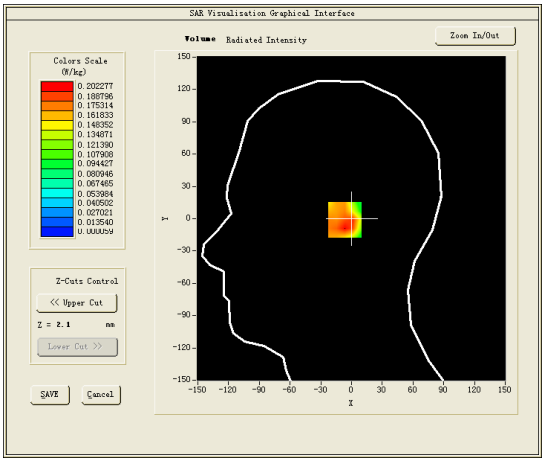
Maximum location: X=-9.00, Y=-2.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.150387
SAR 1g (W/Kg)	0.210107

GSM850_GMSK(1 Tx slot)_Right Tilt_Channel189:

Frequency (MHz)	836.400024
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.901453
Variation (%)	-5868.950195

SURFACE SAR	**VOLUME SAR**
	

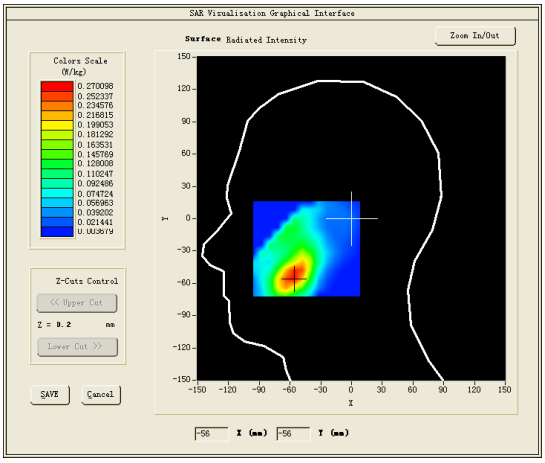
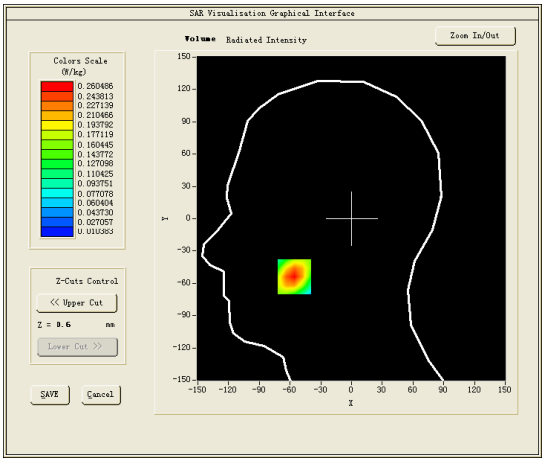
Maximum location: X=0.00, Y=-1.00

SAR Peak: 0.32 W/kg

SAR 10g (W/Kg)	0.134899
SAR 1g (W/Kg)	0.209404

GSM1900_GMSK(1 Tx slot)_Left Cheek_Channel661:

Frequency (MHz)	1880.000000
Relative permittivity (real part)	40.000000
Relative permittivity (imaginary part)	13.408000
Conductivity (S/m)	1.400391
Variation (%)	3.850000

SURFACE SAR	**VOLUME SAR**
	

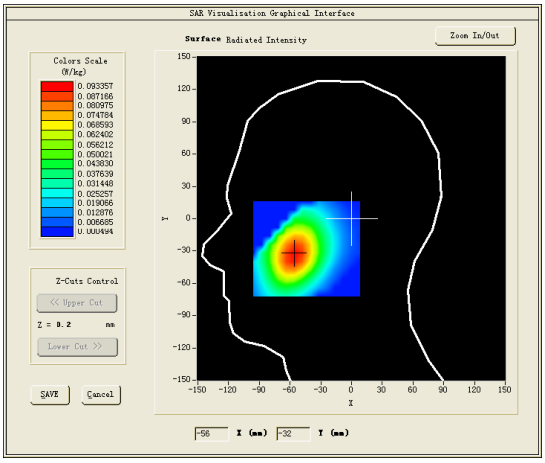
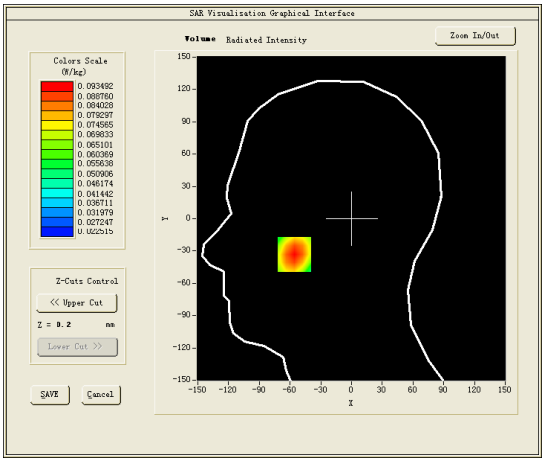
Maximum location: X=-56.00, Y=-54.00

SAR Peak: 0.37 W/kg

SAR 10g (W/Kg)	0.145361
SAR 1g (W/Kg)	0.244932

WCDMA Band V_12.2 kbps RMC_Left Cheek_Channel4183:

Frequency (MHz)	836.400000
Relative permittivity (real part)	41.500000
Relative permittivity (imaginary part)	19.400000
Conductivity (S/m)	0.948444
Variation (%)	3.580000

SURFACE SAR	**VOLUME SAR**
	

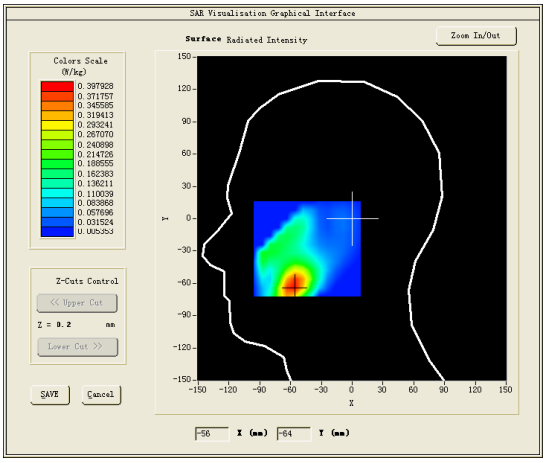
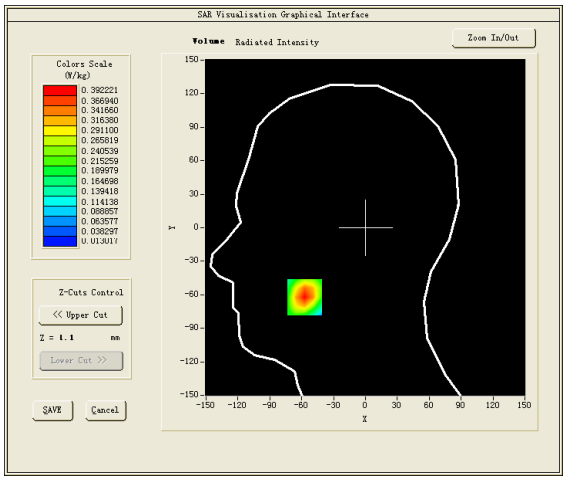
Maximum location: X=-56.00, Y=-33.00

SAR Peak: 0.11 W/kg

SAR 10g (W/Kg)	0.068565
SAR 1g (W/Kg)	0.089971

WCDMA Band IV_12.2 kbps RMC_Right Cheek_Channel1412:

Frequency (MHz)	1732.400000
Relative permittivity (real part)	53.360527
Relative permittivity (imaginary part)	15.254474
Conductivity (S/m)	1.505956
Variation (%)	82.910004

SURFACE SAR	**VOLUME SAR**
	

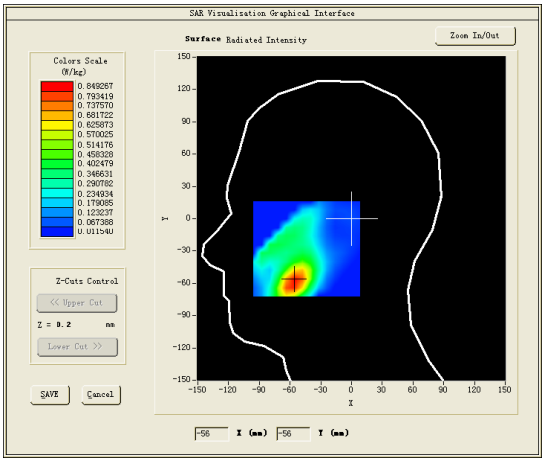
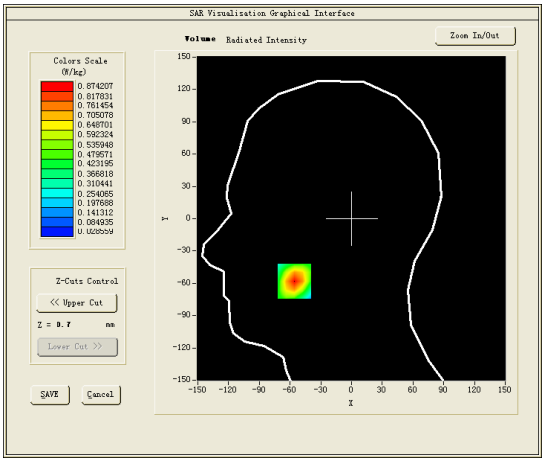
Maximum location: X=-57.00, Y=-62.00

SAR Peak: 0.56 W/kg

SAR 10g (W/Kg)	0.213780
SAR 1g (W/Kg)	0.366377

WCDMA Band II_12.2 kbps RMC_Right Cheek_Channel9400:

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.299999
Relative permittivity (imaginary part)	13.968000
Conductivity (S/m)	1.520960
Variation (%)	0.990000

SURFACE SAR	**VOLUME SAR**
	

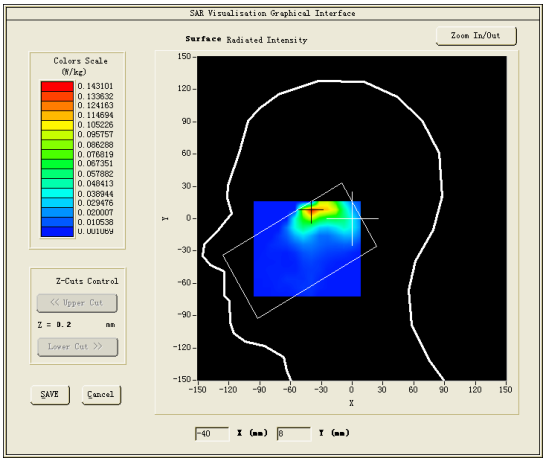
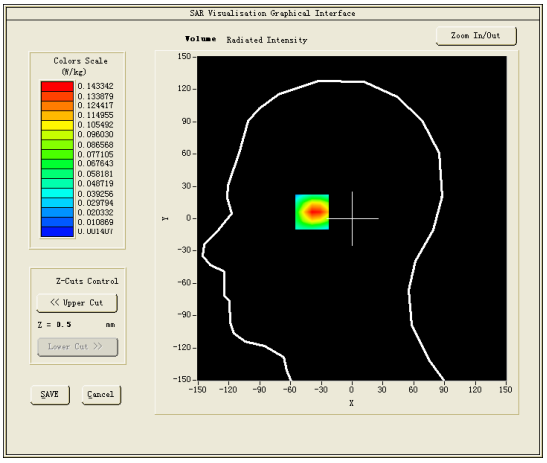
Maximum location: X=-56.00, Y=-58.00

SAR Peak: 0.85 W/kg

SAR 10g (W/Kg)	0.247029
SAR 1g (W/Kg)	0.511709

WLAN 2.4GHz_802.11b_Right Cheek_Channel1:

Frequency (MHz)	2412.000000
Relative permittivity (real part)	39.276001
Relative permittivity (imaginary part)	13.182000
Conductivity (S/m)	1.766388
Variation (%)	0.720000

SURFACE SAR	**VOLUME SAR**
	

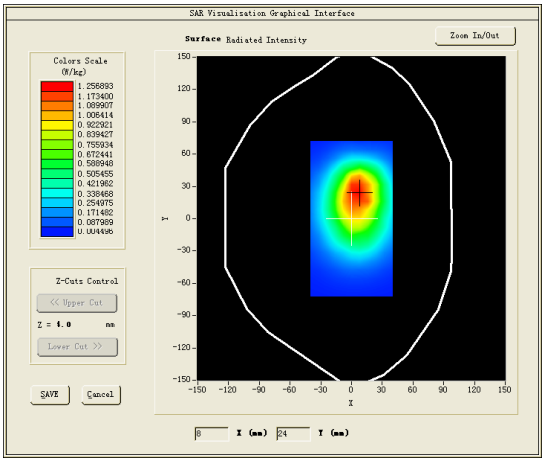
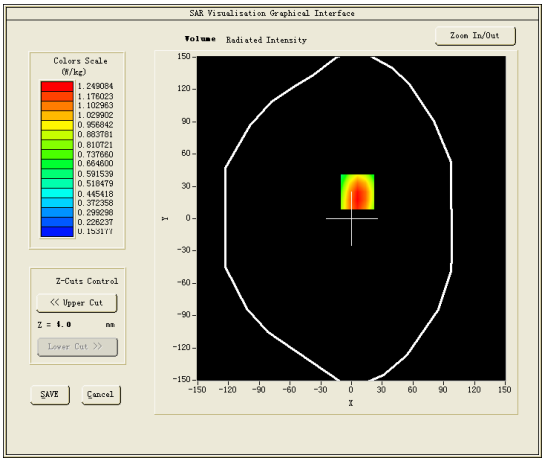
Maximum location: X=-39.00, Y=9.00

SAR Peak: 0.25 W/kg

SAR 10g (W/Kg)	0.064978
SAR 1g (W/Kg)	0.134445

GSM850_GMSK(1 Tx slot)_Bottom Side_1cm_Channel189:

Frequency (MHz)	824.200000
Relative permittivity (real part)	55.195076
Relative permittivity (imaginary part)	20.912214
Conductivity (S/m)	0.971953
Variation (%)	-5.660000

SURFACE SAR	**VOLUME SAR**
	

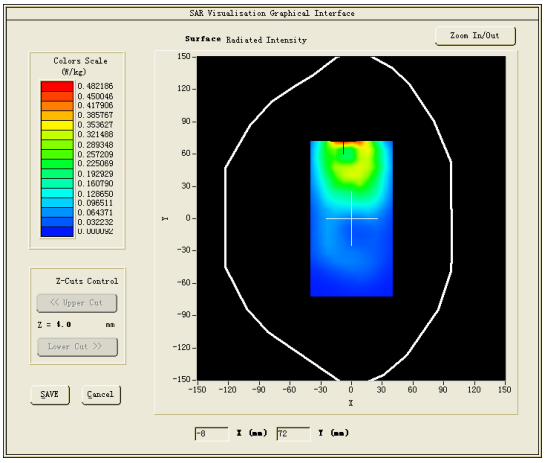
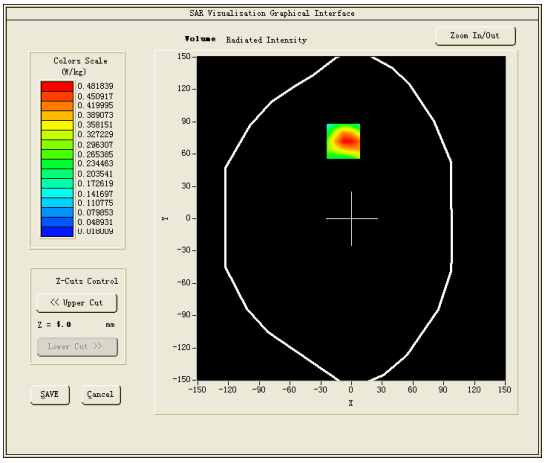
Maximum location: X=6.00, Y=25.00

SAR Peak: 1.26 W/kg

SAR 10g (W/Kg)	0.504517
SAR 1g (W/Kg)	0.788827

GSM1900_GMSK(1 Tx slot)_Back_1cm_Channel661:

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.299999
Relative permittivity (imaginary part)	14.560000
Conductivity (S/m)	1.520711
Variation (%)	0.430000

SURFACE SAR	**VOLUME SAR**
	

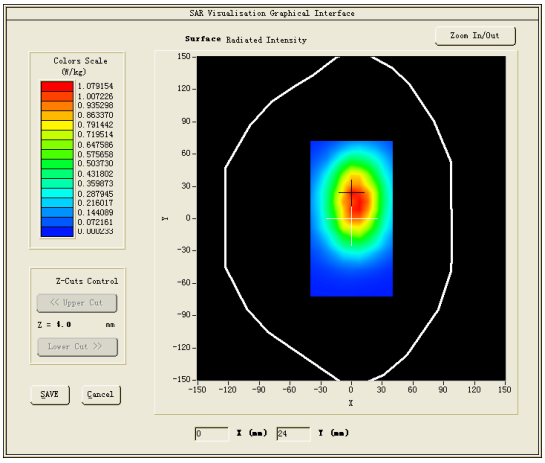
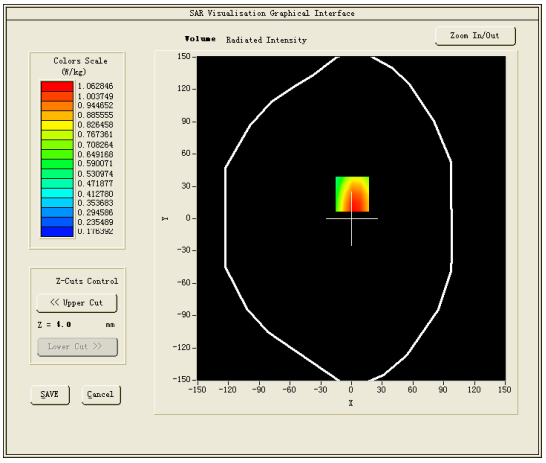
Maximum location: X=-8.00, Y=72.00

SAR Peak: 0.78 W/kg

SAR 10g (W/Kg)	0.286073
SAR 1g (W/Kg)	0.497174

WCDMA Band V_12.2 kbps RMC_Bottom Side_1cm_Channel4183:

Frequency (MHz)	836.400000
Relative permittivity (real part)	53.854966
Relative permittivity (imaginary part)	21.452658
Conductivity (S/m)	1.011374
Variation (%)	0.660000

SURFACE SAR	**VOLUME SAR**
	

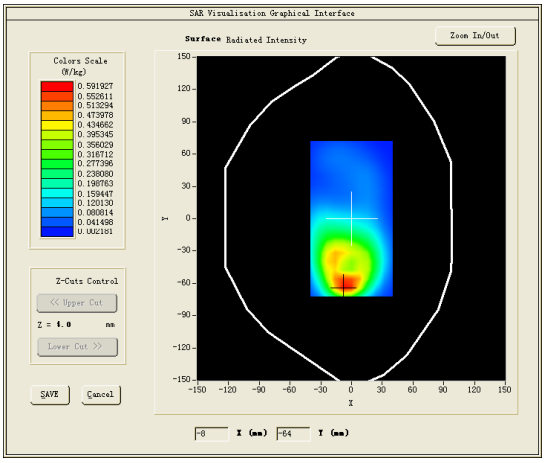
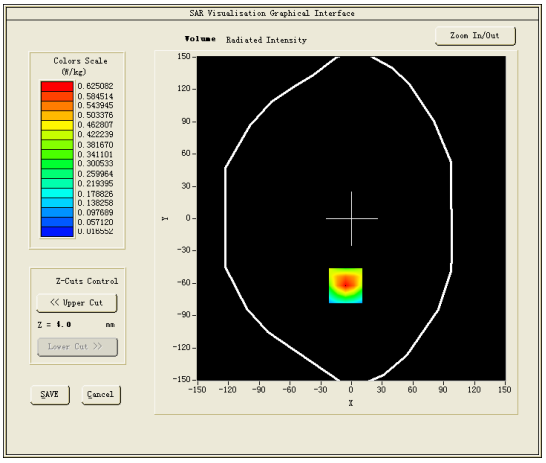
Maximum location: X=1.00, Y=23.00

SAR Peak: 1.21 W/kg

SAR 10g (W/Kg)	0.468857
SAR 1g (W/Kg)	0.712662

WCDMA Band IV_12.2 kbps RMC_Front_1cm_Channel1412:

Frequency (MHz)	1732.400000
Relative permittivity (real part)	40.046001
Relative permittivity (imaginary part)	14.041400
Conductivity (S/m)	1.386198
Variation (%)	-1.000000

SURFACE SAR	**VOLUME SAR**
	

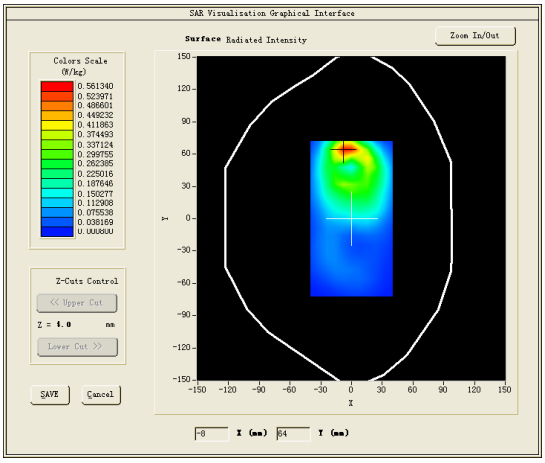
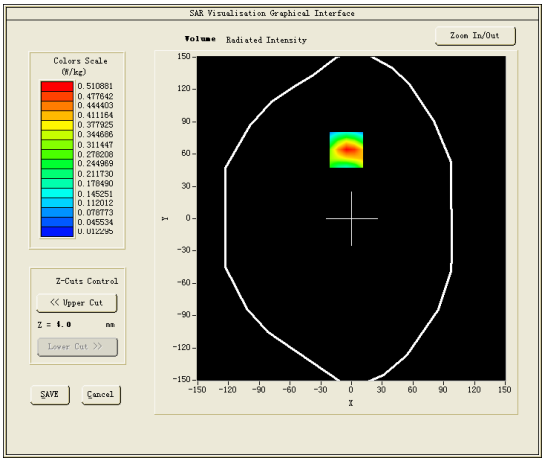
Maximum location: X=-6.00, Y=-62.00

SAR Peak: 0.84 W/kg

SAR 10g (W/Kg)	0.311300
SAR 1g (W/Kg)	0.551870

WCDMA Band IV_12.2 kbps RMC_Back_1cm_Channel9400:

Frequency (MHz)	1880.000000
Relative permittivity (real part)	53.299999
Relative permittivity (imaginary part)	13.968000
Conductivity (S/m)	1.520960
Variation (%)	-5.610000

SURFACE SAR	**VOLUME SAR**
	

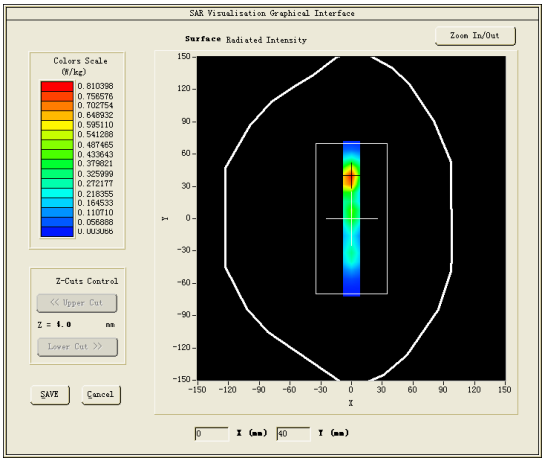
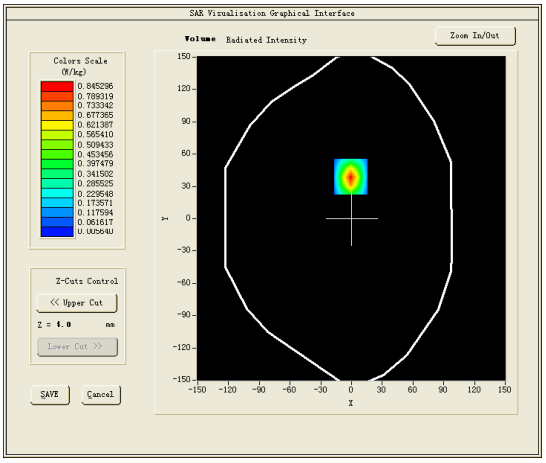
Maximum location: X=-5.00, Y=64.00

SAR Peak: 0.69 W/kg

SAR 10g (W/Kg)	0.197135
SAR 1g (W/Kg)	0.392381

WLAN 2.4GHz_802.11b_Left Side_Channel1:

Frequency (MHz)	2412.000000
Relative permittivity (real part)	52.717335
Relative permittivity (imaginary part)	14.311222
Conductivity (S/m)	1.937580
Variation (%)	-0.220000

SURFACE SAR	**VOLUME SAR**
	

Maximum location: X=-1.00, Y=39.00

SAR Peak: 0.67 W/kg

SAR 10g (W/Kg)	0.176245
SAR 1g (W/Kg)	0.356347

10 Simultaneous Transmission Analysis

The test mode as follows:

Simultaneous Transmission Configurations	Portable Handset Exposure positions	
	Head	Body-worn
GSM + WLAN 2.4GHz	Yes	Yes
GSM + Bluetooth	Yes	Yes
WCDMA + WLAN 2.4GHz	Yes	Yes
WCDMA + Bluetooth	Yes	Yes

Note:

1. WLAN 2.4GHz and Bluetooth share the same antenna, and cannot transmit simultaneously.
2. EUT will choose either GSM or WCDMA according to the network signal condition; therefore, they will not transmit simultaneously.
3. The reported SAR summation is calculated based on the same configuration and test position.
4. Per KDB 447498 D01v05r01, simultaneous transmission SAR is compliant if,
   a) Scalar SAR summation < 1.6W/kg.
   b) SPLSR = $(\mathrm{SAR1}+\mathrm{SAR2})^{1.5}$ / (min. separation distance, mm), and the peak separation distance is determined from the square root of [$(\mathrm{x1}-\mathrm{x2})^2$ + $(\mathrm{y1}-\mathrm{y2})^2$ +$(\mathrm{z1}-\mathrm{z2})^2$], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan. If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary
   c) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg
5. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB 447498 D01v05r01 based on the formula below.
   a) [(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] • [$\sqrt{f}$ (GHz)/x] W/kg for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
   b) When the minimum test separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.
   c) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.
   d) If the test separation distance (antenna-user) is < 5mm, 5mm is used for excluded SAR calculation.

Bluetooth			
Tune-up Maximum Power(dBm)	Exposure Position	Head	Body Worn
	Test separation (mm)	0	10
5	Estimated SAR (W/Kg)	0.133	0.066

10.1 Head SAR Simultaneous Transmission Analysis

WWAN + WLAN 2.4GHz

Test Position	WWAN		WLAN 2.4GHz	Summed SAR (W/kg)	SPLSR ≤ 0.04
	Band	1g SAR (W/kg)	1g SAR (W/kg)		
Right Cheek	GSM850	0.32	0.202	0.522	
	GSM1900	0.269	0.202	0.471	
	WCDMA Band V	0.115	0.202	0.317	
	WCDMA Band IV	0.523	0.202	0.725	
	WCDMA Band II	0.773	0.202	**0.975**	
Right Tilted	GSM850	0.32	0.110	0.43	
	GSM1900	0.056	0.110	0.166	
	WCDMA Band V	0.10	0.110	0.21	
	WCDMA Band IV	0.106	0.110	0.216	
	WCDMA Band II	0.205	0.110	0.315	
Left Cheek	GSM850	0.13	0.146	0.276	
	GSM1900	0.319	0.146	0.465	
	WCDMA Band V	0.122	0.146	0.268	
	WCDMA Band IV	0.129	0.146	0.275	
	WCDMA Band II	0.607	0.146	0.753	
Left Tilted	GSM850	0.10	0.169	0.269	
	GSM1900	0.072	0.169	0.241	
	WCDMA Band V	0.10	0.169	0.269	
	WCDMA Band IV	0.104	0.169	0.273	
	WCDMA Band II	0.234	0.169	0.403	

WWAN + Bluetooth

Test Position	WWAN		Bluetooth	Summed SAR (W/kg)	SPLSR ≤ 0.04
	Band	1g SAR (W/kg)	1g SAR (W/kg)		
Right Cheek	GSM850	0.32	0.133	0.453	
	GSM1900	0.269	0.133	0.402	
	WCDMA Band V	0.115	0.133	0.248	
	WCDMA Band IV	0.523	0.133	0.656	
	WCDMA Band II	0.773	0.133	**0.906**	
Right Tilted	GSM850	0.32	0.133	0.453	
	GSM1900	0.056	0.133	0.189	
	WCDMA Band V	0.10	0.133	0.233	
	WCDMA Band IV	0.106	0.133	0.239	
	WCDMA Band II	0.205	0.133	0.338	
Left Cheek	GSM850	0.13	0.133	0.263	
	GSM1900	0.319	0.133	0.452	
	WCDMA Band V	0.122	0.133	0.255	
	WCDMA Band IV	0.129	0.133	0.262	
	WCDMA Band II	0.607	0.133	0.74	
Left Tilted	GSM850	0.10	0.133	0.233	
	GSM1900	0.072	0.133	0.205	
	WCDMA Band V	0.10	0.133	0.233	
	WCDMA Band IV	0.104	0.133	0.237	
	WCDMA Band II	0.234	0.133	0.367	

10.2 Body Worn SAR Simultaneous Transmission Analysis

WWAN + WLAN 2.4GHz

Test Position	WWAN		WLAN 2.4GHz	Summed SAR (W/kg)	SPLSR ≤ 0.04
	Band	1g SAR (W/kg)	1g SAR (W/kg)		
Front	GSM850	0.192	0.123	0.315	
	GSM1900	0.480	0.123	0.603	
	GPRS850	0.111	0.123	0.234	
	GPRS1900	0.558	0.123	0.681	
	WCDMA Band V	0.146	0.123	0.269	
	WCDMA Band IV	0.789	0.123	0.912	
	WCDMA Band II	0.515	0.123	0.638	
Back	GSM850	0.386	0.473	0.859	
	GSM1900	0.648	0.473	1.121	
	GPRS850	0.108	0.473	0.581	
	GPRS1900	0.655	0.473	1.128	
	WCDMA Band V	0.311	0.473	0.784	
	WCDMA Band IV	0.523	0.473	0.996	
	WCDMA Band II	0.599	0.473	1.072	
Left Side	GSM850	0.336	0.676	1.012	
	GSM1900	0.439	0.676	1.115	
	GPRS850	0.221	0.676	0.897	
	GPRS1900	0.301	0.676	0.977	
	WCDMA Band V	0.307	0.676	0.983	
	WCDMA Band IV	0.333	0.676	1.009	
	WCDMA Band II	0.596	0.676	**1.272**	
Right Side	GSM850	0.192		0.192	
	GSM1900	0.371		0.371	
	GPRS850	0.134		0.134	
	GPRS1900	0.244		0.244	
	WCDMA Band V	0.186		0.186	
	WCDMA Band IV	0.227		0.227	
	WCDMA Band II	0.562		0.562	
Bottom Side	GSM850	1.195		1.195	
	GSM1900	0.569		0.569	
	GPRS850	0.140		0.140	
	GPRS1900	0.135		0.135	
	WCDMA Band V	0.963		0.963	
	WCDMA Band IV	0.732		0.732	
	WCDMA Band II	0.577		0.577	

WWAN + Bluetooth

Test Position	WWAN		Bluetooth	Summed SAR (W/kg)	SPLSR ≤ 0.04
	Band	1g SAR (W/kg)	1g SAR (W/kg)		
Front	GSM850	0.192	0.066	0.258	
	GSM1900	0.480	0.066	0.546	
	GPRS850	0.111	0.066	0.177	
	GPRS1900	0.558	0.066	0.624	
	WCDMA Band V	0.146	0.066	0.212	
	WCDMA Band IV	0.789	0.066	0.855	
	WCDMA Band II	0.515	0.066	0.581	
Back	GSM850	0.386	0.066	0.452	
	GSM1900	0.648	0.066	0.714	
	GPRS850	0.108	0.066	0.174	
	GPRS1900	0.655	0.066	0.721	
	WCDMA Band V	0.311	0.066	0.377	
	WCDMA Band IV	0.523	0.066	0.589	
	WCDMA Band II	0.599	0.066	0.665	
Left Side	GSM850	0.336	0.066	0.402	
	GSM1900	0.439	0.066	0.505	
	GPRS850	0.221	0.066	0.287	
	GPRS1900	0.301	0.066	0.367	
	WCDMA Band V	0.307	0.066	0.373	
	WCDMA Band IV	0.333	0.066	0.399	
	WCDMA Band II	0.596	0.066	0.662	
Right Side	GSM850	0.192		0.192	
	GSM1900	0.371		0.371	
	GPRS850	0.134		0.134	
	GPRS1900	0.244		0.244	
	WCDMA Band V	0.186		0.186	
	WCDMA Band IV	0.227		0.227	
	WCDMA Band II	0.562		0.562	
Bottom Side	GSM850	1.195		1.195	
	GSM1900	0.569		0.569	
	GPRS850	0.140		0.140	
	GPRS1900	0.135		0.135	
	WCDMA Band V	0.963		**0.963**	
	WCDMA Band IV	0.732		0.732	
	WCDMA Band II	0.577		0.577	

We can get that the maximum scalar SAR summation value is 1.272W/Kg according to the analysis from above data, it less than 1.6W/Kg, so simultaneous transmission SAR is compliant per KDB 447498 D01v05r01.

11 Measurement Uncertainty

Table 23:Measurement Uncertainty according to IEEE 1528

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	－Probe Calibration	B	6	N	1	1	3.5	∞
2	－Axial isotropy	B	4.7	R	1.732	1	2.7	∞
3	－Hemispherical Isotropy	B	9.4	R	1.732	1	5.4	∞
4	－Boundary Effect	B	11.0	R	1.732	1	6.4	∞
5	－Linearity	B	4.7	R	1.732	1	2.7	∞
6	－System Detection Limits	B	1.0	R	1.732	1	0.6	∞
7	－Readout Electronics	B	1.0	N	1	1	1.00	∞
8	－Response Time	B	0.00	R	1.732	1	0.00	∞
9	－Integration Time	B	0.00	R	1.732	1	0.00	∞
10	－RF Ambient Conditions	B	3.0	R	1.732	1	1.73	∞
11	－Probe Position Mechanical tolerance	B	0.4	R	1.732	1	0.2	∞
12	－Probe Position with respect to Phantom Shell	B	2.9	R	1.732	1	1.7	∞
13	－Extrapolation, Interpolation and Integration Algorithms for Max. SAR evaluation	B	3.9	R	1.732	1	2.3	∞

	Uncertainties of the DUT							
14	－Position of the DUT	A	4.8	N	1	1	4.8	5
15	－Holder of the DUT	A	7.1	N	1	1	7.1	5
16	－Output Power Variation –SAR drift measurement	B	5.0	R	1.732	1	2.9	∞
	Phantom and Tissue Parameters							
17	－Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	1.732	1	0.6	∞
18	－Liquid Conductivity Target –tolerance	B	5.0	R	1.732	0.6	1.7	∞
19	－Liquid Conductivity –measurement Uncertainty)	B	0.23	N	1	1	0.23	9
20	－Liquid Permittivity Target tolerance	B	5.0	R	1.732	0.6	1.7	∞
21	－Liquid Permittivity –measurement uncertainty	B	0.46	N	1	1	0.46	∞
Combined Standard Uncertainty				RSS			12.92	35.15
Expanded uncertainty (Confidence interval of 95 %)				K=2			25.84	

Table 24:Measurement Uncertainty for Body Worn Test according to IEC 62209-2

No.	Uncertainty Component	Type	Uncertainty Value (%)	Probability Distribution	k	ci	Standard Uncertainty (%) ui(%)	Degree of freedom Veff or vi
	Measurement System							
1	－Probe Calibration	B	6	N	1	1	3.5	∞
2	－Isotropy	B	14.1	R	1.732	1	4.1	∞
3	－Hemispherical Isotropy	B	9.4	R	1.732	1	5.4	∞
4	－Boundary Effect	B	11.0	R	1.732	1	6.4	∞
5	－Linearity	B	4.7	R	1.732	1	2.7	∞
6	－System Detection Limits	B	1.0	R	1.732	1	0.6	∞
7	－Readout Electronics	B	1.0	N	1	1	1.00	∞
8	－Response Time	B	0.00	R	1.732	1	0.00	∞
9	－Integration Time	B	0.00	R	1.732	1	0.00	∞
10	－RF Ambient Conditions	B	3.0	R	1.732	1	1.73	∞
11	－Probe Position Mechanical tolerance	B	0.4	R	1.732	1	0.2	∞
12	－Probe Position with respect to Phantom Shell	B	2.9	R	1.732	1	1.7	∞
13	－Post-processing	B	5.0	R	1.732	1	2.9	∞
14	－Probe modulation response	B	0.4	R	1.732	1	0.2	∞

	Uncertainties of the DUT							
15	－Position of the DUT	A	4.8	N	1	1	4.8	5
16	－Holder of the DUT	A	7.1	N	1	1	7.1	5
17	－Power Scaling	B	1.0	R	1.732	1	0.6	∞
18	－Output Power Variation –SAR drift measurement	B	5.0	R	1.732	1	2.9	∞
	Phantom and Tissue Parameters							
19	－Phantom Uncertainty(shape and thickness tolerances)	B	1.0	R	1.732	1	0.6	∞
20	－Liquid Conductivity Target –tolerance	B	5.0	R	1.732	0.6	1.7	∞
21	－Liquid Conductivity –measurement Uncertainty)	B	0.23	N	1	1	0.23	9
22	－Liquid Permittivity Target tolerance	B	5.0	R	1.732	0.6	1.7	∞
23	－Liquid Permittivity –measurement uncertainty	B	0.46	N	1	1	0.46	∞
24	－liquid temperature uncertainty	B	1	N	1	1	1	∞
Combined Standard Uncertainty				RSS			13.12	44.15
Expanded uncertainty (Confidence interval of 95 %)				K=2			26.24	

11 MAIN TEST INSTRUMENTS

No	EQUIPMENT	TYPE	Series No.	Due Date
1	System Simulator	E5515C	GB 47200710	2014-02-23
2	SAR Probe	SATIMO	SN_0913_EP169	2014/04/05
3	Dipole	SID835	SN_0913_DIP0G900-217	2014/04/05
4	Dipole	SID1800	SN_0913_DIP1G800-216	2014/04/05
4	Dipole	SID1900	SN_0913_DIP1G900-218	2014/04/05
5	Dipole	SID2450	SN_0913_DIP2G450-220	2014/04/05
6	Vector Network Analyzer	ZVB8	1145.1010.08	2014/06/13
7	Amplifier	Nucletudes	143060	2014/04/05
8	Power Meter	NRVS	1020.1809.02	2014/06/13
9	Multimeter	Keithley-2000	4014020	2014/04/05

ANNEX C

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-05214

Coolpad Flo

Type Name: Coolpad 7560T

Hardware Version： P2

Software Version： 4.1.009.P2.130819.7560T

System Performance Check Data

This Annex consists of 2 pages

Date of Report：2013-09-04

System Performance Check (Head, 835MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/28/2013

Measurement duration: 12 minutes 57 seconds

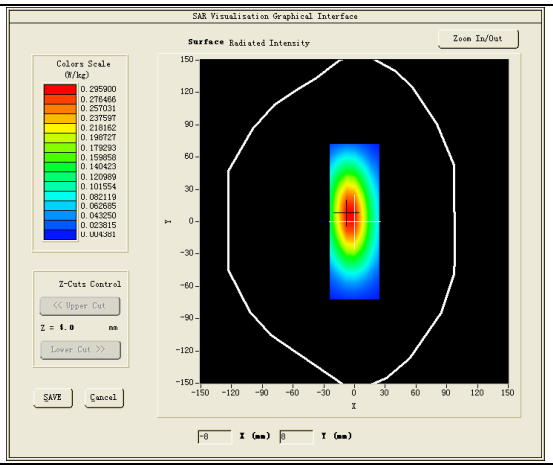
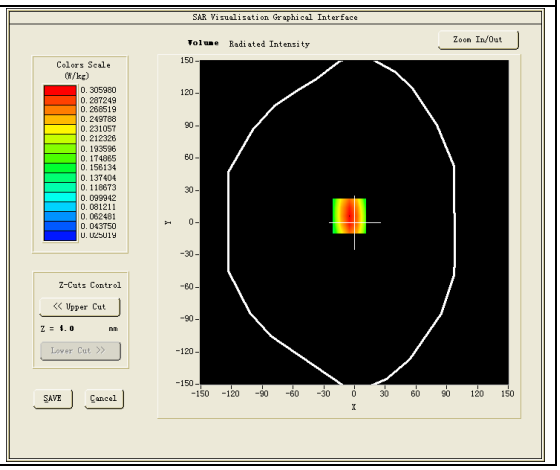
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	41.28
Relative permittivity	15.07
Conductivity (S/m)	0.94
Power drift (%)	-0.160000
Crest factor:	1:1

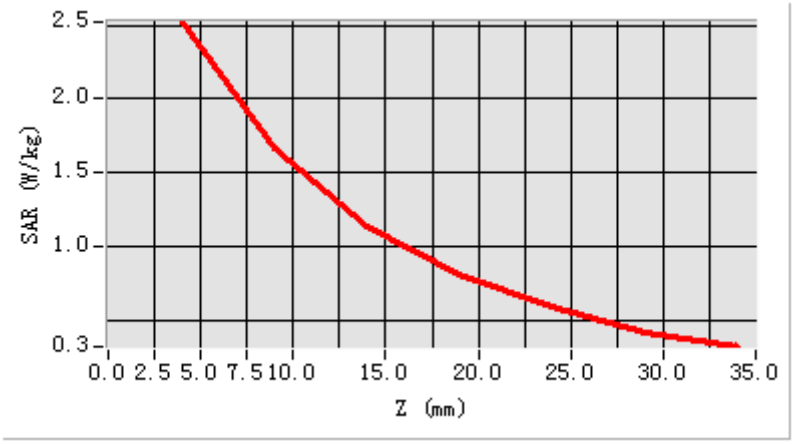
SURFACE SAR	VOLUME SAR
	

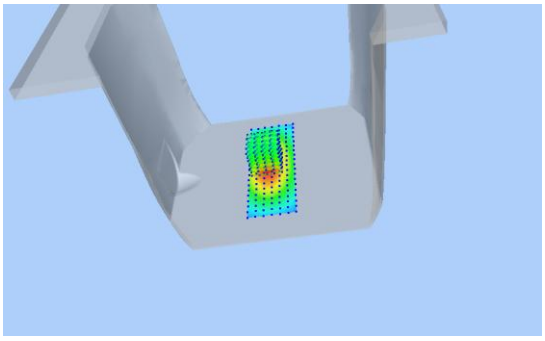
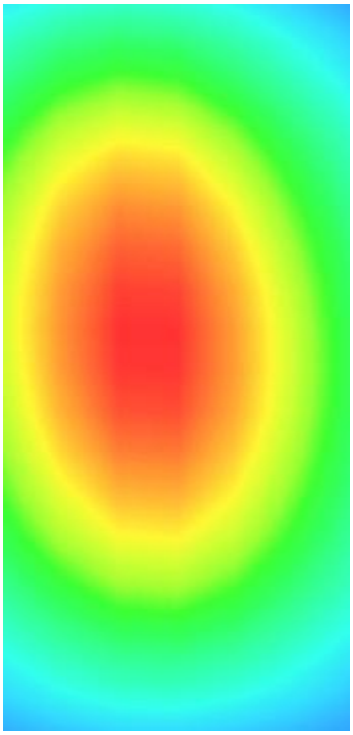
Maximum location: X=-5.00, Y=6.00

SAR 10g (W/Kg)	1.801556
SAR 1g (W/Kg)	2.469344

Z Axis Scan

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



3D sceen shot	Hot spot position
	

System Performance Check (Head, 1750MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/28/2013

Measurement duration: 15 minutes 36 seconds

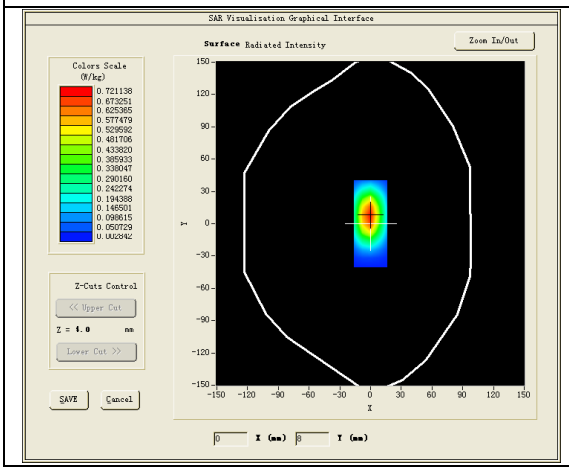
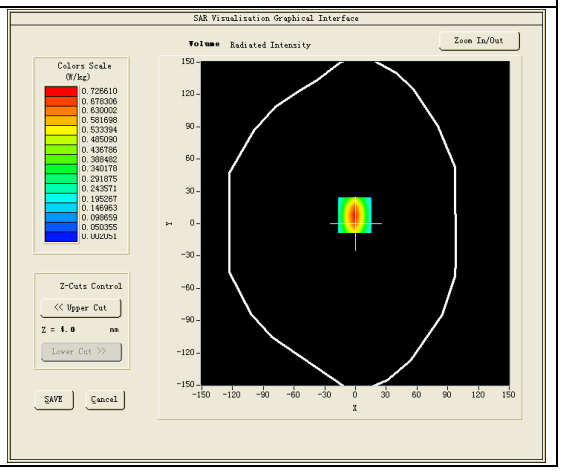
A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Flat Plane
Device Position	Dipole
Band	1750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1750.000000
Relative permittivity (real part)	40.08
Relative permittivity	15.06
Conductivity (S/m)	1.39
Power drift (%)	0.060000
Crest factor:	1:1

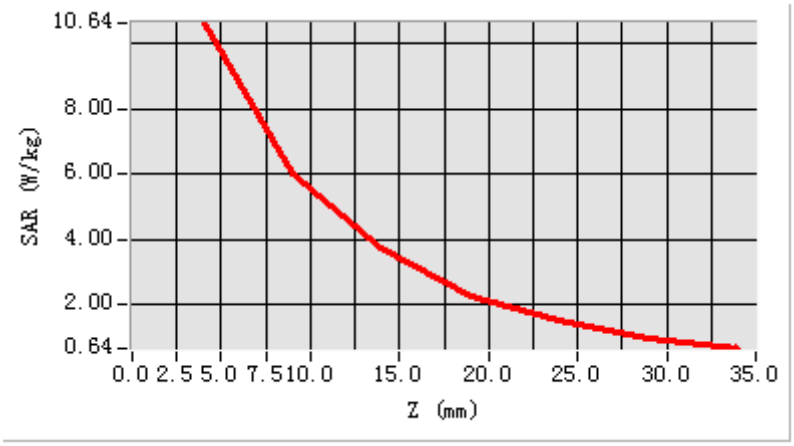
SURFACE SAR	VOLUME SAR
	

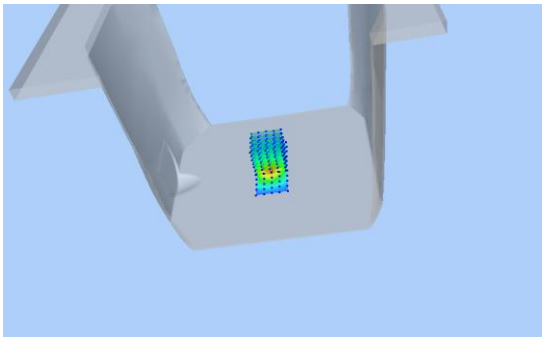
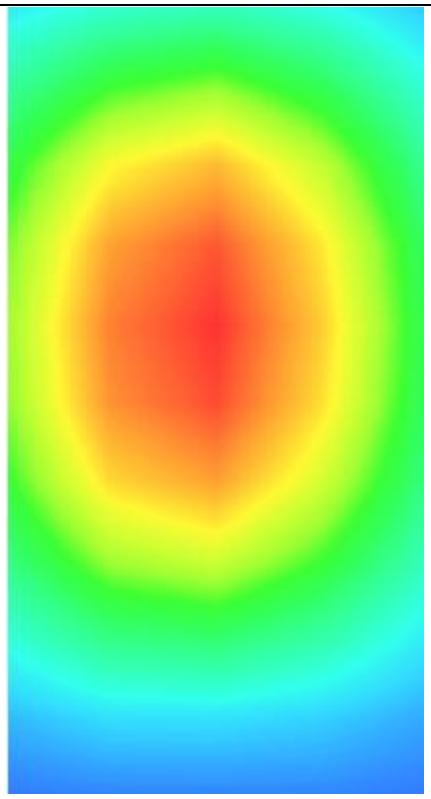
Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.080211
SAR 1g (W/Kg)	9.280692

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	10.6423	6.0038	3.7291	2.2612	1.5113	0.9788



3D sceen shot	Hot spot position
	

System Performance Check (Head, 1900MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/28/2013

Measurement duration: 14 minutes 51 seconds

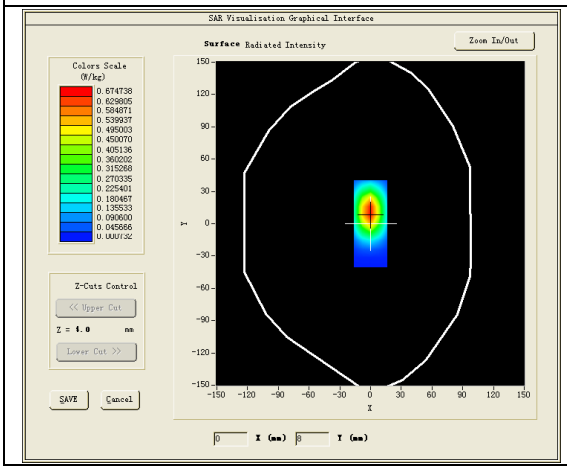
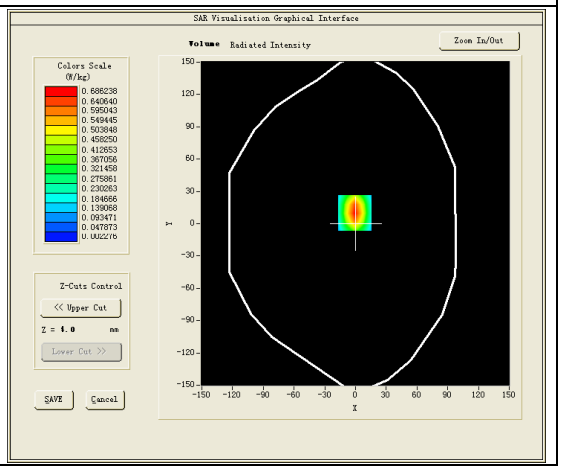
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	39.88
Relative permittivity	15.07
Conductivity (S/m)	1.42
Power drift (%)	-0.420000
Crest factor:	1:1

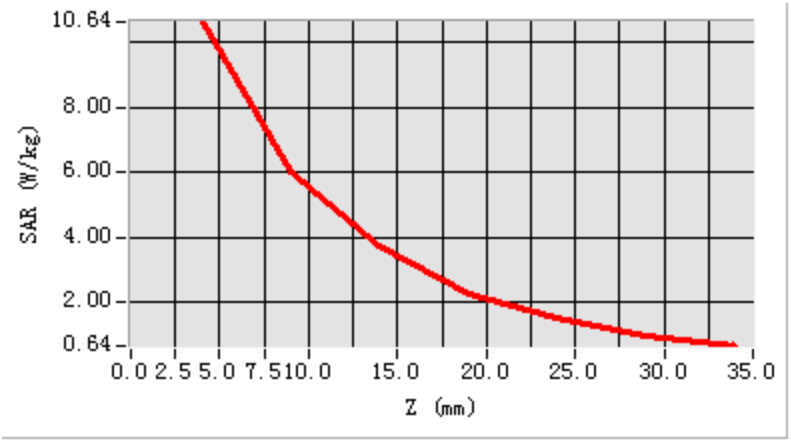
SURFACE SAR	VOLUME SAR
	

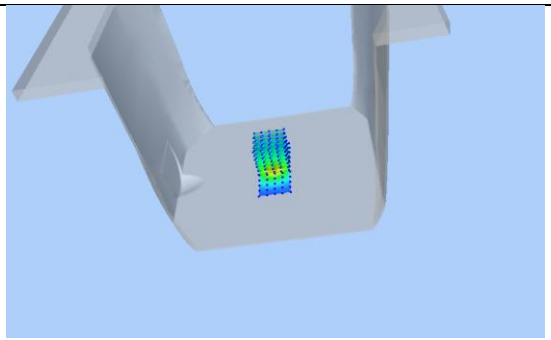
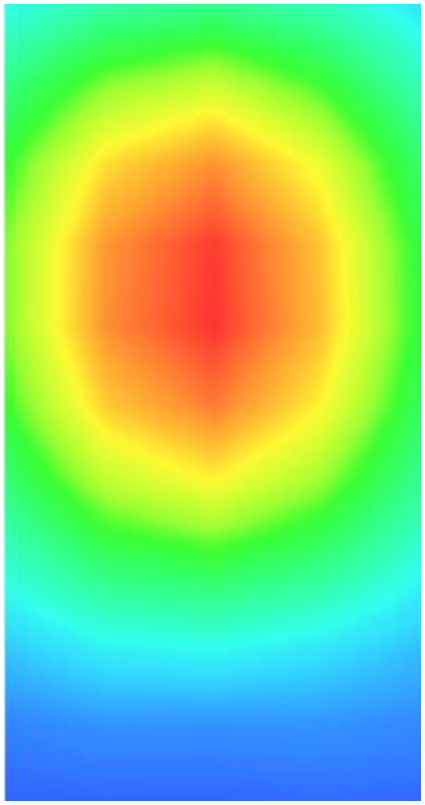
Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.156024
SAR 1g (W/Kg)	9.789668

Z Axis Scan

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



3D sceen shot	Hot spot position
	

System Performance Check (Head, 2450MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/28/2013

Measurement duration: 15 minutes 24 seconds

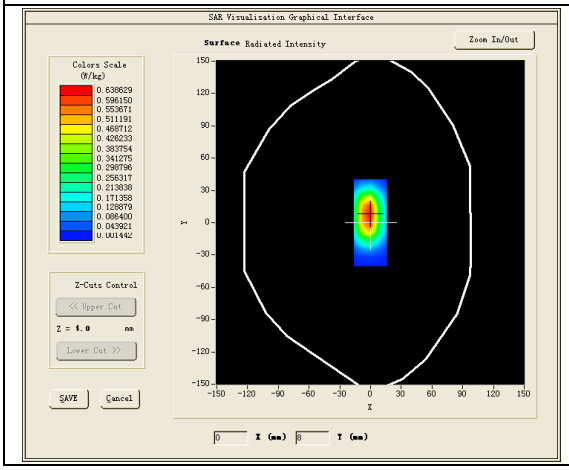
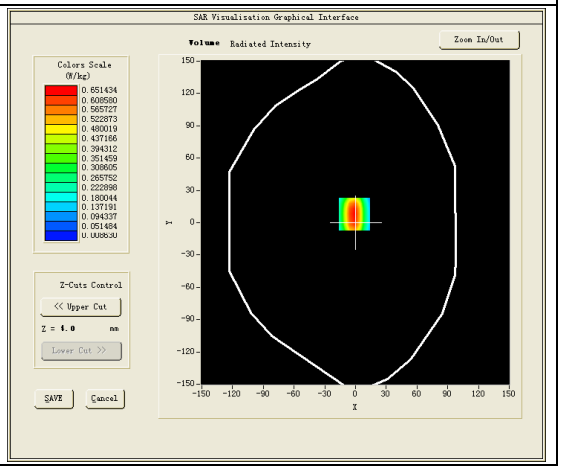
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

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

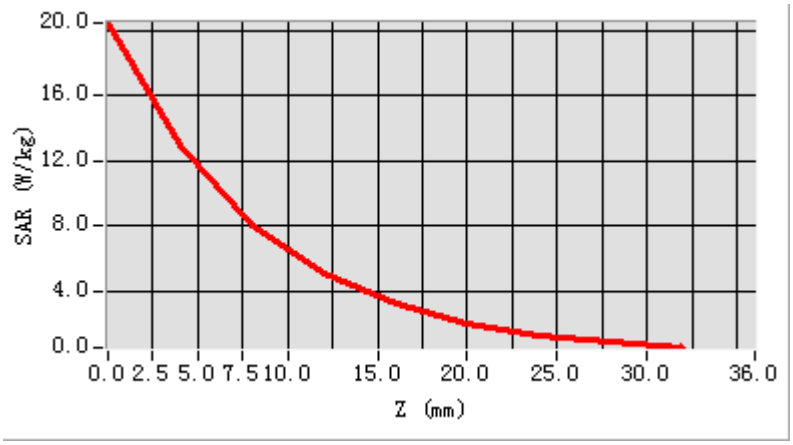
SURFACE SAR	VOLUME SAR
	

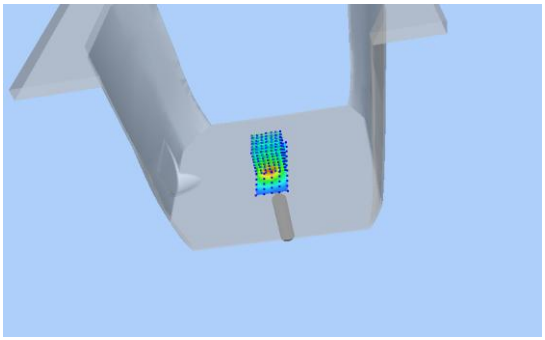
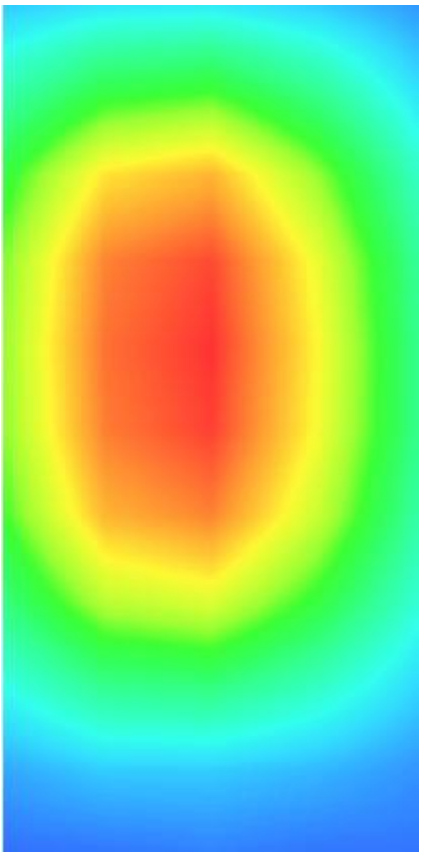
Maximum location: X=0.00, Y=8.00

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

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	20.3890	13.160218	3.8625	0. 8019	0.2333



3D sceen shot	Hot spot position
	

System Performance Check (Body, 835MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/29/2013

Measurement duration: 13 minutes 12 seconds

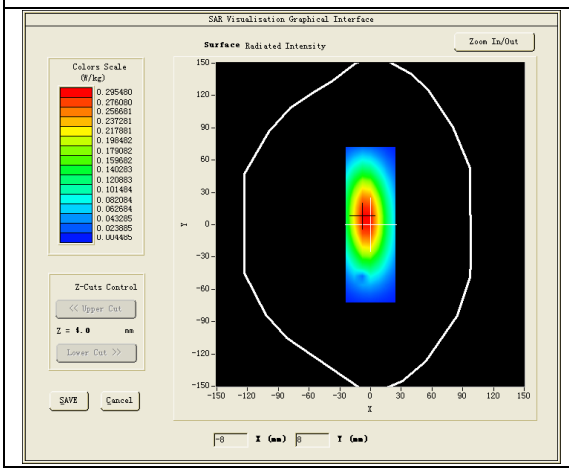
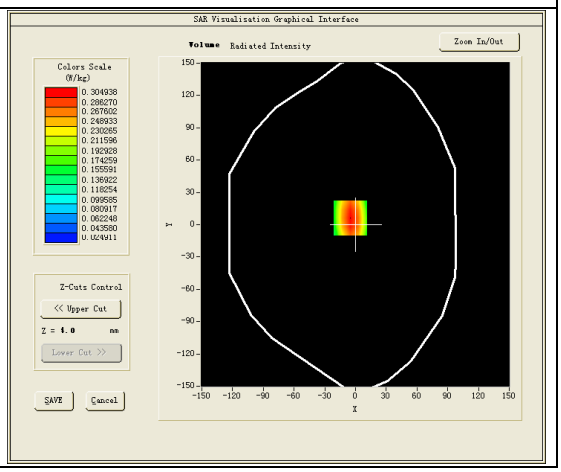
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	835.000000
Relative permittivity (real part)	55.38
Relative permittivity	21.72
Conductivity (S/m)	0.99
Power drift (%)	0.120000
Crest factor:	1:1

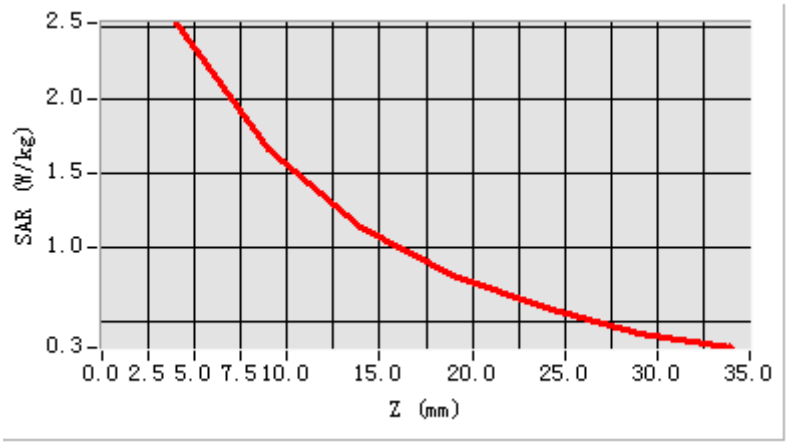
SURFACE SAR	VOLUME SAR
	

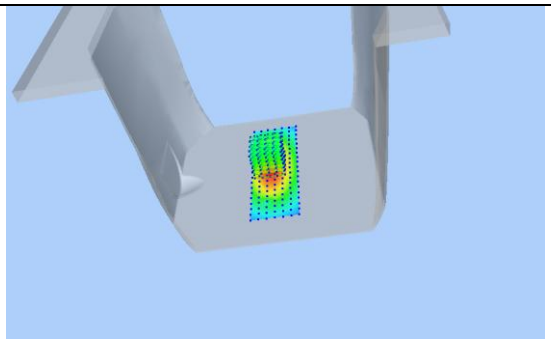
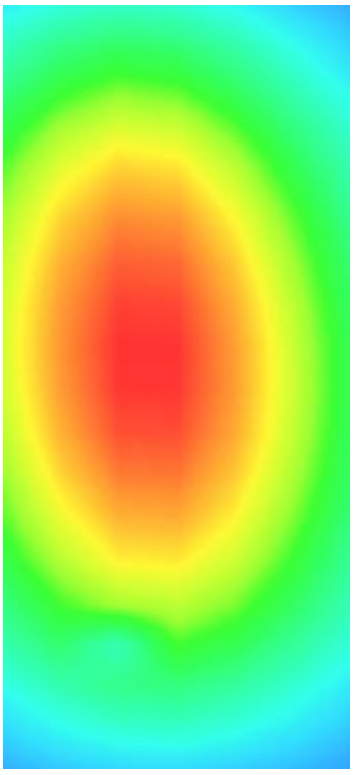
Maximum location: X=-8.00, Y=8.00

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

Z Axis Scan

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



3D sceen shot	Hot spot position
	

System Performance Check (Body, 1750MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/29/2013

Measurement duration: 13 minutes 46 seconds

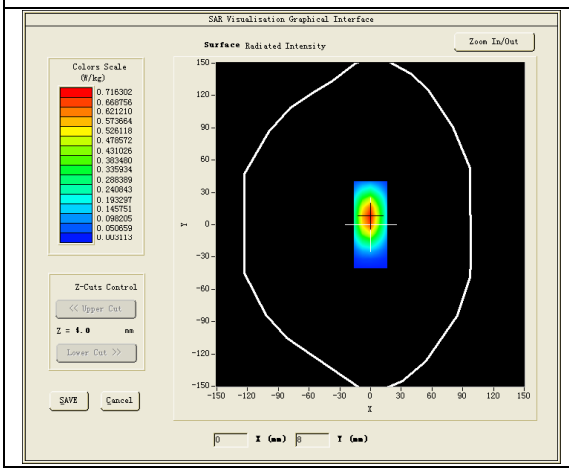
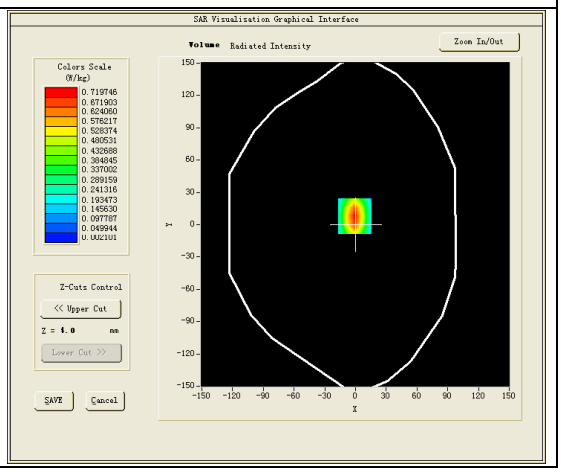
A. Experimental conditions.

Phantom File	surf_sam_plan.txt
Phantom	Flat Plane
Device Position	Dipole
Band	1750MHz
Channels	
Signal	CW

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1750.000000
Relative permittivity (real part)	53.76
Relative permittivity	14.07
Conductivity (S/m)	1.51
Power drift (%)	-0.330000
Crest factor:	1:1

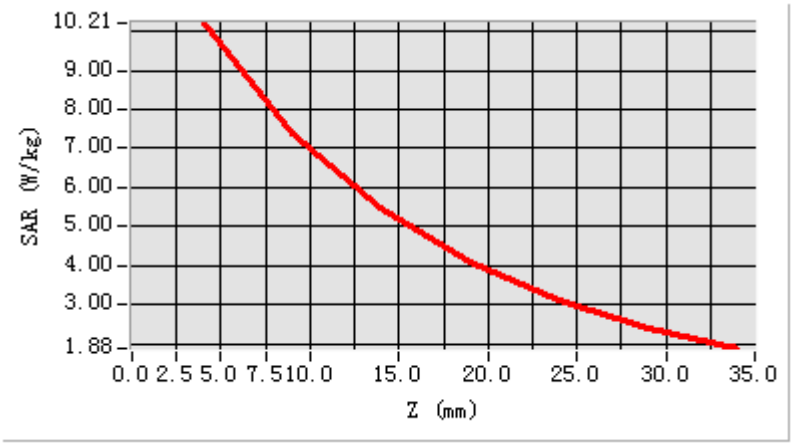
SURFACE SAR	**VOLUME SAR**
	

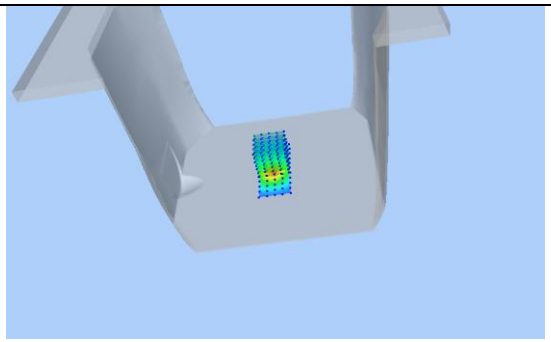
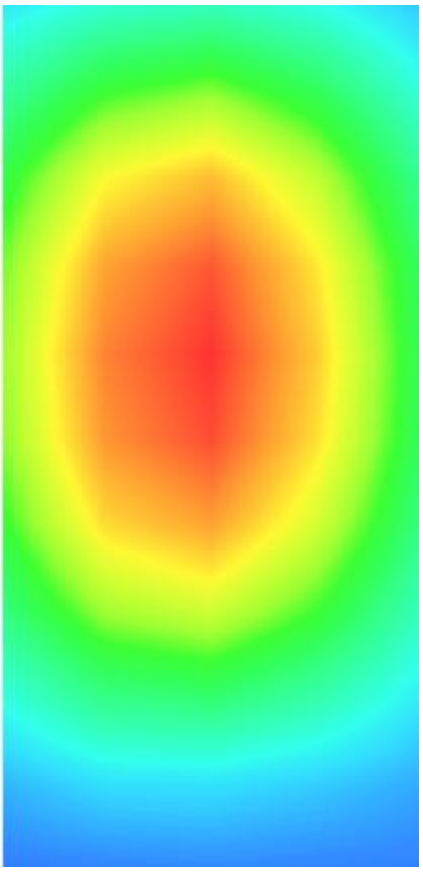
Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.012642
SAR 1g (W/Kg)	9.280122

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00	24.00	29.00
SAR (W/Kg)	0.0000	9.2801	7.3996	5.4654	4.1101	3.1286	2.4128



3D sceen shot	Hot spot position
	

System Performance Check (Body, 1900MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/29/2013

Measurement duration: 14 minutes 12 seconds

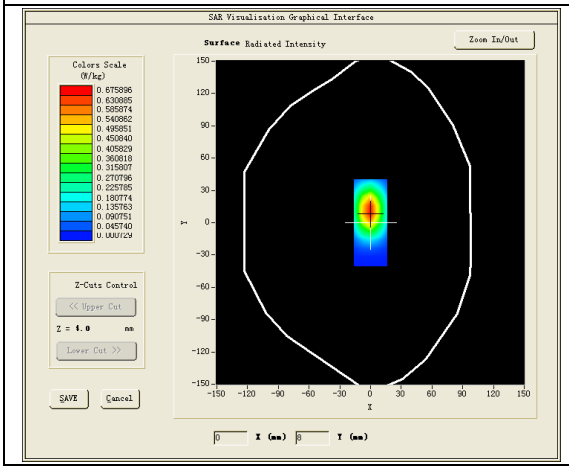
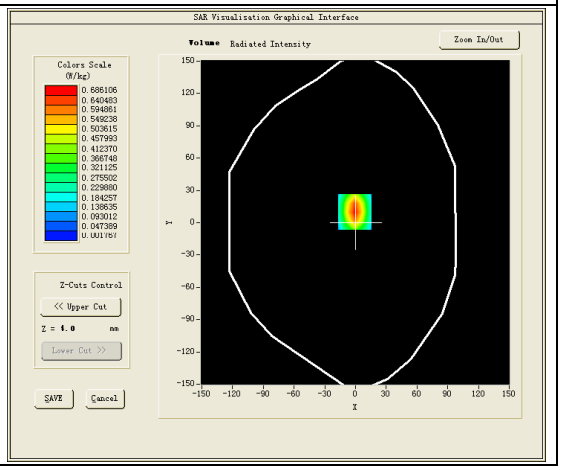
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	1900.000000
Relative permittivity (real part)	53.67
Relative permittivity	13.02
Conductivity (S/m)	1.51
Power Drift (%)	0.220000
Crest factor:	1:1

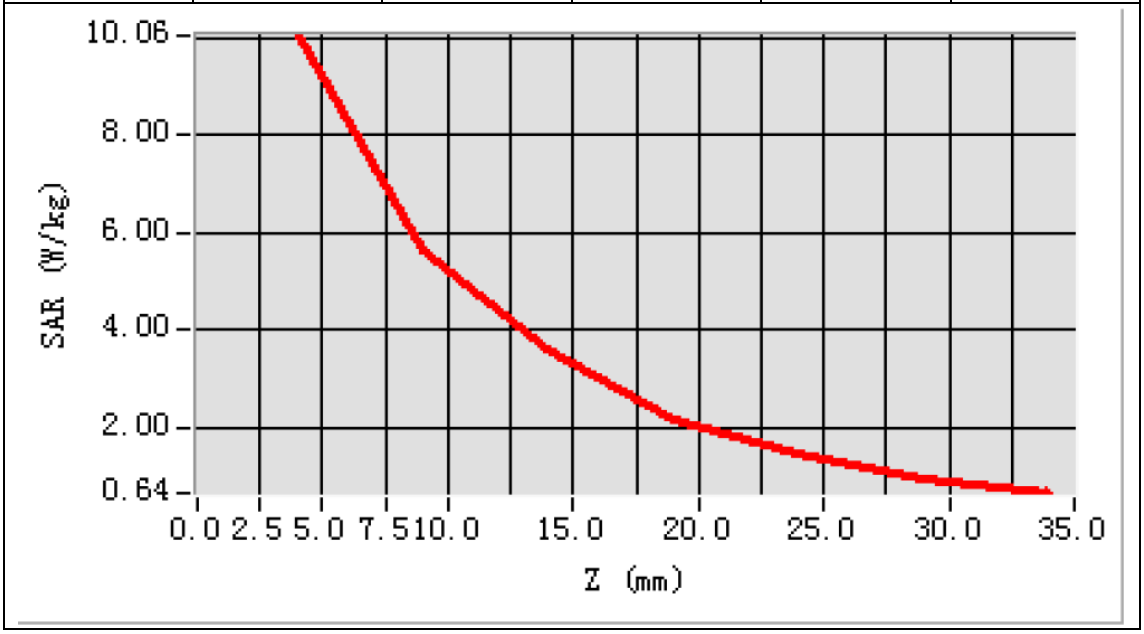
SURFACE SAR	**VOLUME SAR**
	

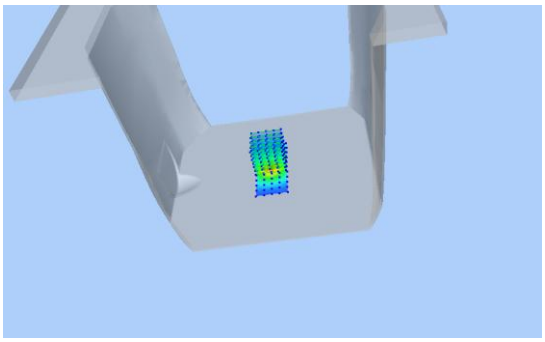
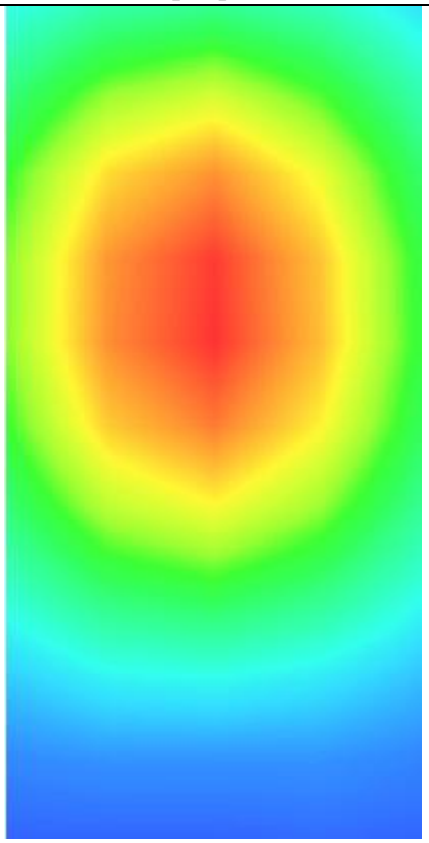
Maximum location: X=0.00, Y=8.00

SAR 10g (W/Kg)	5.201543
SAR 1g (W/Kg)	9.986241

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	10.0613	5.7282	3. 6529	2.0314



3D sceen shot	Hot spot position
	

System Performance Check (Body, 2450MHz)

Type: Phone measurement (Complete)

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

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

Date of measurement: 9/2/2013

Measurement duration: 13 minutes 21 seconds

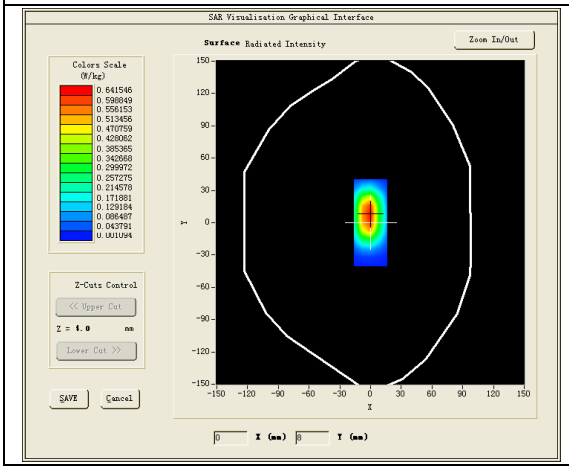
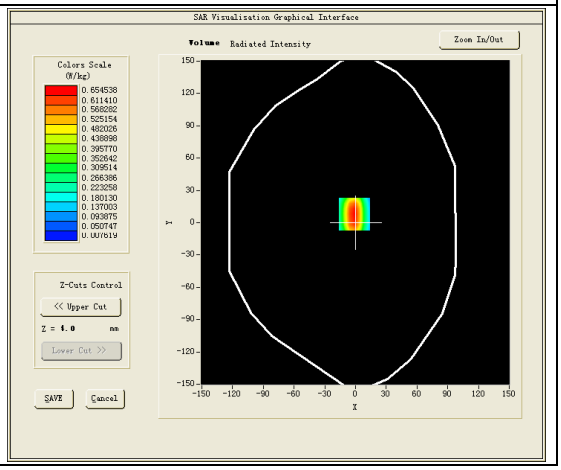
A. Experimental conditions.

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

B. SAR Measurement Results

Band SAR

Frequency (MHz)	2450.000000
Relative permittivity (real part)	52.68
Relative permittivity	13.02
Conductivity (S/m)	1.97
Power Drift (%)	-0.070000
Crest factor:	1:1

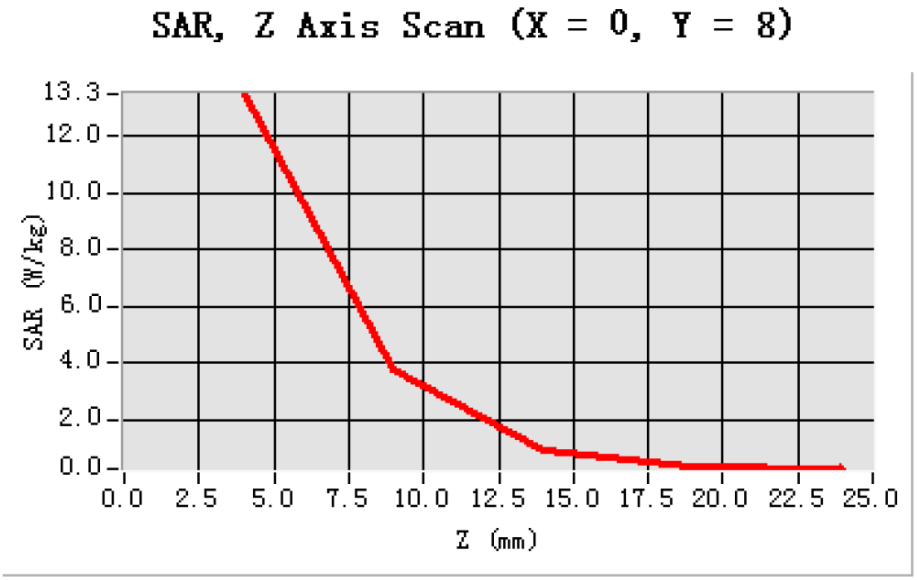
SURFACE SAR	**VOLUME SAR**
	

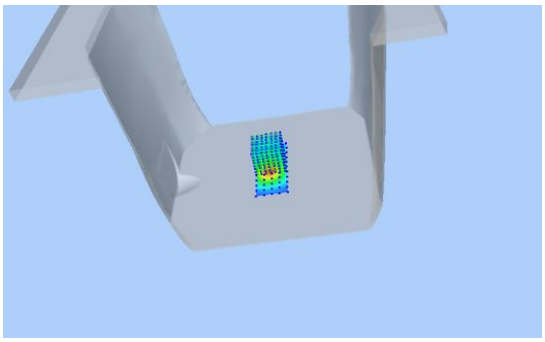
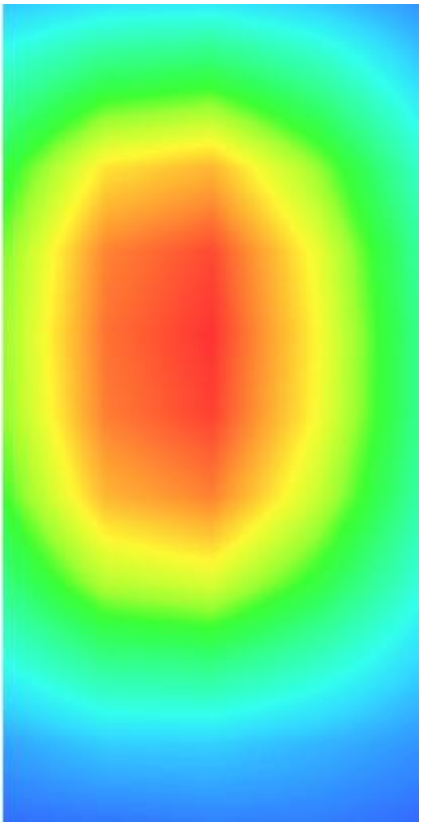
Maximum location: X=0.00, Y=8.00

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

Z Axis Scan

Z (mm)	0.00	4.00	9.00	14.00	19.00
SAR (W/Kg)	0.0000	13.3122	3.8625	0. 8019	0.2333



3D sceen shot	Hot spot position
	

ANNEX D

of

CCIC-SET

CONFORMANCE TEST REPORT FOR

HUMAN EXPOSURE TO ELECTROMAGNETIC FIELDS

SET2013-05214

Coolpad Flo

Type Name: Coolpad 7560T

Hardware Version： P2

Software Version： 4.1.009.P2.130819.7560T

Calibration Certificate of Probe and Dipoles

This Annex consists of 3 pages

Date of Report：2013-09-04

Probe Calibration Ceriticate

COMOSAR E-Field Probe Calibration Report

Ref : ACR.96.2.13.SATU.A

CCIC SOUTHERN ELECTRONIC PRODUCT TESTING (SHENZHEN) CO.,LTD

ELECTRONIC TESTING BUILDING,SHAHE ROAD, XILI. TOWN SHENZHEN,P.R.CHINA

SATIMO COMOSAR DOSIMETRIC E-FIELD PROBE

SERIAL NO.: SN 09/13 EP169

Calibrated at SATIMO US

2105 Barrett Park Dr. - Kennesaw, GA 30144

ACCREDITED
Calibration CERT #2246.02

04/05/13

Summary:

This document presents the method and results from an accredited COMOSAR Dosimetric E-Field Probe calibration performed in SATIMO USA using the CALISAR / CALIBAIR test bench, for use with a SATIMO COMOSAR system only. All calibration results are traceable to national metrology institutions.

	Name	*Function*	*Date*	*Signature*
Prepared by :	Jérôme LUC	Product Manager	4/5/2013	
Checked by :	Jérôme LUC	Product Manager	4/5/2013	
Approved by :	Kim RUTKOWSKI	Quality Manager	4/5/2013	

	Customer Name
Distribution :	Shenzhen EMC-united Co., Ltd

Issue	*Date*	*Modifications*
A	4/5/2013	Initial release

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1 DEVICE UNDER TEST

Device Under Test	
Device Type	COMOSAR DOSIMETRIC E FIELD PROBE
Manufacturer	Satimo
Model	SSE5
Serial Number	SN 09/13 EP169
Product Condition (new / used)	new
Frequency Range of Probe	0.7 GHz-3GHz
Resistance of Three Dipoles at Connector	Dipole 1: R1=0.223 MΩ Dipole 2: R2=0.233 MΩ Dipole 3: R3=0.222 MΩ

A yearly calibration interval is recommended.

2 PRODUCT DESCRIPTION

2.1 GENERAL INFORMATION

Satimo's COMOSAR E field Probes are built in accordance to the IEEE 1528, OET 65 Bulletin C and CEI/IEC 62209 standards.

Figure 1 – *Satimo COMOSAR Dosimetric E field Dipole*

Probe Length	330 mm
Length of Individual Dipoles	4.5 mm
Maximum external diameter	8 mm
Probe Tip External Diameter	5 mm
Distance between dipoles / probe extremity	2.7 mm

3 MEASUREMENT METHOD

The IEEE 1528, OET 65 Bulletin C, CENELEC EN50361 and CEI/IEC 62209 standards provide recommended practices for the probe calibrations, including the performance characteristics of interest and methods by which to assess their affect. All calibrations / measurements performed meet the fore mentioned standards.

3.1 LINEARITY

The evaluation of the linearity was done in free space using the waveguide, performing a power sweep to cover the SAR range 0.01W/kg to 100W/kg.

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3.2 SENSITIVITY

The sensitivity factors of the three dipoles were determined using a two step calibration method (air and tissue simulating liquid) using waveguides as outlined in the standards.

3.3 LOWER DETECTION LIMIT

The lower detection limit was assessed using the same measurement set up as used for the linearity measurement. The required lower detection limit is 10 mW/kg.

3.4 ISOTROPY

The axial isotropy was evaluated by exposing the probe to a reference wave from a standard dipole with the dipole mounted under the flat phantom in the test configuration suggested for system validations and checks. The probe was rotated along its main axis from 0 - 360 degrees in 15 degree steps. The hemispherical isotropy is determined by inserting the probe in a thin plastic box filled with tissue-equivalent liquid, with the plastic box illuminated with the fields from a half wave dipole. The dipole is rotated about its axis (0°–180°) in 15° increments. At each step the probe is rotated about its axis (0°–360°).

3.5 BOUNDARY EFFECT

The boundary effect is defined as the deviation between the SAR measured data and the expected exponential decay in the liquid when the probe is oriented normal to the interface. To evaluate this effect, the liquid filled flat phantom is exposed to fields from either a reference dipole or waveguide. With the probe normal to the phantom surface, the peak spatial average SAR is measured and compared to the analytical value at the surface.

4 MEASUREMENT UNCERTAINTY

The guidelines outlined in the IEEE 1528, OET 65 Bulletin C, CENELEC EN50361 and CEI/IEC 62209 standards were followed to generate the measurement uncertainty associated with an E-field probe calibration using the waveguide technique. All uncertainties listed below represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2, traceable to the Internationally Accepted Guides to Measurement Uncertainty.

Uncertainty analysis of the probe calibration in waveguide

ERROR SOURCES	Uncertainty value (%)	Probability Distribution	Divisor	ci	Standard Uncertainty (%)
Incident or forward power	3.00%	Rectangular	$\sqrt{3}$	1	1.732%
Reflected power	3.00%	Rectangular	$\sqrt{3}$	1	1.732%
Liquid conductivity	5.00%	Rectangular	$\sqrt{3}$	1	2.887%
Liquid permittivity	4.00%	Rectangular	$\sqrt{3}$	1	2.309%
Field homogeneity	3.00%	Rectangular	$\sqrt{3}$	1	1.732%
Field probe positioning	5.00%	Rectangular	$\sqrt{3}$	1	2.887%
Field probe linearity	3.00%	Rectangular	$\sqrt{3}$	1	1.732%

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Combined standard uncertainty					5.831%
Expanded uncertainty 95 % confidence level k = 2					12%

5 CALIBRATION MEASUREMENT RESULTS

Calibration Parameters	
Liquid Temperature	21 °C
Lab Temperature	21 °C
Lab Humidity	45 %

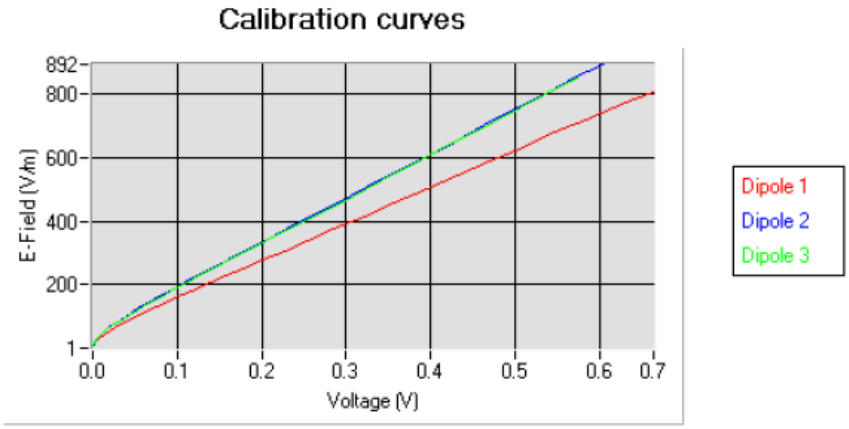
5.1 SENSITIVITY IN AIR

Normx dipole 1 (μV/(V/m)^2)	Normy dipole 2 (μV/(V/m)^2)	Normz dipole 3 (μV/(V/m)^2)
7.21	6.08	5.72

DCP dipole 1 (mV)	DCP dipole 2 (mV)	DCP dipole 3 (mV)
93	93	90

Calibration curves ei=f(V) (i=1,2,3) allow to obtain H-field value using the formula:

$$E = \sqrt{E_1^2 + E_2^2 + E_3^2}$$



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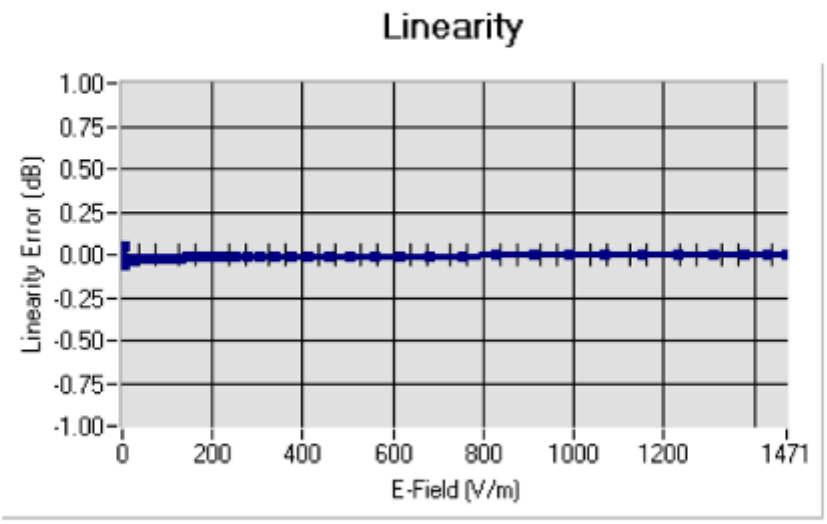
5.2 LINEARITY



Linearity: +/-1.42% (+/-0.06dB)

5.3 SENSITIVITY IN LIQUID

Liquid	Frequency (MHz +/- 100MHz)	Permittivity	Epsilon (S/m)	ConvF
HL850	835	42.56	0.88	5.52
BL850	835	55.26	0.96	5.67
HL900	900	41.79	0.96	5.19
BL900	900	55.98	1.04	5.32
HL1800	1750	40.17	1.38	4.79
BL1800	1750	52.05	1.48	4.95
HL1900	1880	39.80	1.43	5.48
BL1900	1880	52.55	1.50	5.64
HL2000	1950	38.93	1.44	4.82
BL2000	1950	53.12	1.51	5.01
HL2450	2450	38.64	1.82	4.80
BL2450	2450	52.02	1.94	4.90

LOWER DETECTION LIMIT: 9mW/kg

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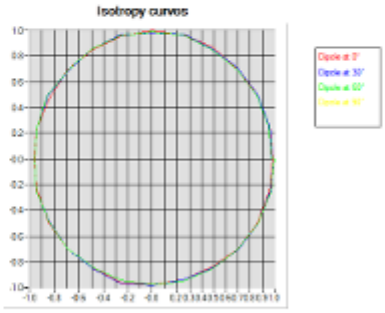
5.4 ISOTROPY

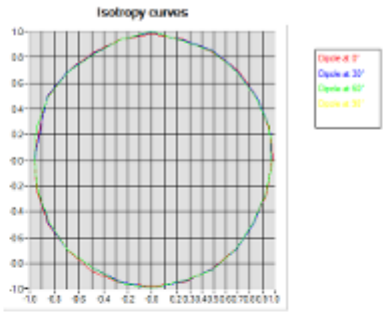
HL900 MHz

- Axial isotropy: 0.04 dB
- Hemispherical isotropy: 0.05 dB



HL1800 MHz

- Axial isotropy: 0.05 dB
- Hemispherical isotropy: 0.07 dB



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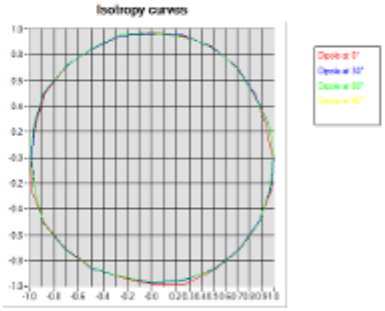
HL2450 MHz

- Axial isotropy: 0.06 dB
- Hemispherical isotropy: 0.09 dB



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