SAR Test Report

Product Name	:	WCDMA mobile phone
Model No.	:	C8666GP、Keon、GP-002(fx)
FCC ID	:	T38C8666GP

Prepared By:	:	Inventec Appliances(Pudong) Corporation
Address:	:	No.789 Pu Xing Road,Shanghai,PRC
Date of Receipt	:	2013.02.10
Date of Test	:	2013.03.01-2013.03.06
Report No.	:	20130210SAR-FCC

Test Report Certification

Date of Issue : Mar.06.2013

Report No. : 20130210SAR

Product Name	:	WCDMA mobile phone
Model No.	:	C8666GP、Keon、GP-002(fx)
Trade Name	:	Cellon、geeksphone
Applicant	:	Cellon Communications Technology(Shenzhen)Co., Ltd.
Address	:	13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen
Standard	:	FCC 47 CFR Part2 (2.1093) IEEE C95.1-1999 IEEE 1528-2003 FCC OET Bulletin 65 supplement C FCC KDB 648474 D01 v01r05 FCC KDB 447498 D01 v05 FCC KDB 941225 D03 v01 FCC KDB 248227 D01 v01r02

Test Result : Complied

The Test Results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of Inventec Appliances(Pudong) Corporation

Documented By : _____, Mar.06.2013
Judy Ge/Engineer

Tested By : _____, Mar.06.2013
Alice Lee/Engineer

Approved By : _____, Mar.06.2013
Jeff Huang/Director of Operations

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1. GENERAL INFORMATION

1.1. Applicant

Company Name: Cellon Communications Technology(Shenzhen)Co., Ltd.

Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen

1.2. Manufacturer

Company Name: Cellon Communications Technology(Shenzhen)Co., Ltd.

Address: 13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen

1.3. Test Environment

Ambient conditions in the laboratory:

Items	Required	Actural
Temperature(℃)	15~30	21.4
Humidity(%RH)	30~70	46

2. SAR Measurement System

2.1. ALSAS-10U System Description

ALSAS-10-U is fully compliant with the technical and scientific requirements of IEEE 1528, IEC 62209, CENELEC, ARIB, ACA, and the Federal Communications Commission. The system comprises of a six axes articulated robot which utilizes a dedicated controller. ALSAS-10U uses the latest methodologies and FDTD order to provide a platform which is repeatable with minimum uncertainty.

2.1.1. Applications

Predefined measurement procedures compliant with the guidelines of CENELEC, IEEE, IEC, FCC, etc are utilized during the assessment for the device. Automatic detection for all SAR maxima are embedded within the core architecture for the system, ensuring that peak locations used for centering the zoom scan are within a 1mm resolution and a 0.05mm repeatable position. System operation range currently is available up to 6 GHz in simulated tissue.

2.1.2. Area Scans

Area Scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a $10mm^2$ step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

2.1.3. Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the ALSAS-10U software is in the shape of a cube and the side dimension of a 1g or 10g mass is dependent on the density of the liquid representing the simulated tissue. A density of $1000Kg/m^3$ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1g cube is 10mm, with the side length of the 10g cube 21.5mm.

When the cube intersects with the surFront of the phantom, it is oriented so that 3 vertices touch the surFront of the shell or the center of a Front is tangent to the surFront.

The zoom Scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 5 ×5×8 (8mm×8mm×5mm) providing a volume of 32mm in the X & Y axis, and 35mm in the Z axis.

2.1.4. ALSAS-10U Interpolation and Extrapolation Uncertainty

The overall uncertainty for the methodology and algorithms the used during the SAR calculation was evaluated using the data from IEEE 1528 based on the example f3 algorithm:

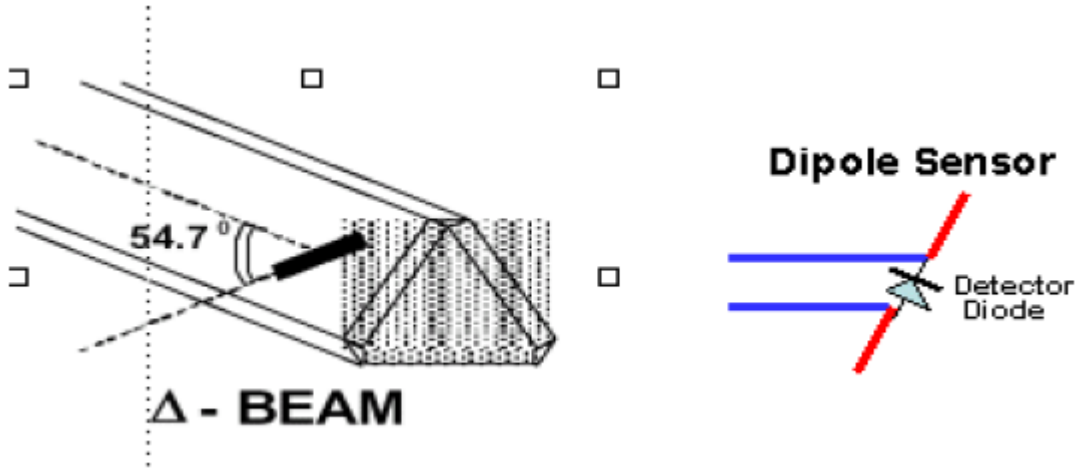
$$f_3(x, y, z) = A \frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2} \cdot \left(e^{-\frac{2z}{a}} + \frac{a^2}{2(a + 2z)^2} \right)$$

2.2. Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropic, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change. A number of methods is used for calibrating probes, and these are outlined in the table below:

Calibration Frequency	Air Calibration	Tissue Calibration
900MHz	TEM Cell	Temperature
1800MHz	TEM Cell	Temperature

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



SAR is assessed with a calibrated probe which moves at a default height of 5mm from the center of the diode, which is mounted to the sensor, to the phantom surFront (in the Z Axis). The 5mm offset height has been selected so as to minimize any resultant boundary effect due to the probe being in close proximity to the phantom surFront.

The following algorithm is an example of the function used by the system for linearization of the output from the probe when measuring complex modulation schemes.

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

2.2.1. Isotropic E-Field Probe Specification

Calibration in Air	Frequency Dependent Below 2GHz Calibration in air performed in a TEM Cell Above 2GHz Calibration in air performed in waveguide
Sensitivity	0.70 μV/(V/m)^2 to 0.85 μV/(V/m)^2
Dynamic Range	0.0005 W/kg to 100W/kg
Isotropic Response	Better than 0.2dB
Diode Compression point (DCP)	Calibration for Specific Frequency
Probe Tip Radius	< 5mm
Sensor Offset	1.56 (+/- 0.02mm)
Probe Length	290mm
Video Bandwidth	@ 500 Hz: 1dB @1.02 KHz: 3dB
Boundary Effect	Less than 2% for distance greater than 2.4mm
Spatial Resolution	Diameter less than 5mm Compliant with Standards

Probe model no: ALS-E-020, S/N:500-00273

2.3. Boundary detection Unit and Probe Mounting Device

ALSAS-10U incorporates a boundary detection unit with a sensitivity of 0.05mm for detecting all types of surFronts. The robust design allows for detecting during probe tilt (probe normalize) exercises, and utilizes a second stage emergency sTop. The signal electronics are directly into the robot controller for high accuracy surFront detection in lateral and axial detection modes (X, Y, &Z).
The probe is mounted directly onto the Boundary Detection unit for accurate tooling and displacement calculations controlled by the robot kinematics. The probe is connected to an isolated probe interconnect where the output stage of the probe is fed directly into the amplifier stage of the Daq-Paq.

2.4. Daq-Paq (Analog to Digital Electronics)

ALSAS-10U incorporates a fully calibrated Daq-Paq (analog to digital conversion system) which has a 4 channel input stage, sent via a 2 stage auto-set amplifier module. The input signal is amplified accordingly so as to offer a dynamic range from 5 μV to 800mV. Integration of the fields measured is carried out at board level utilizing a Co-Processor which then sends the measured fields down into the main computational module in digitized form via a RS232 communications port. Probe linearity and duty cycle compensation is carried out within the main Daq-Paq module.

ADC	12 Bit
Amplifier Range	20mV to 200mV and 150mV to 800mV
Field Integration	Local Co-Processor utilizing proprietary integration algorithms
Number of Input Channels	4 in total 3 dedicated and 1 spare
Communication	Packet data via RS232

2.5. Axis Articulated Robot

ALSAS-10U utilizes a six articulated robot, which is controlled using a Pentium based real-time movement controller. The movement kinematics engine utilizes proprietary (Thermo CRS) interpolation and extrapolation algorithms, which allow full freedom of movement for each of the six joints within the working envelop. Utilization of joint 6 allows for full probe rotation with a tolerance better than 0.05mm around the central axis.

Robot/Controller Manufacturer	Thermo CRS
Number of Axis	Six independently controlled axis
Positioning Repeatability	0.05mm
Controller Type	Single phase Pentium based C500C
Robot Reach	710mm
Communication	RS232 and LAN compatible

2.6. ALSAS Universal Workstation

ALSAS Universal workstation allows for repeatability and fast adaptability. It allows users to do calibration, testing and measurement using different types of phantoms with one set up, which significantly speeds up the measurement process.

2.7. Universal Device Positioner

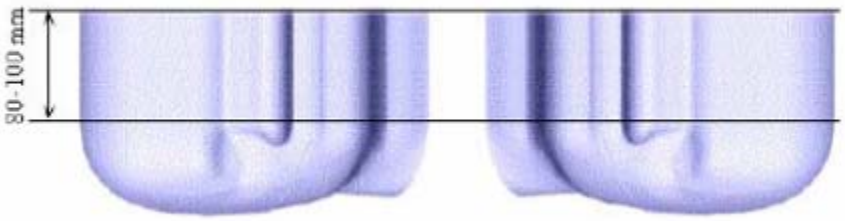
The universal device positioner allows complete freedom of movement of the EUT. Developed to hold a EUT in a free-space scenario any additional loading attributable to the material used in the construction of the positioner has been eliminated. Repeatability has been enhanced through the linear scales which form the design used to indicate positioning for any given test scenario in all major axes. A 15° tilt movements for head SAR analysis. Overall uncertainty for measurements has been reduced due to the design of the Universal device positioner, which allows positioning of a device in as near to a free-space scenario as possible, and by providing the means for complete repeatability.

2.8. Phontom Types

The ALSAS-10U allows the integration of multiple phantom types. SAM Phantoms fully compliant with IEEE 1528, Universal Phantom, and Universal Flat.

2.8.1. APREL SAM Phantoms

The SAM phantoms developed using the IEEE SAM CAD file. They are fully compliant with the requirements for both IEEE 1528 and FCC Supplement C. Both the left and right SAM phantoms are interchangeable, transparent and include the IEEE 1528 grid with visible NF and MB lines.



2.8.2. APREL Laboratories Universal Phantom

The Universal Phantom is used on the ALSAS-10U as a system validation phantom. The Universal Phantom has been fully validated both experimentally from 800MHz to 6GHz and numerically using XFDTD numerical software. The shell thickness is 2mm overall, with a 4mm spacer located at the NF/MB intersection providing an overall thickness of 6mm in line with the requirements of IEEE-1528.

The design allows for fast and accurate measurements, of handsets , by allowing the conservative SAR to be evaluated at on frequency for both left and right head experiments in one measurement.

3. Tissue Simulating Liquid

3.1. The composition of the tissue simulating liquid

INGREDIENT （% Weight）	850MHz Head	1900MHZ Head	850MHZ Body	1900MHz Body	2450MHz Head	2450MHz Body
Water	**40.45%**	**54.9%**	**45.0%**	**70.17%**	**55%**	**73.2%**
Salt	**1.45%**	**0.18%**	**52.4%**	**0.39%**	**0%**	**0%**
Sugar	**57.6%**	**0%**	**1.4%**	**0%**	**0%**	**0%**
HEC	**0.4%**	**0%**	**1.0%**	**0%**	**0%**	**0%**
Preventol	**0.1%**	**0%**	**0.1%**	**0%**	**0%**	**0%**
DGBE	**0%**	**44.92%**	**0%**	**29.44%**	**45%**	**26.76%**

3.2. Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to SAR evaluation using APREL Dielectric Probe Kit and Agilent E5071B Vector Network Analyzer.

Head Tissue Simulate Measurement				
Frequency (MHz)	Description	Dielectric Parameters		Tissue Temp.(℃)
		ε_r	σ (s/m)	
850MHz	Reference result	41.5	0.90	NA
	+/-5% window	39.425to43.575	0.855to0.945	
	04-Mar-13	40.24	0.93	20.7
1900MHz	Reference result	40.0	1.40	NA
	+/-5% window	38to42	1.33 to 1.47	
	04-Mar-13	41.52	1.44	20.7
2450MHz	Reference result	39.2	1.80	NA
	+/-5% window	37.24to41.16	1.71to1.89	
	04-Mar-13	40.25	1.81	20.7

Body Tissue Simulate Measurement				
Frequency (MHz)	Description	Dielectric Parameters		Tissue Temp.(℃)
		ε_r	σ (s/m)	
850MHz	Reference result	55.2	0.97	NA
	+/-5% window	52.44to57.96	0.922to1.019	
	04-Mar-13	53.34	0.95	20.7
1900MHz	Reference result	53.3	1.52	NA
	+/-5% window	50.635to55.965	1.444to1.596	
	04-Mar-13	52.94	1.53	20.7
2450MHz	Reference result	52.7	1.95	NA
	+/-5% window	50.065to55.335	1.852to2.0475	
	04-Mar-13	53.35	1.96	20.7

3.3. Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in PP1528 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 P1428 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

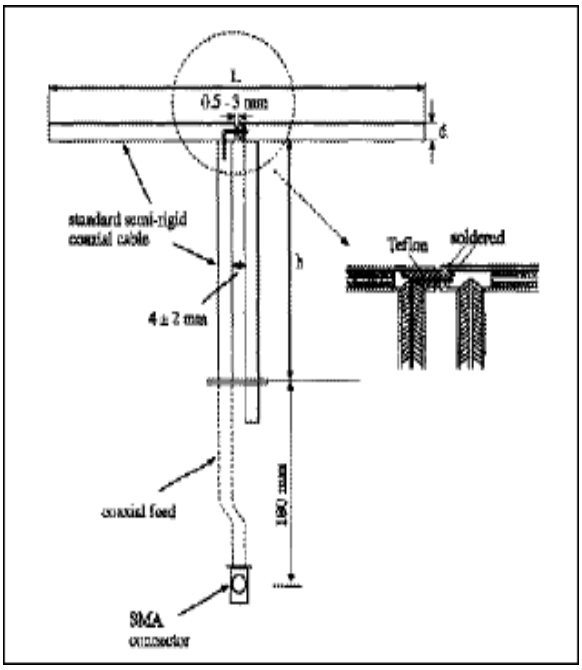
Target Frequency	Head		Body	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7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

(ε_r =relative permittivity, σ =conductivity and ρ =1000 Kg/m^3)

4. SAR Measurement Procedure

4.1. SAR System Validation

4.1.1. Validation Dipoles



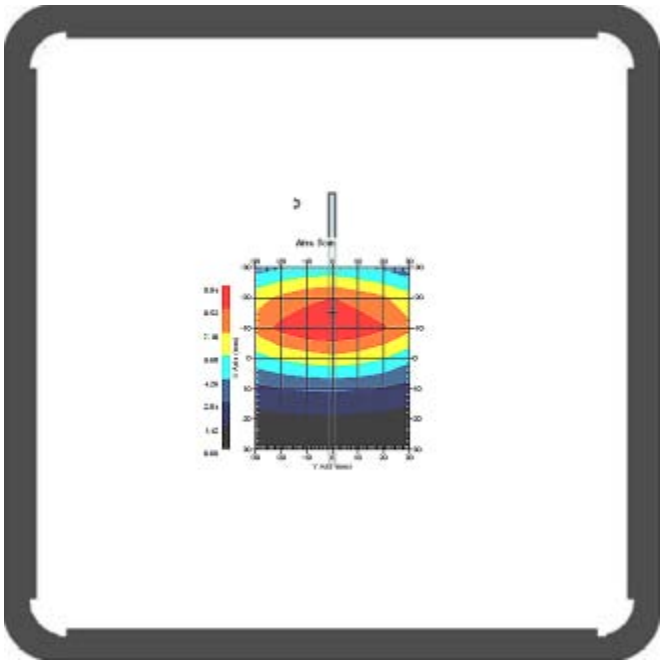
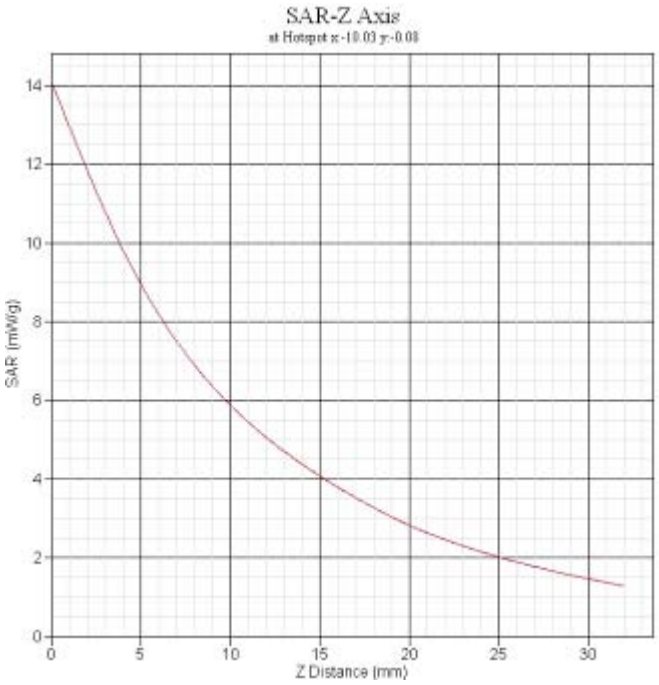
The dipoles used are based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. The table below provides details for the mechanical and electrical specifications for the dipoles.

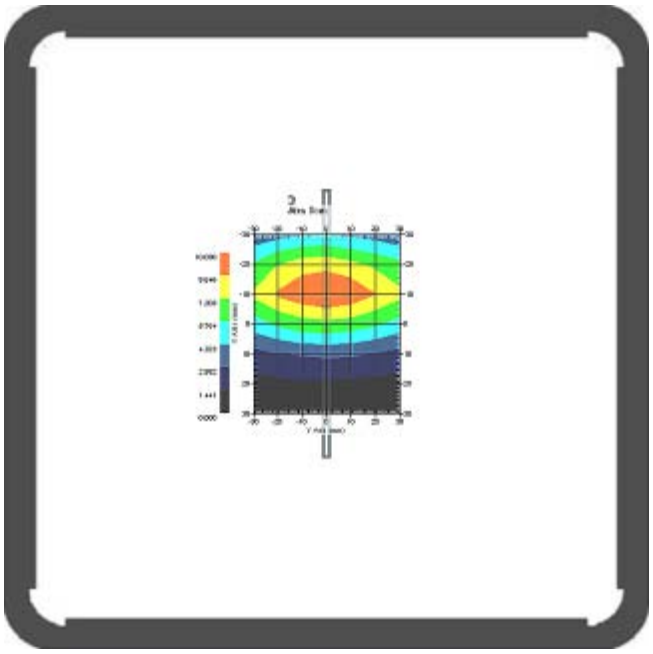
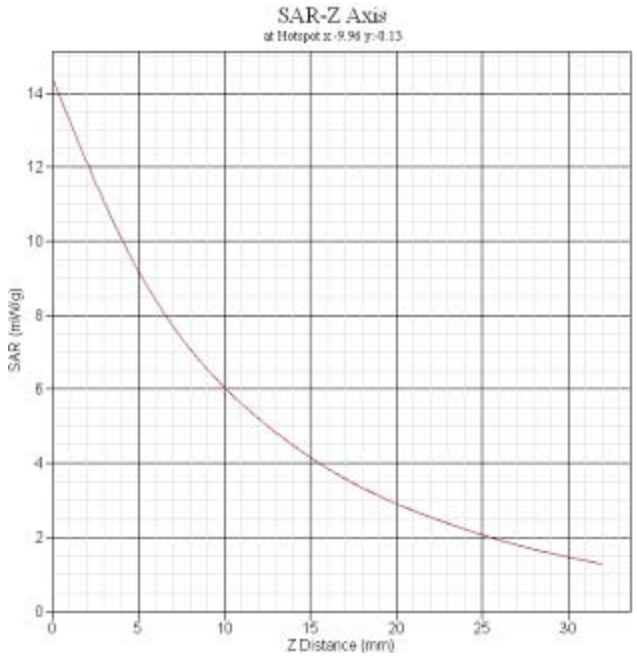
Frequency	L(mm)	h(mm)	d(mm)
850MHz	161	89.8	3.6
1900MHz	67.1	38.9	3.6
2450MHz	51.5	30.4	3.6

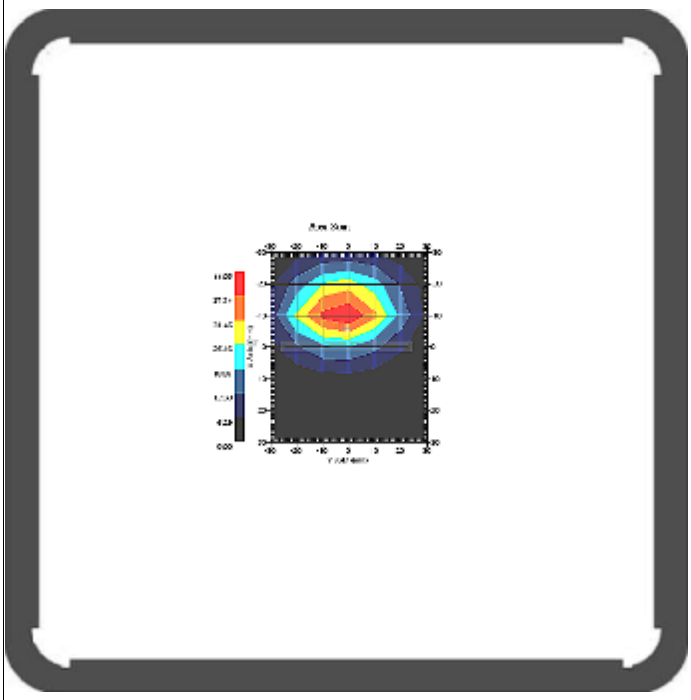
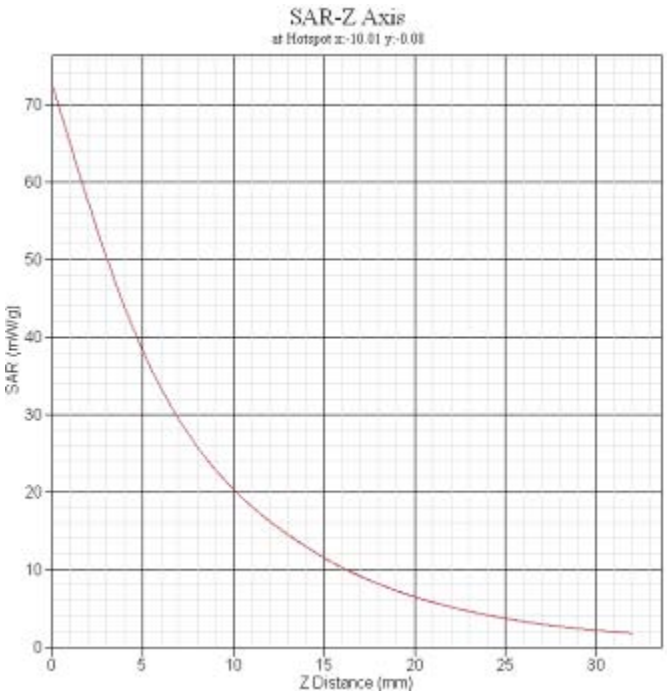
4.1.2. Validation Result

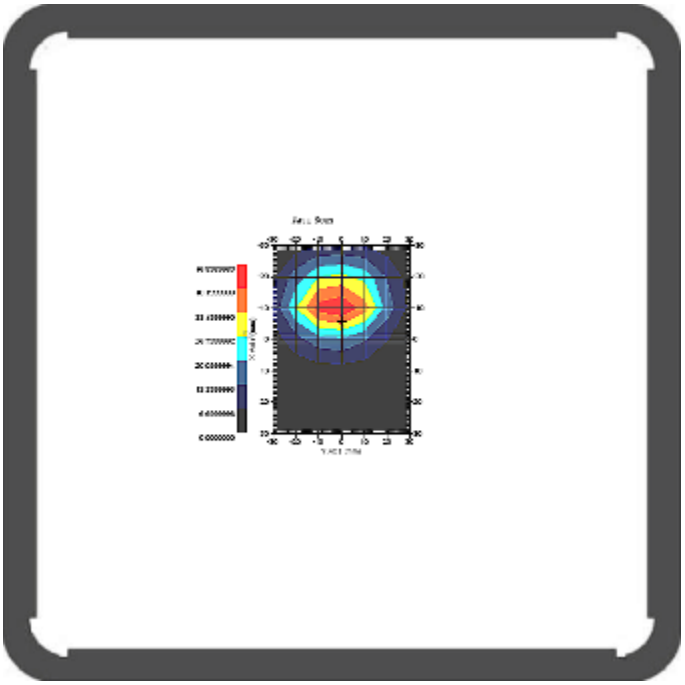
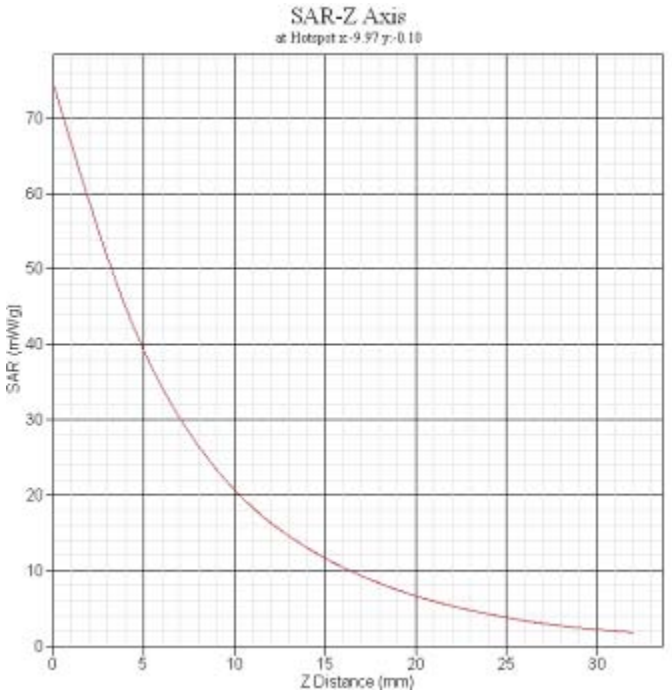
Head System Performance Check at 850MHZ&1900MHz&2450MHz				
Validation Kit: ASL-D-850-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
850MHz	Reference result	9.590	6.003	N/A
	+/-5%window	9.110to10.07	5.702to6.303	
	04-Mar-13(1W)	9.469	5.851	20.7
Validation Kit: ASL-D-1900-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
1900MHz	Reference result	39.378	19.668	N/A
	+/-5%window	37.418to41.356	18.685to20.651	
	04-Mar-13(1W)	38.672	19.234	20.7
Validation Kit: ASL-D-2450-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
2450MHz	Reference result	52.456	23.603	N/A
	+/-5%window	49.833to55.078	22.423to24.783	
	04-Mar-13(1W)	51.871	22.739	20.7
Note: All SAR values are normalized to 1 W forward power.				

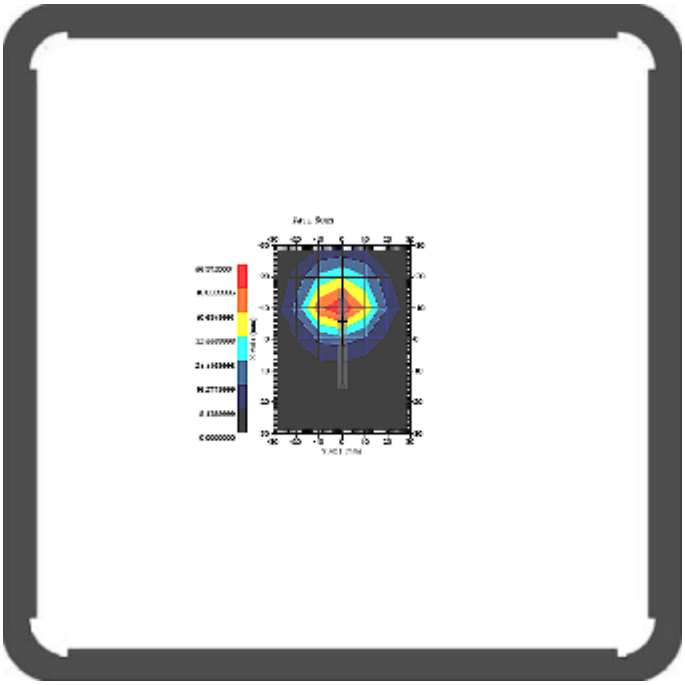
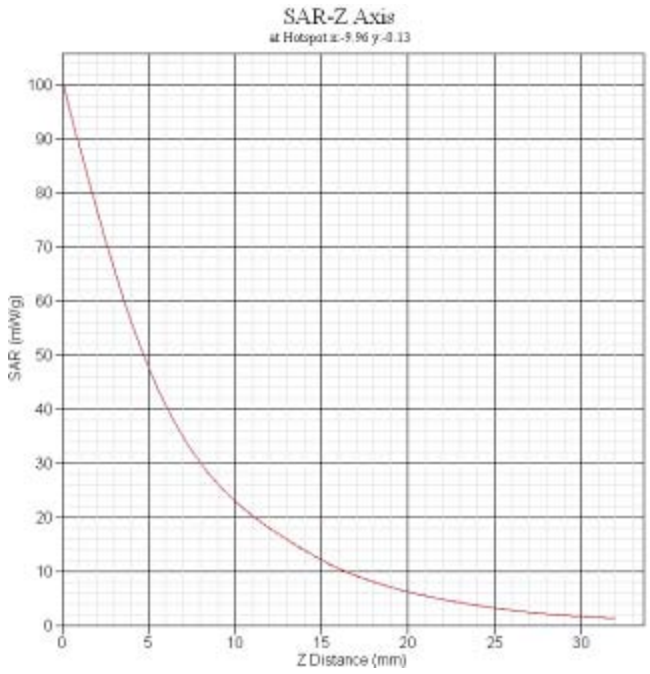
Body System Performance Check at 850MHZ&1900MHz&2450MHz				
Validation Kit: ASL-D-850-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
850MHz	Reference result	9.981	6.006	N/A
	+/-5%window	9.482to10.48	5.706to6.306	
	04-Mar-13(1W)	9.546	5.862	20.7
Validation Kit: ASL-D-1900-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
1900MHz	Reference result	39.654	19.668	N/A
	+/-5%window	37.671to41.637	18.685to20.651	
	04-Mar-13(1W)	39.625	19.717	20.7
Validation Kit: ASL-D-2450-S-2				
Frequency(MHz)	Description	SAR(W/kg) 1g	SAR(W/kg) 10g	Tissue Temp.(℃)
2450MHz	Reference result	52.592	24.461	N/A
	+/-5%window	49.962to55.222	23.238to25.684	
	04-Mar-13(1W)	51.264	24.341	20.7
Note: All SAR values are normalized to 1W forward power.				

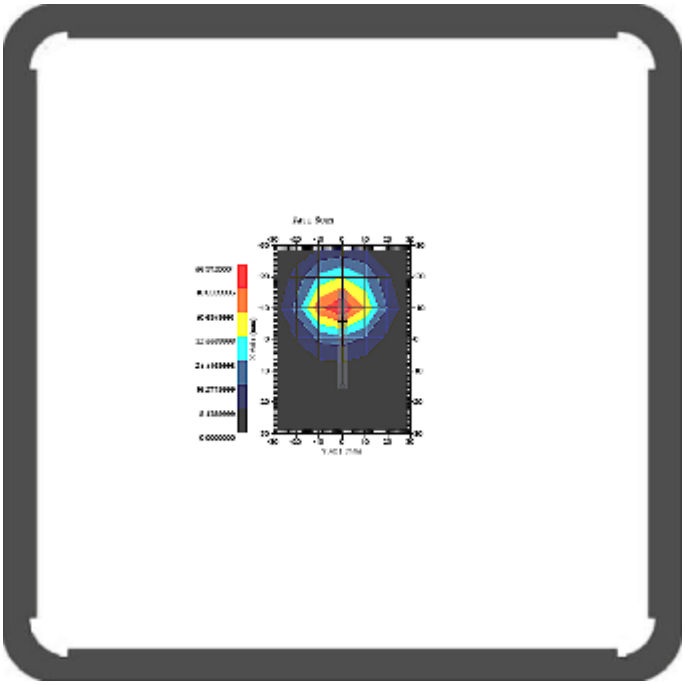
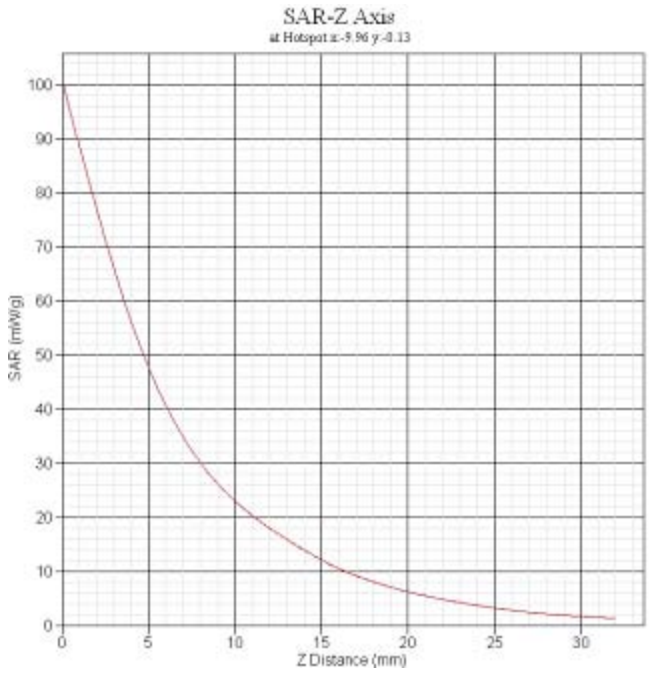
Frequency(MHz)	850
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	-0.452
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	9.469
SAR 10g(W/kg)	5.851

Frequency(MHz)	850
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	0.248
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	9.546
SAR 10g(W/kg)	5.862

Frequency(MHz)	1900
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	0.651
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	38.672
SAR 10g(W/kg)	19.234

Frequency(MHz)	1900
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-0.345
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	39.625
SAR 10g(W/kg)	19.717

Frequency(MHz)	2450
Relative permittivity(real part)	40.25
Conductivity(S/m)	1.81
Variation(%)	0.452
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	51.871
SAR 10g(W/kg)	22.739

Frequency(MHz)	2450
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	0.512
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	51.264
SAR 10g(W/kg)	24.341

4.2. Arrangement Assessment Setup

4.2.1. Test Positions of Device Relative to Head

This specifies exactly two test positions for the handset against the head phantom, the "cheek" position and the "tilted" position. The handset should be tested in both positions on the left and right sides of the SAM phantom. If the handset construction is such that it cannot be positioned using the handset positioning procedures described in 4.2.2.1 and 4.2.2.2 to represent normal use conditions (e.g. asymmetric handset), alternative alignment procedures should be considered with details provided in the test report.

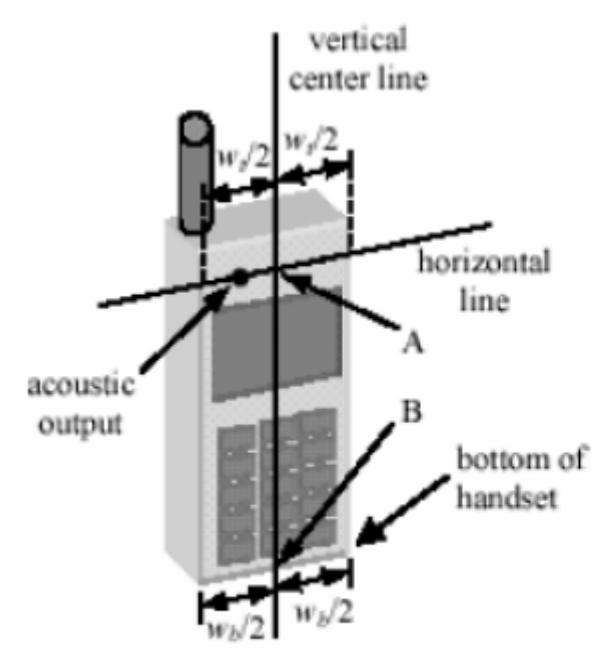


Figure 4.1a Internal Case

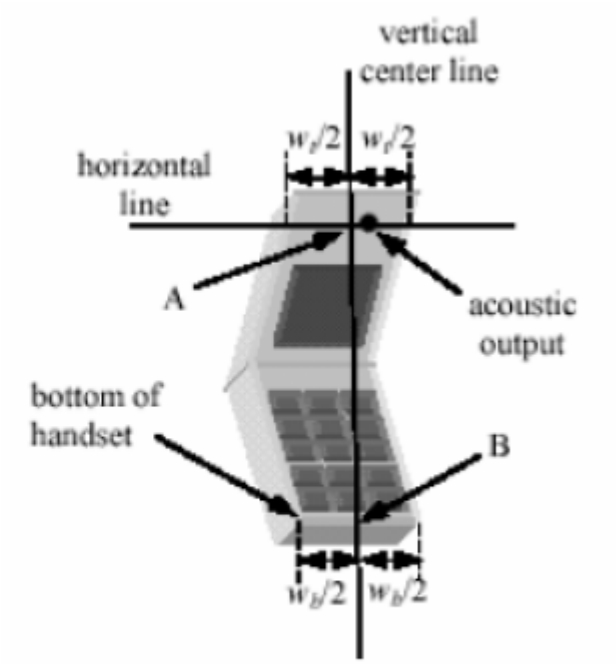


Figure4.1b Clam Shell

4.2.2.1. Definition of the "Cheek" Position

The "cheek" position is defined as follows:

a. Ready the handset for talk operation, if necessary. For example, for hand sets with a cover piece, open the cover. (If the handset can also be used with the cover closed both configurations must be tested.)
b. Define two imaginary lines on the handset: the vertical centerline and the horizontal line. 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 (point A on Figures 4.1 a and 4.1 b), and the midpoint of the width wb of the

Back of the handset through the center of the acoustic output (see Figure 4.1 a). 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 parallel to the front Front of the handset (see Figure 4.1 b), especially for clamshell handsets, handsets with flip pieces, and other irregularly-shaped handsets.

c. Position the handset close to the surFront of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see 4.2), such that the plan defined by the vertical center line and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
d. Translate the handset towards the phantom along the line passing through RE and LE until the handset touches the pinna.
e. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to MB-NF including the line MB (called the reference plane).
f. Rotate the handset around the vertical centerline until the handset (horizontal line) is symmetrical with respect to the line NF.

While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE and maintaining the handset contact with the pinna, rotate the handset about the line NF until any point on the handset is in contact with a phantom point below the pinna (cheek). See Figure 4.2 the physical angles of rotation should be noted.

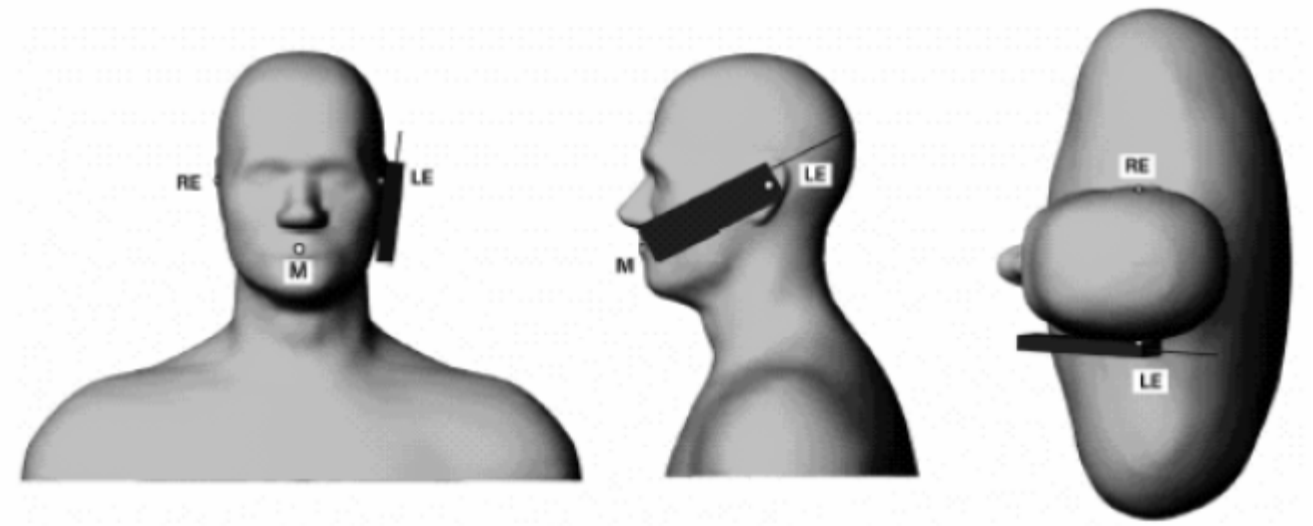


Figure 4.2 – Phone position 1, “cheek” or “touch” position.

4.2.1.2 Definition of the “Tilted” Position

The “tilted” position is defined as follows:

a. Repeat steps (a) – (g) of 4.2.1.1 to place the device in the “cheek position”.
b. While maintaining the orientation of the handset move the handset away from the

pinna along the line passing through RE and LE in order to enable a rotation of the handset by 15 degrees.

c. Rotate the handset around the horizontal line by 15 degrees.

d. While maintaining the orientation of the handset, move the handset towards the phantom on a line passing through RE and LE until any part of the handset touches the ear. The tilted position is obtained when the contact is on the pinna. If the contact is at any location other than the pinna (e.g. the antenna with the Back of the phantom head), the angle of the handset should be reduced. In this case, the tilted position is obtained if any part of the handset is in contact with the pinna as well as a second part of the handset is contact with the phantom (e.g. the antenna with Back of the head).

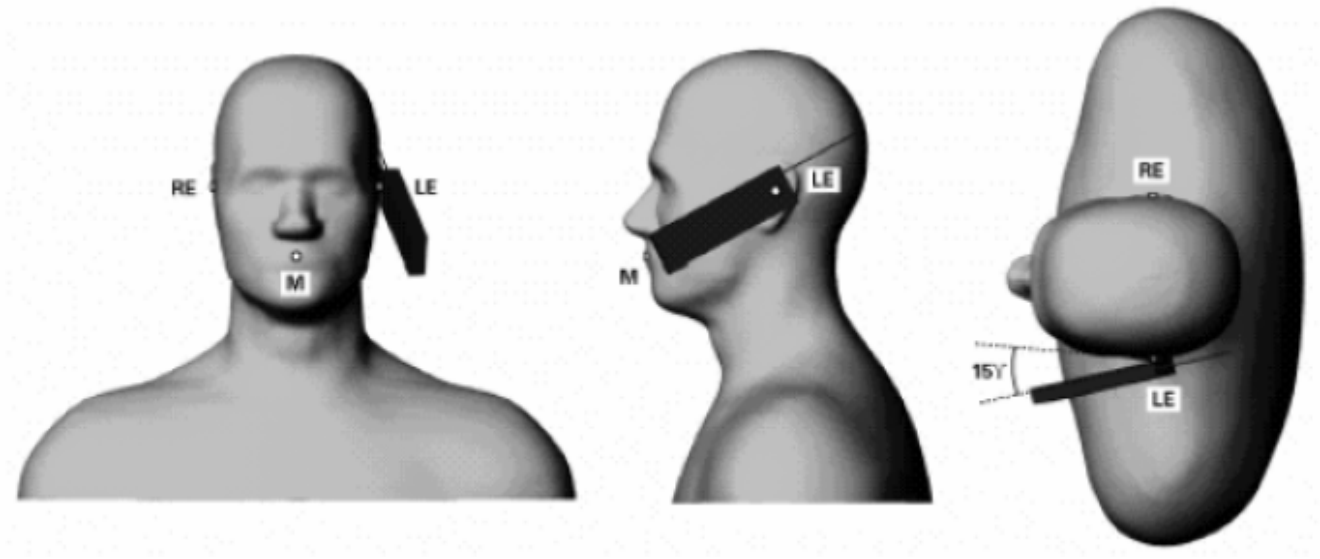


Figure 4.3 – Phone position 2, "tilted" position.

4.2.2. Test Positions for body-worn

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. A separation distance of 1.5 cm between the Back of the device and a flat phantom is recommended for testing body-worn SAR compliance under such circumstances. Other separation distance may be use, but not exceed 2.5cm.

4.3. SAR Measurement Procedure

The ALSAS-10U calculates SAR using the following equation,

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

σ :represents the simulated tissue conductivity
ρ :represents the tissue density

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

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

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

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

5. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE C95.1-1999, IEEE 1528-2003 , FCC OET Bulletin 65 supplement C.

Type Exposure (W/kg)	Uncontrolled Environment Limit
Spatial Peak SAR (10g cube tissue for head and trunk)	1.60 W/kg
Spatial Average SAR (whole body)	0.08 W/kg
Spatial Peak SAR (10g for limb)	4.00 W/kg

6. Test Equipment List

Instrument	Manufacture	Model No.	Serial No.	Last Calibration
Universal Work Station	Aprel	ALS-UWS	100-00154	NCR
Data Acquisition Package	Aprel	ALS-DAQ-PAQ-3	110-00215	NCR
Probe Mounting Device and Boundary Detection Sensor System	Aprel	ALS-PMDPS-3	120-00265	NCR
Miniature E-Field Probe	Aprel	ALS-E-020	500-00282	Oct.01,2012
Left ear SAM Phantom	Aprel	ALS-P-SAM-L	130-00312	NCR
Right ear SAM Phantom	Aprel	ALS-P-SAM-R	140-00362	NCR
Universal SAM Phantom	Aprel	ALS-P-SU-1	150-00410	NCR
Reference Validation Dipole 850MHz	Aprel	ALS-D-850-S-2	180-00556	May.19,2011
Reference Validation Dipole 1900MHz	Aprel	ALS-D-1900-S-2	210-00707	May.16,2011
Reference Validation Dipole 2450MHz	Aprel	ALS-D-2450-S-2	220-00755	May.19,2011
Dielectric Probe Kit	Aprel	ALS-PR-DIEL	260-00955	NCR
Device Holder 2.0	Aprel	ALS-H-E-SET-2	170-00506	NCR
SAR software	Aprel	ALS-SAR-AL-10	Ver.2.3.8	NCR
CRS C500C Controller	Thermo	ALS-C500	RCF0504291	NCR
CRS F3 Robot	Aprel	ALS-F3-SW	N/A	NCR
Power Amplifier	Mini-Circuit	ZHL- 42	040306	Jul.17,2012
Directional Coupler	Agilent	778D-012	51011	Jul.17,2012
Universal Radio Communication Tester	Agilent	E5515C	104845	Mar.1,2012
Vector Network	Agilent	E5071B	MY4230146	Jul.19,2012
Signal Generator	Agilent	E8257D	N/A	Dec.10,2012
Power Meter	Rohde&Schwarz	NRP	N/A	Dec.10,2012

Note: All equipment upon which need to be calibrated are with calibration period of 1 year, except validation dipole antenna of every 3 years.

7. Measurement Uncertainty

Exposure Assessment Measurement Uncertainty

Source of Uncertainty	Tolerance Value	Probability Distribution	Divisor	c_i^1 (1-g)	c_i^1 (10-g)	Standard Uncertainty (1-g) %	Standard Uncertainty (10-g) %
Measurement System							
Probe Calibration	3.5	normal	1	1	1	3.5	3.5
Axial Isotropy	3.7	rectangular	$\sqrt{3}$	$(1-cp)^{1/2}$	$(1-cp)^{1/2}$	1.5	1.5
Hemispherical Isotropy	10.9	rectangular	$\sqrt{3}$	$\sqrt{cp}$	$\sqrt{cp}$	4.4	4.4
Boundary Effect	1.0	rectangular	$\sqrt{3}$	1	1	0.6	0.6
Linearity	4.7	rectangular	$\sqrt{3}$	1	1	2.7	2.7
Detection Limit	1.0	rectangular	$\sqrt{3}$	1	1	0.6	0.6
Readout Electronics	1.0	normal	1	1	1	1.0	1.0
Response Time	0.8	rectangular	$\sqrt{3}$	1	1	0.5	0.5
Integration Time	1.7	rectangular	$\sqrt{3}$	1	1	1.0	1.0
RF Ambient Condition	3.0	rectangular	$\sqrt{3}$	1	1	1.7	1.7
Probe Positioner Mech.	0.4	rectangular	$\sqrt{3}$	1	1	0.2	0.2
Restriction							
Probe Positioning with respect to Phantom Shell	2.9	rectangular	$\sqrt{3}$	1	1	1.7	1.7
Extrapolation and Integration	3.7	rectangular	$\sqrt{3}$	1	1	2.1	2.1
Test Sample Positioning	4.0	normal	1	1	1	4.0	4.0
Device Holder Uncertainty	2.0	normal	1	1	1	2.0	2.0
Drift of Output Power	0.6	rectangular	$\sqrt{3}$	1	1	0.3	0.3
Phantom and Setup							
Phantom Uncertainty(shape & thickness tolerance)	3.4	rectangular	$\sqrt{3}$	1	1	2.0	2.0
Liquid Conductivity(target)	5.0	rectangular	$\sqrt{3}$	0.7	0.5	2.0	1.4
Liquid Conductivity(meas.)	0.0	normal	1	0.7	0.5	0.0	0.0

Liquid Permittivity(target)	5.0	rectangular	√3	0.6	0.5	1.7	1.4
Liquid Permittivity(meas.)	2.4	normal	1	0.6	0.5	1.4	1.2
Combined Uncertainty		RSS				9.3	9.2
Combined Uncertainty (coverage factor=2)		Normal(k=2)				18.7	18.3

8. SAR Test Results

8.1. Conducted Power(Unit:dBm)

<WWAN Conducted Power>

Band	GSM850			GSM1900		
Channel	128	190	251	512	661	810
Frequency(MHz)	824.2	836.6	848.8	1850.2	1880.0	1909.8
GSM	32.22	32.32	**32.48**	28.87	29.11	**29.32**
Band	WCDMA band Ⅱ			WCDMA band Ⅴ		
Channel	9262	9400	9538	4132	4183	4233
Frequency(MHz)	1852.4	1880.0	1907.6	826.4	836.6	846.6
WCDMA	22.05	**22.13**	22.08	22.12	**22.24**	22.17

Band	Conducted Power (dBm)			Factor (dB)	Average Power (dBm)		
Channel	128	190	251		128	190	251
Frequency(MHz)	824.2	836.6	848.8		824.2	836.6	848.8
GPRS8(1up)	30.68	30.76	**30.85**	**-9.03**	21.65	21.73	21.82
GPRS10(2up)	29.57	29.74	29.79	**-6.02**	23.55	23.72	23.77
GPRS12(4up)	26.61	26.68	26.90	**-3.01**	23.60	23.67	23.89

Band	Conducted Power (dBm)			Factor (dB)	Average Power (dBm)		
Channel	512	661	810		512	661	810
Frequency(MHz)	1850.2	1880.0	1909.8		1850.2	1880.0	1909.8
GPRS8(1up)	28.86	29.10	29.31	**-9.03**	19.83	20.07	20.28
GPRS10(2up)	27.31	27.59	27.76	**-6.02**	21.29	21.57	21.74
GPRS12(4up)	23.92	24.13	24.22	**-3.01**	20.91	21.12	21.21

NOTES:
Division Factors:
To average the power, the division factor is as follows:
1.TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB
2.TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB
3.TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB
4.TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB
5.The EUT do not support DTM mode.

<Bluetooth Conducted Power>

Channel	Frequency	Bluetooth RF Output Power (dBm)		
		Data Rate / Modulation		
		GFSK	π /4-DQPSK	8-DPSK
		1Mbps	2Mbps	3Mbps
Ch00	2402MHz	4.69	5.07	5.21
Ch39	2441MHz	5.28	5.76	**5.95**
Ch78	2480MHz	5.15	5.60	5.83

<WLAN Conducted Power>

Channel	Frequency	2.4GHz 802.11b RF Power (dBm)			
		At DSSS Data Rate			
		1 Mbps	2 Mbps	5.5 Mbps	11 Mbps
CH 01	2412 MHz	14.31	14.33	14.44	14.45
CH 06	2437 MHz	15.03	15.11	15.15	**15.16**
CH 11	2462 MHz	14.85	15.01	15.12	15.14

Channel	Frequency	2.4GHz 802.11g RF Power (dBm)							
		At OFDM Data Rate							
		6	9	12	18	24	36	48	54
		Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps	Mbps
CH01	2412MHz	11.92	11.89	11.82	11.81	13.99	13.92	13.22	11.76
CH06	2437MHz	12.41	12.37	12.28	12.22	**14.36**	14.33	13.39	12.28
CH11	2462MHz	12.25	12.64	12.21	12.15	14.21	14.07	13.26	12.19

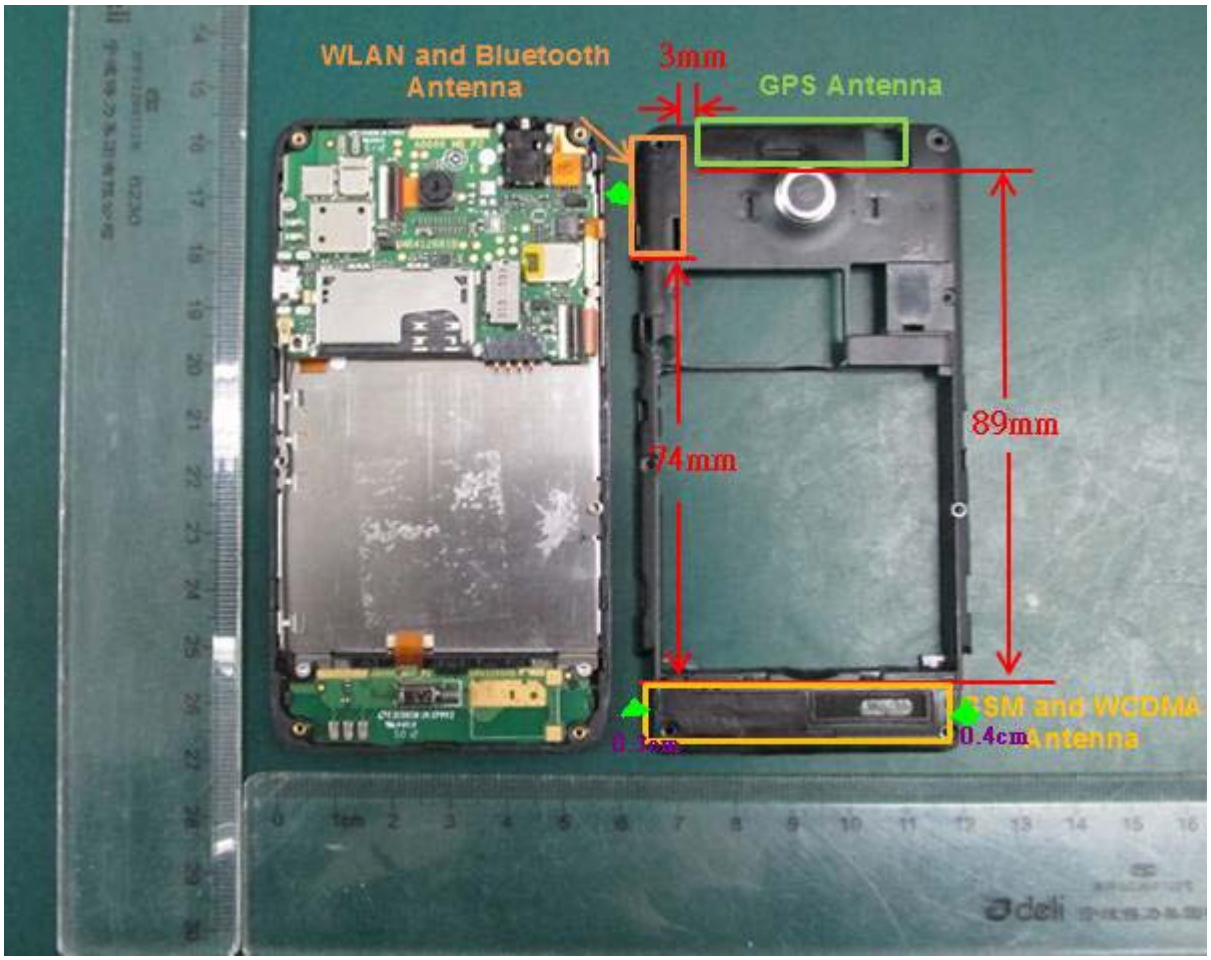
Channel	Frequency	2.4GHz 802.11n RF Power (dBm)							
		At OFDM Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
		6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
CH01	2412MHz	11.67	11.42	11.37	13.87	13.83	13.71	12.67	10.23
CH06	2437MHz	12.45	12.27	12.28	**14.37**	14.17	14.1	13.41	10.67
CH11	2462MHz	12.39	12.26	12.25	13.75	13.76	13.75	12.92	10.16

Note:

1. Per KDB 248227, choose the highest output power channel to test SAR and judge further SAR exclusion.
2. Per KDB 248227, 11g and 11n(HT20) output power is less than 1/4 dB higher than 11b mode, thus the SAR can be excluded.

For each frequency band, testing at higher data rate and higher order modulations is not required when the maximum average power output for each of these configurations is less than 1/4 dB higher than those measured at the lowest data rate.

8.2. Exposure Positions Consideration



Sides for SAR tests; Hotspot mode Test distance: 10 mm						
Band	Back	Front	Top	Bottom	Right	Left
GSM 850	✓	✓	X	✓	✓	✓
GSM 1900	✓	✓	X	✓	✓	✓
WCDMA Band II	✓	✓	X	✓	✓	✓
WCDMA Band V	✓	✓	X	✓	✓	✓
WLAN 11b/g 2.4GHz	✓	✓	✓	X	✓	X

Sides for SAR tests; Body-worn mode Test distance: 10 mm						
Band	Back	Front	Top	Bottom	Right	Left
GSM 850	✓	✓	X	X	X	X
GSM 1900	✓	✓	X	X	X	X
WCDMA Band II	✓	✓	X	X	X	X
WCDMA Band V	✓	✓	X	X	X	X
WLAN 11b/g 2.4GHz	✓	✓	X	X	X	X

Note:

1. Only Face/Back worst Mode of Hotspot as Test Mode
2. Base on KDB447498 D01v05 4.3.1.1 formula, BT SAR is exclude as below table:

	Wireless Interface	Bluetooth
	Tune-up Maximum power(dBm)	7
	Tune-up Maximum power(mW)	5
Head	Antenna to user(mm)	5
	SAR exclusion threshold(mW)	10
	SAR testing required or not?	NOT
Body	Antenna to user(mm)	10
	SAR exclusion threshold(mW)	19
	SAR testing required or not?	NOT

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·

[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,

5mw(7dBm)/5mm*√2.45=1.565<3.0, So standalone Bluetooth SAR test is not required.

The SAR threshold for 5mm distance at 2450MHz is 10mW. The power of the BT transmitter is below 10mW. Therefore standalone SAR does not required.

8.3. SAR Test Results Summary

8.3.1 Test results for Head SAR Test

<WWAN SAR>

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
GSM850	LC	251	32.48	33	0.572	1.127	0.645
	LT	251	32.48	33	0.542	1.127	0.611
	RC	251	32.48	33	0.571	1.127	0.644
	RT	251	32.48	33	0.469	1.127	0.529
GSM1900	LC	810	29.32	30	0.431	1.169	0.504
	LT	810	29.32	30	0.293	1.169	0.343
	RC	810	29.32	30	0.441	1.169	0.516
	RT	810	29.32	30	0.217	1.169	0.254

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
WCDMA V	LC	4183	22.24	23	0.360	1.191	0.429
	LT	4183	22.24	23	0.319	1.191	0.380
	RC	4183	22.24	23	0.385	1.191	0.459
	RT	4183	22.24	23	0.321	1.191	0.382
WCDMA II	LC	9400	22.13	23	0.645	1.222	0.788
	LT	9400	22.13	23	0.421	1.222	0.514
	RC	9400	22.13	23	0.570	1.222	0.696
	RT	9400	22.13	23	0.413	1.222	0.505

<WLAN SAR>

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
802.11b band	LC	11	15.16	16	0.043	1.123	0.052
	LT	11	15.16	16	0.045	1.123	0.055
	RC	11	15.16	16	0.165	1.123	0.200
	RT	11	15.16	16	0.122	1.123	0.148

8.3.2 Test results for Hotspot SAR Test

<WWAN SAR 1cm>

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
GPRS850	Front	251	26.90	27	0.609	1.023	0.623
	Back	128	26.61	27	0.852	1.094	0.932
	Back	190	26.68	27	0.868	1.076	0.934
	Back	251	26.90	27	0.976	1.023	0.999
	Left	251	26.90	27	0.537	1.023	0.550
	Right	251	26.90	27	0.548	1.023	0.561
	Bottom	251	26.90	27	0.086	1.023	0.088
GPRS1900	Front	810	24.22	25	0.502	1.197	0.601
	Back	512	23.92	25	0.904	1.282	1.159
	Back	661	24.13	25	0.933	1.222	1.140
	Back	810	24.22	25	0.969	1.197	1.160
	Left	810	24.22	25	0.123	1.197	0.147
	Right	810	24.22	25	0.120	1.197	0.144
	Bottom	810	24.22	25	0.626	1.197	0.749

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
WCDMA V	Front	4183	22.24	23	0.286	1.191	0.540
	Back	4183	22.24	23	0.571	1.191	1.059
	Left	4183	22.24	23	0.377	1.191	0.545
	Right	4183	22.24	23	0.297	1.191	0.522
	Bottom	4183	22.24	23	0.512	1.191	0.027
WCDMA II	Front	9400	22.13	23	0.602	1.222	0.736
	Back	9262	22.05	23	0.911	1.245	1.134
	Back	9400	22.13	23	0.920	1.222	1.124
	Back	9538	22.08	23	0.841	1.236	1.039
	Left	9400	22.13	23	0.209	1.222	0.255
	Right	9400	22.13	23	0.141	1.222	0.172
	Bottom	9400	22.13	23	0.590	1.222	0.721

<WLAN SAR 1cm>

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
802.11b band	Front	11	15.16	16	0.052	1.123	0.063
	Back	11	15.16	16	0.205	1.123	0.249
	Right	11	15.16	16	0.084	1.123	0.102
	Top	11	15.16	16	0.055	1.123	0.067

8.3.3 Test results for Body-worn SAR Test

<WWAN SAR 1cm>

Band	Position	CH	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
GPRS850	Front	251	26.9	27	0.609	1.023	0.623
	Back	128	26.9	27	0.852	1.023	0.872
	Back	190	26.9	27	0.868	1.023	0.888
	Back	251	26.9	27	0.976	1.023	0.999
GSM850 + earphone	Back	251	32.48	33	0.677	1.127	0.763
GPRS1900	Front	810	24.22	25	0.502	1.197	0.601
	Back	512	23.92	25	0.904	1.282	1.159
	Back	661	24.13	25	0.933	1.222	1.140
	Back	810	24.22	25	0.969	1.197	1.160
GSM1900 + earphone	Back	810	29.32	30	0.669	1.169	0.782

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
WCDMA V	Front	4183	22.24	23	0.286	1.191	0.540
	Back	4183	22.24	23	0.571	1.191	1.059
WCDMA V + earphone	Back	4183	22.24	23	0.568	1.191	0.677
WCDMA II	Front	9400	22.13	23	0.602	1.222	0.736
	Back	9262	22.05	23	0.911	1.245	1.134
	Back	9400	22.13	23	0.920	1.222	1.124
	Back	9538	22.08	23	0.841	1.236	1.039
WCDMA II + earphone	Back	9400	22.13	23	0.908	1.222	1.109

<WLAN SAR 1cm>

Band	Position	Channel	Measured Power(dBm)	Tune-up Power(dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
802.11b band	Front	11	15.16	16	0.052	1.123	0.063
	Back	11	15.16	16	0.205	1.123	0.249
802.11b band + earphone	Back	11	15.16	16	0.198	1.123	0.240

8.3.4 Repeated SAR Measurement

Band	Position	CH	Measured Power (dBm)	Tune-up Power (dBm)	SAR 1g (W/kg)	Scale factor	Scaled SAR 1g(W/kg)
GPRS850	Back	251	26.90	27	0.976	1.023	0.999
	Back	251	26.90	27	0.965	1.023	0.987
GPRS1900	Back	810	24.22	25	0.969	1.197	1.160
	Back	810	24.22	25	0.963	1.197	1.152
WCDMA II	Back	9400	22.13	23	0.920	1.222	1.124
	Back	9400	22.13	23	0.925	1.222	1.130

Note：

1. Per KDB 865664 D01v01,for each frequency band, repeated SAR measurement is required only when the measured SAR is≥0.8W/kg
2. Per KDB 447498D01v05, for each exposure position, if the highest output channel<0.8W/kg, other channels SAR testing are not necessary.
3. Per KDB 865664 D01v01,if the deviation among the repeated measurement is≤20% and the measured SAR<1.45W/kg, only one repeated measurement is required.
4. The deviation is the difference in percentage between original and repeated measured SAR.
5. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

8.4. Simultaneous Transmitting Configurations

Simultaneous Transmitting Configuration	**Applicable Combination**
Simultaneous Transmission	**WWAN+BT**
	WWAN+WiFi

1. WLAN and BT use the same antenna, cannot transmit simultaneously.
2. GSM and WCDMA use the same antenna, cannot transmit simultaneously, and the device does not support hotspot mode.
3. If 1g SAR sum>1.6W/kg, SPLSR calculation is necessary.
4. For simultaneous transmission analysis, Bluetooth SAR is estimated per KDB447498 D01v05 base on formula as below:

   (*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.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.
5. If the test separation distance(antenna-user)is<5mm.5mm is used for estimated SAR calculation.

	Head(0 cm)	Body(1 cm)
Estimated SAR(W/kg)	0.209W/kg	0.105W/kg

<Head SAR>

	Scaled WWAN		Scaled BT	Scaled
Position	**WWAN band**	**Max. WWAN SAR**	**Max. BT SAR**	**WWAN+BT**
Left Cheek	GSM850	0.645	0.209	0.854
	GSM1900	0.504	0.209	0.713
	WCDMA V	0.429	0.209	0.638
	WCDMA II	0.788	0.209	0.997
Left Tilt	GSM850	0.611	0.209	0.82
	GSM1900	0.343	0.209	0.552
	WCDMA V	0.380	0.209	0.589
	WCDMA II	0.514	0.209	0.681
Right Cheek	GSM850	0.644	0.209	0.853
	GSM1900	0.516	0.209	0.725
	WCDMA V	0.459	0.209	0.668
	WCDMA II	0.696	0.209	0.905
Right Tilt	GSM850	0.529	0.209	0.738
	GSM1900	0.254	0.209	0.463
	WCDMA V	0.382	0.209	0.591
	WCDMA II	0.505	0.209	0.714

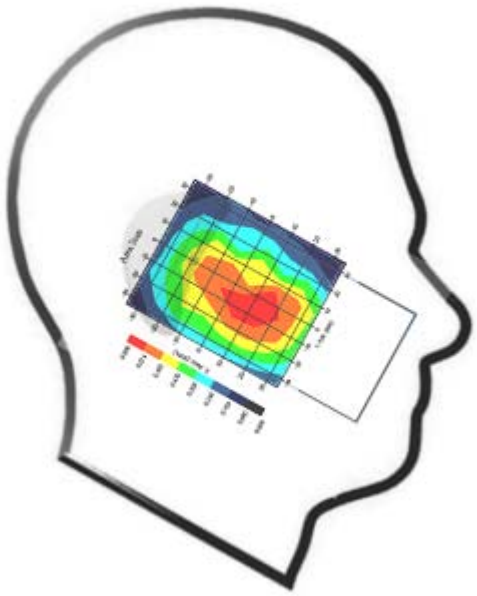
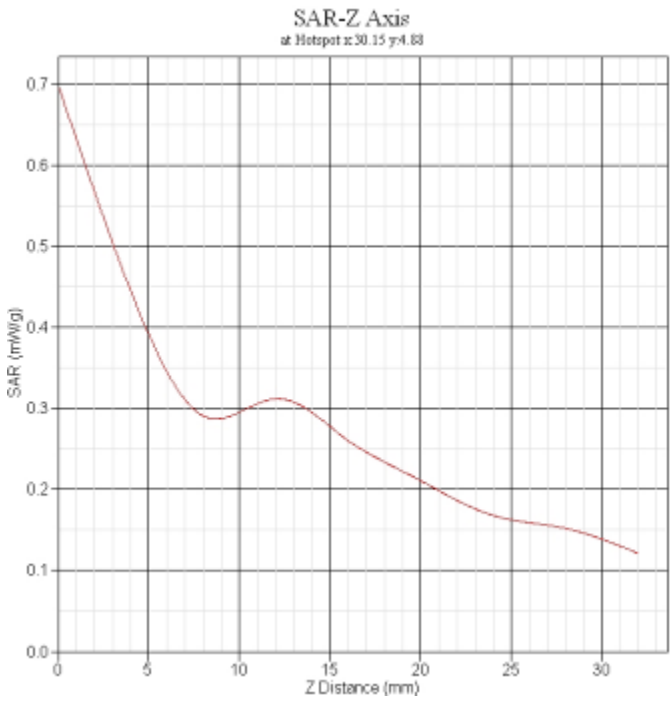
	Scaled WWAN		Scaled WLAN	Scaled
Position	**WWAN band**	**Max. WWAN SAR**	**Max. WLAN SAR**	**WWAN+WLAN**
Left Cheek	GSM850	0.645	0.052	0.697
	GSM1900	0.504	0.052	0.556
	WCDMA V	0.429	0.052	0.481
	WCDMA II	0.788	0.052	0.840
Left Tilt	GSM850	0.611	0.055	0.666
	GSM1900	0.343	0.055	0.398
	WCDMA V	0.380	0.055	0.435
	WCDMA II	0.514	0.055	0.569
Right Cheek	GSM850	0.644	0.200	0.844
	GSM1900	0.516	0.200	0.716
	WCDMA V	0.459	0.200	0.659
	WCDMA II	0.696	0.200	0.896
Right Tilt	GSM850	0.529	0.148	0.677
	GSM1900	0.254	0.148	0.402
	WCDMA V	0.382	0.148	0.530
	WCDMA II	0.505	0.148	0.653

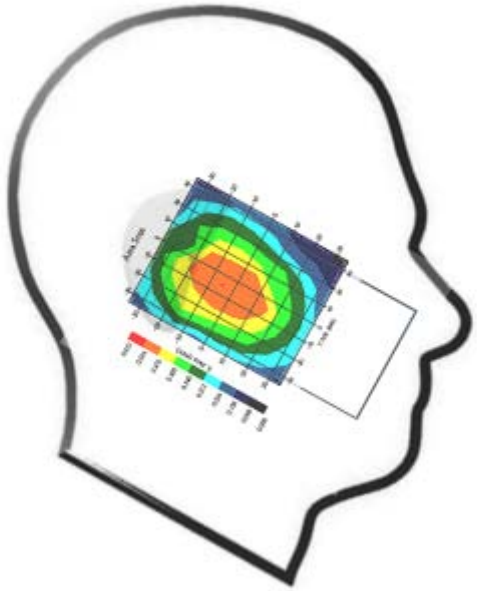
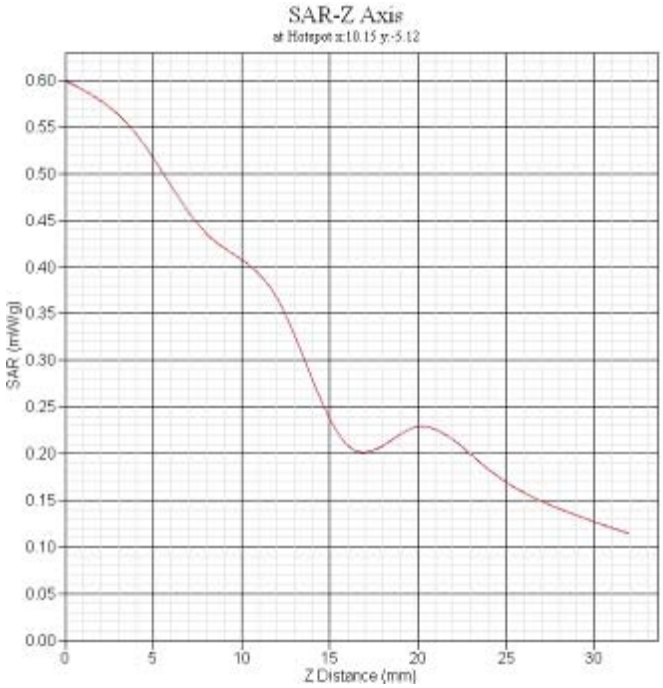
<Hotspot & Body-worn SAR>

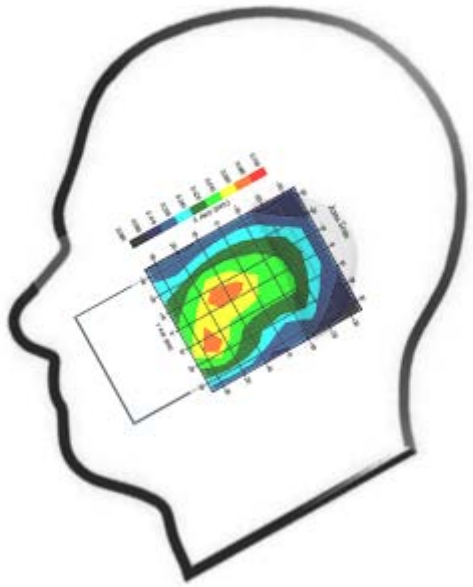
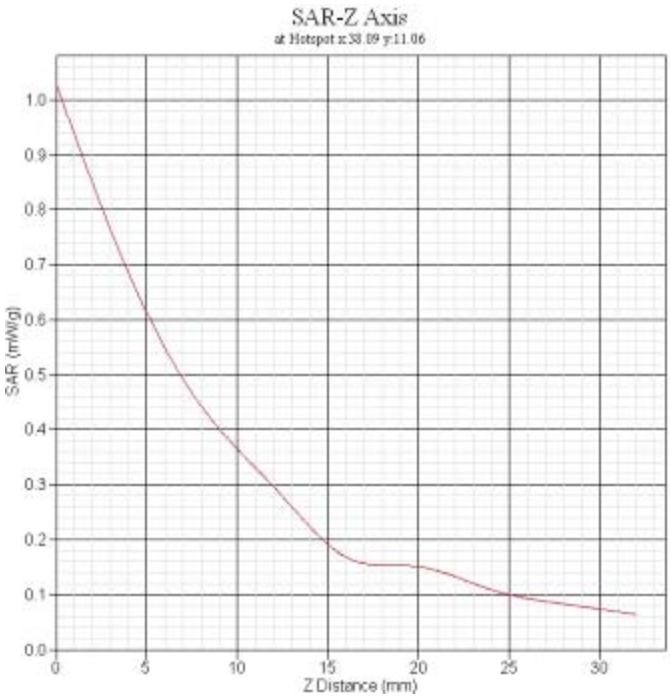
	Scaled WWAN		Scaled BT	Scaled
Position	**WWAN band**	**Max. WWAN SAR**	**Max. BT SAR**	**WWAN+BT**
Front	GSM850	0.623	0.105	0.728
	GSM1900	0.601	0.105	0.706
	WCDMA V	0.341	0.105	0.446
	WCDMA II	0.736	0.105	0.841
Back	GSM850	0.999	0.105	1.104
	GSM1900	1.160	0.105	1.265
	WCDMA V	0.680	0.105	0.785
	WCDMA II	1.134	0.105	1.239
Right	GSM850	0.561	0.105	0.666
	GSM1900	0.144	0.105	0.249
	WCDMA V	0.354	0.105	0.459
	WCDMA II	0.172	0.105	0.277
Back (With earphone)	GSM850	0.763	0.105	0.868
	GSM1900	0.782	0.105	0.887
	WCDMA V	0.677	0.105	0.782
	WCDMA II	1.109	0.105	1.214

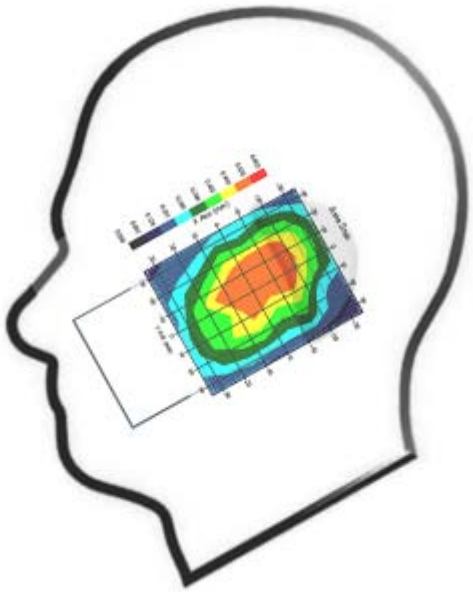
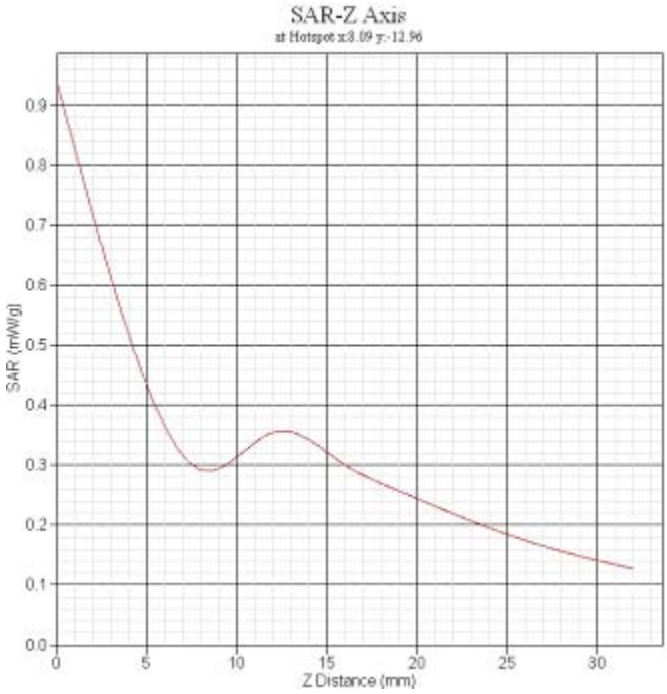
	Scaled WWAN		Scaled WLAN	Scaled
Position	**WWAN band**	**Max. WWAN SAR**	**Max. WLAN SAR**	**WWAN+WLAN**
Front	GSM850	0.623	0.063	0.686
	GSM1900	0.601	0.063	0.664
	WCDMA V	0.341	0.063	0.404
	WCDMA II	0.736	0.063	0.799
Back	GSM850	0.999	0.249	1.248
	GSM1900	1.160	0.249	1.409
	WCDMA V	0.680	0.249	0.929
	WCDMA II	1.124	0.249	1.373
Right	GSM850	0.561	0.102	0.663
	GSM1900	0.144	0.102	0.246
	WCDMA V	0.354	0.102	0.456
	WCDMA II	0.172	0.102	0.274
Back (With earphone)	GSM850	0.763	0.249	1.012
	GSM1900	0.782	0.249	1.031
	WCDMA V	0.677	0.249	0.926
	WCDMA II	1.109	0.249	1.358

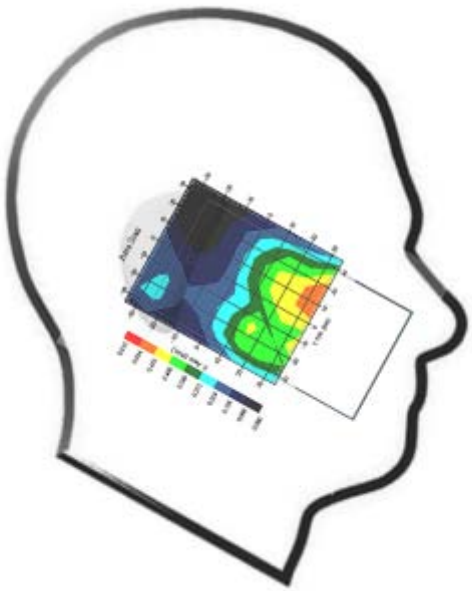
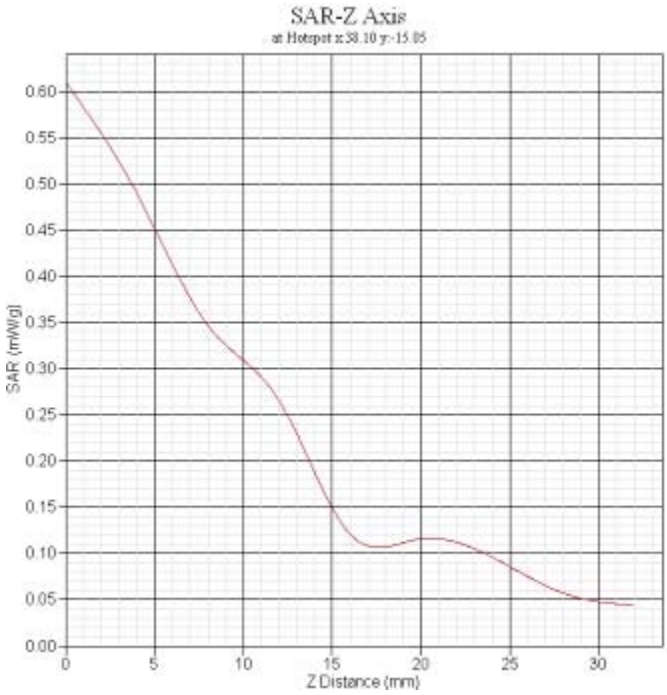
8.5. SAR Measurement Data

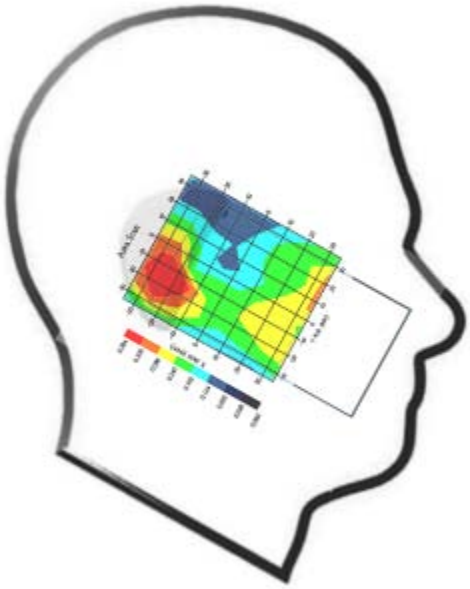
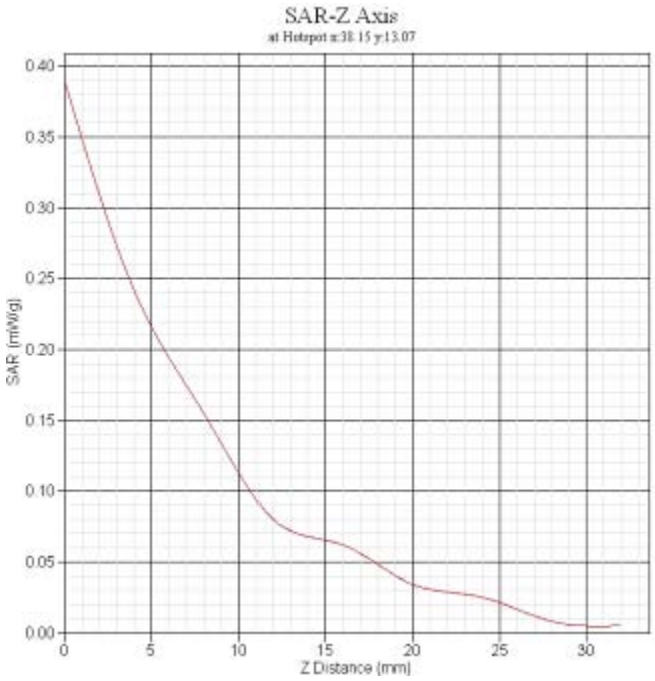
GSM850 left cheek ch251	
Frequency(MHz)	848.8
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	-1.415
Duty Cycle Factor	8
Crest factor	8
4Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.572
SAR 10g(W/kg)	0.411

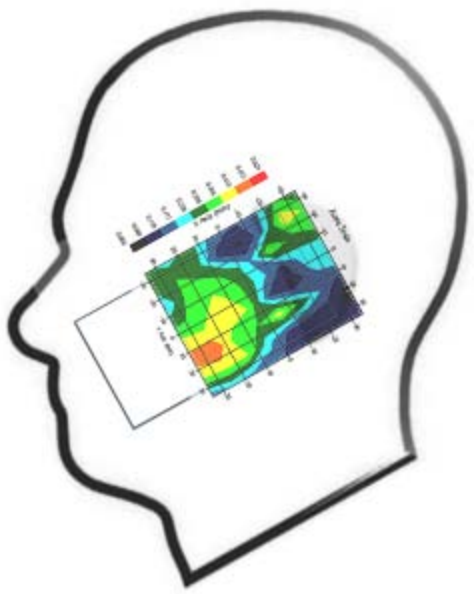
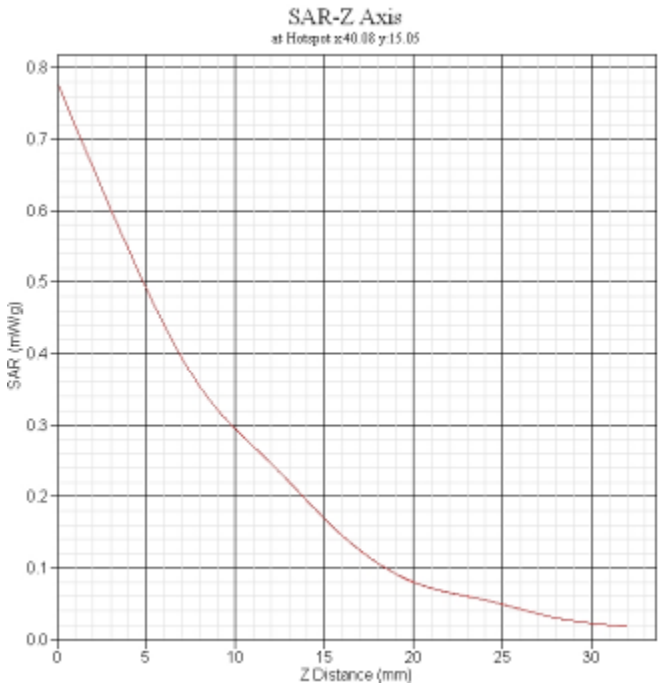
GSM850 left tilt ch251	
Frequency(MHz)	848.8
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	-3.415
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.542
SAR 10g(W/kg)	0.375

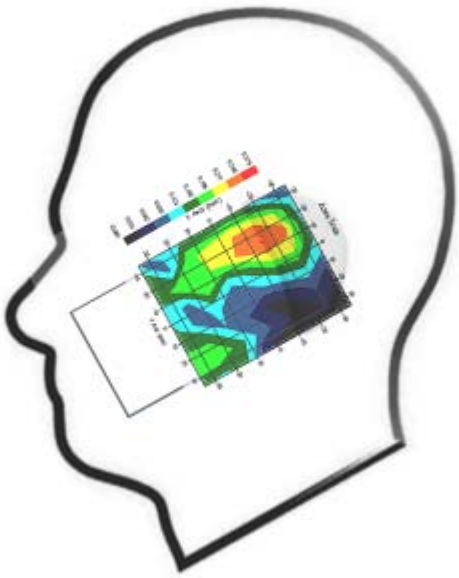
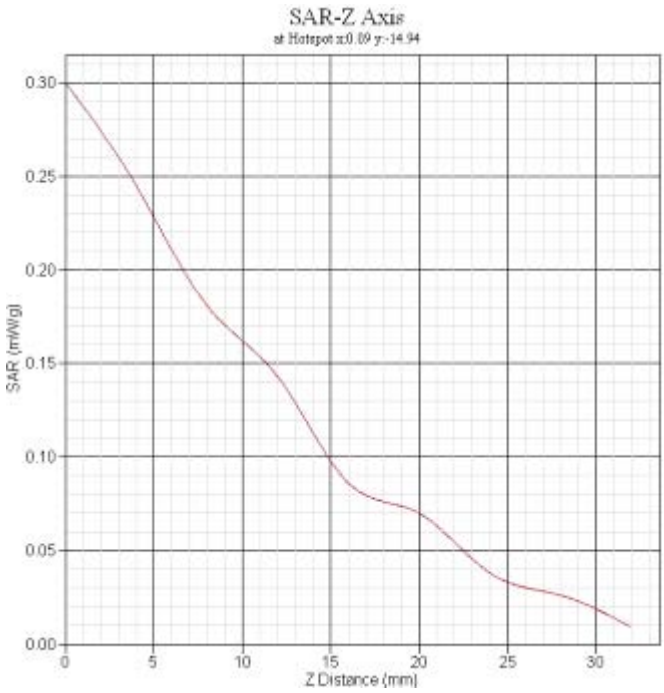
GSM850 Right cheek ch251	
Frequency(MHz)	848.8
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	2.000
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.571
SAR 10g(W/kg)	0.335

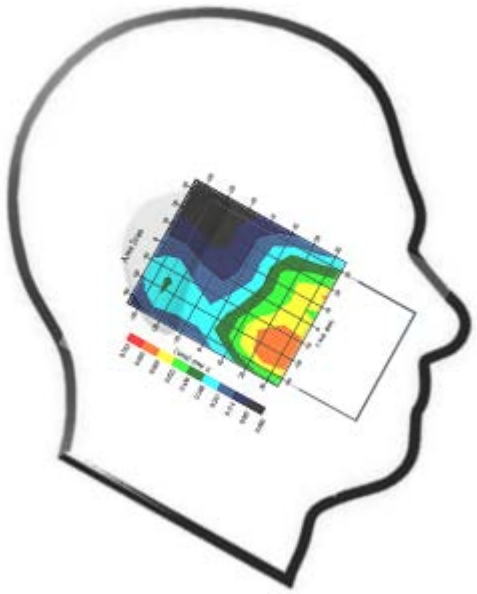
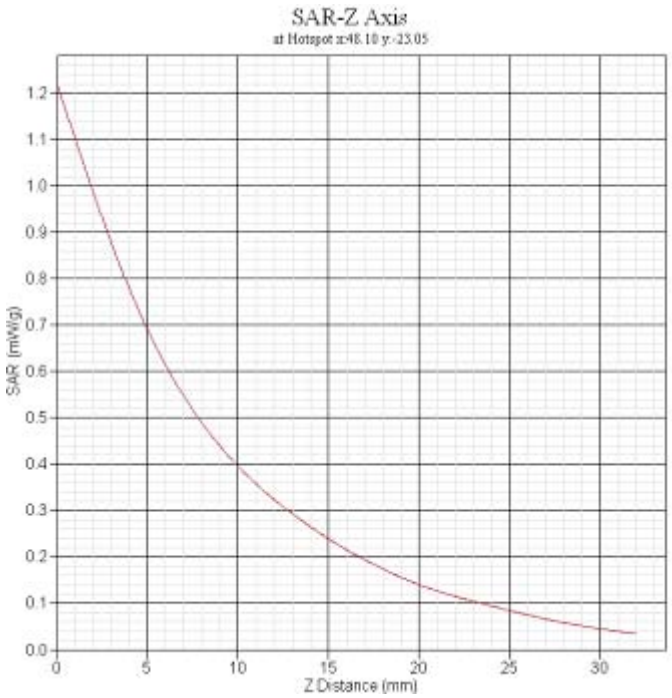
GSM850 Right tilt CH251	
Frequency(MHz)	848.8
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	-2.086
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.469
SAR 10g(W/kg)	0.338

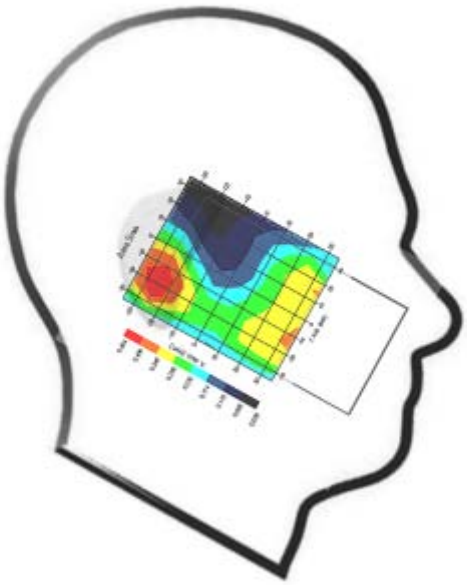
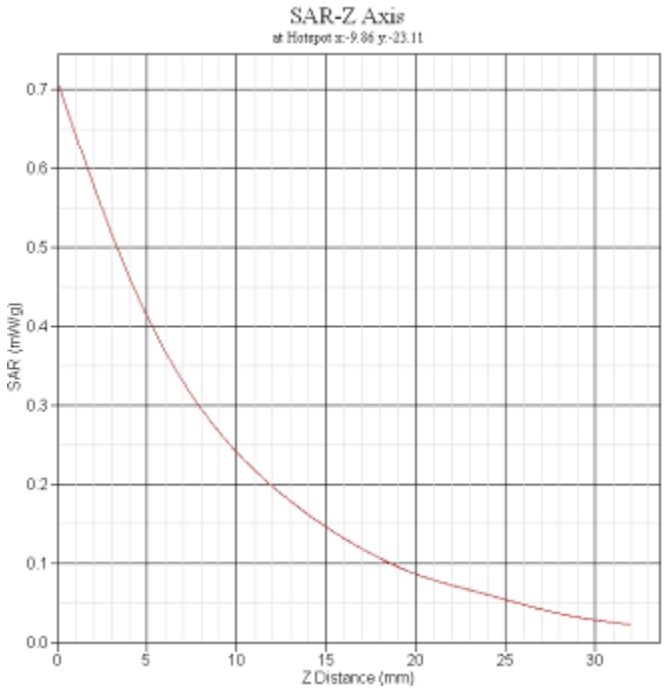
GSM1900 Left cheek CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	-1.093
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.431
SAR 10g(W/kg)	0.255

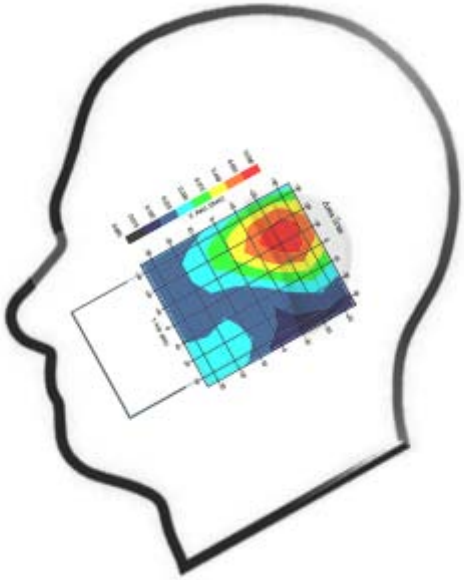
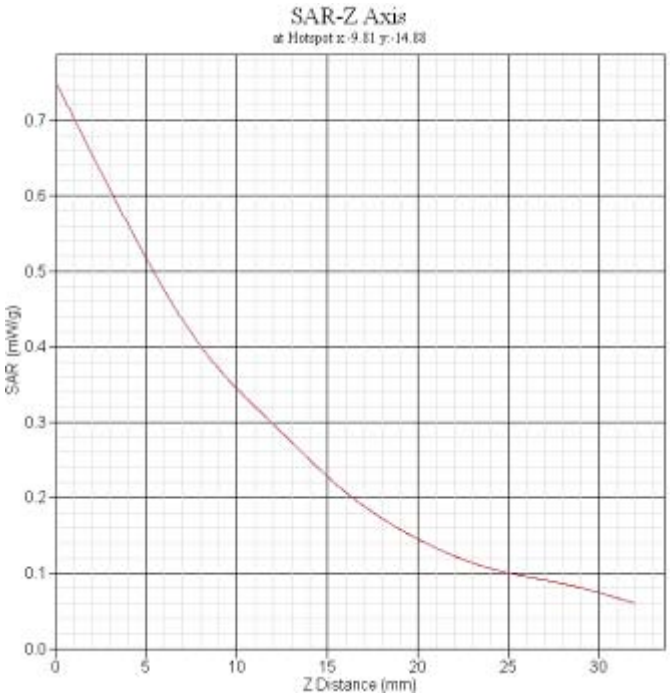
GSM1900 Left tilt CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	-2.979
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.293
SAR 10g(W/kg)	0.235

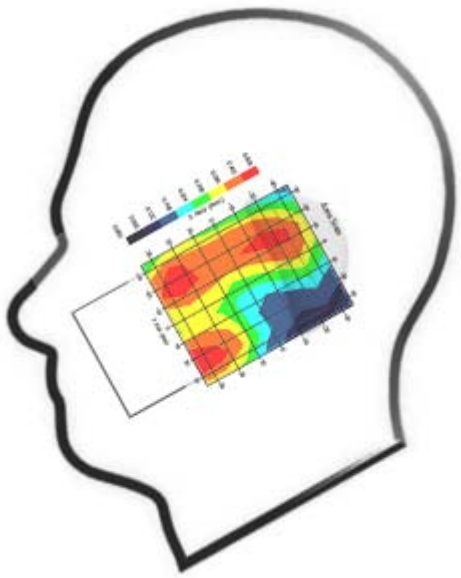
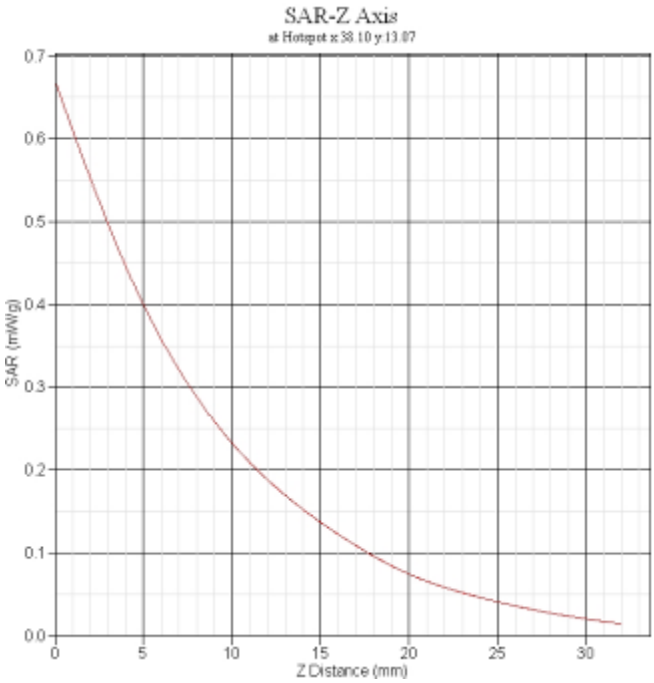
GSM1900 Right cheek CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	4.525
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.441
SAR 10g(W/kg)	0.296

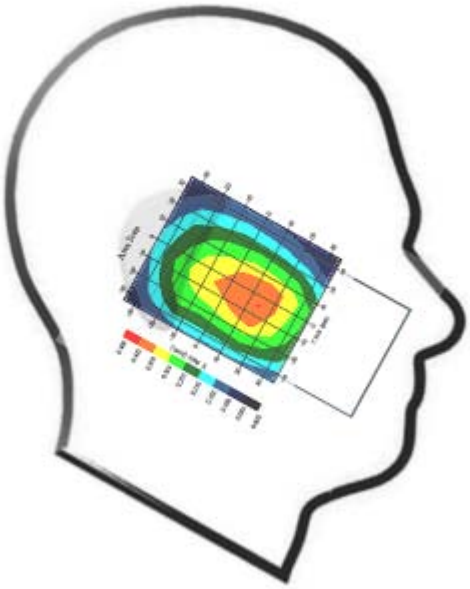
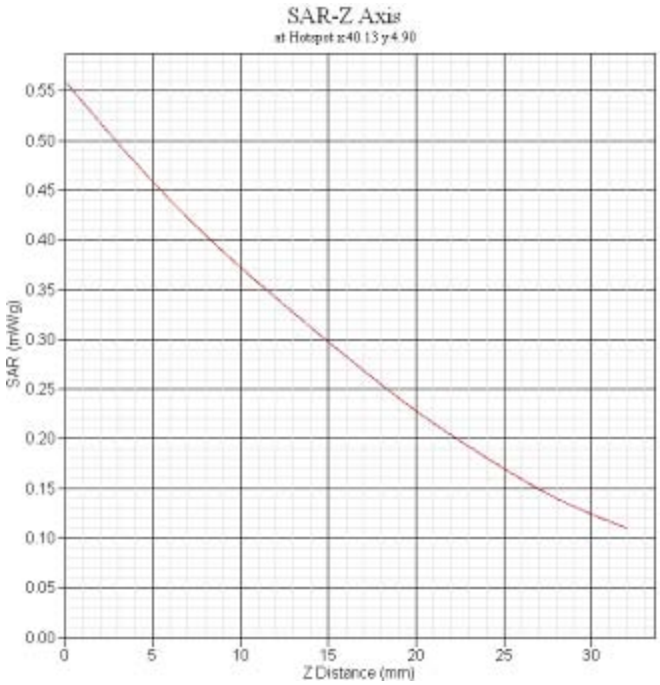
GSM1900 Right tilt CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	0.741
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.217
SAR 10g(W/kg)	0.118

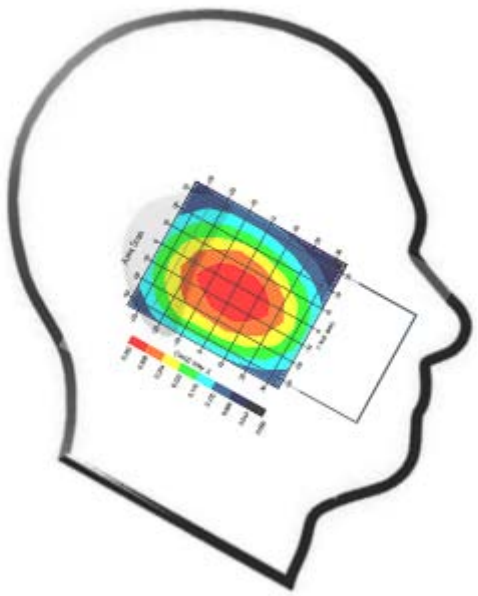
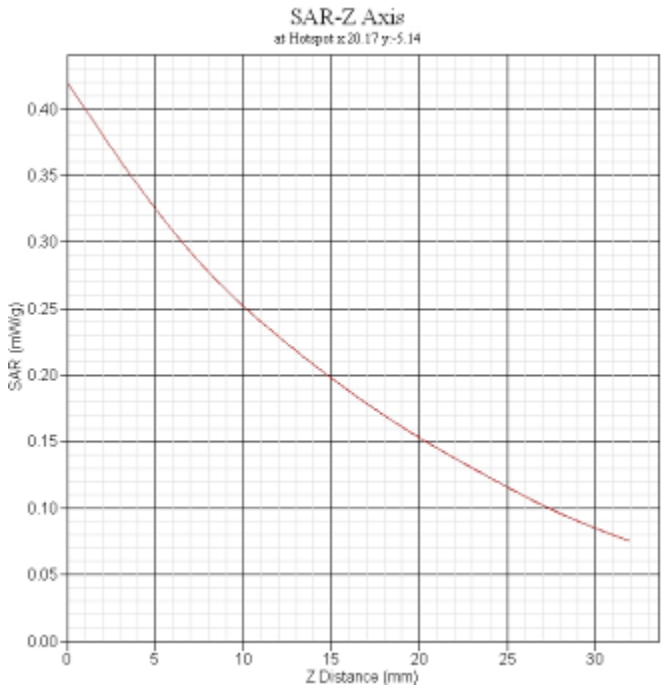
WCDMA Band Ⅱ Left cheek CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	-4.064
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.645
SAR 10g(W/Kg)	0.403

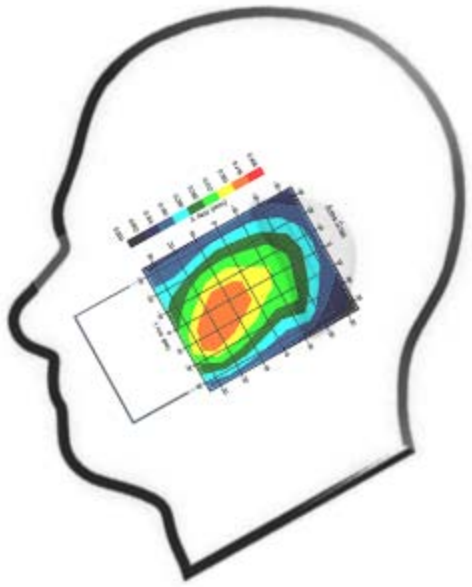
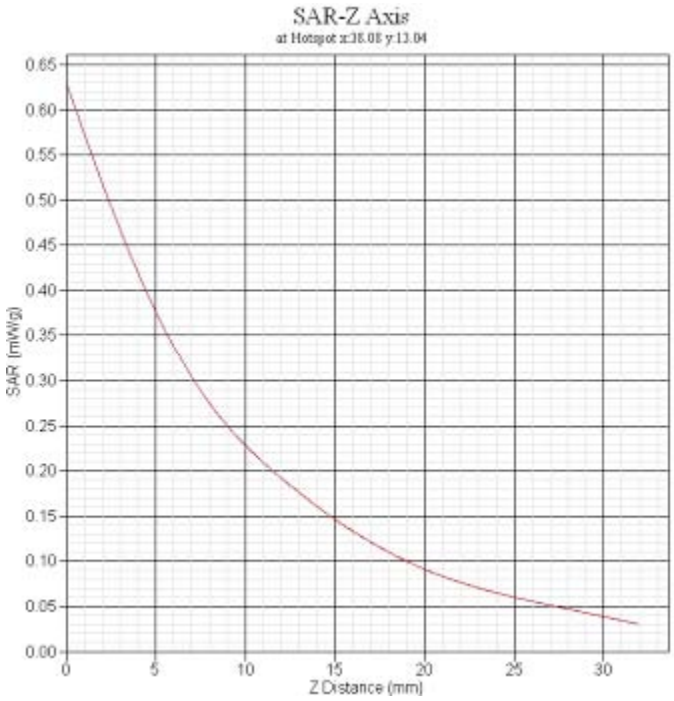
WCDMA Band Ⅱ Left tilt CH9400	
Frequency(MHz)	1800.0
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	2.810
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.421
SAR 10g(W/Kg)	0.235

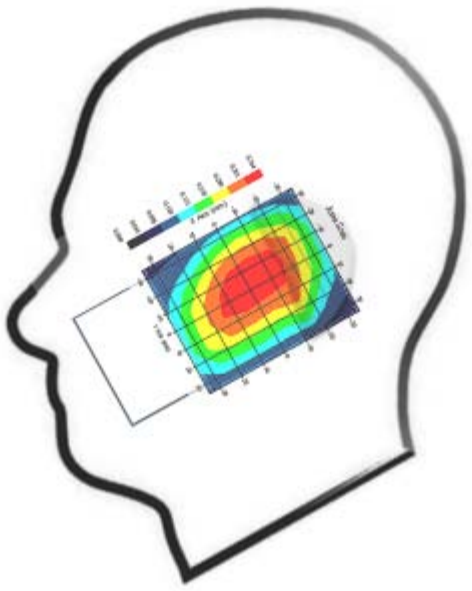
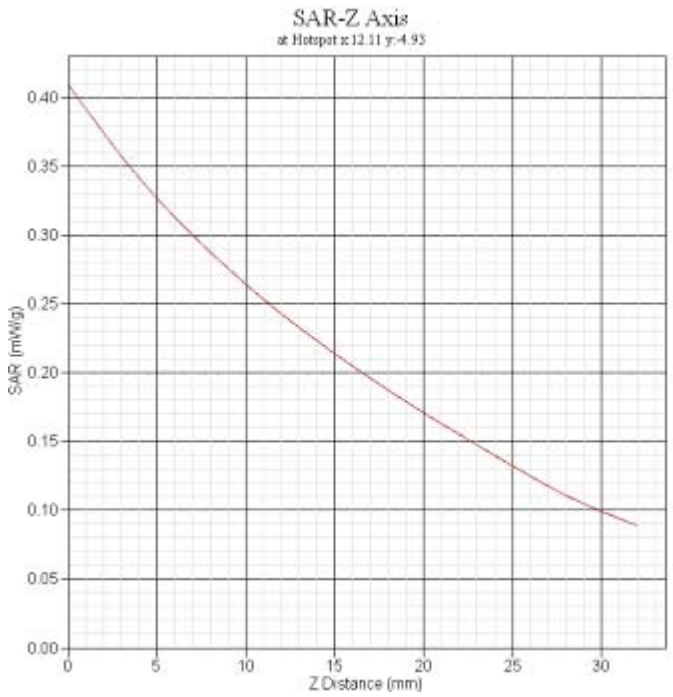
WCDMA Band Ⅱ Right cheek CH9400	
Frequency(MHz)	1800.0
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	-1.737
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.570
SAR 10g(W/Kg)	0.292

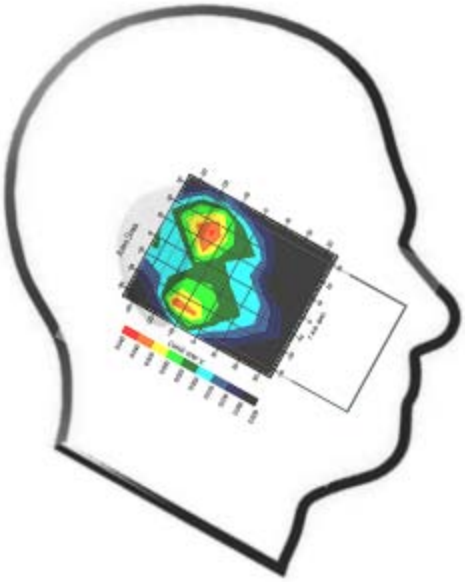
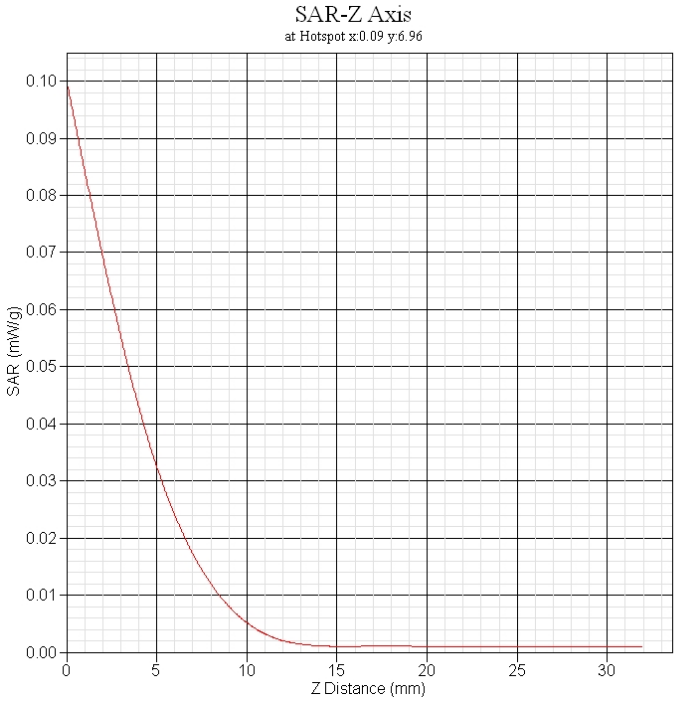
WCDMA Band Ⅱ Right tilt CH9400	
Frequency(MHz)	1800.0
Relative permittivity(real part)	41.52
Conductivity(S/m)	1.44
Variation(%)	1.560
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.7
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.413
SAR 10g(W/Kg)	0.237

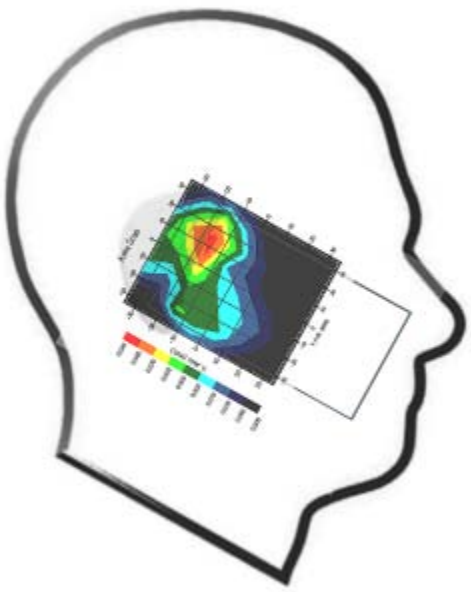
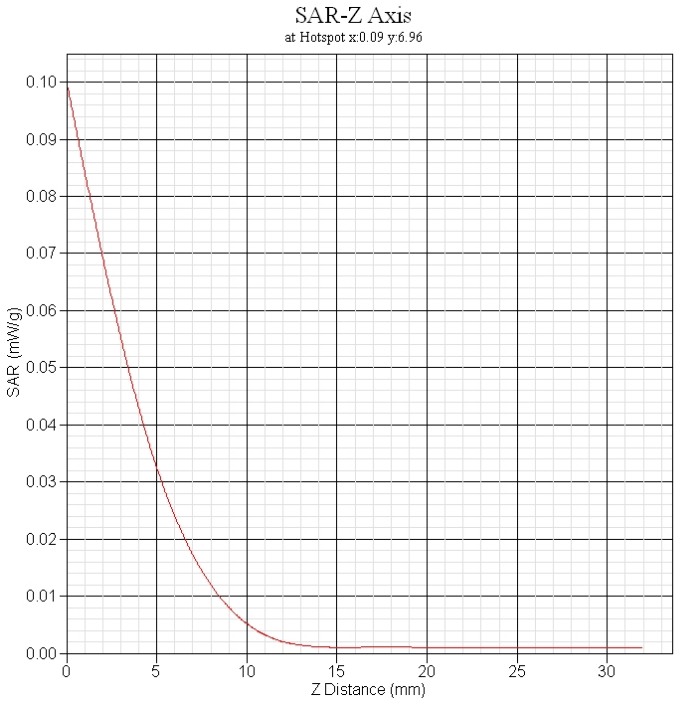
WCDMA Band Ⅴ Left cheek CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	2.332
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/Kg)	0.360
SAR 10g(W/Kg)	0.219

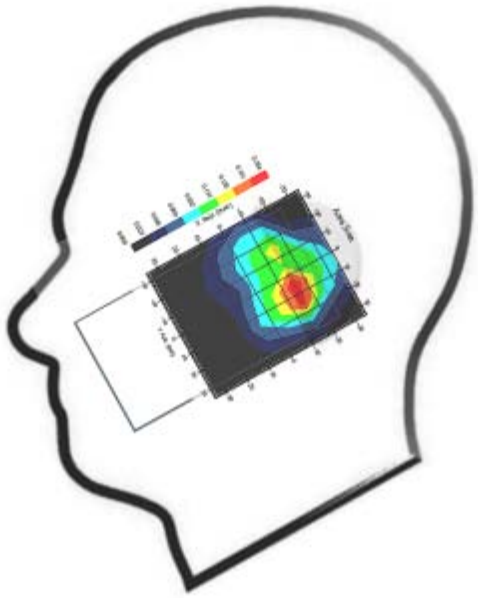
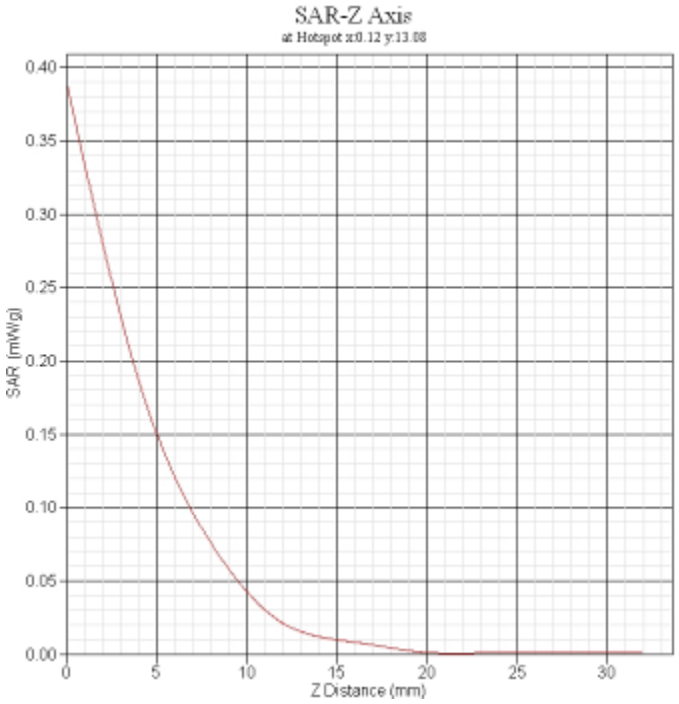
WCDMA Band Ⅴ Left tilt CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	-2.936
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/Kg)	0.319
SAR 10g(W/Kg)	0.225

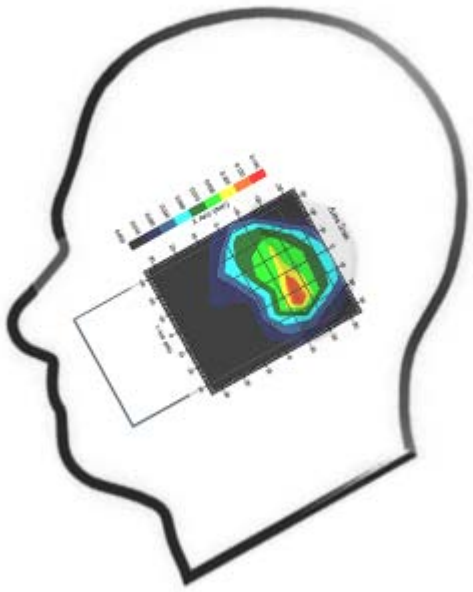
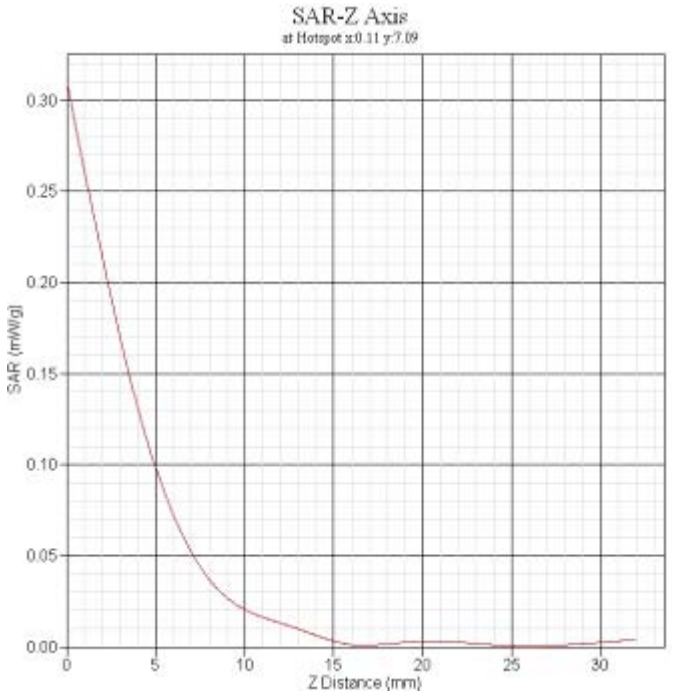
WCDMA Band Ⅴ Right cheek CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	2.966
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/Kg)	0.385
SAR 10g(W/Kg)	0.218

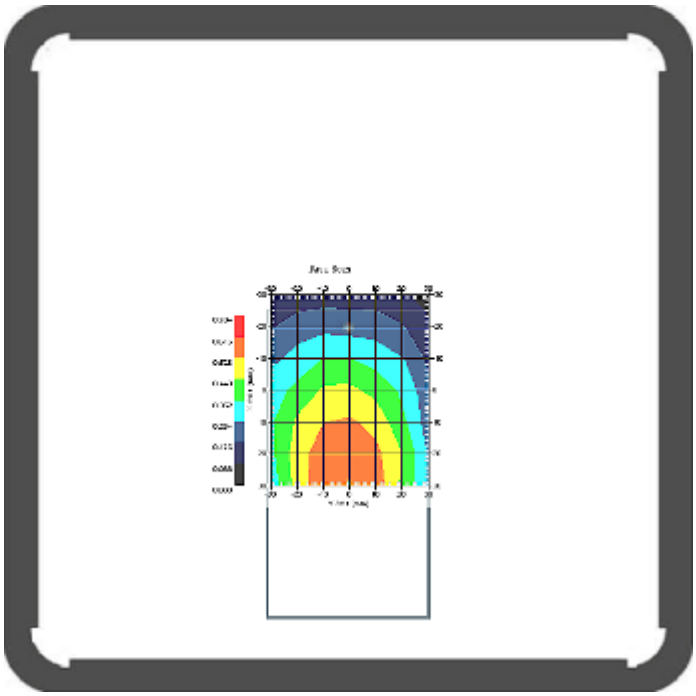
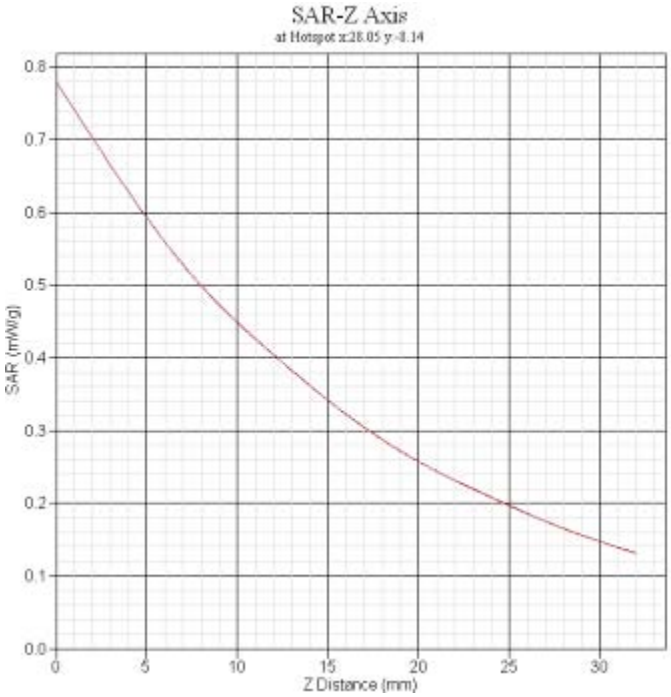
WCDMA Band Ⅴ	Right tilt CH4183
Frequency(MHz)	836.6
Relative permittivity(real part)	40.24
Conductivity(S/m)	0.93
Variation(%)	2.989
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.5
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/Kg)	0.321
SAR 10g(W/Kg)	0.237

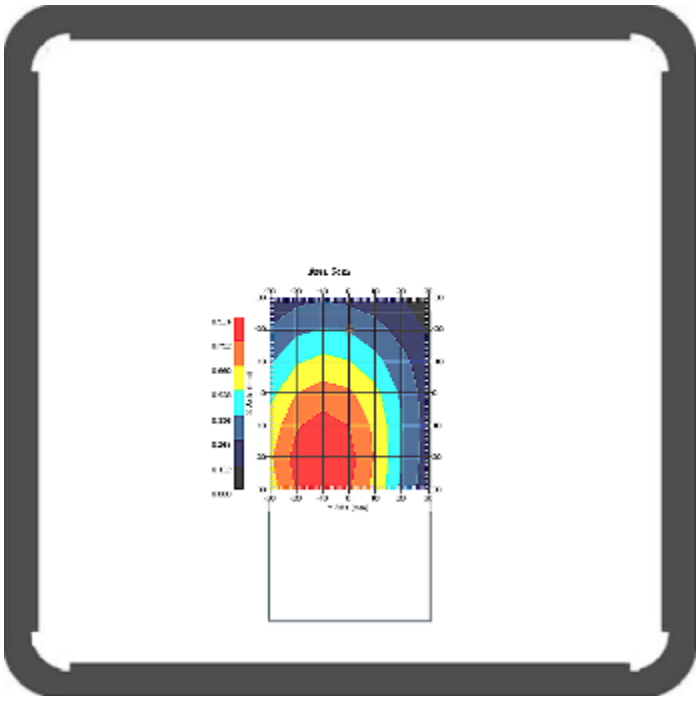
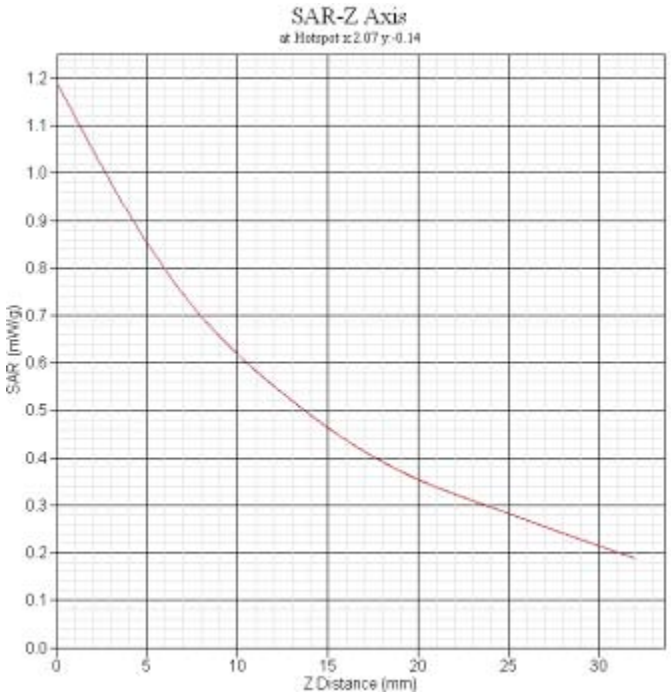
802.11b Left cheek CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	40.25
Conductivity(S/m)	1.81
Variation(%)	1.372
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.65
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.043
SAR 10g(W/kg)	0.019

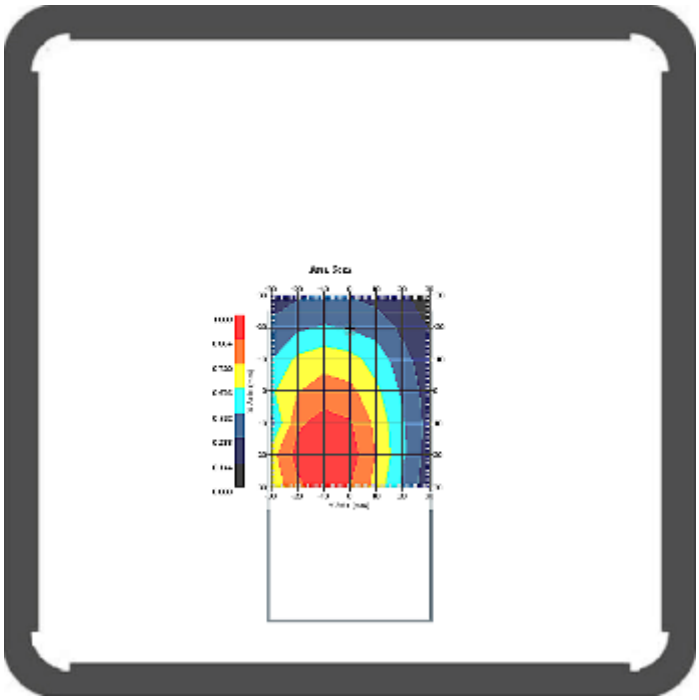
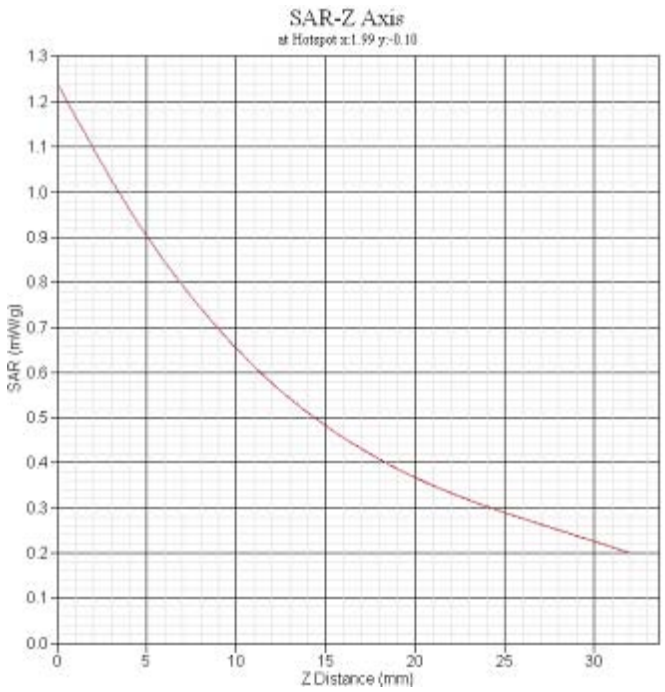
802.11b Left tilt CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	40.25
Conductivity(S/m)	1.81
Variation(%)	3.002
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.65
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.045
SAR 10g(W/kg)	0.020

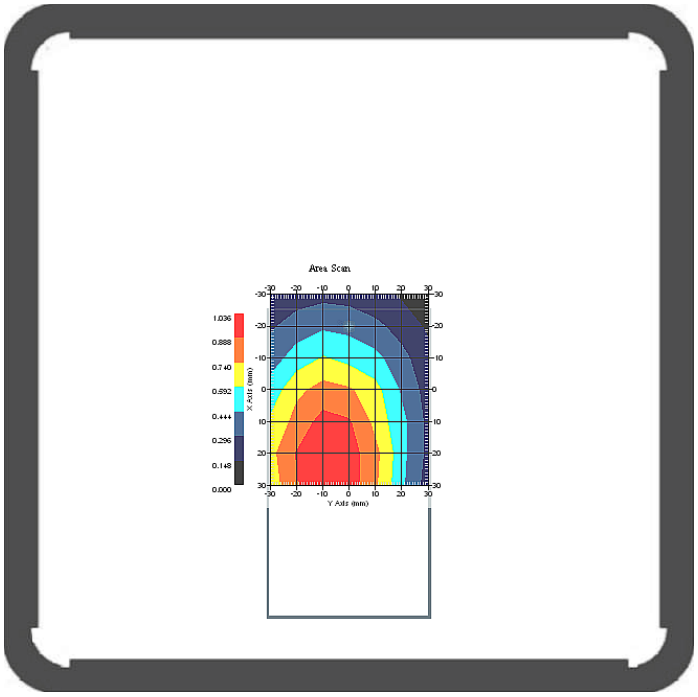
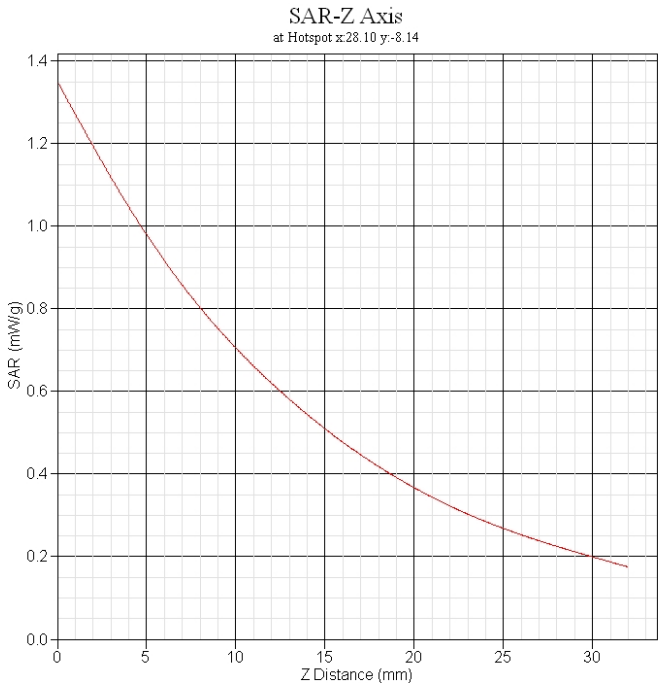
802.11b Right cheek CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	40.25
Conductivity(S/m)	1.81
Variation(%)	-2.426
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.65
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.165
SAR 10g(W/kg)	0.065

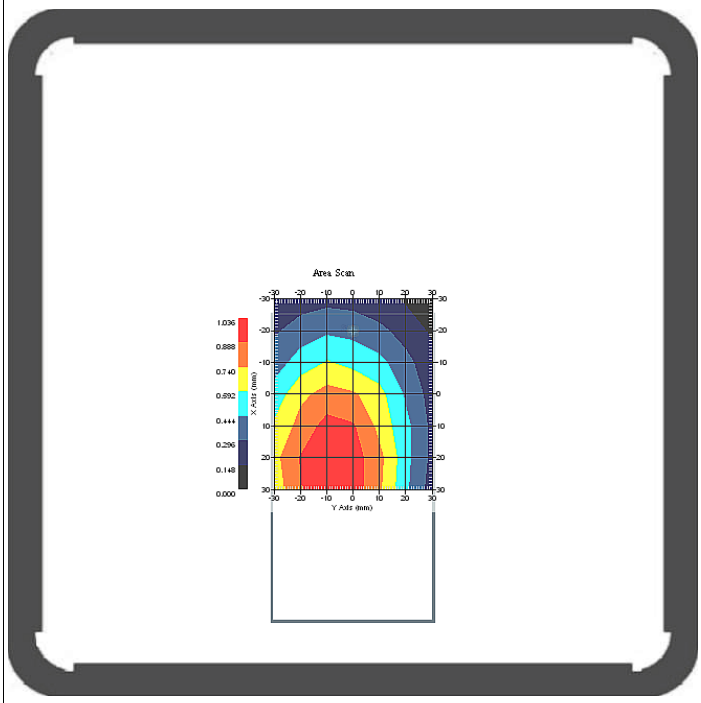
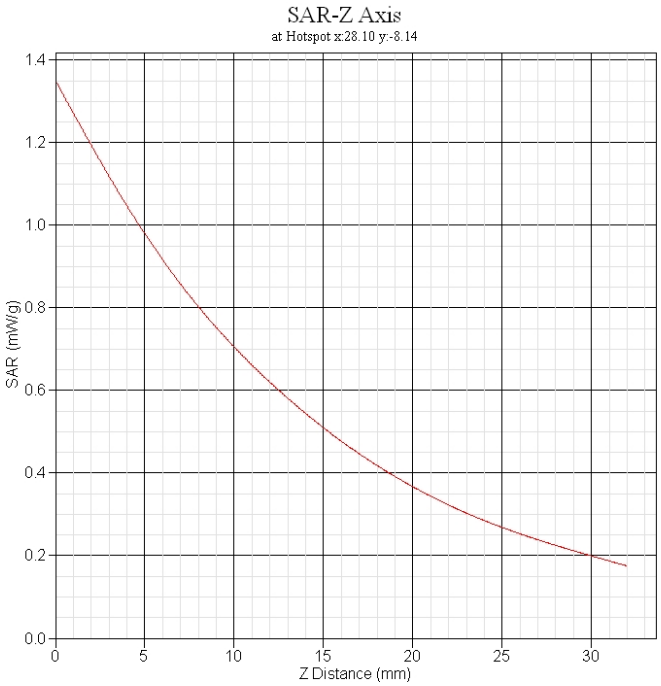
802.11b Right tilt CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	40.25
Conductivity(S/m)	1.81
Variation(%)	1.962
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.65
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.122
SAR 10g(W/kg)	0.049

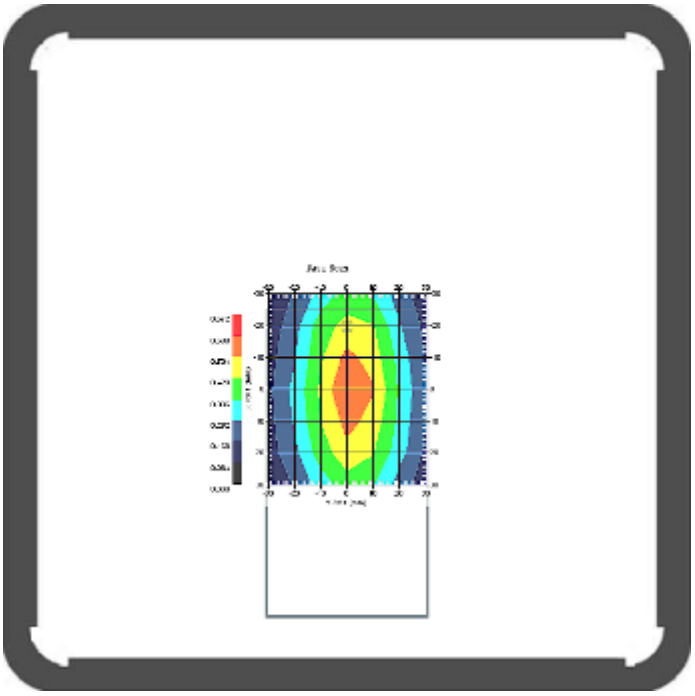
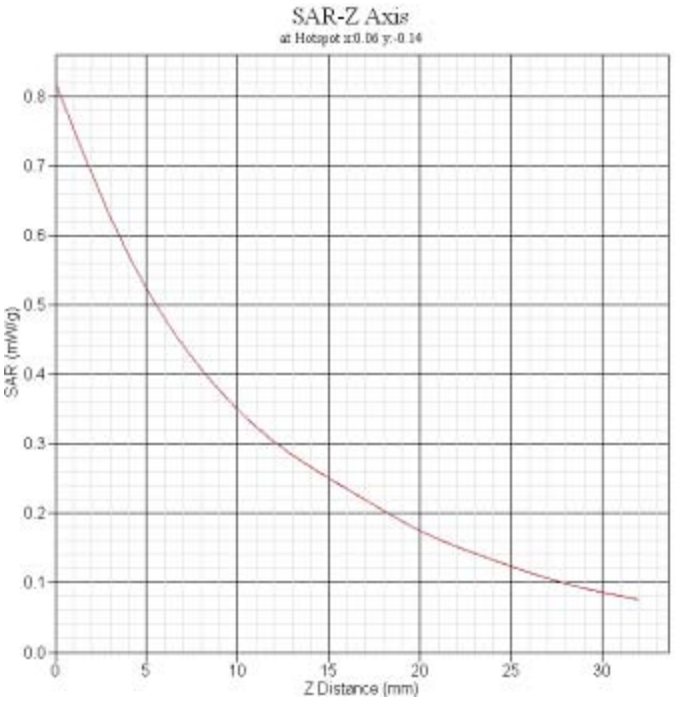
GPRS850 body Front CH251	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-3.456
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.609
SAR 10g(W/kg)	0.427

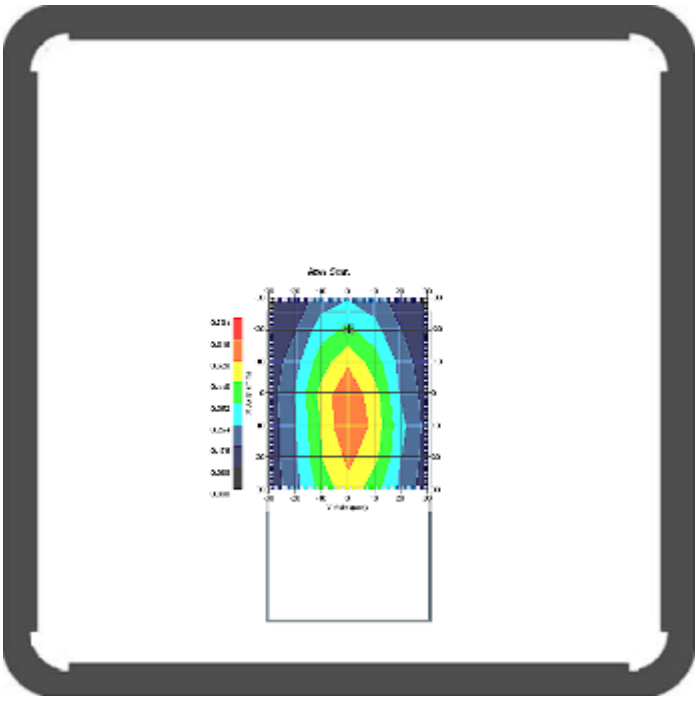
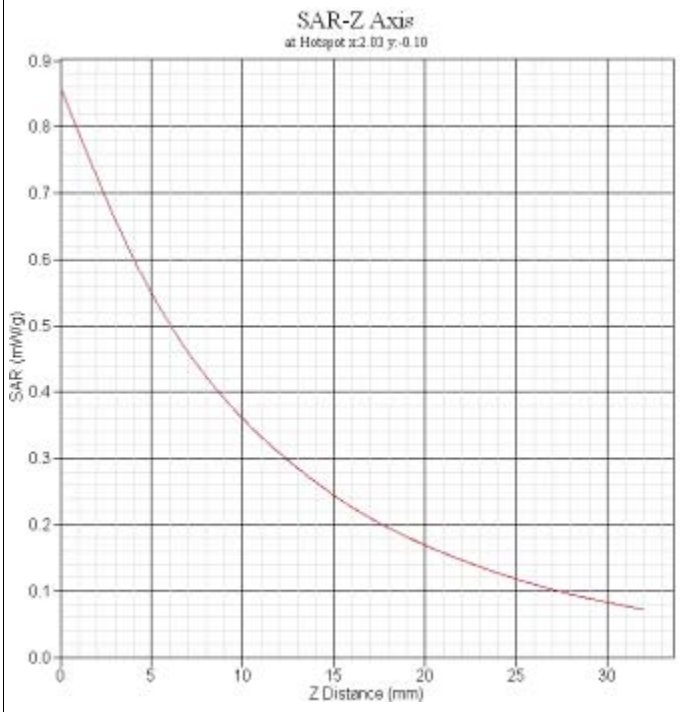
GPRS850 body Back CH128	
Frequency(MHz)	824.2
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-1.511
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.852
SAR 10g(W/kg)	0.563

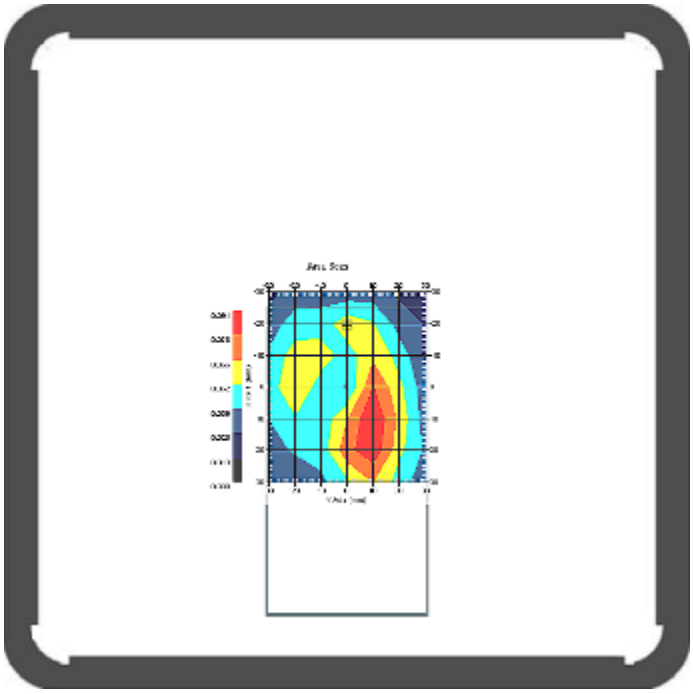
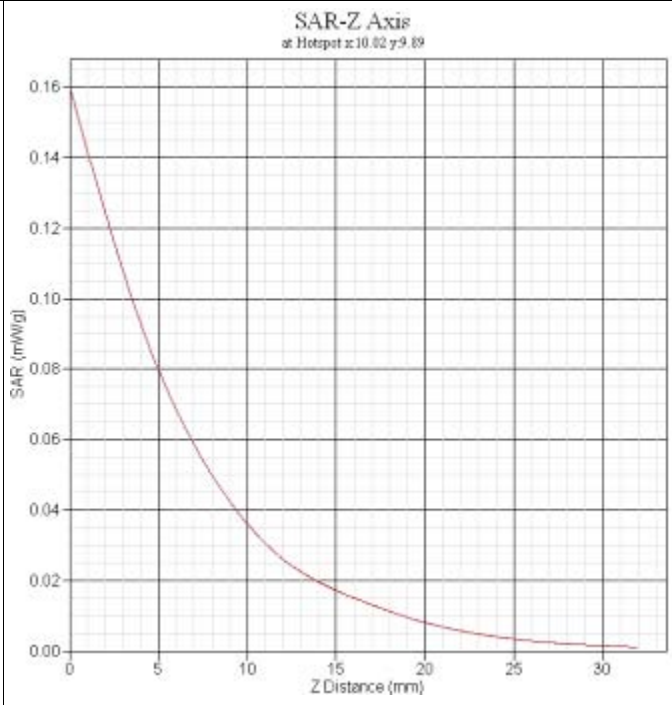
GPRS850 body Back CH190	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-1.709
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.868
SAR 10g(W/kg)	0.564

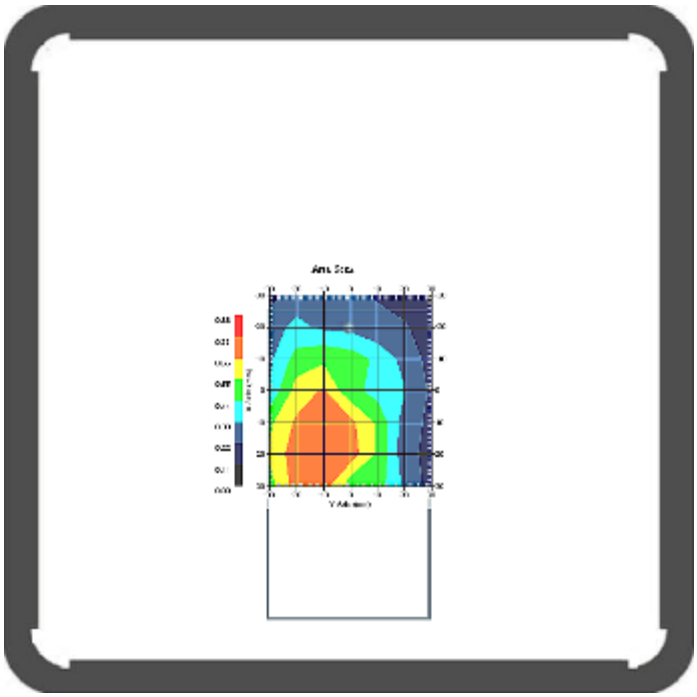
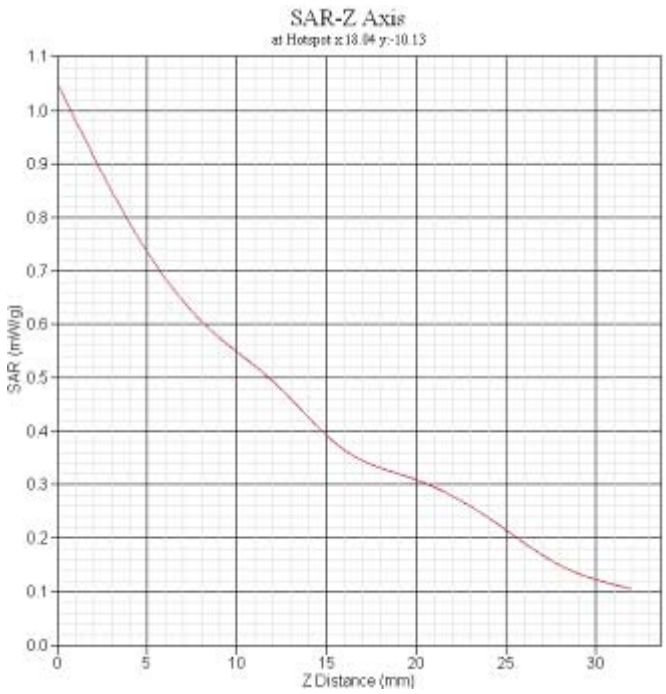
GPRS850 body Back CH251	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-1.818
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.976
SAR 10g(W/kg)	0.655

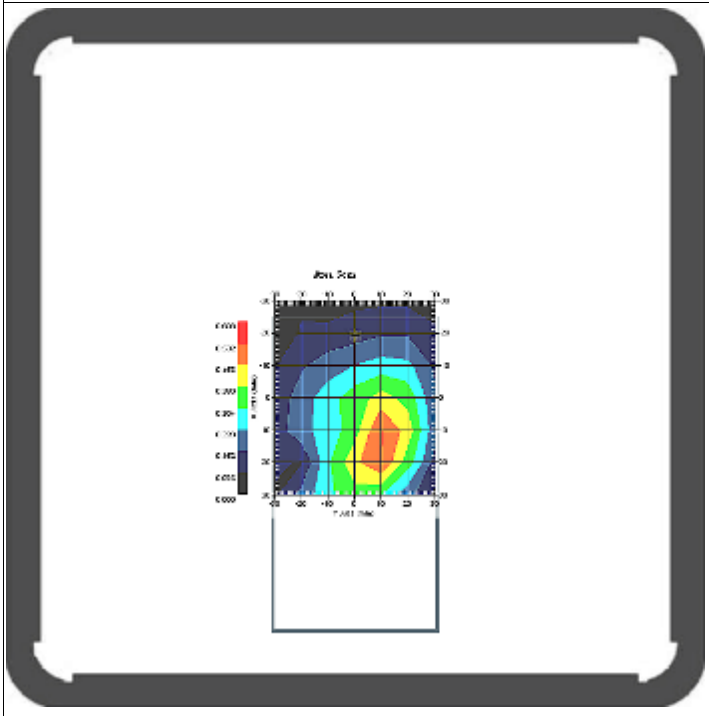
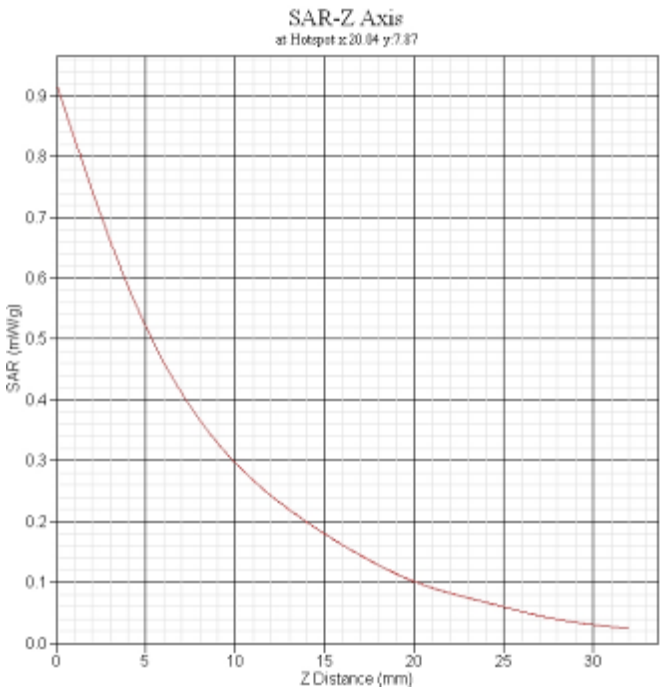
GPRS850 body Back CH251(repeat)	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-1.456
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.965
SAR 10g(W/kg)	0.643

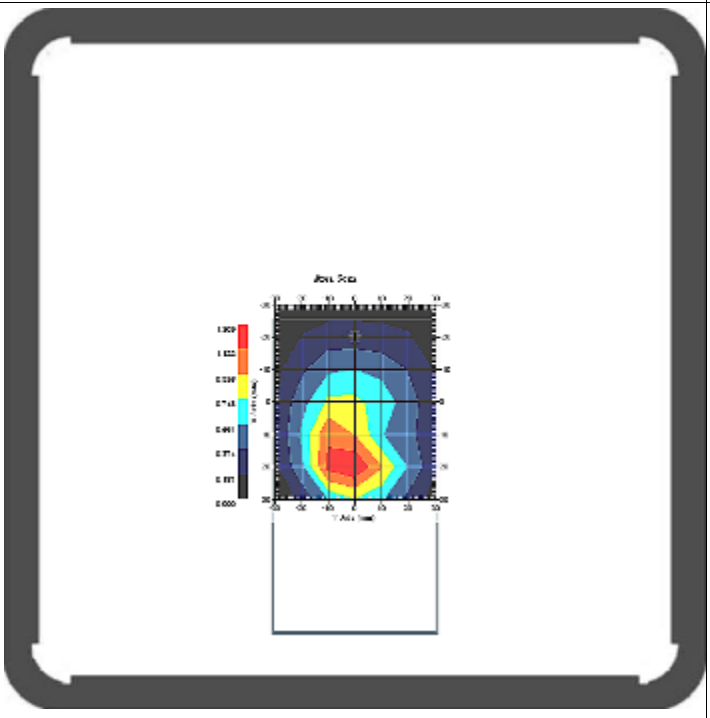
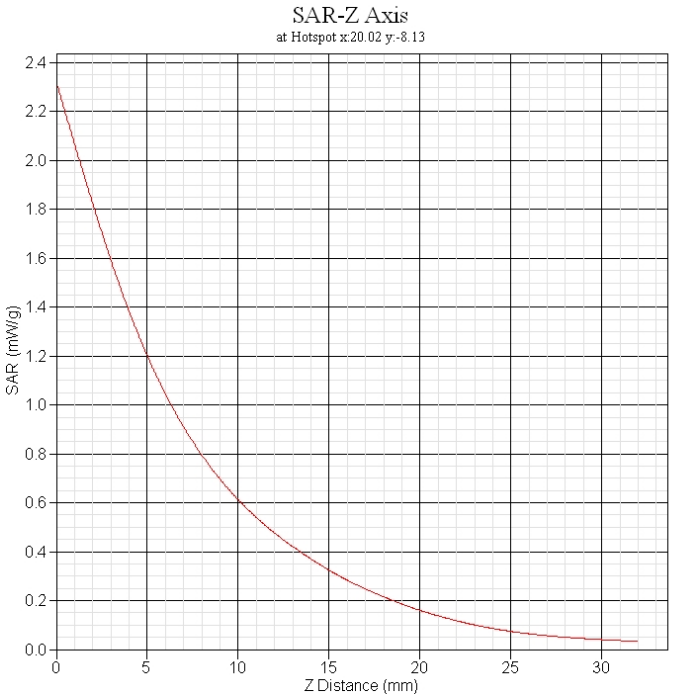
GPRS850 body Left CH251	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-3.426
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.537
SAR 10g(W/kg)	0.344

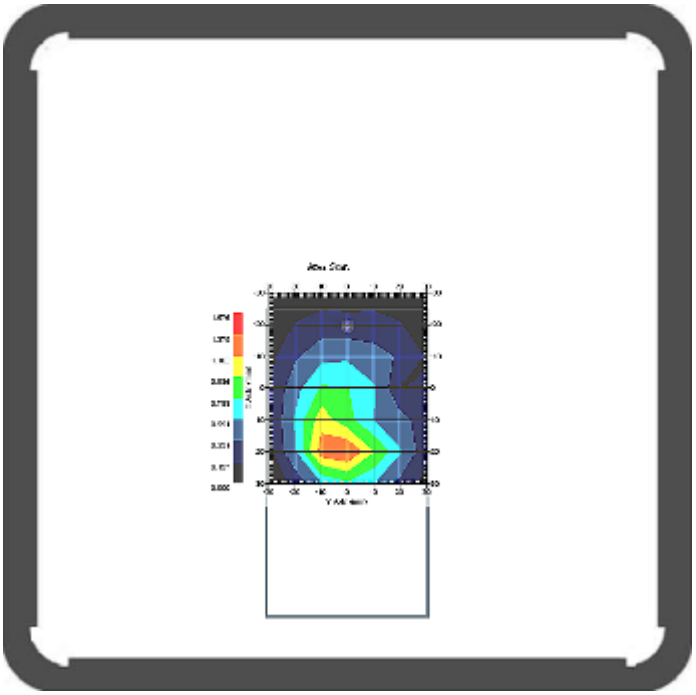
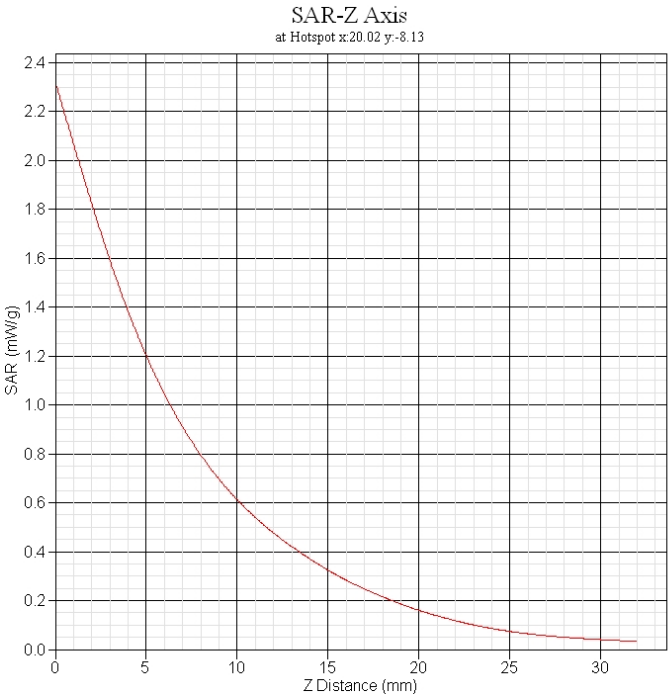
GPRS850 body Right ch251	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	4.525
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.548
SAR 10g(W/kg)	0.338

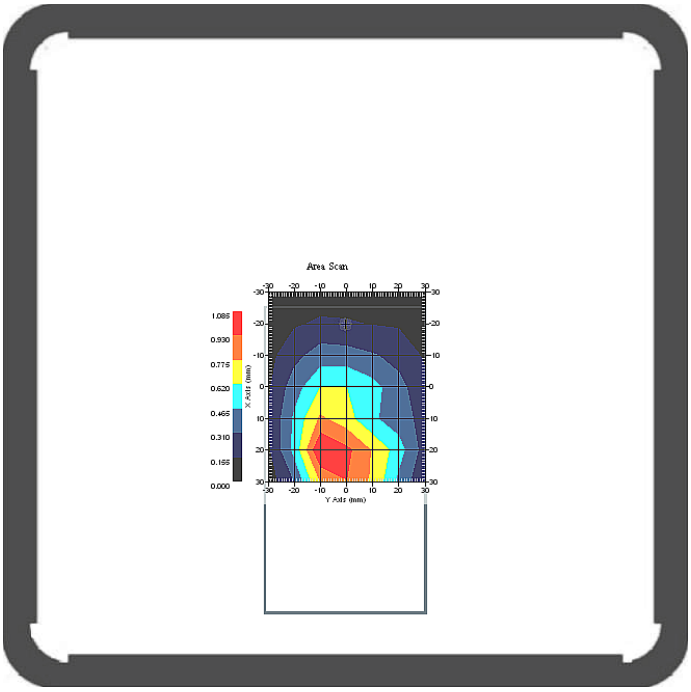
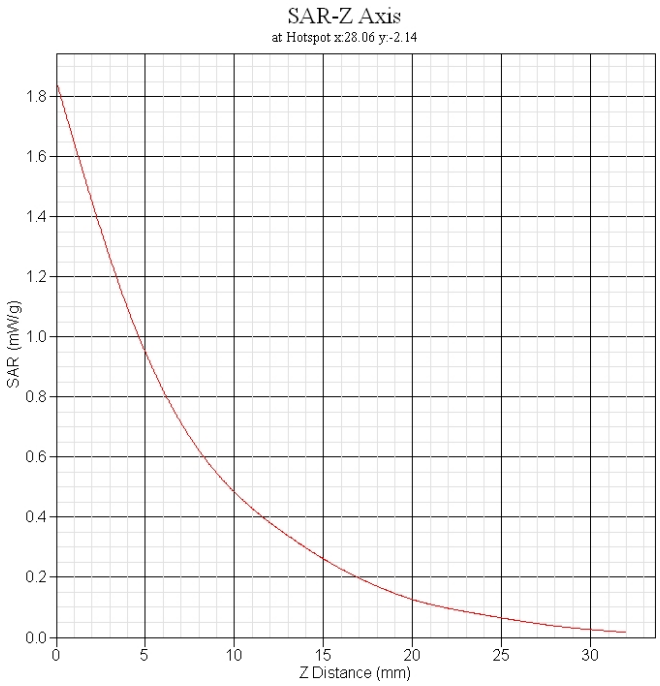
GPRS850 body Bottom ch251	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	2.548
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.086
SAR 10g(W/kg)	0.043

GSM850 body Back ch251+earphone	
Frequency(MHz)	848.8
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	0.990
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-04
	
SAR 1g(W/kg)	0.677
SAR 10g(W/kg)	0.429

GPRS1900 body Front CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.474
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.502
SAR 10g(W/kg)	0.255

GPRS1900 body Back CH512	
Frequency(MHz)	1850.2
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.021
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.904
SAR 10g(W/kg)	0.533

GPRS1900 body Back CH661	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	2.124
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.933
SAR 10g(W/kg)	0.548

GPRS1900 body Back CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	2.503
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.969
SAR 10g(W/kg)	0.580

GPRS1900 body Back CH810(repeat)	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	1.378
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
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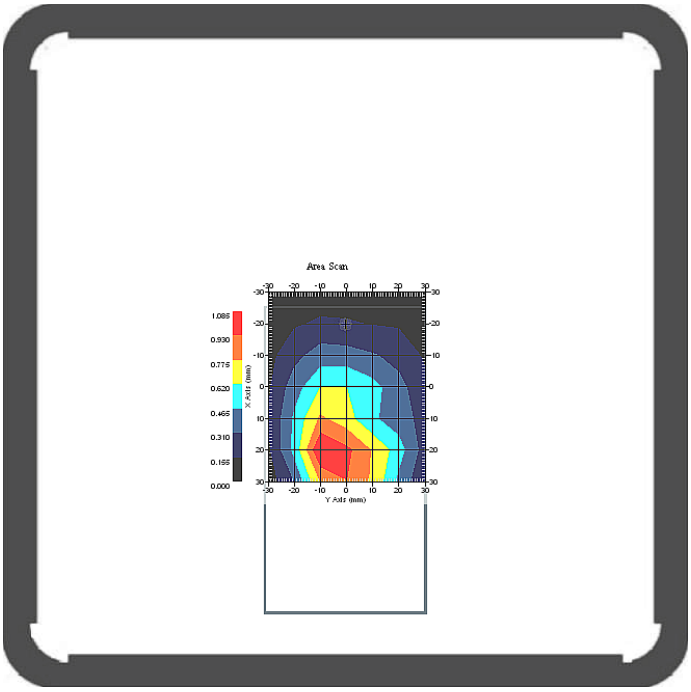
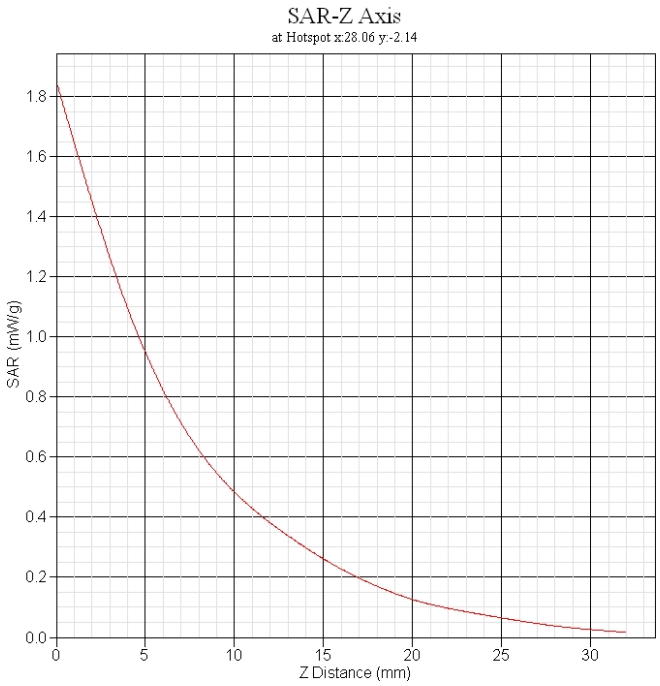
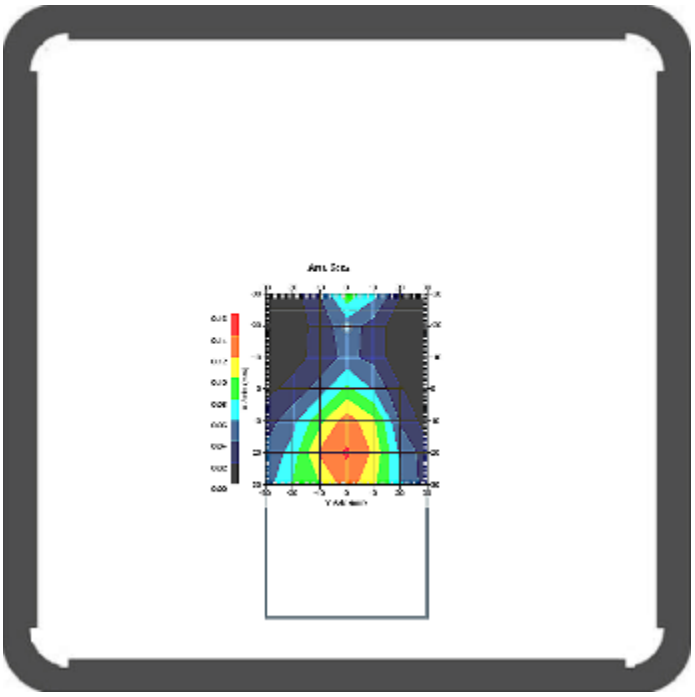
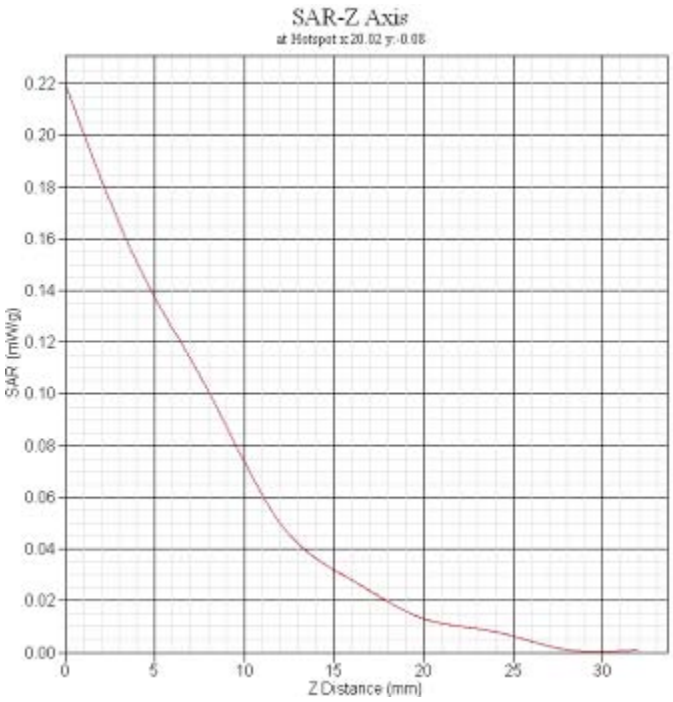
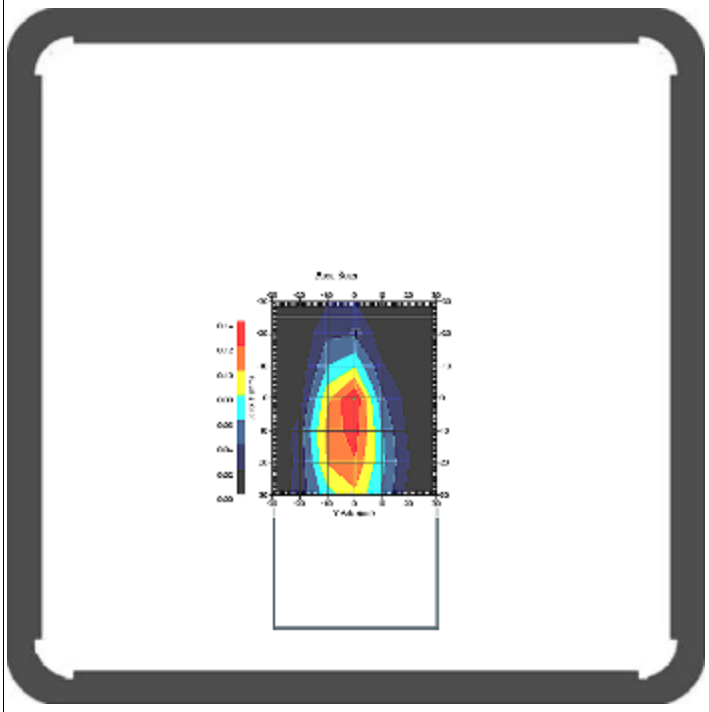
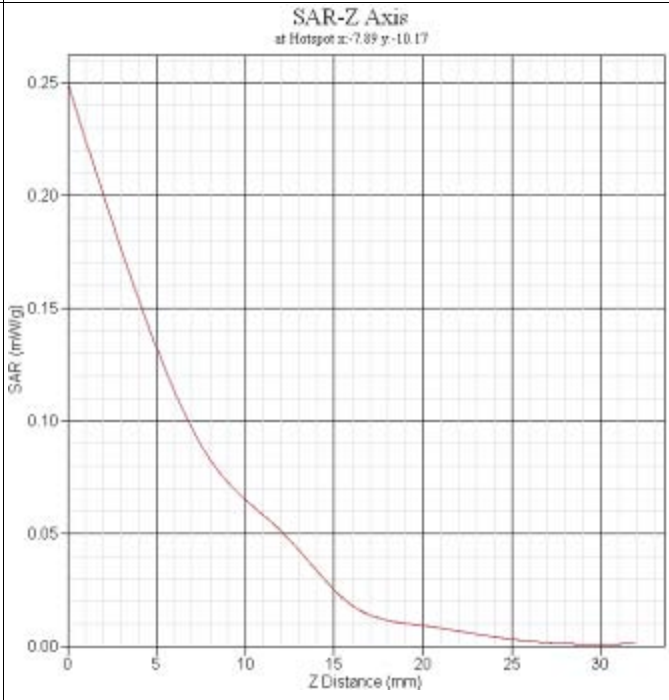
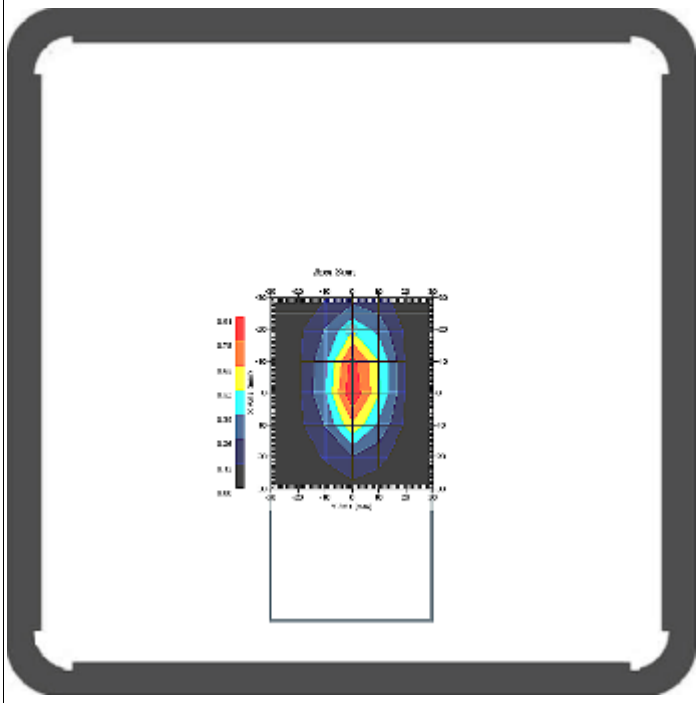
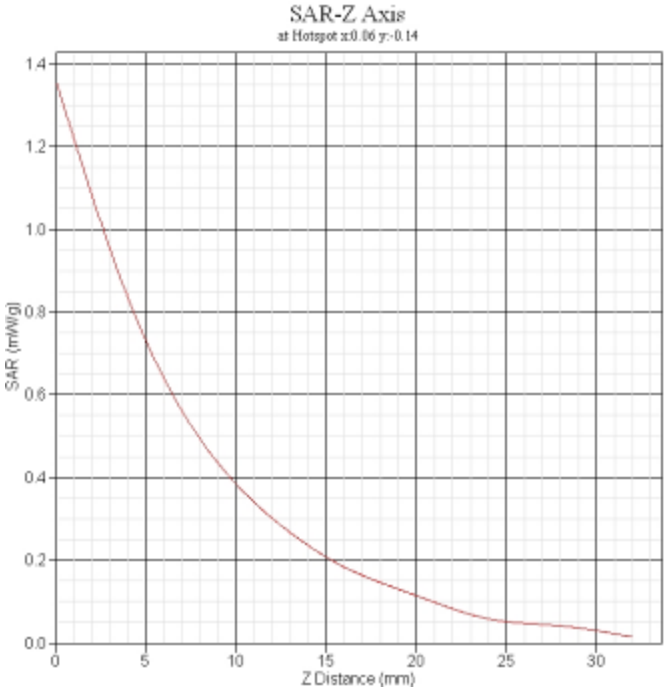
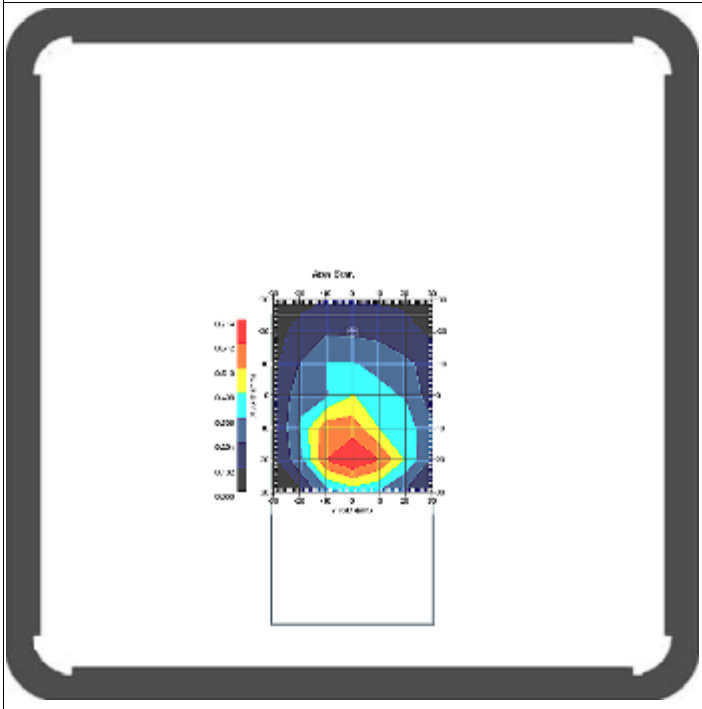
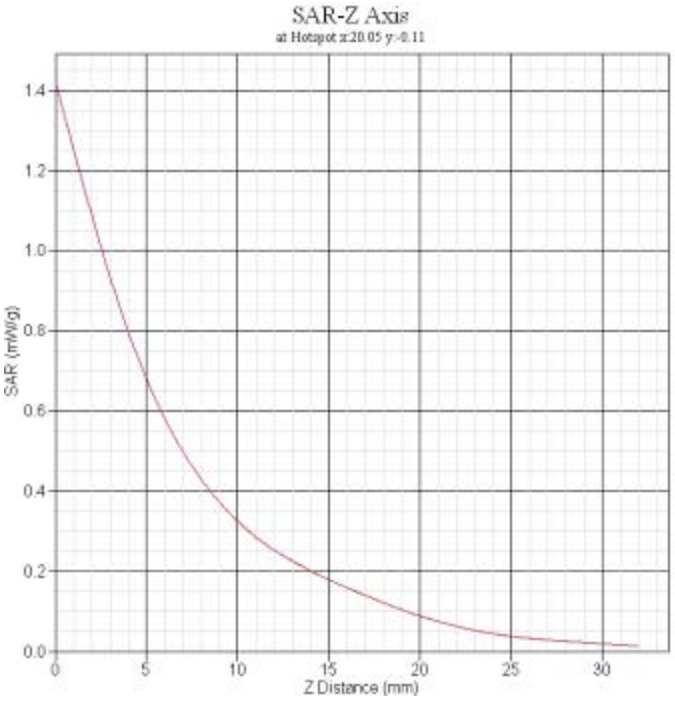
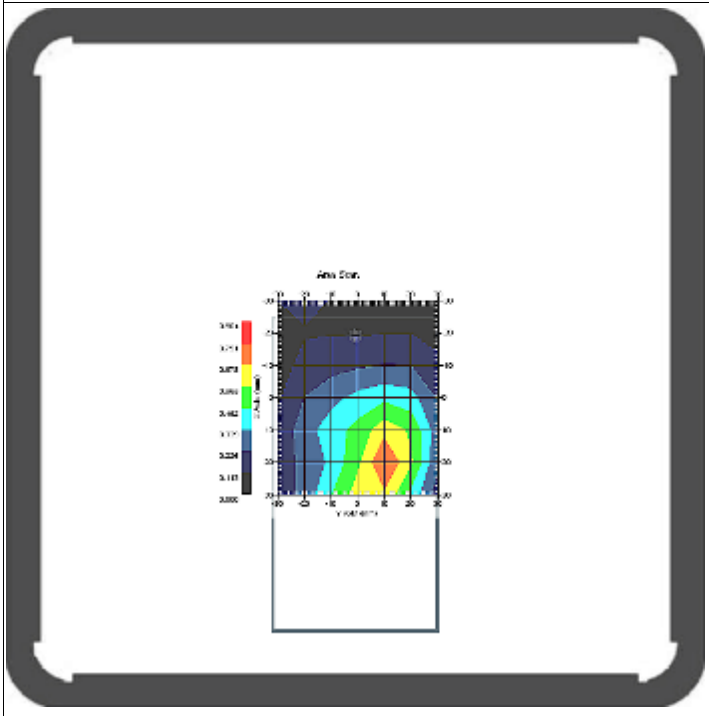
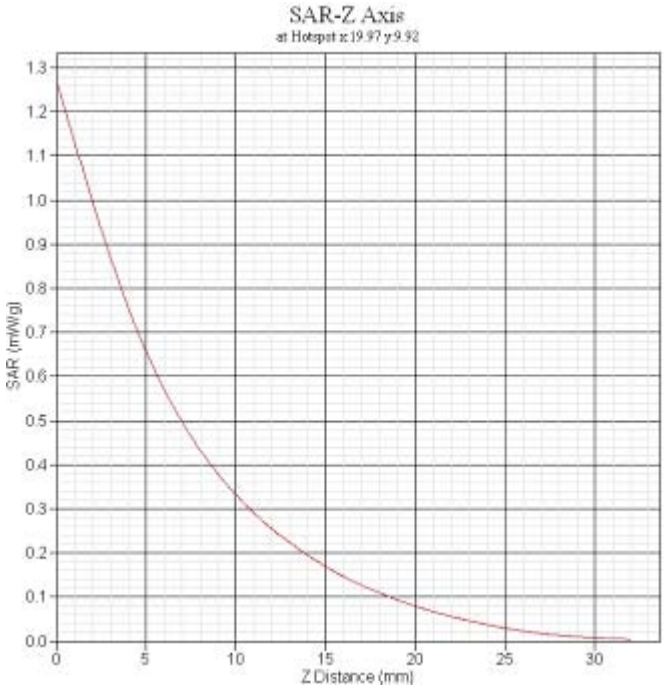
	
SAR 1g(W/kg)	0.963
SAR 10g(W/kg)	0.575

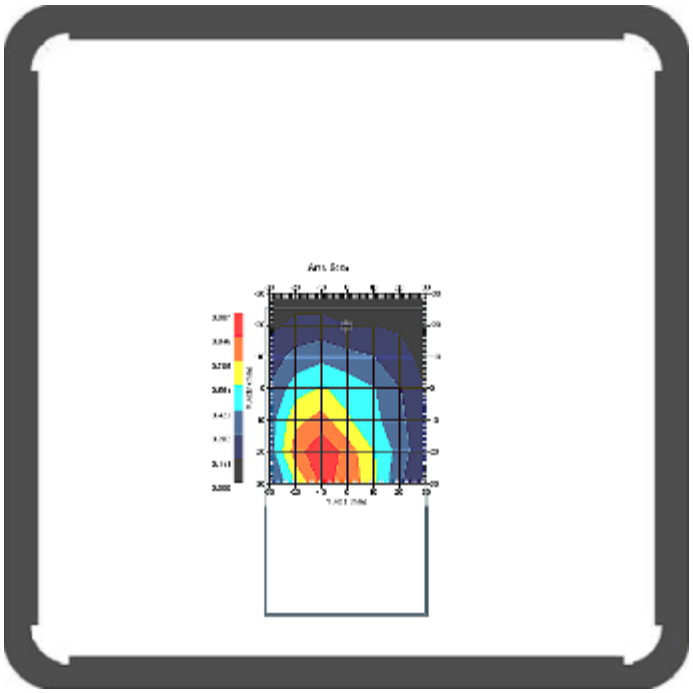
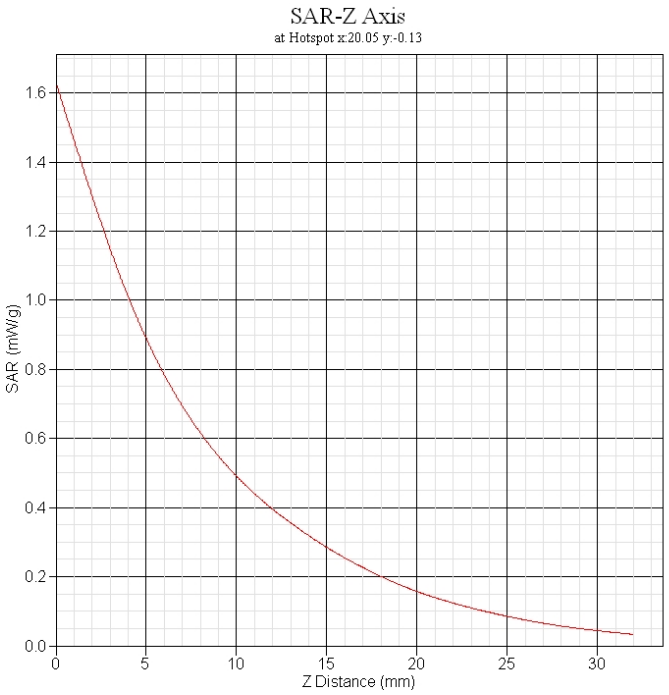
GPRS1900 body Left CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.857
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.123
SAR 10g(W/kg)	0.053

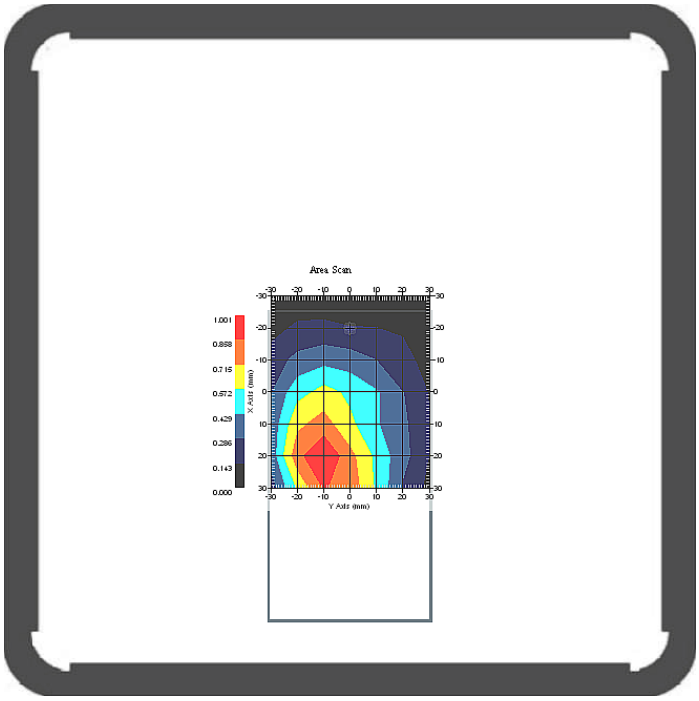
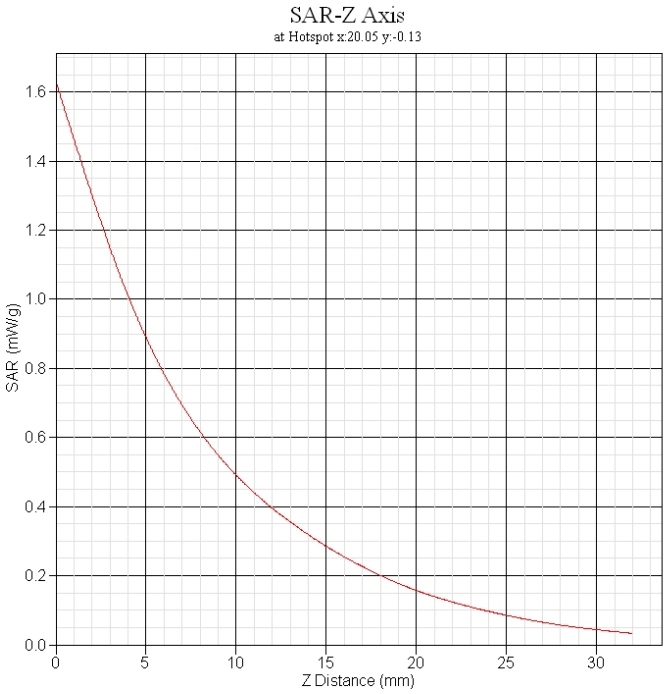
GPRS1900 body Right CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.388
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.120
SAR 10g(W/kg)	0.054

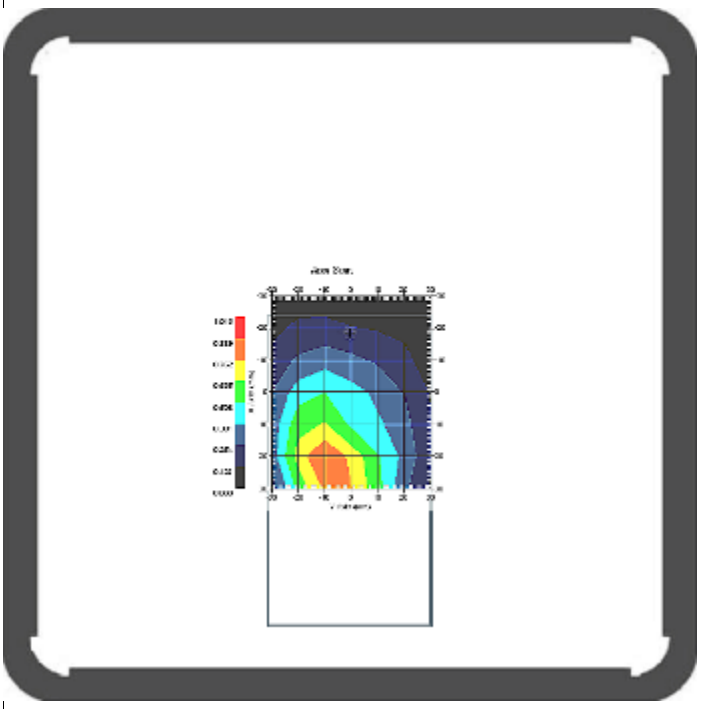
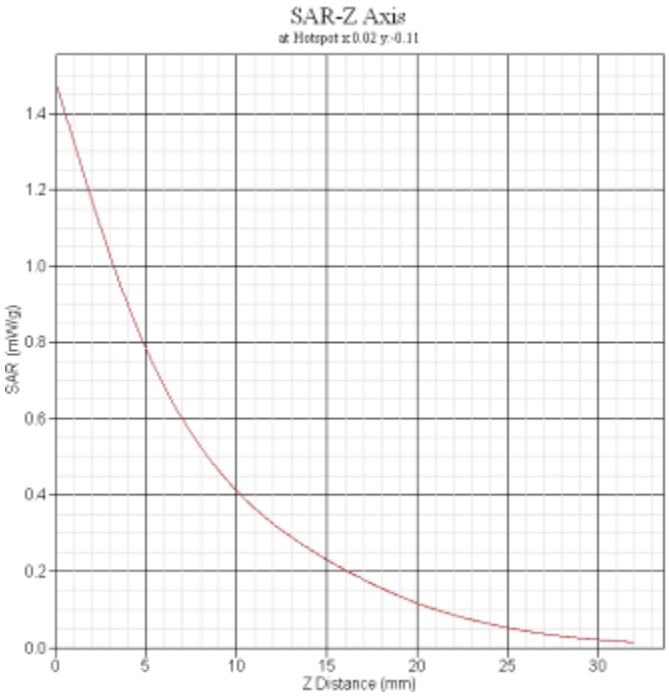
GPRS1900 body Bottom CH810	
Frequency(MHz)	1909.8
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.148
Duty Cycle Factor	2
Crest factor	2
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.626
SAR 10g(W/kg)	0.360

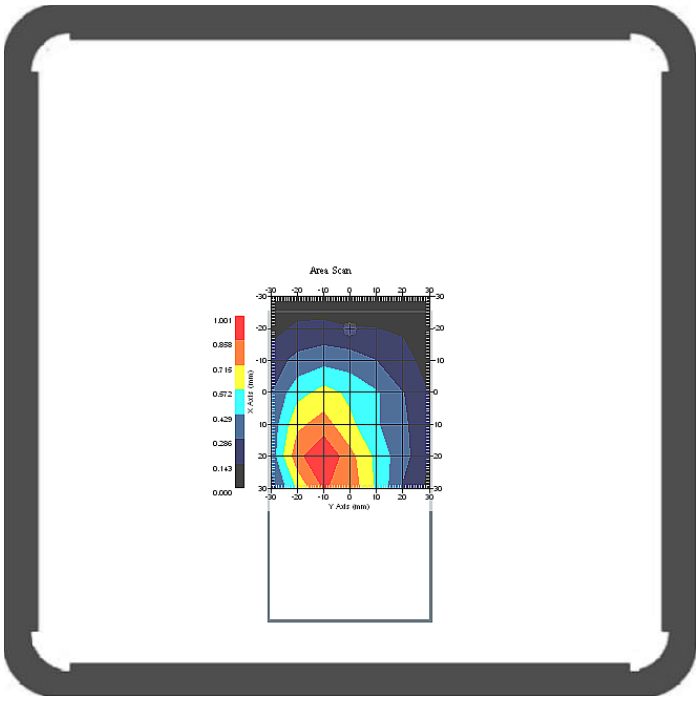
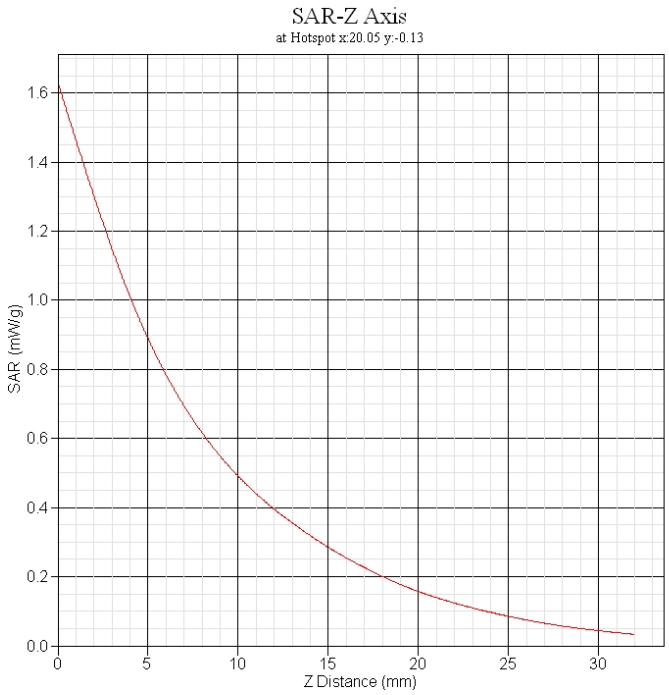
GSM1900 body Back CH512+earphone	
Frequency(MHz)	1850.2
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	0.381
Duty Cycle Factor	8
Crest factor	8
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/kg)	0.669
SAR 10g(W/kg)	0.317

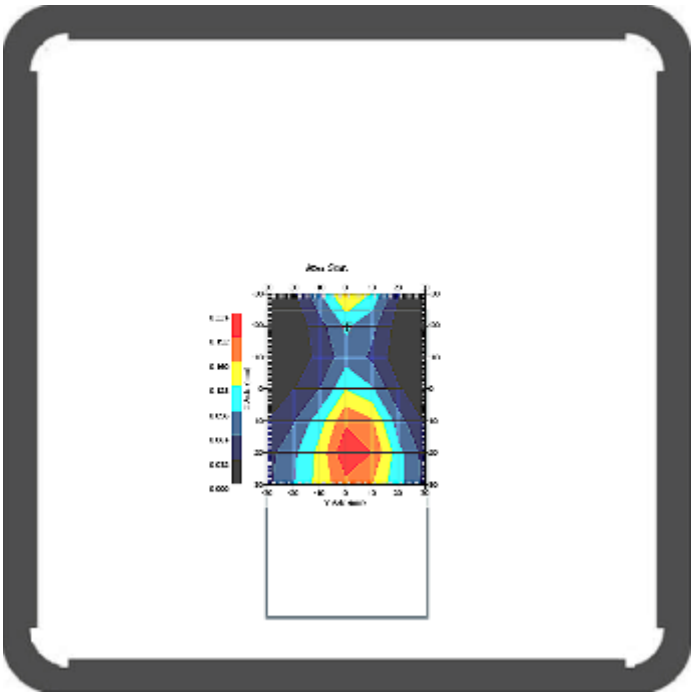
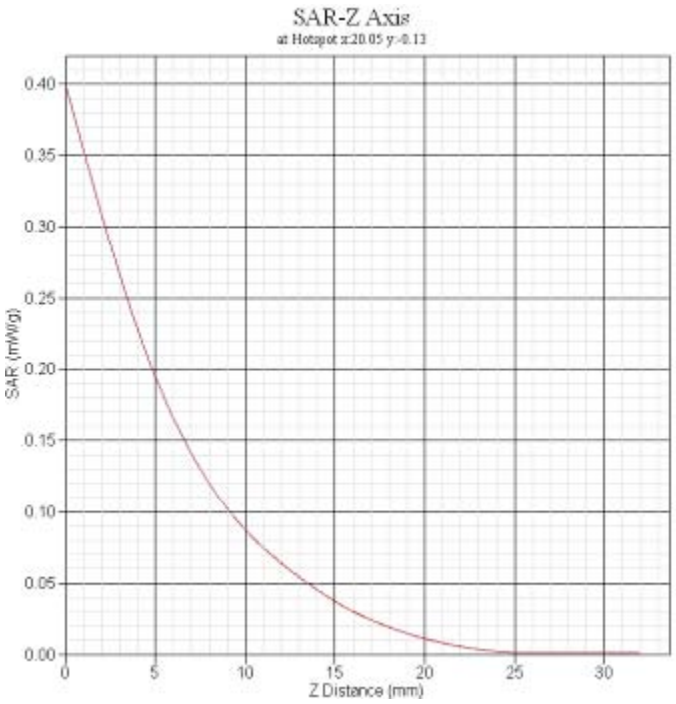
WCDMA Band Ⅱ body Front CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	3.441
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.602
SAR 10g(W/Kg)	0.362

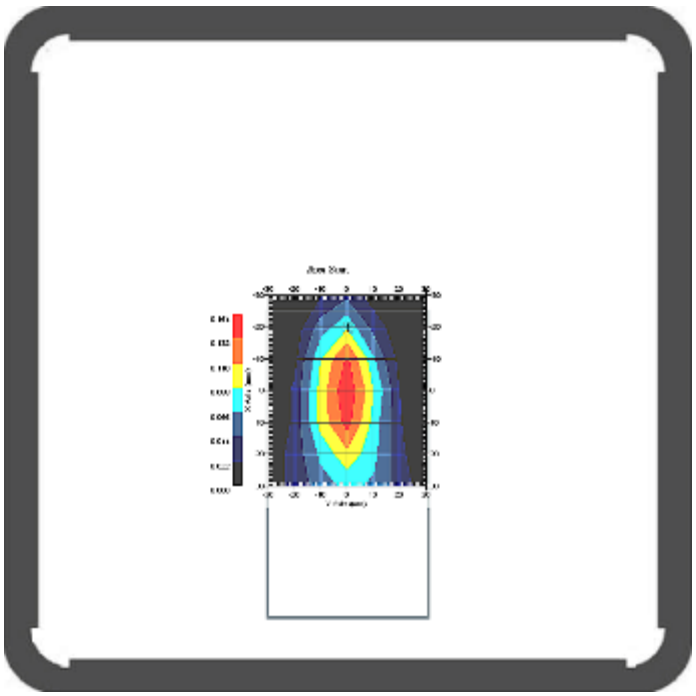
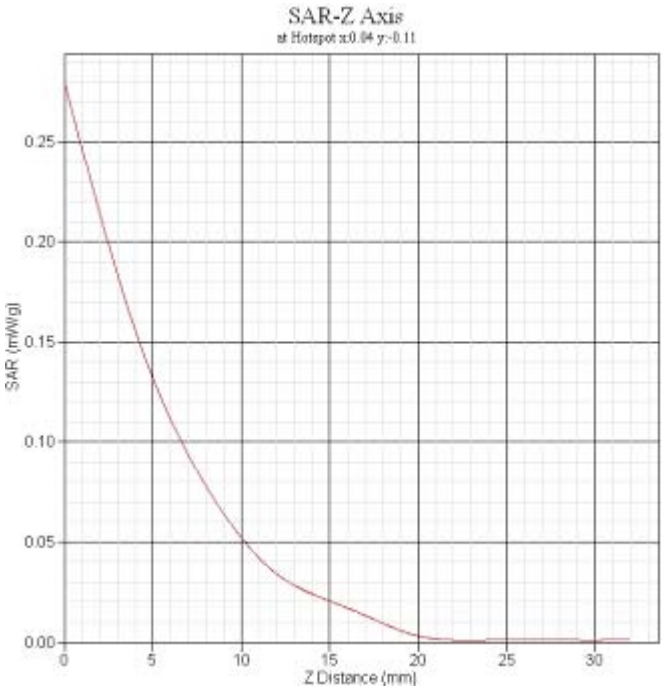
WCDMA Band Ⅱ body Back CH9262	
Frequency(MHz)	1852.4
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-2.175
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.911
SAR 10g(W/Kg)	0.479

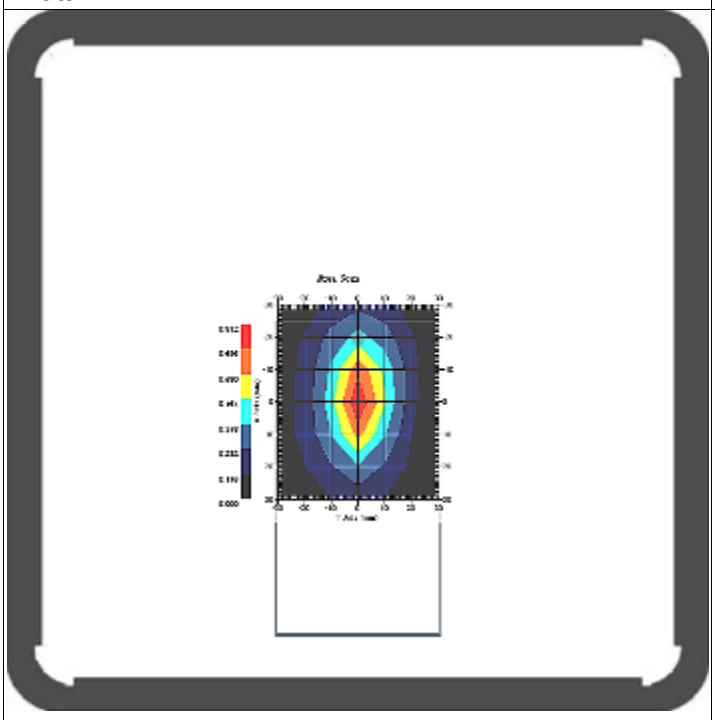
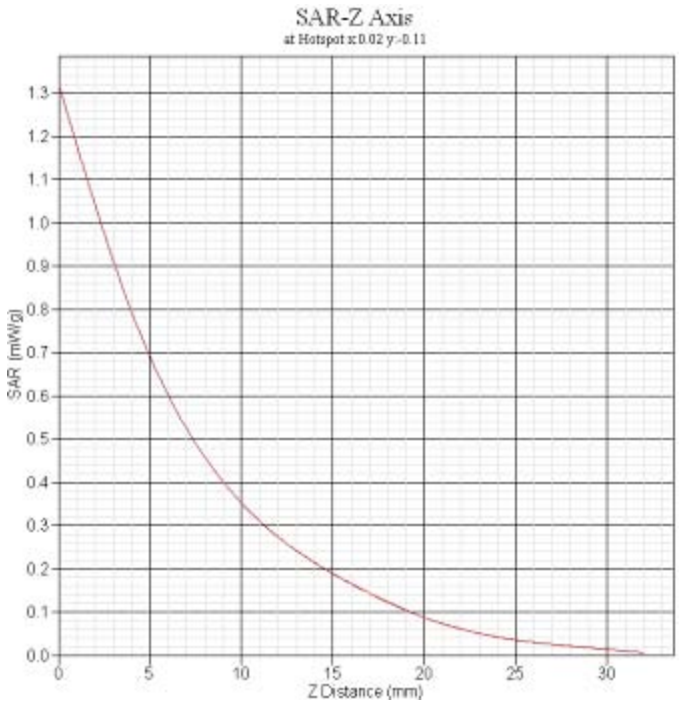
WCDMA Band Ⅱ body Back CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-3.339
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.920
SAR 10g(W/Kg)	0.485

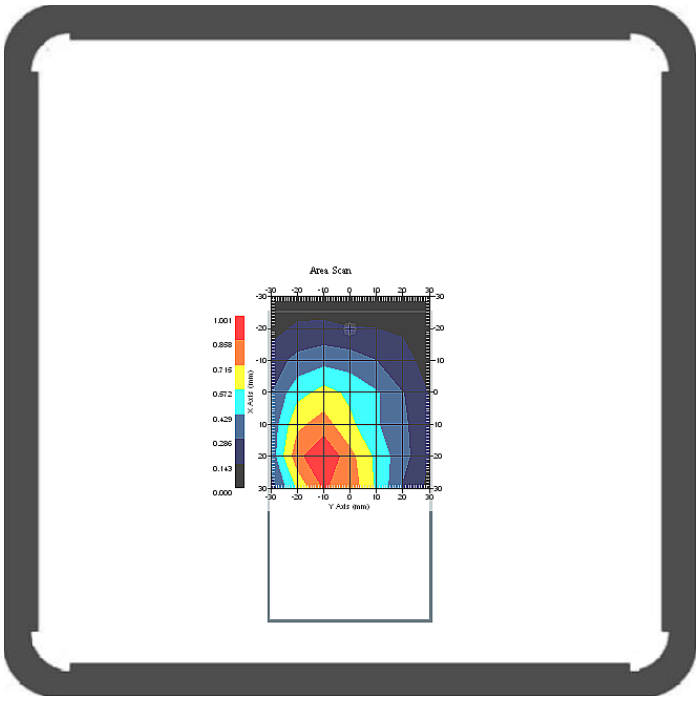
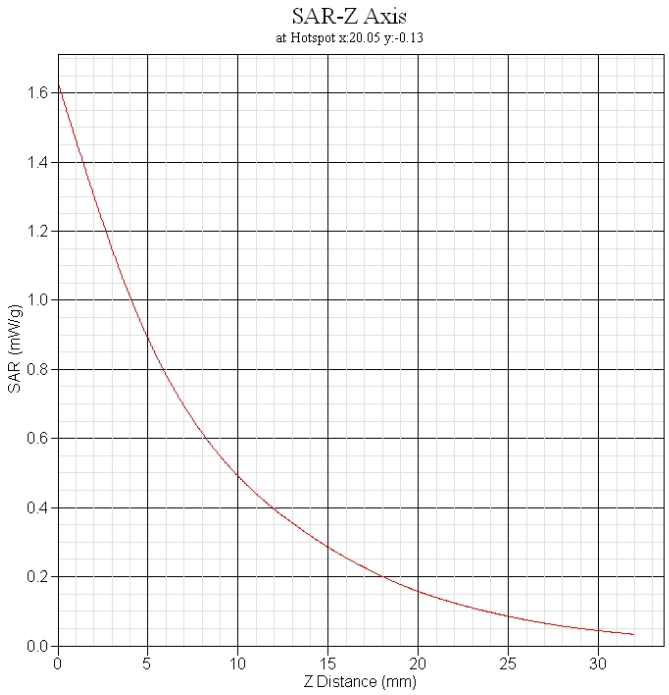
WCDMA Band Ⅱ body Back CH9538	
Frequency(MHz)	1907.6
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	2.923
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.841
SAR 10g(W/Kg)	0.438

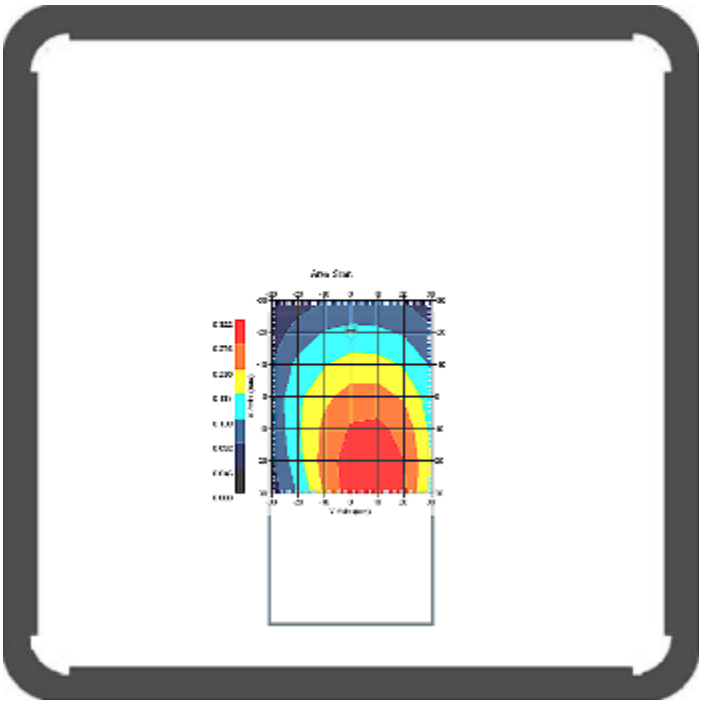
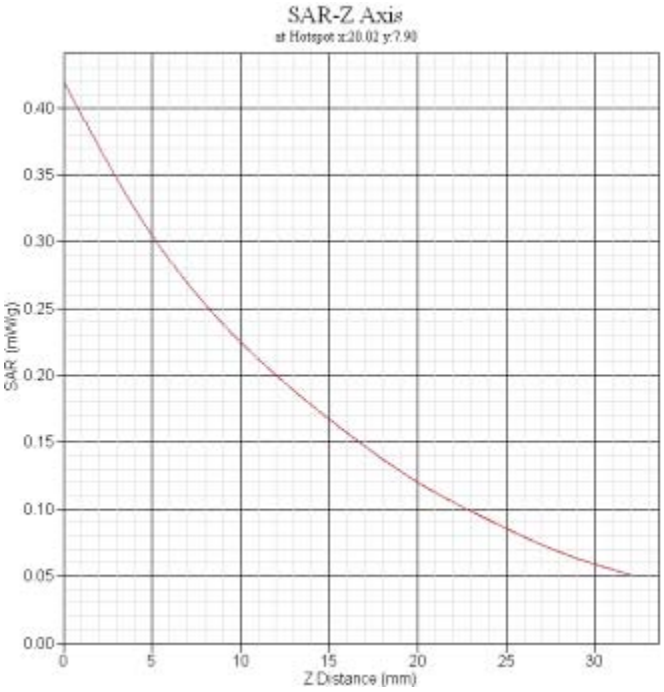
WCDMA Band Ⅱ body Back CH9400(repeat)	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-1.249
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.925
SAR 10g(W/Kg)	0.489

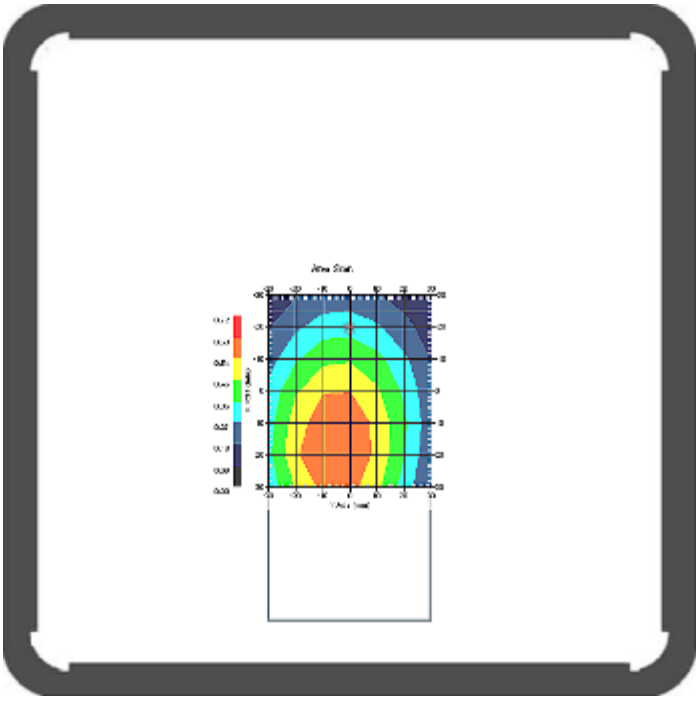
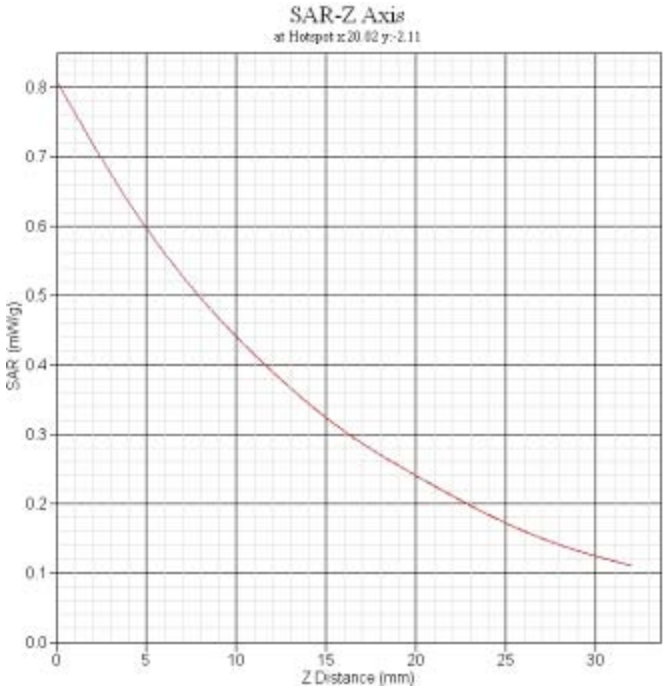
WCDMA Band Ⅱ body Left CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-3.478
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.209
SAR 10g(W/Kg)	0.100

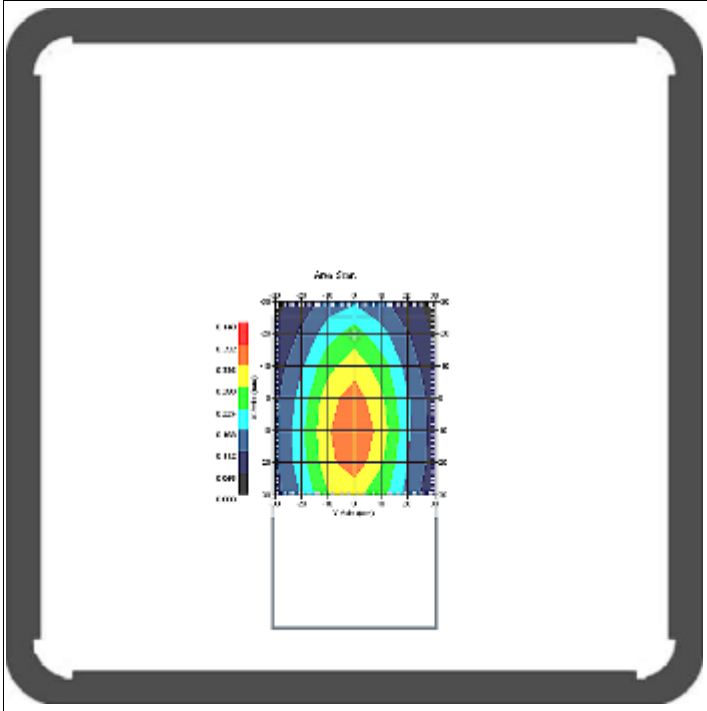
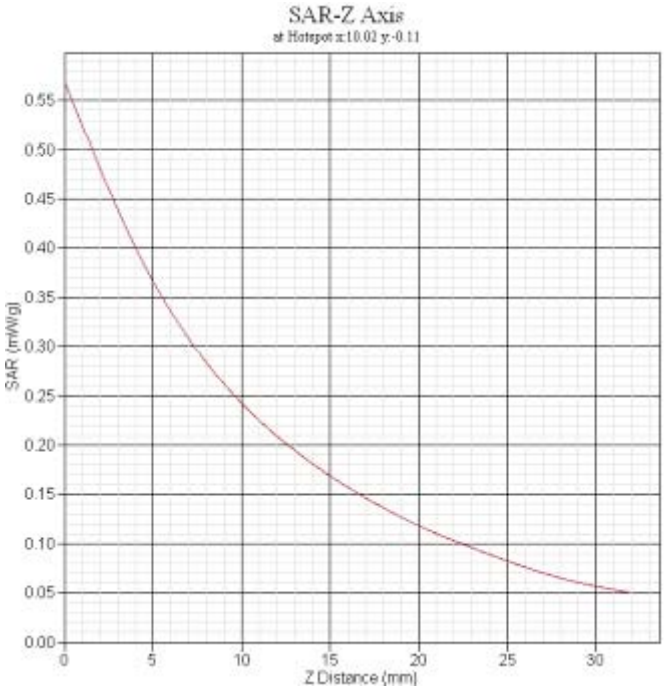
WCDMA Band Ⅱ body Right CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	1.078
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.141
SAR 10g(W/Kg)	0.063

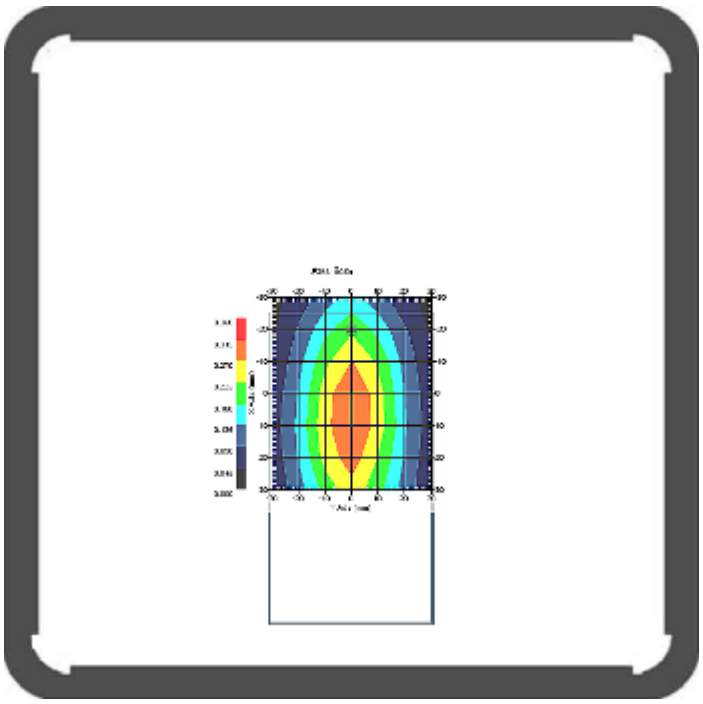
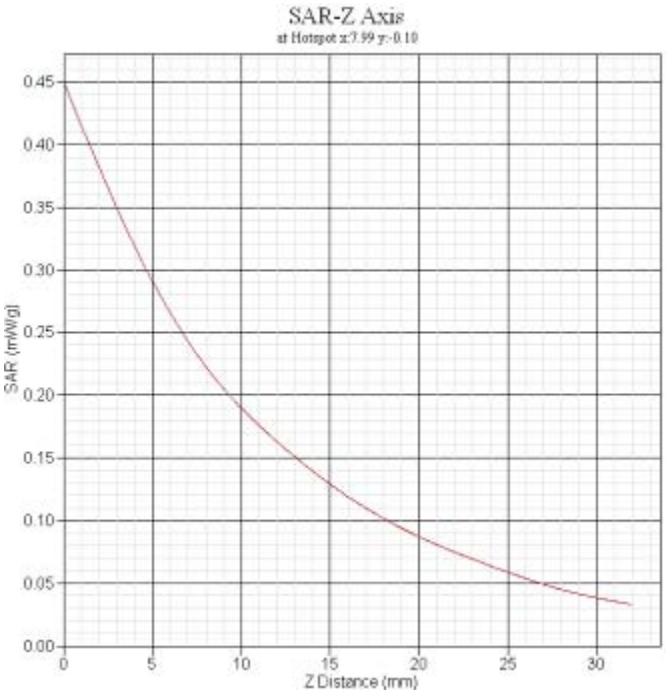
WCDMA Band Ⅱ body Bottom CH9400	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	-3.720
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.590
SAR 10g(W/Kg)	0.331

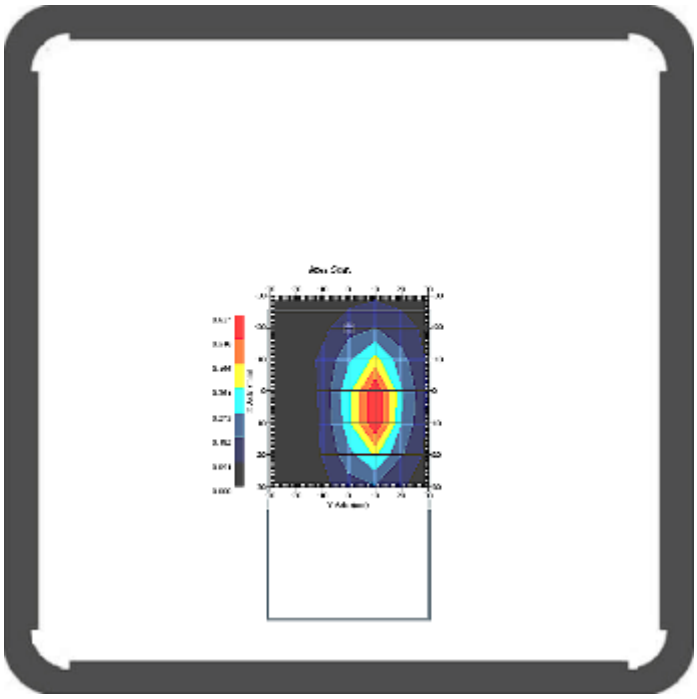
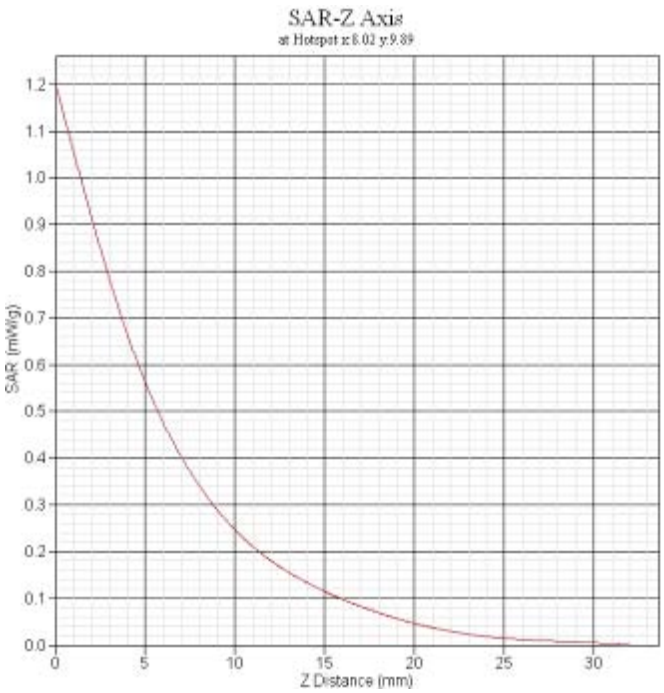
WCDMA Band Ⅱ body Back CH9400+earphone	
Frequency(MHz)	1880.0
Relative permittivity(real part)	52.94
Conductivity(S/m)	1.53
Variation(%)	0.357
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	5.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/Kg)	0.908
SAR 10g(W/Kg)	0.476

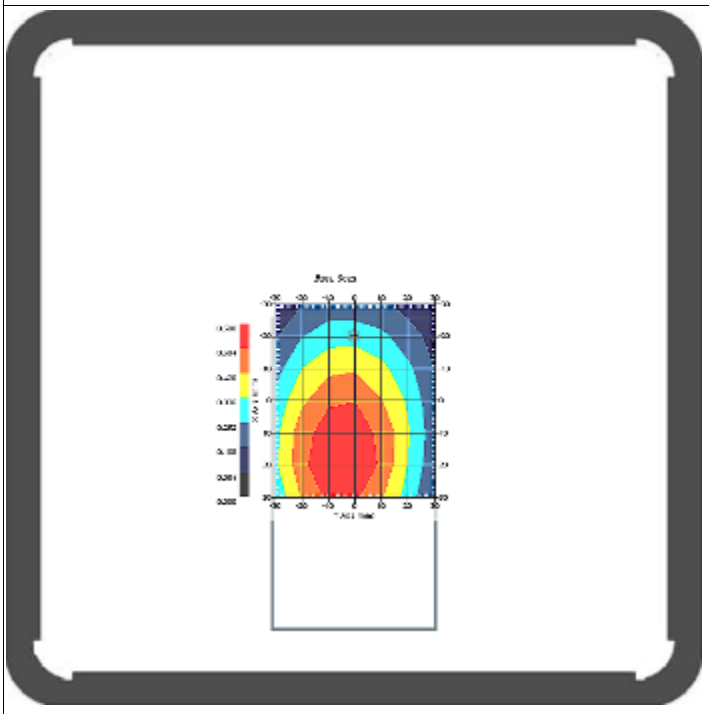
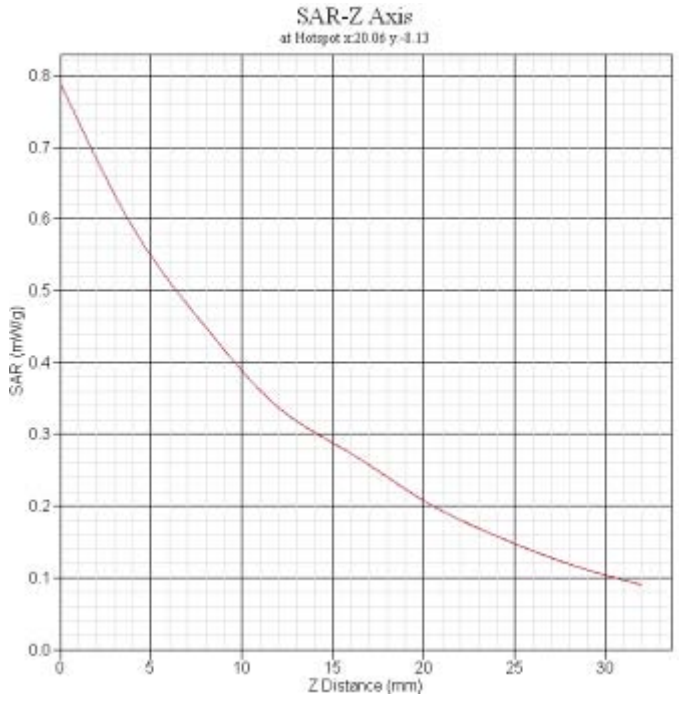
WCDMA Band Ⅴbody Front CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	3.643
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μV/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.286
SAR 10g(W/Kg)	0.212

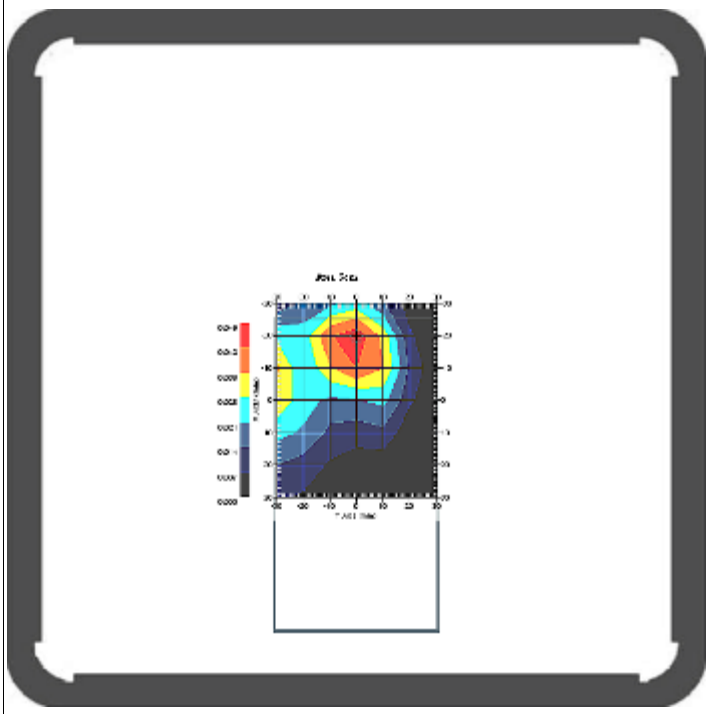
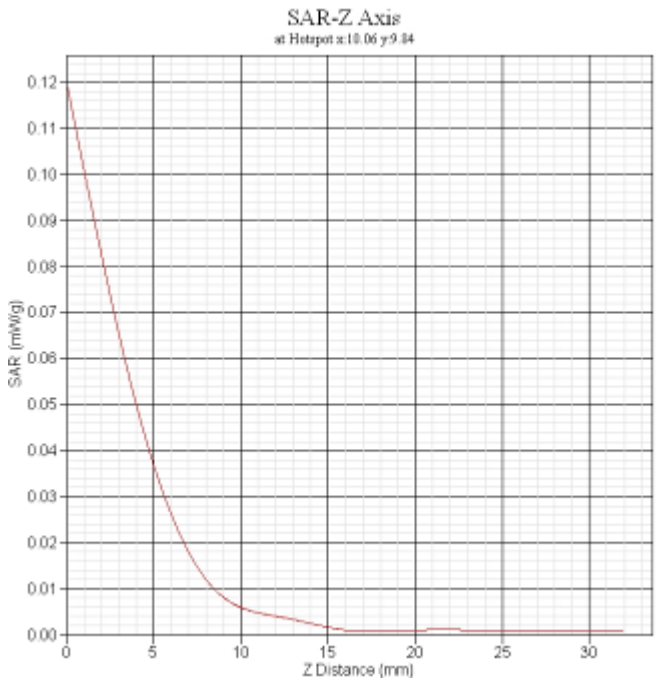
WCDMA Band Ⅴ body Back CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	0.911
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.571
SAR 10g(W/Kg)	0.372

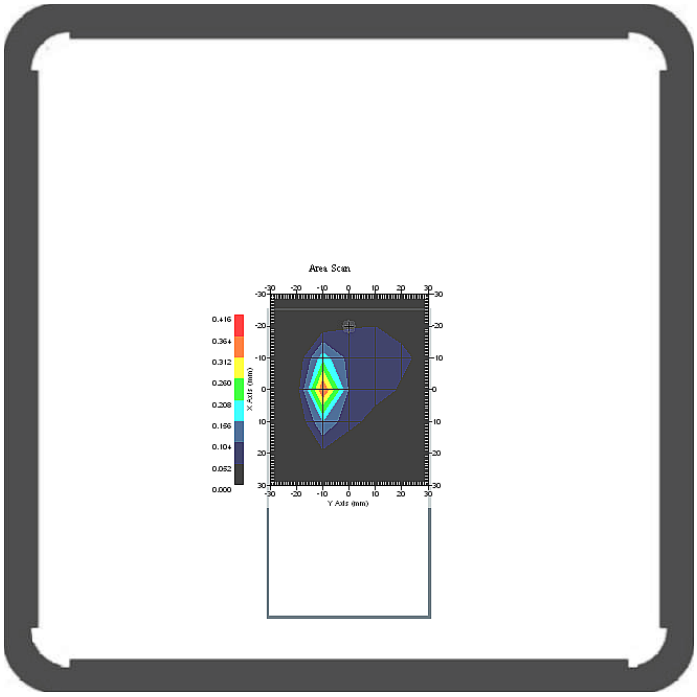
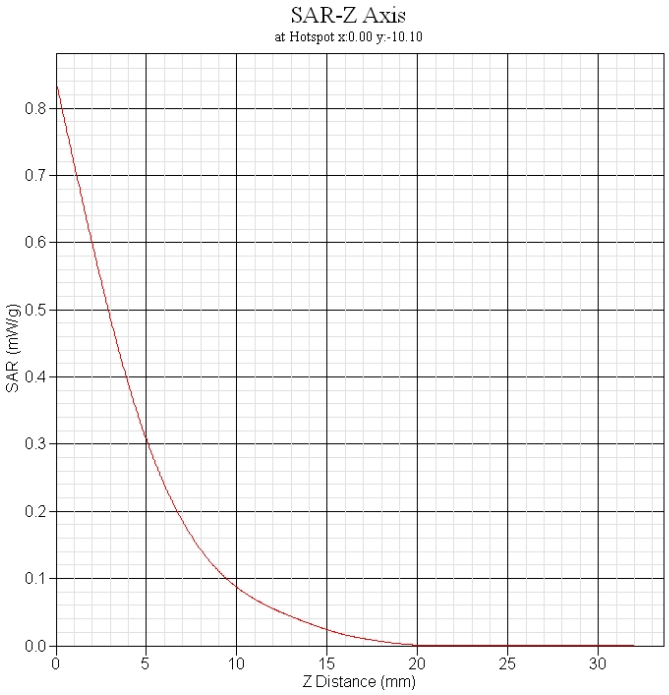
WCDMA Band Ⅴ body Left CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	1.337
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.377
SAR 10g(W/Kg)	0.240

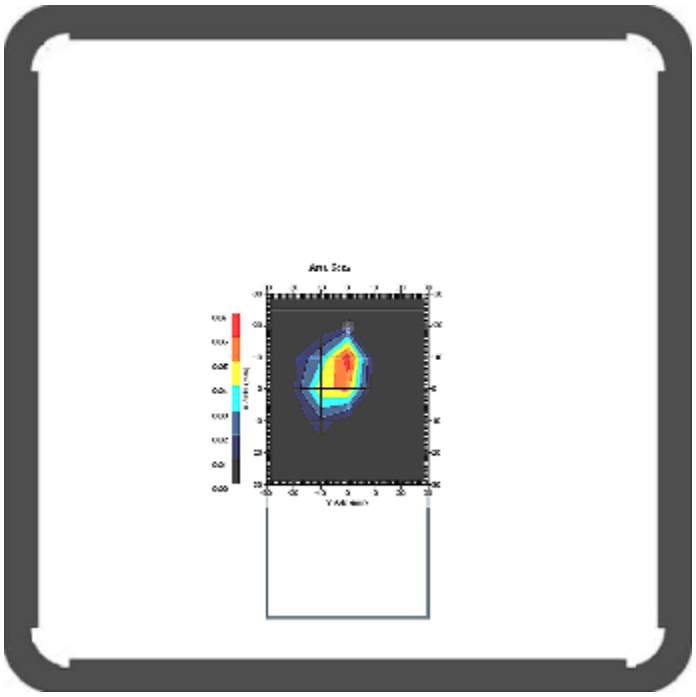
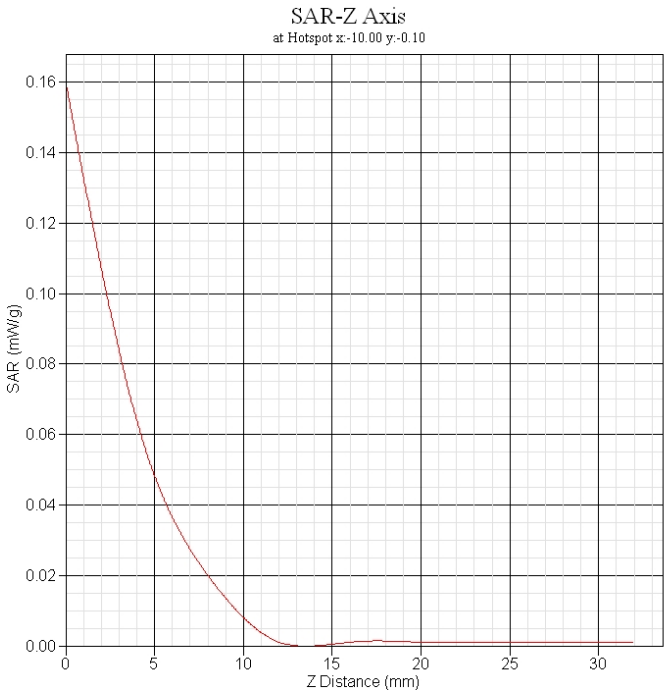
WCDMA Band Ⅴ body Right CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	0.636
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.297
SAR 10g(W/Kg)	0.184

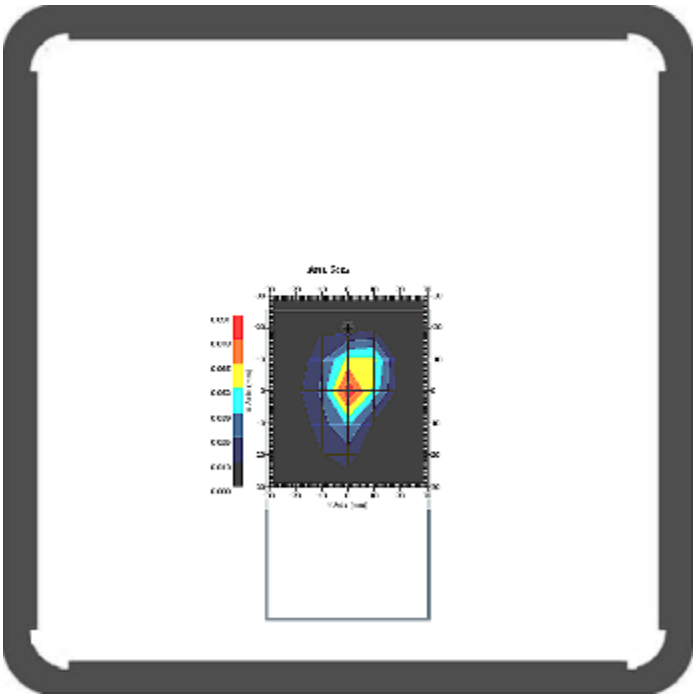
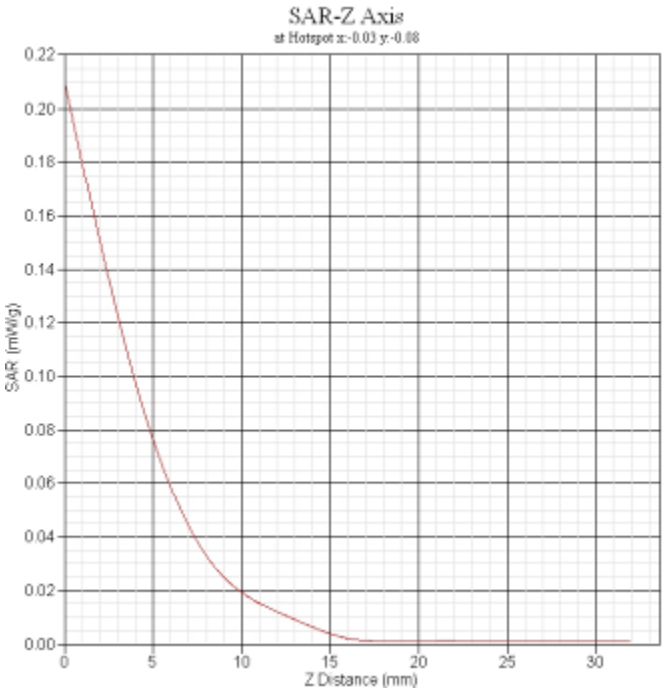
WCDMA Band Ⅴ body Bottom CH4183	
Frequency(MHz)	836.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	0.233
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.512
SAR 10g(W/Kg)	0.241

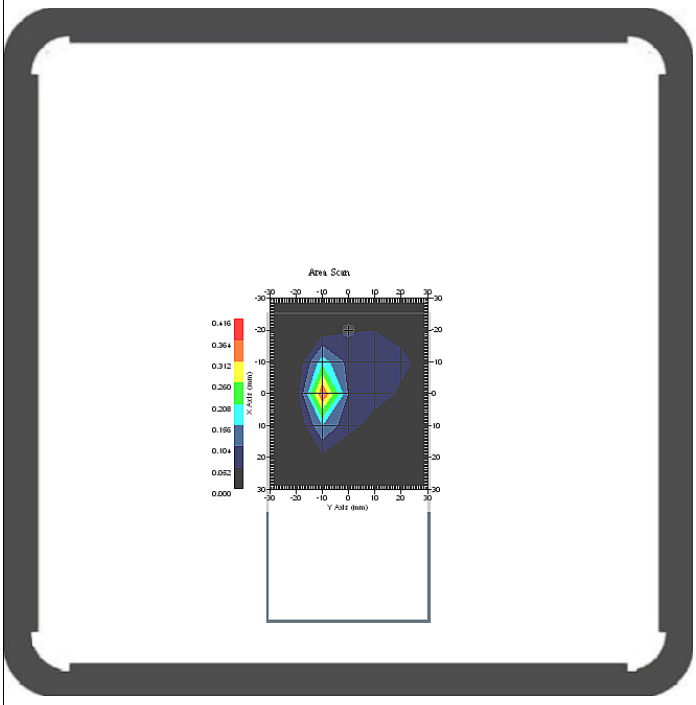
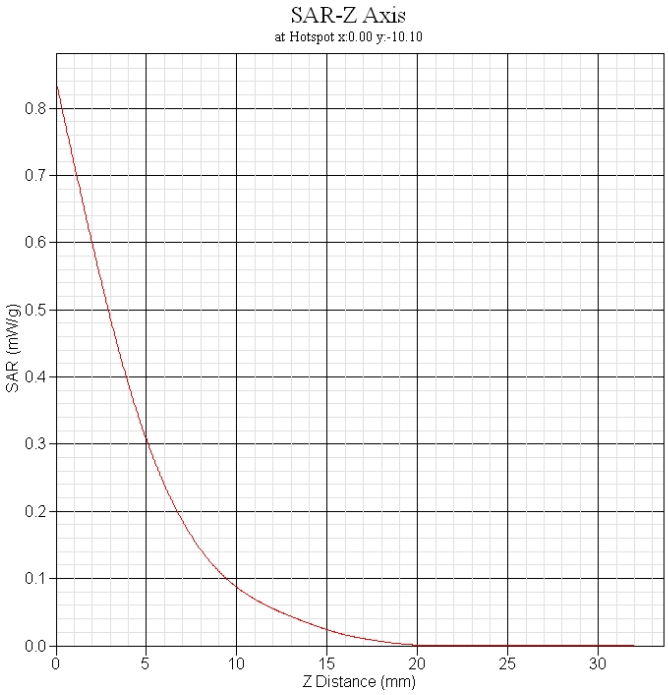
WCDMA Band Ⅴ body Back CH4233+earphone	
Frequency(MHz)	846.6
Relative permittivity(real part)	53.34
Conductivity(S/m)	0.95
Variation(%)	-1.759
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	6.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-05
	
SAR 1g(W/Kg)	0.568
SAR 10g(W/Kg)	0.388

802.11b body Front CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	-3.698
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.052
SAR 10g(W/kg)	0.021

802.11b body Back CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	-1.867
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.205
SAR 10g(W/kg)	0.080

802.11b body Top CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	-2.544
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.055
SAR 10g(W/kg)	0.017

802.11b body Right CH11	
Frequency(MHz)	2462
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	1.300
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.084
SAR 10g(W/kg)	0.031

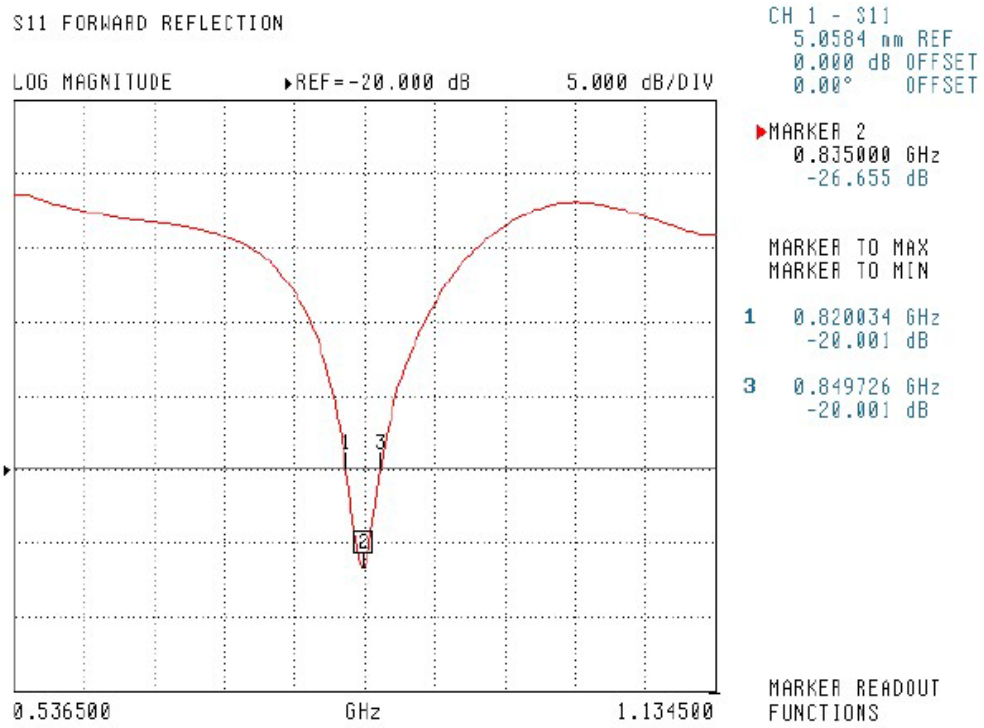
802.11b body Back CH11+earphone	
Frequency(MHz)	2462
Relative permittivity(real part)	53.35
Conductivity(S/m)	1.96
Variation(%)	-2.325
Duty Cycle Factor	1
Crest factor	1
Conversion Factor	4.4
Probe Sensitivity	1.20 1.20 1.20 μ V/(V/m)2
Data	2013-03-06
	
SAR 1g(W/kg)	0.198
SAR 10g(W/kg)	0.076

ValidationDipole Calibration

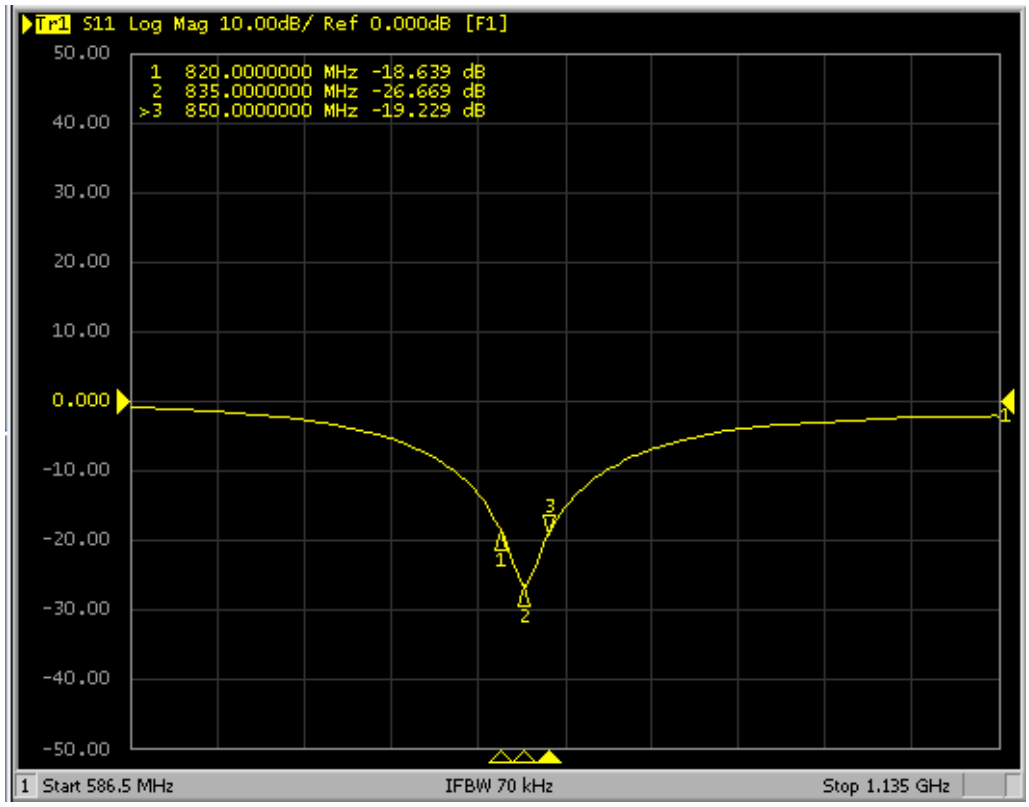
Electrical Specification 835MHz

Tissue Type	Return Loss(dB)	Impedance(ohm)
Head(2011)	-26.655	51.666
Head(2012 recent)	-26.669	52.536
Body(2011)	-22.106	57.482
Body(2012 recent)	-22.595	54.711

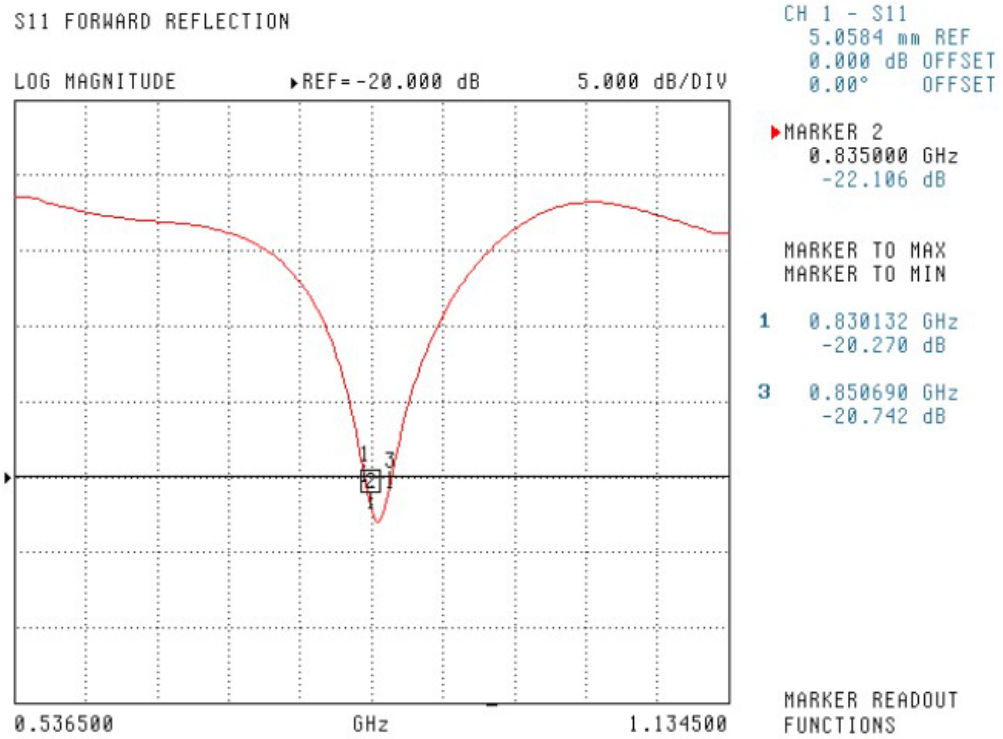
Head Tissue of Return Loss(2011)



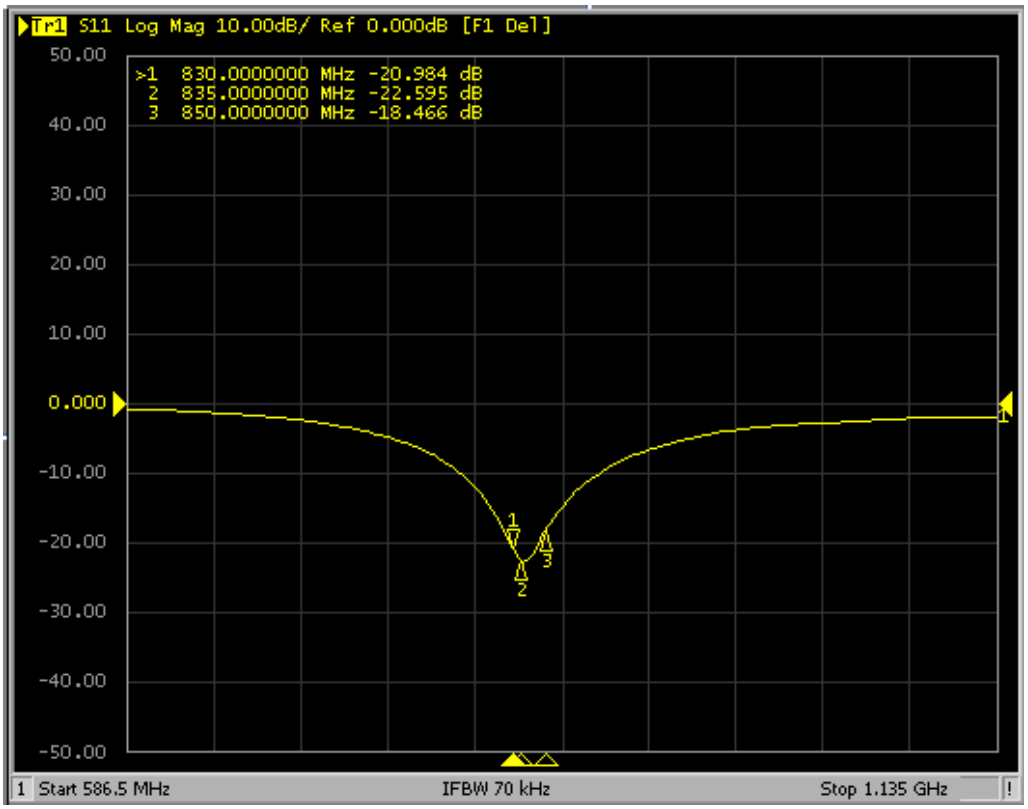
Head Tissue of Return Loss(2012 recent)



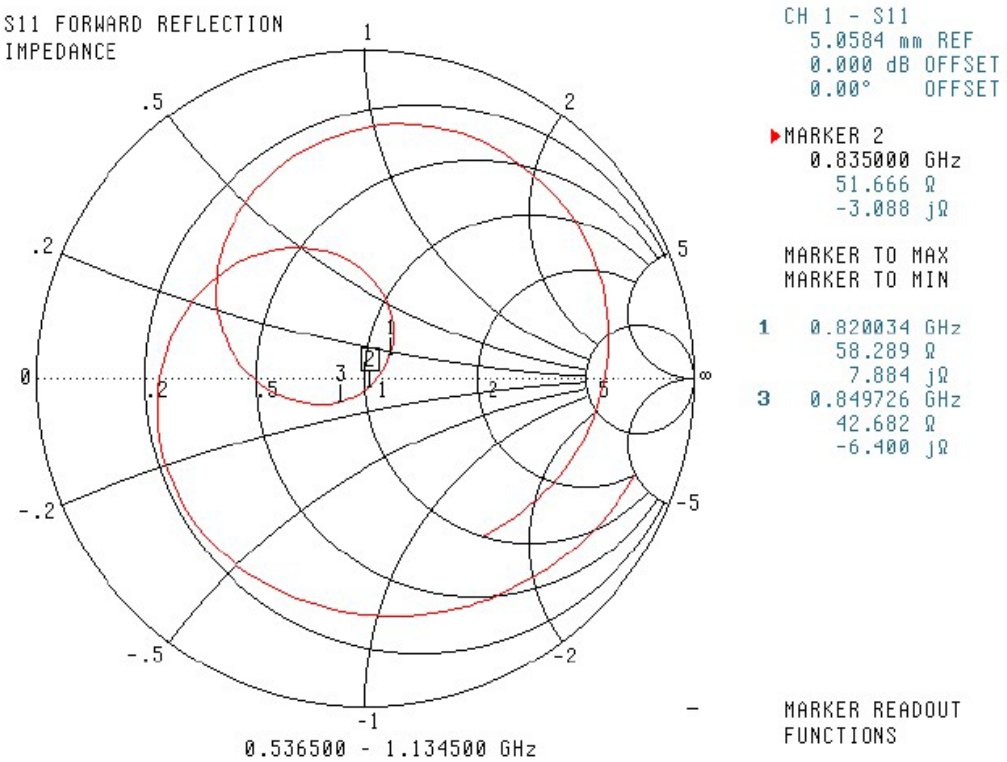
Body Tissue of Return Loss(2011)



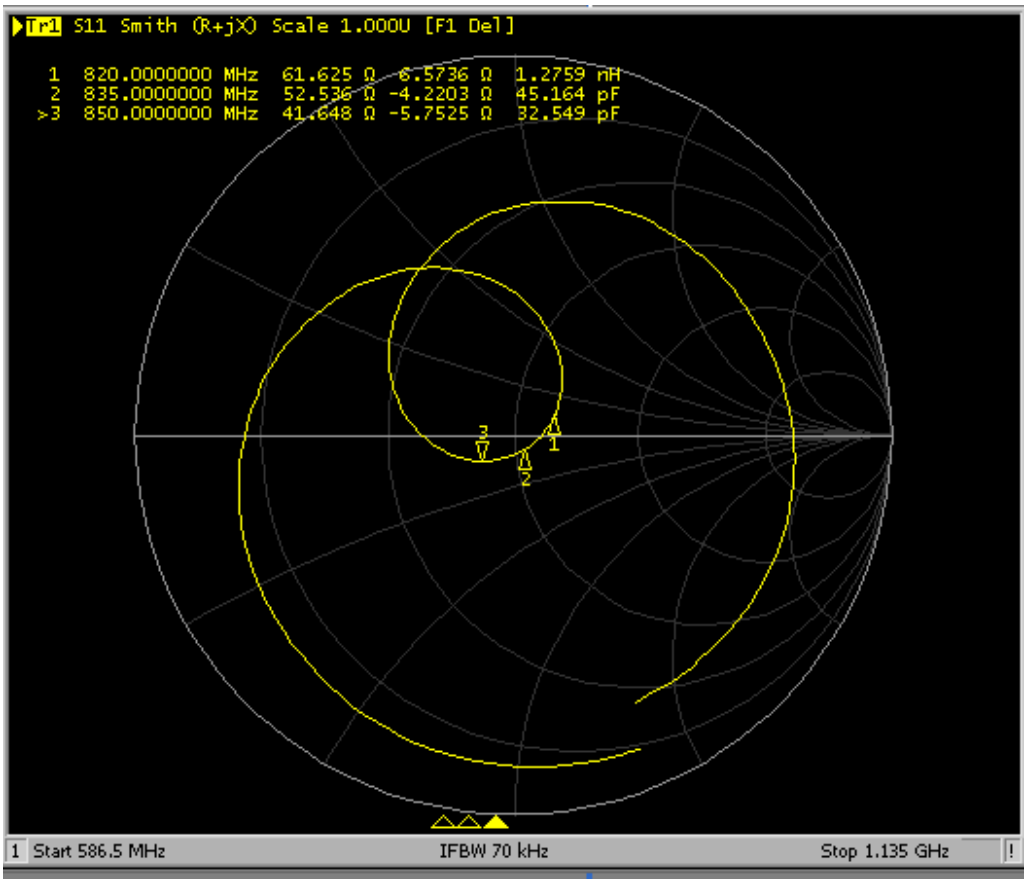
Body Tissue of Return Loss(2012 recent)



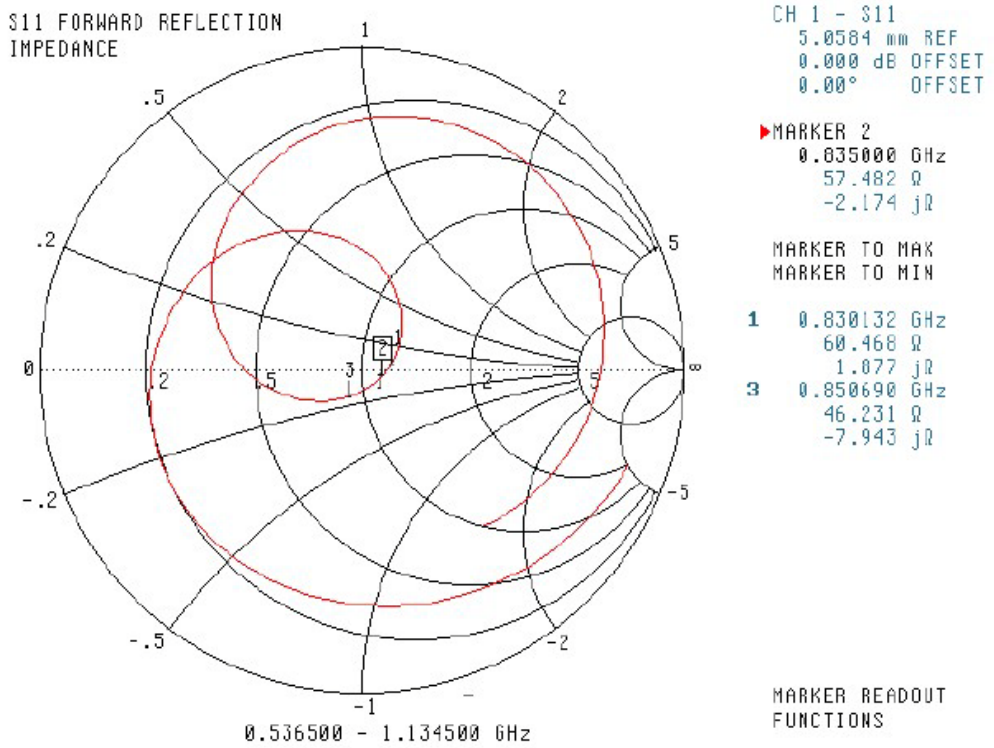
Head Tissue of Impedance(2011)



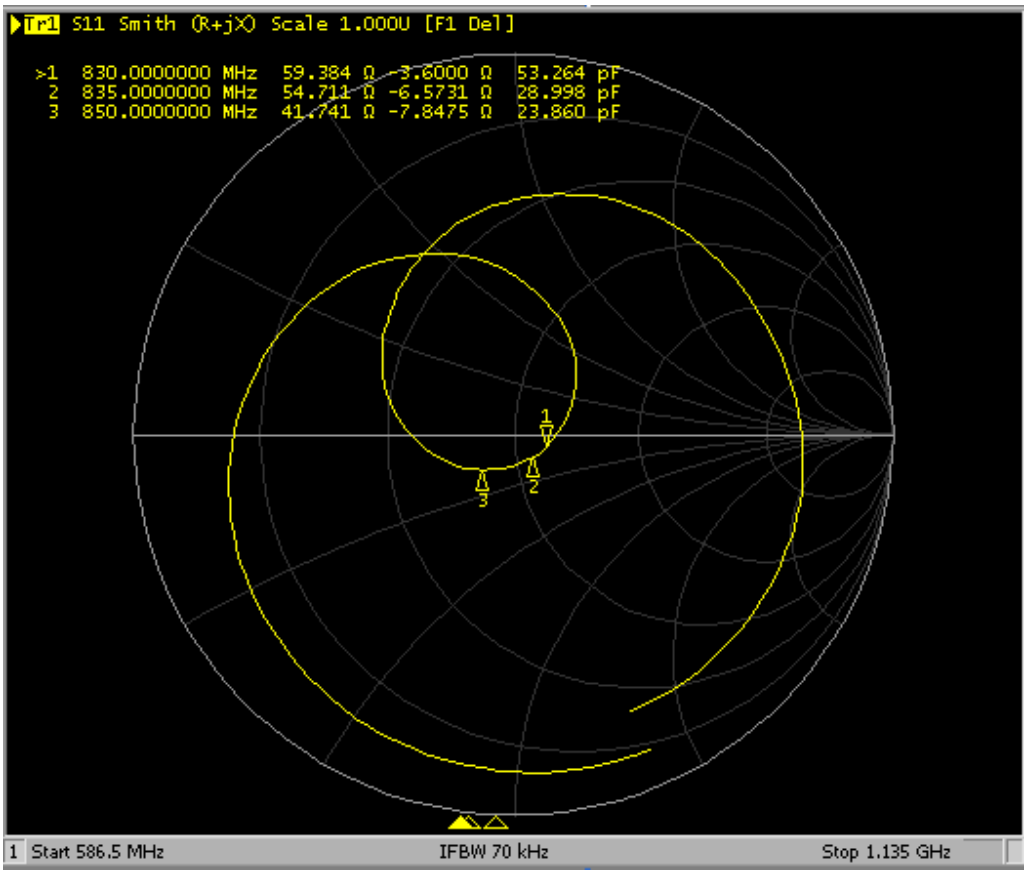
Head Tissue of Impedance(2012 recent)



Body Tissue of Impedance(2011)



Body Tissue of Impedance(2012 recent)

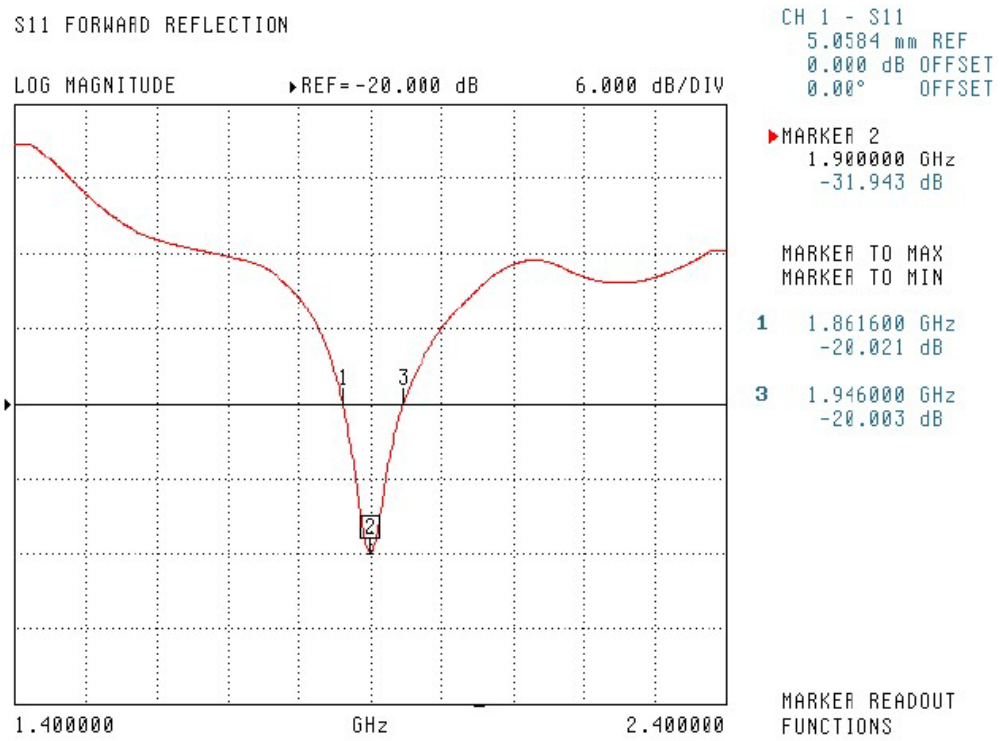


ValidationDipole Calibration

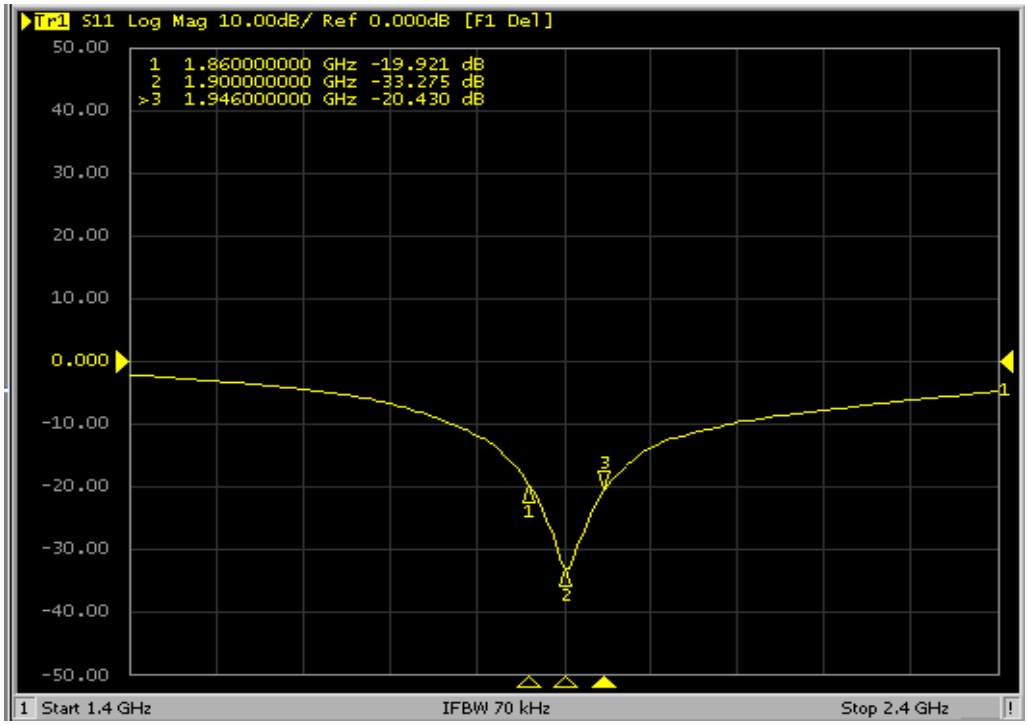
Electrical Specification 1900MHz

Tissue Type	Return Loss(dB)	Impedance(ohm)
Head(2011)	-31.943	51.262
Head(2012 recent)	-33.275	49.302
Body(2011)	-25.099	53.750
Body(2012 recent)	-25.606	50.197

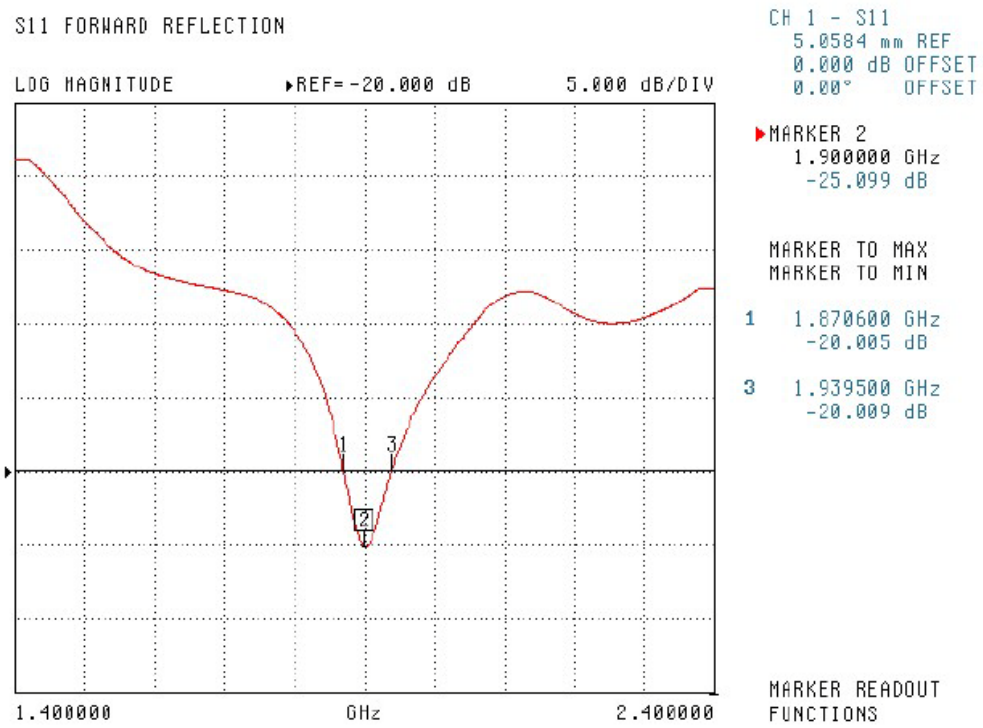
Head Tissue of Return Loss(2011)



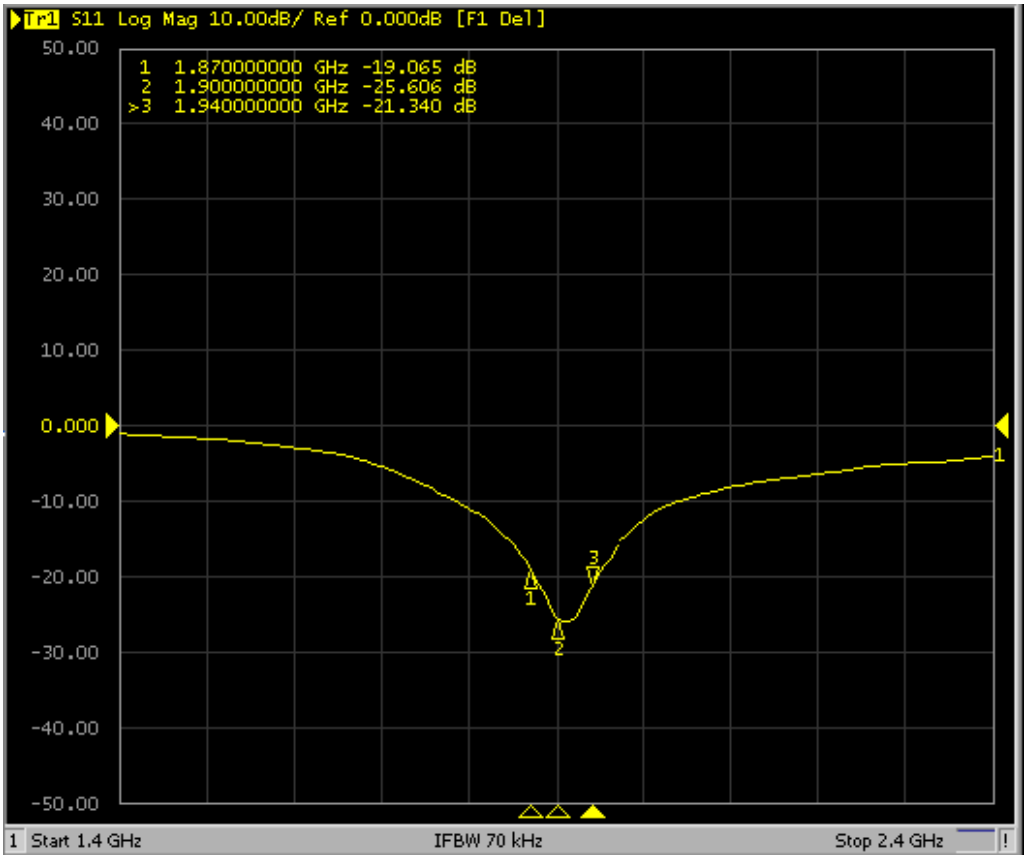
Head Tissue of Return Loss(2012 recent)



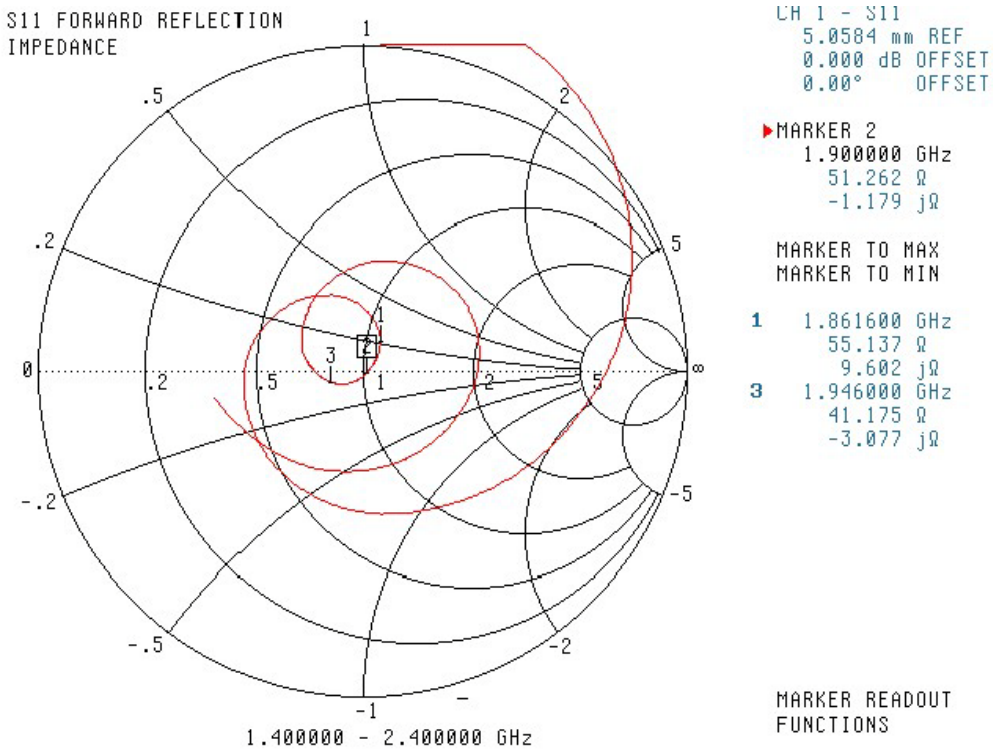
Body Tissue of Return Loss(2011)



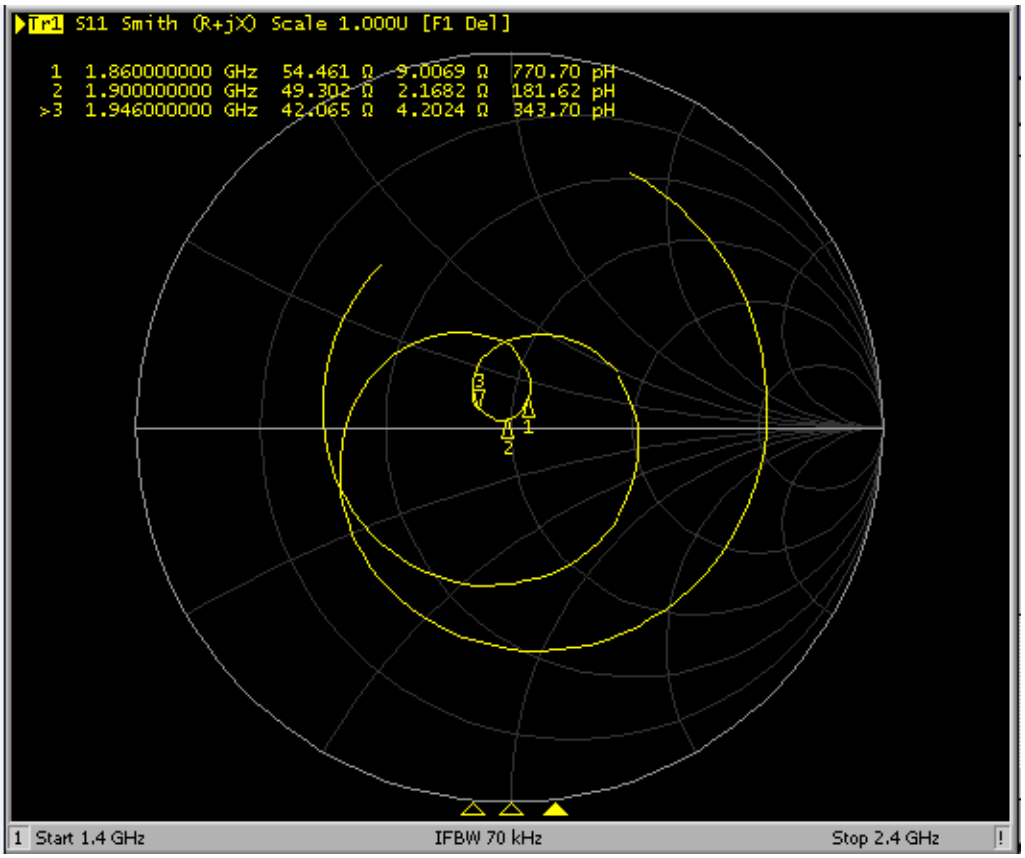
Body Tissue of Return Loss(2012 recent)



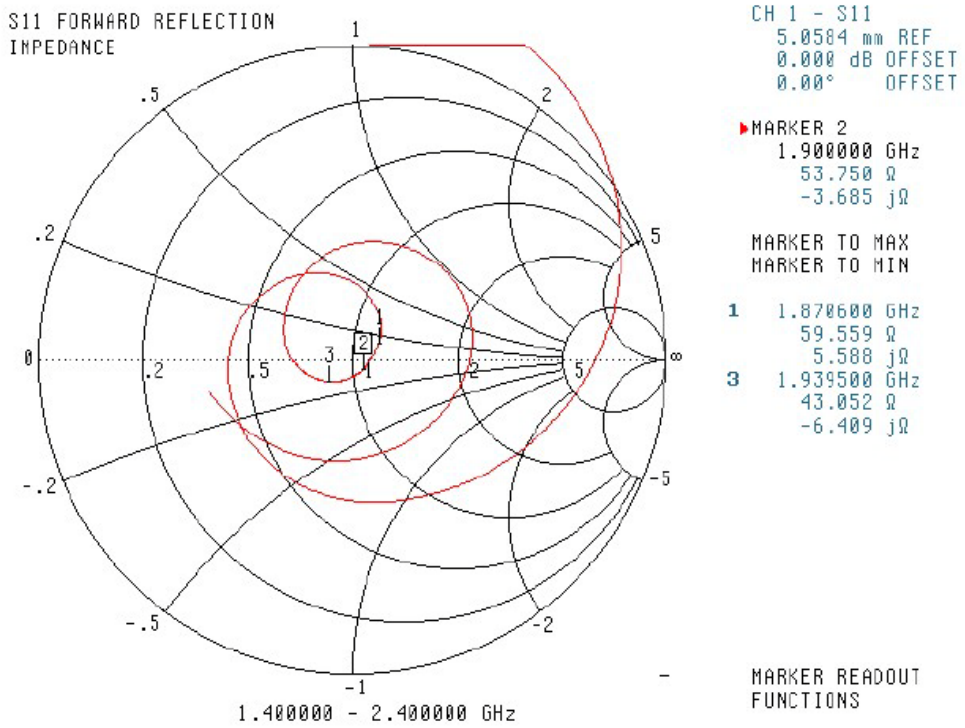
Head Tissue of Impedance(2011)



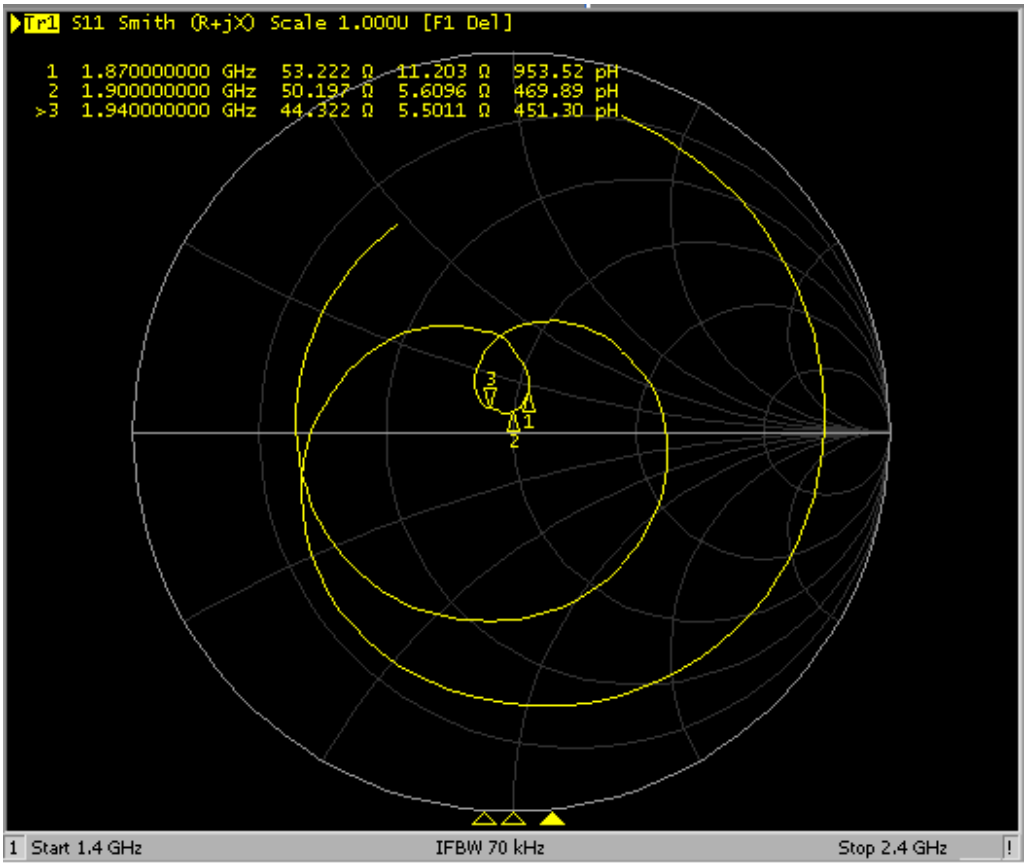
Head Tissue of Impedance(2012 recent)



Body Tissue of Impedance(2011)



Body Tissue of Impedance(2012 recent)


Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
1 1.870000000 GHz 53.222 Ω 11.203 Ω 953.52 pH
2 1.900000000 GHz 50.197 Ω 5.6096 Ω 469.89 pH
>3 1.940000000 GHz 44.322 Ω 5.5011 Ω 451.30 pH
1 Start 1.4 GHz
IFBW 70 kHz
Stop 2.4 GHz