Lab Code: 200707-0

SAR EVALUATION REPORT

For

Nexpro International Limitada

San Jose-Goicoechea, Guadalupe, Barrio Tournon, Frente Al Hotel Villas Tournon, Oficinas Del Bufete FacioY Canas, Costa Rica

FCC ID: ZYPS8073

Report Type:	**Product Type:**
Original Report	Smart Phone

Test Engineer:	Sandy Wang
Report Number:	R1DG121227001-20
Report Date:	2013-01-10
Reviewed By:	Alvin Huang RF Leader
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Attestation of Test Results			
EUT Information	**Company Name**	Nexpro International Limitada	
	EUT Description	Smartphone	
	FCC ID	ZYPS8073	
	Model Number	Sage	
	Test Date	2013-01-04 to 2013-01-06	
Frequency	**Max. SAR Level(s) Measured**		**Limit(W/Kg)**
Cellular Band	0.367 W/kg 1g Head SAR 1.017 W/kg 1g Body SAR		**1. 6**
PCS Band	0.221 W/kg 1g Head SAR 0.712 W/kg 1g Body SAR		
WCDMA850	0.421 W/kg 1g Head SAR 0.707 W/kg 1g Body SAR		
WCDMA1900	0.376 W/kg 1g Head SAR 0.464 W/kg 1g Body SAR		
WiFi (802.11b)	0.038 W/kg 1g Head SAR 0.048 W/kg 1g Body SAR		
Hot Spot	1.065 W/kg 1g Body SAR		
Applicable Standards	**ANSI / IEEE C95.1 : 2005** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fileds,3 kHz to 300 GHz.		
	ANSI / IEEE C95.3 : 2002 IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to SuchFields,100 kHz—300 GHz.		
	OET BULLETIN 65 SUPPLEMENT C Evaluating Compliance with FCC Guidelines for Human Exposure To Radiofrequency Electromagnetic Fields		
	IEEE1528:2003 IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques		

Note: This wireless device has been shown to be capable of compliance for localized specific absorption rate (SAR) for General Population/Uncontrolled Exposure limits specified in ANSI/IEEE Standards and has been tested in accordance with the measurement procedures specified in FCC OET 65 Supplement C and IEEE 1528-2003.

The results and statements contained in this report pertain only to the device(s) evaluated.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1DG121227001-20	Original Report	2013-01-10

EUT DESCRIPTION

This report has been prepared on behalf of Nexpro International Limitada and their product, FCC ID: ZYPS8073, Model: Sage or the EUT (Equipment Under Test) as referred to in the rest of this report. The EUT is a Smartphone.

Technical Specification

Product Type	Portable
Exposure Category:	Population / Uncontrolled
Antenna Type(s):	Internal Antenna
Body-Worn Accessories:	Headset
Face-Head Accessories:	None
Multi-slot Class:	Class12
Operation Mode :	GSM Voice, GPRS Data, EGPRS Data, WCDMA, Bluetooth and WiFi
Frequency Band:	Cellular Band : 824-849 MHz(TX) ; 869-894 MHz(RX) PCS Band : 1850-1910 MHz(TX) ; 1930-1990 MHz(RX) WCDMA850: 824-849MHz(TX); 869-894MHz(RX) WCDMA1900: 1850-1910MHz(TX); 1930-1990MHz(RX) Bluetooth : 2400MHz-2483.5MHz WiFi(802.11b/g/n20) : 2412MHz-2462MHz
Conducted RF Power:	Cellular Band : 32.60dBm PCS Band : 30.19dBm WCDMA850:22.73dBm WCDMA1900: 22.61dBm WiFi(802.11b/g/n20) :16.93dBm Bluetooth: 7.59dBm
Dimensions (L*W*H):	127.4mm (L)× 65.5mm (W)× 11.2mm (H)
Weight:	140.2g
Power Source:	3.7 VDC Rechargeable Battery
Normal Operation:	Head and Body-worn

REFERENCE, STANDARDS, AND GUILDELINES

FCC:

The Report and Order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g as recommended by the ANSI/IEEE standard C95.1-1992 [6] for an uncontrolled environment (Paragraph 65). According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in North America is 1.6 mW/g average over 1 gram of tissue mass.

CE:

The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 2 mW/g as recommended by EN62209-1 for an uncontrolled environment. According to the Standard, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

This report describes the methodology and results of experiments performed on wireless data terminal. The objective was to determine if there is RF radiation and if radiation is found, what is the extent of radiation with respect to safety limits. SAR (Specific Absorption Rate) is the measure of RF exposure determined by the amount of RF energy absorbed by human body (or its parts) – to determine how the RF energy couples to the body or head which is a primary health concern for body worn devices. The limit below which the exposure to RF is considered safe by regulatory bodies in Europe is 2 mW/g average over 10 gram of tissue mass.

The test configurations were laid out on a specially designed test fixture to ensure the reproducibility of measurements. Each configuration was scanned for SAR. Analysis of each scan was carried out to characterize the above effects in the device.

SAR Limits

FCC Limit (1g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 1 g of tissue)	1.60	8.0
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

CE Limit (10g Tissue)

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average (averaged over the whole body)	0.08	0.4
Spatial Peak (averaged over any 10 g of tissue)	2.0	10
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)	4.0	20.0

Population/Uncontrolled Environments are defined as locations where there is the exposure of individual who have no knowledge or control of their exposure.

Occupational/Controlled Environments are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure (i.e. as a result of employment or occupation).

General Population/Uncontrolled environments Spatial Peak limit 1.6W/kg (FCC) & 2 W/kg (CE) applied to the EUT.

FACILITIES AND ACCREDITATION

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect data is located at
6/F, the 3rd Phase of WanLi Industrial Building,
Shi Hua Road, Fu Tian Free Trade Zone,
Shenzhen, Guangdong, P.R. of China

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

DESCRIPTION OF TEST SYSTEM

These measurements were performed with ALSAS 10 Universal Integrated SAR Measurement system from APREL Laboratories.

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 modeling to provide a platform which is repeatable with minimum uncertainty.

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 available up-to 6 GHz in simulated tissue.

Area Scans

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

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.

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 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m3 is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm,with the side length of the 10 g cube 21,5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

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 5x5x8 (8mmx8mmx5mm) providing a volume of 32mm in the X & Y axis, and 35mm in the Z axis.

ALSAS-10U Interpolation and Extrapolation Uncertainty

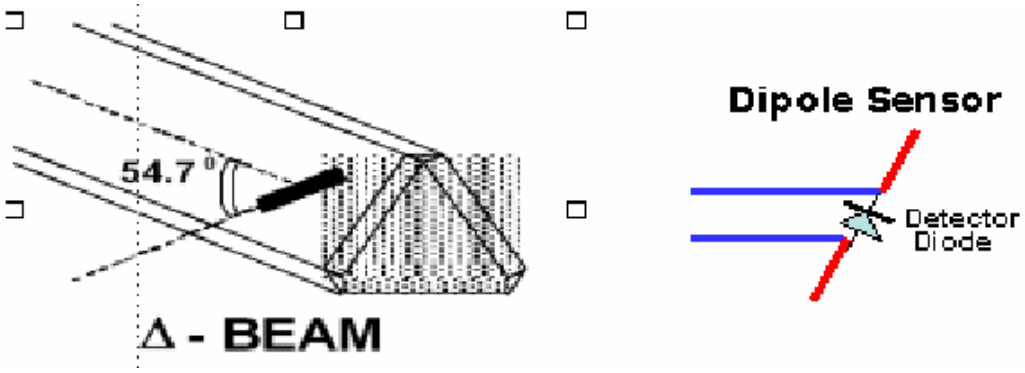
The overall uncertainty for the methodology and algorithms the used during the SAR calculation was evaluated using the data from IEEE 1528 based on the example f3 algorithm:

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

Isotropic E-Field Probe

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

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



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 surface (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 surface.

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.

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

Isotropic E-Field Probe Specification

Calibration Method	Frequency Dependent Below 1 GHz Calibration in air performed in a TEM Cell Above 1 GHz 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 100 W/kg
Isotropic Response	Better than 0.1 dB
Diode Compression Point (DCP)	Calibration for Specific Frequency
Probe Tip Diameter	< 2.9 mm
Sensor Offset	1.56 (+/- 0.02 mm)
Probe Length	289 mm
Video Bandwidth	@ 500 Hz: 1 dB @ 1.02 kHz: 3 dB
Boundary Effect	Less than 2.1% for distance greater than 0.58 mm
Spatial Resolution	The spatial resolution uncertainty is less than 1.5% for 4.9mm diameter probe. The spatial resolution uncertainty is less than 1.0% for 2.5mm diameter probe

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 surfaces. The robust design allows for detection during probe tilt (probe normalize) exercises, and utilizes a second stage emergency stop. The signal electronics are fed directly into the robot controller for high accuracy surface 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 connect to an isolated probe interconnect where the output stage of the probe is fed directly into the amplifier stage of the Daq-Paq.

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 5μV 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 an RS232 communications port. Probe linearity and duty cycle compensation is carried out within the main Daq-Paq module.

ADC	12 Bit
Amplifier Range	20 mV to 200 mV and 150 mV to 800 mV
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

Axis Articulated Robot

ALSAS-10U utilizes a six axis 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 envelope. 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	0.05 mm
Controller Type	Single phase Pentium based C500C
Robot Reach	710 mm
Communication	RS232 and LAN compatible

ALSAS Universal Workstation

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

Universal Device Positioner

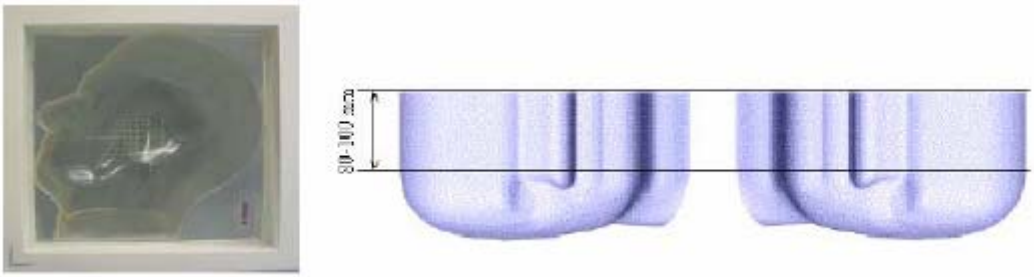
The universal device positioner allows complete freedom of movement of the EUT. Developed to hold a EUT in a free-space scenario any additional loading attributable to the material used in the construction of the positioner has been eliminated. Repeatability has been enhanced through the linear scales which form the design used to indicate positioning for any given test scenario in all major axes. A 15° tilt indicator is included for the of aid cheek to tilt movements for head SAR analysis. Overall uncertainty for measurements have 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.

Phantom Types

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

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.



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.

Tissue Dielectric Parameters for Head and Body Phantoms

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

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

Recommended Tissue Dielectric Parameters for Head and Body

Frequency (MHz)	Head Tissue		Body Tissue	
	εr	σ (S/m)	εr	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

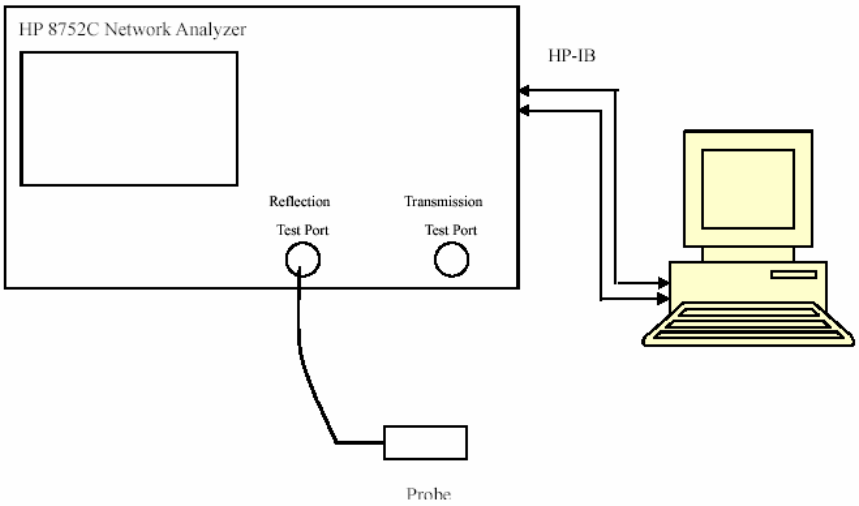
EQUIPMENT LIST AND CALIBRATION

Equipments List & Calibration Information

Equipment	Model	Calibration Date	S/N
CRS F3 robot	ALS-F3	N/A	RAF0805352
CRS F3 Software	ALS-F3-SW	N/A	N/A
CRS C500C controller	ALS-C500	N/A	RCF0805379
Probe mounting device & Boundary Detection Sensor System	ALS-PMDPS-3	N/A	120-00270
Universal Work Station	ALS-UWS	N/A	100-00157
Data Acquisition Package	ALS-DAQ-PAQ-3	2012-05-13	110-00212
Miniature E-Field Probe	ALS-E-020	2012-08-09	500-00283
Dipole, 835MHz	ALS-D-835-S-2	2011-08-25	180-00558
Dipole, 1900MHz	ALS-D-1900-S-2	2011-08-25	210-00710
Dipole,2450MHz	ALS-D-2450-S-2	2011-08-25	220-00758
Dipole Spacer	ALS-DS-U	N/A	250-00907
Device holder/Positioner	ALS-H-E-SET-2	N/A	170-00510
Left ear SAM phantom	ALS-P-SAM-L	N/A	130-00311
Right ear SAM phantom	ALS-P-SAM-R	N/A	140-00359
UniPhantom	ALS-P-UP-1	N/A	150-00413
Simulated Tissue 835 MHz Head	ALS-TS-835-H	Each Time	270-01002
Simulated Tissue 835 MHz Body	ALS-TS-835-B	Each Time	270-02101
Simulated Tissue 1900 MHz Head	ALS-TS-1900-H	Each Time	295-01103
Simulated Tissue 1900 MHz Body	ALS-TS-1900-B	Each Time	295-02102
Simulated Tissue 2450 MHz Body	ALS-TS-2450-B	Each Time	290-01109
Power Amplifier	5S1G4	N/A	71377
Synthesized Sweeper	HP 8341B	2012-05-17	2624A00116
UNIVERSAL RADIO COMMUNICATION TESTER	CMU 200	2012-05-28	1100.0008.02
EMI Test Receiver	ESCI	2012-08-08	101122

SAR MEASUREMENT SYSTEM VERIFICATION

Liquid Verification



Liquid Verification Setup Block Diagram

Liquid Verification Results

Frequency	Liquid Type	Liquid Parameter		Target Value		Delta (%)		Tolerance (%)
		ε_r	σ (S/m)	ε_r	σ (S/m)	$\Delta\varepsilon_r$	$\Delta\sigma$ (S/m)	
824.2	Head	41.60	0.90	41.50	0.90	0.241	0.000	±5
	Body	55.24	0.95	55.20	0.97	0.072	-2.060	±5
826.4	Head	41.48	0.90	41.50	0.90	-0.050	0.000	±5
	Body	55.25	0.96	55.20	0.97	0.091	-1.030	±5
836.6	Head	41.54	0.92	41.50	0.90	0.120	2.222	±5
	Body	55.31	0.97	55.20	0.97	0.199	0.000	±5
846.6	Head	41.40	0.93	41.50	0.90	-0.240	3.333	±5
	Body	55.38	0.99	55.20	0.97	0.326	2.062	±5
848.8	Head	41.32	0.93	41.50	0.90	-0.430	3.333	±5
	Body	55.39	0.99	55.20	0.97	0.344	2.062	±5
1850.2	Head	40.24	1.39	40.00	1.40	0.600	-0.710	±5
	Body	53.89	1.48	53.30	1.52	1.107	-2.630	±5
1852.4	Head	40.24	1.38	40.00	1.40	0.600	-1.430	±5
	Body	53.84	1.48	53.30	1.52	1.013	-2.630	±5
1880.0	Head	40.25	1.41	40.00	1.40	0.625	0.714	±5
	Body	53.64	1.52	53.30	1.52	0.638	0.000	±5
1907.6	Head	40.25	1.42	40.00	1.40	0.625	1.429	±5
	Body	53.61	1.54	53.30	1.52	0.582	1.316	±5
1909.8	Head	40.25	1.42	40.00	1.40	0.625	1.429	±5
	Body	53.72	1.53	53.30	1.52	0.788	0.658	±5
2412.0	Head	40.22	1.80	39.2	1.80	2.628	0.000	±5
	Body	53.22	1.94	52.70	1.95	0.987	-0.720	±5
2437.0	Head	40.28	1.83	39.2	1.80	2.628	1.667	±5
	Body	53.03	1.98	52.70	1.95	0.626	1.538	±5
2462.0	Head	40.39	1.84	39.2	1.80	3.036	2.222	±5
	Body	52.86	2.01	52.70	1.95	0.304	3.077	±5

**Liquid Verification was performed on 2013-01-04*

Please refer to the following tables.

850 MHz Head				850 MHz Body		
Frequency (MHz)	e'	e''		Frequency (MHz)	e'	e''
824.0	41.595126	19.684648		824.0	55.235276	20.818705
824.5	41.564097	19.685202		824.5	55.238414	20.718216
825.0	41.547437	19.685756		825.0	55.241547	20.730734
825.5	41.442297	19.686314		825.5	55.244694	20.743168
826.0	41.460655	19.686865		826.0	55.247828	20.878232
826.5	41.482548	19.687418		826.5	55.250966	20.941961
827.0	41.459035	19.687972		827.0	55.254104	20.856463
827.5	41.506356	19.688526		827.5	55.257242	20.734596
828.0	41.525962	19.689083		828.0	55.260383	20.769158
828.5	41.532388	19.689635		828.5	55.263518	20.726581
829.0	41.583319	19.690188		829.0	55.266656	20.830736
829.5	41.531812	19.690743		829.5	55.269794	20.773565
830.0	41.568181	19.691297		830.0	55.272932	20.651462
830.5	41.528209	19.691851		830.5	55.276071	20.715851
831.0	41.501207	19.692405		831.0	55.279208	20.701025
831.5	41.520762	19.692959		831.5	55.282346	20.908449
832.0	41.482582	19.693513		832.0	55.285484	20.886113
832.5	41.457404	19.694067		832.5	55.288622	20.662812
833.0	41.497944	19.694621		833.0	55.291760	20.596176
833.5	41.529359	19.695175		833.5	55.294898	20.707643
834.0	41.526784	19.695729		834.0	55.298035	20.859541
834.5	41.525364	19.696285		834.5	55.301173	20.752462
835.0	41.550193	19.696838		835.0	55.304311	20.695921
835.5	41.551193	19.697693		835.5	55.307449	20.943628
836.0	41.554793	19.698548		836.0	55.310587	20.950551
836.5	41.539825	19.699403		836.5	55.313725	20.808358
837.0	41.526622	19.700259		837.0	55.316863	20.635441
837.5	41.520829	19.701117		837.5	55.320001	20.671707
838.0	41.544002	19.701969		838.0	55.323139	20.95599
838.5	41.502532	19.702826		838.5	55.326277	20.971194
839.0	41.492463	19.703684		839.0	55.329415	20.893206
839.5	41.494933	19.704535		839.5	55.332553	20.828164
840.0	41.506100	19.705394		840.0	55.335691	20.895307
840.5	41.495362	19.706245		840.5	55.338829	20.940671
841.0	41.478634	19.707101		841.0	55.341967	20.895799
841.5	41.508076	19.707956		841.5	55.345105	20.832536
842.0	41.509778	19.708811		842.0	55.348243	21.008376
842.5	41.513474	19.709666		842.5	55.351381	20.976889
843.0	41.507569	19.700488		843.0	55.354519	20.937287
843.5	41.431272	19.701339		843.5	55.357657	20.892798
844.0	41.507524	19.702195		844.0	55.360795	20.910456
844.5	41.461815	19.703049		844.5	55.363933	20.936363
845.0	41.387833	19.703908		845.0	55.367071	20.845781
845.5	41.403135	19.704763		845.5	55.370209	20.792167
846.0	41.357718	19.725691		846.0	55.373347	20.965168
846.5	41.398657	19.726546		846.5	55.376485	21.026572
847.0	41.378926	19.727402		847.0	55.379623	20.975431
847.5	41.382112	19.728257		847.5	55.382761	20.895732
848.0	41.355712	19.729112		848.0	55.385899	20.985889
848.5	41.340164	19.758628		848.5	55.389037	21.063973
849.0	41.321428	19.759483		849.0	55.392175	21.064155

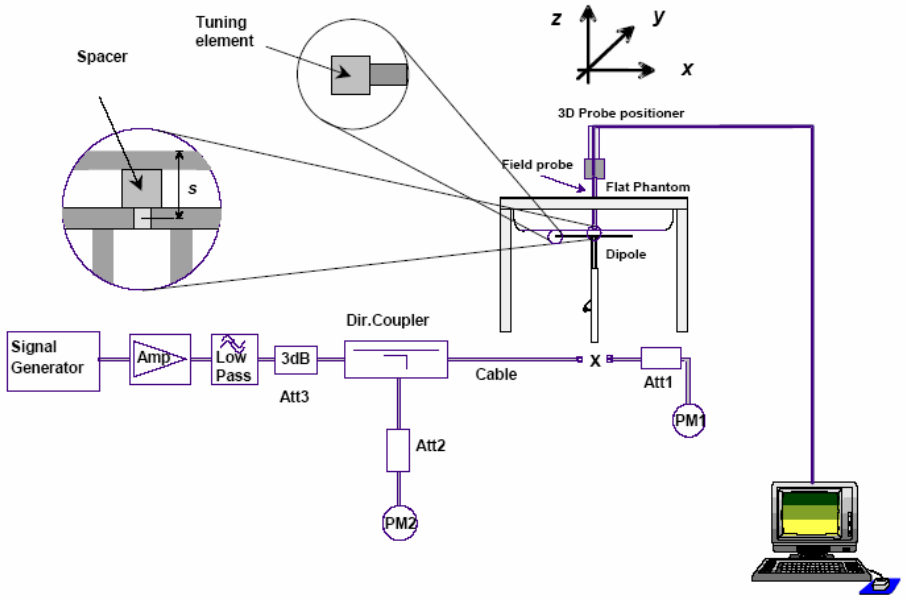
1900 MHz Head				1900 MHz Body		
Frequency (MHz)	e'	e''		Frequency (MHz)	e'	e''
1850.0	40.237741	13.487749		1850.0	53.889828	14.408266
1851.2	40.239968	13.457773		1851.2	53.821747	14.365683
1852.4	40.240221	13.425054		1852.4	53.840591	14.366787
1853.6	40.240467	13.448425		1853.6	53.817174	14.343062
1854.8	40.240716	13.442381		1854.8	53.720012	14.362543
1856.0	40.240964	13.366494		1856.0	53.823033	14.398964
1857.2	40.241214	13.506352		1857.2	53.816204	14.424949
1858.4	40.241465	13.402554		1858.4	53.798218	14.346165
1859.6	40.241713	13.456491		1859.6	53.779889	14.340508
1860.8	40.241962	13.457811		1860.8	53.675681	14.393304
1862.0	40.242211	13.474353		1862.0	53.703356	14.220507
1863.2	40.242461	13.496783		1863.2	53.649337	14.233312
1864.4	40.242684	13.531771		1864.4	53.684089	14.250395
1865.6	40.242958	13.526344		1865.6	53.690562	14.221431
1866.8	40.243208	13.515157		1866.8	53.765572	14.212124
1868.0	40.243506	13.533664		1868.0	53.834016	14.228073
1869.2	40.243705	13.594424		1869.2	53.843078	14.250499
1870.4	40.243957	13.587165		1870.4	53.756576	14.301952
1871.6	40.244204	13.561095		1871.6	53.698956	14.302659
1872.8	40.244453	13.591152		1872.8	53.737392	14.331649
1874.0	40.244702	13.533803		1874.0	53.663855	14.339958
1875.2	40.244952	13.567866		1875.2	53.727018	14.403215
1876.4	40.245211	13.565833		1876.4	53.630133	14.325996
1877.6	40.245452	13.630333		1877.6	53.732416	14.406037
1878.8	40.245699	13.525936		1878.8	53.760203	14.537873
1880.0	40.245948	13.471159		1880.0	53.642524	14.556828
1881.2	40.246197	13.519899		1881.2	53.600764	14.553864
1882.4	40.246448	13.542497		1882.4	53.696306	14.525242
1883.6	40.246696	13.511274		1883.6	53.661807	14.481265
1884.8	40.246945	13.511848		1884.8	53.686704	14.504006
1886.0	40.247194	13.511174		1886.0	53.721915	14.436201
1887.2	40.247444	13.506321		1887.2	53.702692	14.412366
1888.4	40.247694	13.501403		1888.4	53.792467	14.446675
1889.6	40.247942	13.496624		1889.6	53.722958	14.451287
1890.8	40.248191	13.491777		1890.8	53.768633	14.508116
1892.0	40.248445	13.486933		1892.0	53.756597	14.304299
1893.2	40.248689	13.482083		1893.2	53.729049	14.265222
1894.4	40.248941	13.477236		1894.4	53.701687	14.314302
1895.6	40.249187	13.472389		1895.6	53.694535	14.648103
1896.8	40.249437	13.467542		1896.8	53.684436	14.646212
1898.0	40.249686	13.462695		1898.0	53.684766	14.626774
1899.2	40.249936	13.457848		1899.2	53.761767	14.627211
1900.4	40.250186	13.453001		1900.4	53.726683	14.525867
1901.6	40.250434	13.448154		1901.6	53.730166	14.615213
1902.8	40.250704	13.443307		1902.8	53.699257	14.575235
1904.0	40.250931	13.438469		1904.0	53.780968	14.544052
1905.2	40.251181	13.433613		1905.2	53.692725	14.512573
1906.4	40.251441	13.428766		1906.4	53.682637	14.437507
1907.6	40.251679	13.423919		1907.6	53.608317	14.554298
1908.8	40.251928	13.419072		1908.8	53.692597	14.489726
1910.0	40.252179	13.414225		1910.0	53.719124	14.453348

2450 MHz Head				2450 MHz Body		
Frequency (MHz)	e'	e''		Frequency (MHz)	e'	e''
2410	40.227122	13.465619		2410	53.240142	14.396699
2411	40.226123	13.465817		2411	53.231112	14.403696
2412	40.224125	13.466015		2412	53.222101	14.408698
2413	40.222127	13.466213		2413	53.213091	14.413695
2414	40.223126	13.466411		2414	53.204082	14.418698
2415	40.224125	13.466609		2415	53.195077	14.423703
2416	40.225124	13.466807		2416	53.186068	14.428698
2417	40.226123	13.467005		2417	53.177053	14.433698
2418	40.227122	13.467203		2418	53.168045	14.438697
2419	40.231118	13.467401		2419	53.159036	14.443695
2420	40.235114	13.467599		2420	53.150041	14.448702
2421	40.239111	13.467797		2421	53.141010	14.473698
2422	40.243106	13.467995		2422	53.134001	14.480701
2423	40.247102	13.468193		2423	53.126993	14.487698
2424	40.251098	13.468391		2424	53.119985	14.494697
2425	40.255094	13.468589		2425	53.112978	14.501698
2426	40.259092	13.468787		2426	53.105971	14.508697
2427	40.263086	13.468985		2427	53.098962	14.515696
2428	40.267082	13.469183		2428	53.091954	14.522703
2429	40.271078	13.469381		2429	53.084947	14.529698
2430	40.272077	13.469579		2430	53.077943	14.536695
2431	40.273076	13.469777		2431	53.070931	14.543695
2432	40.274075	13.469975		2432	53.063923	14.550697
2433	40.275074	13.470173		2433	53.056915	14.557702
2434	40.276073	13.470371		2434	53.049908	14.564697
2435	40.277072	13.470569		2435	53.042901	14.571697
2436	40.280069	13.470767		2436	53.035892	14.578702
2437	40.283066	13.470965		2437	53.028884	14.585701
2438	40.286063	13.471163		2438	53.021876	14.592701
2439	40.289061	13.471361		2439	53.014874	14.599697
2440	40.292057	13.471559		2440	53.007861	14.606696
2441	40.295054	13.471757		2441	53.000853	14.613695
2442	40.300049	13.471955		2442	52.993845	14.617694
2443	40.305044	13.472153		2443	52.986838	14.621697
2444	40.310039	13.472351		2444	52.979830	14.625724
2445	40.315034	13.472549		2445	52.972822	14.629699
2446	40.320029	13.472747		2446	52.965814	14.633698
2447	40.325024	13.472945		2447	52.958806	14.637696
2448	40.330019	13.473143		2448	52.951803	14.641696
2449	40.335014	13.473341		2449	52.944791	14.645697
2450	40.340009	13.473539		2450	52.937783	14.649696
2451	40.345004	13.473737		2451	52.930775	14.653695
2452	40.349999	13.473935		2452	52.923767	14.657696
2453	40.354994	13.474133		2453	52.916762	14.661701
2454	40.358991	13.474331		2454	52.909752	14.665696
2455	40.362986	13.474529		2455	52.902744	14.669696
2456	40.366982	13.474727		2456	52.895736	14.673703
2457	40.370978	13.474925		2457	52.888731	14.677696
2458	40.374974	13.475123		2458	52.881721	14.681701
2459	40.378970	13.475321		2459	52.874713	14.685696
2460	40.382966	13.475519		2460	52.867705	14.689699
2461	40.386962	13.475717		2461	52.860697	14.693694
2462	40.387816	13.475706		2462	52.860841	14.681634

System Accuracy Verification

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

System Verification Setup Block Diagram



Probe and dipole antenna List and Detail

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
APREL	Probe	ALS-E-020	500-00283	2012-08-09	2013-08-08
APREL	Dipole antenna(835MHz)	ALS-D-835-S-2	180-00558	2011-08-25	2014-08-24
APREL	Dipole antenna(1900MHz)	ALS-D-1900-S-2	210-00710	2011-08-25	2014-08-24
APREL	Dipole antenna(2450MHz)	ALS-D-2450-S-2	220-00758	2011-08-25	2014-08-24

System Accuracy Check Results

Date	Frequency Band	Liquid Type	Measured SAR (W/Kg)		Target Value (W/Kg)	Delta (%)	Tolerance (%)
2013-01-04	835	Head	1g	9.819	9.590	2.388	±10
		Body	1g	10.328	9.684	6.650	±10
	1900	Head	1g	41.204	39.648	3.925	±10
		Body	1g	40.614	39.769	2.125	±10
	2450	Head	1g	53.419	52.667	1.427	±10
		Body	1g	49.879	52.561	-5.103	±10

*All SAR values are normalized to 1 Watt forward power.

SAR SYSTEM VALIDATION DATA

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 835 MHz Head Liquid

Dipole 835 MHz; Type: ALS-D-835-S-2; S/N: 180-00558

Product Data
Device Name : Dipole 835 MHz
Serial No. : 180-00558
Type : Dipole
Model : ALS-D-835-S-2
Frequency Band : 835
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 10.208 W/kg
Power Drift-Finish : 10.414W/kg
Power Drift (%) : 2.017

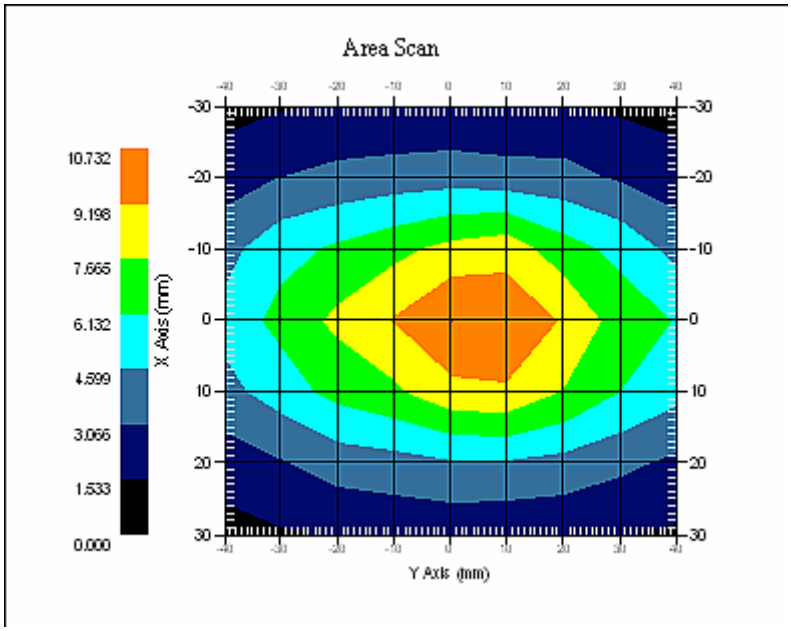
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Head
Serial No. : 270-01002
Frequency : 835.0 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 41.55 F/m
Sigma : 0.91 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 9.819 W/kg
10 gram SAR value : 5.951 W/kg
Area Scan Peak SAR : 10.731 W/kg
Zoom Scan Peak SAR : 16.082 W/kg



835 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 835MHz Body Liquid

Dipole 835 MHz; Type: ALS-D-835-S-2; S/N: 180-00558

Product Data
Device Name : Dipole 835 MHz
Serial No. : 180-00558
Type : Dipole
Model : ALS-D-835-S-2
Frequency Band : 835
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 10.633 W/kg
Power Drift-Finish : 10.419W/kg
Power Drift (%) : -1.997

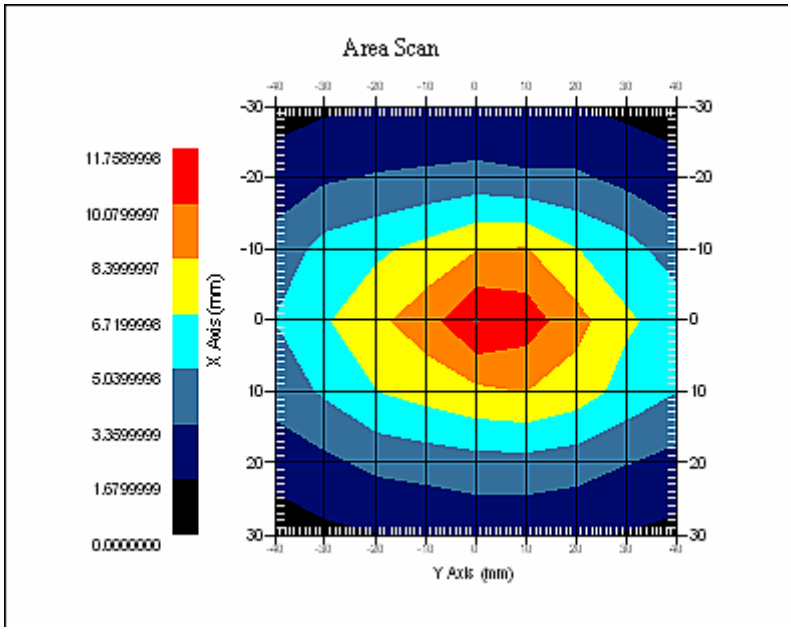
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default
Phantom Data

Tissue Data
Type : Body
Serial No. : 270-02101
Frequency : 835.0 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 55.30 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 21.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 10.328 W/kg
10 gram SAR value : 6.193W/kg
Area Scan Peak SAR : 11.756 W/kg
Zoom Scan Peak SAR : 17.044 W/kg



835 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1900 MHz Head Liquid

Dipole 1900 MHz; Type: ALS-D-1900-S-2; S/N: 210-00710

Product Data
Device Name : Dipole 1900MHz
Serial No. : 210-00710
Type : Dipole
Model : ALS-D-1900-S-2
Frequency Band : 1900
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 41.205 W/kg
Power Drift-Finish : 40.414 W/kg
Power Drift (%) : -2.139

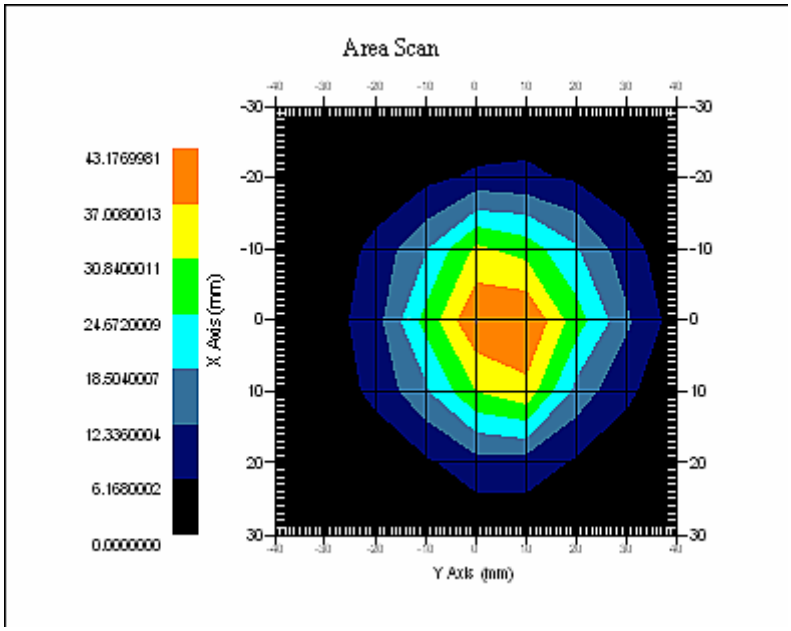
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Head
Serial No. : 295-01103
Frequency : 1900.00 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 40.25 F/m
Sigma : 1.42 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.20
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 41.204 W/kg
10 gram SAR value : 22.187 W/kg
Area Scan Peak SAR : 43.177 W/kg
Zoom Scan Peak SAR : 86.156 W/kg



1900 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 1900 Body Liquid

Dipole 1900 MHz; Type: ALS-D-1900-S-2; S/N: 210-00710

Product Data
Device Name : Dipole 1900MHz
Serial No. : 210-00710
Type : Dipole
Model : ALS-D-1900-S-2
Frequency Band : 1900
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 40.621 W/kg
Power Drift-Finish : 41.361 W/kg
Power Drift (%) : 1.528

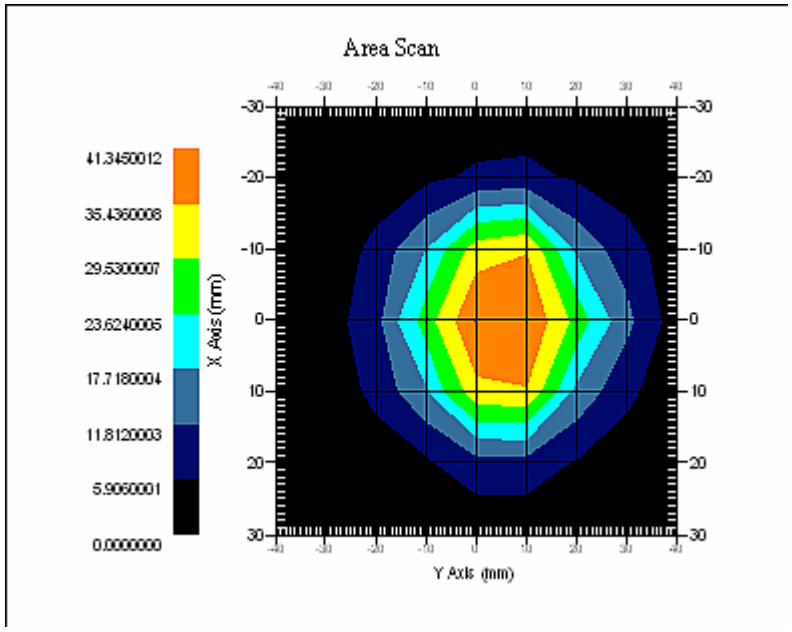
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Body
Serial No. : 295-02102
Frequency : 1900.00 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 56.00 RH%
Epsilon : 53.73 F/m
Sigma : 1.53 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 21.00 °C
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 40.614 W/kg
10 gram SAR value : 21.988 W/kg
Area Scan Peak SAR : 41.345 W/kg
Zoom Scan Peak SAR : 92.646 W/kg



1900 MHz System Validation with Body Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 2450 MHz Head Liquid

Dipole 2450 MHz; Type: ALS-D-2450-S-2; S/N: 220-00758

Product Data
Device Name : Dipole 2450MHz
Serial No. : 220-00758
Type : Dipole
Model : ALS-D-2450-S-2
Frequency Band : 2450
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 51.220 W/kg
Power Drift-Finish : 50.142 W/kg
Power Drift (%) : -1.998

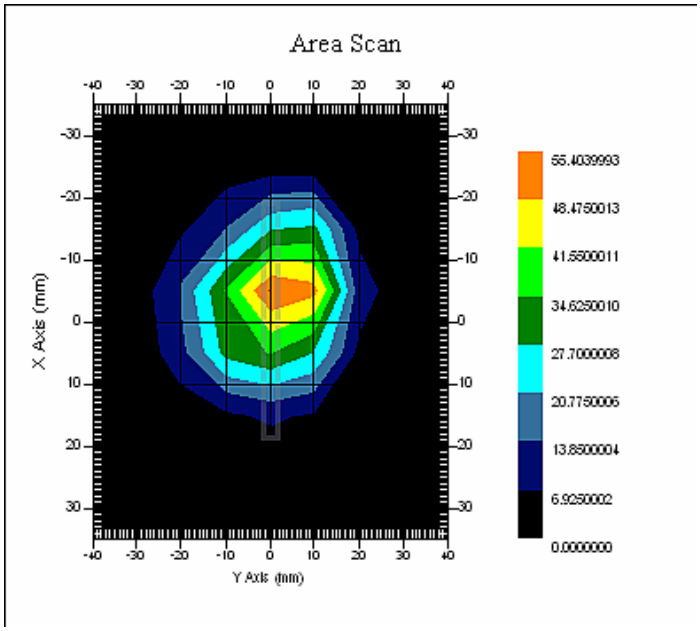
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : Head
Serial No. : 290-01109
Frequency : 2450.00 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 50.00 RH%
Epsilon : 40.34 F/m
Sigma : 1.83 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 8x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 53.419 W/kg
10 gram SAR value : 25.077 W/kg
Area Scan Peak SAR : 54.757 W/kg
Zoom Scan Peak SAR : 99.204 W/kg



2450 MHz System Validation with Head Tissue

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

System Performance Check 2450 MHz Body Liquid

Dipole 2450 MHz; Type: ALS-D-2450-S-2; S/N: 220-00758

Product Data
Device Name : Dipole 2450MHz
Serial No. : 220-00758
Type : Dipole
Model : ALS-D-2450-S-2
Frequency Band : 2450
Max. Transmit Pwr : 1 W
Drift Time : 3 min(s)
Power Drift-Start : 50.155 W/kg
Power Drift-Finish : 49.010 W/kg
Power Drift (%) : -2.109

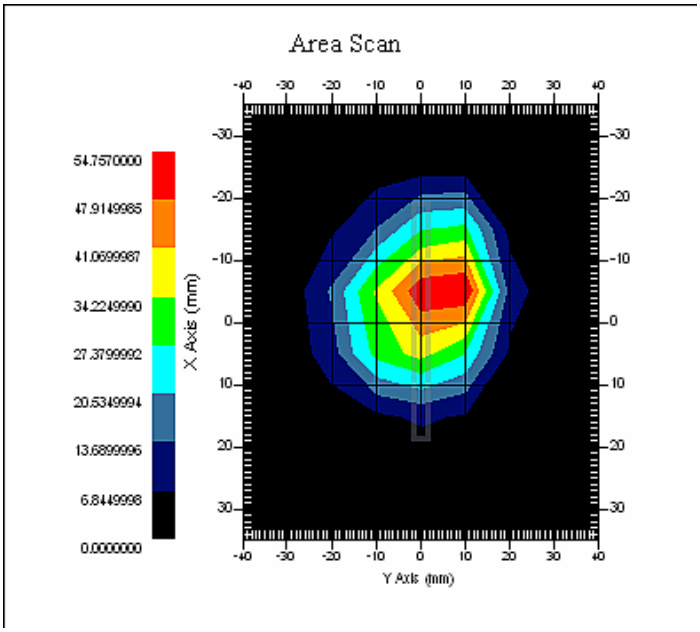
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : Default

Tissue Data
Type : BODY
Serial No. : 290-01109
Frequency : 2450.00 MHz
Last Calib. Date : 04-Jan-2013
Temperature : 20.00 °C
Ambient Temp. : 21.00 °C
Humidity : 50.00 RH%
Epsilon : 52.94 F/m
Sigma : 2.00 S/m
Density : 1000.00 kg/cu. M

Probe Data
Name : E-Field
Model : E-020
Type : E-Field Triangle
Serial No. : 500-00283
Last Calib. Date : 09-Aug-2012
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point : 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Tissue Temp. : 20.00 °C
Ambient Temp. : 20.00 °C
Area Scan : 8x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm

1 gram SAR value : 49.879 W/kg
10 gram SAR value : 24.936 W/kg
Area Scan Peak SAR : 54.757 W/kg
Zoom Scan Peak SAR : 100.054 W/kg



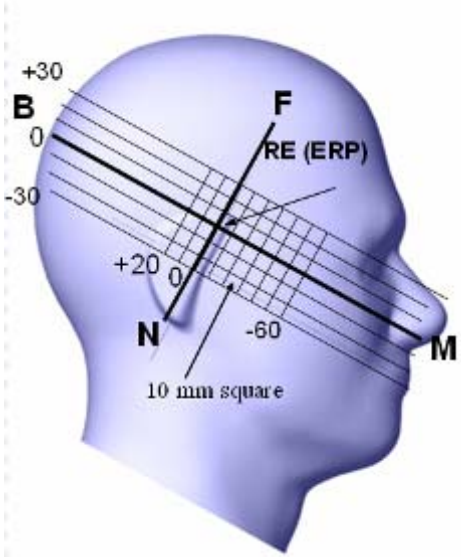
2450 MHz System Validation with Body Tissue

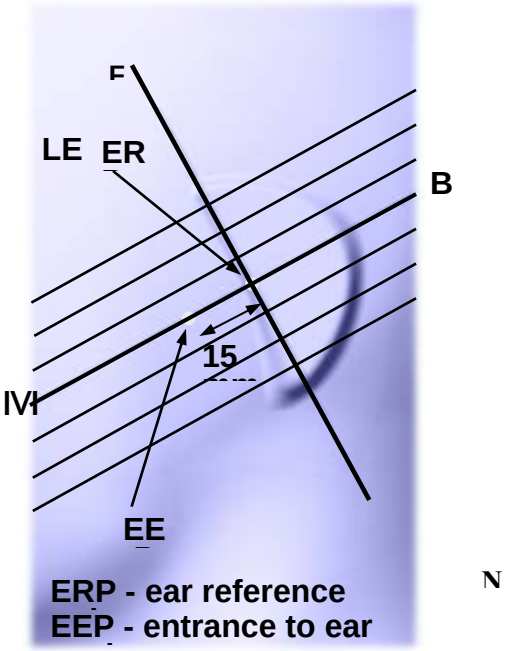
EUT TEST STRATEGY AND METHODOLOGY

Test Positions for Device Operating Next to a Person's Ear

This category includes most wireless handsets with fixed, retractable or internal antennas located toward the top half of the device, with or without a foldout, sliding or similar keypad cover. The handset should have its earpiece located within the upper ¼ of the device, either along the centerline or off-centered, as perceived by its users. This type of handset should be positioned in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point". The "test device reference point" should be located at the same level as the center of the earpiece region. The "vertical centerline" should bisect the front surface of the handset at its top and bottom edges. A "ear reference point" is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the "phantom reference plane" defined by the three lines joining the center of each "ear reference point" (left and right) and the tip of the mouth.

A handset should be initially positioned with the earpiece region pressed against the ear spacer of a head phantom. For the SCC-34/SC-2 head phantom, the device should be positioned parallel to the "N-F" line defined along the base of the ear spacer that contains the "ear reference point". For interim head phantoms, the device should be positioned parallel to the cheek for maximum RF energy coupling. The "test device reference point" is aligned to the "ear reference point" on the head phantom and the "vertical centerline" is aligned to the "phantom reference plane". This is called the "initial ear position". While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:





Cheek/Touch Position

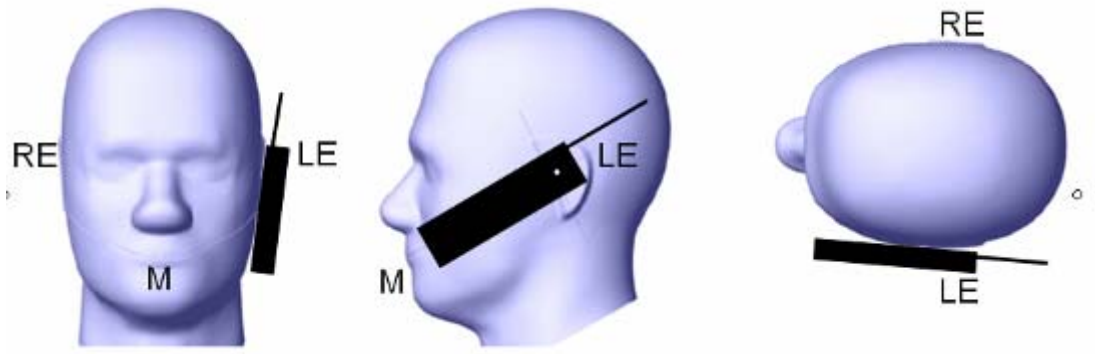
The device is brought toward the mouth of the head phantom by pivoting against the "ear reference point" or along the "N-F" line for the SCC-34/SC-2 head phantom.

This test position is established:

- When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.
- (or) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

For existing head phantoms – when the handset loses contact with the phantom at the pivoting point, rotation should continue until the device touches the cheek of the phantom or breaks its last contact from the ear spacer.

Cheek /Touch Position



Ear/Tilt Position

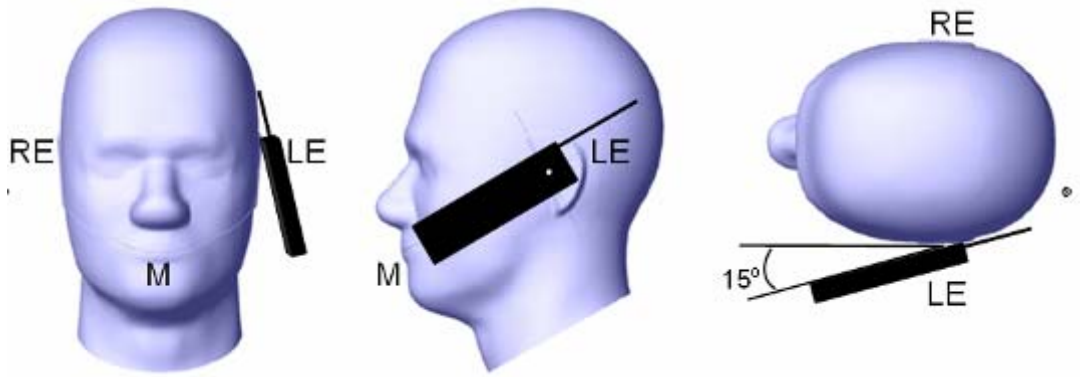
With the handset aligned in the "Cheek/Touch Position":

1) If the earpiece of the handset is not in full contact with the phantom's ear spacer (in the "Cheek/Touch position") and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device should be returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

2) (otherwise) The handset should be moved (translated) away from the cheek perpendicular to the line passes through both "ear reference points" (note: one of these ear reference points may not physically exist on a split head model) for approximate 2-3 cm. While it is in this position, the device handset is tilted away from the mouth with respect to the "test device reference point" until the inside angle between the vertical centerline on the front surface of the phone and the horizontal line passing through the ear reference point isby 15 80°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process should be repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously. This test position may require a device holder or positioner to achieve the translation and tilting with acceptable positioning repeatability.

If a device is also designed to transmit with its keypad cover closed for operating in the head position, such positions should also be considered in the SAR evaluation. The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tile/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). If the transmission band of the test device is less than 10 MHz, testing at the high and low frequency channels is optional.

Ear /Tilt 15° Position



Test positions for body-worn and other configurations

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. Devices with a headset output should be tested with a headset connected to the device. When multiple accessories that do not contain metallic components are supplied with the device, the device may be tested with only the accessory that dictates the closest spacing to the body. When multiple accessories that contain metallic components are supplied with the device, the device must be tested with each accessory that contains a unique metallic component. If multiple accessories share an identical metallic component (e.g., the same metallic belt-clip used with different holsters with no other metallic components), only the accessory that dictates the closest spacing to the body must be tested.

Body-worn accessories may not always be supplied or available as options for some devices that are intended to be authorized for body-worn use. 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 distances may be used, but they should not exceed 2.5 cm. In these cases, the device may use body-worn accessories that provide a separation distance greater than that tested for the device provided however that the accessory contains no metallic components.

SAR Evaluation Procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point or central position was used as a reference value for assessing the power drop. The SAR at this point is measured at the start of the test and then again at the end of the testing.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 4 mm from the inner surface of the shell. The area covered the entire dimension of the head or EUT and the horizontal grid spacing was 10 mm x 10 mm. Based on these data, the area of the maximum absorption was determined by spline interpolation. The first Area Scan covers the entire dimension of the EUT to ensure that the hotspot was correctly identified.

Step 3: Around this point, a volume of 35 mm x 35 mm x 35 mm was assessed by measuring 7x 7 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1) The data at the surface were extrapolated, since the center of the dipoles is 1.2 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

2) The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one dimensional splines with the “Not a knot"-condition (in x, y and z-directions). The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the averages.

All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation was repeated.

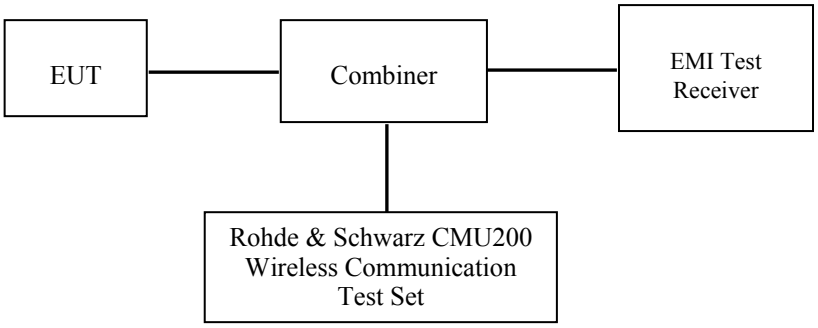
CONDUCTED OUTPUT POWER MEASUREMENT

Provision Applicable

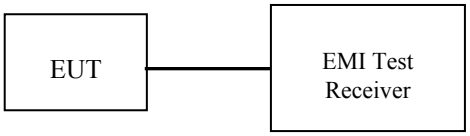
The measured peak output power should be greater and within 5% than EMI measurement.

Test Procedure

The RF output of the transmitter was connected to the input of the EMI Test Receiver through sufficient attenuation.



GSM/3G



WiFi

Test Results:

GSM

Frequency Band	Frequency (MHz)	Conducted Output Power	
		GSM (dBm)	GSM (W)
Cellular	824.2	32.58	1.811
	836.6	32.57	1.807
	848.8	32.52	1.786
PCS	1850.2	30.15	1.035
	1880.0	30.08	1.019
	1909.8	30.05	1.012

GPRS

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
Cellular	128	824.2	32.60	31.80	30.15	29.33
	190	836.6	32.59	31.79	30.13	29.30
	251	848.8	32.54	31.70	30.06	29.23
PCS	512	1850.2	30.19	29.48	27.98	27.00
	661	1880.0	30.14	29.43	27.93	26.97
	810	1909.8	30.07	29.35	27.87	26.90

EGPRS

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
Cellular	128	824.2	26.64	25.66	23.47	22.14
	190	836.6	26.71	25.72	23.58	22.22
	251	848.8	26.77	25.76	23.52	22.27
PCS	512	1850.2	26.76	25.62	23.59	22.34
	661	1880.0	26.65	25.56	23.54	22.28
	810	1909.8	26.48	25.34	23.28	22.06

For SAR, the time based average power is relevant, the difference in between depends on the duty cycle of the TDMA signal.

Number of Time slot	1	2	3	4
Duty Cycle	1:8	1:4	1:2.66	1:2
Time based Ave. power compared to slotted Ave. power	-9 dB	-6 dB	-4.25 dB	-3 dB
Crest Factor	8	4	2.66	2

The time based average power

GPRS

Band	Channel No.	Frequency (MHz)	Time based average Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
Cellular	128	824.2	23.60	25.80	25.90	26.33
	190	836.6	23.59	25.79	25.88	26.30
	251	848.8	23.54	25.70	25.81	26.23
PCS	512	1850.2	21.19	23.48	23.73	24.00
	661	1880.0	21.14	23.43	23.68	23.97
	810	1909.8	21.07	23.35	23.62	23.90

EGPRS

Band	Channel No.	Frequency (MHz)	RF Output Power (dBm)			
			1 slot	2 slot	3 slots	4 slots
Cellular	128	824.2	17.64	19.66	19.22	19.14
	190	836.6	17.71	19.72	19.33	19.22
	251	848.8	17.77	19.76	19.27	19.27
PCS	512	1850.2	17.76	19.62	19.34	19.34
	661	1880.0	17.65	19.56	19.29	19.28
	810	1909.8	17.48	19.34	19.03	19.06

Note:

1. Rohde & Schwarz Radio Communication Tester (CMU200) was used for the measurement of GSM peak and average output power for active timeslots.

2. For GSM voice, 1 timeslot has been activated with power level 5 (850 MHz band) and 0 (1900 MHz band).

3. For GPRS and EGPRS, 1，2，3 and 4 timeslots has been activated separately with power level 5(850 MHz band) and 0(1900 MHz band).

4. The maximum average output power of the GPRS mode is more than 2 dB higher than EGPRS mode measured in the same frequency band, according to IEEE1528, GPRS mode SAR is required.

WCDMA850

Test Condition	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
Normal	Rel 99	1	22.73	22.66	22.59
	Rel 5 HSDPA	1	22.50	22.54	22.51
		2	22.43	22.46	22.45
		3	22.00	22.27	22.20
		4	22.11	22.23	22.29
	Rel 6 HSUPA	1	22.41	22.59	22.44
		2	22.42	22.50	22.48
		3	22.24	22.45	22.25
		4	22.32	22.35	22.24
		5	22.15	22.19	22.27

WCDMA1900

Test Condition	Test Mode	3GPP Sub Test	Averaged Mean Power (dBm)		
			Low Frequency	Mid Frequency	High Frequency
Normal	Rel 99	1	22.61	22.56	22.35
	Rel 5 HSDPA	1	22.54	22.48	22.47
		2	22.45	22.45	22.50
		3	22.11	22.20	22.28
		4	21.97	22.25	22.18
	Rel 6 HSUPA	1	22.44	22.59	22.54
		2	22.32	22.51	22.50
		3	22.21	22.44	22.24
		4	22.16	22.33	22.22
		5	22.17	22.31	22.28

Note:

1. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Model 1.

2. KDB 941225 D01-Body SAR is not required for HSDPA when the maximum average output of each RF channel with HSDPA active is less than ¼ dB higher than measured without HSDPA using 12.2kbps RMC or the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

3. KDB 941225 D01-Body SAR is not required for HSUPA when the maximum average output of each RF channel with HSUPA active is less than ¼ dB higher than measured without HSUPA using 12.2kbps RMC and the maximum SAR for 12.2kbps RMC is < 75% of SAR limit.

4. The setup configuration for the power measurements as fellows:

WCDMA-Release 99:

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	**Loopback Mode**	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc /βd	8/15

WCDMA HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/ βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR(dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	D_{CQI}	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs= βhs/βc	30/15			

WCDMA HSUPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/ βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	Ahs= βhs/βc	30/15				
HSUPA Specific Settings	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCIs	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	

Wi-Fi

Band	Frequency (MHz)	Conducted Output Power	
		(dBm)	(Watt)
802.11b	2412	16.89	0.049
	2437	16.93	0.049
	2462	16.69	0.049
802.11g	2412	14.84	0.030
	2437	14.84	0.030
	2462	14.87	0.031
802.11n-20	2412	14.94	0.031
	2437	14.90	0.031
	2462	14.90	0.031

Note:

1. The output power was tested under data rate 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5 Mbps for 802.11n20.

2. KDB248227-SAR is not required for 802.11g/n channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.

Bluetooth

Mode	Channel frequency (MHz)	Reading power (dBm)	Power output (mw)
BDR(GFSK)	(Low)2402	5.97	3.95
	(Middle)2441	7.12	5.15
	(High)2480	7.59	5.74
EDR(4-DQPSK)	(Low)2402	5.92	3.91
	(Middle)2441	7.06	5.08
	(High)2480	7.53	5.66
EDR-8DPSK	(Low)2402	5.67	3.69
	(Middle)2441	6.86	4.85
	(High)2480	6.99	5.00

Note:

According to the appendix A of FCC KDB 447498 D01 General RF Exposure Guidance v05 generic portable criteria, the exclusion thresholds for 2450 MHz is 10 mW. So SAR test is not required for Bluetooth.

SAR MEASUREMENT RESULTS

This page summarizes the results of the performed dosimetric evaluation.

SAR Test Data

Environmental Conditions

Temperature:	21-22° C
Relative Humidity:	50-53%
ATM Pressure:	1001-1002 mbar

** Testing was performed by Sandy Wang on 2013-01-04 to 2013-01-06*

Cellular Band:

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Left Head Cheek	128(Low)	824.2	GSM	Integral	SAM	-2.047	**0.367**	1.6
	190(Middle)	836.6	GSM	Integral	SAM	/	/	1.6
	251(High)	848.8	GSM	Integral	SAM	/	/	1.6
Left Head Tilt	128(Low)	824.2	GSM	Integral	SAM	-2.496	0.186	1.6
	190(Middle)	836.6	GSM	Integral	SAM	/	/	1.6
	251(High)	848.8	GSM	Integral	SAM	/	/	1.6
Right Head Cheek	128(Low)	824.2	GSM	Integral	SAM	3.417	0.352	1.6
	190(Middle)	836.6	GSM	Integral	SAM	/	/	1.6
	251(High)	848.8	GSM	Integral	SAM	/	/	1.6
Right Head Tilt	128(Low)	824.2	GSM	Integral	SAM	-0.419	0.184	1.6
	190(Middle)	836.6	GSM	Integral	SAM	/	/	1.6
	251(High)	848.8	GSM	Integral	SAM	/	/	1.6
Body-Front-Headset (10mm)	128(Low)	824.2	GSM	Integral	Universal	-2.417	0.466	1.6
	190(Middle)	836.6	GSM	Integral	Universal	/	/	1.6
	251(High)	848.8	GSM	Integral	Universal	/	/	1.6
Body-Back-Headset (10mm)	128(Low)	824.2	GSM	Integral	Universal	-2.924	**0.596**	1.6
	190(Middle)	836.6	GSM	Integral	Universal	/	/	1.6
	251(High)	848.8	GSM	Integral	Universal	/	/	1.6

Note:

1. When the 1-g SAR is ≤ 0.8W/Kg, testing for other channels are optional.

PCS Band:

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Left Head Cheek	512(Low)	1850.2	GSM	Integral	SAM	-1.227	**0.221**	1.6
	661(Middle)	1880.0	GSM	Integral	SAM	/	/	1.6
	810(High)	1909.8	GSM	Integral	SAM	/	/	1.6
Left Head Tilt	512(Low)	1850.2	GSM	Integral	SAM	-0.828	0.030	1.6
	661(Middle)	1880.0	GSM	Integral	SAM	/	/	1.6
	810(High)	1909.8	GSM	Integral	SAM	/	/	1.6
Right Head Cheek	512(Low)	1850.2	GSM	Integral	SAM	0.930	0.215	1.6
	661(Middle)	1880.0	GSM	Integral	SAM	/	/	1.6
	810(High)	1909.8	GSM	Integral	SAM	/	/	1.6
Right Head Tilt	512(Low)	1850.2	GSM	Integral	SAM	2.023	0.033	1.6
	661(Middle)	1880.0	GSM	Integral	SAM	/	/	1.6
	810(High)	1909.8	GSM	Integral	SAM	/	/	1.6
Body-Front-Headset (10mm)	512(Low)	1850.2	GSM	Integral	Universal	-1.259	0.144	1.6
	661(Middle)	1880.0	GSM	Integral	Universal	/	/	1.6
	810(High)	1909.8	GSM	Integral	Universal	/	/	1.6
Body-Back-Headset (10mm)	512(Low)	1850.2	GSM	Integral	Universal	-1.725	**0.226**	1.6
	661(Middle)	1880.0	GSM	Integral	Universal	/	/	1.6
	810(High)	1909.8	GSM	Integral	Universal	/	/	1.6

Note:
1. When the 1-g SAR is ≤ 0.8W/Kg, testing for other channels are optional.
2. The EUT transmit and receive through the same GSM antenna while testing SAR.

WCDMA850

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Left Head Cheek	4132(Low)	826.4	WCDMA850	Integral	SAM	-2.885	**0.421**	1.6
	4183(Middle)	836.6	WCDMA850	Integral	SAM	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	SAM	/	/	1.6
Left Head Tilt	4132(Low)	826.4	WCDMA850	Integral	SAM	-2.324	0.192	1.6
	4183(Middle)	836.6	WCDMA850	Integral	SAM	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	SAM	/	/	1.6
Right Head Cheek	4132(Low)	826.4	WCDMA850	Integral	SAM	0.779	0.394	1.6
	4183(Middle)	836.6	WCDMA850	Integral	SAM	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	SAM	/	/	1.6
Right Head Tilt	4132(Low)	826.4	WCDMA850	Integral	SAM	-1.898	0.201	1.6
	4183(Middle)	836.6	WCDMA850	Integral	SAM	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	SAM	/	/	1.6

Note:

1. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.

WCDMA1900

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Left Head Cheek	9262(Low)	1852.4	WCDMA1900	Integral	SAM	1.092	**0.376**	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	SAM	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	SAM	/	/	1.6
Left Head Tilt	9262(Low)	1852.4	WCDMA1900	Integral	SAM	-2.377	0.065	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	SAM	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	SAM	/	/	1.6
Right Head Cheek	9262(Low)	1852.4	WCDMA1900	Integral	SAM	-3.051	0.364	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	SAM	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	SAM	/	/	1.6
Right Head Tilt	9262(Low)	1852.4	WCDMA1900	Integral	SAM	2.133	0.063	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	SAM	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	SAM	/	/	1.6

Note:

1. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.

2. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Mode.

WiFi (802.11b)

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 10g SAR (W/Kg)	
	Channel NO.	MHz					Measurement	Limit
Left Head Cheek	1	2412.0	802.11b	Integral	SAM	/	/	1.6
	6	2437.0	802.11b	Integral	SAM	-3.227	**0.038**	1.6
	11	2462.0	802.11b	Integral	SAM	/	/	1.6
Left Head Tilt	1	2412.0	802.11b	Integral	SAM	/	/	1.6
	6	2437.0	802.11b	Integral	SAM	-1.215	0.011	1.6
	11	2462.0	802.11b	Integral	SAM	/	/	1.6
Right Head Cheek	1	2412.0	802.11b	Integral	SAM	/	/	1.6
	6	2437.0	802.11b	Integral	SAM	1.919	0.033	1.6
	11	2462.0	802.11b	Integral	SAM	/	/	1.6
Right Head Tilt	1	2412.0	802.11b	Integral	SAM	/	/	1.6
	6	2437.0	802.11b	Integral	SAM	-0.742	0.009	1.6
	11	2462.0	802.11b	Integral	SAM	/	/	1.6

Note:

1. When the 1-g SAR is ≤0.8W/Kg, testing for other channels are optional.
2. The SAR testing is conducted with 100% duty cycle factor.
3. The output power was tested under data rate 1Mbps for 802.11b.

Mobile Hot-Spot Test Result

The DUT is capable of functioning as a WiFi to Cellular Mobile hotspot. Additional SAR testing was performed according to KDB 941225 D06. Testing was performed with a separation of 1cm between the DUT and the flat phantom. The DUT was positioned for SAR tests with the front and back surfaces facing the phantom, and also with the edges facing the phantom in which the transmitting antenna is <2.5 cm from the edge. Each transmit band was utilized for SAR testing. The tested mode has been selected within each band that exhibits the highest time average output power.

Hot spot-GPRS (Frequency Band: 835MHz)

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Body-Front (10mm)	128	824.2	GPRS	Integral	Universal	-1.820	0.791	1.6
	190	836.6	GPRS	Integral	Universal	/	/	1.6
	251	848.8	GPRS	Integral	Universal	/	/	1.6
Body-Back (10mm)	128	824.2	GPRS	Integral	Universal	-2.311	0.915	1.6
	190	836.6	GPRS	Integral	Universal	-2.775	1.010	1.6
	251	848.8	GPRS	Integral	Universal	3.349	**1.017**	1.6
Body-Left (10mm)	128	824.2	GPRS	Integral	Universal	-1.288	0.394	1.6
	190	836.6	GPRS	Integral	Universal	/	/	1.6
	251	848.8	GPRS	Integral	Universal	/	/	1.6
Body-Right (10mm	128	824.2	GPRS	Integral	Universal	-2.634	0.501	1.6
	190	836.6	GPRS	Integral	Universal	/	/	1.6
	251	848.8	GPRS	Integral	Universal	/	/	1.6
Body-Bottom (10mm)	128	824.2	GPRS	Integral	Universal	2.525	0.020	1.6
	190	836.6	GPRS	Integral	Universal	/	/	1.6
	251	848.8	GPRS	Integral	Universal	/	/	1.6

Note:

1 .When the 1-g SAR is ≤ 0.8W/Kg, testing for other channels are optional.

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Hot spot-GPRS (Frequency Band: 1900MHz)

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Body-Front (10mm)	512	1850.2	GPRS	Integral	Universal	2.996	0.230	1.6
	661	1880.0	GPRS	Integral	Universal	/	/	1.6
	810	1909.8	GPRS	Integral	Universal	/	/	1.6
Body-Back (10mm)	512	1850.2	GPRS	Integral	Universal	-1.182	0.520	1.6
	661	1880.0	GPRS	Integral	Universal	/	/	1.6
	810	1909.8	GPRS	Integral	Universal	/	/	1.6
Body-Left (10mm)	512	1850.2	GPRS	Integral	Universal	-2.705	0.022	1.6
	661	1880.0	GPRS	Integral	Universal	/	/	1.6
	810	1909.8	GPRS	Integral	Universal	/	/	1.6
Body-Right (10mm	512	1850.2	GPRS	Integral	Universal	-1.882	0.031	1.6
	661	1880.0	GPRS	Integral	Universal	/	/	1.6
	810	1909.8	GPRS	Integral	Universal	/	/	1.6
Body-Bottom (10mm)	512	1850.2	GPRS	Integral	Universal	-1.747	**0.712**	1.6
	661	1880.0	GPRS	Integral	Universal	/	/	1.6
	810	1909.8	GPRS	Integral	Universal	/	/	1.6

Note:

1 .When the 1-g SAR is ≤ 0.8W/Kg, testing for other channels are optional.

2. The EUT is a Capability Class B mobile phone which can be attached to both GPRS and GSM services.

3.The Multi-slot Classes of EUT is Class 12 which has maximum 4 Downlink slots and 4 Uplink slots, the maximum active slots is 5, when perform the multiple slots scan, 1DL+4UL is the worse case.

4. The EUT transmit and receive through the same GSM antenna while testing SAR.

Hot spot-WCDMA850

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Body-Front (10mm)	4132(Low)	826.4	WCDMA850	Integral	Universal	-1.753	**0.551**	1.6
	4183(Middle)	836.6	WCDMA850	Integral	Universal	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	Universal	/	/	1.6
Body-Back (10mm)	4132(Low)	826.4	WCDMA850	Integral	Universal	2.117	0.707	1.6
	4183(Middle)	836.6	WCDMA850	Integral	Universal	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	Universal	/	/	1.6
Body-Left (10mm)	4132(Low)	826.4	WCDMA850	Integral	Universal	-1.262	0.165	1.6
	4183(Middle)	836.6	WCDMA850	Integral	Universal	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	Universal	/	/	1.6
Body-Right (10mm	4132(Low)	826.4	WCDMA850	Integral	Universal	1.366	0.243	1.6
	4183(Middle)	836.6	WCDMA850	Integral	Universal	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	Universal	/	/	1.6
Body-Bottom (10mm)	4132(Low)	826.4	WCDMA850	Integral	Universal	-0.926	0.008	1.6
	4183(Middle)	836.6	WCDMA850	Integral	Universal	/	/	1.6
	4233(High)	846.6	WCDMA850	Integral	Universal	/	/	1.6

WCDMA1900

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Body-Front (10mm)	9262(Low)	1852.4	WCDMA1900	Integral	Universal	-1.598	0.300	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	Universal	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	Universal	/	/	1.6
Body-Back (10mm)	9262(Low)	1852.4	WCDMA1900	Integral	Universal	-2.486	0.211	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	Universal	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	Universal	/	/	1.6
Body-Left (10mm)	9262(Low)	1852.4	WCDMA1900	Integral	Universal	2.761	0.007	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	Universal	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	Universal	/	/	1.6
Body-Right (10mm	9262(Low)	1852.4	WCDMA1900	Integral	Universal	-3.044	0.010	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	Universal	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	Universal	/	/	1.6
Body-Bottom (10mm)	9262(Low)	1852.4	WCDMA1900	Integral	Universal	-1.131	**0.464**	1.6
	9400(Middle)	1880.0	WCDMA1900	Integral	Universal	/	/	1.6
	9538(High)	1907.6	WCDMA1900	Integral	Universal	/	/	1.6

Note:

1. When the 1-g SAR is ≤ 0.8W/kg, testing for other channels are optional.

2. The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement Channel) Configured in Test Loop Mode.

Hot Spot-WiFi

EUT Position	Frequency (MHz)		Test Mode	Antenna Type	Phantom Type	Power Drift (%)	FCC 1g SAR (W/Kg)	
	Channel	MHz					Measurement	Limit
Body-Front (10mm)	1	2412	802.11b	Integral	Universal	/	/	1.6
	6	2437	802.11b	Integral	Universal	-1.116	0.032	1.6
	11	2462	802.11b	Integral	Universal	/	/	1.6
Body-Back (10mm)	1	2412	802.11b	Integral	Universal	/	/	1.6
	6	2437	802.11b	Integral	Universal	2.108	**0.048**	1.6
	11	2462	802.11b	Integral	Universal	/	/	1.6
Body-Left (10mm)	1	2412	802.11b	Integral	Universal	/	/	1.6
	6	2437	802.11b	Integral	Universal	-0.417	0.044	1.6
	11	2462	802.11b	Integral	Universal	/	/	1.6
Body-Right (10mm)	1	2412	802.11b	Integral	Universal	/	/	1.6
	6	2437	802.11b	Integral	Universal	4.011	0.002	1.6
	11	2462	802.11b	Integral	Universal	/	/	1.6
Body-Top (10mm	1	2412	802.11b	Integral	Universal	/	/	1.6
	6	2437	802.11b	Integral	Universal	-1.881	0.013	1.6
	11	2462	802.11b	Integral	Universal	/	/	1.6

Note:

1. When the 1-g SAR is ≤0.8W/Kg, testing for other channels are optional.

2. The SAR testing is conducted with 100% duty cycle factor.

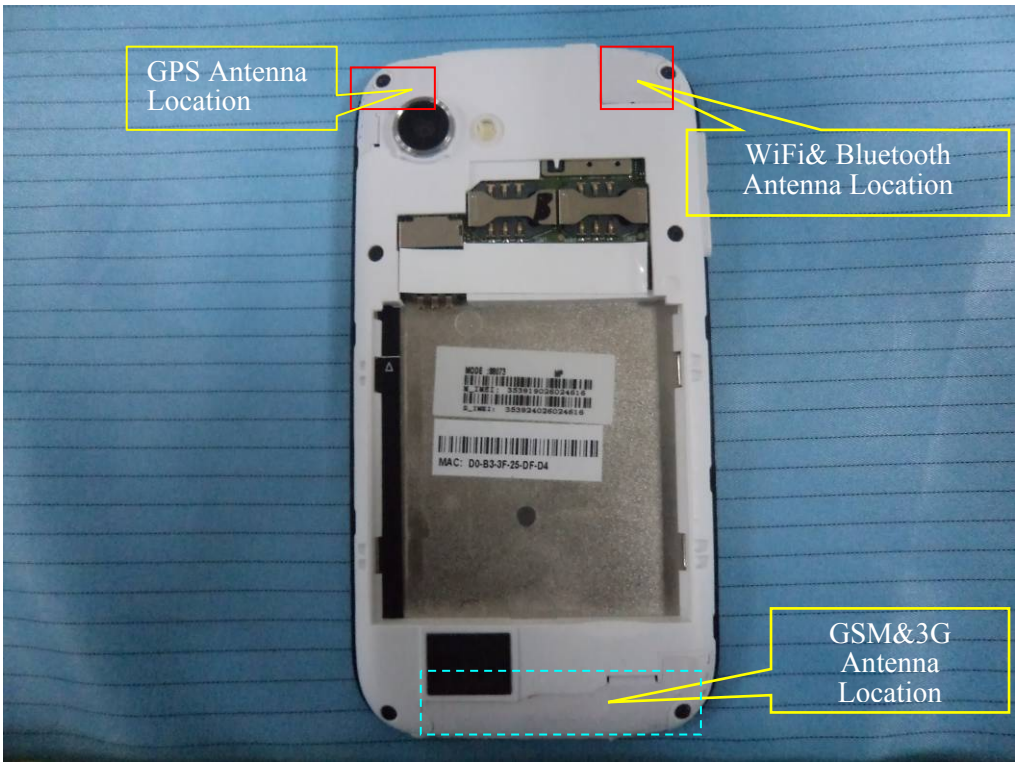
3. The output power was tested under data rate 1Mbps for 802.11b.

SAR SIMULTANEOUS TRANSMISSION DESCRIPTION

KDB 447498D01 General RF Exposure Guidance v05
KDB 648474 D04 SAR Handsets Multi Xmiter and Ant v01

Stand-alone and simultaneous SAR evaluation for a cell phone with multiple transmitters is base on the antennas distance of each radio.

WiFi & BT and GSM Antenna Location:



Antenna Information:

Description of Simultaneous Transmit Capabilities			Antennas Distance (mm)
Transmitter Combination	Scenario Supported?	Supported for Mobile Hot Spot	
GSM(CS Voice) + GSM(PS Data)	×	×	0.00
GSM(CS Voice) + WCDMA(Voice)	×	×	0.00
GSM(CS Voice) + WCDMA(Data)	×	×	0.00
GSM(PS Data) + WCDMA(Voice)	×	×	0.00
GSM(PS Data) + WCDMA(Data)	×	×	0.00
WCDMA(Voice) + WCDMA(Data)	×	×	0.00
GSM(CS Voice) + WiFi	√	×	103
GSM(PS Data) + WiFi	√	√	103
WCDMA(Voice) + WiFi	√	×	103
WCDMA(Data) + WiFi	√	√	103
Bluetooth + GSM/WCDMA	√	×	103
Bluetooth + WiFi	×	×	0.00

Standalone SAR test exclusion considerations:

Head Position:

Mode	Frequency (MHz)	P_{avg} (dBm)	P_{avg} (mW)	Threshold (1-g)	Distance (mm)	SAR Test Exclusion
GSM850	835	23.58	228.03	16	5	No
PCS1900	1900	21.15	130.32	11	5	No
WCDMA850	850	22.73	187.50	16	5	No
WCDMA1900	1900	22.61	182.39	11	5	No
Bluetooth	2450	7.59	5.74	10	5	Yes
WiFi	2450	16.93	49.32	10	5	No

Body Position:

Mode	Frequency (MHz)	P_{avg} (dBm)	P_{avg} (mW)	Threshold (1-g)	Distance (mm)	SAR Test Exclusion
GSM850	835	26.33	429.54	33	10	No
PCS1900	1900	24.00	251.19	22	10	No
WCDMA850	850	22.73	187.50	33	10	No
WCDMA1900	1900	22.61	182.39	22	10	No
Bluetooth	2450	7.59	5.74	19	10	Yes
WiFi	2450	16.93	49.32	19	10	Yes

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, where
1. f(GHz) is the RF channel transmit frequency in GHz.
2. Power and distance are rounded to the nearest mW and mm before calculation.
3. The result is rounded to one decimal place for comparison.

Simultaneous SAR test exclusion considerations:

GSM with Bluetooth:

Mode	Position	Reported SAR (W/kg)		ΣSAR
		GSM	Bluetooth	< 1.6W/kg
GSM850	Left Head Cheek	0.367	0.240	0.607
	Left Head Tile	0.186		0.426
	Right Head Cheek	0.352		0.592
	Right Head Tilt	0.184		0.424
	Body Front	0.466	0.120	0.586
	Body Back	0.596		**0.716**
WCDMA 850	Left Head Cheek	0.421	0.240	0.661
	Left Head Tile	0.192		0.432
	Right Head Cheek	0.394		0.634
	Right Head Tilt	0.201		0.441
	Body Front	0.551	0.120	0.671
	Body Back	0.707		**0.827**
PCS1900	Left Head Cheek	0.221	0.240	**0.461**
	Left Head Tile	0.030		0.270
	Right Head Cheek	0.215		0.455
	Right Head Tilt	0.033		0.273
	Body Front	0.144	0.120	0.264
	Body Back	0.226		0.346
WCDMA 1900	Left Head Cheek	0.376	0.240	**0.616**
	Left Head Tile	0.065		0.305
	Right Head Cheek	0.364		0.604
	Right Head Tilt	0.063		0.303
	Body Front	0.300	0.120	0.420
	Body Back	0.211		0.331

Mode	Frequency (GHz)	Distance (mm)	P_{avg} (dBm)	P_{avg} (mW)	Estimated $_{1-g}$ (W/kg)
Bluetooth Head	2.45	5	7.59	5.74	0.240
Bluetooth Body	2.45	10	7.59	5.74	0.120

GSM with WiFi:

Mode	Position	Reported SAR (W/kg)		ΣSAR
		GSM	WiFi	< 1.6W/kg
GSM850	Left Head Cheek	0.367	0.038	0.405
	Left Head Tile	0.186	0.011	0.197
	Right Head Cheek	0.352	0.033	0.385
	Right Head Tilt	0.184	0.009	0.193
	Body Front	0.466	0.032	0.498
	Body Back	0.596	0.048	**0.644**
WCDMA 850	Left Head Cheek	0.421	0.038	0.459
	Left Head Tile	0.192	0.011	0.203
	Right Head Cheek	0.394	0.033	0.427
	Right Head Tilt	0.201	0.009	0.210
	Body Front	0.551	0.032	0.583
	Body Back	0.707	0.048	**0.755**
PCS1900	Left Head Cheek	0.221	0.038	0.259
	Left Head Tile	0.030	0.011	0.041
	Right Head Cheek	0.215	0.033	0.248
	Right Head Tilt	0.033	0.009	0.042
	Body Front	0.144	0.032	0.176
	Body Back	0.226	0.048	**0.274**
WCDMA 1900	Left Head Cheek	0.376	0.038	**0.414**
	Left Head Tile	0.065	0.011	0.076
	Right Head Cheek	0.364	0.033	0.397
	Right Head Tilt	0.063	0.009	0.072
	Body Front	0.300	0.032	0.332
	Body Back	0.211	0.048	0.259

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

[(*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.

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test Exclusion

Conclusion:

ΣSAR < 1.6 W/kg therefore simultaneous transmission SAR with Volume Scans is **not** required.

Hotspot:

Evaluations for Simultaneous SAR, Mobile Hot Spot Positions									
Test Position	Stand Alone 1-g SAR (W/Kg)					∑ 1-g SAR（W/Kg）			
	GSM 850	WCDMA 850	GSM 1900	WCDMA 1900	WiFi	GSM 850+WiFi	WCDMA 850 +WiFi	GSM 1900+WiFi	WCDMA 1900+WiFi
Body-Front (1.0cm)	0.791	0.551	0.230	0.300	0.032	0.823	0.583	0.262	0.332
Body-Back (1.0cm)	1.017	0.707	0.520	0.211	0.048	**1.065**	0.755	0.568	0.259
Body-Left (1.0cm)	0.394	0.165	0.022	0.007	0.044	0.438	0.209	0.066	0.051
Body-Right (1.0cm)	0.501	0.243	0.031	0.010	0.002	0.503	0.245	0.033	0.012
Body-Bottom (1.0cm)	0.020	0.008	0.712	0.464	0.013	0.033	0.021	0.725	0.477

Note:

1. If the sum of the 1g SAR measured for the simultaneously transmitting antennas is less than the SAR limit, SAR measurement for simultaneous transmission is not required.

EUT SCAN RESULTS

Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Cheek (824.2 MHz Low Channel)

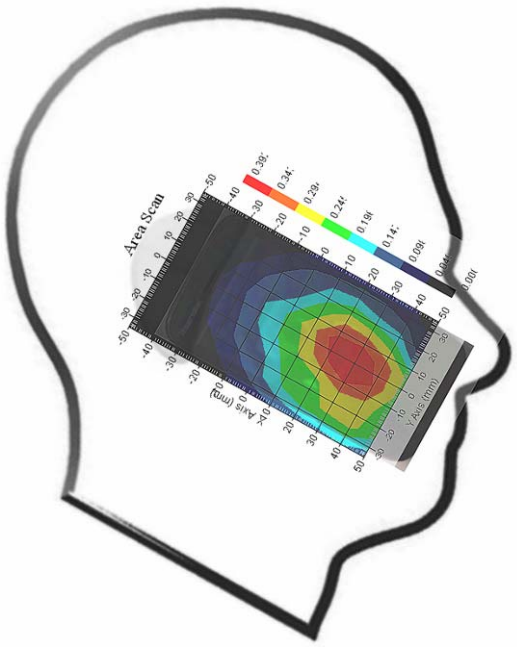
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.021 W/kg
Power Drift-Finish : 0.021W/kg
Power Drift (%) : -2.049

Tissue Data
Type : Head
Frequency : 824.20 MHz
Epsilon : 41.60 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.367 W/kg
10 gram SAR value : 0.240 W/kg
Area Scan Peak SAR : 0.390 W/kg
Zoom Scan Peak SAR : 0.527 W/kg

Plot 1#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Tilt (824.2 MHz Low Channel)

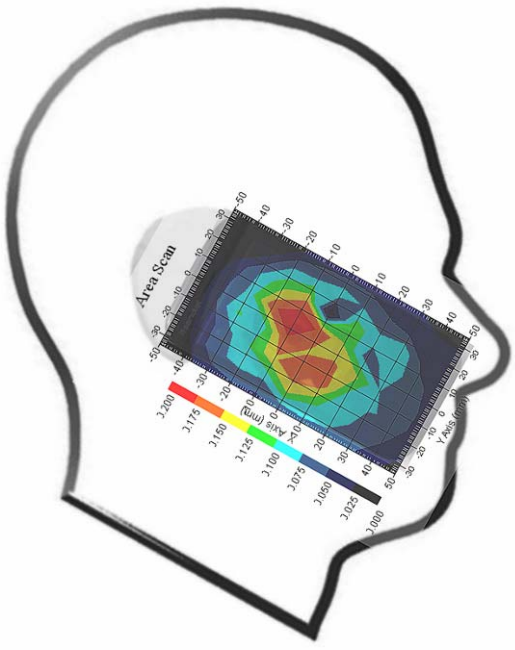
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.038 W/kg
Power Drift-Finish : 0.037 W/kg
Power Drift (%) : -2.496

Tissue Data
Type : Head
Frequency : 824.20 MHz
Epsilon : 41.60 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.186 W/kg
10 gram SAR value : 0.114 W/kg
Area Scan Peak SAR : 0.199 W/kg
Zoom Scan Peak SAR : 0.270 W/kg

Plot 2#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Right Head Cheek (824.2 MHz Low Channel)

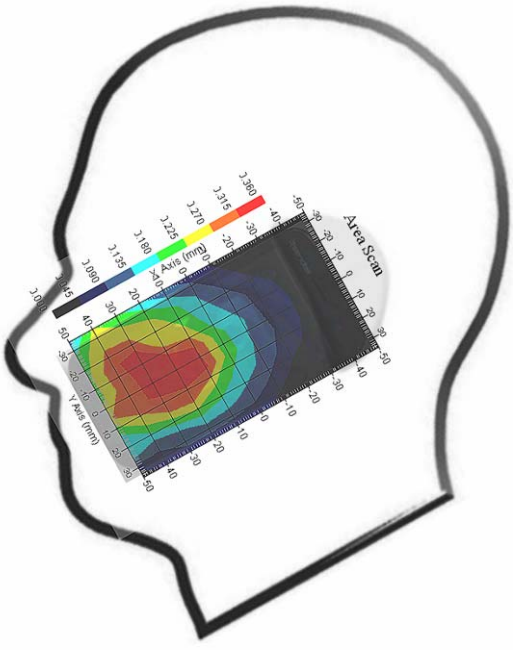
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.030 W/kg
Power Drift-Finish : 0.031 W/kg
Power Drift (%) : 3.417

Tissue Data
Type : Head
Frequency : 824.20 MHz
Epsilon : 41.60 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.352 W/kg
10 gram SAR value : 0.207 W/kg
Area Scan Peak SAR : 0.368 W/kg
Zoom Scan Peak SAR : 0.503 W/kg

Plot 3#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Right Head Tilt (824.2 MHz Low Channel)

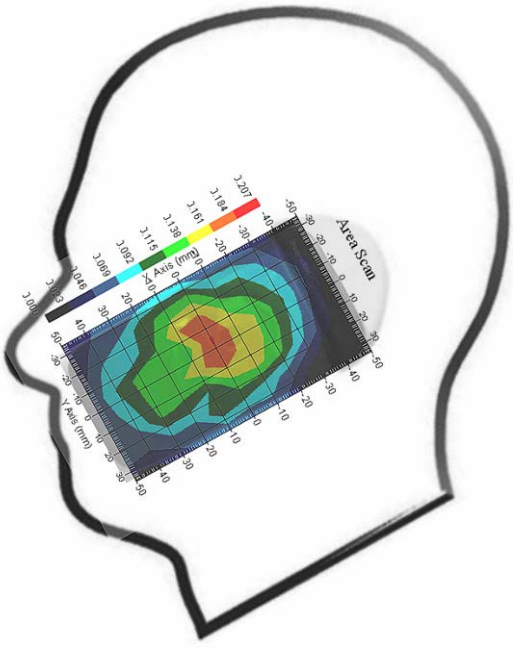
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.045 W/kg
Power Drift-Finish : 0.045 W/kg
Power Drift (%) : -0.419

Tissue Data
Type : Head
Frequency : 824.20 MHz
Epsilon : 41.60 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.184 W/kg
10 gram SAR value : 0.118 W/kg
Area Scan Peak SAR : 0.187 W/kg
Zoom Scan Peak SAR : 0.300 W/kg

Plot 4#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Body-worn Front-Headset (824.2 MHz Low Channel)

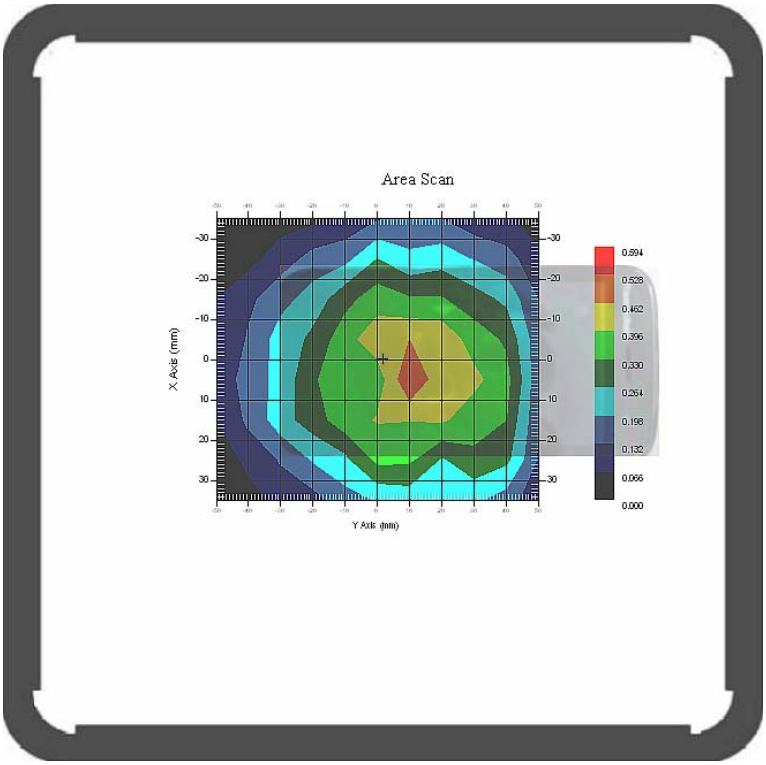
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.406 W/kg
Power Drift-Finish : 0.396 W/kg
Power Drift (%) : -2.417

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.466 W/kg
10 gram SAR value : 0.384 W/kg
Area Scan Peak SAR : 0.529 W/kg
Zoom Scan Peak SAR : 0.950 W/kg

Plot 5#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Body-worn Back-Headset (824.2 MHz Low Channel)

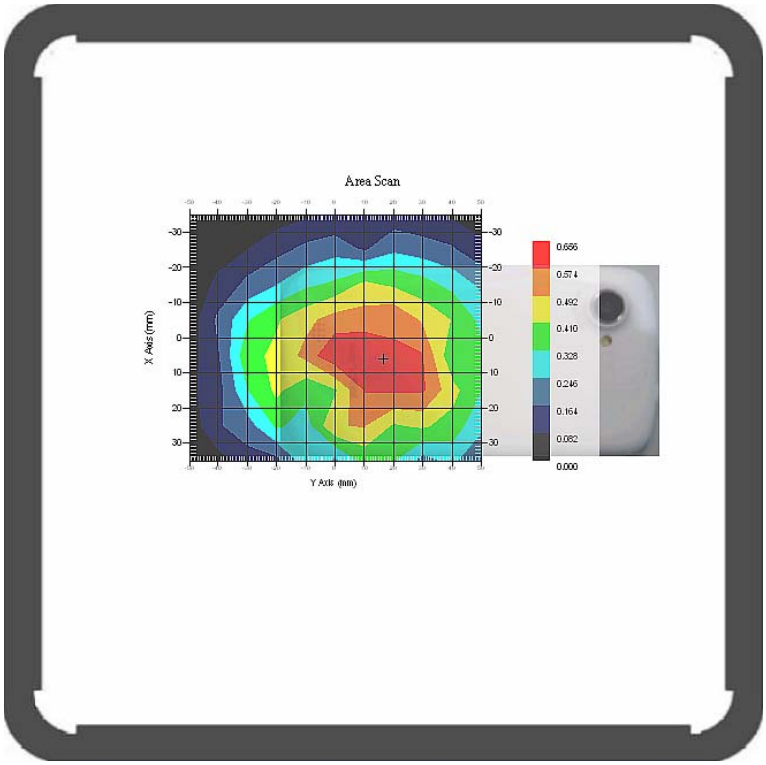
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.599 W/kg
Power Drift-Finish : 0.582 W/kg
Power Drift (%) : -2.924

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 8
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.596 W/kg
10 gram SAR value : 0.410 W/kg
Area Scan Peak SAR : 0.652 W/kg
Zoom Scan Peak SAR : 0.980 W/kg

Plot 6#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Cheek (1850.2 MHz Low Channel)

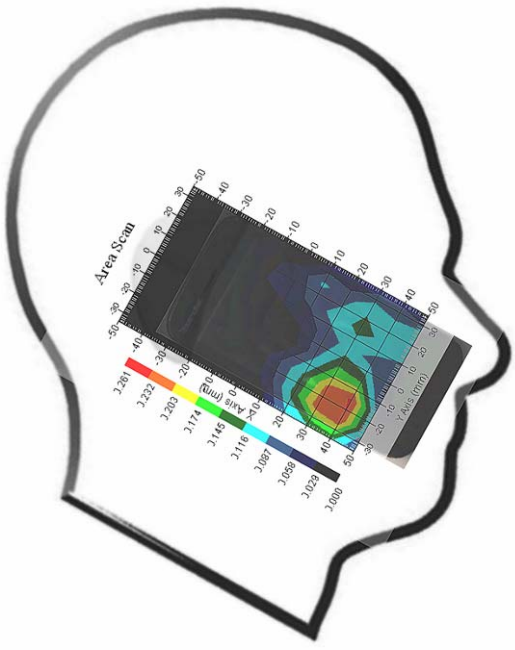
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.014 W/kg
Power Drift-Finish : 0.014 W/kg
Power Drift (%) : -1.227

Tissue Data
Type : Head
Frequency : 1850.20 MHz
Epsilon : 40.24 F/m
Sigma : 1.39 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.221 W/kg
10 gram SAR value : 0.112 W/kg
Area Scan Peak SAR : 0.235 W/kg
Zoom Scan Peak SAR : 0.590 W/kg

Plot 7#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Tilt (1850.2 MHz Low Channel)

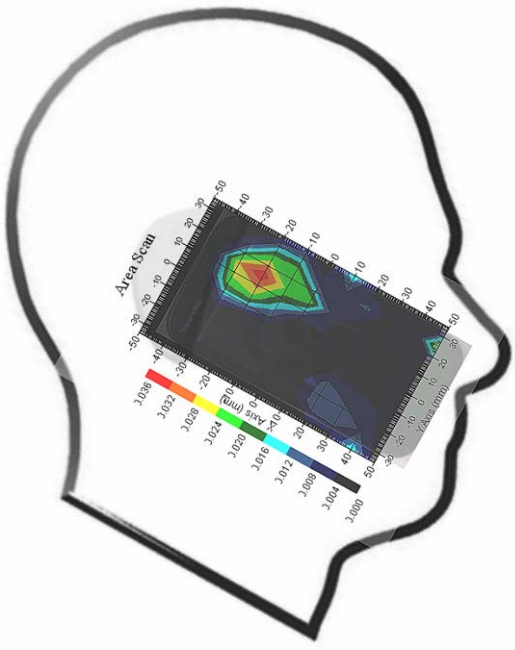
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.002 W/kg
Power Drift-Finish : 0.002 W/kg
Power Drift (%) : -0.828

Tissue Data
Type : Head
Frequency : 1850.20 MHz
Epsilon : 40.24 F/m
Sigma : 1.39 S/m
Density : 1000.00 kg/cu. M

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.030 W/kg
10 gram SAR value : 0.012 W/kg
Area Scan Peak SAR : 0.035 W/kg
Zoom Scan Peak SAR : 0.100 W/kg

Plot 8#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Right Head Cheek (1850.2 MHz Low Channel)

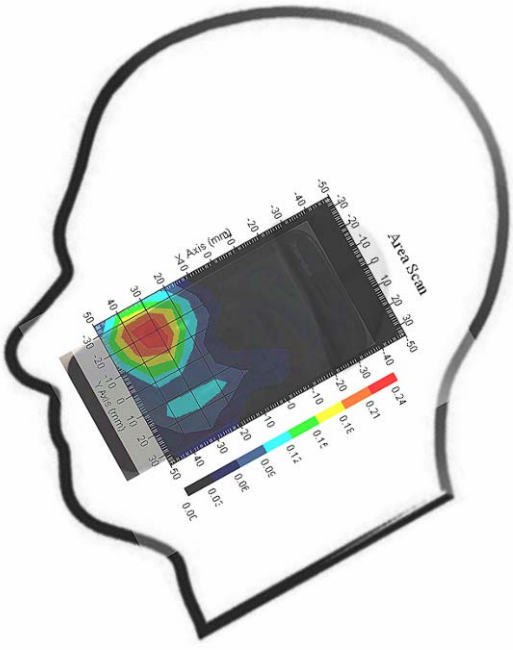
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.015 W/kg
Power Drift-Finish : 0.015W/kg
Power Drift (%) : 0.930

Tissue Data
Type : Head
Frequency : 1850.20 MHz
Epsilon : 40.24 F/m
Sigma : 1.39 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.215 W/kg
10 gram SAR value : 0.102 W/kg
Area Scan Peak SAR : 0.227 W/kg
Zoom Scan Peak SAR : 0.523 W/kg

Plot 9#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Right Head Tilt (1850.2 MHz Low Channel)

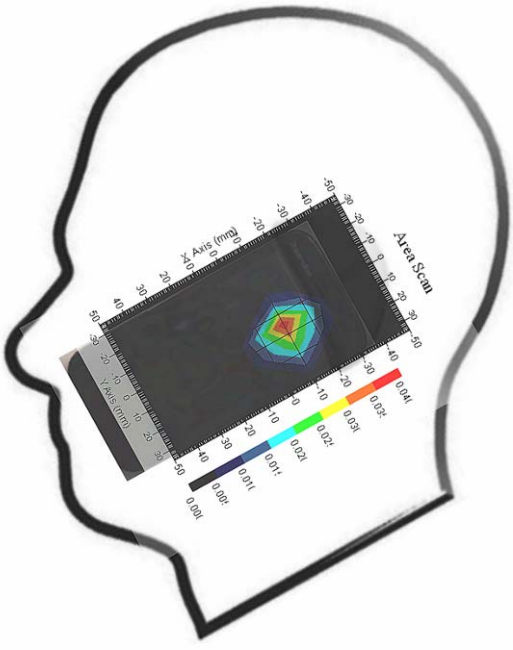
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : 2.023

Tissue Data
Type : Head
Frequency : 1850.20 MHz
Epsilon : 40.24 F/m
Sigma : 1.39 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.033 W/kg
10 gram SAR value : 0.013 W/kg
Area Scan Peak SAR : 0.039 W/kg
Zoom Scan Peak SAR : 0.087 W/kg

Plot 10#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Body- worn Front-Headset (1850.2 MHz Low Channel)

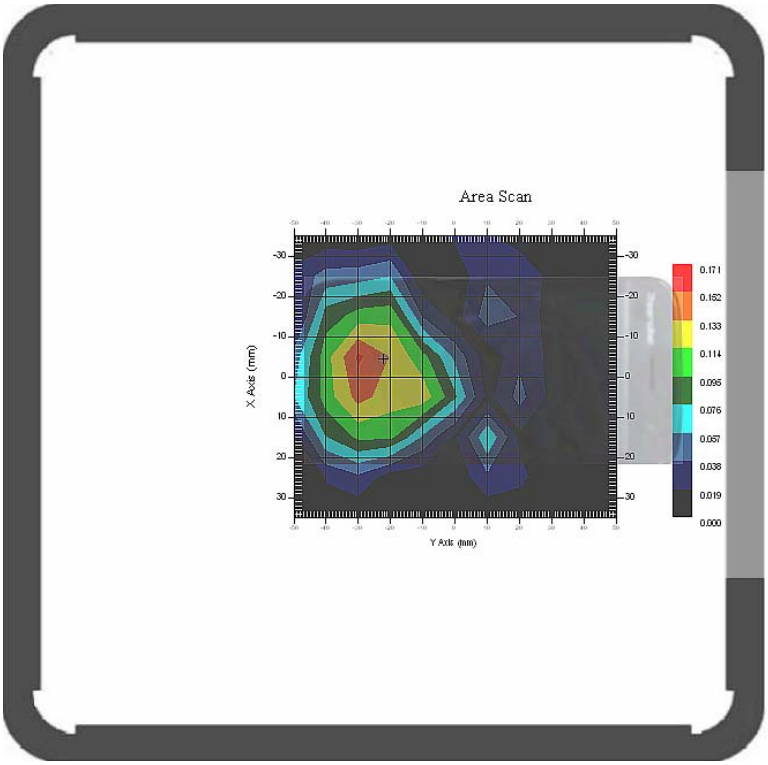
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.141 W/kg
Power Drift-Finish : 0.139 W/kg
Power Drift (%) : -1.259

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.144 W/kg
10 gram SAR value : 0.069 W/kg
Area Scan Peak SAR : 0.153 W/kg
Zoom Scan Peak SAR : 0.370 W/kg

Plot 11#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Body- worn Back- Headset (1850.2 MHz Low Channel)

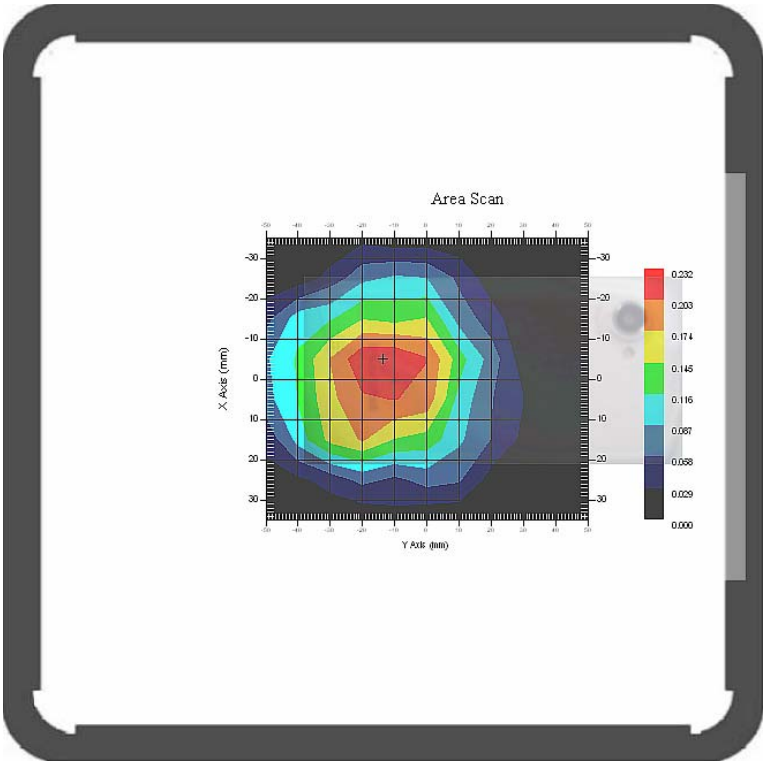
Measurement Data
Test mode : GSM
Crest Factor : 8
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.227 W/kg
Power Drift-Finish : 0.223 W/kg
Power Drift (%) : -1.725

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 8
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.226 W/kg
10 gram SAR value : 0.112 W/kg
Area Scan Peak SAR : 0.232 W/kg
Zoom Scan Peak SAR : 0.370 W/kg

Plot 12#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Left Head Cheek (826.4 MHz Low Channel)

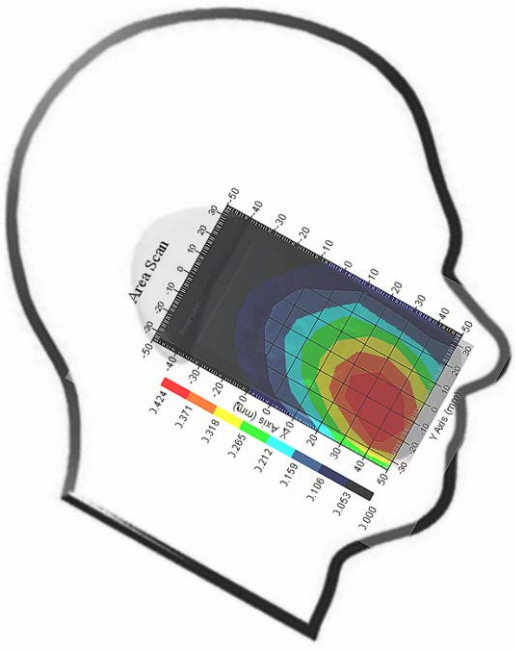
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.019 W/kg
Power Drift-Finish : 0.019 W/kg
Power Drift (%) : -2.885

Tissue Data
Type : Head
Frequency : 826.40 MHz
Epsilon : 41.48 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.421 W/kg
10 gram SAR value : 0.295 W/kg
Area Scan Peak SAR : 0.422 W/kg
Zoom Scan Peak SAR : 0.600 W/kg

Plot 13#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Left Head Tilt (826.4 MHz Low Channel)

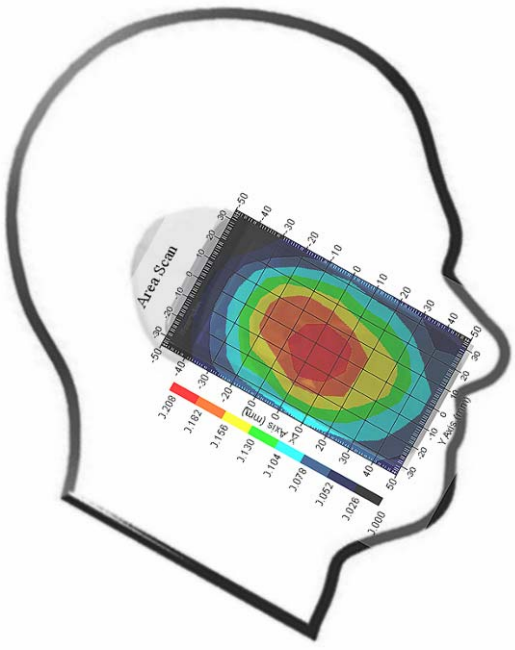
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.042 W/kg
Power Drift-Finish : 0.041 W/kg
Power Drift (%) : -2.324

Tissue Data
Type : Head
Frequency : 826.40 MHz
Epsilon : 41.48 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.192 W/kg
10 gram SAR value : 0.140 W/kg
Area Scan Peak SAR : 0.207 W/kg
Zoom Scan Peak SAR : 0.250 W/kg

Plot 14#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Right Head Cheek (826.4 MHz Low Channel)

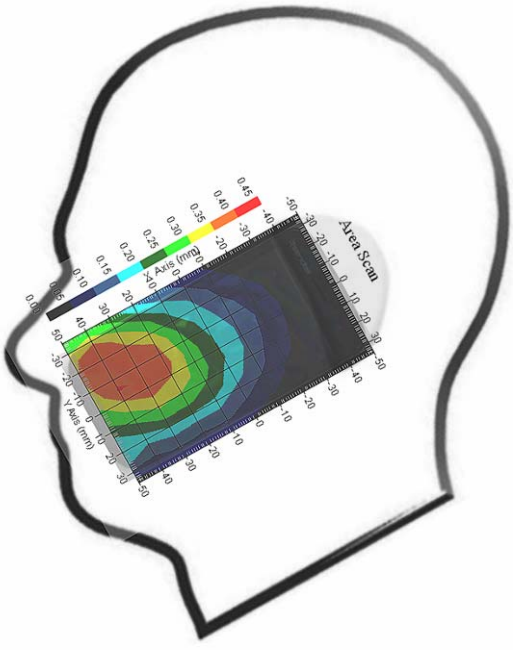
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.020 W/kg
Power Drift-Finish : 0.020 W/kg
Power Drift (%) : 0.779

Tissue Data
Type : Head
Frequency : 826.40 MHz
Epsilon : 41.48 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.394 W/kg
10 gram SAR value : 0.318 W/kg
Area Scan Peak SAR : 0.453 W/kg
Zoom Scan Peak SAR : 0.560 W/kg

Plot 15#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Left Head Tilt (826.4 MHz Low Channel)

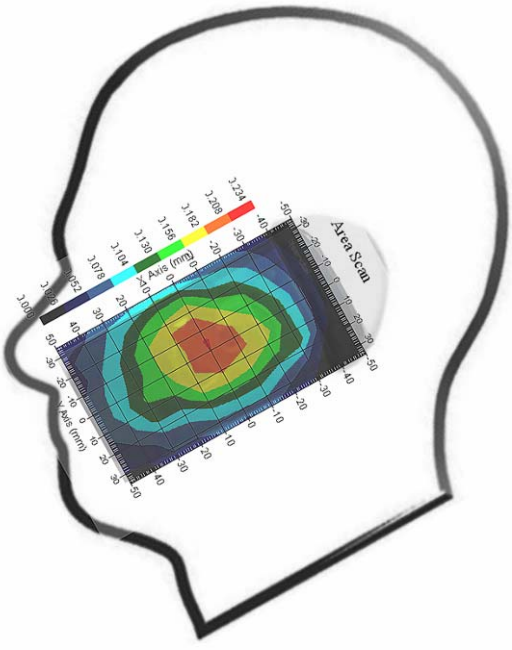
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.051 W/kg
Power Drift-Finish : 0.050 W/kg
Power Drift (%) : -1.898

Tissue Data
Type : Head
Frequency : 826.40 MHz
Epsilon : 41.48 F/m
Sigma : 0.90 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.201 W/kg
10 gram SAR value : 0.146 W/kg
Area Scan Peak SAR : 0.211 W/kg
Zoom Scan Peak SAR : 0.270 W/kg

Plot 16#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Left Head Cheek (1852.4 MHz Low Channel)

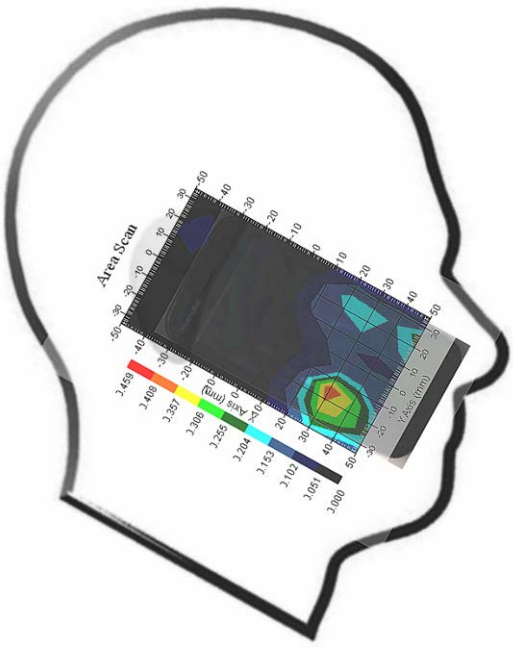
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.013 W/kg
Power Drift-Finish : 0.013 W/kg
Power Drift (%) : 1.092

Tissue Data
Type : Head
Frequency : 1852.4 MHz
Epsilon : 40.24 F/m
Sigma : 1.38 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.376 W/kg
10 gram SAR value : 0.177 W/kg
Area Scan Peak SAR : 0.410 W/kg
Zoom Scan Peak SAR : 0.660 W/kg

Plot 17#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Left Head Tit (1852.4 MHz Low Channel)

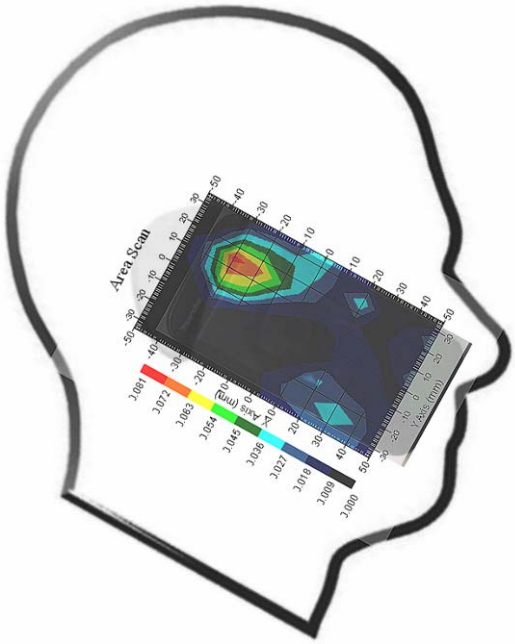
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.044 W/kg
Power Drift-Finish : 0.043 W/kg
Power Drift (%) : -2.377

Tissue Data
Type : Head
Frequency : 1852.4 MHz
Epsilon : 40.24 F/m
Sigma : 1.38 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.065 W/kg
10 gram SAR value : 0.037 W/kg
Area Scan Peak SAR : 0.075 W/kg
Zoom Scan Peak SAR : 0.110 W/kg

Plot 18#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Right Head Cheek (1852.4 MHz Low Channel)

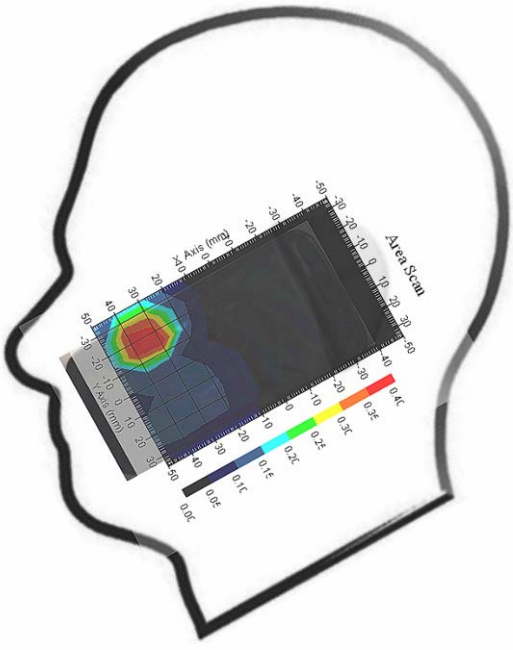
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.010 W/kg
Power Drift-Finish : 0.010 W/kg
Power Drift (%) : -3.051

Tissue Data
Type : Head
Frequency : 1852.4 MHz
Epsilon : 40.24 F/m
Sigma : 1.38 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.364 W/kg
10 gram SAR value : 0.159 W/kg
Area Scan Peak SAR : 0.399 W/kg
Zoom Scan Peak SAR : 0.681 W/kg

Plot 19#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Right Head Tilt (1852.4 MHz Low Channel)

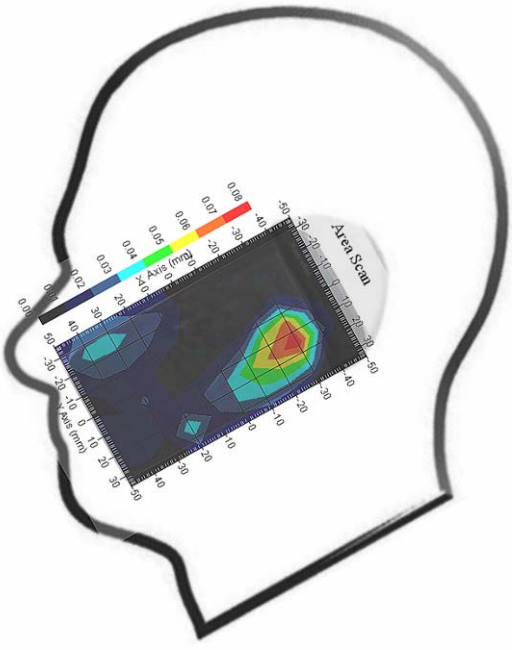
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.020 W/kg
Power Drift-Finish : 0.020 W/kg
Power Drift (%) : 2.133

Tissue Data
Type : Head
Frequency : 1852.4 MHz
Epsilon : 40.24 F/m
Sigma : 1.38 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.2
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.063 W/kg
10 gram SAR value : 0.027 W/kg
Area Scan Peak SAR : 0.078 W/kg
Zoom Scan Peak SAR : 0.115 W/kg

Plot 20#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Cheek (2437 MHz Middle Channel)

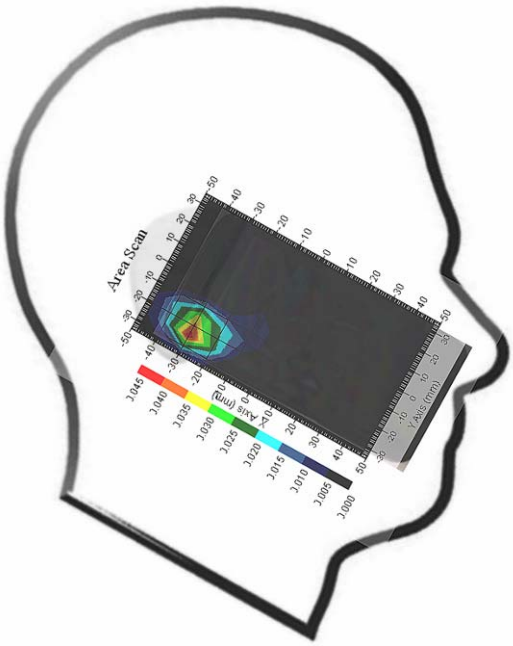
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.002 W/kg
Power Drift-Finish : 0.002 W/kg
Power Drift (%) : -3.227

Tissue Data
Type : Head
Frequency : 2437.00 MHz
Epsilon : 40.28 F/m
Sigma : 1.83 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.038 W/kg
10 gram SAR value : 0.018 W/kg
Area Scan Peak SAR : 0.044 W/kg
Zoom Scan Peak SAR : 0.130 W/kg

Plot 21#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Tilt (2437 MHz Middle Channel)

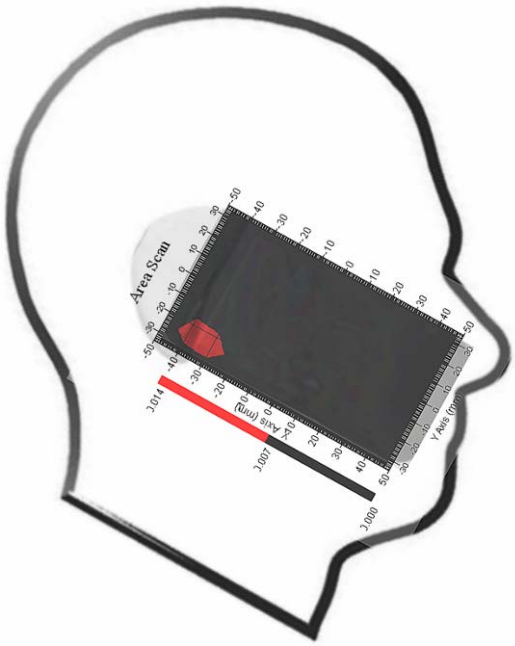
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : -1.215

Tissue Data
Type : Head
Frequency : 2437.00 MHz
Epsilon : 40.28 F/m
Sigma : 1.83 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.011 W/kg
10 gram SAR value : 0.005 W/kg
Area Scan Peak SAR : 0.013 W/kg
Zoom Scan Peak SAR : 0.057 W/kg

Plot 22#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Right Head Cheek (2437 MHz Middle Channel)

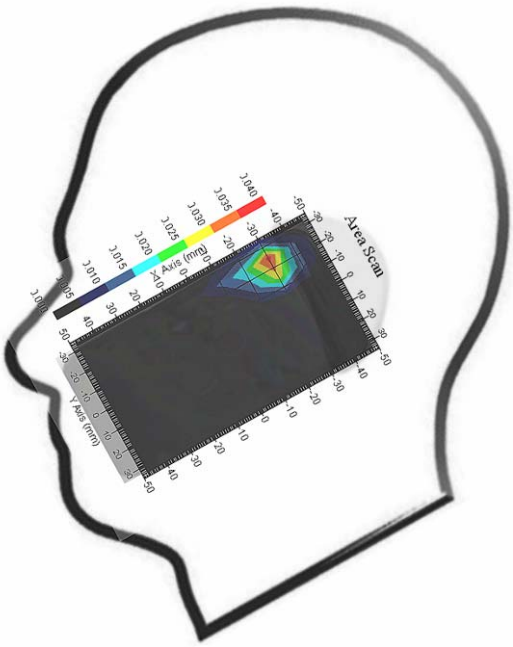
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : 1.919

Tissue Data
Type : Head
Frequency : 2437.00 MHz
Epsilon : 40.28 F/m
Sigma : 1.83 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.033 W/kg
10 gram SAR value : 0.012 W/kg
Area Scan Peak SAR : 0.039 W/kg
Zoom Scan Peak SAR : 0.110 W/kg

Plot 23#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Left Head Cheek (2437 MHz Middle Channel)

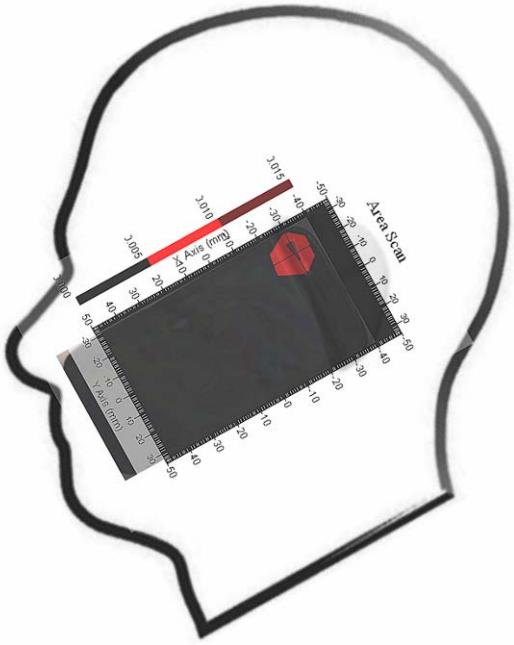
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 11x8x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : -0.742

Tissue Data
Type : Head
Frequency : 2437.00 MHz
Epsilon : 40.28 F/m
Sigma : 1.83 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.009 W/kg
10 gram SAR value : 0.004 W/kg
Area Scan Peak SAR : 0.014 W/kg
Zoom Scan Peak SAR : 0.031 W/kg

Plot 24#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Front (824.2 MHz Low Channel)

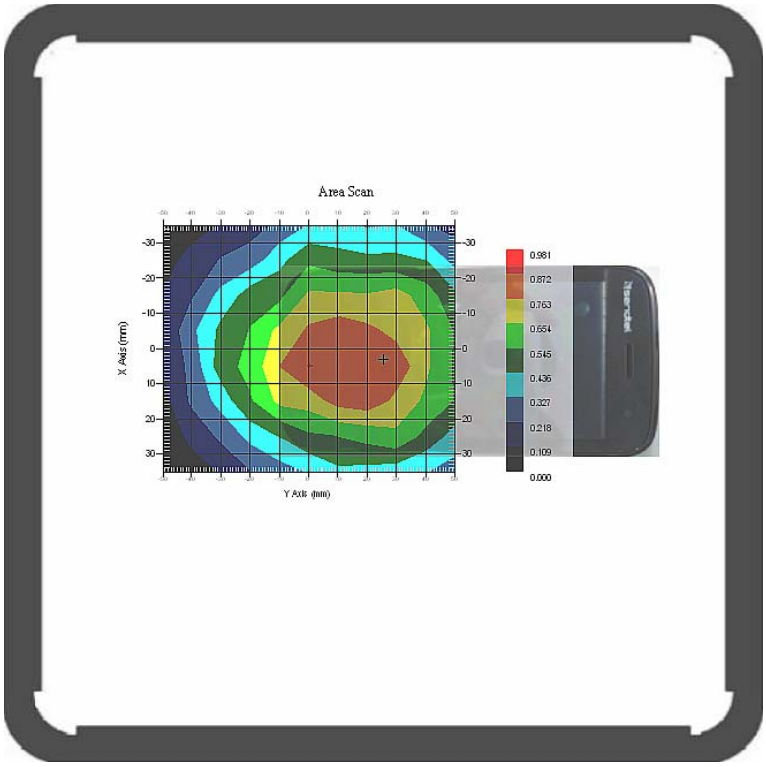
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.754W/kg
Power Drift-Finish : 0.741 W/kg
Power Drift (%) : -1.820

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.791 W/kg
10 gram SAR value : 0.575 W/kg
Area Scan Peak SAR : 0.836 W/kg
Zoom Scan Peak SAR : 1.191 W/kg

Plot 25#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Back (824.2 MHz Low Channel)

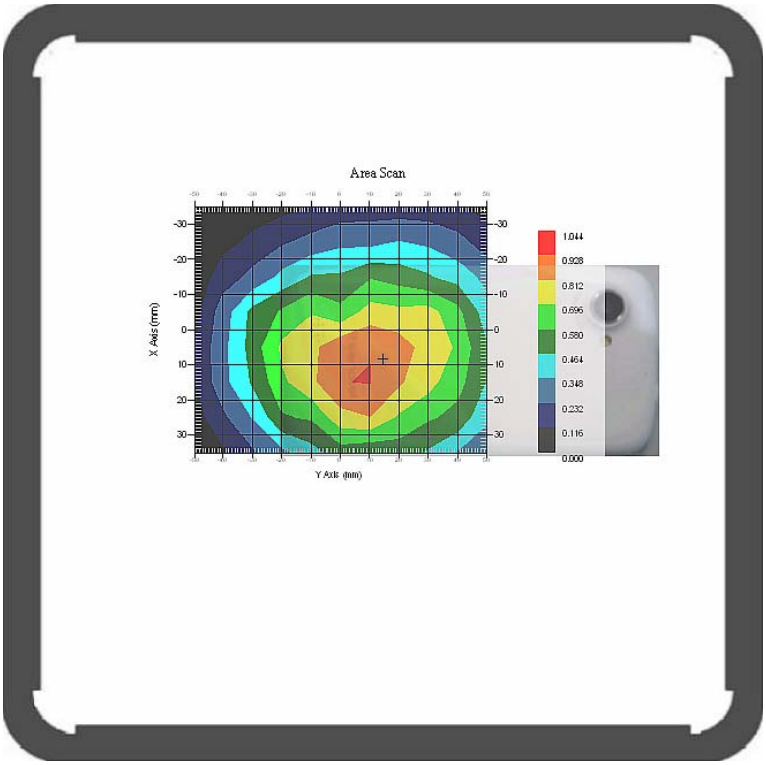
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.899 W/kg
Power Drift-Finish : 0.874 W/kg
Power Drift (%) : -2.311

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.915 W/kg
10 gram SAR value : 0.689 W/kg
Area Scan Peak SAR : 0.932 W/kg
Zoom Scan Peak SAR : 1.371 W/kg

Plot 26#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Back (836.6 MHz Middle Channel)

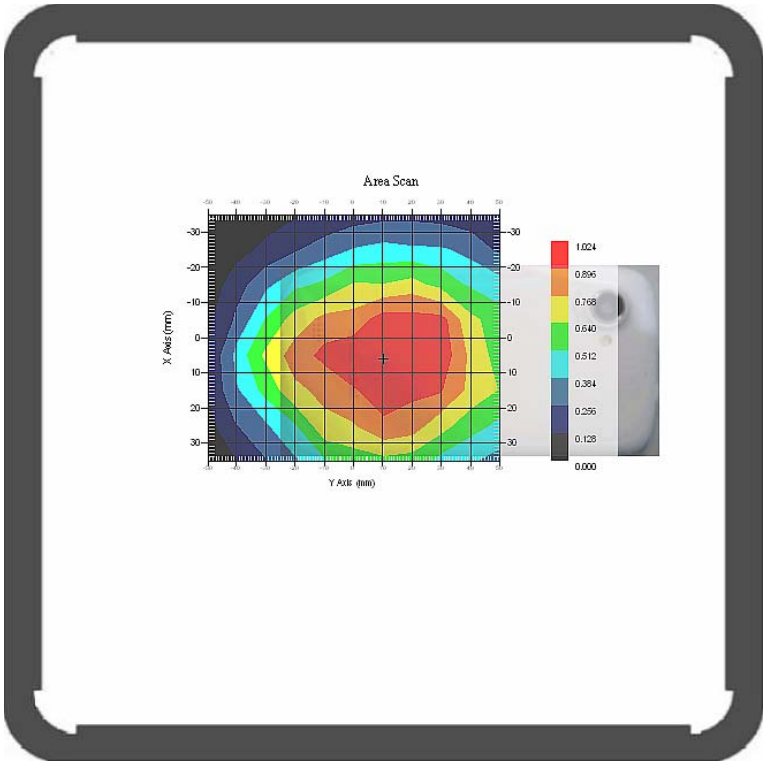
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 1.029 W/kg
Power Drift-Finish : 1.001 W/kg
Power Drift (%) : -2.775

Tissue Data
Type : Body
Frequency : 836.60 MHz
Epsilon : 55.31 F/m
Sigma : 0.97 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 1.010 W/kg
10 gram SAR value : 0.734 W/kg
Area Scan Peak SAR : 1.021 W/kg
Zoom Scan Peak SAR : 1.791 W/kg

Plot 27#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Back (848.8 MHz High Channel)

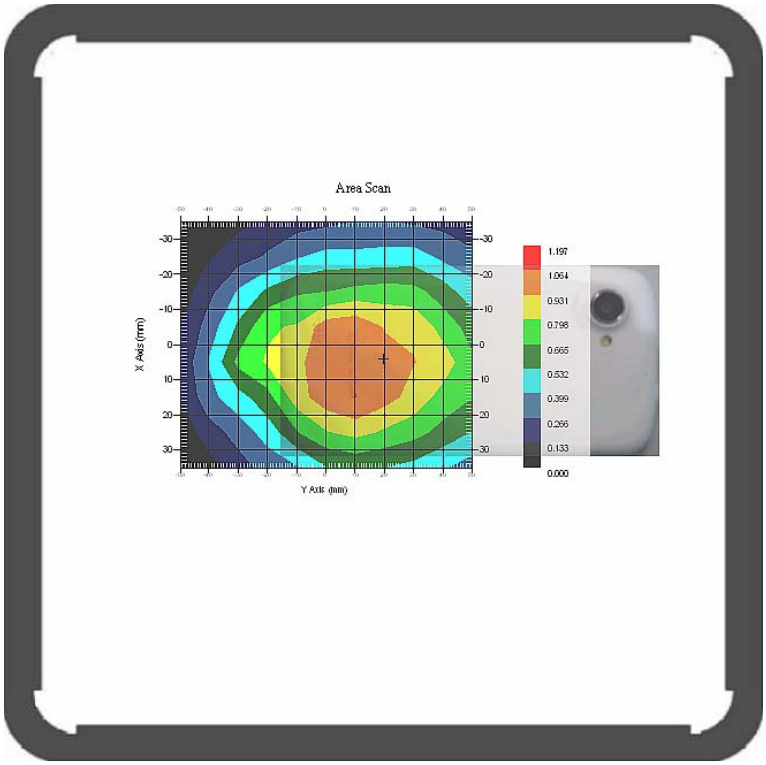
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 1.012 W/kg
Power Drift-Finish : 1.036W/kg
Power Drift (%) : 3.349

Tissue Data
Type : Body
Frequency : 848.80 MHz
Epsilon : 55.39 F/m
Sigma : 0.99 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 1.017 W/kg
10 gram SAR value : 0.711 W/kg
Area Scan Peak SAR : 1.068 W/kg
Zoom Scan Peak SAR : 1.391 W/kg

Plot 28#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Left (824.2 MHz Low Channel)

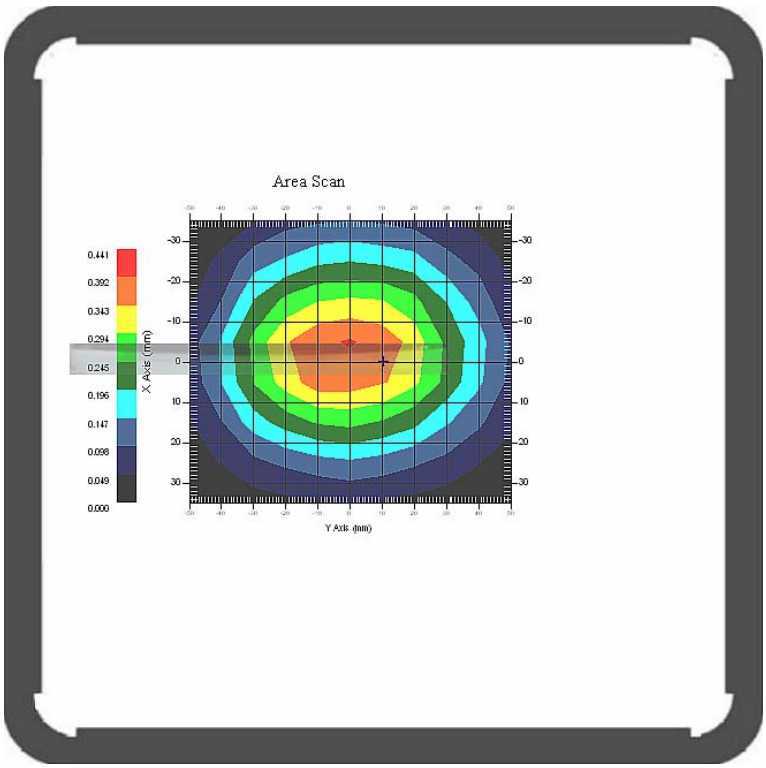
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.388 W/kg
Power Drift-Finish : 0.383 W/kg
Power Drift (%) : -1.288

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.394 W/kg
10 gram SAR value : 0.277 W/kg
Area Scan Peak SAR : 0.396 W/kg
Zoom Scan Peak SAR : 0.610 W/kg

Plot 29#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Right (824.2 MHz Low Channel)

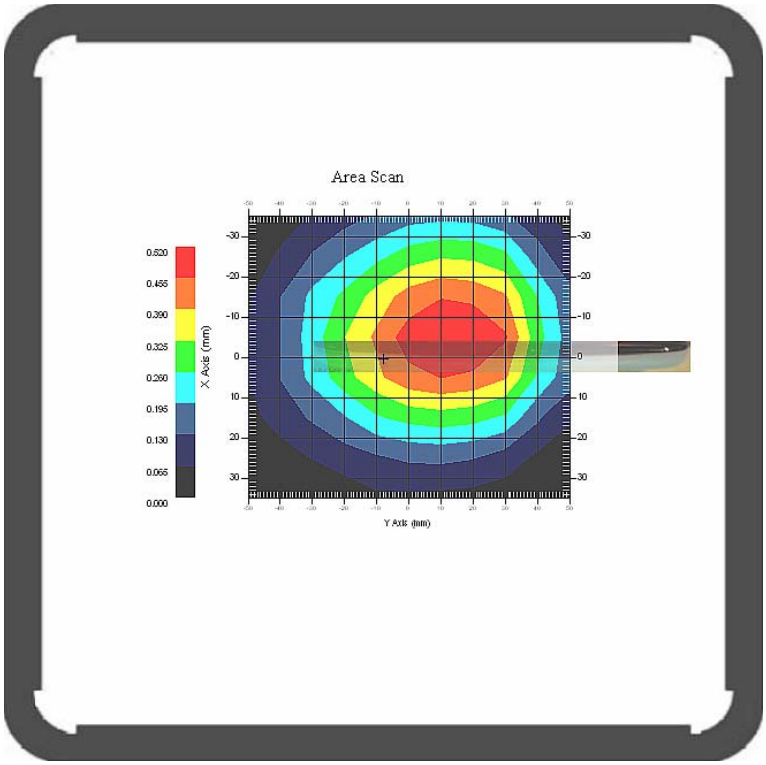
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 7x9x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.458 W/kg
Power Drift-Finish : 0.427 W/kg
Power Drift (%) : -2.634

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 2
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.501 W/kg
10 gram SAR value : 0.357 W/kg
Area Scan Peak SAR : 0.520 W/kg
Zoom Scan Peak SAR : 0.820 W/kg

Plot 30#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body-worn-Bottom (824.2 MHz Low Channel)

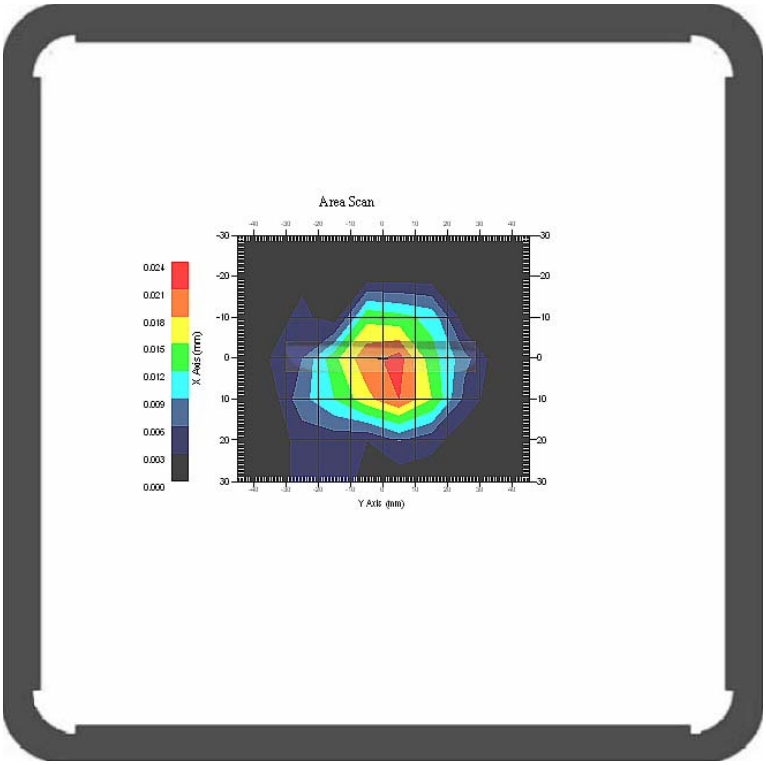
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type： : Complete
Area Scan : 7x10x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.015 W/kg
Power Drift-Finish : 0.015 W/kg
Power Drift (%) : 2.525

Tissue Data
Type : Body
Frequency : 824.20 MHz
Epsilon : 55.24 F/m
Sigma : 0.95 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 835
Duty Cycle Factor : 3
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.020 W/kg
10 gram SAR value : 0.012 W/kg
Area Scan Peak SAR : 0.022 W/kg
Zoom Scan Peak SAR : 0.040 W/kg

Plot 31#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body- worn Front (1850.2 MHz Low Channel)

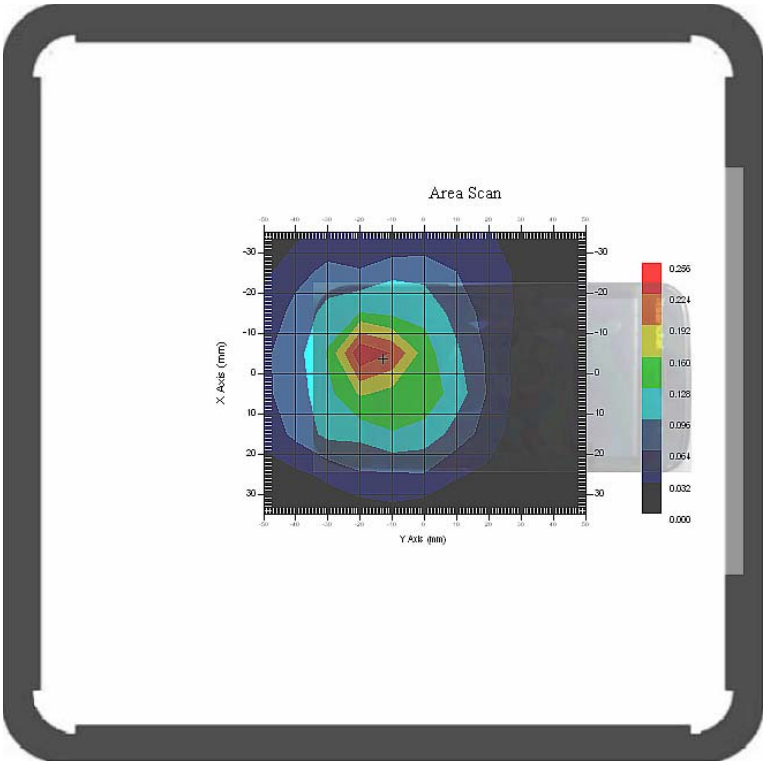
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.205 W/kg
Power Drift-Finish : 0.211 W/kg
Power Drift (%) : 2.996

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 2
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.230 W/kg
10 gram SAR value : 0.128 W/kg
Area Scan Peak SAR : 0.254 W/kg
Zoom Scan Peak SAR : 0.450 W/kg

Plot 32#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body- worn Back (1850.2 MHz Low Channel)

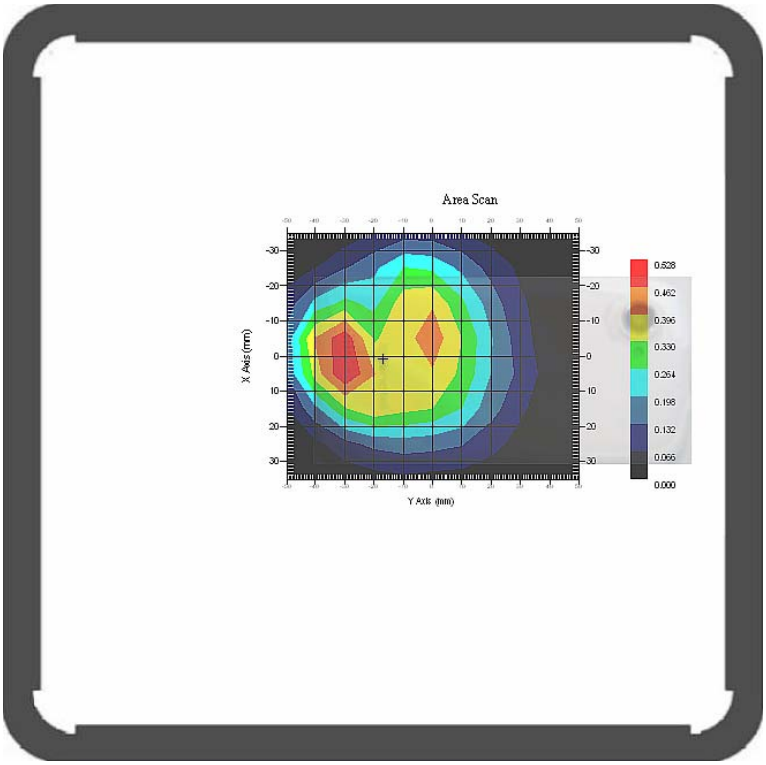
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.445 W/kg
Power Drift-Finish : 0.440 W/kg
Power Drift (%) : -1.182

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 2
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.520 W/kg
10 gram SAR value : 0.303 W/kg
Area Scan Peak SAR : 0.526 W/kg
Zoom Scan Peak SAR : 1.100 W/kg

Plot 33#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body- worn-Left (1850.2 MHz Low Channel)

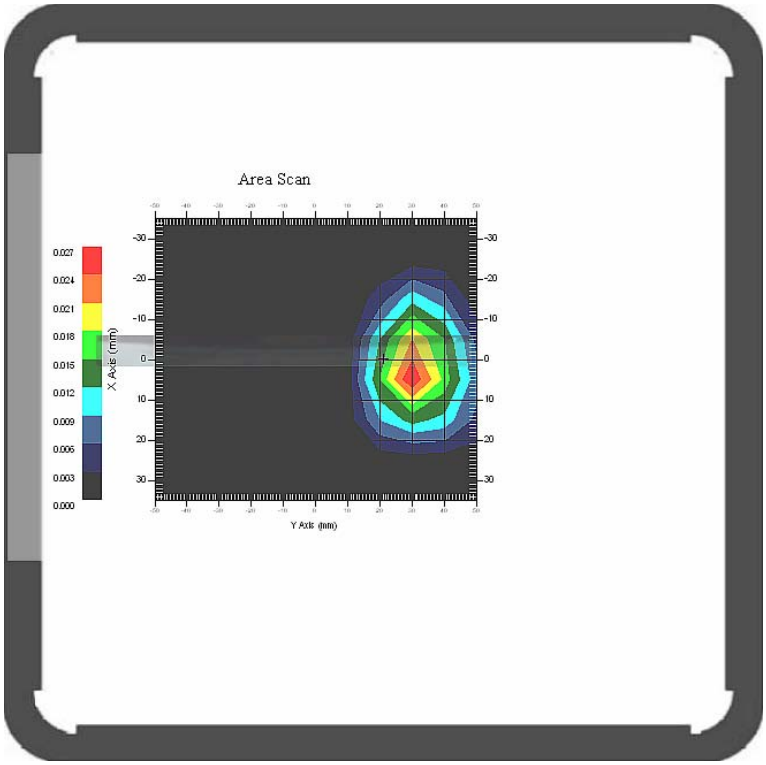
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type : Complete
Area Scan : 7x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.010 W/kg
Power Drift-Finish : 0.010 W/kg
Power Drift (%) : -2.705

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 2
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.022 W/kg
10 gram SAR value : 0.013 W/kg
Area Scan Peak SAR : 0.027 W/kg
Zoom Scan Peak SAR : 0.071 W/kg

Plot 34#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body- worn-Right (1850.2 MHz Low Channel)

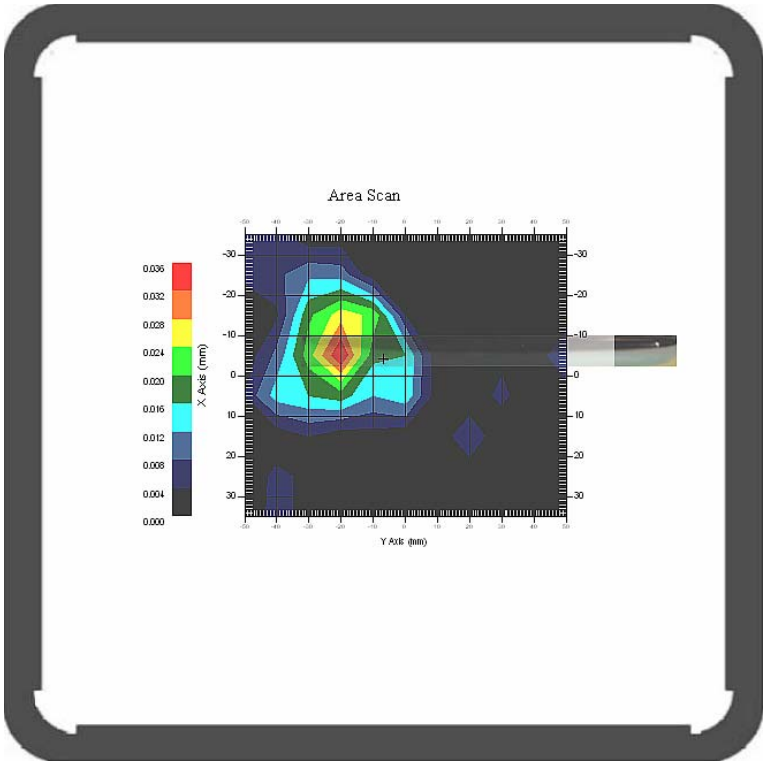
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type : Complete
Area Scan : 7x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.011 W/kg
Power Drift-Finish : 0.011 W/kg
Power Drift (%) : -1.882

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 2
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.031 W/kg
10 gram SAR value : 0.014 W/kg
Area Scan Peak SAR : 0.036 W/kg
Zoom Scan Peak SAR : 0.100 W/kg

Plot 35#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: Body- worn-Bottom (1850.2 MHz Low Channel)

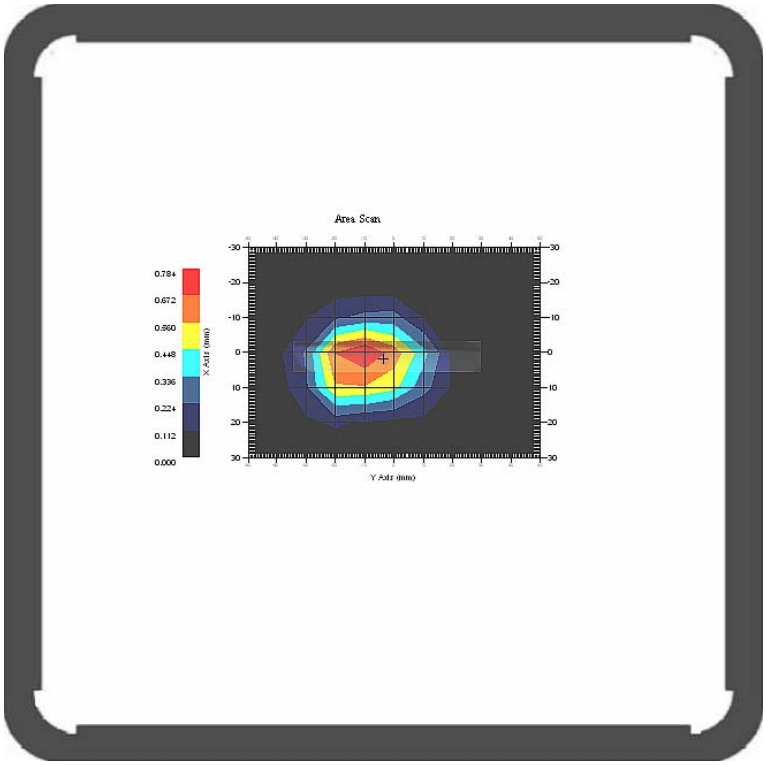
Measurement Data
Test mode : GPRS
Crest Factor : 2
Scan Type : Complete
Area Scan : 7x10x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.652 W/kg
Power Drift-Finish : 0.640 W/kg
Power Drift (%) : -1.747

Tissue Data
Type : Body
Frequency : 1850.20 MHz
Epsilon : 53.89 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 2
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.712 W/kg
10 gram SAR value : 0.330 W/kg
Area Scan Peak SAR : 0.782 W/kg
Zoom Scan Peak SAR : 1.651 W/kg

Plot 36#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Body-worn-Front (826.4 MHz Low Channel)

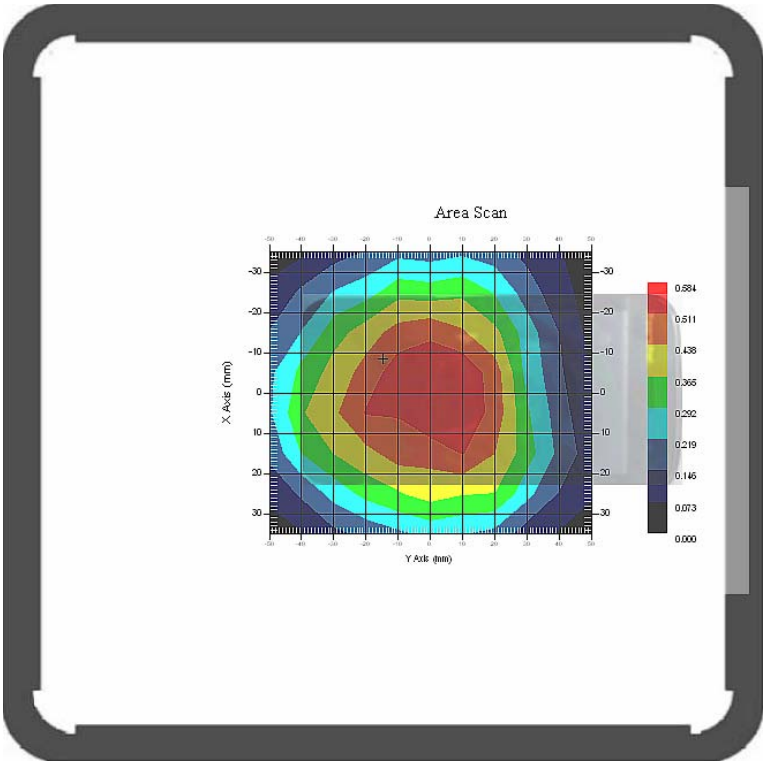
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.509 W/kg
Power Drift-Finish : 0.500 W/kg
Power Drift (%) : -1.753

Tissue Data
Type : Body
Frequency : 826.40 MHz
Epsilon : 55.25 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 850
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.551 W/kg
10 gram SAR value : 0.389 W/kg
Area Scan Peak SAR : 0.584 W/kg
Zoom Scan Peak SAR : 0.770 W/kg

Plot 37#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Body-worn-Back (826.4 MHz Low Channel)

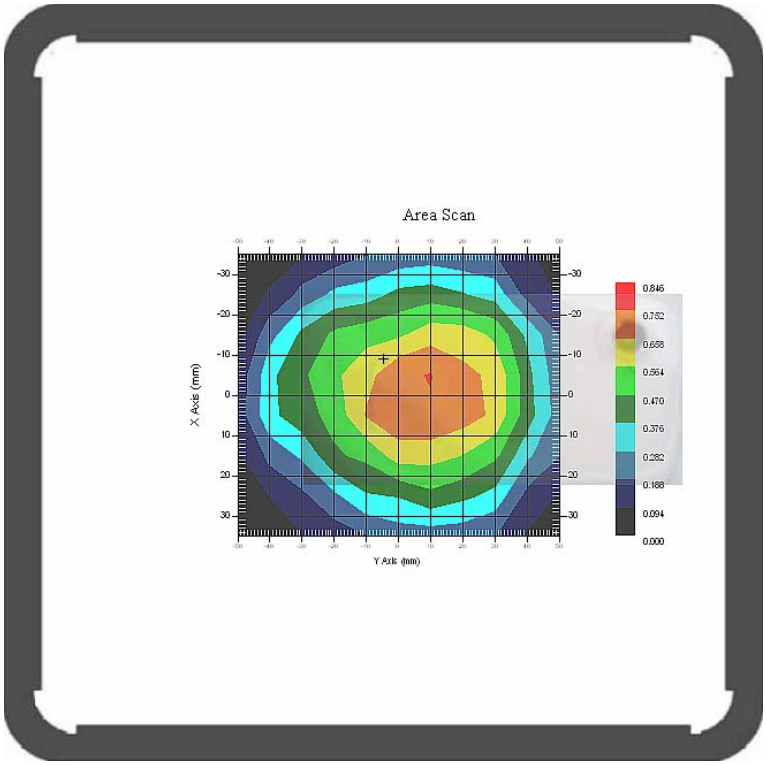
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.745 W/kg
Power Drift-Finish : 0.771 W/kg
Power Drift (%) : 2.117

Tissue Data
Type : Body
Frequency : 826.40 MHz
Epsilon : 55.25 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 850
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.707 W/kg
10 gram SAR value : 0.487 W/kg
Area Scan Peak SAR : 0.756 W/kg
Zoom Scan Peak SAR : 0.970 W/kg

Plot 38#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Body-worn-Left (826.4 MHz Low Channel)

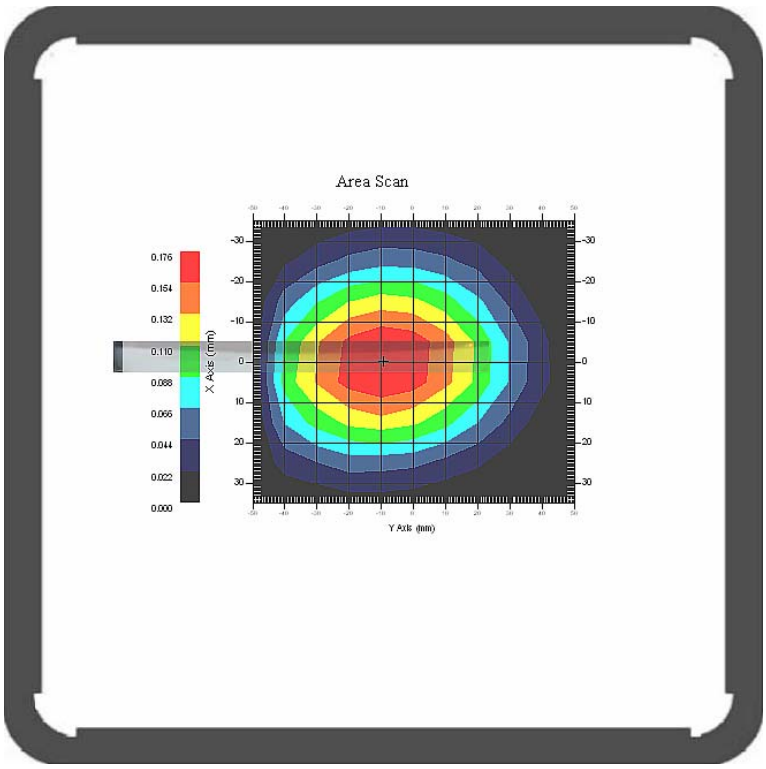
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.162 W/kg
Power Drift-Finish : 0.160 W/kg
Power Drift (%) : -1.262

Tissue Data
Type : Body
Frequency : 826.40 MHz
Epsilon : 55.25 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 850
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.165 W/kg
10 gram SAR value : 0.125 W/kg
Area Scan Peak SAR : 0.173 W/kg
Zoom Scan Peak SAR : 0.300 W/kg

Plot 39#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Body-worn-Right (826.4 MHz Low Channel)

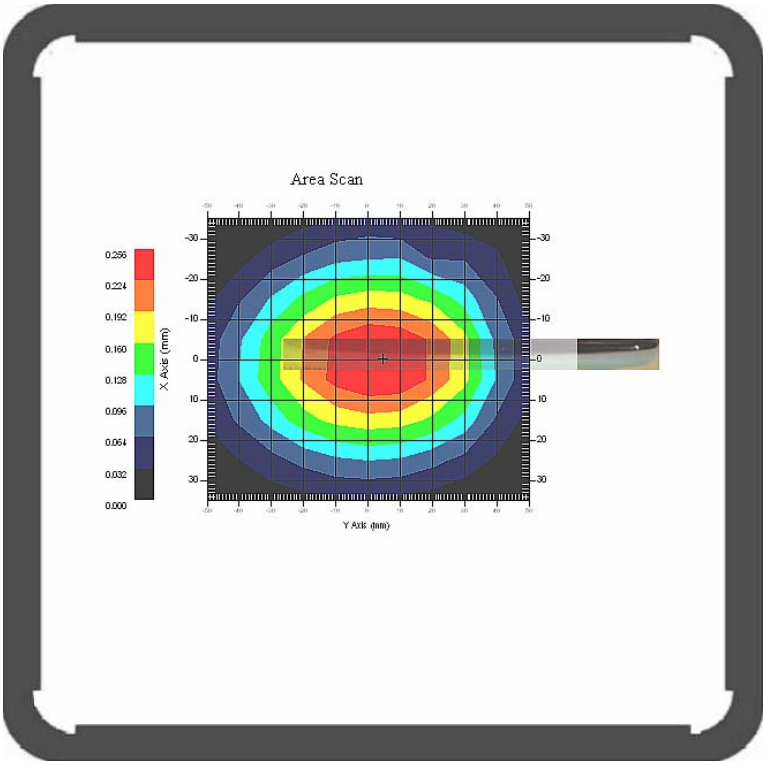
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.244 W/kg
Power Drift-Finish : 0.247 W/kg
Power Drift (%) : 1.366

Tissue Data
Type : Body
Frequency : 826.40 MHz
Epsilon : 55.25 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 850
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.243 W/kg
10 gram SAR value : 0.092 W/kg
Area Scan Peak SAR : 0.253 W/kg
Zoom Scan Peak SAR : 0.350 W/kg

Plot 40#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA850; Body-worn-Bottom (826.4 MHz Low Channel)

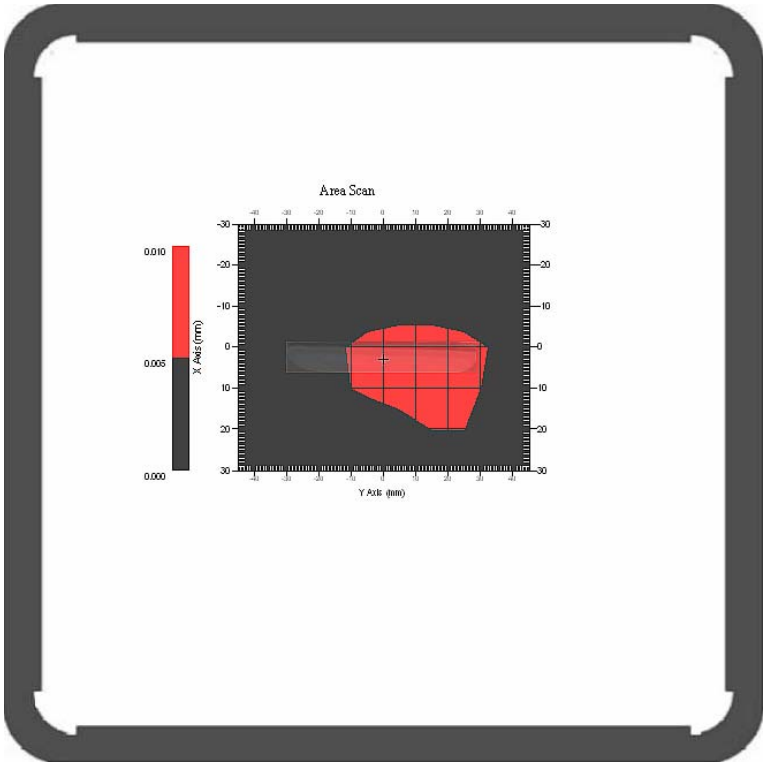
Measurement Data
Test mode : WCDMA850
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.005 W/kg
Power Drift-Finish : 0.005 W/kg
Power Drift (%) : -0.926

Tissue Data
Type : Body
Frequency : 826.40 MHz
Epsilon : 55.25 F/m
Sigma : 0.96 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 850
Duty Cycle Factor : 1
Conversion Factor : 6.6
Probe Sensitivity : 1.20 1.20 1.20 μV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.008 W/kg
10 gram SAR value : 0.004 W/kg
Area Scan Peak SAR : 0.010 W/kg
Zoom Scan Peak SAR : 0.053 W/kg

Plot 41#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Body-worn-Front (1852.4 MHz Low Channel)

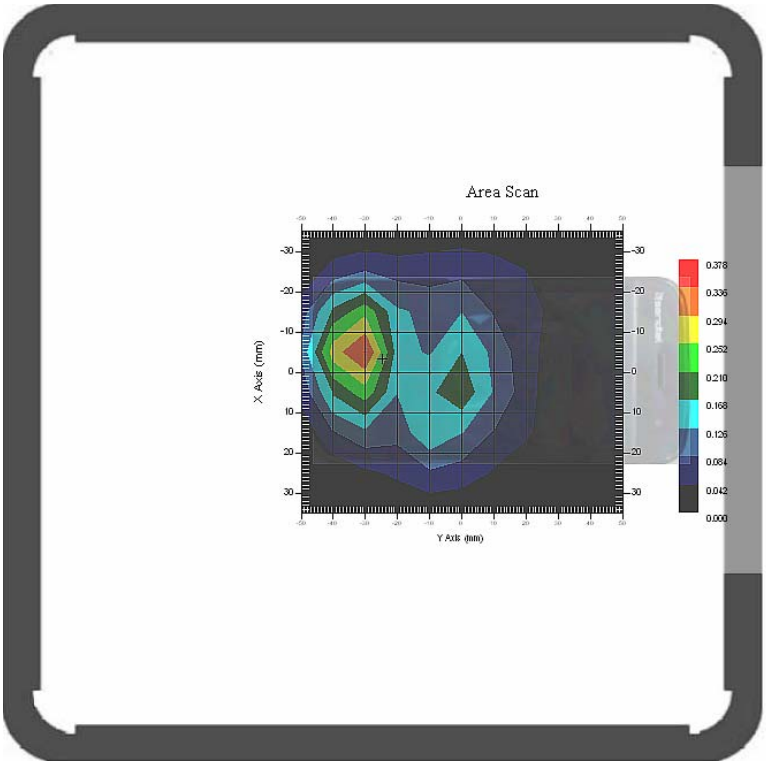
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.255 W/kg
Power Drift-Finish : 0.251 W/kg
Power Drift (%) : -1.598

Tissue Data
Type : Body
Frequency : 1852.40 MHz
Epsilon : 53.84 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.300 W/kg
10 gram SAR value : 0.135 W/kg
Area Scan Peak SAR : 0.339 W/kg
Zoom Scan Peak SAR : 0.610 W/kg

Plot 42#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Body-worn-Back (1852.4 MHz Low Channel)

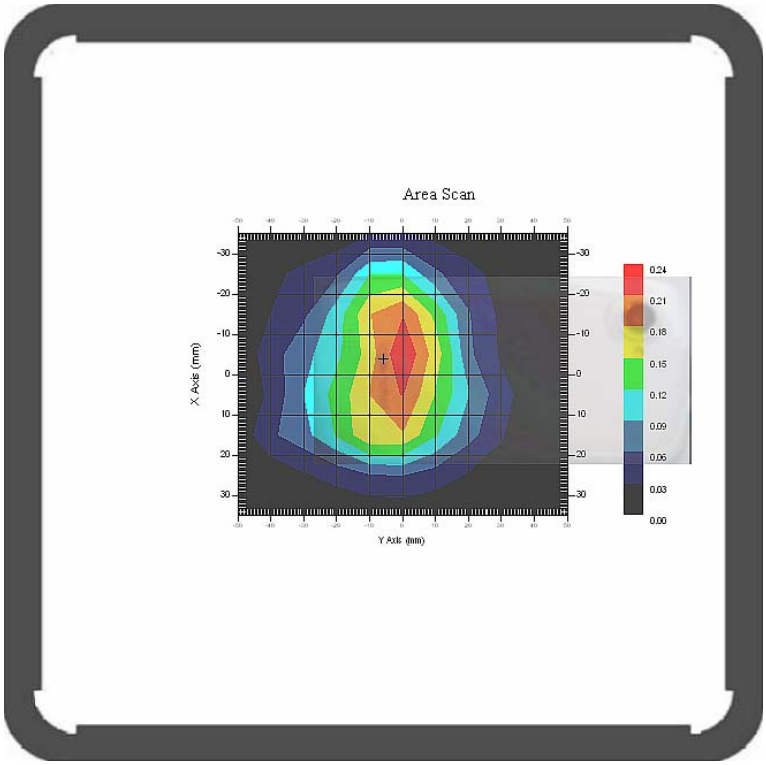
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.200 W/kg
Power Drift-Finish : 0.195 W/kg
Power Drift (%) : -2.486

Tissue Data
Type : Body
Frequency : 1852.40 MHz
Epsilon : 53.84 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.211 W/kg
10 gram SAR value : 0.105 W/kg
Area Scan Peak SAR : 0.238 W/kg
Zoom Scan Peak SAR : 0.440 W/kg

Plot 43#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Body-worn-Left (1852.4 MHz Low Channel)

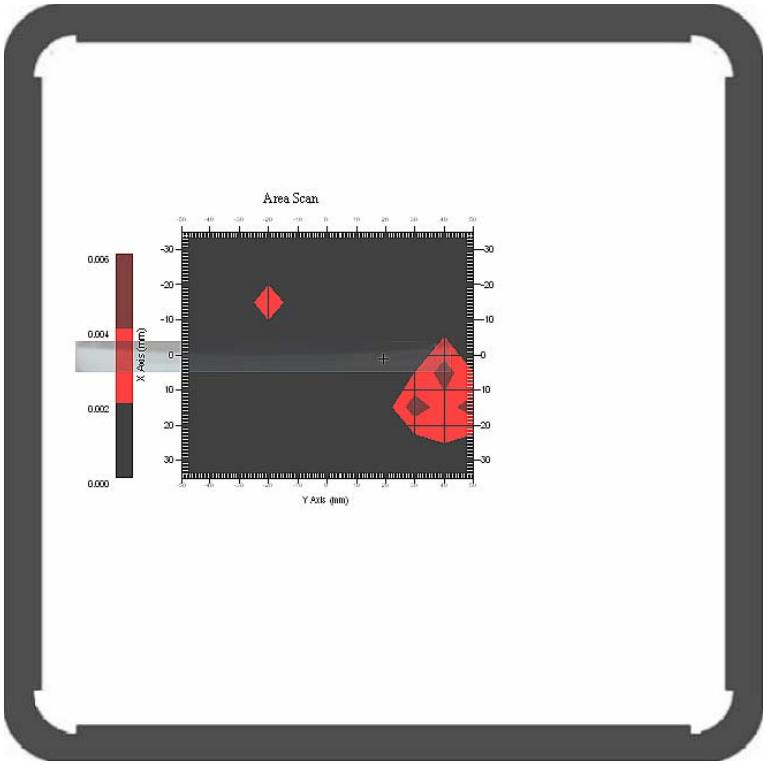
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : 2.761

Tissue Data
Type : Body
Frequency : 1852.40 MHz
Epsilon : 53.84 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.007 W/kg
10 gram SAR value : 0.003 W/kg
Area Scan Peak SAR : 0.009 W/kg
Zoom Scan Peak SAR : 0.021 W/kg

Plot 44#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Body-worn-Right (1852.4 MHz Low Channel)

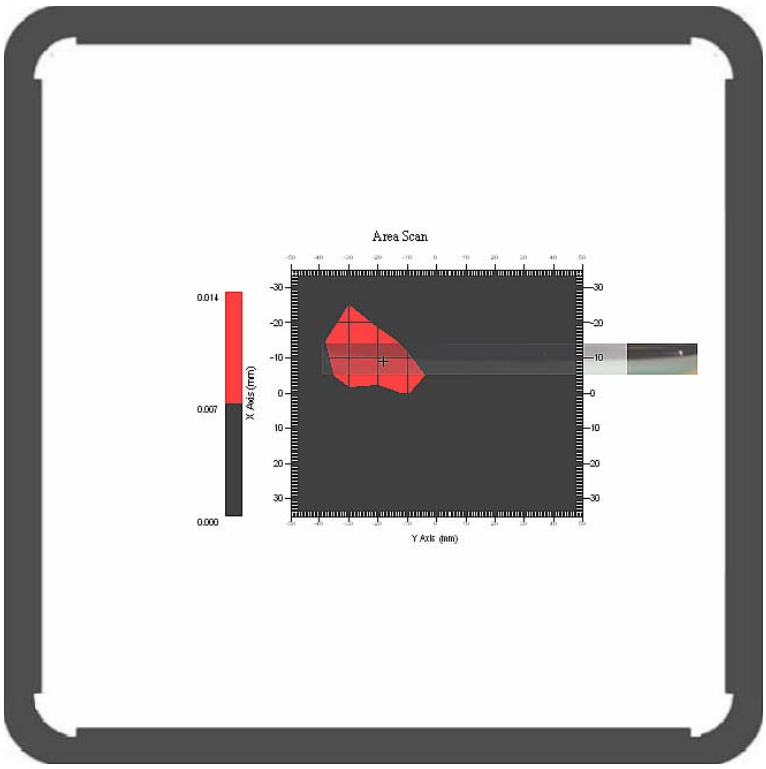
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : -3.044

Tissue Data
Type : Body
Frequency : 1852.40 MHz
Epsilon : 53.84 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.010 W/kg
10 gram SAR value : 0.005 W/kg
Area Scan Peak SAR : 0.014 W/kg
Zoom Scan Peak SAR : 0.056 W/kg

Plot 45#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

WCDMA1900; Body-worn-Front (1852.4 MHz Low Channel)

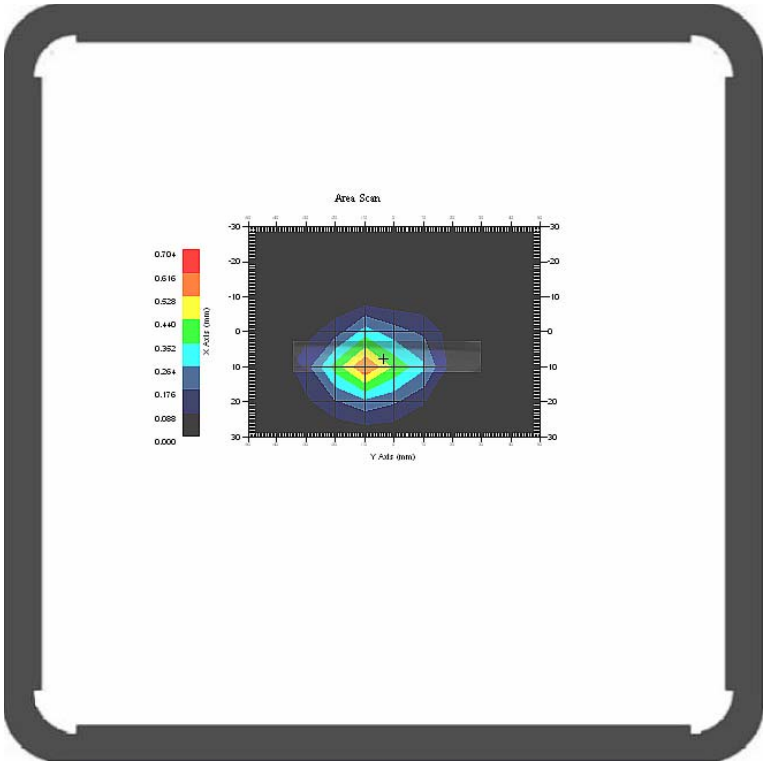
Measurement Data
Test mode : WCDMA1900
Crest Factor : 1
Scan Type : Complete
Area Scan : 7x11x1: Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7: Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.452 W/kg
Power Drift-Finish : 0.447 W/kg
Power Drift (%) : -1.131

Tissue Data
Type : Body
Frequency : 1852.40 MHz
Epsilon : 53.84 F/m
Sigma : 1.48 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 1900
Duty Cycle Factor : 1
Conversion Factor : 5.0
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.464 W/kg
10 gram SAR value : 0.206 W/kg
Area Scan Peak SAR : 0.617 W/kg
Zoom Scan Peak SAR : 0.930 W/kg

Plot 46#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: 802.11b; Body-Worn-Front (2437 MHz Channel 6)

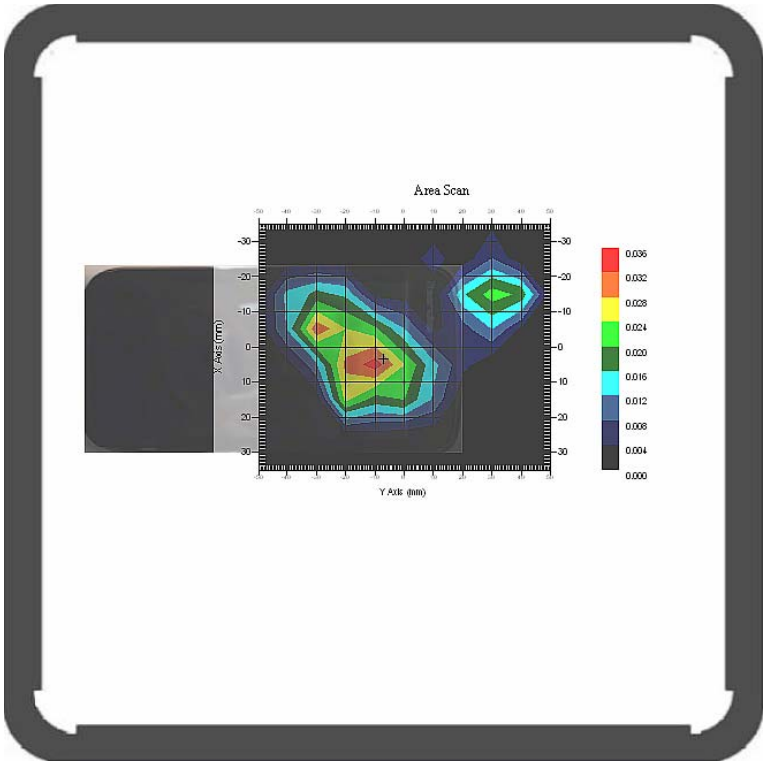
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.019 W/kg
Power Drift-Finish : 0.019 W/kg
Power Drift (%) : -1.116

Tissue Data
Type : Body
Frequency : 2437 MHz
Epsilon : 53.03 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.032 W/kg
10 gram SAR value : 0.017 W/kg
Area Scan Peak SAR : 0.034 W/kg
Zoom Scan Peak SAR : 0.133 W/kg

Plot 47#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: 802.11b; Body-Worn-Back (2437 MHz Channel 6)

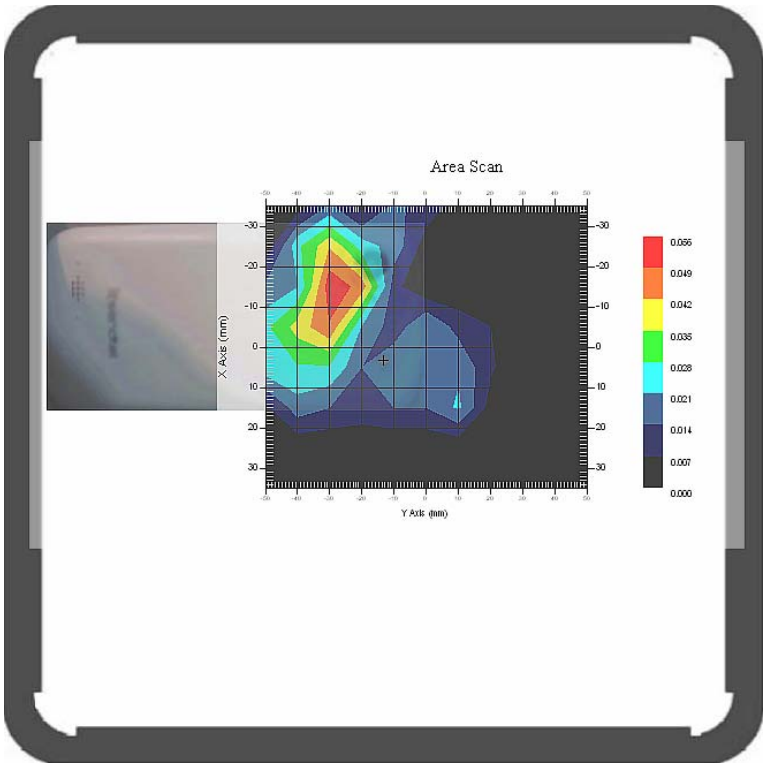
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.012 W/kg
Power Drift-Finish : 0.012 W/kg
Power Drift (%) : 2.108

Tissue Data
Type : Body
Frequency : 2437 MHz
Epsilon : 53.03 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.048W/kg
10 gram SAR value : 0.020 W/kg
Area Scan Peak SAR : 0.054 W/kg
Zoom Scan Peak SAR : 0.120 W/kg

Plot 48#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: 802.11b; Body-Worn-Left (2437 MHz Channel 6)

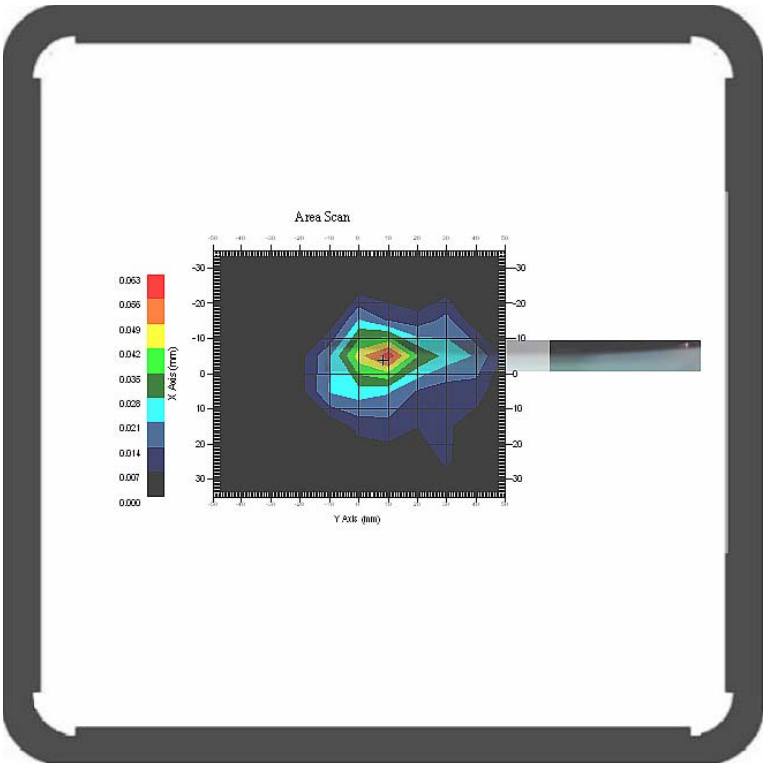
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.045 W/kg
Power Drift-Finish : 0.045 W/kg
Power Drift (%) : -0.417

Tissue Data
Type : Body
Frequency : 2437 MHz
Epsilon : 53.03 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.044 W/kg
10 gram SAR value : 0.016 W/kg
Area Scan Peak SAR : 0.060 W/kg
Zoom Scan Peak SAR : 0.161 W/kg

Plot 49#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: 802.11b; Body-Worn-Right (2437 MHz Channel 6)

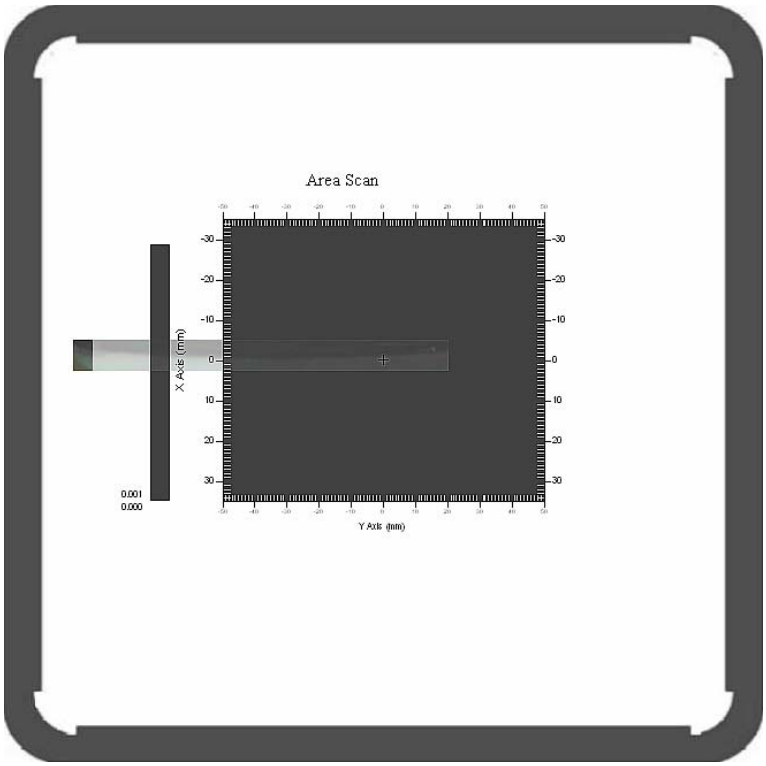
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.001 W/kg
Power Drift-Finish : 0.001 W/kg
Power Drift (%) : 4.011

Tissue Data
Type : Body
Frequency : 2437 MHz
Epsilon : 53.03 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.002 W/kg
10 gram SAR value : 0.001 W/kg
Area Scan Peak SAR : 0.002W/kg
Zoom Scan Peak SAR : 0.046 W/kg

Plot 50#



Test Laboratory: Bay Area Compliance Lab Corp. (Shenzhen)

Hot Spot: 802.11b; Body-Worn-Top (2437 MHz Channel 6)

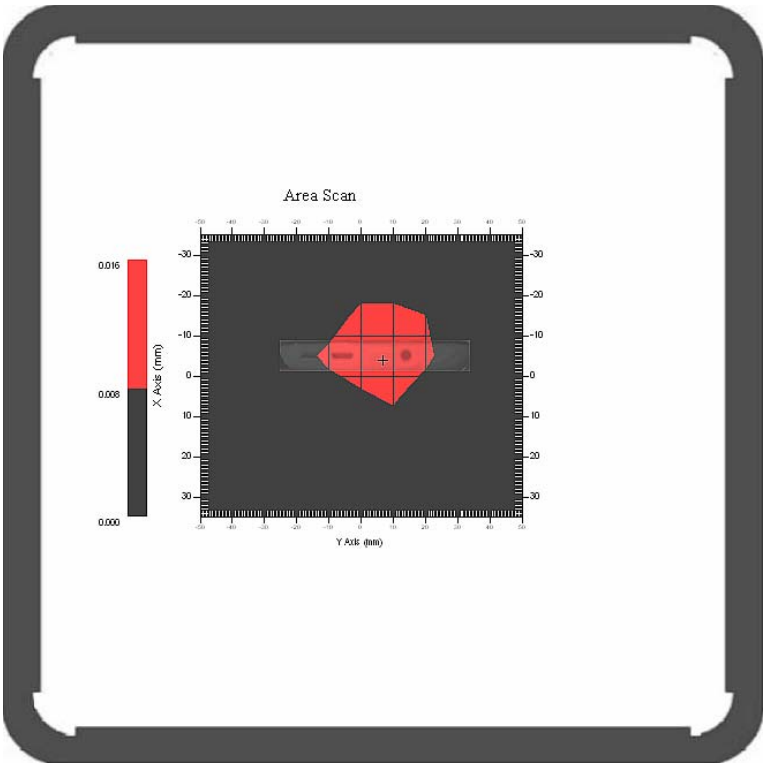
Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 8x11x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 7x7x7 : Measurement x=5mm, y=5mm, z=5mm
Power Drift-Start : 0.011 W/kg
Power Drift-Finish : 0.011 W/kg
Power Drift (%) : -1.881

Tissue Data
Type : Body
Frequency : 2437 MHz
Epsilon : 53.03 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Serial No. : 500-00283
Frequency Band : 2450
Duty Cycle Factor : 1
Conversion Factor : 4.3
Probe Sensitivity : 1.20 1.20 1.20 µV/(V/m)2
Compression Point : 95.00 mV
Offset : 1.56 mm

1 gram SAR value : 0.013 W/kg
10 gram SAR value : 0.007 W/kg
Area Scan Peak SAR : 0.014W/kg
Zoom Scan Peak SAR : 0.029 W/kg

Plot 51#



APPENDIX A – MEASUREMENT UNCERTAINTY

The uncertainty budget has been determined for the measurement system and is given in the following Table.

Measurement Uncertainty for 300MHz to 3GHz

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	$\sqrt{3}$	$(1\text{-cp})^{1/2}$	$(1\text{-cp})^{1}_{/2}$	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 -Noise	0.006	rectangular	$\sqrt{3}$	1	1	0.003	0.003
RF Ambient Condition - Reflections	3.0	rectangular	$\sqrt{3}$	1	1	1.7	1.7
Probe Positioner Mech. Restrictions	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	0.023	normal	1	1	1	0.023	0.023
Device Holder Uncertainty	6.215	normal	1	1	1	6.215	6.215
Drift of Output Power	4.627	rectangular	$\sqrt{3}$	1	1	2.67	2.67
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.)	1.938	normal	1	0.7	0.5	1.36	0.97
Liquid Permittivity(target)	5.0	rectangular	$\sqrt{3}$	0.6	0.5	1.7	1.4
Liquid Permittivity(meas.)	3.093	normal	1	0.6	0.5	1.86	1.55
Combined Uncertainty		RSS				10.78	10.55
Expanded uncertainty (coverage factor=2)		Normal(k=2)				21.56	21.10

APPENDIX B – PROBE CALIBRATION CERTIFICATES

NCL CALIBRATION LABORATORIES

Calibration File No.: 1427-1430

Client.: BACL Lab

CERTIFICATE OF CALIBRATION

It is certified that the equipment identified below has been calibrated in the **NCL CALIBRATION LABORATORIES** by qualified personnel following recognized procedures and using transfer standards traceable to NRC/NIST.

Equipment: Miniature Isotropic RF Probe
Record of Calibration
Head and Body
Manufacturer: APREL Laboratories
Model No.: E-020
Serial No.: 500-00283

Calibration Procedure: D01-032-E020-V2, D22-012-Tissue, D28-002-Dipole
Project No: BACL-5673

Calibrated: 8th August 2012
Released on: 9th August 2012

This Calibration Certificate is Incomplete Unless Accompanied with the Calibration Results Summary

Released By: _____

Art Brennan, Quality Manager

NCL CALIBRATION LABORATORIES
Suite 102, 303 Terry Fox Dr, OTTAWA, ONTARIO CANADA K2K 3J1
Division of APREL Lab. TEL: (613) 435-8300 FAX: (613) 435-8306

NCL Calibration Laboratories

Division of APREL Inc.

Introduction

This Calibration Report reproduces the results of the calibration performed in line with the references listed below. Calibration is performed using accepted methodologies as per the references listed below. Probes are calibrated for air, and tissue and the values reported are the results from the physical quantification of the probe through meteorgical practices.

Calibration Method

Probes are calibrated using the following methods.

<1000MHz
TEM Cell for sensitivity in air
Standard phantom using temperature transfer method for sensitivity in tissue

>1000MHz
Waveguide* method to determine sensitivity in air and tissue
*Waveguide is numerically (simulation) assessed to determine the field distribution and power

The boundary effect for the probe is assessed using a standard flat phantom where the probe output is compared against a numerically simulated series of data points

References

- IEEE Standard 1528 (2003) including Amendment 1
  IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
- EN 62209-1 (2006)
  Human Exposure to RF Fields from hand-held and body-mounted wireless communication devices - Human models. instrumentation, and procedures-Part 1: Procedure to measure the Specific Absorption Rate (SAR) for hand-held mobile wireless devices
- IEC 62209-2 Ed. 1.0 (2010-03)
  Human exposure to RF fields from hand-held and body-mounted wireless devices - Human models, instrumentation, and procedures - Part 2: specific absorption rate (SAR) for wireless communication devices (30 MHz - 6 GHz)
- TP-D01-032-E020-V2 E-Field probe calibration procedure
- D22-012-Tissue dielectric tissue calibration procedure
- D28-002-Dipole procedure for validation of SAR system using a dipole
- IEEE 1309 Draft Standard for Calibration of Electromagnetic Field Sensors and Probes, Excluding Antennas, from 9kHz to 40GHz

This page has been reviewed for content and attested to on Page 2 of this document.

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Conditions

Probe 500-00283 was a recalibration with the exception frequency of 450 MHz .which was a new calibration

Ambient Temperature of the Laboratory:	22 °C +/- 1.5°C
Temperature of the Tissue:	21 °C +/- 1.5°C
Relative Humidity:	< 60%

Primary Measurement Standards

Instrument	**Serial Number**	**Cal due date**
Power meter Anritsu MA2408A	90025437	Nov.4, 2012
Power Sensor Anritsu MA2481D	103555	Nov 4, 2012
Attenuator HP 8495A (70dB)	1944A10711	Sept. 14, 2012
Network Analyzer Anritsu MT8801C	MB11855	Feb. 8, 2013

Secondary Measurement Standards

Signal Generator Agilent E4438C -506	MY55182336	June 7, 2013

Attestation

The below named signatories have conducted the calibration and review of the data which is presented in this calibration report.

We the undersigned attest that to the best of our knowledge the calibration of this subject has been accurately conducted and that all information contained within the results pages have been reviewed for accuracy.

Art Brennan, Quality Manager

Dan Brooks, Test Engineer

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Probe Summary

Probe Type:	E-Field Probe E020
Serial Number:	500-00283
Frequency:	As presented on page 5
Sensor Offset:	1.56
Sensor Length:	2.5
Tip Enclosure:	Composite*
Tip Diameter:	< 2.9 mm
Tip Length:	55 mm
Total Length:	289 mm

*Resistive to recommended tissue recipes per IEEE-1528

Sensitivity in Air

Channel X:	1.2 $\mu V/(V/m)^2$
Channel Y:	1.2 $\mu V/(V/m)^2$
Channel Z:	1.2 $\mu V/(V/m)^2$
Diode Compression Point:	95 mV

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Calibration for Tissue (Head H, Body B)

Frequency	Tissue Type	Measured Epsilon	Measured Sigma	Calibration Uncertainty	Tolerance Uncertainty for 5%*	Conversion Factor
450 H	Head	43.98	0.9	3.5	3.4	6
450 B	Body	57.07	0.92	3.5	3.4	6
750 H	Head	X	X	X	X	X
750 B	Body	X	X	X	X	X
835 H	Head	42.35	0.938	3.5	3.4	6.6
835 B	Body	56.65	1.018	3.5	3.4	6.6
900 H	Head	41.35	0.98	3.5	3.4	6
900 B	Body	56.08	1.05	3.5	3.4	6
1450 H	Head	X	X	X	X	X
1450 B	Body	X	X	X	X	X
1500 H	Head	X	X	X	X	X
1500 B	Body	X	X	X	X	X
1640 H	Head	X	X	X	X	X
1640 B	Body	X	X	X	X	X
1750 H	Head	X	X	X	X	X
1750 B	Body	X	X	X	X	X
1800 H	Head	X	X	X	X	X
1800 B	Body	X	X	X	X	X
1900 H	Head	38.72	1.35	3.5	2.7	5.2
1900 B	Body	51.62	1.48	3.5	2.7	5
2000 H	Head	X	X	X	X	X
2000 B	Body	X	X	X	X	X
2100 H	Head	X	X	X	X	X
2100 B	Body	X	X	X	X	X
2300 H	Head	X	X	X	X	X
2300 B	Body	X	X	X	X	X
2450 H	Head	38.06	1.87	3.5	3.5	4.9
2450B	Body	50.22	2.03	3.5	3.5	4.3
2600 H	Head	X	X	X	X	X
2600 B	Body	X	X	X	X	X
3000 H	Head	X	X	X	X	X
3000 B	Body	X	X	X	X	X
3600 H	Head	X	X	X	X	X
3600 B	Body	X	X	X	X	X
5200 H	Head	X	X	X	X	X
5200 B	Body	X	X	X	X	X
5600 H	Head	X	X	X	X	X
5600 B	Body	X	X	X	X	X
5800 H	Head	X	X	X	X	X
5800 B	Body	X	X	X	X	X

This page has been reviewed for content and attested to on Page 2 of this document.

Boundary Effect:

Uncertainty resulting from the boundary effect is less than 2.1% for the distance between the tip of the probe and the tissue boundary, when less than 0.58mm.

Spatial Resolution:

The spatial resolution uncertainty is less than 1.5% for 4.9mm diameter probe.
The spatial resolution uncertainty is less than 1.0% for 2.5mm diameter probe.

DAQ-PAQ Contribution

To minimize the uncertainty calculation all tissue sensitivity values were calculated using a load impedance of 5 MΩ.

Boundary Effect:

For a distance of 0.58mm the worst case evaluated uncertainty (increase in the probe sensitivity) is less than 2.1%.

NOTES:

*The maximum deviation from the centre frequency when comparing the lower to upper range is listed.

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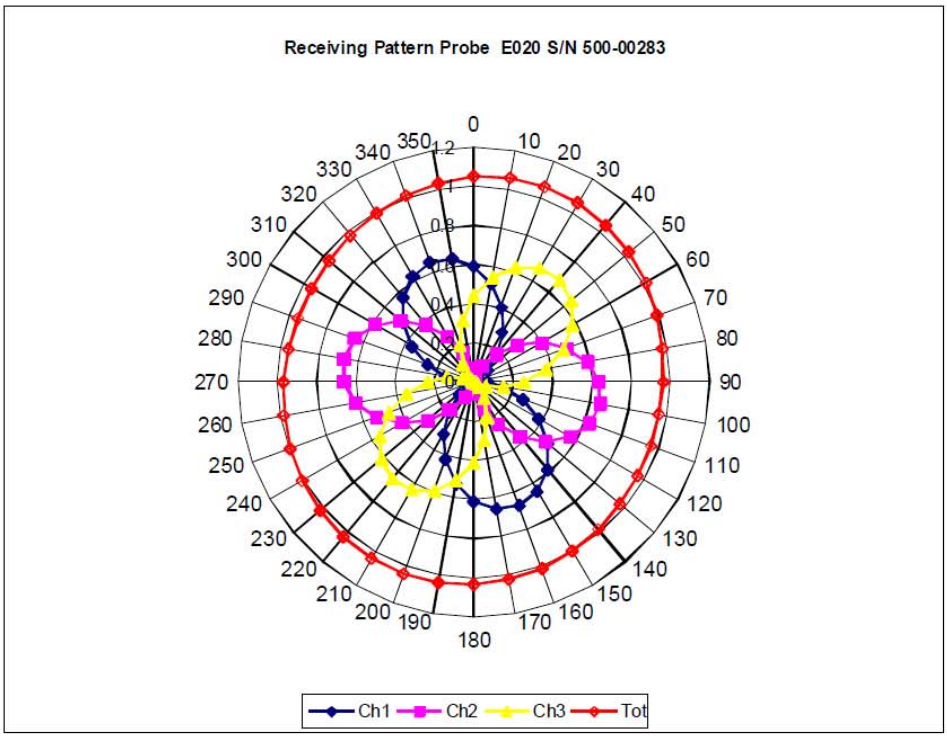
Receiving Pattern Air



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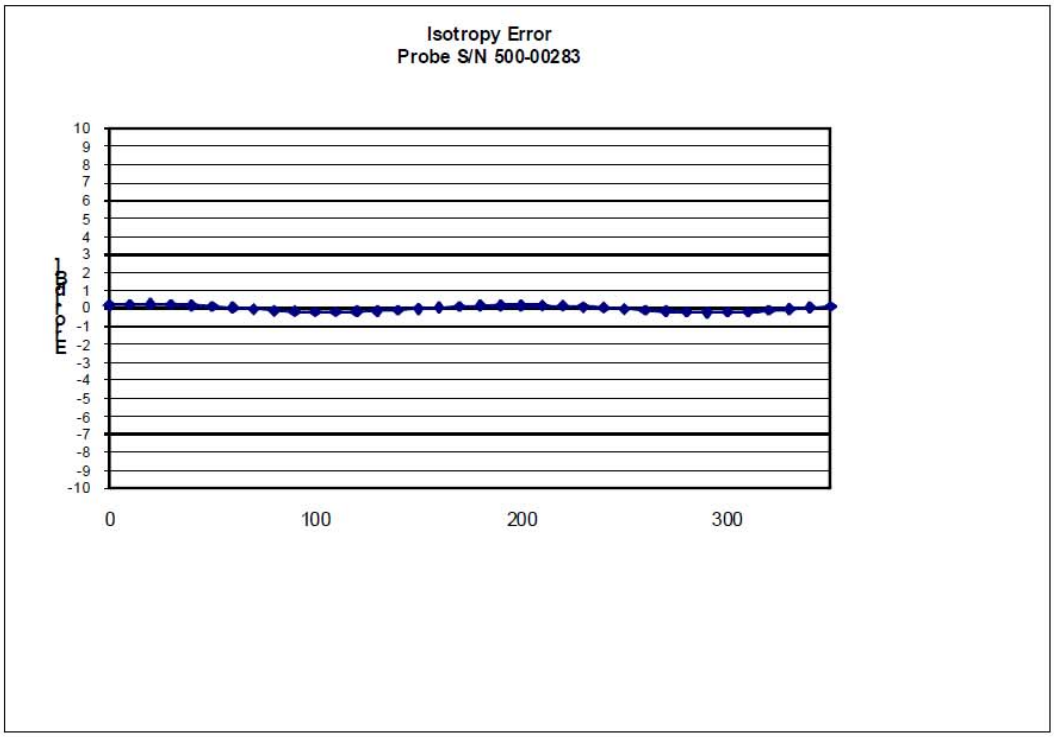
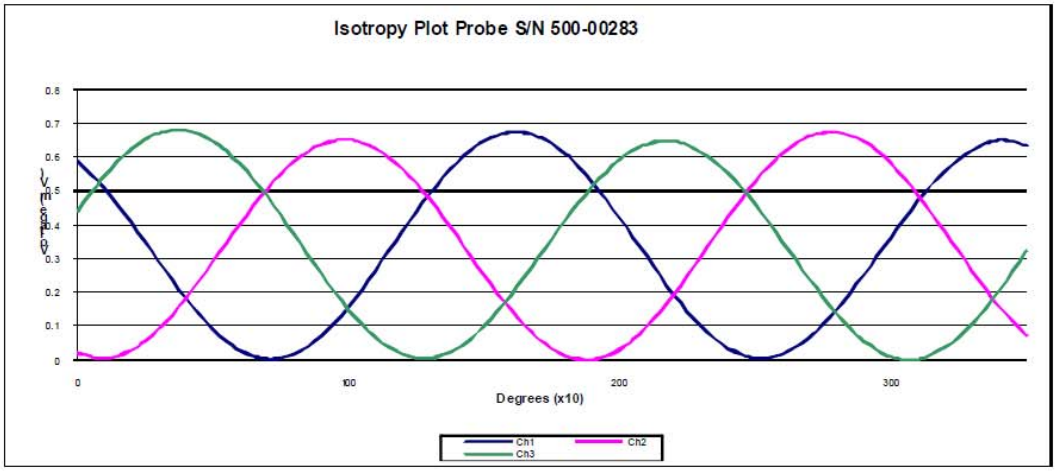
Isotropy Error Air





Isotropicity Tissue: 0.10 dB

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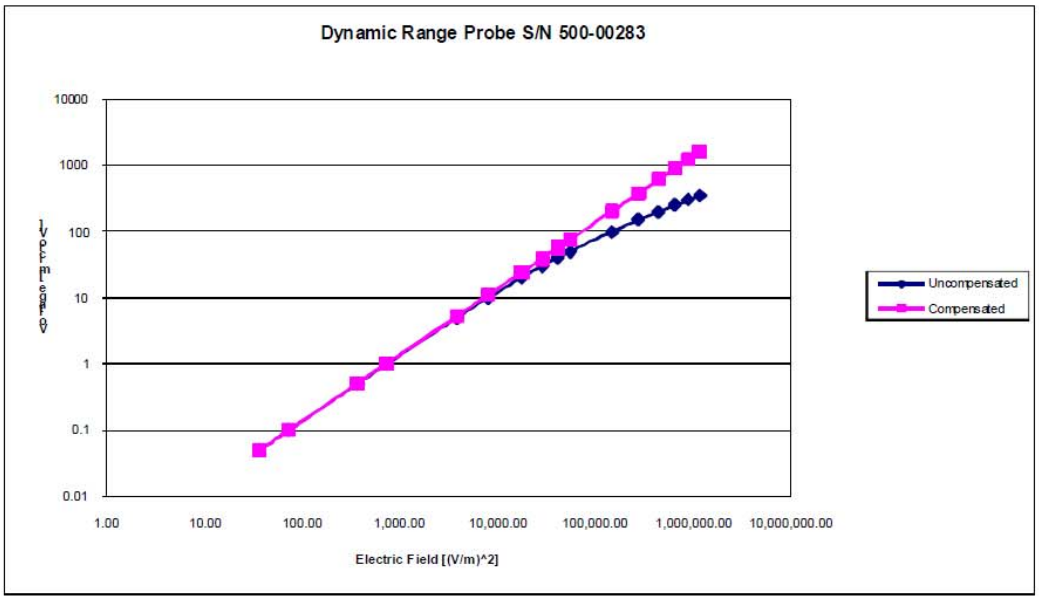
Dynamic Range



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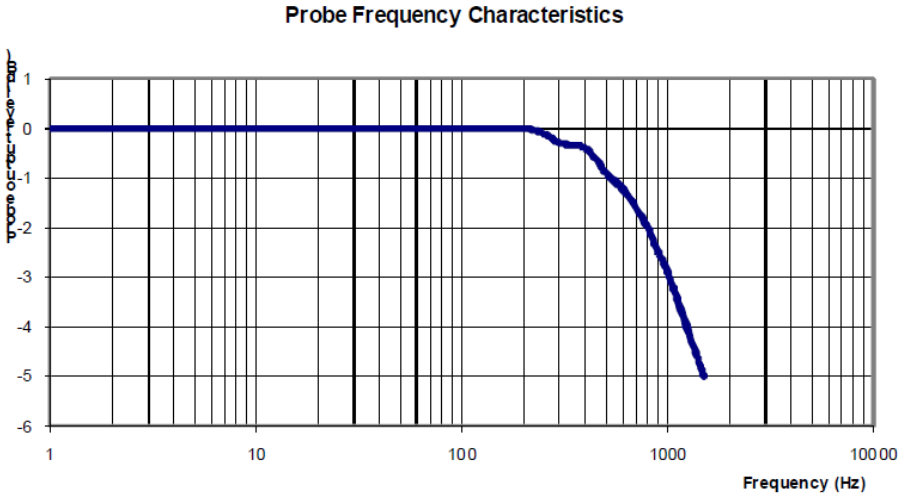
Video Bandwidth



Video Bandwidth at 500 Hz	1 dB
Video Bandwidth at 1.02 KHz:	3 dB

Test Equipment

The test equipment used during Probe Calibration, manufacturer, model number and, current calibration status are listed and located on the main APREL server R:\NCL\Calibration Equipment\Instrument List May 2012.