PCTEST ENGINEERING LABORATORY, INC.
6660-B Dobbin Road, Columbia, MD 21045 USA
Tel. +1.410.290.6652 / Fax +1.410.290.6654
http://www.pctestlab.com

SAR COMPLIANCE EVALUATION REPORT

Applicant Name:
Samsung Electronics Co Ltd
18600 Broadwick St.
Rancho Dominguez, CA 90220
USA

Date of Testing:
07/25/11 - 08/21/11
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
0Y1107211278-R1.A3L

FCC ID: **A3LSCHI405**

APPLICANT: **SAMSUNG ELECTRONICS CO LTD**

Model(s): SCH-I405
DUT Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN
Test Device Serial No.: Pre-Production [S/N: FCC #1, FCC #2]
Applicable FCC Rules: CFR §2.1093
Report Type: Certification

Band & Mode	Tx Frequency	Conducted Power [dBm]	SAR		
			1 gm Head (W/kg)	1 gm Body-Worn (W/kg)	1 gm Hotspot (W/kg)
Cell. CDMA	824.70 - 848.31 MHz	25.26	0.27	1.11	1.14
PCS CDMA	1851.25 - 1908.75 MHz	25.48	0.45	1.15	1.15
LTE	782 MHz	23.32	0.24	0.40	0.42
2.4 GHz WLAN	2412 - 2462 MHz	14.30	0.04	0.02	0.03
5.2 GHz WLAN	5180 - 5240 MHz	13.53	0.03	0.08	
5.3 GHz WLAN	5260 - 5320 MHz	13.46	0.02	0.07	
5.5 GHz WLAN	5500 - 5700 MHz	13.72	0.02	0.10	
5.8 GHz WLAN	5745 - 5825 MHz	14.12	0.03	0.13	

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE C95.1-1992 and has been tested in accordance with the measurement procedures specified in FCC/OET Bulletin 65 Supplement C (2001), IEEE 1528-2003 and applicable Industry Canada Radio Standards Specifications (RSS); for North American frequency bands only.

Note: This revised Test Report (S/N: 0Y1107211278-R1.A3L) supersedes and replaces the previously issued test report on the same subject EUT for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them. Test results reported herein relate only to the item(s) tested.

PCTEST certifies that no party to this application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

TABLE OF CONTENTS

1 LTE INFORMATION PER FCC KDB 941225 D05

Sec.	FCC ID	A3LSCHI405	
	Form Factor	Handset	
1)	Frequency Range of each LTE transmission band	Band 13: 782 MHz	
2)	Channel Bandwidths	10 MHz BW	
3)	H, M, L channel numbers and frequencies		
	Low / Mid / High		
	NA / 782 MHz (CH:23230) / NA	Band 13, 10 MHz BW	
4)(a)	UE Category	3	
(b)	Modulations Supported in UL	QPSK, 16QAM	
5)	Description of LTE Tx and Ant. Implementation	1 TX/RX Ant; 1 Rx Ant	
6)	LTE Voice available?	No, but VoIP via apps possible	
	Hotspot with LTE+WIFI	Yes	
	Hotspot with LTE+WIFI active with 1XVoice sessions?	Yes	
7)	LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3~6.2.5? (manufacturer attestation to be provided)	Yes	
	A-MPR (Additional MPR) disabled for SAR Testing?	Yes	
8)	Conducted power Table provided for 1RB (low and high offset), 50% RB (centered), 100% RB	Yes	

9-10)	Non-LTE US Wireless Operating Modes/Band	RF Output Power (dBm)	RF Exposure Configurations
	835 MHz CDMA	See Section 14	Head and Body
	1900 MHz CDMA		Head and Body
	2.4 GHz Bluetooth		Body
	2.4 GHz WI-FI / Bluetooth		Head and Body
	5 GHz WI-FI		Head and Body

11)	Simultaneous Tx conditions	See Section 17	
12)	Power Reduction used for SAR Compliance?	No	

13-15) N/A

2 INTRODUCTION

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency (RF) radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices. [1]

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [3] and Health Canada RF Exposure Guidelines Safety Code 6 [24]. The measurement procedure described in IEEE/ANSI C95.3-2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave [4] is used for guidance in measuring the Specific Absorption Rate (SAR) due to the RF radiation exposure from the Device Under Test (DUT). These criteria for SAR evaluation are similar to those recommended by the International Committee for Non-Ionizing Radiation Protection (ICNIRP) in Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," Report No. Vol 74. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

2.1 SAR Definition

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy (*d*U) absorbed by (dissipated in) an incremental mass (*d*m) contained in a volume element (*d*V) of a given density (ρ). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body.

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

Figure 2-1
SAR Mathematical Equation

SAR is expressed in units of Watts per Kilogram W/kg or mW/g.

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

where:

σ = conductivity of the tissue-simulating material (S/m)
ρ = mass density of the tissue-simulating material (kg/m^3)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relation to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.[6]

3 TEST SITE LOCATION

3.1 INTRODUCTION

The map at the right shows the location of the PCTEST LABORATORY in Columbia, Maryland. It is in proximity to the FCC Laboratory, the Baltimore-Washington International (BWI) airport, the city of Baltimore and Washington, DC.

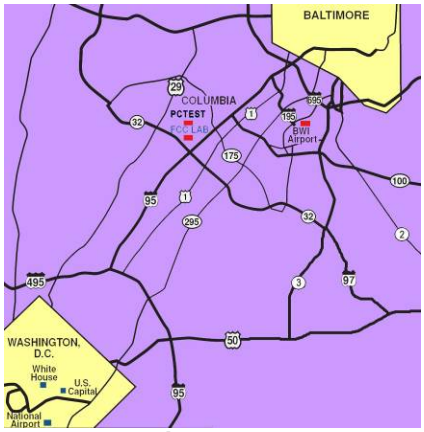

Figure 3-1
Map of the Greater Baltimore and Metropolitan Washington, D.C. area

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49' 38" W longitude. The facility is 1.5 miles north of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 and Industry Canada.

3.2 Test Facility / Accreditations:

Measurements were performed at an independent accredited PCTEST Engineering Lab located in Columbia, MD 21045, U.S.A.

- PCTEST Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing-Aid Compatibility (HAC), Battery Safety, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and all Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (IC-2451) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS and CDMA, and EvDO mobile phones.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO Data, CDMA 1xRTT Data

4 SAR MEASUREMENT SETUP

4.1 Robotic System

Measurements are performed using the DASY automated dosimetric assessment system. The DASY is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland and consists of a high precision robotics system (Staubli), robot controller, desktop computer, near-field probe, probe alignment sensor, and the SAM phantom containing the head or body equivalent material. The robot is a six-axis industrial robot, performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Figure 4-1).

4.2 System Hardware

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and a remote control used to drive the robot motors. The PC consists of the SAR Measurement Software, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, A/D conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal from the DAE and transfers data to the PC card.

4.3 System Electronics

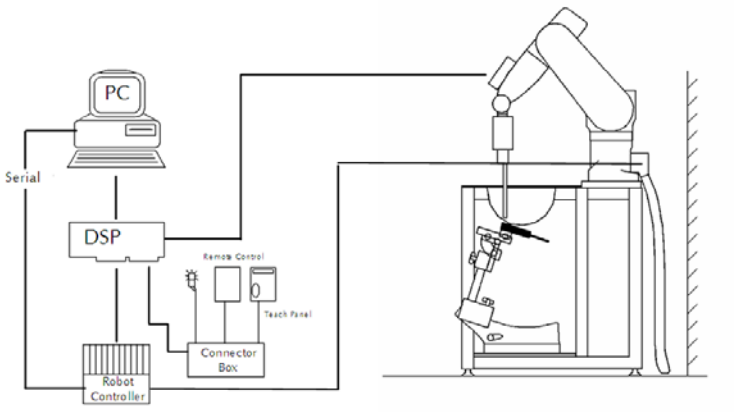

Figure 4-1
SAR Measurement System Setup

The DAE consists of a highly sensitive electrometer-grade auto-zeroing preamplifier, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

4.4 Automated Test System Specifications

Test Software:	SPEAG DASY4 version 4.7 Measurement Software
Robot:	Stäubli Unimation Corp. Robot RX60L or RX90
Repeatability:	0.02 mm
No. of Axes:	6

Data Acquisition Electronic System (DAE)

Description:	Signal amplifier, multiplexer, A/D converter and control logic
Measurement Range:	-100 to +300 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Resistance:	200 MΩ

Data Converter

Features:	Signal Amplifier, multiplexer, A/D converter & control logic
Software:	SEMCAD software
Connecting Lines:	Optical Downlink for data and status info Optical upload for commands and clock

PC Interface Card

Function:	Link to DAE 16-bit A/D converter for surface detection system Two Serial & Ethernet link to robotics Direct emergency stop output for robot

Figure 4-2
SAR Measurement System

5 E-FIELD MEASUREMENT & PROBE

5.1 Probe Measurement System

Figure 5-1
SAR System

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration (see Figure 5-3) and optimized for dosimetric evaluation [9]. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi-fiber line ending at the front of the probe tip. It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The measurement software reads the reflection during a software approach and looks for the maximum using a 2nd order curve fitting (see Figure 5-2). The approach is stopped at reaching the maximum.

5.2 Probe Specifications

Model(s):	ES3DV2, ES3DV3, EX3DV4
Frequency Range:	10 MHz – 6.0 GHz (EX3DV4) 10 MHz – 4 GHz (ES3DV3, ES3DV2)
Calibration:	In head and body simulating tissue at Frequencies from 300 up to 6000 MHz
Linearity:	± 0.2 dB (30 MHz to 6 GHz) for EX3DV4 ± 0.2 dB (30 MHz to 4 GHz) for ES3DV3. ES3DV2
Dynamic Range:	10 mW/kg – 100 W/kg
Probe Length:	330 mm
Probe Tip Length:	20 mm
Body Diameter:	12 mm
Tip Diameter:	2.5 mm (3.9 mm for ES3DV3)
Tip-Center:	1 mm (2.0 mm for ES3DV3)
Application:	SAR Dosimetry Testing Compliance tests of mobile phones Dosimetry in strong gradient fields

Figure 5-2
Near-Field Probe

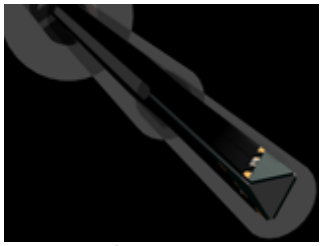

Figure 5-3
Triangular Probe Configuration

6 SAR PHANTOM AND EQUIVALENT TISSUES

6.1 SAR Phantom

The SAM Twin Phantom V4.0 is constructed of Vinylester, a glass fiber reinforced (VE-GF) material integrated in a table. The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1.

Figure 6-1 Twin SAM SAR Phantom

The shape of the shell is based on data from an anatomical study designed to represent the 90th percentile of adult male head dimensions as tabulated by the US Army [12][13]. The phantom enables the dosimetric evaluation of SAR for both left and right handed handset usage, as well as body-worn usage using the flat phantom region. The SAM Twin Phantom shell is bisected along the mid-sagittal plane into right and left halves. The perimeter sidewalls of each phantom halves are extended to allow filling with liquid to a depth that is sufficient to minimize reflections from the upper surface.

Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. The shell phantom has a 2 mm ± 0.2 mm shell thickness (except the ear region where shell thickness increases to 6 mm ± 0.2 mm).

6.2 Tissue Simulating Mixture Characterization

Figure 6-2
SAM Phantom with Simulating Tissue

The mixture is characterized to obtain proper dielectric constant (permittivity) and conductivity of the tissue of interest. The tissue dielectric parameters recommended in IEEE 1528 and IEC 62209 have been used as targets for the compositions, and are to match within FCC recommendations.

Table 6-1
Composition of the Tissue Equivalent Matter

Frequency (MHz)	835	835	1900	1900	2450	2450	5200-5800	5200-5800
Tissue	Head	Body	Head	Body	Head	Body	Head	Body
Ingredients (% by weight)								
Bactericide	0.1	0.1						
DGBE			44.92	29.44	7.99	26.7		
HEC	1	1						
NaCl	1.45	0.94	0.18	0.39	0.16	0.1		
Sucrose	57	44.9						
Triton X-100					19.97		17.24	10.67
Diethylenglycol monohexylether							17.24	10.67
Water	40.45	53.06	54.9	70.17	71.88	73.2	65.52	78.66

See next page for 750 MHz Tissue Recipes

Table 6-2
Composition of the 750MHz Head and Body Tissue Equivalent Matter

2 Composition / Information on ingredients

The Item is composed of the following ingredients:

H_2O	Water, 35 – 58%
Sucrose	Sugar, white, refined, 40 – 60%
NaCl	Sodium Chloride, 0 – 6%
Hydroxyethyl-cellulose	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1 – 0.7% Relevant for safety; Refer to the respective Safety Data Sheet".

Note: 750MHz liquid recipes are proprietary SPEAG. The composition is approximate to the actual liquids utilized. Thus the manufacturer production sheets are provided below.

f [MHz]	HP-e'	HP-e"	sigma
300	61.02	35.43	0.59
350	60.21	32.13	0.63
400	59.50	29.71	0.66
450	58.79	28.00	0.70
500	58.16	26.60	0.74
550	57.57	25.54	0.78
600	56.99	24.68	0.82
650	56.43	23.97	0.87
700	55.88	23.46	0.91
750	55.35	22.91	0.96
800	55.02	22.56	1.00
850	54.50	22.31	1.06
900	54.02	22.08	1.11
950	53.55	21.89	1.16
1000	53.05	21.70	1.21

P/N:	SL AAM 075	TARGET PARAMETERS		
Charge:	090224-1	f [MHz]	eps	sigma
Mea Date:	05-Mrz-09	700	55.7	0.96
Temp [°C]	22	750	55.5	0.96
		800	55.3	0.97

Figure 6-2
750MHz Body Tissue Equivalent Matter

f [MHz]	HP-e'	HP-e"	sigma
300	50.56	30.29	0.51
350	49.28	28.08	0.55
400	48.08	26.44	0.59
450	47.00	25.25	0.63
500	46.03	24.24	0.67
550	45.14	23.46	0.72
600	44.32	22.89	0.78
650	43.51	22.32	0.81
700	42.78	21.89	0.85
750	42.07	21.44	0.89
800	41.53	21.13	0.94
850	40.88	20.89	0.99
900	40.28	20.65	1.03
950	39.68	20.42	1.08
1000	39.11	20.20	1.12

P/N:	SL AAH 075	TARGET PARAMETERS		
Charge:	090224-2	f [MHz]	eps	sigma
Mea Date:	05-Mrz-09	700	42.2	0.89
Temp [°C]	22	750	41.9	0.89
		800	41.7	0.90

Figure 6-3
750MHz Head Tissue Equivalent Matter

7 DOSIMETRIC SAR ASSESSMENT PROCEDURE

7.1 Measurement Procedure

The evaluation was performed using the following procedure (according to IEEE 1528 and Supplement C):

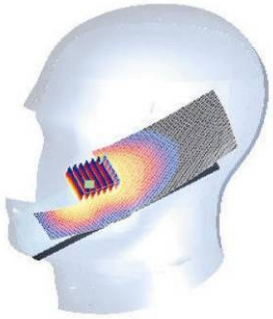

Figure 7-1
Sample SAR Area Scan

1. The SAR distribution at the exposed side of the phantom was measured at a distance no greater than 4.0 mm from the inner surface of the shell. The horizontal grid spacing was 15mm x 15mm (10mm x 10mm for 5 GHz)
2. The point SAR measurement was taken at the maximum SAR region determined from Step 1 to enable the monitoring of SAR fluctuations/drifts during testing the 1 gram cube. This fixed point was measured and used as a reference value.
3. Based on the area scan data, the location of the maximum absorption was determined by spline interpolation. Around this point, a volume of 32mm x 32mm x 30mm (fine resolution volume scan, zoom scan) was assessed by measuring 5 x 5 x 7 points. From this zoom scan, the spatial peak SAR value was evaluated per IEEE 1528 procedures:
   a. The data was extrapolated to the surface of the outer-shell of the phantom. The total distance extrapolated was the combined distance from the center of the diodes 2.7mm away from the tip of the probe housing plus the 1.2 mm distance between the surface and the lowest measuring point. The extrapolation was based on a least-squares algorithm. A polynomial of the fourth order was calculated through the points in the z-axis (normal to the phantom shell).
   b. After the maximum interpolated values were calculated between the points within the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 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 then integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were obtained through interpolation, in order to calculate the averaged SAR.
   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.
4. The SAR reference value at the same location as step 2, was measured after the zoom scan was complete. This is the drift of the 1 gram SAR assessment. If this value drifted by more than 5%, the evaluation was repeated.
5. For 5 GHz testing finer resolution zoom scans were preformed as specified by FCC SAR Measurement Requirements for 3 – 6 GHz, KDB pub 865664. The 5 GHz zoom scan requires a minimum volume of 24mm x 24mm x 20mm and 7 x 7 x 11 points.

8 DEFINITION OF REFERENCE POINTS

8.1 EAR REFERENCE POINT

Figure 8-1 shows the front, back and side views of the SAM Twin Phantom. The point "M" is the reference point for the center of the mouth, "LE" is the left ear reference point (ERP), and "RE" is the right ERP. The ERP is 15mm posterior to the entrance to the ear canal (EEC) along the B-M line (Back-Mouth), as shown in Figure 8-1. The plane passing through the two ear canals and M is defined as the Reference Plane. The line N-F (Neck-Front) is perpendicular to the reference plane and passing through the RE (or LE) is called the Reference Pivoting Line (see Figure 8-2). Line B-M is perpendicular to the N-F line. Both N-F and B-M lines are marked on the external phantom shell to facilitate handset positioning [5].

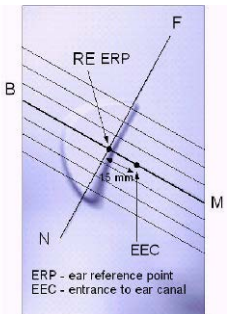

Figure 8-1
Close-Up Side view of ERP

8.2 HANDSET REFERENCE POINTS

Two imaginary lines on the handset were established: the vertical centerline and the horizontal line. The test device was placed 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" (See Figure 8-3). The "test device reference point" was than located at the same level as the center of the ear reference point. The test device was positioned so that the "vertical centerline" was bisecting the front surface of the handset at it's top and bottom edges, positioning the "ear reference point" on the outer surface of the both the left and right head phantoms on the ear reference point.

Figure 8-2
Front, back and side view of SAM Twin Phantom

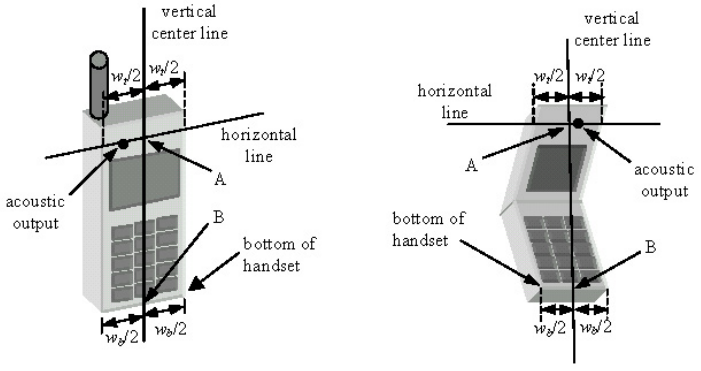

Figure 8-3
Handset Vertical Center & Horizontal Line Reference Points

9 TEST CONFIGURATION POSITIONS

9.1 Device Holder

The DASY device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity ε = 3 and loss tangent δ = 0.02.

9.2 Positioning for Cheek/Touch

1. The test device was positioned with the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Figure 9-1), such that the plane defined by the vertical center line and the horizontal line of the phone is approximately parallel to the sagittal plane of the phantom.

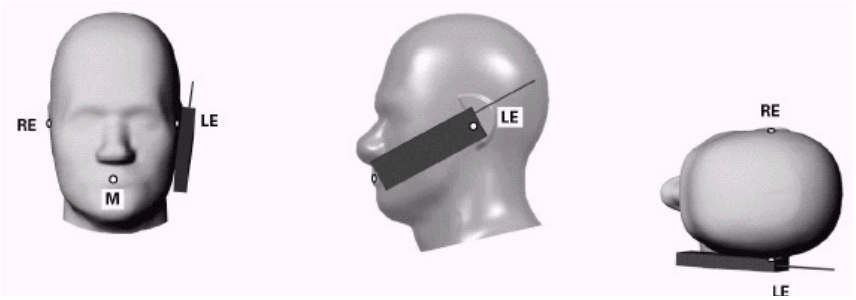

Figure 9-1 Front, Side and Top View of Cheek/Touch Position

2. The handset was translated towards the phantom along the line passing through RE & LE until the handset touches the ear.
3. While maintaining the handset in this plane, the handset was rotated around the LE-RE line until the vertical centerline was in the plane normal to MB-NF including the line MB (reference plane).
4. The phone was hen rotated around the vertical centerline until the phone (horizontal line) was symmetrical was respect to the line NF.
5. While maintaining the vertical centerline in the reference plane, keeping point A on the line passing through RE and LE, and maintaining the phone contact with the ear, the handset was rotated about the line NF until any point on the handset made contact with a phantom point below the ear (cheek) (See Figure 9-2).

9.3 Positioning for Ear / 15º Tilt

With the test device aligned in the “Cheek/Touch Position”:

1. While maintaining the orientation of the phone, the phone was retracted parallel to the reference plane far enough to enable a rotation of the phone by 15degree.
2. The phone was then rotated around the horizontal line by 15 degree.
3. While maintaining the orientation of the phone, the phone was moved parallel to the reference plane until any part of the phone touches the head. (In this position, point A was located on the line RE-LE). The tilted position is obtained when the contact is on the pinna. If the contact was at any location other than the pinna, the angle of the phone would then be reduced. The tilted position was obtained when any part of the phone was in contact of the ear as well as a second part of the phone was in contact with the head (see Figure 9-2).

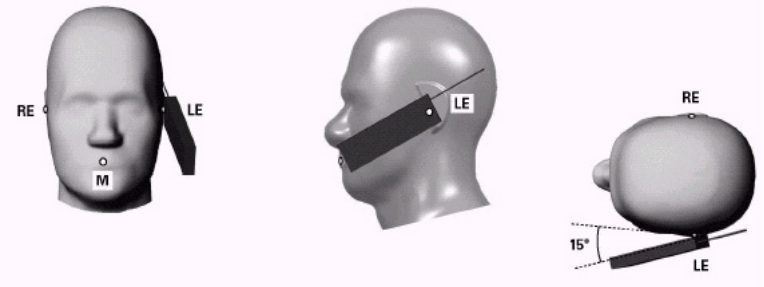

Figure 9-2 Front, Side and Top View of Ear/15º Tilt Position

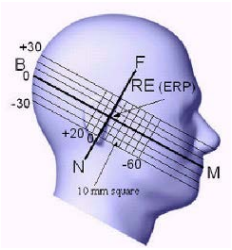

Figure 9-3
Side view w/ relevant markings

Figure 9-4 Body SAR Sample Photo
(Not Actual DUT)

9.4 SAR Evaluations near the Mouth/Jaw Regions of the SAM Phantom

Antennas located near the bottom of a phone may require SAR measurements around the mouth and jaw regions of the SAM head phantom. This typically applies to clam-shell style phones that are generally longer in the unfolded normal use positions or to certain older style long rectangular phones. It has been known for some time that there are SAR measurement difficulties in these regions of the SAM phantom. SAR probes are calibrated in tissue equivalent liquids with sufficient separation between the probe sensors and nearby physical boundaries to ensure scattering does not affect probe calibration. When the probe tip is moved into tight regions with multiple boundaries surrounding its sensors, probe calibration and measurement accuracy can become questionable. In addition, these measurement locations often require a probe to be tilted at steep angles, where it may no longer comply with calibration requirements and measurement protocols, or satisfy the required measurement uncertainty. In some situations it is not feasible to tilt the probe or rotate the phantom, as suggested by measurement standards, to conduct these measurements.

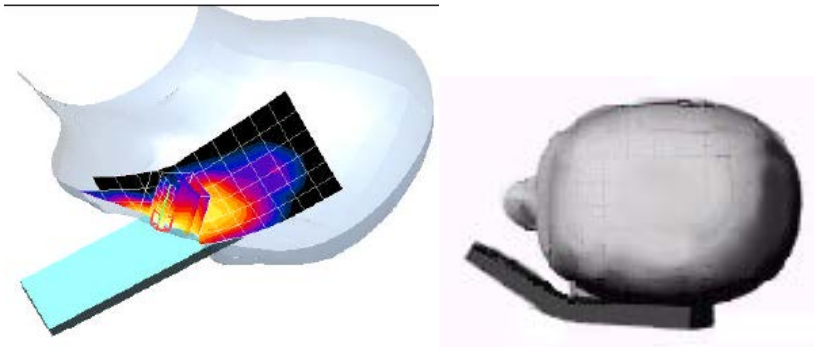

Figure 9-5
SAR Scans near the Jaw/Mouth

In order to ensure there is sufficient conservativeness for ensuring compliance until practical solutions are available, additional measurement considerations are necessary to address these technical difficulties. When measurements are required near the mouth, nose, jaw or similar tight regions of the SAM phantom,

area or zoom scans are often unable to fully enclose the peak SAR location as required by IEEE 1528 and Supplement C, due to probe orientation and positioning difficulties. Even when limited measurements are possible, the test results could be questionable due to probe calibration and measurement uncertainty issues. Under these circumstances, the following procedures apply, adopted from the FCC guidance on SAR handsets document publication 648474. The SAR required in these regions of SAM should be measured using a flat phantom. **Rectangular shaped phones** should be positioned with its bottom edge positioned from the flat phantom with the same distance provided by the cheek touching position using SAM. The ear reference point (ERP, as defined for SAM) of the phone should be positioned ½ cm from the flat phantom shell. **Clam-shell phones** should be positioned with the hinge against a smooth edge of the flat phantom where the upper half of the phone is unfolded and extended beyond the phantom side wall. The lower half of the phone is secured in the test device holder at a fixed distance below the flat phantom determined by the minimum separation along the lower edge of the phone in the cheek touching position using SAM. Any case with substantial variation in separation distance along the lower edge of a clam shell is discussed with the FCC for best-to-use methodology.

The flat phantom data should allow test results to be compared uniformly across measurement systems, until suitable solutions are available in measurement standards to address certain probe calibration and positioning issues, due to implementation differences between horizontal and upright SAM configurations. These flat phantom procedures are only applicable for stand-alone SAR evaluation in tight regions of the SAM phantom, where measurement is not feasible or test results can be questionable due to probe calibration and accessibility issues. Details on device positioning and photos showing how separation distances are determined are included in the SAR report Photographs. SAR for other regions of the head must be evaluated using SAM; therefore, a phone with antennas at different locations may require flat and SAM phantom evaluation for the different antennas.

9.5 Body Holster /Belt Clip Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Figure 9-4). A device with a headset output is tested with a headset connected to the device.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. 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 is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

10 FCC RF EXPOSURE LIMITS

10.1 Uncontrolled Environment

UNCONTROLLED ENVIRONMENTS are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

10.2 Controlled Environment

CONTROLLED ENVIRONMENTS are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 10-1
SAR Human Exposure Specified in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

HUMAN EXPOSURE LIMITS		
	UNCONTROLLED ENVIRONMENT *General Population* (W/kg) or (mW/g)	CONTROLLED ENVIRONMENT *Occupational* (W/kg) or (mW/g)
SPATIAL PEAK SAR Brain	1.6	8.0
SPATIAL AVERAGE SAR Whole Body	0.08	0.4
SPATIAL PEAK SAR Hands, Feet, Ankles, Wrists	4.0	20

1. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
2. The Spatial Average value of the SAR averaged over the whole body.
3. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

11 POWER MEASUREMENT PROCEDURES

11.1 Procedures Used to Establish RF Signal for SAR

The following procedures are according to FCC KDB 941225 D01 “SAR Measurement Procedures for 3G Devices v02”.

The device was placed into a simulated call using a base station simulator in a RF shielded chamber. Establishing connections in this manner ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. Devices under test were evaluated prior to testing, with a fully charged battery and were configured to operate at maximum output power. In order to verify that the device was tested throughout the SAR test at maximum output power, the SAR measurement system measures a “point SAR” at an arbitrary reference point at the start and end of the 1 gram SAR evaluation, to assess for any power drifts during the evaluation. Any power drifts of greater than 5% were repeated.

11.2 SAR Measurement Conditions for LTE

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes following SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR [4]. The R&S CMW500 was used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing.

11.2.1 MPR

MPR is permanently implemented for this device. The specific manufacturer target MPR is indicated alongside the SAR results. With the MPR permanently implemented, this device will never operate at higher power levels. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

11.2.2 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests

11.2.3 Required RB Size and RB Offsets for SAR Testing

According to FCC KDB 941225 D05:

1. Per KDB Publication 941225 D05 Page 4, 3) A), QPSK with 50% RB is required.
2. Per KDB Publication 941225 D05 Page 4, 3) B), QPSK with 1 RB for both channel edges are required.
3. Per KDB Publication 941225 D05 Page 4, 4) A), 16QAM with 50% RB is required.
4. Per KDB Publication 941225 D05 Page 4, 4) B), 16QAM with 1RB for both channel edges are required.
5. Per KDB Publication 941225 D05 Page 4, A) I), 100% RB Allocation is not required to be tested since SAR is not > 1.45 W/kg.

11.2.4 Power Reduction for LTE

This model implements a dynamic power reduction scheme for non-SAR related purposes. See Section 18 for addressing SAR aspects due to power reduction.

11.3 SAR Measurement Conditions for CDMA2000

The following procedures were performed according to FCC KDB Publication 941225 D01 "SAR Measurement Procedures for 3G Devices" v02, October 2007.

11.3.1 Output Power Verification

See 3GPP2 C.S0011/TIA-98-E as recommended by "SAR Measurement Procedures for 3G Devices" v02, October 2007. Maximum output power is verified on the High, Middle and Low channels according to procedures in section 4.4.5.2 of 3GPP2 C.S0011/TIA-98-E. SO55 tests were measured with power control bits in the "All Up" condition.

1. If the mobile station (MS) supports Reverse TCH RC 1 and Forward TCH RC 1, set up a call using Fundamental Channel Test Mode 1 (RC=1/1) with 9600 bps data rate only.
2. Under RC1, C.S0011 Table 4.4.5.2-1, Table 11-1 parameters were applied.
3. If the MS supports the RC 3 Reverse FCH, RC3 Reverse SCH_0 and demodulation of RC 3,4, or 5, set up a call using Supplemental Channel Test Mode 3 (RC 3/3) with 9600 bps Fundamental Channel and 9600 bps SCH0 data rate.
4. Under RC3, C.S0011 Table 4.4.5.2-2, Table 13-2 was applied.
5. FCHs were configured at full rate for maximum SAR with "All Up" power control bits.

Table 11-1
Parameters for Max. Power for RC1

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-104
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

Table 11-2
Parameters for Max. Power for RC3

Parameter	Units	Value
$\hat{I}_{or}$	dBm/1.23 MHz	-86
$\frac{\text{Pilot } E_c}{I_{or}}$	dB	-7
$\frac{\text{Traffic } E_c}{I_{or}}$	dB	-7.4

11.3.2 Head SAR Measurements

SAR for head exposure configurations is measured in RC3 with the DUT configured to transmit at full rate using Loopback Service Option SO55. SAR for RC1 is not required when the maximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1 using the exposure configuration that results in the highest SAR for that channel in RC3.

11.3.3 Body SAR Measurements

SAR for body exposure configurations is measured in RC3 with the DUT configured to transmit at full rate on FCH with all other code channels disabled using TDSO / SO32. SAR for multiple code channels (FCH + SCH_n) is not required when the maximum average output of each RF channel is less than ¼ dB higher than that measured with FCH only. Otherwise, SAR is measured on the maximum output channel (FCH + SCH_n) with FCH at full rate and SCH_0 enabled at 9600 bps using the exposure configuration that results in the highest SAR for that channel with FCH only. When multiple code channels are enabled, the DUT output may shift by more than 0.5 dB and lead to higher SAR drifts and SCH dropouts. Body SAR was measured using TDSO / SO32 with power control bits in the "All Up"

Body SAR in RC1 is not required when the maximum average output of each channel is less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel in RC1; with Loopback Service Option SO55, at full rate, using the body exposure configuration that results in the highest SAR for that channel in RC3.

11.3.4 Handsets with EVDO

For handsets with Ev-Do capabilities, when the maximum average output of each channel in Rev. 0 is less than ¼ dB higher than that measured in RC3 (1x RTT), body SAR for EV-DO is not required. Otherwise, SAR for Rev. 0 is measured on the maximum output channel at 153.6 kbps using the body exposure configuration that results in the highest SAR for that channel in RC3. SAR for Rev. A is not required when the maximum average output of each channel is less than that measured in Rev. 0 or less than ¼ dB higher than that measured in RC3. Otherwise, SAR is measured on the maximum output channel for Rev. A using a Reverse Data Channel payload size of 4096 bits and a Termination Target of 16 slots defined for Subtype 2 Physical Layer configurations. A Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with the ACK Channel transmitting in all slots would be configured in the downlink for both Rev. 0 and Rev. A.

11.3.5 Body SAR Measurements for EVDO Hotspot

Hotspot Body SAR is measured using Subtype 0/1 Physical Layer configurations for Rev. 0. SAR for Subtype 2 Physical layer configurations is not required for Rev. A when the maximum average output of each RF channels is less than that measured in Subtype 0/1 Physical layer configurations. Otherwise, SAR is measured on the maximum output channel for Rev. A using the exposure configuration that results in the highest SAR for the RF channels in Rev. 0. The AT is tested with a Reverse Data Channel rate of 153.6 kbps in Subtype 0/1 Physical Layer configurations; and a Reverse Data Channel payload size of 4096 bits and Termination Target of 16 slots in Subtype 2 Physical Layer configurations. Both FTAP and FETAP are configured with a Forward Traffic Channel data rate corresponding to the 2-slot version of 307.2 kbps with the ACK Channel transmitting in all slots. AT power control should be in “All Bits Up” conditions for TAP/ETAP.

11.4 SAR Measurements for 802.11 modes

The SAR test procedures for devices with 802.11 modes are adopted from FCC KDB 248227 publication.

Normal network operating configurations are not suitable for measuring the SAR of 802.11 modes. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices is therefore measured using chipset based test mode software to ensure the results are consistent and reliable.

11.4.1 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. According to KDB 248227, the device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.

The test frequencies correspond to actual channel frequencies defined for domestic use. If the device has switched diversity, SAR is measured with only one antenna transmitting at a time during each SAR measurement, with a fixed modulation and data rate, and antenna pattern. The same data pattern was used for all measurements.

11.4.2 2.4 GHz and 5 GHz Frequency Channel Requirements

802.11 modes are tested independently according to the service requirements in each frequency band.

802.11a is tested for UNII operations on channels listed on Table 11-3 with a check mark. These are referred to as the “default test channels”. Adjacent channels marked with an asterisk represent channels to be tested if the powers are greater than that of the check marked channels.

If the SAR < 0.8 W/kg within a colored 5 GHz band, then only testing SAR at the highest output channel is required.

2.4 GHz 802.11g/n mode was evaluated only if the output power was 0.25 dB higher than the 802.11b mode. 5 GHz 802.11n mode was evaluated only if the output power was 0.25 dB higher than 802.11a mode.

Table 11-3 IEEE 802.11 Default Test Channels

Mode		GHz	Channel	Turbo Channel	“Default Test Channels”			
					§15.247		UNII	
					802.11b	802.11g		
802.11 b/g		2.412	1		√	∇		
		2.437	6	6	√	∇		
		2.462	11		√	∇		
802.11a	UNII	5.18	36				√	
		5.20	40	42 (5.21 GHz)				*
		5.22	44					*
		5.24	48	50 (5.25 GHz)			√	
		5.26	52				√	
		5.28	56	58 (5.29 GHz)				*
		5.30	60					*
		5.32	64				√	
		5.500	100	Unknown				*
		5.520	104				√	
		5.540	108					*
		5.560	112					*
		5.580	116				√	
		5.600	120					*
		5.620	124				√	
		5.640	128					*
		5.660	132					*
		5.680	136				√	
		5.700	140					*
	UNII or §15.247	5.745	149		√		√	
		5.765	153	152 (5.76 GHz)		*		*
		5.785	157		√			*
		5.805	161	160 (5.80 GHz)		*	√	
	§15.247	5.825	165		√			

12 FCC PERSONAL WIRELESS ROUTER CONFIGURATIONS

12.1 Personal Wireless Router Considerations

The FCC has provided guidance in KDB Publication 941225 D06 for battery-operated handsets that have the capability to transmit and receive Internet connectivity through simultaneous transmission of WIFI in conjunction with another transmitter. SAR test considerations are based on a standard composite test separation distance of 10 mm from the edges, front and back of the device (L x W ≥ 9cm x 5cm) with antennas 2.5 cm or closer to the edge of the device. This has been determined by the FCC from general mixed use conditions for this type of devices. If the device is smaller, then a 5mm distance is required.

12.2 SAR Test Setup for Personal Wireless Router Features

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions. Therefore, SAR must be evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedures. The "Portable Hotspot" feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.

The standalone head and body-worn accessory SAR data for the applicable voice and data configurations in each wireless mode and frequency band is analyzed separately to determine simultaneous transmission SAR test exclusion according to the procedures in KDB 648474 publication.

12.3 Head and Body-Worn Accessory SAR with Hotspot Mode

When hotspot mode use is not restricted during voice calls, SAR compliance is addressed for the simultaneous voice and hotspot data configurations in both head and body-worn accessory use conditions.

This model supports Simultaneous Voice and Data with CDMA Voice and LTE data. Additionally, CDMA voice can transmit with LTE Hotspot without restriction.

12.4 Power Reduction for Portable Hotspot Mode

When portable hotspot mode is enabled, **the hotspot mode itself does not activate any power reduction scheme for SAR**.

12.5 Applicable Router Modes

This device supports router operations for CDMA/EVDO and LTE modes. In addition to these standard wireless router modes, CDMA 1X-RTT voice may operate in conjunction with LTE WIFI Hotspot. Therefore, CDMA 1X-RTT was tested for hotspot SAR test conditions per 941225 D06.

12.6 SAR Test Configurations

Table 12-1
Hotspot Sides for SAR Testing

Mobile Hotspot Sides for SAR Testing per KDB 941225 D06						
Mode	Back	Front	Top	Bottom	Right	Left
Cell. CDMA	Yes	Yes	No	Yes	No	Yes
PCS CDMA	Yes	Yes	No	Yes	No	Yes
LTE	Yes	Yes	No	Yes	Yes	No
2.4 GHz WLAN	Yes	Yes	No	No	No	Yes

Particular DUT edges were not necessary to be evaluated for Wireless Router SAR if the edges were greater than 2.5 cm from the transmitting antenna according to FCC KDB Publication 941225 D06 guidance, page 2.

Note: When Hotspot mode is active, all 5 GHz WIFI bands are disabled by manufacturer software. Therefore, the 5 GHz operations are not considered for Hotspot SAR.

Figure 12-1
Identification of Sides/Edges for SAR Testing (Back View)

13 FCC MULTI-TX AND ANTENNA SAR CONSIDERATIONS

13.1 Introduction

The following procedures adopted from "FCC SAR Considerations for Cell Phones with Multiple Transmitters" FCC KDB Publication 648474 are applicable to handsets with built-in unlicensed transmitters such as 802.11a/b/g/n and Bluetooth devices which may simultaneously transmit with the licensed transmitter.

13.2 FCC Power Tables & Conditions

	2.45	5.15 - 5.35	5.47 - 5.85	GHz
P_{Ref}	12	6	5	mW
Device output power should be rounded to the nearest mW to compare with values specified in this table.				

Figure 13-1
Output Power Thresholds for Unlicensed Transmitters

	Individual Transmitter	Simultaneous Transmission
Licensed Transmitters	Routine evaluation required	SAR not required: Unlicensed only ○ when stand-alone 1-g SAR is not required and antenna is ≥ 5 cm from other antennas Licensed & Unlicensed ○ when the sum of the 1-g SAR is < 1.6 W/kg for all simultaneous transmitting antennas ○ when SAR to peak location separation ratio of simultaneous transmitting antenna pair is < 0.3 SAR required: Licensed & Unlicensed antenna pairs with SAR to peak location separation ratio ≥ 0.3; test is only required for the configuration that results in the highest SAR in stand-alone configuration for each wireless mode and exposure condition Note: simultaneous transmission exposure conditions for head and body can be different for different style phones; therefore, different test requirements may apply
Unlicensed Transmitters	When there is no simultaneous transmission – ○ output ≤ 60/f: SAR not required ○ output > 60/f: stand-alone SAR required When there is simultaneous transmission – Stand-alone SAR not required when ○ output ≤ 2·P_{Ref} and antenna is ≥ 5.0 cm from other antennas ○ output ≤ P_{Ref} and antenna is ≥ 2.5 cm from other antennas ○ output ≤ P_{Ref} and antenna is < 2.5 cm from other antennas, each with either output power ≤ P_{Ref} or 1-g SAR < 1.2 W/kg Otherwise stand-alone SAR is required When stand-alone SAR is required ○ test SAR on highest output channel for each wireless mode and exposure condition ○ if SAR for highest output channel is > 50% of SAR limit, evaluate all channels according to normal procedures	

Figure 13-2
SAR Evaluation Requirements for Multiple Transmitter Handsets

14 OUTPUT POWER MEASUREMENTS

14.1 LTE Mode

Table 14-1
Band 13 LTE RF Output Conducted Powers

Frequency	BW	Modulation	RB Size	RB Offset	Maximum Average Power [dBm]	Target MPR [dB]	MPR Allowed per 3GPP [dB]
782 MHz	10 MHz	QPSK	1	0	22.79	0	0
		16QAM	1	0	21.77	1	0-1
		QPSK	1	49	23.13	0	0
		16QAM	1	49	22.03	1	0-1
		QPSK	25	12	23.32	0	0-1
		16QAM	25	12	22.24	1	0-2
		QPSK	50	0	23.30	0	0-1
		16QAM	50	0	22.12	1	0-2

Note: Differences from expected MPR levels are a result of measurement uncertainty. Per the manufacturer, the measured powers are acceptable for use within the intended network infrastructure. Powers measured below the expected levels on the devices were extrapolated to ensure compliance for SAR.

LTE test configurations are determined according to SAR Test Considerations for LTE handsets and Data Modems KDB 941225 D05 Publication:

- Per KDB Publication 941225 D05 Page 4, 3) A), QPSK with 50% RB is required for the highest bandwidth (10 MHz).
- Per KDB Publication 941225 D05 Page 4, 3) B), QPSK with 1 RB for both channel edges are required for the highest bandwidth (10 MHz).
- Per KDB Publication 941225 D05 Page 4, 4) A), 16QAM with 50% RB is required for the highest bandwidth (10 MHz).
- Per KDB Publication 941225 D05 Page 4, 4) B), 16QAM with 1RB for both channel edges are required for the highest bandwidth (10 MHz).
- Per KDB Publication 941225 D05 Page 4, A) I), 100% RB Allocation is not required to be tested since SAR is not > 1.45 W/kg for the highest bandwidth (10 MHz).

Figure 14-1
Power Measurement Setup

14.2 CDMA Conducted Powers

Table 14-2
CDMA/EVDO RF Output Conducted Powers

Band	Channel	SO55 [dBm]	SO55 [dBm]	TDSO SO32 [dBm]	TDSO SO32 [dBm]	1x EvDO Rev. 0 [dBm]	1x EvDO Rev. A [dBm]
	F-RC	RC1	RC3	FCH+SCH	FCH	(RTAP)	(RETAP)
Cellular	1013	24.92	24.93	25.02	25.17	25.16	25.06
	384	25.16	25.09	25.12	25.13	25.26	25.07
	777	25.00	24.93	25.04	25.06	25.24	25.07
PCS	25	25.24	25.19	25.46	24.25	24.61	24.72
	600	25.23	25.27	25.48	25.23	24.66	24.53
	1175	25.00	24.89	25.44	24.48	24.73	24.61

RC1 is only applicable for IS-95 compatibility

Per KDB Publication 941225 D01:

1. Head SAR was tested with SO55 RC3. SO55 RC1 was not required since the average output power was not more than 0.25 dB than the SO55 RC3 powers.
2. Body-Worn SAR was tested with TDSO32 FCH. **TDSO32 FCH+SCH SAR tests were required since the maximum average output powers was more than 0.25 dB higher than the maximum average powers forTDSO32 FCH for PCS Band.** EVDO SAR (for Cell. And PCS Bands) and TDSO FCH+SCH SAR (for Cell. Band) tests were not required since the average output power was not more than 0.25 dB higher than the TDSO32 FCH powers.
3. Hotspot SAR was tested with EVDO Rev 0. For PCS Band, TDSO32 SAR tests were additionally required since the average output power was more than 0.25 dB higher than EVDO Rev. 0 powers. EVDO Rev A (for Cell. And PCS bands) and TDSO32 (for Cell. Band) SAR tests were not required since the average output power was not more than 0.25 dB higher than the EVDO Rev. 0 powers.

Figure 14-2
Power Measurement Setup

14.3 WIFI Mode

Table 14-3
IEEE 802.11b Average RF Power

Mode	Freq [MHz]	Channel	Conducted Power [dBm] Data Rate [Mbps]			
			1	2	5.5	11
802.11b	2412	1	13.01	13.04	13.13	13.05
802.11b	2437	6	13.67	13.54	13.72	13.64
802.11b	2462	11	**13.83**	13.82	13.89	13.78

Table 14-4
IEEE 802.11g Average RF Power

Mode	Freq [MHz]	Channel	Conducted Power [dBm] Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11g	2412	1	13.65	13.71	13.73	13.67	13.65	13.65	13.67	13.60
802.11g	2437	6	14.12	14.09	14.06	14.15	14.10	14.06	14.05	14.10
802.11g	2462	11	**14.30**	14.33	14.40	14.33	14.33	14.28	14.35	14.28

Table 14-5
IEEE 802.11n Average RF Power

Mode	Freq [MHz]	Channel	Conducted Power [dBm] Data Rate [Mbps]							
			6.5	13	20	26	39	52	58	65
802.11n	2412	1	11.77	11.61	11.74	11.76	11.77	11.72	11.79	11.79
802.11n	2437	6	12.12	12.20	12.18	12.25	12.17	12.14	12.25	12.18
802.11n	2462	11	12.45	12.39	12.48	12.40	12.42	12.39	12.45	12.61

Table 14-6
IEEE 802.11a Average RF Power

Mode	Freq [MHz]	Channel	Conducted Power [dBm] Data Rate [Mbps]							
			6	9	12	18	24	36	48	54
802.11a	*5180*	*36*	13.46	13.50	13.48	13.61	13.56	13.52	13.57	13.63
802.11a	5200	40	13.44	13.53	13.50	13.58	13.62	13.63	13.60	13.63
802.11a	5220	44	**13.53**	13.56	13.58	13.53	13.61	13.55	13.58	13.72
802.11a	*5240*	*48*	13.45	13.50	13.51	13.58	13.49	13.53	13.61	13.64
802.11a	*5260*	*52*	13.43	13.61	13.44	13.61	13.54	13.50	13.58	13.58
802.11a	5280	56	13.45	13.45	13.44	13.58	13.56	13.52	13.56	13.56
802.11a	5300	60	**13.46**	13.40	13.42	13.50	13.54	13.57	13.54	13.65
802.11a	*5320*	*64*	13.42	13.45	13.44	13.55	13.48	13.48	13.52	13.57
802.11a	5500	100	13.71	13.81	13.75	13.85	13.85	13.86	13.82	13.90
802.11a	*5520*	*104*	**13.72**	13.75	13.78	13.85	13.80	13.80	13.82	13.79
802.11a	5540	108	13.65	13.66	13.75	13.71	13.77	13.71	13.82	13.68
802.11a	5560	112	13.60	13.70	13.65	13.70	13.70	13.67	13.73	13.69
802.11a	*5580*	*116*	13.61	13.60	13.61	13.72	13.62	13.70	13.75	13.72
802.11a	5600	120	13.52	13.55	13.65	13.60	13.55	13.62	13.68	13.62
802.11a	*5620*	*124*	13.46	13.45	13.61	13.55	13.55	13.48	13.65	13.58
802.11a	5640	128	13.44	13.50	13.48	13.55	13.56	13.45	13.53	13.45
802.11a	5660	132	13.40	13.41	13.37	13.47	13.39	13.40	13.52	13.44
802.11a	*5680*	*136*	13.34	13.45	13.46	13.48	13.40	13.36	13.51	13.45
802.11a	5700	140	13.34	13.36	13.35	13.40	13.30	13.42	13.44	13.50
802.11a	*5745*	*149*	**14.12**	14.17	14.20	14.12	14.18	14.20	14.25	14.28
802.11a	5765	153	14.11	14.15	14.12	14.22	14.15	14.15	14.21	14.20
802.11a	*5785*	*157*	14.05	14.07	14.10	14.20	14.17	14.06	14.20	14.11
802.11a	*5805*	*161*	14.00	14.10	14.11	14.21	14.15	14.12	14.12	14.08
802.11a	5825	165	13.97	14.08	14.08	14.20	14.11	14.04	14.15	14.20

Table 14-7
IEEE 802.11n Average RF Power

Mode	Freq	Channel	Conducted Power [dBm]							
			Data Rate [Mbps]							
	[MHz]		6.5	13	20	26	39	52	58	65
802.11n	*5180*	*36*	12.40	12.45	12.50	12.53	12.57	12.63	12.70	12.68
802.11n	5200	40	12.41	12.55	12.62	12.66	12.67	12.65	12.64	12.69
802.11n	5220	44	12.44	12.54	12.60	12.61	12.62	12.65	12.69	12.67
802.11n	*5240*	*48*	12.50	12.52	12.56	12.55	12.60	12.62	12.67	12.71
802.11n	*5260*	*52*	12.35	12.40	12.50	12.61	12.58	12.60	12.65	12.68
802.11n	5280	56	12.44	12.50	12.55	12.55	12.59	12.54	12.58	12.63
802.11n	5300	60	12.41	12.46	12.45	12.50	12.57	12.56	12.62	12.61
802.11n	*5320*	*64*	12.35	12.51	12.52	12.54	12.55	12.65	12.60	12.71
802.11n	5500	100	12.60	12.56	12.66	12.61	12.75	12.76	12.75	12.70
802.11n	*5520*	*104*	12.68	12.67	12.70	12.71	12.70	12.70	12.70	12.76
802.11n	5540	108	12.65	12.62	12.65	12.62	12.77	12.75	12.83	12.81
802.11n	5560	112	12.62	12.55	12.67	12.56	12.65	12.62	12.70	12.71
802.11n	*5580*	*116*	12.53	12.59	12.55	12.56	12.68	12.66	12.64	12.65
802.11n	5600	120	12.31	12.40	12.45	12.48	12.58	12.61	12.60	12.63
802.11n	*5620*	*124*	12.27	12.37	12.48	12.52	12.55	12.56	12.57	12.55
802.11n	5640	128	12.21	12.30	12.37	12.46	12.55	12.54	12.41	12.45
802.11n	5660	132	12.18	12.25	12.40	12.40	12.45	12.47	12.50	12.51
802.11n	*5680*	*136*	12.21	12.23	12.31	12.30	12.41	12.45	12.46	12.49
802.11n	5700	140	12.17	12.23	12.31	12.33	12.32	12.35	12.40	12.42
802.11n	*5745*	*149*	11.92	12.00	12.08	12.16	12.10	12.11	12.15	12.20
802.11n	5765	153	11.90	12.00	12.10	12.15	12.05	12.04	12.12	12.07
802.11n	*5785*	*157*	11.90	11.89	11.95	12.00	12.01	12.03	12.15	12.01
802.11n	*5805*	*161*	11.86	11.90	11.84	11.92	12.06	12.00	12.10	12.11
802.11n	5825	165	11.85	11.82	11.94	11.95	11.86	11.86	11.95	12.00

Justification for reduced test configurations for WIFI channels per KDB Publication 248227 and April 2010 FCC/TCB Meeting Notes:

- For 2.4 GHz, highest average RF output power channel for the lowest data rate were selected for SAR evaluation for IEEE 802.11b. IEEE 802.11g was tested since the average output powers were more than 0.25 dB greater than IEEE 802.11b mode. IEEE 802.11n modes and higher data rates were not investigated since the average output powers were not greater than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11b/g modes.
- For 5 GHz, highest average RF output power channel for the lowest data rate were selected for SAR evaluation. Other IEEE 802.11 modes (including 802.11n) were not investigated since the average output powers were not greater than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11a mode.
- The bolded configurations above were tested for SAR.

Figure 14-3
Power Measurement Setup

15 SYSTEM VERIFICATION

15.1 Tissue Verification

Table 15-1
Measured Tissue Properties

Calibrated for Tests Performed on:	Tissue Type	Measured Frequency (MHz)	Measured Conductivity, σ (S/m)	Measured Dielectric Constant, ε	TARGET Conductivity, σ (S/m)	TARGET Dielectric Constant, ε	% dev σ	% dev ε
07/29/2011	750H	725	0.887	43.10	0.888	42.033	-0.06%	2.53%
		740	0.901	42.99	0.889	41.953	1.40%	2.46%
		755	0.913	42.73	0.891	41.876	2.44%	2.04%
		770	0.925	42.48	0.892	41.806	3.70%	1.61%
		785	0.937	42.33	0.894	41.735	4.81%	1.43%
07/29/2011	750B	725	0.964	57.05	0.960	55.817	0.45%	2.21%
		740	0.970	57.17	0.961	55.733	0.90%	2.58%
		755	0.991	57.09	0.963	55.649	2.93%	2.59%
		770	1.003	56.78	0.964	55.564	4.10%	2.19%
		785	1.012	56.75	0.965	55.480	4.86%	2.29%
07/25/2011	835H	820	0.856	40.28	0.898	41.571	-4.68%	-3.11%
		835	0.859	40.38	0.900	41.500	-4.56%	-2.70%
		850	0.871	39.86	0.916	41.500	-4.91%	-3.95%
08/21/2011	835H	820	0.880	42.86	0.898	41.571	-2.00%	3.10%
		835	0.902	42.59	0.900	41.500	0.22%	2.63%
		850	0.912	42.32	0.916	41.500	-0.44%	1.98%
07/25/2011	835B	820	0.974	54.95	0.969	55.284	0.52%	-0.60%
		835	0.986	54.92	0.970	55.200	1.65%	-0.51%
		850	0.999	54.83	0.988	55.154	1.11%	-0.59%
08/21/2011	835B	820	0.954	52.82	0.969	55.284	-1.55%	-4.46%
		835	0.968	52.74	0.970	55.200	-0.21%	-4.46%
		850	0.971	52.49	0.988	55.154	-1.72%	-4.83%
07/26/2011	1900H	1850	1.397	41.39	1.400	40.000	-0.21%	3.48%
		1880	1.444	41.48	1.400	40.000	3.14%	3.70%
		1910	1.453	41.42	1.400	40.000	3.79%	3.55%
07/25/2011	1900B	1850	1.463	53.14	1.520	53.300	-3.75%	-0.30%
		1880	1.496	53.15	1.520	53.300	-1.58%	-0.28%
		1910	1.526	53.26	1.520	53.300	0.39%	-0.08%
08/01/2011	2450H	2401	1.710	39.47	1.758	39.298	-2.73%	0.44%
		2450	1.784	38.63	1.800	39.200	-0.89%	-1.45%
		2499	1.856	39.00	1.852	39.135	0.22%	-0.34%
08/01/2011	2450B	2401	1.865	52.19	1.903	52.765	-2.00%	-1.09%
		2450	1.933	52.07	1.950	52.700	-0.87%	-1.20%
		2499	2.004	51.85	2.019	52.638	-0.74%	-1.50%
07/27/2011	5200H-5800H	5170	4.789	35.31	4.629	36.030	3.46%	-2.00%
		5210	4.808	35.26	4.670	35.990	2.96%	-2.03%
		5250	4.883	35.16	4.710	35.950	3.67%	-2.20%
		5270	4.879	35.20	4.730	35.930	3.15%	-2.03%
		5310	4.937	35.12	4.770	35.890	3.50%	-2.15%
		5350	4.978	34.99	4.810	35.850	3.49%	-2.40%
		5470	5.114	34.75	4.934	35.695	3.65%	-2.65%
		5510	5.160	34.75	4.976	35.635	3.70%	-2.48%
		5550	5.216	34.71	5.018	35.575	3.95%	-2.43%
		5570	5.236	34.63	5.039	35.545	3.91%	-2.57%
		5610	5.287	34.49	5.080	35.490	4.07%	-2.82%
		5650	5.329	34.52	5.120	35.450	4.08%	-2.62%
		5670	5.352	34.50	5.140	35.430	4.12%	-2.62%
		5710	5.390	34.48	5.180	35.390	4.05%	-2.57%
		5750	5.415	34.28	5.220	35.350	3.74%	-3.03%
		5770	5.459	34.25	5.240	35.330	4.18%	-3.06%
		5810	5.537	34.18	5.281	35.290	4.85%	-3.15%
		5850	5.567	34.12	5.323	35.250	4.58%	-3.21%
07/27/2011	5200B-5800B	5170	5.293	47.88	5.264	49.055	0.55%	-2.40%
		5210	5.315	47.88	5.311	49.001	0.08%	-2.29%
		5250	5.395	47.80	5.358	48.946	0.69%	-2.34%
		5270	5.404	47.58	5.381	48.919	0.43%	-2.74%
		5310	5.429	47.66	5.428	48.865	0.02%	-2.47%
		5350	5.537	47.61	5.470	48.811	1.22%	-2.46%
		5470	5.701	47.44	5.615	48.648	1.53%	-2.48%
		5510	5.728	47.30	5.661	48.594	1.18%	-2.66%
		5550	5.798	47.30	5.708	48.539	1.58%	-2.55%
		5570	5.822	47.32	5.731	48.512	1.59%	-2.46%
		5610	5.840	47.10	5.778	48.458	1.07%	-2.80%
		5650	5.922	47.05	5.825	48.404	1.67%	-2.80%
		5670	5.930	47.05	5.848	48.376	1.40%	-2.74%
		5710	5.984	47.07	5.895	48.322	1.51%	-2.59%
		5750	6.061	46.96	5.942	48.268	2.00%	-2.71%
		5770	6.109	46.76	5.965	48.241	2.41%	-3.07%
		5810	6.162	46.89	6.012	48.186	2.50%	-2.69%
		5850	6.206	46.86	6.058	48.132	2.44%	-2.64%

Note: KDB Publication 450824 was ensured to be applied for probe calibration frequencies greater than or equal to 50 MHz of the DUT frequencies, if applicable.

The above measured tissue parameters were used in the DASY software to perform interpolation via the DASY software to determine actual dielectric parameters at the test frequencies (per IEEE 1528 6.6.1.2). The tissue parameters on the SAR test plots may slightly differ from that indicated on table above since the DASY software rounds to three significant digits when reporting the information on the plots.

Probe calibration used within ±100 MHz of the test frequency between 5.47 - 5.85 GHz is acceptable per KDB Publication 865664 since the design of the SAR probe supports the extended frequency, provided the appropriate DASY software version is used for the tests, and the expanded calibration uncertainty (k=2) is less than or equal to 15% (See SAR probe calibration certificate for this information). The dielectric and conductivities measured are within 10% and 5% respectively of the target parameters specified in Supplement C 01-01.

15.2 Measurement Procedure for Tissue verification

1) The network analyzer and probe system was configured and calibrated.
2) The probe was immersed in the sample which was placed in a nonmetallic container. Trapped air bubbles beneath the flange were minimized by placing the probe at a slight angle.
3) The complex admittance with respect to the probe aperture was measured
4) The complex relative permittivity , for example from the below equation (Pournaropoulos and Misra):

$$Y = \frac{j2\omega\varepsilon_r\varepsilon_0}{\left[\ln(b/a)\right]^2}\int_a^b\int_a^b\int_0^\pi \cos\phi' \frac{\exp\left[-j\omega r(\mu_0\varepsilon_r^{'}\varepsilon_0)^{1/2}\right]}{r} d\phi' d\rho' d\rho$$

where *Y* is the admittance of the probe in contact with the sample, the primed and unprimed coordinates refer to source and observation points, respectively, $r^2 = \rho^2 + \rho'^2 - 2\rho\rho'\cos\phi'$, ω is the angular frequency, and $j = \sqrt{-1}$.

15.3 Test System Verification

Prior to assessment, the system is verified to ±10% of the manufacturer SAR measurement on the reference dipole at the time of calibration.

Table 15-2
System Verification Results

System Verification TARGET & MEASURED											
Date:	Amb. Temp (°C)	Liquid Temp (°C)	Input Power (W)	Tissue Frequency (MHz)	Dipole SN	Probe SN	Tissue Type	Measured SAR_{1g} (W/kg)	1 W Target SAR_{1g} (W/kg)	1 W Normalized SAR_{1g} (W/kg)	Deviation (%)
07/29/2011	24.0	23.5	0.250	750	1003	3022	Head	2.16	8.370	8.640	3.23%
07/29/2011	24.2	23.1	0.250	750	1003	3022	Body	2.26	8.850	9.040	2.15%
07/25/2011	23.6	21.8	0.063	835	4d047	3258	Head	0.609	9.530	9.6667	1.43%
08/21/2011	22.5	21.6	0.250	835	4d047	3258	Head	2.3	9.530	9.200	-3.46%
07/25/2011	24.0	22.2	0.063	835	4d047	3258	Body	0.649	9.850	10.3016	4.58%
08/21/2011	22.4	21.0	0.250	835	4d047	3258	Body	2.54	9.850	10.160	3.15%
07/26/2011	23.8	21.9	0.100	1900	502	3022	Head	4.16	40.200	41.600	3.48%
07/25/2011	23.7	21.8	0.100	1900	502	3022	Body	4.12	41.100	41.200	0.24%
08/01/2011	23.7	22.3	0.040	2450	797	3550	Head	2.3	53.300	57.500	7.88%
08/01/2011	23.9	22.5	0.025	2450	797	3258	Body	1.32	52.300	52.800	0.96%
07/27/2011	22.3	20.4	0.025	5200	1057	3550	Head	2.24	83.100	89.600	7.82%
07/27/2011	22.2	20.5	0.100	5200	1057	3550	Body	8.11	77.700	81.100	4.38%
07/27/2011	22.3	20.4	0.100	5500	1057	3550	Head	9.76	90.100	97.600	8.32%
07/27/2011	22.3	20.7	0.100	5500	1057	3550	Body	7.9	84.400	79.000	-6.40%
07/27/2011	22.6	20.8	0.100	5800	1057	3550	Head	9.04	82.900	90.400	9.05%
07/27/2011	22.7	20.9	0.100	5800	1057	3550	Body	7.72	75.000	77.200	2.93%

\Note: Per KDB Publication 865664, when a reference dipole is not defined within ±100MHz of the test frequency, the system verification may be conducted within ± 200 MHz of the center frequency of the measurement frequencies if the SAR probe calibration is valid and the same tissue-equivalent matter is used for verification and test measurements.

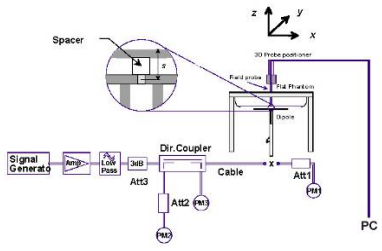

Figure 15-1
System Verification Setup Diagram

Figure 15-2
System Verification Setup Photo

16 SAR DATA SUMMARY

16.1 Head SAR Test Data

Table 16-1
Cellular CDMA Head SAR Results

MEASUREMENT RESULTS									
FREQUENCY		Mode/Band	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	SAR (1g)
MHz	Ch.								(W/kg)
836.52	384	Cell. CDMA	25.09	-0.04	Right	Touch	Standard	FCC #1	0.241
836.52	384	Cell. CDMA	25.09	-0.04	Right	Tilt	Standard	FCC #1	0.163
836.52	384	Cell. CDMA	25.09	0.00	Left	Touch	Standard	FCC #1	0.265
836.52	384	Cell. CDMA	25.09	0.00	Left	Tilt	Standard	FCC #1	0.170
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**Head 1.6 W/kg (mW/g) averaged over 1 gram**				

Table 16-2
PCS CDMA Head SAR Results

MEASUREMENT RESULTS									
FREQUENCY		Mode/Band	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	SAR (1g)
MHz	Ch.								(W/kg)
1880.00	600	PCS CDMA	25.27	-0.05	Right	Touch	Standard	FCC #2	0.309
1880.00	600	PCS CDMA	25.27	-0.07	Right	Tilt	Standard	FCC #2	0.451
1880.00	600	PCS CDMA	25.27	-0.07	Left	Touch	Standard	FCC #2	0.451
1880.00	600	PCS CDMA	25.27	-0.07	Left	Tilt	Standard	FCC #2	0.370
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population					**Head 1.6 W/kg (mW/g) averaged over 1 gram**				

Table 16-3
LTE Head SAR Results

MEASUREMENT RESULTS													
FREQUENCY		Mode/Band	Modulation	Conducted Power [dBm]	Power Drift [dB]	Target MPR [dB]	Side	Test Position	# of Resource Blocks	RB Offset	Battery Type	Serial Number	SAR (1g)
MHz	Ch.												(W/kg)
782.00	23230	LTE	QPSK	23.32	0.05	0	Right	Touch	25	12	Standard	FCC #1	0.197
782.00	23230	LTE	QPSK	22.79	-0.03	0	Right	Touch	1	0	Standard	FCC #1	0.242
782.00	23230	LTE	QPSK	23.13	-0.02	0	Right	Touch	1	49	Standard	FCC #1	0.201
782.00	23230	LTE	16QAM	22.24	0.02	1	Right	Touch	25	12	Standard	FCC #1	0.162
782.00	23230	LTE	16QAM	21.77	0.01	1	Right	Touch	1	0	Standard	FCC #1	0.192
782.00	23230	LTE	16QAM	22.03	0.01	1	Right	Touch	1	49	Standard	FCC #1	0.164
782.00	23230	LTE	QPSK	23.32	0.01	0	Right	Tilt	25	12	Standard	FCC #1	0.099
782.00	23230	LTE	QPSK	22.79	0.04	0	Right	Tilt	1	0	Standard	FCC #1	0.117
782.00	23230	LTE	QPSK	23.13	-0.07	0	Right	Tilt	1	49	Standard	FCC #1	0.108
782.00	23230	LTE	16QAM	22.24	-0.01	1	Right	Tilt	25	12	Standard	FCC #1	0.083
782.00	23230	LTE	16QAM	21.77	0.03	1	Right	Tilt	1	0	Standard	FCC #1	0.092
782.00	23230	LTE	16QAM	22.03	0.02	1	Right	Tilt	1	49	Standard	FCC #1	0.086
782.00	23230	LTE	QPSK	23.32	0.08	0	Left	Touch	25	12	Standard	FCC #1	0.146
782.00	23230	LTE	QPSK	22.79	-0.05	0	Left	Touch	1	0	Standard	FCC #1	0.176
782.00	23230	LTE	QPSK	23.13	-0.03	0	Left	Touch	1	49	Standard	FCC #1	0.146
782.00	23230	LTE	16QAM	22.24	-0.09	1	Left	Touch	25	12	Standard	FCC #1	0.116
782.00	23230	LTE	16QAM	21.77	-0.02	1	Left	Touch	1	0	Standard	FCC #1	0.131
782.00	23230	LTE	16QAM	22.03	0.02	1	Left	Touch	1	49	Standard	FCC #1	0.117
782.00	23230	LTE	QPSK	23.32	0.07	0	Left	Tilt	25	12	Standard	FCC #1	0.079
782.00	23230	LTE	QPSK	22.79	0.06	0	Left	Tilt	1	0	Standard	FCC #1	0.090
782.00	23230	LTE	QPSK	23.13	0.00	0	Left	Tilt	1	49	Standard	FCC #1	0.090
782.00	23230	LTE	16QAM	22.24	0.04	1	Left	Tilt	25	12	Standard	FCC #1	0.070
782.00	23230	LTE	16QAM	21.77	0.08	1	Left	Tilt	1	0	Standard	FCC #1	0.076
782.00	23230	LTE	16QAM	22.03	-0.05	1	Left	Tilt	1	49	Standard	FCC #1	0.076
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**							**Head** **1.6 W/kg (mW/g)** averaged over 1 gram						

Table 16-4
2.4 GHz WLAN Head SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	Data Rate (Mbps)	SAR (1g)
MHz	Ch.										(W/kg)
2462	11	IEEE 802.11b	DSSS	13.83	0.06	Right	Touch	Standard	FCC #1	1	0.009
2462	11	IEEE 802.11b	DSSS	13.83	0.02	Right	Tilt	Standard	FCC #1	1	0.002
2462	11	IEEE 802.11b	DSSS	13.83	-0.07	Left	Touch	Standard	FCC #1	1	0.013
2462	11	IEEE 802.11b	DSSS	13.83	-0.03	Left	Tilt	Standard	FCC #1	1	0.008
2462	11	IEEE 802.11g	OFDM	14.30	0.09	Right	Touch	Standard	FCC #1	6	0.032
2462	11	IEEE 802.11g	OFDM	14.30	-0.02	Right	Tilt	Standard	FCC #1	6	0.010
2462	11	IEEE 802.11g	OFDM	14.30	0.03	Left	Touch	Standard	FCC #1	6	0.042
2462	11	IEEE 802.11g	OFDM	14.30	0.02	Left	Tilt	Standard	FCC #1	6	0.020
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 16-5
5.2 GHz WLAN Head SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	Data Rate (Mbps)	SAR (1g)
MHz	Ch.										(W/kg)
5220	44	IEEE 802.11a	OFDM	13.53	-0.03	Right	Touch	Standard	FCC #1	6	0.026
5220	44	IEEE 802.11a	OFDM	13.53	-0.01	Right	Tilt	Standard	FCC #1	6	0.009
5220	44	IEEE 802.11a	OFDM	13.53	0.09	Left	Touch	Standard	FCC #1	6	0.027
5220	44	IEEE 802.11a	OFDM	13.53	0.01	Left	Tilt	Standard	FCC #1	6	0.021
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 16-6
5.3 GHz WLAN Head SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	Data Rate (Mbps)	SAR (1g)
MHz	Ch.										(W/kg)
5300	60	IEEE 802.11a	OFDM	13.46	-0.08	Right	Touch	Standard	FCC #1	6	0.014
5300	60	IEEE 802.11a	OFDM	13.46	0.04	Right	Tilt	Standard	FCC #1	6	0.006
5300	60	IEEE 802.11a	OFDM	13.46	0.07	Left	Touch	Standard	FCC #1	6	0.022
5300	60	IEEE 802.11a	OFDM	13.46	0.01	Left	Tilt	Standard	FCC #1	6	0.006
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 16-7
5.5 GHz WLAN Head SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	Data Rate (Mbps)	SAR (1g)
MHz	Ch.										(W/kg)
5520	104	IEEE 802.11a	OFDM	13.72	0.05	Right	Touch	Standard	FCC #1	6	0.010
5520	104	IEEE 802.11a	OFDM	13.72	0.02	Right	Tilt	Standard	FCC #1	6	0.007
5520	104	IEEE 802.11a	OFDM	13.72	-0.10	Left	Touch	Standard	FCC #1	6	0.017
5520	104	IEEE 802.11a	OFDM	13.72	0.06	Left	Tilt	Standard	FCC #1	6	0.003
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram					

Table 16-8
5.8 GHz WLAN Head SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Side	Test Position	Battery Type	Serial Number	Data Rate (Mbps)	SAR (1g)
MHz	Ch.										(W/kg)
5745	149	IEEE 802.11a	OFDM	14.12	0.06	Right	Touch	Standard	FCC #1	6	0.020
5745	149	IEEE 802.11a	OFDM	14.12	0.08	Right	Tilt	Standard	FCC #1	6	0.004
5745	149	IEEE 802.11a	OFDM	14.12	0.00	Left	Touch	Standard	FCC #1	6	0.027
5745	149	IEEE 802.11a	OFDM	14.12	0.01	Left	Tilt	Standard	FCC #1	6	0.001
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Head 1.6 W/kg (mW/g) averaged over 1 gram					

16.2 Body-Worn SAR Test Data

Table 16-9
CDMA Body-Worn SAR Results

MEASUREMENT RESULTS										
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Serial Number	Side	SAR (1g)
MHz	Ch.									(W/kg)
824.70	1013	Cell. CDMA	TDSO	25.17	-0.03	1.0 cm	Standard	FCC #1	back	1.110
824.70	1013	Cell. CDMA	TDSO	25.17	-0.01	1.0 cm	Extended	FCC #1	back	0.826
836.52	384	Cell. CDMA	TDSO	25.13	-0.01	1.0 cm	Standard	FCC #1	back	0.994
848.31	777	Cell. CDMA	TDSO	25.06	0.03	1.0 cm	Standard	FCC #1	back	0.915
1851.25	25	PCS CDMA	TDSO	24.25	-0.07	1.0 cm	Standard	FCC #2	back	0.557
1880.00	600	PCS CDMA	TDSO	25.23	0.04	1.0 cm	Standard	FCC #2	back	1.010
1908.75	1175	PCS CDMA	TDSO	24.48	-0.07	1.0 cm	Standard	FCC #2	back	1.050
1851.25	25	PCS CDMA	TDSO+SCH	25.46	0.00	1.0 cm	Standard	FCC #2	back	0.642
1880.00	600	PCS CDMA	TDSO+SCH	25.48	0.02	1.0 cm	Standard	FCC #2	back	1.110
1908.75	1175	PCS CDMA	TDSO+SCH	25.44	0.06	1.0 cm	Standard	FCC #2	back	1.150
1880.00	600	PCS CDMA	TDSO+SCH	25.48	0.06	1.0 cm	Extended	FCC #2	back	0.832
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram				

Table 16-10
LTE Body-Worn SAR Results

MEASUREMENT RESULTS													
FREQUENCY		Mode	Modulation	Conducted Power [dBm]	Power Drift [dB]	Target MPR [dB]	Spacing	# of Resource Blocks	RB Offset	Battery Type	Serial Number	Side	SAR (1g)
MHz	Ch.												(W/kg)
782	23230	LTE	QPSK	23.32	0.02	0	1.0 cm	25	12	Standard	FCC #1	back	0.325
782	23230	LTE	QPSK	22.79	0.08	0	1.0 cm	1	0	Standard	FCC #1	back	0.400
782	23230	LTE	QPSK	23.13	0.01	0	1.0 cm	1	49	Standard	FCC #1	back	0.342
782	23230	LTE	16 QAM	22.24	-0.03	1	1.0 cm	25	12	Standard	FCC #1	back	0.271
782	23230	LTE	16 QAM	21.77	0.08	1	1.0 cm	1	0	Standard	FCC #1	back	0.309
782	23230	LTE	16 QAM	22.03	-0.06	1	1.0 cm	1	49	Standard	FCC #1	back	0.280
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 16-11
WLAN Body-Worn SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Serial Number	Data Rate (Mbps)	Side	SAR (1g)
MHz	Ch.										(W/kg)
2462	11	IEEE 802.11b	DSSS	13.83	0.00	1.0 cm	Standard	FCC #1	1	back	0.004
2462	11	IEEE 802.11g	OFDM	14.30	0.08	1.0 cm	Standard	FCC #1	6	back	0.024
5220	44	IEEE 802.11a	OFDM	13.53	0.04	1.0 cm	Standard	FCC #1	6	back	0.078
5300	60	IEEE 802.11a	OFDM	13.46	-0.07	1.0 cm	Standard	FCC #1	6	back	0.073
5520	104	IEEE 802.11a	OFDM	13.72	-0.07	1.0 cm	Standard	FCC #1	6	back	0.100
5745	149	IEEE 802.11a	OFDM	14.12	-0.07	1.0 cm	Standard	FCC #1	6	back	0.132
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram					

16.3 Wireless Router SAR Data

Table 16-12
Cellular CDMA Hotspot Body SAR Results

MEASUREMENT RESULTS										
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Serial Number	Side	SAR (1g)
MHz	Ch.									(W/kg)
824.70	1013	Cell. CDMA	EVDO	25.16	-0.06	1.0 cm	Standard	FCC #1	back	1.140
824.70	1013	Cell. CDMA	EVDO	25.16	0.00	1.0 cm	Extended	FCC #1	back	0.760
836.52	384	Cell. CDMA	EVDO	25.26	0.01	1.0 cm	Standard	FCC #1	back	1.020
848.31	777	Cell. CDMA	EVDO	25.24	0.06	1.0 cm	Standard	FCC #1	back	0.923
836.52	384	Cell. CDMA	EVDO	25.26	-0.03	1.0 cm	Standard	FCC #1	front	0.345
836.52	384	Cell. CDMA	EVDO	25.26	-0.02	1.0 cm	Standard	FCC #1	bottom	0.119
836.52	384	Cell. CDMA	EVDO	25.26	0.00	1.0 cm	Standard	FCC #1	left	0.490
824.70	1013	Cell. CDMA	TDSO	25.17	-0.03	1.0 cm	Standard	FCC #1	back	1.110
836.52	384	Cell. CDMA	TDSO	25.13	-0.01	1.0 cm	Standard	FCC #1	back	0.994
848.31	777	Cell. CDMA	TDSO	25.06	0.03	1.0 cm	Standard	FCC #1	back	0.915
836.52	384	Cell. CDMA	TDSO	25.13	-0.01	1.0 cm	Standard	FCC #1	front	0.387
836.52	384	Cell. CDMA	TDSO	25.13	0.04	1.0 cm	Standard	FCC #1	bottom	0.132
836.52	384	Cell. CDMA	TDSO	25.13	-0.02	1.0 cm	Standard	FCC #1	left	0.608
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						Body 1.6 W/kg (mW/g) averaged over 1 gram				

Table 16-13
PCS CDMA Hotspot Body SAR Results

MEASUREMENT RESULTS										
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Serial Number	Side	SAR (1g)
MHz	Ch.									(W/kg)
1851.25	25	PCS CDMA	EVDO	24.61	0.08	1.0 cm	Standard	FCC #2	back	0.592
1880.00	600	PCS CDMA	EVDO	24.66	0.07	1.0 cm	Standard	FCC #2	back	1.060
1908.75	1175	PCS CDMA	EVDO	24.73	0.04	1.0 cm	Standard	FCC #2	back	1.090
1880.00	600	PCS CDMA	EVDO	24.66	-0.05	1.0 cm	Standard	FCC #2	front	0.455
1880.00	600	PCS CDMA	EVDO	24.66	0.04	1.0 cm	Standard	FCC #2	bottom	0.382
1880.00	600	PCS CDMA	EVDO	24.66	-0.09	1.0 cm	Standard	FCC #2	left	0.319
1851.25	25	PCS CDMA	TDSO	24.25	-0.07	1.0 cm	Standard	FCC #2	back	0.557
1880.00	600	PCS CDMA	TDSO	25.23	0.04	1.0 cm	Standard	FCC #2	back	1.010
1908.75	1175	PCS CDMA	TDSO	24.48	-0.07	1.0 cm	Standard	FCC #2	back	1.050
1880.00	600	PCS CDMA	TDSO	25.23	0.10	1.0 cm	Standard	FCC #2	front	0.449
1880.00	600	PCS CDMA	TDSO	25.23	0.00	1.0 cm	Standard	FCC #2	bottom	0.339
1880.00	600	PCS CDMA	TDSO	25.23	-0.03	1.0 cm	Standard	FCC #2	left	0.280
1851.25	25	PCS CDMA	TDSO+SCH	25.46	0.00	1.0 cm	Standard	FCC #2	back	0.642
1880.00	600	PCS CDMA	TDSO+SCH	25.48	0.02	1.0 cm	Standard	FCC #2	back	1.110
1908.75	1175	PCS CDMA	TDSO+SCH	25.44	0.06	1.0 cm	Standard	FCC #2	back	1.150
1880.00	600	PCS CDMA	TDSO+SCH	25.48	0.06	1.0 cm	Extended	FCC #2	back	0.832
1880.00	600	PCS CDMA	TDSO+SCH	25.48	0.06	1.0 cm	Standard	FCC #2	front	0.568
1880.00	600	PCS CDMA	TDSO+SCH	25.48	-0.06	1.0 cm	Standard	FCC #2	bottom	0.335
1880.00	600	PCS CDMA	TDSO+SCH	25.48	-0.06	1.0 cm	Standard	FCC #2	left	0.299
ANSI / IEEE C95.1 1992 - SAFETY LIMIT **Spatial Peak** **Uncontrolled Exposure/General Population**						**Body** **1.6 W/kg (mW/g)** averaged over 1 gram				

Table 16-14
LTE Hotspot Body SAR Results

MEASUREMENT RESULTS													
FREQUENCY		Mode	Modulation	Conducted Power [dBm]	Power Drift [dB]	Target MPR [dB]	Spacing	# of Resource Blocks	RB Offset	Battery Type	Serial Number	Side	SAR (1g)
MHz	Ch.												(W/kg)
782.00	23230	LTE	QPSK	23.32	0.02	0	1.0 cm	25	12	Standard	FCC #1	back	0.325
782.00	23230	LTE	QPSK	22.79	0.08	0	1.0 cm	1	0	Standard	FCC #1	back	0.400
782.00	23230	LTE	QPSK	23.13	0.01	0	1.0 cm	1	49	Standard	FCC #1	back	0.342
782.00	23230	LTE	16 QAM	22.24	-0.03	1	1.0 cm	25	12	Standard	FCC #1	back	0.271
782.00	23230	LTE	16 QAM	21.77	0.08	1	1.0 cm	1	0	Standard	FCC #1	back	0.309
782.00	23230	LTE	16 QAM	22.03	-0.06	1	1.0 cm	1	49	Standard	FCC #1	back	0.280
782.00	23230	LTE	QPSK	23.32	0.02	0	1.0 cm	25	12	Standard	FCC #1	front	0.203
782.00	23230	LTE	QPSK	22.79	0.08	0	1.0 cm	1	0	Standard	FCC #1	front	0.253
782.00	23230	LTE	QPSK	23.13	-0.07	0	1.0 cm	1	49	Standard	FCC #1	front	0.218
782.00	23230	LTE	16 QAM	22.24	-0.07	1	1.0 cm	25	12	Standard	FCC #1	front	0.166
782.00	23230	LTE	16 QAM	21.77	0.07	1	1.0 cm	1	0	Standard	FCC #1	front	0.202
782.00	23230	LTE	16 QAM	22.03	0.07	1	1.0 cm	1	49	Standard	FCC #1	front	0.185
782.00	23230	LTE	QPSK	23.32	0.02	0	1.0 cm	25	12	Standard	FCC #1	bottom	0.086
782.00	23230	LTE	QPSK	22.79	-0.03	0	1.0 cm	1	0	Standard	FCC #1	bottom	0.101
782.00	23230	LTE	QPSK	23.13	-0.07	0	1.0 cm	1	49	Standard	FCC #1	bottom	0.096
782.00	23230	LTE	16 QAM	22.24	0.00	1	1.0 cm	25	12	Standard	FCC #1	bottom	0.069
782.00	23230	LTE	16 QAM	21.77	0.05	1	1.0 cm	1	0	Standard	FCC #1	bottom	0.082
782.00	23230	LTE	16 QAM	22.03	-0.06	1	1.0 cm	1	49	Standard	FCC #1	bottom	0.083
782.00	23230	LTE	QPSK	23.32	-0.04	0	1.0 cm	25	12	Standard	FCC #1	right	0.363
782.00	23230	LTE	QPSK	22.79	-0.07	0	1.0 cm	1	0	Standard	FCC #1	right	0.418
782.00	23230	LTE	QPSK	23.13	0.00	0	1.0 cm	1	49	Standard	FCC #1	right	0.386
782.00	23230	LTE	16 QAM	22.24	-0.06	1	1.0 cm	25	12	Standard	FCC #1	right	0.308
782.00	23230	LTE	16 QAM	21.77	0.02	1	1.0 cm	1	0	Standard	FCC #1	right	0.330
782.00	23230	LTE	16 QAM	22.03	-0.02	1	1.0 cm	1	49	Standard	FCC #1	right	0.332
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram						

Table 16-15
Hotspot 2.4 GHz WLAN Body SAR Results

MEASUREMENT RESULTS											
FREQUENCY		Mode	Service	Conducted Power [dBm]	Power Drift [dB]	Spacing	Battery Type	Serial Number	Data Rate (Mbps)	Side	SAR (1g)
MHz	Ch.										(W/kg)
2462	11	IEEE 802.11b	DSSS	13.83	0.00	1.0 cm	Standard	FCC #1	1	back	0.004
2462	11	IEEE 802.11b	DSSS	13.83	0.10	1.0 cm	Standard	FCC #1	1	front	0.001
2462	11	IEEE 802.11b	DSSS	13.83	0.09	1.0 cm	Standard	FCC #1	1	left	0.007
2462	11	IEEE 802.11g	OFDM	14.30	0.08	1.0 cm	Standard	FCC #1	6	back	0.024
2462	11	IEEE 802.11g	OFDM	14.30	0.10	1.0 cm	Standard	FCC #1	6	front	0.006
2462	11	IEEE 802.11g	OFDM	14.30	0.03	1.0 cm	Standard	FCC #1	6	left	0.029
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population							Body 1.6 W/kg (mW/g) averaged over 1 gram				

16.4 SAR Testing Notes

General Notes:

1. The test data reported are the worst-case SAR value with the position set in a typical configuration. Test procedures used were according to FCC/OET Bulletin 65, Supplement C.
2. All modes of operation were investigated, and worst-case results are reported.
3. Batteries are fully charged for all readings.
4. Tissue parameters and temperatures are listed on the SAR plots.
5. Liquid tissue depth was at least 15.0 cm.
6. Device was tested using a fixed spacing for body-worn testing. A separation distance of **10 mm** was tested because the manufacturer has determined that there will be body-worn accessories available in the marketplace for users to support this RF Exposure requirement.
7. Samples tested for CDMA, WIFI, and LTE were electrically identical per the applicant.
8. **Batteries**: Per KDB Inquiry 428577, the most conservative battery (standard battery) was tested for all configurations. For each exposure condition and wireless mode, when SAR was less than 0.8 W/kg, no additional SAR tests were required. When SAR per exposure condition was greater than 0.8 W/kg, the configuration with the highest SAR was tested with all batteries.

CDMA/EVDO Notes:

1. Per FCC/OET Bulletin 65 Supplement C and Public Notice DA-02-1438, if the SAR measured at the middle channel for each test configuration is at least 3.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s).
2. Head SAR was tested with SO55 RC3. SO55 RC1 was not required since the average output power was not more than 0.25 dB than the SO55 RC3 powers.
3. Body-Worn SAR was tested with TDSO32 FCH. **TDSO32 FCH+SCH SAR tests were required since the maximum average output powers was more than 0.25 dB higher than the maximum average powers forTDSO32 FCH for PCS Band.** EVDO SAR (for Cell. and PCS Bands) and TDSO FCH+SCH SAR (for Cell. Band) tests for body-worn were not required since the average output power was not more than 0.25 dB higher than the TDSO32 FCH powers.

LTE Notes:

1. Considerations: LTE test configurations are determined according to SAR Test Considerations for LTE handsets and Data Modems KDB 941225 D05 Publication:
   a. Per KDB Publication 941225 D05 Page 4, 3) A), QPSK with 50% RB is required for the highest bandwidth (10 MHz).
   b. Per KDB Publication 941225 D05 Page 4, 3) B), QPSK with 1 RB for both channel edges are required for the highest bandwidth (10 MHz).
   c. Per KDB Publication 941225 D05 Page 4, 4) A), 16QAM with 50% RB is required for the highest bandwidth (10 MHz).
   d. Per KDB Publication 941225 D05 Page 4, 4) B), 16QAM with 1RB for both channel edges are required for the highest bandwidth (10 MHz).
   e. Per KDB Publication 941225 D05 Page 4, A) I), 100% RB Allocation is not required to be tested since SAR is not > 1.45 W/kg for the highest bandwidth (10 MHz).
2. There is a permanently applied MPR implemented by the manufacturer. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1. The differences noted are not cases of implemented MPR but rather associated with measurement uncertainty and allowable tolerances per 3GPP standard and the manufacturer.
3. A-MPR was disabled for all SAR tests.
4. LTE Head SAR was evaluated to cover third-party VOIP applications that may result in LTE being used held to the ear.

Bluetooth/WLAN Notes

1. Justification for reduced test configurations for WIFI channels per KDB Publication 248227 and April 2010 FCC/TCB Meeting Notes:
    a. For 2.4 GHz, highest average RF output power channel for the lowest data rate were selected for SAR evaluation for IEEE 802.11b. IEEE 802.11g was tested since the average output powers were more than 0.25 dB greater than IEEE 802.11b mode. IEEE 802.11n modes and higher data rates were not investigated since the average output powers were not greater than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11b/g modes.
    b. For 5 GHz WLAN, highest average RF output power channel for the lowest data rate were selected for SAR evaluation. IEEE 802.11n and higher data rates were not investigated since the average output powers were not greater than 0.25 dB than that of the corresponding channel in the lowest data rate IEEE 802.11a mode.
2. WLAN transmission was verified using a spectrum analyzer.
3. RF Conducted power of Bluetooth was measured to be 4.127 mW. Based on the output power, antenna separation distance, and the Body SAR, per KDB 648474 publication, a stand-alone Bluetooth SAR test is not required.

Hotspot Notes (See Section 12 for Hotspot considerations)

1. SAR was evaluated for each frequency transmission and mode separately and summed with the WIFI transmitter according to KDB 648474 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal.
2. CDMA Hotspot SAR was tested with EVDO Rev 0. **For PCS Band, TDSO32 SAR tests were additionally required since the average output power was more than 0.25 dB higher than EVDO Rev. 0 powers.** EVDO Rev A (for Cell. And PCS bands), TDSO32 (for Cell. Band) and TDSO32+SCH (for Cell. Band) SAR tests were not required since the average output power was not more than 0.25 dB higher than the EVDO Rev. 0 powers.
3. For CDMA Hotspot SAR, TDSO32 SAR tests were additionally evaluated for wireless router edges/sides to address the body-worn CDMA Voice + LTE WIFI Hotspot simultaneous transmission scenario.

17 SIMULTANEOUS TRANSMISSION ANALYSIS

17.1 Simultaneous Transmissions Scenarios

The following table shows exposure conditions for all transmitters operating in the DUT:

Table 17-1
Simultaneous Transmission Scenarios

No.	Capable Transmit Configurations	Head	Body-Worn Accessory	Hot Spot	Note	Scenario Possible?
		IEEE 1528, Supp C	Supp C	FCC KDB 941225 D06		
1	CDMA 850/1900 MHz Voice + WiFi 2.4GHz	Yes	10mm	-	-	Yes
2	CDMA 850/1900 MHz Voice + 782 MHz LTE Data	Yes	10mm	-	SVLTE	Yes
3	850/1900 MHz EVDO Data + WIFI 2.4 GHz	-	-	Yes	2G Hotspot	Yes
4	782 MHz LTE Data + WIFI 2.4 GHz	-	-	Yes	4G Hotspot	Yes
5	CDMA 850/1900 MHz Voice + WiFi 5GHz	Yes	10mm	-	5GHz Client only	Yes
6	CDMA 850/1900 MHz Voice + 782 MHz LTE Data + WIFI 2.4 GHz	Yes	10mm	Yes	CDMA Voice Call with 4G Hotspot	Yes

CDMA/EVDO share the same antenna path and cannot transmit simultaneously. Bluetooth, 2.4 GHz WLAN and 5 GHz WLAN share the same antenna path and cannot transmit simultaneously.

LTE (VoIP) + 2.4/5 GHz WIFI is not supported.

All other simultaneous conditions not addressed in **Table 17-1** are not supported by hardware and/or software.

17.2 Held to Ear Simultaneous Transmission Scenarios

Table 17-2
Held to Ear Voice call with WIFI data

Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS CDMA SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.241	0.032	**0.273**	Head SAR	Right Cheek	0.309	0.032	**0.341**
	Right Tilt	0.163	0.010	**0.173**		Right Tilt	0.451	0.010	**0.461**
	Left Cheek	0.265	0.042	**0.307**		Left Cheek	0.451	0.042	**0.493**
	Left Tilt	0.170	0.020	**0.190**		Left Tilt	0.370	0.020	**0.390**
Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	5 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS CDMA SAR (W/kg)	5 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.241	0.026	**0.267**	Head SAR	Right Cheek	0.309	0.026	**0.335**
	Right Tilt	0.163	0.009	**0.172**		Right Tilt	0.451	0.009	**0.460**
	Left Cheek	0.265	0.027	**0.292**		Left Cheek	0.451	0.027	**0.478**
	Left Tilt	0.170	0.021	**0.191**		Left Tilt	0.370	0.021	**0.391**

The above tables represent a held to ear voice call with WIFI data operating as a client.

Table 17-3
Held to Ear Voice Call with LTE data (SVLTE)

Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	LTE SAR (W/kg)	Σ SAR (W/kg)	Simult Tx	Configuration	PCS CDMA SAR (W/kg)	LTE SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.241	0.242	**0.483**	Head SAR	Right Cheek	0.309	0.242	**0.551**
	Right Tilt	0.163	0.117	**0.280**		Right Tilt	0.451	0.117	**0.568**
	Left Cheek	0.265	0.176	**0.441**		Left Cheek	0.451	0.176	**0.627**
	Left Tilt	0.170	0.090	**0.260**		Left Tilt	0.370	0.090	**0.460**

The above tables represent a held to ear voice call with LTE data. Both CDMA SAR and LTE SAR were evaluated at max power. See Section 18 for details regarding non-SAR related dynamic power reduction and additional SAR test considerations for this device.

This device also supports Wireless Router modes that are unrestricted when used in conjunction with voice calls. This held-to-ear simultaneous transmission analysis is shown in **Table 17-7**.

17.3 Body-Worn Accessory Simultaneous Transmission Scenarios

Table 17-4
Body-Worn Voice Call with WIFI data

Configuration	Mode	CDMA SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Back Side	Cell. CDMA	1.110	0.024	**1.134**
Back Side	PCS CDMA	1.150	0.024	**1.174**
Configuration	Mode	CDMA SAR (W/kg)	5 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Back Side	Cell. CDMA	1.110	0.132	**1.242**
Back Side	PCS CDMA	1.150	0.132	**1.282**

The above tables represent a body-worn accessory voice call with WIFI data operating as a client.

Table 17-5
Body-Worn Voice Call with LTE data (SVLTE)

Configuration	Mode	CDMA SAR (W/kg)	LTE SAR (W/kg)	Σ SAR (W/kg)
Back Side	Cell. CDMA	1.110	0.400	**1.510**
Back Side	PCS CDMA	1.150	0.400	**1.550**

The above tables represent a Body-worn voice call with LTE data. Both CDMA SAR and LTE SAR were tested at max power. See Section 18 for details regarding non-SAR related dynamic power reduction and additional SAR test considerations for this device.

This device also supports Wireless Router modes that are unrestricted when used in conjunction with voice calls. This held-to-ear simultaneous transmission analysis is shown in Table 17-8**.**

17.4 Wireless Router Simultaneous Transmission Scenarios

The following calculations represent wireless router operation simultaneous transmissions scenarios.

Per FCC KDB Publication 941225 D06, the edges with antennas more than 2.5 cm that were not required to be evaluated for SAR are denoted as "-". SAR values of 0 W/kg were used for the sum SAR calculations for those particular summation calculations.

Table 17-6
Standard Wireless Router Simultaneous Transmission Scenarios

Simult Tx	Configuration	Cell. EVDO SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.140	0.024	**1.164**
	Front	0.345	0.006	**0.351**
	Top	-	-	**0.000**
	Bottom	0.119	-	**0.119**
	Right	-	-	**0.000**
	Left	0.490	0.029	**0.519**

Simult Tx	Configuration	PCS EVDO SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.090	0.024	**1.114**
	Front	0.455	0.006	**0.461**
	Top	-	-	**0.000**
	Bottom	0.382	-	**0.382**
	Right	-	-	**0.000**
	Left	0.319	0.029	**0.348**

Simult Tx	Configuration	LTE SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	0.400	0.024	**0.424**
	Front	0.253	0.006	**0.259**
	Top	-	-	**0.000**
	Bottom	0.101	-	**0.101**
	Right	0.418	-	**0.418**
	Left	-	0.029	**0.029**

Table 17-7 and Table 17-8 **represent LTE WIFI Hotspot in conjunction with CDMA Voice** since the simultaneous transmission scenario is not restricted to the end-user**.** All SAR results in these tables represent maximum output power standalone transmission numerical sums.

Table 17-7
Held to Ear Voice Call + LTE Portable Hotspot

Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	LTE SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.241	0.242	0.032	**0.515**
	Right Tilt	0.163	0.117	0.010	**0.290**
	Left Cheek	0.265	0.176	0.042	**0.483**
	Left Tilt	0.170	0.090	0.020	**0.280**

Simult Tx	Configuration	PCS CDMA SAR (W/kg)	LTE SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Head SAR	Right Cheek	0.309	0.242	0.032	**0.583**
	Right Tilt	0.451	0.117	0.010	**0.578**
	Left Cheek	0.529	0.176	0.042	**0.747**
	Left Tilt	0.370	0.090	0.020	**0.480**

Table 17-8
CDMA Voice Call + LTE WIFI Hotspot

Simult Tx	Configuration	Cell. CDMA SAR (W/kg)	LTE SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.110	0.400	0.024	**1.534**
	Front	0.387	0.253	0.006	**0.646**
	Top	-	-	-	**0.000**
	Bottom	0.132	0.101	-	**0.132**
	Right	-	0.418	-	**0.418**
	Left	0.608	-	0.029	**0.637**

Simult Tx	Configuration	PCS CDMA SAR (W/kg)	LTE SAR (W/kg)	2.4 GHz WIFI SAR (W/kg)	Σ SAR (W/kg)
Body SAR	Back	1.150	0.400	0.024	**1.574**
	Front	0.568	0.253	0.006	**0.827**
	Top	-	-	-	**0.000**
	Bottom	0.339	0.101	-	**0.339**
	Right	-	0.418	-	**0.418**
	Left	0.299	-	0.029	**0.328**

17.5 Simultaneous Transmission Conclusion

The numerical summed SAR calculations for simultaneous transmissions were below the SAR limit. Therefore, the above analysis is sufficient to determine that actual simultaneous transmissions will not exceed the SAR limit. Therefore no volumetric SAR summation is required according to FCC KDB Publication 648474.

18 SVLTE POWER REDUCTION CONSIDERATIONS

18.1 Introduction

This DUT is capable of Simultaneous Voice and LTE (SVLTE) calls, with the voice call supported by a CDMA 1xRTT transmitter and the data connection supported by a LTE transmitter. The transmitters have separate transmit antennas and RF circuitry (PA, RF filtering), however a dynamic LTE power reduction scheme is applied during a SVLTE call with the 1xRTT voice call in the cell band for any channel between 1013 and 400 (824.75 – 837 MHz). This LTE power reduction can be controlled by CDMA Received Signal Strength Indicator (RSSI) and Ec/Io levels. RSSI is a relative indicator of the power level being received by the antenna. Ec/Io is a ratio of signal power to total power, demonstrating the level of signal quality. Power reduction is only applicable for LTE modes and not for CDMA modes during SVLTE calls. The device also operates in the PCS band but LTE power reduction is not applied during PCS band 1xRTT calls. LTE does not operate simultaneously with EVDO in both cell and PCS bands. LTE power reduction is not implemented for SAR compliance.

18.2 LTE Power Reduction and SVLTE Test and Setup Configuration

The LTE power reduction was investigated by simultaneously connecting the DUT to both LTE and CDMA base station simulators. LTE output powers were measured through conducted RF connections by first placing the LTE data call and then the cell band 1xRTT call. CDMA RSSI and Ec/Io levels were controlled using the 8960 base station simulator and verified on the DUT with a monitoring mode while conducted powers were measured. Per KDB Inquiry 834288, SVLTE SAR was evaluated at 23 dBm and 19 dBm to verify that there are no noticeable changes in the SAR distribution characteristics due to conditions that require LTE power reduction. Since CDMA RSSI and Ec/Io cannot be maintained in a radiated environment, LTE power was fixed during SAR tests to ensure a constant power throughout the evaluation.

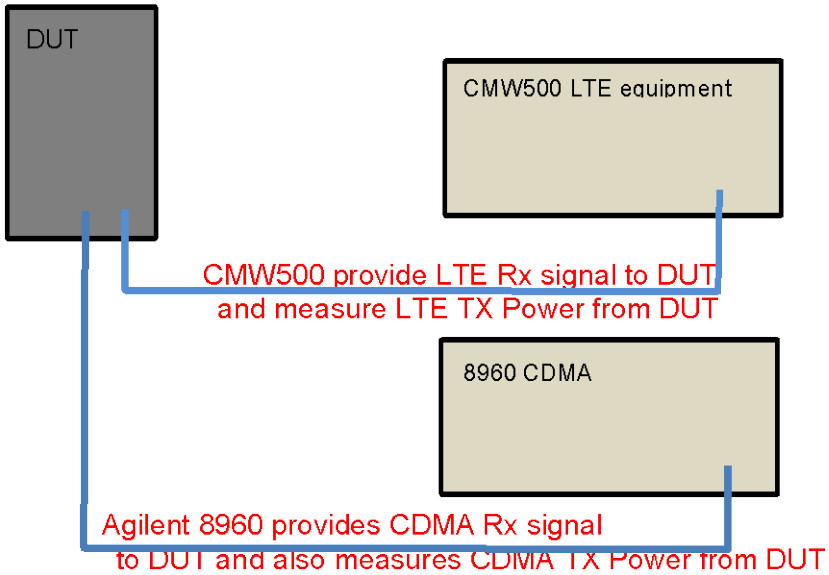

Figure 18-1
SVLTE Conducted Test Setup Diagram

18.3 LTE Power Reduction

18.3.1 LTE Power Reduction Data

Table 18-1
Allowed LTE Powers during SVLTE mode (dBm)

RSSI	Ec/Io(dB)			
(dBm)	≥-9	-10,-11	-12,-13	≤-14
≥-89	23	23	23	23
-90~-94		19	15	8
≤-95	8	8	8	

Tolerance ± 0.5 dB

Table 18-2
Measured LTE Powers during SVLTE mode (dBm)

RSSI	Ec/Io(dB)			
(dBm)	≥-9	-10,-11	-12,-13	≤-14
≥-89	**23.23**	23.07	23.10	23.07
-90~-94		19.34	14.88	7.79
≤-95	7.68	7.69	7.77	

With a CDMA Voice call and LTE Data session active, CDMA RSSI and Ec/Io levels were configured using the Agilent 8960 base station simulator through a DUT monitoring mode while LTE conducted powers were measured and verified at the various RSSI and Ec/Io levels.

There are 4 conditions of RSSI and Ec/Io combinations that can trigger the 23 dBm LTE output. Actual SVLTE scenario SAR was evaluated at both conditions resulting in LTE powers at 23 dBm and separately at 19 dBm to verify that there are no noticeable changes in the SAR distribution characteristics due to conditions that require LTE power reduction. SAR was evaluated with Cellular CDMA SAR test setup conditions according to the KDB Inquiry 834288.

18.4 SVLTE SAR Test Data per the KDB FCC Lab Inquiry 834288

Test Config	Mode	CDMA Channel	LTE Config	SAR (W/kg)	
				19 dBm LTE	23 dBm LTE
Left Touch	SVLTE	384	QPSK, RB1, RB Offset 0	0.356	0.473
Right Touch	SVLTE	384	QPSK, RB1, RB Offset 0	0.391	0.54
Right Touch	SVLTE	1013	QPSK, RB1, RB Offset 0	0.39	0.565
Body-worn, Back	SVLTE	384	QPSK, RB1, RB Offset 0	1.16	1.27
Body-worn, Back	SVLTE	1013	QPSK, RB1, RB Offset 0	1.22	1.44

SVLTE SAR Notes:

1. SVLTE was evaluated with a 1xRTT voice call on cell CDMA channel 384 at maximum output conditions with LTE transmitting for left and right touch and body-worn positions. Per KDB Inquiry 834288, SVLTE SAR was additionally evaluated on cell CDMA channel 1013 for the highest head and body SAR configurations measured with channel 384.
2. The LTE configuration of QPSK, RB1, RB Offset 0 represented the worst case condition according to the standalone SAR results for each particular test configuration (Left Touch, Right Touch, and Body-worn Back).
3. SVLTE was tested with LTE in QPSK mode since maximum output powers for 16QAM were not more than 0.25 dB greater than QPSK powers.
4. SVLTE with LTE 50% RB allocation was not tested since standalone SAR for LTE 50% RB allocation was not higher than 0.8 W/kg nor maximum output power more than 0.5 dB higher than tested 1 RB conditions.
5. The same tissue-equivalent liquid and probe calibration factors for cell band 1xRTT was used for simultaneous 1xRTT and LTE SAR tests according to the KDB FCC Lab Inquiry 834288 requirements.
6. See Figure 12-1 (p.22) for antenna locations and SAR Plots on pp. 55, 57, 79, 82, 91 and 122 for standalone 1xRTT and LTE SAR distribution plots. See SAR plots pp. 84-90 and 127-131 for SVLTE head and body plots.
7. SVLTE SAR was investigated at LTE powers of 23 dBm and 19 dBm. A sample was modified by a non-volatile (NV) software change to fix the EUT at these power levels.

18.5 KDB Inquiry 834288 Conclusions for the SVLTE Power Reduction

SVLTE SAR was investigated to verify that there is no noticeable change in the SAR distribution characteristics due to the conditions that require LTE power reduction. The measured SVLTE SAR indicates that with LTE power increasing with a simultaneous voice call, overall simultaneous SAR levels also increase as expected.

19 EQUIPMENT LIST

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
Agilent	85070B	Dielectric Probe Kit	8/22/2010	Annual	8/22/2011	US33020316
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/13/2010	Annual	10/13/2011	3613A00315
Agilent	E5515C	Wireless Communications Test Set	10/11/2010	Annual	10/11/2011	GB46110872
Agilent	E5515C	Wireless Communications Test Set	10/8/2010	Annual	10/8/2011	GB46310798
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/5/2011	Annual	4/5/2012	MY45470194
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/11/2010	Annual	10/11/2011	1833460
Gigatronics	8651A	Universal Power Meter	10/11/2010	Annual	10/11/2011	8650319
Rohde & Schwarz	CMU200	Base Station Simulator	11/11/2010	Annual	11/11/2011	836371/0079
SPEAG	D1900V2	1900 MHz SAR Dipole	2/17/2011	Annual	2/17/2012	502
SPEAG	D2450V2	2450 MHz SAR Dipole	8/27/2009	Biennial	8/27/2011	719
SPEAG	D2450V2	2450 MHz SAR Dipole	2/8/2011	Annual	2/8/2012	797
SPEAG	D2600V2	2600 MHz SAR Dipole	4/15/2011	Biennial	4/15/2013	1004
SPEAG	D5GHzV2	5 GHz SAR Dipole	2/11/2011	Annual	2/11/2012	1057
SPEAG	D835V2	835 MHz SAR Dipole	2/9/2011	Annual	2/9/2012	4d047
SPEAG	D835V2	835 MHz SAR Dipole	8/24/2009	Biennial	8/24/2011	4d026
SPEAG	DAE3	Dasy Data Acquisition Electronics	11/18/2010	Annual	11/18/2011	455
SPEAG	DAE4	Dasy Data Acquisition Electronics	3/17/2011	Annual	3/17/2012	704
SPEAG	DAE4	Dasy Data Acquisition Electronics	4/20/2011	Annual	4/20/2012	665
SPEAG	DAE4	Dasy Data Acquisition Electronics	2/21/2011	Annual	2/21/2012	649
SPEAG	ES3DV2	SAR Probe	9/21/2010	Annual	9/21/2011	3022
SPEAG	EX3DV4	SAR Probe	2/14/2011	Annual	2/14/2012	3550
SPEAG	D750V3	750 MHz Dipole	2/14/2011	Annual	2/14/2012	1003
SPEAG	ES3DV3	SAR Probe	3/24/2011	Annual	3/24/2012	3213
SPEAG	ES3DV3	SAR Probe	4/18/2011	Annual	4/18/2012	3209
SPEAG	D1640V2	1640 MHz Dipole	8/17/2010	Biennial	8/17/2012	321
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	8/30/2010	Annual	8/30/2011	100976
Anritsu	MA2481A	Power Sensor	2/7/2011	Annual	2/7/2012	5318
Anritsu	MA2481A	Power Sensor	2/7/2011	Annual	2/7/2012	5442
Anritsu	ML2438A	Power Meter	2/7/2011	Annual	2/7/2012	1190013
Anritsu	ML2438A	Power Meter	2/7/2011	Annual	2/7/2012	98150041
Anritsu	ML2438A	Power Meter	2/7/2011	Annual	2/7/2012	1070030
Anritsu	MA2481A	Power Sensor	2/7/2011	Annual	2/7/2012	5821
Anritsu	MA2481A	Power Sensor	2/7/2011	Annual	2/7/2012	8013
Anritsu	MA2481A	Power Sensor	2/7/2011	Annual	2/7/2012	2400
Amplifier Research	5S1G4	5W, 800MHz-4.2GHz	N/A			17042
Mini-Circuits	BW-N20W5+	DC to 18 GHz Precision Fixed 20 dB Attenuator	N/A			N/A
Agilent	E5515C	Wireless Communications Test Set	2/8/2011	Annual	2/8/2012	GB45360985
Speag	D3700V2	3700 MHz SAR Dipole	2/16/2011	Annual	2/16/2012	1002
Rohde & Schwarz	CMW500	LTE Radio Communication Tester	3/11/2011	Annual	3/11/2012	103962
Control Company	61220-416	Long-Stem Thermometer	2/15/2011	Biennial	2/15/2013	111331322
Control Company	61220-416	Long-Stem Thermometer	2/15/2011	Biennial	2/15/2013	111331323
Control Company	61220-416	Long-Stem Thermometer	2/15/2011	Biennial	2/15/2013	111331330
Control Company	61220-416	Long-Stem Thermometer	2/15/2011	Biennial	2/15/2013	111331332
Control Company	61220-416	Long-Stem Thermometer	3/16/2011	Biennial	3/16/2013	111391601

20 MEASUREMENT UNCERTAINTIES

Applicable for 700 – 3000 MHz.

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**IEEE 1528 Sec.**	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System									
Probe Calibration	E.2.1	6.0	N	1	1.0	1.0	6.0	6.0	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	1.0	1.0	1.3	1.3	∞
Boundary Effect	E.2.3	0.4	N	1	1.0	1.0	0.4	0.4	∞
Linearity	E.2.4	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	E.2.5	5.1	N	1	1.0	1.0	5.1	5.1	∞
Readout Electronics	E.2.6	1.0	N	1	1.0	1.0	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	E.6.3	2.9	R	1.73	1.0	1.0	1.7	1.7	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1.0	1.0	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	6.0	N	1	1.0	1.0	6.0	6.0	287
Device Holder Uncertainty	E.4.1	3.32	R	1.73	1.0	1.0	1.9	1.9	∞
Output Power Variation - SAR drift measurement	6.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)			RSS				12.1	11.7	299
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.2	23.5	

The above measurement uncertainties are according to IEEE Std. 1528-2003

Applicable for 5 GHz.

a	b	c	d	e= f(d,k)	f	g	h = c x f/e	i = c x g/e	k
Uncertainty Component	**IEEE 1528 Sec.**	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i 1gm**	**c_i 10 gms**	**1gm u_i (± %)**	**10gms u_i (± %)**	**v_i**
Measurement System									
Probe Calibration	E.2.1	6.55	N	1	1.0	1.0	6.6	6.6	∞
Axial Isotropy	E.2.2	0.25	N	1	0.7	0.7	0.2	0.2	∞
Hemishperical Isotropy	E.2.2	1.3	N	1	1.0	1.0	1.3	1.3	∞
Boundary Effect	E.2.3	0.4	N	1	1.0	1.0	0.4	0.4	∞
Linearity	E.2.4	0.3	N	1	1.0	1.0	0.3	0.3	∞
System Detection Limits	E.2.5	5.1	N	1	1.0	1.0	5.1	5.1	∞
Readout Electronics	E.2.6	1.0	N	1	1.0	1.0	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1.0	1.0	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1.0	1.0	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1.0	1.0	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1.0	1.0	0.2	0.2	∞
Probe Positioning w/ respect to Phantom	E.6.3	2.9	R	1.73	1.0	1.0	1.7	1.7	∞
Extrapolation, Interpolation & Integration algorithms for Max. SAR Evaluation	E.5	1.0	R	1.73	1.0	1.0	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	6.0	N	1	1.0	1.0	6.0	6.0	287
Device Holder Uncertainty	E.4.1	3.32	R	1.73	1.0	1.0	1.9	1.9	∞
Output Power Variation - SAR drift measurement	6.6.2	5.0	R	1.73	1.0	1.0	2.9	2.9	∞
Phantom & Tissue Parameters									
Phantom Uncertainty (Shape & Thickness tolerances)	E.3.1	4.0	R	1.73	1.0	1.0	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	3.8	N	1	0.64	0.43	2.4	1.6	6
Liquid Permittivity - deviation from target values	E.3.2	5.0	R	1.73	0.60	0.49	1.7	1.4	∞
Liquid Permittivity - measurement uncertainty	E.3.3	4.5	N	1	0.60	0.49	2.7	2.2	6
Combined Standard Uncertainty (k=1)			RSS				12.4	12.0	299
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				24.7	24.0	

The above measurement uncertainties are according to IEEE Std. 1528-2003

21 CONCLUSION

21.1 Measurement Conclusion

The SAR evaluation indicates that the DUT complies with the RF radiation exposure limits of the FCC and Industry Canada, with respect to all parameters subject to this test. These measurements were taken to simulate the RF effects of RF exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body are very complex phenomena that depend on the mass, shape, and size of the body, the orientation of the body with respect to the field vectors, and the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because various factors may interact with one another to vary the specific biological outcome of an exposure to electromagnetic fields, any protection guide should consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables. [3]

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APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

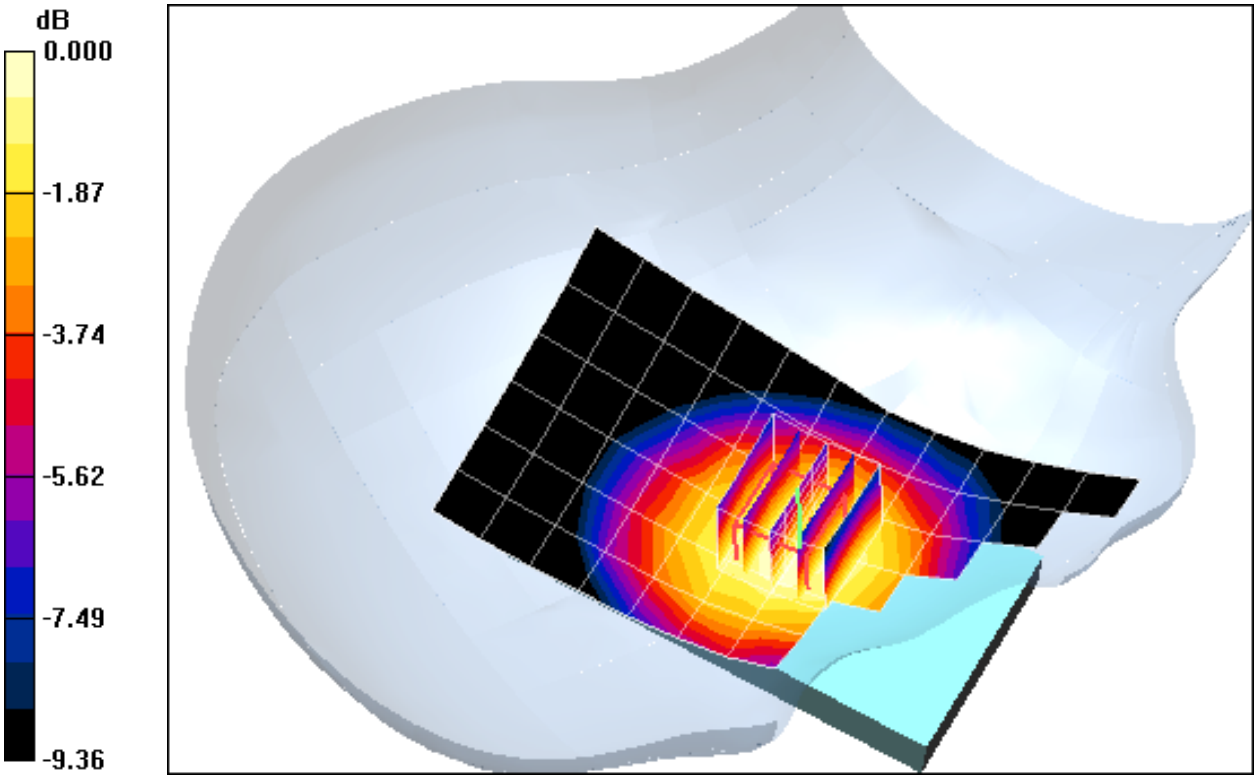
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.86$ mho/m; $\varepsilon_r = 40.33$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-25-2011; Ambient Temp: 23.6°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA, Right Head, Touch, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.1 V/m
Peak SAR (extrapolated) = 0.302 W/kg
SAR(1 g) = 0.241 mW/g; SAR(10 g) = 0.183 mW/g



0 dB = 0.253mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

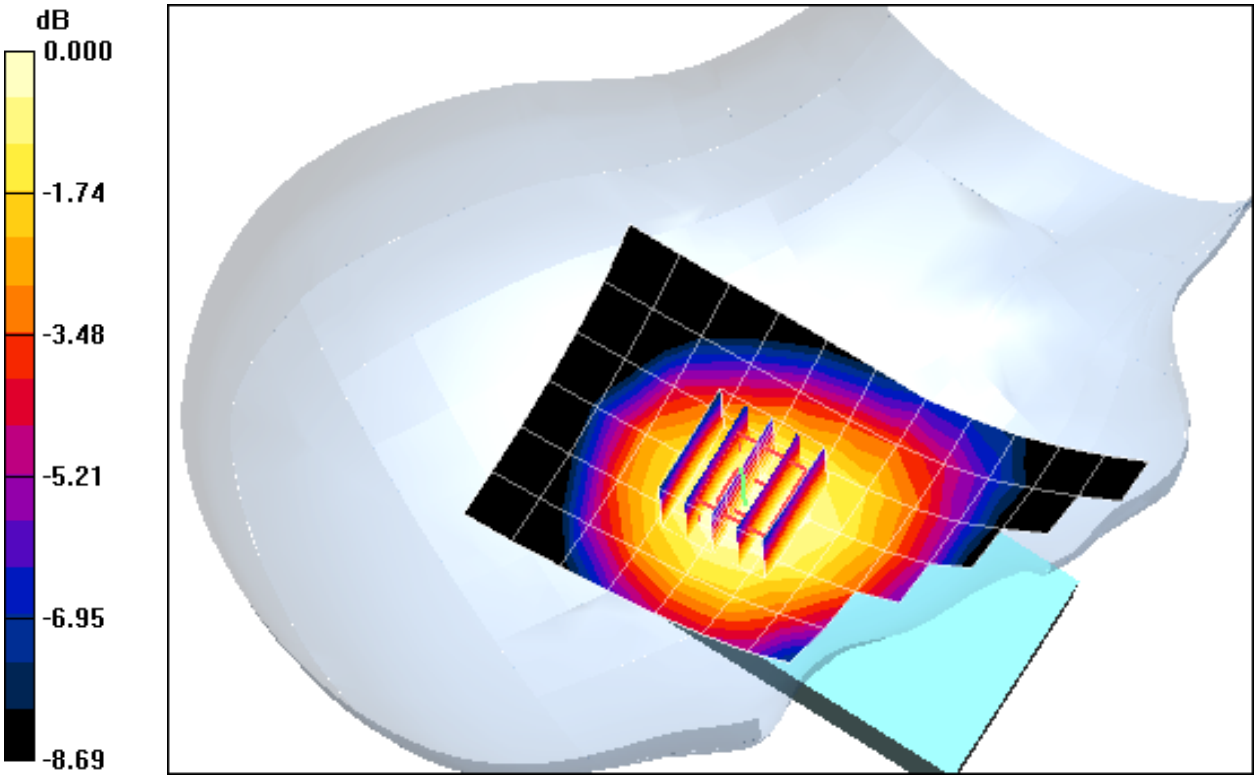
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.86$ mho/m; $\varepsilon_r = 40.33$; $\rho = 1000$ kg/m^3
Phantom section: Right Section

Test Date: 07-25-2011; Ambient Temp: 23.6°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA, Right Head, Tilt, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.9 V/m
Peak SAR (extrapolated) = 0.206 W/kg
SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.125 mW/g



0 dB = 0.171mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

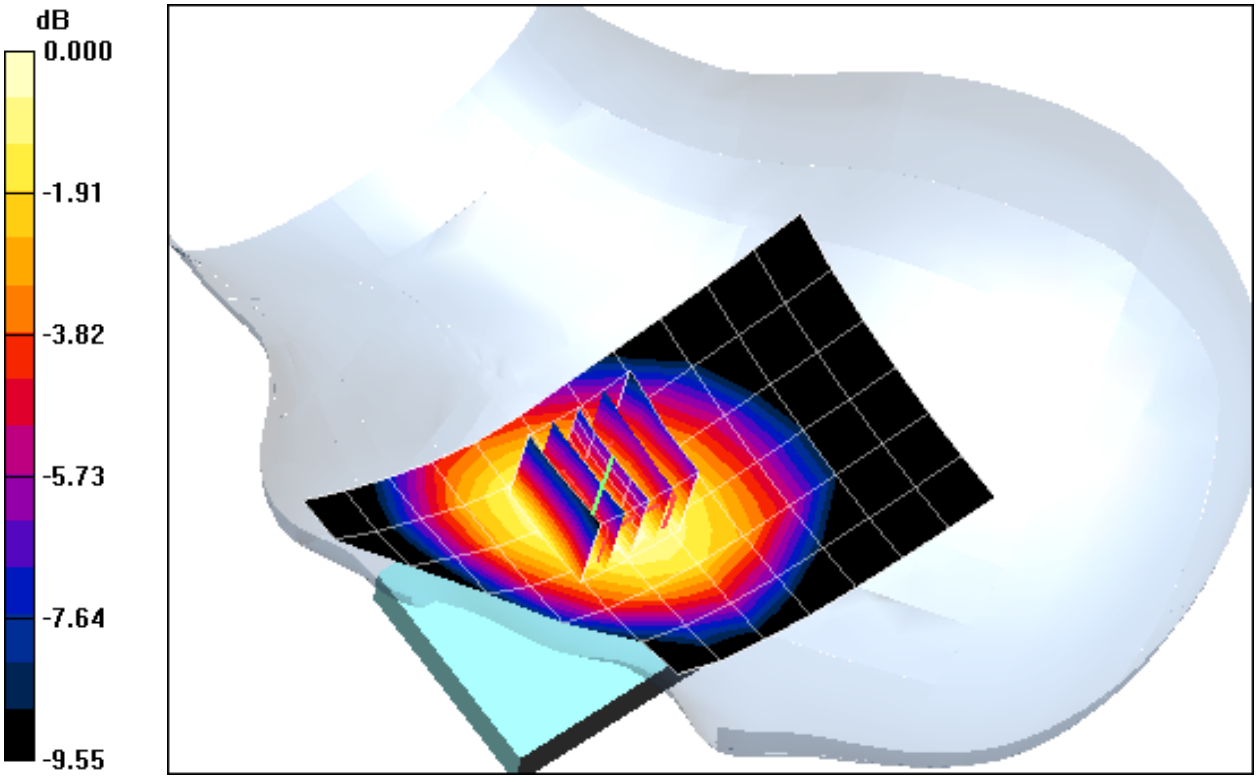
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.86 mho/m; ε_r = 40.33; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-25-2011; Ambient Temp: 23.6°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA, Left Head, Touch, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.69 V/m
Peak SAR (extrapolated) = 0.348 W/kg
SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.198 mW/g



0 dB = 0.279mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC_#1

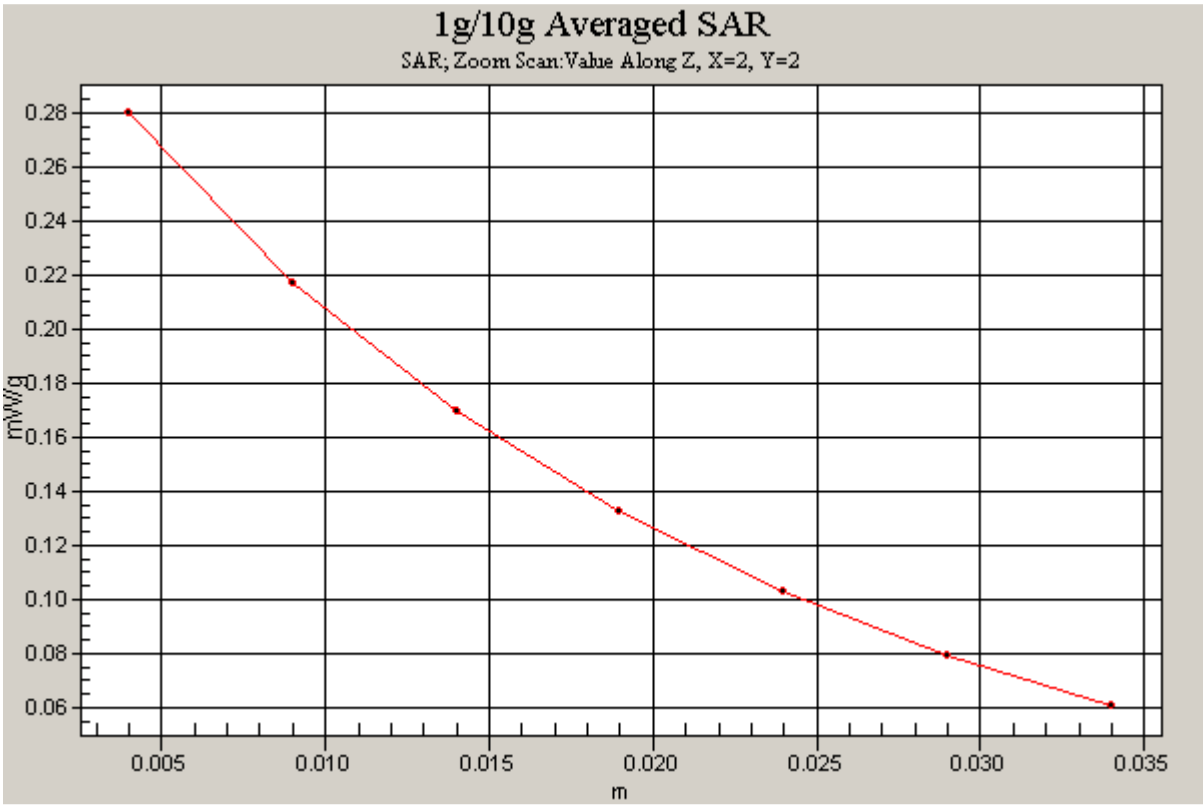
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.86 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-25-2011; Ambient Temp: 23.6°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA, Left Head, Touch, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.69 V/m
Peak SAR (extrapolated) = 0.348 W/kg
SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.198 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

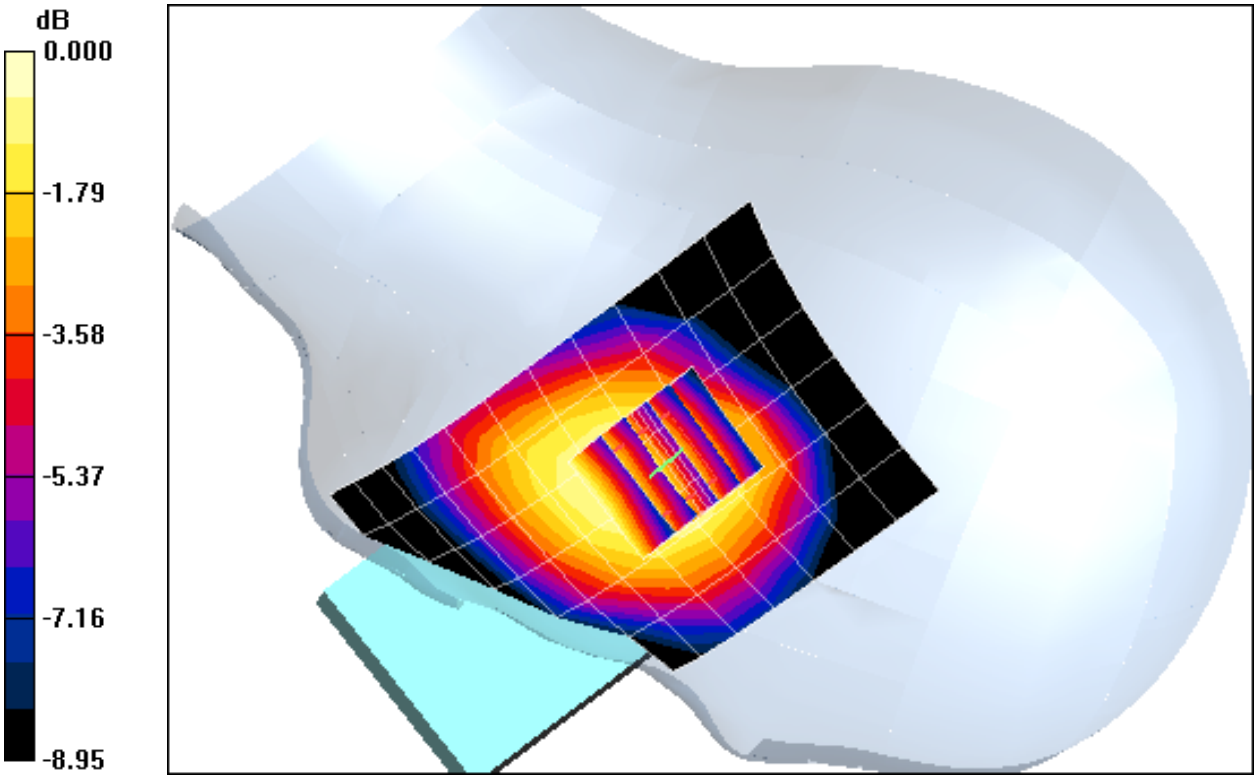
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Head; Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.86$ mho/m; $\varepsilon_r = 40.33$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 07-25-2011; Ambient Temp: 23.6°C; Tissue Temp: 21.8°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA, Left Head, Tilt, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.47 V/m
Peak SAR (extrapolated) = 0.213 W/kg
SAR(1 g) = 0.170 mW/g; SAR(10 g) = 0.130 mW/g



0 dB = 0.177mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

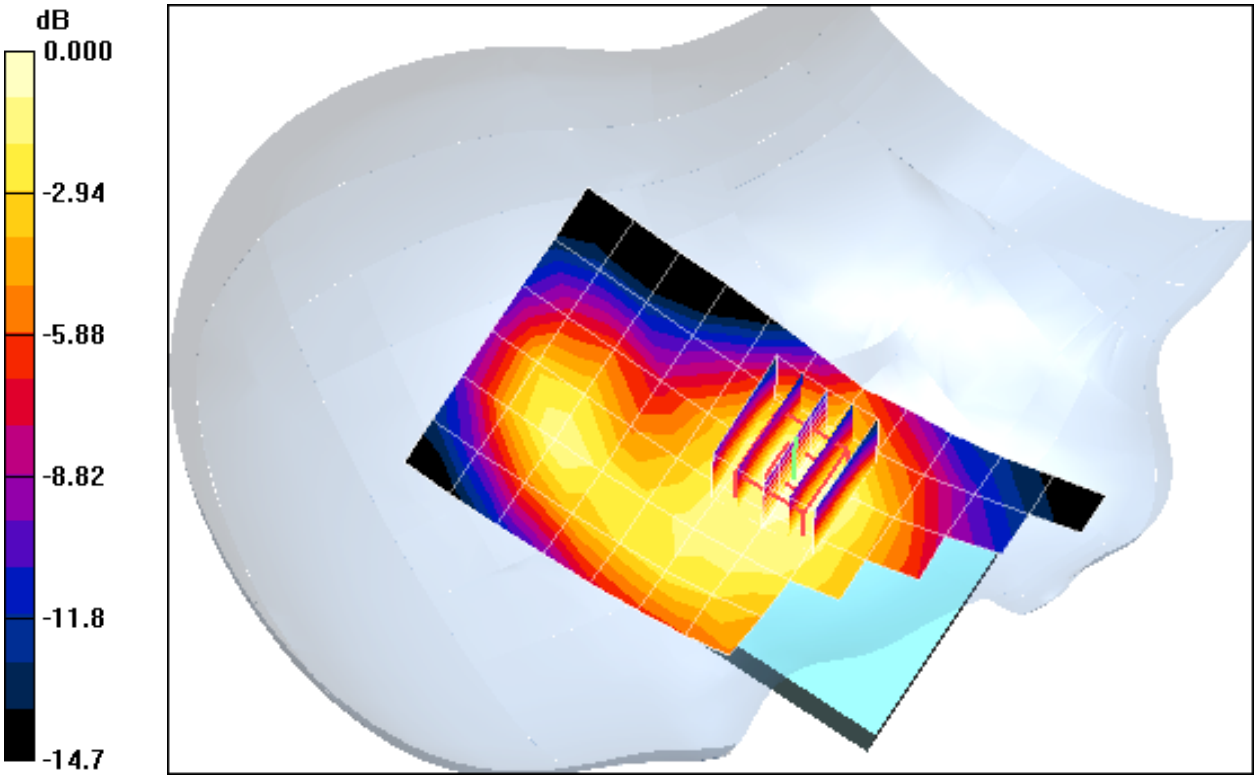
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.44 mho/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-26-2011; Ambient Temp: 23.8°C; Tissue Temp: 21.9°C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS CDMA, Right Head, Touch, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.8 V/m
Peak SAR (extrapolated) = 0.416 W/kg
SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.202 mW/g



0 dB = 0.336mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

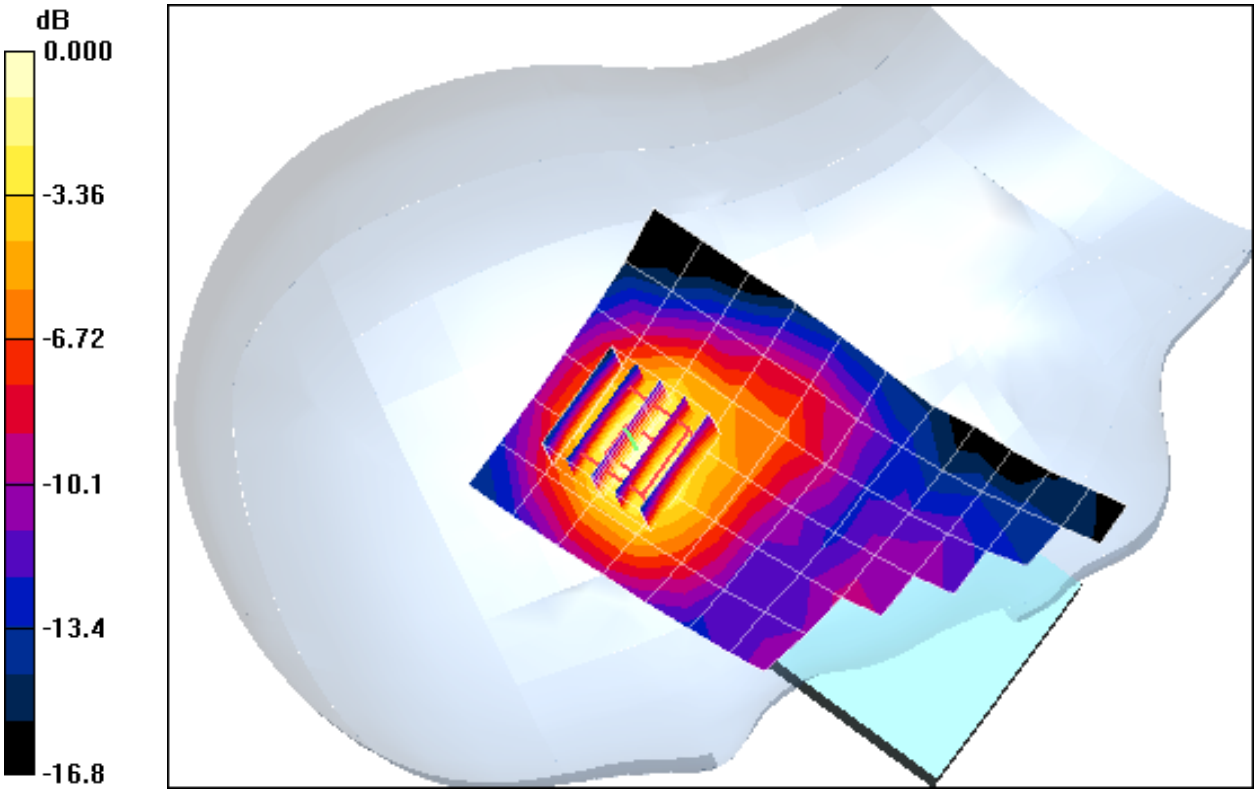
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.44 mho/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-26-2011; Ambient Temp: 23.8°C; Tissue Temp: 21.9°C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS CDMA, Right Head, Tilt, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.9 V/m
Peak SAR (extrapolated) = 0.727 W/kg
SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.265 mW/g



0 dB = 0.492mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

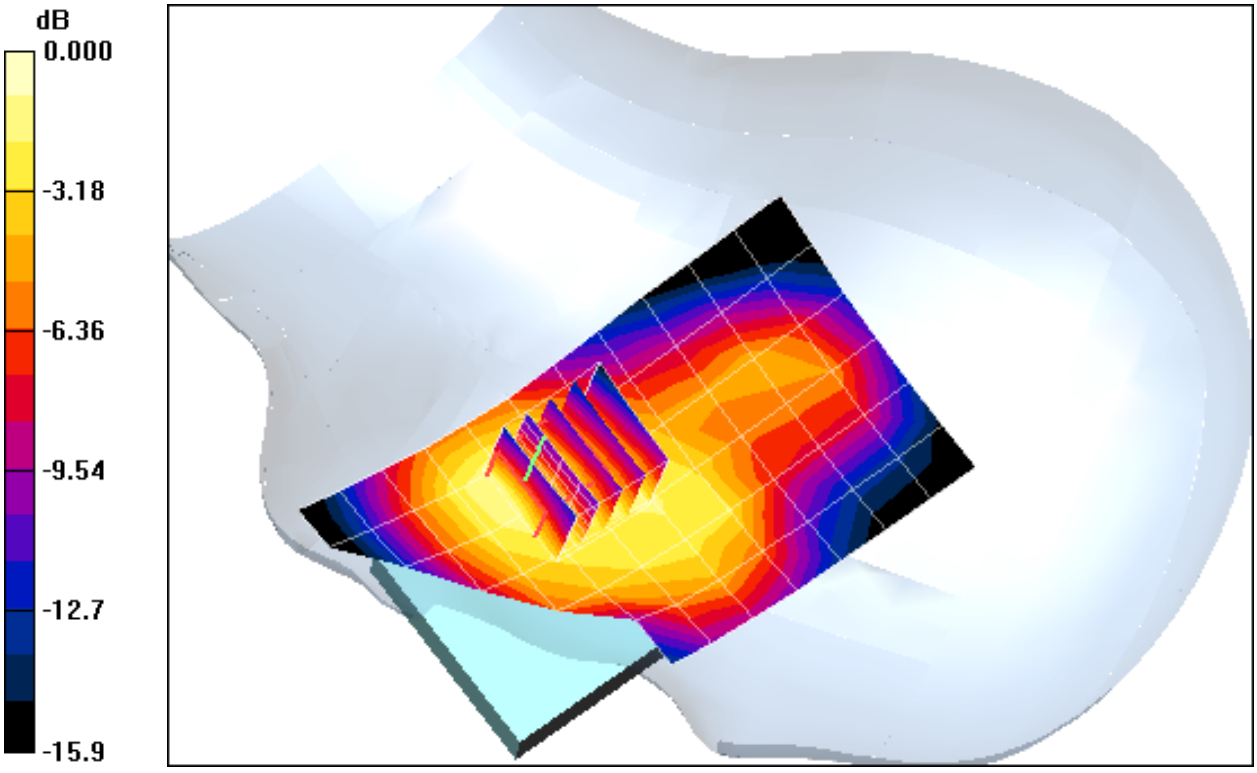
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.44 mho/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-26-2011; Ambient Temp: 23.8°C; Tissue Temp: 21.9°C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS CDMA, Left Head, Touch, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.9 V/m
Peak SAR (extrapolated) = 0.677 W/kg
SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.278 mW/g



0 dB = 0.477mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

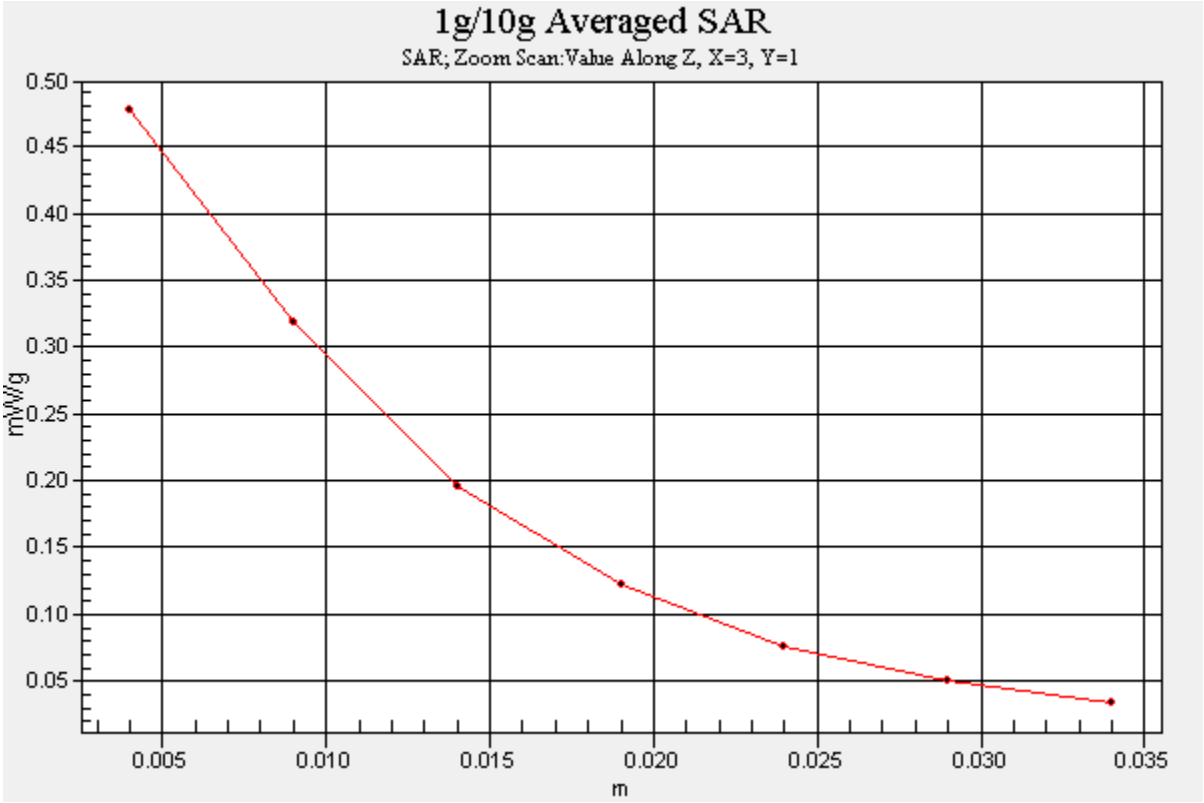
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.44 mho/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-26-2011; Ambient Temp: 23.8°C; Tissue Temp: 21.9°C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS CDMA, Left Head, Touch, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.9 V/m
Peak SAR (extrapolated) = 0.677 W/kg
SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.278 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

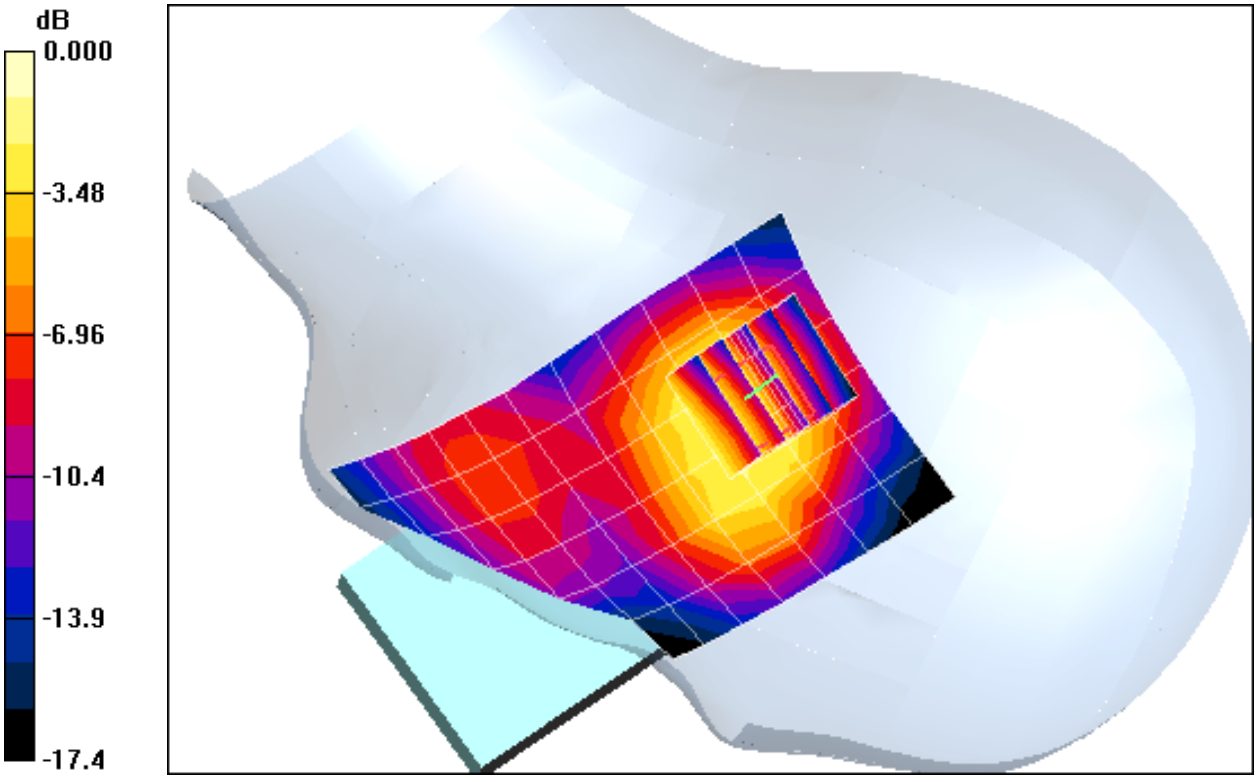
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Head; Medium parameters used:
f = 1880 MHz; σ = 1.44 mho/m; ε_r = 41.48; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-26-2011; Ambient Temp: 23.8°C; Tissue Temp: 21.9°C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS CDMA, Left Head, Tilt, Mid.ch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.1 V/m
Peak SAR (extrapolated) = 0.585 W/kg
SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.226 mW/g



0 dB = 0.402mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

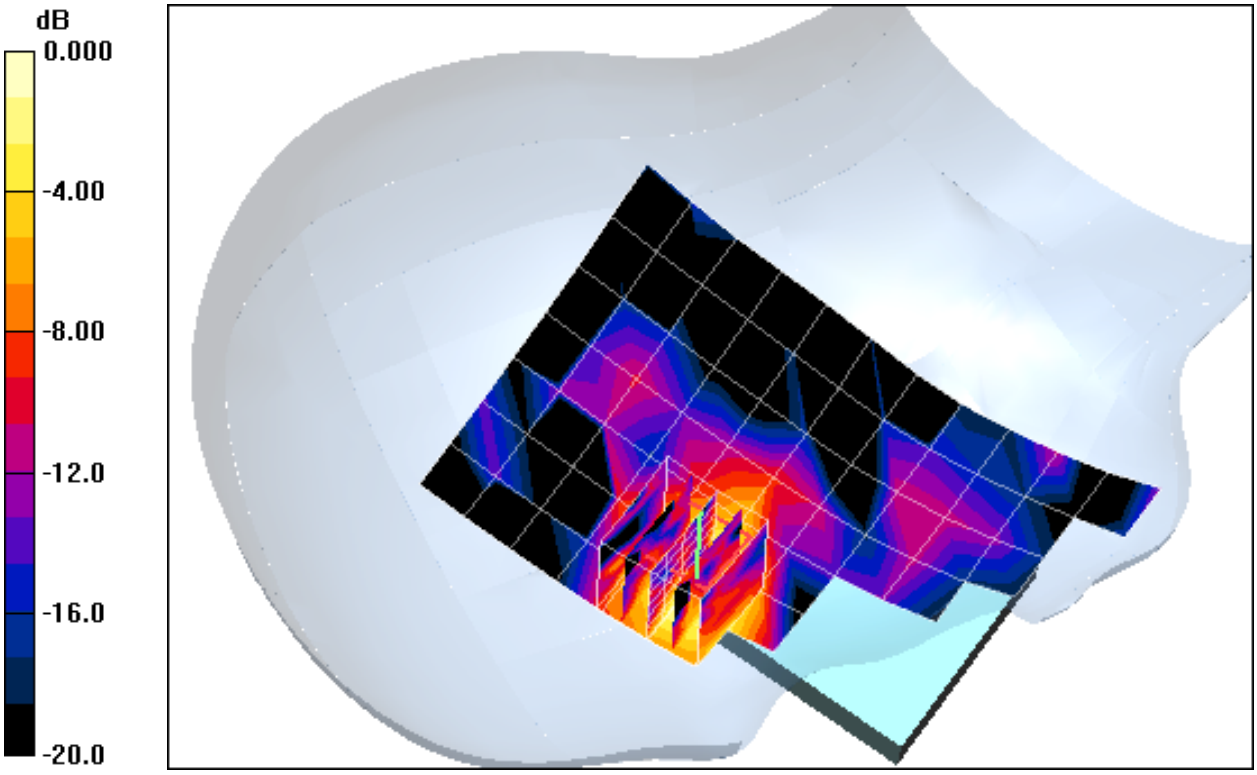
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Right Head, Touch, Ch 11, 1 Mbps, Standard Battery

Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.29 V/m
Peak SAR (extrapolated) = 0.029 W/kg
SAR(1 g) = 0.00939 mW/g; SAR(10 g) = 0.00374 mW/g



0 dB = 0.038mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

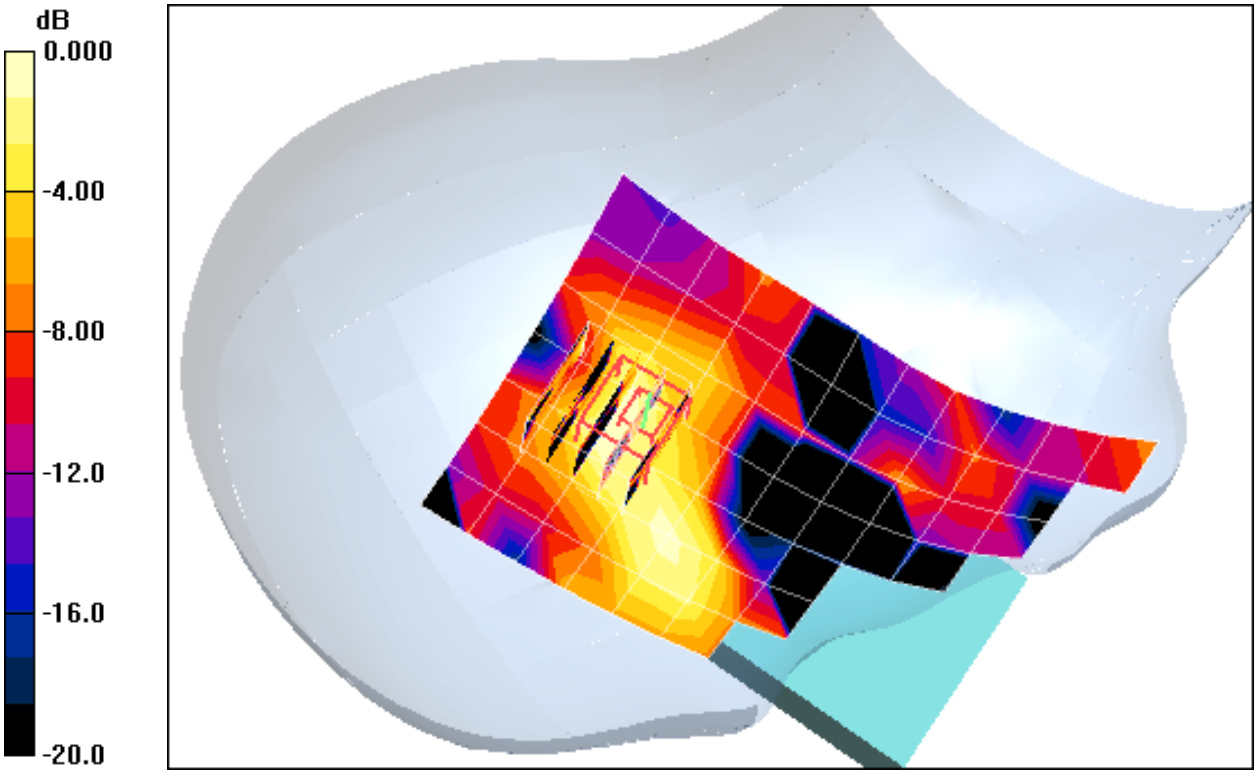
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Right Head, Tilt, Ch 11, 1 Mbps, Standard Battery

Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.898 V/m
Peak SAR (extrapolated) = 0.007 W/kg
SAR(1 g) = 0.00209 mW/g; SAR(10 g) = 0.000377 mW/g



0 dB = 0.011mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

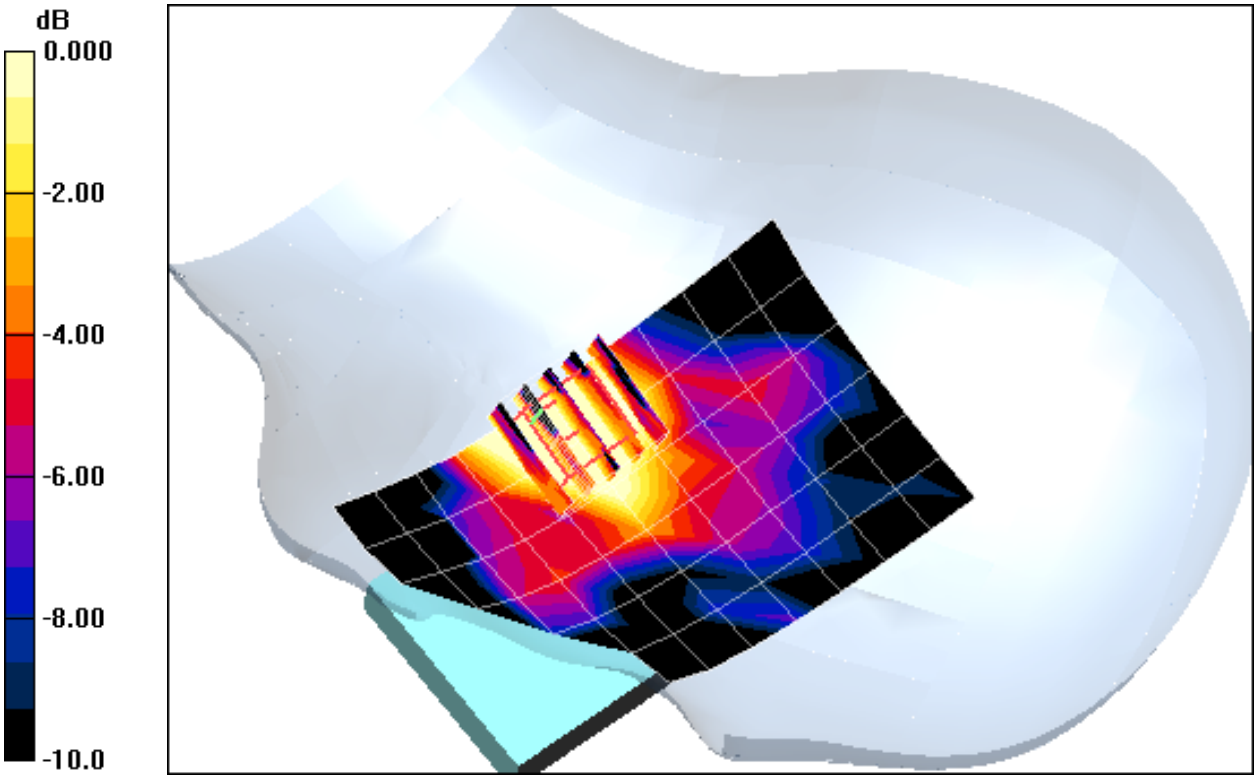
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Left Head, Touch, Ch 11, 1 Mbps, Standard Battery

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.00 V/m
Peak SAR (extrapolated) = 0.024 W/kg
SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.00518 mW/g



0 dB = 0.016mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

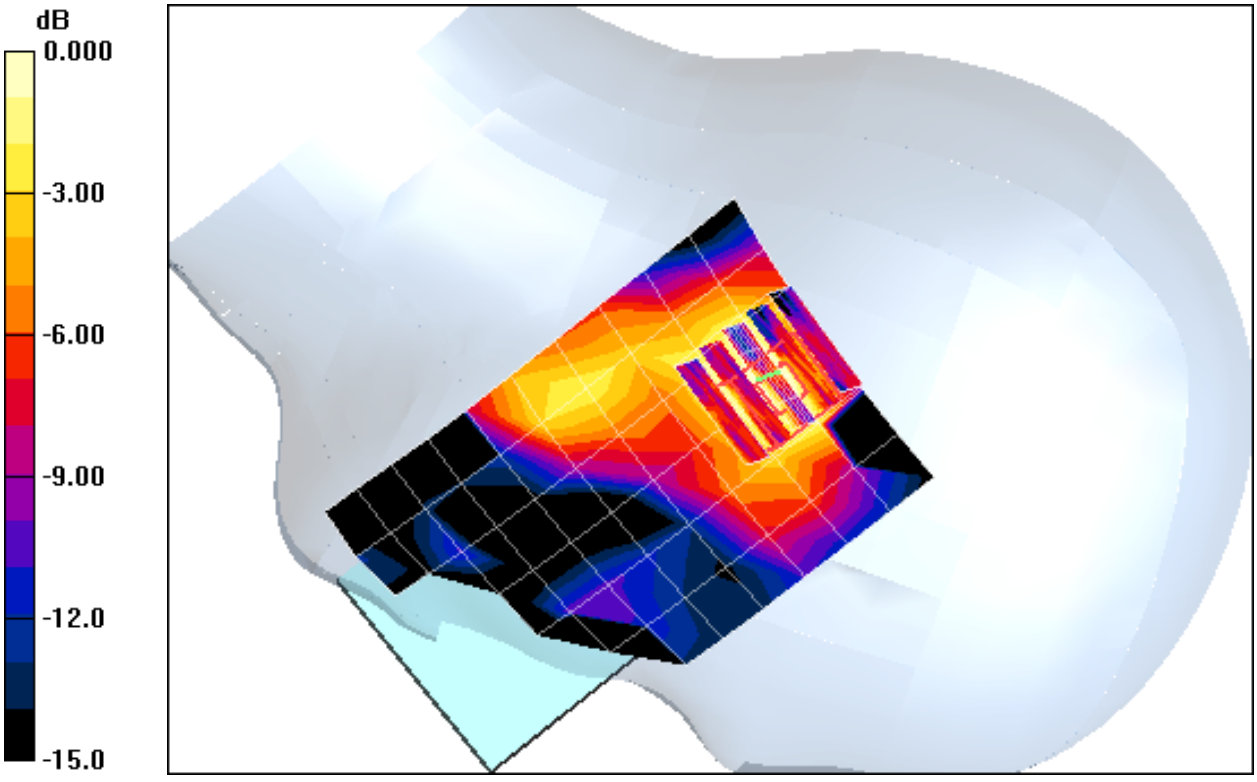
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Left Head, Tilt, Ch 11, 1 Mbps, Standard Battery

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.27 V/m
Peak SAR (extrapolated) = 0.014 W/kg
SAR(1 g) = 0.00761 mW/g; SAR(10 g) = 0.00339 mW/g



0 dB = 0.018mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

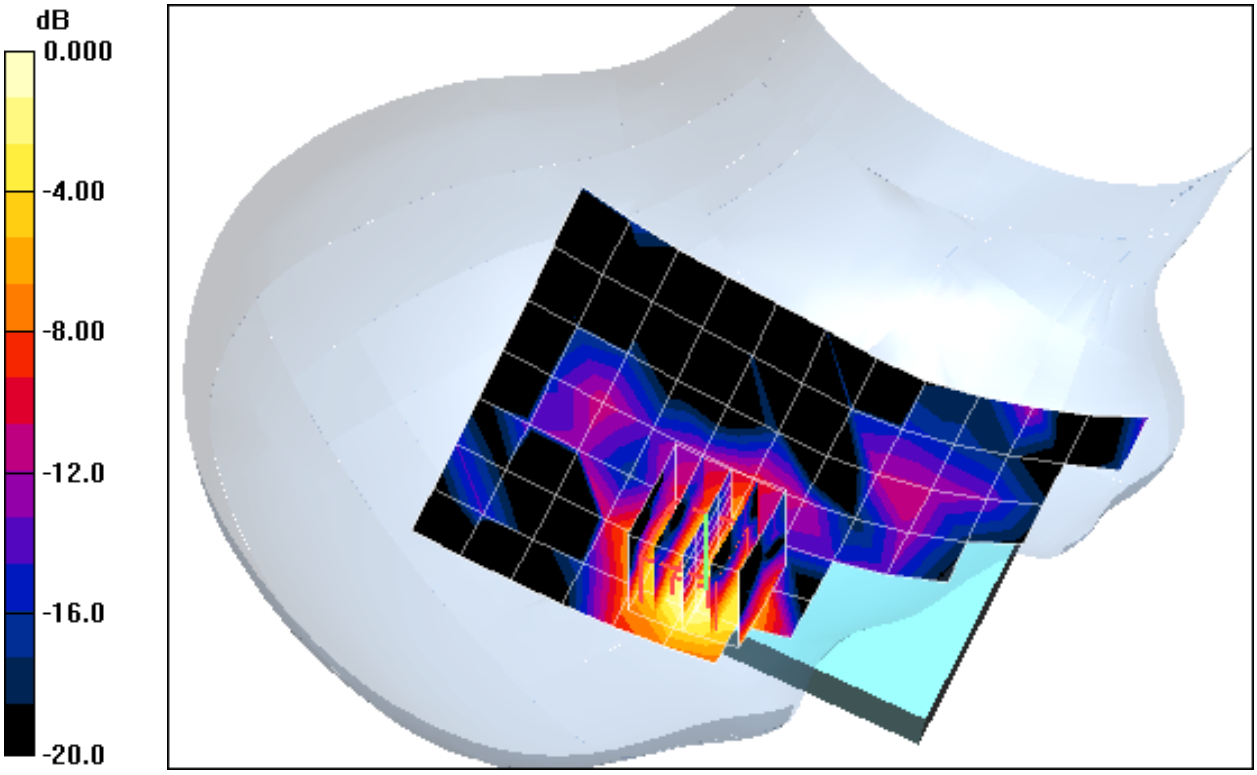
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Right Head, Touch, Ch 11, 6 Mbps, Standard Battery

Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.25 V/m
Peak SAR (extrapolated) = 0.061 W/kg
SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.016 mW/g



0 dB = 0.044mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

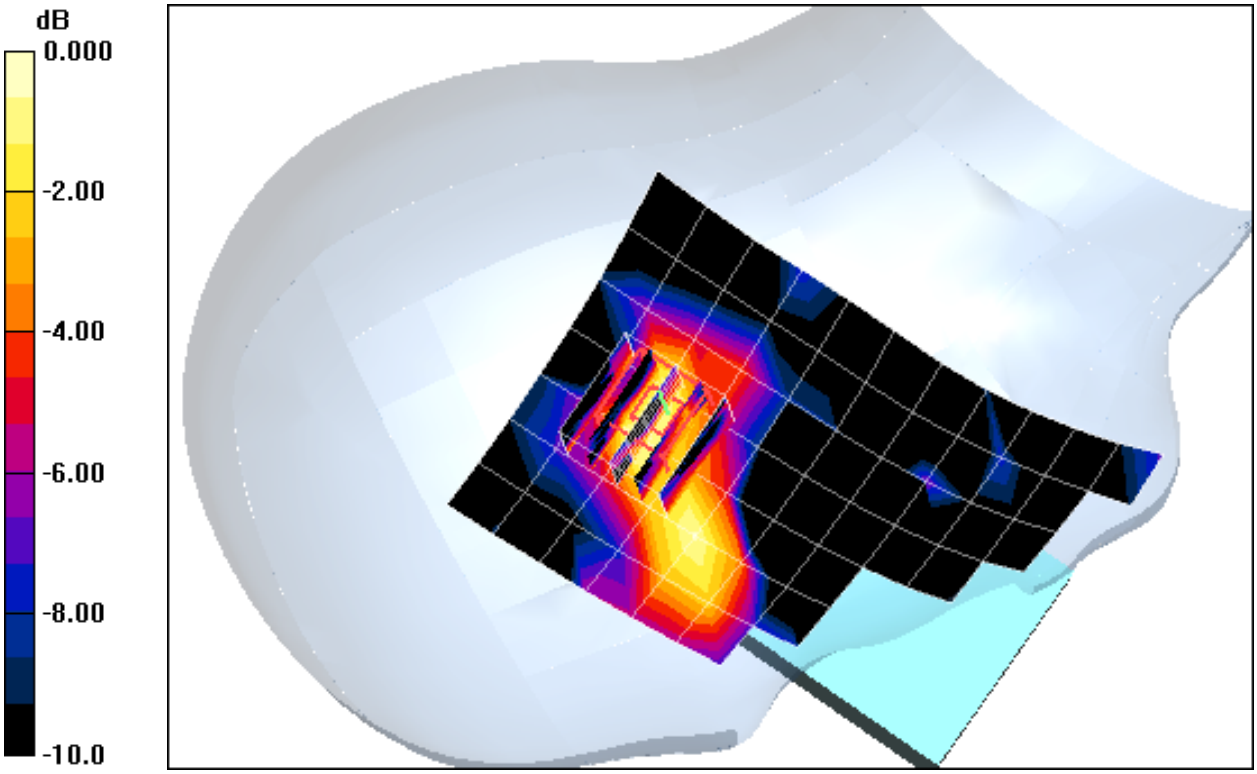
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Right Head, Tilt, Ch 11, 6 Mbps, Standard Battery

Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.37 V/m
Peak SAR (extrapolated) = 0.028 W/kg
SAR(1 g) = 0.00991 mW/g; SAR(10 g) = 0.00392 mW/g



0 dB = 0.011mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

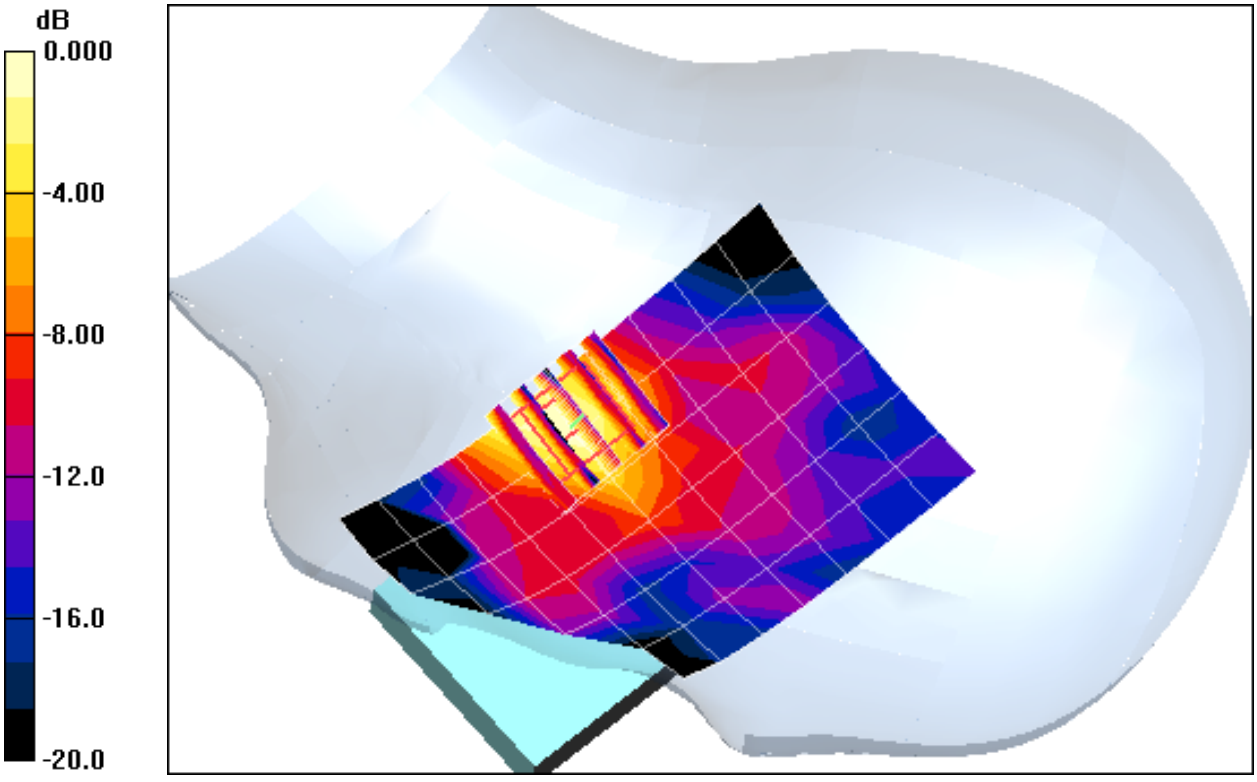
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Left Head, Touch, Ch 11, 6 Mbps, Standard Battery

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.06 V/m
Peak SAR (extrapolated) = 0.077 W/kg
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.020 mW/g



0 dB = 0.052mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

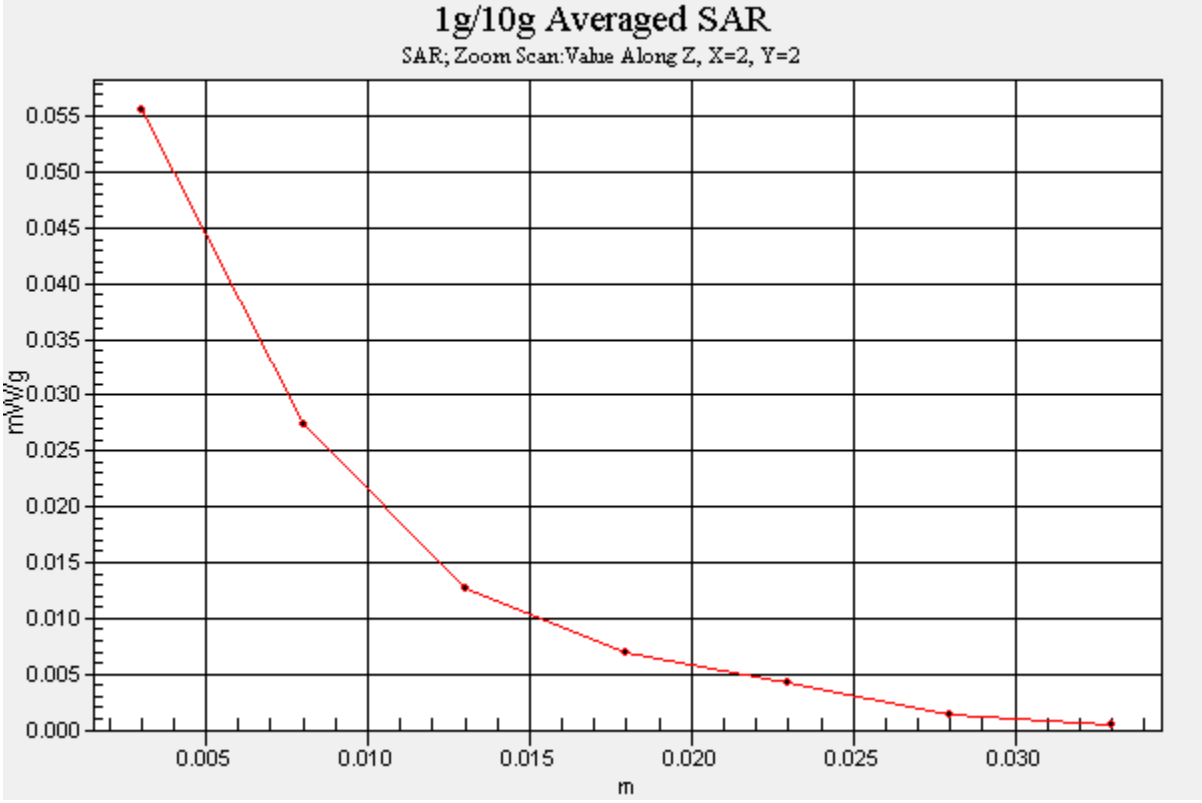
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
$f = 2462$ MHz; $\sigma = 1.8$ mho/m; $\varepsilon_r = 38.7$; $\rho = 1000$ kg/m^3
Phantom section: Left Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Left Head, Touch, Ch 11, 6 Mbps, Standard Battery

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.06 V/m
Peak SAR (extrapolated) = 0.077 W/kg
SAR(1 g) = 0.042 mW/g; SAR(10 g) = 0.020 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

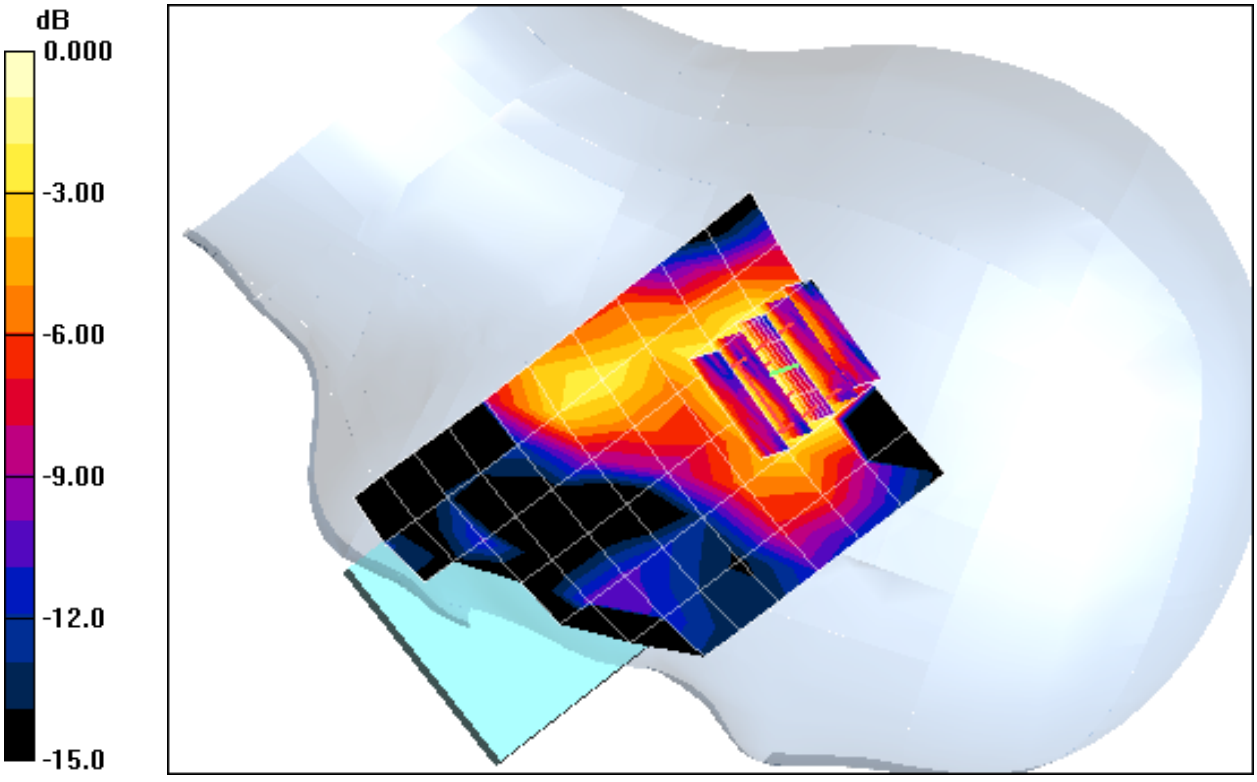
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Head; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.7; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Left Head, Tilt, Ch 11, 6 Mbps, Standard Battery

Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.02 V/m
Peak SAR (extrapolated) = 0.041 W/kg
SAR(1 g) = 0.020 mW/g; SAR(10 g) = 0.00989 mW/g



0 dB = 0.018mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

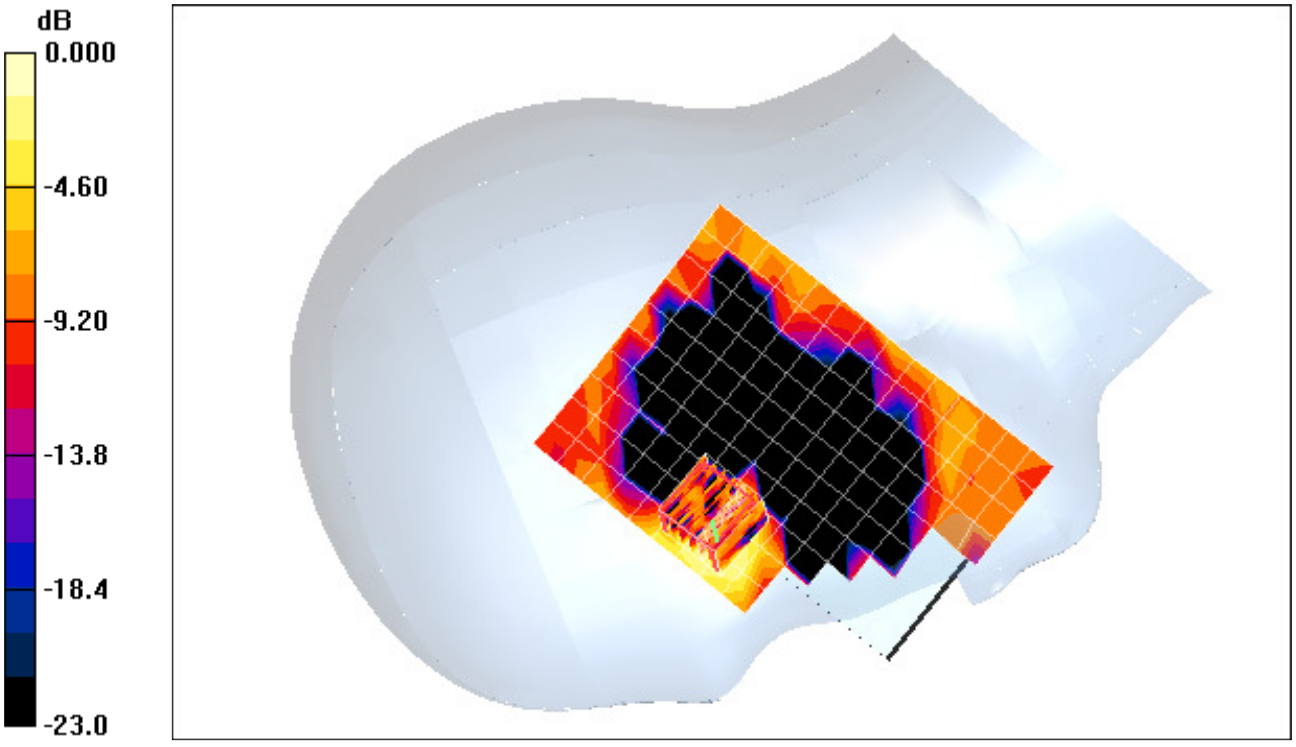
Communication System: IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5220 MHz; σ = 4.83 mho/m; ε_r = 35.2; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 7-27-2011; Ambient Temp: 22.3°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN3550; ConvF(4.06, 4.06, 4.06); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a 5.2 GHz, Right Head, Touch, Ch 44, 6 Mbps, Standard Battery

Area Scan (11x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.47 V/m
Peak SAR (extrapolated) = 0.289 W/kg
SAR(1 g) = 0.026 mW/g; SAR(10 g) = 0.00904 mW/g



0 dB = 0.054mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

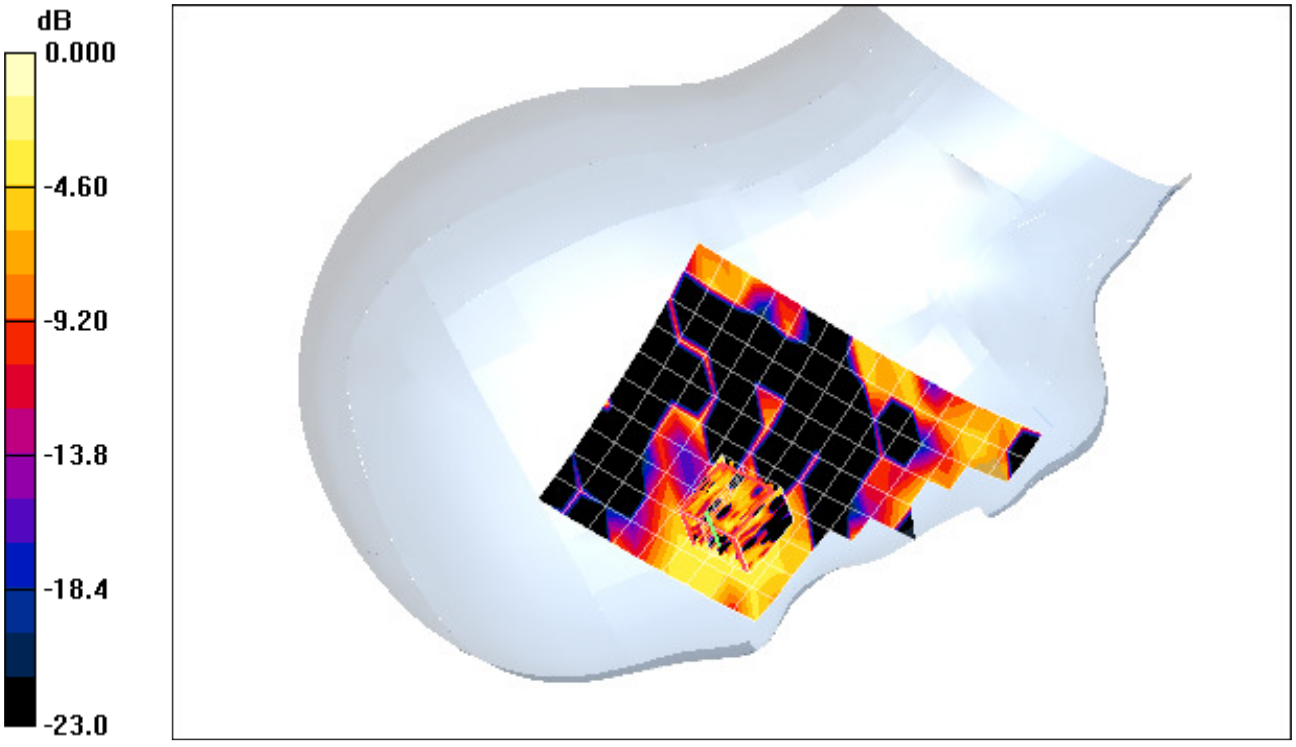
Communication System: IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5220 MHz; σ = 4.83 mho/m; ε_r = 35.2; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 7-27-2011; Ambient Temp: 22.3°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN3550; ConvF(4.06, 4.06, 4.06); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a 5.2 GHz, Right Head, Tilt, Ch 44, 6 Mbps, Standard Battery

Area Scan (11x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.20 V/m
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.00871 mW/g; SAR(10 g) = 0.00332 mW/g



0 dB = 0.018mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

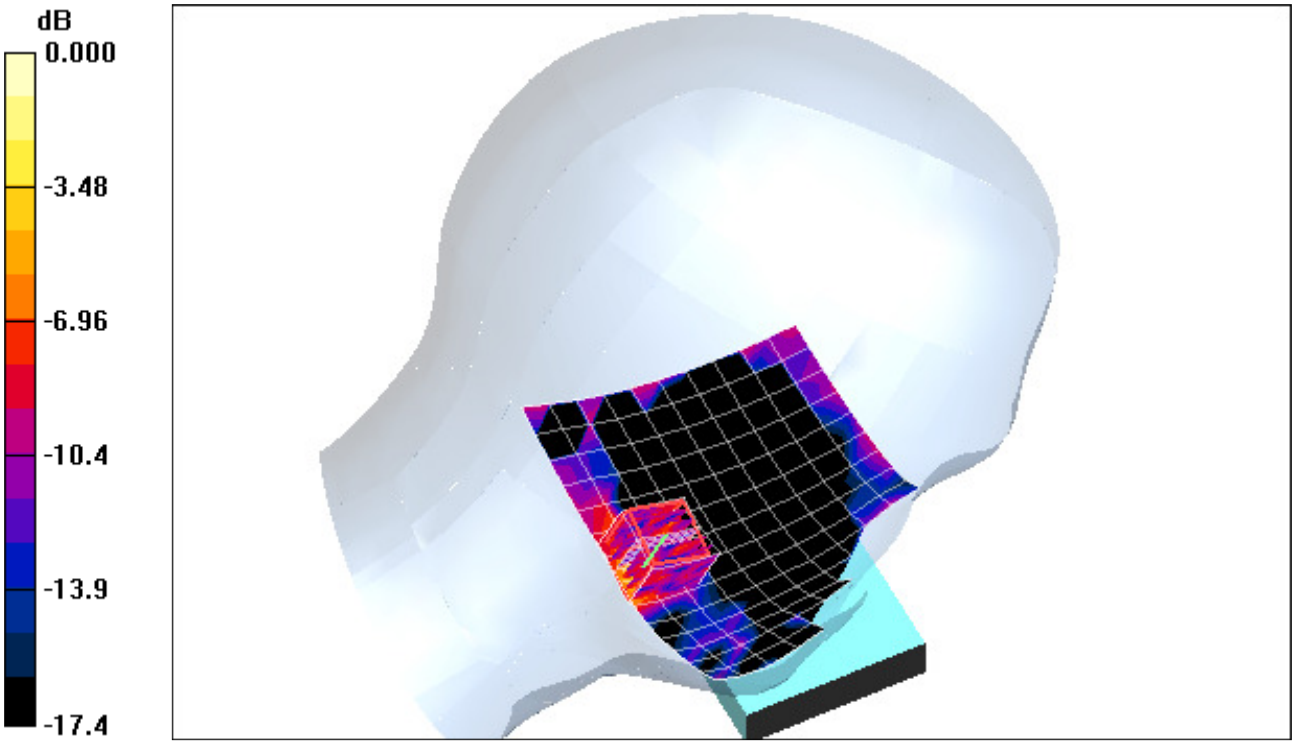
Communication System: IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5745 MHz; σ = 5.41 mho/m; ε_r = 34.3; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 7-27-2011; Ambient Temp: 22.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN3550; ConvFConvF(3.64, 3.64, 3.64); Calibrated: 2/14/2011
Sensor-Surface: Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a, 5.8 GHz Left Head, Touch, Ch 149, 6 Mbps, Standard Battery

Area Scan (11x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.78 V/m
Peak SAR (extrapolated) = 0.147 W/kg
SAR(1 g) = 0.027 mW/g; SAR(10 g) = 0.00981 mW/g



0 dB = 0.073mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

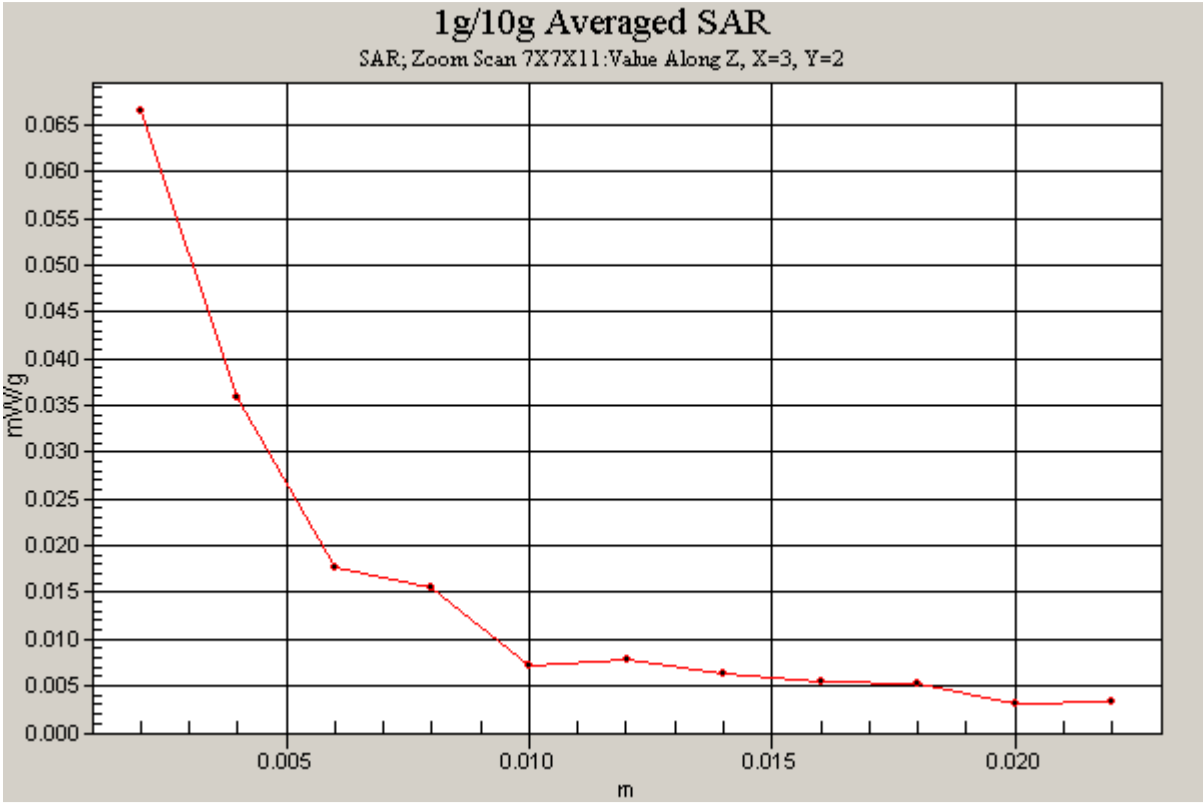
Communication System: IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5745 MHz; σ = 5.41 mho/m; ε_r = 34.3; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 7-27-2011; Ambient Temp: 22.6°C; Tissue Temp: 20.8°C

Probe: EX3DV4 - SN3550; ConvFConvF(3.64, 3.64, 3.64); Calibrated: 2/14/2011
Sensor-Surface: Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a, 5.8 GHz Left Head, Touch, Ch 149, 6 Mbps, Standard Battery

Area Scan (11x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.78 V/m
Peak SAR (extrapolated) = 0.147 W/kg
SAR(1 g) = 0.027 mW/g; SAR(10 g) = 0.00981 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

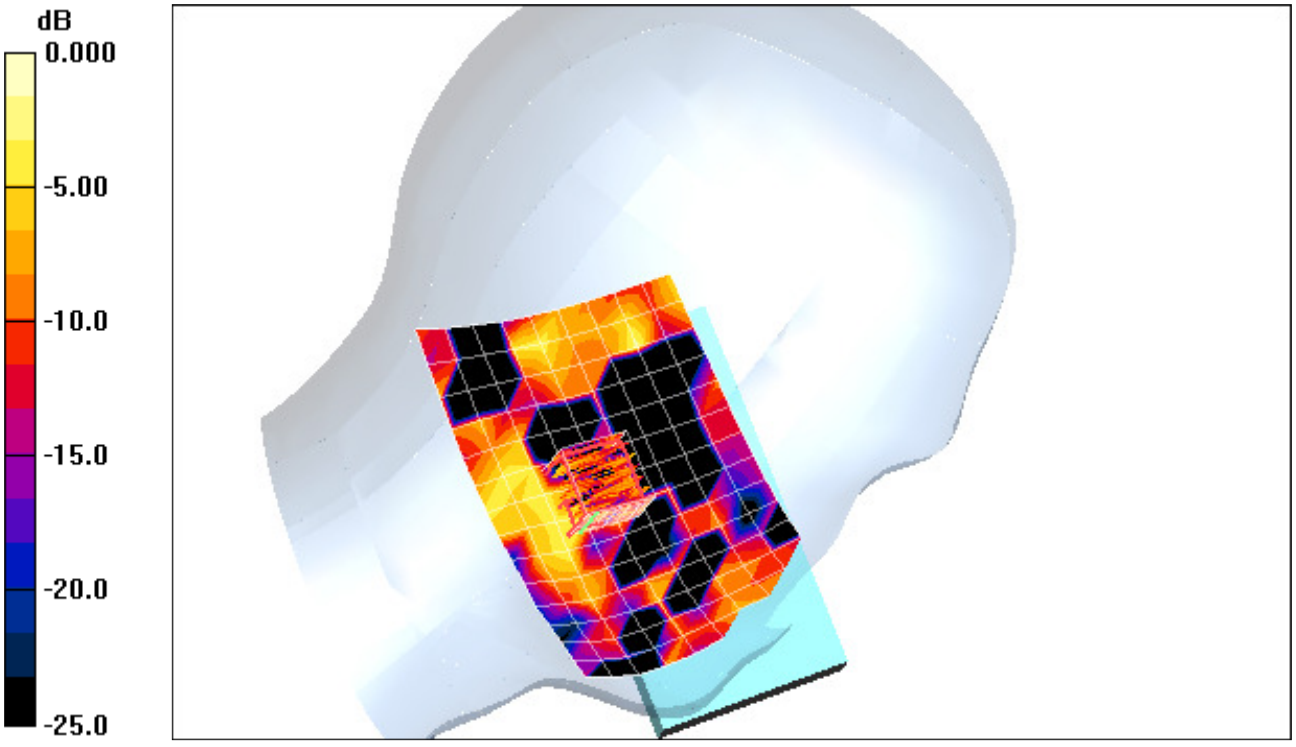
Communication System: IEEE 802.11a 5.2-5.8 GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5220 MHz; σ = 4.83 mho/m; ε_r = 35.2; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 7-27-2011; Ambient Temp: 22.3°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN3550; ConvF(4.06, 4.06, 4.06); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a, 5.2 GHz Left Head, Tilt, Ch 44, 6 Mbps, Standard Battery

Area Scan (10x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 1.32 V/m
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.021 mW/g; SAR(10 g) = 0.00387 mW/g



0 dB = 0.033mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

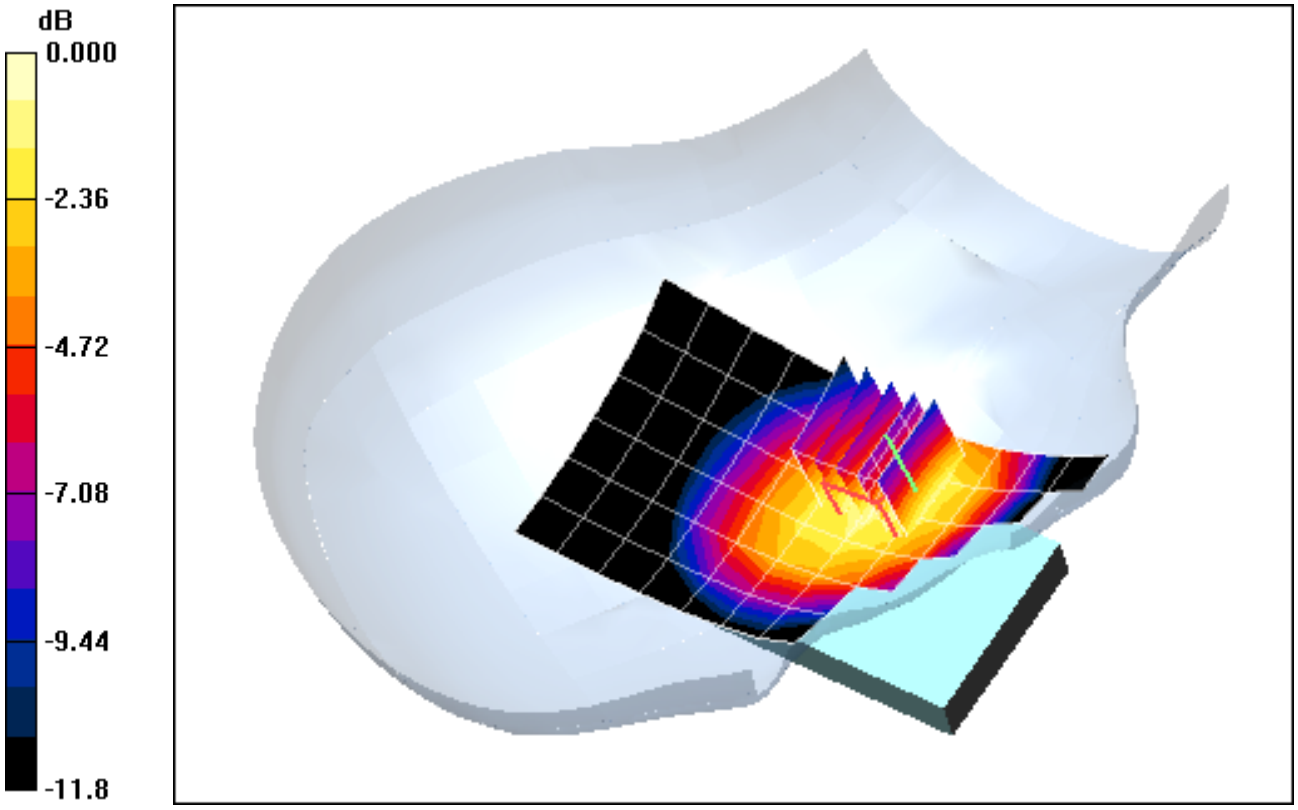
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Right Head, Touch, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.5 V/m
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.173 mW/g



0 dB = 0.255mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

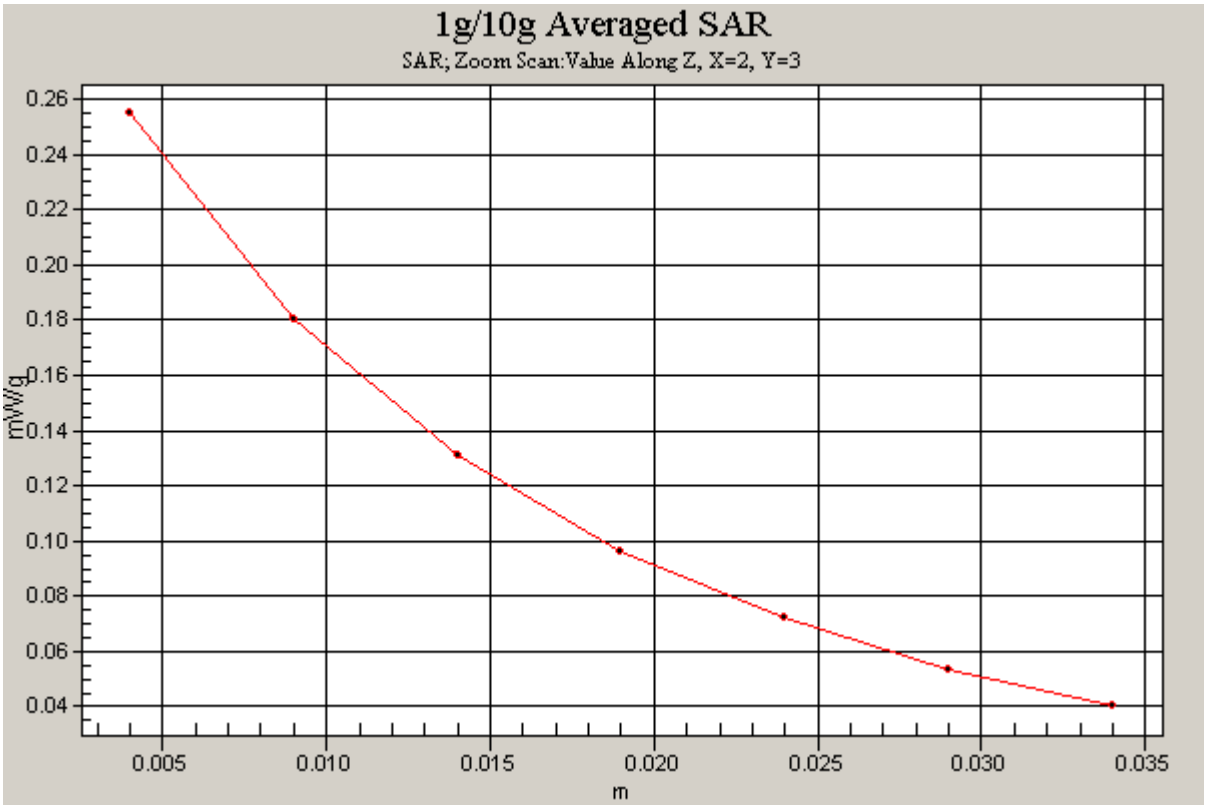
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Right Head, Touch, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.5 V/m
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.173 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

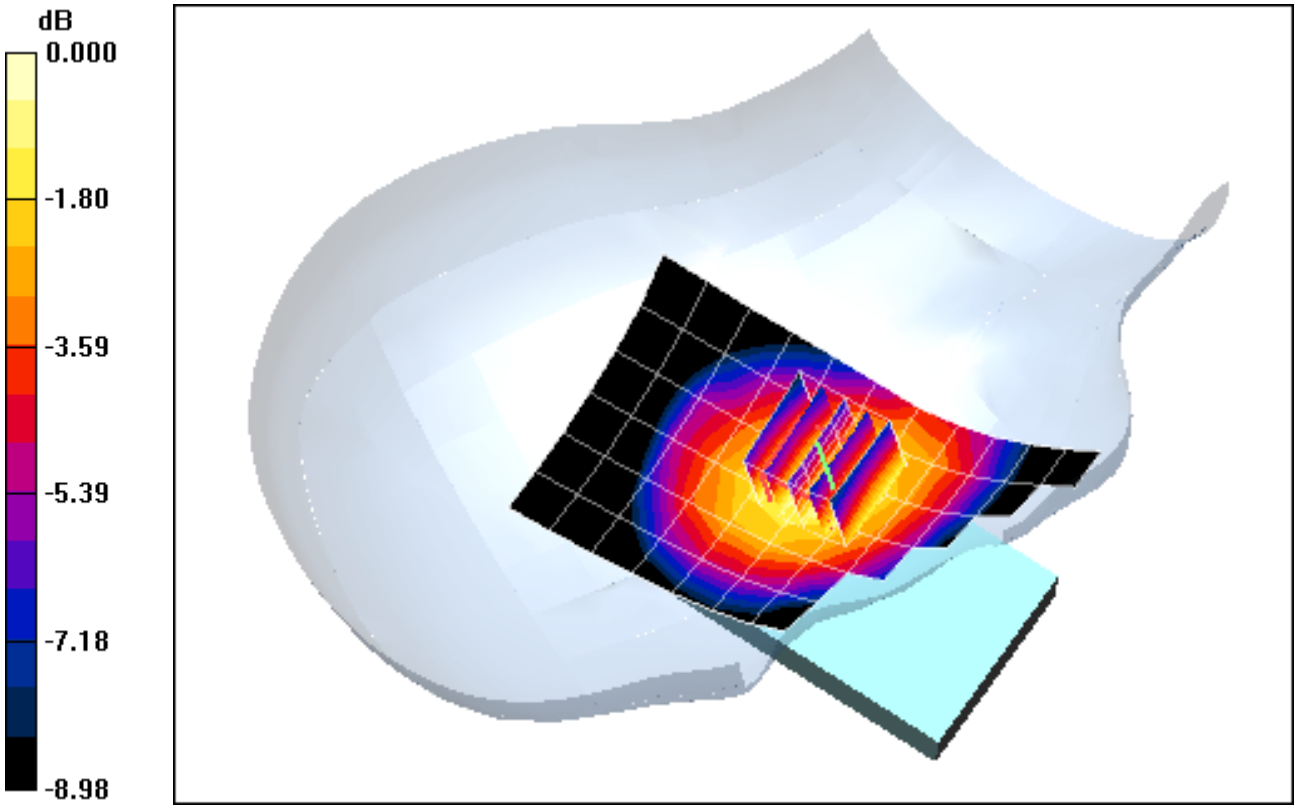
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Right Head, Tilt, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.1 V/m
Peak SAR (extrapolated) = 0.146 W/kg
SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.089 mW/g



0 dB = 0.122mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

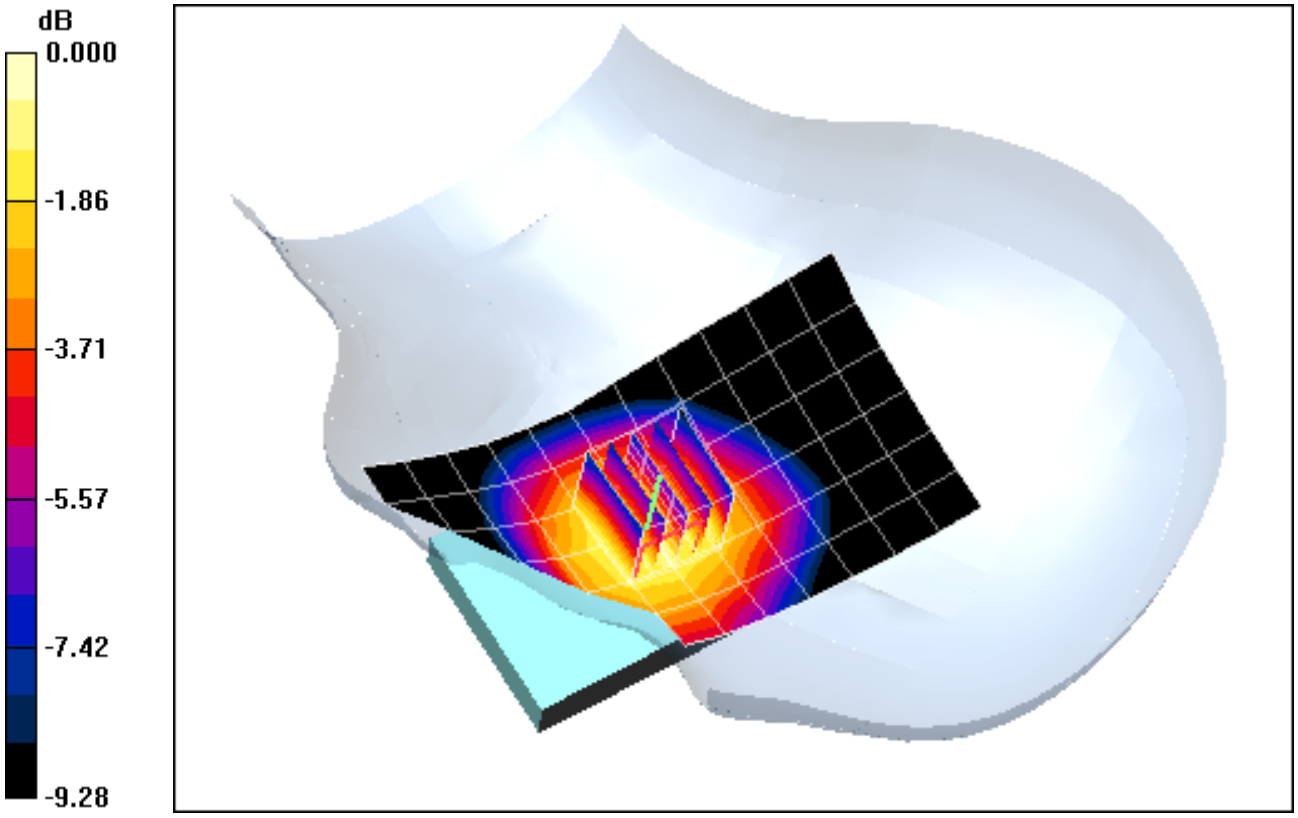
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Left Head, Touch, Mid.ch, QPSK, 1 RB, RB Offset, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.9 V/m
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.133 mW/g



0 dB = 0.185mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

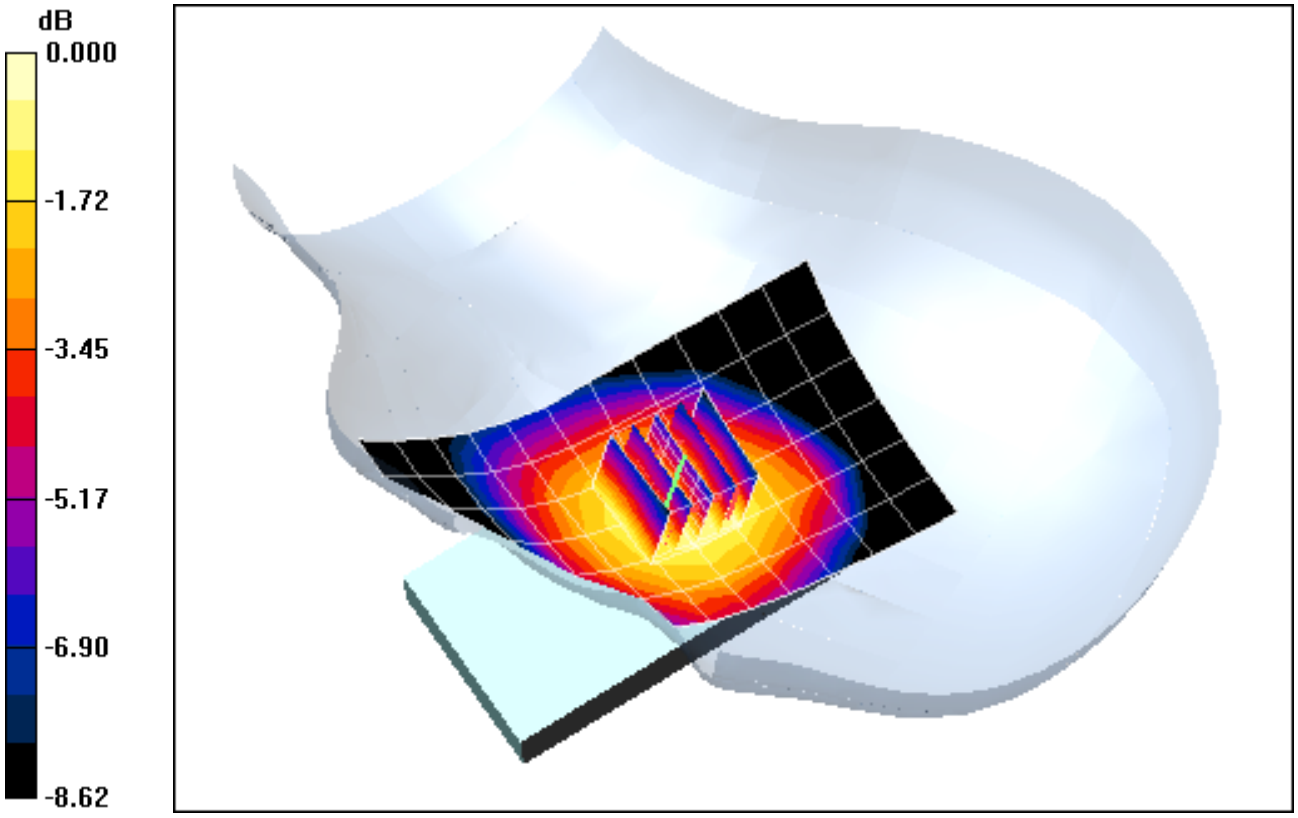
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 782 MHz; σ = 0.935 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Left Head, Tilt, Mid.ch, QPSK,1 RB, RB Offset 49, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m
Peak SAR (extrapolated) = 0.112 W/kg
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.069 mW/g



0 dB = 0.094mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

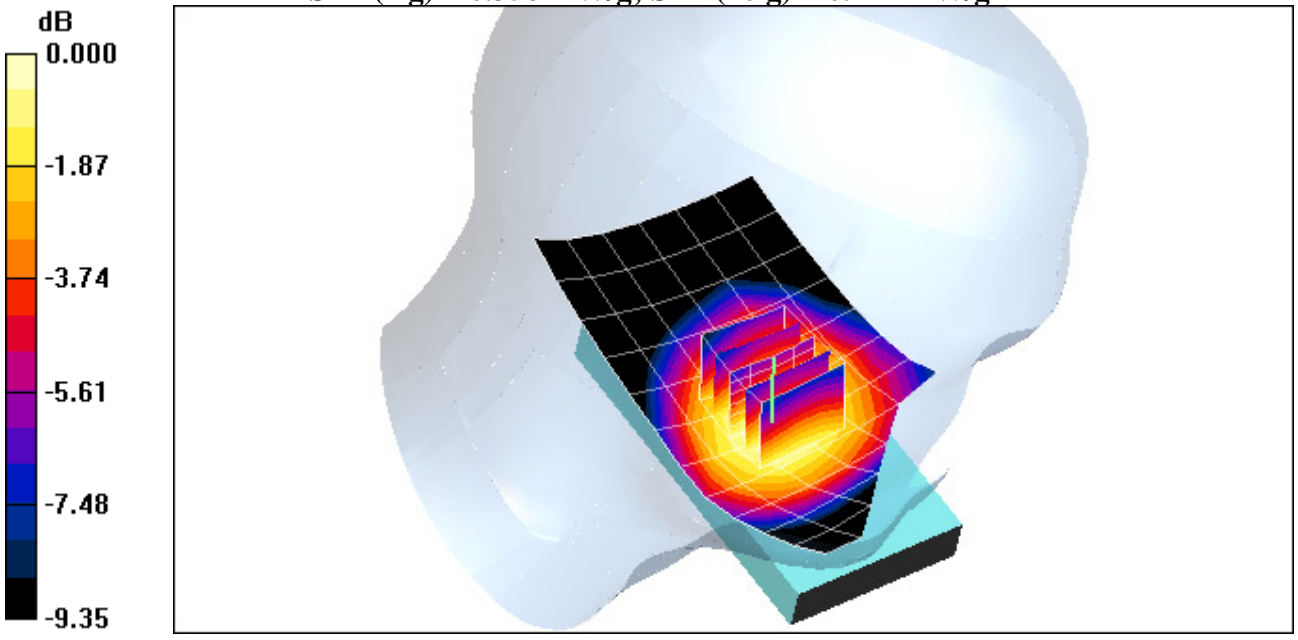
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.903 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Left Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.26 V/m
Peak SAR (extrapolated) = 0.445 W/kg
SAR(1 g) = 0.356 mW/g; SAR(10 g) = 0.274 mW/g



0 dB = 0.373mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

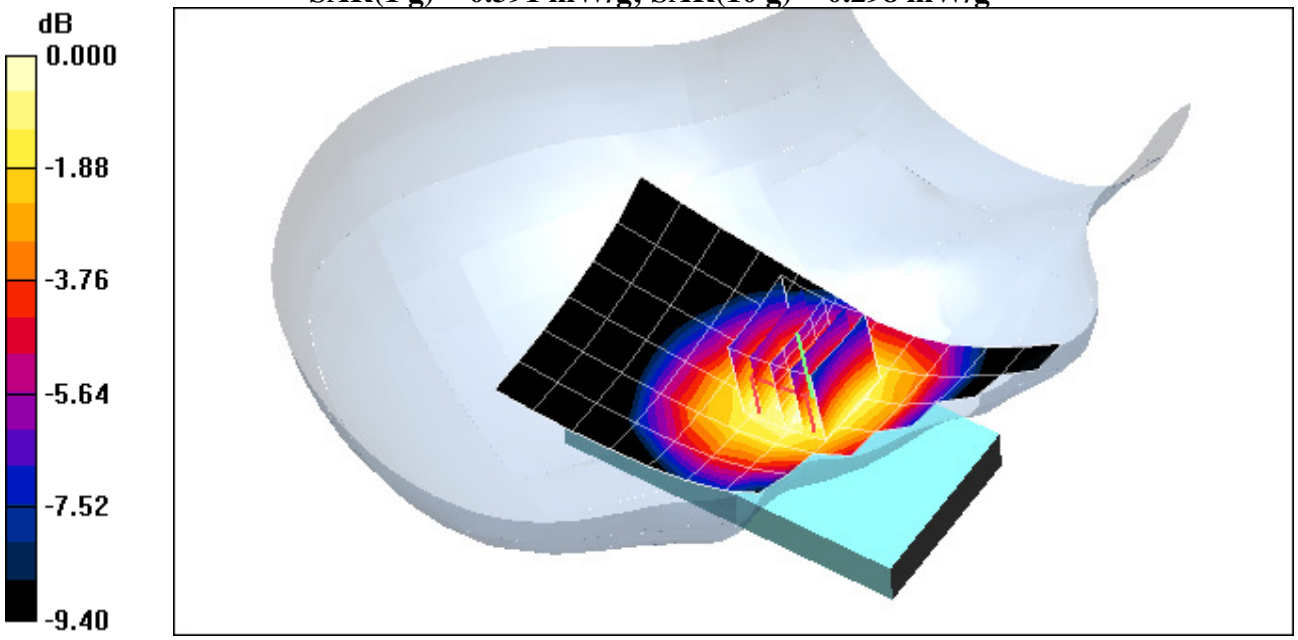
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.903 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Right Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.8 V/m
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.391 mW/g; SAR(10 g) = 0.298 mW/g



0 dB = 0.415mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

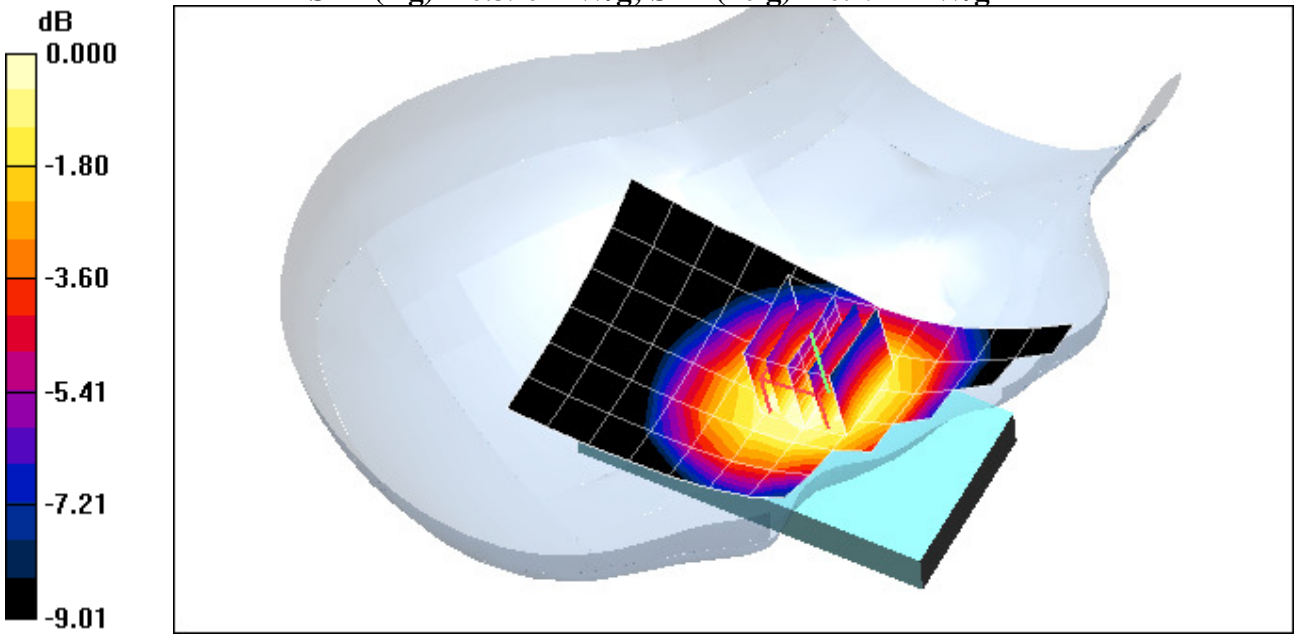
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.887 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°CC

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Right Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.2 V/m
Peak SAR (extrapolated) = 0.490 W/kg
SAR(1 g) = 0.390 mW/g; SAR(10 g) = 0.297 mW/g



0 dB = 0.408mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

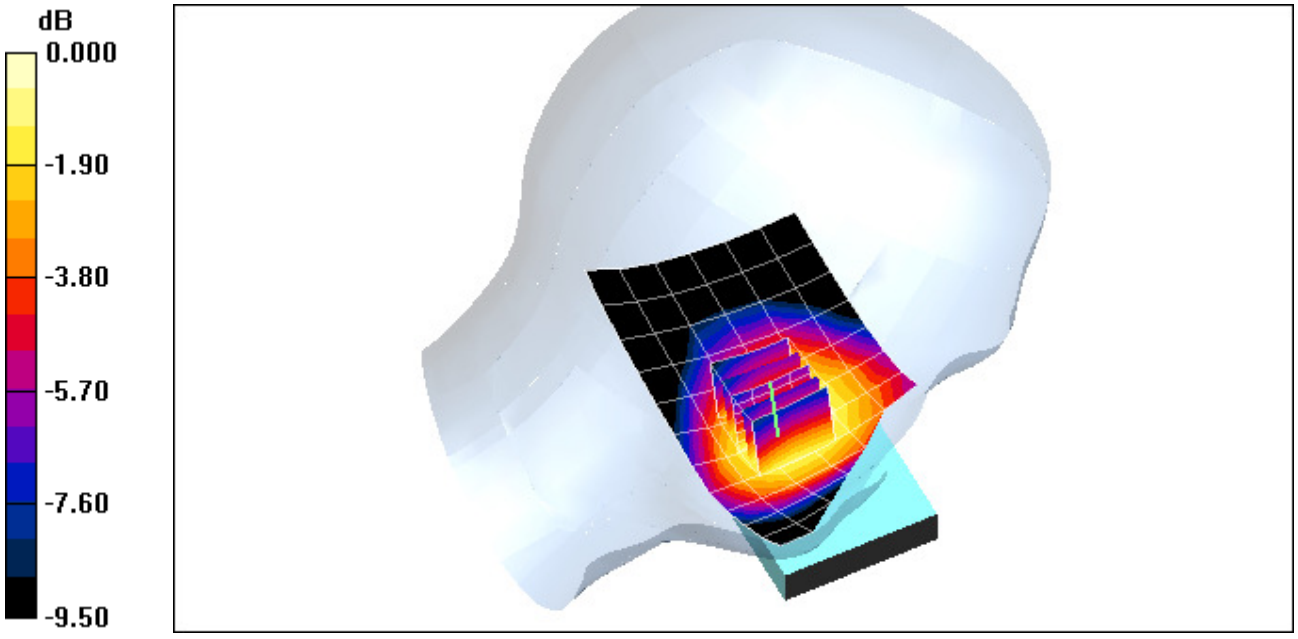
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.903 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Phantom section: Left Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Left Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.51 V/m
Peak SAR (extrapolated) = 0.602 W/kg
SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.355 mW/g



0 dB = 0.497mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

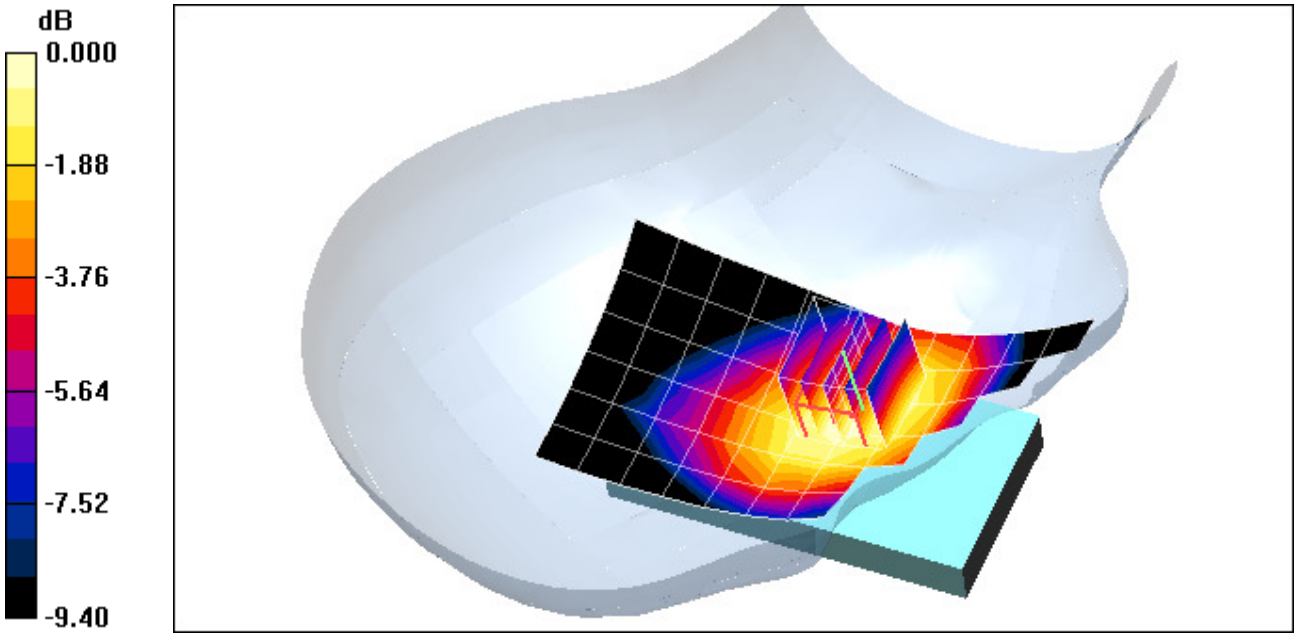
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.903 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Right Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.8 V/m
Peak SAR (extrapolated) = 0.700 W/kg
SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.406 mW/g



0 dB = 0.570mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

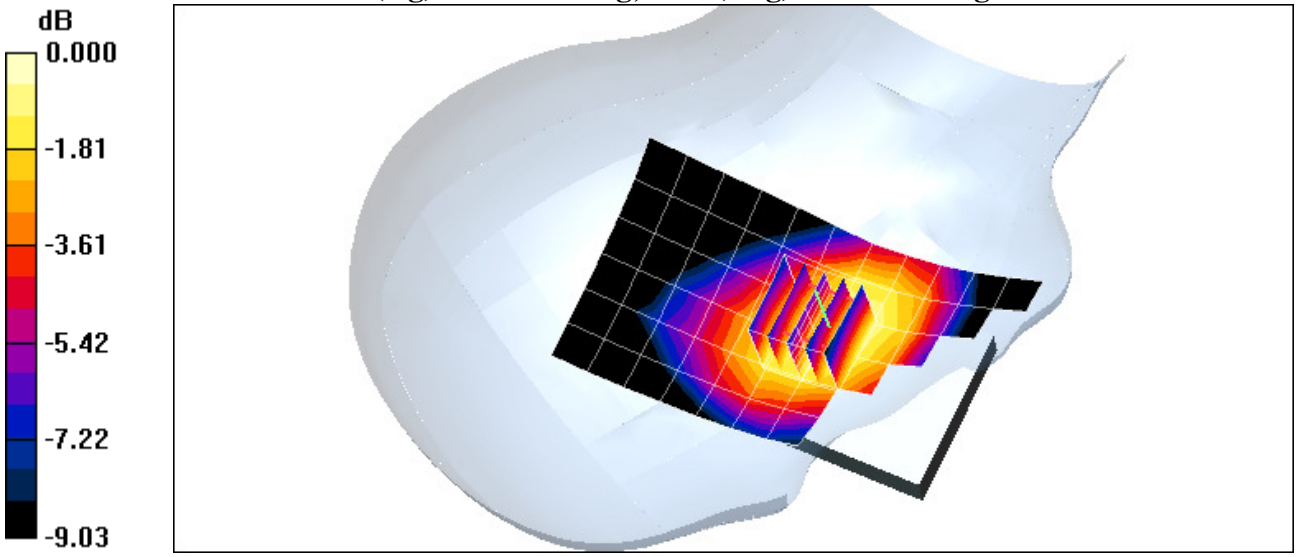
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.887 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Right Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.9 V/m
Peak SAR (extrapolated) = 0.723 W/kg
SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.427 mW/g



0 dB = 0.592mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

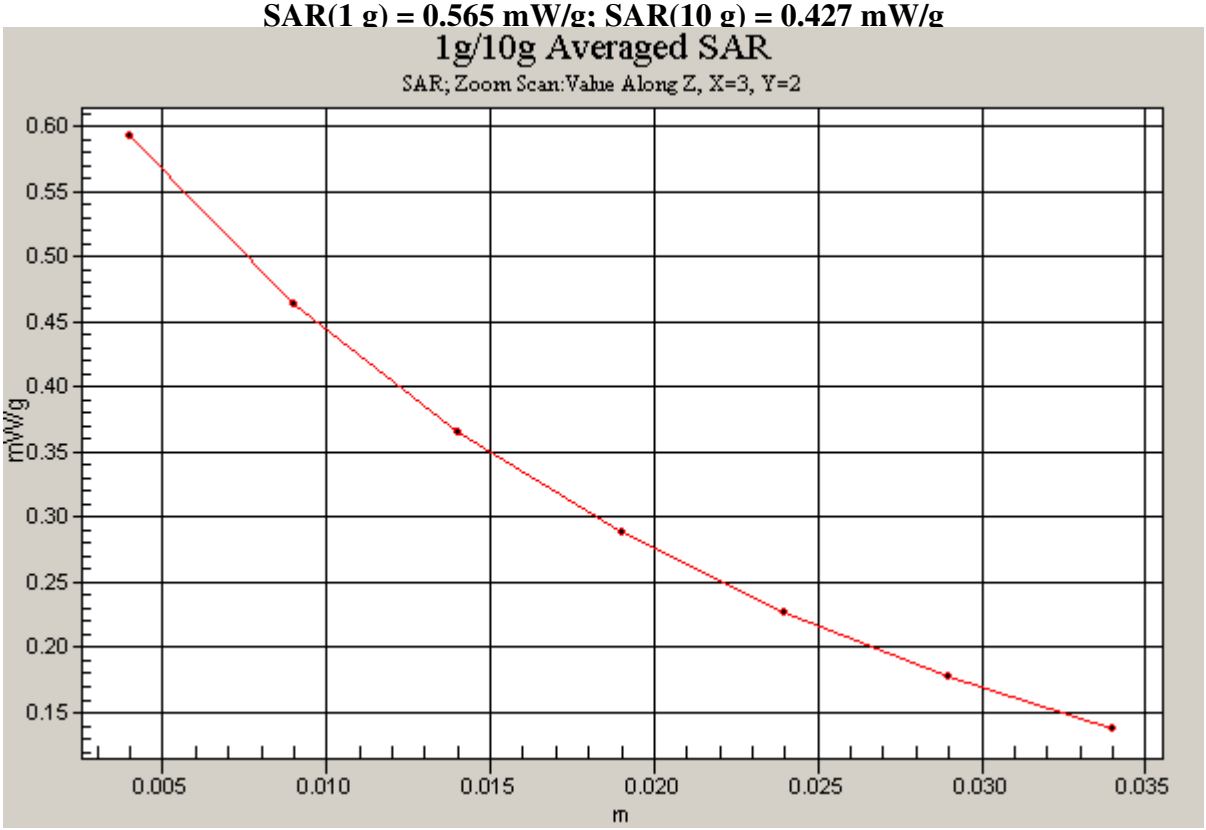
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.887 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Phantom section: Right Section

Test Date: 8-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Right Head, Touch, Standard Battery

Area Scan (7x14x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.9 V/m
Peak SAR (extrapolated) = 0.723 W/kg
SAR(1 g) = 0.565 mW/g; SAR(10 g) = 0.427 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

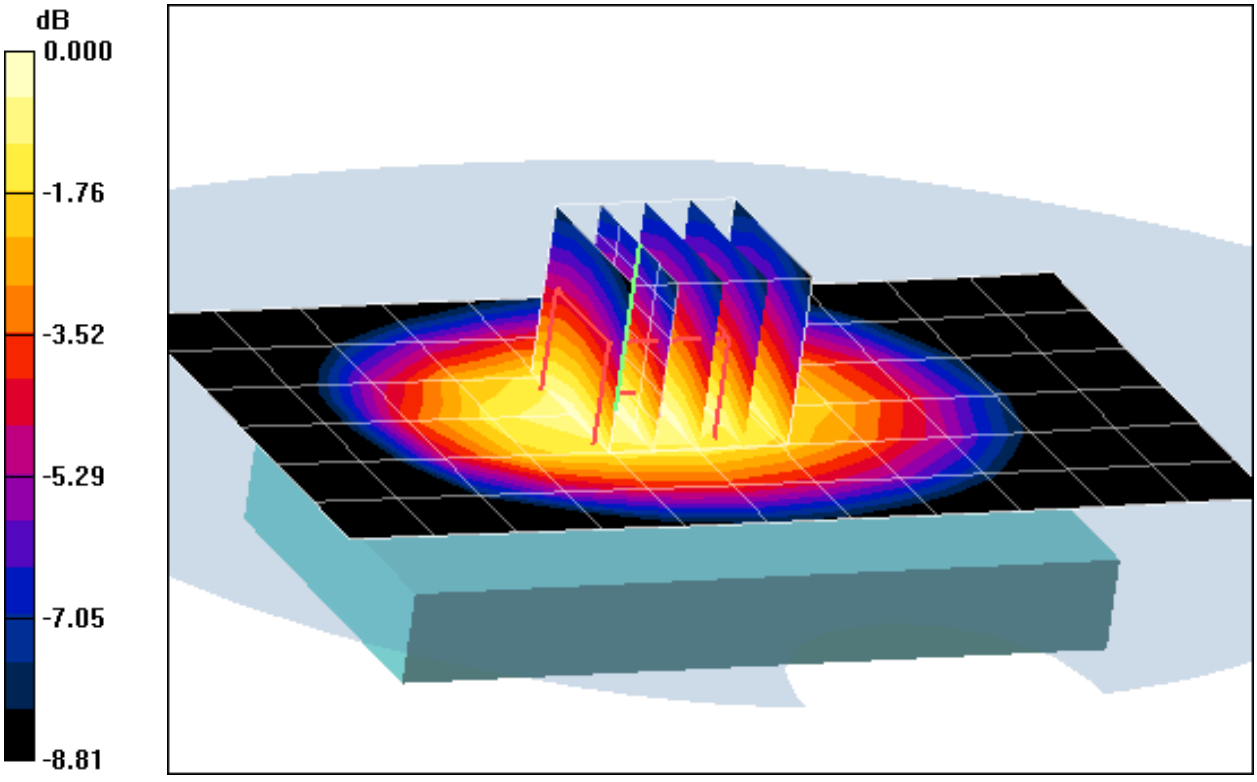
Communication System: Cellular CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
$f = 824.7$ MHz; $\sigma = 0.978$ mho/m; $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular TDSO32, Body SAR, Back side, Low.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 36.4 V/m
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.819 mW/g



0 dB = 1.17mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

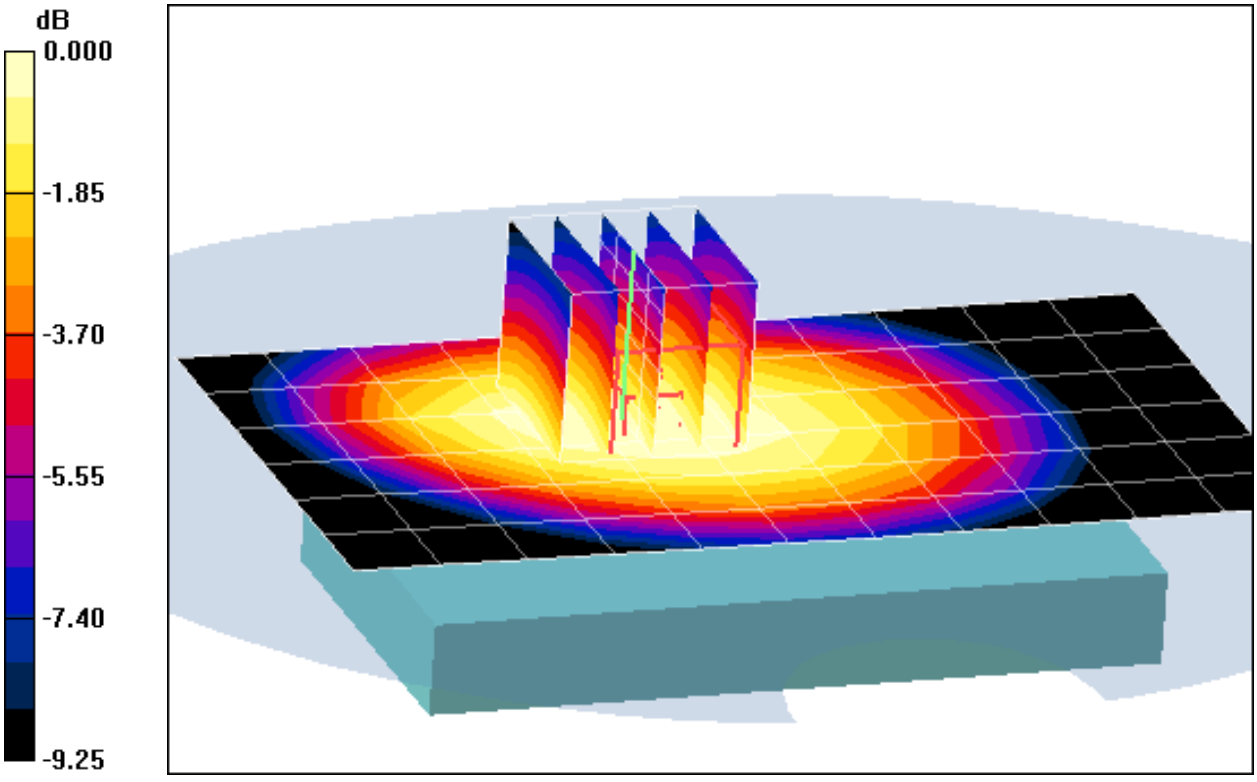
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
$f = 836.52$ MHz; $\sigma = 0.987$ mho/m; $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular TDSO32, Body SAR, Front side, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.6 V/m
Peak SAR (extrapolated) = 0.503 W/kg
SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.293 mW/g



0 dB = 0.404mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

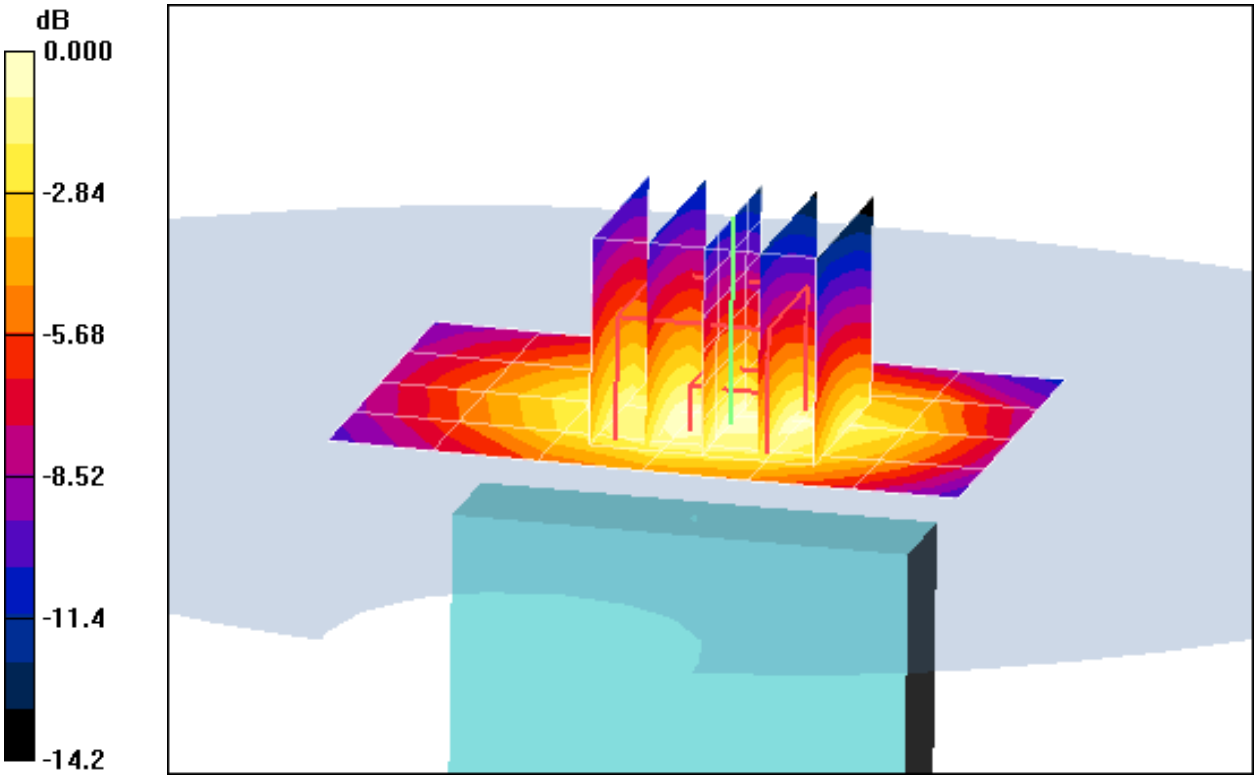
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.987 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular TDSO32, Body SAR, Bottom Edge, Mid.ch, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.6 V/m
Peak SAR (extrapolated) = 0.236 W/kg
SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.081 mW/g



0 dB = 0.141mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

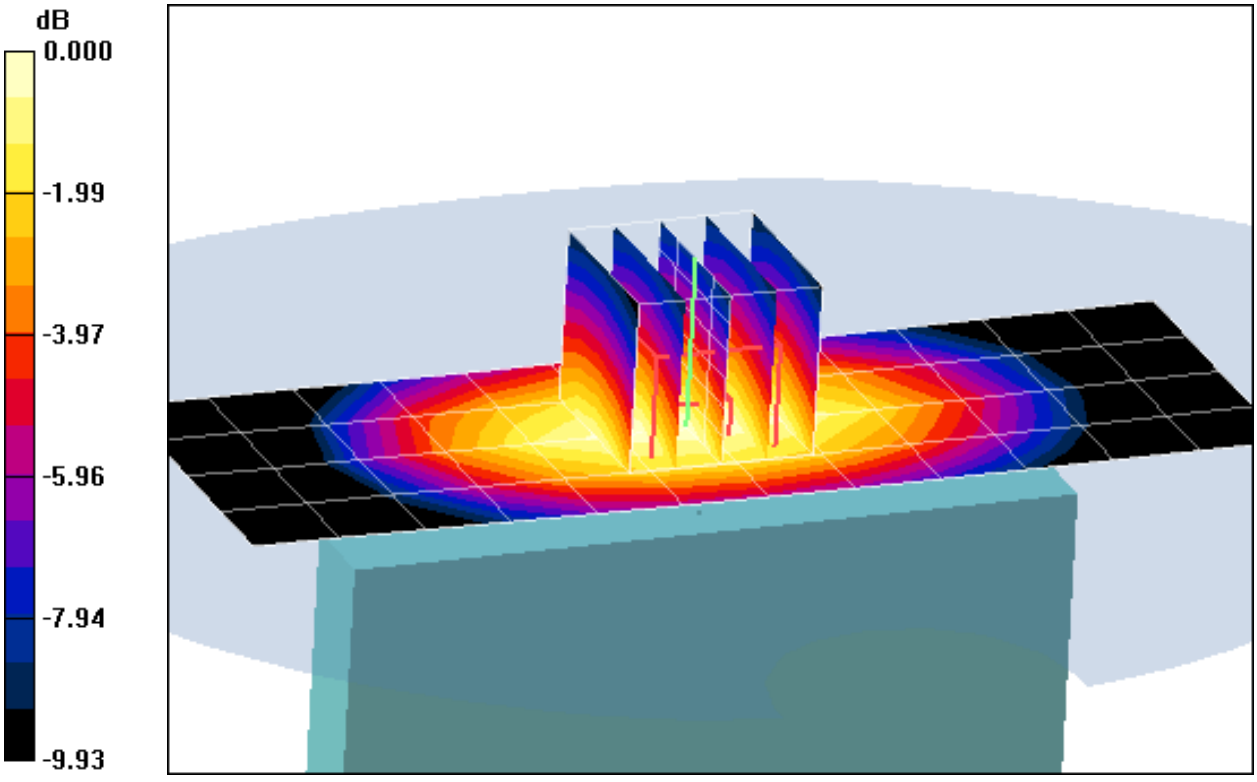
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.987 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular TDSO32, Body SAR, Left Edge, Mid.ch, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.2 V/m
Peak SAR (extrapolated) = 0.865 W/kg
SAR(1 g) = 0.608 mW/g; SAR(10 g) = 0.417 mW/g



0 dB = 0.653mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

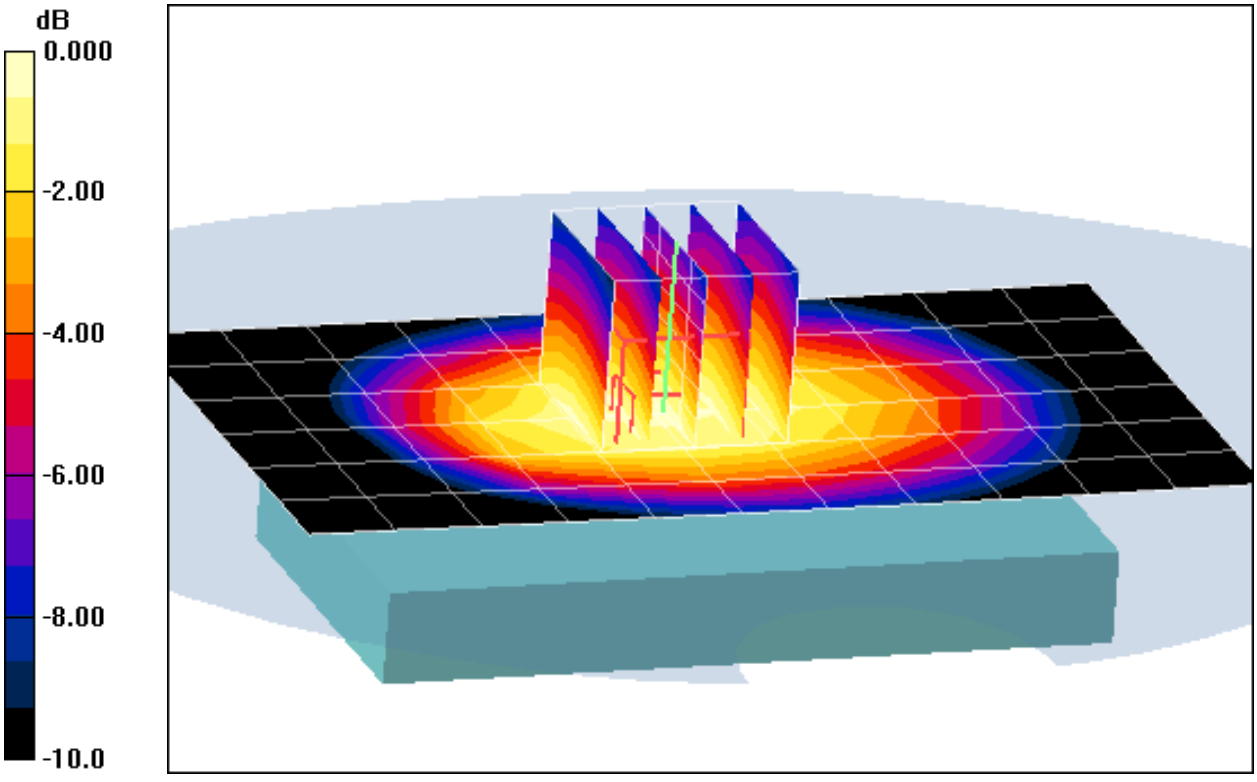
Communication System: Cellular CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
$f = 824.7$ MHz; $\sigma = 0.978$ mho/m; $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular EVDO, Body SAR, Back side, Low.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.4 V/m
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.840 mW/g



0 dB = 1.20mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

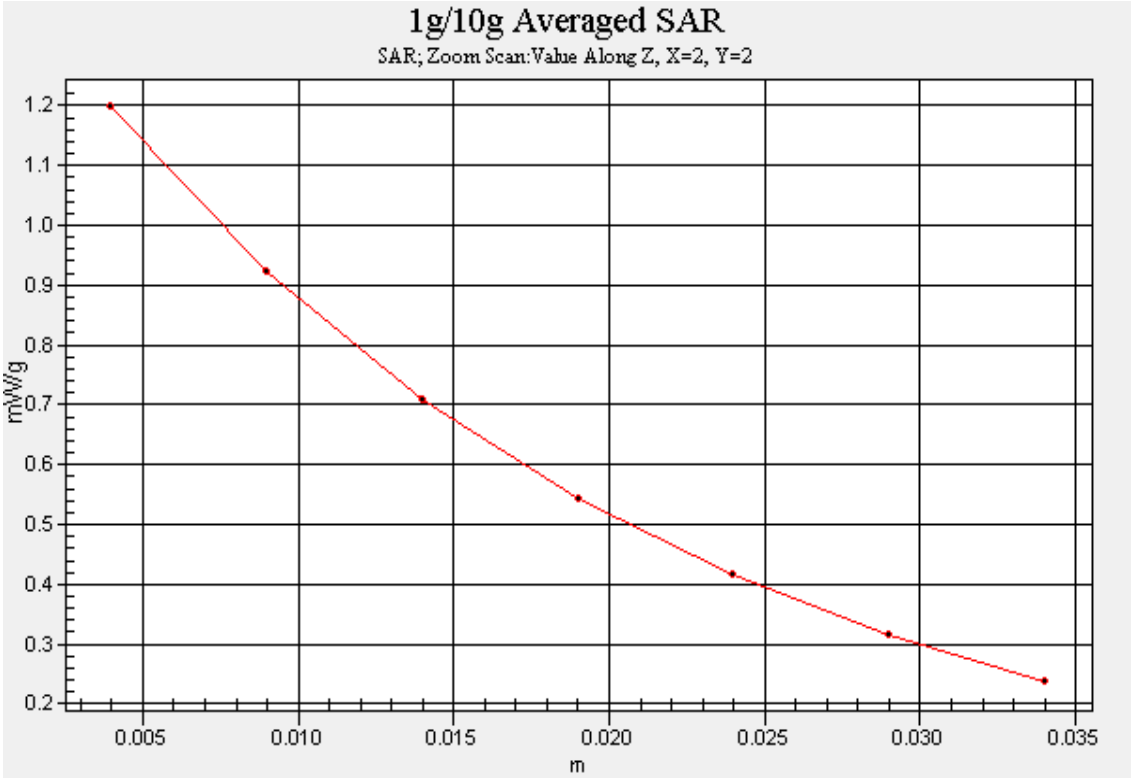
Communication System: Cellular CDMA; Frequency: 824.7 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
$f = 824.7$ MHz; $\sigma = 0.978$ mho/m; $\varepsilon_r = 54.9$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular EVDO, Body SAR, Back side, Low.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.4 V/m
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.840 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

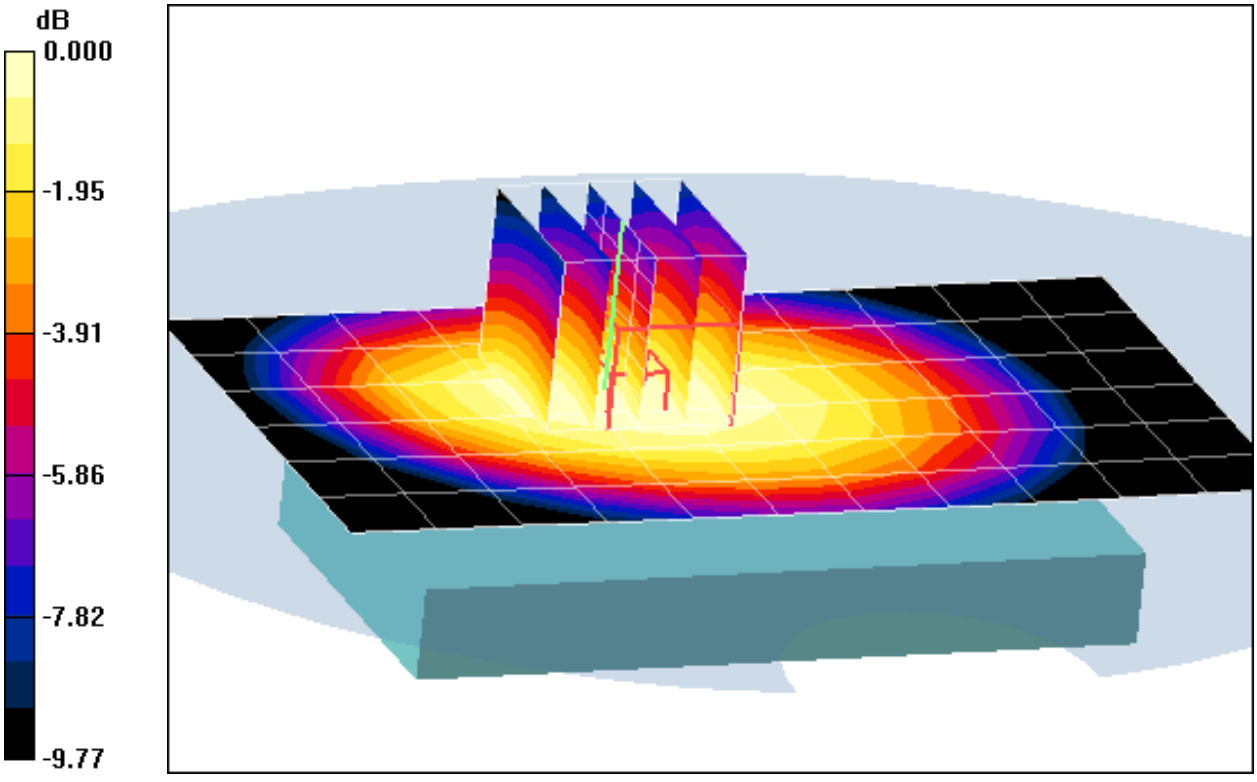
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.987 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular EVDO, Body SAR, Front side, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.0 V/m
Peak SAR (extrapolated) = 0.448 W/kg
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.259 mW/g



0 dB = 0.362mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

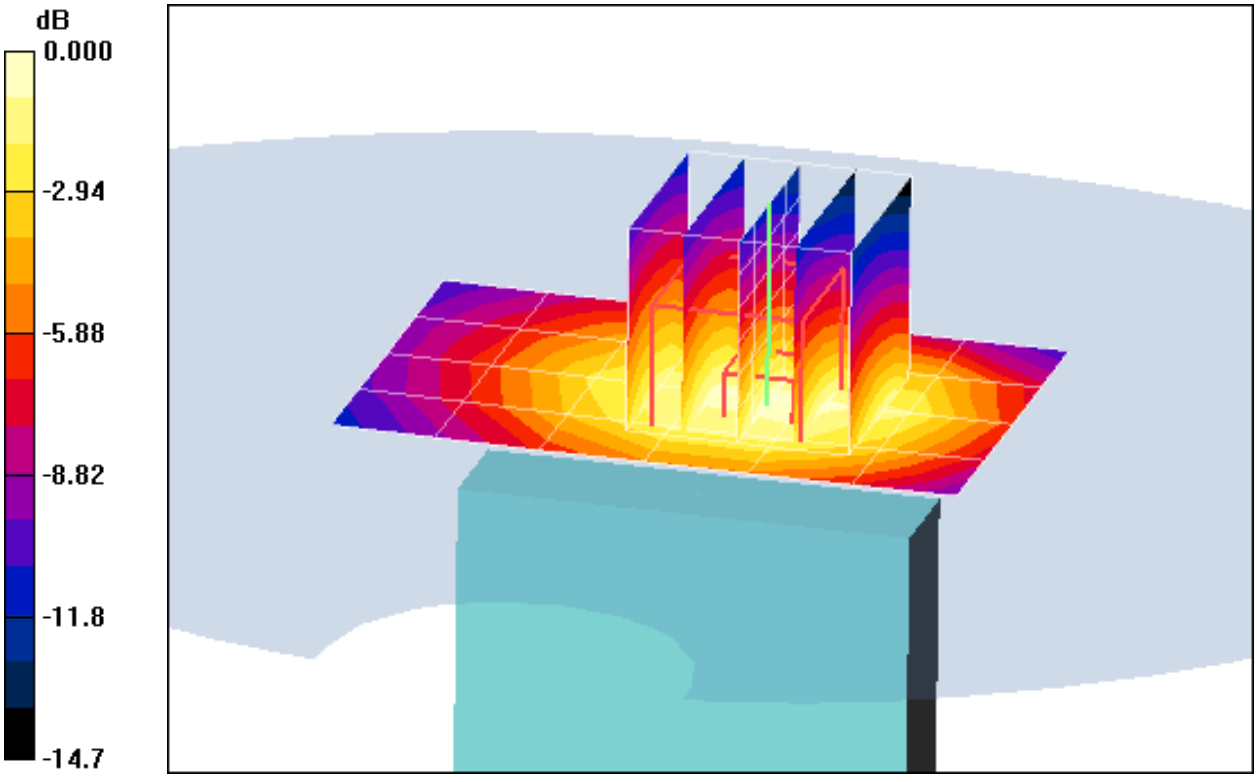
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.987 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular EVDO, Body SAR, Bottom Edge, Mid.ch, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.5 V/m
Peak SAR (extrapolated) = 0.215 W/kg
SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.072 mW/g



0 dB = 0.129mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

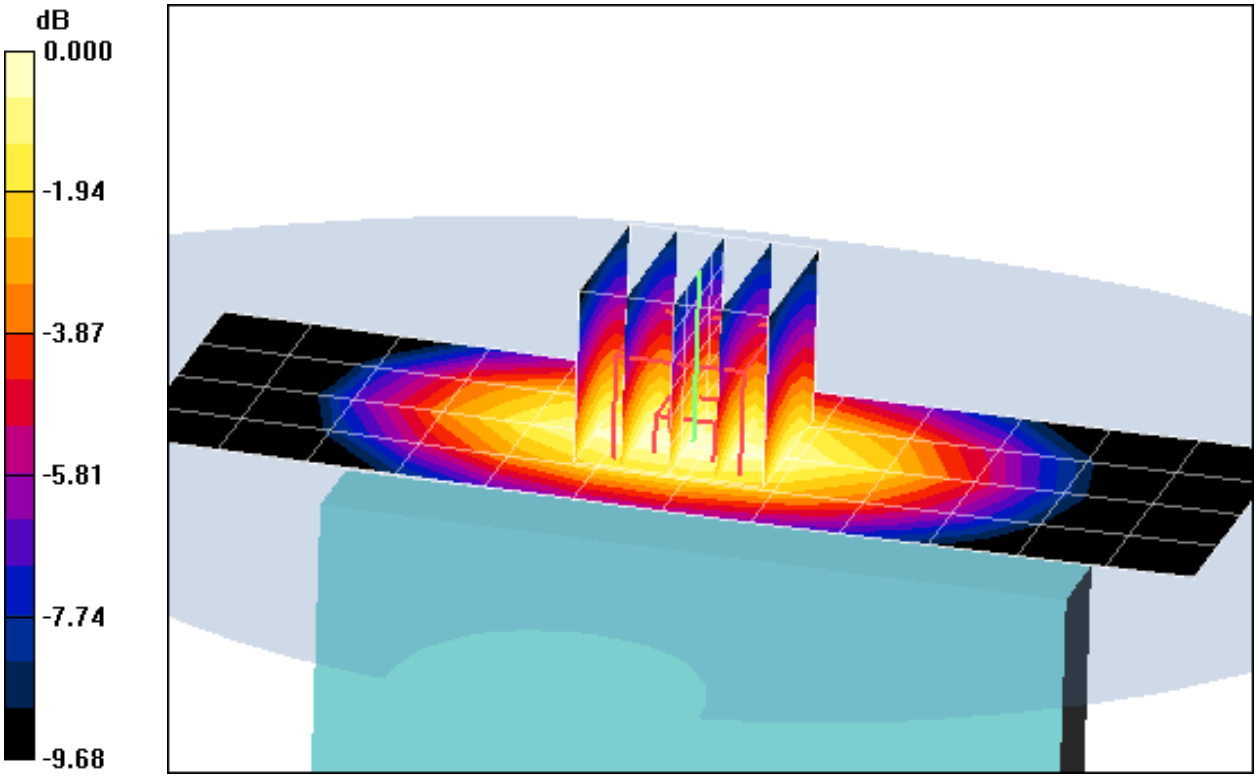
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Body; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.987 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 24.0°C; Tissue Temp: 22.2°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular EVDO, Body SAR, Left Edge, Mid.ch, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.6 V/m
Peak SAR (extrapolated) = 0.691 W/kg
SAR(1 g) = 0.490 mW/g; SAR(10 g) = 0.339 mW/g



0 dB = 0.523mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 8Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

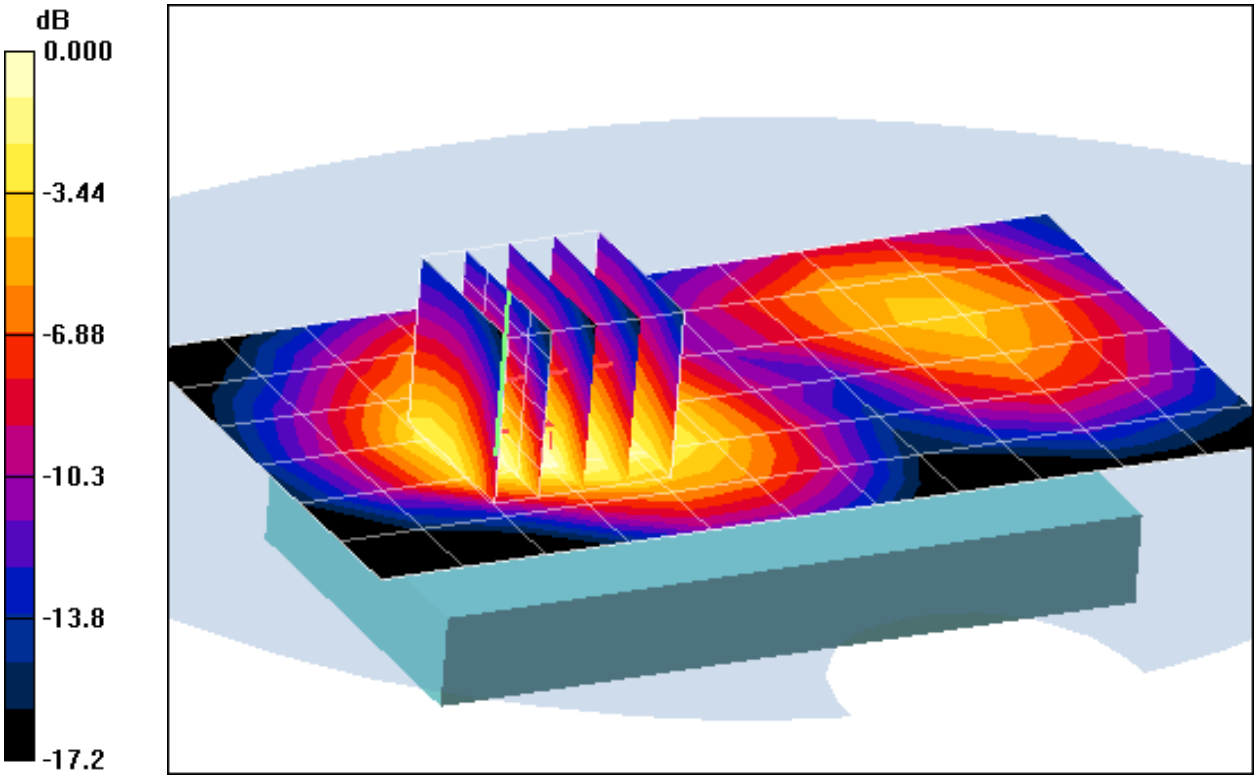
Communication System: PCS CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.52 mho/m; ε_r = 53.26; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32, Body SAR, Back side, High.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.5 V/m
Peak SAR (extrapolated) = 1.78 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.601 mW/g



0 dB = 1.13mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

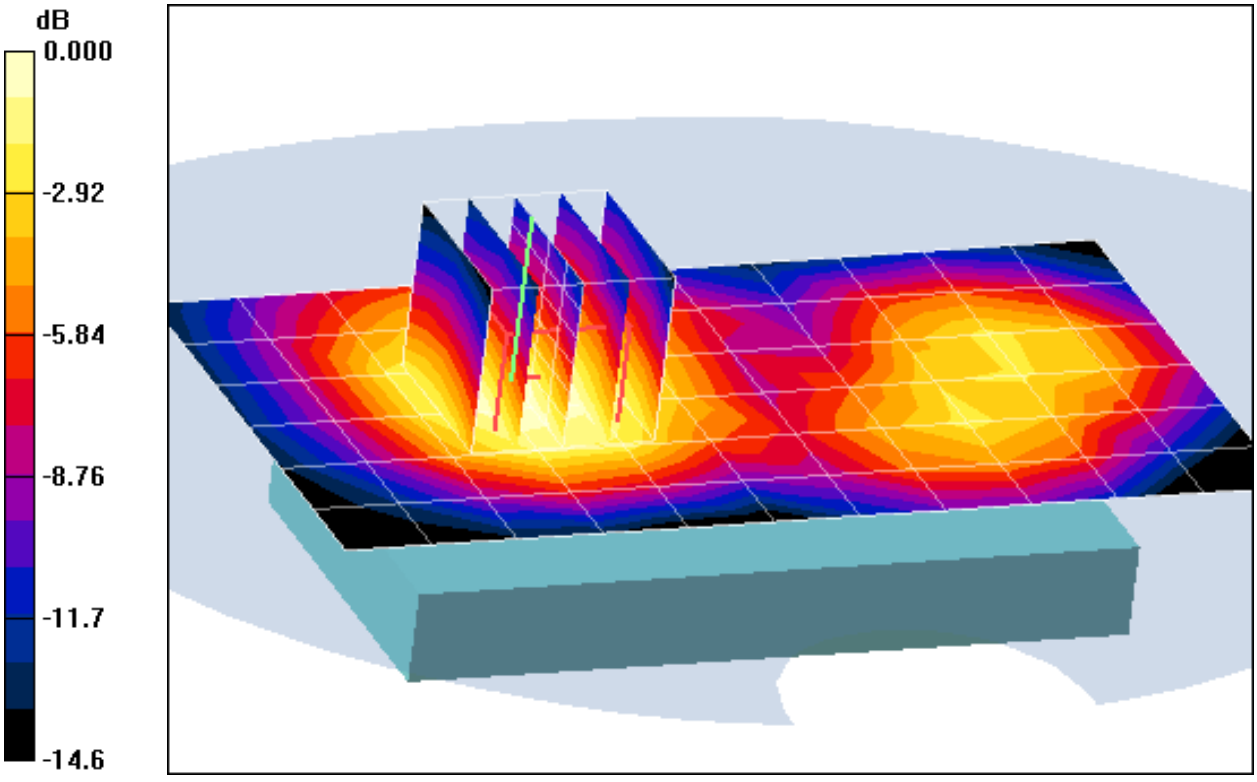
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32, Body SAR, Front side, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.5 V/m
Peak SAR (extrapolated) = 0.645 W/kg
SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.289 mW/g



0 dB = 0.470mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

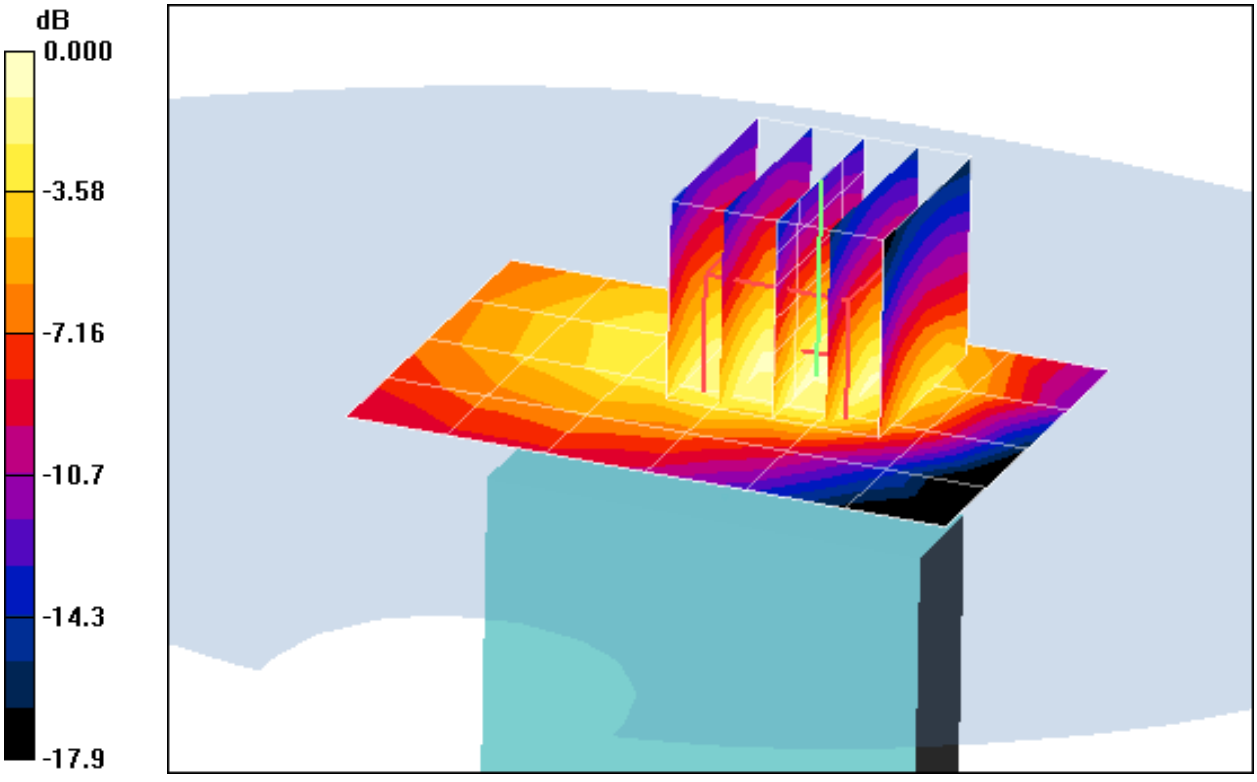
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32, Body SAR, Bottom Edge, Mid.ch, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.4 V/m
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.196 mW/g



0 dB = 0.373mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

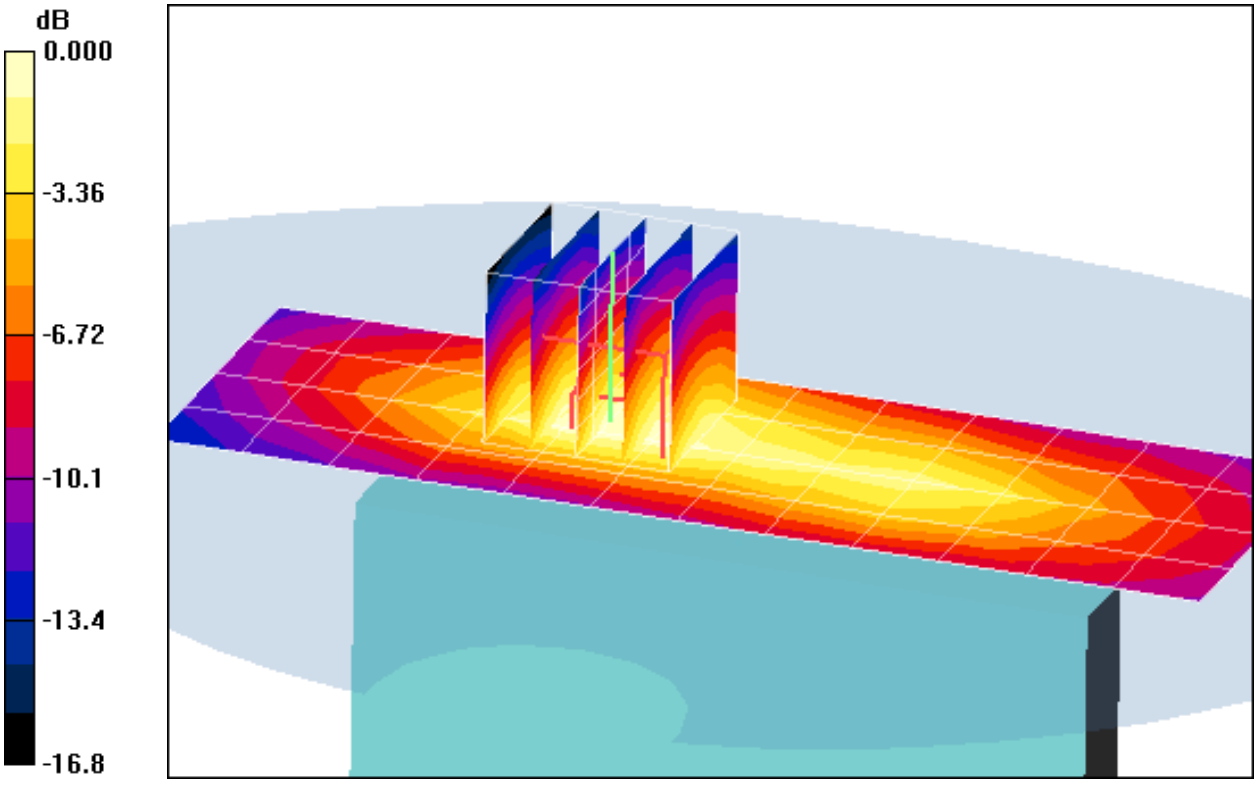
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32, Body SAR, Left Edge, Mid.ch, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.7 V/m
Peak SAR (extrapolated) = 0.445 W/kg
SAR(1 g) = 0.280 mW/g; SAR(10 g) = 0.165 mW/g



0 dB = 0.314mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

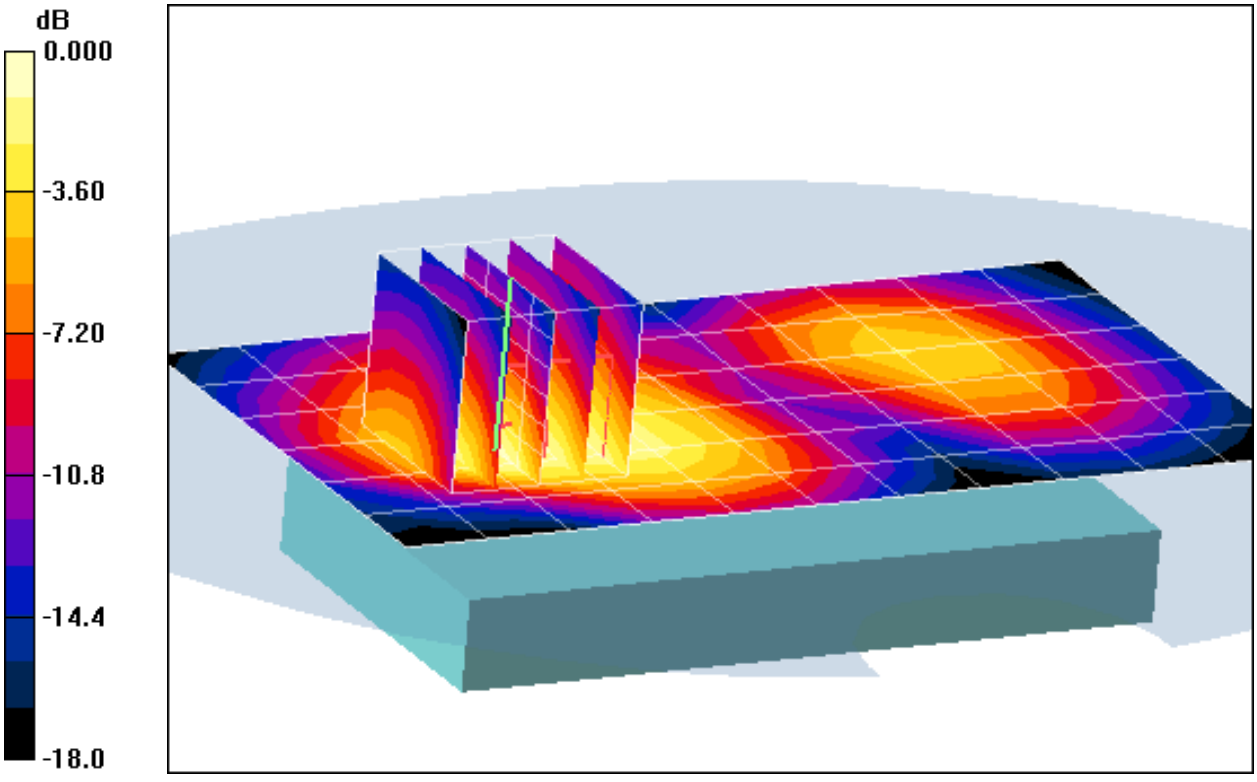
Communication System: PCS CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
$f = 1908.75$ MHz; $\sigma = 1.52$ mho/m; $\varepsilon_r = 53.26$; $\rho = 1000$ kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32+SCH, Body SAR, Back side, High.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.5 V/m
Peak SAR (extrapolated) = 1.96 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.687 mW/g



0 dB = 1.28mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

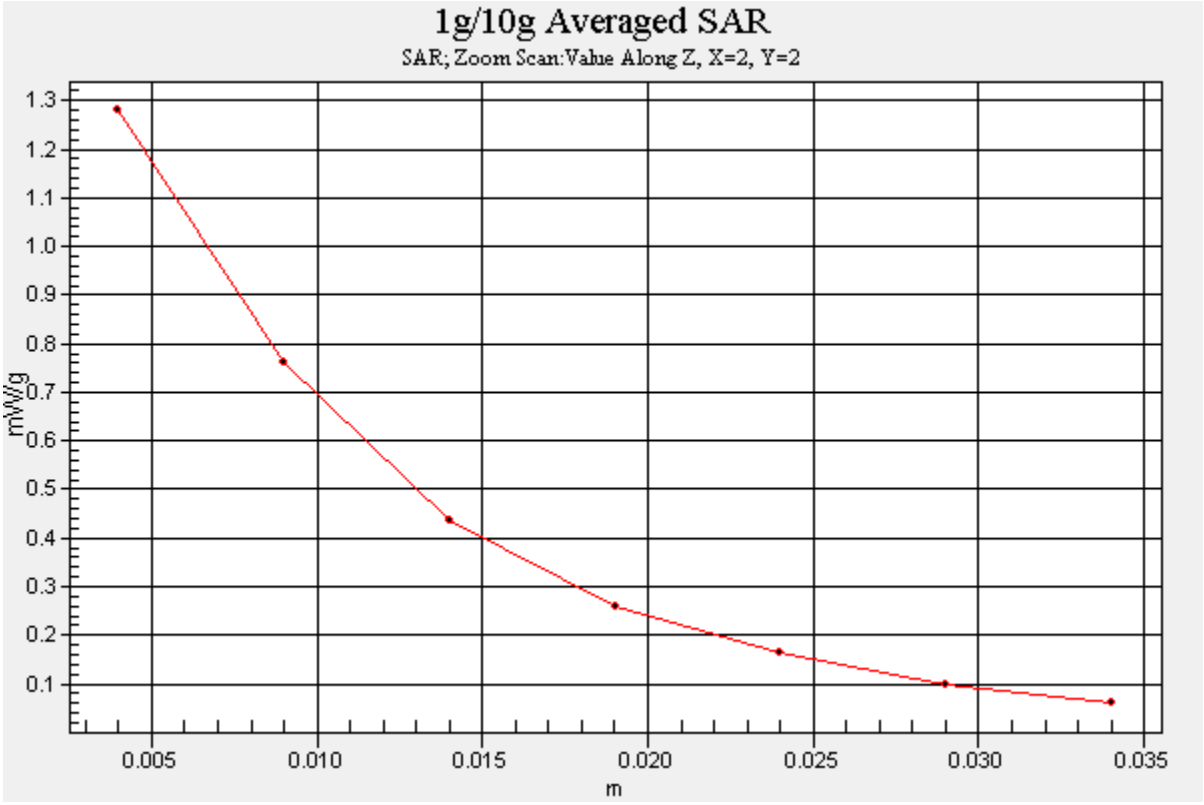
Communication System: PCS CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.52 mho/m; ε_r = 53.26; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32, Body SAR, Back side, High.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.5 V/m
Peak SAR (extrapolated) = 1.96 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.687 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #2

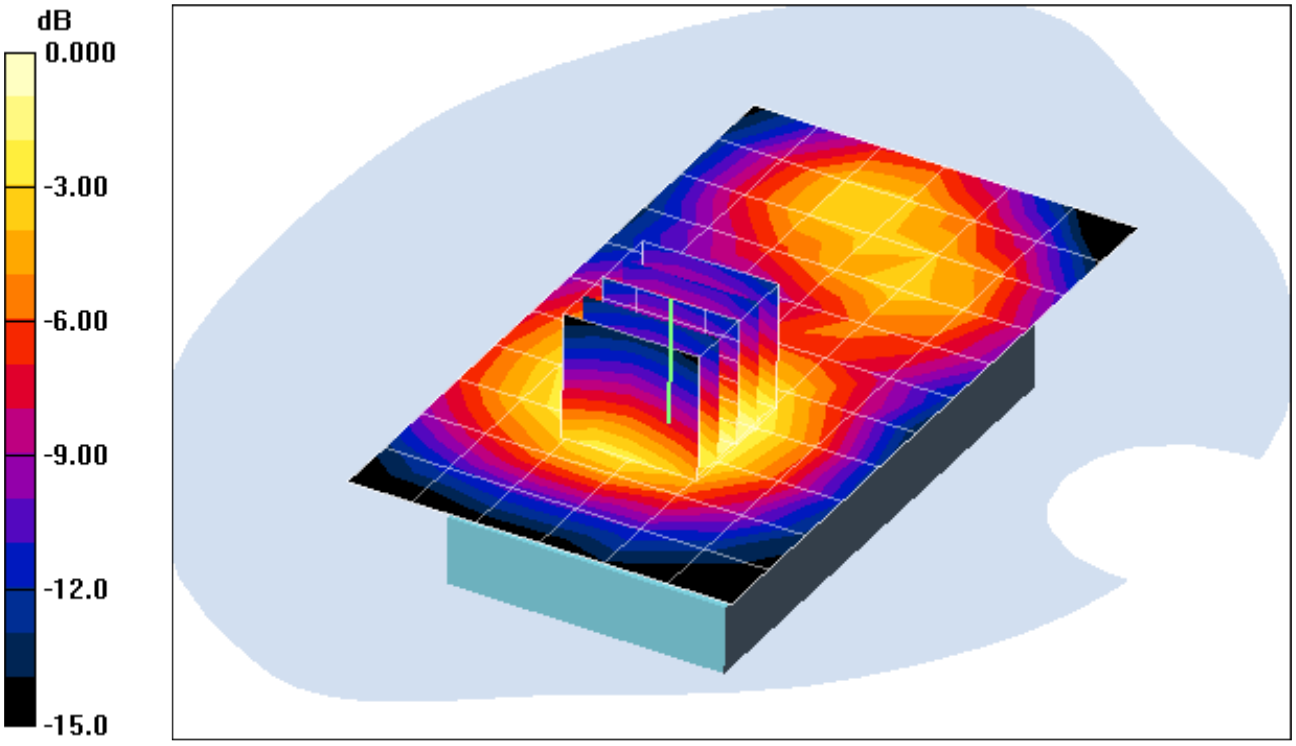
Communication System: PCS CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32+SCH, Body SAR, Front side, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.7 V/m
Peak SAR (extrapolated) = 0.843 W/kg
SAR(1 g) = 0.568 mW/g; SAR(10 g) = 0.361 mW/g



0 dB = 0.613mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

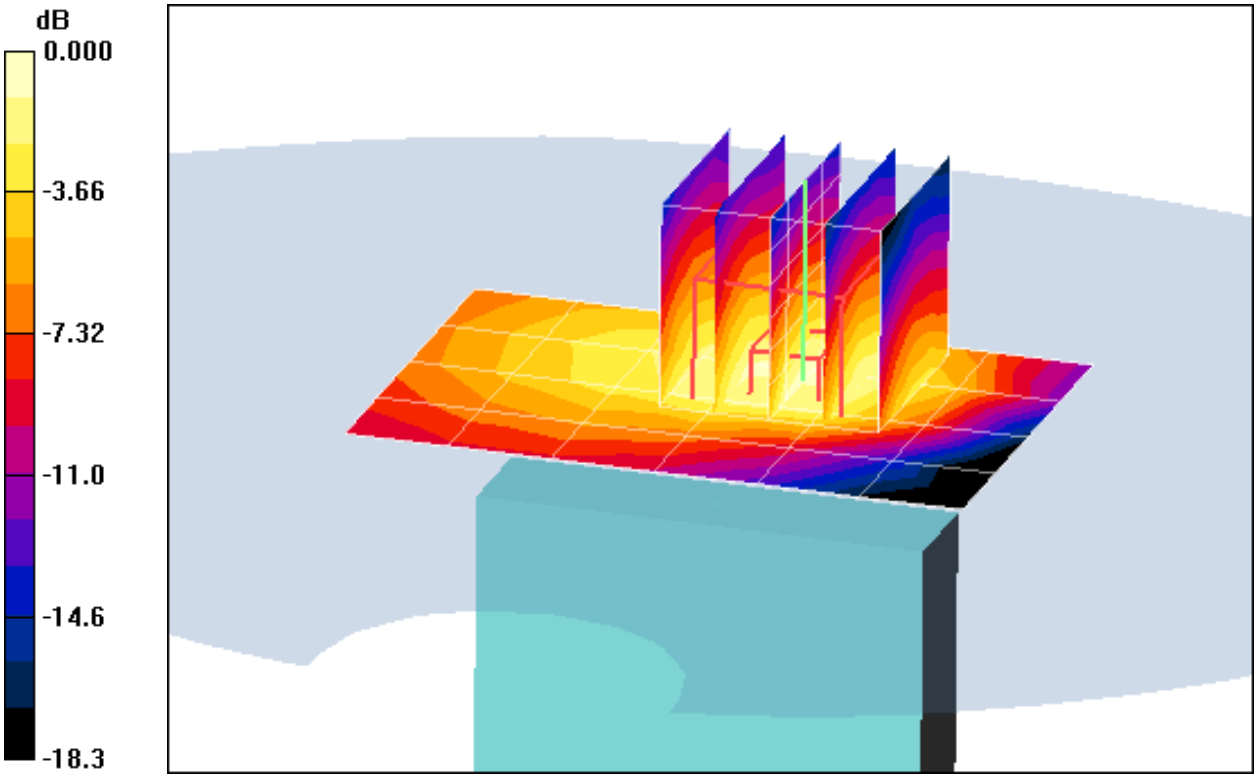
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32+SCH, Body SAR, Bottom Edge, Mid.ch, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.8 V/m
Peak SAR (extrapolated) = 0.522 W/kg
SAR(1 g) = 0.335 mW/g; SAR(10 g) = 0.192 mW/g



0 dB = 0.380mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

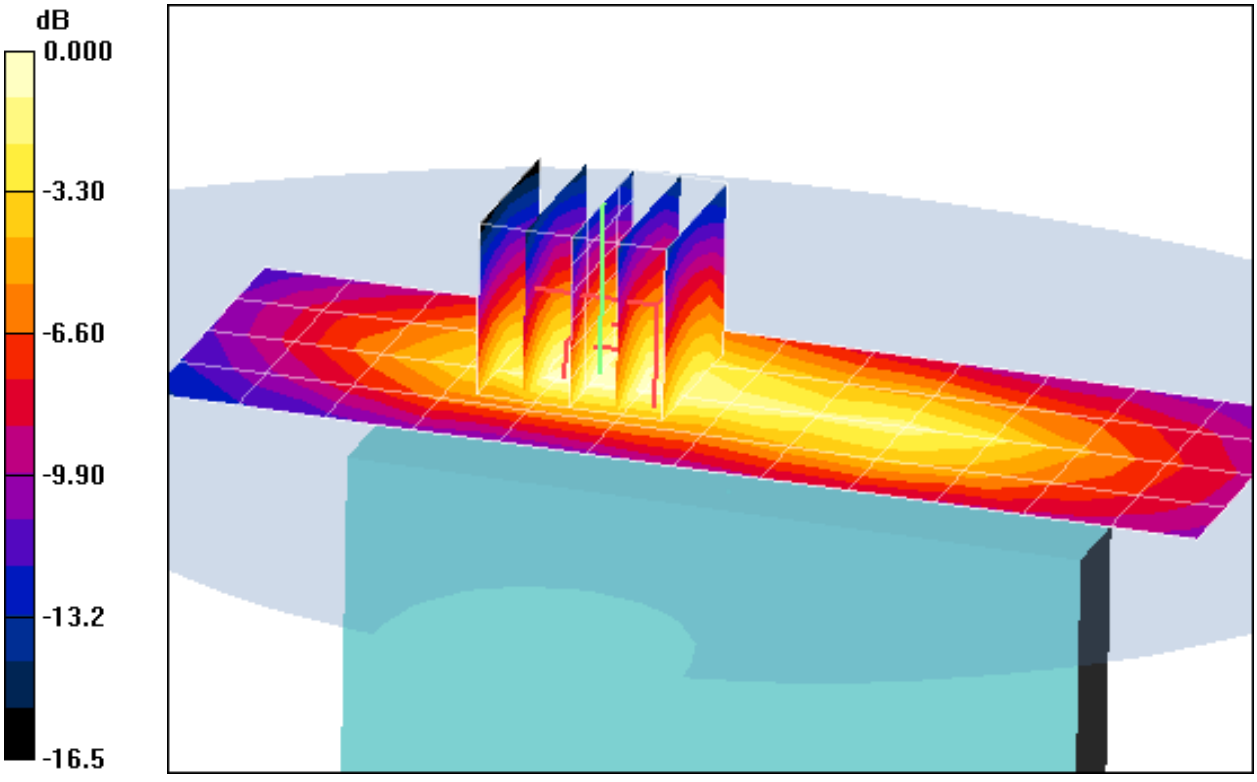
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS TDSO32+SCH, Body SAR, Left Edge, Mid.ch, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.5 V/m
Peak SAR (extrapolated) = 0.511 W/kg
SAR(1 g) = 0.299 mW/g; SAR(10 g) = 0.171 mW/g



0 dB = 0.323mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

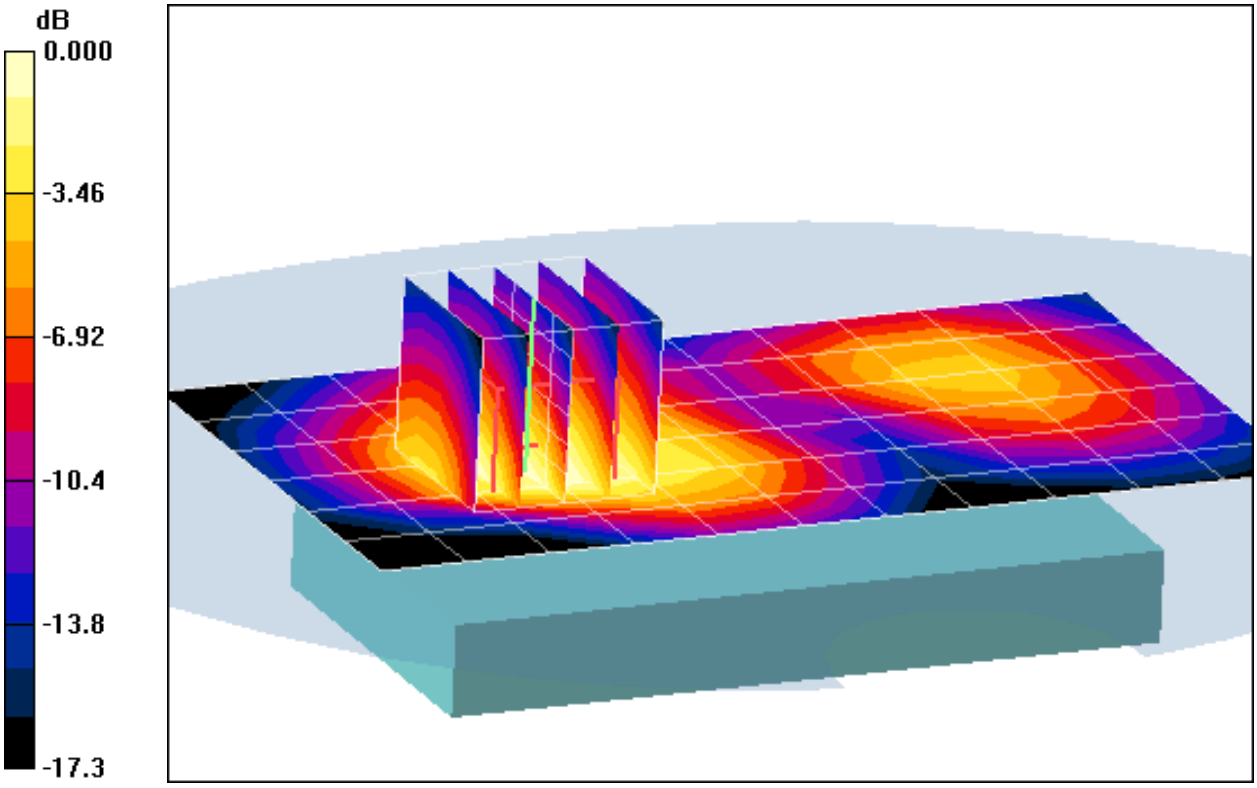
Communication System: PCS CDMA; Frequency: 1908.75 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used (interpolated):
f = 1908.75 MHz; σ = 1.52 mho/m; ε_r = 53.26; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS EVDO, Body SAR, Back side, High.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.2 V/m
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.632 mW/g



0 dB = 1.17mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

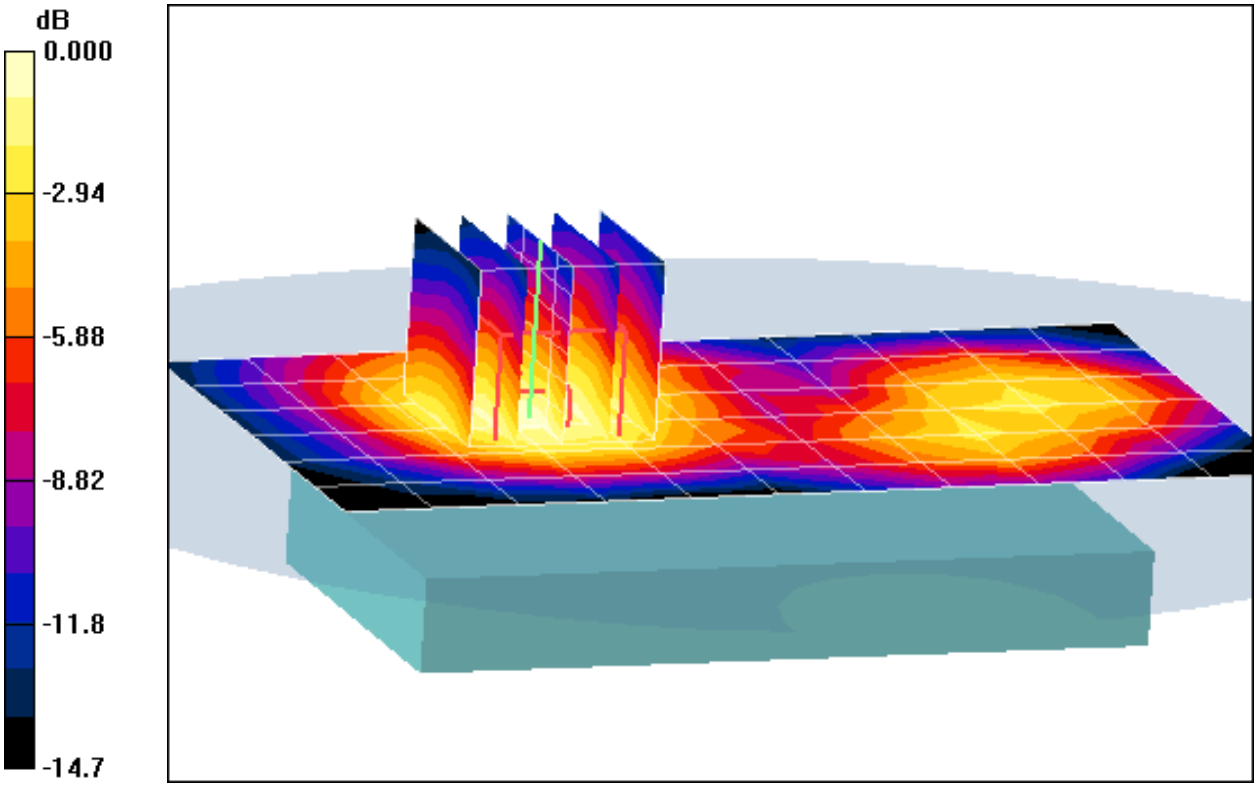
Communication System: PCS CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS EVDO, Body SAR, Front side, Mid.ch, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.2 V/m
Peak SAR (extrapolated) = 0.677 W/kg
SAR(1 g) = 0.455 mW/g; SAR(10 g) = 0.291 mW/g



0 dB = 0.497mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

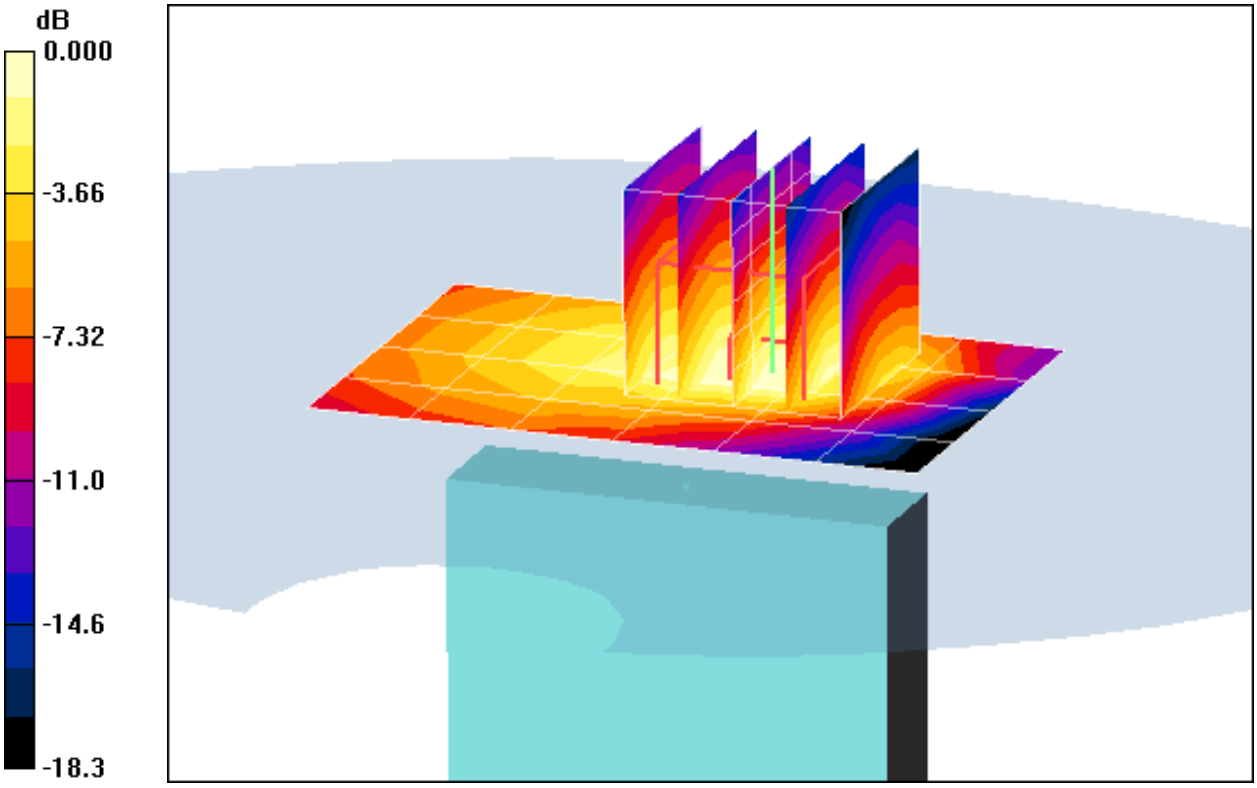
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS EVDO, Body SAR, Bottom Edge, Mid.ch, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.1 V/m
Peak SAR (extrapolated) = 0.596 W/kg
SAR(1 g) = 0.382 mW/g; SAR(10 g) = 0.222 mW/g



0 dB = 0.407mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #2

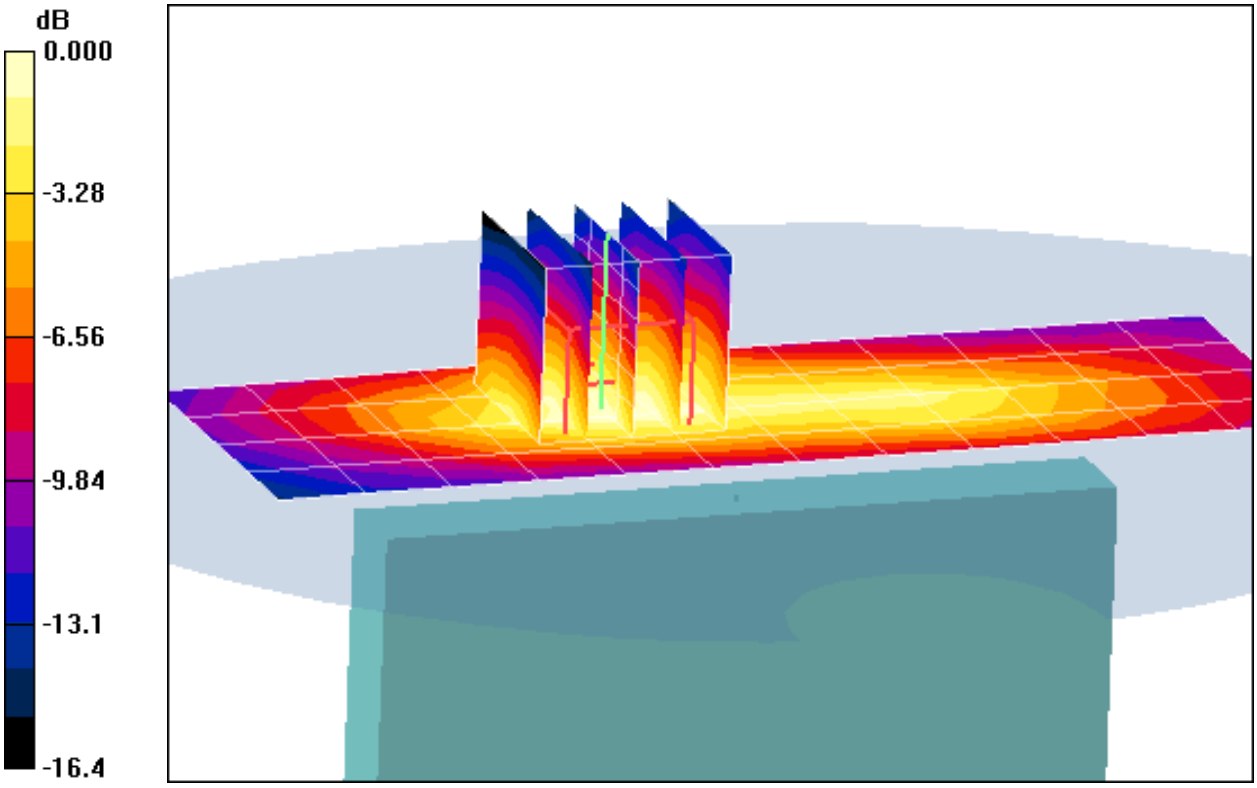
Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1
Medium: 1900 Body; Medium parameters used:
f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.15; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7°C; Tissue Temp: 21.8°C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: PCS EVDO, Body SAR, Left Edge, Mid.ch, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.2 V/m
Peak SAR (extrapolated) = 0.465 W/kg
SAR(1 g) = 0.319 mW/g; SAR(10 g) = 0.188 mW/g



0 dB = 0.347mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

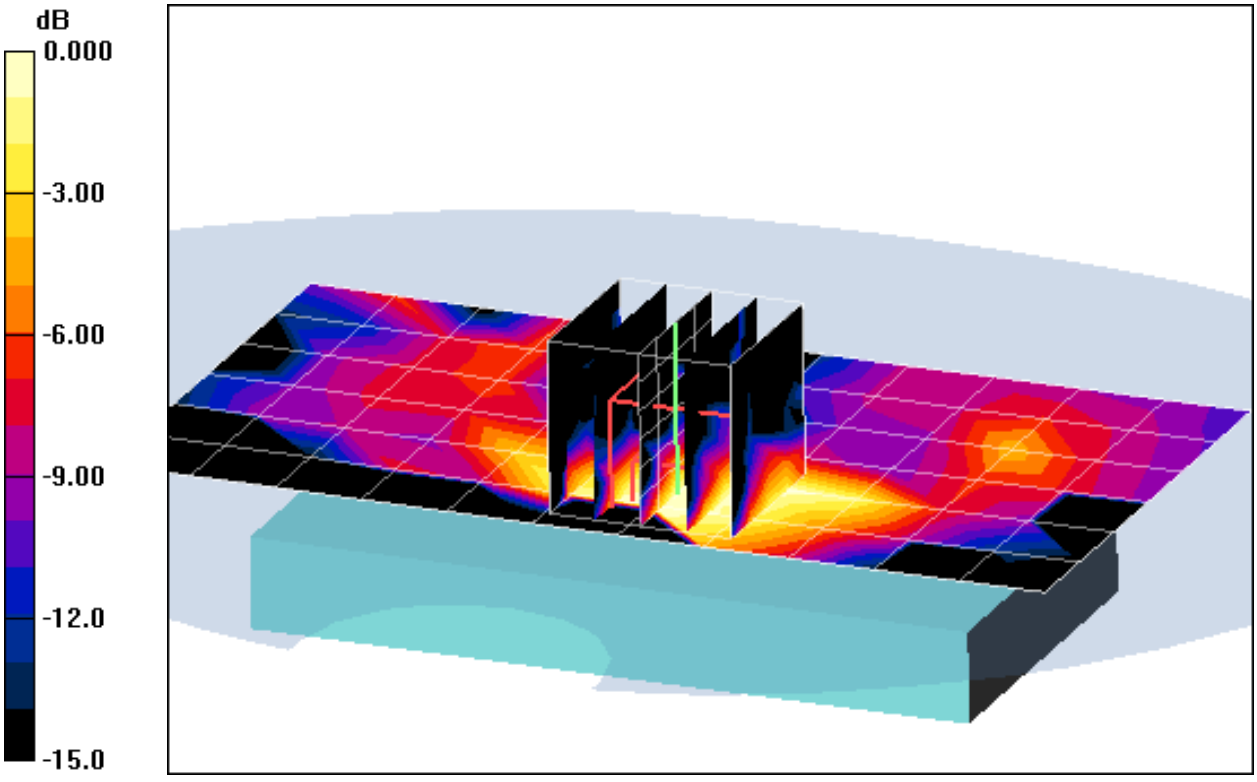
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Body SAR, Ch.11, 1Mbps, Back Side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.44 V/m
Peak SAR (extrapolated) = 0.014 W/kg
SAR(1 g) = 0.00417 mW/g; SAR(10 g) = 0.00173 mW/g



0 dB = 0.004mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

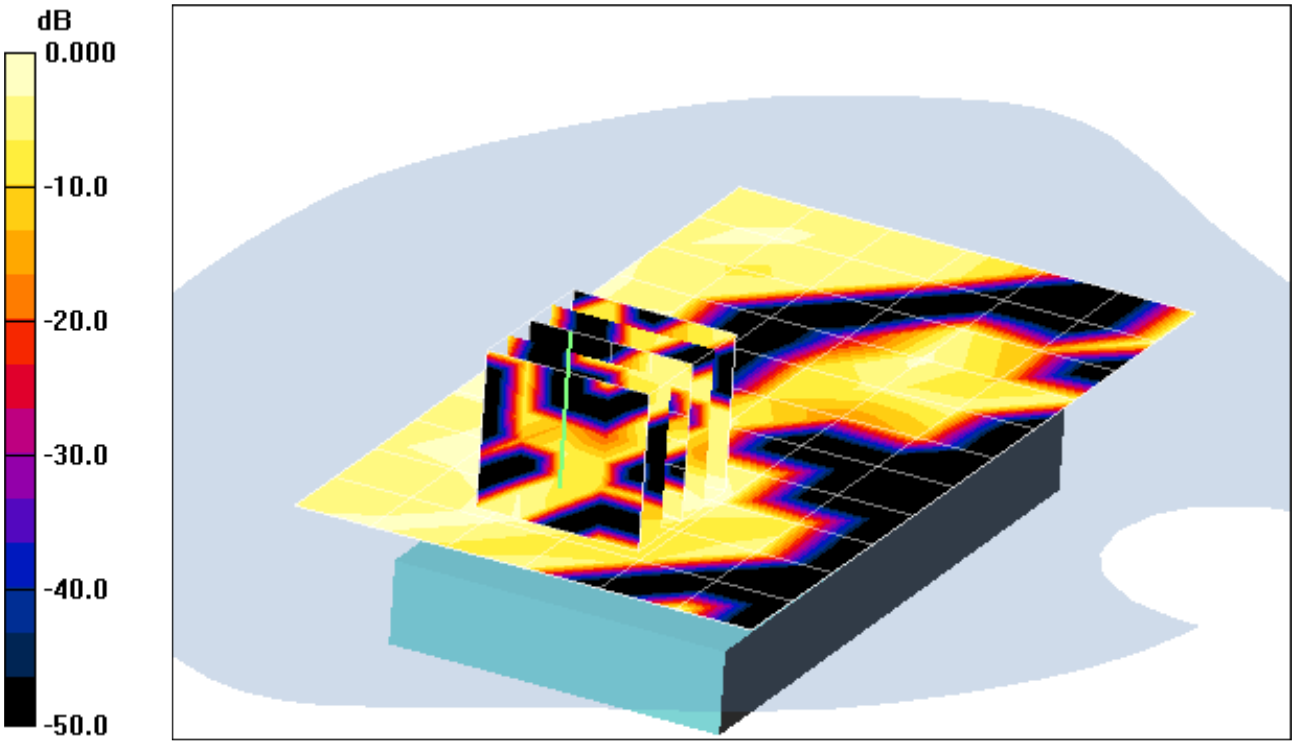
Communication System: IEEE 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Body SAR, Ch.11, 1Mbps, Front Side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.222 V/m
Peak SAR (extrapolated) = 0.003 W/kg
SAR(1 g) = 0.000759 mW/g; SAR(10 g) = 0.000262 mW/g



0 dB = 0.001mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

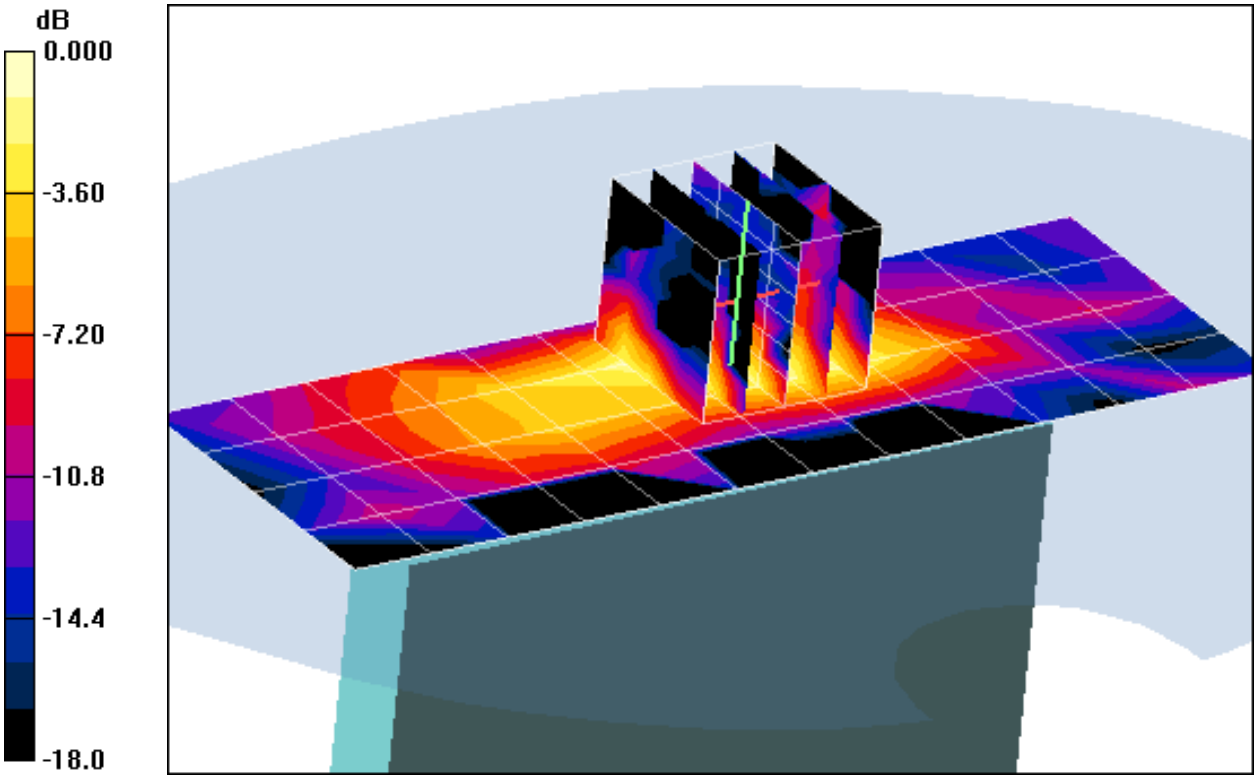
Communication System: IEEE 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11b, Body SAR, Ch.11, 1Mbps, Left Edge, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.86 V/m
Peak SAR (extrapolated) = 0.013 W/kg
SAR(1 g) = 0.00683 mW/g; SAR(10 g) = 0.00256 mW/g



0 dB = 0.008mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

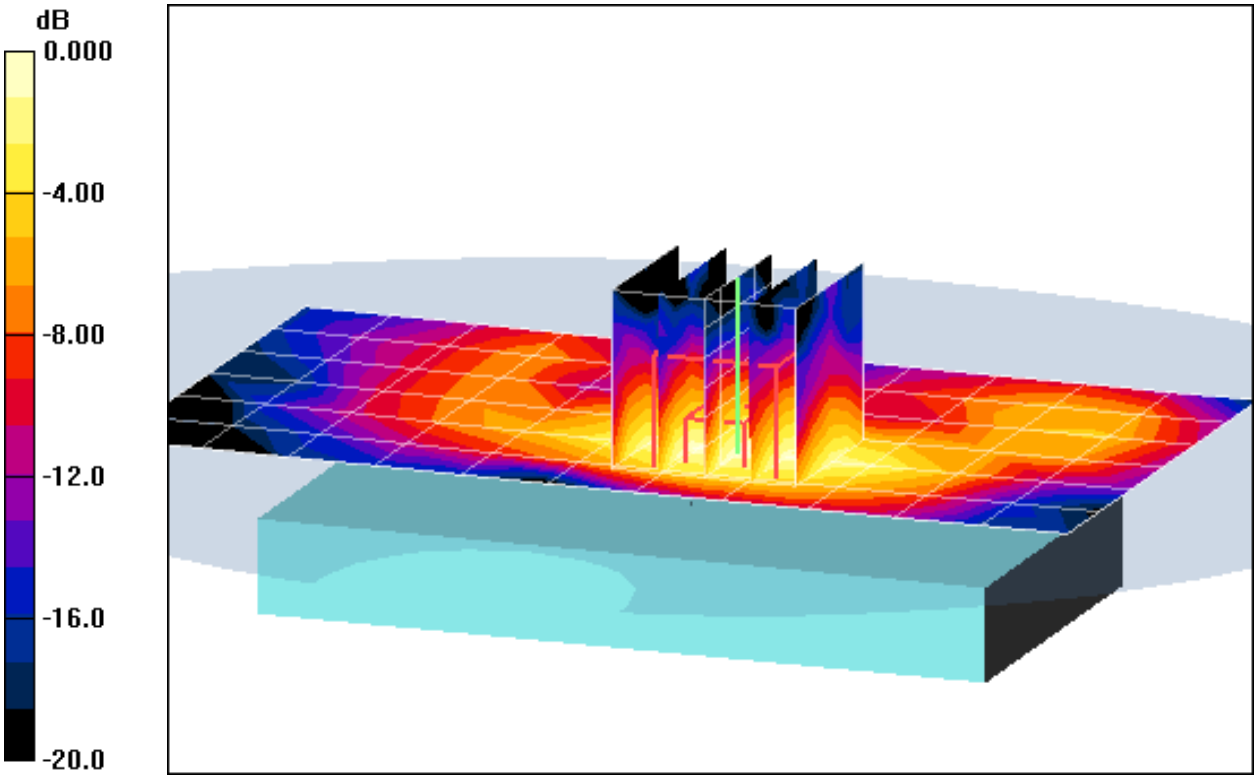
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Body SAR, Ch.11, 6Mbps, Back Side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.52 V/m
Peak SAR (extrapolated) = 0.049 W/kg
SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.012 mW/g



0 dB = 0.031mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

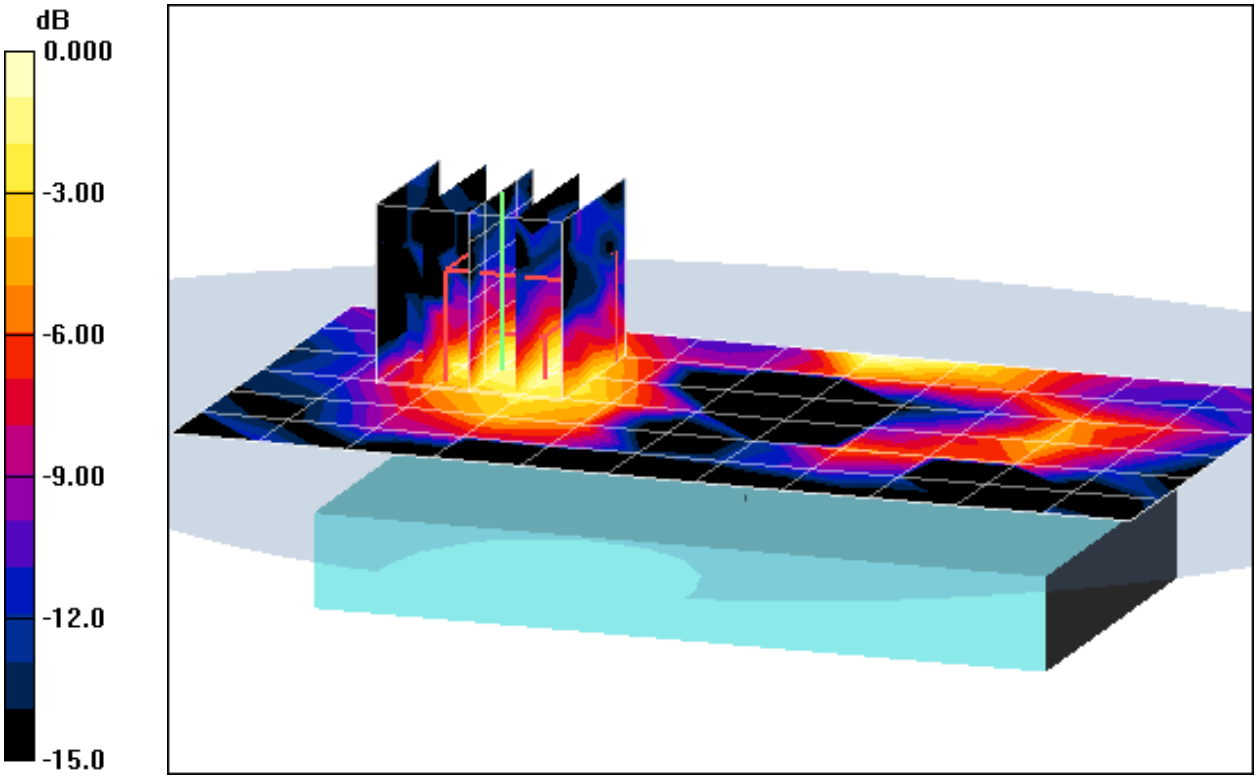
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Body SAR, Ch.11, 6Mbps, Front Side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.362 V/m;
Peak SAR (extrapolated) = 0.012 W/kg
SAR(1 g) = 0.00597 mW/g; SAR(10 g) = 0.00277 mW/g



0 dB = 0.008mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type:Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

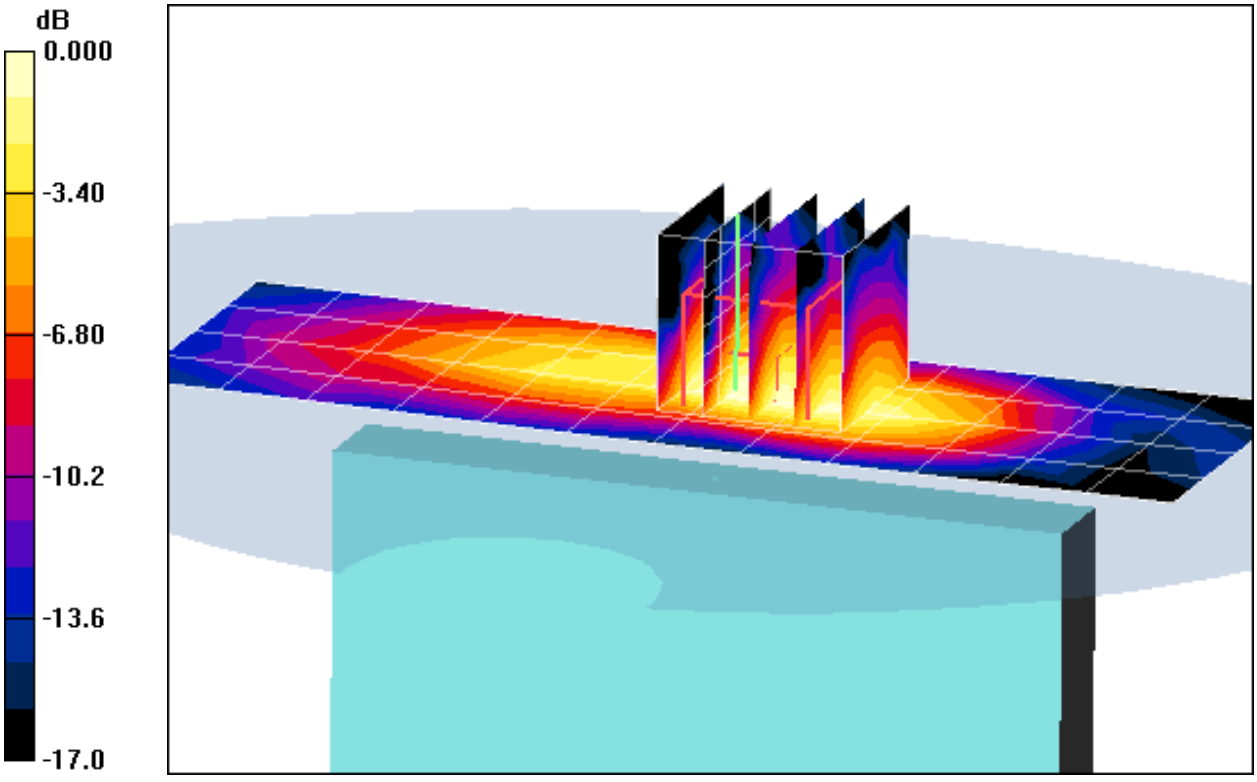
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Body SAR, Ch.11, 6Mbps, Left Edge, Standard Batterye

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.68 V/m
Peak SAR (extrapolated) = 0.062 W/kg
SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.013 mW/g



0 dB = 0.029mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: Cellular/PCS CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

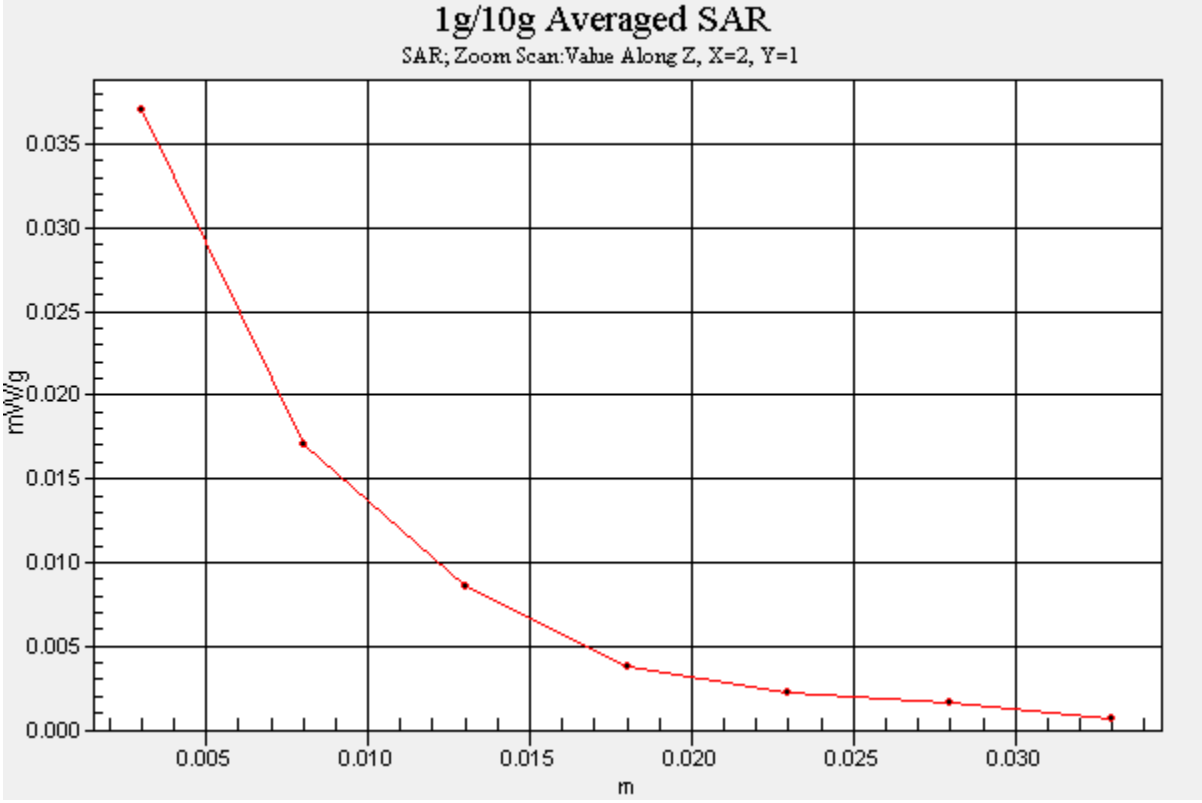
Communication System: IEEE 802.11g; Frequency: 2462 MHz; Duty Cycle: 1:1
Medium: 2450 Body; Medium parameters used (interpolated):
f = 2462 MHz; σ = 1.95 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11g, Body SAR, Ch.11, 6Mbps, Left Edge, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.68 V/m
Peak SAR (extrapolated) = 0.062 W/kg
SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.013 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

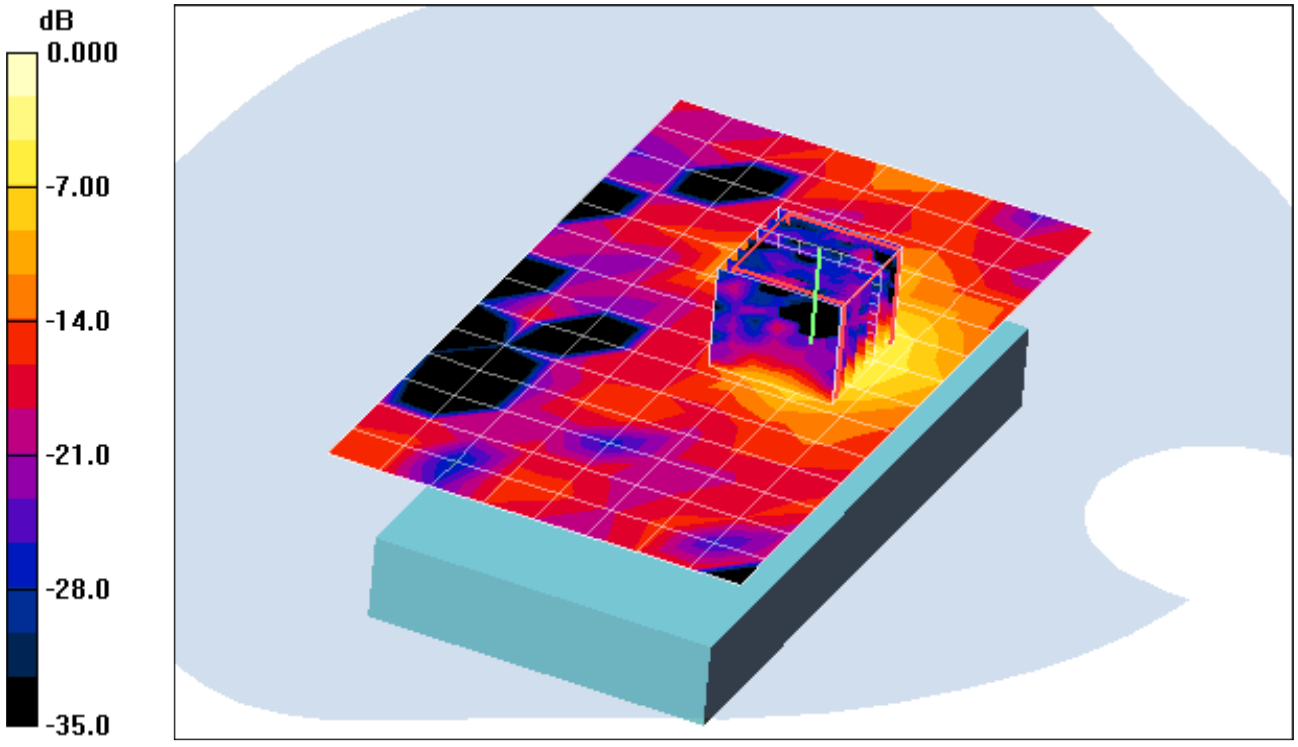
Communication System: IEEE 802.11a 5.2-5.8 GHz Band;Frequency: 5745 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
f = 5745 MHz; σ = 6.05 mho/m; ε_r = 47; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 7-27-2011; Ambient Temp: 22.7°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN3550; ConvF(3.29, 3.29, 3.29); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a, 5.8 GHz, Body SAR, Ch 149, 6 Mbps, Back Side, Standard Battery

Area Scan (9x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.82 V/m
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.042 mW/g



0 dB = 0.271mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

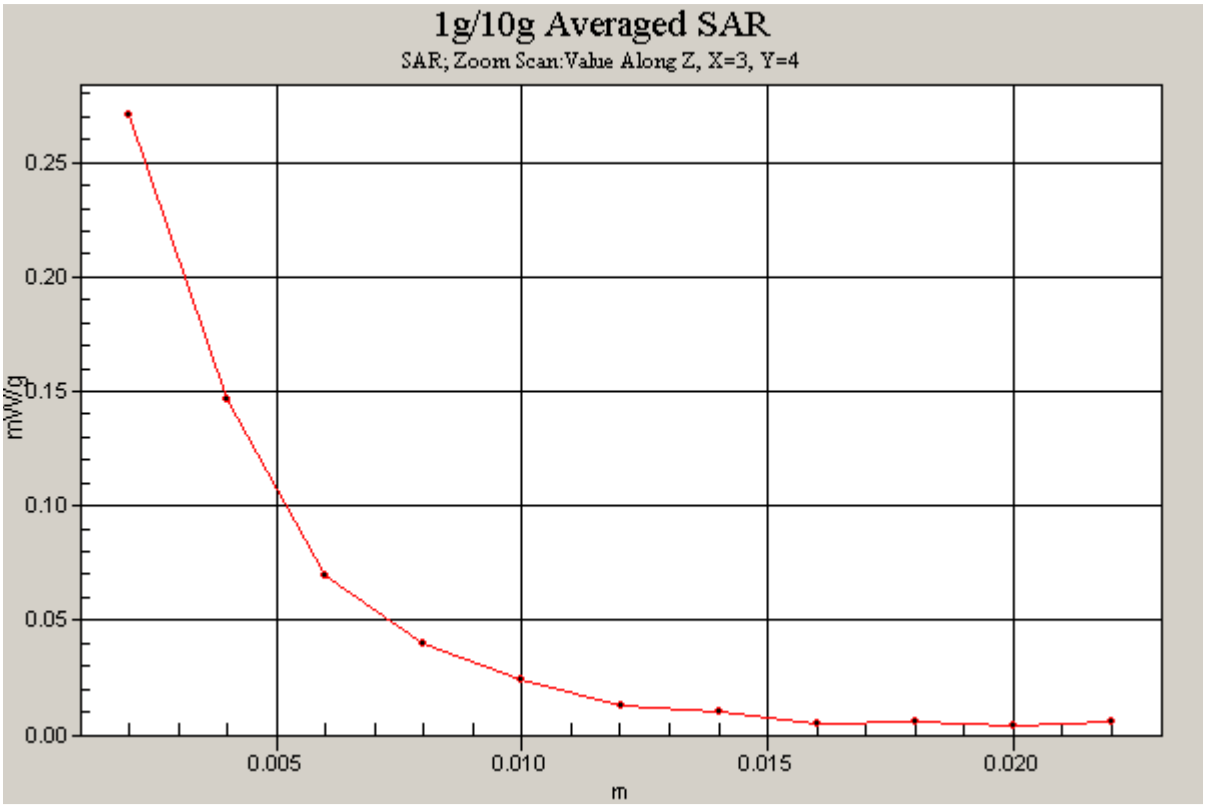
Communication System: IEEE 802.11a 5.2-5.8 GHz Band;Frequency: 5745 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body Medium parameters used (interpolated):
f = 5745 MHz; σ = 6.05 mho/m; ε_r = 47; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 7-27-2011; Ambient Temp: 22.7°C; Tissue Temp: 20.9°C

Probe: EX3DV4 - SN3550; ConvF(3.29, 3.29, 3.29); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: IEEE 802.11a, 5.8 GHz, Body SAR, Ch 149, 6 Mbps, Back Side, Standard Battery

Area Scan (9x15x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.82 V/m
Peak SAR (extrapolated) = 0.492 W/kg
SAR(1 g) = 0.132 mW/g; SAR(10 g) = 0.042 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE, Bluetooth and WLAN; Serial: FCC #1

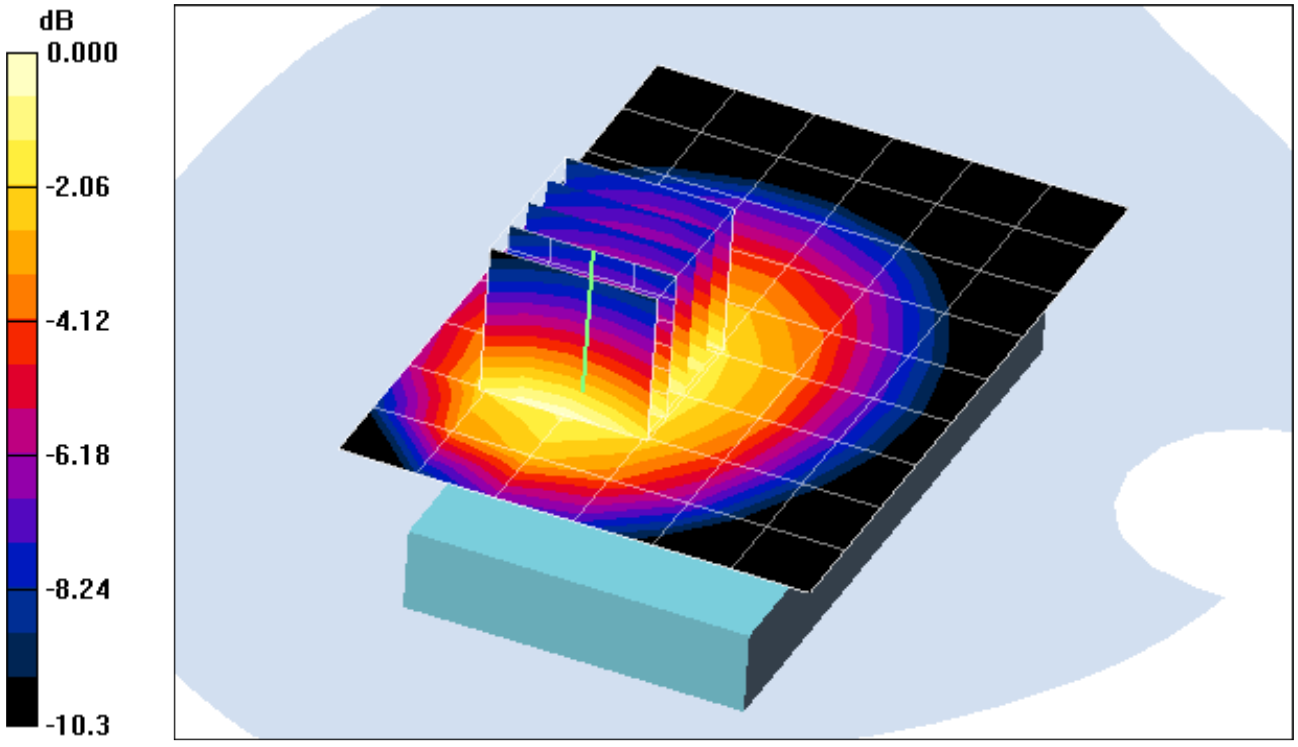
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 785 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 1.01 mho/m; ε_r = 56.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Body SAR, Back side, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.7 V/m
Peak SAR (extrapolated) = 0.546 W/kg
SAR(1 g) = 0.400 mW/g; SAR(10 g) = 0.285 mW/g



0 dB = 0.425mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

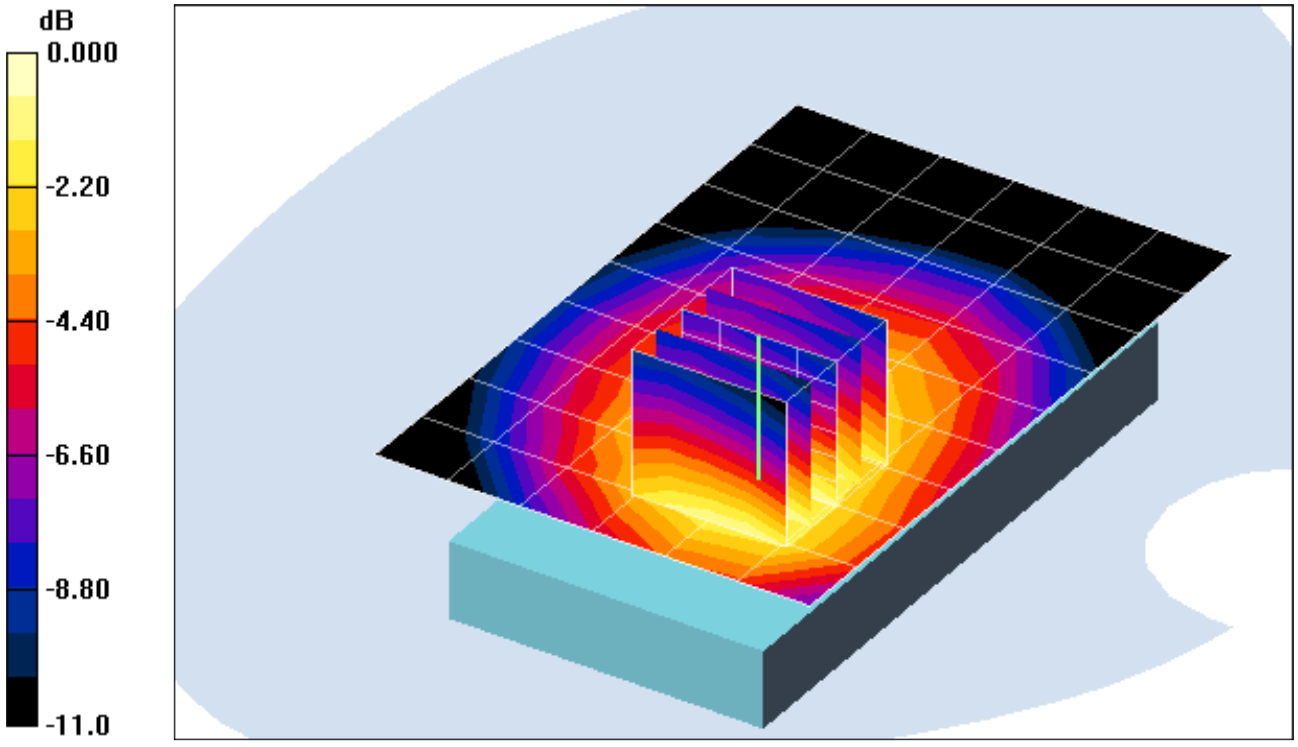
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 785 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 1.01 mho/m; ε_r = 56.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Body SAR, Front side, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 16.0 V/m
Peak SAR (extrapolated) = 0.364 W/kg
SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.177 mW/g



0 dB = 0.275mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

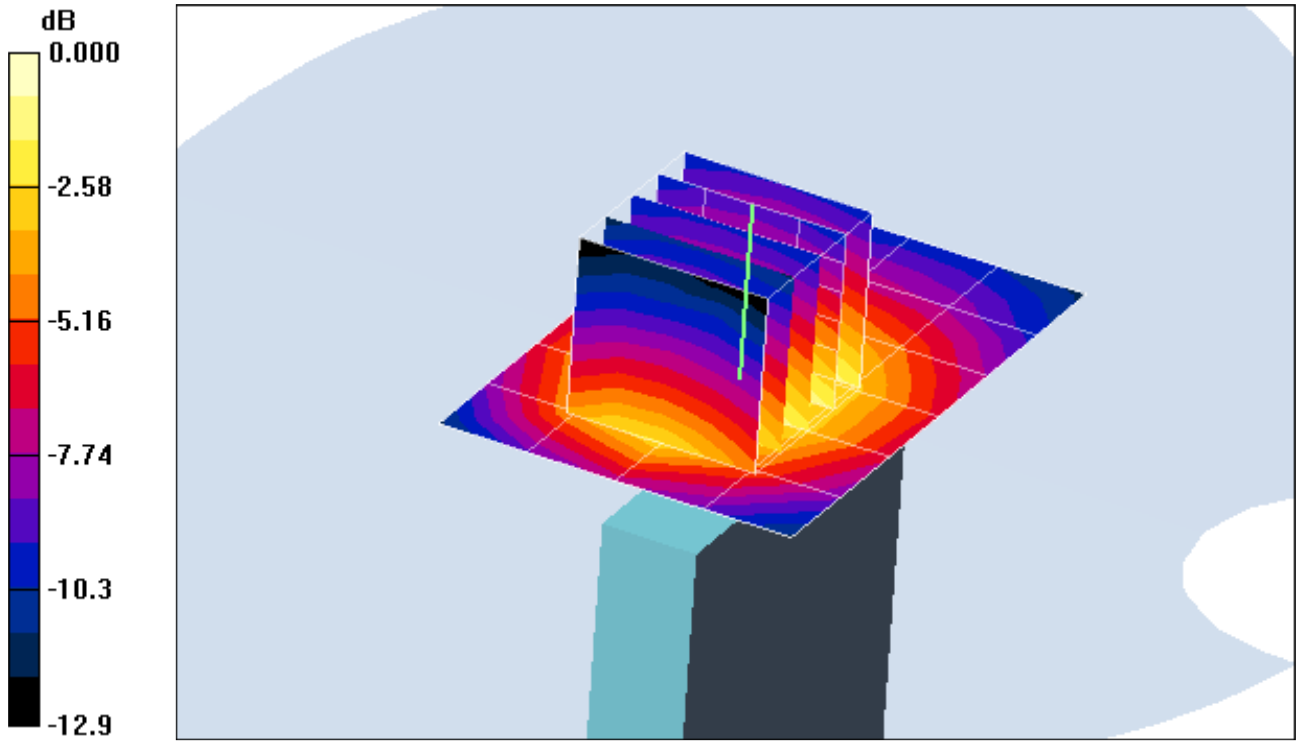
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 785 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 1.01 mho/m; ε_r = 56.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Body SAR, Bottom Edge, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.6 V/m
Peak SAR (extrapolated) = 0.151 W/kg
SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.066 mW/g



0 dB = 0.107mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

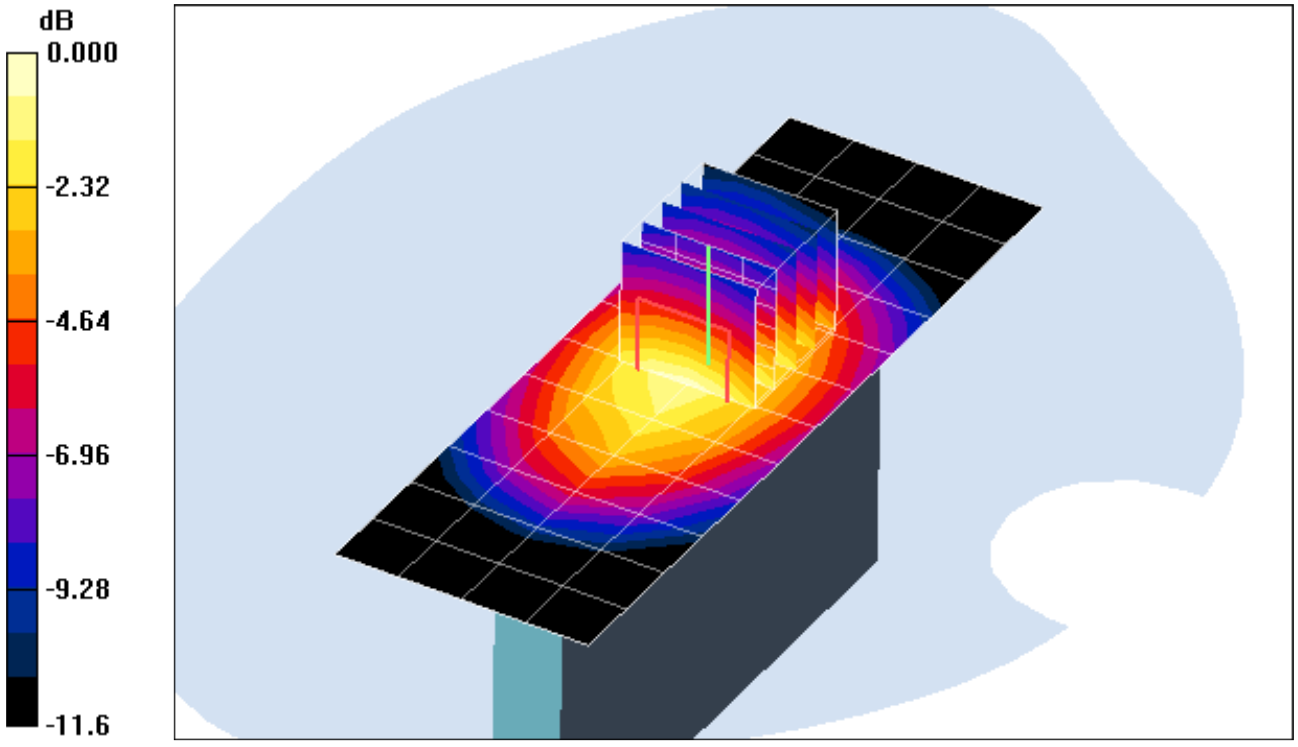
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 785 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 1.01 mho/m; ε_r = 56.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Body SAR, Right Edge, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.2 V/m
Peak SAR (extrapolated) = 0.591 W/kg
SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.283 mW/g



0 dB = 0.445mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO Phone with LTE Bluetooth and WLAN; Serial: FCC #1

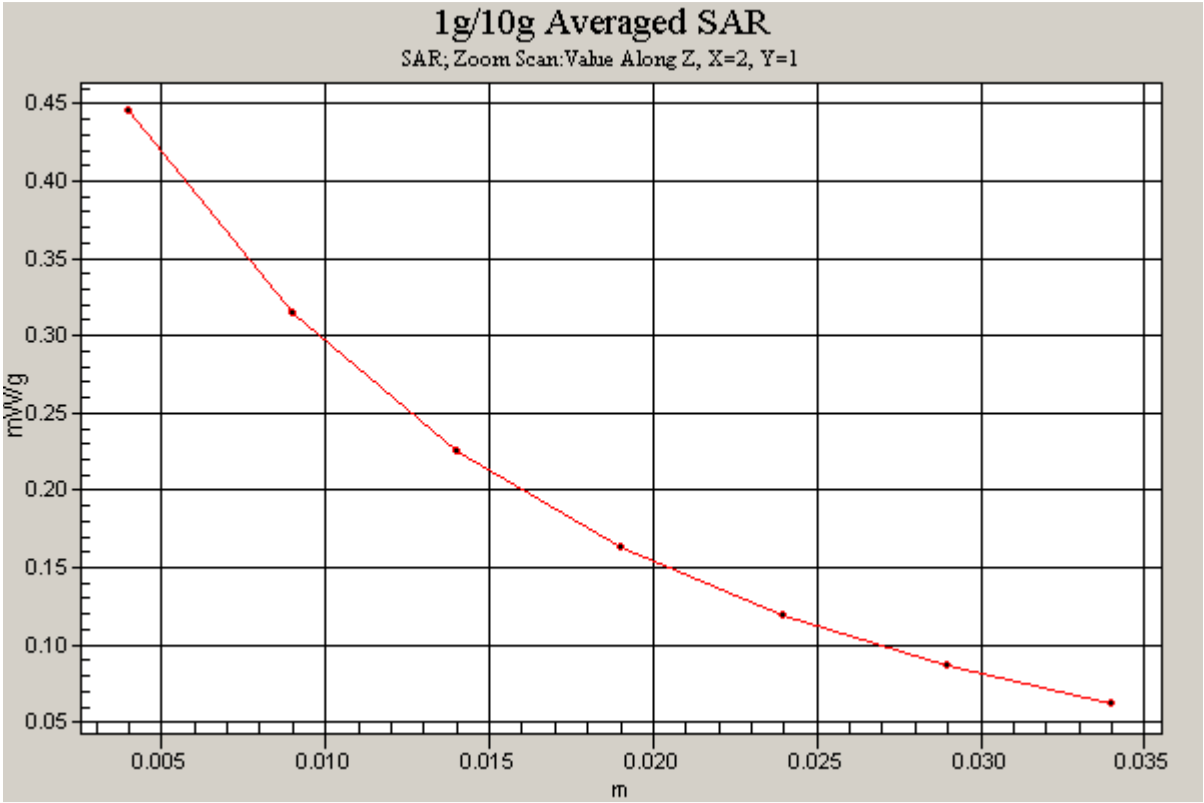
Communication System: LTE RF; Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 785 Body Medium parameters used (interpolated):
f = 782 MHz; σ = 1.01 mho/m; ε_r = 56.8; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: LTE, Body SAR, Right Edge, Mid.ch, QPSK, 1 RB, RB Offset 0, Standard Battery

Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.2 V/m
Peak SAR (extrapolated) = 0.591 W/kg
SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.283 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

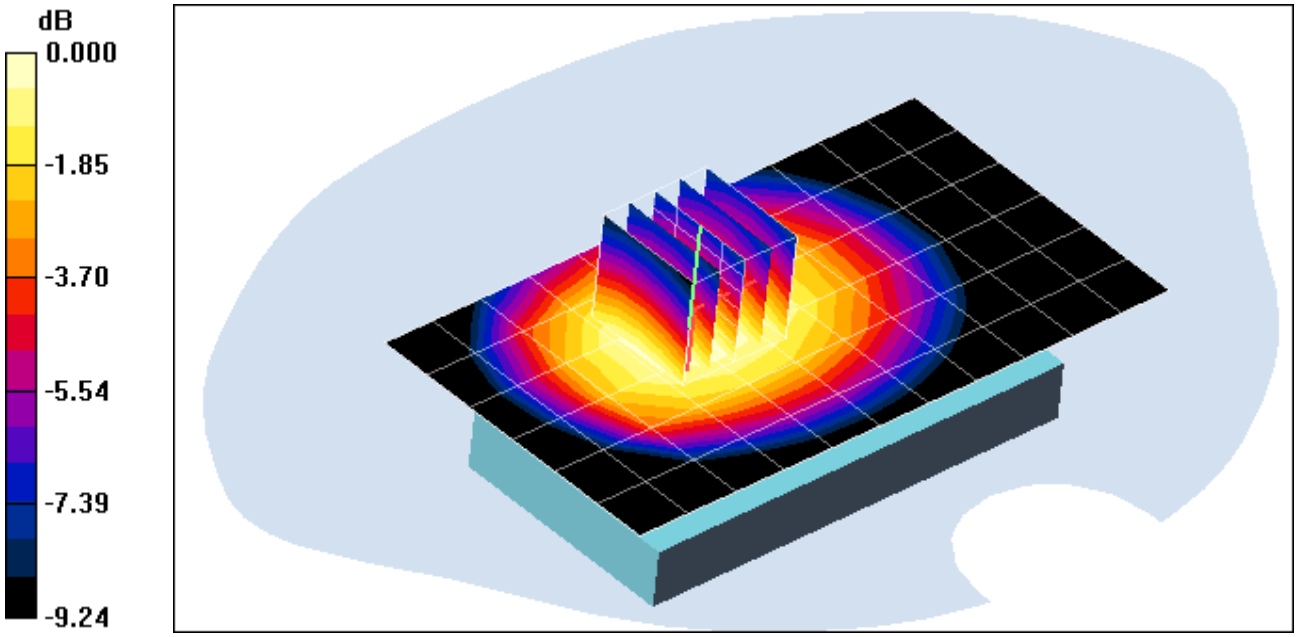
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.968 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Body SAR, Back side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.3 V/m
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.856 mW/g



0 dB = 1.21mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

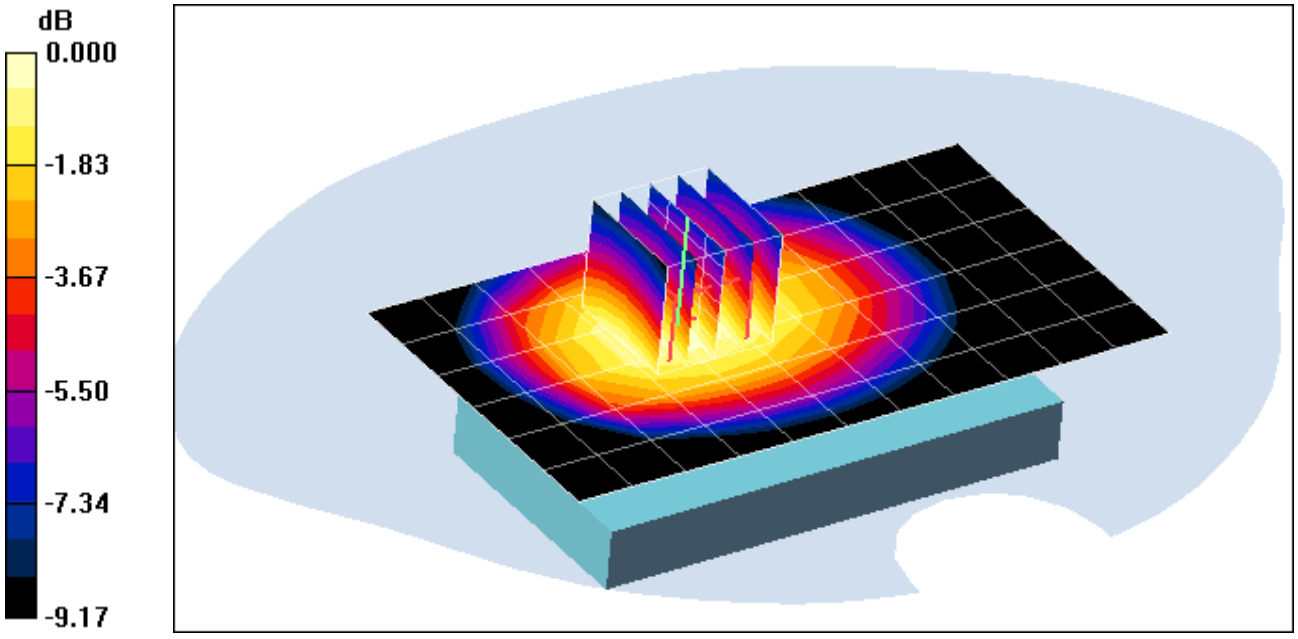
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.958 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Body SAR, Back side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 37.2 V/m
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.904 mW/g



0 dB = 1.28mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

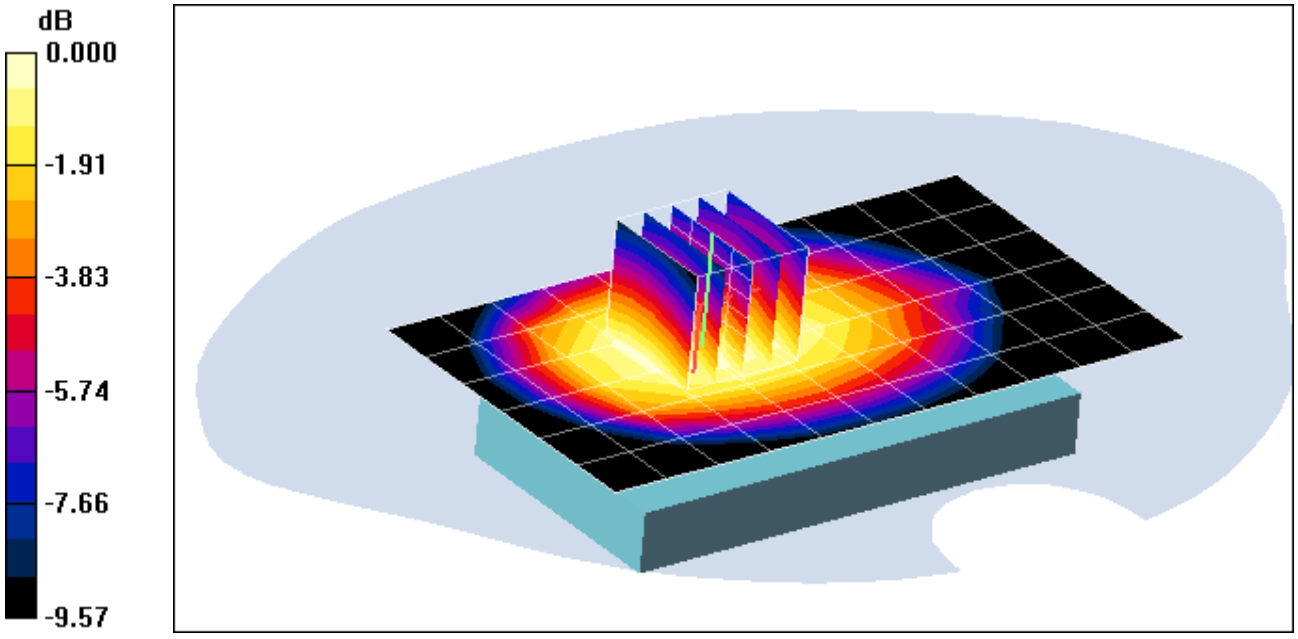
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.968 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Mid.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Body SAR, Back side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 38.9 V/m
Peak SAR (extrapolated) = 1.66 W/kg
SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.943 mW/g



0 dB = 1.34mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN Serial: FCC #1

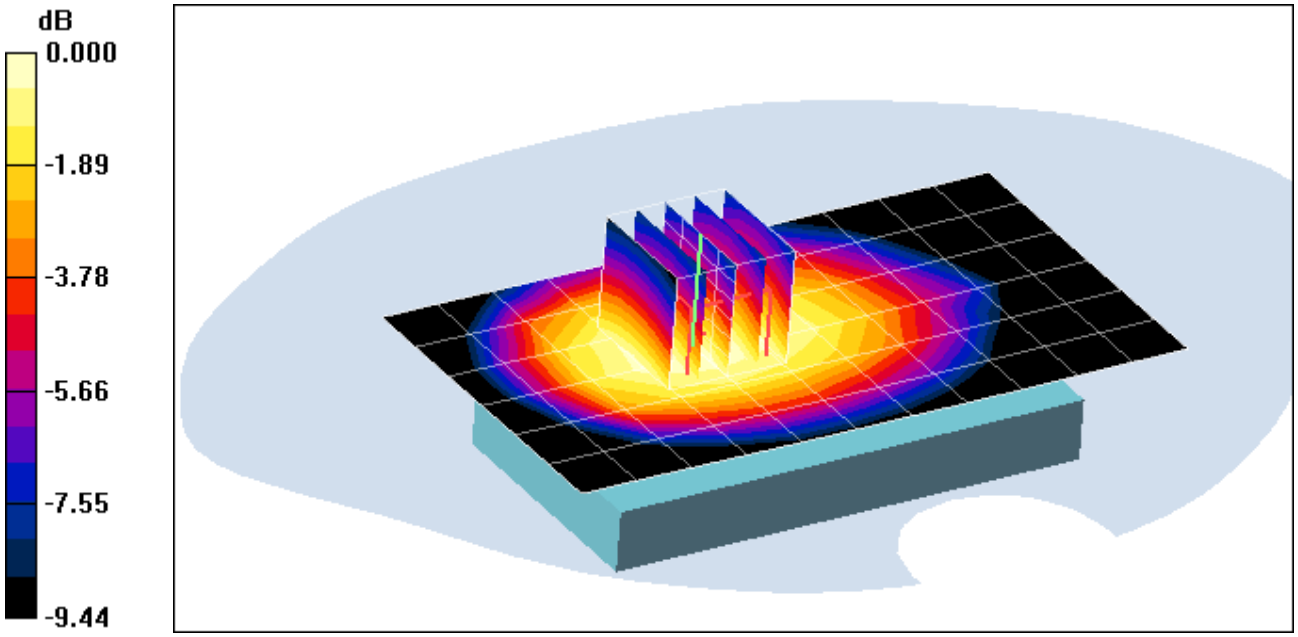
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.958 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Body SAR, Back side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.2 V/m=
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.44 mW/g; SAR(10 g) = 1.07 mW/g



0 dB = 1.51mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: A3LSCHI405; Type: 835/1900 CDMA/EVDO with LTE, Bluetooth and WLAN; Serial: FCC #1

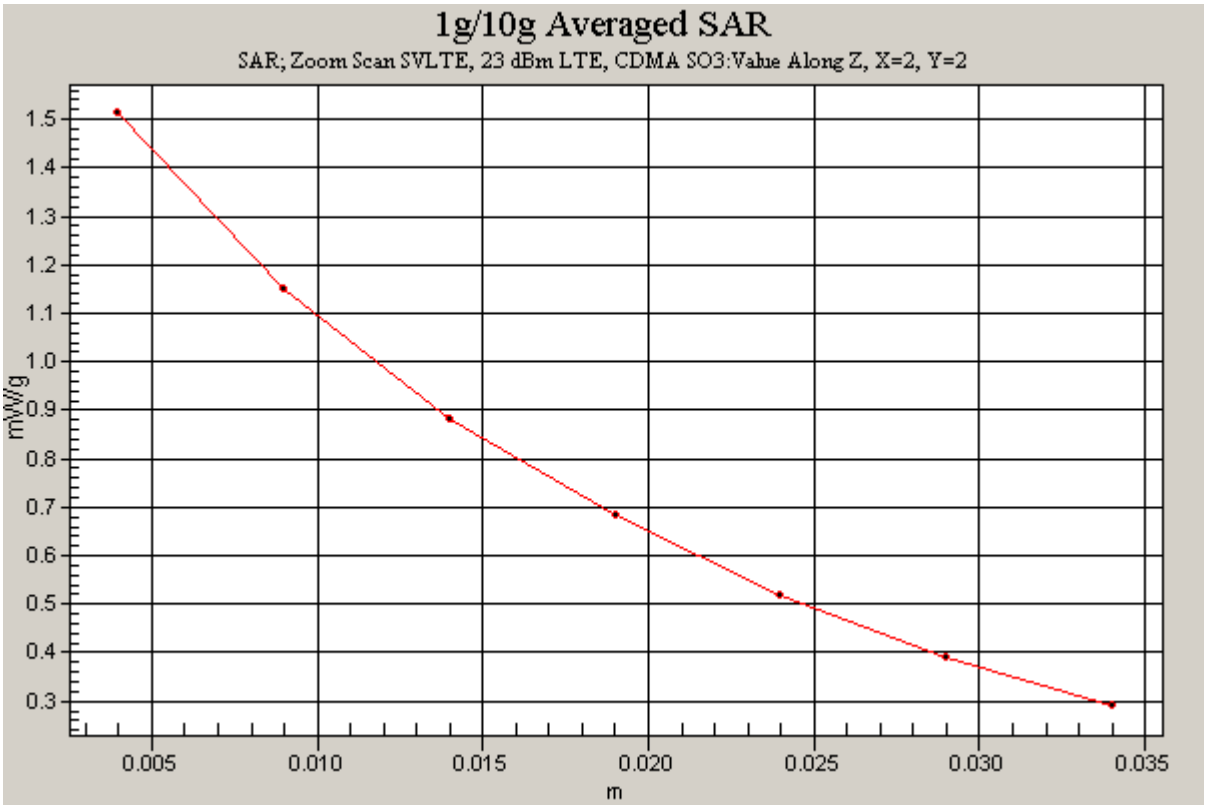
Communication System: Cellular CDMA; Frequency: 824.7 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used (interpolated):
f = 824.7 MHz; σ = 0.958 mho/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: SVLTE with Cell. CDMA, Low.ch & 782MHz LTE, QPSK, 10MHz BW, RB1, RB Offset 0, Body SAR, Back side, Standard Battery

Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 42.2 V/m=
Peak SAR (extrapolated) = 1.87 W/kg
SAR(1 g) = 1.44 mW/g; SAR(10 g) = 1.07 mW/g



APPENDIX B: DIPOLE VALIDATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

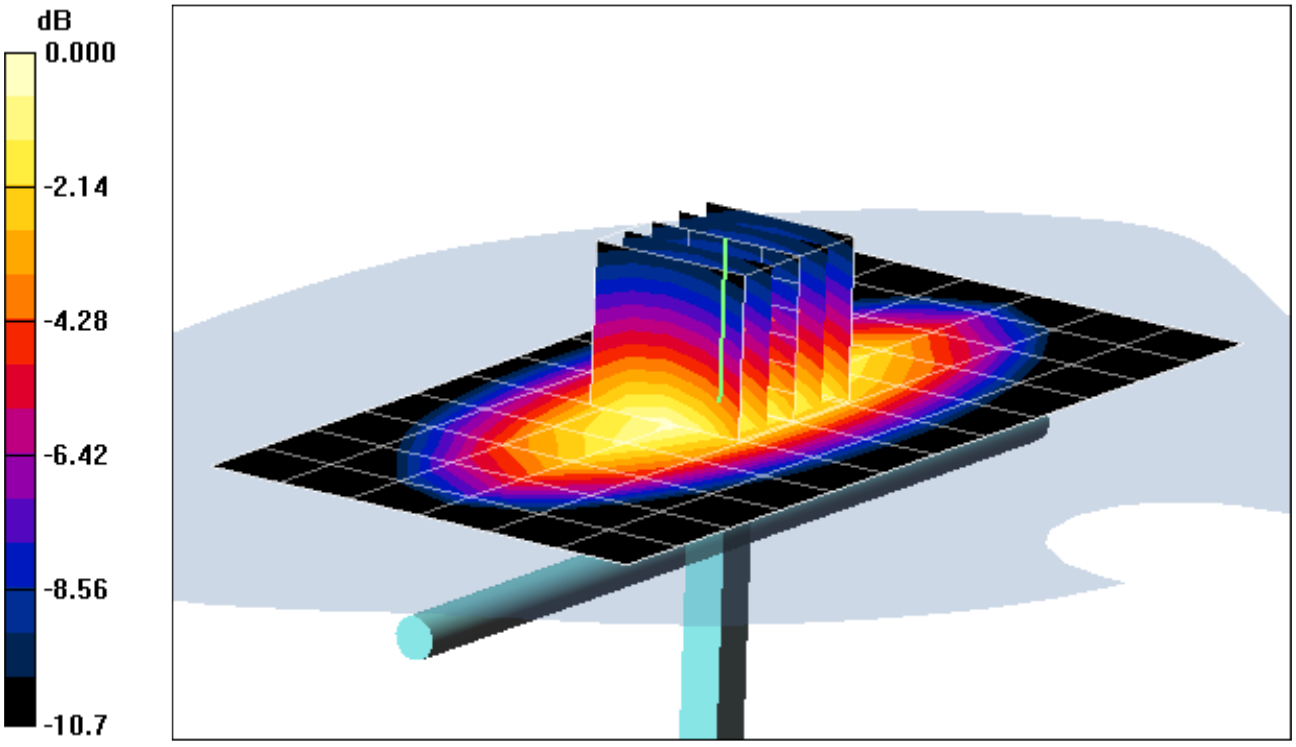
Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: 750 Head Medium parameters used (interpolated):
f = 750 MHz; σ = 0.909 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-29-2011; Ambient Temp: 24.0°C; Tissue Temp: 23.5°C

Probe: ES3DV2 - SN3022; ConvF(6.32, 6.32, 6.32); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

750MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 24.0 dBm (250 mW)
SAR(1 g) = 2.16 mW/g; SAR(10 g) = 1.4 mW/g
Deviation = 3.23 %



0 dB = 2.33mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 750 MHz; Type: D750V3; Serial: 1003

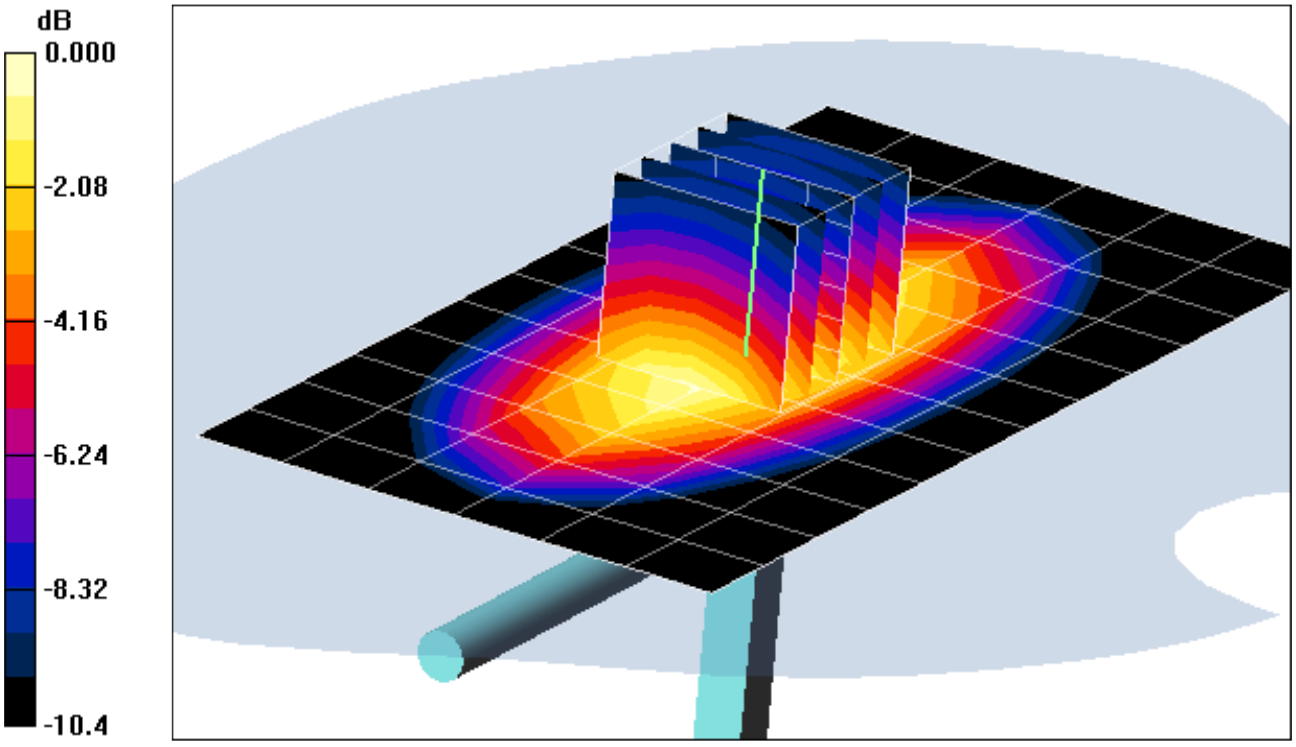
Communication System: CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: 750 Muscle Medium parameters used (interpolated):
f = 750 MHz; σ = 0.984 mho/m; ε_r = 57.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-29-2011; Ambient Temp: 24.2°C; Tissue Temp: 23.1°C

Probe: ES3DV2 - SN3022; ConvF(6.09, 6.09, 6.09); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

750MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 24.0 dBm (250 mW)
SAR(1 g) = 2.26 mW/g; SAR(10 g) = 1.49 mW/g
Deviation = 2.15 %



0 dB = 2.45mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

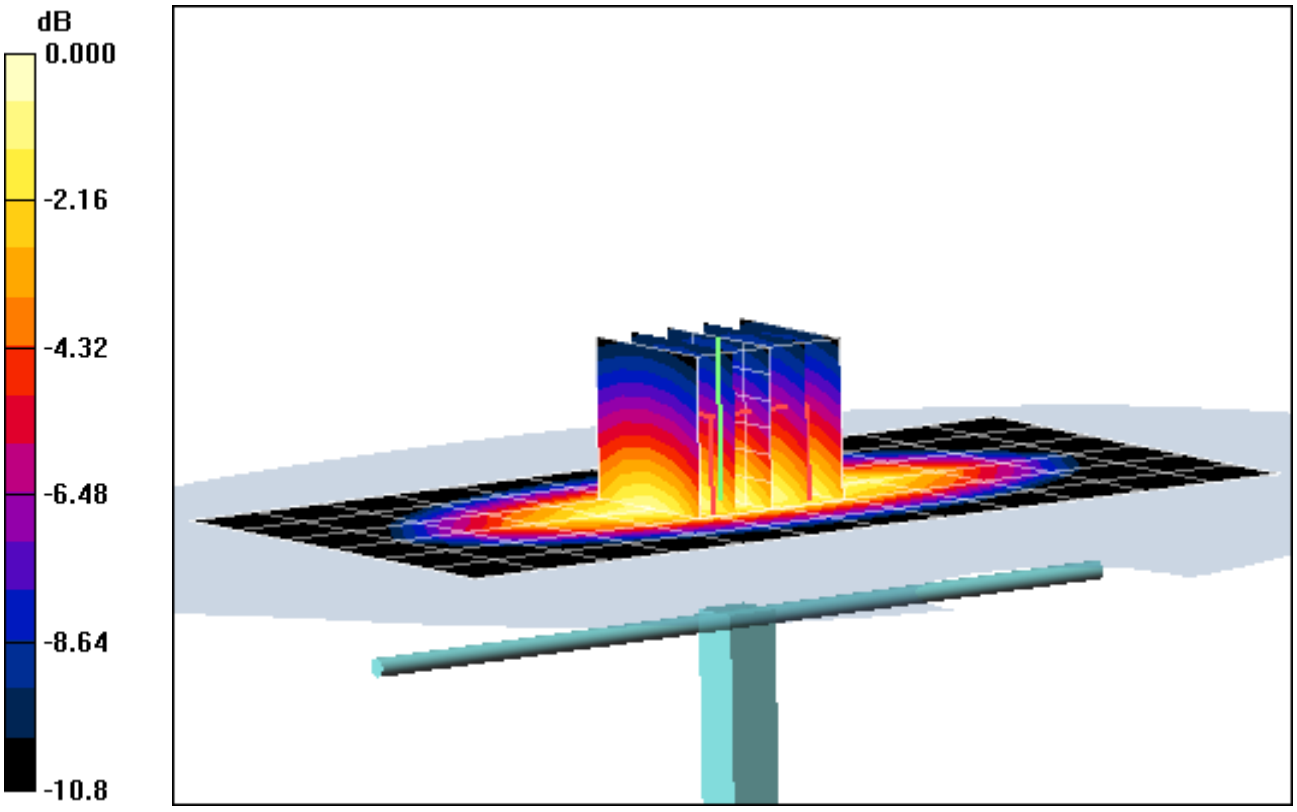
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.859 mho/m; ε_r = 40.38; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-25-2011; Ambient Temp: 23.6 °C; Tissue Temp: 21.8 °C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 18.0 dBm (63 mW)
SAR(1 g) = 0.609 mW/g; SAR(10 g) = 0.395 mW/g
Deviation = 1.43 %



0 dB = 0.656mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

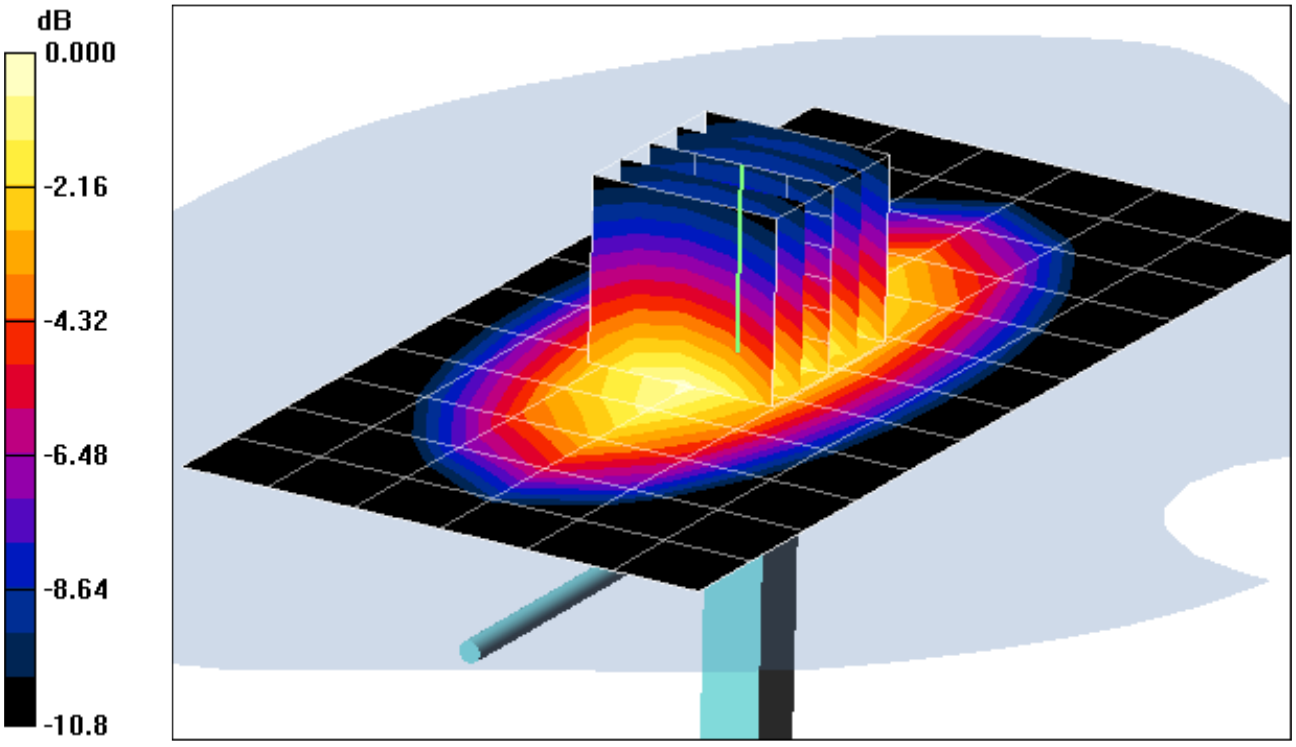
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Head Medium parameters used:
f = 835 MHz; σ = 0.902 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 08-21-2011; Ambient Temp: 22.5°C; Tissue Temp: 21.6°C

Probe: ES3DV3 - SN3258; ConvF(6.18, 6.18, 6.18); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 24.0 dBm (250 mW)
SAR(1 g) = 2.3 mW/g; SAR(10 g) = 1.5 mW/g
Deviation = -3.46 %



0 dB = 2.49mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

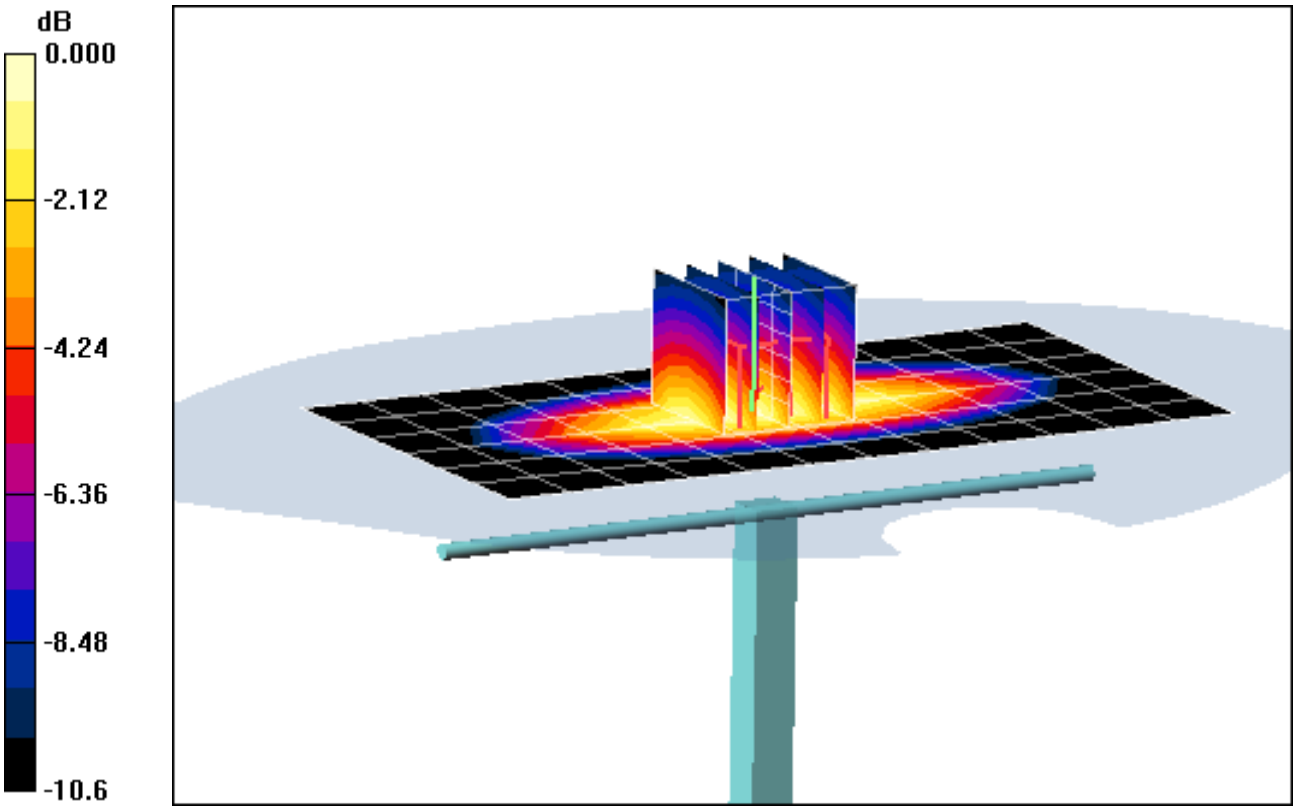
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.986 mho/m; ε_r = 54.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 07-25-2011; Ambient Temp: 24.0 °C; Tissue Temp: 22.2 °C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 18.0 dBm (63 mW)
SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.423 mW/g
Deviation = 4.58 %



0 dB = 0.701mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

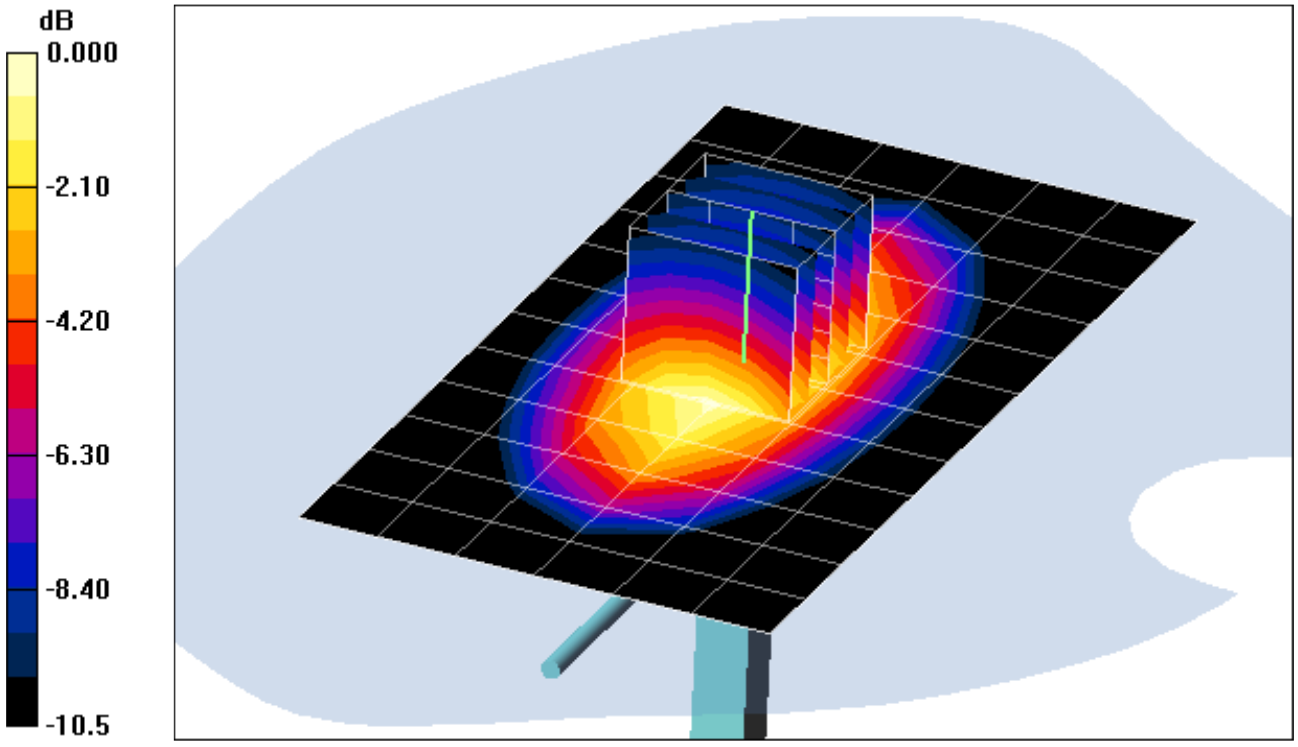
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Body Medium parameters used:
f = 835 MHz; σ = 0.968 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

Test Date: 08-21-2011; Ambient Temp: 22.4°C; Tissue Temp: 21.0°C

Probe: ES3DV3 - SN3258; ConvF(6.12, 6.12, 6.12); Calibrated: 4/8/2011
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

835MHz System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 24.0 dBm (250 mW)
SAR(1 g) = 2.54 mW/g; SAR(10 g) = 1.66 mW/g
Deviation = 3.15 %



0 dB = 2.75mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 1900 MHz; Type: D1900V2; Serial: 502

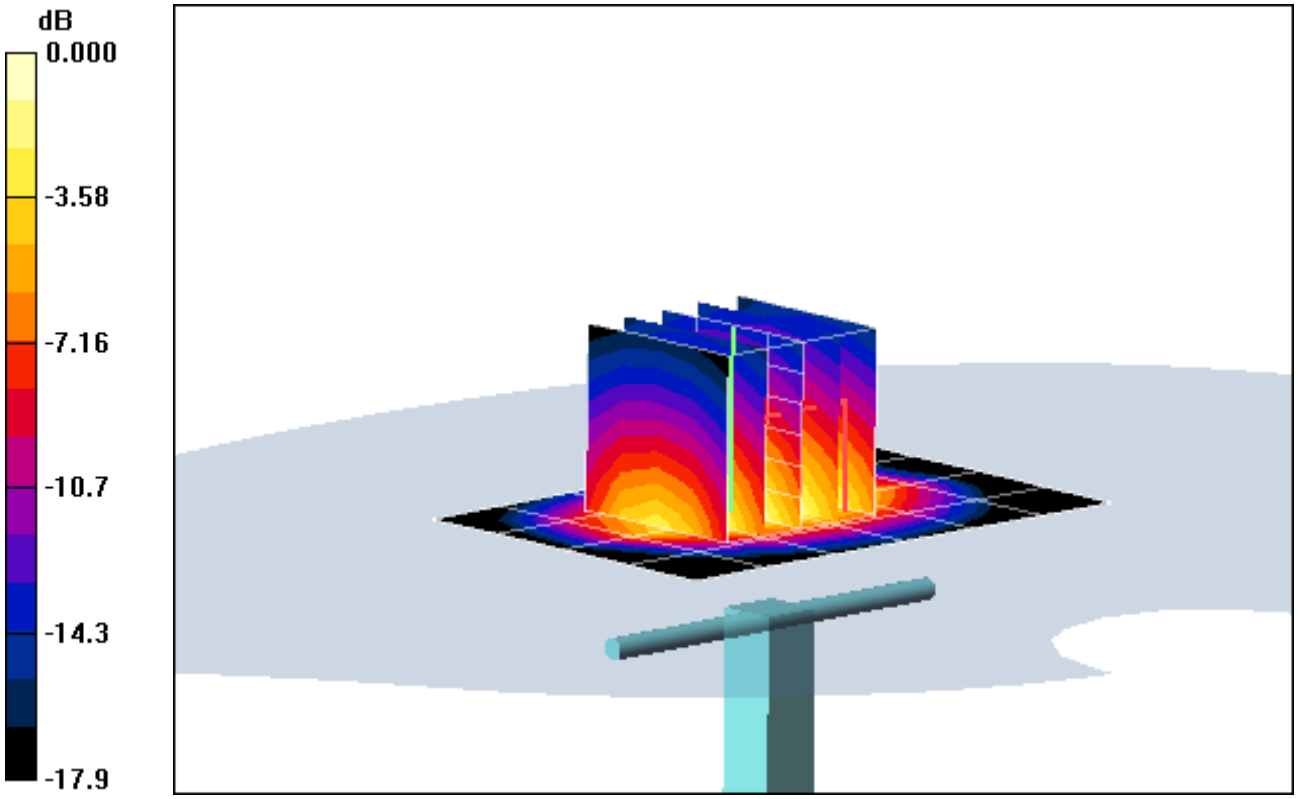
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 Head Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.45 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-26-2011; Ambient Temp: 23.8 °C; Tissue Temp: 21.9 °C

Probe: ES3DV2 - SN3022; ConvF(4.83, 4.83, 4.83); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM Sub Dasy B; Type: SAM 4.0; Serial: TP-1626
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

1900MHz System Verification

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 4.16 mW/g; SAR(10 g) = 2.21 mW/g
Deviation = 3.48 %



0 dB = 4.63mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 1900 MHz; Type: D1900V2; Serial: 502

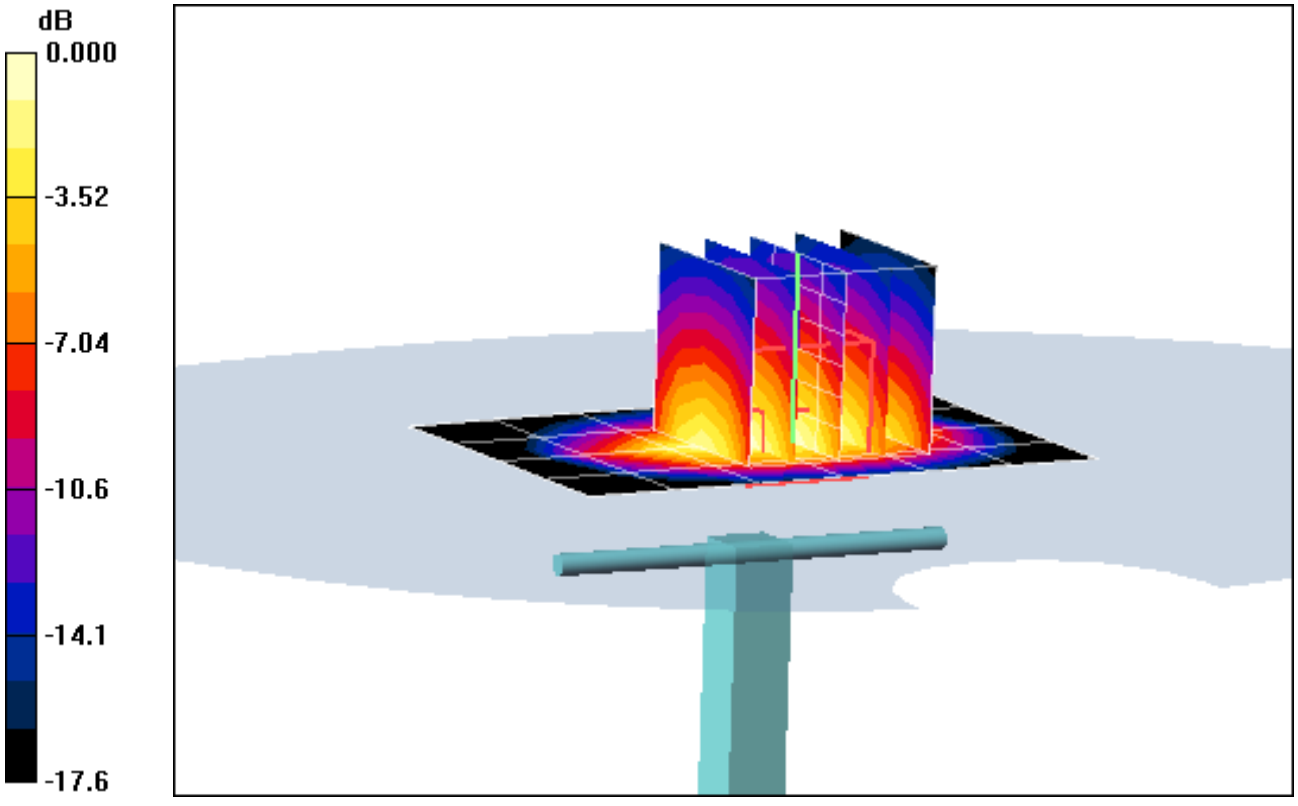
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 Body Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.52 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-25-2011; Ambient Temp: 23.7 °C; Tissue Temp: 21.8 °C

Probe: ES3DV2 - SN3022; ConvF(4.34, 4.34, 4.34); Calibrated: 9/21/2010
Sensor-Surface: 4mm (Mechanical Surface Detection)
Electronics: DAE4 Sn704; Calibrated: 3/17/2011
Phantom: SAM with CRP; Type: SAM; Serial: TP1375
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

1900MHz System Verification

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 4.12 mW/g; SAR(10 g) = 2.2 mW/g
Deviation = 0.24 %



0 dB = 4.61mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 2450 MHz; Type: D2450V2; Serial: 797

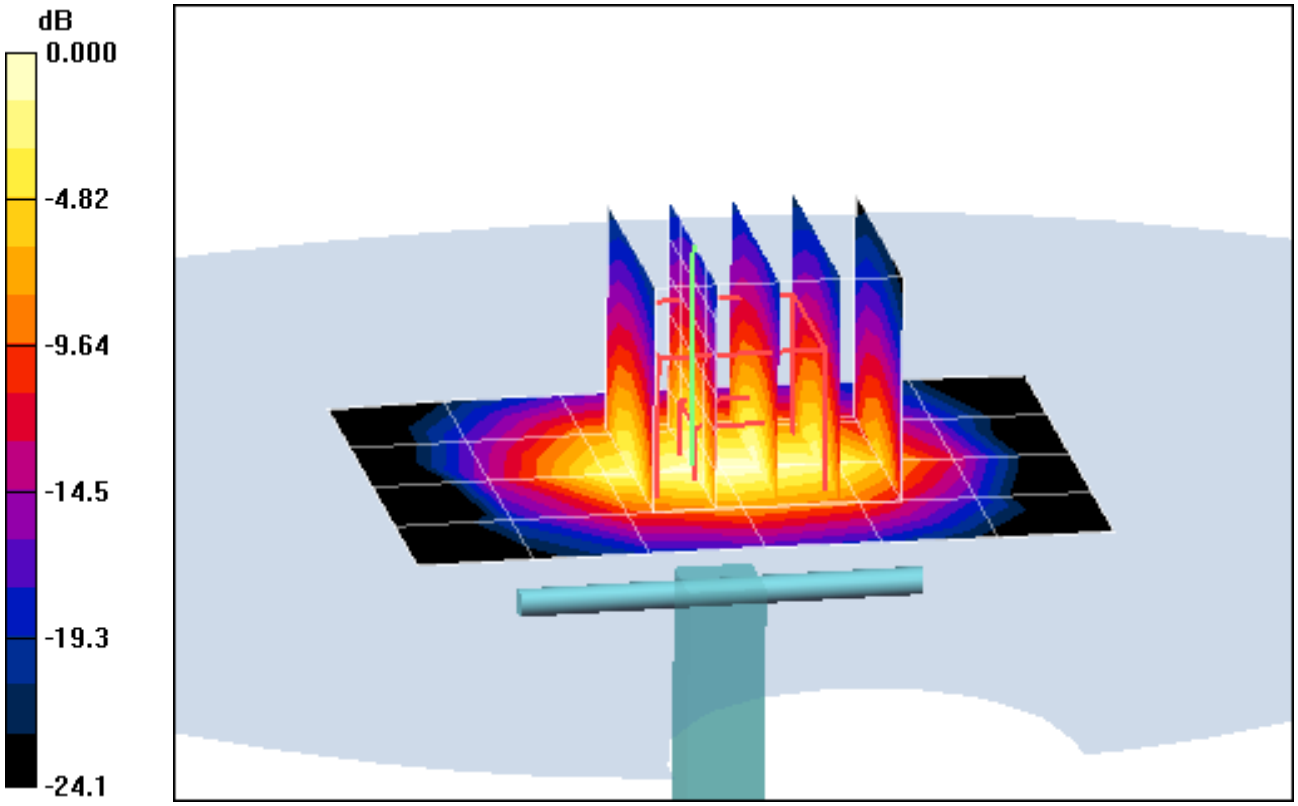
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Head Medium parameters used:
f = 2450 MHz; σ = 1.78 mho/m; ε_r = 38.63; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.29, 6.29, 6.29); Calibrated: 2/14/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

2450MHz System Verification

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 16 dBm (40 mW)
SAR(1 g) = 2.3 mW/g; SAR(10 g) = 1.04 mW/g
Deviation = 7.88 %



0 dB = 2.96mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 2450 MHz; Type: D2450V2; Serial: 797

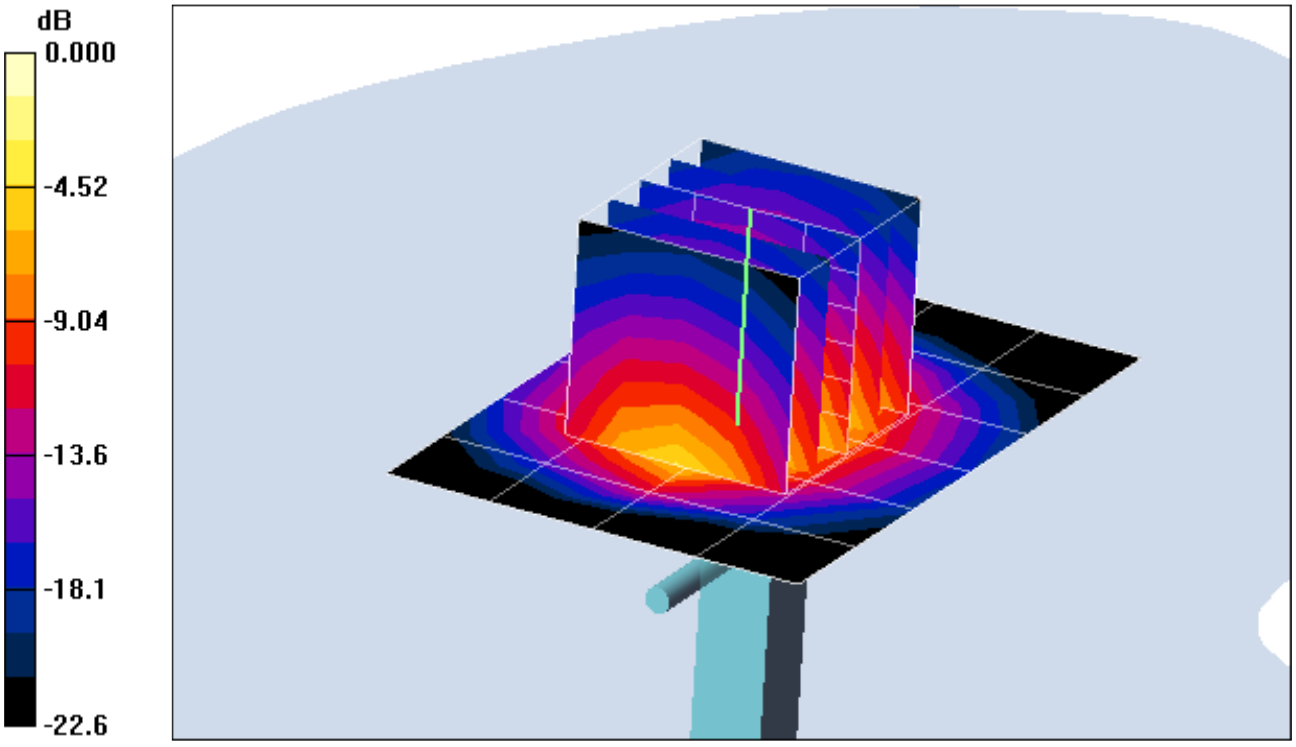
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Body Medium parameters used:
f = 2450 MHz; σ = 1.93 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-01-2011; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: ES3DV3 - SN3258; ConvF(4.34, 4.34, 4.34); Calibrated: 4/8/2011
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 2/21/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

2450MHz System Verification

Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 14.0 dBm (25 mW)
SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.609 mW/g
Deviation = 0.96 %



0 dB = 1.72mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1057

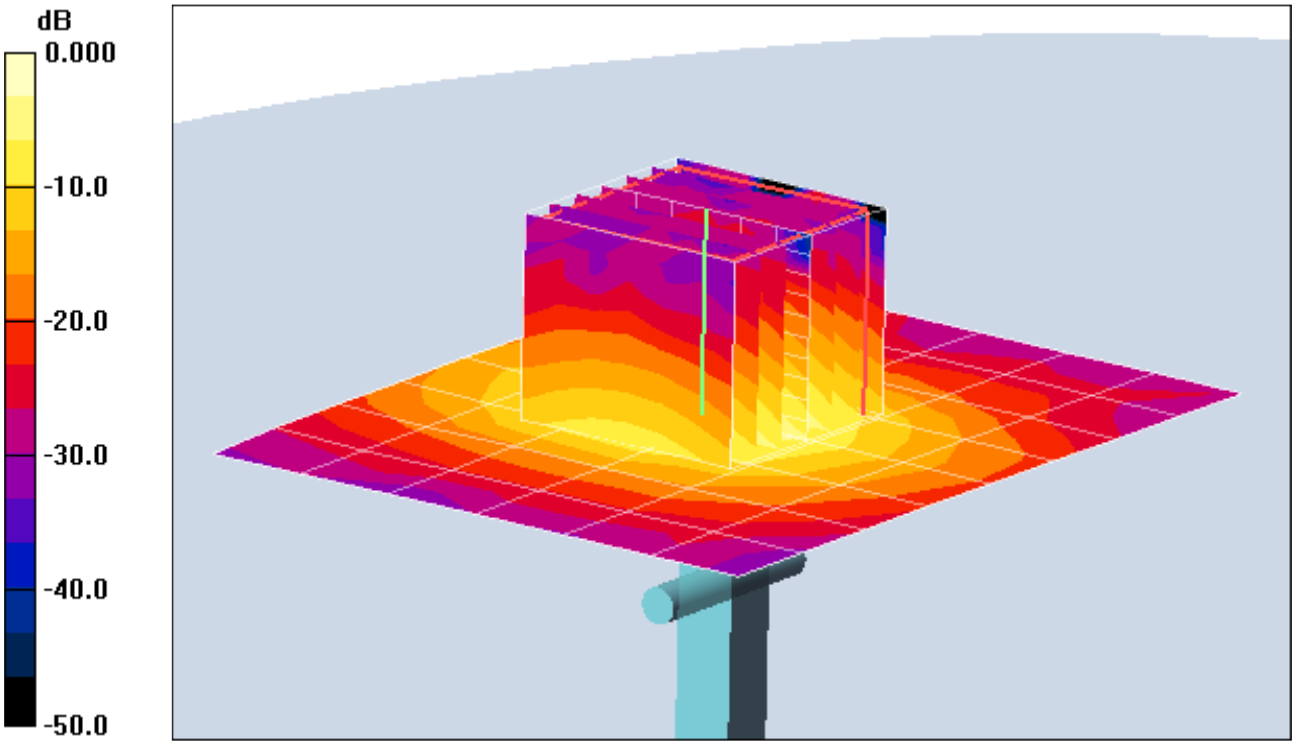
Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head Medium parameters used (interpolated):
f = 5200 MHz; σ = 4.8 mho/m; ε_r = 35.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.3°C; Tissue Temp: 20.4°C

Probe: EX3DV4 - SN3550; ConvF(4.06, 4.06, 4.06); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5200MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 14.0 dBm (25 mW)
SAR(1 g) = 2.24 mW/g; SAR(10 g) = 0.631 mW/g
Deviation = 7.82 %



0 dB = 4.68mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1057

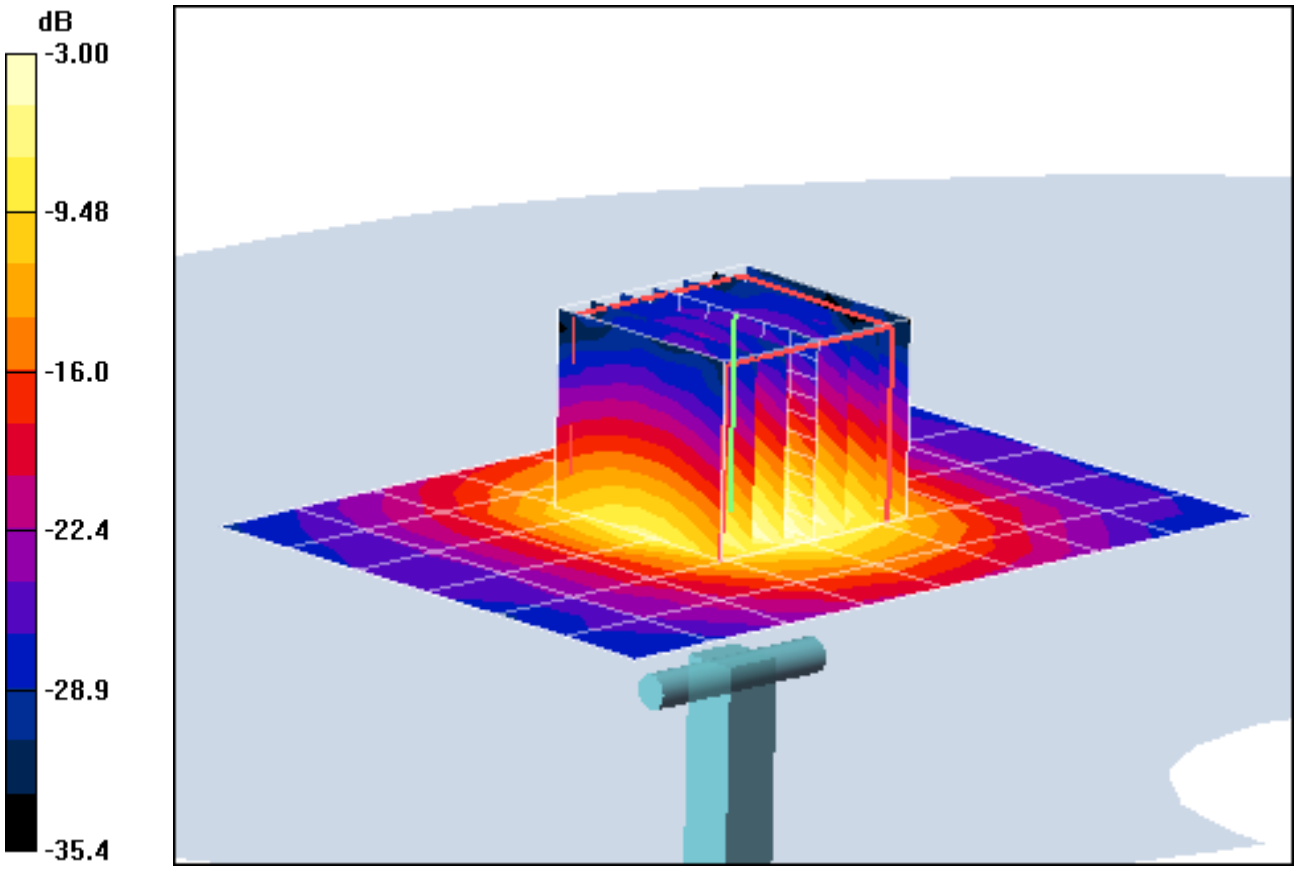
Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body; Medium parameters used (interpolated):
f = 5200 MHz; σ = 5.31 mho/m; ε_r = 47.88; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.2 °C; Tissue Temp: 20.5°C

Probe: EX3DV4 - SN3550; ConvF(3.58, 3.58, 3.58); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5200MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 8.11 mW/g; SAR(10 g) = 2.23 mW/g
Deviation = 4.38 %



0 dB = 16.5mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

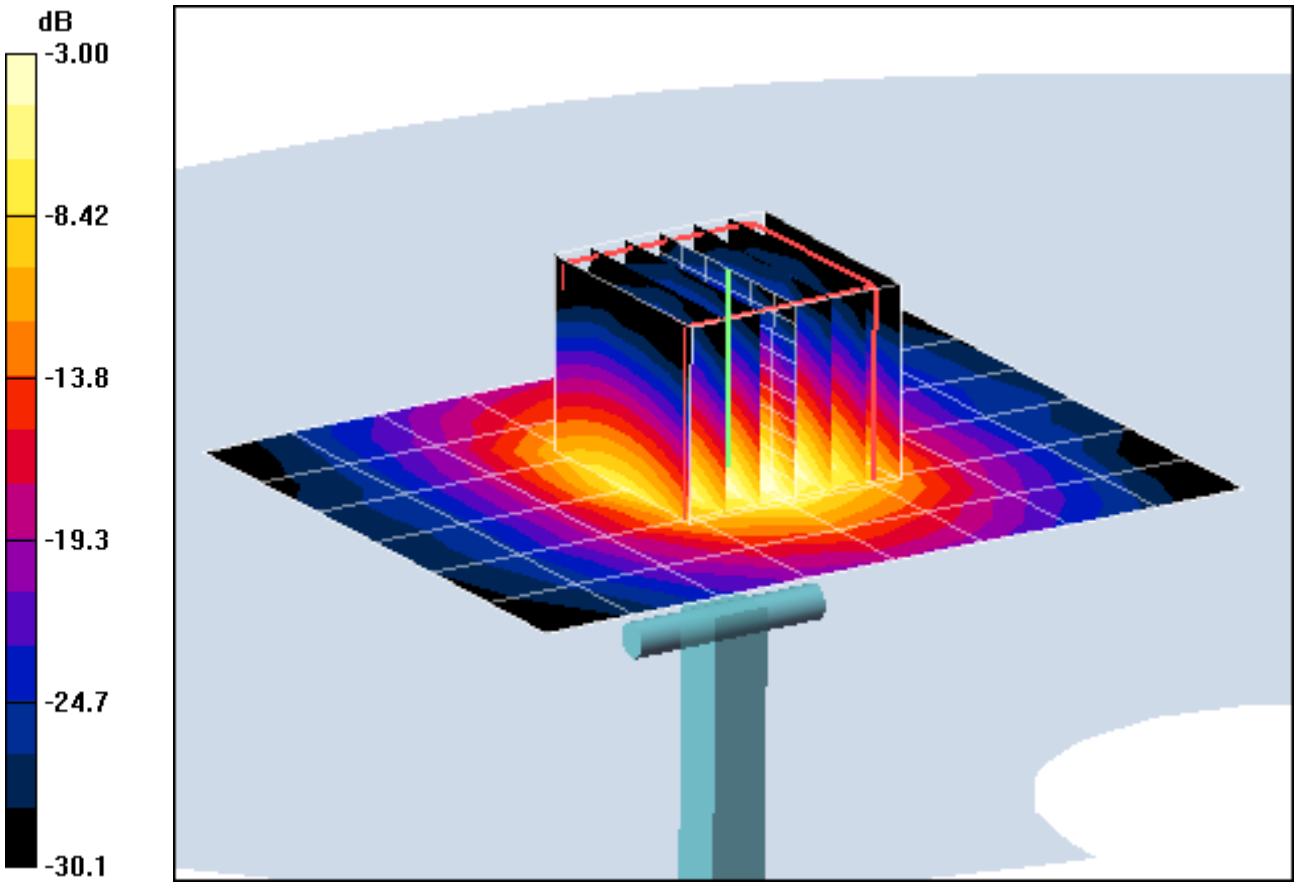
Communication System: CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head; Medium parameters used (interpolated):
f = 5500 MHz; σ = 5.15 mho/m; ε_r = 34.75; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.3 °C; Tissue Temp: 20.4 °C

Probe: EX3DV4 - SN3550; ConvF(3.77, 3.77, 3.77); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5500MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 9.76 mW/g; SAR(10 g) = 2.74 mW/g
Deviation = 8.32 %



0 dB = 20.4mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

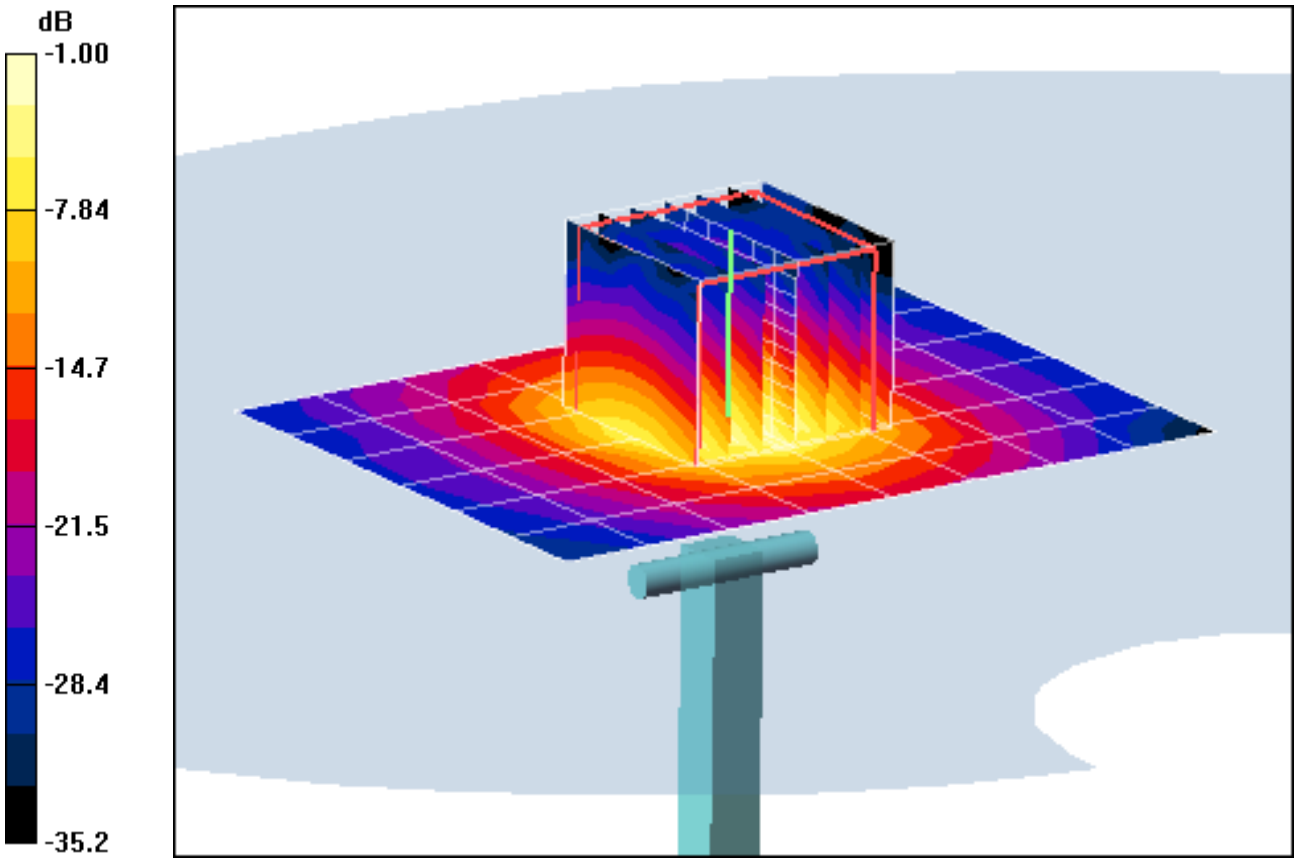
Communication System: CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body; Medium parameters used (interpolated):
f = 5500 MHz; σ = 5.72 mho/m; ε_r = 47.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.3 °C; Tissue Temp: 20.7 °C

Probe: EX3DV4 - SN3550; ConvF(3.21, 3.21, 3.21); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5500MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 7.9 mW/g; SAR(10 g) = 2.16 mW/g
Deviation = -6.40 %



0 dB = 16.2mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

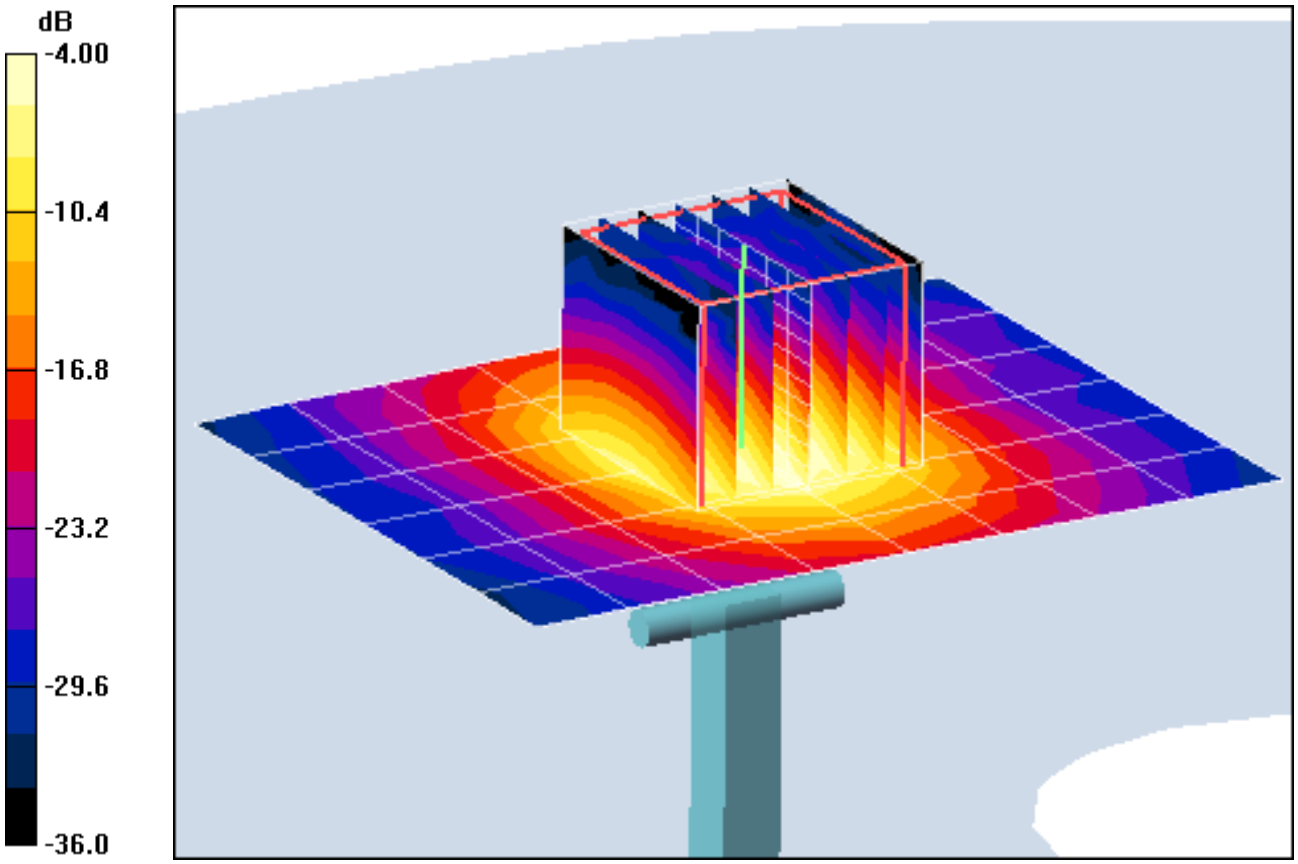
Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: 5 GHz Head; Medium parameters used (interpolated):
f = 5800 MHz; σ = 5.51 mho/m; ε_r = 34.2; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.6 °C; Tissue Temp: 20.8 °C

Probe: EX3DV4 - SN3550; ConvF(3.64, 3.64, 3.64); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5800MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 9.04 mW/g; SAR(10 g) = 2.51 mW/g
Deviation = 9.05 %



0 dB = 19.4mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

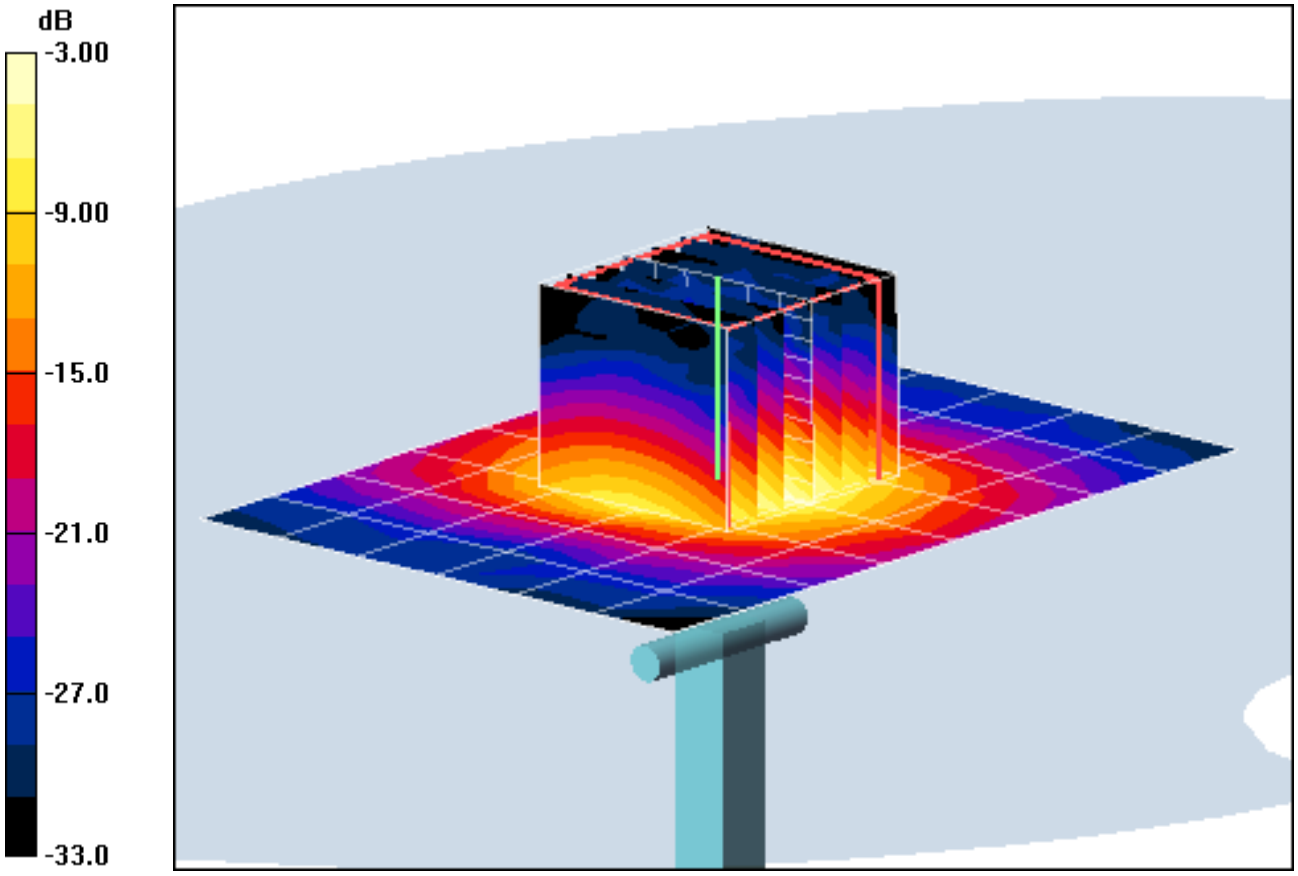
Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: 5 GHz Body; Medium parameters used (interpolated):
f = 5800 MHz; σ = 6.15 mho/m; ε_r = 46.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 07-27-2011; Ambient Temp: 22.7 °C; Tissue Temp: 20.9 °C

Probe: EX3DV4 - SN3550; ConvF(3.29, 3.29, 3.29); Calibrated: 2/14/2011
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn665; Calibrated: 4/20/2011
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5800MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (7x7x11)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Input Power = 20.0 dBm (100 mW)
SAR(1 g) = 7.72 mW/g; SAR(10 g) = 2.1 mW/g
Deviation = 2.93 %



0 dB = 16.4mW/g