Report No.: RZA2010-0915

TESTING
No. L2264

OET 65

TEST REPORT

Product Name	WCDMA/GSM(GPRS) Dual-Mode Digital Mobile Phone
Model	ZTE-U X850
FCC ID	Q78-ZTE-UX850
Client	ZTE CORPORATION

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	WCDMA/GSM(GPRS) Dual-Mode Digital Mobile Phone	**Model**	ZTE-U X850
FCC ID	Q78-ZTE-UX850	**Report No.**	RZA2010-0915
Client	ZTE CORPORATION		
Manufacturer	ZTE CORPORATION		
Reference Standard(s)	**IEEE Std C95.1, 1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. **IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. **SUPPLEMENT C Edition 01-01 to OET BULLETIN 65 Edition 97-01 June 2001 including DA 02-1438, published June 2002:** Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radio frequency Emissions.		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards. General Judgment: **Pass** (Stamp) **Date of issue: June 22nd, 2010**		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中 **Revised by** 凌敏宝 **Performed by** 薛超峰

Yang Weizhong Ling Minbao Xue Chaofeng

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1. General Information

1.1. Notes of the Test Report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

1.2. Testing Laboratory

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1.3. Applicant Information

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1.4. Manufacturer Information

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Postal Code:	518057
Country:	P.R. China
Telephone:	021-68897541
Fax:	021-50801070

1.5. Information of EUT

General Information

Device Type :	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
Product Name:	WCDMA/GSM(GPRS) Dual-Mode Digital Mobile Phone		
IMEI or SN:	000039485642710		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/ GSM 1900; (tested) WCDMA Band V; (tested) WIFI; (tested) Bluetooth; GSM 900/ GSM 1800; WCDMA Band I;		
GPRS Multislot Class :	12		
EGPRS Multislot Class :	12		
HSDPA UE Category:	8		
HSUPA UE Category:	6		
Test Modulation:	(GSM)GMSK; WCDMA(QPSK)		
Operating Frequency Range(s):	Band	Tx (MHz)	Rx (MHz)
	GSM 850	824.2 ~ 848.8	869.2 ~ 893.8
	GSM 1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8
	WCDMA Band V	826.4 ~ 846.6	871.4 ~ 891.6
Power Class:	GSM 850: 4, tested with power level 5		
	GSM 1900: 1, tested with power level 0		
	WCDMA Band V: 3, tested with power control all up bits		
Test Channel: (Low - Middle - High)	128 - 190 - 251 (GSM 850) (tested) 512 - 661 - 810 (GSM 850) (tested) 4132 - 4183 - 4233 (WCDMA Band V) (tested)		
Hardware Version:	p3zB		
Software Version:	CR_P726NV1.0.0B01		
Antenna Type:	Internal Antenna		

Auxiliary Equipment Details

AE1:Battery

Model:	Li3710T42P3h553457
Manufacturer:	ZTE CORPORATION
SN:	10091001201103111

AE2:Travel Adapter

Model:	STC-A22O50I700M5-A
Manufacturer:	MADE IN CHINA BY RUIDE
SN:	/

Equipment Under Test (EUT) is a model of WCDMA/GSM(GPRS) Dual-Mode Digital Mobile Phone with internal antenna. The detail about Mobile phone, Lithium Battery and AC/DC Adapter is in chapter 1.5 in this report. SAR is tested for GSM850, GSM 1900 and WCDMA Band V.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. The Maximum SAR_{1g} Values and Conducted Power of each tested band

Band	SAR_{1g} (W/kg)		Maximum Conducted Power (dBm)
	Head	Body	
GSM 850	**0.671**	**0.623**	**32.41**
GSM 1900	**0.926**	**0.342**	**29.46**
WCDMA Band V	**0.678**	**0.506**	**22.71**
802.11b	**0.293**	**0.122**	**13.45**
802.11g	**0.288**	**0.106**	**14.08**

1.7. Test Date

The test is performed from May 18, 2010 to May 27, 2010 and from June 19, 2010 to June 20, 2010.

2. Operational Conditions during Test

2.1. General Description of Test Procedures

A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 in the case of GSM 850, allocated to 512, 661 and 810 in the case of GSM 1900, allocated to 4132, 4183 and 4233 in the case of WCDMA Band V. The EUT is commanded to operate at maximum transmitting power.

Connection to the EUT is established via air interface with E5515C, and the EUT is set to maximum output power by E5515C. The power lever is set to “5” in SAR of GSM 850, set to “0” in SAR of GSM 1900, power control is set “All Up Bits” of WCDMA. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30 dB.

2.2. GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a System Simulator (SS) by air link. Using E5515C the power lever is set to “5” in SAR of GSM 850, set to “0” in SAR of GSM 1900. The tests in the band of GSM 850 and GSM 1900 are performed in the mode of speech transfer function and GPRS/EGPRS function. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink. The EGPRS class is 12 for this EUT; it has at most 4 timeslots in uplink.

SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Table 1: The allowed power reduction in the multi-slot configuration

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power,(dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

2.3. WCDMA Test Configuration

2.3.1. Output Power Verification

Maximum output power is verified on the High, Middle and Low channel according to the procedures described in section 5.2 of 3GPP TS 34. 121, using the appropriate RMC or AMR with TPC(transmit power control) set to all “1’s” for WCDMA/HSDPA or applying the required inner loop power control procedures to the maximum output power while HSUPA is active. Results for all applicable physical channel configuration (DPCCH, $DPDCH_n$ and spreading codes, HSDPA, HSPA) should be tabulated in the SAR report. All configuration that are not supported by the DUT or can not be measured due to technical or equipment limitations should be clearly identified.

2.3.2. Head SAR Measurements

SAR for head exposure configurations in voice mode is measured using a 12.2kbps RMC with TPC bits configured to all “1’s”. SAR in AMR configurations is not required when the maximum average output of each RF channel for 12.2kbps AMR is less than 1/4 dB higher than that measured in 12.2 kbps RMC. Otherwise, SAR is measured on the maximum output channel in 12.2kbps AMR with a 3.4 kbps SRB(Signaling radio bearer) using the exposure configuration that results in the highest SAR in 12.2kbps RMC for that RF channel.

2.3.3. Body SAR Measurements

SAR for body exposure configurations in voice and data modes is measured using 12.2kbps RMC with TPC bits configured to all “1’s”. SAR for other spreading codes and multiple $DPDCH_n$, when supported by the DUT, are not required when the maximum average output of each RF channel, for each spreading code and $DPDCH_n$ configuration, are less than 1/4 dB higher than those measured in 12.2kbps RMC. Otherwise, SAR is measured on the maximum output channel with an applicable RMC configuration for the corresponding spreading code or $DPDCH_n$ using the exposure configuration that results in the highest SAR with 12.2 kbps RMC. When more than 2 $DPDCH_n$ are supported by the DUT, it may be necessary to configure additional $DPDCH_n$ for a DUT using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

2.4. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the “Body SAR Measurements” procedures of that section. In addition, body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 1/4 dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA should be configured according to the UE category of a test device. The number of HS-DSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set f. To maintain a consistent test configuration and stable transmission condition, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured

with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc,βd), and HS-DPCCH power offset parameters(△ACK, △NACK, △CQI)should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 2: Subtests for UMTS Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note1: $\triangle_{ACK}$, $\triangle_{NACK}$ and $\triangle_{CQI}$= 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$=30/15 ⇔ β_{hs}=30/15*β_c

Note2:For the HS-DPCCH power mask requirement test in clause 5.2C,5.7A,and the Error Vector Magnitude(EVM) with HS-DPCCH test in clause 5.13.1.A,and HSDPA EVM with phase discontinuity in clause 5.13.1AA, $\triangle_{ACK}$ and $\triangle_{NACK}$= 8 (A_{hs}=30/15) with β_{hs}=30/15*β_c,and $\triangle_{CQI}$= 7 (A_{hs}=24/15) with β_{hs}=24/15*β_c.

Note3: CM=1 forβ_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4:For subtest 2 the $\beta_c\beta_d$ ratio of 12/15 for the TFC during the measurement period(TF1,TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1,TF1) to β_c=11/15 and β_d=15/15.

Table 3: Settings of required H-Set 1 QPSK in HSDPA mode

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	534
Inter-TTI Distance	TTI's	3
Number of HARQ Processes	Processes	2
Information Bit Payload (N_{INF})	Bits	3202
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	4800
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	9600
Coding Rate		0.67
Number of Physical Channel Codes	Codes	5
Modulation	/	QPSK

Table 4: HSDPA UE category

HS-DSCH Category	Maximum HS-DSCH Codes Received	Minimum Inter-TTI Interval	Maximum Transport Bits/HS-DSCH	Total Channel
1	5	3	7298	19200
2	5	3	7298	28800
3	5	2	7298	28800
4	5	2	7298	38400
5	5	1	7298	57600
6	5	1	7298	67200
7	10	1	14411	115200
8	10	1	14411	134400
9	15	1	25251	172800
10	15	1	27952	172800
11	5	2	3630	14400
12	5	1	3630	28800
13	15	1	34800	259200
14	15	1	42196	259200
15	15	1	23370	345600
16	15	1	27952	345600

2.5. HSUPA Test Configuration

Body SAR is also measured for HSPA when the maximum average output of each RF channel with HSPA active is at least ¼ dB higher than that measured without HSPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set 1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 with power control algorithm 2, according to the highest body SAR configuration in 12.2 kbps RMC without HSPA.[40]

Due to inner loop power control requirements in HSPA, a commercial communication test set should be used for the output power and SAR tests.[41] The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA should be configured according to the β values indicated below as well as other applicable procedures described in the ‘WCDMA Handset’ and ‘Release 5 HSDPA Data Devices’ sections of 3 G device.

Table 5: Sub-Test 5 Setup for Release 6 HSUPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (1)	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM (2) (dB)	MPR (dB)	AG (4) Index	E-TFCI
1	11/15 (3)	15/15 (3)	64	11/15 (3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed1}:47/15 β_{ed2}:47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (4)	15/15 (4)	64	15/15 (4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, ΔNACK and Δ_{CQI} = 8 $\Leftrightarrow$ A_{hs} = β_{hs}/β_c = 30/15 $\Leftrightarrow$ β_{hs}= 30/15 *β_c.

Note 2: CM = 1 for βc/βd =12/15, β_{hs}/β_c =24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-

DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the

signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.

Note 4: For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the

signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.

Note 6: βed can not be set directly; it is set by Absolute Grant Value.

Table 6: HSUPA UE category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCH TTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?
	4	4	10		20000	?

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.
UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)

2.6. WIFI Test Configuration

For the 802.11b/g SAR tests, a communication link is set up with the test mode software for WIFI mode test. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 1, 6 and 11 respectively in the case of 2450 MHz. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode.

802.11b/g operating modes are tested independently according to the service requirements in each frequency band.802.11b/g modes are tested on channels1,6,11;however,if output power reduction is necessary for channels 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels must be tested instead.

SAR is not required for 802.11g channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels. When the maximum average output channel in each frequency band is not included in the “default test channels”, the maximum channel should be tested instead of an adjacent “default test channels”, these are referred to as the “required test channels” and are illustrated in table 7.

And according to the “3 dB rule” FCC Public Notice, DA 02-1948, June 19.2002 **“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)”**. Then The Absolute Radio Frequency Channel Number (ARFCN) is firstly allocated to 2437 respectively in the case of 802.11b/g.

Table 7: “Default Test Channels”

Mode	GHz	Channel	Turbo Channel	“Default Test Channels”			
				15.247		UNII	
				802.11b	802.11g		
802.11b/g	2.412	1#		√	*		
	2.437	6	6	√	*		
	2.462	11#		√	*		

Note: #=when output power is reduced for channel 1 and /or 11to meet restricted band requirements the highest out put channels closet to each of these channels should be tested.

√= “default test channels”

* =possible 802.11g channels with maximum average output 0.25dB>=the “default test channels”

3. SAR Measurements System Configuration

3.1. SAR Measurement Set-up

The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY4 measurement server.
- The DASY4 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003
- DASY4 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

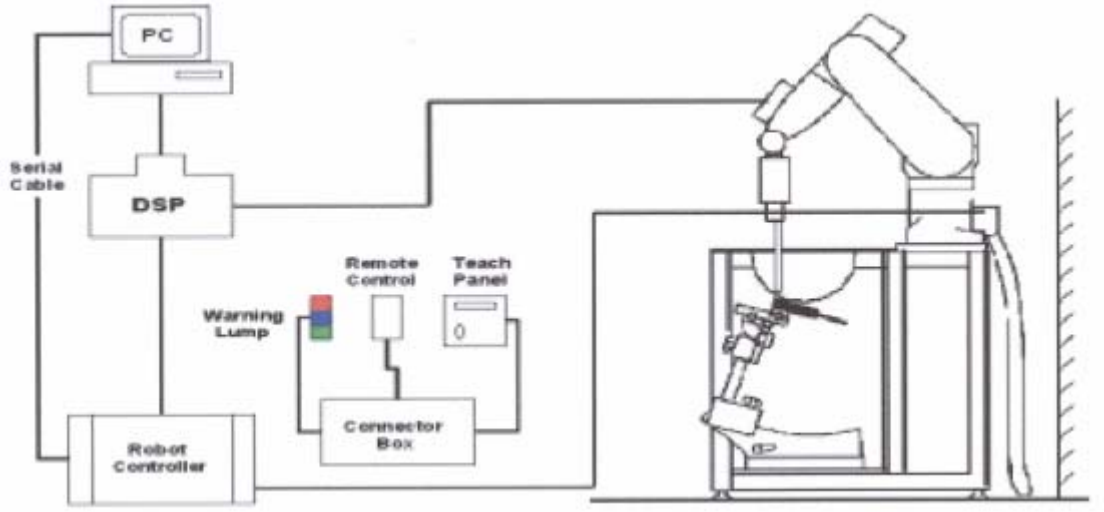

Figure 1 SAR Lab Test Measurement Set-up

3.2. DASY4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

3.2.1. EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μW/g to > 100 mW/g Linearity: ± 0.2dB (noise: typically < 1 μW/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.

Figure 2.EX3DV4 E-field Probe

Figure 3. EX3DV4 E-field probe

3.2.2. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.
E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
ΔT = Temperature increase due to RF exposure.
Or

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

Where:
σ = Simulated tissue conductivity,
ρ = Tissue density (kg/m3).

3.3. Other Test Equipment

3.3.1. Device Holder for Transmitters

The DASY device holder is designed to cope with the die rent positions given in the standard.
It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus, the device needs no repositioning when changing the angles.
The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the inference of the clamp on the test results could thus be lowered.

Figure 4 Device Holder

3.3.2. Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden Figure. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. 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.

Shell Thickness	2±0.1 mm
Filling Volume	Approx. 20 liters
Dimensions	810 x l000 x 500 mm (H x L x W)
Aailable	Special

Figure 5 Generic Twin Phantom

3.4. Scanning Procedure

The DASY4 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

- The “surface check” measurement tests the optical surface detection system of the DASY4 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

  The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot.Before starting the area scan a grid

spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.
After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

- Zoom Scan
  Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

- Spatial Peak Detection
  The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses.The DASY4 system allows evaluations that combine measured data and robot positions, such as:
  • maximum search
  • extrapolation
  • boundary correction
  • peak search for averaged SAR
  During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.
  Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.
- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

3.5. Data Storage and Evaluation

3.5.1. Data Storage

The DASY4 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

3.5.2. Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, ai_0, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	Dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	
	- Density	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY4 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

$$V_i = U_i + U_i^2 \cdot c f / d c p_i$$

With V_i = compensated signal of channel i (i = x, y, z)

U_i = input signal of channel i (i = x, y, z)

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes: $E_i = (V_i / Norm_i \cdot ConvF)^{1/2}$

H-field probes: $H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f$

With V_i = compensated signal of channel i (i = x, y, z)

$Norm_i$ = sensor sensitivity of channel i (i = x, y, z)
[mV/(V/m)^2] for E-field Probes

$ConvF$ = sensitivity enhancement in solution

a_{ij} = sensor sensitivity factors for H-field probes

f = carrier frequency [GHz]

E_i = electric field strength of channel i in V/m

H_i = magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}$$

The primary field data are used to calculate the derived field units.

$$SAR = (E_{tot}^2 \cdot \ .) / (\quad \cdot 1000)$$

with $\boldsymbol{SAR}$ = local specific absorption rate in mW/g

$\boldsymbol{E_{tot}}$ = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

ρ = equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = E_{tot}^2 / 3770 \quad \text{or} \quad \boldsymbol{P_{pwe} = H_{tot}^2 \cdot 37.7}$$

with P_{pwe} = equivalent power density of a plane wave in mW/cm^2

$\boldsymbol{E_{tot}}$ = total electric field strength in V/m

$\boldsymbol{H_{tot}}$ = total magnetic field strength in A/m

3.6. System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the table 14 and table 15.

System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system (±10 %).

System check is performed regularly on all frequency bands where tests are performed with the DASY4 system.

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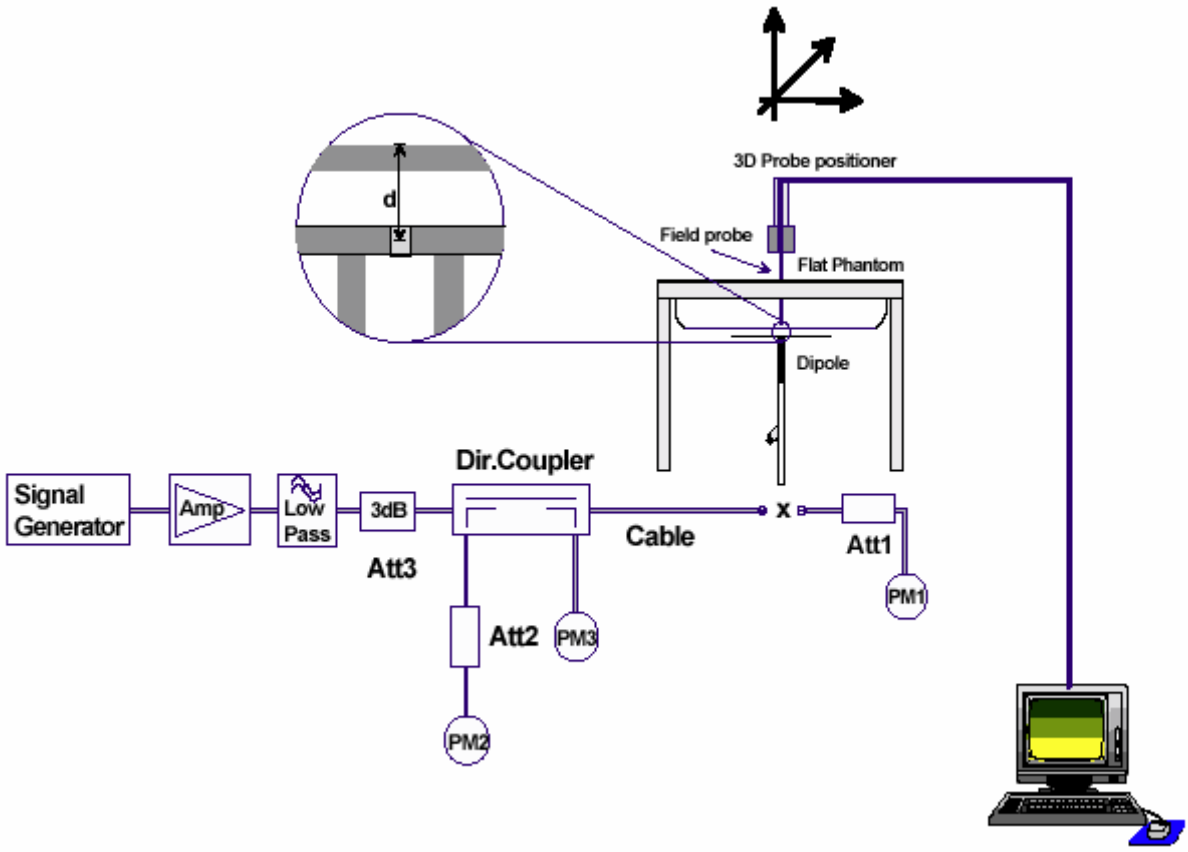


Figure 6 System Check Set-up

3.7. Equivalent Tissues

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose.The liquid has previously been proven to be suited for worst-case. The Table 8 and Table 9 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 8: Composition of the Head Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Brain) 835MHz
Water	41.45
Sugar	56
Salt	1.45
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=41.5 σ=0.9

MIXTURE%	FREQUENCY(Brain) 1900MHz
Water	55.242
Glycol monobutyl	44.452
Salt	0.306
Dielectric Parameters Target Value	f=1900MHz ε=40.0 σ=1.40

MIXTURE%	FREQUENCY(Brain) 2450MHz
Water	62.7
Glycol	36.8
Salt	0.5
Dielectric Parameters Target Value	f=2450MHz ε=39.20 σ=1.80

Table 9: Composition of the Body Tissue Equivalent Matter

MIXTURE%	FREQUENCY(Body) 835MHz
Water	52.5
Sugar	45
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=55.2 σ=0.97

MIXTURE%	FREQUENCY(Body) 1900MHz
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz ε=53.3 σ=1.52

MIXTURE%	FREQUENCY(Body) 2450MHz
Water	73.2
Glycol	26.7
Salt	0.1
Dielectric Parameters Target Value	f=2450MHz ε=52.70 σ=1.95

4. Laboratory Environment

Table 10: The Ambient Conditions during Test

Temperature	Min. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

5. Characteristics of the Test

5.1. Applicable Limit Regulations

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

5.2. Applicable Measurement Standards

IEEE Std 1528™-2003: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

SUPPLEMENT C Edition 01-01 to OET BULLETIN 65 Edition 97-01 June 2001 including DA 02-1438, published June 2002: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radio frequency Emissions.

6. Conducted Output Power Measurement

6.1. Summary

The DUT is tested using an E5515C communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted power. Conducted output power was measured using an integrated RF connector and attached RF cable. This result contains conducted output power for the EUT.

6.2. Conducted Power Results

Table 11: Conducted Power Measurement Results

GSM 850		**Conducted Power(dBm)**		
		Channel 128	Channel 190	Channel 251
Before Test		32.36	32.40	32.33
After Test		32.35	32.41	32.32
GSM 1900		**Conducted Power(dBm)**		
		Channel 512	Channel 661	Channel 810
Before Test		29.43	29.46	29.43
After Test		29.42	29.45	29.42
WCDMA Band V		**Conducted Power (dBm)**		
		Channel 4132	Channel 4183	Channel 4233
12.2kbps	Before Test	22.48	22.70	22.57
	After Test	22.47	22.71	22.58
64kbps	Before Test	22.46	22.68	22.56
	After Test	22.47	22.69	22.57
144kbps	Before Test	22.44	22.68	22.55
	After Test	22.45	22.67	22.56
384kbps	Before Test	22.43	22.65	22.53
	After Test	22.41	22.66	22.54
WCDMA Band V HSDPA		**Conducted Power(dBm)**		
		Channel 4132	Channel 4183	Channel 4233
Sub Test - 1	Before Test	22.34	22.64	22.44
	After Test	22.33	22.62	22.46
Sub Test - 2	Before Test	22.24	22.47	22.33
	After Test	22.23	22.45	22.31
Sub Test - 3	Before Test	21.79	21.92	21.89
	After Test	21.77	21.93	21.87
Sub Test - 4	Before Test	21.73	21.87	21.81
	After Test	21.72	21.88	21.83
WCDMA Band V HSUPA		**Conducted Power(dBm)**		

		Channel 4132	Channel 4183	Channel 4233
Sub Test - 1	Before Test	20.93	20.90	20.70
	After Test	20.92	20.91	20.71
Sub Test - 2	Before Test	20.27	20.87	20.45
	After Test	20.28	20.86	20.44
Sub Test - 3	Before Test	20.63	20.96	20.66
	After Test	20.64	20.95	20.65
Sub Test - 4	Before Test	20.07	20.97	20.58
	After Test	20.07	20.96	20.57
Sub Test - 5	Before Test	20.83	20.76	20.70
	After Test	20.82	20.77	20.71

Average Power

GSM 850+GPRS		**Conducted Power(dBm)**						
		CH128	CH190	CH251		CH128	CH190	CH251
1 timeslot	Before Test	32.36	32.40	32.33	-9.03dB	23.33	23.37	23.30
	After Test	32.35	32.41	32.32	-9.03dB	23.32	23.38	23.29
2 timeslots	Before Test	30.34	30.36	30.29	-6.02dB	**24.32**	**24.34**	**24.27**
	After Test	30.33	30.35	30.28	-6.02dB	24.31	24.33	24.26
3 timeslots	Before Test	28.42	28.43	28.36	-4.26dB	24.16	24.17	24.10
	After Test	28.41	28.42	28.35	-4.26dB	24.15	24.16	24.09
4 timeslots	Before Test	27.28	27.31	27.25	-3.01dB	24.27	24.30	24.24
	After Test	27.27	27.30	27.24	-3.01dB	24.26	24.29	24.23
GSM 850+EGPRS		**Conducted Power(dBm)**						
		CH128	CH190	CH251		CH128	CH190	CH251
1 timeslot	Before Test	32.34	32.41	32.33	-9.03dB	23.31	23.38	23.30
	After Test	32.32	32.41	32.31	-9.03dB	23.29	23.38	23.28
2 timeslots	Before Test	30.31	30.32	30.27	-6.02dB	**24.29**	**24.30**	**24.25**
	After Test	30.32	30.31	30.29	-6.02dB	24.30	24.29	24.27
3 timeslots	Before Test	28.40	28.45	28.35	-4.26dB	24.14	24.19	24.09
	After Test	28.41	28.43	28.34	-4.26dB	24.15	24.17	24.08
4 timeslots	Before Test	27.27	27.29	27.23	-3.01dB	24.26	24.28	24.22
	After Test	27.28	27.30	27.24	-3.01dB	24.27	24.29	24.23

GSM 1900+GPRS		Conducted Power(dBm)						
		CH512	CH661	CH810		CH512	CH661	CH810
1 timeslot	Before Test	29.42	29.46	29.43	-9.03dB	20.39	20.43	20.4
	After Test	29.41	29.45	29.42	-9.03dB	20.38	20.42	20.39
2 timeslots	Before Test	27.36	27.39	27.35	-6.02dB	**21.34**	**21.37**	**21.33**
	After Test	27.35	27.38	27.34	-6.02dB	21.33	21.36	21.32
3 timeslots	Before Test	25.46	25.50	25.47	-4.26dB	21.2	21.24	21.21
	After Test	25.45	25.51	25.46	-4.26dB	21.19	21.25	21.2
4 timeslots	Before Test	24.31	24.35	24.33	-3.01dB	21.30	21.34	21.32
	After Test	24.30	24.34	24.32	-3.01dB	21.29	21.33	21.31
GSM 1900+EGPRS		**Conducted Power(dBm)**						
		CH512	CH661	CH810		CH512	CH661	CH810
1 timeslot	Before Test	29.40	29.46	29.43	-9.03dB	20.37	20.43	20.4
	After Test	29.41	29.45	29.42	-9.03dB	20.38	20.42	20.39
2 timeslots	Before Test	27.36	27.41	27.33	-6.02dB	**21.34**	**21.39**	**21.31**
	After Test	27.35	27.38	27.34	-6.02dB	21.33	21.36	21.32
3 timeslots	Before Test	25.46	25.53	25.46	-4.26dB	21.20	21.27	21.20
	After Test	25.45	25.51	25.46	-4.26dB	21.19	21.25	21.2
4 timeslots	Before Test	24.32	24.35	24.33	-3.01dB	21.31	21.34	21.32
	After Test	24.30	24.34	24.32	-3.01dB	21.29	21.33	21.31

Note:

1) Division Factors

To average the power, the division factor is as follows:

1 TX- slot = 1 transmit tome slot out of 8 time slots

=> conducted power divided by (8/1) => -9.03 dB

2 TX- slot = 2 transmit tome slots out of 8 time slots

=> conducted power divided by (8/2) => -6.02 dB

3TX- slot = 3 transmit tome slots out of 8 time slots

=> conducted power divided by (8/3) => -4.26 dB

4 TX- slot = 4 transmit tome slots out of 8 time slots

=> conducted power divided by (8/4) => -3.01 dB

2) Average power numbers

The maximum power numbers are marks in bold.

3) For SAR testing the EUT was set to multislot class based on the maximum averaged conducted power.

7. Test Results

7.1. Dielectric Performance

Table 12: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ε_r	σ(s/m)	
835MHz (head)	Target value ± 5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	/
	Measurement value 2010-5-22	42.28	0.92	21.8
	Measurement value 2010-6-19	42.06	0.93	21.8
1900MHz (head)	Target value 5% window	40.0 38 — 42	1.40 1.33 — 1.47	/
	Measurement value 2010-5-21	40.19	1.42	21.9
2450MHz (head)	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	/
	Measurement value 2010-5-26	38.81	1.79	21.9

Table 13: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ε_r	σ(s/m)	
835MHz (body)	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	/
	Measurement value 2010-5-21	54.67	1.00	21.8
	Measurement value 2010-6-19	54.67	1.01	21.8
	Measurement value 2010-6-26	54.68	1.01	21.8
1900MHz (body)	Target value ±5% window	53.3 50.64 — 55.97	1.52 1.44 — 1.60	/
	Measurement value 2010-5-18	52.29	1.56	21.9
2450MHz (body)	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	/
	Measurement value 2010-5-27	51.83	1.92	21.9

7.2. System Check Results

Table 14: System Check for Head Tissue Simulating Liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	ε_r	σ(s/m)	℃
835MHz	Recommended result ±10% window	1.58 1.42 — 1.74	2.42 2.18 — 2.66	40.5	0.89	/
	Measurement value 2010-5-22	1.62	2.48	42.28	0.92	21.9
	Measurement value 2010-6-19	1.62	2.48	42.06	0.93	21.9
1900MHz	Recommended result 10% window	5.38 4.84 — 5.92	10.3 9.27 — 11.33	41	1.42	/
	Measurement value 2010-5-21	5.46	10.6	40.19	1.42	22.1
2450 MHz	Recommended result ±10% window	6.32 5.69 — 6.95	13.40 12.06 — 14.74	40.4	1.78	/
	Measurement value 20109-5-26	6.50	14.05	38.81	1.79	21.7

Note: 1. the graph results see ANNEX B.

2. Recommended Values used derive from the calibration certificate and 250 mW is used as feeding power to the calibrated dipole.

Table 15: System Check for Body Tissue Simulating Liquid

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	ε_r	σ(s/m)	℃
835MHz	Recommended result ±10% window	1.68 1.51 — 1.85	2.56 2.30 — 2.82	53	0.99	/
	Measurement value 2010-5-21	1.68	2.56	54.67	1.00	21.9
	Measurement value 2010-6-19	1.68	2.56	54.67	1.01	21.9
	Measurement value 2010-6-26	1.67	2.55	54.68	1.01	21.9
1900 MHz	Recommended result ±10% window	5.52 4.97— 6.07	10.50 9.45 — 11.55	54.00	1.55	/
	Measurement value 2010-5-18	5.17	9.73	52.29	1.56	21.7
2450 MHz	Recommended result ±10% window	6.17 5.55 — 6.79	13.20 11.88 — 14.52	53.2	2.00	/
	Measurement value 2010-5-27	6.46	14.00	51.83	1.92	21.7

Note: 1. The graph results see ANNEX B.

2. Target Values used derive from the calibration certificate and 250 mW is used as feeding power to the Calibrated dipole.

7.3. Summary of Measurement Results

7.3.1. GSM 850 (GPRS/EGPRS)

Table 16: SAR Values [GSM 850 (GPRS/EGPRS)]

Limit of SAR		10g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	±0.21dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10g Average	1g Average		
Test Position of Head					
Left Hand, Touch Cheek	High	0.474	0.671	-0.148	Figure 16
	Middle	0.429	0.610	-0.140	Figure 17
	Low	0.419	0.592	0.105	Figure 18
Left Hand, Tilt 15 Degree	Middle	0.224(max.cube)	0.299(max.cube)	0.081	Figure 19
Right Hand, Touch Cheek	Middle	0.386	0.529	-0.034	Figure 20
Right Hand, Tilt 15 Degree	Middle	0.227	0.304	-0.092	Figure 21
Test Position of Body (Distance 15mm)					
Towards Ground	High	0.380	0.532	-0.038	Figure 22
	Middle	0.317	0.444	-0.007	Figure 23
	Low	0.289	0.404	-0.001	Figure 24
Towards Phantom	Middle	0.274	0.376	0.005	Figure 25
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	High	0.311	0.438	0.061	Figure 26
Worst Case Position of Body with GPRS (2Up, Distance 15mm)					
Towards Ground	High	0.446	0.623	-0.043	Figure 27
Worst Case Position of Body with EGPRS (2Up, Distance 15mm)					
Towards Ground	High	0.432	0.602	-0.116	Figure 28

Note: 1. The value with blue color is the maximum SAR Value of each test band.

2. Upper and lower frequencies were measured at the worst position.
3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR_{1g} limit (< 0.8W/kg), testing at the high and low channels is optional.
4. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).

7.3.2. GSM 1900 (GPRS/EGPRS)

Table 17: SAR Values [GSM 1900 (GPRS/EGPRS)]

Limit of SAR		10g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	±0.21dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1g Average		
Test Position of Head					
Left Hand, Touch Cheek	Middle	0.346	0.606	0.020	Figure 29
Left Hand, Tilt 15 Degree	Middle	0.124	0.202	-0.064	Figure 30
Right Hand, Touch Cheek	High	0.302	0.578	-0.031	Figure 31
	Middle	0.370	0.692	-0.010	Figure 32
	Low	0.495	0.926	-0.131	Figure 33
Right Hand, Tilt 15 Degree	Middle	0.117	0.180	-0.173	Figure 34
Test Position of Body (Distance 15mm)					
Towards Ground	High	0.096	0.167	-0.104	Figure 35
	Middle	0.117	0.206	-0.005	Figure 36
	Low	0.169	0.296	-0.021	Figure 37
Towards Phantom	Middle	0.095	0.159	0.007	Figure 38
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	Low	0.163	0.287	-0.047	Figure 39
Worst Case t Position of Body with GPRS (2Up, Distance 15mm)					
Towards Ground	Low	0.195	0.342	-0.036	Figure 40
Worst Case Position of Body with EGPRS (2Up, Distance 15mm)					
Towards Ground	Low	0.194	0.341	-0.098	Figure 41

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. Upper and lower frequencies were measured at the worst position.
3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR_{1g} limit (< 0.8W/kg), testing at the high and low channels is optional.

7.3.3. WCDMA Band V (WCDMA/HSDPA/HSUPA)

Table 18: SAR Values [WCDMA Band V (WCDMA/HSDPA/HSUPA)]

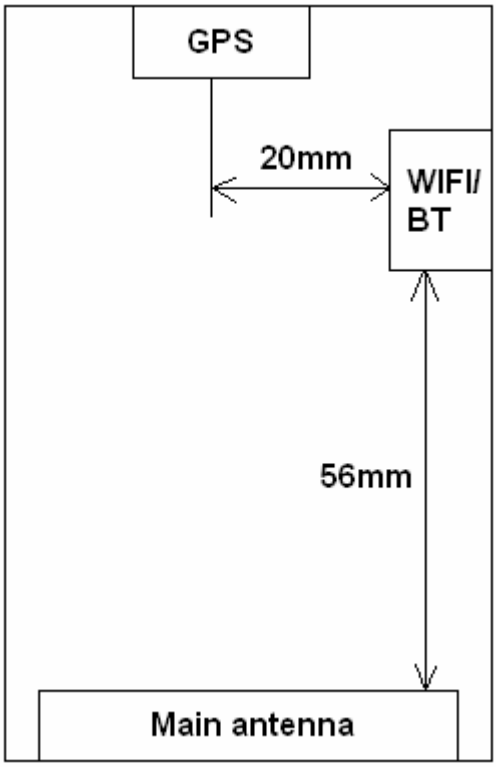
Limit of SAR		10g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	±0.21dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head					
Left Hand, Touch Cheek	High	0.489	0.678	-0.030	Figure 42
	Middle	0.473	0.658	0.031	Figure 43
	Low	0.367	0.507	-0.025	Figure 44
Left Hand, Tilt 15 Degree	Middle	0.257	0.343	0.010	Figure 45
Right Hand, Touch Cheek	Middle	0.434	0.583	0.055	Figure 46
Right Hand, Tilt 15 Degree	Middle	0.251	0.337	-0.035	Figure 47
Test Position of Body (Distance 15mm)					
Towards Ground	High	0.363	0.506	-0.133	Figure 48
	Middle	0.343	0.480	0.064	Figure 49
	Low	0.268	0.375	-0.045	Figure 50
Towards Phantom	Middle	0.248	0.338	0.059	Figure 51
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	High	0.305	0.423	0.043	Figure 52
Worst Case Position of Body with HSDPA (Distance 15mm)					
Towards Ground	High	0.348	0.485	0.179	Figure 53
Worst Case Position of Body with HSUPA (Distance 15mm)					
Towards Ground	High	0.274	0.383	0.013	Figure 54

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. Upper and lower frequencies were measured at the worst position.
3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR_{1g} limit (< 0.8W/kg), testing at the high and low channels is optional.

7.3.4. Summary of Measurement Results (BT/WIFI function)

The distance between BT/WIFI antenna and main antenna is >5cm. The location of the antennas inside mobile phone is shown below:



The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
GFSK Test result (dBm)	-3.10	-2.25	-3.23
EDR2M-4_DQPSK Test result (dBm)	-1.24	-0.18	-1.26
EDR3M-8DPSK Test result (dBm)	-1.37	-0.23	-1.31

According to the output power measurement result and the distance between BT/WIFI antenna and main antenna we can draw the conclusion that: stand-alone SAR is not required for BT transmitter, because the output power of BT transmitter is ≤2P_{Ref} and its antenna is ≥5cm from other antenna.

The output power of WIFI antenna is as following:

Channel	Channel 1 (2412MHz)	Channel 6 (2437MHz)	Channel 11 (2462MHz)
802.11b(dBm)	13.44	13.24	13.45
802.11g(dBm)	14.08	13.99	13.89

Table 19: SAR Values (802.11g)

Limit of SAR		10g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1g Average		
Test position of Head					
Left hand, Touch cheek	Middle	0.118	0.240	0.049	Figure 55
Left hand, Tilt 15 Degree	High	0.133	0.279	-0.048	Figure 56
	Middle	0.137	0.288	-0.056	Figure 57
	Low	0.126	0.265	-0.102	Figure 58
Right hand, Touch cheek	Middle	0.092	0.176	0.102	Figure 59
Right hand, Tilt 15 Degree	Middle	0.113	0.226	0.013	Figure 60
Test position of Body (Distance 15mm)					
Towards Ground	High	0.055	0.093	0.007	Figure 61
	Middle	0.054	0.092	-0.048	Figure 62
	Low	0.053	0.091	0.051	Figure 63
Towards phantom	Middle	0.043	0.078	0.024	Figure 64
Worst case position of Body with Earphone (Distance 15mm)					
Towards Ground	High	0.061	0.106	0.059	Figure 65

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. Upper and lower frequencies were measured at the worst position.
3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR_{1g} limit (< 0.8W/kg), testing at the high and low channels is optional.

Table 20: SAR Values (802.11b)

Limit of SAR		10g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	±0.21dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1g Average		
Test Position of Head					
Left Hand, Touch Cheek	Middle	0.117	0.235	-0.150	Figure 66
Left Hand, Tilt 15 Degree	High	0.141	0.293	0.010	Figure 67
	Middle	0.134	0.278	-0.079	Figure 68
	Low	0.133	0.274	0.017	Figure 69
Right Hand, Touch Cheek	Middle	0.100	0.196	0.016	Figure 70
Right Hand, Tilt 15 Degree	Middle	0.118	0.232	0.032	Figure 71
Test Position of Body (Distance 15mm)					
Towards Ground	High	0.061	0.104	0.003	Figure 72
	Middle	0.060	0.104	-0.165	Figure 73
	Low	0.058	0.101	0.004	Figure 74
Towards phantom	Middle	0.048	0.087	0.037	Figure 75
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	Middle	0.070	0.122	0.017	Figure 76
Towards phantom	Middle	0.043	0.077	-0.086	Figure 77

Note: 1.The value with blue color is the maximum SAR Value of each test band.

2. Upper and lower frequencies were measured at the worst position.
3. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR_{1g} limit (< 0.8W/kg), testing at the high and low channels is optional.

Simultaneous transmission SAR

Because the distance between the main antenna and BT/Wifi antenna is (5.6cm) > 5cm, and total the maximum 1g SAR for main antenna and BT/Wifi antenna is 1.219 W/kg, less than 1.6 W/kg, So the Simultaneous transmission SAR are not required for wifi transmitter and main antenna. Because the stand-alone SAR is not required for BT transmitter, so the simultaneous transmission SAR are not required for BT transmitter and main antenna. And BT and wifi don't transfer simultaneously.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty $u_i^{'}$ (%)	Degree of freedom V_{eff} or v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	probe calibration	B	5.9	N	1	1	5.9	∞
3	axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
6	boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
7	probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
8	System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
9	readout Electronics	B	1.0	N	1	1	1.0	∞
10	response time	B	0	R	$\sqrt{3}$	1	0	∞
11	integration time	B	4.32	R	$\sqrt{3}$	1	2.5	∞
12	noise	B	0	R	$\sqrt{3}$	1	0	∞
13	RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	∞
14	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
15	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
16	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
17	-Test Sample Positioning	A	2.9	N	1	1	2.9	5
18	-Device Holder Uncertainty	A	4.1	N	1	1	4.1	5
19	-Output Power Variation - SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Physical parameter								

20	-phantom	B	4.0	R	$\sqrt{3}$	1	2.3	∞
21	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.64	1.8	∞
22	-liquid conductivity (measurement uncertainty)	B	5.0	N	1	0.64	3.2	∞
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	5.0	N	1	0.6	3.0	∞
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					12.0	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N		k=2	24.0	

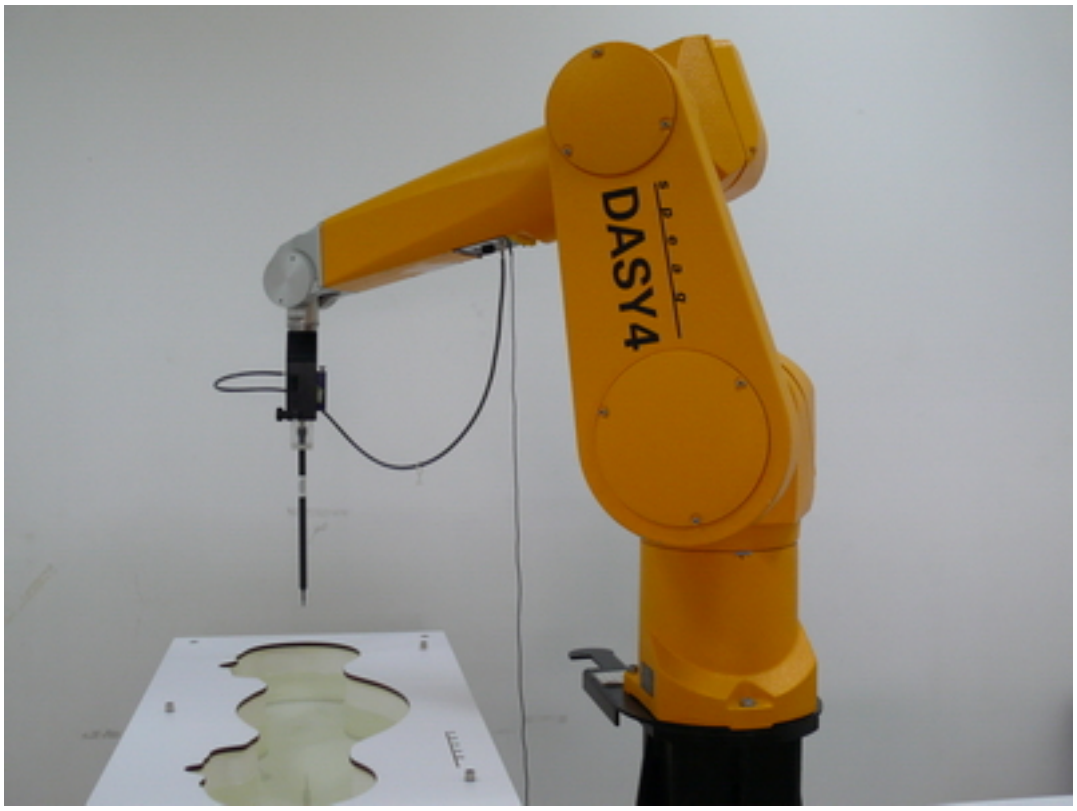
9. Main Test Instruments

Table 21: List of Main Instruments

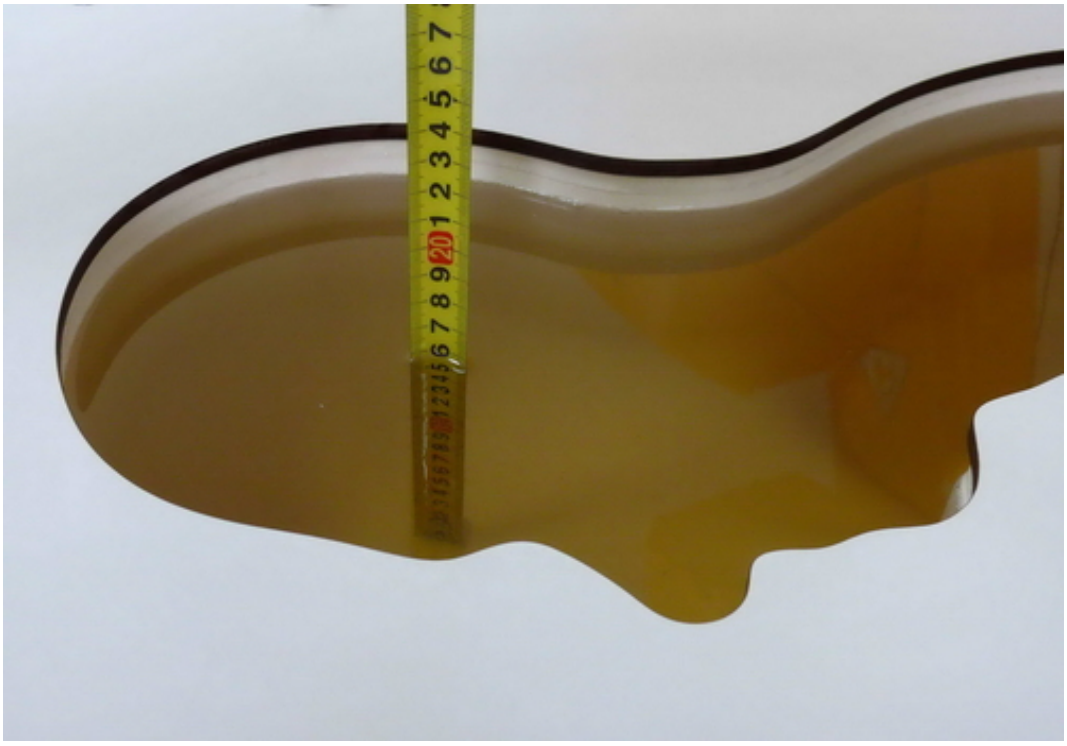
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 13, 2009	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 13, 2010	One year
04	Power sensor	Agilent 8481H	MY41091316	March 26, 2010	One year
05	Signal Generator	HP 8341B	2730A00804	September 13, 2009	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	MY48360988	December 4, 2009	One year
08	E-field Probe	EX3DV4	3677	September 23, 2009	One year
			3661	December 30, 2009	One year
09	DAE	DAE4	871	November 11, 2009	One year
10	Validation Kit 835MHz	D835V2	4d082	July 13, 2009	One year
11	Validation Kit 1900MHz	D1900V2	5d018	June 26, 2009	One year
12	Validation Kit 2450MHz	D2450V2	735	June 19, 2009	One year

*******END OF REPORT BODY*******

ANNEX A: Test Layout



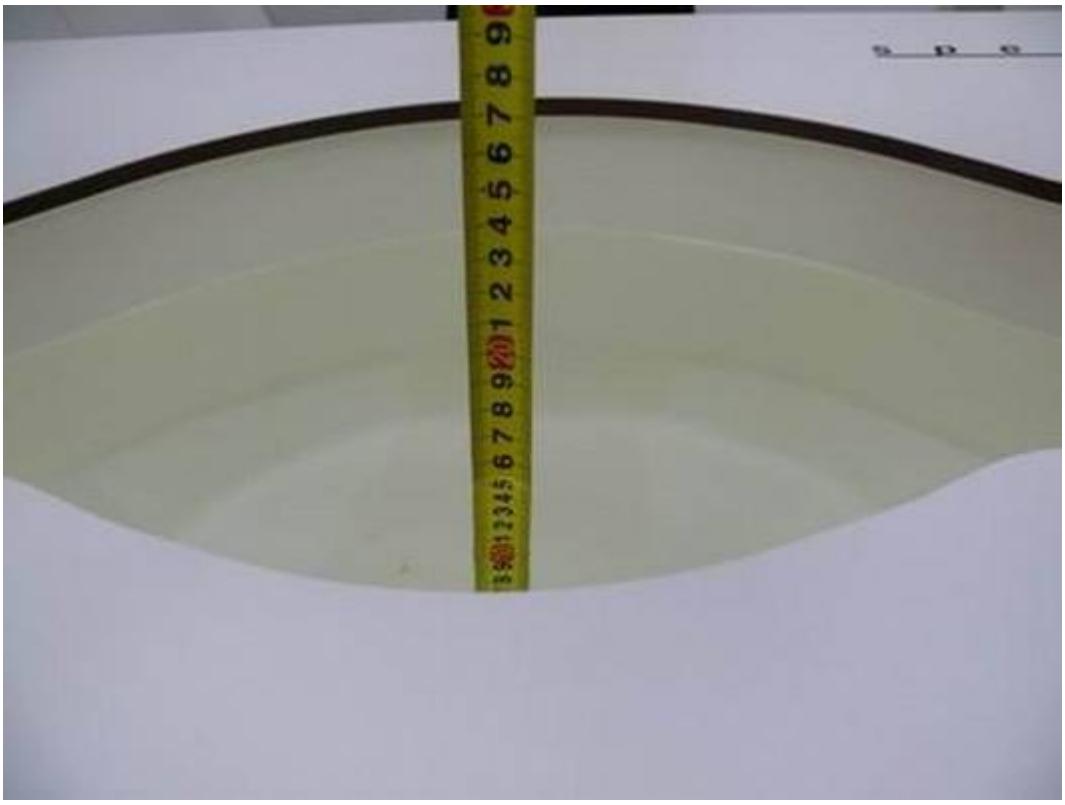
Picture 1: Specific Absorption Rate Test Layout



Picture 2: Liquid depth in the head Phantom (835MHz, 15.4cm depth)

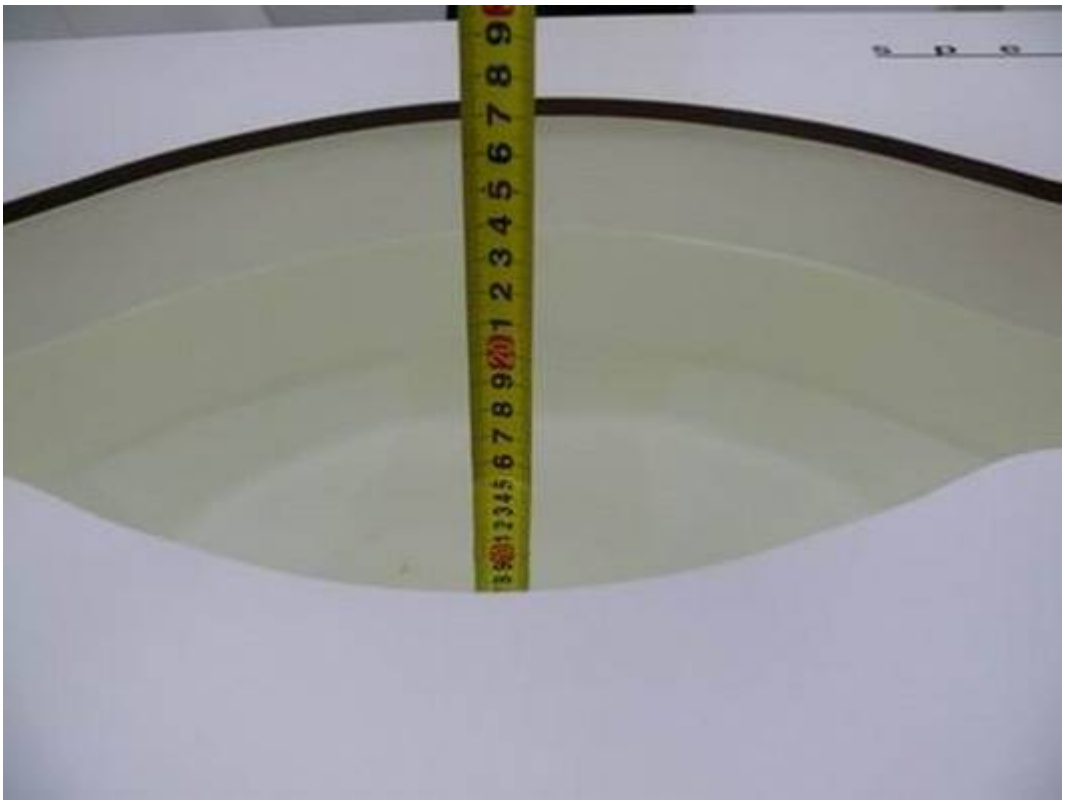
Picture 3: Liquid depth in the flat Phantom (835MHz, 15.3cm depth)

Picture 4: liquid depth in the head Phantom (1900 MHz, 15.2cm depth)



Picture 5: Liquid depth in the flat Phantom (1900 MHz, 15.4cm depth)

Picture 6: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)



Picture 7: Liquid depth in the flat Phantom (2450 MHz, 15.4cm depth)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d082

Date/Time: 5/22/2010 9:50:02 AM

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 0.92 mho/m; ε_r = 42.28; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.71 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.5 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 3.75 W/kg

SAR(1 g) = 2.48 mW/g; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (measured) = 2.67 mW/g

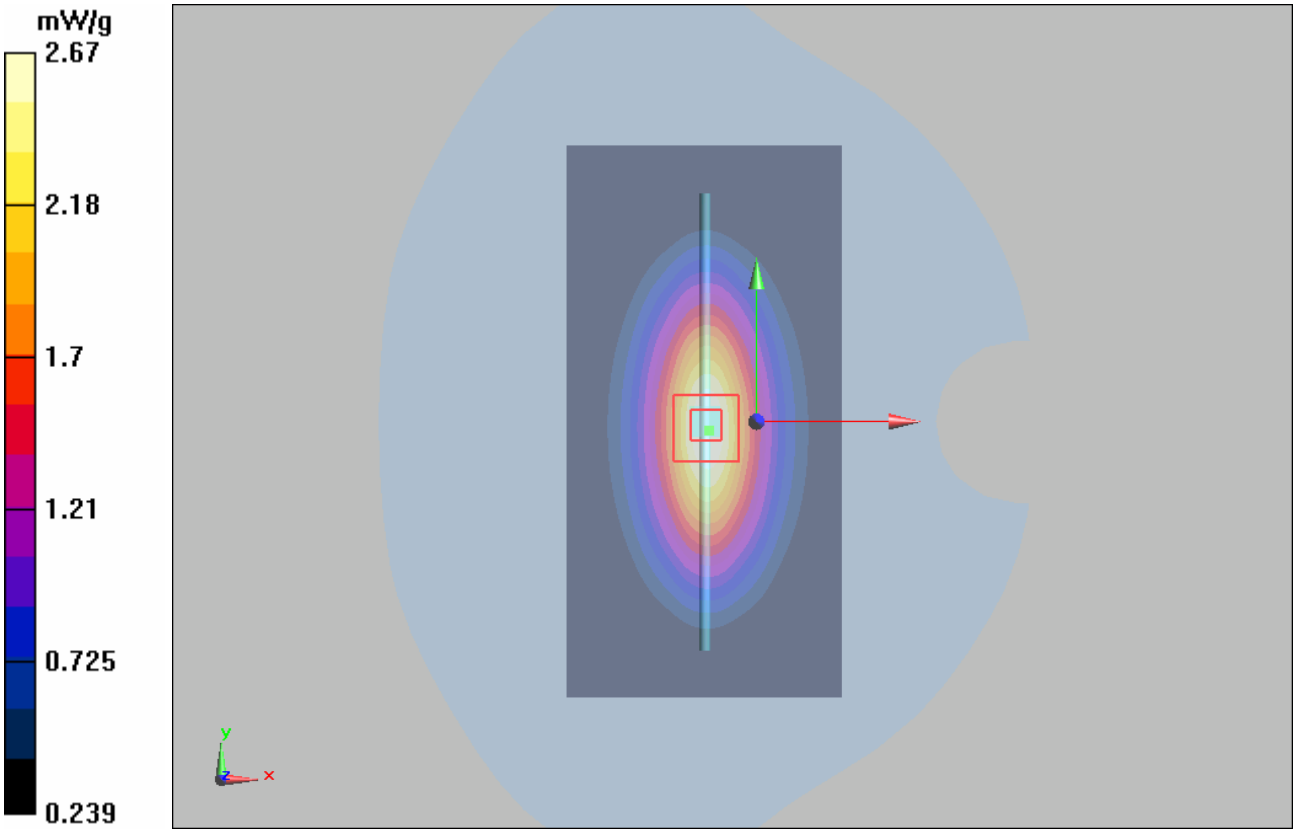


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d082

Date/Time: 6/19/2010 12:27:02 AM

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 0.93 mho/m; ε_r = 42.06; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.71 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.5 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 3.75 W/kg

SAR(1 g) = 2.48 mW/g; SAR(10 g) = 1.62 mW/g

Maximum value of SAR (measured) = 2.67 mW/g

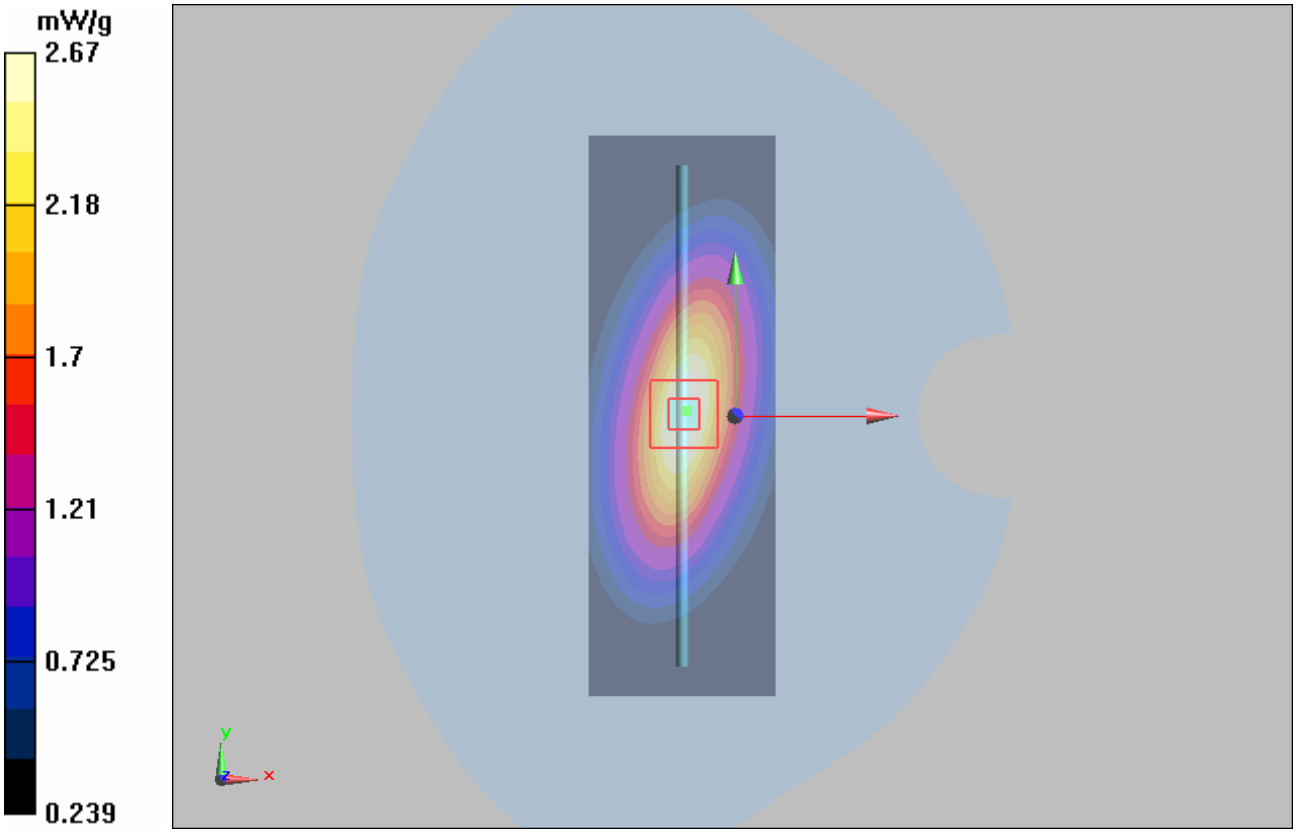


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d082

Date/Time: 5/21/2010 1:47:20 PM

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 1.00 mho/m; ε_r = 54.67; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW/Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.77 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.9 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 3.68 W/kg

SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.77 mW/g

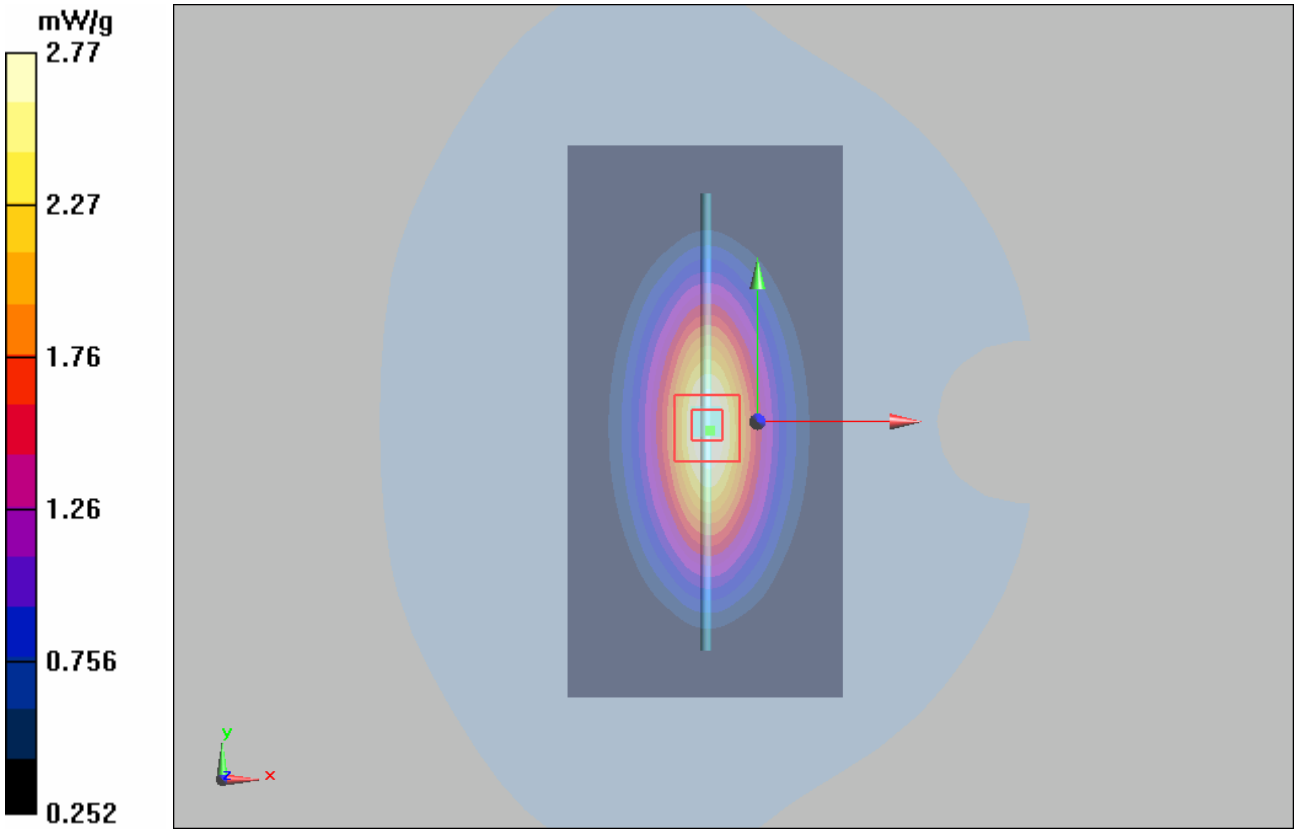


Figure 9 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d082

Date/Time: 6/19/2010 9:25:20 PM

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 54.67; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW /Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.77 mW/g

d=15mm, Pin=250mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.9 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 3.68 W/kg

SAR(1 g) = 2.56 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.77 mW/g

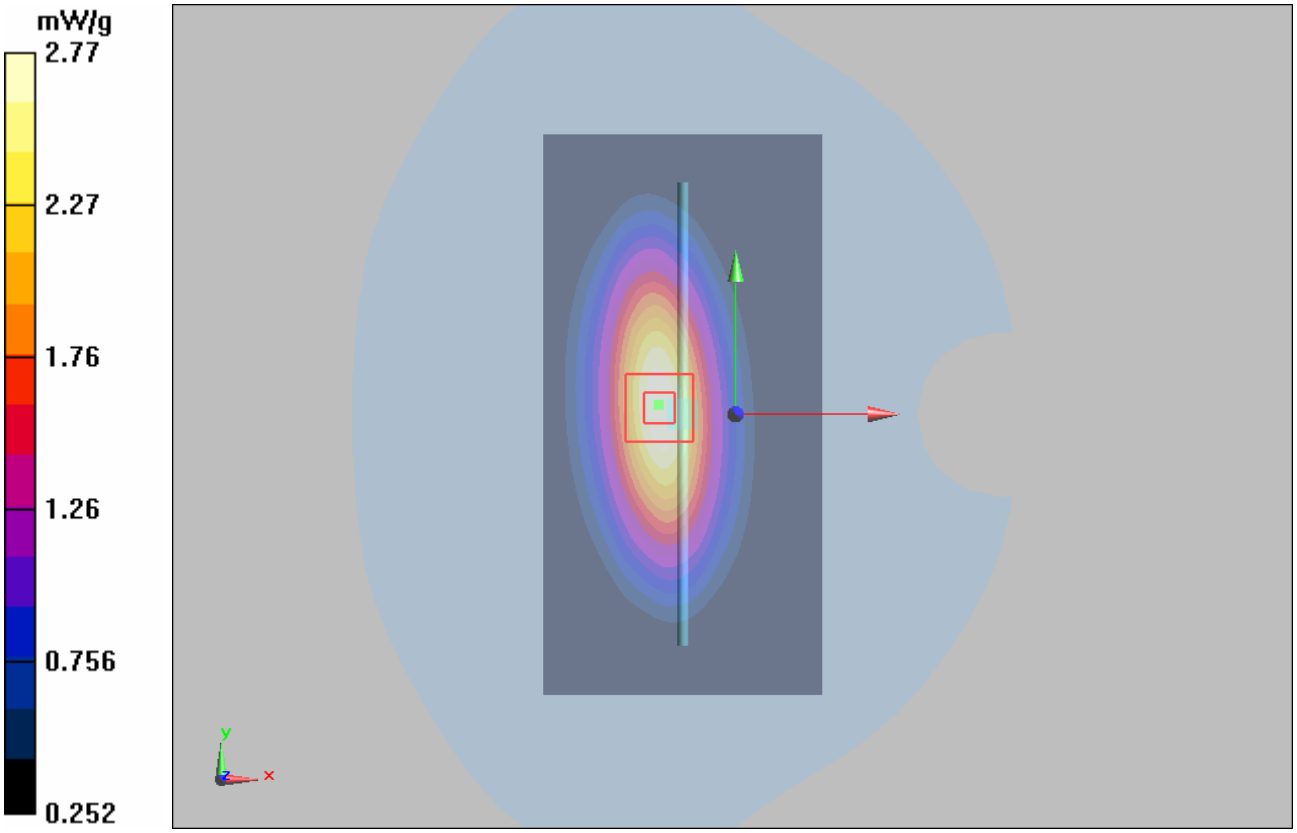


Figure 10 System Performance Check 835MHz 250Mw

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d082

Date/Time: 6/26/2010 7:25:20 AM

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1

Medium parameters used: f = 835 MHz; σ = 1.01 mho/m; ε_r = 54.68; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=15mm, Pin=250mW /Area Scan (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.77 mW/g

d=15mm, Pin=250mW /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 50.5 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 3.68 W/kg

SAR(1 g) = 2.55 mW/g; SAR(10 g) = 1.67 mW/g

Maximum value of SAR (measured) = 2.77 mW/g

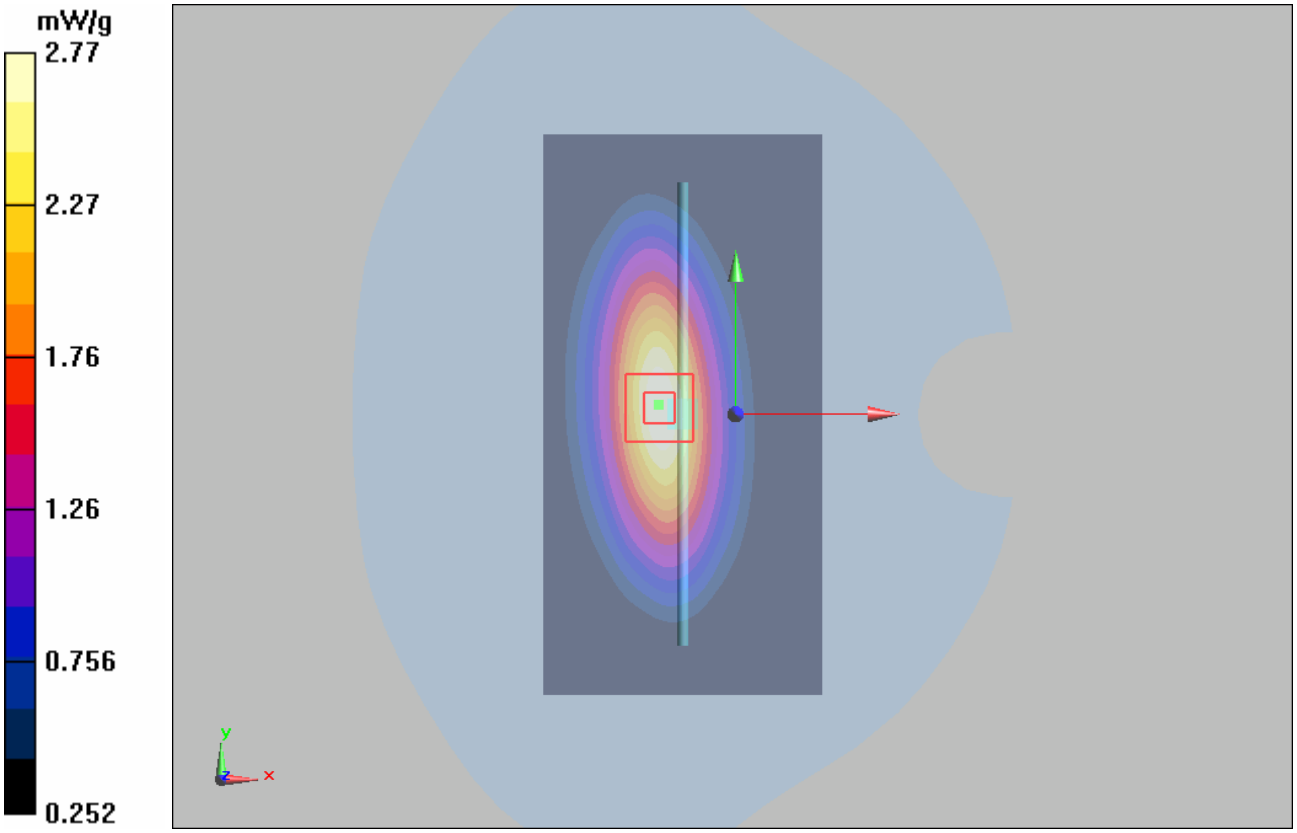


Figure 11 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d018

Date/Time: 5/21/2010 12:03:04 PM

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ε_r = 40.19; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.9 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 87.8 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 20.1 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.46 mW/g

Maximum value of SAR (measured) = 11.9 mW/g

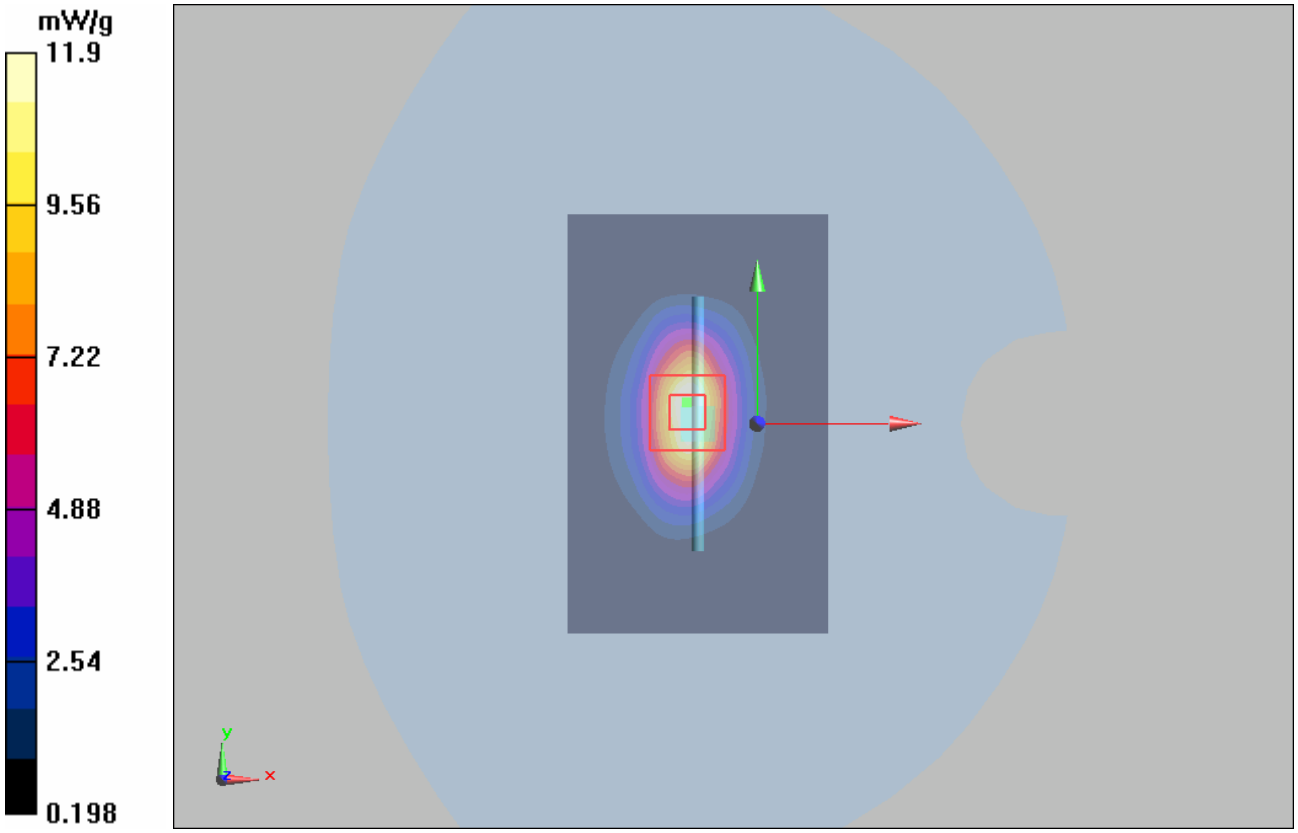


Figure 12 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d018

Date/Time: 5/18/2010 9:50:19 AM

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε_r = 52.29; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.5 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 75.9 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.73 mW/g; SAR(10 g) = 5.17 mW/g

Maximum value of SAR (measured) = 11 mW/g

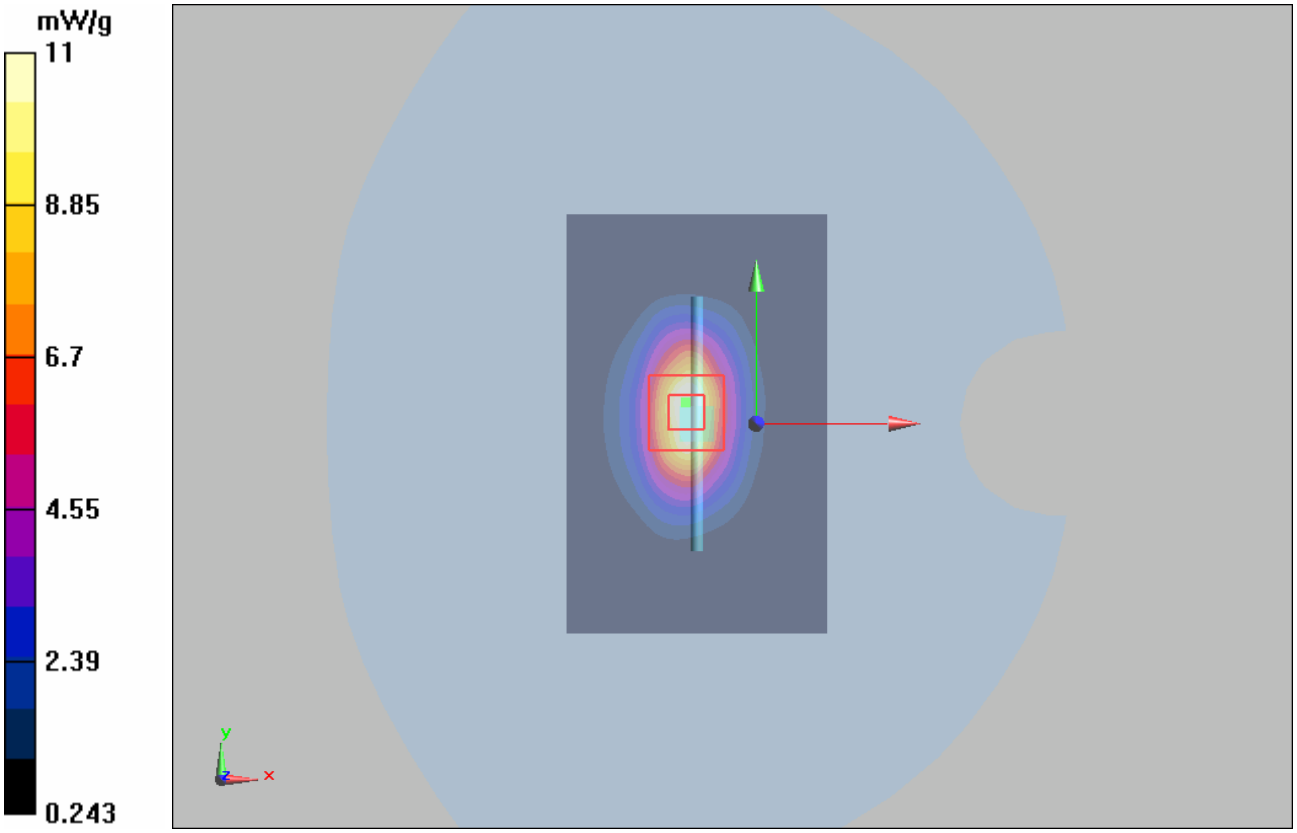


Figure 13 System Performance Check 1900MHz 250Mw

System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 735

Date/Time: 5/26/2010 5:01:36 PM

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; σ = 1.79 mho/m; ε_r = 38.81; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 21.4 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 67.0 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 14.05 mW/g; SAR(10 g) = 6.5 mW/g

Maximum value of SAR (measured) = 15.7 mW/g

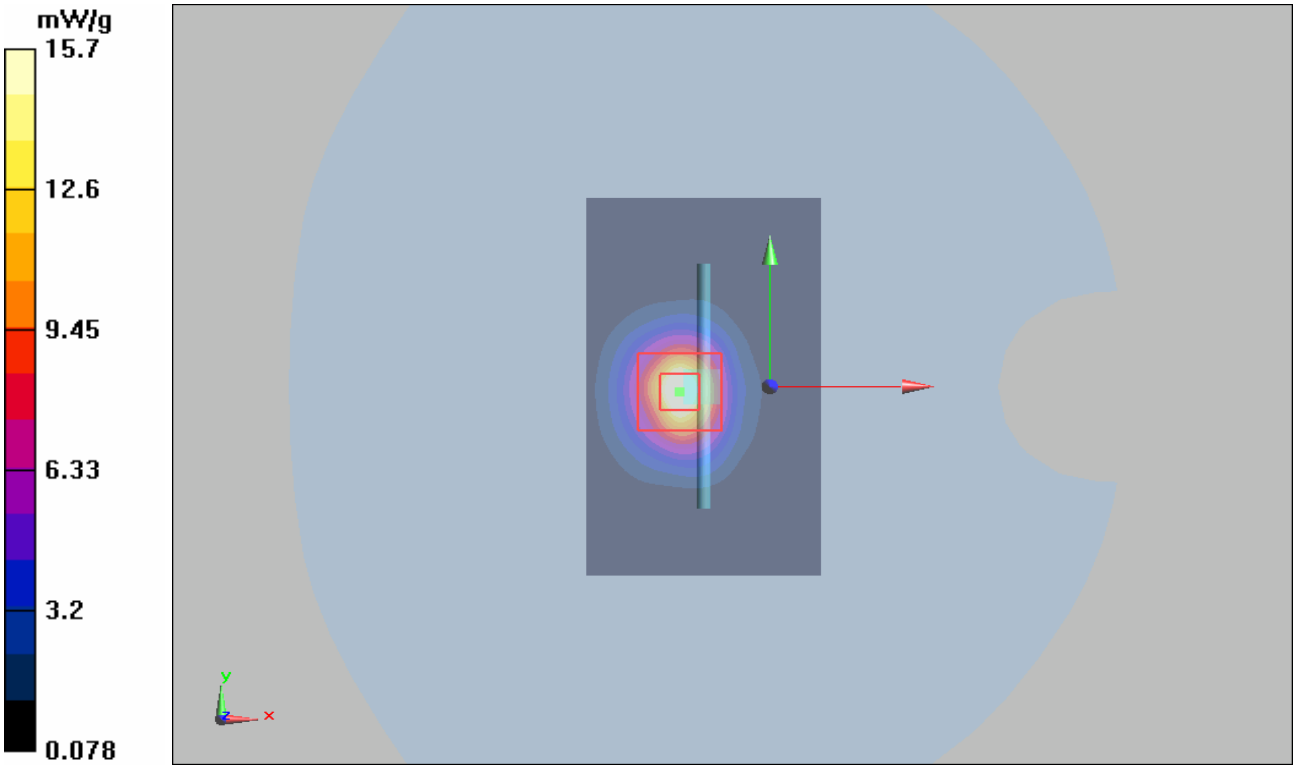


Figure 14 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 735

Date/Time: 5/27/2010 8:01:36 AM

Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2450 MHz; σ = 1.92 mho/m; ε_r = 51.83; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 21.5 mW/g

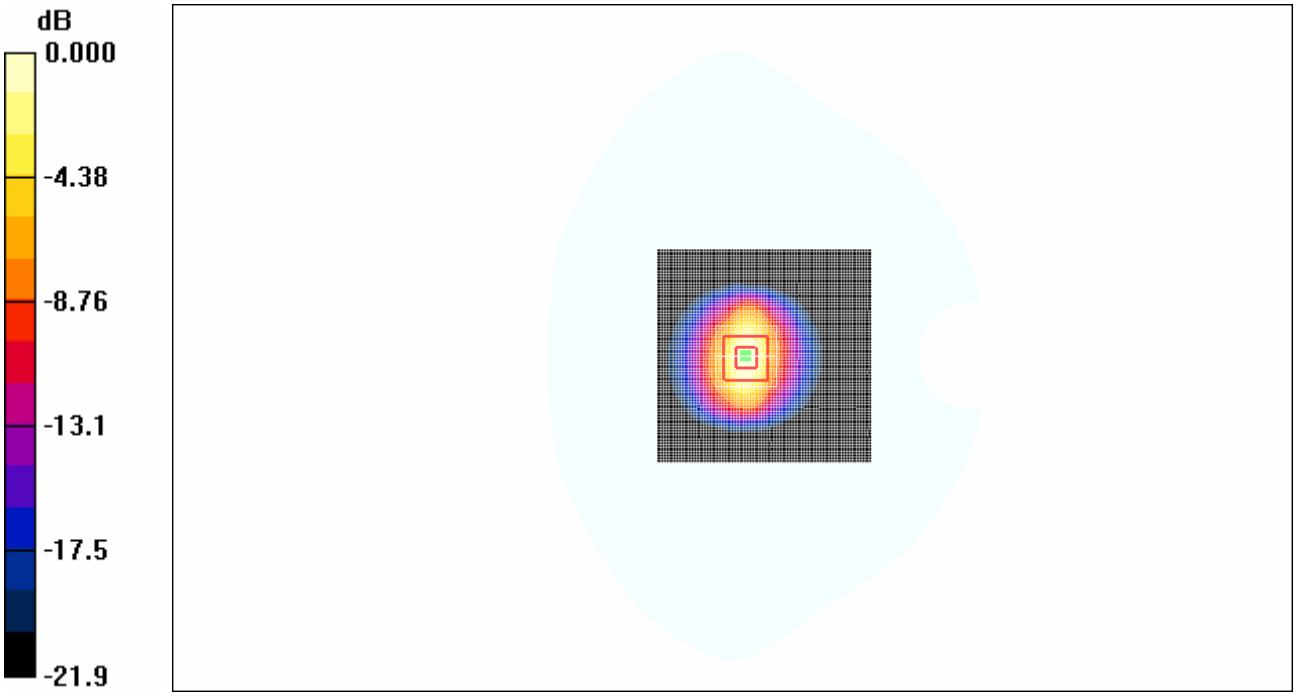
d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 71.0 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 28.2 W/kg

SAR(1 g) = 14.0 mW/g; SAR(10 g) = 6.46 mW/g

Maximum value of SAR (measured) = 19.8 mW/g



0 dB = 19.8mW/g

Figure 15 System Performance Check 2450MHz 250mW

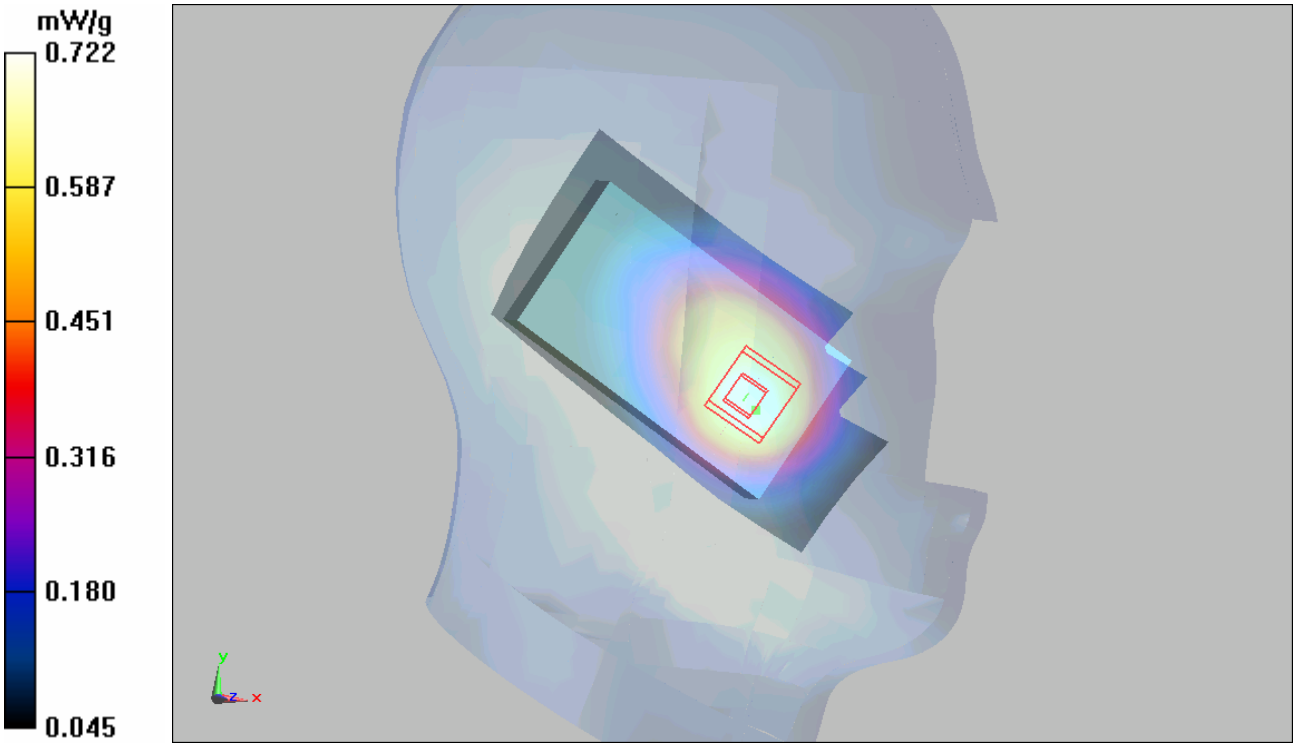
ANNEX C: Graph Results

GSM 850 Left Cheek High

Date/Time: 5/22/2010 12:51:37 PM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.932 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.748 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.42 V/m; Power Drift = -0.148 dB
Peak SAR (extrapolated) = 0.855 W/kg
SAR(1 g) = 0.671 mW/g; SAR(10 g) = 0.474 mW/g
Maximum value of SAR (measured) = 0.722 mW/g



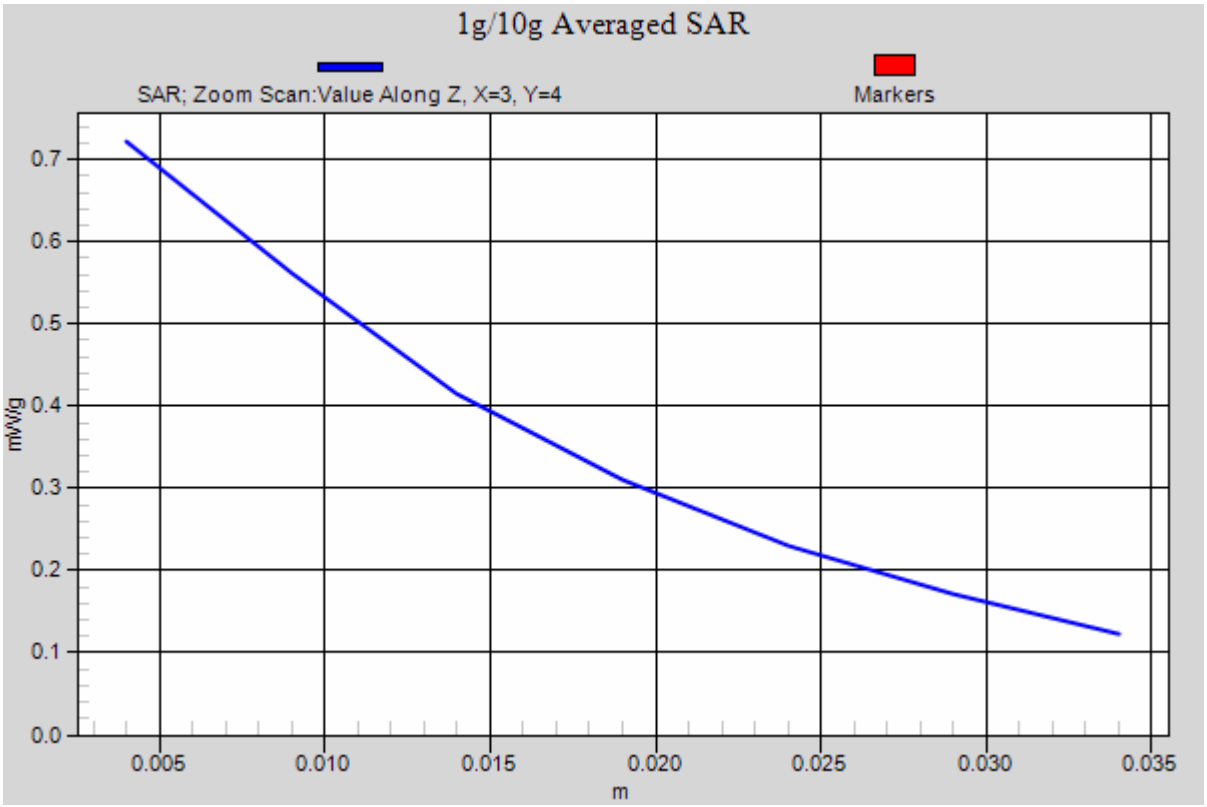


Figure 16 Left Hand Touch Cheek GSM 850 Channel 251

GSM 850 Left Cheek Middle

Date/Time: 5/22/2010 10:44:20 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.92 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.669 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.55 V/m; Power Drift = -0.140 dB
Peak SAR (extrapolated) = 0.799 W/kg
SAR(1 g) = 0.610 mW/g; SAR(10 g) = 0.429 mW/g
Maximum value of SAR (measured) = 0.661 mW/g

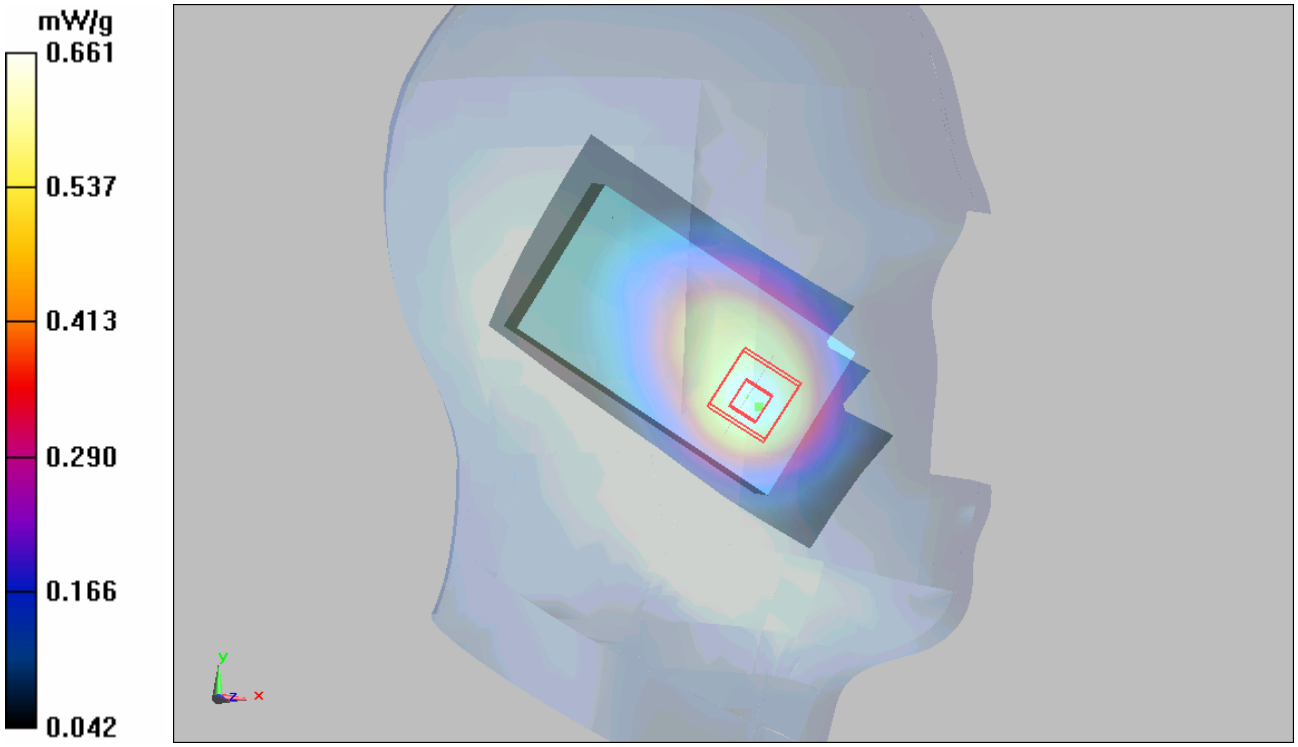


Figure 17 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Cheek Low

Date/Time: 5/22/2010 12:31:34 PM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.906 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.648 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.01 V/m; Power Drift = 0.105 dB
Peak SAR (extrapolated) = 0.762 W/kg
SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.419 mW/g
Maximum value of SAR (measured) = 0.639 mW/g

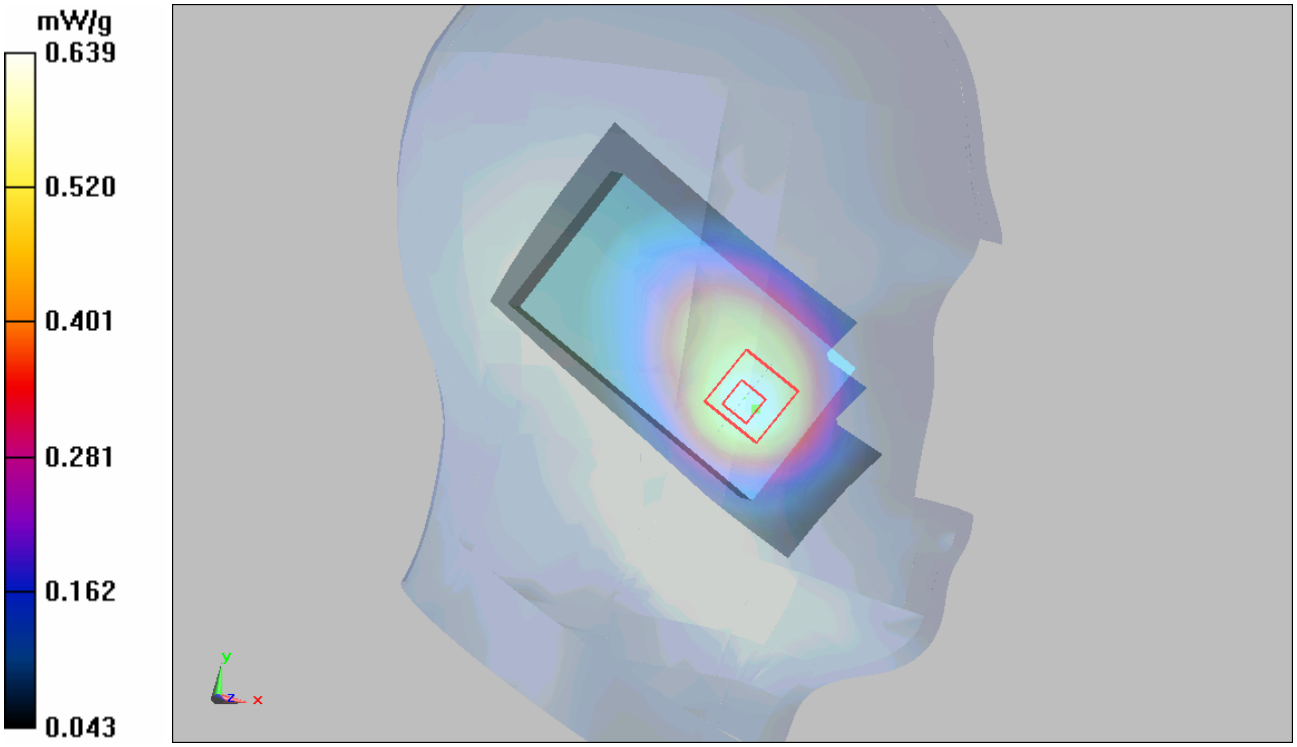


Figure 18 Left Hand Touch Cheek GSM 850 Channel 128

GSM 850 Left Tilt Middle

Date/Time: 5/22/2010 11:18:11 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.92 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186
Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.320 mW/g
Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13 V/m; Power Drift = 0.081 dB
Peak SAR (extrapolated) = 0.374 W/kg
SAR(1 g) = 0.299 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.319 mW/g
Tilt Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13 V/m; Power Drift = 0.081 dB
Peak SAR (extrapolated) = 0.343 W/kg
SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.166 mW/g
Maximum value of SAR (measured) = 0.291 mW/g

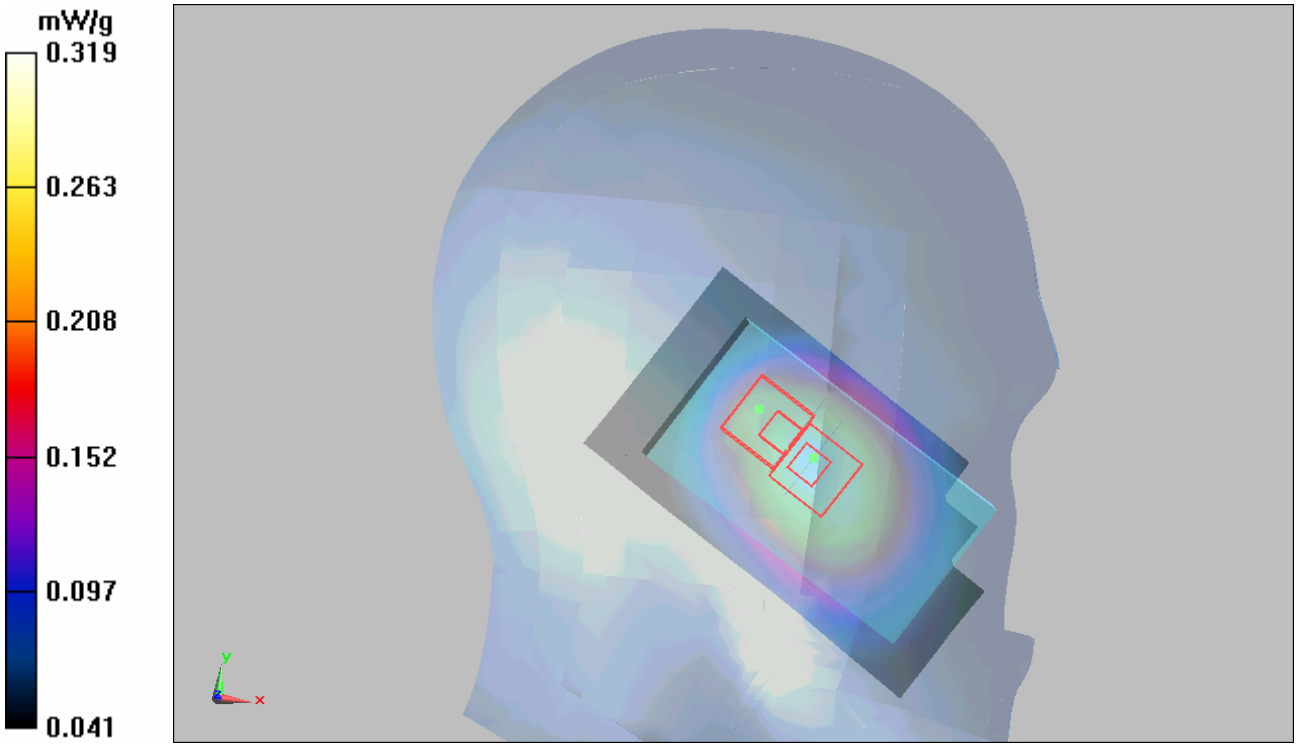


Figure 19 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle

Date/Time: 5/22/2010 11:49:44 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.92 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.577 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.77 V/m; Power Drift = -0.034 dB
Peak SAR (extrapolated) = 0.698 W/kg
SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.386 mW/g
Maximum value of SAR (measured) = 0.560 mW/g

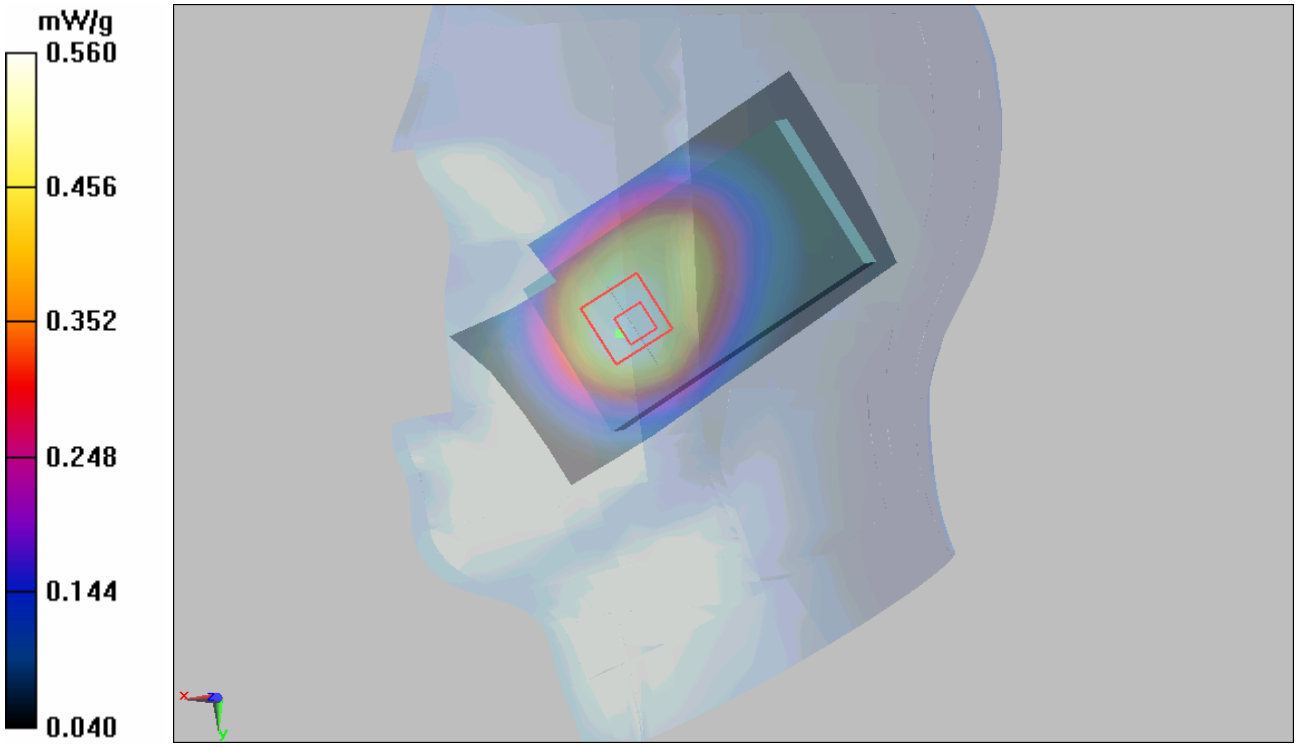


Figure 20 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle

Date/Time: 5/22/2010 12:10:26 PM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.92 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.34, 9.34, 9.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.325 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14 V/m; Power Drift = -0.092 dB
Peak SAR (extrapolated) = 0.382 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.227 mW/g
Maximum value of SAR (measured) = 0.322 mW/g

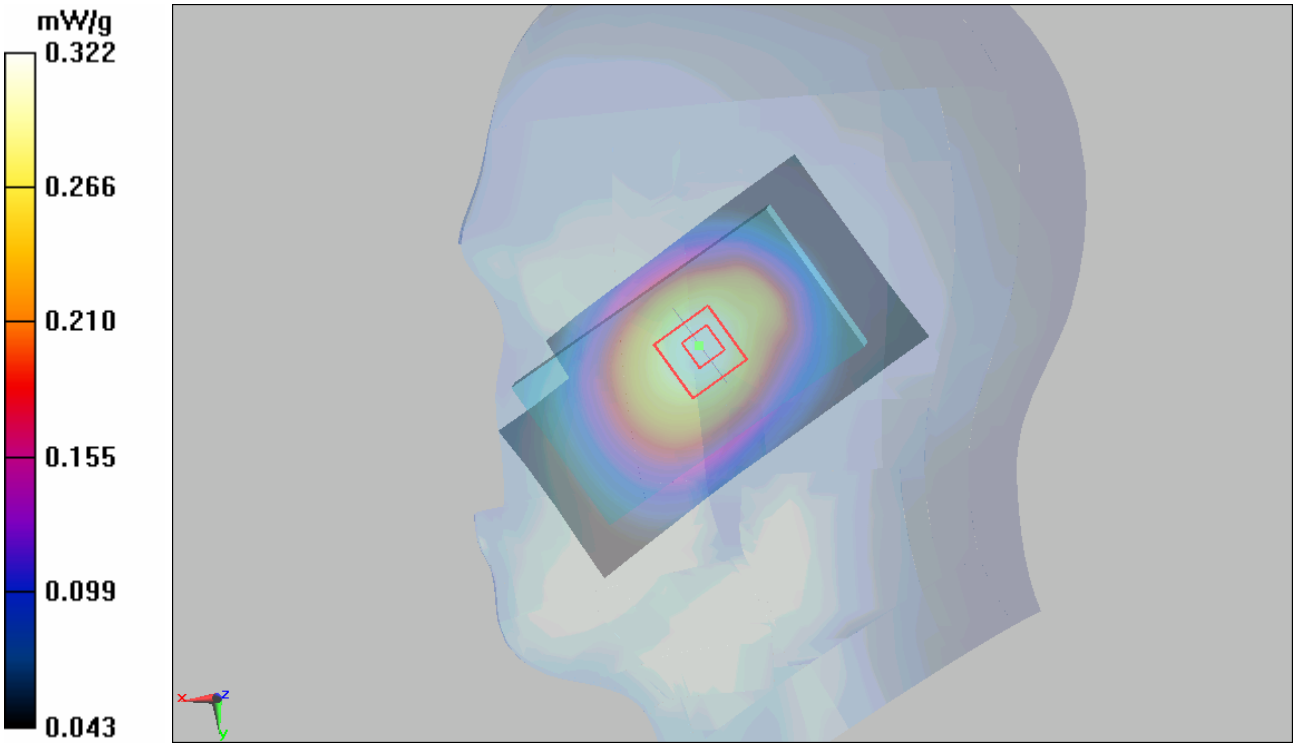


Figure 21 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Towards Ground High

Date/Time: 5/21/2010 6:48:34 PM

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.567 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.89 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 0.687 W/kg

SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.380 mW/g

Maximum value of SAR (measured) = 0.566 mW/g

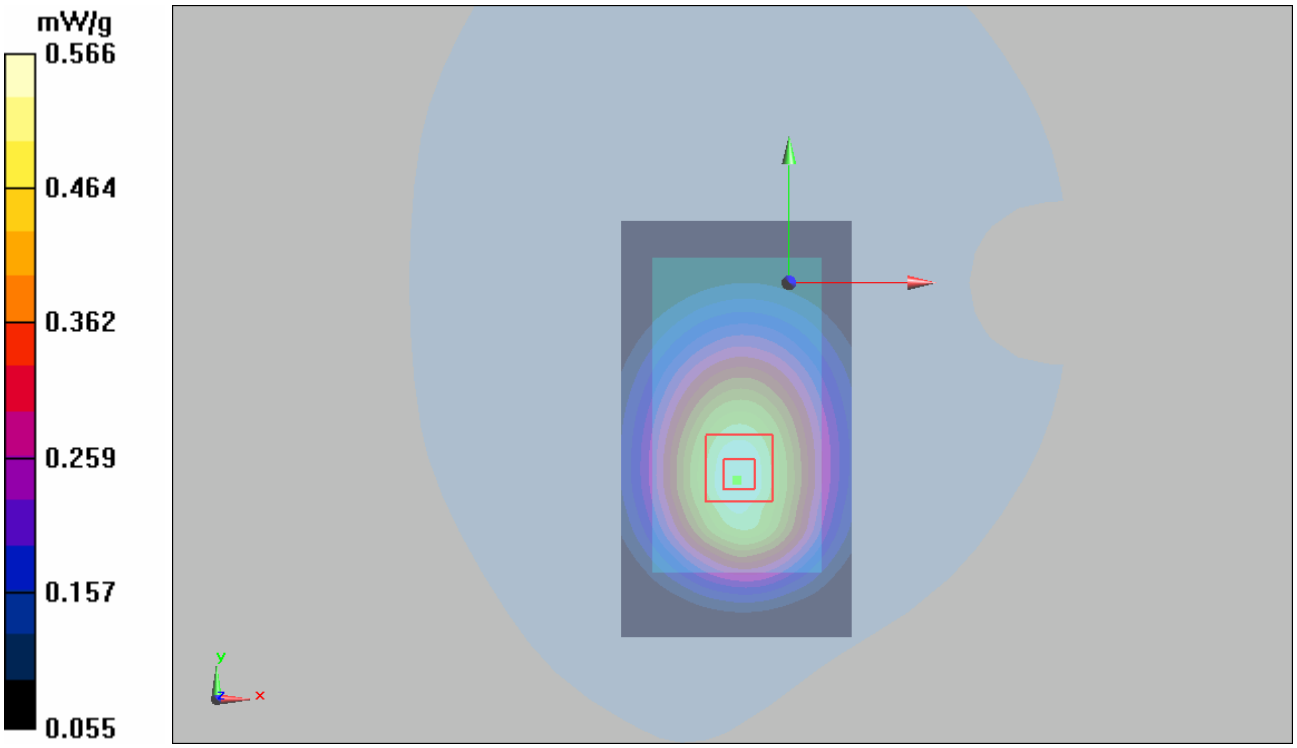


Figure 22 Body, Towards Ground, GSM 850 Channel 251

GSM 850 Towards Ground Middle

Date/Time: 5/21/2010 7:09:47 PM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.474 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.92 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.575 W/kg
SAR(1 g) = 0.444 mW/g; SAR(10 g) = 0.317 mW/g
Maximum value of SAR (measured) = 0.472 mW/g

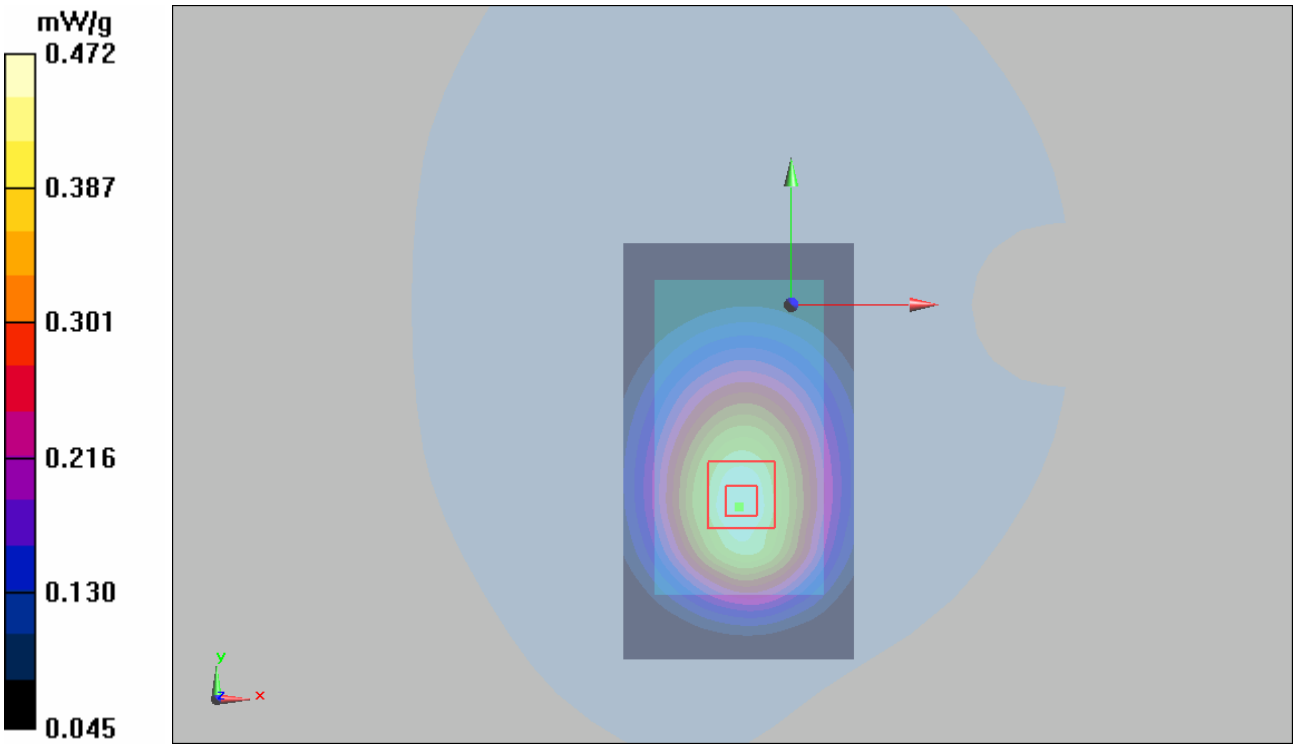


Figure 23 Body, Towards Ground, GSM 850 Channel 190

GSM 850 Towards Ground Low

Date/Time: 5/21/2010 7:30:07 PM

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.994 mho/m; ε_r = 54.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.432 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.36 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 0.524 W/kg

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.289 mW/g

Maximum value of SAR (measured) = 0.431 mW/g

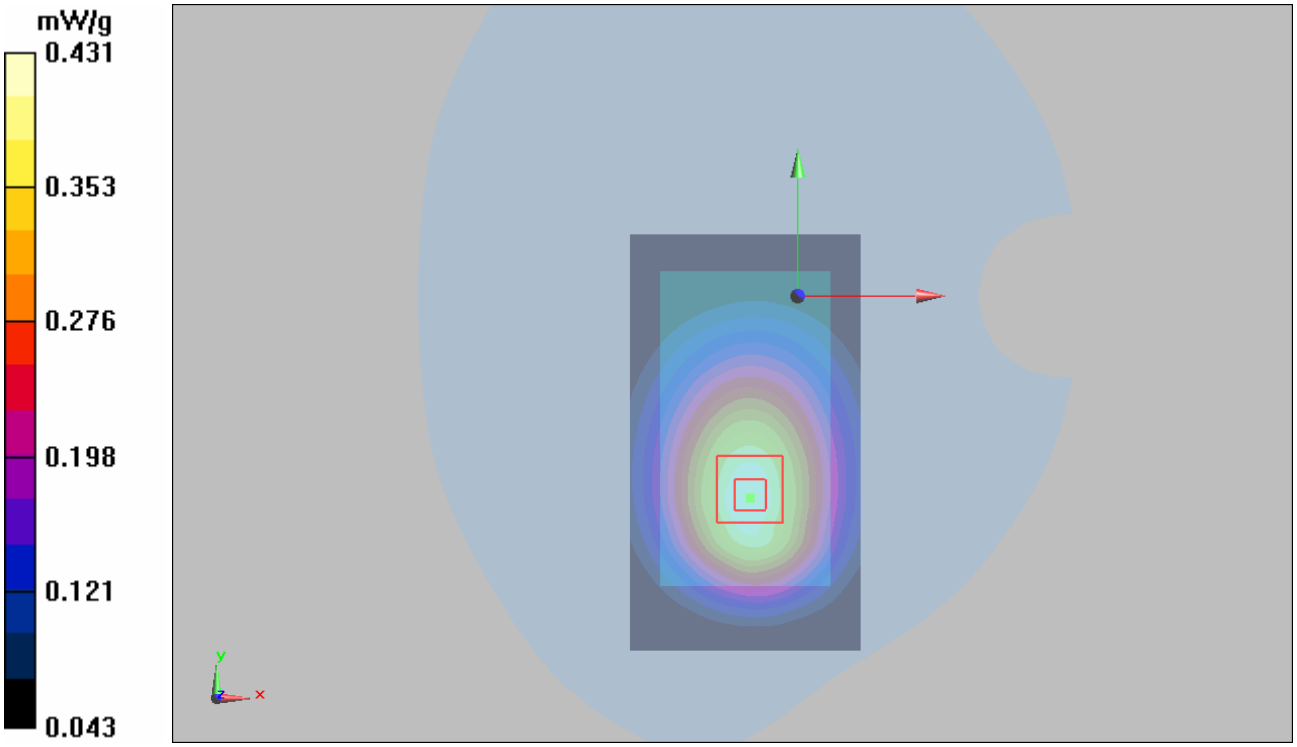


Figure 24 Body, Towards Ground, GSM 850 Channel 128

GSM 850 Towards Phantom Middle

Date/Time: 5/21/2010 11:59:42 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.400 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.97 V/m; Power Drift = 0.005dB

Peak SAR (extrapolated) = 0.477 W/kg

SAR(1 g) = 0.376 mW/g; SAR(10 g) = 0.274 mW/g

Maximum value of SAR (measured) = 0.398 mW/g

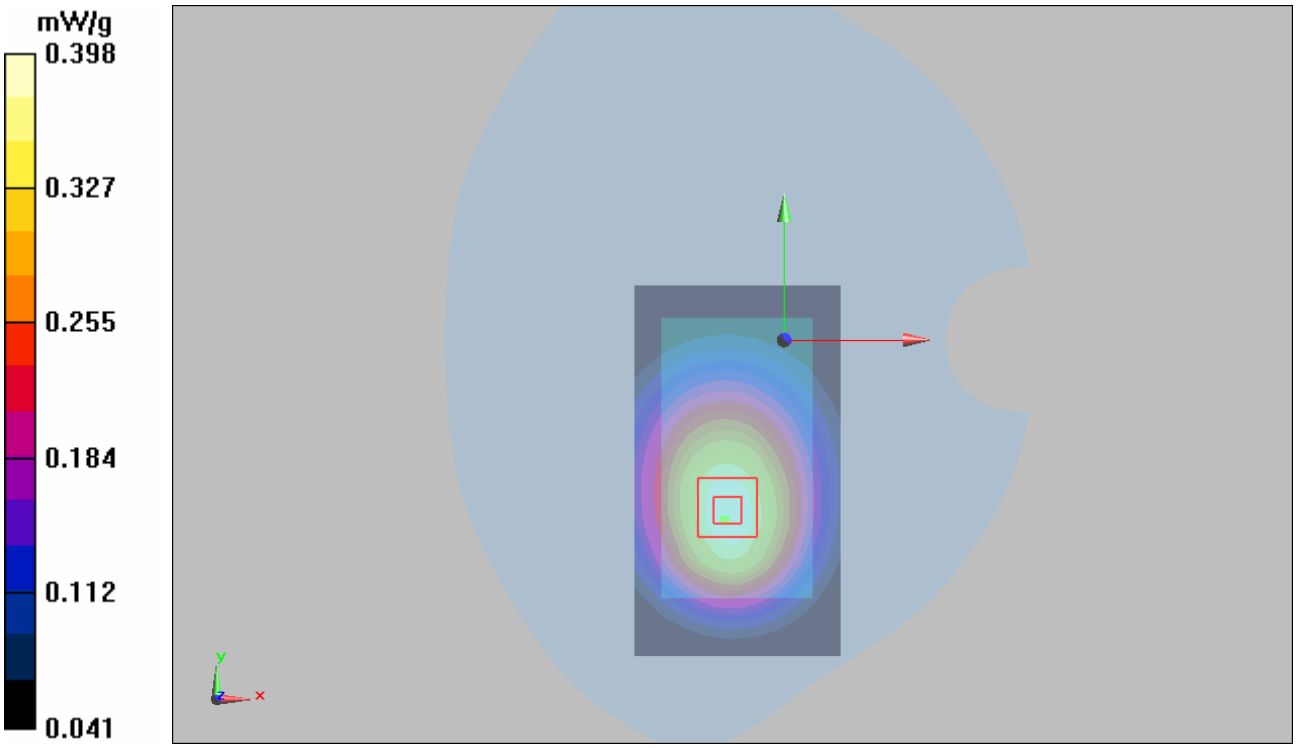


Figure 25 Body, Towards Phantom, GSM 850 Channel 190

GSM 850 with Earphone Towards Ground High

Date/Time: 5/21/2010 7:51:10 PM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.471 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.05 V/m; Power Drift = 0.061 dB
Peak SAR (extrapolated) = 0.572 W/kg
SAR(1 g) = 0.438 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.468 mW/g

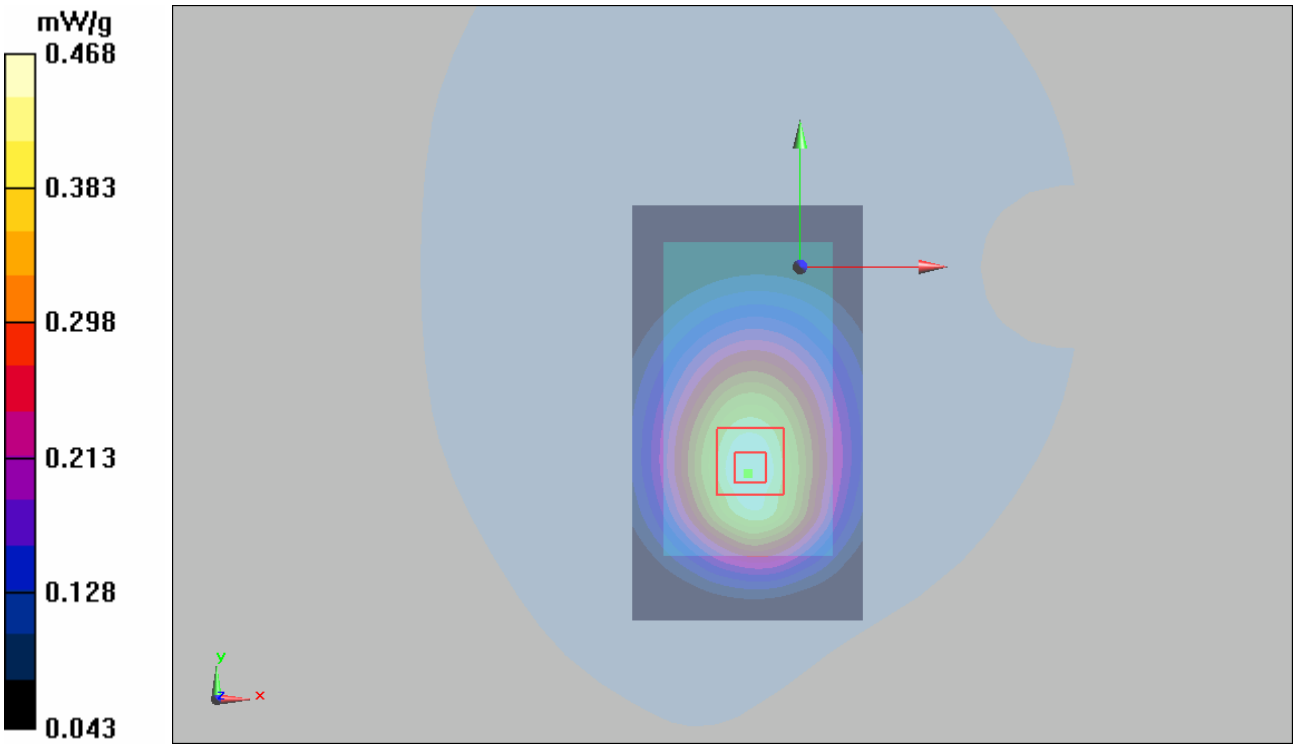


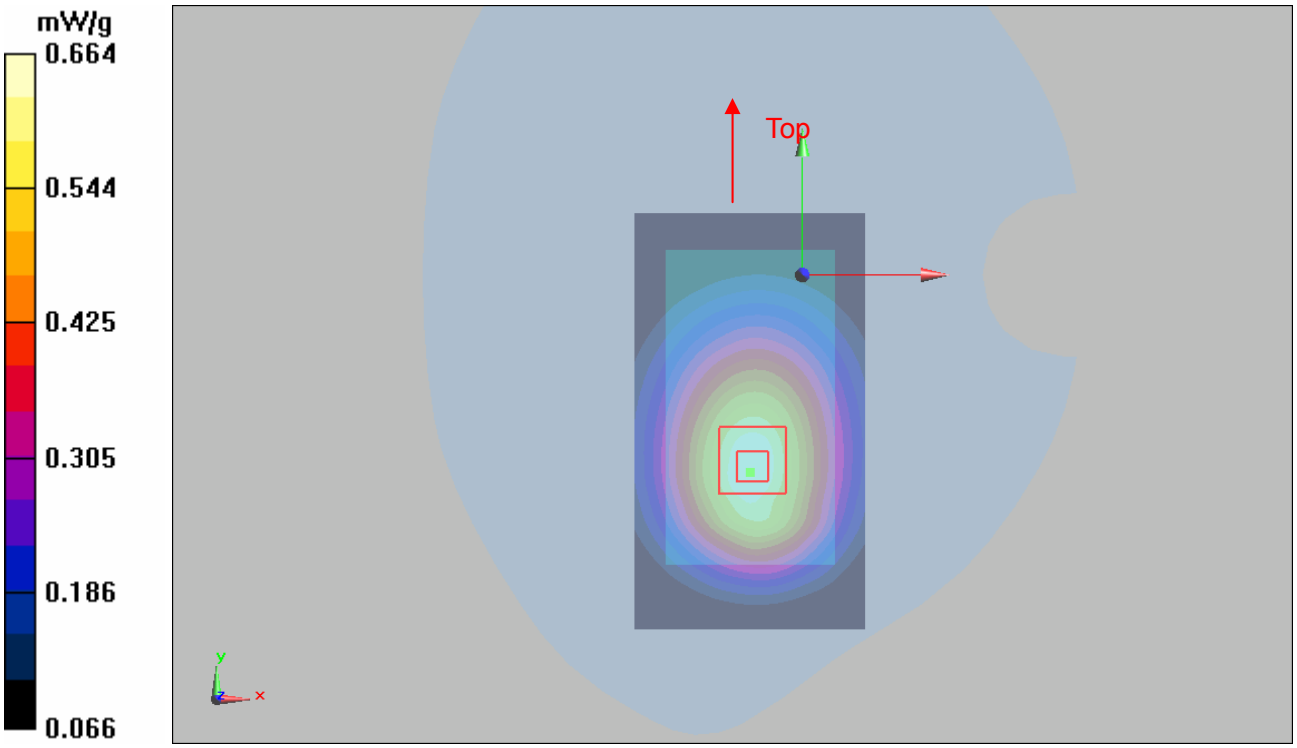
Figure 26 Body with Earphone, Towards Ground, GSM 850 Channel 251

GSM 850 GPRS (2Up) Towards Ground High

Date/Time: 5/21/2010 8:41:22 PM
Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.662 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.8 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 0.809 W/kg
SAR(1 g) = 0.623 mW/g; SAR(10 g) = 0.446 mW/g
Maximum value of SAR (measured) = 0.664 mW/g



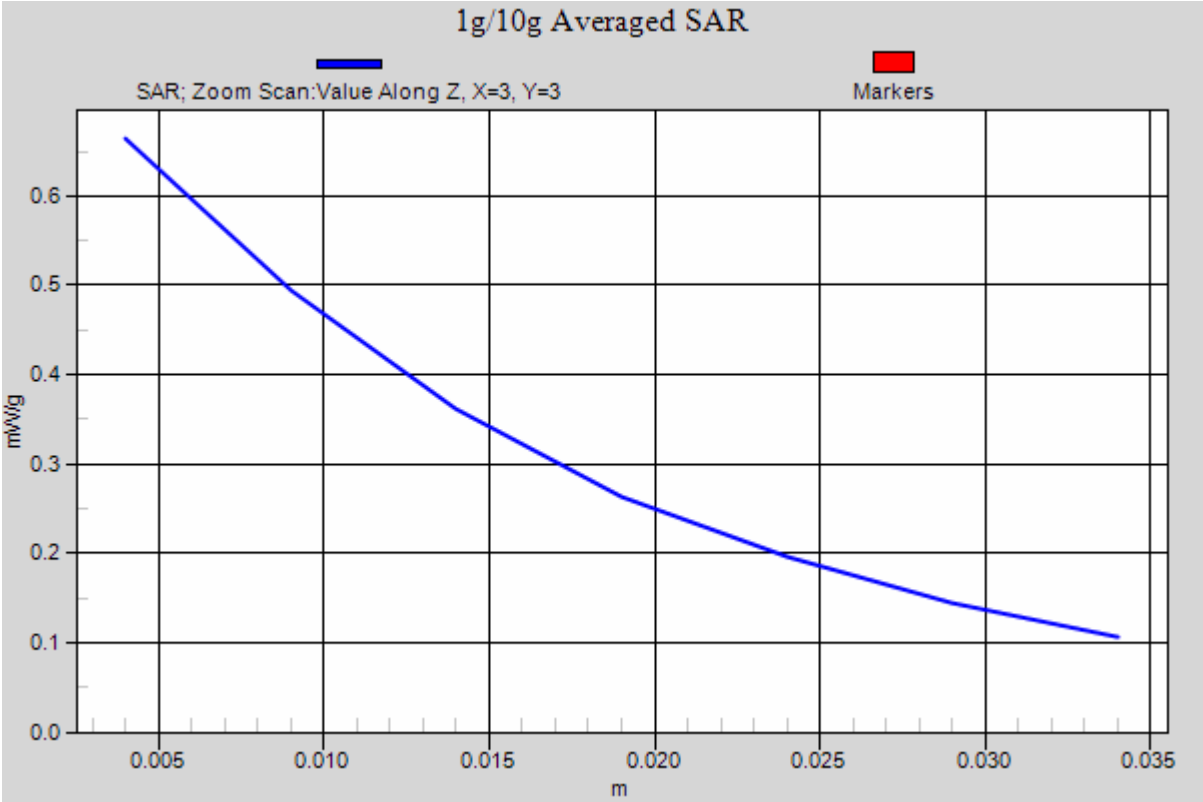


Figure 27 Body, Towards Ground, GSM 850 GPRS (2Up) Channel 251

GSM 850 EGPRS (2Up) Towards Ground High

Date/Time: 5/21/2010 9:10:12 PM
Communication System: GSM850 + EGPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.15
Medium parameters used: f = 849 MHz; σ = 1.02 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(9.24, 9.24, 9.24); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.650 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.8 V/m; Power Drift = -0.116 dB
Peak SAR (extrapolated) = 0.773 W/kg
SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.432 mW/g
Maximum value of SAR (measured) = 0.636 mW/g

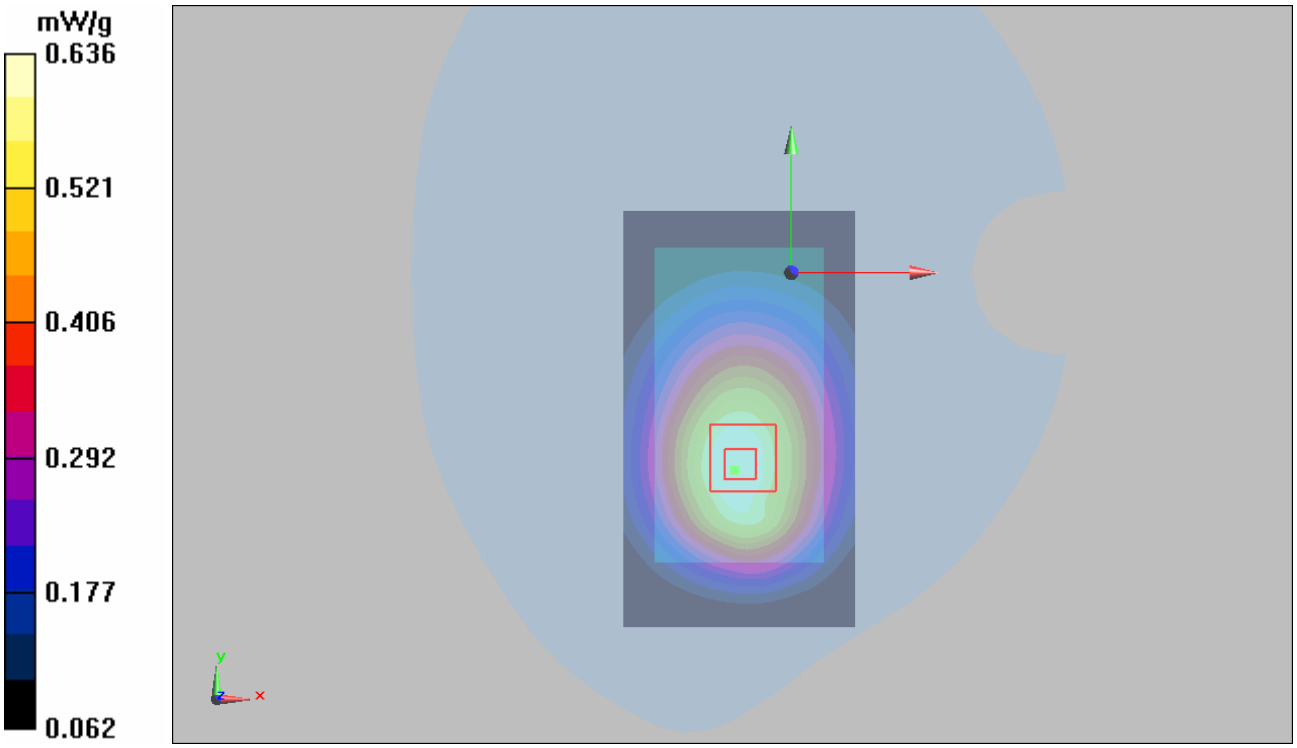


Figure 28 Body, Towards Ground, GSM 850 EGPRS (2Up) Channel 251

GSM 1900 Left Cheek Middle

Date/Time: 5/21/2010 3:08:31 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.680 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.74 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 0.898 W/kg
SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.346 mW/g
Maximum value of SAR (measured) = 0.698 mW/g

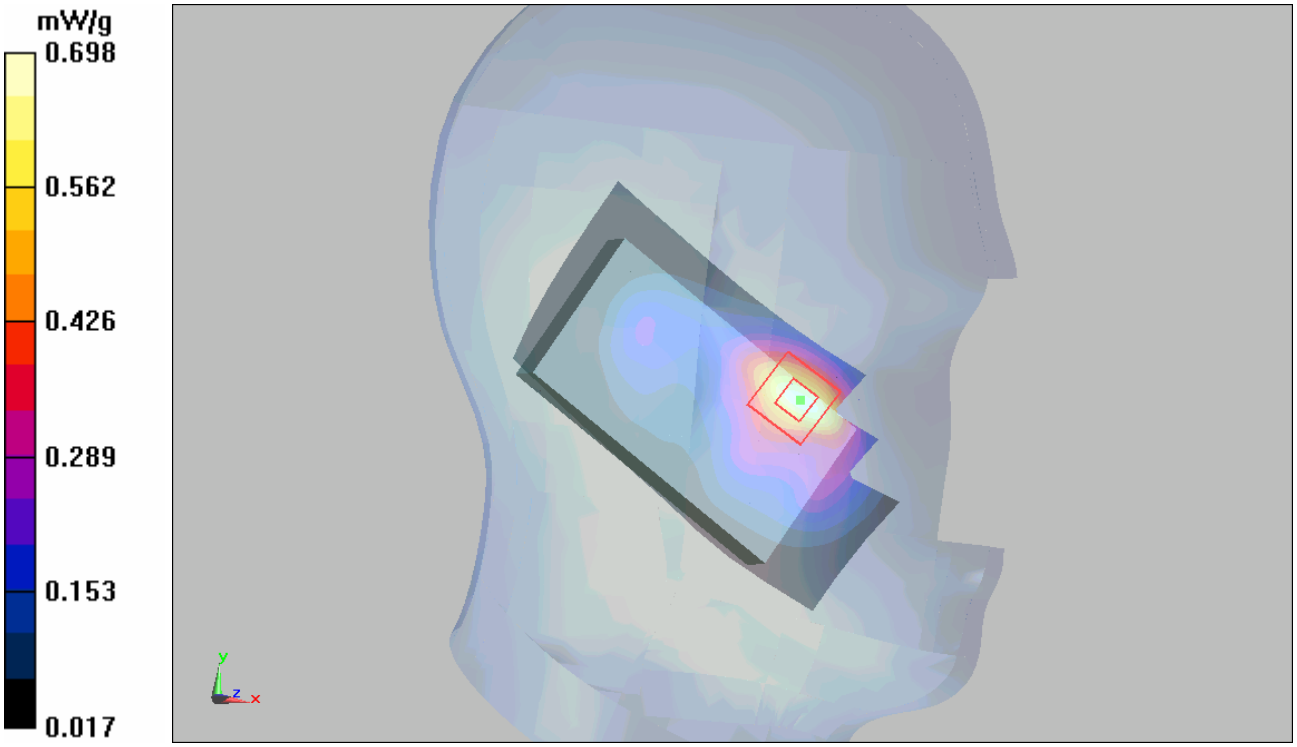


Figure 29 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Tilt Middle

Date/Time: 5/21/2010 6:14:08 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.245 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 0.290 W/kg
SAR(1 g) = 0.202 mW/g; SAR(10 g) = 0.124 mW/g
Maximum value of SAR (measured) = 0.223 mW/g

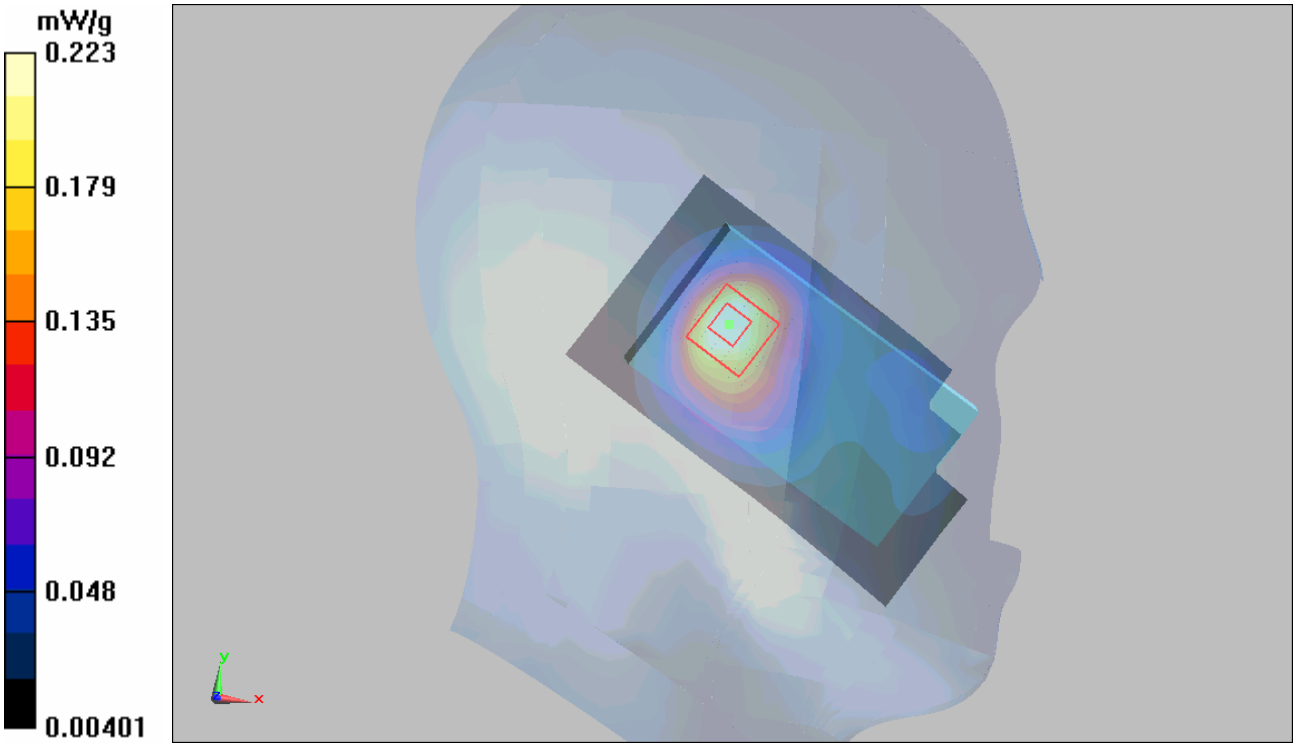


Figure 30 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek High

Date/Time: 5/21/2010 5:51:15 PM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.633 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.33 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 0.949 W/kg
SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.302 mW/g
Maximum value of SAR (measured) = 0.660 mW/g

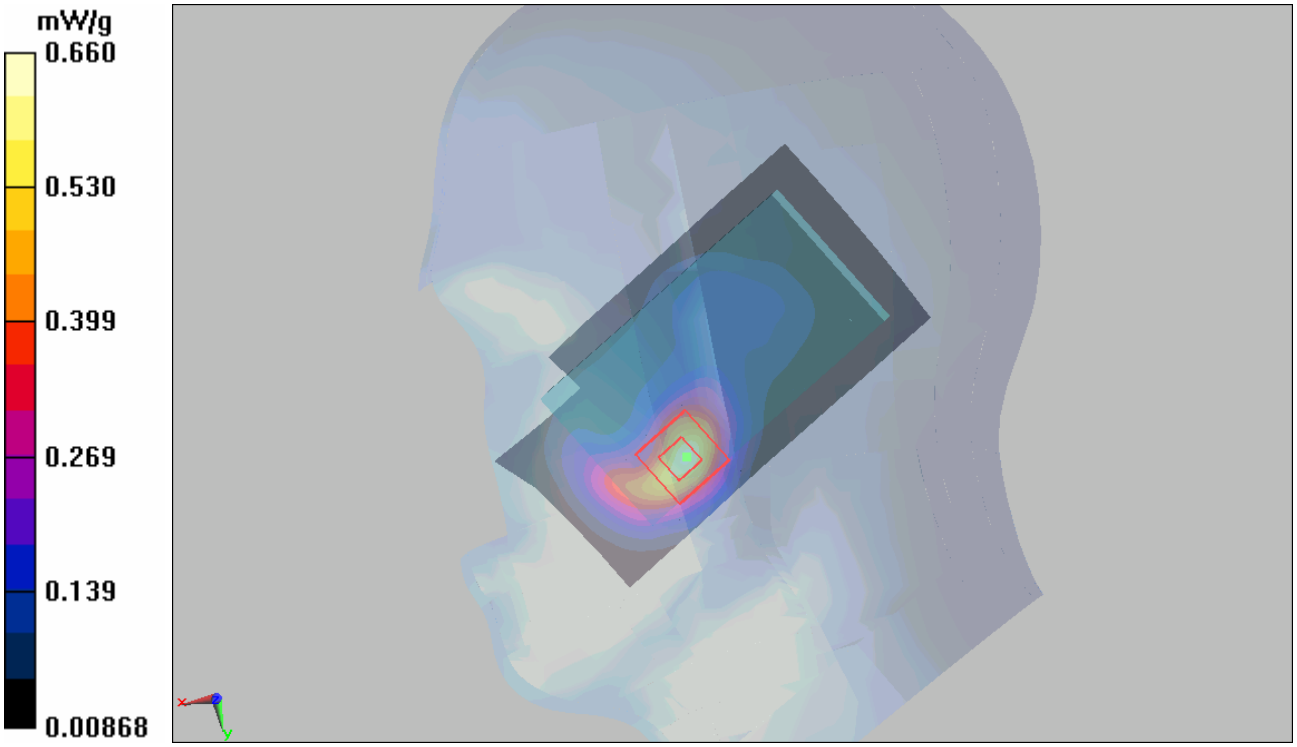


Figure 31 Right Hand Touch Cheek GSM 1900 Channel 810

GSM 1900 Right Cheek Middle

Date/Time: 5/21/2010 4:37:37 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.755 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.29 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.370 mW/g
Maximum value of SAR (measured) = 0.799 mW/g

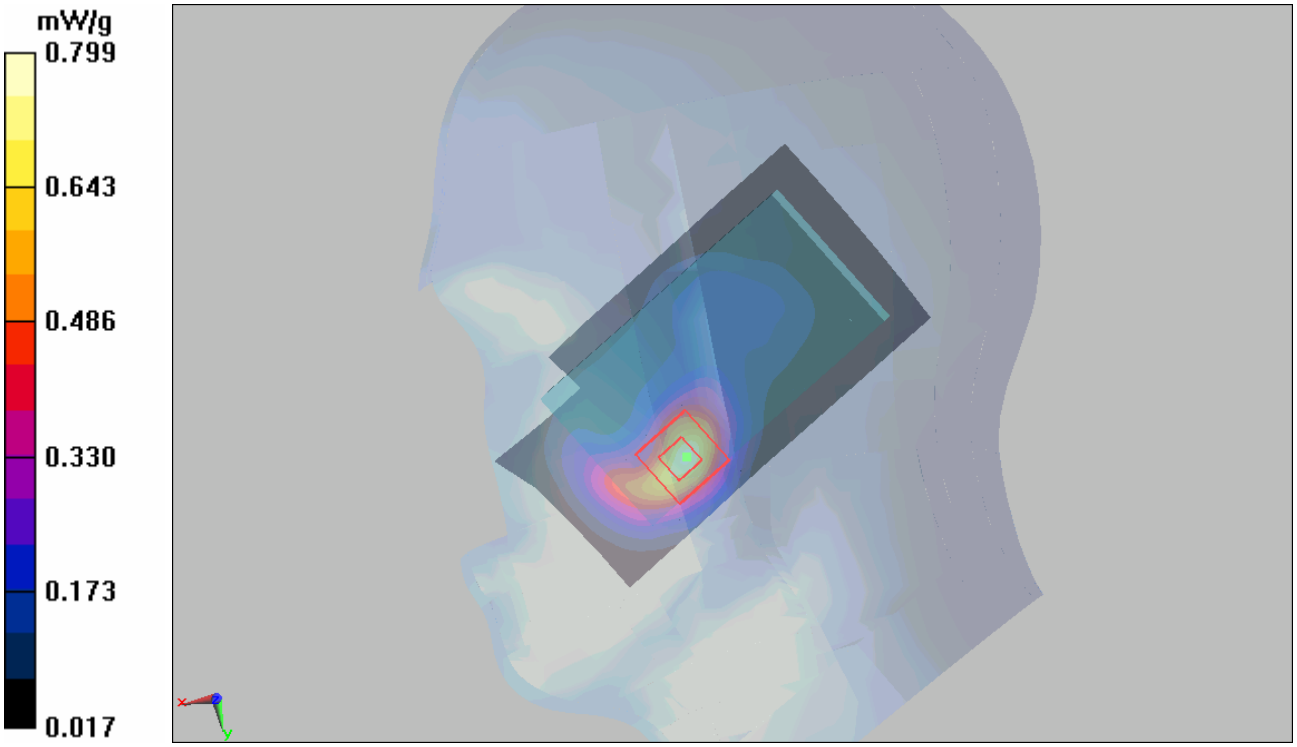


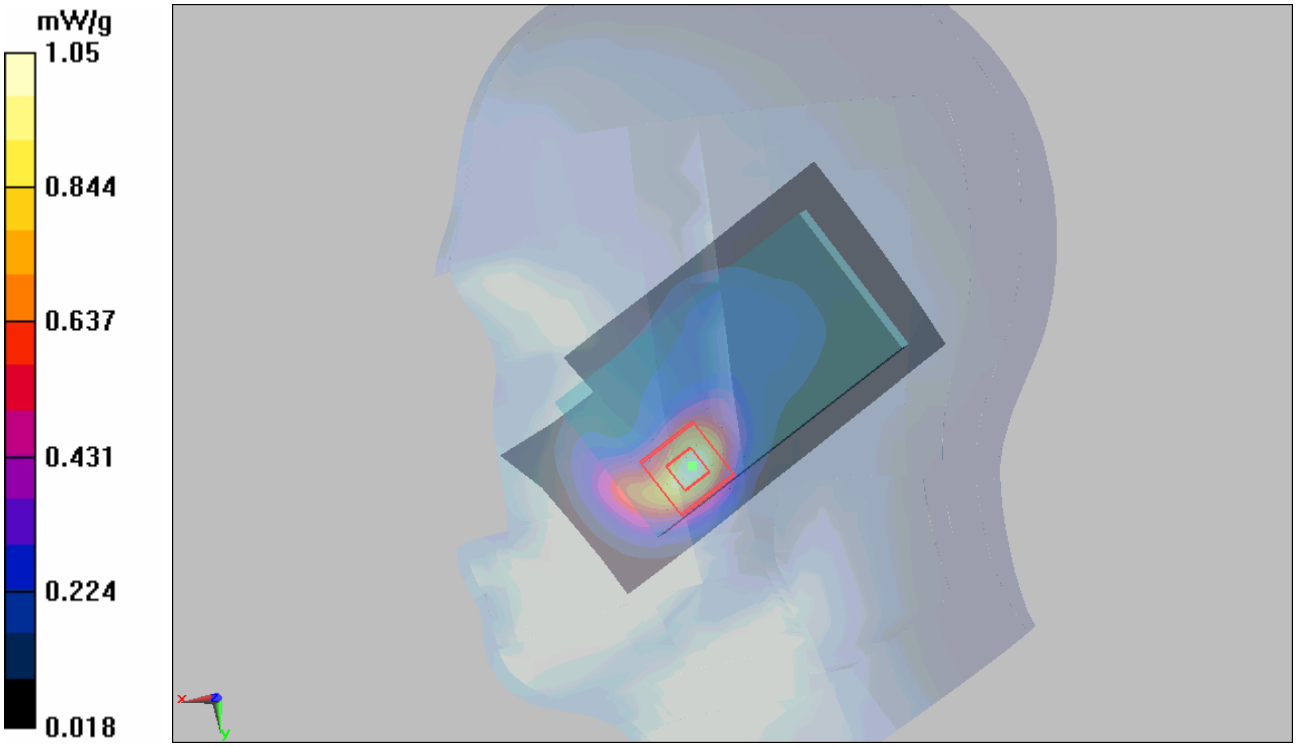
Figure 32 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Cheek Low

Date/Time: 5/21/2010 5:29:59 PM
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.03 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.65 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.926 mW/g; SAR(10 g) = 0.495 mW/g
Maximum value of SAR (measured) = 1.05 mW/g



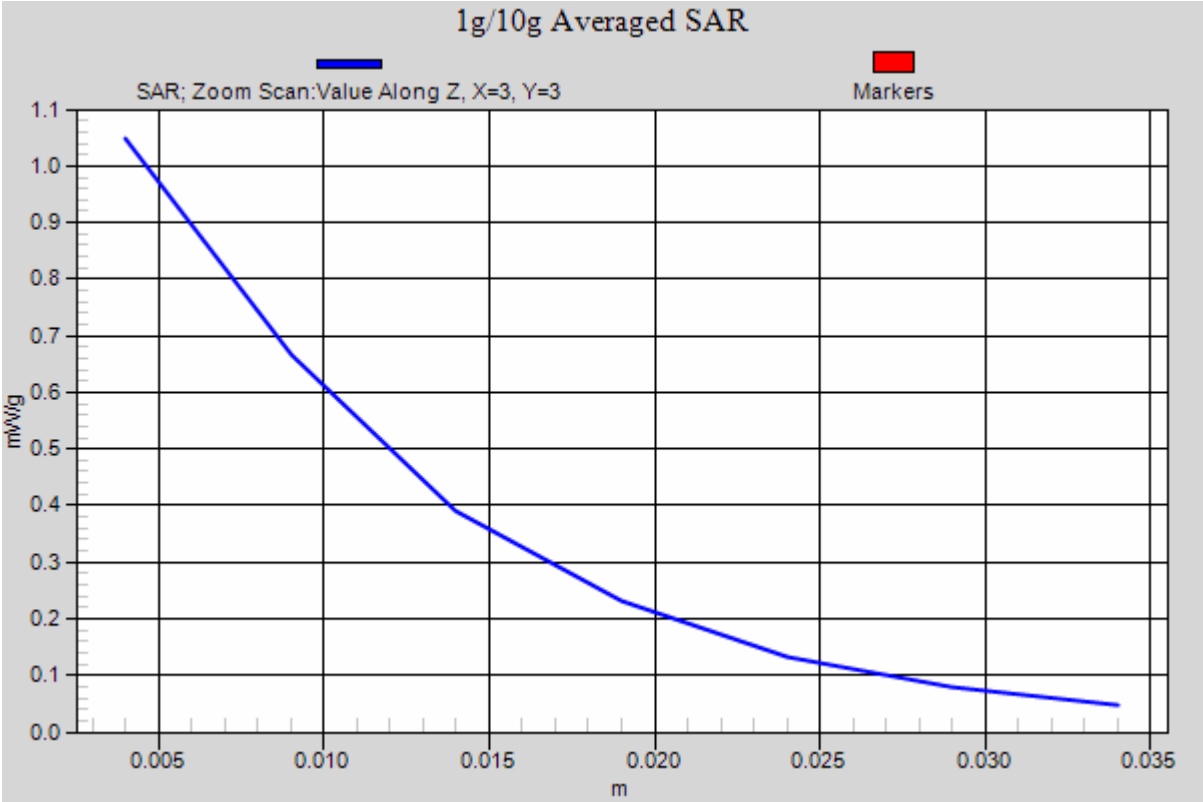


Figure 33 Right Hand Touch Cheek GSM 1900 Channel 512

GSM 1900 Right Tilt Middle

Date/Time: 5/21/2010 4:58:58 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.77, 7.77, 7.77); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.211 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10 V/m; Power Drift = -0.173 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.117 mW/g
Maximum value of SAR (measured) = 0.193 mW/g

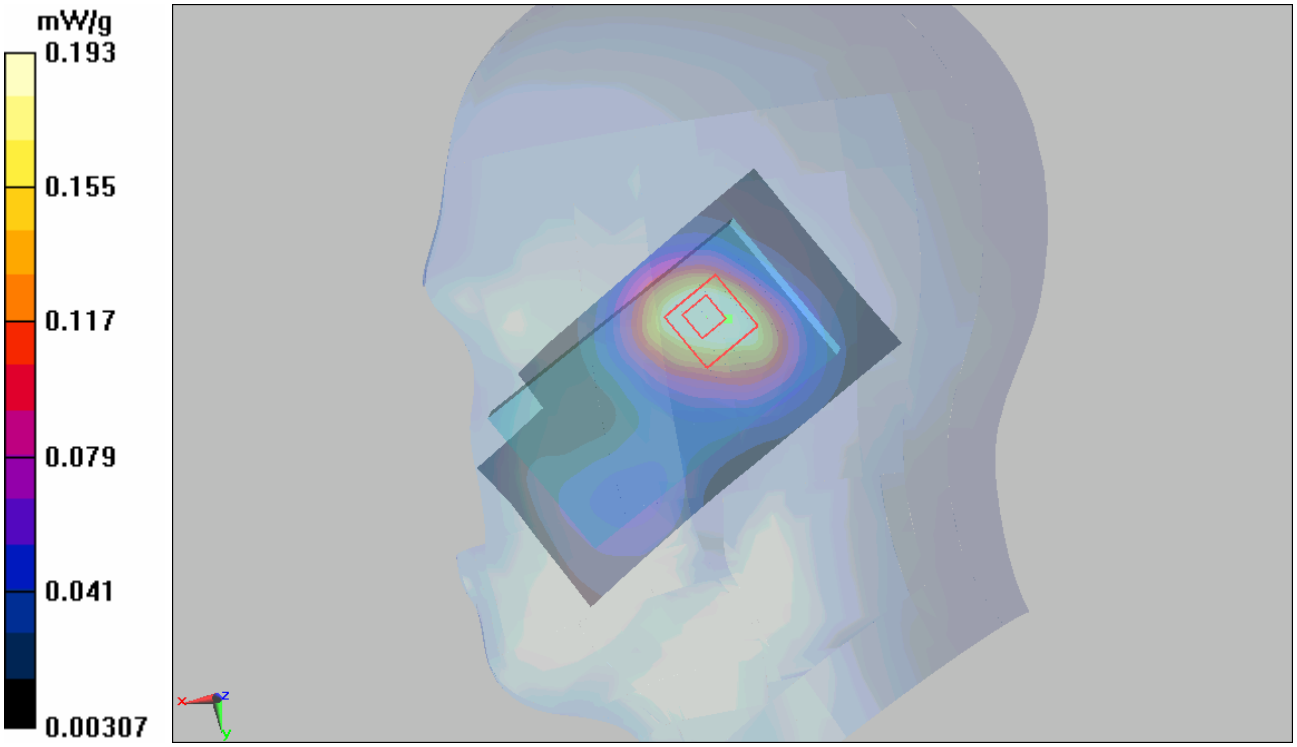


Figure 34 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Towards Ground High

Date/Time: 5/18/2010 12:31:38 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM2; Type: SAM;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.186 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.15 V/m; Power Drift = -0.104 dB

Peak SAR (extrapolated) = 0.313 W/kg

SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.096 mW/g

Maximum value of SAR (measured) = 0.180 mW/g

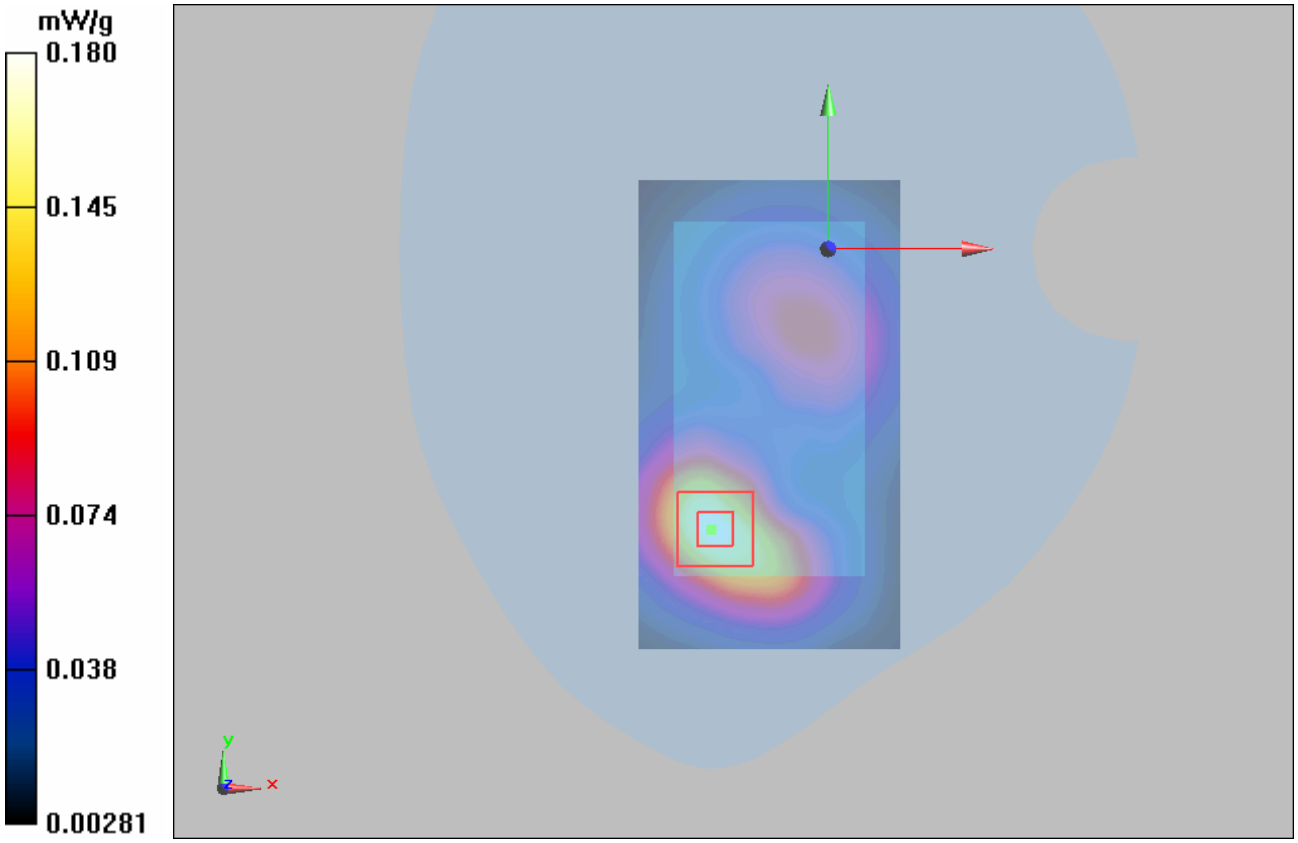


Figure 35 Body, Towards Ground, GSM 1900 Channel 810

GSM 1900 Towards Ground Middle

Date/Time: 5/18/2010 12:08:58 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.230 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.73 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 0.381 W/kg
SAR(1 g) = 0.206 mW/g; SAR(10 g) = 0.117 mW/g
Maximum value of SAR (measured) = 0.224 mW/g

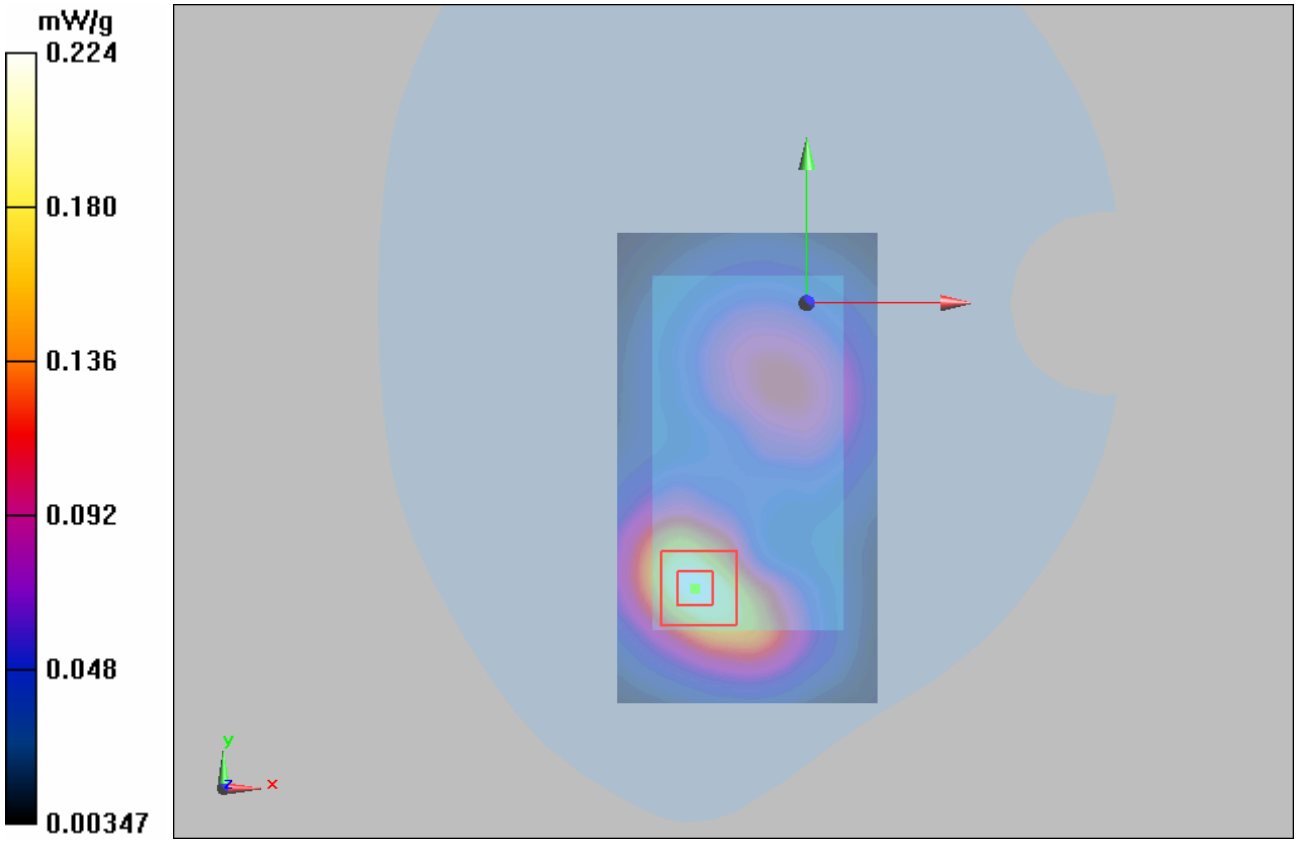


Figure 36 Body, Towards Ground, GSM 1900 Channel 661

GSM 1900 Towards Ground Low

Date/Time: 5/18/2010 1:04:04 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM2; Type: SAM;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.330 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.87 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.543 W/kg

SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.169 mW/g

Maximum value of SAR (measured) = 0.321 mW/g

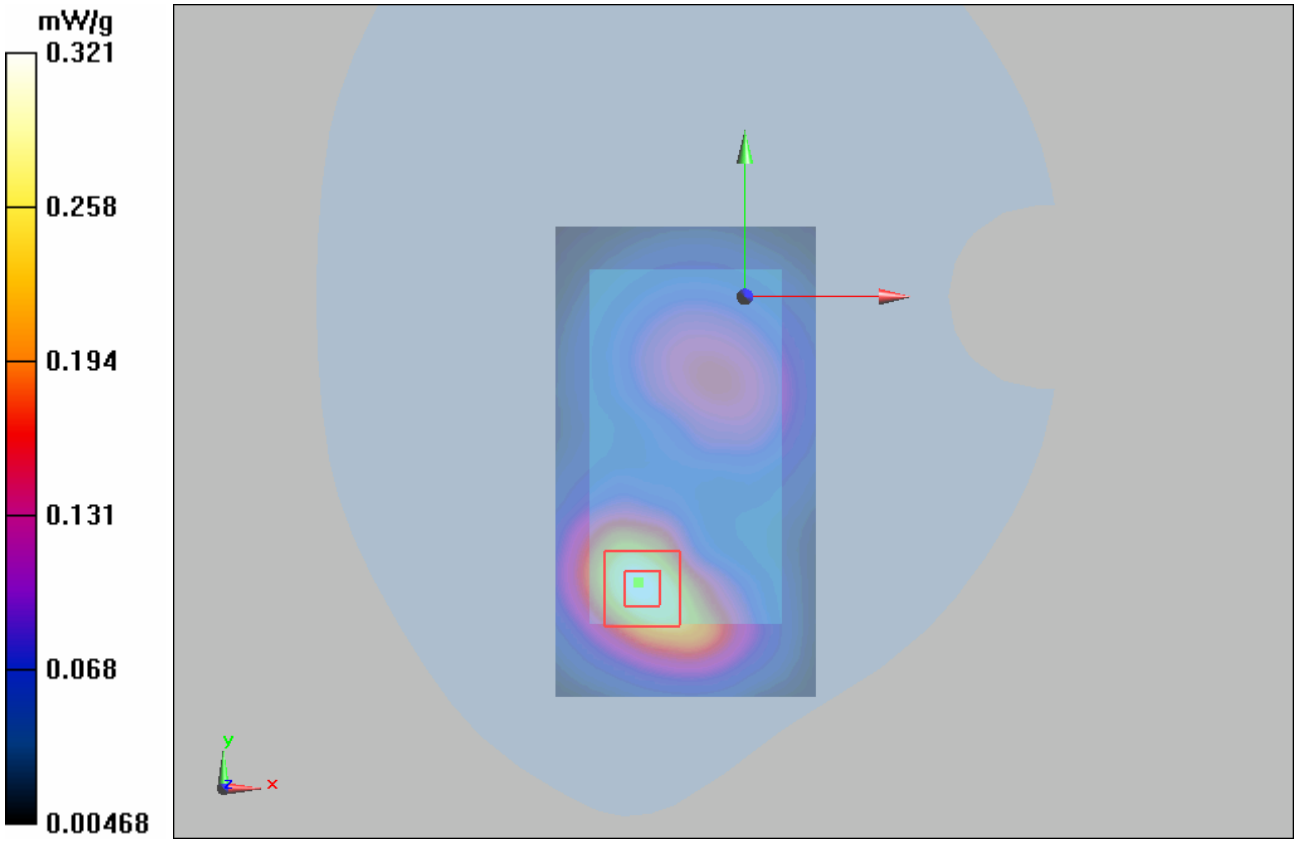


Figure 37 Body, Towards Ground, GSM 1900 Channel 512

GSM 1900 Towards Phantom Middle

Date/Time: 5/18/2010 11:45:02 AM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.178 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.08 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 0.271 W/kg
SAR(1 g) = 0.159 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.172 mW/g

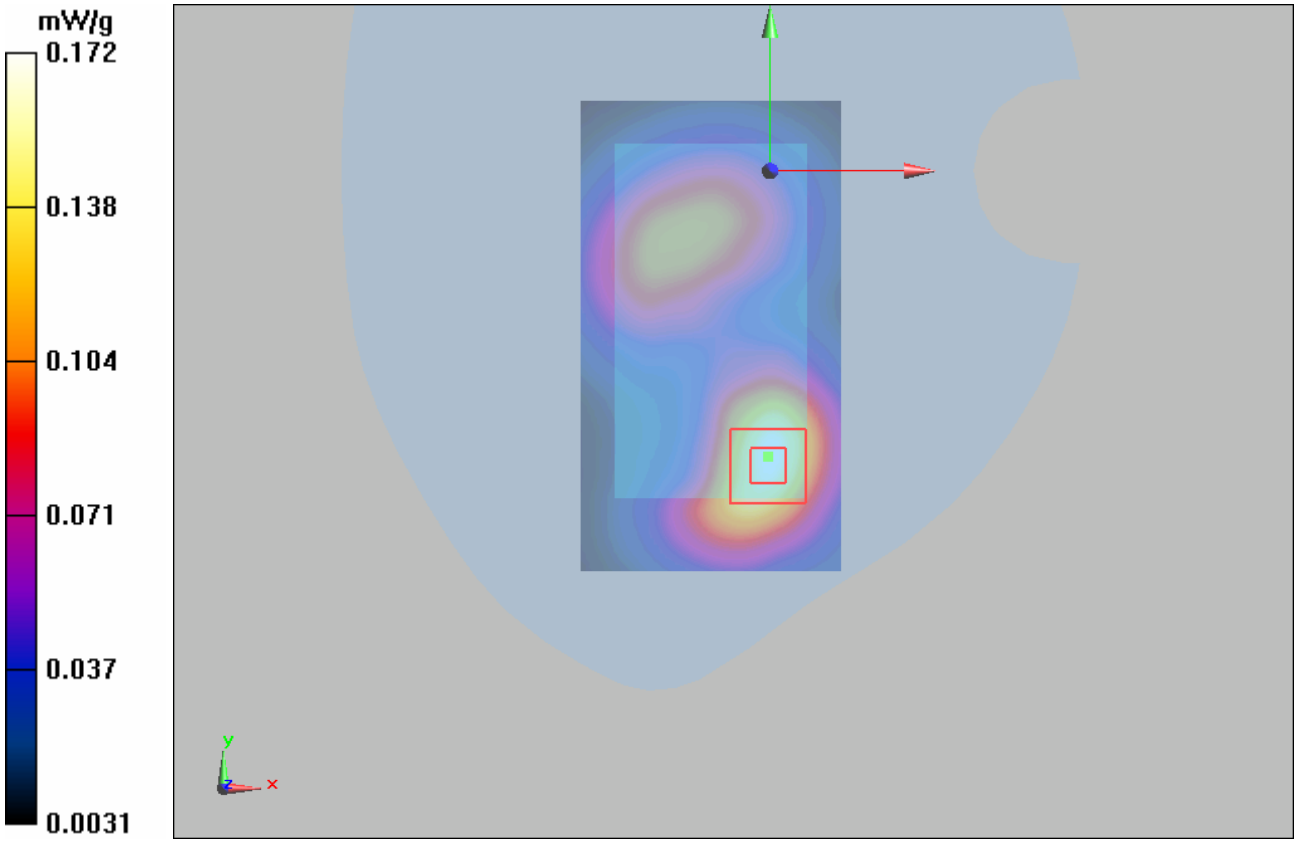


Figure 38 Body, Towards Phantom, GSM 1900 Channel 661

GSM 1900 with Earphone Towards Ground Low

Date/Time: 5/18/2010 1:27:20 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM2; Type: SAM;

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.317 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.78 V/m; Power Drift = -0.047 dB

Peak SAR (extrapolated) = 0.522 W/kg

SAR(1 g) = 0.287 mW/g; SAR(10 g) = 0.163 mW/g

Maximum value of SAR (measured) = 0.310 mW/g

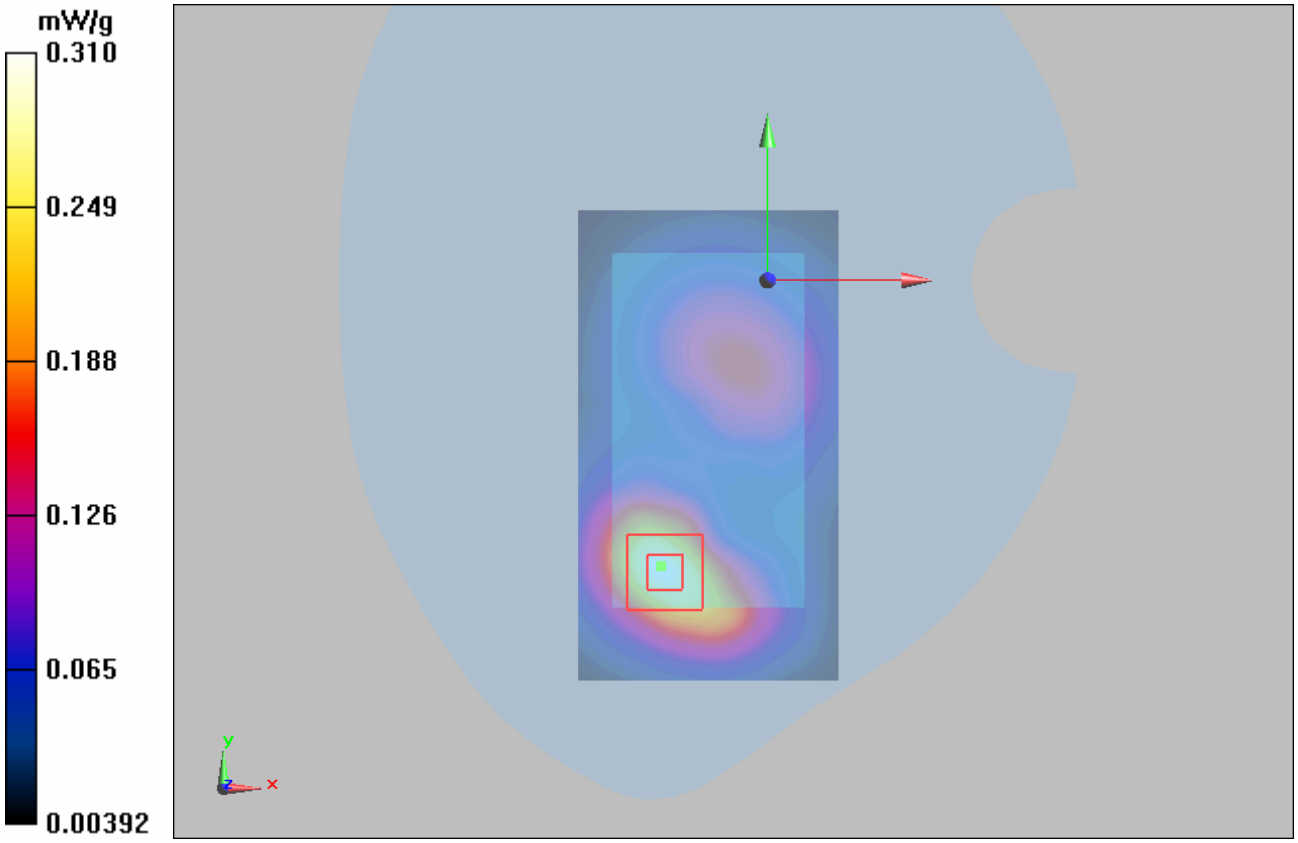


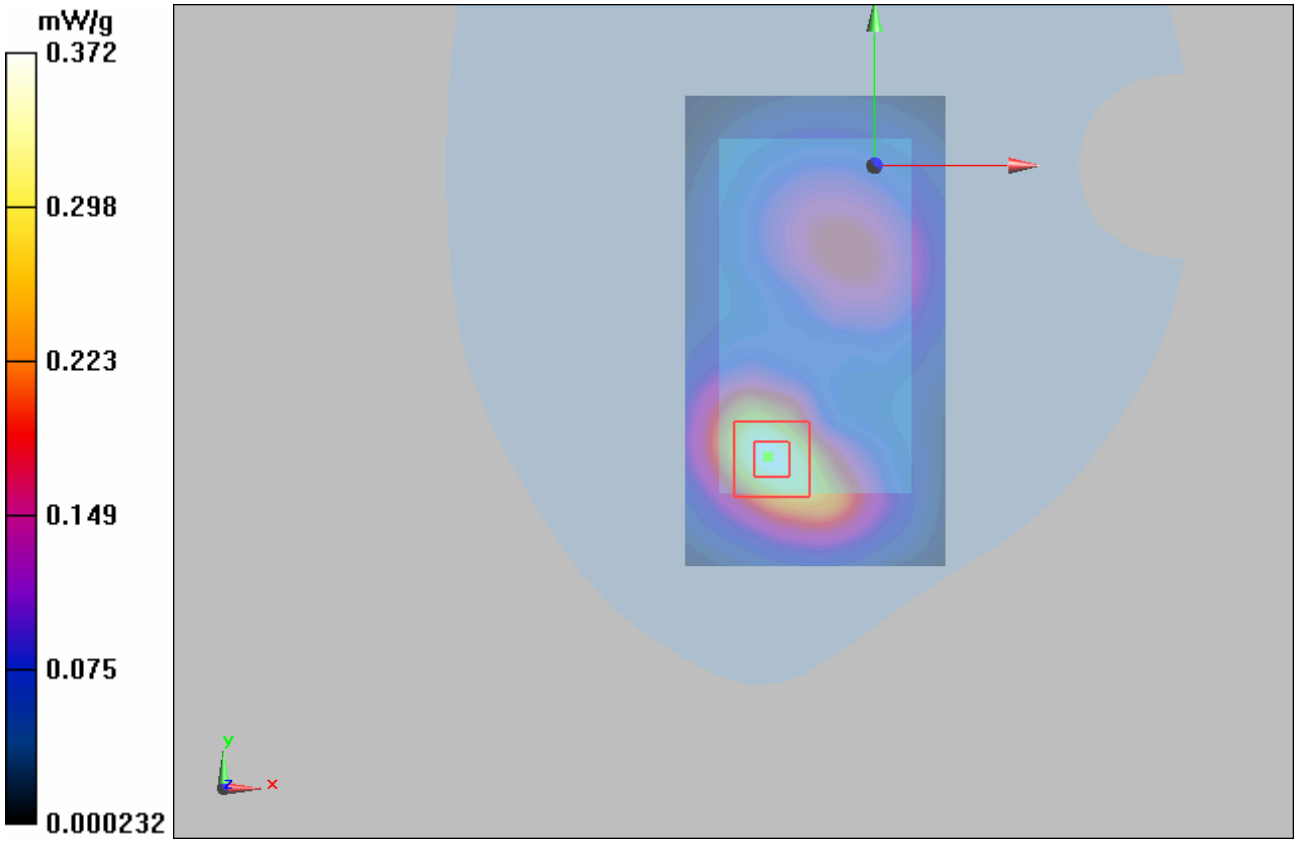
Figure 39 Body with Earphone, Towards Ground, GSM 1900 Channel 512

GSM 1900 GPRS (2Up) Towards Ground Low

Date/Time: 5/18/2010 2:16:09 PM
Communication System: PCS 1900+GPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.378 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.53 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 0.626 W/kg
SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.195 mW/g
Maximum value of SAR (measured) = 0.372 mW/g



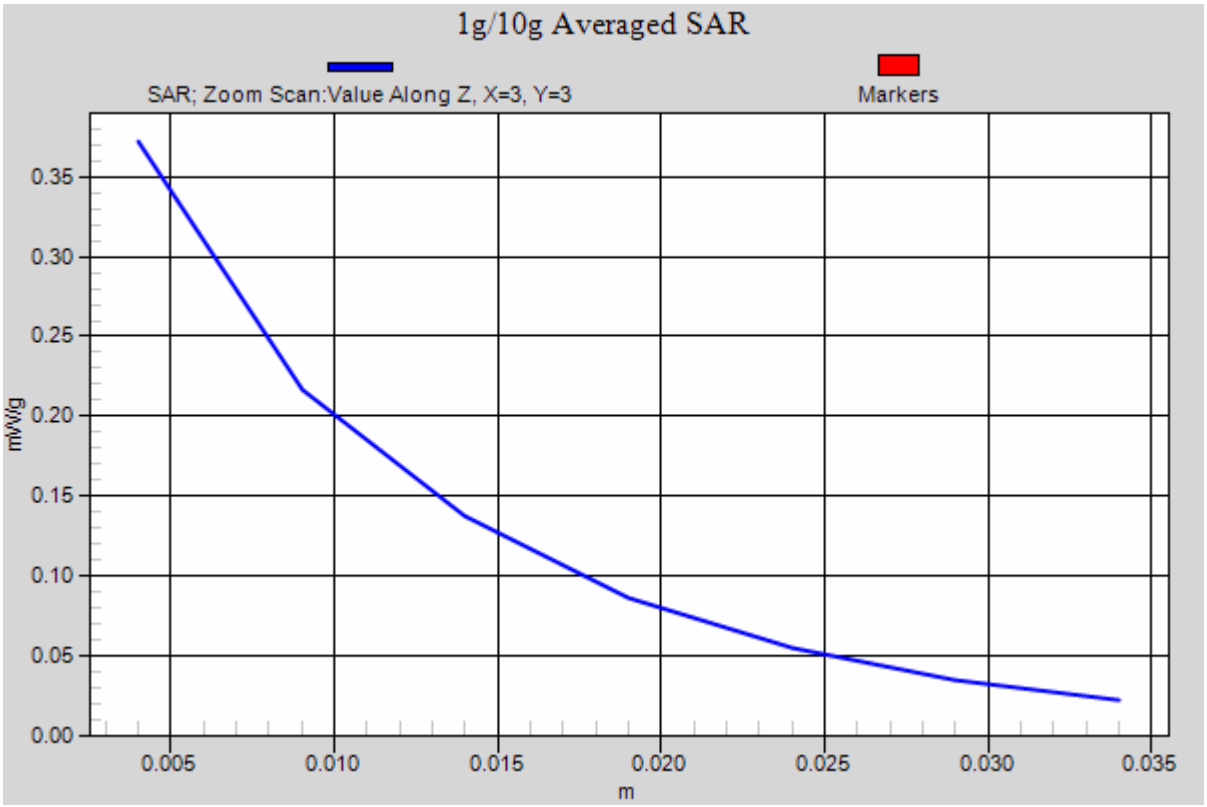


Figure 40 Body, Towards Ground, GSM 1900 GPRS (2Up) Channel 512

GSM 1900 EGPRS (2Up) Towards Ground Low

Date/Time: 5/18/2010 1:52:13 PM
Communication System: PCS 1900+EGPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4.15
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.6, 7.6, 7.6); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.377 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.58 V/m; Power Drift = -0.098 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.194 mW/g
Maximum value of SAR (measured) = 0.372 mW/g

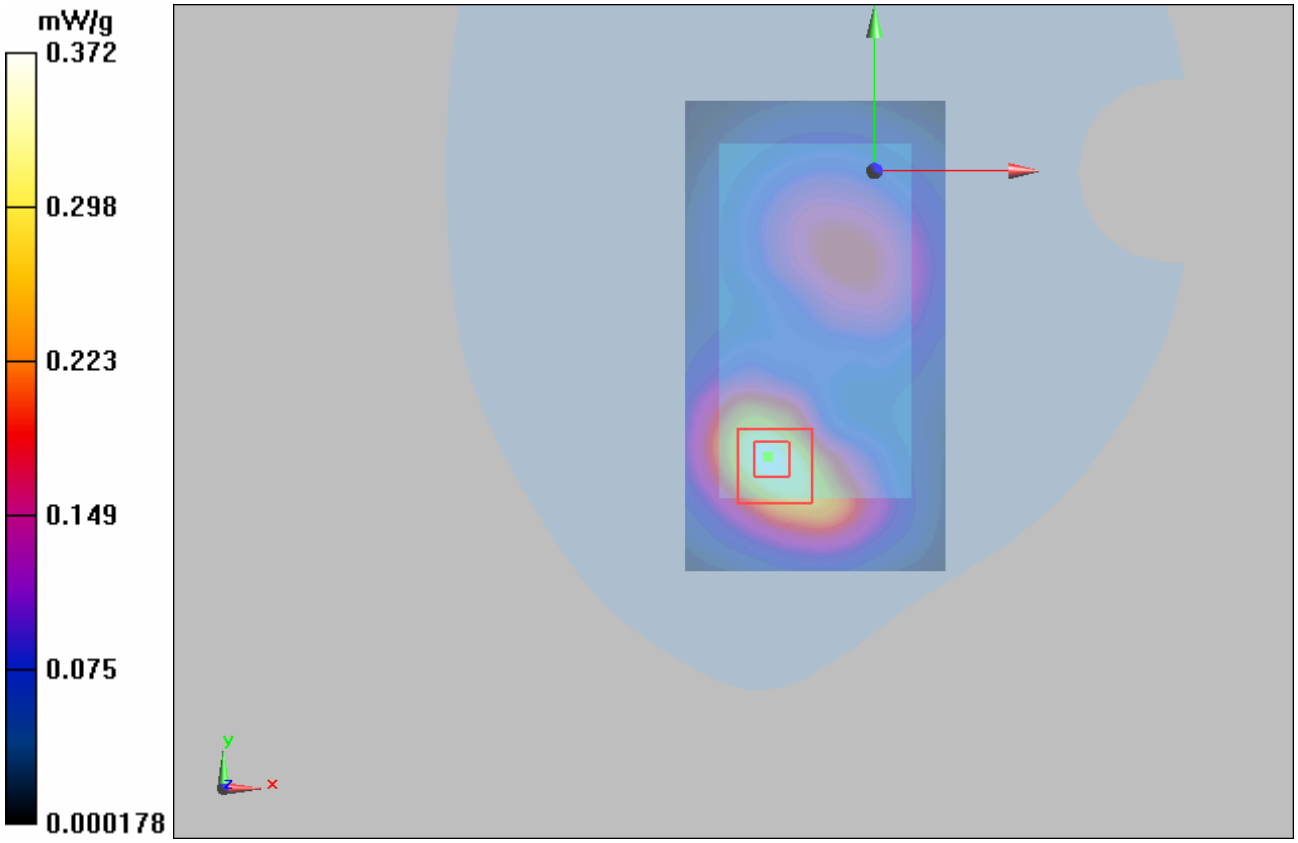


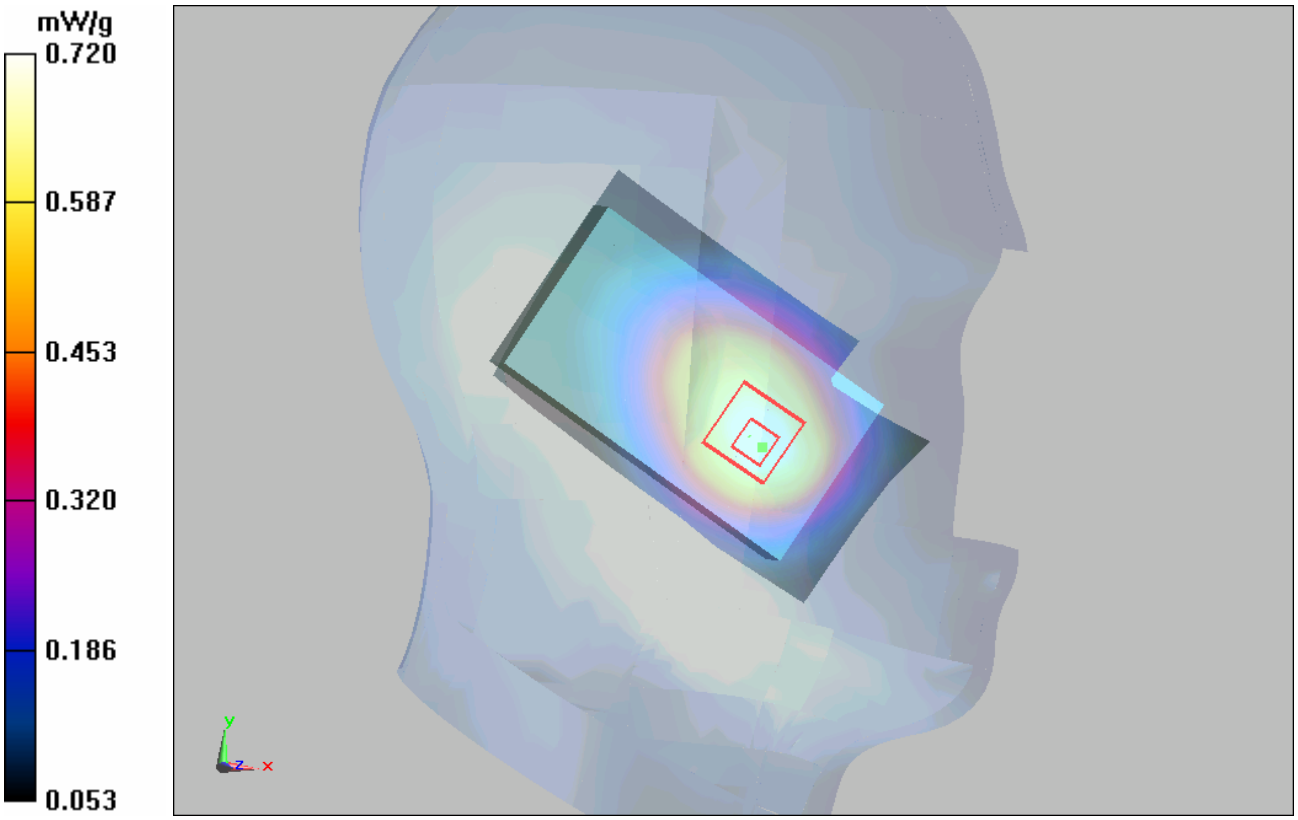
Figure 41 Body, Towards Ground, GSM 1900 EGPRS (2Up) Channel 512

WCDMA Band V Left Cheek High

Date/Time: 6/19/2010 4:09:16 AM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.943 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.731 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.91 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.868 W/kg
SAR(1 g) = 0.678 mW/g; SAR(10 g) = 0.489 mW/g
Maximum value of SAR (measured) = 0.720 mW/g



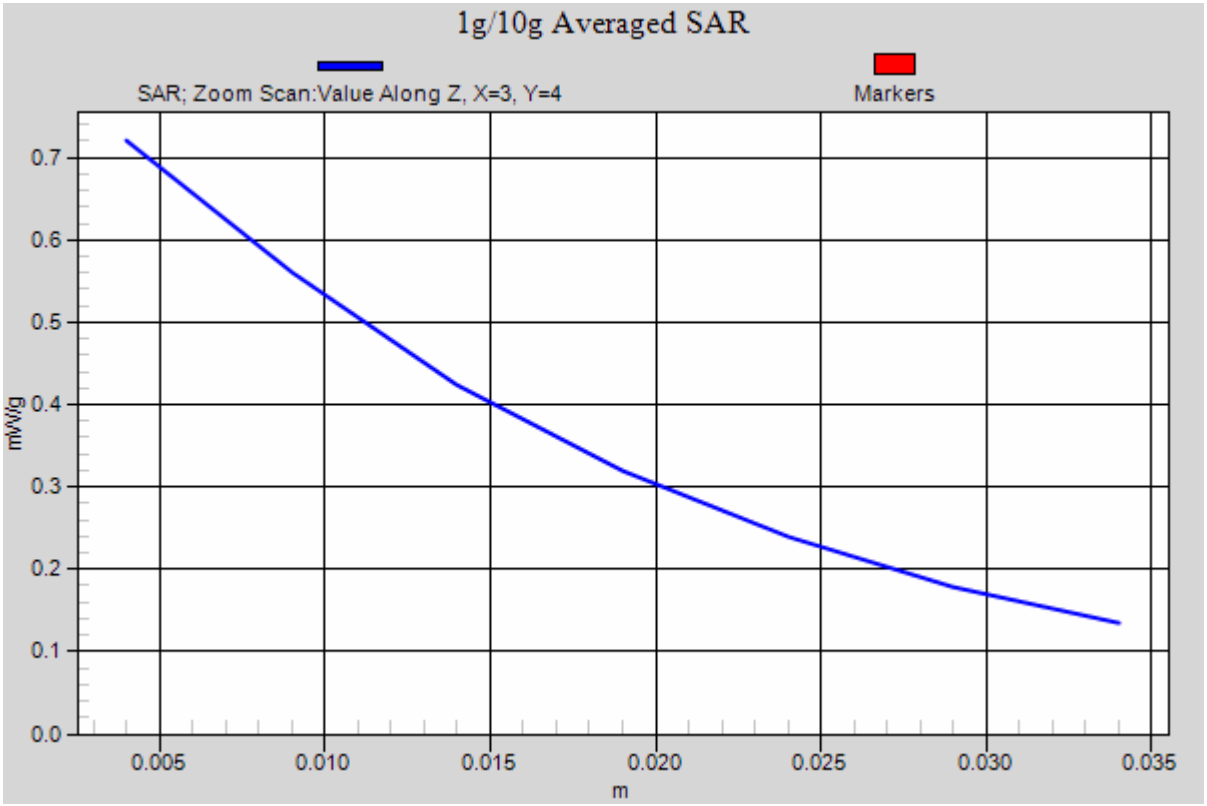


Figure 42 Left Hand Touch Cheek WCDMA Band V Channel 4233

WCDMA Band V Left Cheek Middle

Date/Time: 6/19/2010 1:56:34 AM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.933 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.728 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.57 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.842 W/kg
SAR(1 g) = 0.658 mW/g; SAR(10 g) = 0.473 mW/g
Maximum value of SAR (measured) = 0.697 mW/g

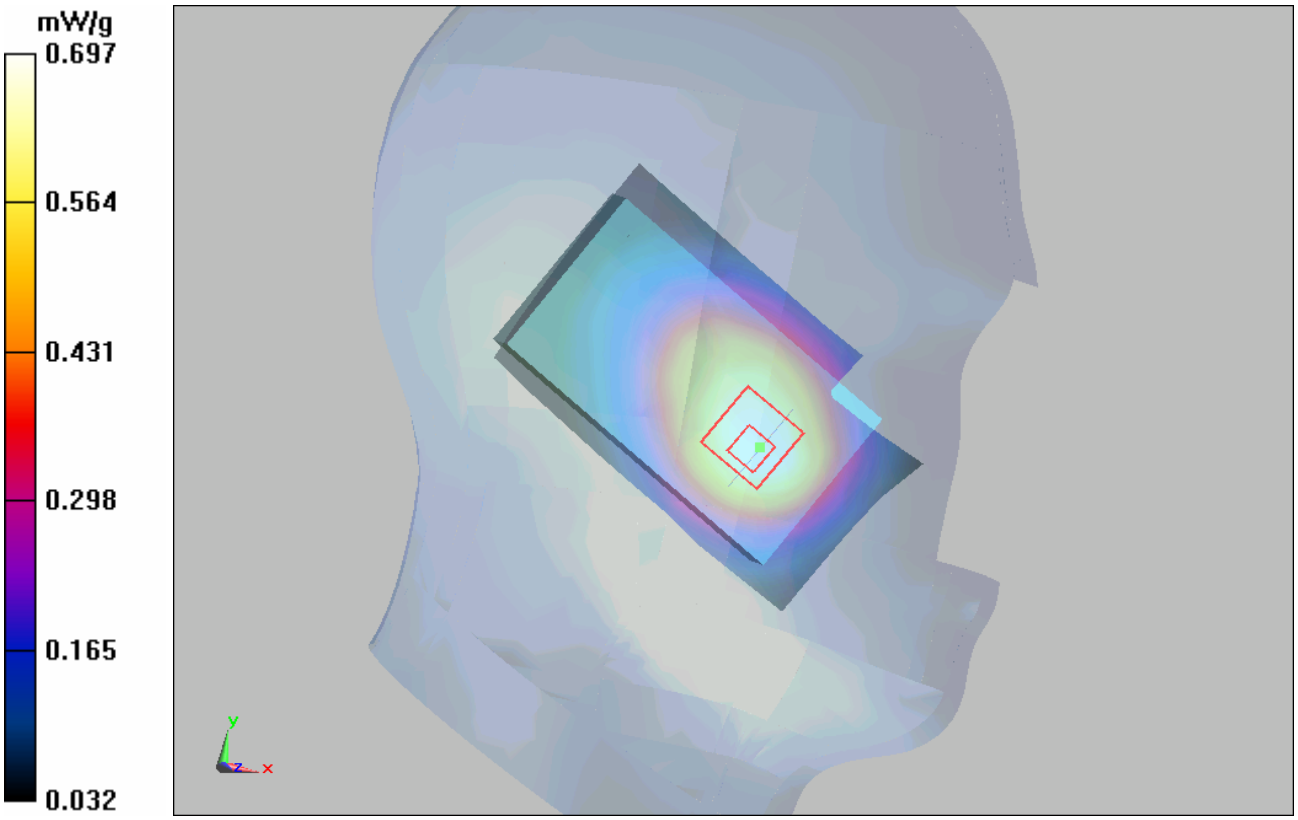


Figure 43 Left Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Left Cheek Low

Date/Time: 6/19/2010 3:49:12 AM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.926 mho/m; ε_r = 42.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.554 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.66 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 0.651 W/kg
SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.367 mW/g
Maximum value of SAR (measured) = 0.534 mW/g

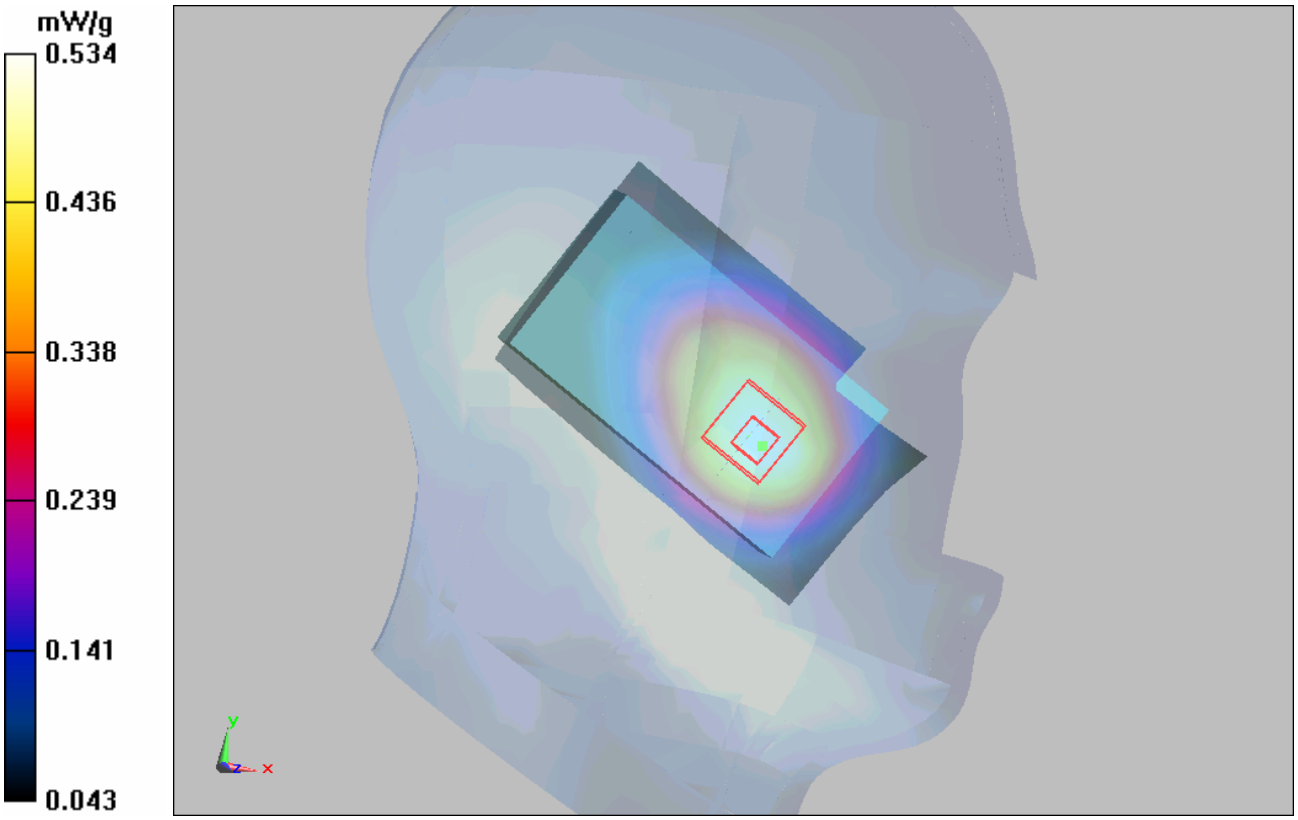


Figure 44 Left Hand Touch Cheek WCDMA Band V Channel 4132

WCDMA Band V Left Tilt Middle

Date/Time: 6/19/2010 2:17:14 AM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.933 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.355 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.1 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.417 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.257 mW/g
Maximum value of SAR (measured) = 0.362 mW/g

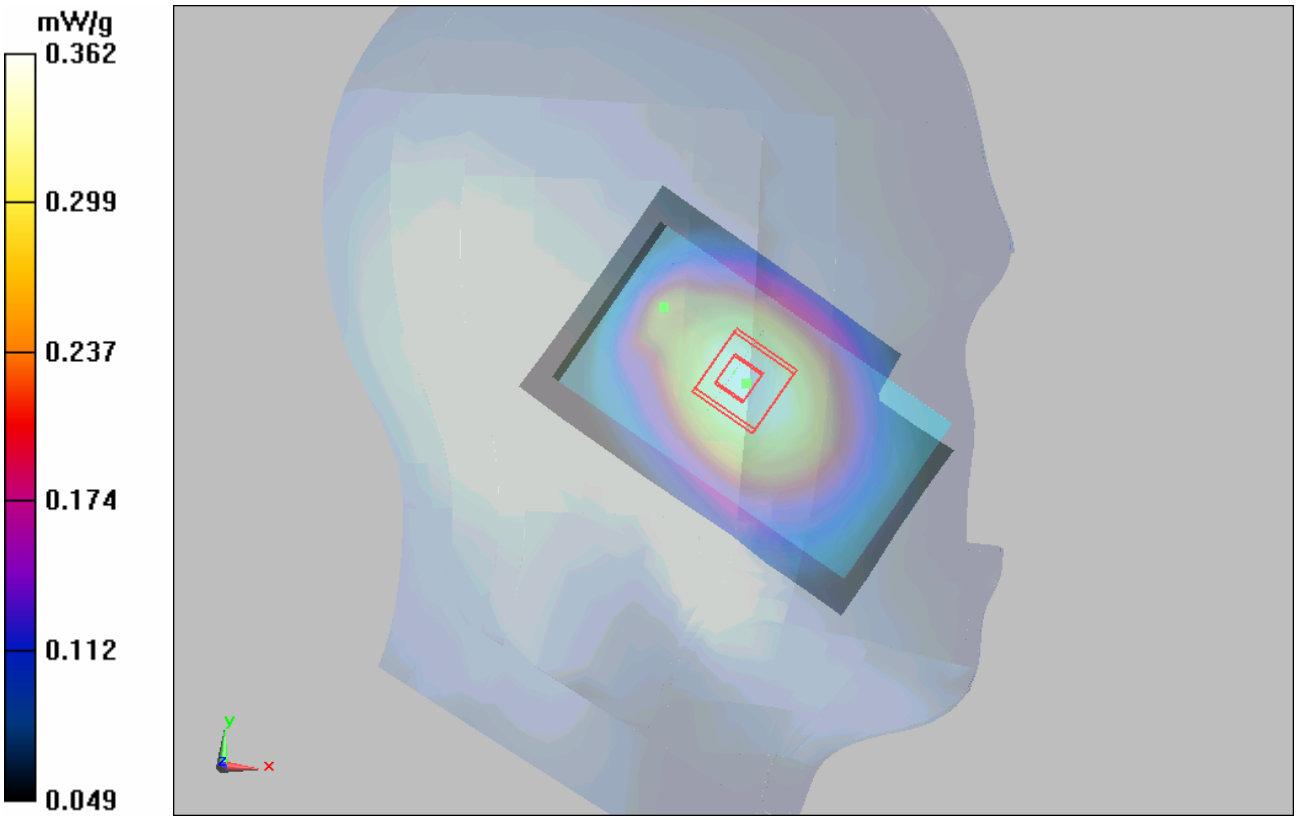


Figure 45 Left Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Right Cheek Middle

Date/Time: 6/19/2010 2:41:58 AM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.933 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.623 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.8 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 0.757 W/kg
SAR(1 g) = 0.583 mW/g; SAR(10 g) = 0.434 mW/g
Maximum value of SAR (measured) = 0.619 mW/g

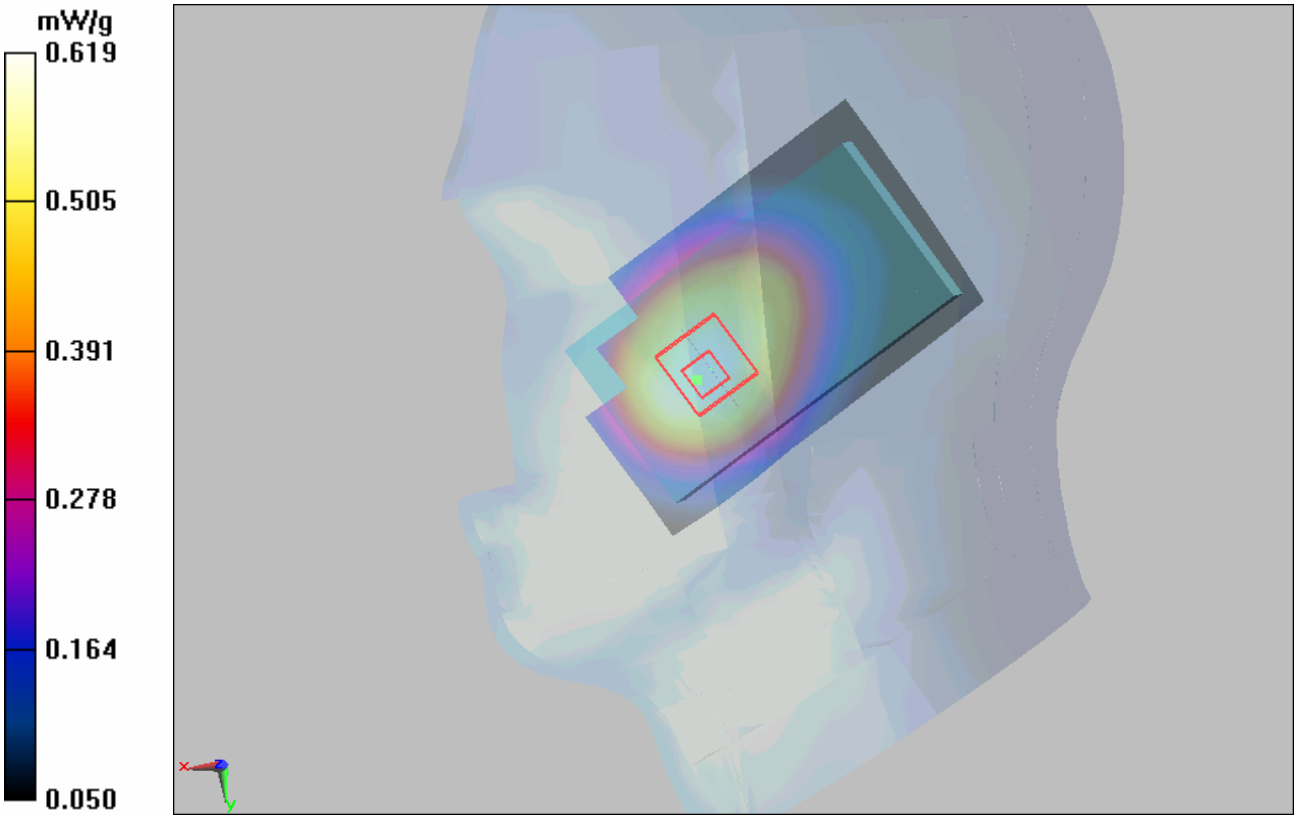


Figure 46 Right Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Right Tilt Middle

Date/Time: 6/19/2010 3:02:30 AM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.933 mho/m; ε_r = 42; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.2, 9.2, 9.2); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.353 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.2 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.337 mW/g; SAR(10 g) = 0.251 mW/g
Maximum value of SAR (measured) = 0.357 mW/g

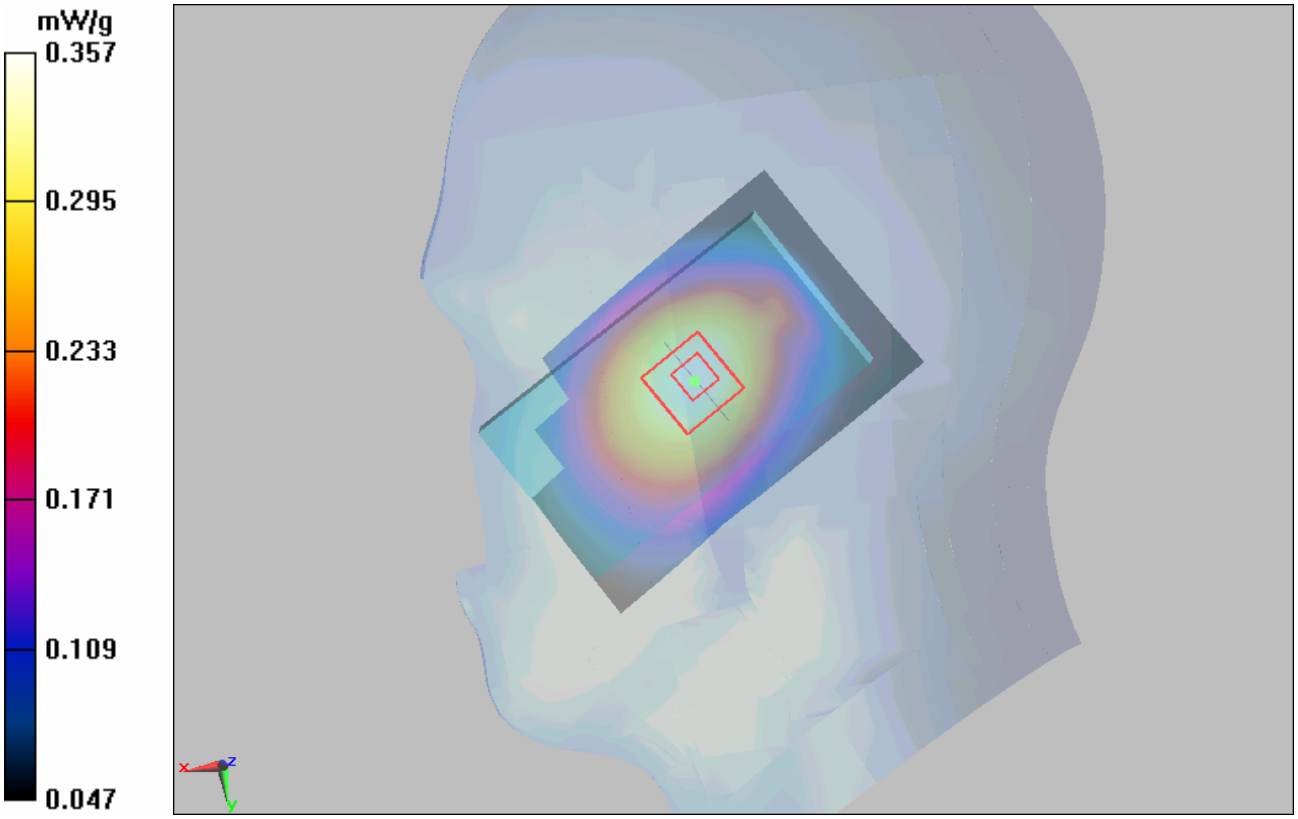


Figure 47 Right Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Towards Ground High

Date/Time: 6/19/2010 11:54:30 PM

Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 847 MHz; σ = 1.02 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.544 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.2 V/m; Power Drift = -0.133 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.506 mW/g; SAR(10 g) = 0.363 mW/g

Maximum value of SAR (measured) = 0.538 mW/g

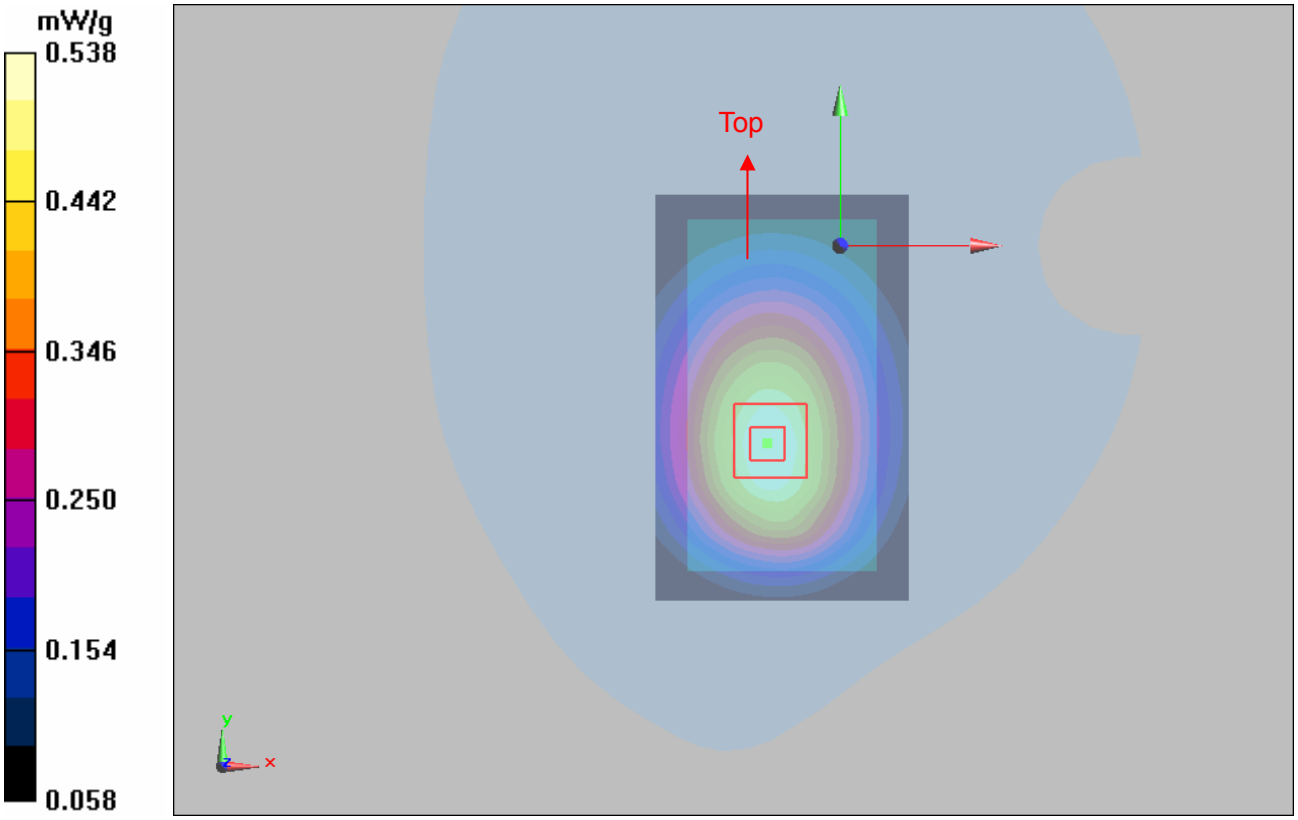


Figure 48 Body, Towards Ground, WCDMA Band V Channel 4233

WCDMA Band V Towards Ground Middle

Date/Time: 6/19/2010 11:14:15 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.518 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.17 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.627 W/kg

SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.343 mW/g

Maximum value of SAR (measured) = 0.510 mW/g

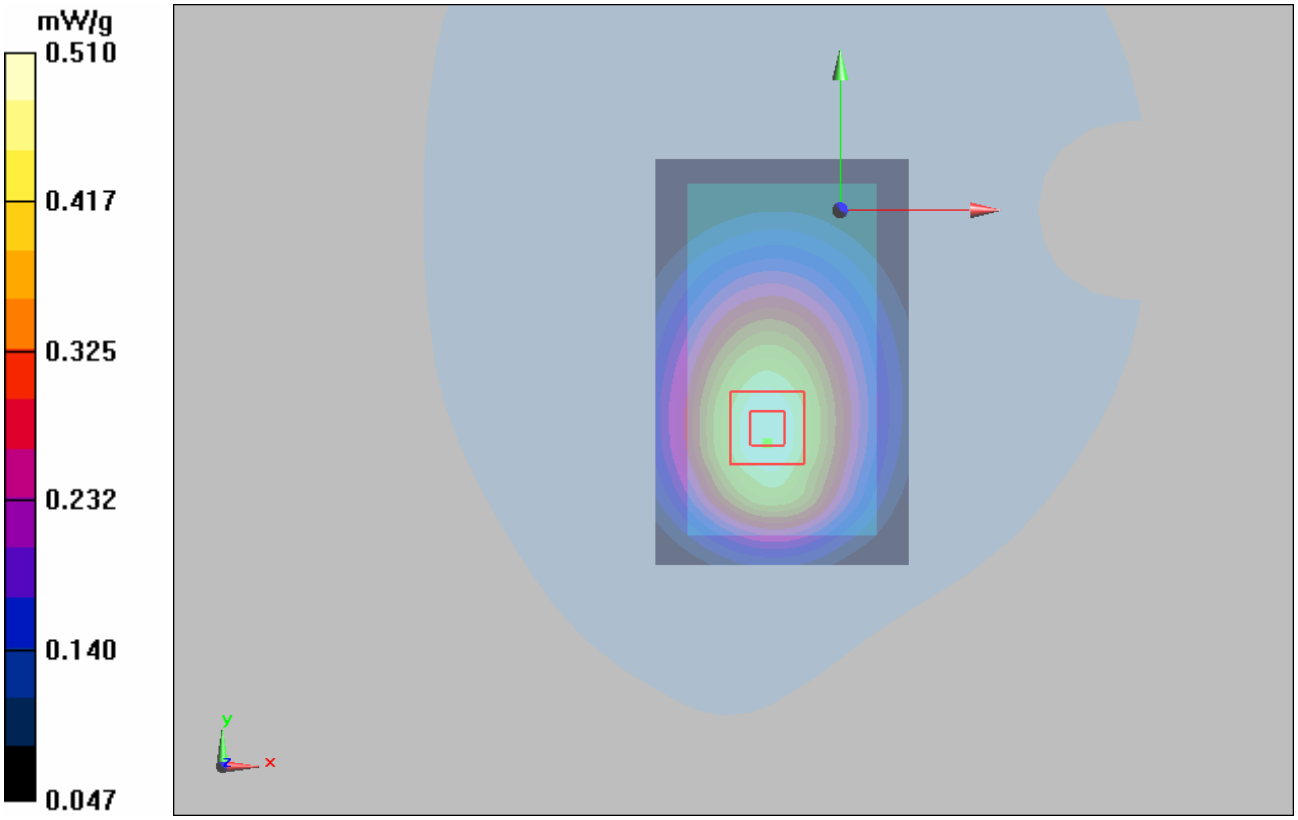


Figure 49 Body, Towards Ground, WCDMA Band V Channel 4183

WCDMA Band V Towards Ground Low

Date/Time: 6/19/2010 11:34:32 PM

Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.996 mho/m; ε_r = 54.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.405 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.1 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 0.486 W/kg

SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.268 mW/g

Maximum value of SAR (measured) = 0.400 mW/g

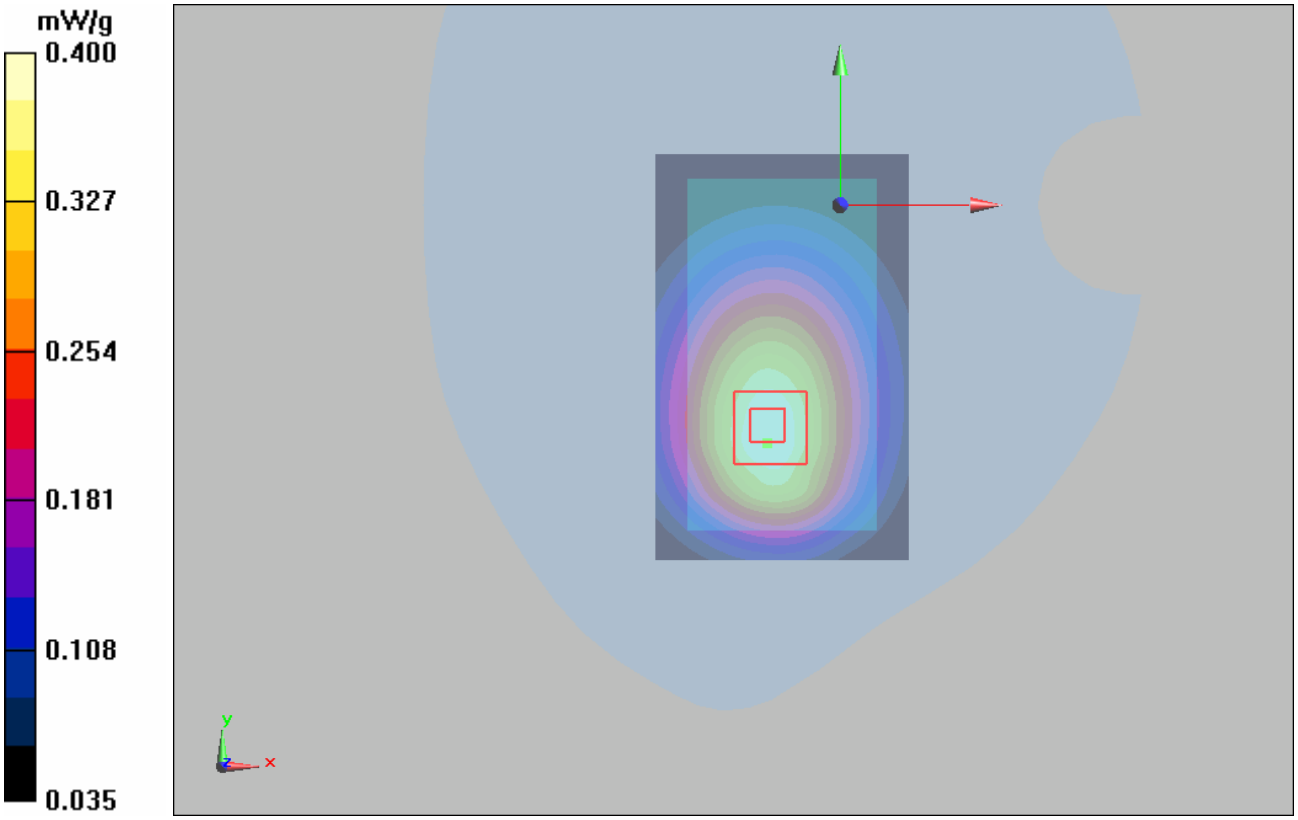


Figure 50 Body, Towards Ground, WCDMA Band V Channel 4132

WCDMA Band V Towards Phantom Middle

Date/Time: 6/19/2010 10:53:11 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 1.01 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009

Electronics: DAE4 Sn871; Calibrated: 11/11/2009

Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246

Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.360 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.64 V/m; Power Drift = 0.059 dB

Peak SAR (extrapolated) = 0.427 W/kg

SAR(1 g) = 0.338 mW/g; SAR(10 g) = 0.248 mW/g

Maximum value of SAR (measured) = 0.360 mW/g

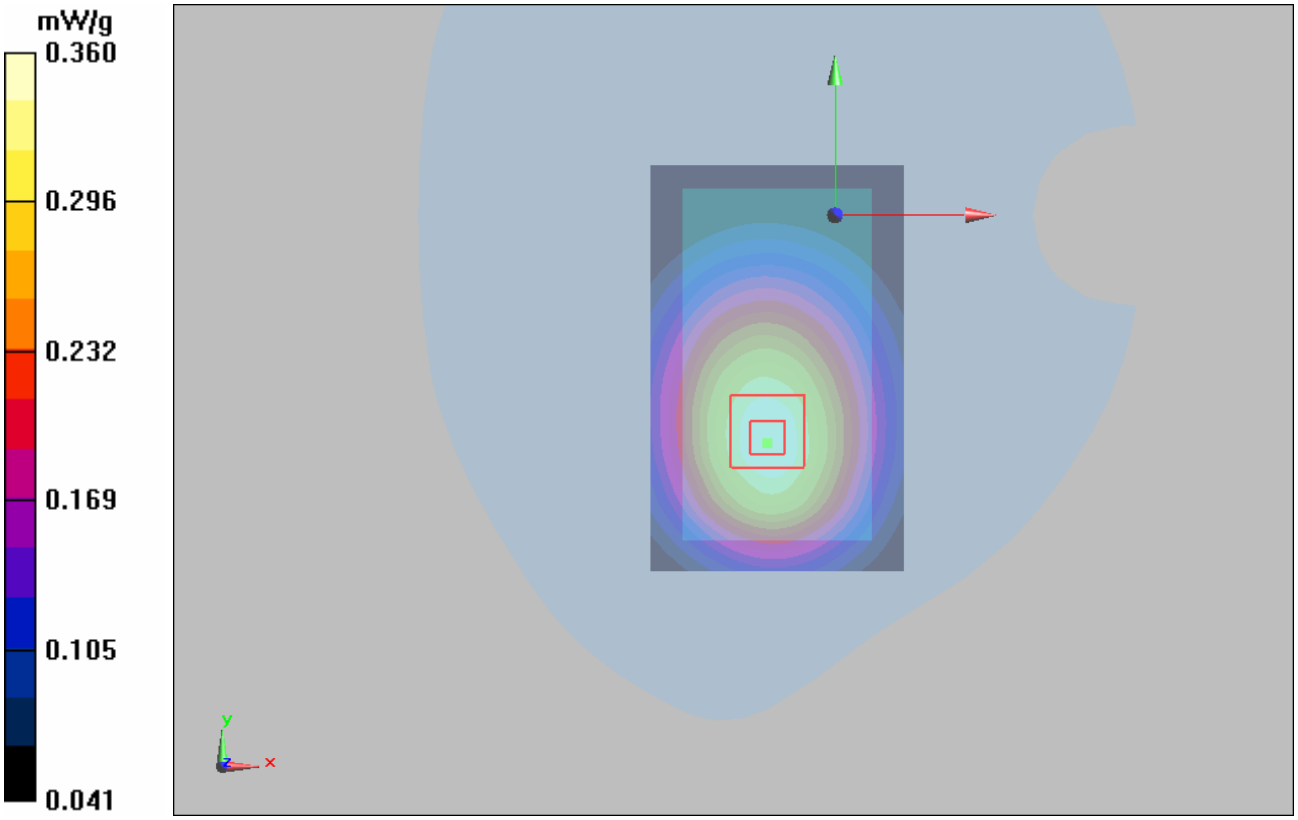


Figure 51 Body, Towards Phantom, WCDMA Band V Channel 4183

WCDMA Band V with Earphone Towards Ground High

Date/Time: 6/20/2010 12:05:46 AM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1.02 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.451 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 0.541 W/kg
SAR(1 g) = 0.423 mW/g; SAR(10 g) = 0.305 mW/g
Maximum value of SAR (measured) = 0.449 mW/g

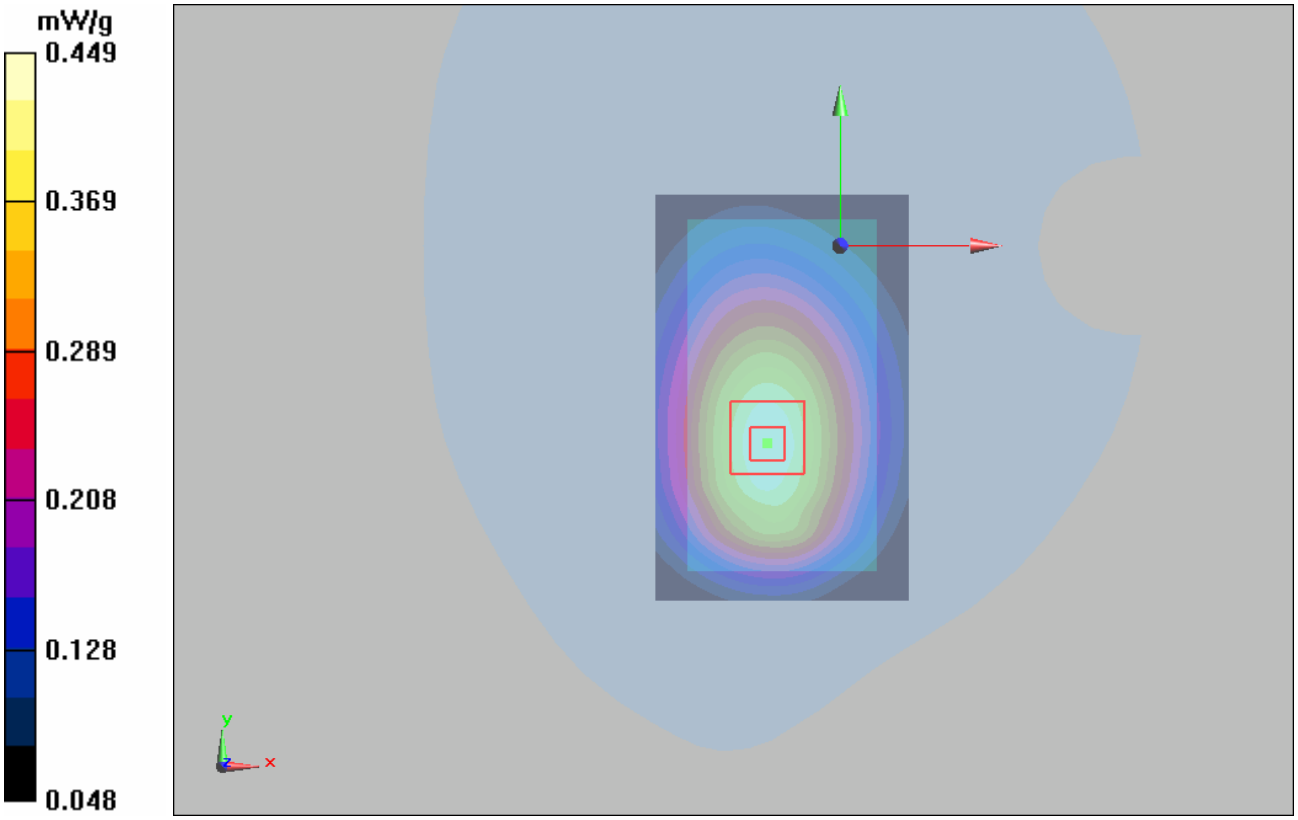


Figure 52 Body with Earphone, Towards Ground, WCDMA Band V Channel 4233

WCDMA Band V HSDPA Towards Ground High

Date/Time: 6/26/2010 9:09:07 AM
Communication System: WCDMA Band V+HSDPA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1.02 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V5.0 Build 120; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.516 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.80 V/m; Power Drift = 0.179 dB
Peak SAR (extrapolated) = 0.652 W/kg
SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.348 mW/g
Maximum value of SAR (measured) = 0.511 mW/g

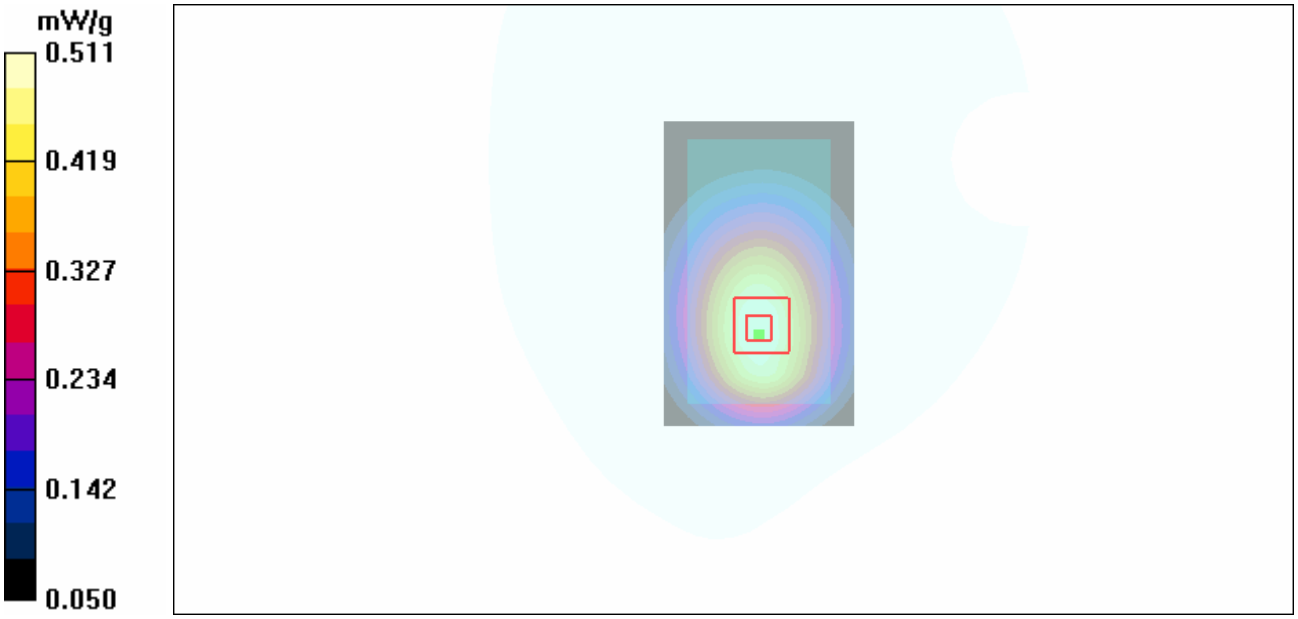


Figure 53 Body, Towards Ground, WCDMA Band V HSDPA Channel 4233

WCDMA Band V HSUPA Towards Ground High

Date/Time: 6/26/2010 10:00:14 AM
Communication System: WCDMA Band V+HSUPA; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1.02 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3677; ConvF(9.11, 9.11, 9.11); Calibrated: 9/23/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V5.0 Build 120; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.412 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.98 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.521 W/kg
SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.274 mW/g
Maximum value of SAR (measured) = 0.406 mW/g

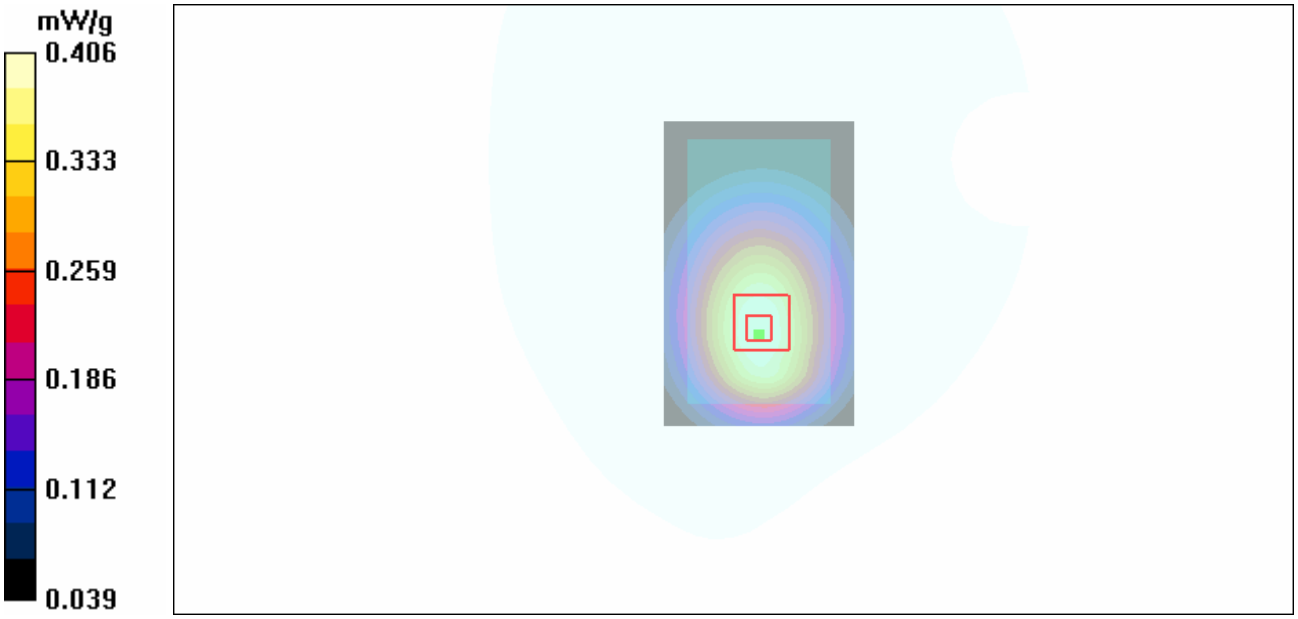


Figure 54 Body, Towards Ground, WCDMA Band V HSUPA Channel 4233

802.11g Left Cheek Middle

Date/Time: 5/26/2010 9:13:16 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.236 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12 V/m; Power Drift = 0.049 dB
Peak SAR (extrapolated) = 0.520 W/kg
SAR(1 g) = 0.240 mW/g; SAR(10 g) = 0.118 mW/g
Maximum value of SAR (measured) = 0.262 mW/g

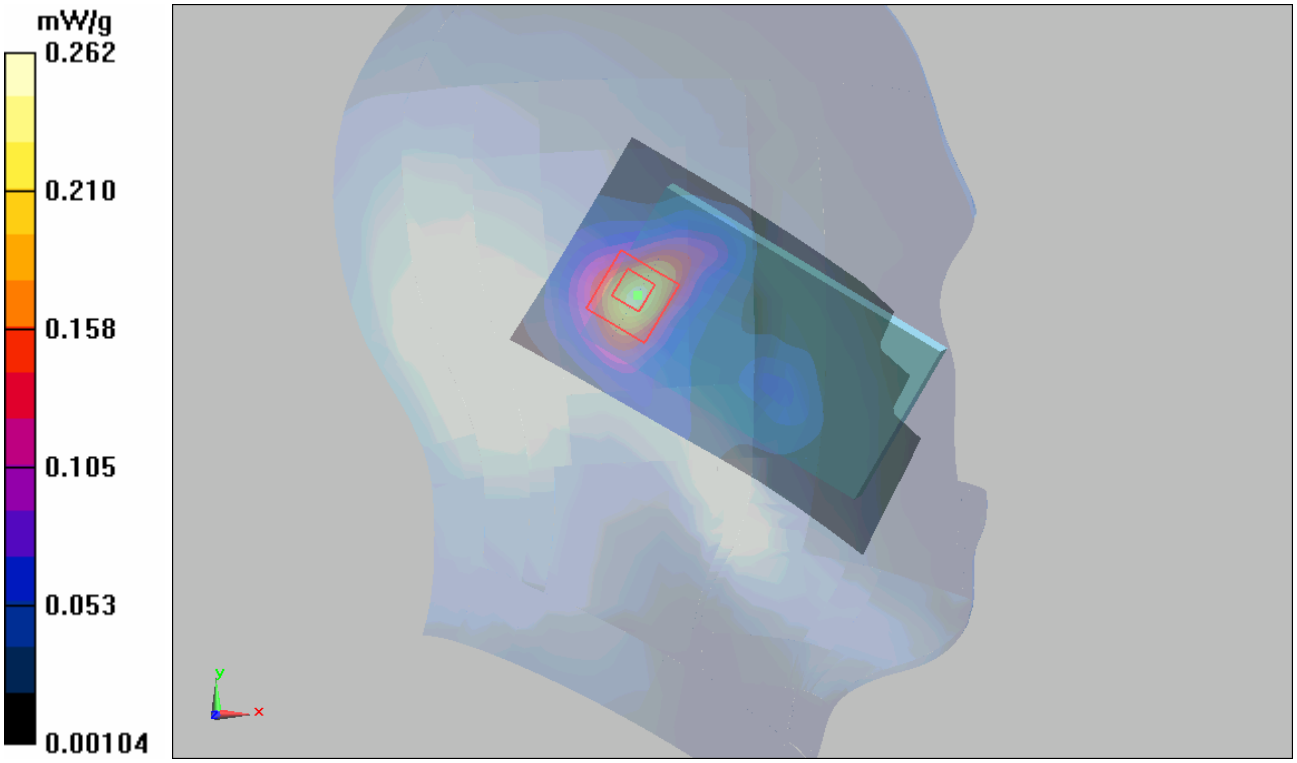


Figure 55 Left Hand Touch Cheek 802.11g Channel 6

802.11g Left Tilt High

Date/Time: 5/26/2010 11:21:00 PM
Communication System: 802.11g; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.282 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.1 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.632 W/kg
SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.133 mW/g
Maximum value of SAR (measured) = 0.303 mW/g

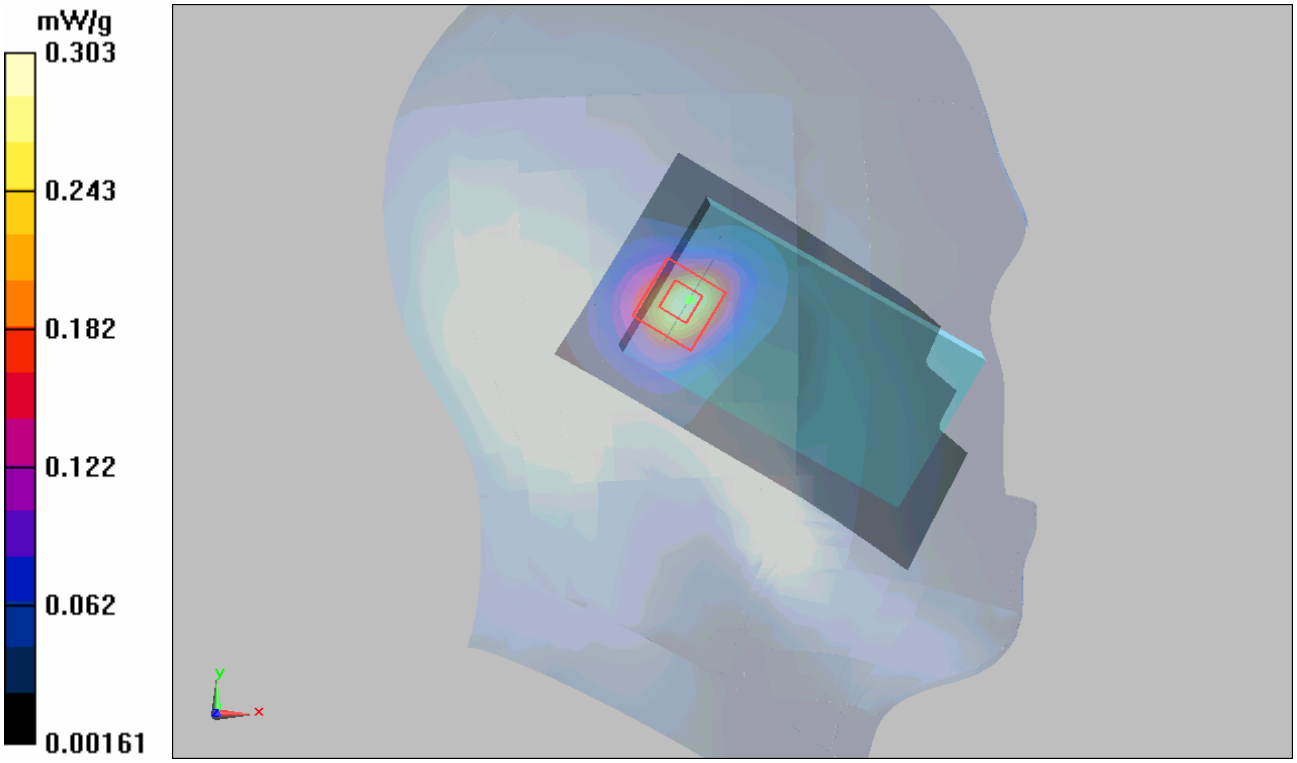


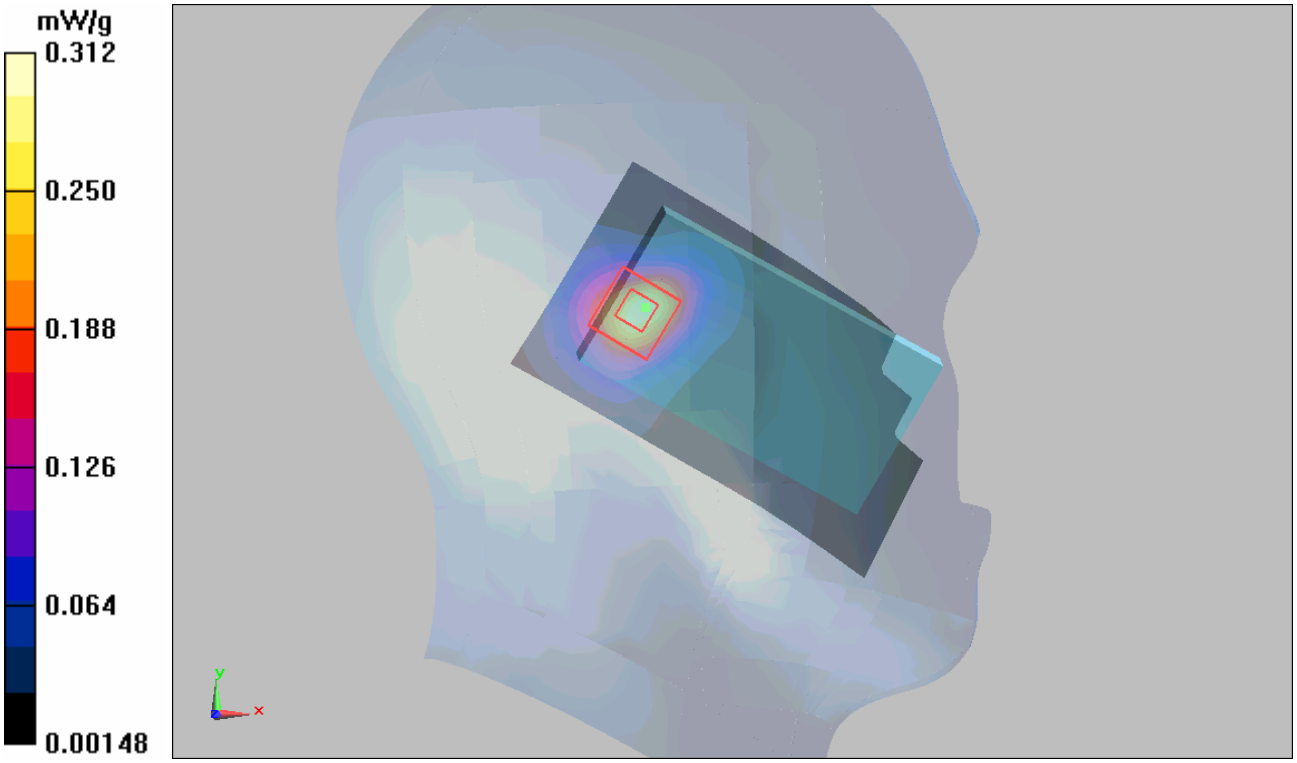
Figure 56 Left Hand Tilt 15° 802.11g Channel 11

802.11g Left Tilt Middle

Date/Time: 5/26/2010 9:34:07 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.292 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.648 W/kg
SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.137 mW/g
Maximum value of SAR (measured) = 0.312 mW/g



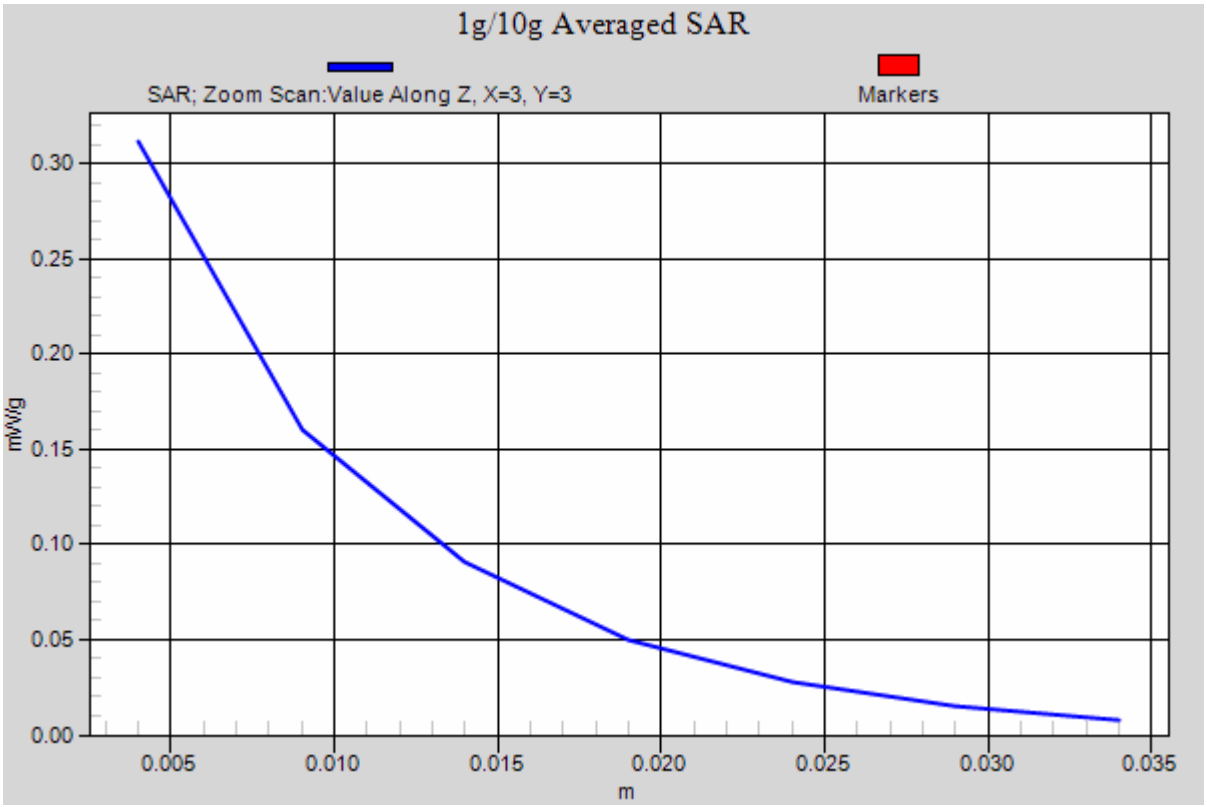


Figure 57 Left Hand Tilt 15° 802.11g Channel 6

802.11g Left Tilt Low

Date/Time: 5/26/2010 11:00:10 PM
Communication System: 802.11g; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.74 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.274 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13 V/m; Power Drift = -0.102 dB
Peak SAR (extrapolated) = 0.590 W/kg
SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.126 mW/g
Maximum value of SAR (measured) = 0.286 mW/g

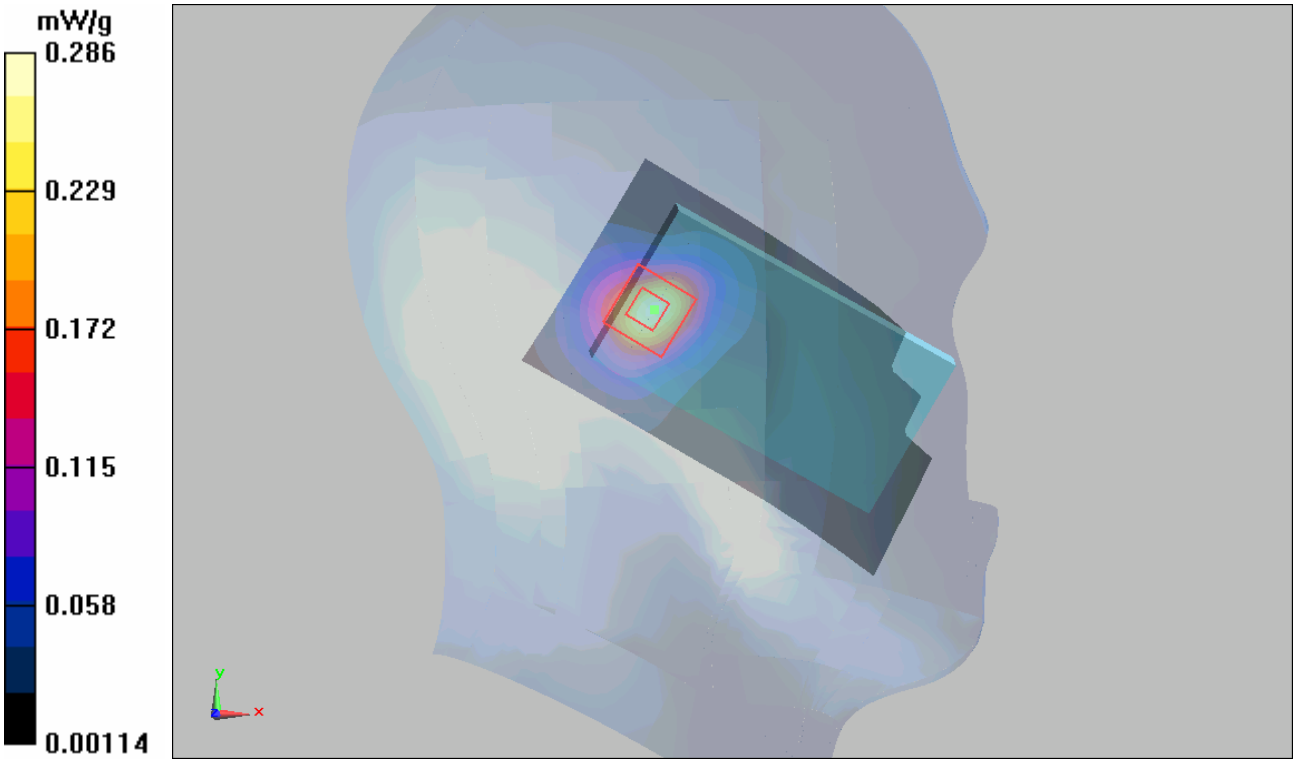


Figure 58 Left Hand Tilt 15° 802.11g Channel 1

802.11g Right Cheek Middle

Date/Time: 5/26/2010 10:16:41 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.192 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.102 dB
Peak SAR (extrapolated) = 0.486 W/kg
SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.092 mW/g
Maximum value of SAR (measured) = 0.190 mW/g

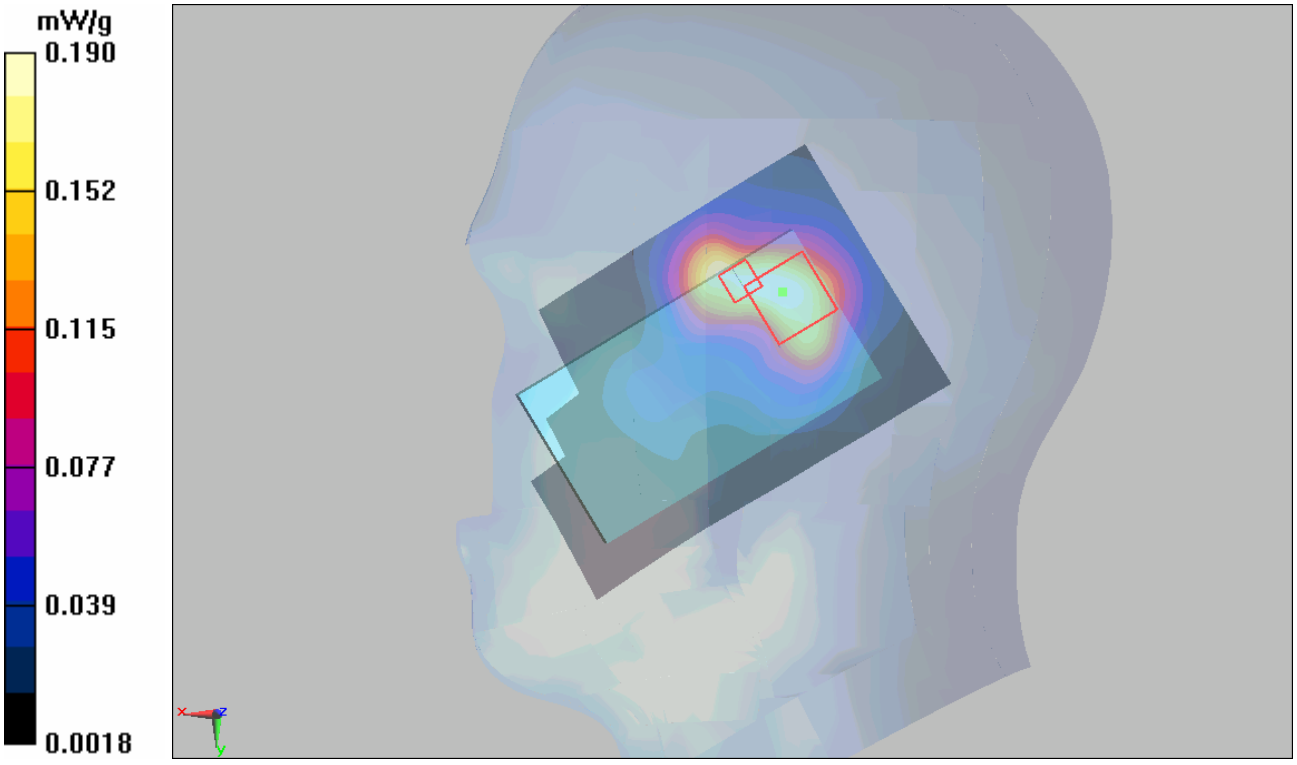


Figure 59 Right Hand Touch Cheek 802.11g Channel 6

802.11g Right Tilt Middle

Date/Time: 5/26/2010 10:37:27 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.241 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.2 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 0.494 W/kg
SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.113 mW/g
Maximum value of SAR (measured) = 0.245 mW/g

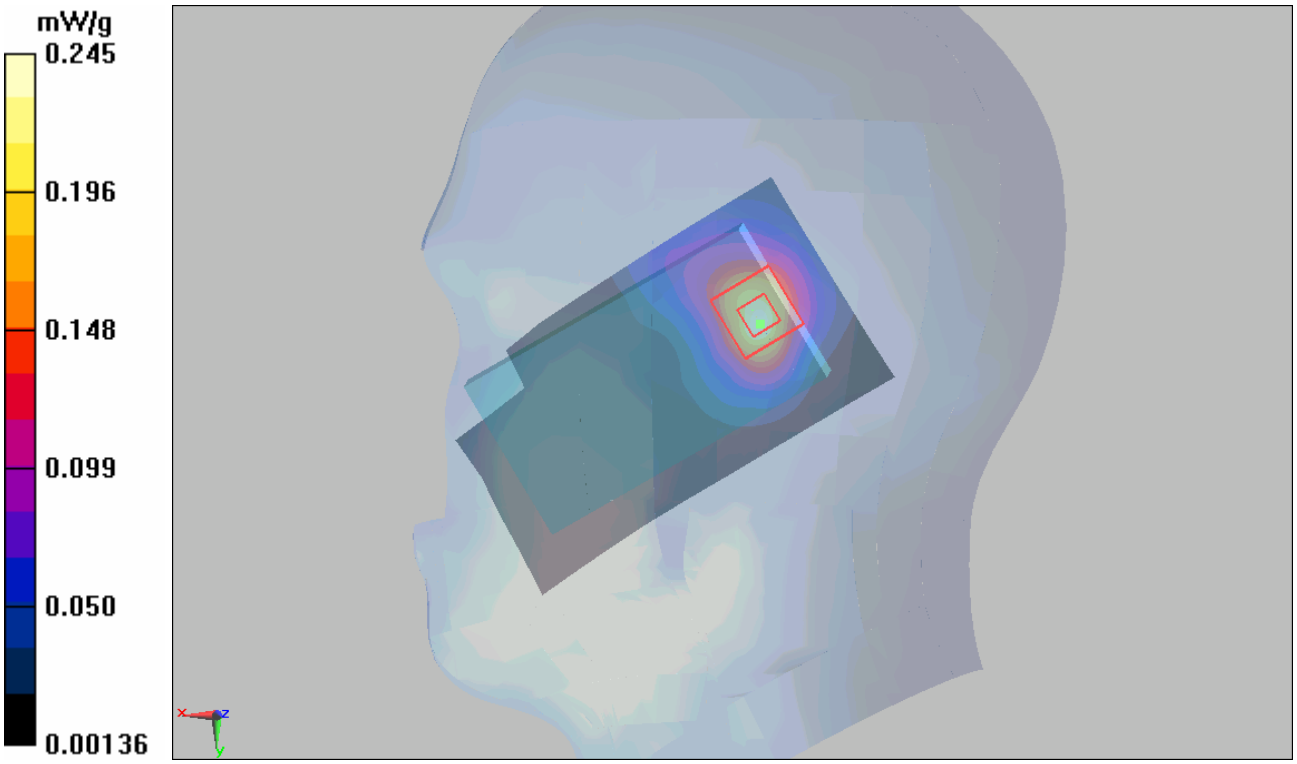


Figure 60 Right Hand Tilt 15° 802.11g Channel 6

802.11g Towards Ground High

Date/Time: 5/27/2010 3:38:42 PM
Communication System: 802.11g; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.94 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.100 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.95 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 0.198 W/kg
SAR(1 g) = 0.093 mW/g; SAR(10 g) = 0.055 mW/g
Maximum value of SAR (measured) = 0.098 mW/g

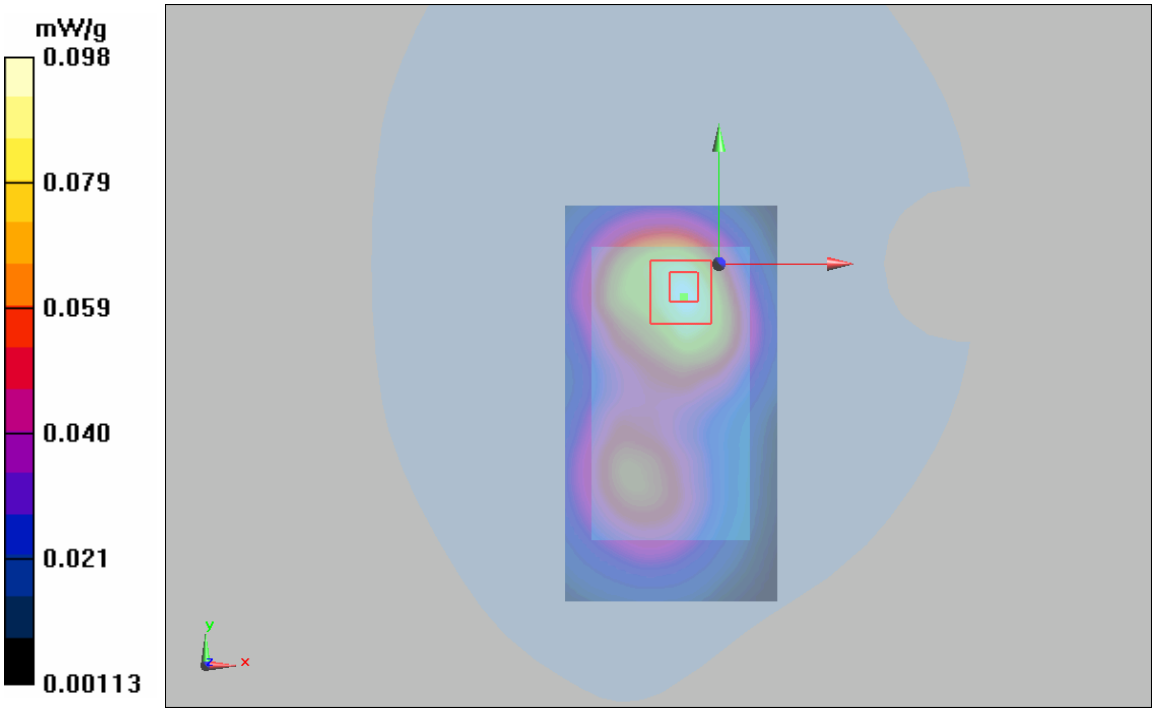


Figure 61 Body, Towards Ground, 802.11g Channel 11

802.11g Towards Ground Middle

Date/Time: 5/27/2010 2:57:00 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.099 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.98 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.054 mW/g
Maximum value of SAR (measured) = 0.097 mW/g

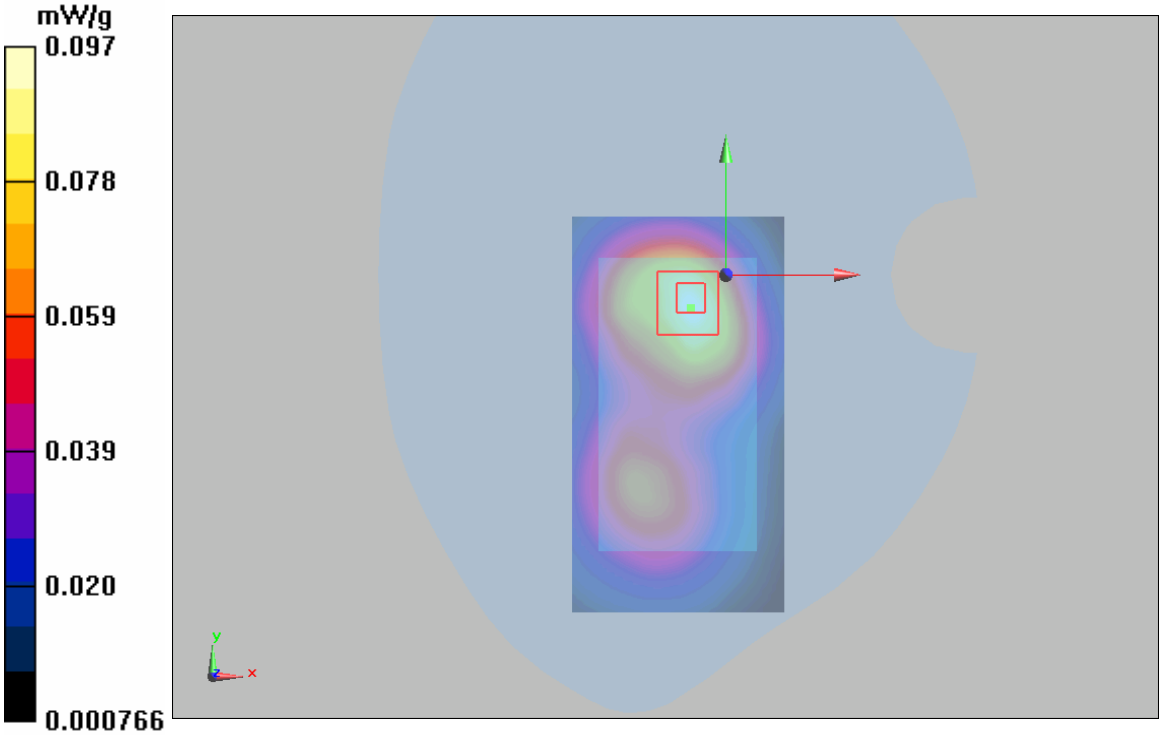


Figure 62 Body, Towards Ground, 802.11g Channel 6

802.11g Towards Ground Low

Date/Time: 5/27/2010 3:17:51 PM
Communication System: 802.11g; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.88 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.096 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.88 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 0.195 W/kg
SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.094 mW/g

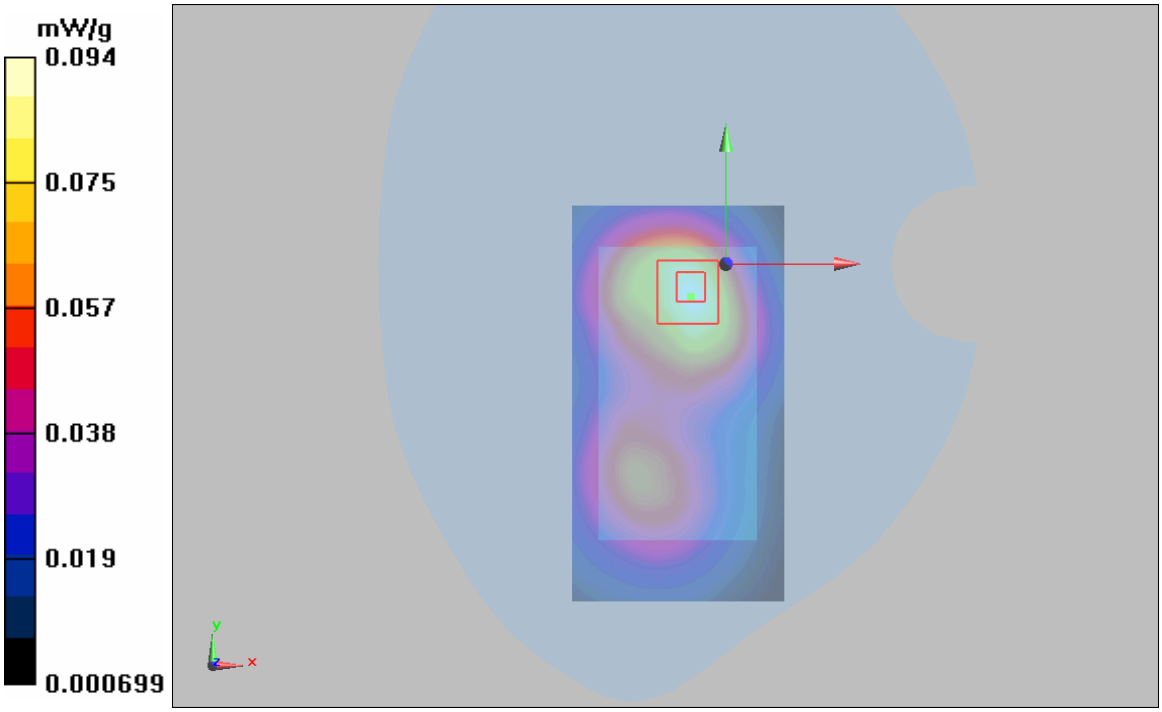


Figure 63 Body, Towards Ground, 802.11g Channel 1

802.11g Towards Phantom Middle

Date/Time: 5/27/2010 4:52:57 PM
Communication System: 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.091 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.59 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 0.172 W/kg
SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.043 mW/g
Maximum value of SAR (measured) = 0.082 mW/g

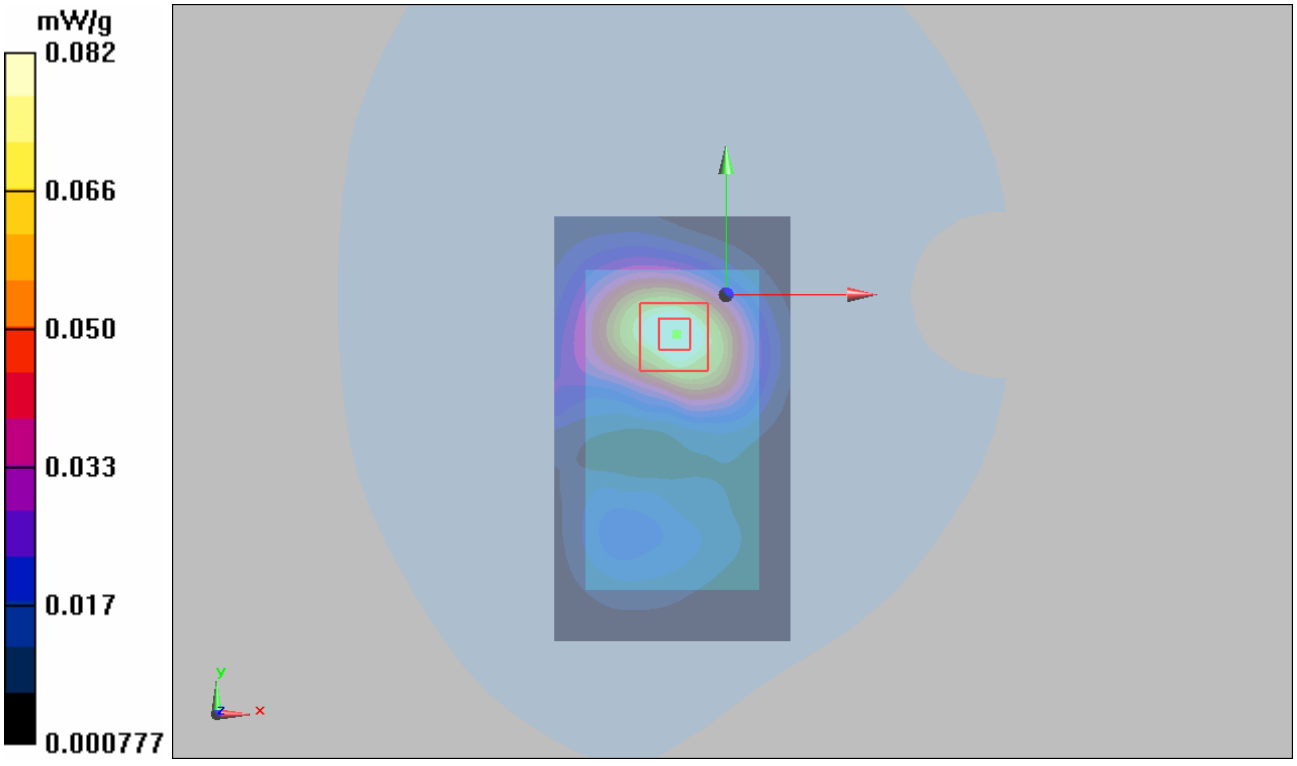


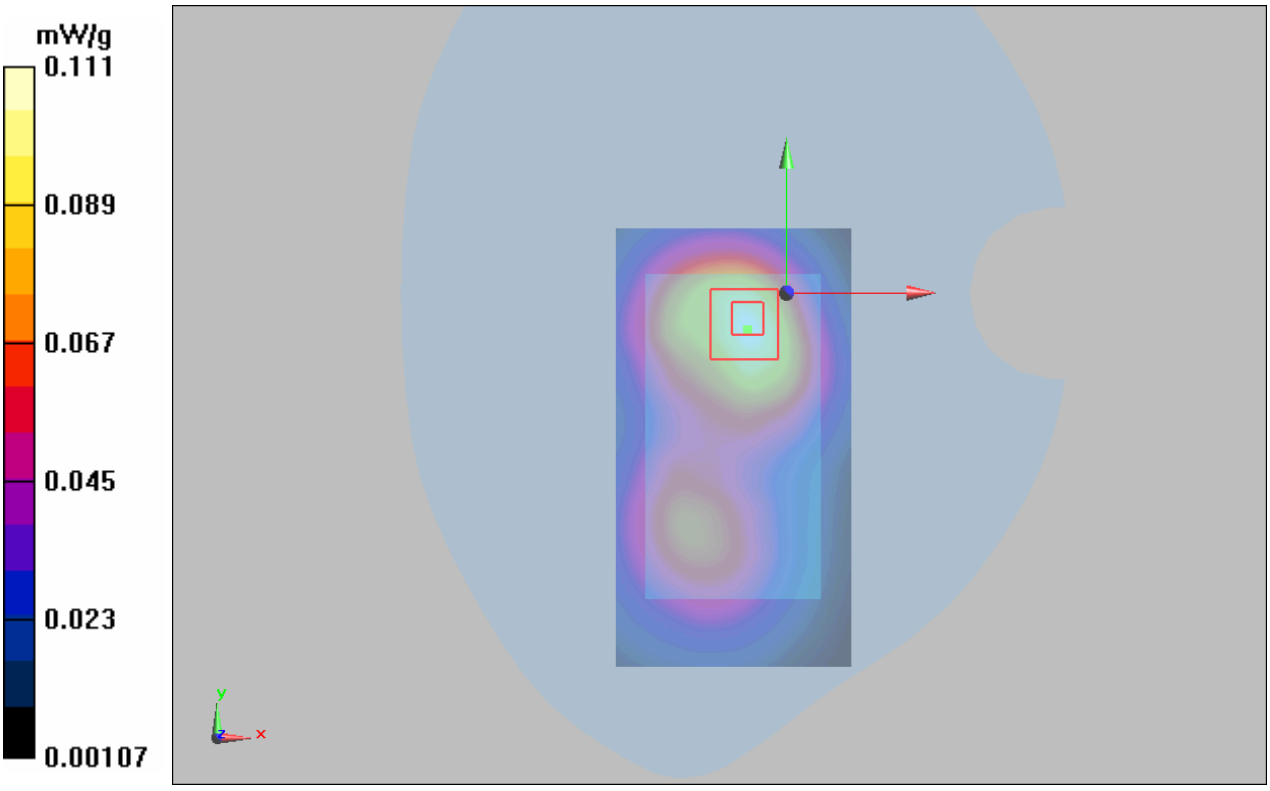
Figure 64 Body, Towards Phantom, 802.11g Channel 6

802.11g Towards Ground with Earphone High

Date/Time: 5/27/2010 6:14:37 PM
Communication System: 802.11g; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.94 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM2; Type: SAM;
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.111 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.4 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.111 mW/g



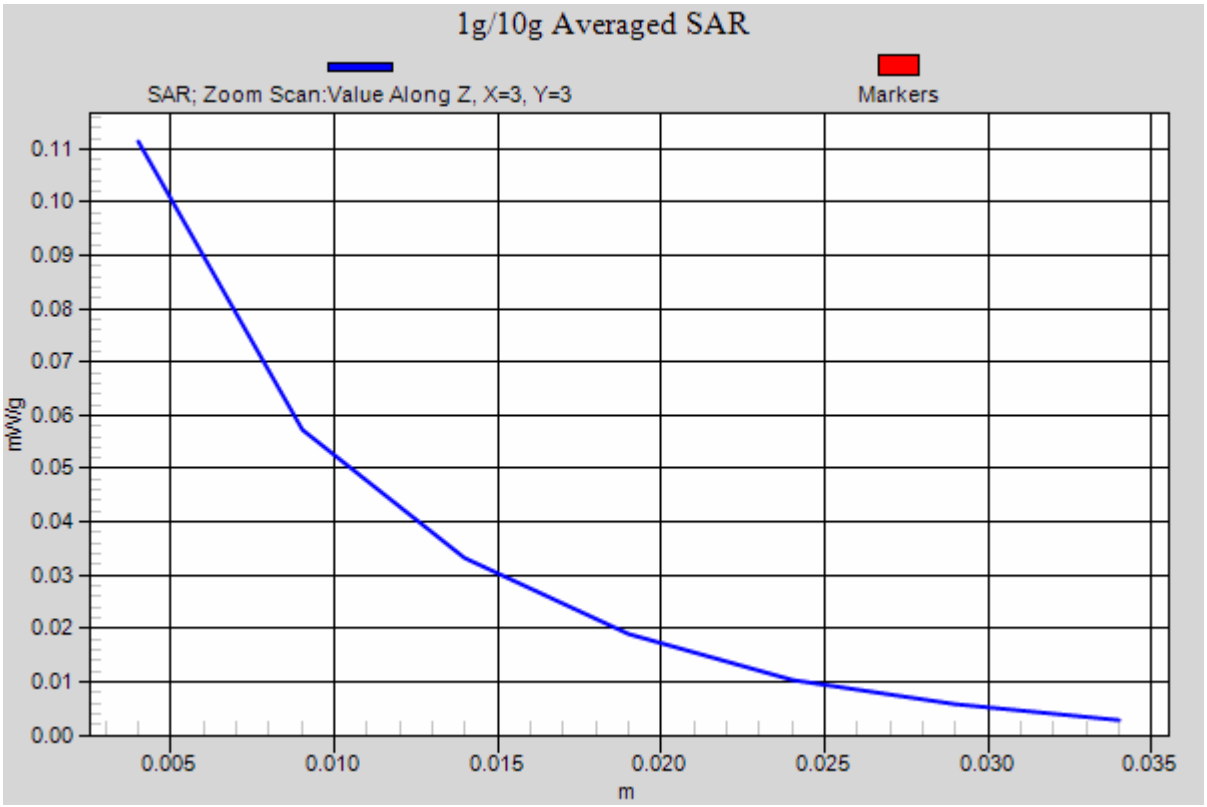


Figure 65 Body with Earphone, Towards Ground, 802.11g Channel 11

802.11b Left Cheek Middle

Date/Time: 5/26/2010 6:03:03 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.237 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12 V/m; Power Drift = -0.150 dB
Peak SAR (extrapolated) = 0.501 W/kg
SAR(1 g) = 0.235 mW/g; SAR(10 g) = 0.117 mW/g
Maximum value of SAR (measured) = 0.252 mW/g

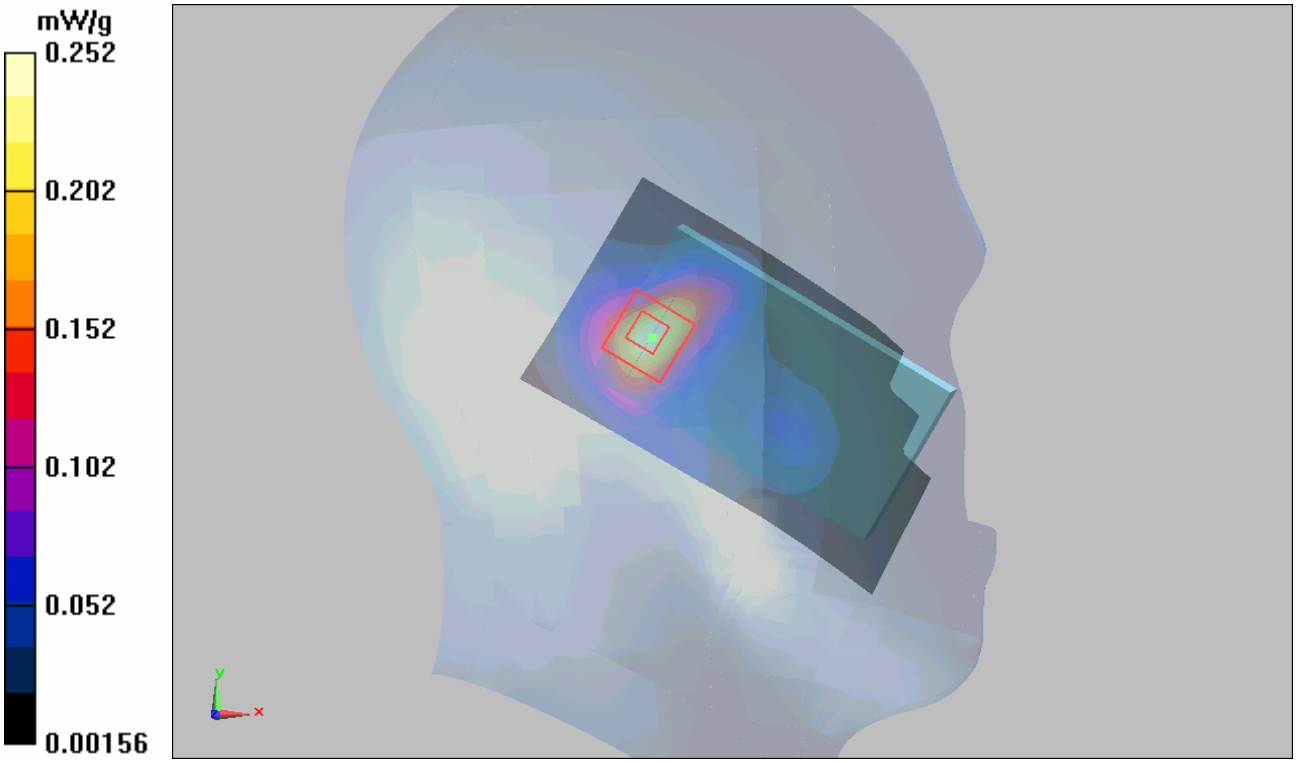


Figure 66 Left Hand Touch Cheek 802.11b Channel 6

802.11b Left Tilt High

Date/Time: 5/26/2010 8:25:32 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.8 mho/m; ε_r = 38.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.298 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.648 W/kg
SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.141 mW/g
Maximum value of SAR (measured) = 0.323 mW/g

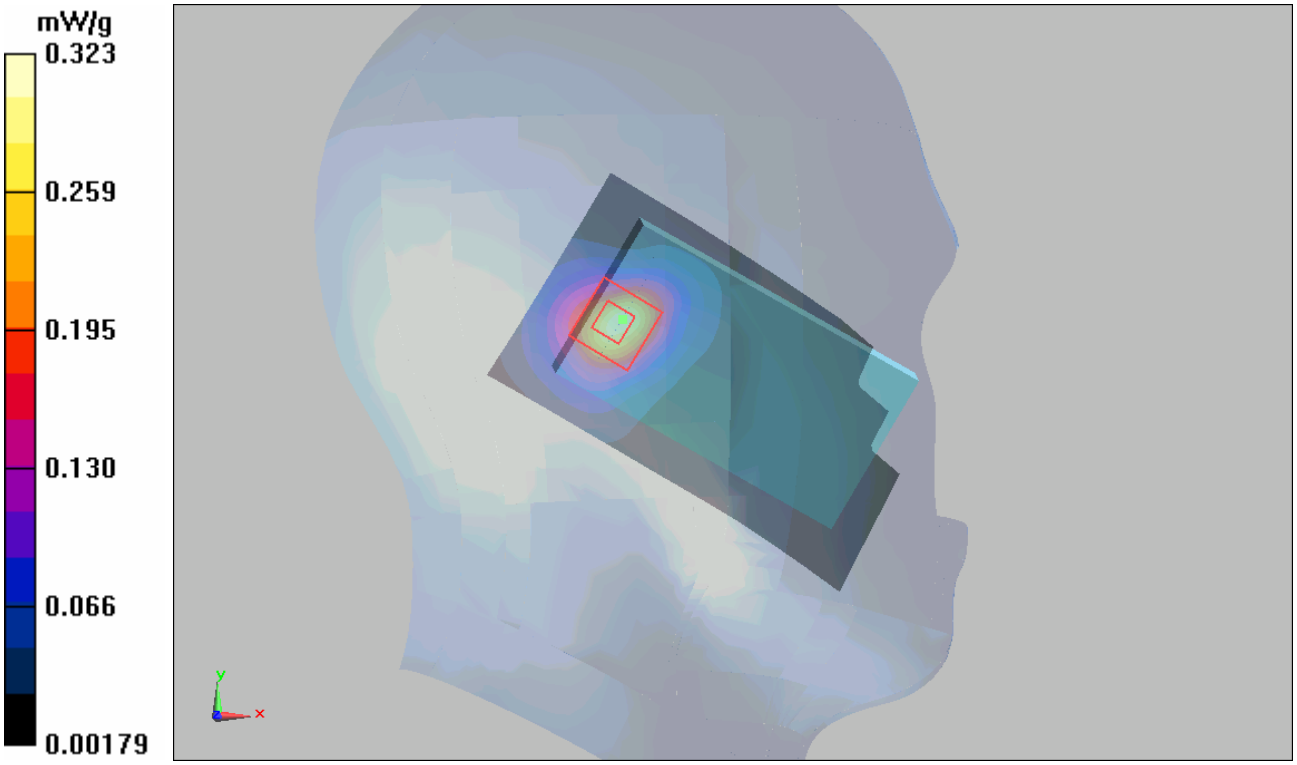


Figure 67 Left Hand Tilt 15° 802.11b Channel 11

802.11b Left Tilt Middle

Date/Time: 5/26/2010 6:30:13 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.282 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 0.619 W/kg
SAR(1 g) = 0.278 mW/g; SAR(10 g) = 0.134 mW/g
Maximum value of SAR (measured) = 0.302 mW/g

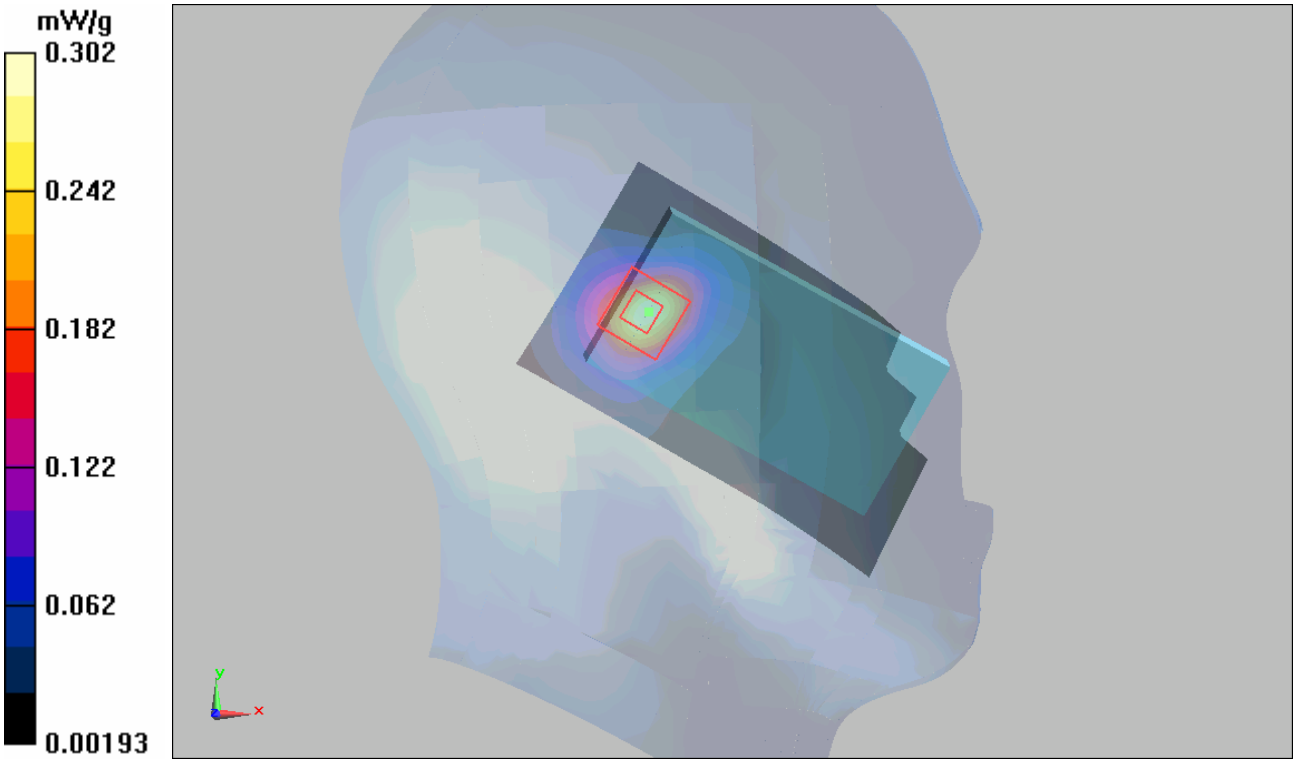


Figure 68 Left Hand Tilt 15° 802.11b Channel 6

802.11b Left Tilt Low

Date/Time: 5/26/2010 8:47:06 PM
Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.74 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.287 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.2 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.596 W/kg
SAR(1 g) = 0.274 mW/g; SAR(10 g) = 0.133 mW/g
Maximum value of SAR (measured) = 0.292 mW/g

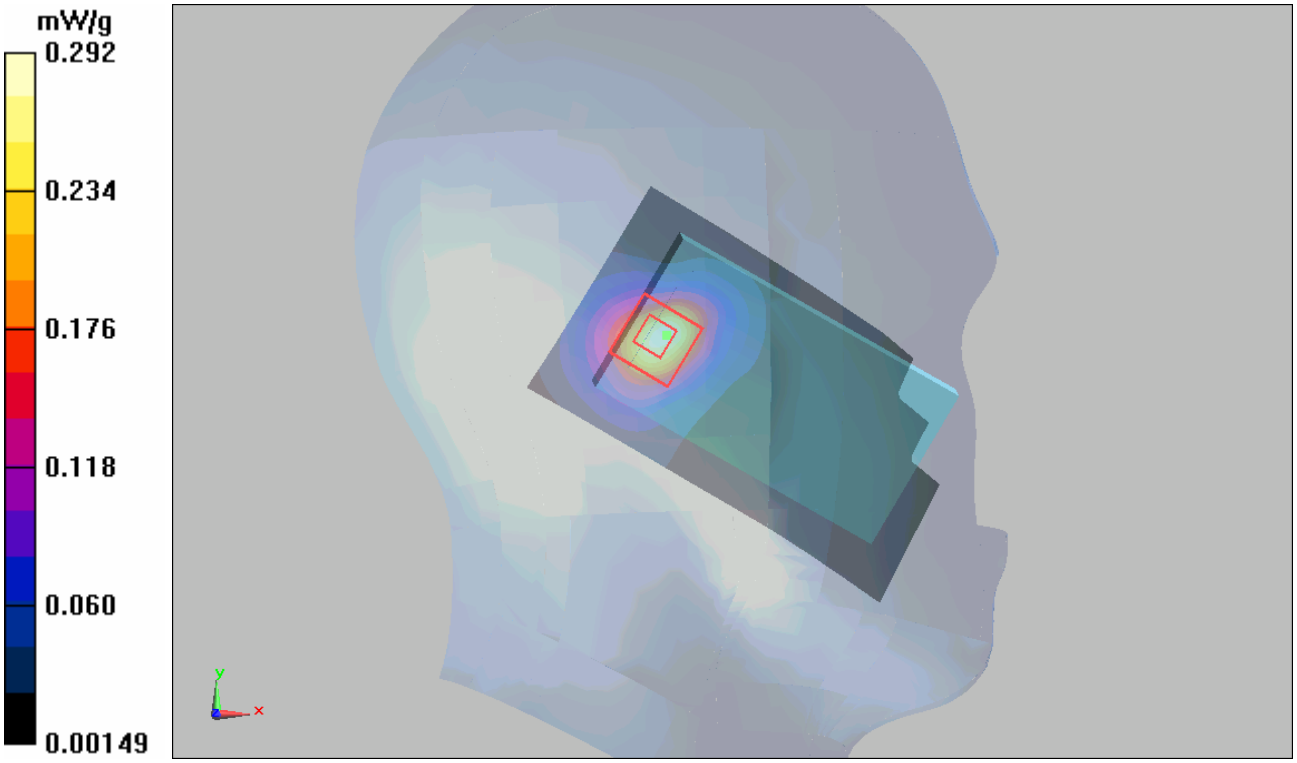


Figure 69 Left Hand Tilt 15° 802.11b Channel 1

802.11b Right Cheek Middle

Date/Time: 5/26/2010 8:02:09 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.205 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.533 W/kg
SAR(1 g) = 0.196 mW/g; SAR(10 g) = 0.100 mW/g
Maximum value of SAR (measured) = 0.212 mW/g

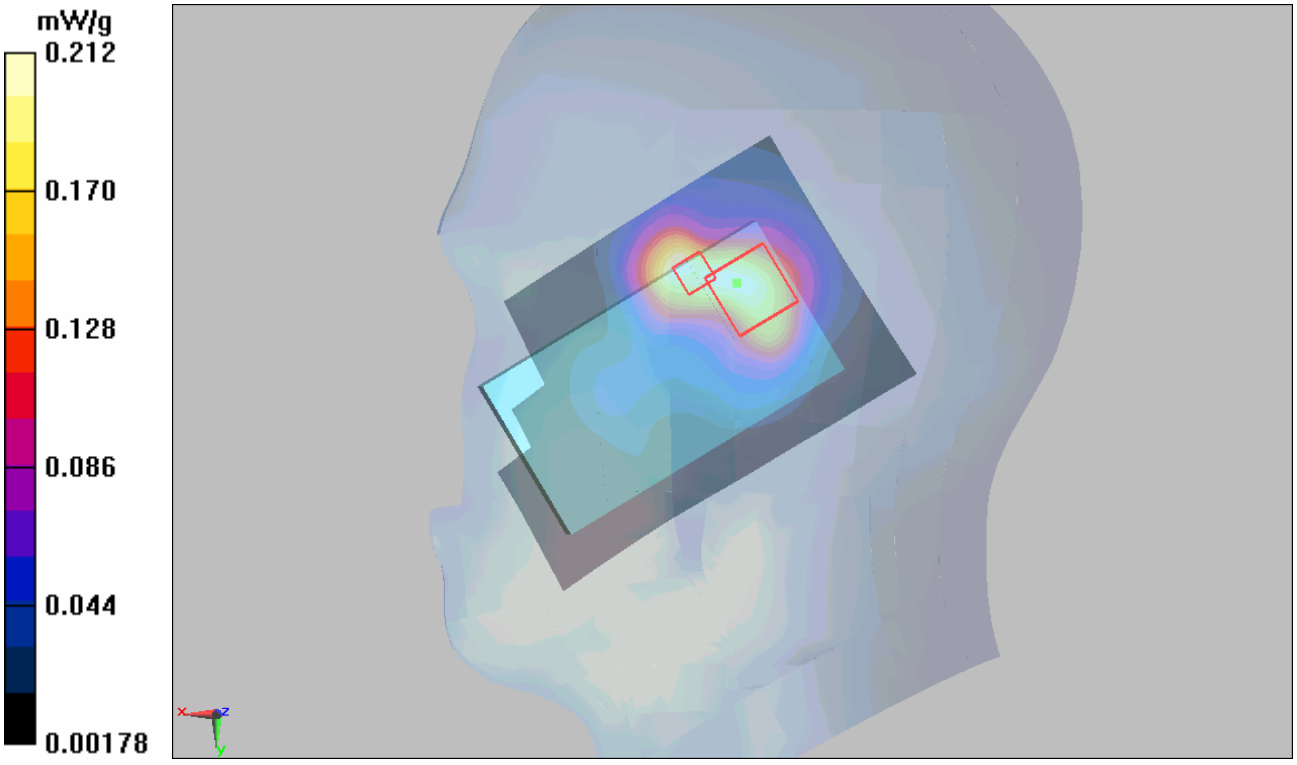


Figure 70 Right Hand Touch Cheek 802.11b Channel 6

802.11b Right Tilt Middle

Date/Time: 5/26/2010 7:28:30 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2437 MHz; σ = 1.77 mho/m; ε_r = 38.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.22, 7.22, 7.22); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.250 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.488 W/kg
SAR(1 g) = 0.232 mW/g; SAR(10 g) = 0.118 mW/g
Maximum value of SAR (measured) = 0.252 mW/g

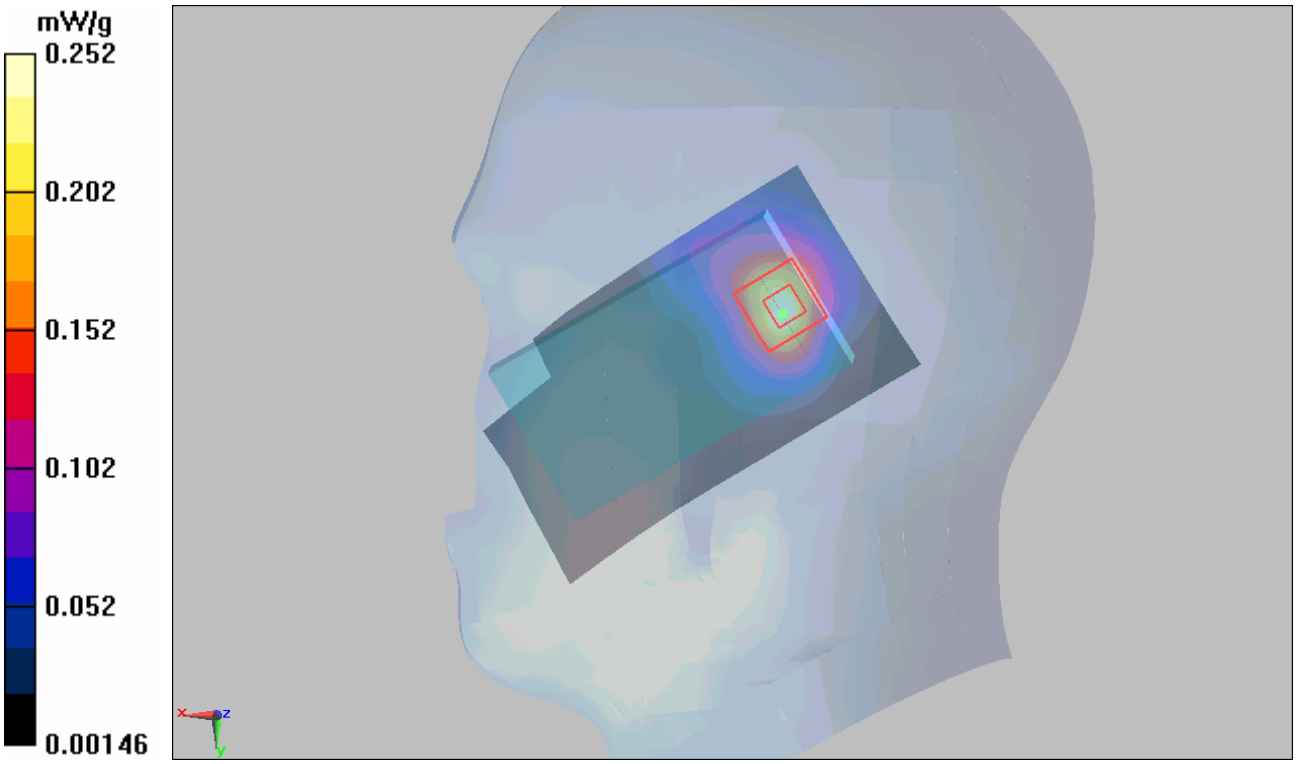


Figure 71 Right Hand Tilt 15° 802.11b Channel 6

802.11b Towards Ground High

Date/Time: 5/27/2010 11:55:11 AM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.94 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.112 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.23 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.223 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.061 mW/g
Maximum value of SAR (measured) = 0.109 mW/g

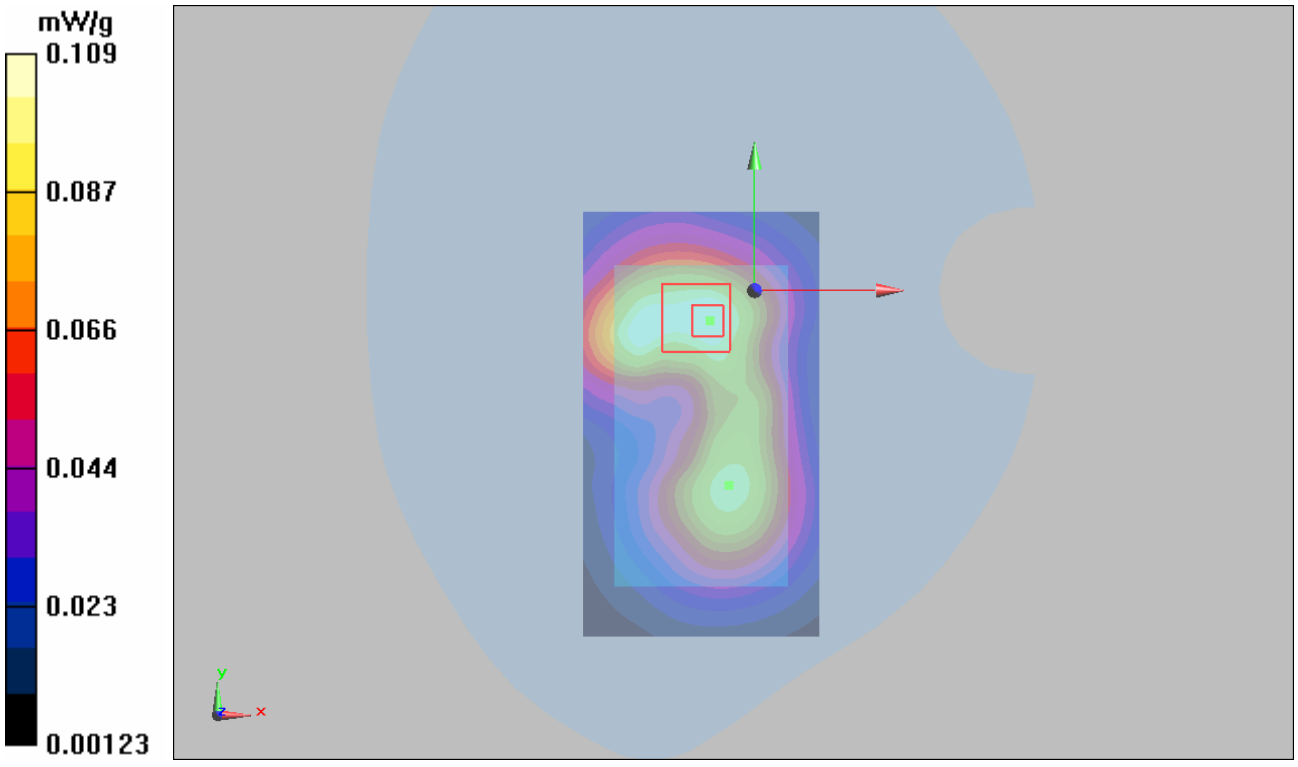


Figure 72 Body, Towards Ground, 802.11b Channel 11

802.11b Towards Ground Middle

Date/Time: 5/27/2010 11:13:42 AM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.113 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.34 V/m; Power Drift = -0.165 dB
Peak SAR (extrapolated) = 0.224 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.060 mW/g
Maximum value of SAR (measured) = 0.109 mW/g

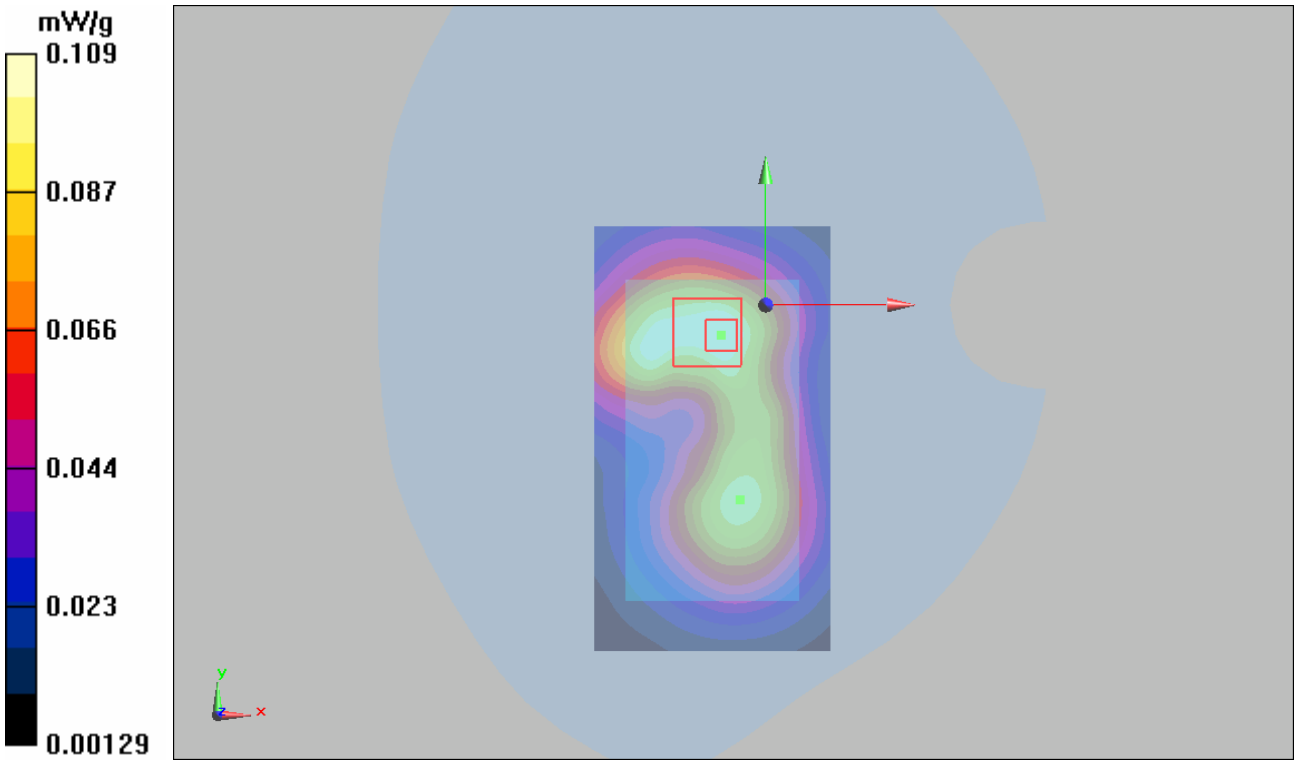


Figure 73 Body, Towards Ground, 802.11b Channel 6

802.11b Towards Ground Low

Date/Time: 5/27/2010 11:34:20 AM
Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2412 MHz; σ = 1.88 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.106 mW/g

Towards Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.14 V/m; Power Drift = 0.004 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.058 mW/g
Maximum value of SAR (measured) = 0.106 mW/g

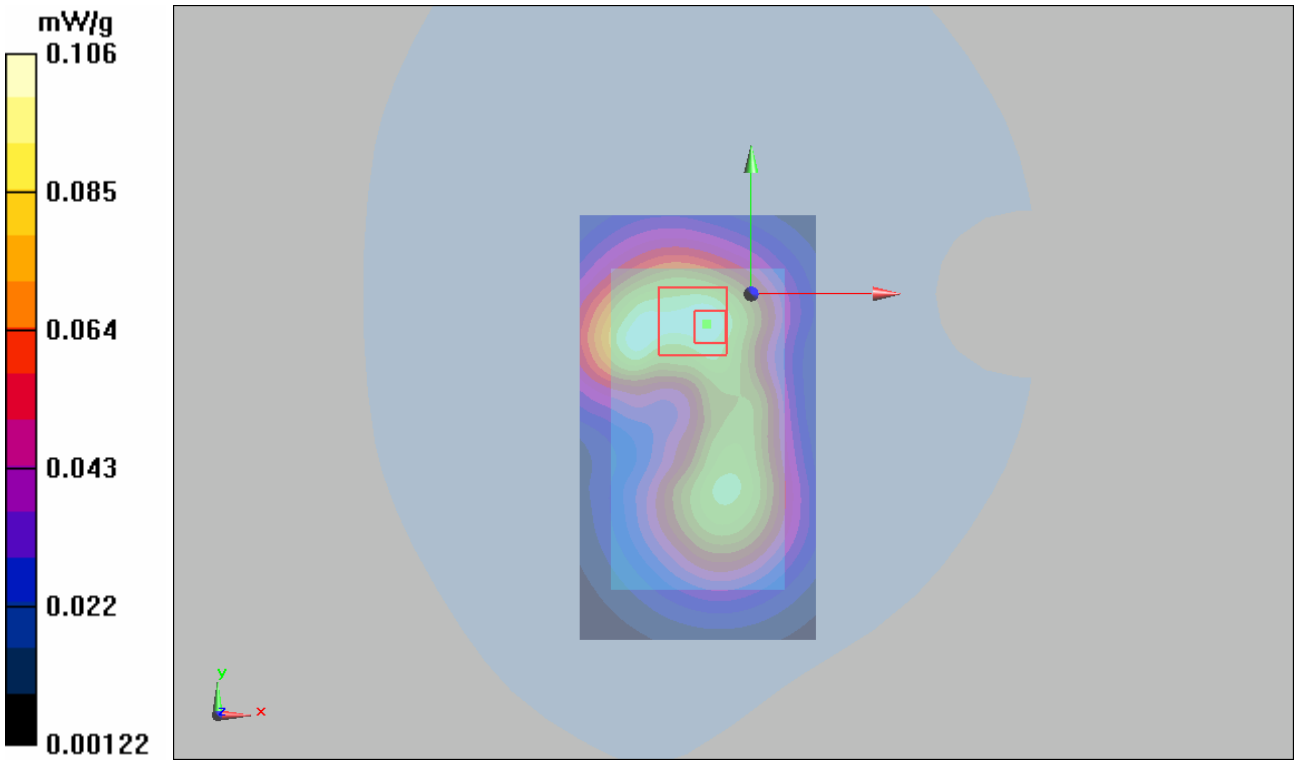


Figure 74 Body, Towards Ground, 802.11b Channel 1

802.11b Towards Phantom Middle

Date/Time: 5/27/2010 10:52:03 AM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.097 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.24 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 0.190 W/kg
SAR(1 g) = 0.087 mW/g; SAR(10 g) = 0.048 mW/g
Maximum value of SAR (measured) = 0.090 mW/g

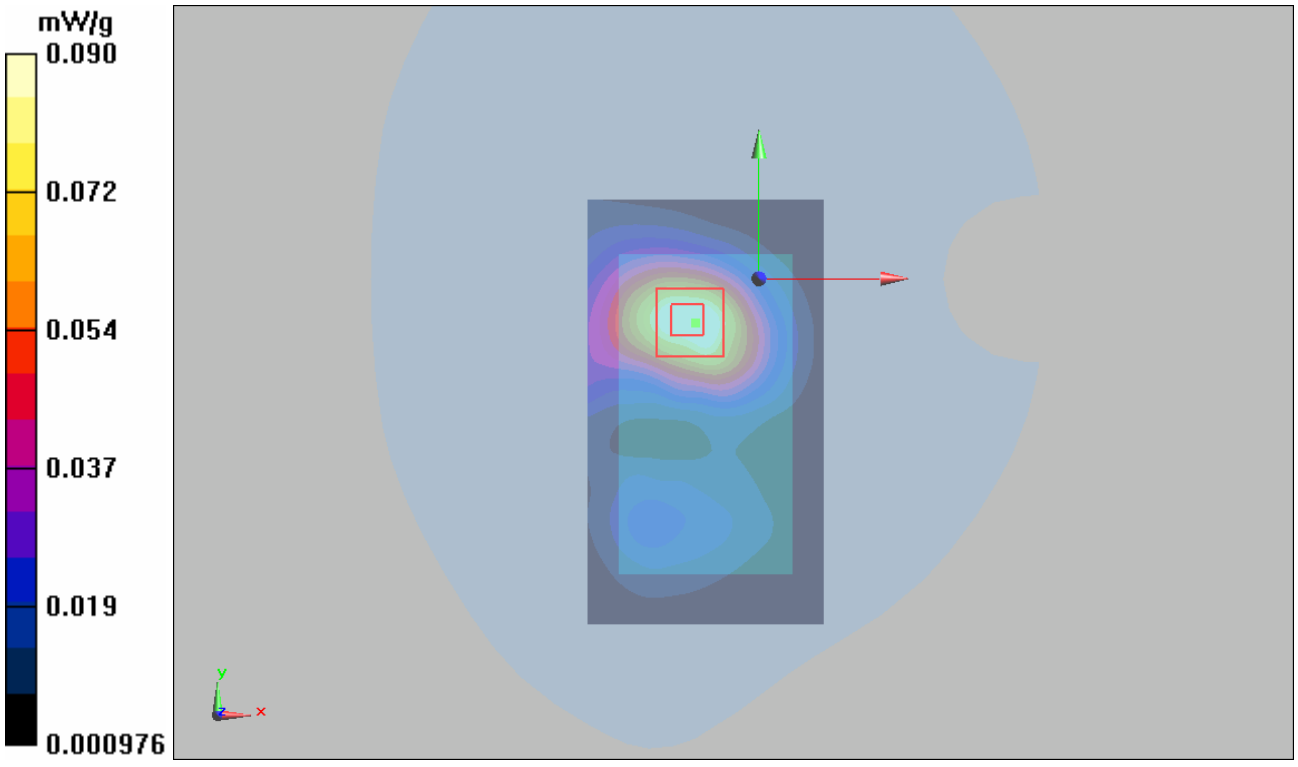


Figure 75 Body, Towards Phantom, 802.11b Channel 6

802.11b Towards Ground with Earphone Middle

Date/Time: 5/27/2010 12:44:38 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.126 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.86 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.070 mW/g
Maximum value of SAR (measured) = 0.128 mW/g

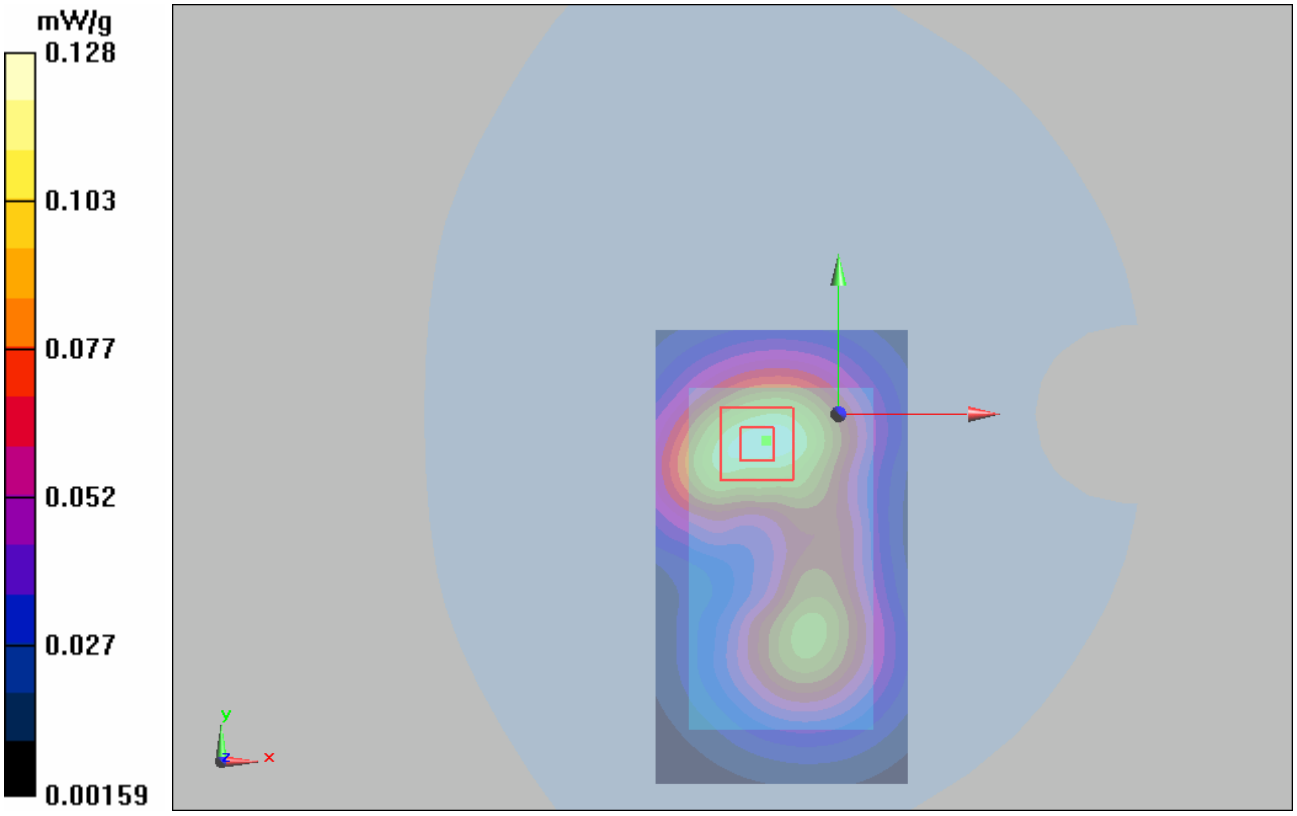


Figure 76 Body with Earphone, Towards Ground, 802.11b Channel 6

802.11b Towards Phantom with Earphone Middle

Date/Time: 5/27/2010 6:37:53 PM
Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.91 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.5℃
DASY4 Configuration:
Probe: EX3DV4 - SN3661; ConvF(7.34, 7.34, 7.34); Calibrated: 12/30/2009
Electronics: DAE4 Sn871; Calibrated: 11/11/2009
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.083 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.99 V/m; Power Drift = -0.086 dB
Peak SAR (extrapolated) = 0.170 W/kg
SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.043 mW/g
Maximum value of SAR (measured) = 0.079 mW/g

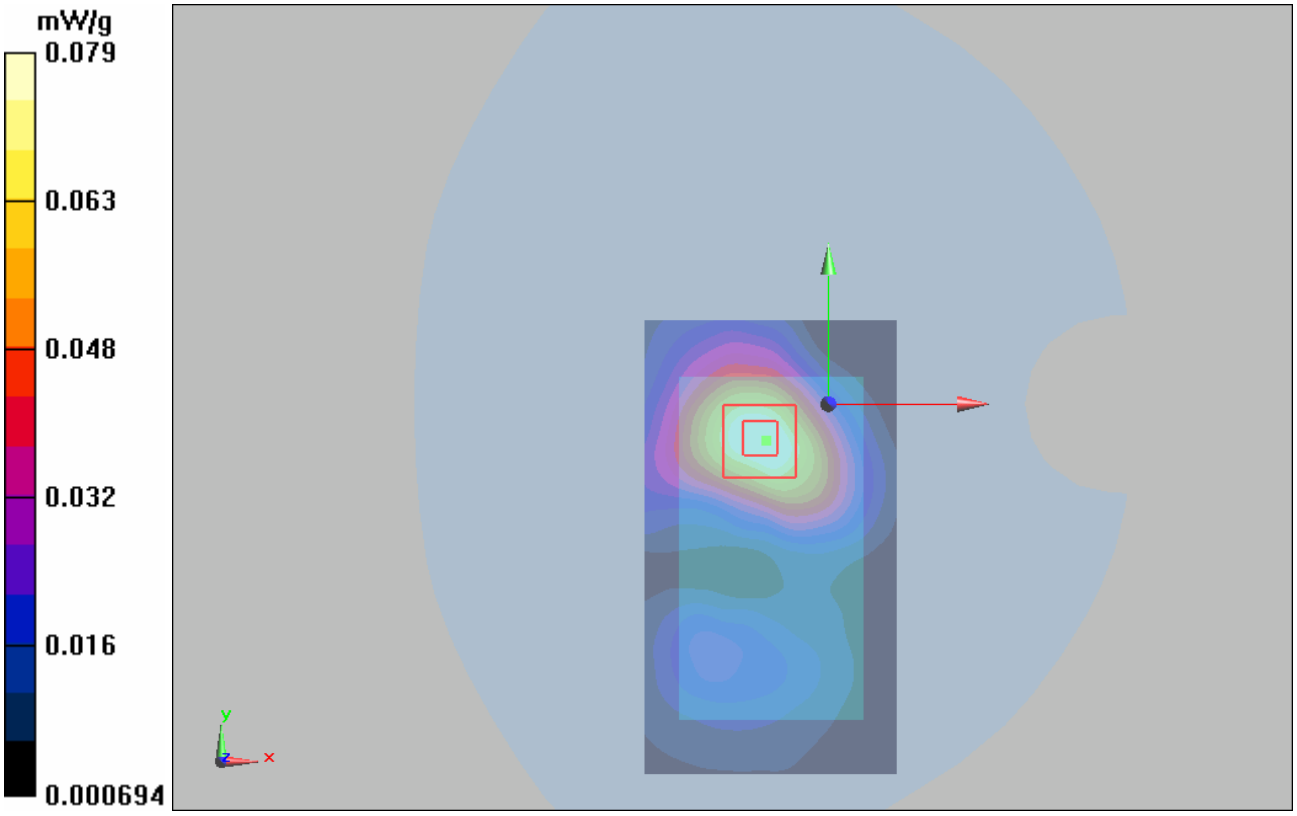


Figure 77 Body with Earphone, Towards Phantom, 802.11b Channel 6