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TESTING
No. L2264

OET 65

TEST REPORT

Product Name	WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone
Model	Movistar Prime
FCC ID	Q78-MOVISTARPRIME
Client	ZTE CORPORATION

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone	**Model**	Movistar Prime
FCC ID	Q78-MOVISTARPRIME		
Report No.	RZA1105-0678SAR01R1		
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 Radiofrequency 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 Radiofrequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency 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: May 26th, 2011		
Comment	The test result only responds to the measured sample.		

Approved by _Yang Weizhong_ **Revised by** _Ling Minbao_ **Performed by** _Liu Jun_

Yang Weizhong   Ling Minbao   Liu Jun

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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.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

1.2.   Testing Laboratory

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1.4. Manufacturer Information

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Address:	ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. China
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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:	000039485642710
Hardware Version:	w5uA
Software Version:	P729USV1.0.0B01
Antenna Type:	Internal Antenna
Device Operating Configurations:	
Supporting Mode(s):	GSM 850/GSM 1900/ WCDMA Band II/WCDMA Band V; (tested) WiFi; (tested) GSM 900/GSM 1800 /Bluetooth;
Test Modulation:	(GSM)GMSK; (WCDMA)QPSK
Device Class:	B
HSDPA UE Category:	8

GPRS Multislot Class(12):	Max Number of Timeslots in Uplink	4
	Max Number of Timeslots in Downlink	4
	Max Total Timeslot	5
EGPRS Multislot Class(12):	Max Number of Timeslots in Uplink	4
	Max Number of Timeslots in Downlink	4
	Max Total Timeslot	5

Operating Frequency Range(s):	Mode	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 II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	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 II: 3, tested with power control all up bits
	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 1900) (tested) 9262 - 9400 - 9538 (WCDMA Band II) (tested) 4132 - 4183 - 4233 (WCDMA Band V) (tested) 1 - 6 - 11 (802.11b) (tested)

Auxiliary Equipment Details

AE1:Battery

Model: Li3712T42P3h444865

Manufacturer: ZTE CORPORATION

S/N: 30031102260606808

Equipment Under Test (EUT) is a model of WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone. The device has an internal antenna for GSM/WCDMA Tx/Rx, and the other is BT/WiFi antenna that can be used for Tx/Rx. The detail about Mobile phone and Lithium Battery is in chapter 1.5 in this report. SAR is tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band V and WiFi in this report.

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 Mode

Head Configuration

Mode	Channel	Position	SAR$_{1g}$ (W/kg)
GSM 850	High/251	Left, Cheek	**0.535**
GSM 1900	High/810	Left, Cheek	**0.737**
WCDMA Band II	Middle/9400	Left, Cheek	**0.781**
WCDMA Band V	High/4233	Left, Cheek	**0.629**
WiFi	Middle/6	Right, Cheek	**0.113**

Body Worn Configuration

Mode	Channel	Separation distance	SAR$_{1g}$ (W/kg)
2 Slots GPRS 850	High/251	15mm	**0.742**
2 Slots GPRS 1900	High/810	15mm	**0.394**
WCDMA Band II	Middle/9400	15mm	**0.374**
WCDMA Band V	High/4233	15mm	**0.645**
WiFi	Low/1	15mm	**0.051**

Maximum Power

Band		Max Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	32.34	23.31
	GPRS(GMSK), 2-slots	30.27	24.25
	EGPRS(GMSK), 2-slots	30.27	24.25
GSM 1900	GSM	29.46	20.43
	GPRS(GMSK), 2-slots	27.43	21.41
	EGPRS(GMSK), 2-slots	27.38	21.36
WCDMA Band II		22.19	/
WCDMA Band V		23.23	/

Note: The detail Power refers to Table 10 (Power Measurement Results).

1.7. Test Date

The test is performed from May 5, 2011 to May 9, 2011.

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 Radiofrequency Channel Number (ARFCN) is allocated to 128, 190 and 251 in the case of GSM 850, to 512, 661 and 810 in the case of GSM 1900, to 9262, 9400 and 9538 in the case of WCDMA Band II, to 1312, 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 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. Since the GPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5; the EGPRS class is 12 for this EUT, it has at most 4 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5.

When 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. Results for all applicable physical channel configuration (DPCCH, $DPDCH_n$ and spreading codes) 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 3G device. 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. 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($\beta c, \beta d$), and HS-DPCCH power offset parameters($\triangle$ACK, $\triangle$NACK, $\triangle$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 $\Leftrightarrow$ A_{hs} = β_{hs}/β_c=30/15 $\Leftrightarrow$ 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=}$24/15) with β_{hs}=24/15*$\beta_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

Table 5: UE maximum output powers with HS-DPCCH (Release 5 Only)

Ratio of β_c to β_d for all values of β_{hs}	Power Class 3		Power Class 4	
	Power (dBm)	Tolerance (dB)	Power (dBm)	Tolerance (dB)
$1/15 \leq \beta_c/\beta_d \leq 12/15$	+24	+1/-3	+21	+2/-2
$13/15 \leq \beta_c/\beta_d \leq 15/8$	+23	+2/-3	+20	+3/-2
$15/7 \leq \beta_c/\beta_d \leq 15/0$	+22	+3/-3	+19	+4/-2

2.5. 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. Each channel should be tested at the lowest data rate.

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 6.

Table 6: "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"

2.6. Test Positions

2.6.1. Against Phantom Head

Measurements were made in "cheek" and "tilt" positions on both the left hand and right hand sides of the phantom.

The positions used in the measurements were according to IEEE 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".

2.6.2. Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations. Devices with a headset output should be tested with a headset connected to the device. The distance between the device and the phantom was kept 15mm.

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.
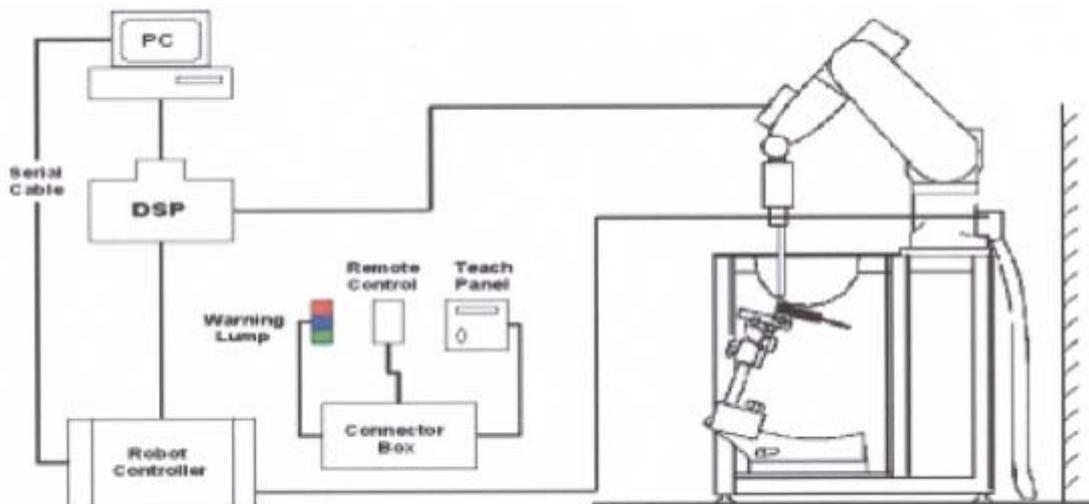

Figure 1 SAR Lab Test Measurement Set-up

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)

Figure 2.EX3DV4 E-field Probe

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 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 1000 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, a_{i0}, 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.

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

with **SAR**   = local specific absorption rate in mW/g

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

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

       ■ = 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.

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

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

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

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 13 and table 14.

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.
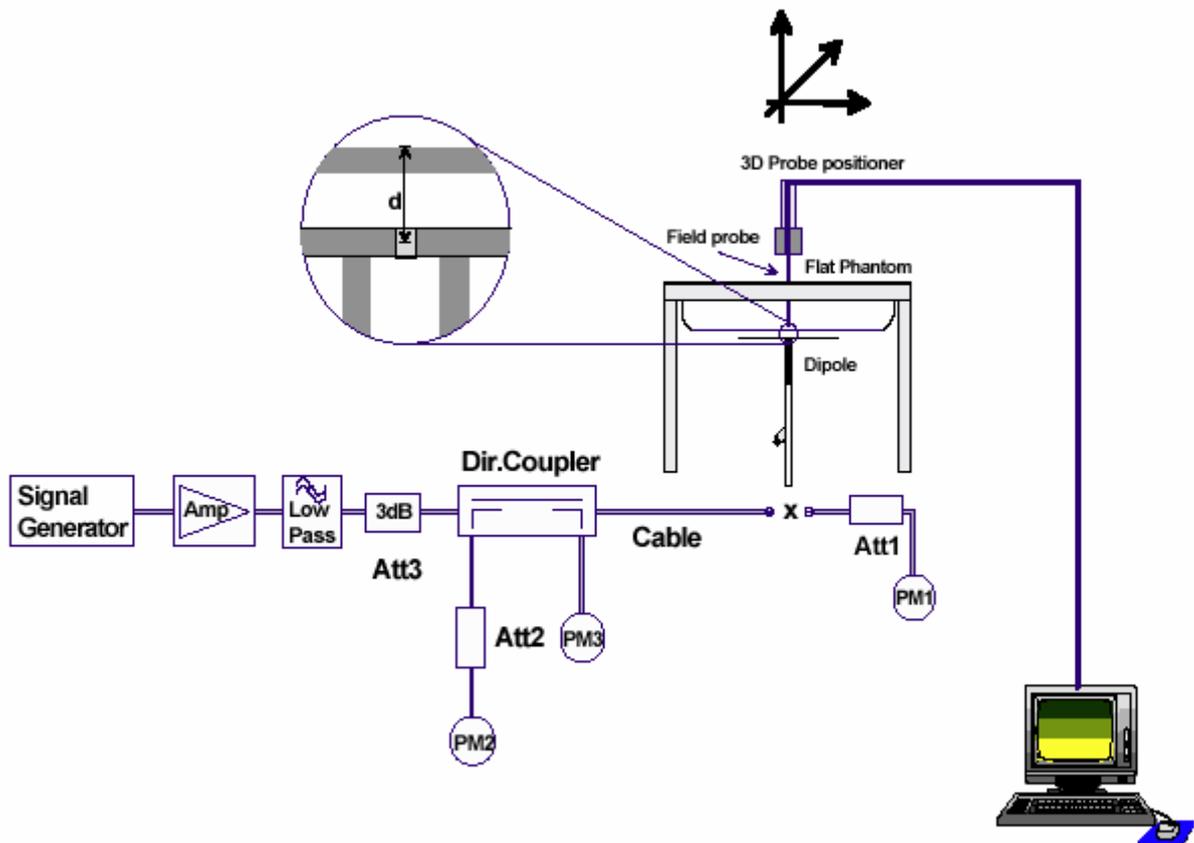
Figure 6 System Check Set-up

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 7 and table 8 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 7: 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 8: 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 9: 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 Radiofrequency 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 Radiofrequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency 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 10: Conducted Power Measurement Results

GSM 850		Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM	Result	32.32	32.34	32.27	-9.03dB	23.29	23.31	23.24
GPRS (GMSK)	1TXslot	32.27	32.31	32.22	-9.03dB	23.24	23.28	23.19
	2Txslots	30.26	30.27	30.20	-6.02dB	**24.24**	**24.25**	**24.18**
	3Txslots	28.33	28.36	28.29	-4.26dB	24.07	24.1	24.03
	4Txslots	27.24	27.26	27.19	-3.01dB	24.23	24.25	24.18
EGPRS (GMSK)	1TXslot	32.27	32.31	32.23	-9.03dB	23.24	23.28	23.2
	2Txslots	30.25	30.27	30.21	-6.02dB	**24.23**	**24.25**	**24.19**
	3Txslots	28.33	28.37	28.29	-4.26dB	24.07	24.11	24.03
	4Txslots	27.23	27.25	27.2	-3.01dB	24.22	24.24	24.19
GSM 1900		Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM	Result	29.34	29.46	29.32	-9.03dB	20.31	20.43	20.29
GPRS	1TXslot	29.29	29.46	29.28	-9.03dB	20.26	20.43	20.25
	2Txslots	27.23	27.43	27.27	-6.02dB	**21.21**	**21.41**	**21.25**
	3Txslots	25.35	25.57	25.41	-4.26dB	21.09	21.31	21.15
	4Txslots	24.2	24.4	24.25	-3.01dB	21.19	21.39	21.24
EGPRS (GMSK)	1TXslot	29.25	29.42	29.25	-9.03dB	20.22	20.39	20.22
	2Txslots	27.19	27.38	27.24	-6.02dB	**21.17**	**21.36**	**21.22**
	3Txslots	25.31	25.51	25.37	-4.26dB	21.05	21.25	21.11
	4Txslots	24.17	24.36	24.22	-3.01dB	21.16	21.35	21.21

Note:

1) Division Factors

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

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

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

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

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

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

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

4 TX- slots = 4 transmit time 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.

WCDMA Band II		Conducted Power(dBm)		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps	21.83	22.11	22.19
	64kbps	21.79	22.08	22.16
	144kbps	21.8	22.07	22.15
	384kbps	21.81	22.09	22.17
HSDPA	Sub-Test 1	21.91	22.21	22.19
	Sub-Test 2	21.68	22.07	22.1
	Sub-Test 3	21.36	21.61	21.72
	Sub-Test 4	21.31	21.5	21.6
WCDMA Band V		Conducted Power(dBm)		
		Channel 4132	Channel 4183	Channel 4233
RMC	12.2kbps	23.23	23.17	23.16
	64kbps	23.2	23.14	23.12
	144kbps	23.19	23.16	23.15
	384kbps	23.21	23.14	23.11
HSDPA	Sub-Test 1	22.73	22.69	22.75
	Sub-Test 2	22.79	22.82	22.89
	Sub-Test 3	22.58	22.52	22.54
	Sub-Test 4	22.47	22.35	22.41

7. Test Results

7.1. Dielectric Performance

Table 11: 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 2011-5-5	41.75	0.90	21.8
1900MHz (head)	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	/
	Measurement value 2011-5-6	39.98	1.41	21.9
2450MHz (head)	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	/
	Measurement value 2011-5-8	39.10	1.81	21.7

Table 12: 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 2011-5-5	56.25	0.99	21.9
1900MHz (body)	Target value ±5% window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	/
	Measurement value 2011-5-7	53.18	1.53	21.7
2450MHz (body)	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	/
	Measurement value 2011-5-9	51.19	1.94	21.8

7.2. System Check Results

Table 13: 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	1.56 1.40 — 1.72	2.39 2.15 — 2.63	41.2	0.89	/
	Measurement value 2011-5-5	1.6	2.42	41.75	0.90	21.8
1900MHz	Recommended result ±10% window	5.22 4.70 — 5.74	10 9.00 — 11.00	39.5	1.44	/
	Measurement value 2011-5-6	5.34	10.3	39.98	1.41	21.9
2450 MHz	Recommended result ±10% window	6.24 5.62 — 6.86	13.3 11.97—14.63	38.7	1.77	/
	Measurement value 2011-5-8	6.50	14.05	39.10	1.81	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 14: 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	1.63 1.47 — 1.79	2.49 2.24 — 2.74	54.6	0.98	/
	Measurement value 2011-5-5	1.65	2.52	56.25	0.99	21.9
1900 MHz	Recommended result ±10% window	5.52 4.97 — 6.07	10.3 9.27 — 11.33	53.5	1.54	/
	Measurement value 2011-5-7	5.34	10.18	53.18	1.53	21.7
2450 MHz	Recommended result ±10% window	5.97 5.37 — 6.57	13 11.7—14.3	51.8	2.01	/
	Measurement value 2011-5-9	6.46	14.00	51.19	1.94	21.8

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

| Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift	
		10 g Average	1 g Average	(dB)	
Test Position of Head					
Left hand, Touch Cheek	High/251	0.375	0.535	-0.003	Figure 13
	Middle/190	0.308	0.438	0.180	Figure 14
	Low/128	0.257	0.363	0.062	Figure 15
Left hand, Tilt 15 Degree	Middle/190	0.174	0.229	-0.045	Figure 16
Right hand, Touch Cheek	Middle/190	0.286	0.379	-0.060	Figure 17
Right hand, Tilt 15 Degree	Middle/190	0.172	0.228	-0.013	Figure 18
Test position of Body (Distance 15mm)					
Towards Ground (GSM)	Middle/190	0.398	0.547	-0.126	Figure 19
Towards Ground (2Txslots)	High/251	0.540	0.742	0.065	Figure 20
	Middle/190	0.467	0.639	-0.082	Figure 21
	Low/128	0.402	0.550	-0.057	Figure 22
Towards Ground (3Txslots)	Middle/190	0.442	0.607	-0.123	Figure 23
Towards Ground (4Txslots)	Middle/190	0.463	0.635	0.001	Figure 24
Towards Phantom (2Txslots)	Middle/190	0.330	0.449	0.037	Figure 25
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground (GSM)	High/251	0.309	0.434	0.094	Figure 26
Worst Case Position of Body with EGPRS (GMSK, Distance 15mm)					
Towards Ground (2Txslots)	High/251	0.531	0.722	-0.112	Figure 27

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 limit (< 0.8W/kg), testing at the high and low channels is optional.

4. When 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.

7.3.2. GSM 1900 (GPRS/EGPRS)

Table 16: SAR Values [GSM 1900(GPRS/EGPRS)]

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	$\pm$ 0.21 dB	
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/810	0.407	0.737	0.041	Figure 28
	Middle/661	0.324	0.587	0.049	Figure 29
	Low/512	0.260	0.461	-0.062	Figure 30
Left hand, Tilt 15 Degree	Middle/661	0.094	0.148	0.193	Figure 31
Right hand, Touch cheek	Middle/661	0.224	0.350	0.042	Figure 32
Right hand, Tilt 15 Degree	Middle/661	0.093	0.155	0.071	Figure 33
Test position of Body (Distance 15mm)					
Towards Ground (GSM)	Middle/661	0.150	0.251	0.095	Figure 34
Towards Ground (2Txslots)	High/810	0.234	0.394	0.018	Figure 35
	Middle/661	0.183	0.306	-0.007	Figure 36
	Low/512	0.146	0.244	0.024	Figure 37
Towards Ground (3Txslots)	Middle/661	0.175	0.293	0.004	Figure 38
Towards Ground (4Txslots)	Middle/661	0.176	0.295	-0.018	Figure 39
Towards Phantom (2Txslots)	Middle/661	0.142	0.243	-0.078	Figure 40
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground (GSM)	High/810	0.168	0.282	0.032	Figure 41
Worst Case Position of Body with EGPRS (GMSK, Distance 15mm)					
Towards Ground (2Txslots)	High/810	0.228	0.381	-0.146	Figure 42

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 limit (< 0.8W/kg), testing at the high and low channels is optional.

4. When 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.

7.3.3. WCDMA Band II (WCDMA/HSDPA)

Table 17: SAR Values [WCDMA Band II (WCDMA/HSDPA)]

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift	
		10 g Average	1 g Average	(dB)	
Test Position of Head					
Left Hand, Touch Cheek	High/9538	0.393	0.684	0.036	Figure 43
	Middle/9400	0.443	0.781	0.012	Figure 44
	Low/9262	0.439	0.778	0.062	Figure 45
Left Hand, Tilt 15 Degree	Middle/9400	0.139	0.222	-0.050	Figure 46
Right Hand, Touch Cheek	Middle/9400	0.393(max.cube)	0.614(max.cube)	-0.046	Figure 47
Right Hand, Tilt 15 Degree	Middle/9400	0.153	0.254	-0.191	Figure 48
Test Position of Body (Distance 15mm)					
Towards Ground	High/9538	0.164	0.276	-0.022	Figure 49
	Middle/9400	0.210	0.353	0.012	Figure 50
	Low/9262	0.183	0.307	0.021	Figure 51
Towards Phantom	Middle/9400	0.189	0.325	0.015	Figure 52
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	Middle/9400	0.214	0.360	0.063	Figure 53
Worst Case Position of Body with HSDPA (Distance 15mm)					
Towards Ground	Middle/9400	0.223	0.374	0.006	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 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.

7.3.4. WCDMA Band V (WCDMA/HSDPA)

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

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
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/4233	0.443	0.629	-0.020	Figure 55
	Middle/4183	0.357	0.504	-0.124	Figure 56
	Low/4132	0.382	0.542	-0.163	Figure 57
Left Hand, Tilt 15 Degree	Middle/4183	0.210	0.277	-0.083	Figure 58
Right Hand, Touch Cheek	Middle/4183	0.326	0.430	0.030	Figure 59
Right Hand, Tilt 15 Degree	Middle/4183	0.187	0.246	-0.012	Figure 60
Test Position of Body (Distance 15mm)					
Towards Ground	High/4233	0.471	0.645	-0.065	Figure 61
	Middle/4183	0.397	0.543	-0.154	Figure 62
	Low/4132	0.449	0.613	-0.030	Figure 63
Towards Phantom	Middle/4183	0.268	0.366	0.014	Figure 64
Worst Case Position of Body with Earphone (Distance 15mm)					
Towards Ground	High/4233	0.326	0.457	-0.148	Figure 65
Worst Case Position of Body with HSDPA (Distance 15mm)					
Towards Ground	High/4233	0.469	0.642	0.096	Figure 66

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 limit (< 0.8W/kg), testing at the high and low channels is optional.

7.3.5. Bluetooth/WiFi Function

The distance between BT/WIFI antenna and GSM/WCDMA antenna is ＞5cm. The location of the antennas inside mobile phone is shown in Annex I:
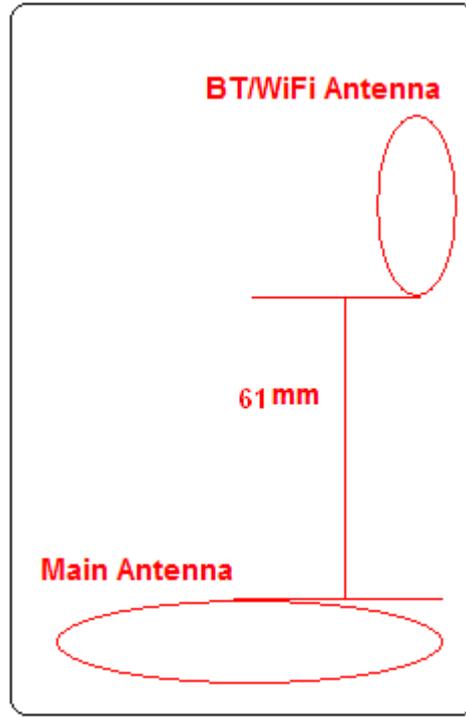
The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
GFSK(dBm)	-3.78	-3.36	-2.36
EDR2M-4_DQPSK(dBm)	-3.58	-3.14	-2.12
EDR3M-8DPSK(dBm)	-3.64	-3.49	-2.30

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	14.30
		2	14.25
		5.5	14.28
		11	14.26
	6	1	14.21
		2	14.2
		5.5	14.17
		11	14.13
	11	1	14.17
		2	14.15

11g			5.5	14.17
			11	14.16
	1		6	14.3
			9	14.22
			12	14.29
			18	14.26
			24	14.22
			36	14.29
			48	14.28
			54	14.28
	6		6	14.12
			9	14.08
			12	14.09
			18	14.11
			24	14.12
			36	14.11
			48	14.01
			54	14.08
	11		6	13.92
			9	13.95
			12	13.92
			18	13.91
			24	13.9
			36	13.91
			48	13.82
			54	13.79

Note: 1. KDB 248227-SAR is not required for 802.11g channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

Output Power Thresholds for Unlicensed Transmitters

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

Stand-alone SAR

According to the output power measurement result and the distance between BT/WIFI antenna and GSM/WCDMA antenna we can draw the conclusion that:

stand-alone SAR are not required for BT, because the output power of BT transmitter is ≤ $2P_{Ref}$=13.8dBm and its antenna is ＞5cm from GSM/WCDMA antenna.

stand-alone SAR are required for WIFI, because the output power of WIFI transmitter is ≥ $2P_{Ref}$=13.8dBm and its antenna is ＞5cm from other antenna.

Table 19: SAR Values (802.11b)

Limit of SAR (W/kg)		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift	
		10 g Average	1g Average	(dB)	
Test position of Head (802.11b)					
Left hand, Touch cheek	Middle/6	0.036	0.066	0.064	Figure 67
Left hand, Tilt 15 Degree	Middle/6	0.038	0.076	-0.007	Figure 68
Right hand, Touch cheek	High/11	0.047	0.100	0.073	Figure 69
	Middle/6	0.054	0.113	-0.124	Figure 70
	Low/1	0.044	0.091	0.065	Figure 71
Right hand, Tilt 15 Degree	Middle/6	0.031	0.059	-0.050	Figure 72
Test position of Body (802.11b Distance 15mm)					
Towards Ground	High/11	0.013	0.024	0.155	Figure 73
	Middle/6	0.017	0.032	-0.121	Figure 74
	Low/1	0.028	0.051	-0.128	Figure 75
Towards Phantom	Middle/6	0.015	0.027	-0.014	Figure 76
Worst case position of Body with Earphone (802.11b Distance 15mm)					
Towards Ground	Low/1	0.015	0.030	-0.040	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 limit (< 0.8W/kg), testing at the high and low channels is optional.

4. KDB 248227-SAR is not required for 802.11g channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

Simultaneous SAR

About GSM/WCDMA and BT Antenna, because GSM/WCDMA antenna is >5cm from BT Antenna, stand-alone SAR are not required for BT, so Simultaneous SAR are not required for GSM/WCDMA and BT Antenna.

About GSM/WCDMA and WIFI Antenna, because GSM/WCDMA antenna is >5cm from WIFI Antenna, $SAR_{MAX.GSM/WCDMA}$+ $SAR_{MAX.WIFI}$= 0.781 W/kg +0.100 W/kg =0.881 W/kg <1.6 W/kg, so Simultaneous SAR are not required for GSM/WCDMA and WIFI Antenna.

About BT and WiFi can't simultaneous transmit.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard uncertainty $u_i^{'}$ (%)	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	4.92	71
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	0.77	N	1	0.64	0.493	9
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	0.29	N	1	0.6	0.174	9
Combined standard uncertainty		$u_c' = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					11.36	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N		k=2	22.72	

Note: Per KDB 450824 D02 requirements for dipole calibration, TA has adopted two year calibration intervals, on annual basis; each measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole.

2. System validation with specific dipole is within 10% of calibrated value.

3. Return-loss is within 20% of calibrated measurement (test data on file in verification report).

4. Impedance is within 5 Ω of calibrated measurement (test data on file in verification report).

9. Main Test Instruments

Table 20: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 13, 2010	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 12, 2011	One year
04	Power sensor	Agilent N8481H	MY50350004	September 26, 2010	One year
05	Signal Generator	HP 8341B	2730A00804	September 13, 2010	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	MY48360988	December 3, 2010	One year
08	E-field Probe	EX3DV4	3677	November 24, 2010	One year
09	DAE	DAE4	871	November 18, 2010	One year
10	Validation Kit 835MHz	D835V2	4d092	January 14, 2010	Two years
11	Validation Kit 1900MHz	D1900V2	5d018	June 15, 2010	Two years
12	Validation Kit 2450MHz	D2450V2	712	February 19, 2010	Two years

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

ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout
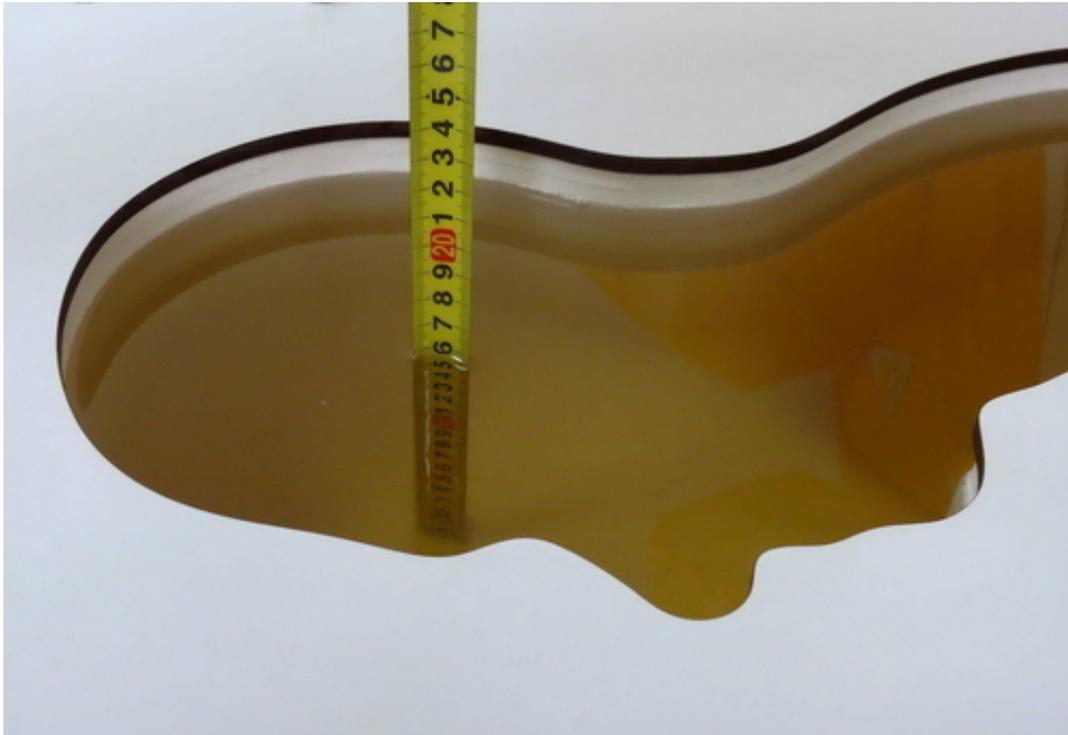
Picture 2: Liquid depth in the head Phantom (835MHz, 15.3cm depth)
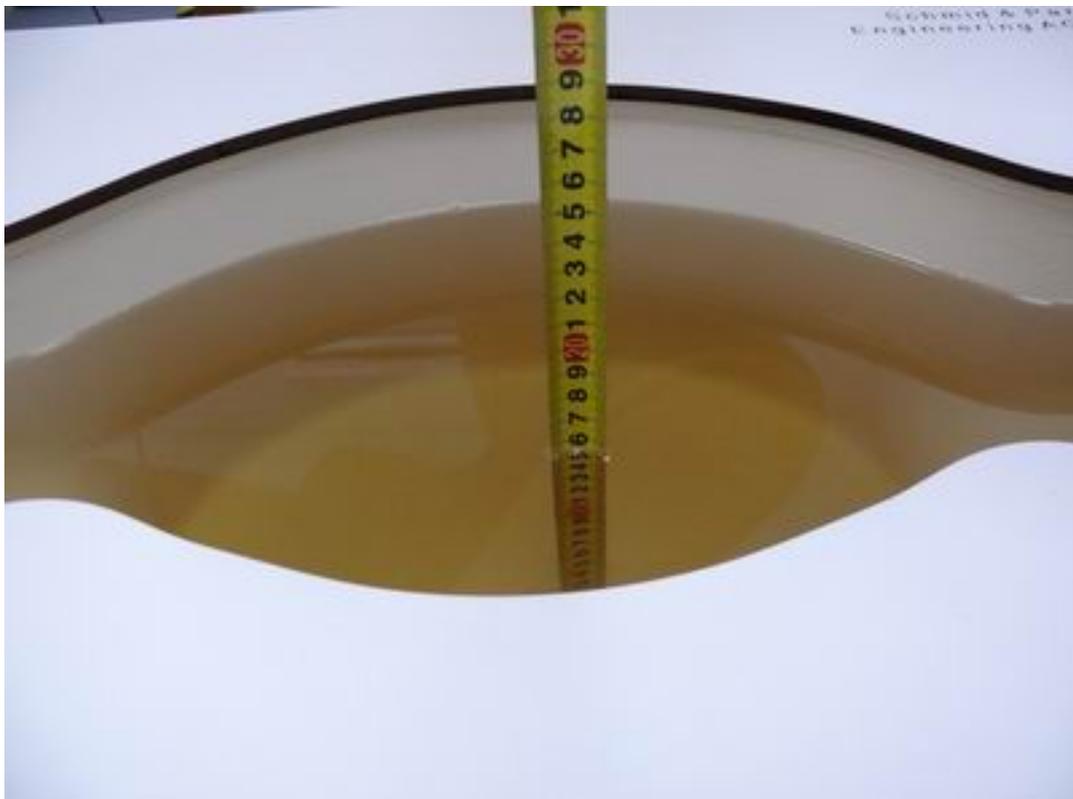
Picture 3: Liquid depth in the flat Phantom (835MHz, 15.4cm depth)

Picture 4: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)
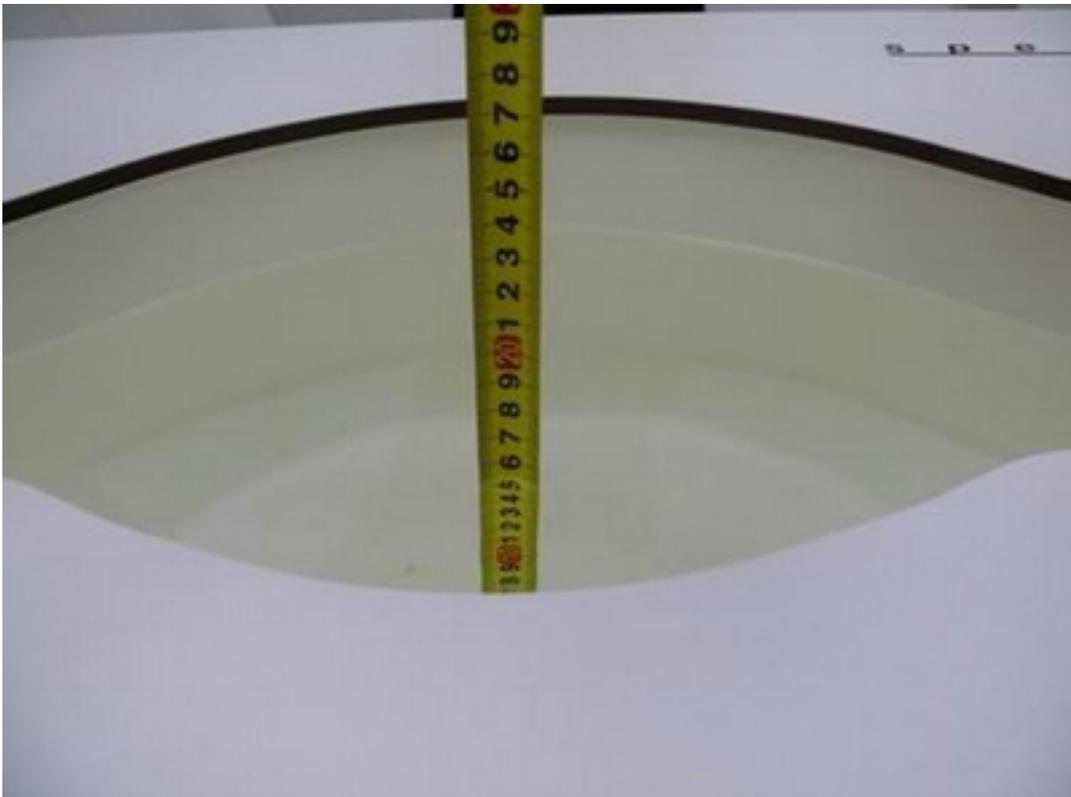
Picture 5: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

Picture 6: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)
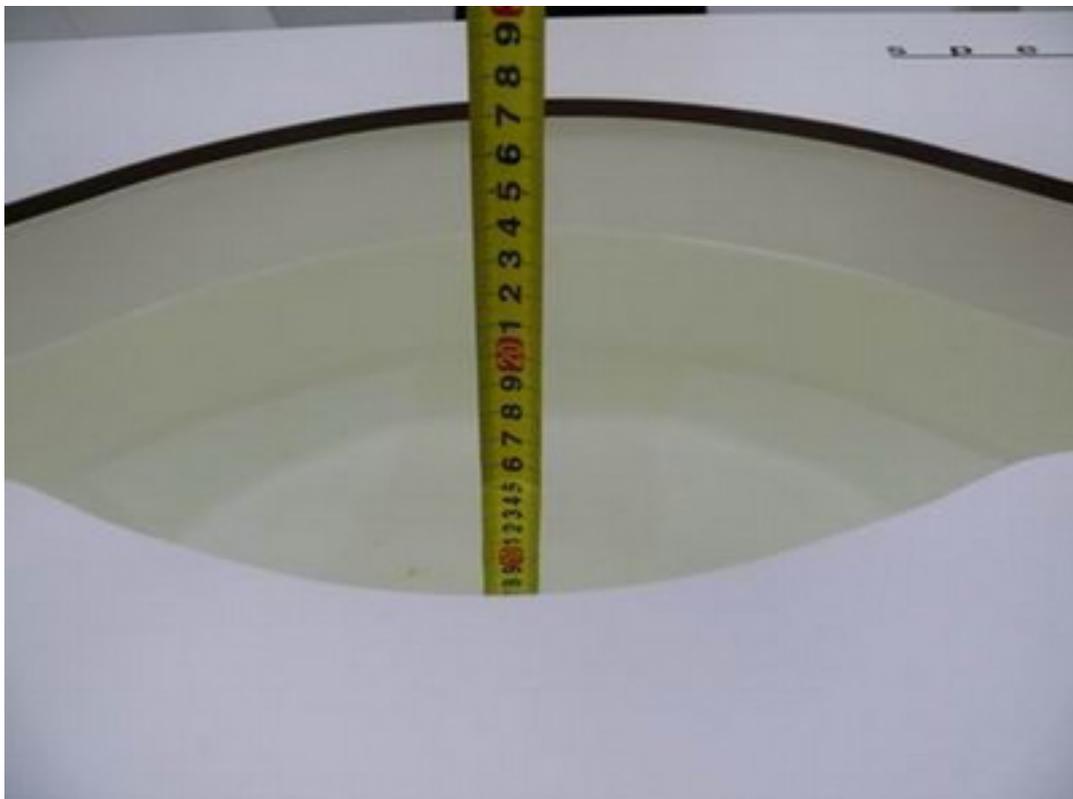
Picture 7: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d092

Date/Time: 5/5/2011 12:15:13 PM

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

Medium parameters used: f = 835 MHz; σ = 0.90 mho/m; ε_r = 41.75; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.8℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (101x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.56 mW/g

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

Reference Value = 51.1 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 3.54 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.61 mW/g
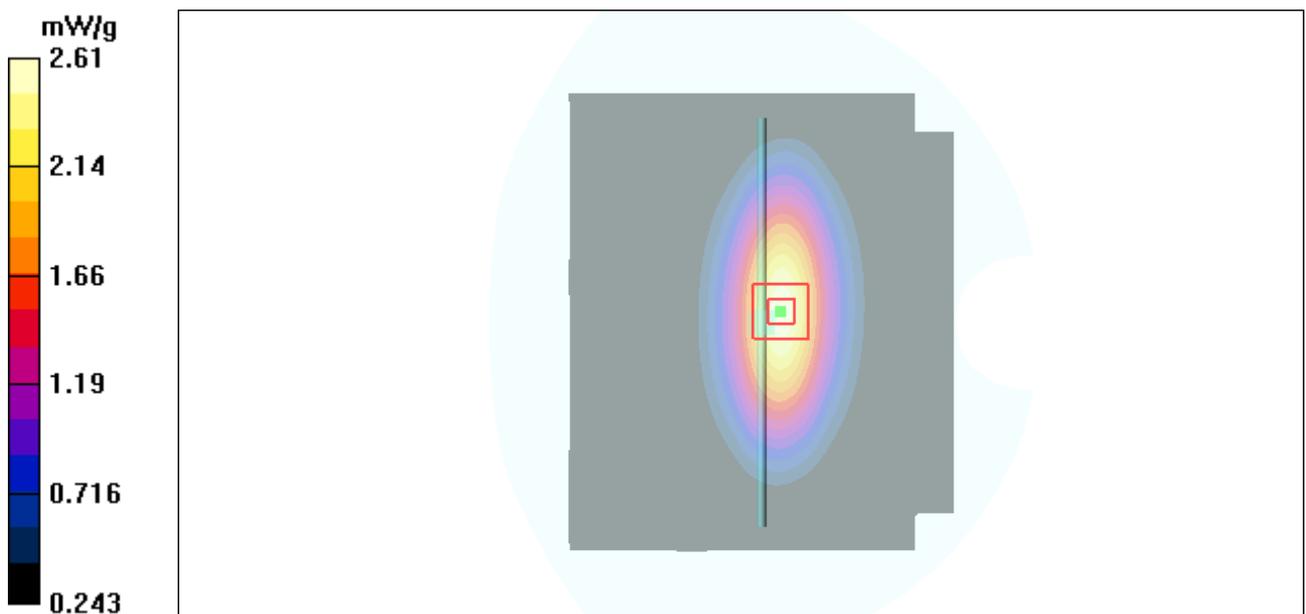
Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d092

Date/Time: 5/5/2011 6:50:20 PM

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

Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 56.25; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.9℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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) = 2.72 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) = 3.63 W/kg

SAR(1 g) = 2.52 mW/g; SAR(10 g) = 1.65 mW/g

Maximum value of SAR (measured) = 2.73 mW/g
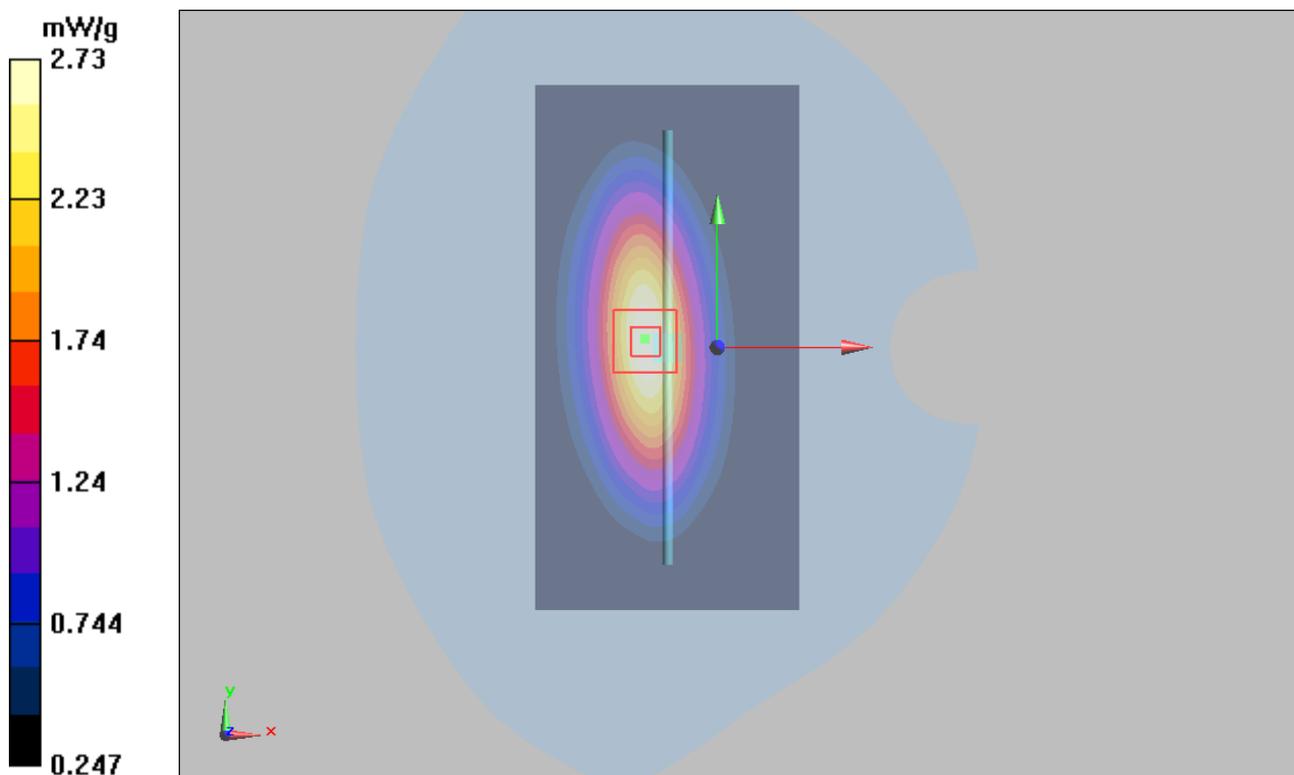
Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 5/6/2011 8:09:34 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.41 mho/m; ε_r = 39.98; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.9℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 12.7 mW/g

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

Reference Value = 81.0 V/m; Power Drift = -0.068 dB

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.34 mW/g

Maximum value of SAR (measured) = 11.5 mW/g
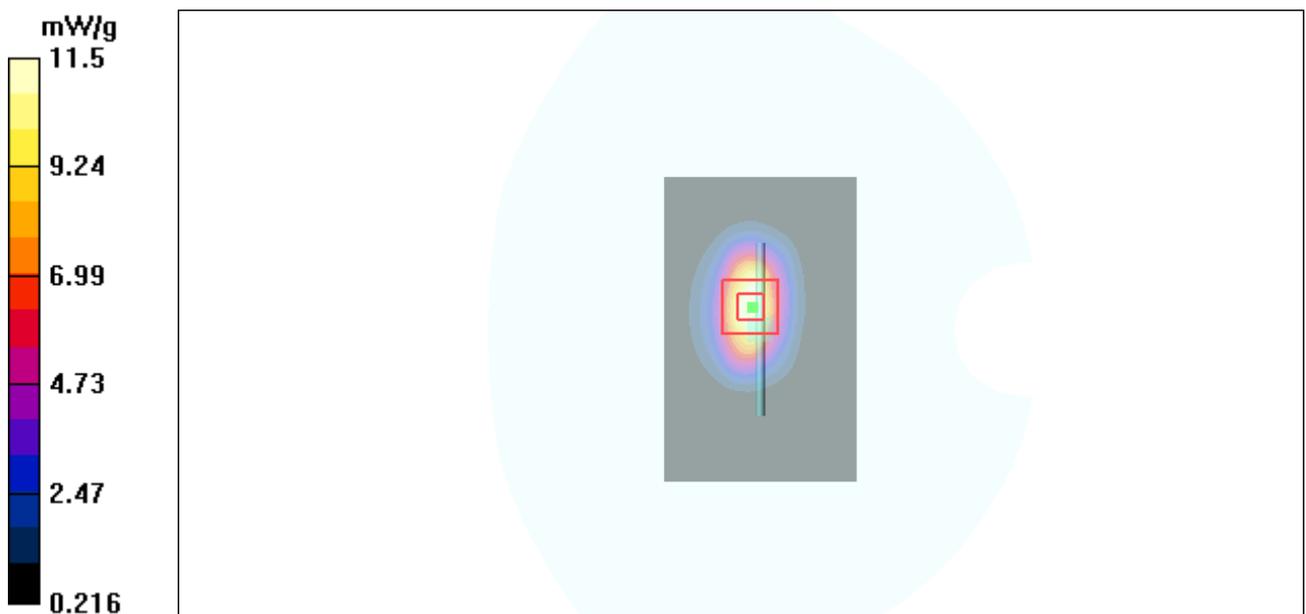
Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 5/7/2011 12:01:19 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.53 mho/m; ε_r = 53.18; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃　　　　Liquid Temperature: 21.7℃

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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) = 11.9 mW/g

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

Reference Value = 80.8 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 17.6 W/kg

SAR(1 g) = 10.18 mW/g; SAR(10 g) = 5.34 mW/g

Maximum value of SAR (measured) = 11 mW/g
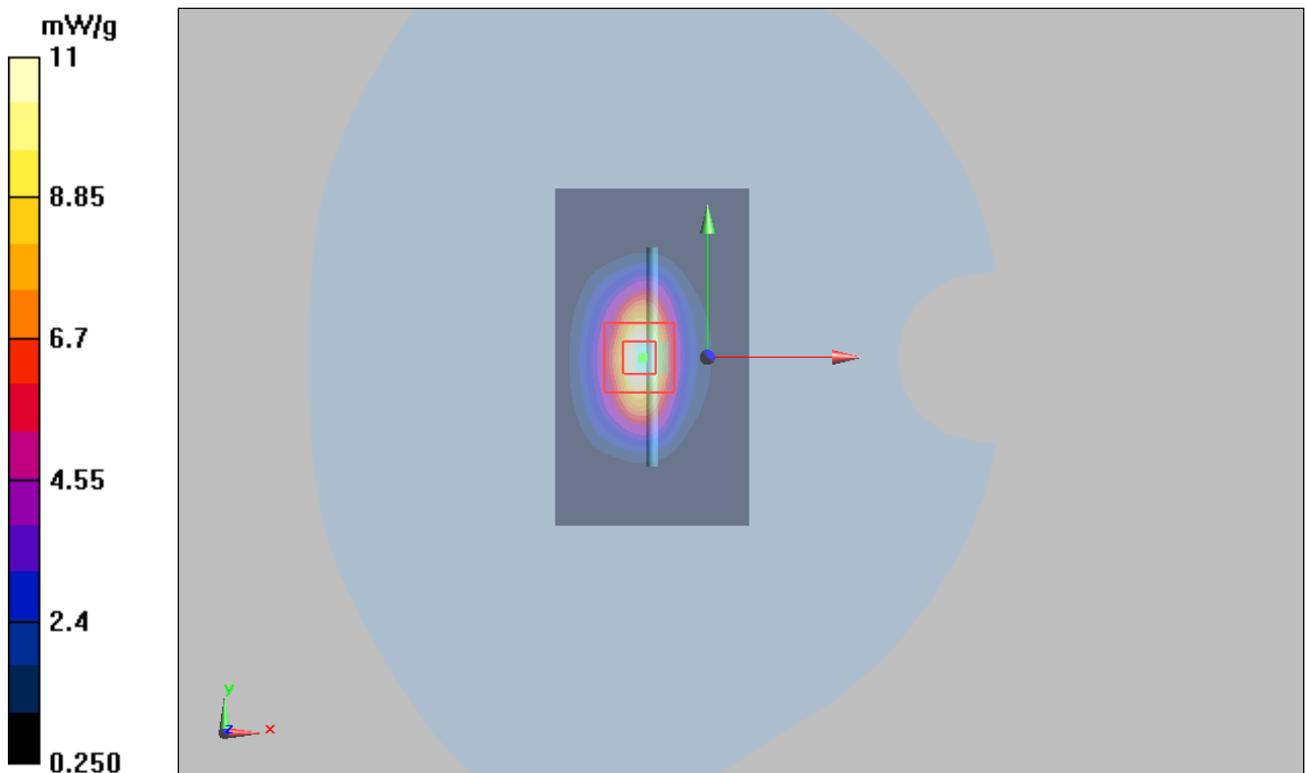
Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 712

Date/Time: 5/8/2011 8:04:36 AM

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

Medium parameters used: f = 2450 MHz; σ = 1.81 mho/m; ε_r = 39.10; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.7℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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)/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
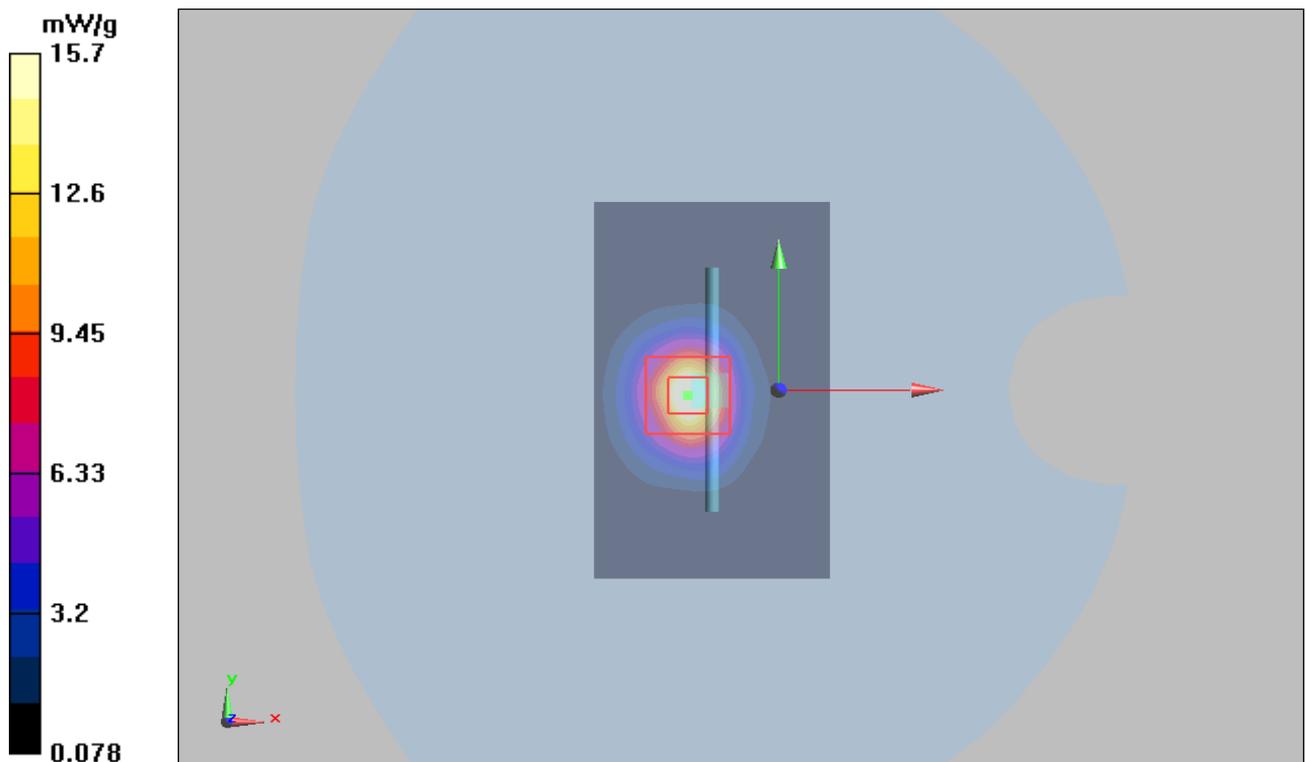
Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 712

Date/Time: 5/9/2011 9:07:36 AM

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

Medium parameters used: f = 2450 MHz; σ = 1.94 mho/m; ε_r = 51.19; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.8℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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)/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
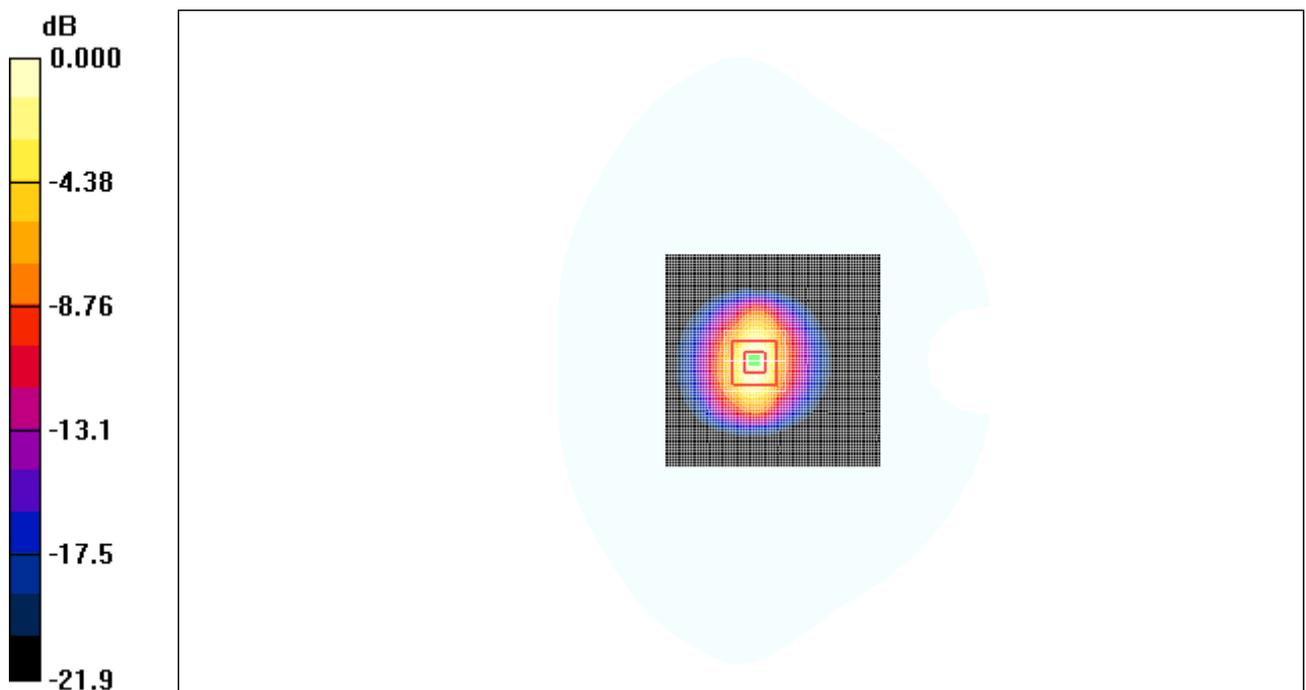
0 dB = 19.8mW/g

Figure 12 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek High

Date/Time: 5/5/2011 3:24:04 PM

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

Medium parameters used: f = 849 MHz; σ = 0.915 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.558 mW/g

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

Reference Value = 7.96 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.749 W/kg

SAR(1 g) = 0.535 mW/g; SAR(10 g) = 0.375 mW/g

Maximum value of SAR (measured) = 0.573 mW/g
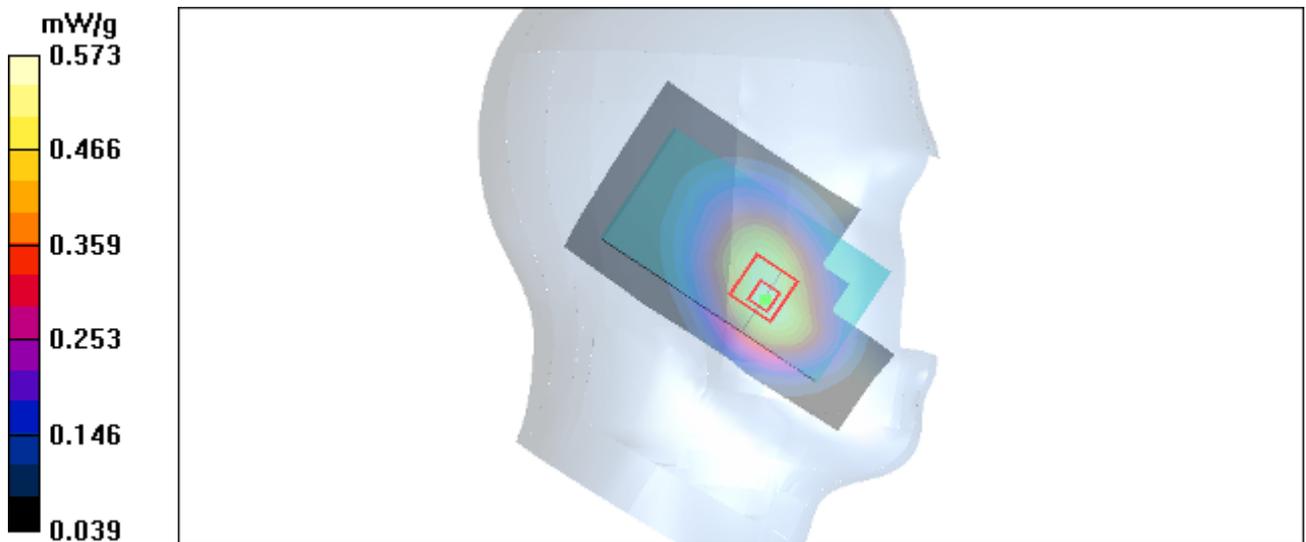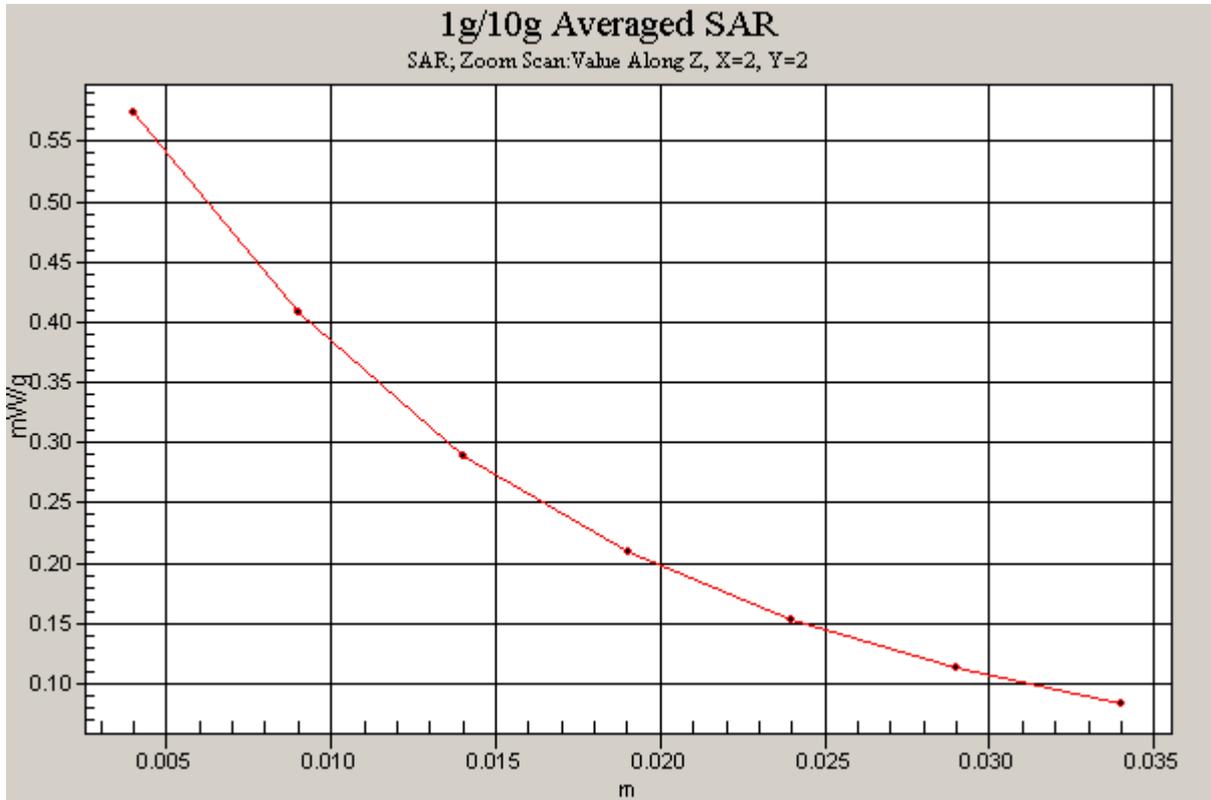
Figure 13 Left Hand Touch Cheek GSM 850 Channel 251

GSM 850 Left Cheek Middle

Date/Time: 5/5/2011 3:07:35 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.453 mW/g

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

Reference Value = 7.15 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 0.612 W/kg

SAR(1 g) = 0.438 mW/g; SAR(10 g) = 0.308 mW/g

Maximum value of SAR (measured) = 0.471 mW/g
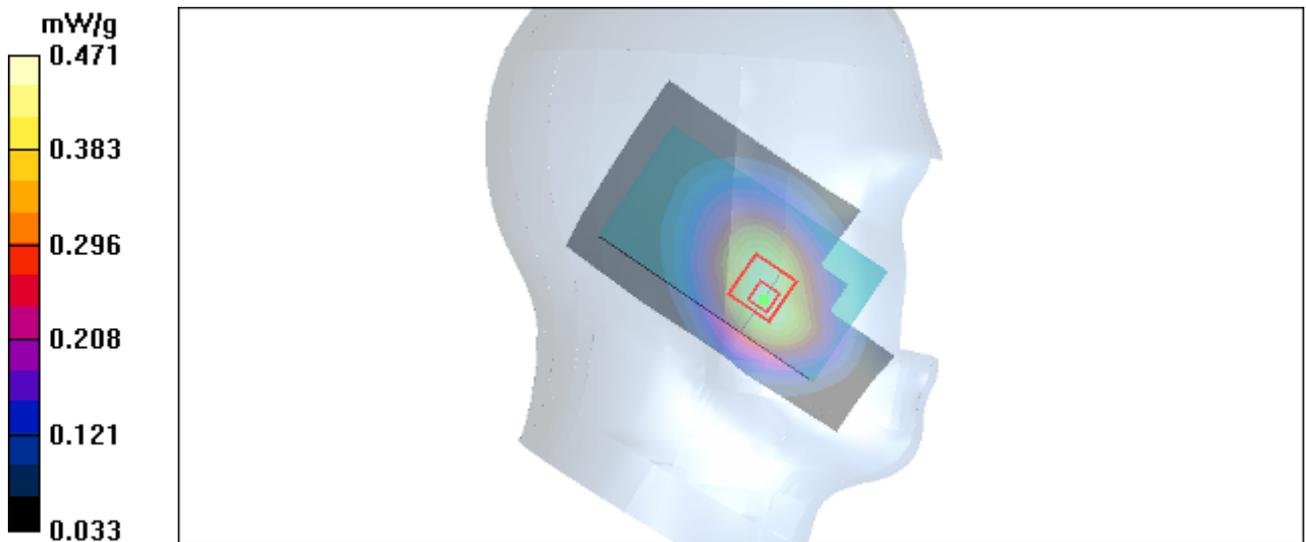
Figure 14 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Cheek Low

Date/Time: 5/5/2011 3:38:46 PM

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

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.894 mho/m; $ε_r$ = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.377 mW/g

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

Reference Value = 6.68 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.501 W/kg

SAR(1 g) = 0.363 mW/g; SAR(10 g) = 0.257 mW/g

Maximum value of SAR (measured) = 0.387 mW/g
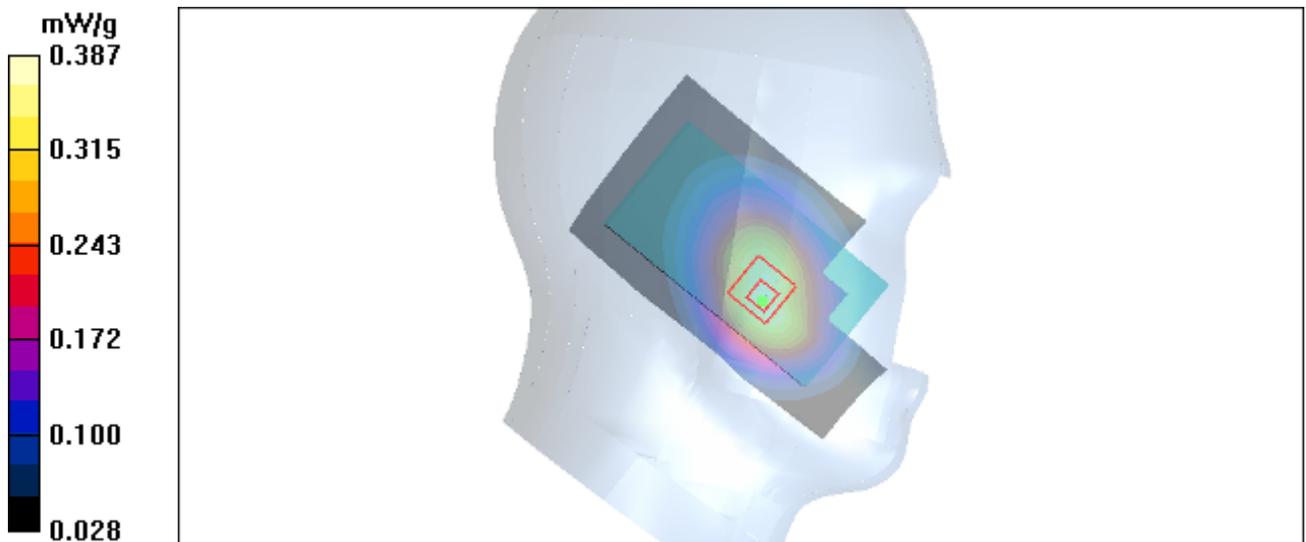
Figure 15 Left Hand Touch Cheek GSM 850 Channel 128

GSM 850 Left Tilt Middle

Date/Time: 5/5/2011 2:23:38 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.252 mW/g

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

Reference Value = 11.2 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.174 mW/g

Maximum value of SAR (measured) = 0.241 mW/g
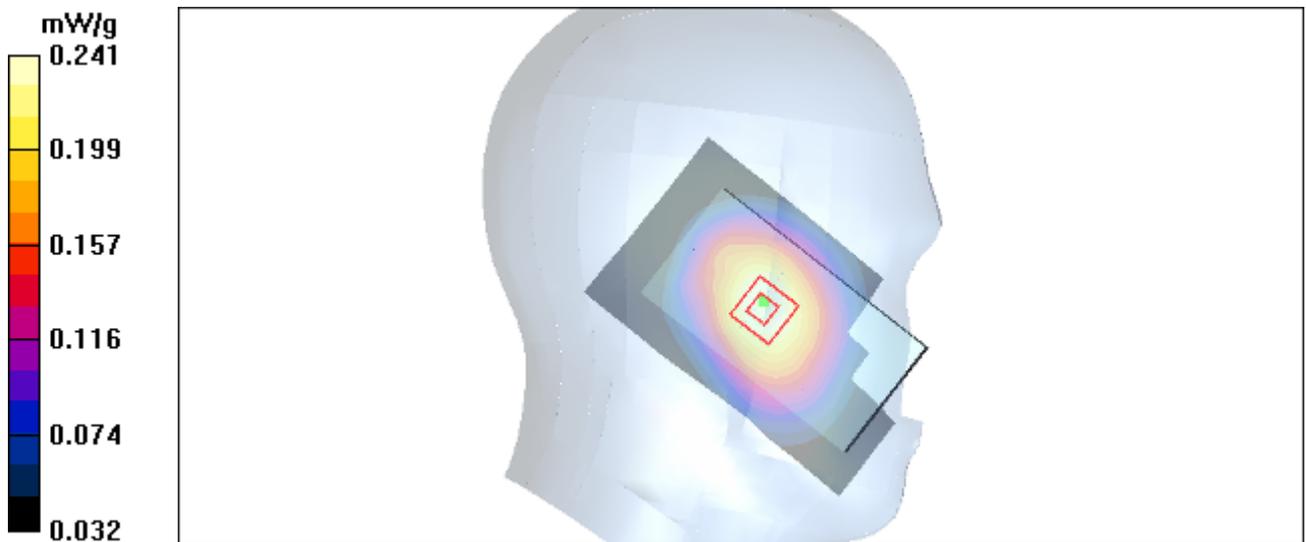
Figure 16 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle

Date/Time: 5/5/2011 1:35:35 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.407 mW/g

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

Reference Value = 7.91 V/m; Power Drift = -0.060 dB

Peak SAR (extrapolated) = 0.454 W/kg

SAR(1 g) = 0.379 mW/g; SAR(10 g) = 0.286 mW/g

Maximum value of SAR (measured) = 0.397 mW/g
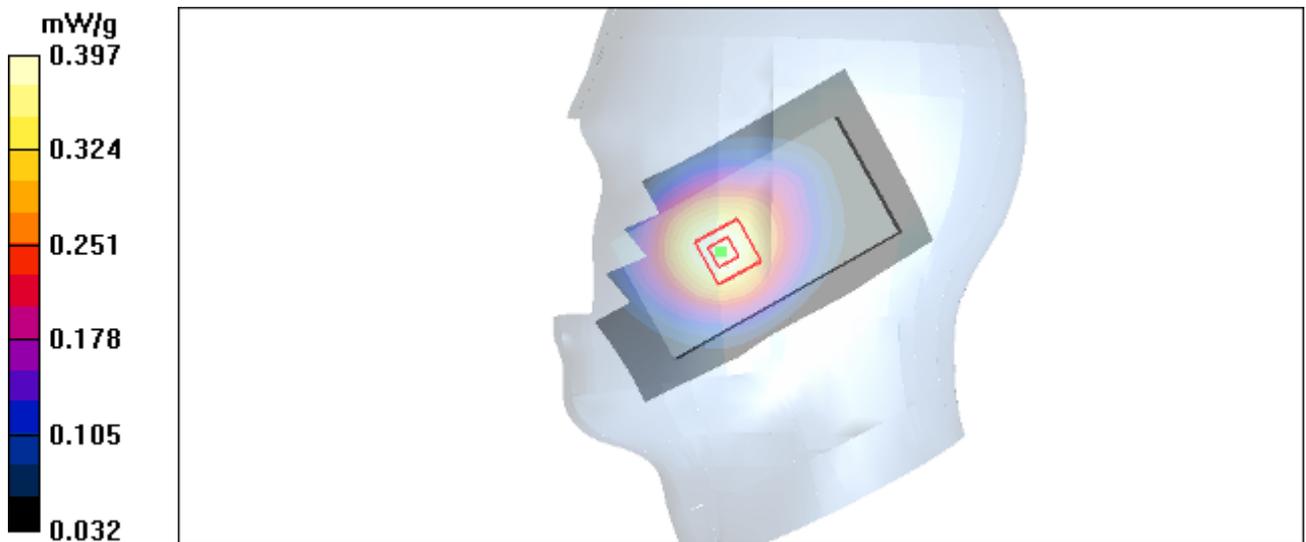
Figure 17 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle

Date/Time: 5/5/2011 1:51:01 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.240 mW/g

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

Reference Value = 11.9 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.276 W/kg

SAR(1 g) = 0.228 mW/g; SAR(10 g) = 0.172 mW/g

Maximum value of SAR (measured) = 0.240 mW/g
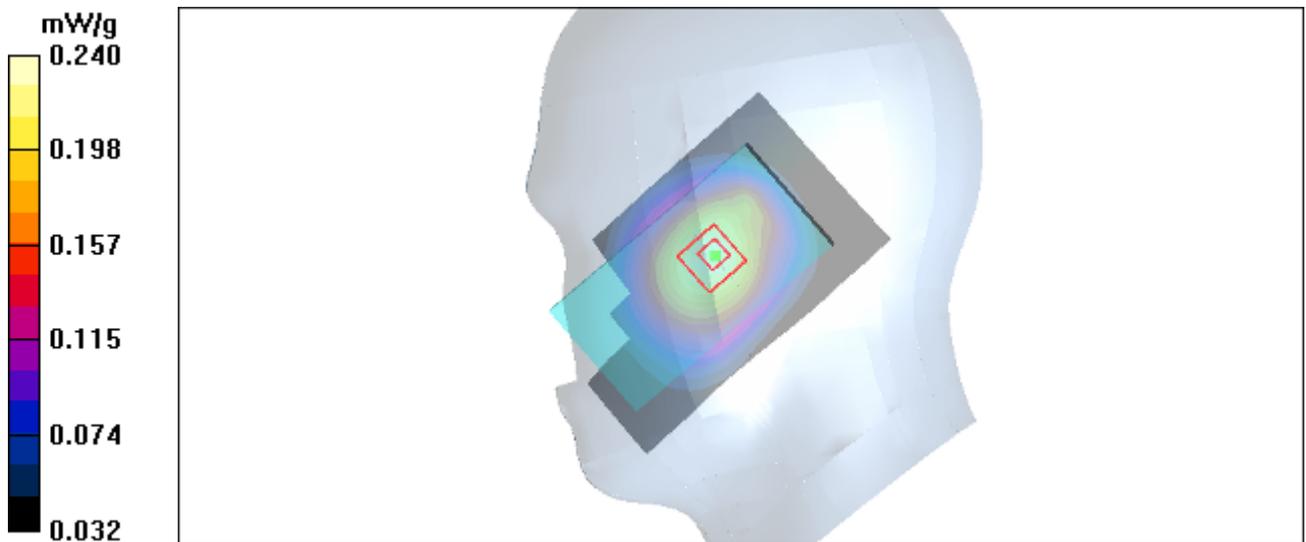
Figure 18 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Towards Ground Middle

Date/Time: 5/5/2011 8:11:17 PM

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

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.585 mW/g

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

Reference Value = 10.3 V/m; Power Drift = -0.126 dB

Peak SAR (extrapolated) = 0.688 W/kg

SAR(1 g) = 0.547 mW/g; SAR(10 g) = 0.398 mW/g
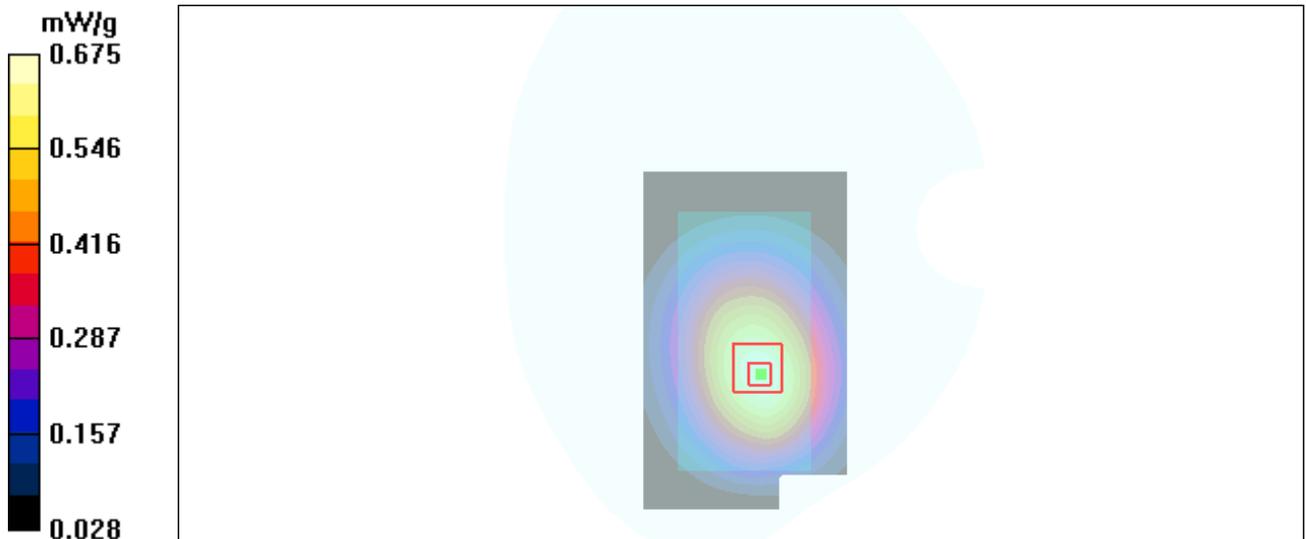
Maximum value of SAR (measured) = 0.581 mW/g
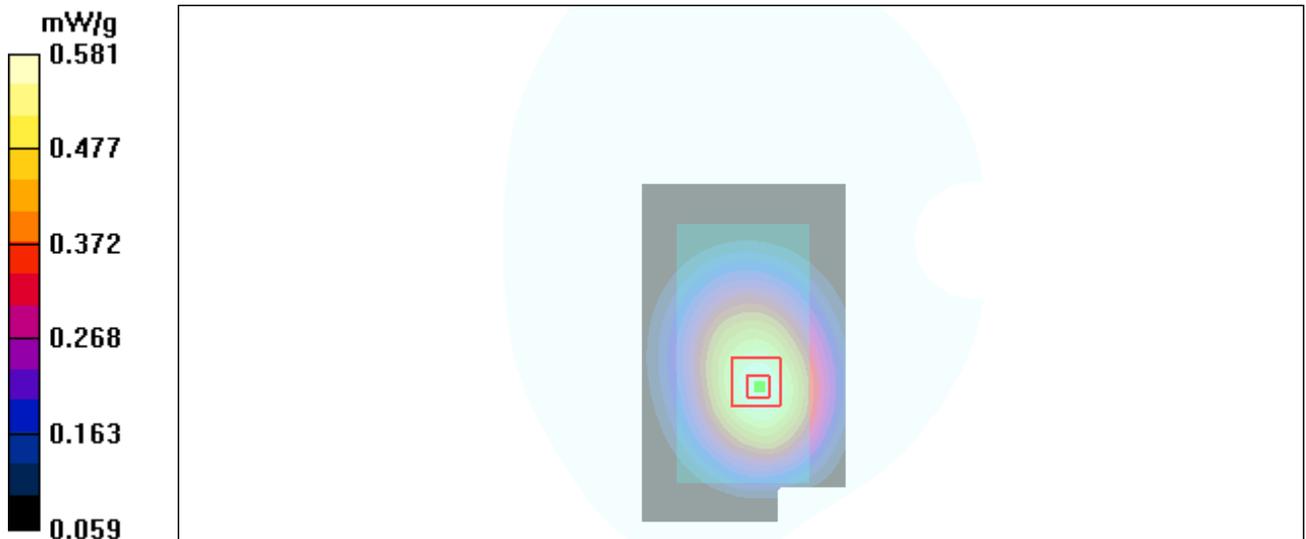
Figure 19 Body, Towards Ground, GSM 850 Channel 190

GSM 850 GPRS (2Txslots) Towards Ground High

Date/Time: 5/5/2011 9:24:18 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.784 mW/g

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

Reference Value = 12.2 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.948 W/kg

SAR(1 g) = 0.742 mW/g; SAR(10 g) = 0.540 mW/g

Maximum value of SAR (measured) = 0.781 mW/g
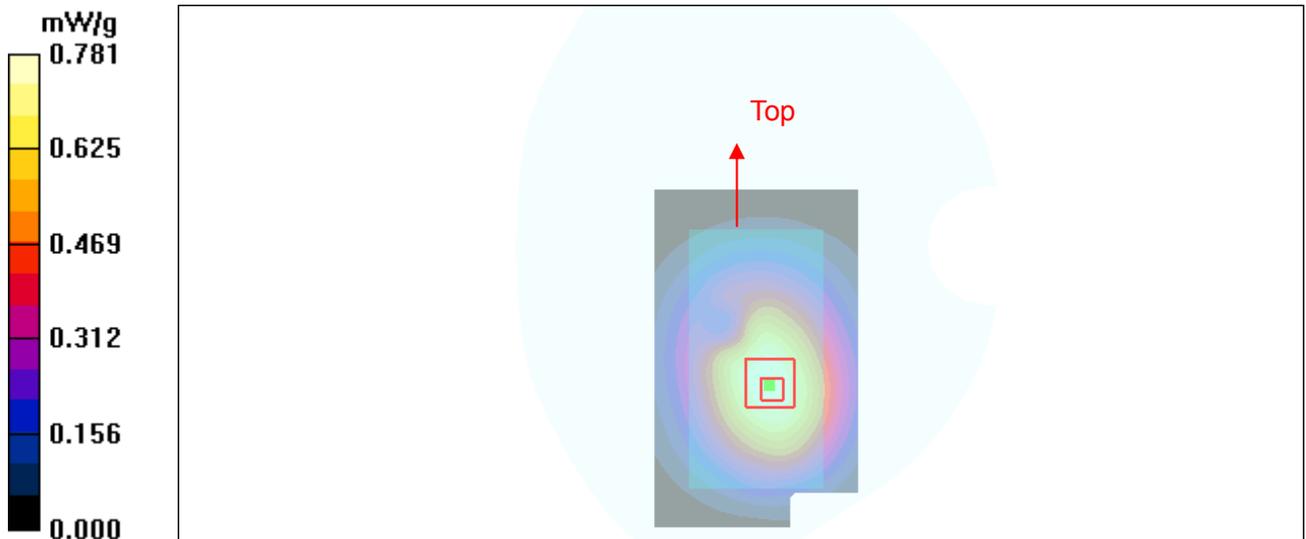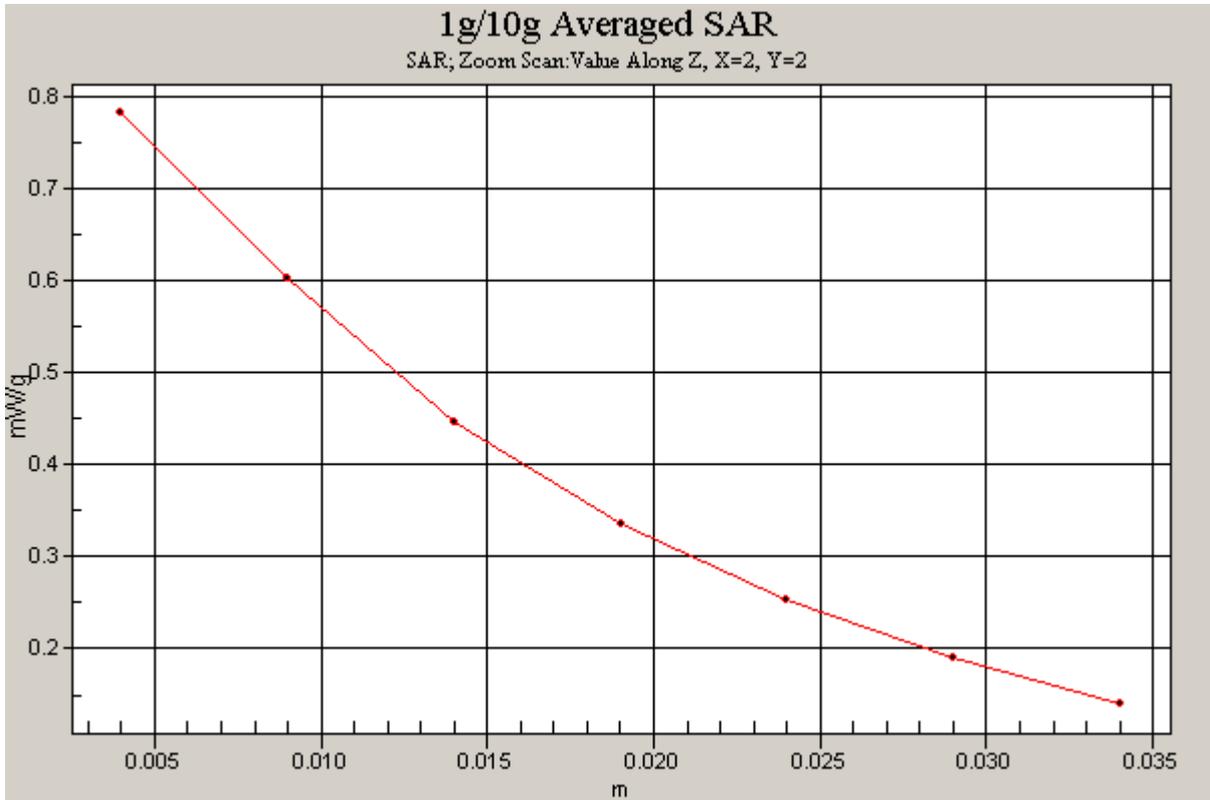
Figure 20 Body, Towards Ground, GSM 850 GPRS (2Txslots) Channel 251

GSM 850 GPRS (2Txslots) Towards Ground Middle

Date/Time: 5/5/2011 8:26:34 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.692 mW/g

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

Reference Value = 11.1 V/m; Power Drift = -0.082 dB

Peak SAR (extrapolated) = 0.796 W/kg

SAR(1 g) = 0.639 mW/g; SAR(10 g) = 0.467 mW/g

Maximum value of SAR (measured) = 0.682 mW/g
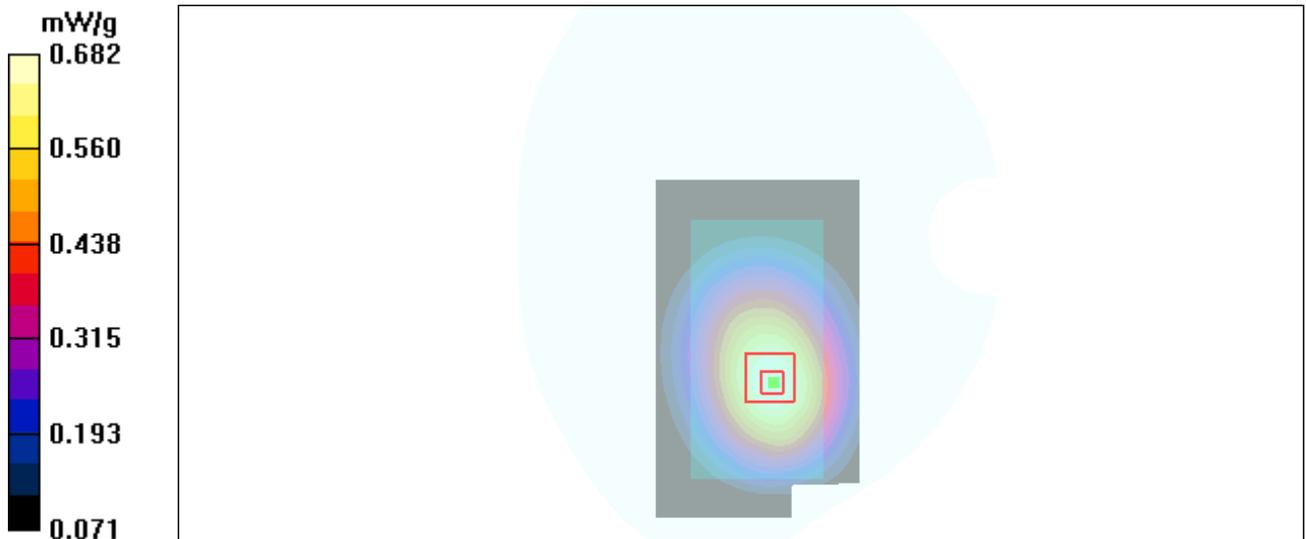
Figure 21 Body, Towards Ground, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Towards Ground Low

Date/Time: 5/5/2011 9:37:32 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4.15

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.985 mho/m; ε_r = 56.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.583 mW/g

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

Reference Value = 10.6 V/m; Power Drift = -0.057 dB

Peak SAR (extrapolated) = 0.697 W/kg

SAR(1 g) = 0.550 mW/g; SAR(10 g) = 0.402 mW/g

Maximum value of SAR (measured) = 0.581 mW/g
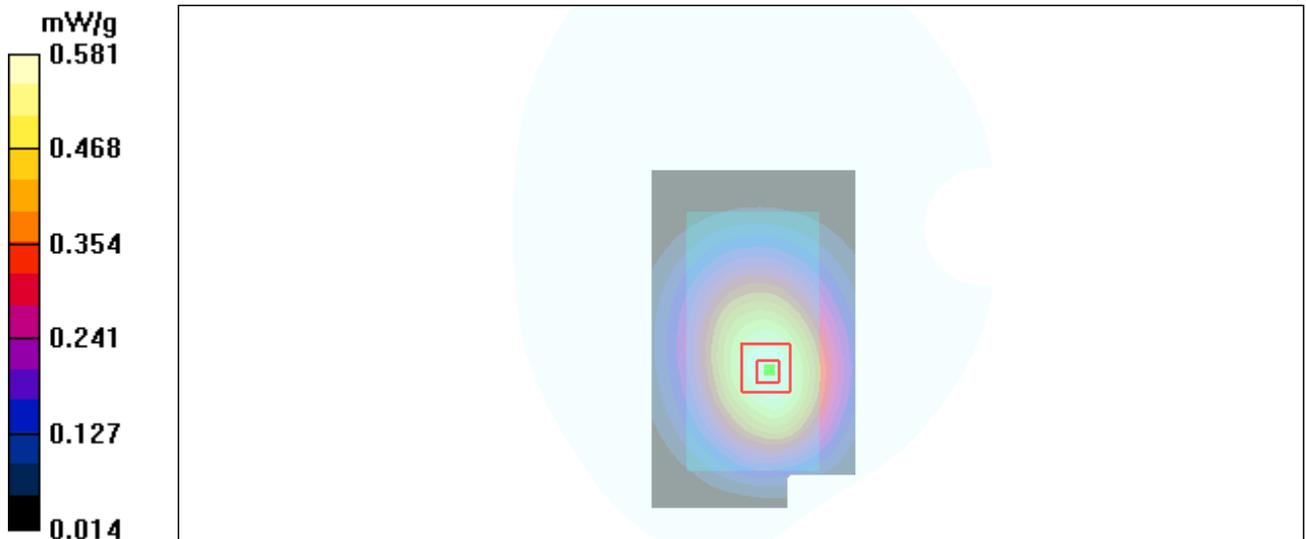
Figure 22 Body, Towards Ground, GSM 850 GPRS (2Txslots) Channel 128

GSM 850 GPRS (3Txslots) Towards Ground Middle

Date/Time: 5/5/2011 8:41:22 PM

Communication System: GSM850 + GPRS(3Up); Frequency: 836.6 MHz;Duty Cycle: 1:2.767

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.654 mW/g

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

Reference Value = 11.0 V/m; Power Drift = -0.123 dB

Peak SAR (extrapolated) = 0.759 W/kg

SAR(1 g) = 0.607 mW/g; SAR(10 g) = 0.442 mW/g

Maximum value of SAR (measured) = 0.644 mW/g
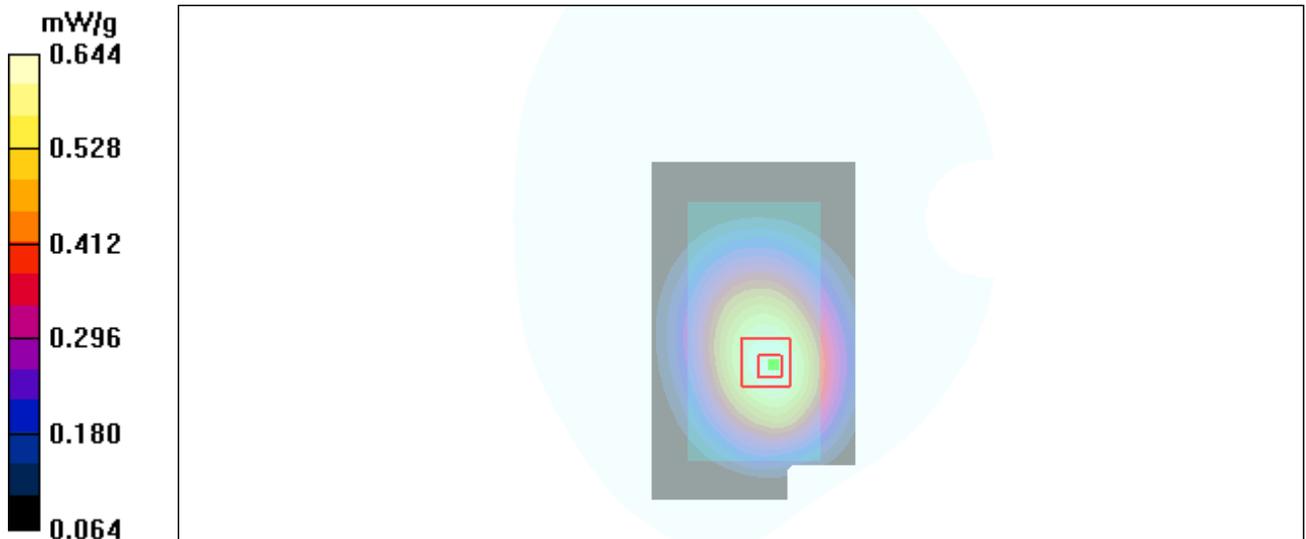
Figure 23 Body, Towards Ground, GSM 850 GPRS (3Txslots) Channel 190

GSM 850 GPRS (4Txslots) Towards Ground Middle

Date/Time: 5/5/2011 8:55:20 PM

Communication System: GSM850 + GPRS(4Up); Frequency: 836.6 MHz;Duty Cycle: 1:2.075

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.672 mW/g

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

Reference Value = 11.1 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 0.800 W/kg

SAR(1 g) = 0.635 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.675 mW/g

Figure 24 Body, Towards Ground, GSM 850 GPRS (4Txslots) Channel 190

GSM 850 GPRS (2Txslots) Towards Phantom Middle

Date/Time: 5/5/2011 9:09:54 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.478 mW/g

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

Reference Value = 9.14 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 0.641 W/kg

SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.471 mW/g
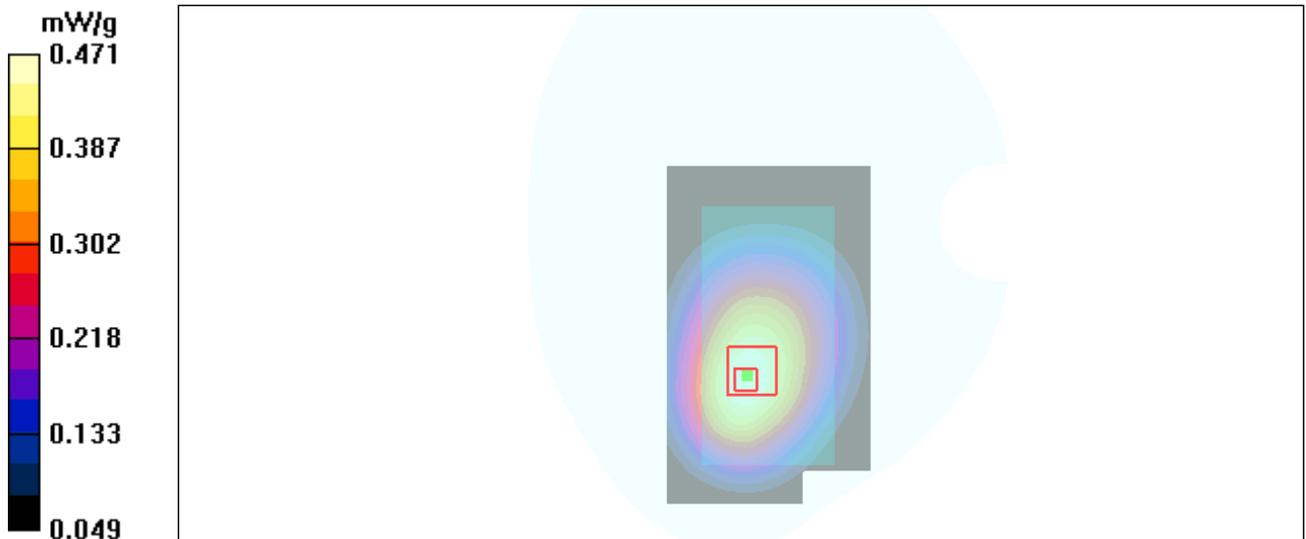
Figure 25 Body, Towards Phantom, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 with Earphone Towards Ground High

Date/Time: 5/5/2011 10:08:05 PM

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

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 56.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.461 mW/g

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

Reference Value = 7.03 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.560 W/kg

SAR(1 g) = 0.434 mW/g; SAR(10 g) = 0.309 mW/g

Maximum value of SAR (measured) = 0.463 mW/g
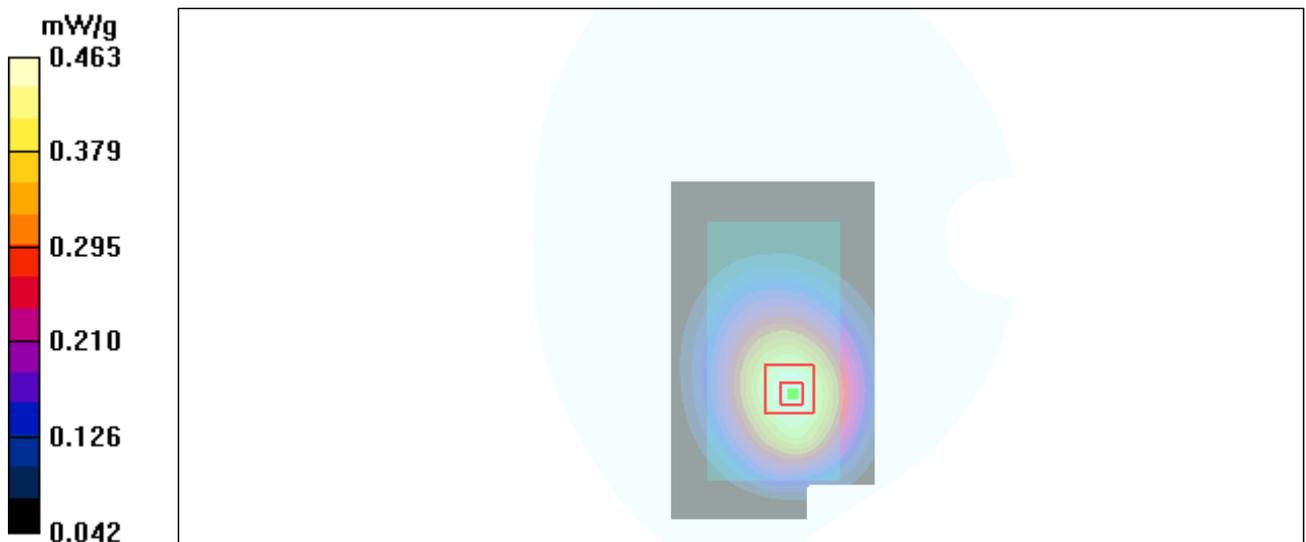
Figure 26 Body with Earphone, Towards Ground, GSM 850 Channel 251

GSM 850 EGPRS (2Txslots) Towards Ground High

Date/Time: 5/5/2011 9:52:24 PM

Communication System: GSM850 + EGPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 56.1; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.790 mW/g

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

Reference Value = 12.3 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.905 W/kg

SAR(1 g) = 0.722 mW/g; SAR(10 g) = 0.531 mW/g

Maximum value of SAR (measured) = 0.763 mW/g
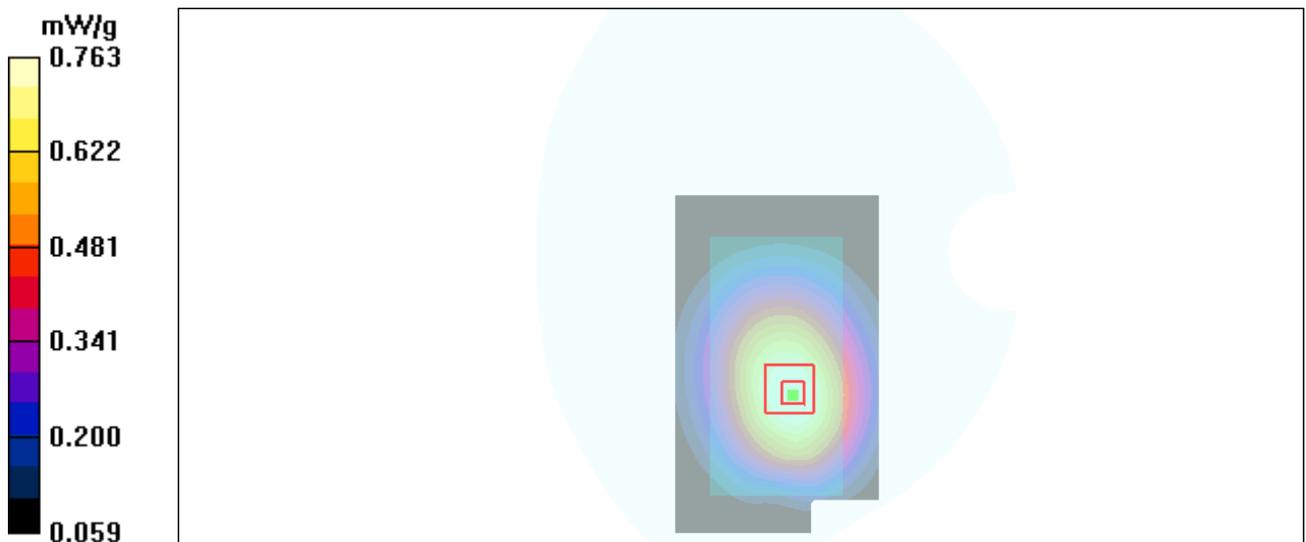
Figure 27 Body, Towards Ground, GSM 850 EGPRS (2Txslots) Channel 251

GSM 1900 Left Cheek High

Date/Time: 5/6/2011 10:25:32 AM

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; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.845 mW/g

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

Reference Value = 4.48 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.737 mW/g; SAR(10 g) = 0.407 mW/g

Maximum value of SAR (measured) = 0.844 mW/g
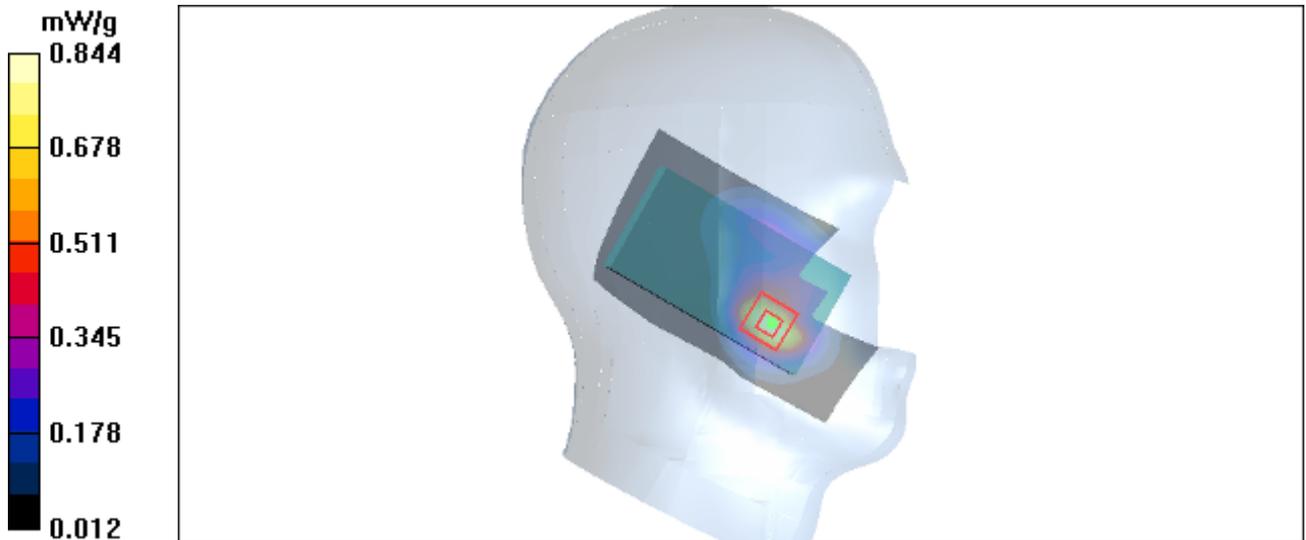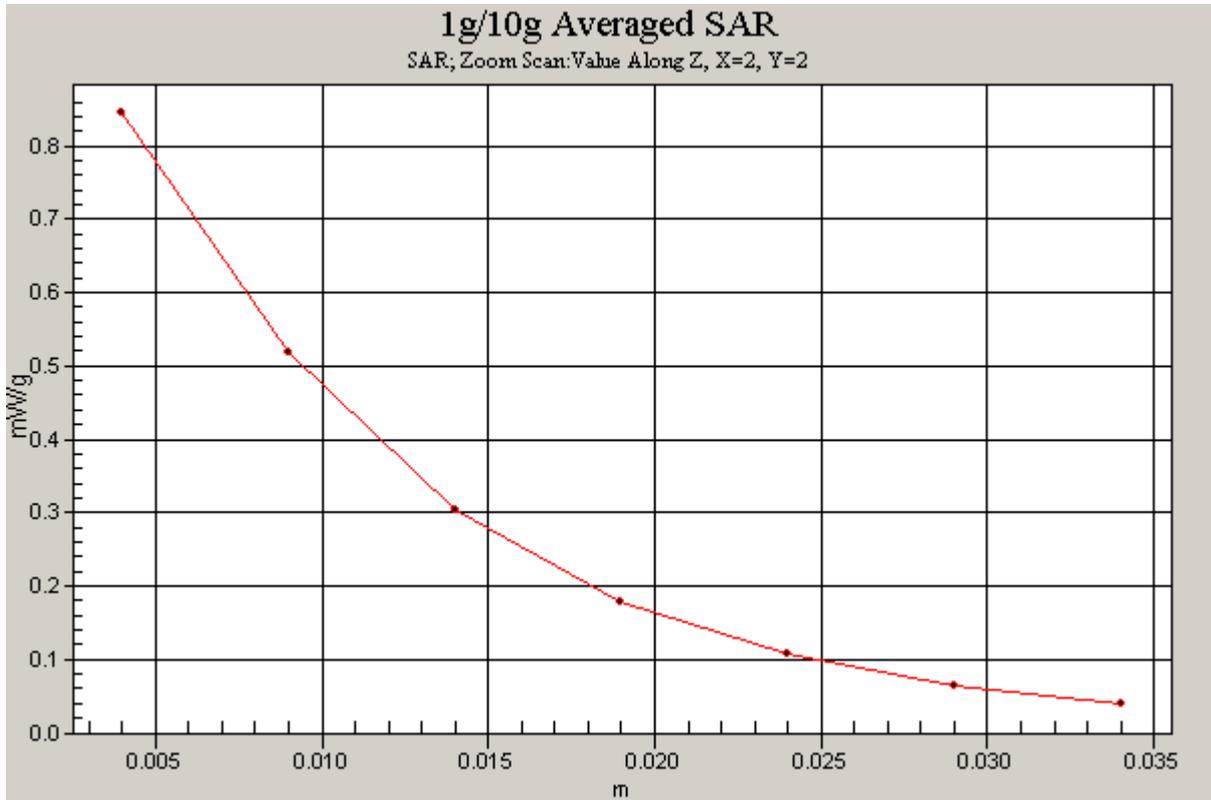
Figure 28 Left Hand Touch Cheek GSM 1900 Channel 810

GSM 1900 Left Cheek Middle

Date/Time: 5/6/2011 10:10:22 AM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.642 mW/g

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

Reference Value = 3.45 V/m; Power Drift = 0.049 dB

Peak SAR (extrapolated) = 0.939 W/kg

SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.324 mW/g

Maximum value of SAR (measured) = 0.683 mW/g
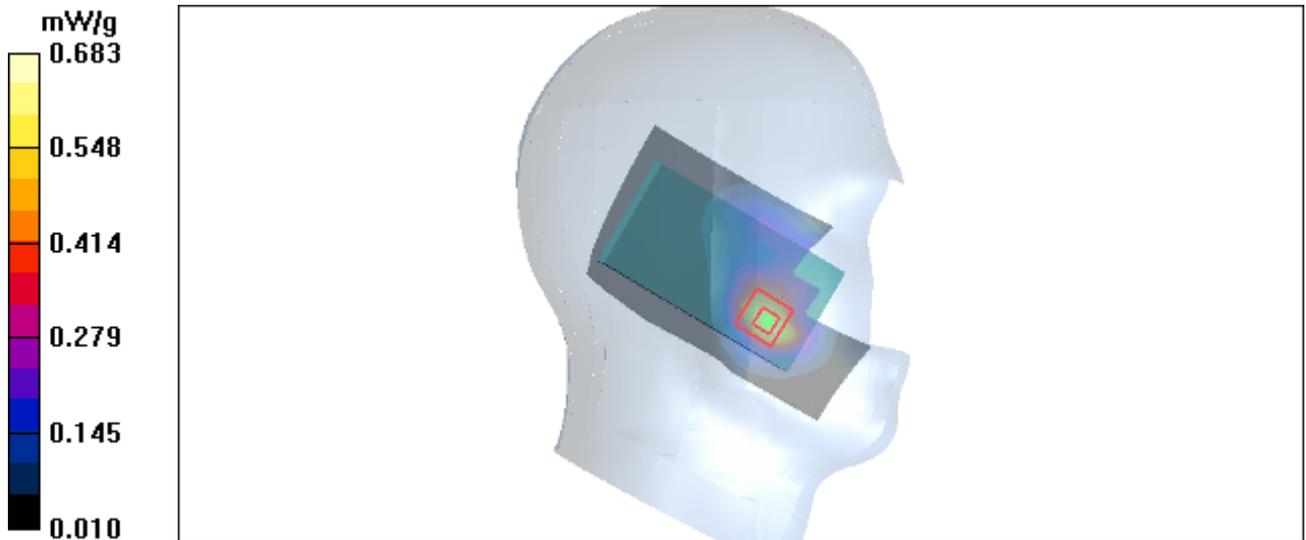
Figure 29 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Cheek Low

Date/Time: 5/6/2011 10:40:19 AM

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

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.537 mW/g

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

Reference Value = 3.39 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.722 W/kg

SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.260 mW/g

Maximum value of SAR (measured) = 0.524 mW/g
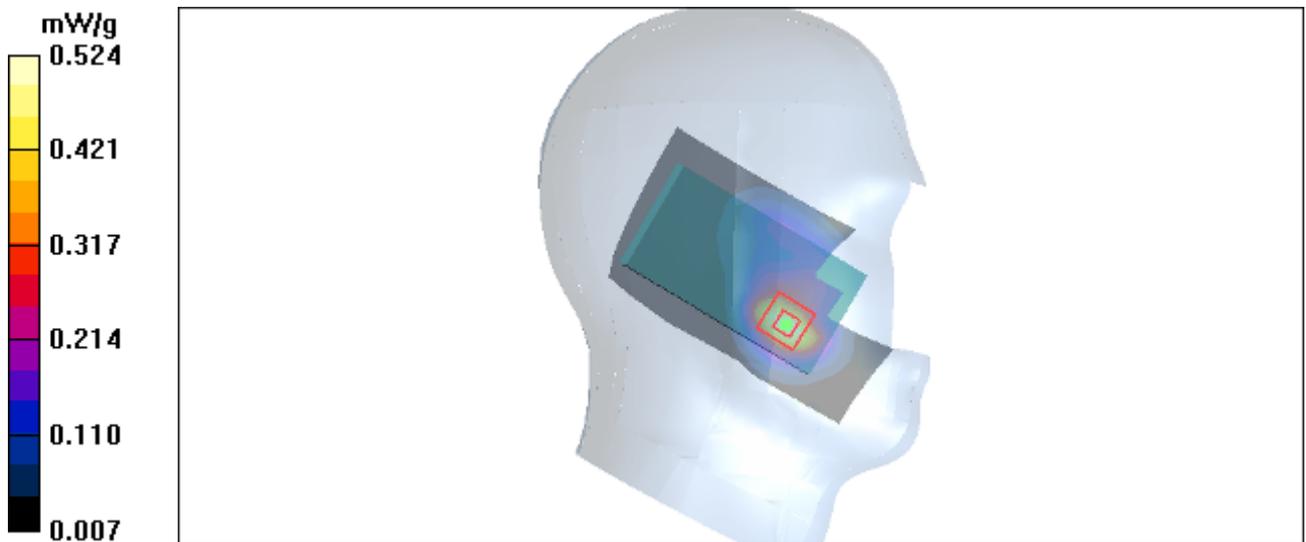
Figure 30 Left Hand Touch Cheek GSM 1900 Channel 512

GSM 1900 Left Tilt Middle

Date/Time: 5/6/2011 10:56:47 AM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.172 mW/g

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

Reference Value = 8.61 V/m; Power Drift = 0.193 dB

Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.148 mW/g; SAR(10 g) = 0.094 mW/g

Maximum value of SAR (measured) = 0.160 mW/g
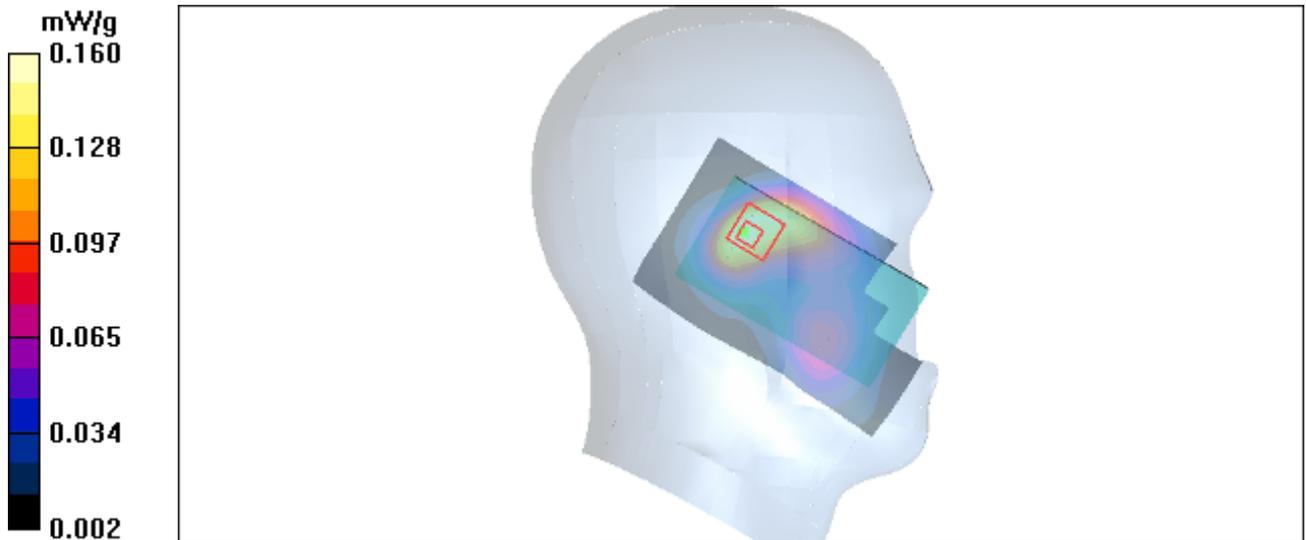
Figure 31 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle

Date/Time: 5/6/2011 9:39:22 AM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.397 mW/g

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

Reference Value = 6.10 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.452 W/kg

SAR(1 g) = 0.350 mW/g; SAR(10 g) = 0.224 mW/g

Maximum value of SAR (measured) = 0.375 mW/g
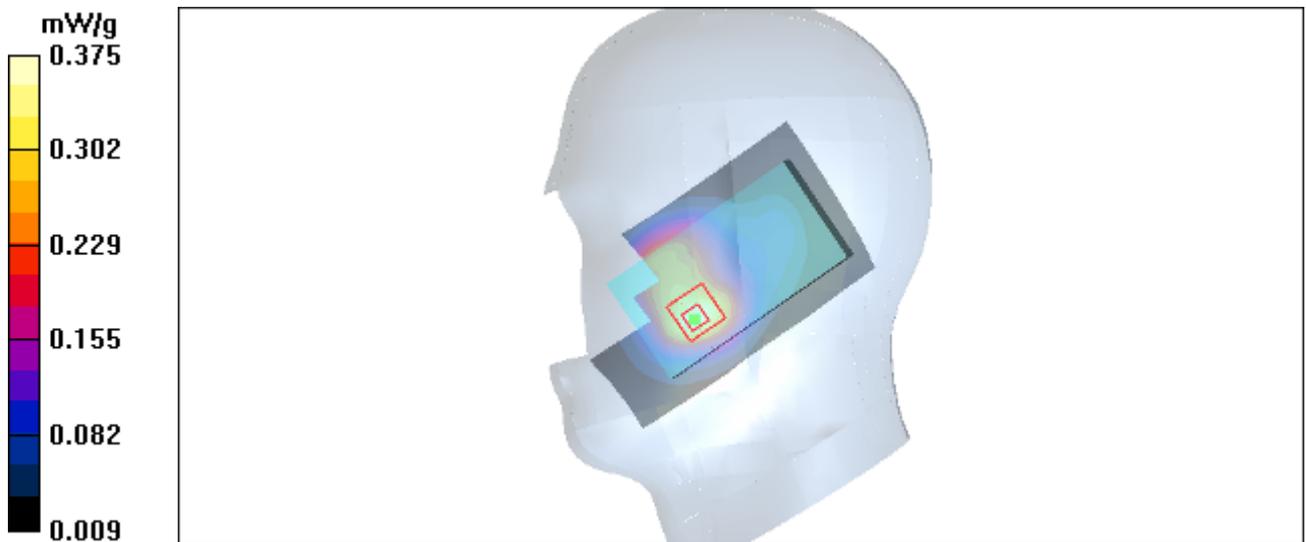
Figure 32 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle

Date/Time: 5/6/2011 9:54:45 AM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.182 mW/g

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

Reference Value = 10.9 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.214 W/kg

SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.093 mW/g

Maximum value of SAR (measured) = 0.168 mW/g
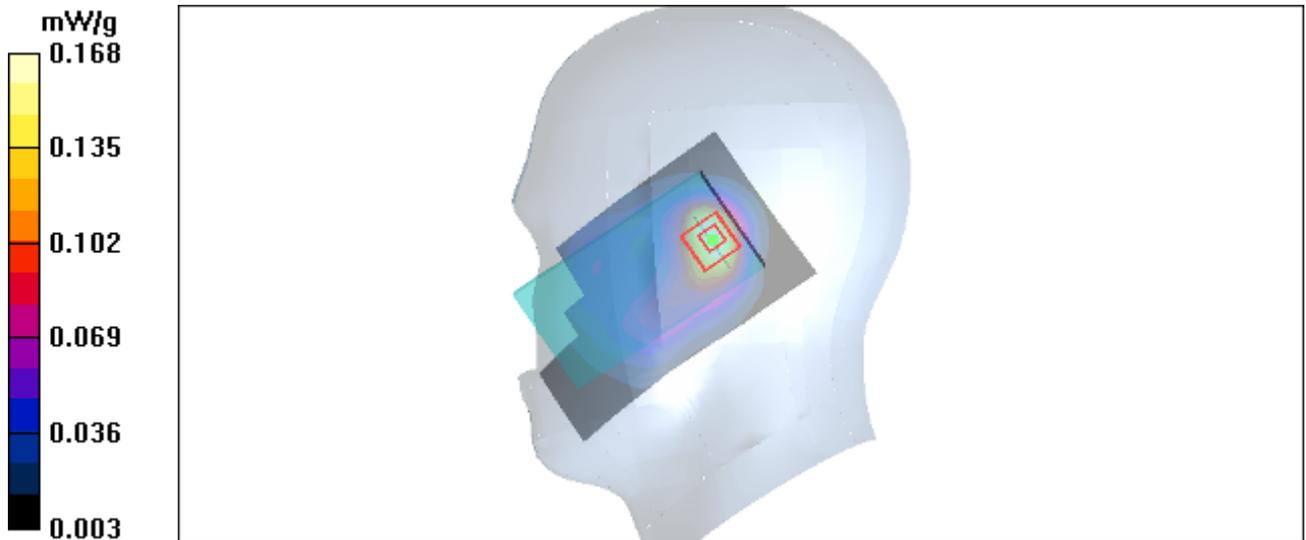
Figure 33 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Towards Ground Middle

Date/Time: 5/7/2011 3:53:41 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.250 mW/g

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

Reference Value = 8.75 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 0.437 W/kg

SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.150 mW/g

Maximum value of SAR (measured) = 0.270 mW/g
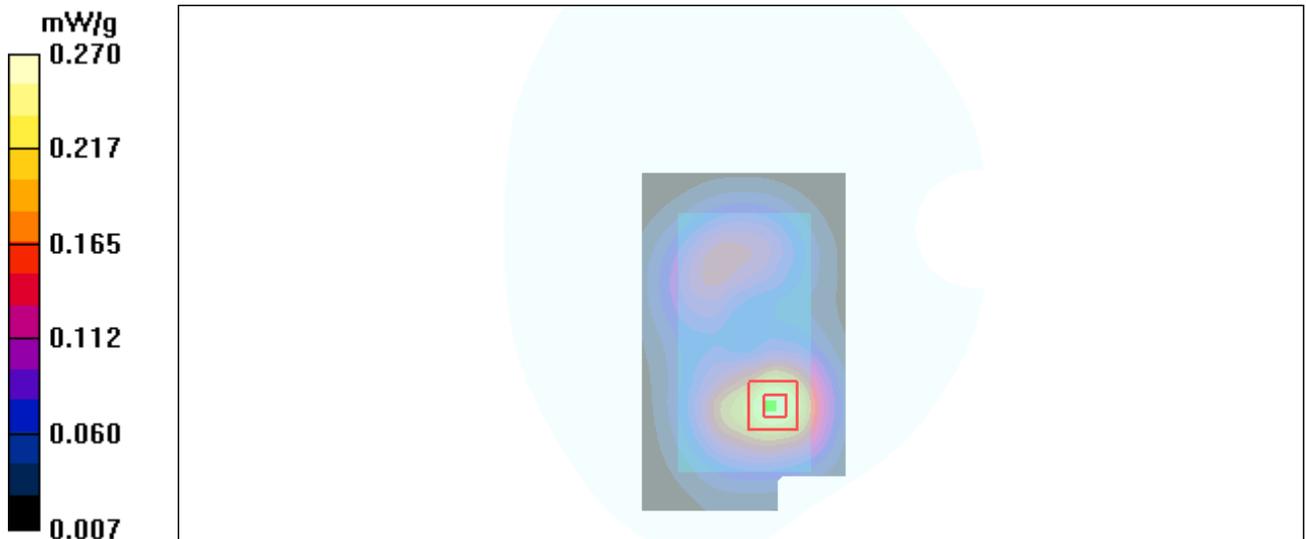
Figure 34 Body, Towards Ground, GSM 1900 Channel 661

GSM 1900 GPRS (2Txslots) Towards Ground High

Date/Time: 5/7/2011 4:49:58 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.430 mW/g

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

Reference Value = 11.0 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 0.692 W/kg

SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.234 mW/g

Maximum value of SAR (measured) = 0.418 mW/g
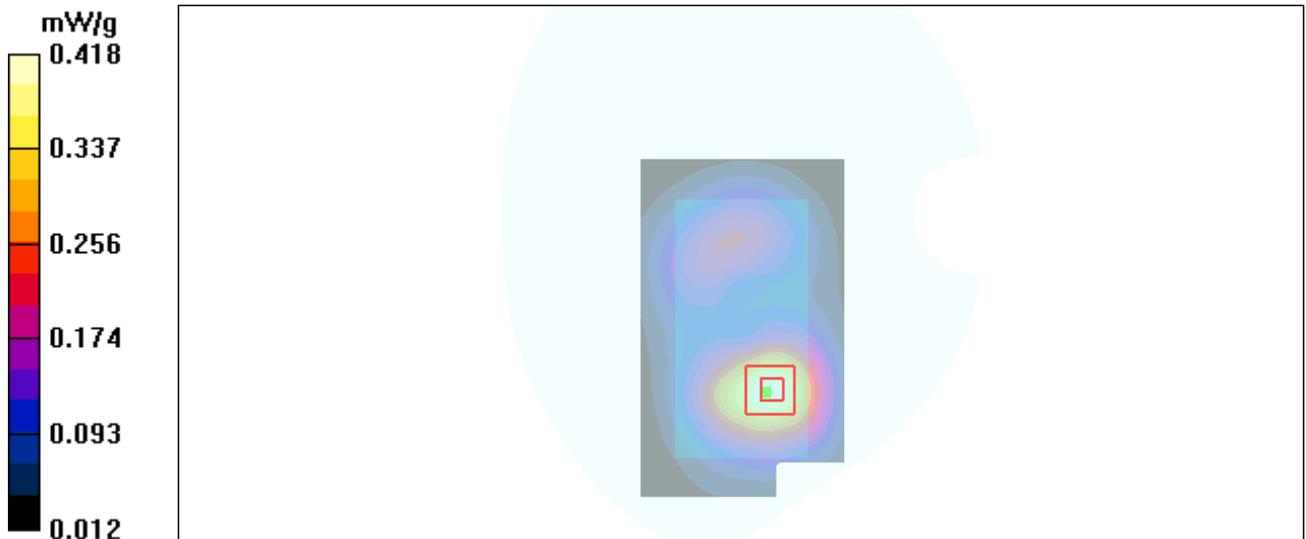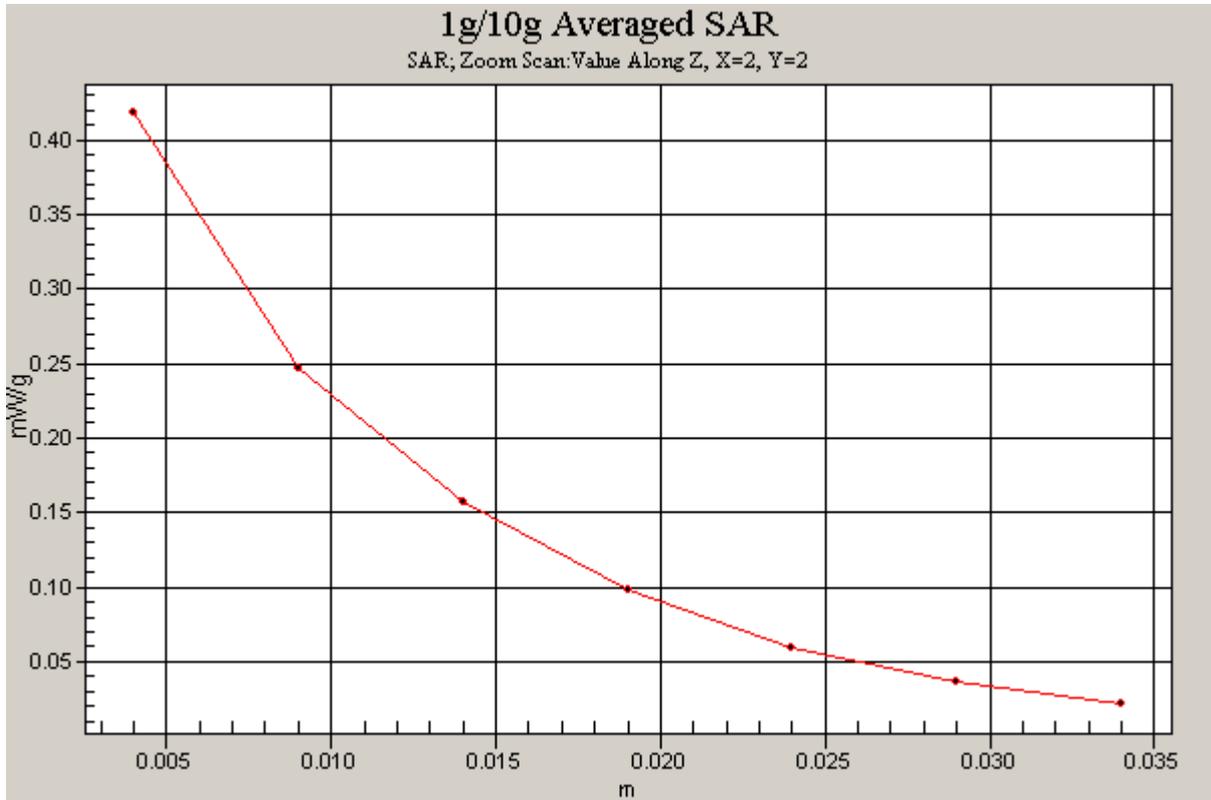
Figure 35 Body, Towards Ground, GSM 1900 GPRS (2Txslots) Channel 810

GSM 1900 GPRS (2Txslots) Towards Ground Middle

Date/Time: 5/7/2011 4:07:21 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.336 mW/g

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

Reference Value = 10.2 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.535 W/kg

SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.183 mW/g
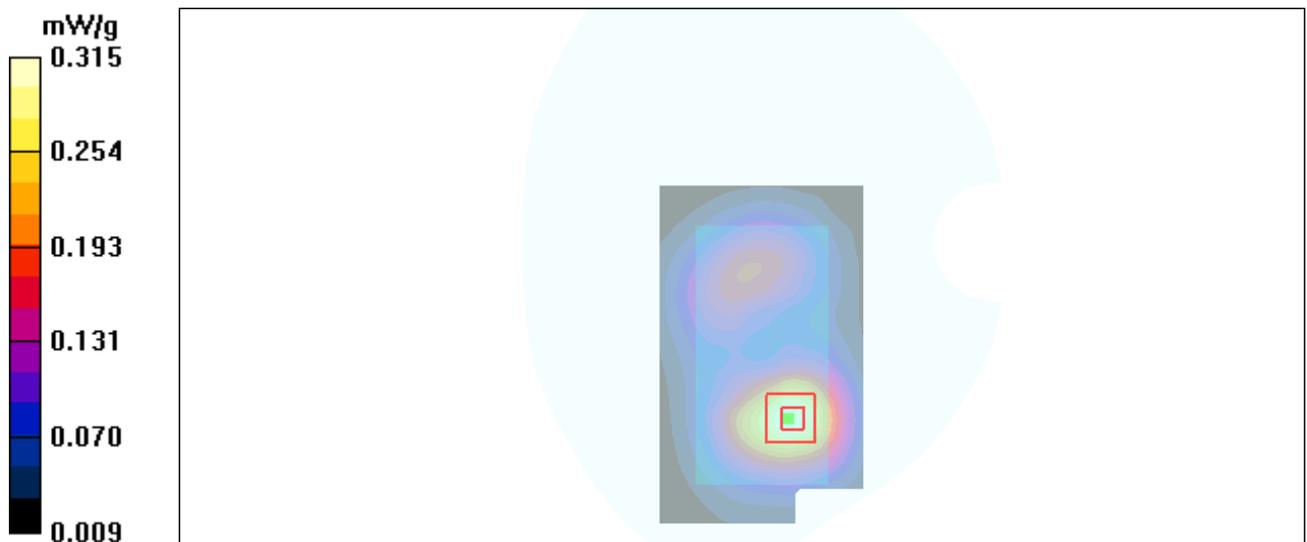
Maximum value of SAR (measured) = 0.326 mW/g
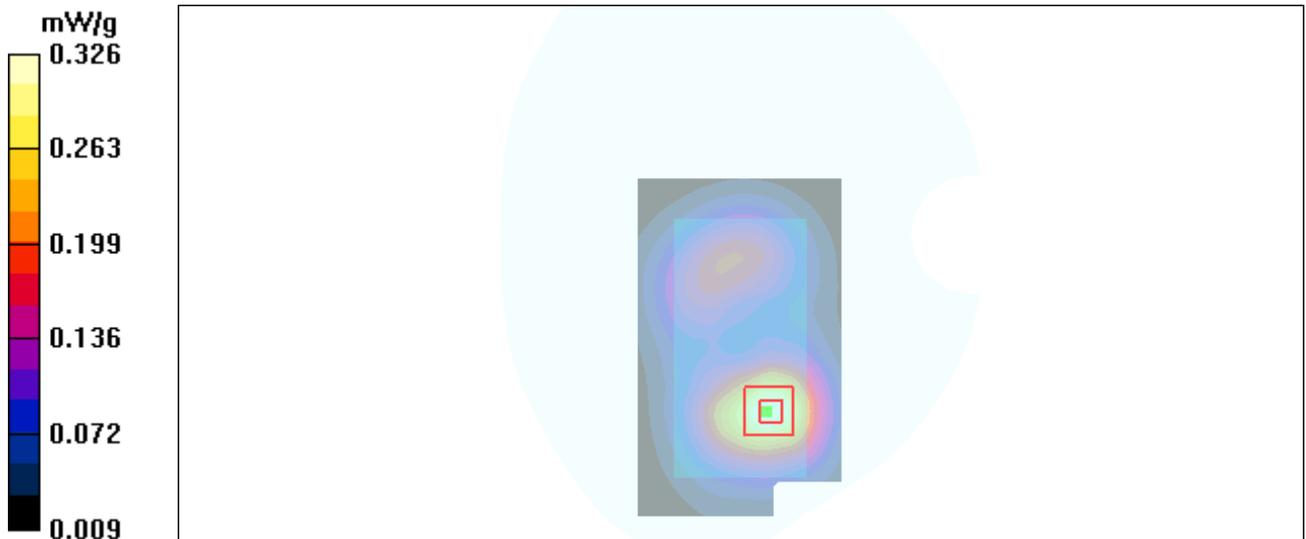
Figure 36 Body, Towards Ground, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Towards Ground Low

Date/Time: 5/7/2011 5:03:49 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 = 1.48 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.264 mW/g

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

Reference Value = 9.25 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.419 W/kg

SAR(1 g) = 0.244 mW/g; SAR(10 g) = 0.146 mW/g

Maximum value of SAR (measured) = 0.258 mW/g
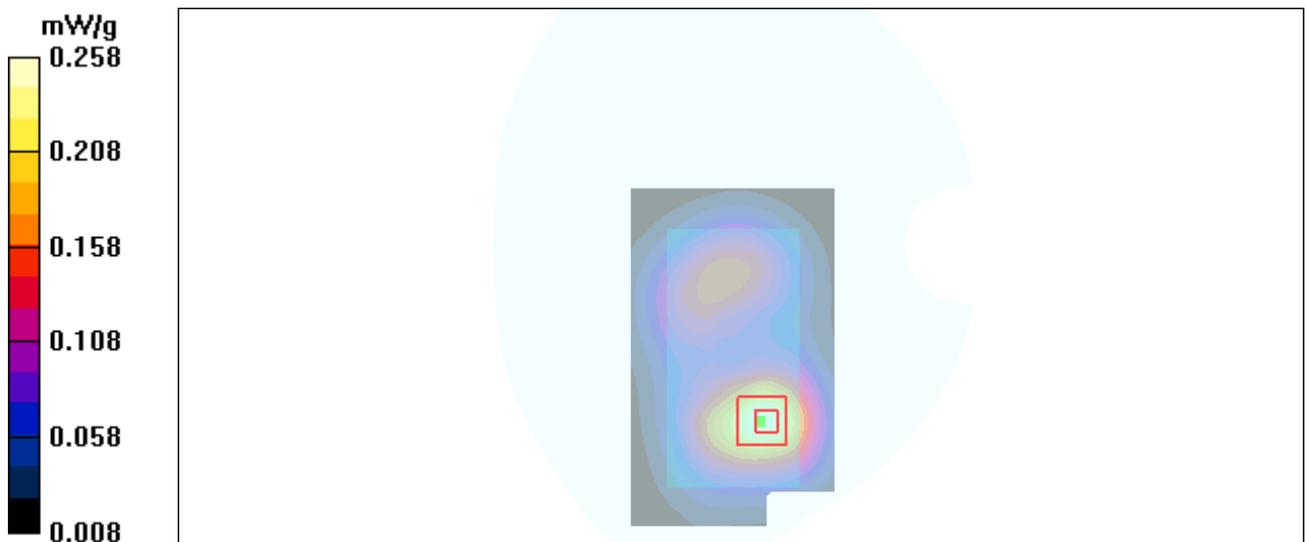
Figure 37 Body, Towards Ground, GSM 1900 GPRS (2Txslots) Channel 512

GSM 1900 GPRS (3Txslots) Towards Ground Middle

Date/Time: 5/7/2011 4:21:13 PM

Communication System: PCS 1900+GPRS(3Up); Frequency: 1880 MHz;Duty Cycle: 1:2.767

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.322 mW/g

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

Reference Value = 10.0 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 0.513 W/kg

SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.175 mW/g

Maximum value of SAR (measured) = 0.310 mW/g
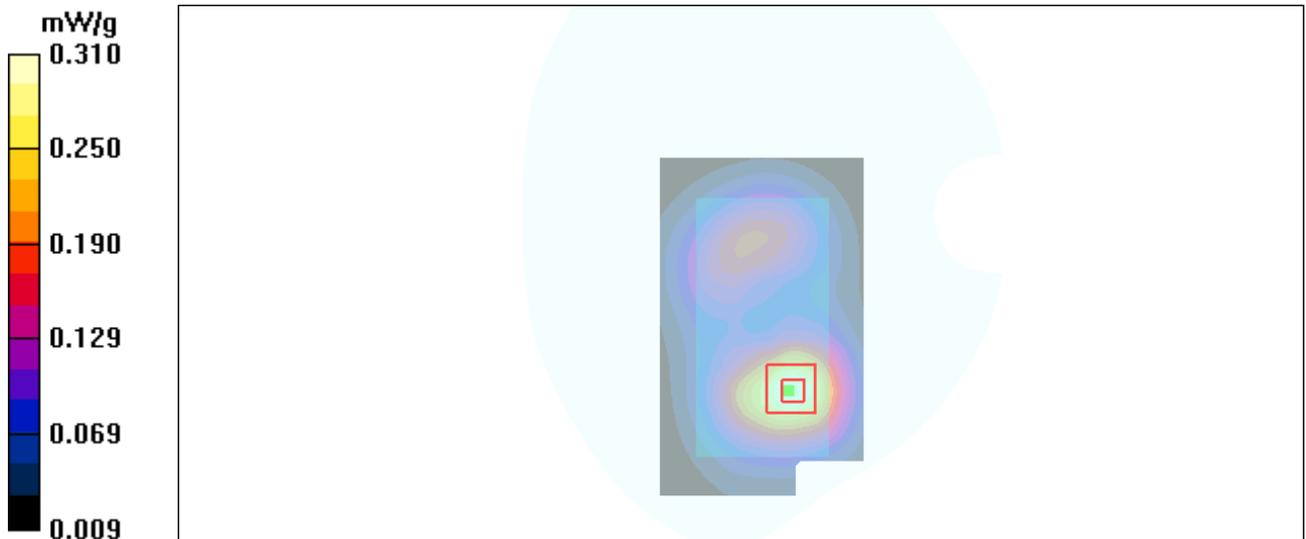
Figure 38 Body, Towards Ground, GSM 1900 GPRS (3Txslots) Channel 661

GSM 1900 GPRS (4Txslots) Towards Ground Middle

Date/Time: 5/7/2011 4:35:19 PM

Communication System: PCS 1900+GPRS(4Up); Frequency: 1880 MHz;Duty Cycle: 1:2.075

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.320 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.018 dB

Peak SAR (extrapolated) = 0.511 W/kg

SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.176 mW/g

Maximum value of SAR (measured) = 0.315 mW/g

Figure 39 Body, Towards Ground, GSM 1900 GPRS (4Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Towards Phantom Middle

Date/Time: 5/7/2011 1:48:11 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.275 mW/g

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

Reference Value = 9.01 V/m; Power Drift = -0.078 dB

Peak SAR (extrapolated) = 0.451 W/kg

SAR(1 g) = 0.243 mW/g; SAR(10 g) = 0.142 mW/g

Maximum value of SAR (measured) = 0.261 mW/g
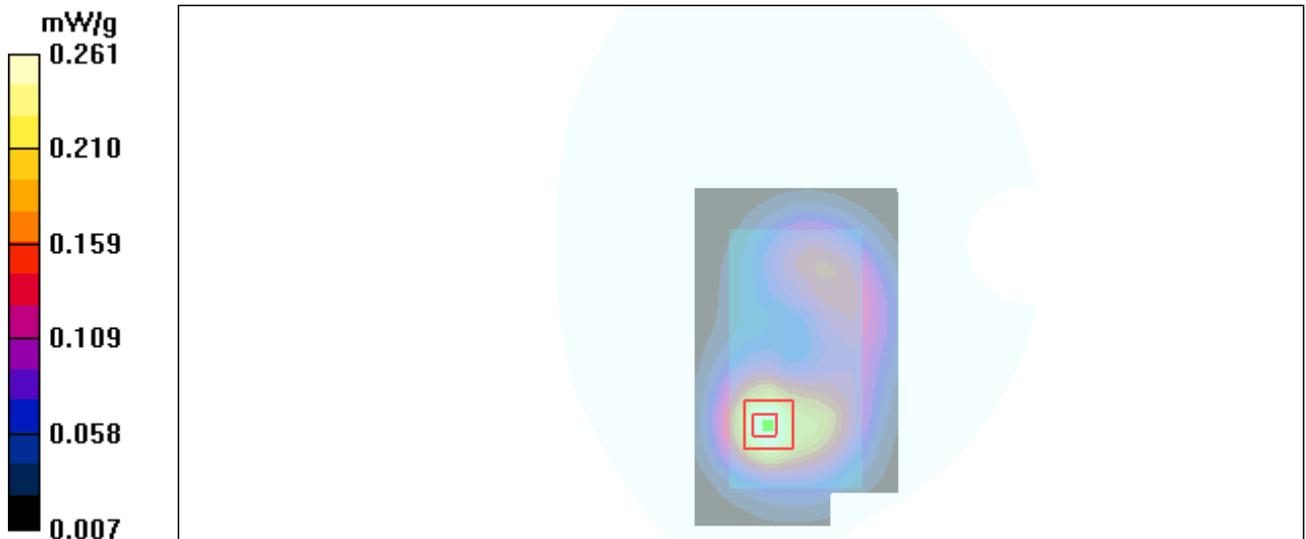
Figure 40 Body, Towards Phantom, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 with Earphone Towards Ground High

Date/Time: 5/7/2011 1:31:55 PM

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

Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; $ε_r$ = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.288 mW/g

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

Reference Value = 9.39 V/m; Power Drift = 0.032 dB

Peak SAR (extrapolated) = 0.493 W/kg

SAR(1 g) = 0.282 mW/g; SAR(10 g) = 0.168 mW/g

Maximum value of SAR (measured) = 0.305 mW/g
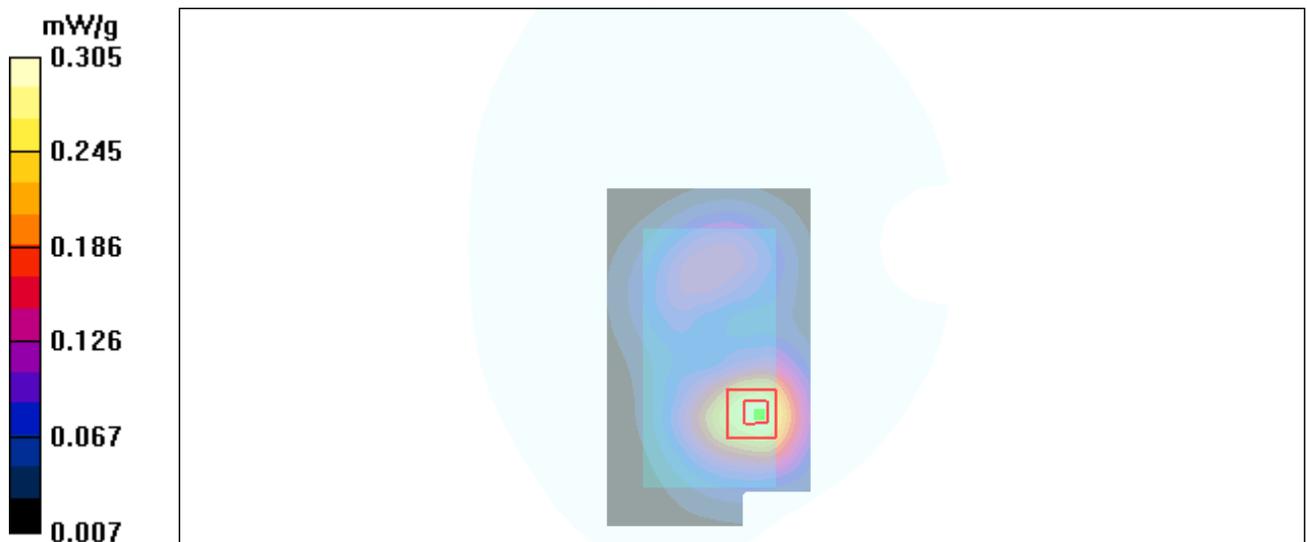
Figure 41 Body with Earphone, Towards Ground, GSM 1900 Channel 810

GSM 1900 EGPRS (2Txslots) Towards Ground High

Date/Time: 5/7/2011 5:20:52 PM

Communication System: PCS 1900+EGPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 1910 MHz; σ = 1.54 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.428 mW/g

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

Reference Value = 11.0 V/m; Power Drift = -0.146 dB

Peak SAR (extrapolated) = 0.669 W/kg

SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.228 mW/g

Maximum value of SAR (measured) = 0.406 mW/g
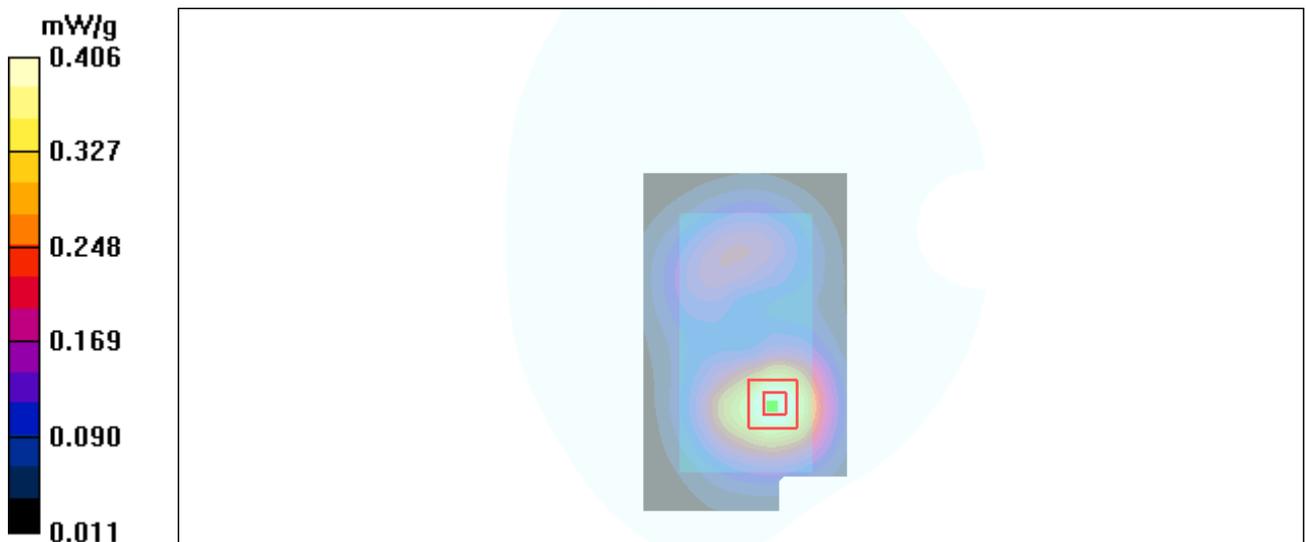
Figure 42 Body, Towards Ground, GSM 1900 EGPRS (2Txslots) Channel 810

WCDMA Band II Left Cheek High

Date/Time: 5/6/2011 11:16:37 AM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.43 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.752 mW/g

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

Reference Value = 4.63 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.684 mW/g; SAR(10 g) = 0.393 mW/g

Maximum value of SAR (measured) = 0.784 mW/g
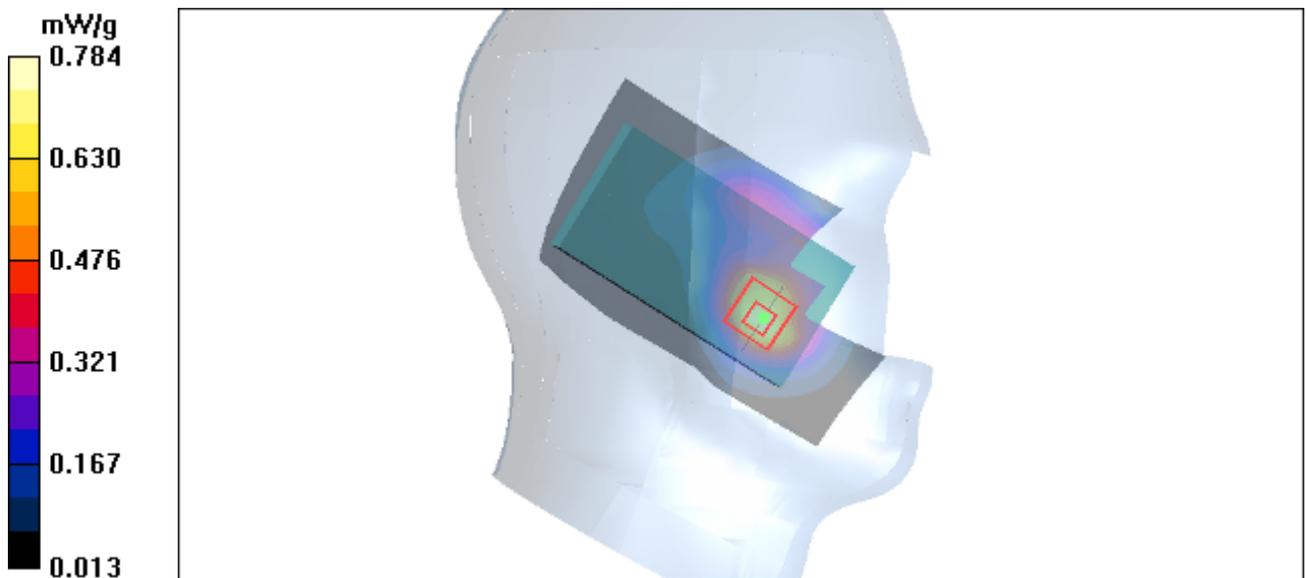
Figure 43 Left Hand Touch Cheek WCDMA Band II Channel 9538

WCDMA Band II Left Cheek Middle

Date/Time: 5/6/2011 12:43:45 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.913 mW/g

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

Reference Value = 5.49 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 1.22 W/kg

SAR(1 g) = 0.781 mW/g; SAR(10 g) = 0.443 mW/g

Maximum value of SAR (measured) = 0.895 mW/g
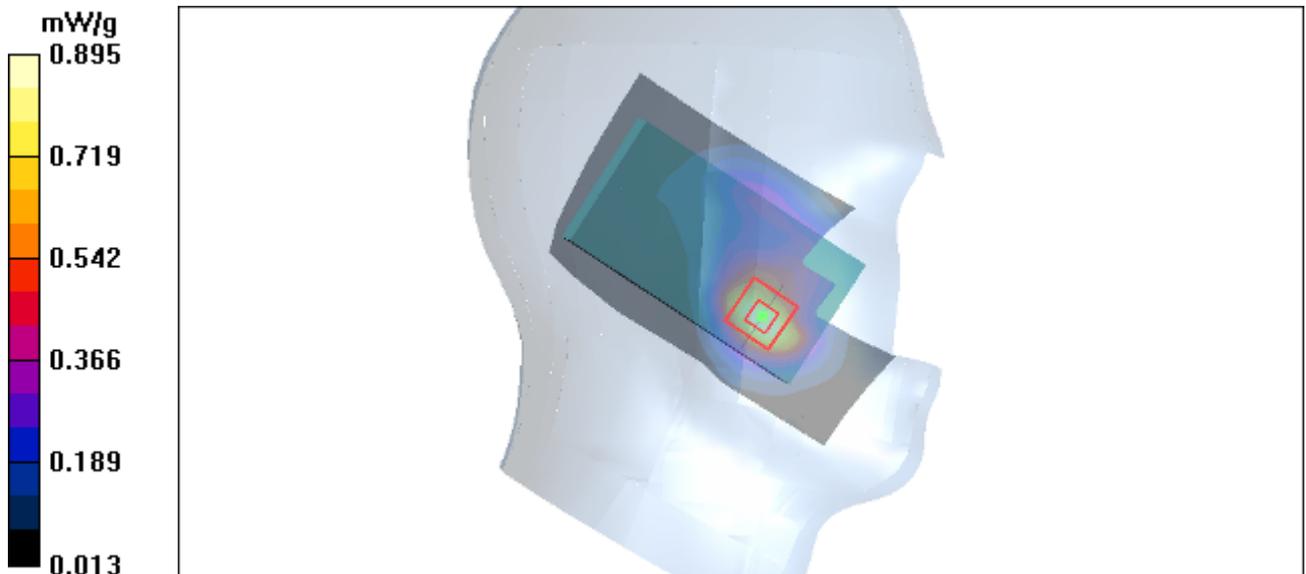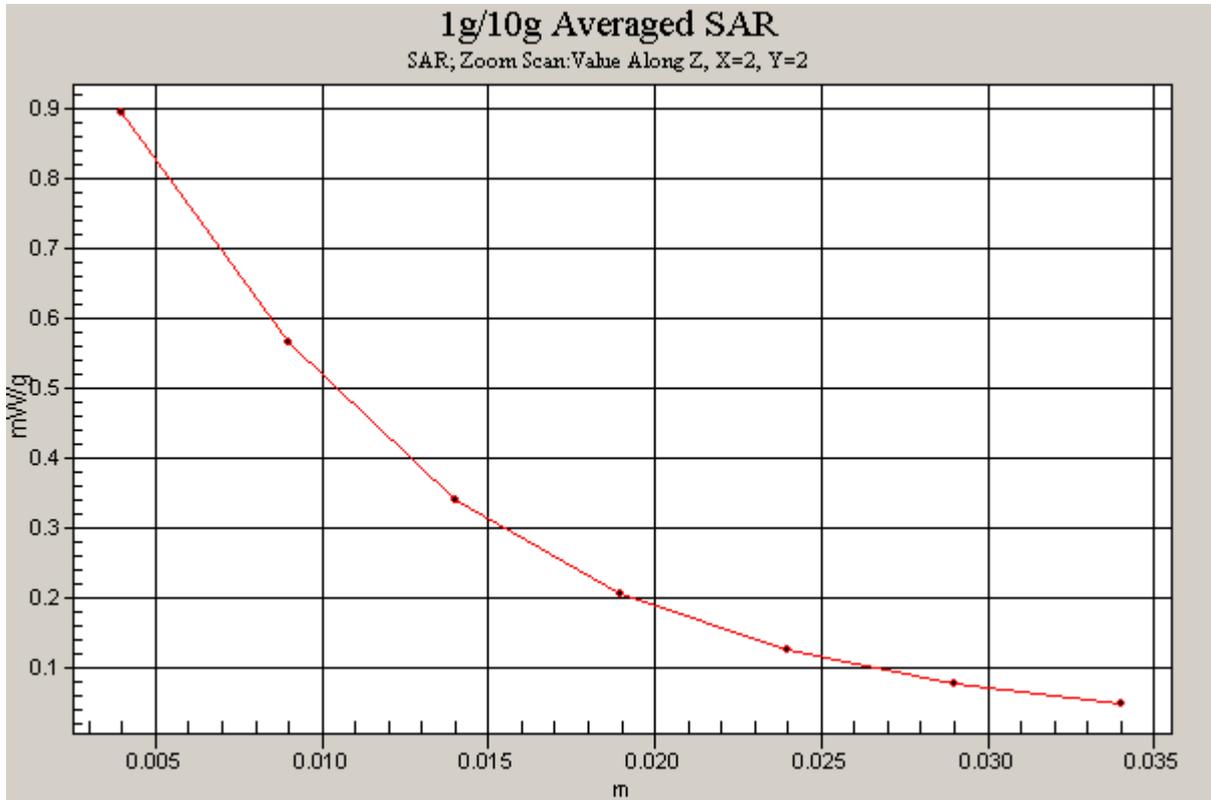
Figure 44 Left Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Left Cheek Low

Date/Time: 5/6/2011 1:11:43 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.38 mho/m; $ε_r$ = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.896 mW/g

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

Reference Value = 5.07 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.778 mW/g; SAR(10 g) = 0.439 mW/g

Maximum value of SAR (measured) = 0.894 mW/g
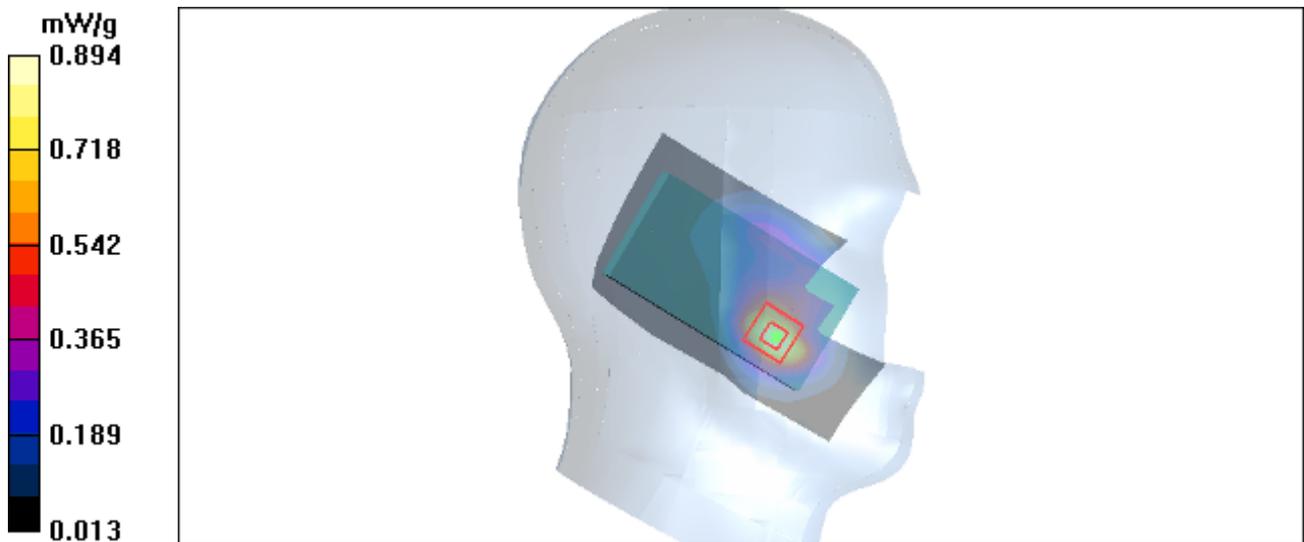
Figure 45 Left Hand Touch Cheek WCDMA Band II Channel 9262

WCDMA Band II Left Tilt Middle

Date/Time: 5/6/2011 1:27:44 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.268 mW/g

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

Reference Value = 11.3 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.303 W/kg

SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.139 mW/g

Maximum value of SAR (measured) = 0.236 mW/g
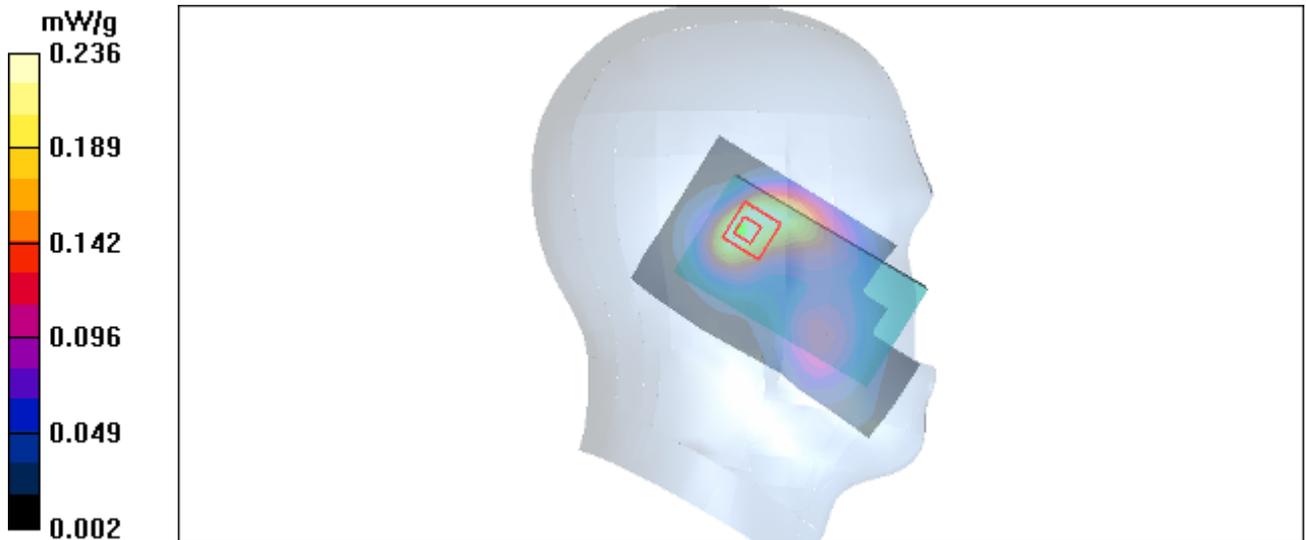
Figure 46 Left Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Right Cheek Middle

Date/Time: 5/6/2011 11:31:43 AM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.702 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.63 V/m; Power Drift = -0.046 dB

Peak SAR (extrapolated) = 0.699 W/kg

SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.314 mW/g

Maximum value of SAR (measured) = 0.589 mW/g

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

Reference Value = 9.63 V/m; Power Drift = -0.046 dB

Peak SAR (extrapolated) = 0.783 W/kg

SAR(1 g) = 0.614 mW/g; SAR(10 g) = 0.393 mW/g

Maximum value of SAR (measured) = 0.659 mW/g
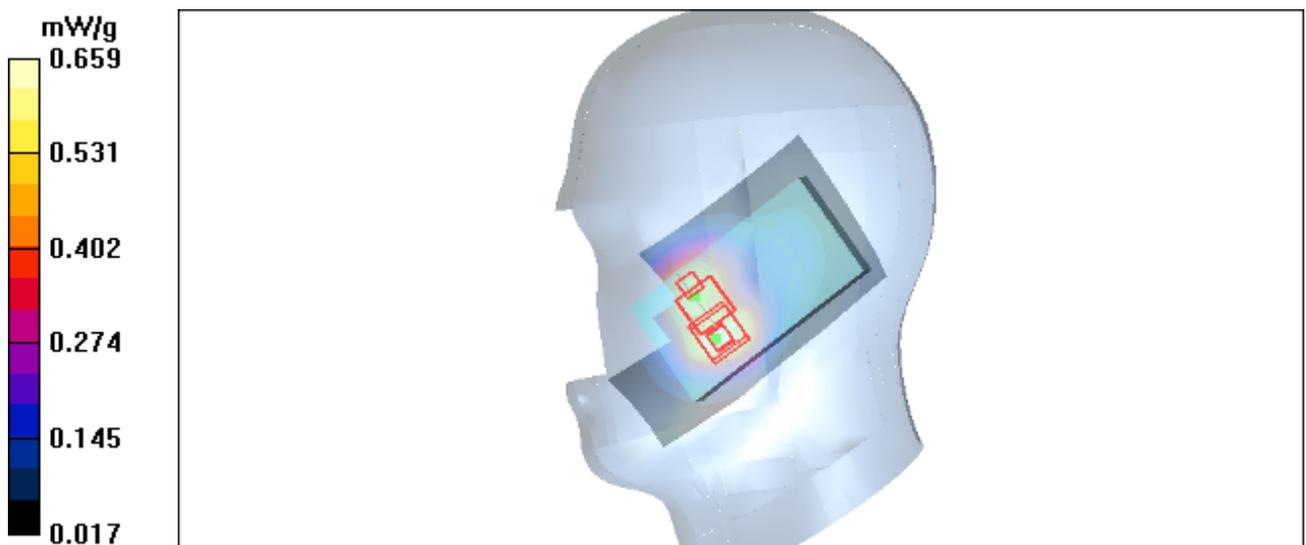
Figure 47 Right Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Right Tilt Middle

Date/Time: 5/6/2011 1:47:12 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; $ε_r$ = 40.1; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.286 mW/g

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

Reference Value = 14.9 V/m; Power Drift = -0.191 dB

Peak SAR (extrapolated) = 0.351 W/kg

SAR(1 g) = 0.254 mW/g; SAR(10 g) = 0.153 mW/g

Maximum value of SAR (measured) = 0.275 mW/g
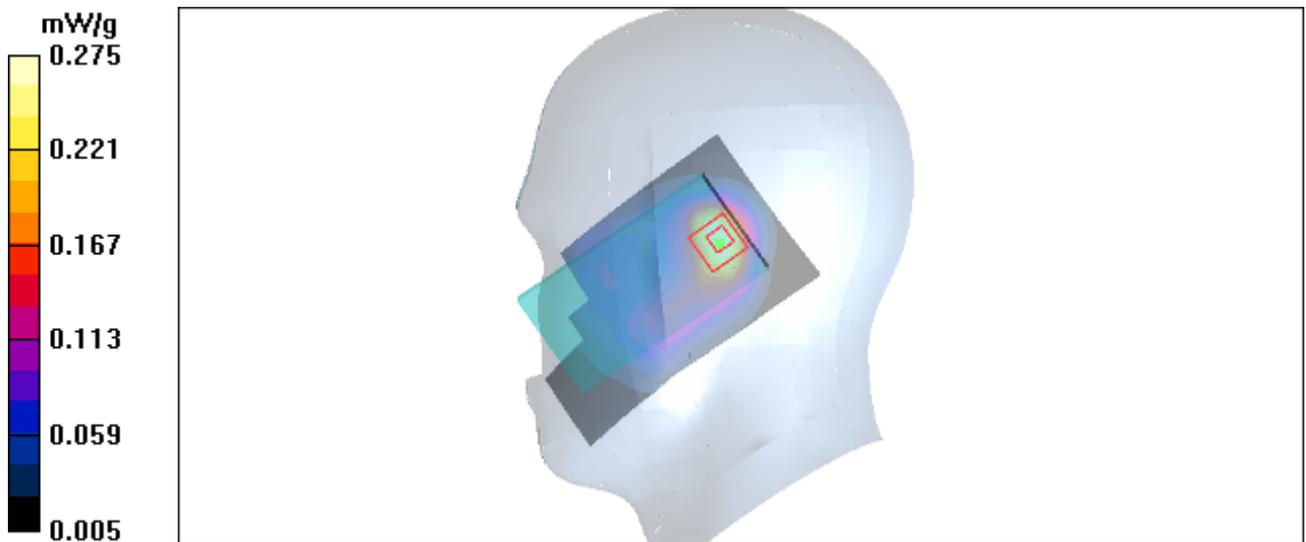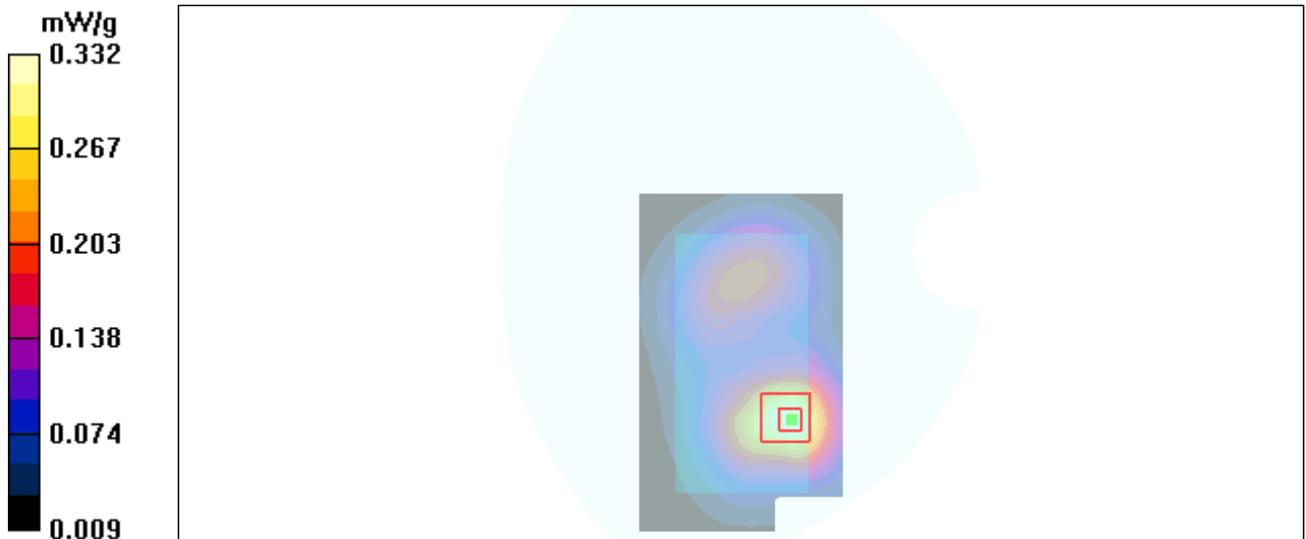

Figure 48 Right Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Towards Ground High

Date/Time: 5/7/2011 2:40:40 PM

Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.54 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.298 mW/g

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

Reference Value = 9.37 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 0.487 W/kg

SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.164 mW/g

Maximum value of SAR (measured) = 0.296 mW/g
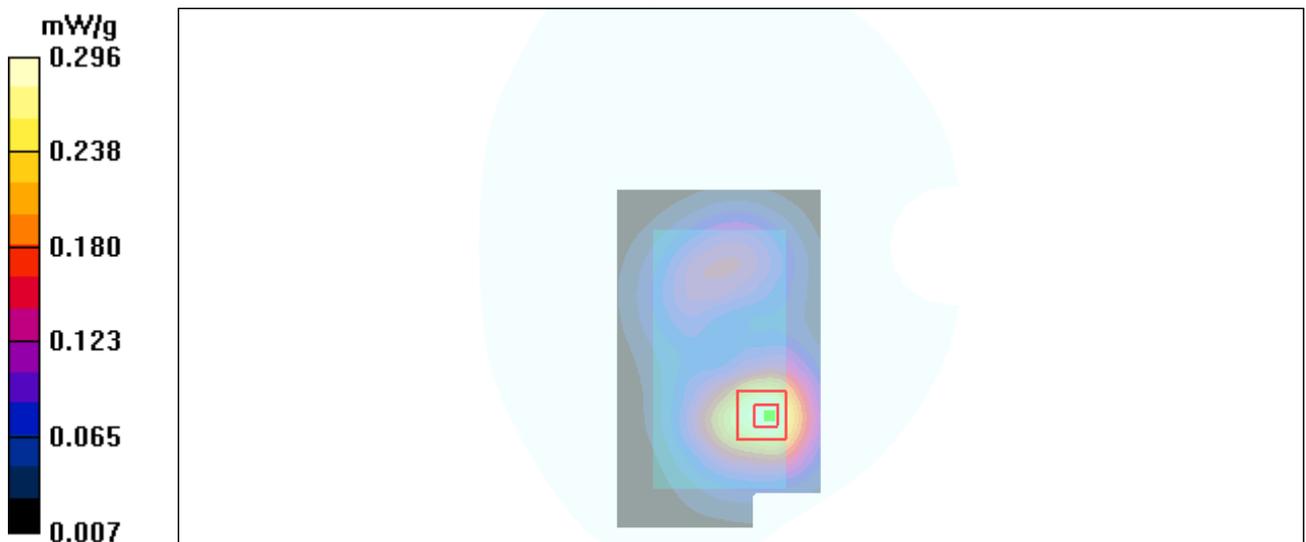
Figure 49 Body, Towards Ground, WCDMA Band II Channel 9538

WCDMA Band II Towards Ground Middle

Date/Time: 5/7/2011 2:26:15 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; $ε_r$ = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.382 mW/g

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

Reference Value = 11.0 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.353 mW/g; SAR(10 g) = 0.210 mW/g

Maximum value of SAR (measured) = 0.380 mW/g
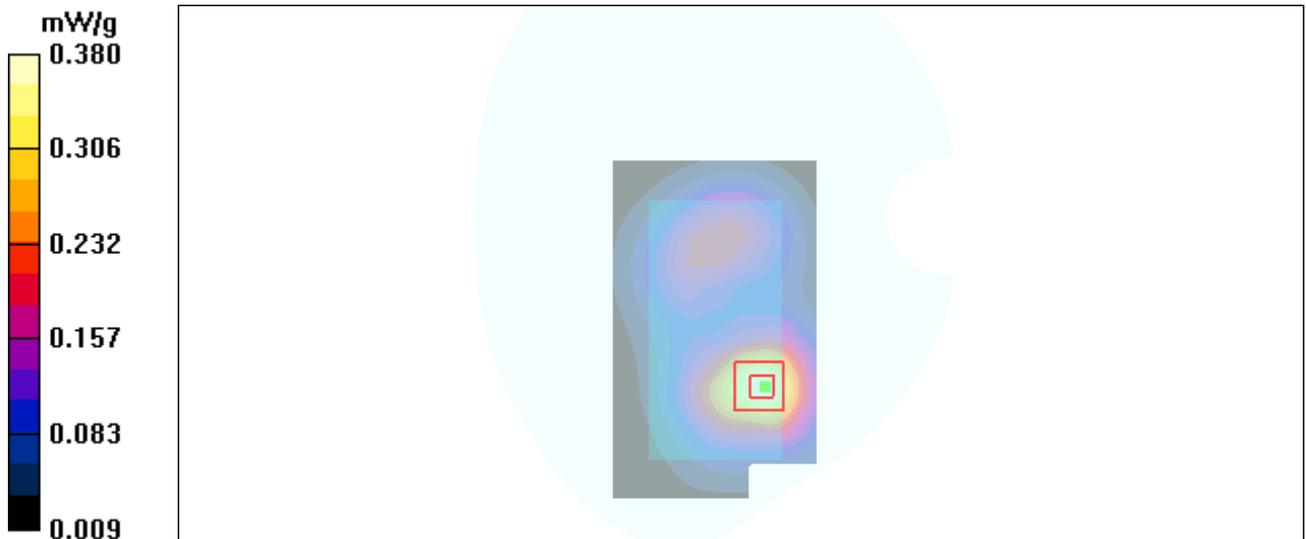
Figure 50 Body, Towards Ground, WCDMA Band II Channel 9400

WCDMA Band II Towards Ground Low

Date/Time: 5/7/2011 2:54:27 PM

Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.48 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.340 mW/g

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

Reference Value = 10.5 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.531 W/kg

SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.183 mW/g

Maximum value of SAR (measured) = 0.332 mW/g

Figure 51 Body, Towards Ground, WCDMA Band II Channel 9262

WCDMA Band II Towards Phantom Middle

Date/Time: 5/7/2011 2:05:14 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.353 mW/g

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

Reference Value = 9.79 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 0.602 W/kg

SAR(1 g) = 0.325 mW/g; SAR(10 g) = 0.189 mW/g

Maximum value of SAR (measured) = 0.344 mW/g
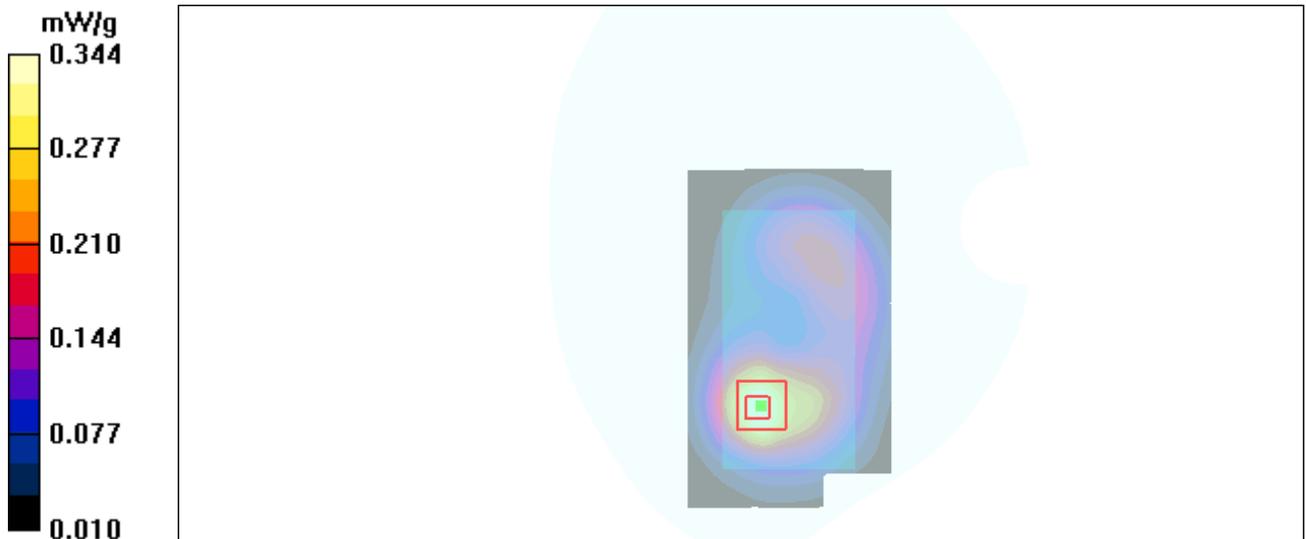
Figure 52 Body, Towards Phantom, WCDMA Band II Channel 9400

WCDMA Band II with Earphone Towards Ground Middle

Date/Time: 5/7/2011 3:09:32 PM

Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.383 mW/g

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

Reference Value = 11.1 V/m; Power Drift = 0.063 dB

Peak SAR (extrapolated) = 0.627 W/kg

SAR(1 g) = 0.360 mW/g; SAR(10 g) = 0.214 mW/g

Maximum value of SAR (measured) = 0.387 mW/g
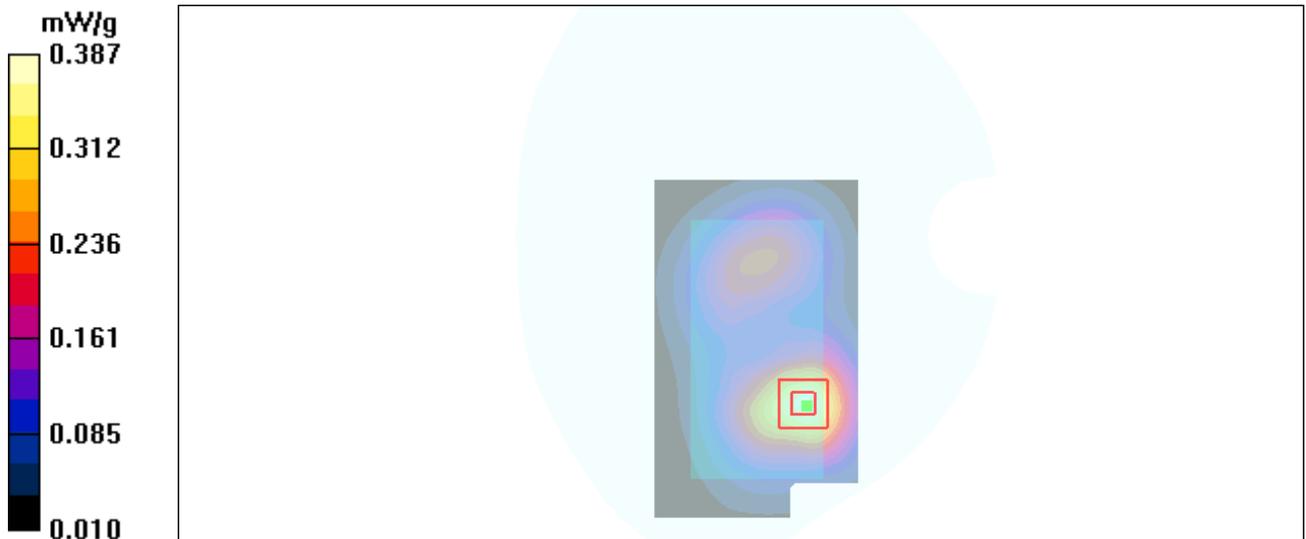
Figure 53 Body with Earphone, Towards Ground, WCDMA Band II Channel 9400

WCDMA Band II HSDPA Towards Ground Middle

Date/Time: 5/7/2011 3:24:57 PM

Communication System: WCDMA Band II+HSDPA; Frequency: 1880 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.392 mW/g

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

Reference Value = 11.4 V/m; Power Drift = 0.006 dB

Peak SAR (extrapolated) = 0.653 W/kg

SAR(1 g) = 0.374 mW/g; SAR(10 g) = 0.223 mW/g

Maximum value of SAR (measured) = 0.403 mW/g
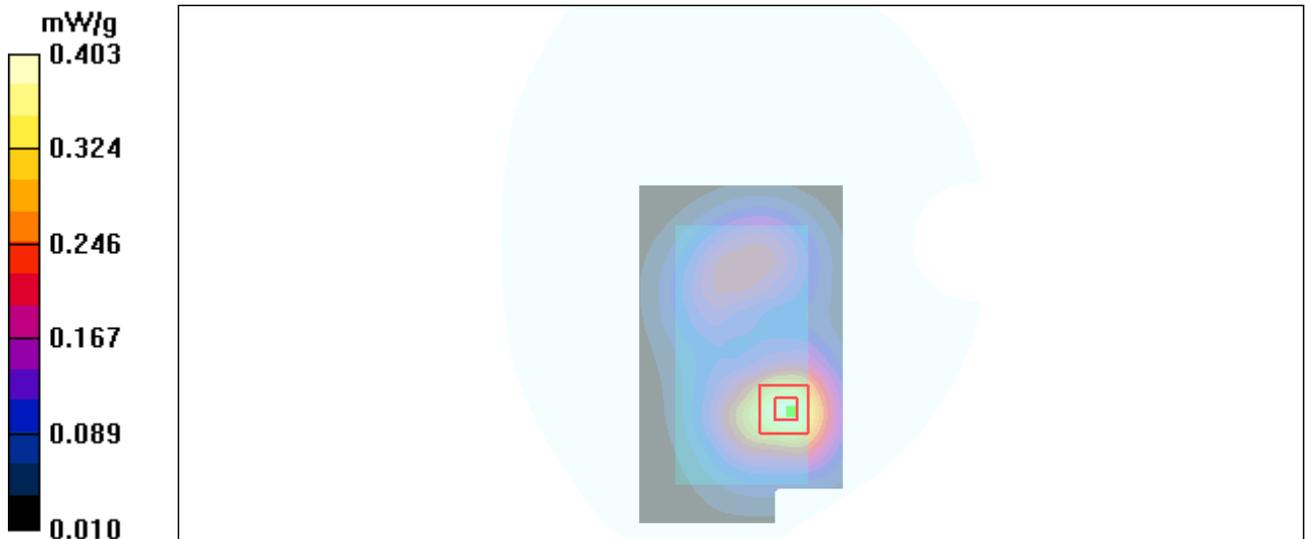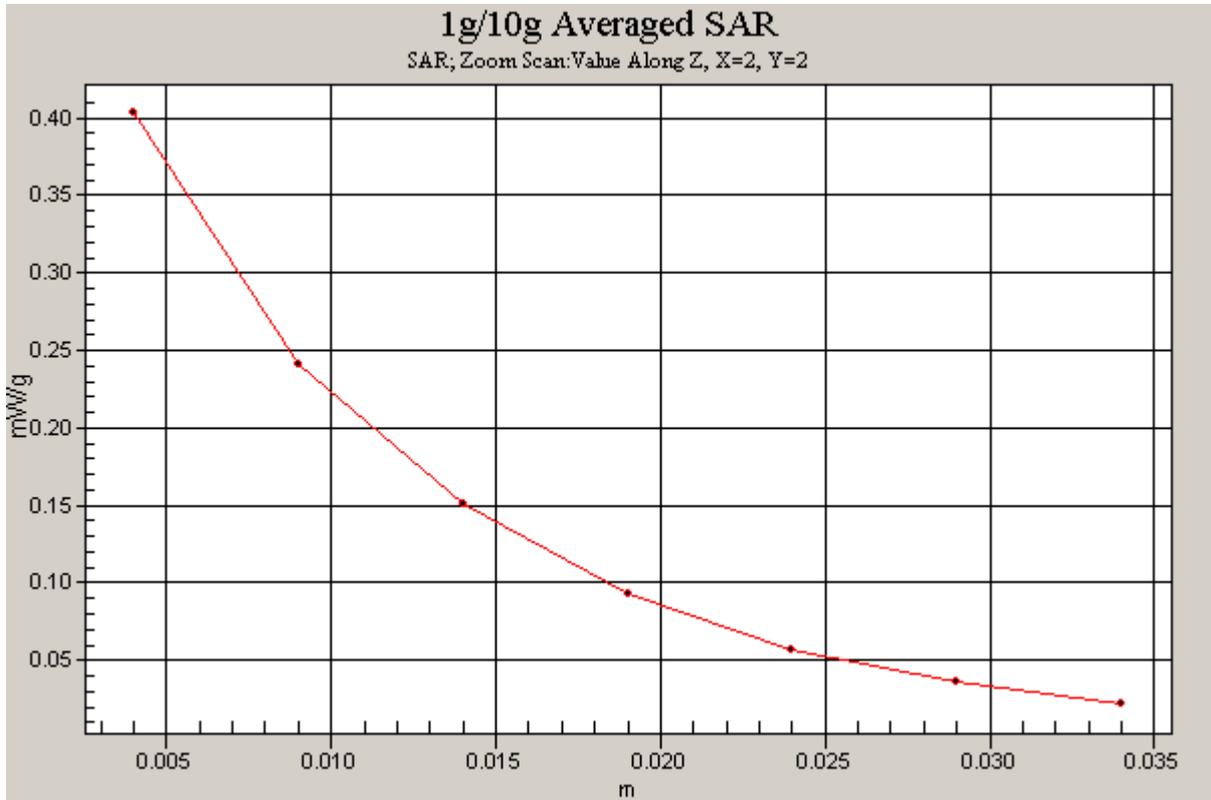
Figure 54 Body, Towards Ground, WCDMA Band II HSDPA Channel 9400

WCDMA Band V Left Cheek High

Date/Time: 5/5/2011 2:07:42 PM

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

Medium parameters used: f = 847 MHz; σ = 0.914 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.654 mW/g

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

Reference Value = 9.19 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.868 W/kg

SAR(1 g) = 0.629 mW/g; SAR(10 g) = 0.443 mW/g

Maximum value of SAR (measured) = 0.669 mW/g
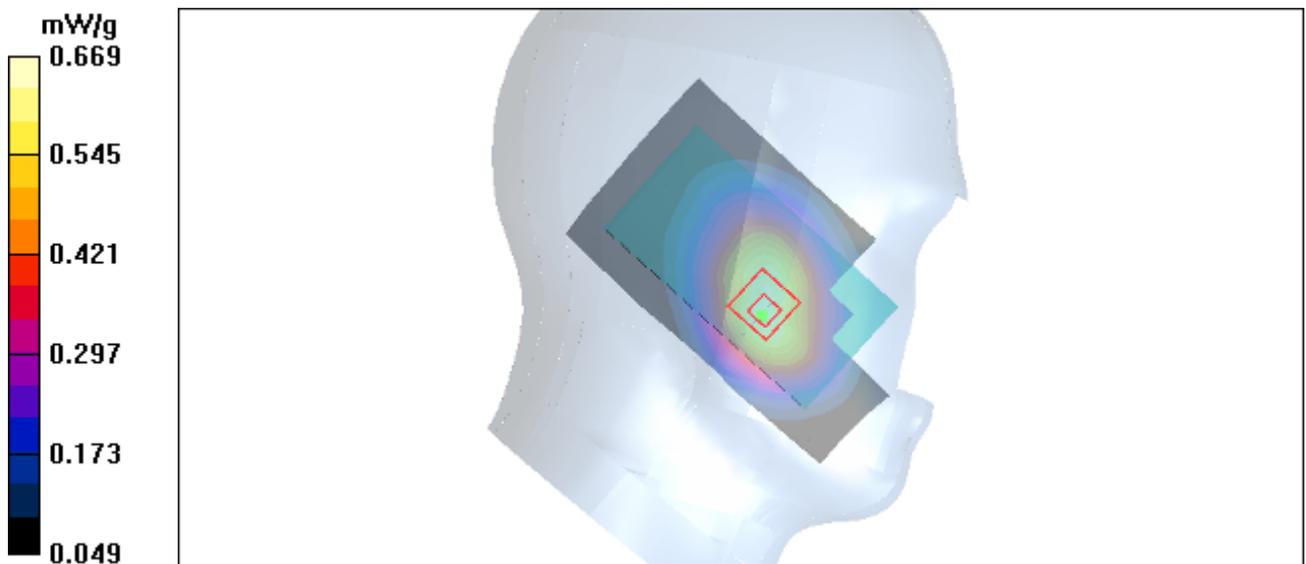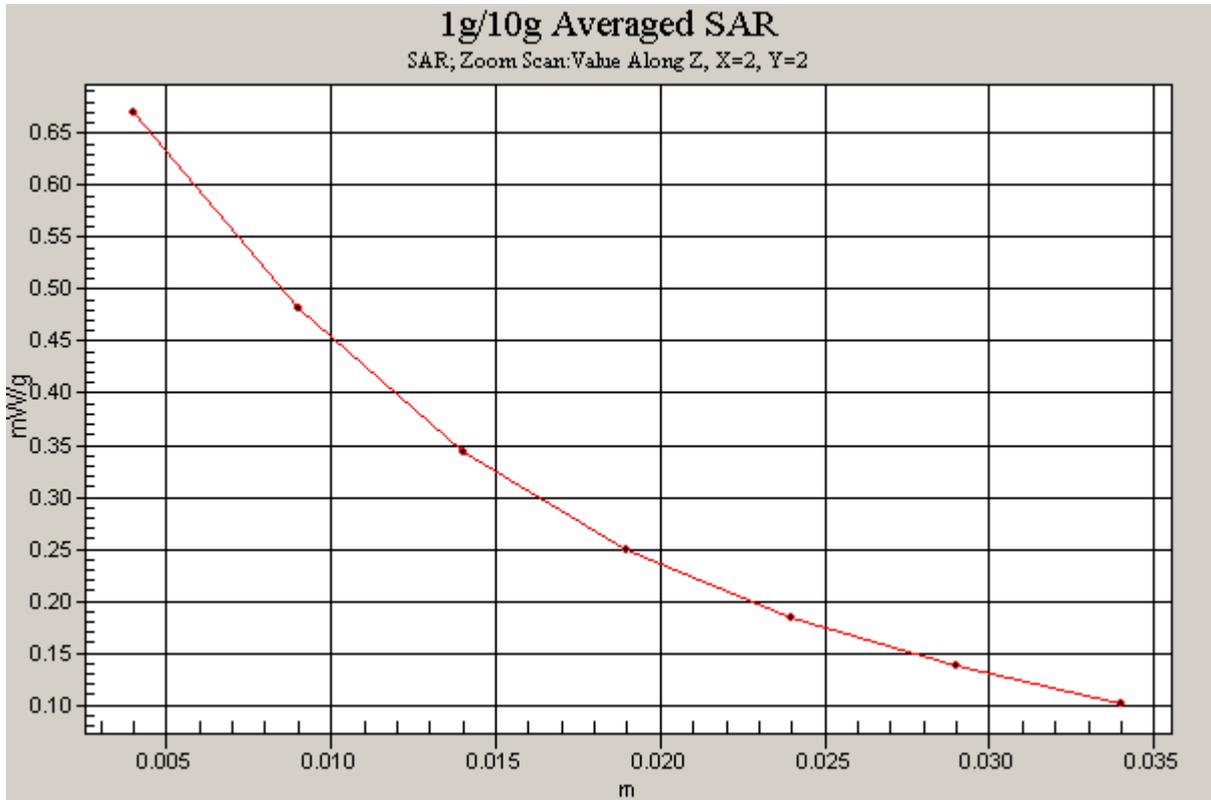
Figure 55 Left Hand Touch Cheek WCDMA Band V Channel 4233

WCDMA Band V Left Cheek Middle

Date/Time: 5/5/2011 3:59:13 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.533 mW/g

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

Reference Value = 7.85 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 0.707 W/kg

SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.357 mW/g

Maximum value of SAR (measured) = 0.536 mW/g
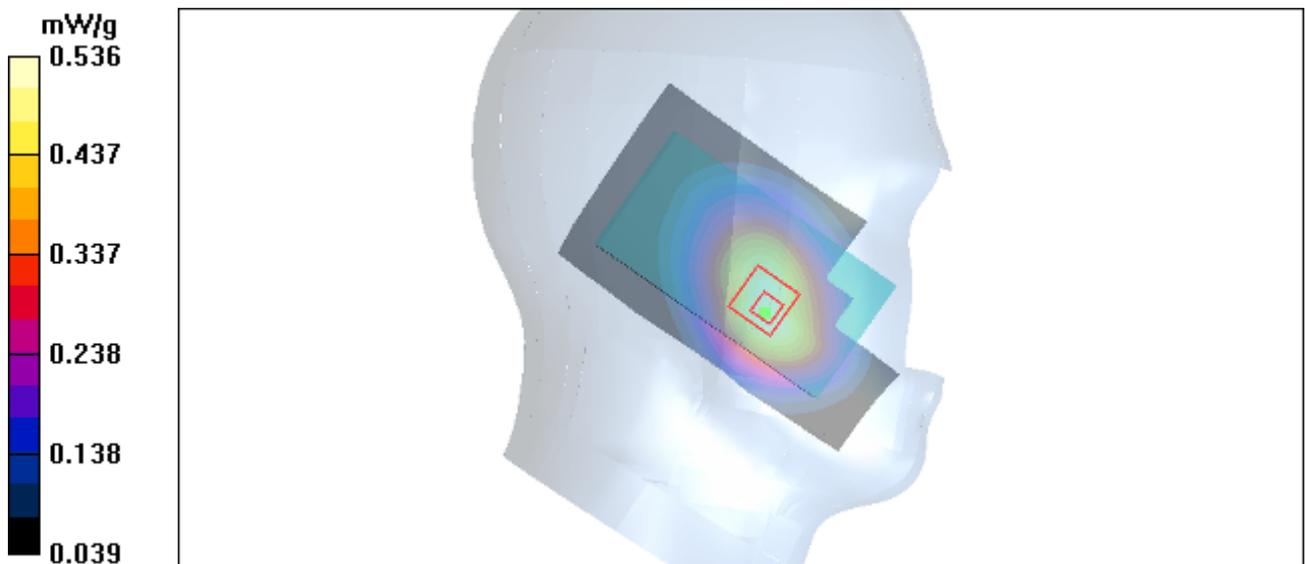
Figure 56 Left Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Left Cheek Low

Date/Time: 5/5/2011 4:13:29 PM

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

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.895 mho/m; ε_r = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.570 mW/g

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

Reference Value = 8.30 V/m; Power Drift = -0.163 dB

Peak SAR (extrapolated) = 0.755 W/kg

SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.382 mW/g

Maximum value of SAR (measured) = 0.579 mW/g
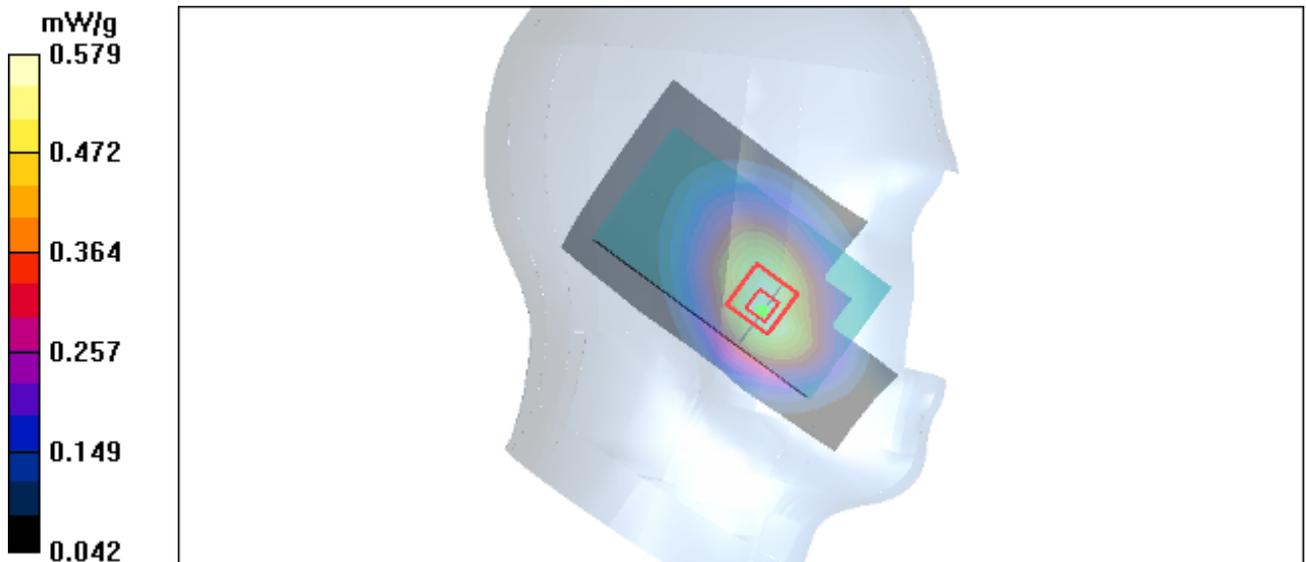
Figure 57 Left Hand Touch Cheek WCDMA Band V Channel 4132

WCDMA Band V Left Tilt Middle

Date/Time: 5/5/2011 4:30:49 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.303 mW/g

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

Reference Value = 12.7 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.326 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.210 mW/g

Maximum value of SAR (measured) = 0.291 mW/g
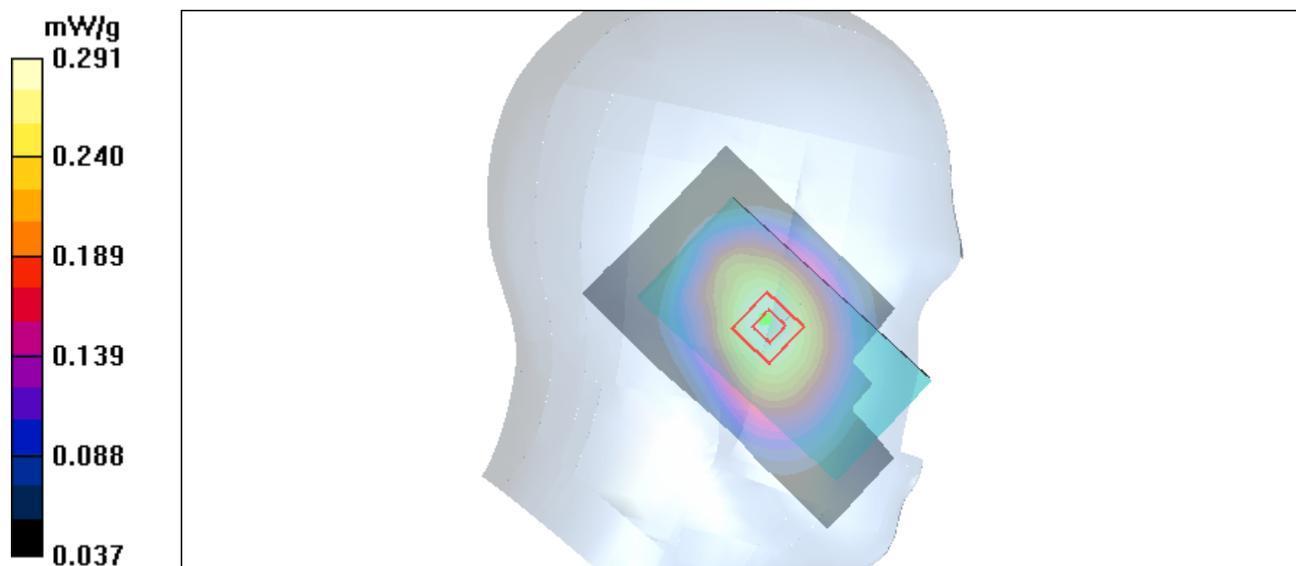
Figure 58 Left Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Right Cheek Middle

Date/Time: 5/5/2011 4:47:54 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; $ε_r$ = 41.7; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.457 mW/g

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

Reference Value = 7.49 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.507 W/kg

SAR(1 g) = 0.430 mW/g; SAR(10 g) = 0.326 mW/g

Maximum value of SAR (measured) = 0.450 mW/g
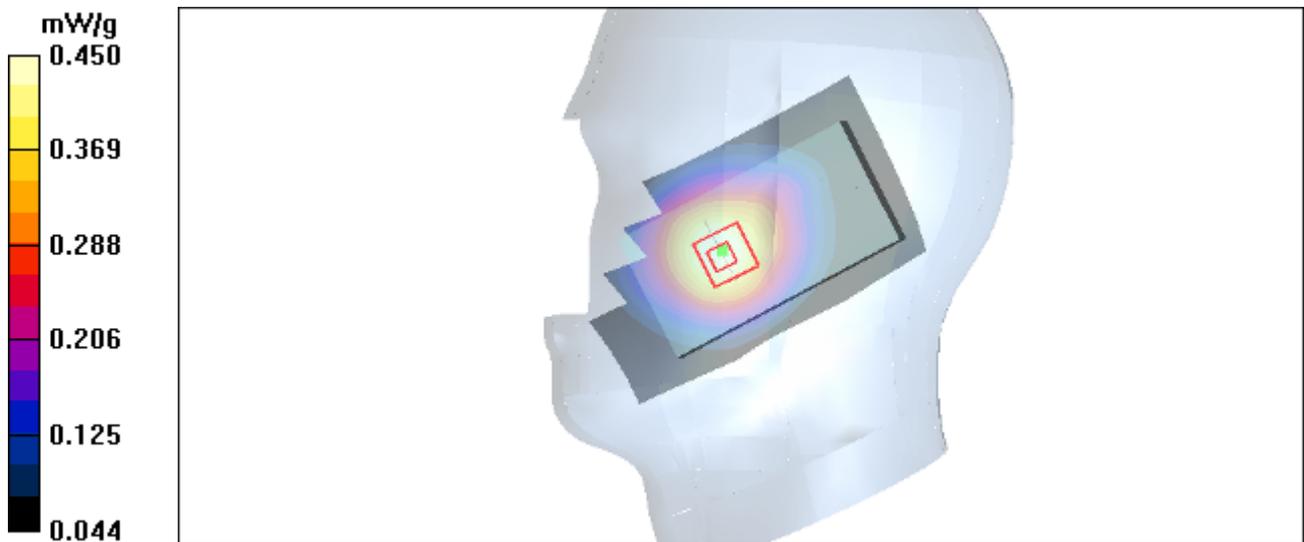
Figure 59 Right Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Right Tilt Middle

Date/Time: 5/5/2011 5:03:29 PM

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

Medium parameters used: f = 837 MHz; σ = 0.905 mho/m; ε_r = 41.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.259 mW/g

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

Reference Value = 11.5 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.293 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.187 mW/g

Maximum value of SAR (measured) = 0.259 mW/g
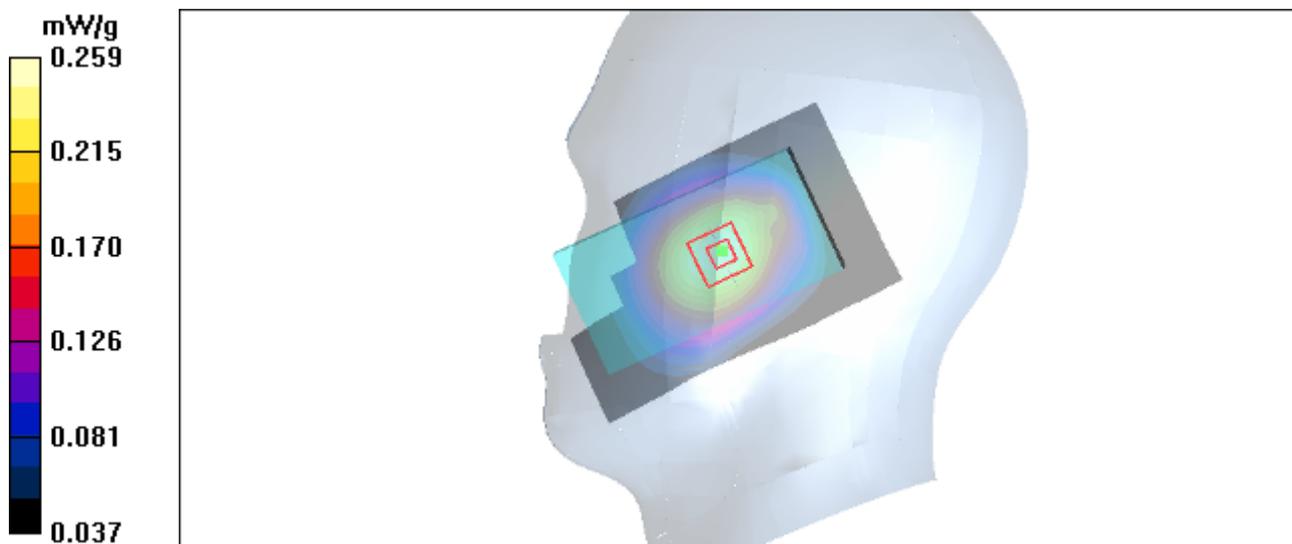
Figure 60 Right Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Towards Ground High

Date/Time: 5/5/2011 10:49:51 PM

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

Medium parameters used: f = 847 MHz; σ = 1.01 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.698 mW/g

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

Reference Value = 12.3 V/m; Power Drift = -0.065 dB

Peak SAR (extrapolated) = 0.810 W/kg

SAR(1 g) = 0.645 mW/g; SAR(10 g) = 0.471 mW/g

Maximum value of SAR (measured) = 0.684 mW/g
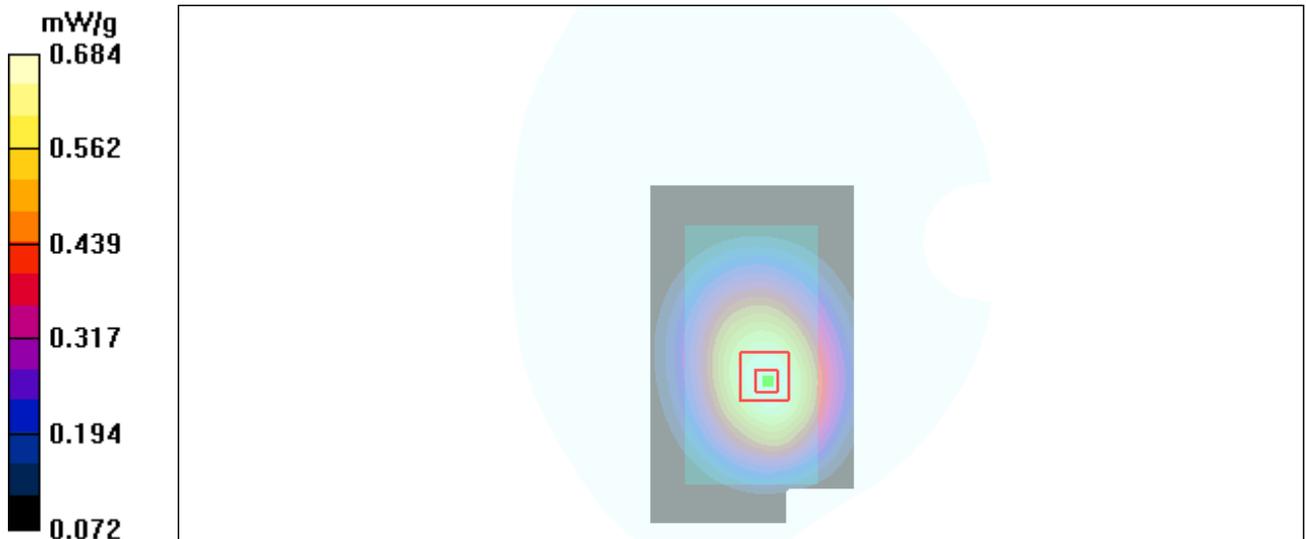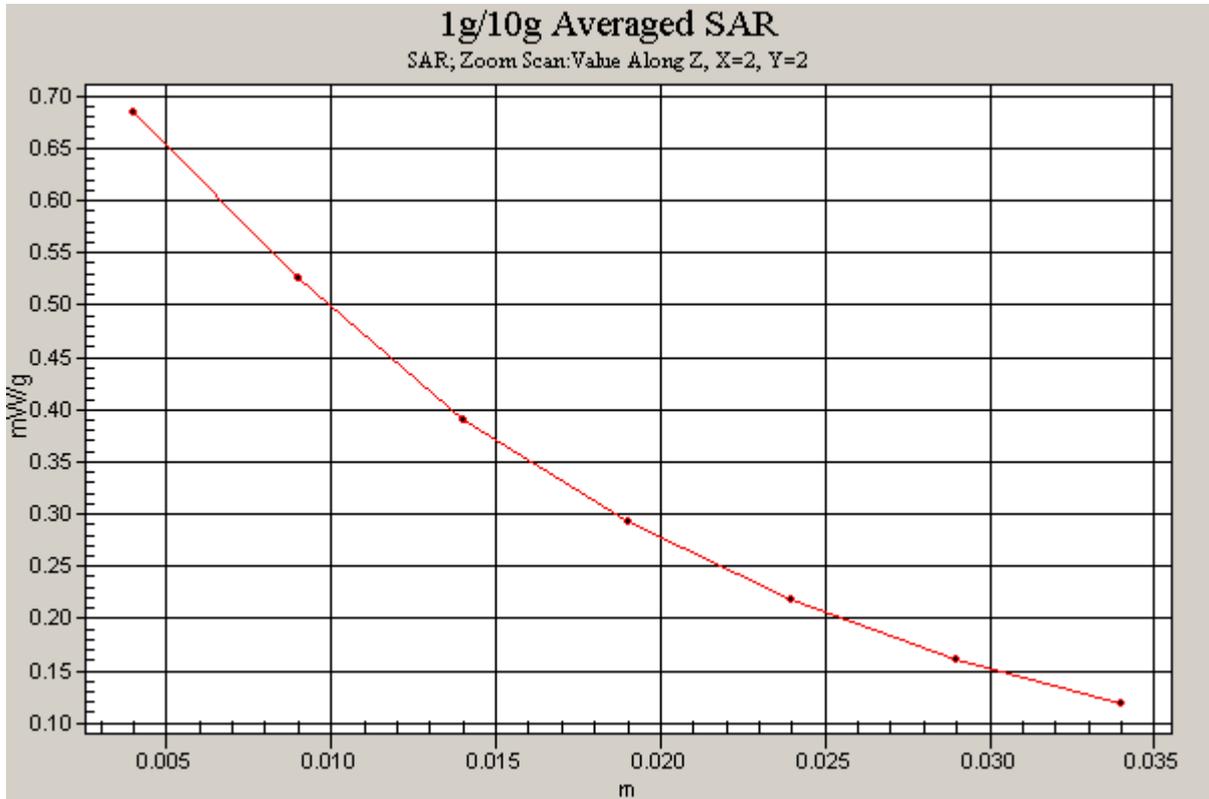
Figure 61 Body, Towards Ground, WCDMA Band V Channel 4233

WCDMA Band V Towards Ground Middle

Date/Time: 5/5/2011 10:36:35 PM

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

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.598 mW/g

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

Reference Value = 11.1 V/m; Power Drift = -0.154 dB

Peak SAR (extrapolated) = 0.681 W/kg

SAR(1 g) = 0.543 mW/g; SAR(10 g) = 0.397 mW/g
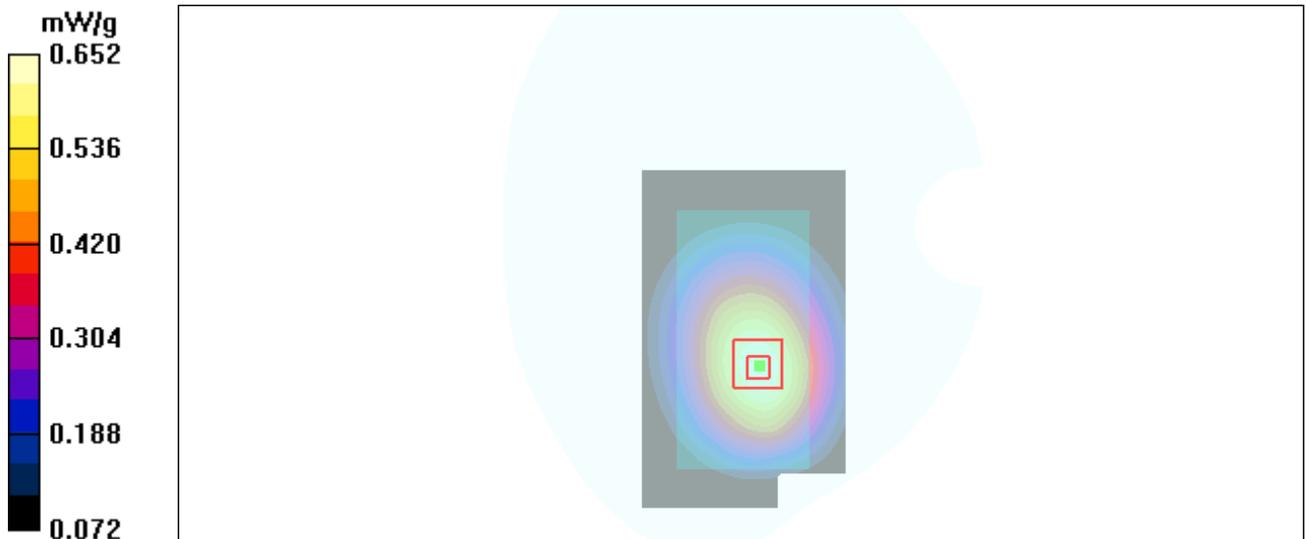
Maximum value of SAR (measured) = 0.575 mW/g
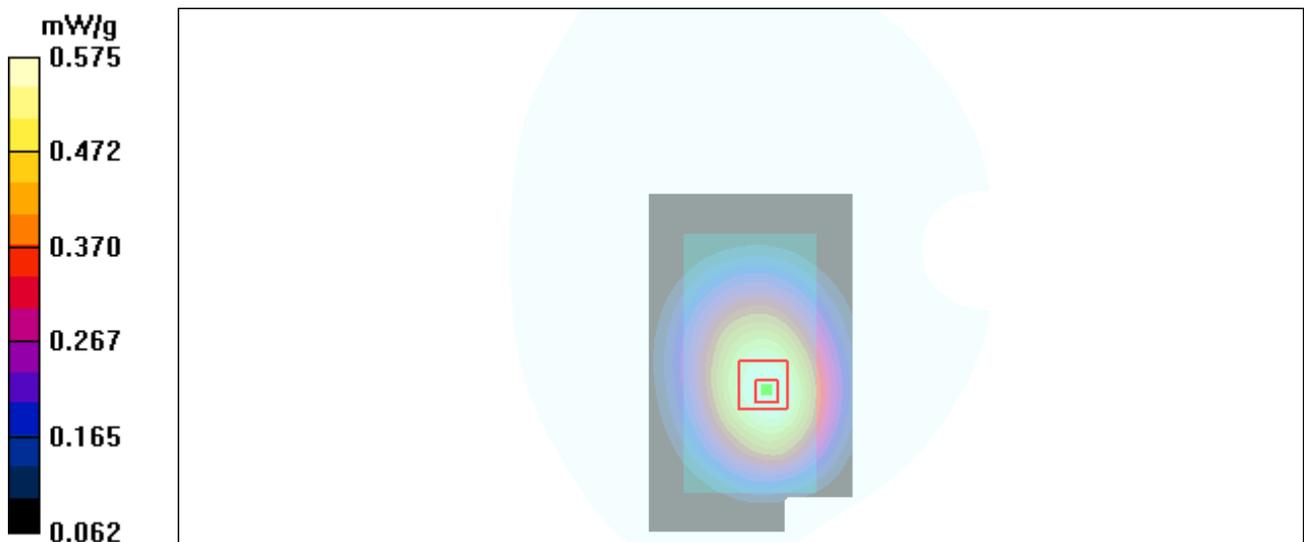
Figure 62 Body, Towards Ground, WCDMA Band V Channel 4183

WCDMA Band V Towards Ground Low

Date/Time: 5/5/2011 11:03:29 PM

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

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.987 mho/m; ε_r = 56.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.654 mW/g

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

Reference Value = 11.7 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.769 W/kg

SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.449 mW/g

Maximum value of SAR (measured) = 0.652 mW/g

Figure 63 Body, Towards Ground, WCDMA Band V Channel 4132

WCDMA Band V Towards Phantom Middle

Date/Time: 5/5/2011 11:17:11 PM

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

Medium parameters used: f = 837 MHz; σ = 0.996 mho/m; $ε_r$ = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.388 mW/g

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

Reference Value = 8.50 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 0.461 W/kg

SAR(1 g) = 0.366 mW/g; SAR(10 g) = 0.268 mW/g

Maximum value of SAR (measured) = 0.387 mW/g
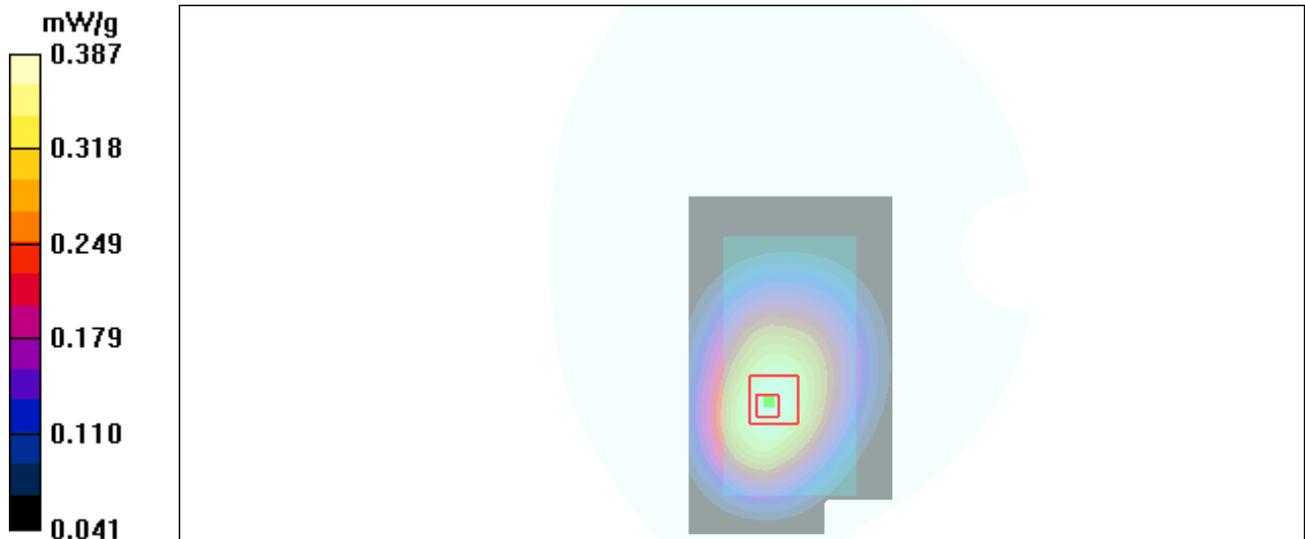
Figure 64 Body, Towards Phantom, WCDMA Band V Channel 4183

WCDMA Band V with Earphone Towards Ground High

Date/Time: 5/5/2011 11:32:09 PM

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

Medium parameters used: f = 847 MHz; σ = 1.01 mho/m; ε_r = 56.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.493 mW/g

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

Reference Value = 7.30 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 0.589 W/kg

SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.326 mW/g

Maximum value of SAR (measured) = 0.487 mW/g
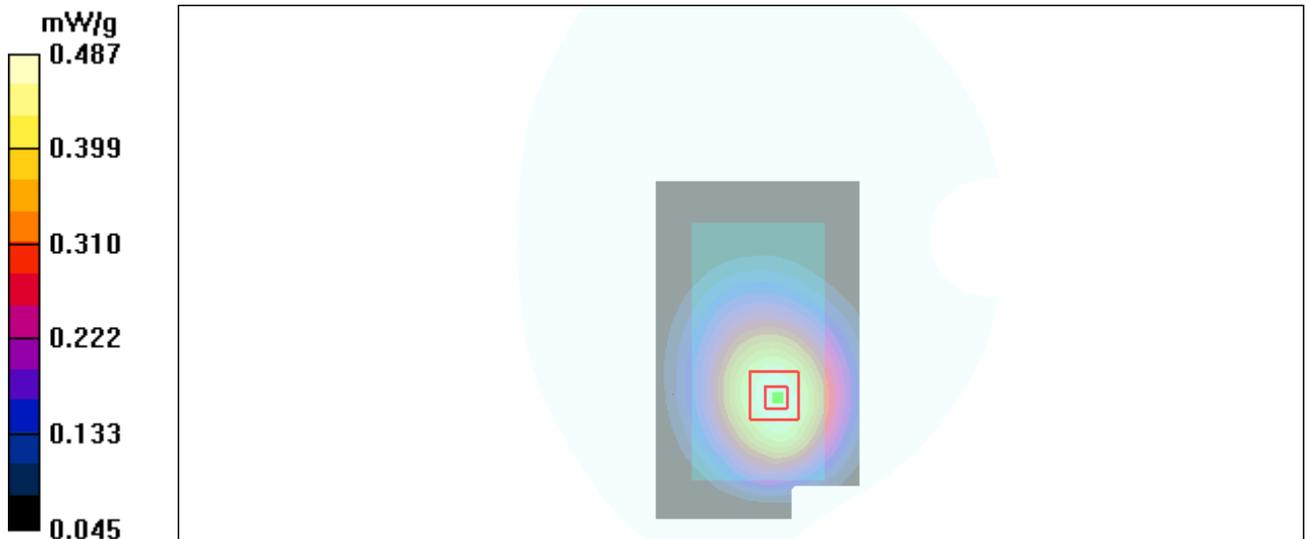
Figure 65 Body with Earphone, Towards Ground, WCDMA Band V Channel 4233

WCDMA Band V HSDPA Towards Ground High

Date/Time: 5/5/2011 11:49:38 PM

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

Medium parameters used: f = 847 MHz; σ = 1.01 mho/m; ε_r = 56.2; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.682 mW/g

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

Reference Value = 10.7 V/m; Power Drift = 0.096 dB

Peak SAR (extrapolated) = 0.807 W/kg

SAR(1 g) = 0.642 mW/g; SAR(10 g) = 0.469 mW/g

Maximum value of SAR (measured) = 0.679 mW/g
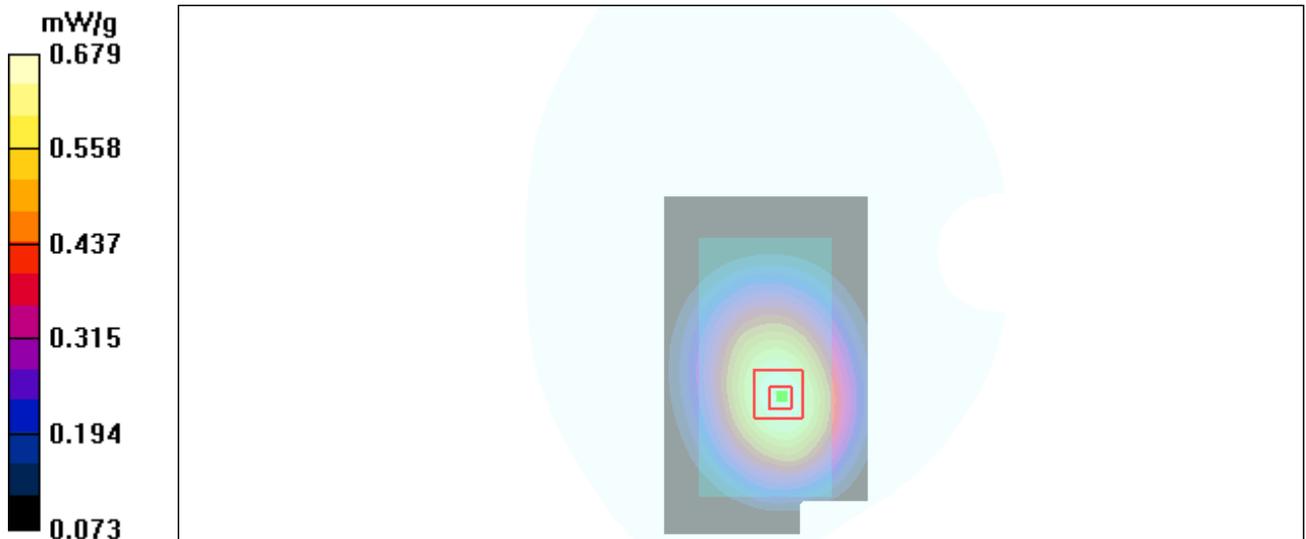
Figure 66 Body, Towards Ground, WCDMA Band V HSDPA Channel 4233

802.11b Left Cheek Middle

Date/Time: 5/8/2011 6:16:01 PM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.8 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.074 mW/g

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

Reference Value = 3.97 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.130 W/kg

SAR(1 g) = 0.066 mW/g; SAR(10 g) = 0.036 mW/g

Maximum value of SAR (measured) = 0.069 mW/g
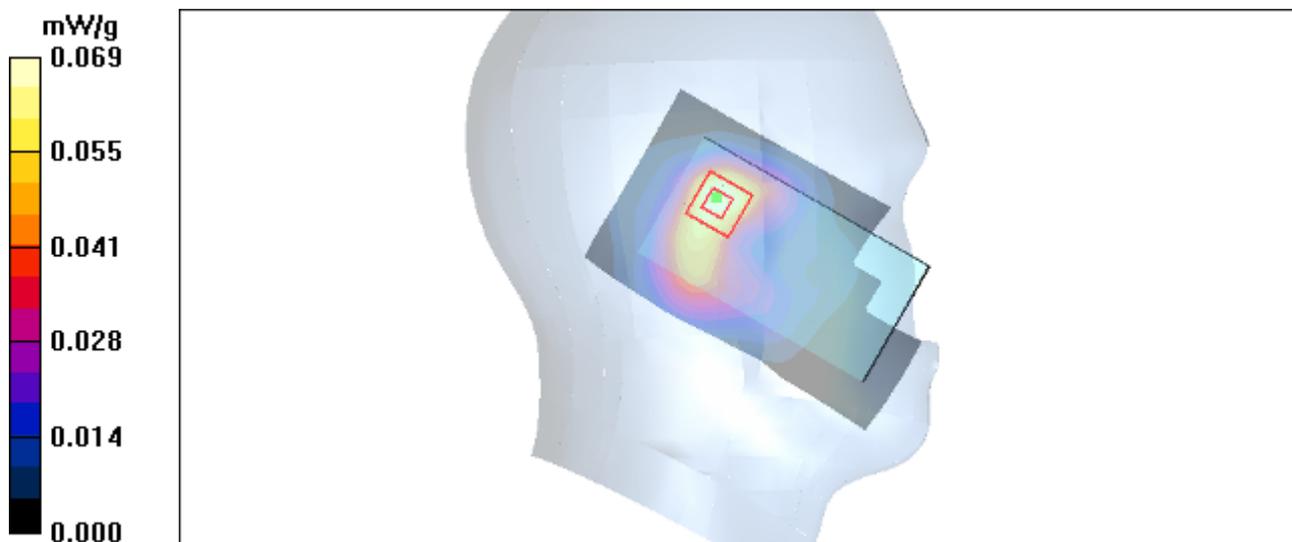
Figure 67 Left Hand Touch Cheek 802.11b Channel 6

802.11b Left Tilt Middle

Date/Time: 5/8/2011 6:54:47 PM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.8 mho/m; $ε_r$ = 39.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.088 mW/g

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

Reference Value = 5.09 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.162 W/kg

SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.081 mW/g
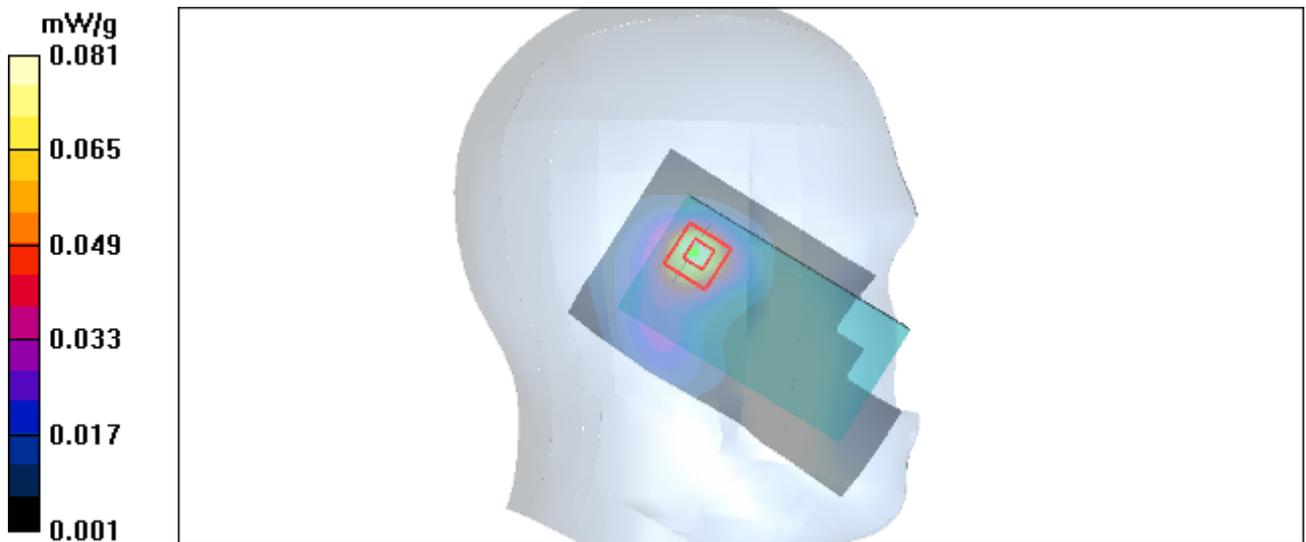
Figure 68 Left Hand Tilt 15° 802.11b Channel 6

802.11b Right Cheek High

Date/Time: 5/8/2011 9:19:28 AM

Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.83 mho/m; $ε_r$ = 39.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃　　　Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.104 mW/g

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

Reference Value = 4.38 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 0.252 W/kg

SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.047 mW/g

Maximum value of SAR (measured) = 0.106 mW/g
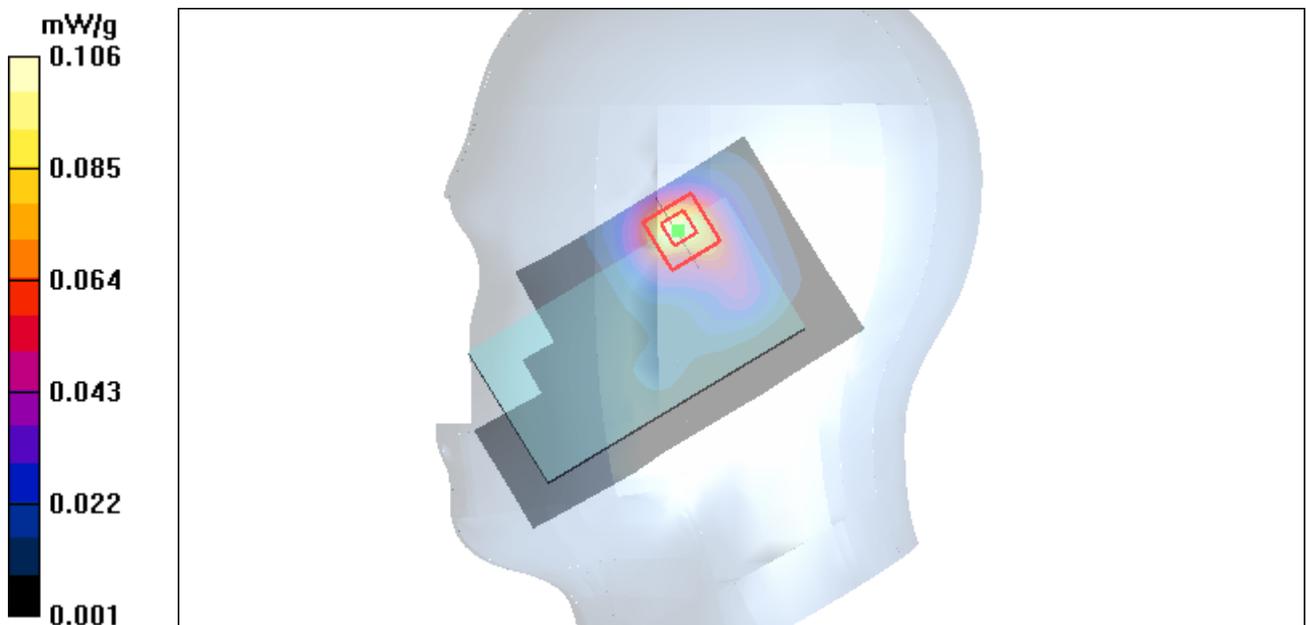
Figure 69 Right Hand Touch Cheek 802.11b Channel 11

802.11b Right Cheek Middle

Date/Time: 5/8/2011 7:30:00 PM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.8 mho/m; ε_r = 39.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.121 mW/g

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

Reference Value = 5.21 V/m; Power Drift = -0.124 dB

Peak SAR (extrapolated) = 0.280 W/kg

SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.054 mW/g

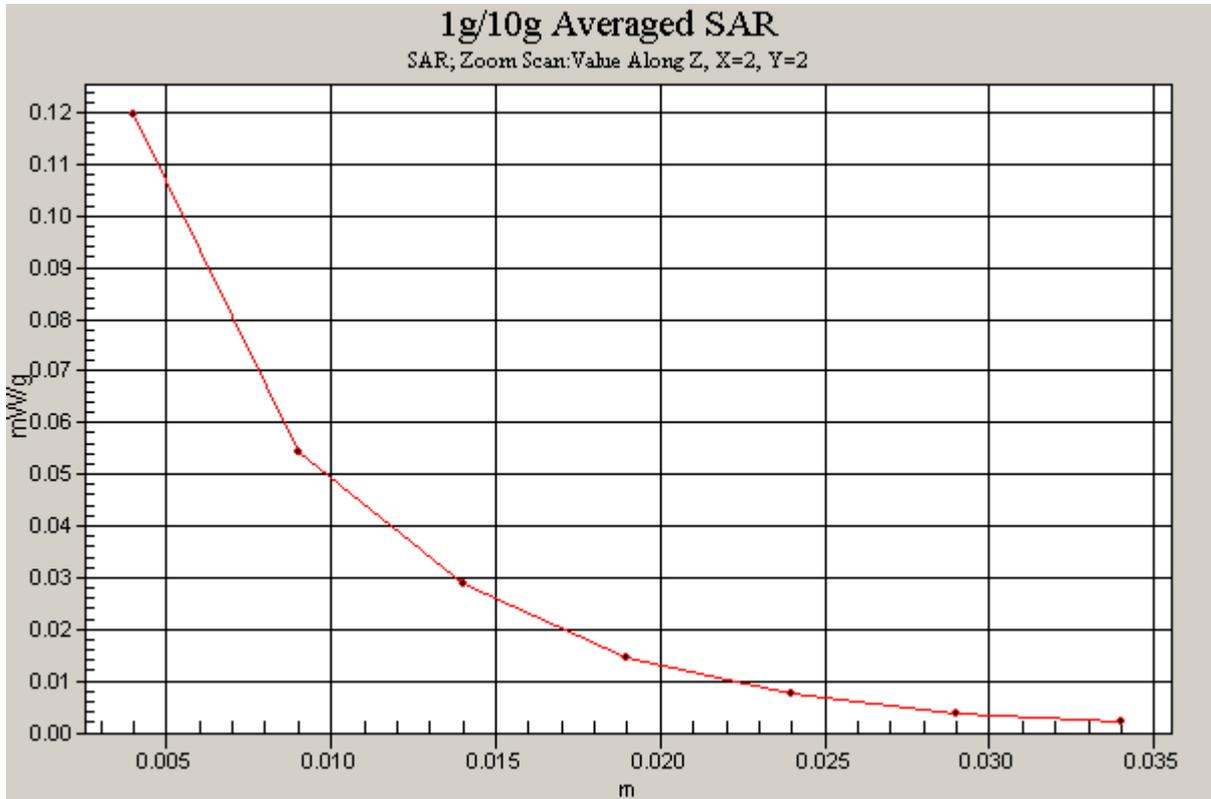Maximum value of SAR (measured) = 0.120 mW/g
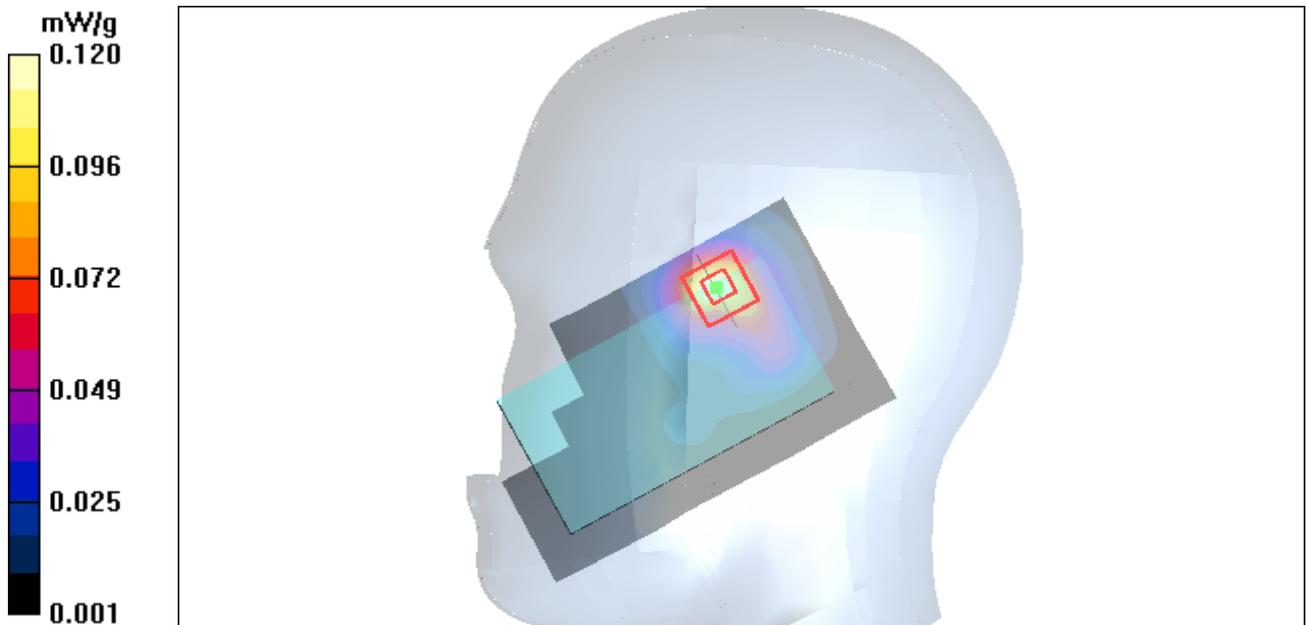
Figure 70 Right Hand Touch Cheek 802.11b Channel 6

802.11b Right Cheek Low

Date/Time: 5/8/2011 9:35:01 AM

Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.77 mho/m; $ε_r$ = 39.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.102 mW/g

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

Reference Value = 4.31 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.227 W/kg

SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.044 mW/g

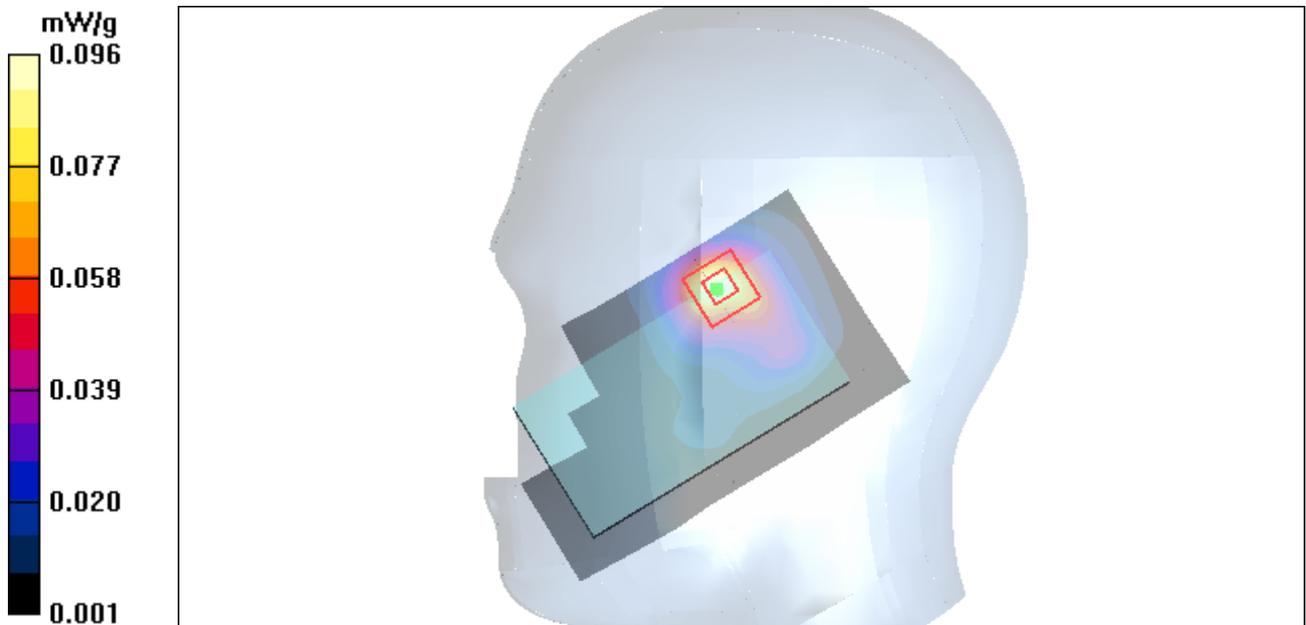Maximum value of SAR (measured) = 0.096 mW/g

Figure 71 Right Hand Touch Cheek 802.11b Channel 1

802.11b Right Tilt Middle

Date/Time: 5/8/2011 7:45:49 PM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.8 mho/m; $ε_r$ = 39.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃　　　Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.065 mW/g

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

Reference Value = 5.73 V/m; Power Drift = -0.050 dB

Peak SAR (extrapolated) = 0.122 W/kg

SAR(1 g) = 0.059 mW/g; SAR(10 g) = 0.031 mW/g

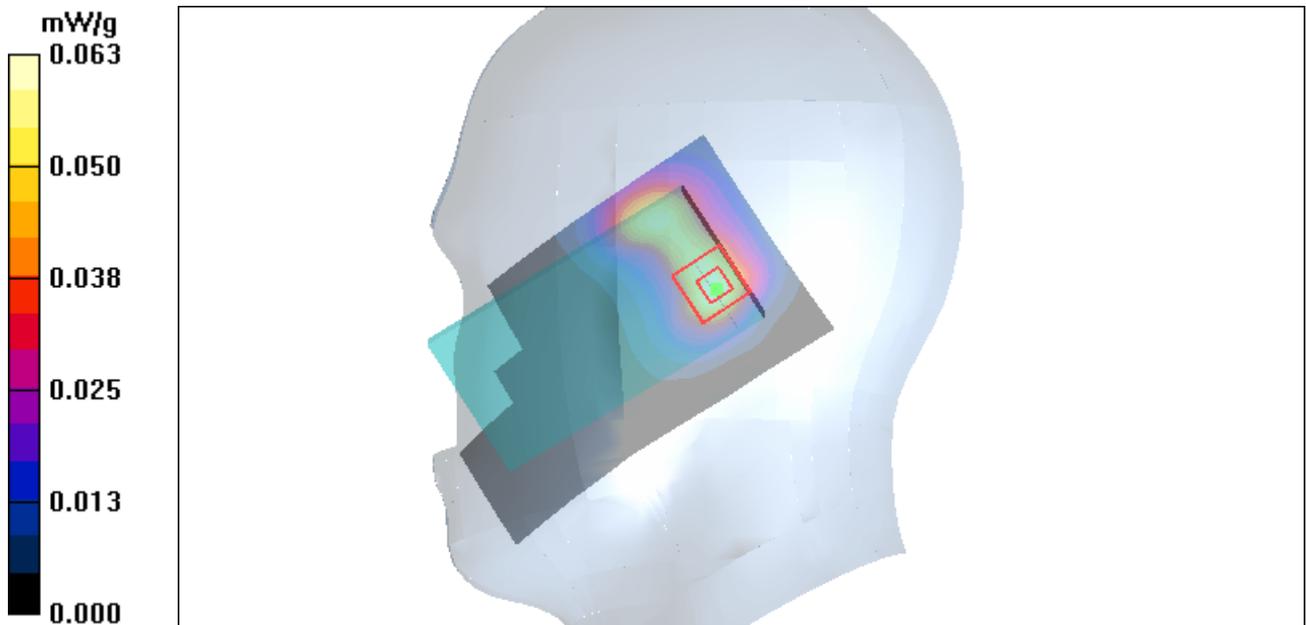Maximum value of SAR (measured) = 0.063 mW/g

Figure 72 Right Hand Tilt 15° 802.11b Channel 6

802.11b Towards Ground High

Date/Time: 5/9/2011 11:18:54 AM

Communication System: 802.11b; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: f = 2462 MHz; σ = 1.96 mho/m; ε_r = 51.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.023 mW/g

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

Reference Value = 3.35 V/m; Power Drift = 0.155 dB

Peak SAR (extrapolated) = 0.049 W/kg

SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.013 mW/g

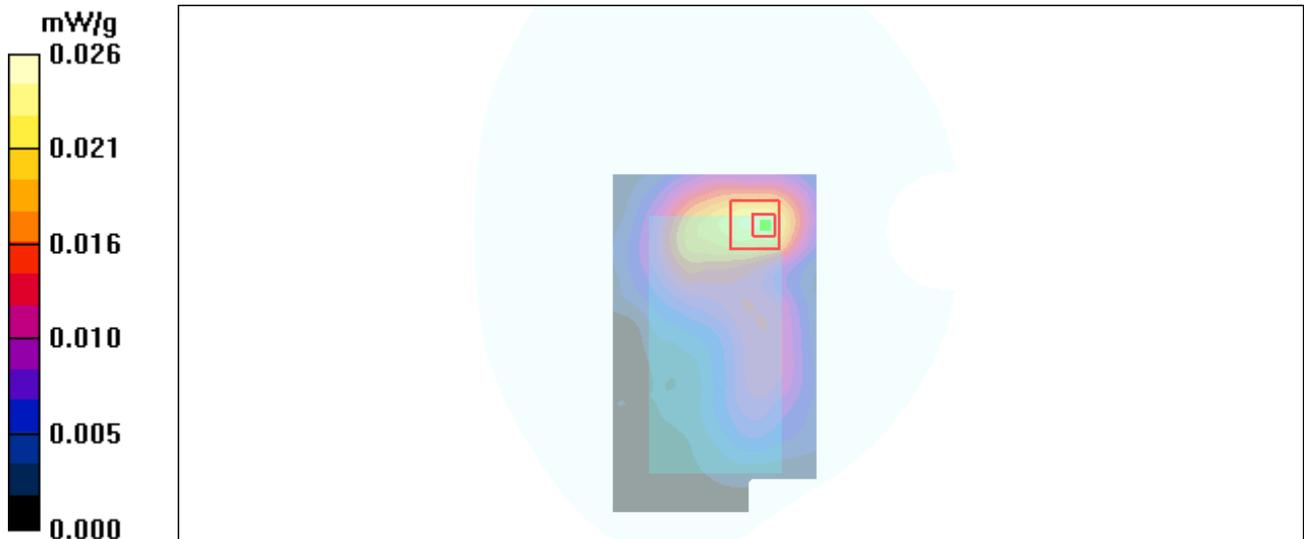Maximum value of SAR (measured) = 0.026 mW/g

Figure 73 Body, Towards Ground, 802.11b Channel 11

802.11b Towards Ground Middle

Date/Time: 5/9/2011 10:42:37 AM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.93 mho/m; ε_r = 51.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.032 mW/g

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

Reference Value = 4.05 V/m; Power Drift = -0.121 dB

Peak SAR (extrapolated) = 0.069 W/kg

SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.017 mW/g

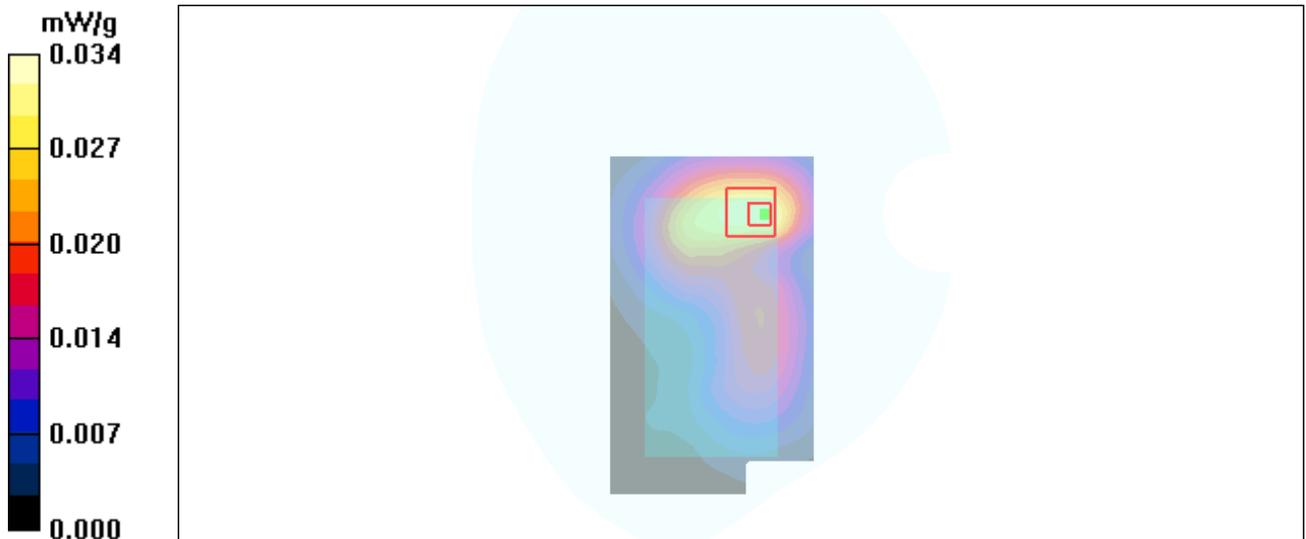Maximum value of SAR (measured) = 0.034 mW/g

Figure 74 Body, Towards Ground, 802.11b Channel 6

802.11b Towards Ground Low

Date/Time: 5/9/2011 11:01:17 AM

Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; $ε_r$ = 51.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

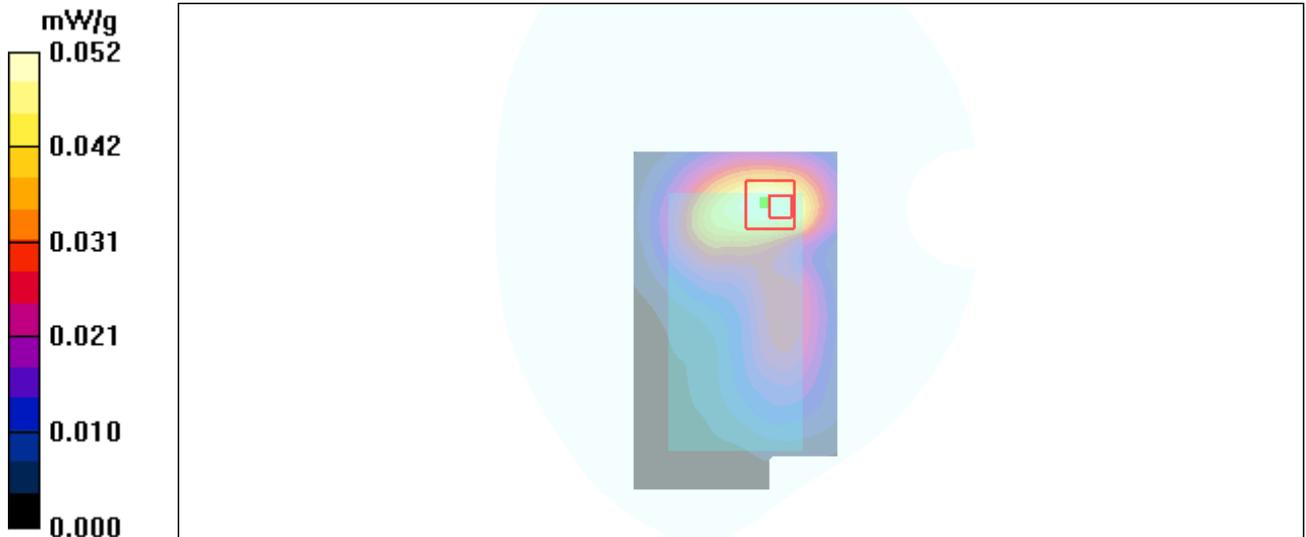Maximum value of SAR (interpolated) = 0.052 mW/g

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

Reference Value = 5.27 V/m; Power Drift = -0.128 dB

Peak SAR (extrapolated) = 0.102 W/kg

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.028 mW/g
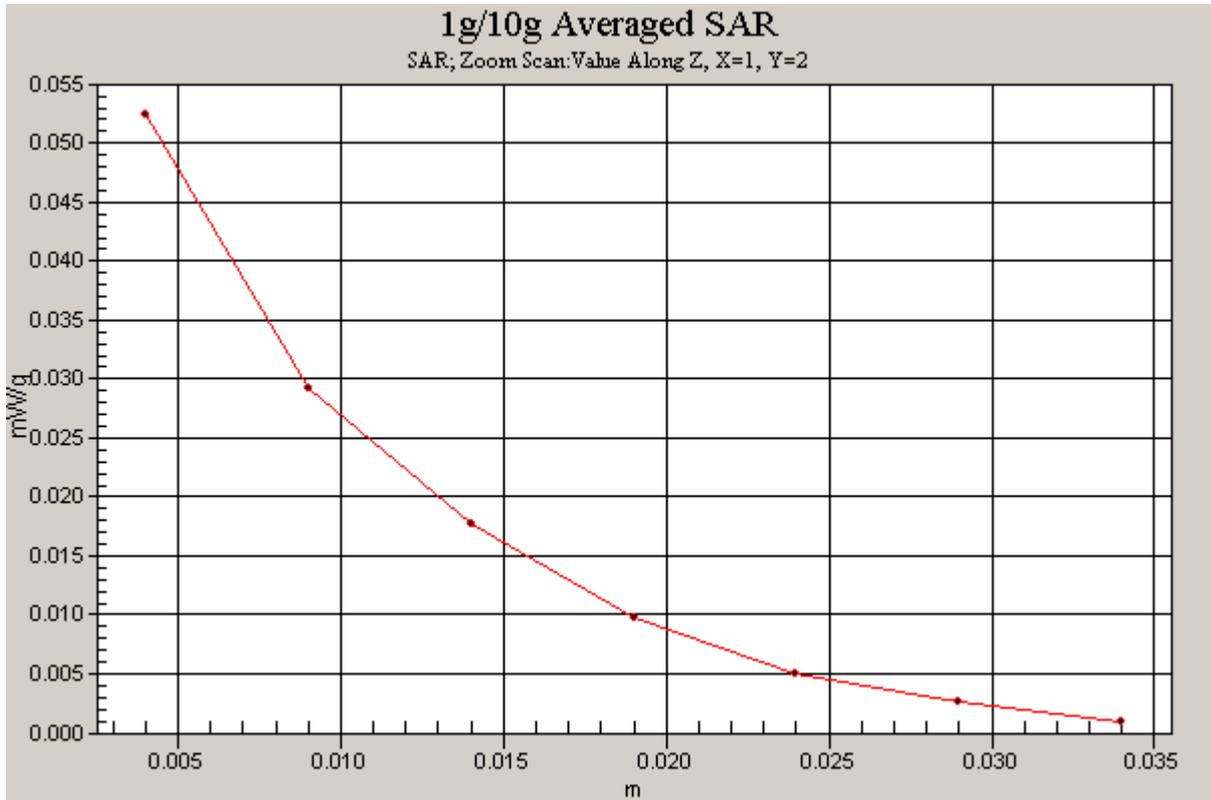
Maximum value of SAR (measured) = 0.052 mW/g

Figure 75 Body, Towards Ground, 802.11b Channel 1

802.11b Towards Phantom Middle

Date/Time: 5/9/2011 10:27:42 AM

Communication System: 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2437 MHz; σ = 1.93 mho/m; ε_r = 51.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.029 mW/g

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

Reference Value = 3.27 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.057 W/kg

SAR(1 g) = 0.027 mW/g; SAR(10 g) = 0.015 mW/g

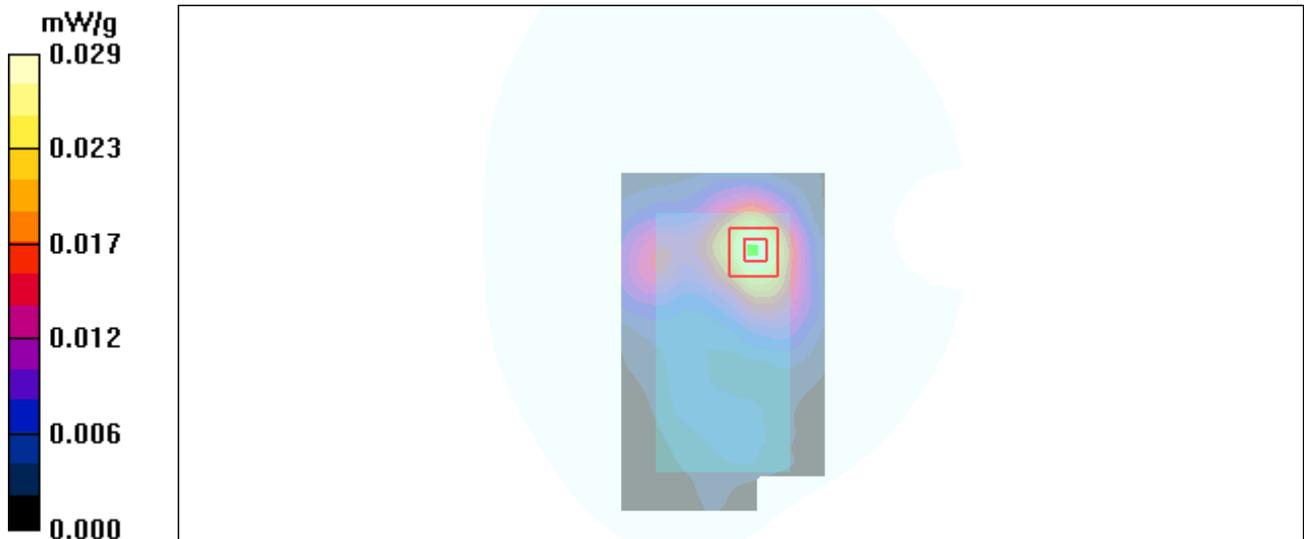Maximum value of SAR (measured) = 0.029 mW/g

Figure 76 Body, Towards Phantom, 802.11b Channel 6

802.11b with Earphone Towards Ground Low

Date/Time: 5/9/2011 11:34:45 AM

Communication System: 802.11b; Frequency: 2412 MHz;Duty Cycle: 1:1

Medium parameters used: f = 2412 MHz; σ = 1.89 mho/m; $ε_r$ = 51.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

Electronics: DAE4 Sn871; Calibrated: 11/18/2010

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 (61x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.027 mW/g

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

Reference Value = 3.65 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 0.073 W/kg

SAR(1 g) = 0.030 mW/g; SAR(10 g) = 0.015 mW/g
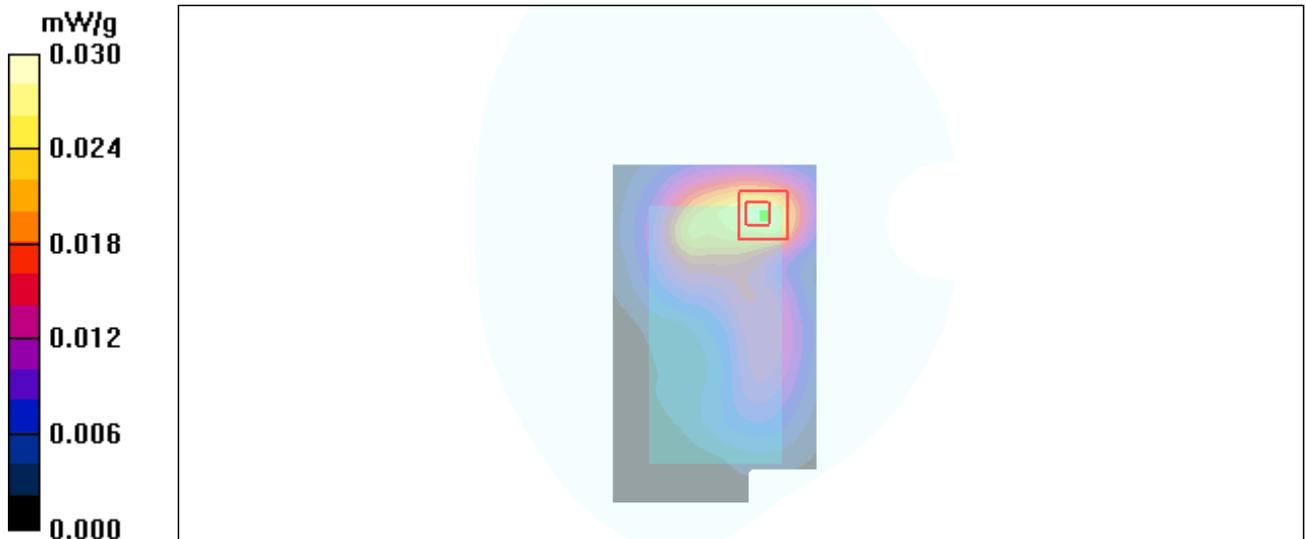
Maximum value of SAR (measured) = 0.030 mW/g

Figure 77 Body with earphone, Towards Ground, 802.11b Channel 1