TESTING
No. L2264

OET 65

TEST REPORT

Product Name	HSUPA/HSDPA/UMTS triband / GSM quadband mobile phone
Model	Pisco A
Marketing Name	ONE TOUCH 916A
FCC ID	RAD251
Client	TCT Mobile Limited

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	HSUPA/HSDPA/UMTS triband / GSM quadband mobile phone	**Model**	Pisco A
Report No.	RXA1204-0075SAR01R1	**FCC ID**	RAD251
Client	TCT Mobile Limited		
Manufacturer	TCT Mobile Limited		
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. **KDB941225 D01 SAR test for 3G devices v02:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA **KDB 941225 D06 Hot Spot SAR v01** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities **KDB 648474 D01 SAR Handsets Multi Xmiter and Ant, v01r05:** SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas.		
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: April 26th, 2012**		
Comment	The test result only responds to the measured sample.		

Approved by _____ Director **Revised by** _____ SAR Manager **Performed by** _____ SAR Engineer

TABLE OF CONTENT

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

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Yang Weizhong
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	yangweizhong@ta-shanghai.com

1.3. Applicant Information

Company:	TCT Mobile Limited
Address:	5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
City:	Shanghai
Postal Code:	201203
Country:	P.R. China
Contact:	Gong Zhizhou
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

1.4. Manufacturer Information

Company:	TCT Mobile Limited
Address:	5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
City:	Shanghai
Postal Code:	201203
Country:	P.R. China
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

1.5. Information of EUT

General Information

Device Type:	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
State of Sample:	Prototype Unit		
Product Name:	HSUPA/HSDPA/UMTS triband / GSM quadband mobile phone		
IMEI:	013105000001455		
Hardware Version:	PIO01		
Software Version:	Pisco-AboutPhone-US		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900; (tested) WCDMA Band II /WCDMA Band V; (tested) GSM 900/GSM 1800/WCDMA Band I; (untested) 802.11b/g/n HT20; (tested) Bluetooth; (untested)		
Test Modulation:	(GSM)GMSK; (WCDMA)QPSK		
Device Class:	B		
HSDPA UE Category:	8		
HSUPA UE Category:	6		
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	(WIFI)	(tested)

Auxiliary Equipment Details

Name	Model	Manufacturer	S/N
Battery 1	CAB32A0000C1	BYD	**B36211047EA**
Battery 2	CAB32A0000C2	SCUD	**FMTMMBC17004036**
Stereo Headset 1	CCB3160A11C1	Juwei	**/**
Stereo Headset 2	CCB3160A11C4	Meihao	**/**
Stereo Headset 3	CCB3160A15C1	Juwei	**/**
Stereo Headset 4	CCB3160A15C4	Meihao	**/**
Note: 1. Stereo Headset 1 and Stereo Headset 2 non-REACH, need test. 2. Stereo Headset 3 and Stereo Headset 4 REACH, no need test.			

Equipment Under Test (EUT) is a HSUPA/HSDPA/UMTS triband / GSM quadband mobile phone. The EUT has a GSM/WCDMA antenna that is used for Tx/Rx, the second is GPS antenna that only can be used for Rx, and the third is BT/WIFI antenna that can be used for Tx/Rx. It has Personal Wireless Routers (hot spots) function. The detail about EUT and Lithium Battery is in chapter 1.5 in this report. SAR are tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band V and WIFI.

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

Head SAR Configuration

Mode	Channel	Position	SAR_{1g} (W/kg)
GSM 850	High/251	Left, Cheek	**0.377**
GSM 1900	High/810	Left, Cheek	**0.538**
WCDMA Band II	Middle/9400	Left, Cheek	**0.957**
WCDMA Band V	High/4233	Left, Cheek	**0.301**
WiFi(802.11b)	High/11	Right, Cheek	**0.145**

Body Worn Configuration

Mode	Channel	Position	Separation distance	SAR_{1g} (W/kg)
4Txslots GPRS 850	Low/128	Back Side	10mm	**1.100**
4Txslots GPRS 1900	High/810	Back Side	10mm	**1.120**
WCDMA Band II	Middle/9400	Back Side	10mm	**1.130**

WCDMA Band V	Middle/4183	Back Side	10mm	**0.786**
WiFi(802.11b)	High/11	Back Side	10mm	**0.017**

Hotspot SAR Configuration

Mode	Channel	Position	Separation distance	SAR_{1g} (W/kg)
4Txslots GPRS 850	Low/128	Back Side	10mm	**1.100**
4Txslots GPRS 1900	High/810	Back Side	10mm	**1.120**
WCDMA Band II	Middle/9400	Back Side	10mm	**1.130**
WCDMA Band V	Middle/4183	Back Side	10mm	**0.786**
WiFi(802.11b)	High/11	Back Side	10mm	**0.017**

Simultaneous SAR

SAR1g(W/kg) / Test Position	WCDMA Band II	WIFI(802.11b)	MAX. ΣSAR_{1g}
Body, Back Side	1.130	0.017	1.147

1.7. Test Date

The test performed from April 18, 2012 to April 20, 2012.

2. SAR Measurements System Configuration

2.1. 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.

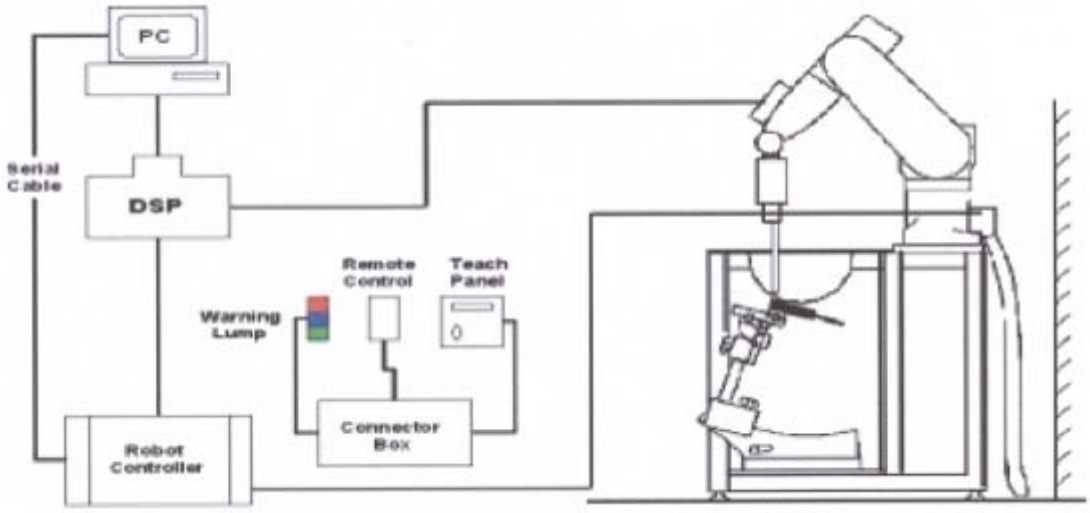


Figure 1 SAR Lab Test Measurement Set-up

2.2. 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.

2.2.1. EX3DV4 Probe Specification

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

Figure 2.EX3DV4 E-field Probe

Figure 3. EX3DV4 E-field probe

2.2.2. 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).

2.3. Other Test Equipment

2.3.1. 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

2.3.2. 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

2.4. 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 5x5x7 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 5x5x7 measurement points with 8 mm resolution amounting to 175 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 5x5x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

2.5. Data Storage and Evaluation

2.5.1. 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.

2.5.2. 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.

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

with SAR = local specific absorption rate in mW/g

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

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

ρ = equivalent tissue density in g/cm^3

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

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

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

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

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

3. Laboratory Environment

Table 1: The Requirements of the Ambient Conditions

Temperature	Min. = 18°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.	

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

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 2 and table 3 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 2: 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 3: 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

4.2. Tissue-equivalent Liquid Properties

Table 4: 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	22.0
	Measurement value 2012-4-19	42.3	0.888	21.5
1900MHz (head)	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	22.0
	Measurement value 2012-4-20	40.1	1.39	21.5
2450MHz (head)	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	22.0
	Measurement value 2012-4-20	38.3	1.88	21.5

Table 5: 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	22.0
	Measurement value 2012-4-19	54.3	0.986	21.5
1900MHz (body)	Target value ±5% window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	22.0
	Measurement value 2012-4-18	52.0	1.56	21.5
	Measurement value 2012-4-20	52.1	1.55	21.5
2450MHz (body)	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	22.0
	Measurement value 2012-4-20	51.7	1.90	21.5

5. System Check

5.1. Description of 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 6 and table 7.

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.

.

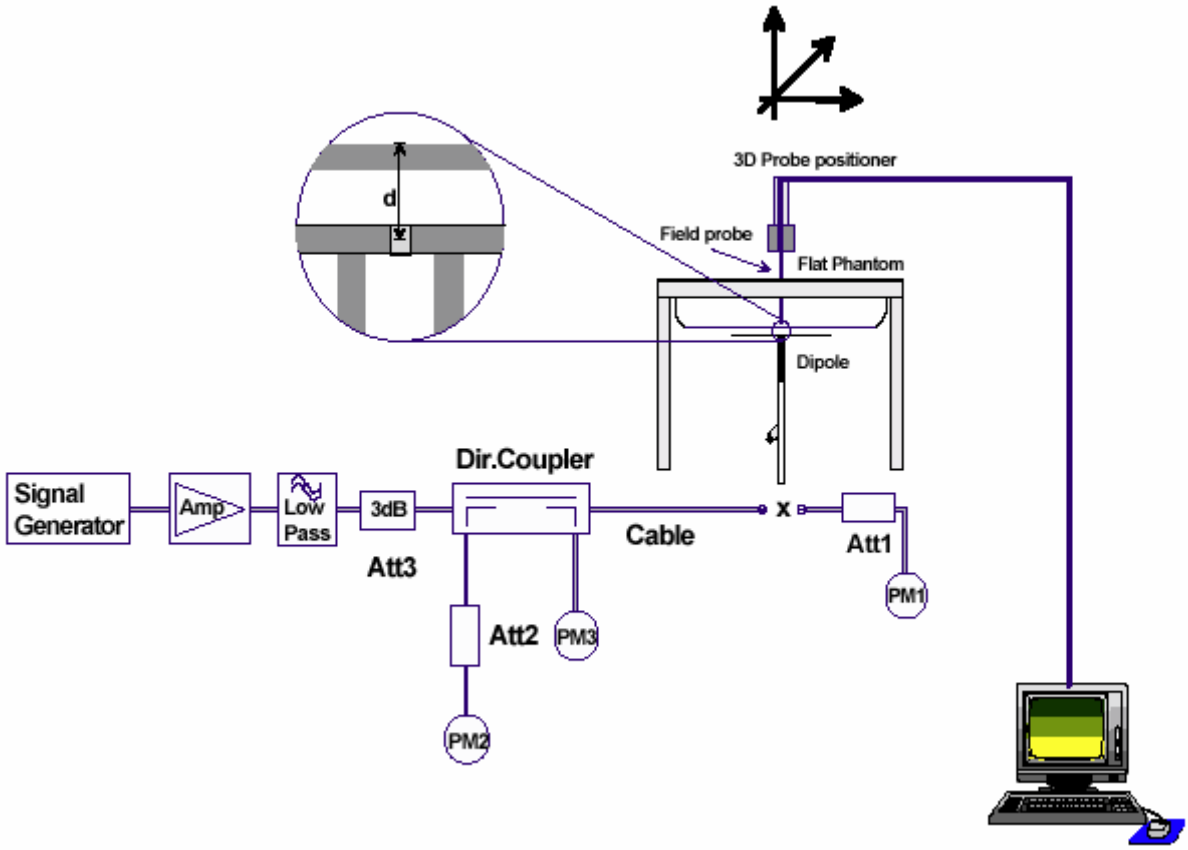


Figure 6 System Check Set-up

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g} (±10% deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)		
835MHz	2012-4-19	42.3	0.888	21.5	2.45	9.80	9.34 (8.41~10.27)
1900MHz	2012-4-20	40.1	1.39	21.5	9.68	38.72	40.30 (36.27~ 44.33)
2450MHz	2012-4-20	38.3	1.88	21.5	14.20	56.80	53.80 (48.42~ 59.18)

Note：1. The graph results see ANNEX B.
2. Target Values derive from the calibration certificate

Table 7: System Check in Body Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g} (±10% deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)		
835MHz	2012-4-19	54.3	0.986	21.5	2.49	9.96	9.46 (8.51~10.41)
1900MHz	2012-4-18	52.0	1.56	21.5	10.70	42.80	41.70 (37.53~45.87)
	2012-4-20	52.1	1.55	21.5	10.6	42.40	
2450MHz	2012-4-20	51.7	1.90	21.5	13.00	52.00	51.70 (46.53~56.87)

Note：1. The graph results see ANNEX B.
2. Target Values derive from the calibration certificate

6. Operational Conditions during Test

6.1. 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 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.

6.2. Test Positions

6.2.1. 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".

6.2.2. 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.

Based upon KDB941225 D06 V01, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. The distance between the device and the phantom was kept 10mm of wireless routers.

6.3. Test Configuration

6.3.1. 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” for GSM 850, set to “0” for 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 8: 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

6.3.2. WCDMA Test Configuration

6.3.2.1. 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 up bits for WCDMA/HSDPA or applying the required inner loop power control procedures to the maximum output power while HSUPA is active. Results for all applicable physical channel configuration (DPCCH, $DPDCH_n$ and spreading codes, HSDPA, HSPA) should be tabulated in the SAR report. All configuration that are not supported by the DUT or can not be measured due to technical or equipment limitations should be clearly identified.

6.3.2.2. Head SAR Measurements

SAR for head exposure configurations in voice mode is measured using a 12.2kbps RMC with TPC bits configured to all up bits. 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.

6.3.2.3. 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 up bits. 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.

6.3.3. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the 'Body SAR Measurements' procedures of that section. In addition,body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit.30 Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps 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 HSDSCH/ 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 conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below.32 The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 9: Subtests for UMTS Release 5 HSDPA

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

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

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

7 ($A_{hs=}$24/15) with β_{hs}=24/15*β_c.

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

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

Table 10: 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 11: 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

6.3.4. HSUPA Test Configuration

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

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

Table 12：Sub-Test 5 Setup for Release 6 HSUPA

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

Note 1: Δ_{ACK}, ΔNACK and Δ_{CQI} = 8 ⇔ A_{hs} = β_{hs}/β_c = 30/15 ⇔ β_{hs}= 30/15 *β_c.
Note 2: CM = 1 for βc/βd =12/15, β_{hs}/β_c =24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-
DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the
signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.
Note 4: For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the
signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.
Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.
Note 6: βed can not be set directly; it is set by Absolute Grant Value.

Table 13: HSUPA UE category

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

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

6.3.5. WIFI Test Configuration

For WLAN SAR testing, WLAN engineering testing software installed on the EUT can provide continuous transmitting RF signal. This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

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

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

SAR is not required for 802.11g channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels. When the maximum average output channel in each frequency band is not included in the “default test channels”, the maximum channel should be tested instead of an adjacent “default test channels”, these are referred to as the “required test channels” and are illustrated in table 14.

Table 14: “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

”

7. Test Results

7.1. Conducted Power Results

Table 15: Conducted Power Measurement Results

GSM 850		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM		33.33	33.23	33.26	-9.03dB	24.3	24.2	24.23
GPRS (GMSK)	1Txslot	33.39	33.26	33.32	-9.03dB	24.36	24.23	24.29
	2Txslots	30.83	30.61	30.72	-6.02dB	24.81	24.59	24.7
	3Txslots	29.42	29.16	29.31	-4.26dB	25.16	24.9	25.05
	4Txslots	28.52	28.25	28.37	-3.01dB	**25.51**	**25.24**	**25.36**
EGPRS (GMSK)	1Txslot	33.36	33.25	33.32	-9.03dB	24.33	24.22	24.29
	2Txslots	30.81	30.59	30.71	-6.02dB	24.79	24.57	24.69
	3Txslots	29.41	29.13	29.31	-4.26dB	25.15	24.87	25.05
	4Txslots	28.51	28.25	28.35	-3.01dB	**25.5**	**25.24**	**25.34**
GSM 1900		**Burst Conducted Power(dBm)**				**Average power(dBm)**		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.93	29.82	30.13	-9.03dB	20.9	20.79	21.10
GPRS (GMSK)	1Txslot	29.95	29.84	30.16	-9.03dB	20.92	20.81	21.13
	2Txslots	27.69	27.72	28.22	-6.02dB	21.67	21.7	22.2
	3Txslots	26.23	26.27	26.83	-4.26dB	21.97	22.01	22.57
	4Txslots	25.29	25.3	25.91	-3.01dB	**22.28**	**22.29**	**22.9**
EGPRS (GMSK)	1Txslot	29.92	29.83	30.15	-9.03dB	20.89	20.8	21.12
	2Txslots	27.67	27.72	28.21	-6.02dB	21.65	21.7	22.19
	3Txslots	26.21	26.26	26.82	-4.26dB	21.95	22	22.56
	4Txslots	25.28	25.29	25.91	-3.01dB	**22.27**	**22.28**	**22.9**

Note:
1) Division Factors
To average the power, the division factor is as follows:
1Txslot = 1 transmit time slot out of 8 time slots
=> conducted power divided by (8/1) => -9.03 dB
2Txslots = 2 transmit time slots out of 8 time slots
=> conducted power divided by (8/2) => -6.02 dB
3Txslots = 3 transmit time slots out of 8 time slots

=> conducted power divided by (8/3) => -4.26 dB
4Txslots = 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		22.34	22.81	22.87
HSDPA	Sub - Test 1	20.26	20.67	20.95
	Sub - Test 2	20.24	20.65	20.94
	Sub - Test 3	20.25	20.66	20.86
	Sub - Test 4	20.19	20.58	20.9
HSUPA	Sub - Test 1	19.98	20.5	20.69
	Sub - Test 2	19.58	19.98	20.55
	Sub - Test 3	19.78	20.17	20.46
	Sub - Test 4	19.56	19.95	20.53
	Sub - Test 5	20.06	20.53	20.77
WCDMA Band V		Conducted Power (dBm)		
		Channel 4132	Channel 4183	Channel 4233
RMC		23.41	23.36	23.25
HSDPA	Sub - Test 1	21.47	21.39	21.25
	Sub - Test 2	21.43	21.4	21.24
	Sub - Test 3	21.43	21.38	21.18
	Sub - Test 4	21.37	21.33	21.19
HSUPA	Sub - Test 1	21.19	21.13	20.95
	Sub - Test 2	20.75	20.62	20.51
	Sub - Test 3	21.03	20.85	20.76
	Sub - Test 4	20.78	20.57	20.47
	Sub - Test 5	21.3	21.17	21.1

7.2. SAR Test Results

7.2.1. GSM 850 (GPRS/EGPRS)

Table 16: 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 (dB)	
		10 g Average	1 g Average		
Test Position of Head with Battery 1					
Left hand, Touch Cheek	High/251	0.241	0.377	0.061	Figure 14
	Middle/190	0.189	0.265	0.038	Figure 15
	Low/128	0.176	0.234	0.110	Figure 16
Left hand, Tilt 15 Degree	High/251	0.159	0.201	-0.147	Figure 17
	Middle/190	0.170	0.217	-0.003	Figure 18
	Low/128	0.180	0.230	0.005	Figure 19
Right hand, Touch Cheek	High/251	0.215	0.304	0.170	Figure 20
	Middle/190	0.206	0.269	0.127	Figure 21
	Low/128	0.224	0.292	0.141	Figure 22
Right hand, Tilt 15 Degree	High/251	0.153	0.197	0.088	Figure 23
	Middle/190	0.170	0.218	0.002	Figure 24
	Low/128	0.191	0.245	0.020	Figure 25
Test position of Body with Battery 1 (Distance 10mm)					
Back Side (4Txslots)	High/251	0.551(max.cube)	0.735(max.cube)	0.010	Figure 26
	Middle/190	0.669(max.cube)	0.903(max.cube)	-0.001	Figure 27
	Low/128	0.814(max.cube)	1.100(max.cube)	-0.198	Figure 28
Front Side (4Txslots)	Low/128	0.479	0.634	-0.149	Figure 29
Left Edge(4Txslots)	Low/128	0.274	0.396	-0.041	Figure 30
Right Edge(4Txslots)	Low/128	0.302	0.434	0.031	Figure 31
Top Edge(4Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(4Txslots)	Low/128	0.074	0.116	0.162	Figure 32
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)					
Back Side (4Txslots)	Low/128	0.799(max.cube)	1.090(max.cube)	-0.155	Figure 33
Worst Case Position of Body with Stereo Headset 1 and Battery 1 (Distance 10mm)					
Back Side(GSM)	Low/128	0.572(max.cube)	0.769(max.cube)	-0.001	Figure 34

Worst Case Position of Body with Stereo Headset 2 and Battery 1 (Distance 10mm)					
Back Side(GSM)	Low/128	0.528(max.cube)	0.709(max.cube)	0.006	Figure 35

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

2. The Head SAR test shall be performed at the high, middle and low frequency channels of each operating mode.
3. The Body SAR test firstly shall be performed at the maximum source-based time-averaged output power channel of each operating mode. If the SAR measured at highest output power channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the other channels is optional, and also other channel were measured at the worst case
4. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
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.
6. 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.

7.2.2. GSM 1900 (GPRS/EGPRS)

Table 17: 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	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head with Battery 1					
Left hand, Touch Cheek	High/810	0.328	0.538	0.095	Figure 36
	Middle/661	0.300	0.491	0.074	Figure 37
	Low/512	0.299	0.488	0.032	Figure 38
Left hand, Tilt 15 Degree	High/810	0.091	0.155	0.028	Figure 39
	Middle/661	0.078	0.130	-0.018	Figure 40
	Low/512	0.082	0.136	0.043	Figure 41
Right hand, Touch Cheek	High/810	0.223	0.345	0.157	Figure 42
	Middle/661	0.205	0.323	0.048	Figure 43
	Low/512	0.211	0.333	0.061	Figure 44
Right hand, Tilt 15 Degree	High/810	0.106	0.190	0.080	Figure 45
	Middle/661	0.086	0.153	0.027	Figure 46
	Low/512	0.088	0.157	-0.021	Figure 47
Test position of Body with Battery 1 (Distance 10mm)					
Back Side (4Txslots)	High/810	0.705	1.120	0.012	Figure 48
	Middle/661	0.571	0.907	-0.007	Figure 49
	Low/512	0.538	0.852	0.051	Figure 50
Front Side (4Txslots)	High/810	0.551	0.873	0.057	Figure 51
	Middle/661	0.378	0.605	0.026	Figure 52
	Low/512	0.364	0.575	0.070	Figure 53
Left Edge(4Txslots)	High/810	0.176	0.301	0.053	Figure 54
Right Edge(4Txslots)	High/810	0.083	0.140	0.021	Figure 55
Top Edge(4Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(4Txslots)	High/810	0.301	0.525	-0.041	Figure 56
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)					
Back Side (4Txslots)	High/810	0.686	1.090	-0.025	Figure 57
Worst Case Position of Body with Stereo Headset 1 and Battery 1 (Distance 10mm)					

Back Side(GSM)	High/810	0.446	0.712	0.037	Figure 58
Worst Case Position of Body with Stereo Headset 2 and Battery 1 (Distance 10mm)					
Back Side(GSM)	High/810	0.451	0.718	0.060	Figure 59

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

2. The Head SAR test shall be performed at the high, middle and low frequency channels of each operating mode.
3. The Body SAR test firstly shall be performed at the maximum source-based time-averaged output power channel of each operating mode. If the SAR measured at highest output power channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the other channels is optional, and also other channel were measured at the worst case
4. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
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.

7.2.3. WCDMA Band II (WCDMA)

Table 18: SAR Values [WCDMA Band II (WCDMA)]

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 with Battery 1					
Left hand, Touch Cheek	High/9538	0.546	0.915	0.041	Figure 60
	Middle/9400	0.575	0.957	0.011	Figure 61
	Low/9262	0.571	0.944	0.038	Figure 62
Left hand, Tilt 15 Degree	High/9538	0.150	0.255	0.020	Figure 63
	Middle/9400	0.147	0.244	0.022	Figure 64
	Low/9262	0.155	0.258	0.038	Figure 65
Right hand, Touch Cheek	High/9538	0.339	0.523	0.041	Figure 66
	Middle/9400	0.326(max.cube)	0.509(max.cube)	0.085	Figure 67
	Low/9262	0.348(max.cube)	0.546(max.cube)	-0.133	Figure 68
Right hand, Tilt 15 Degree	High/9538	0.159	0.284	0.008	Figure 69
	Middle/9400	0.149	0.265	0.024	Figure 70
	Low/9262	0.165	0.291	0.016	Figure 71
Worst Case Position of Head with Battery 2					
Left hand, Touch Cheek	Middle/9400	0.534	0.886	0.059	Figure 72
Test position of Body with Battery 1 (Distance 10mm)					
Back Side	High/9538	0.702	1.130	0.100	Figure 73
	Middle/9400	0.710	1.130	0.066	Figure 74
	Low/9262	0.706	1.120	0.070	Figure 75
Front Side	High/9538	0.533	0.845	0.031	Figure 76
	Middle/9400	0.538	0.851	0.012	Figure 77
	Low/9262	0.540	0.855	0.062	Figure 78
Left Edge	High/9538	0.123	0.207	-0.088	Figure 79
Right Edge	High/9538	0.067	0.112	0.022	Figure 80
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	High/9538	0.273	0.470	0.005	Figure 81
Worst Case Position of Body with Stereo Headset 1 and Battery 1 (Distance 10mm)					

Back Side	Middle/9400	0.660	1.050	-0.025	Figure 82
Worst Case Position of Body with Stereo Headset 2 and Battery 1 (Distance 10mm)					
Back Side	Middle/9400	0.631	0.998	0.016	Figure 83
Worst Case Position of Body with Battery 2 (Distance 10mm)					
Back Side	Middle/9400	0.693	1.110	-0.003	Figure 84

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

2. The Head SAR test shall be performed at the high, middle and low frequency channels of each operating mode.
3. The Body SAR test firstly shall be performed at the highest output power channel of each operating mode. If the SAR measured at highest output power channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the other channels is optional, and also other channel were measured at the worst case
4. WCDMA mode were tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
5. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
6. 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.

7.2.4. WCDMA Band V (WCDMA)

Table 19: SAR Values [WCDMA Band V (WCDMA)]

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 with Battery 1					
Left hand, Touch Cheek	High/4233	0.198	0.301	0.101	Figure 85
	Middle/4183	0.185	0.261	-0.044	Figure 86
	Low/4132	0.167	0.223	0.158	Figure 87
Left hand, Tilt 15 Degree	High/4233	0.128	0.162	0.063	Figure 88
	Middle/4183	0.149	0.189	0.070	Figure 89
	Low/4132	0.140	0.178	0.046	Figure 90
Right hand, Touch Cheek	High/4233	0.209	0.283	0.069	Figure 91
	Middle/4183	0.226	0.296	0.164	Figure 92
	Low/4132	0.221	0.289	0.094	Figure 93
Right hand, Tilt 15 Degree	High/4233	0.177	0.225	0.033	Figure 94
	Middle/4183	0.199	0.254	-0.009	Figure 95
	Low/4132	0.192	0.246	0.043	Figure 96
Test position of Body with Battery 1 (Distance 10mm)					
Back Side	High/4233	0.513(max.cube)	0.694(max.cube)	0.001	Figure 97
	Middle/4183	0.583(max.cube)	0.786(max.cube)	0.005	Figure 98
	Low/4132	0.405(max.cube)	0.654(max.cube)	0.015	Figure 99
Front Side	Low/4132	0.300	0.391	0.019	Figure 100
Left Edge	Low/4132	0.190	0.274	0.019	Figure 101
Right Edge	Low/4132	0.226	0.323	0.005	Figure 102
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Low/4132	0.065	0.102	0.055	Figure 103
Worst Case Position of Body with Stereo Headset 1 and Battery 1 (Distance 10mm)					
Back Side	Middle/4183	0.551(max.cube)	0.746(max.cube)	0.003	Figure 104
Worst Case Position of Body with Stereo Headset 2 and Battery 1 (Distance 10mm)					
Back Side	Middle/4183	0.401(max.cube)	0.651(max.cube)	0.007	Figure 105

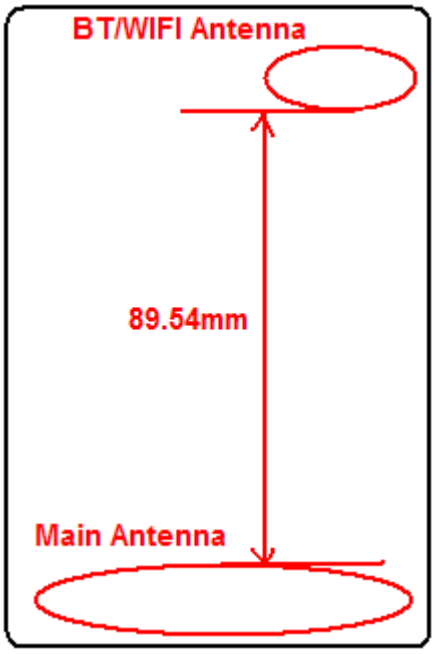
Note: 1.The value with blue color is the maximum SAR Value of each test band.

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

2. The Head SAR test shall be performed at the high, middle and low frequency channels of each operating mode.
3. The Body SAR test firstly shall be performed at the highest output power channel of each operating mode. If the SAR measured at highest output power channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the other channels is optional, and also other channel were measured at the worst case
4. WCDMA mode were tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
5. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
6. 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.

7.2.5. Bluetooth/WiFi Function

The distance between BT/WIFI antenna and GSM/WCDMA antenna is ＞5cm. The location of the antennas inside EUT 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)	4.66	2.49	5.16
EDR2M-4_DQPSK(dBm)	4.00	1.86	4.64
EDR3M-8DPSK(dBm)	4.30	2.16	4.94

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	17.48
		2	17.49
		5.5	17.72
		11	17.64
	6	1	17.54
		2	17.5
		5.5	17.53
		11	17.49
	11	1	17.64

		2	17.65
		5.5	17.79
		11	17.77
11g	1	6	14.54
		9	14.57
		12	14.55
		18	14.85
		24	14.67
		36	14.49
		48	14.66
		54	14.62
	6	6	14.39
		9	14.38
		12	14.43
		18	14.47
		24	14.34
		36	14.31
		48	14.37
		54	14.32
	11	6	14.69
		9	14.72
		12	14.49
		18	14.69
		24	14.53
		36	14.39
		48	14.43
		54	14.39
11n HT20	1	MCS0	14.76
		MCS1	14.66
		MCS2	14.76
		MCS3	14.73
		MCS4	14.71
		MCS5	14.69
		MCS6	14.68

		MCS7	14.67
	6	MCS0	14.45
		MCS1	14.35
		MCS2	14.43
		MCS3	14.4
		MCS4	14.37
		MCS5	14.36
		MCS6	14.37
		MCS7	14.33
	11	MCS0	14.5
		MCS1	14.44
		MCS2	14.55
		MCS3	14.54
		MCS4	14.5
		MCS5	14.5
		MCS6	14.49
		MCS7	14.43
Note: 1. KDB 248227-SAR is not required for 802.11g/n HT20 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 required for WIFI, because WIFI antenna is ＞5cm from other antennas and the output power of WIFI transmitter is ＞$2P_{Ref}$=13.8dBm

Table 20: SAR Values (802.11b)

Limit of SAR (W/kg)		10 g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.21	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1g Average		
Test Position of Head with Battery 1					
Left hand, Touch cheek	High/11	0.049	0.095	0.187	Figure 106
Left hand, Tilt 15 Degree	High/11	0.040	0.078	0.183	Figure 107
Right hand, Touch cheek	High/11	0.070	0.145	0.054	Figure 108
Right hand, Tilt 15 Degree	High/11	0.048	0.096	0.156	Figure 109
Test position of Body with Battery 1 (Distance 10mm)					
Back Side	High/11	0.007	0.017	0.033	Figure 110
Front Side	High/11	0.001	0.003	0.080	Figure 111
Left Edge	High/11	0.002	0.007	0.100	Figure 112
Right Edge	N/A	N/A	N/A	N/A	N/A
Top Edge	High/11	0.005	0.011	-0.011	Figure 113
Bottom Edge	N/A	N/A	N/A	N/A	N/A

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

2. SAR test at the channel with maximum source-based time-averaged output power, if the SAR value is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the other two channels is optional.
3. WLAN antenna is located at Left edge, near to Top edge; antenna-to- Right/Bottom edge distance are more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. KDB 248227-SAR is not required for 802.11g/n HT20 channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

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

BT antenna is ＜2.5cm from WIFI antenna, stand-alone SAR are not required for BT, because $SAR_{MAX.WIFI}$ ≤1.2W/Kg.

Simultaneous SAR

About WIFI and GSM/WCDMA Antenna,

SAR_{1g}(W/kg) Test Position	GSM850	GSM1900	WCDMA Band II	WCDMA Band V	WIFI (802.11b)	MAX. ΣSAR_{1g}
Left hand, Touch cheek	0.377	0.538	**0.957**	0.301	0.095	1.052
Left hand, Tilt 15 Degree	0.230	0.155	**0.258**	0.189	0.078	0.336
Right hand, Touch cheek	0.304	0.345	**0.546**	0.296	0.145	0.691
Right hand, Tilt 15 Degree	0.245	0.190	**0.291**	0.254	0.096	0.387
Body, Back Side	1.100	1.120	**1.130**	0.786	0.017	1.147
Body, Front Side	0.634	**0.873**	0.855	0.391	0.003	0.876
Body, Left Edge	**0.396**	0.301	0.207	0.274	0.007	0.403
Body, Right Edge	**0.434**	0.140	0.112	0.323	N/A	0.434
Body, Top Edge	N/A	N/A	N/A	N/A	0.011	0.011
Body, Bottom Edge	0.116	**0.525**	0.470	0.102	N/A	0.525

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}

WIFI antenna is ＞5cm from GSM/WCDMA Antenna. (GSM/WCDMA Antenna SAR_{MAX})1.130 +(WIFI Antenna SAR_{MAX})0.017 =1.147 ＜1.6. So the Simultaneous SAR are not required for WIFI and GSM/WCDMA antenna.

About BT and GSM/WCDMA Antenna,

SAR_{1g}(W/kg) Test Position	GSM850	GSM1900	WCDMA Band II	WCDMA Band V	BT	MAX. ΣSAR_{1g}
Left hand, Touch cheek	0.377	0.538	**0.957**	0.301	0	0.957
Left hand, Tilt 15 Degree	0.230	0.155	**0.258**	0.189	0	0.258
Right hand, Touch cheek	0.304	0.345	**0.546**	0.296	0	0.546
Right hand, Tilt 15 Degree	0.245	0.190	**0.291**	0.254	0	0.291
Body, Back Side	1.100	1.120	**1.130**	0.786	0	1.130
Body, Front Side	0.634	**0.873**	0.855	0.391	0	0.873
Body, Left Edge	**0.396**	0.301	0.207	0.274	0	0.396
Body, Right Edge	**0.434**	0.140	0.112	0.323	0	0.434
Body, Top Edge	N/A	N/A	N/A	N/A	0	0
Body, Bottom Edge	0.116	**0.525**	0.470	0.102	0	0.525

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX}
3. Stand alone SAR for BT is not required. Its SAR is considered 0 in the 1-g SAR summing process to determine simultaneous transmission SAR evaluation requirments.

BT antenna is ＞5cm from GSM/WCDMA Antenna. (GSM/WCDMA Antenna SAR_{MAX})1.130 +(BT Antenna SAR_{MAX})0 =1.130 ＜1.6. So the Simultaneous SAR are not required for BT and GSM/WCDMA antenna.

About BT and WIFI Antenna, stand-alone SAR are not required for BT, so Simultaneous SAR are not required for BT and WIFI Antenna.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty u_i' (%)	Degree of freedom V_{eff} or v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	-probe calibration	B	6.0	N	1	1	6.0	∞
3	-axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	- Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
6	-boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
7	-probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
8	- System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
9	-readout Electronics	B	1.0	N	1	1	1.0	∞
10	-response time	B	0	R	$\sqrt{3}$	1	0	∞
11	-integration time	B	4.32	R	$\sqrt{3}$	1	2.5	∞
12	-noise	B	0	R	$\sqrt{3}$	1	0	∞
13	-RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	∞
14	-Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
15	-Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
16	-Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
17	-Test Sample Positioning	A	2.9	N	1	1	2.9	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	2.5	N	1	0.64	1.6	9
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	2.5	N	1	0.6	1.5	9
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					12.16	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N		k=2	23.00	

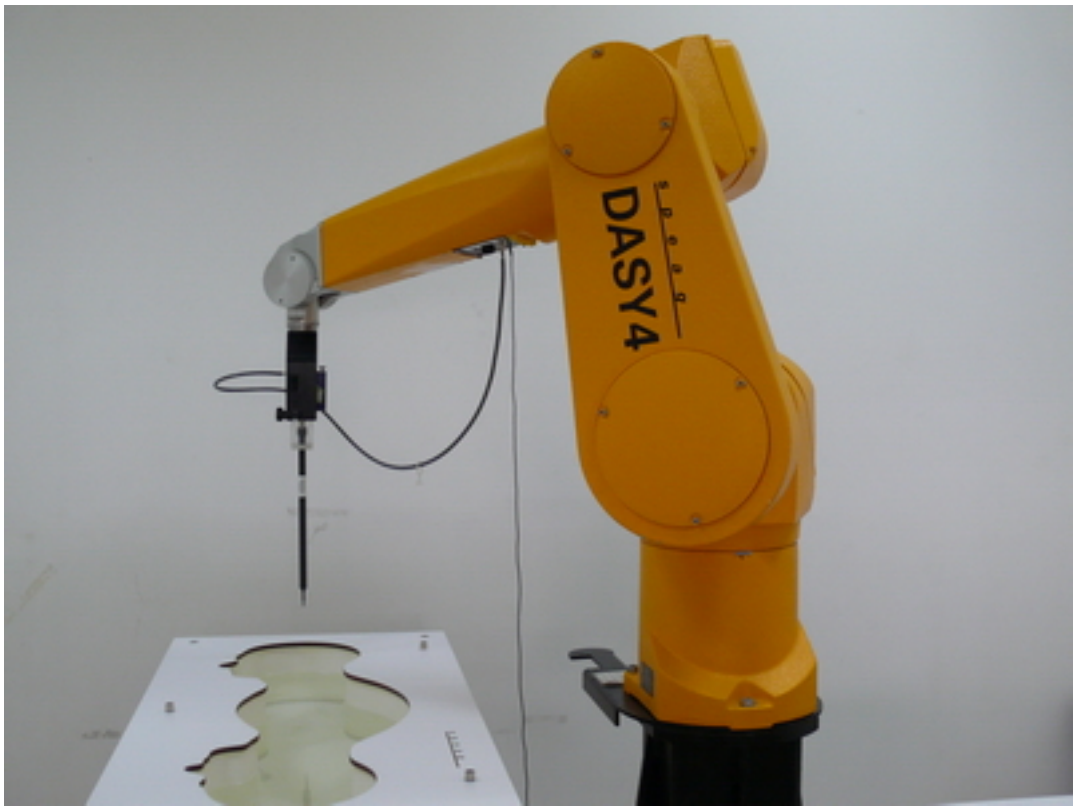
9. Main Test Instruments

Table 21: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 12, 2011	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 11, 2012	One year
04	Power sensor	Agilent N8481H	MY50350004	September 25, 2011	One year
05	Power sensor	E9327A	US40441622	September 24, 2011	One year
06	Signal Generator	HP 8341B	2730A00804	September 12, 2011	One year
07	Dual directional coupler	778D-012	50519	March 26, 2012	One year
08	Dual directional coupler	777D	50146	March 26, 2012	One year
09	Amplifier	IXA-020	0401	No Calibration Requested	
10	BTS	E5515C	MY48360988	December 2, 2011	One year
11	E-field Probe	EX3DV4	3816	October 3, 2011	One year
12	DAE	DAE4	1317	January 23, 2012	One year
13	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	One year
14	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	One year
15	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	One year
16	Temperature Probe	JM222	AA1009129	March 15, 2012	One year
17	Hygrothermograph	WS-1	64591	September 28, 2011	One year

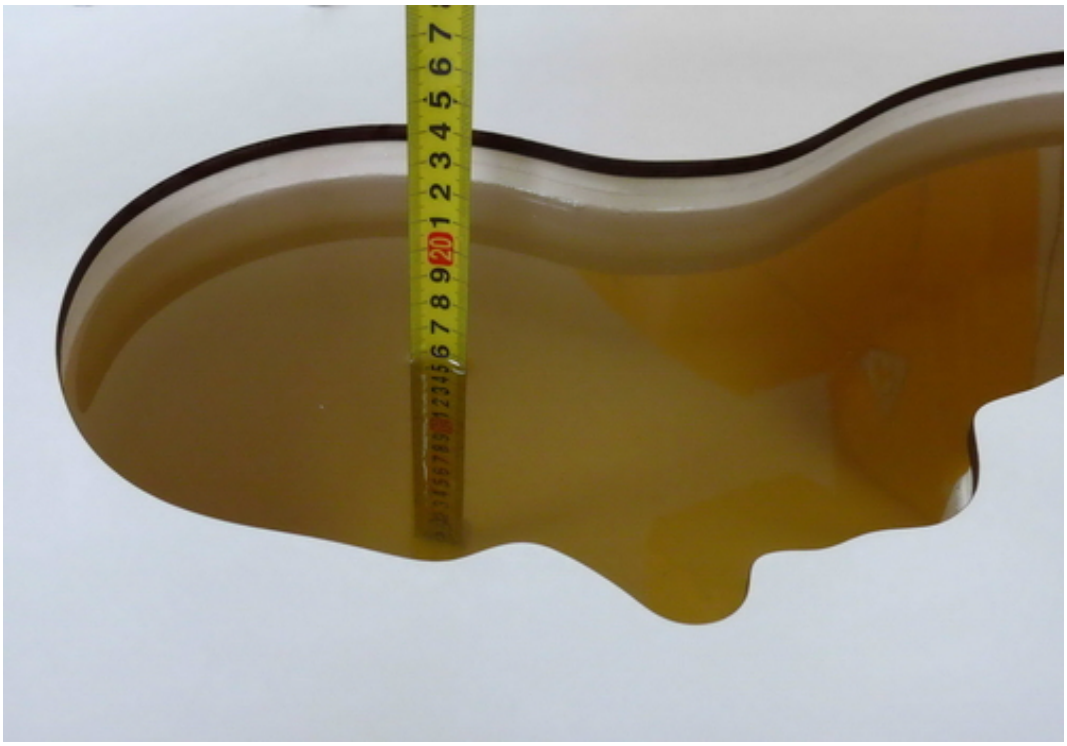
*******END OF REPORT *******

ANNEX A: Test Layout

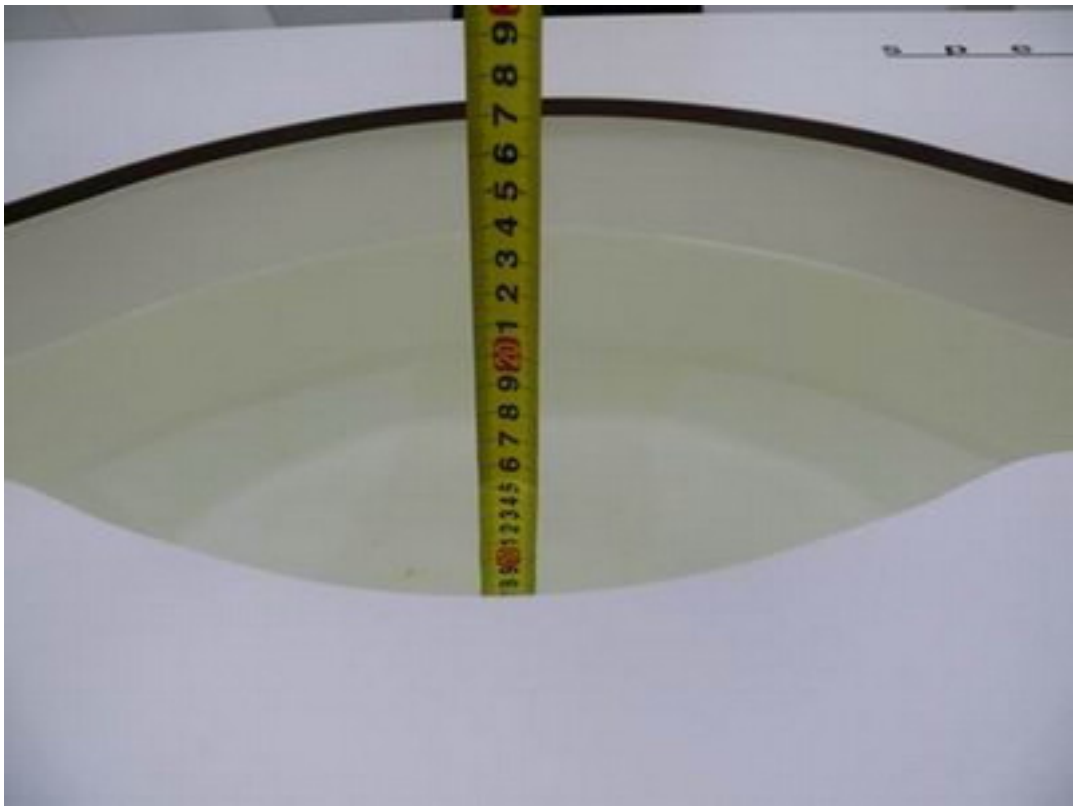


Picture 1: Specific Absorption Rate Test Layout

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

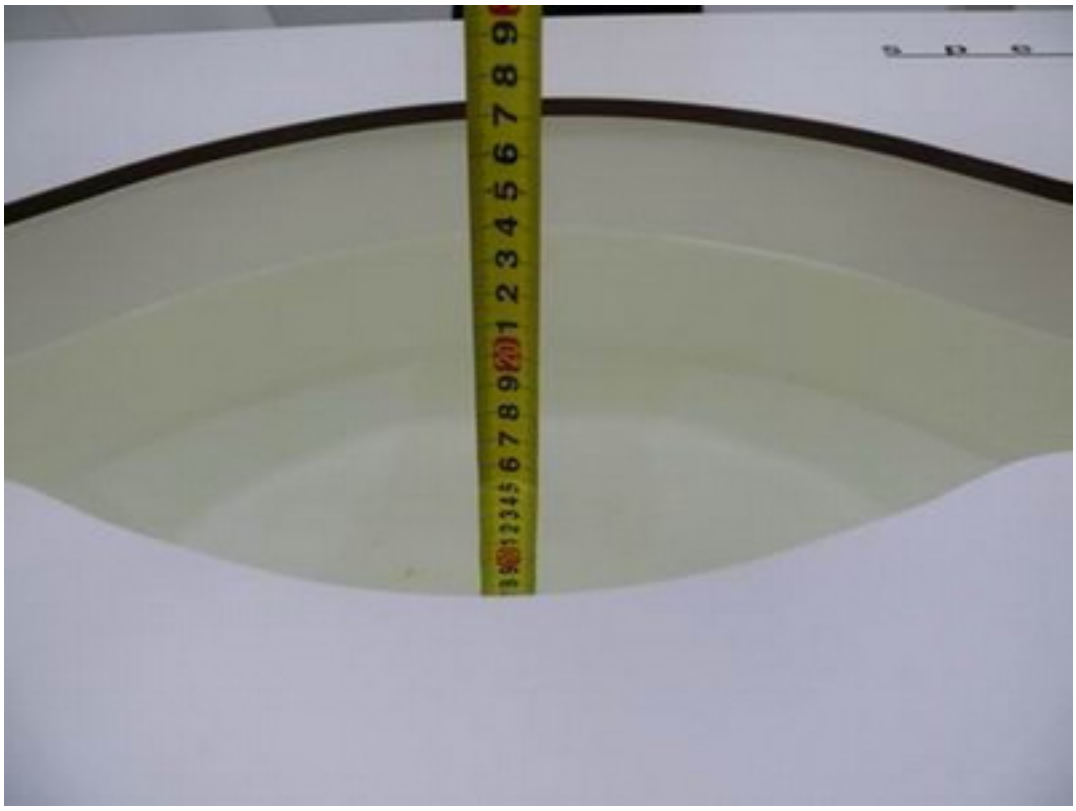


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



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

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



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

Picture 7: liquid depth in the head Phantom (2450 MHz, 15.2cm depth)

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date/Time: 4/19/2012 4:09:43 AM

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

Medium parameters used: f = 835 MHz; σ = 0.888 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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) = 2.58 mW/g

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

Reference Value = 54.6 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 3.69 W/kg

SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.62 mW/g

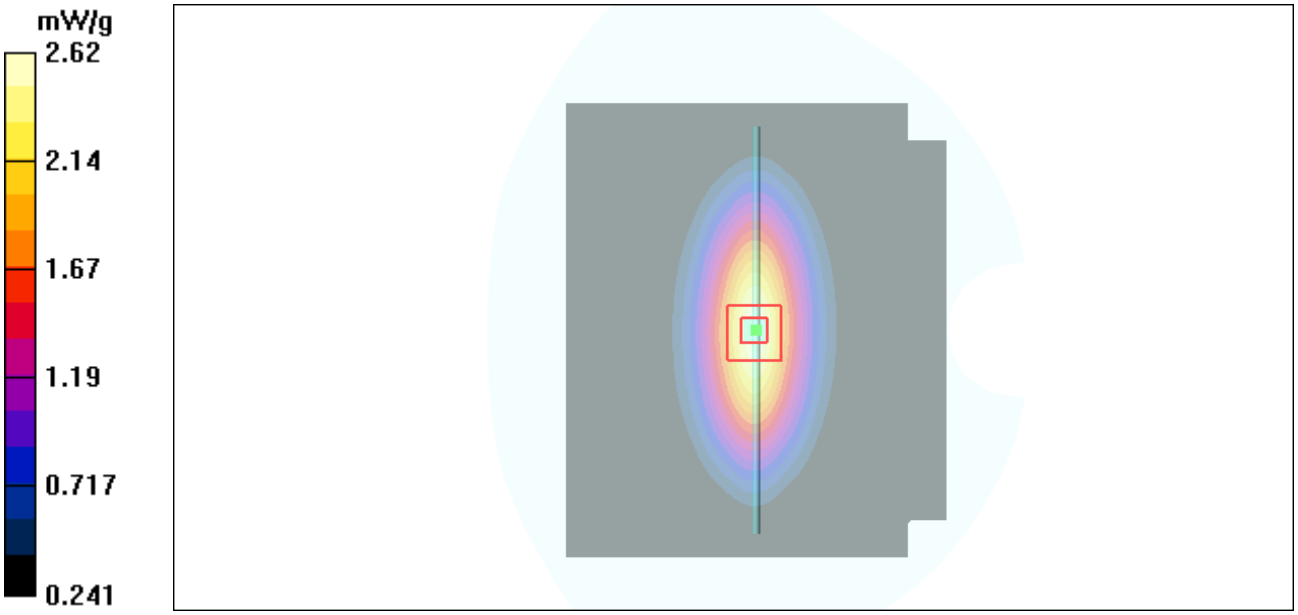


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d020

Date/Time: 4/19/2012 6:15:35 PM

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

Medium parameters used: f = 835 MHz; σ = 0.986 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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

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

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

Maximum value of SAR (interpolated) = 2.69 mW/g

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

Reference Value = 52.0 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 3.70 W/kg

SAR(1 g) = 2.49 mW/g; SAR(10 g) = 1.64 mW/g

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

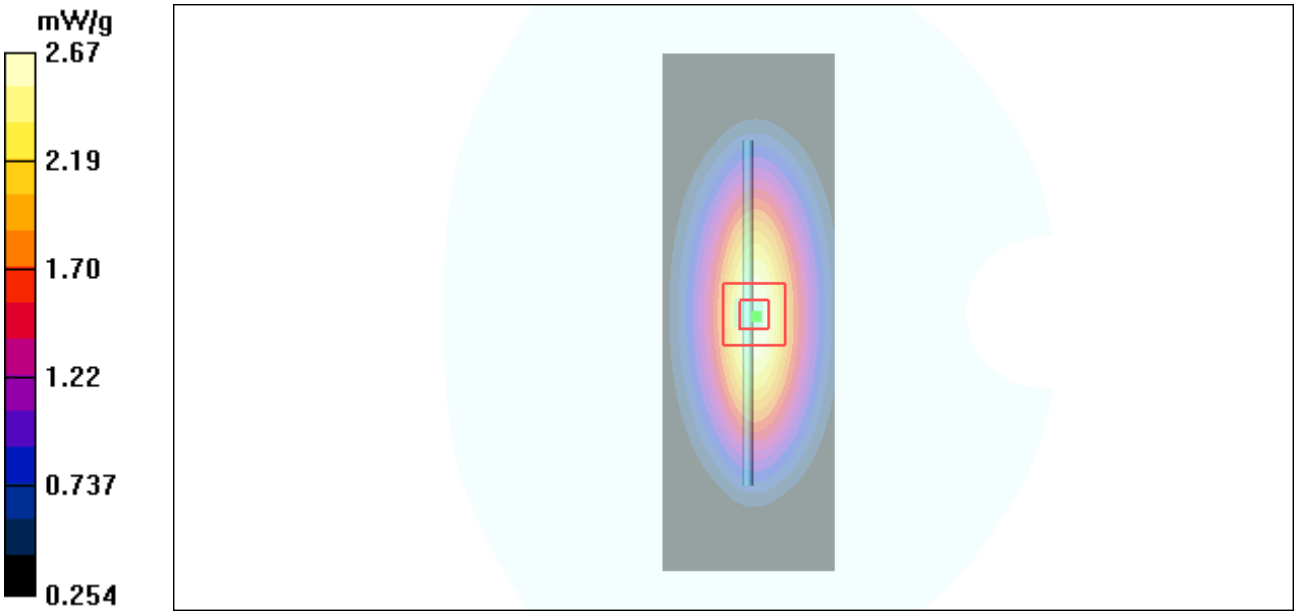


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date/Time: 4/20/2012 8:01:29 AM

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

Medium parameters used: f = 1900 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: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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 (61x81x1): 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 = 86.0 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 18.2 W/kg

SAR(1 g) = 9.68 mW/g; SAR(10 g) = 5.01 mW/g

Maximum value of SAR (measured) = 10.8 mW/g

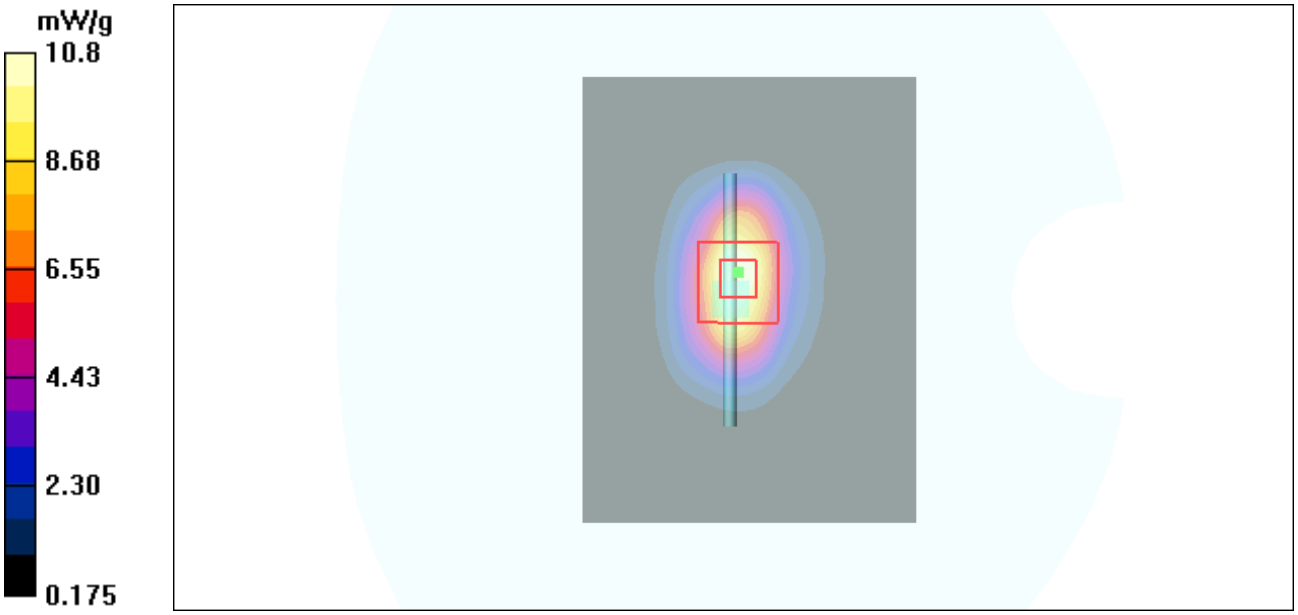


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date/Time: 4/18/2012 9:39:29 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε_r = 52; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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 (41x81x1): 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 = 86.6 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 19.6 W/kg

SAR(1 g) = 10.7 mW/g; SAR(10 g) = 5.57 mW/g

Maximum value of SAR (measured) = 11.8 mW/g

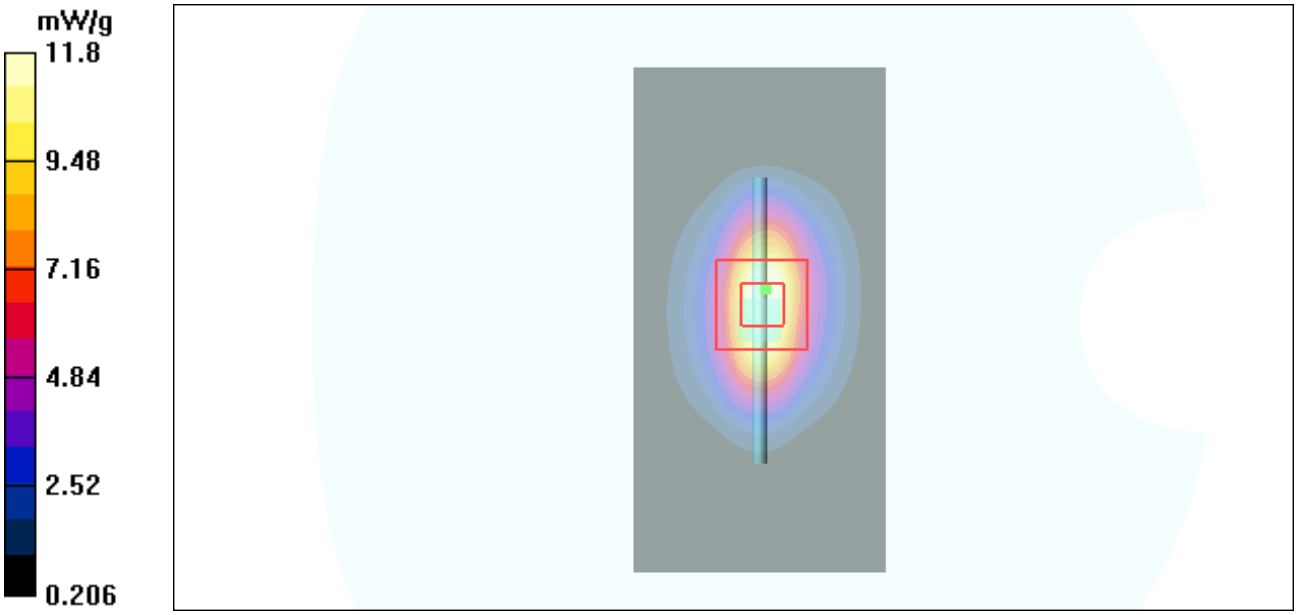


Figure 10 System Performance Check 1900MHz 250Mw

System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d060

Date/Time: 4/20/2012 12:47:11 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.55 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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 (41x81x1): 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 = 84.9 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.6 mW/g; SAR(10 g) = 5.53 mW/g

Maximum value of SAR (measured) = 11.8 mW/g

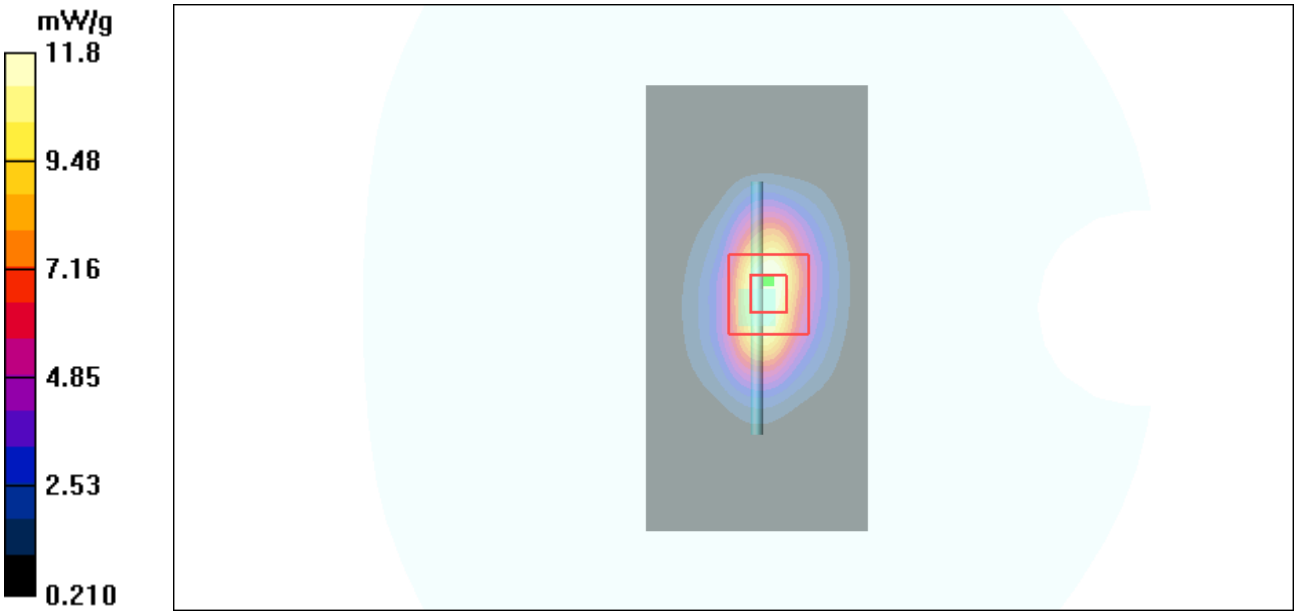


Figure 11 System Performance Check 1900MHz 250Mw

System Performance Check at 2450 MHz Head TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date/Time: 4/20/2012 3:26:35 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.88 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.17, 7.17, 7.17); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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

Maximum value of SAR (interpolated) = 18.5 mW/g

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

Reference Value = 92.4 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 30.7 W/kg

SAR(1 g) = 14.2 mW/g; SAR(10 g) = 6.46 mW/g

Maximum value of SAR (measured) = 16.2 mW/g

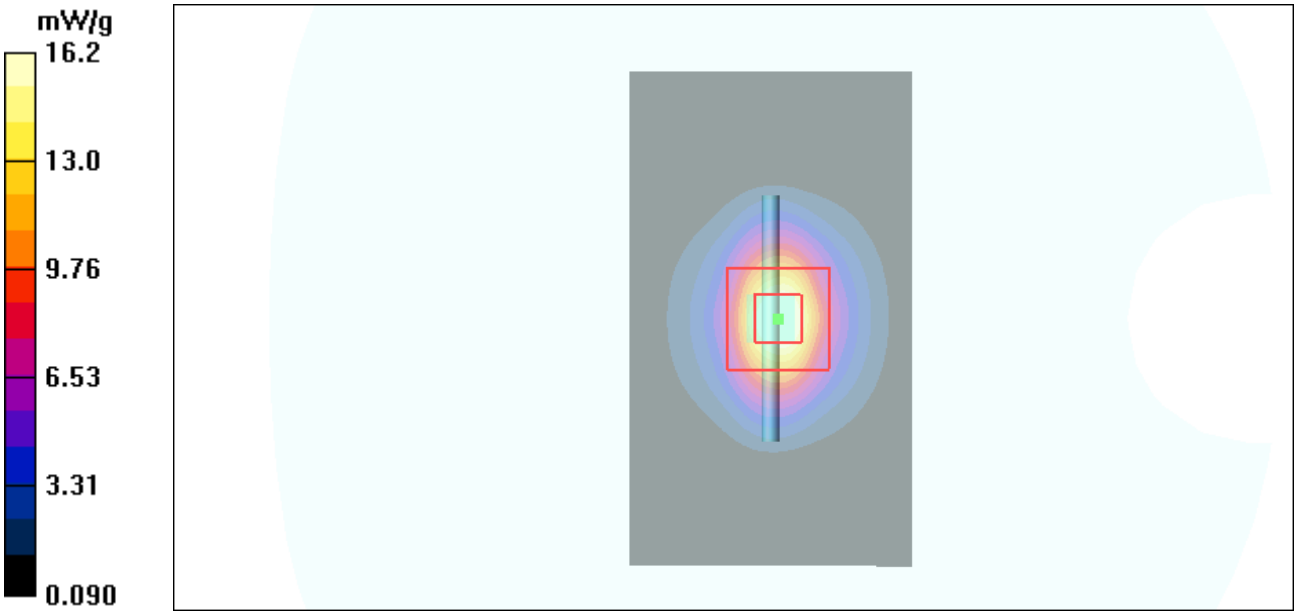


Figure 12 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 786

Date/Time: 4/20/2012 5:28:59 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.9 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.19, 7.19, 7.19); Calibrated: 10/3/2011

Electronics: DAE4 Sn1317; Calibrated: 1/23/2012

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 (71x71x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 16.3 mW/g

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

Reference Value = 88.5 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 25.5 W/kg

SAR(1 g) = 13 mW/g; SAR(10 g) = 6.17 mW/g

Maximum value of SAR (measured) = 14.9 mW/g

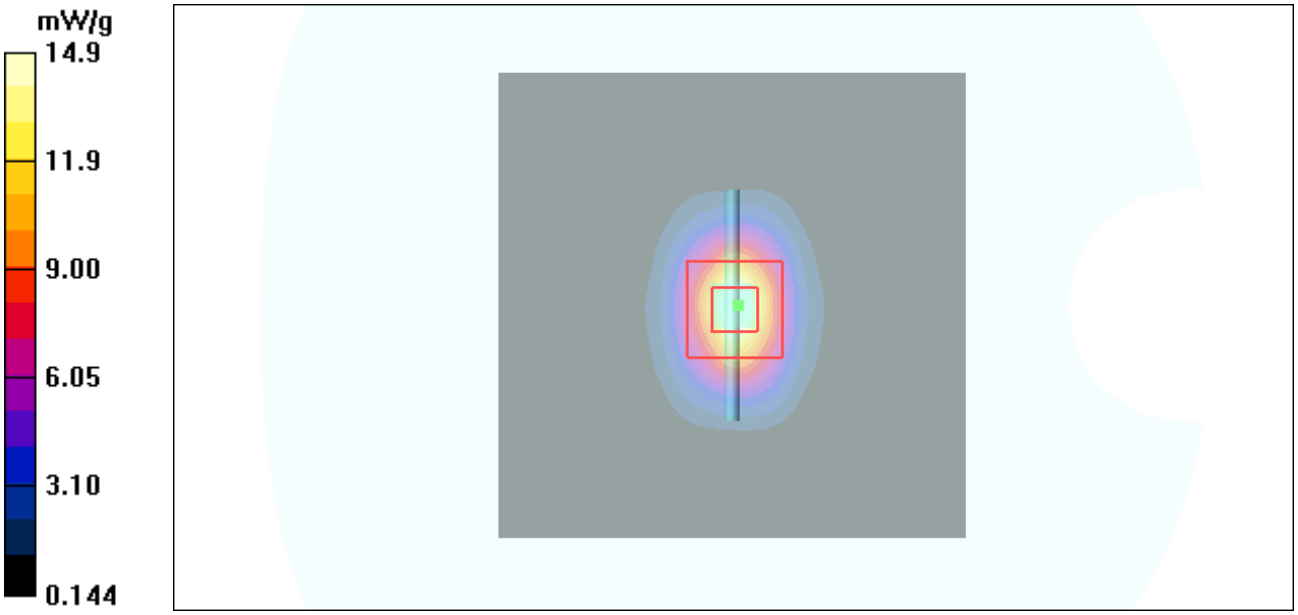


Figure 13 System Performance Check 2450MHz 250mW

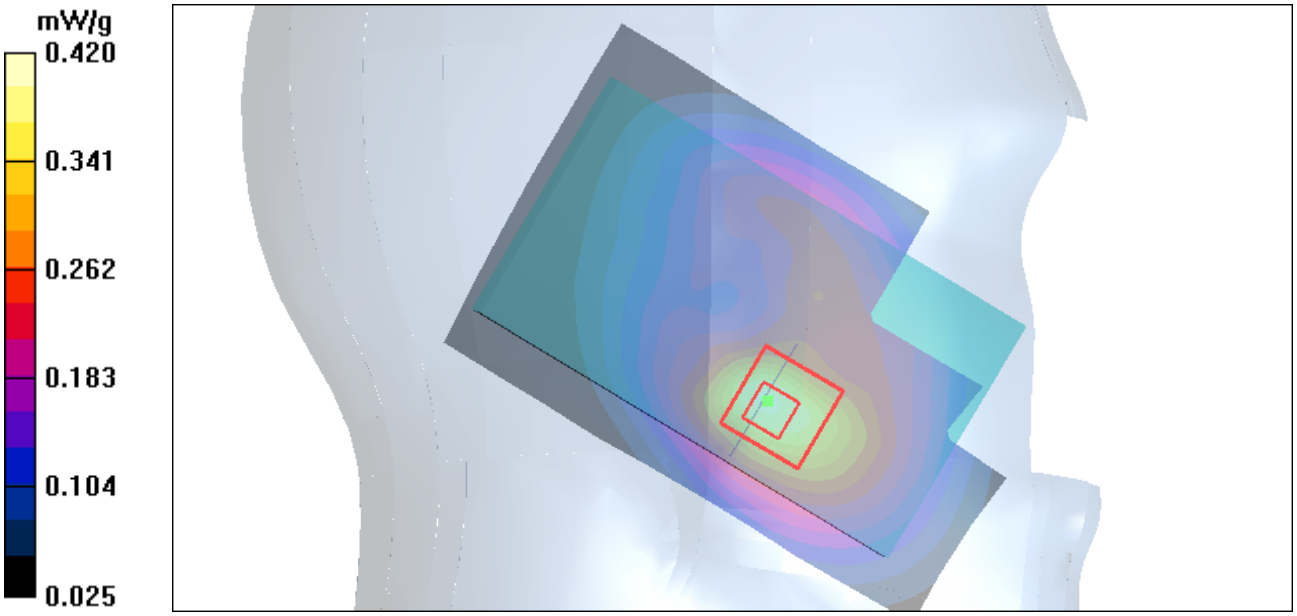
ANNEX C: Graph Results

GSM 850 Left Cheek High (Battery 1)

Date/Time: 4/19/2012 11:37:32 AM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.405 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.83 V/m; Power Drift = 0.061 dB
Peak SAR (extrapolated) = 0.652 W/kg
SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.241 mW/g
Maximum value of SAR (measured) = 0.420 mW/g



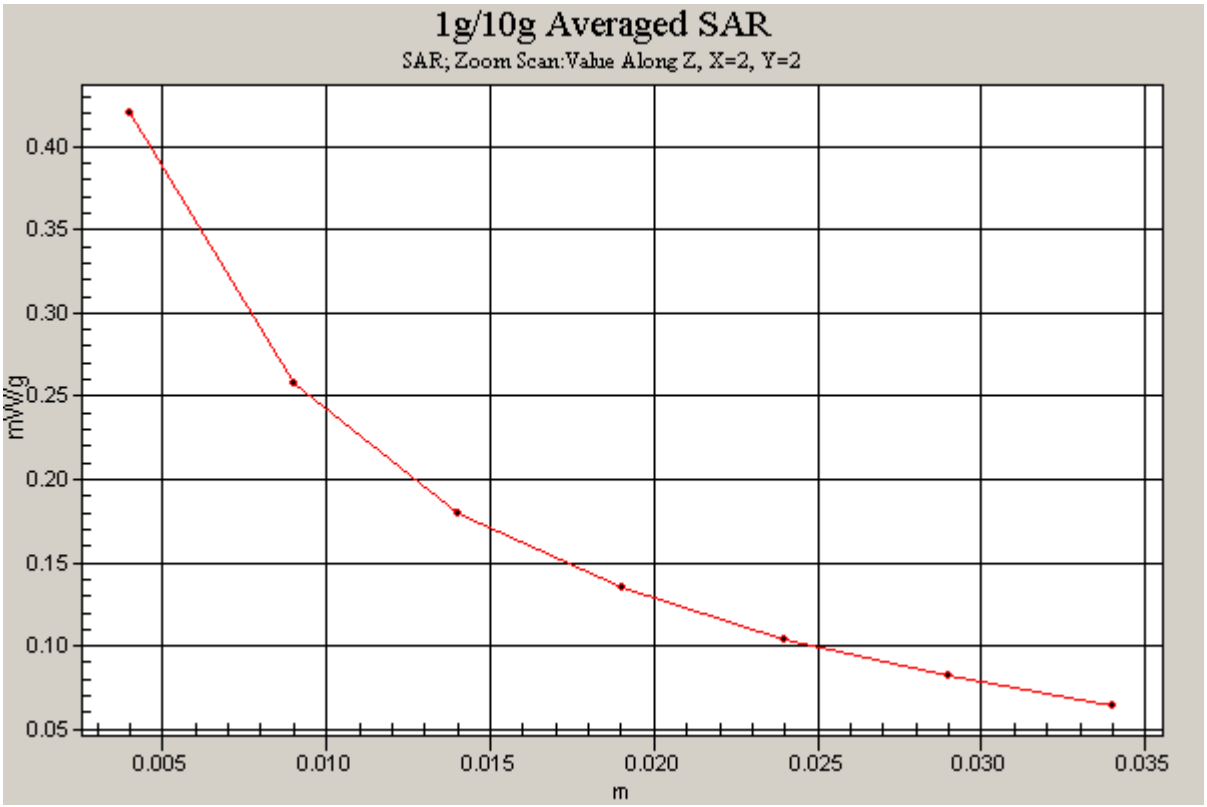


Figure 14 Left Hand Touch Cheek GSM 850 Channel 251

GSM 850 Left Cheek Middle (Battery 1)

Date/Time: 4/19/2012 11:51:57 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.285 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.17 V/m; Power Drift = 0.038 dB
Peak SAR (extrapolated) = 0.406 W/kg
SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.189 mW/g
Maximum value of SAR (measured) = 0.282 mW/g

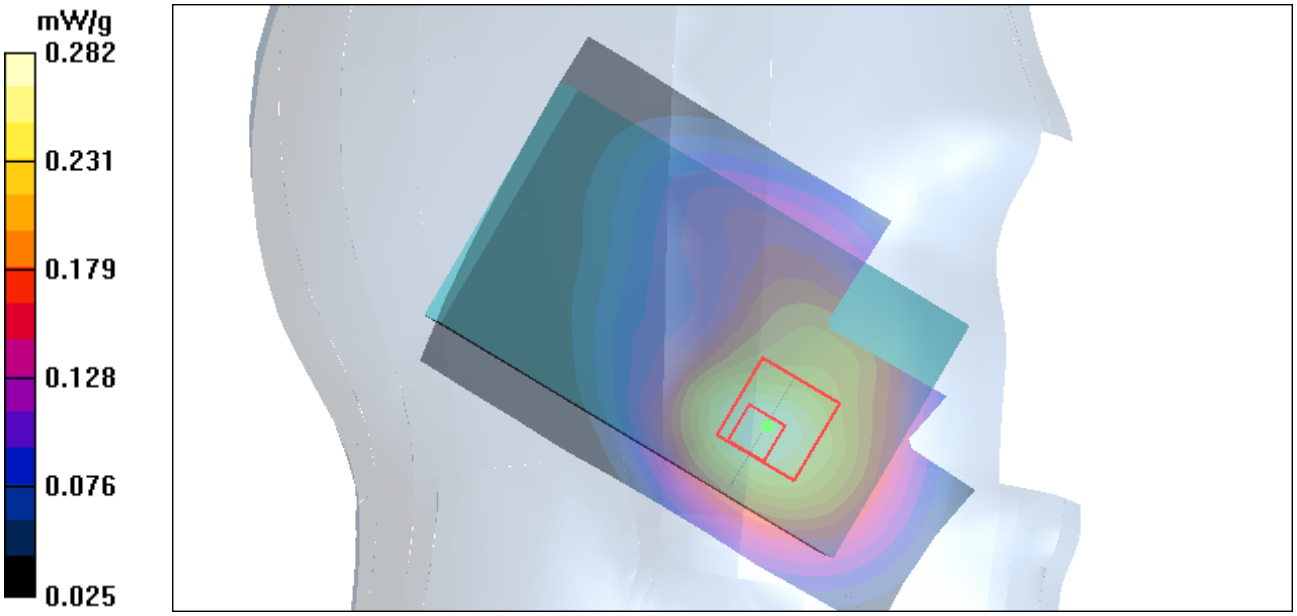


Figure 15 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Cheek Low (Battery 1)

Date/Time: 4/19/2012 12:06:07 PM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.878 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.252 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.30 V/m; Power Drift = 0.110 dB
Peak SAR (extrapolated) = 0.320 W/kg
SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.176 mW/g
Maximum value of SAR (measured) = 0.247 mW/g

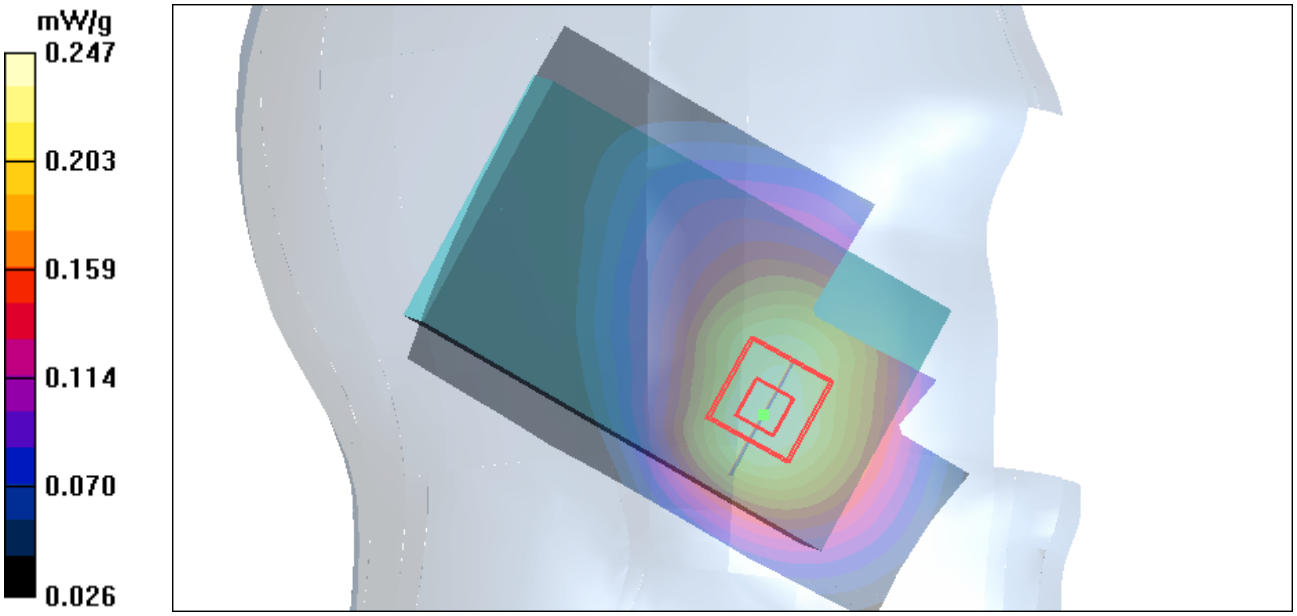


Figure 16 Left Hand Touch Cheek GSM 850 Channel 128

GSM 850 Left Tilt High (Battery 1)

Date/Time: 4/19/2012 12:50:07 PM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.214 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.45 V/m; Power Drift = -0.147 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.159 mW/g
Maximum value of SAR (measured) = 0.211 mW/g

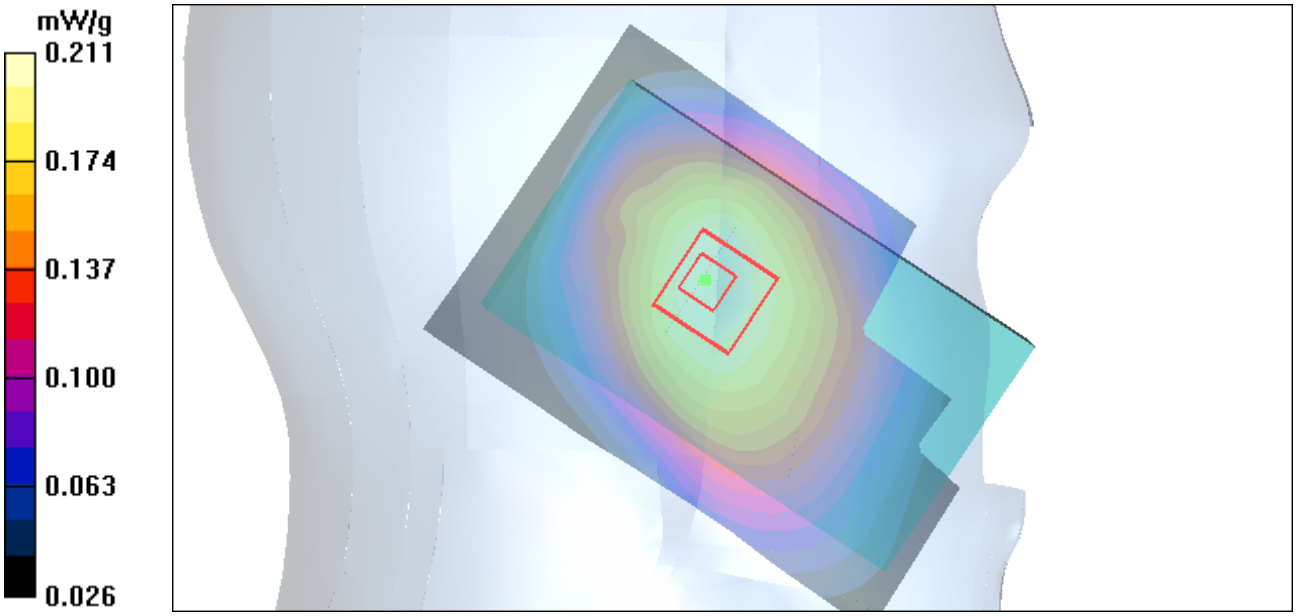


Figure 17 Left Hand Tilt 15° GSM 850 Channel 251

GSM 850 Left Tilt Middle (Battery 1)

Date/Time: 4/19/2012 12:35:56 PM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.228 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.49 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 0.265 W/kg
SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.170 mW/g
Maximum value of SAR (measured) = 0.227 mW/g

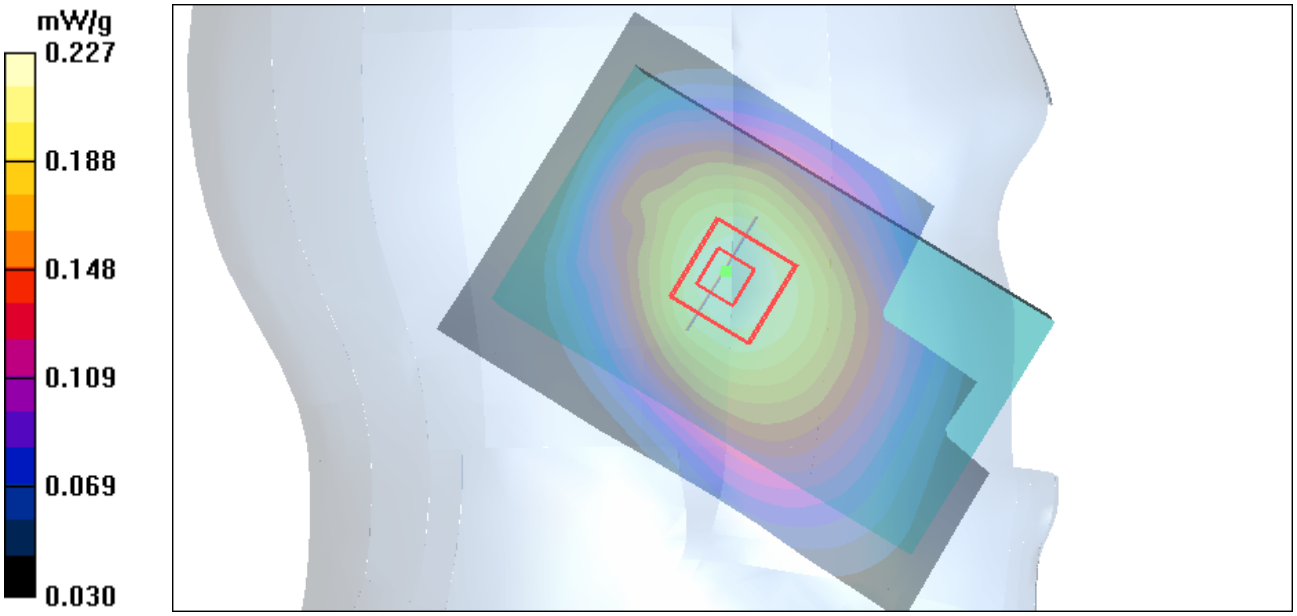


Figure 18 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Left Tilt Low (Battery 1)

Date/Time: 4/19/2012 12:21:46 PM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.878 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.241 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.75 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.230 mW/g; SAR(10 g) = 0.180 mW/g
Maximum value of SAR (measured) = 0.241 mW/g

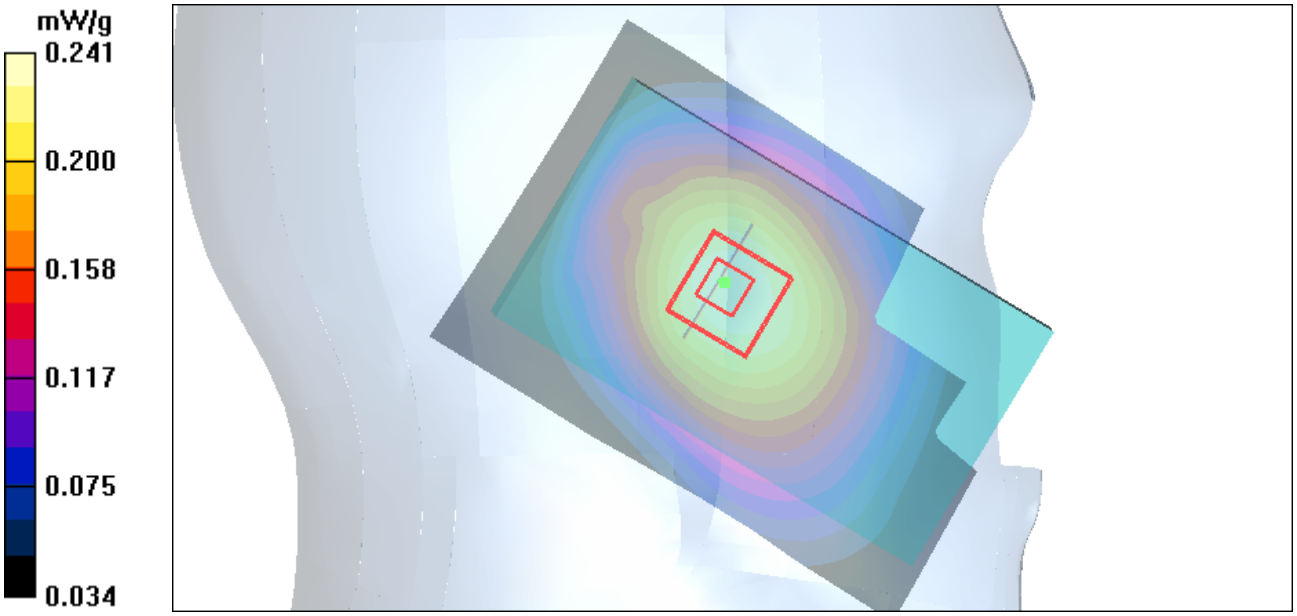


Figure 19 Left Hand Tilt 15° GSM 850 Channel 128

GSM 850 Right Cheek High (Battery 1)

Date/Time: 4/19/2012 10:20:57 AM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.318 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.34 V/m; Power Drift = 0.170 dB
Peak SAR (extrapolated) = 0.503 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.334 mW/g

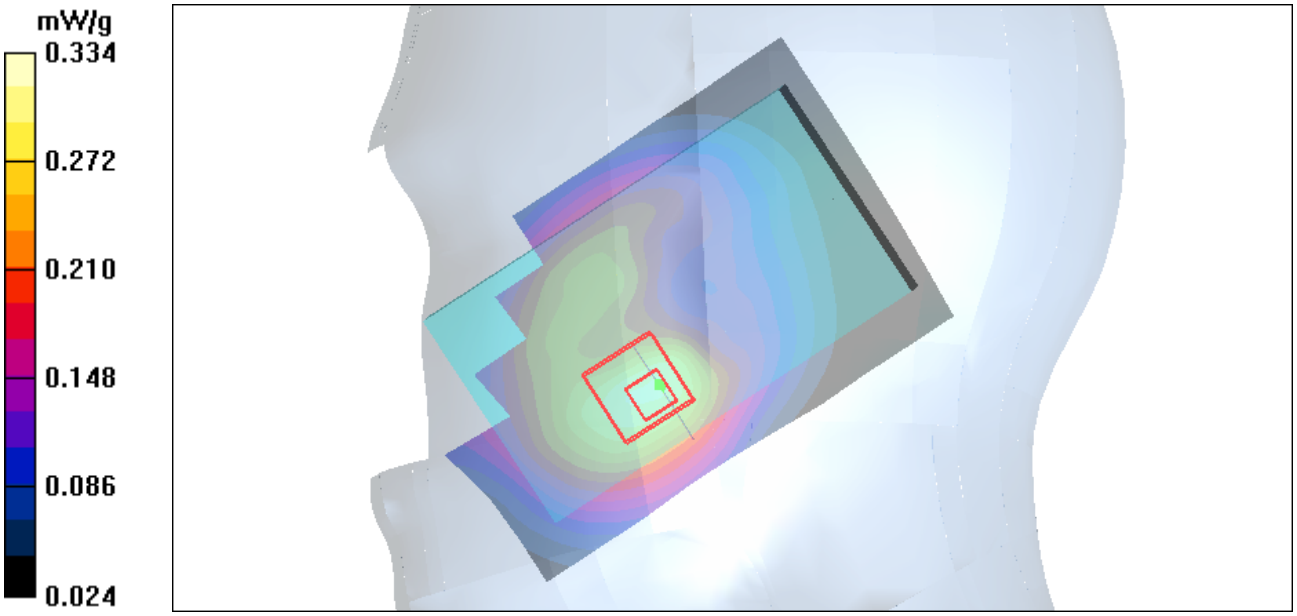


Figure 20 Right Hand Touch Cheek GSM 850 Channel 251

GSM 850 Right Cheek Middle (Battery 1)

Date/Time: 4/19/2012 10:35:29 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.286 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.84 V/m; Power Drift = 0.127 dB
Peak SAR (extrapolated) = 0.363 W/kg
SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.206 mW/g
Maximum value of SAR (measured) = 0.277 mW/g

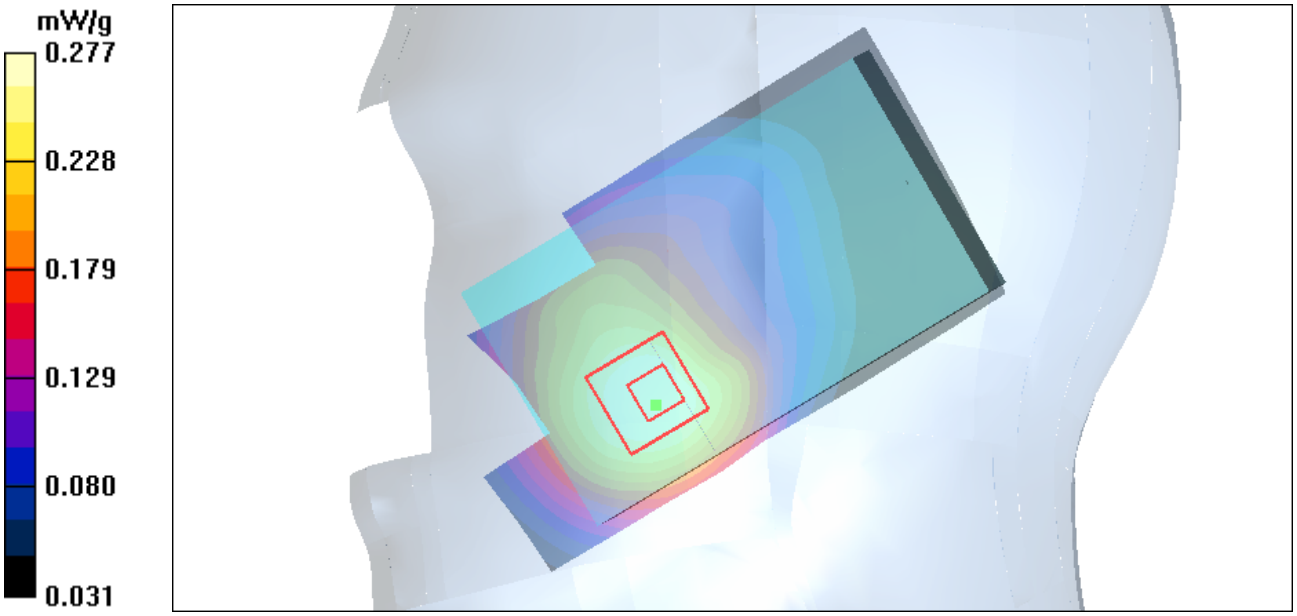


Figure 21 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Cheek Low (Battery 1)

Date/Time: 4/19/2012 10:07:34 AM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.878 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.317 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.67 V/m; Power Drift = 0.141 dB
Peak SAR (extrapolated) = 0.366 W/kg
SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.224 mW/g
Maximum value of SAR (measured) = 0.305 mW/g

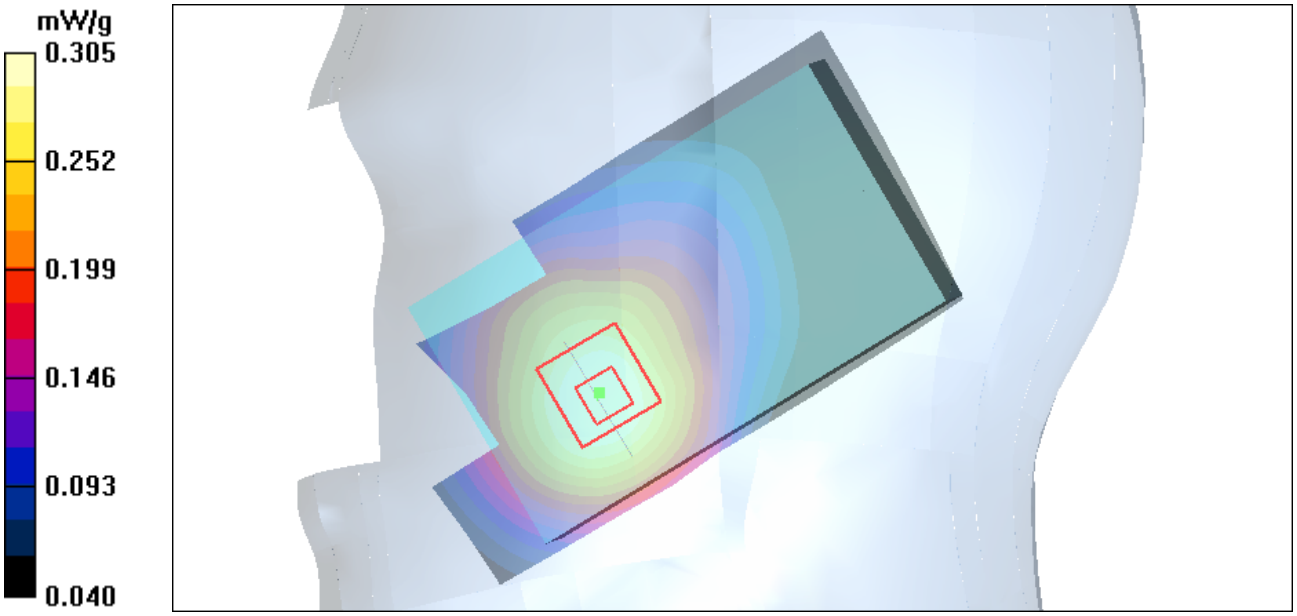


Figure 22 Right Hand Touch Cheek GSM 850 Channel 128

GSM 850 Right Tilt High (Battery 1)

Date/Time: 4/19/2012 11:18:54 AM
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 849 MHz; σ = 0.901 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.205 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.90 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.241 W/kg
SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.153 mW/g
Maximum value of SAR (measured) = 0.207 mW/g

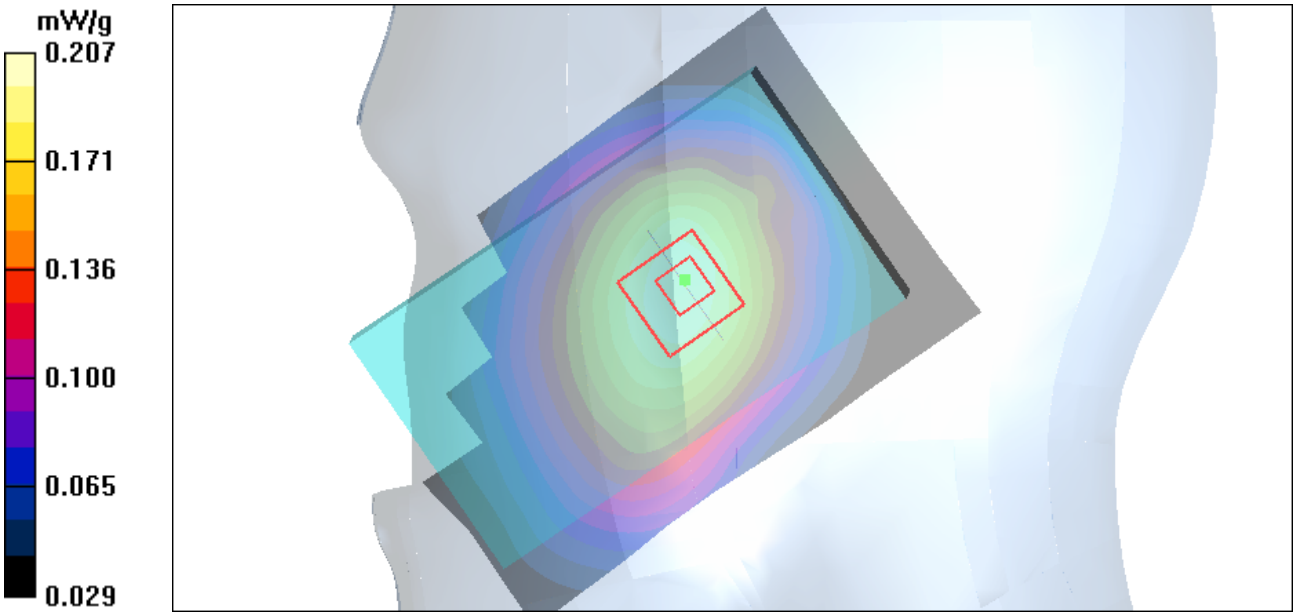


Figure 23 Right Hand Tilt 15° GSM 850 Channel 251

GSM 850 Right Tilt Middle (Battery 1)

Date/Time: 4/19/2012 10:49:54 AM
Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.229 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.33 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.267 W/kg
SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.170 mW/g
Maximum value of SAR (measured) = 0.226 mW/g

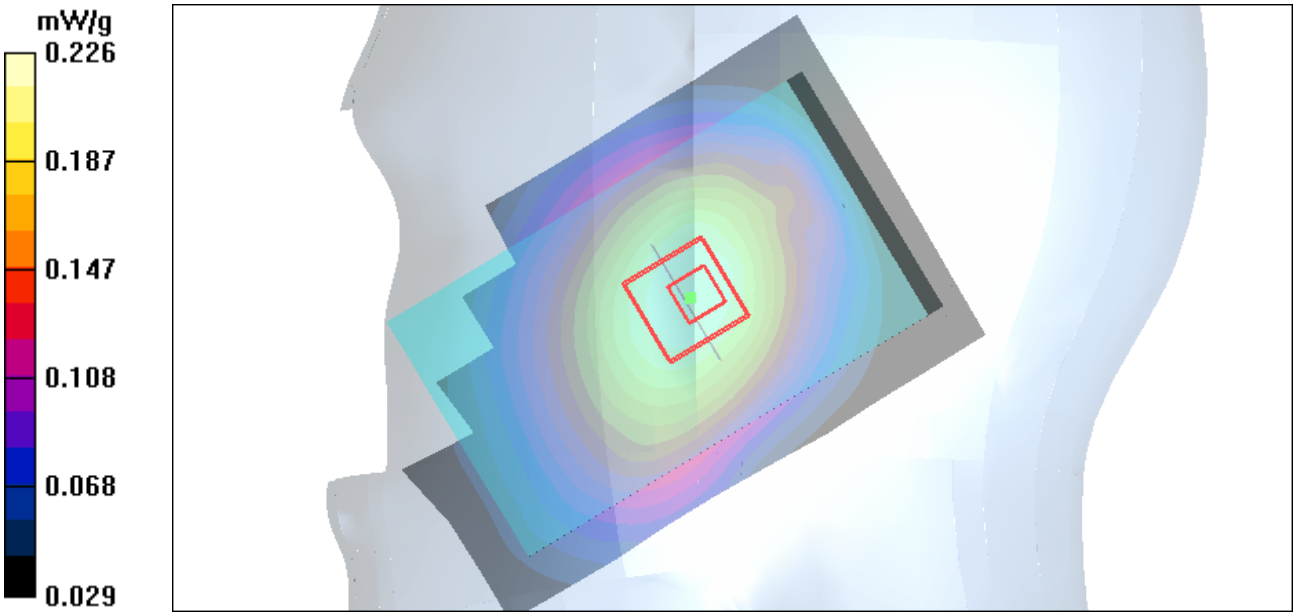


Figure 24 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Tilt Low (Battery 1)

Date/Time: 4/19/2012 11:04:46 AM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.878 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.257 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.75 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 0.298 W/kg
SAR(1 g) = 0.245 mW/g; SAR(10 g) = 0.191 mW/g
Maximum value of SAR (measured) = 0.254 mW/g

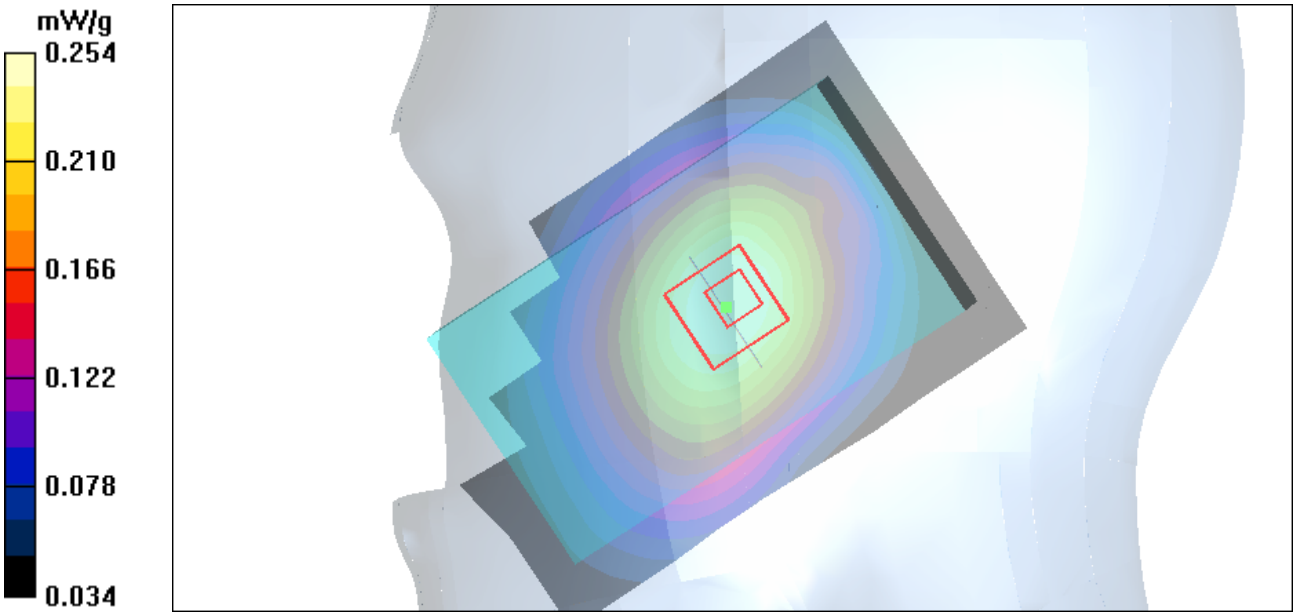


Figure 25 Right Hand Tilt 15° GSM 850 Channel 128

GSM 850 GPRS (4Txslots) Back Side High (Battery 1)

Date/Time: 4/19/2012 10:47:17 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 848.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.783 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.854 W/kg
SAR(1 g) = 0.563 mW/g; SAR(10 g) = 0.402 mW/g
Maximum value of SAR (measured) = 0.709 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 0.951 W/kg
SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.551 mW/g
Maximum value of SAR (measured) = 0.791 mW/g

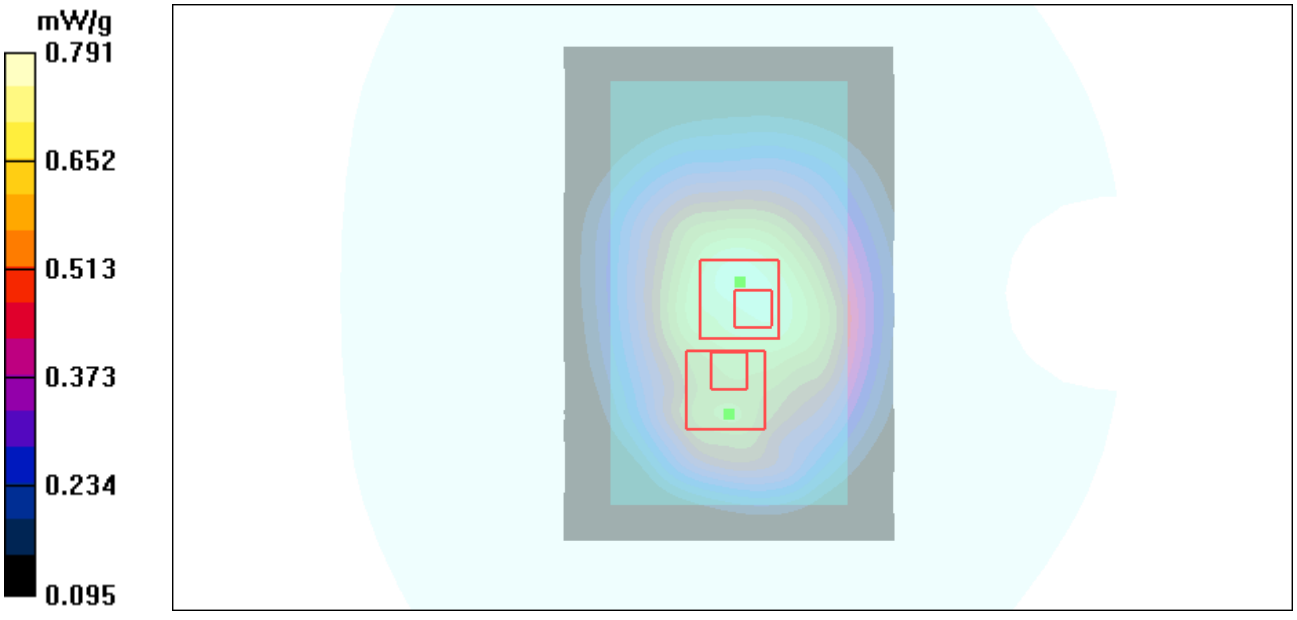


Figure 26 Body, Back Side, GSM 850 GPRS (4Txslots) Channel 251

GSM 850 GPRS (4Txslots) Back Side Middle (Battery 1)

Date/Time: 4/19/2012 11:06:27 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 836.6 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.964 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.1 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.506 mW/g
Maximum value of SAR (measured) = 0.859 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.1 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.903 mW/g; SAR(10 g) = 0.669 mW/g
Maximum value of SAR (measured) = 0.966 mW/g

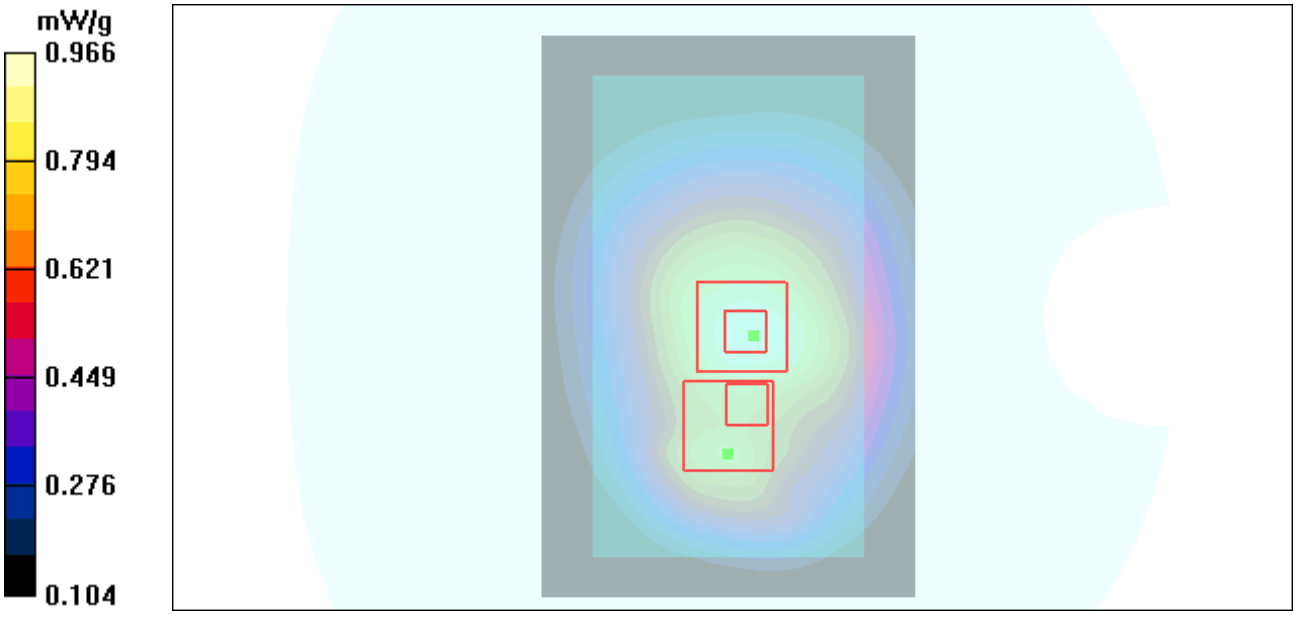


Figure 27 Body, Back Side, GSM 850 GPRS (4Txslots) Channel 190

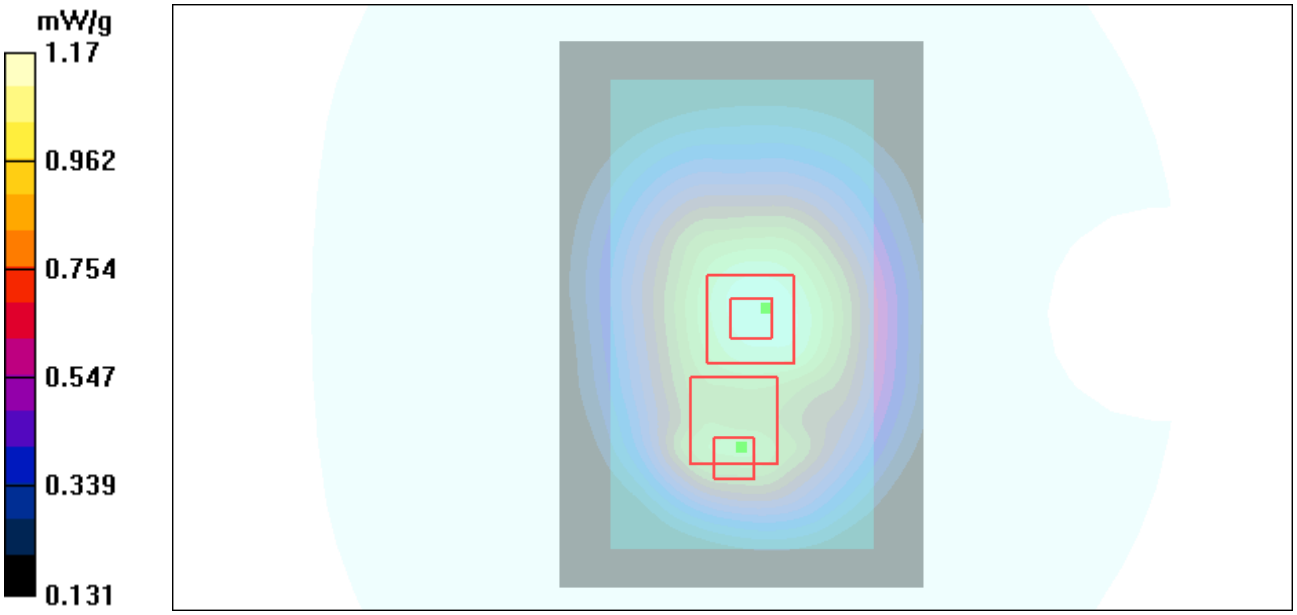
GSM 850 GPRS (4Txslots) Back Side Low (Battery 1)

Date/Time: 4/19/2012 9:36:56 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.17 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.6 V/m; Power Drift = -0.198 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.863 mW/g; SAR(10 g) = 0.619 mW/g
Maximum value of SAR (measured) = 0.968 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.6 V/m; Power Drift = -0.198 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.814 mW/g
Maximum value of SAR (measured) = 1.17 mW/g



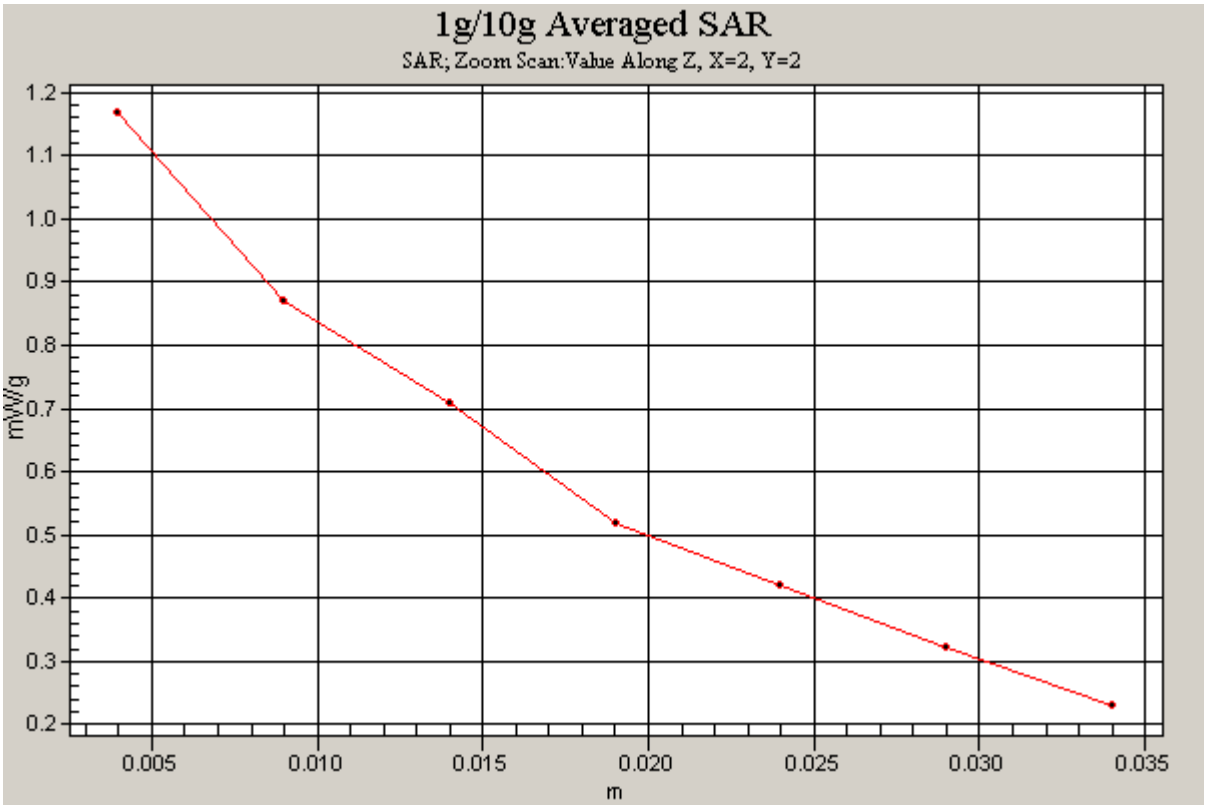


Figure 28 Body, Back Side, GSM 850 GPRS (4Txslots) Channel 128

GSM 850 GPRS (4Txslots) Front Side Low (Battery 1)

Date/Time: 4/19/2012 9:57:19 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.664 mW/g

Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.8 V/m; Power Drift = -0.149 dB
Peak SAR (extrapolated) = 0.851 W/kg
SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.479 mW/g
Maximum value of SAR (measured) = 0.661 mW/g

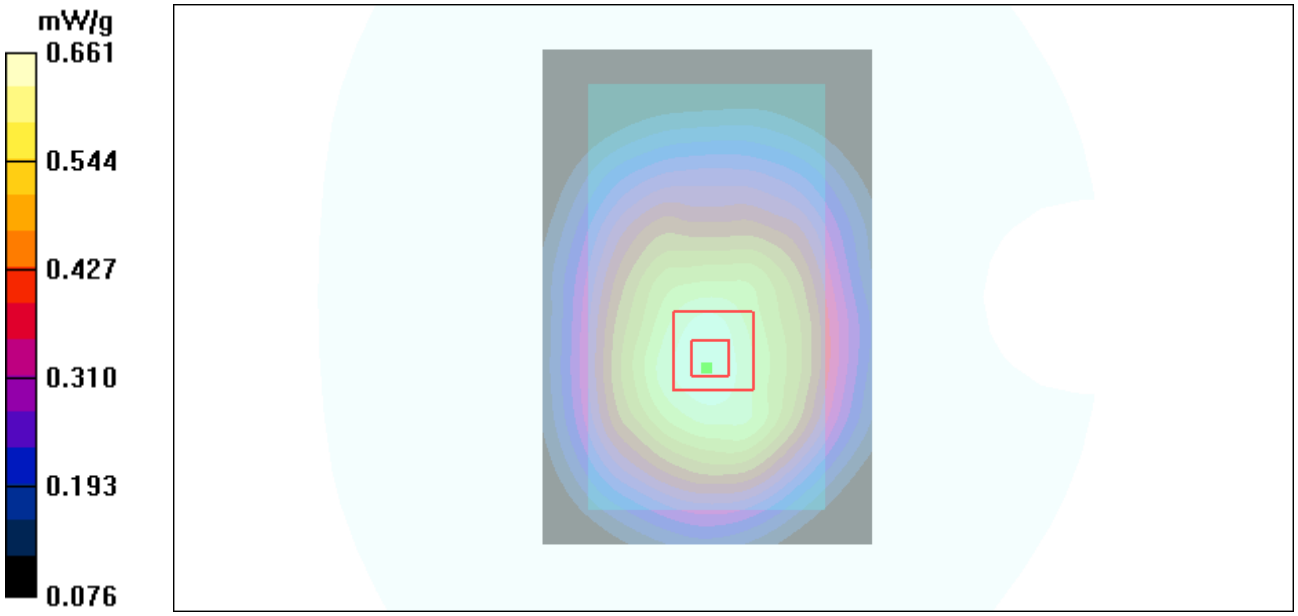


Figure 29 Body, Front Side, GSM 850 GPRS (4Txslots) Channel 128

GSM 850 GPRS (4Txslots) Left Edge Low (Battery 1)

Date/Time: 4/19/2012 10:12:35 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Edge Low/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.400 mW/g

Left Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.2 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 0.567 W/kg
SAR(1 g) = 0.396 mW/g; SAR(10 g) = 0.274 mW/g
Maximum value of SAR (measured) = 0.419 mW/g

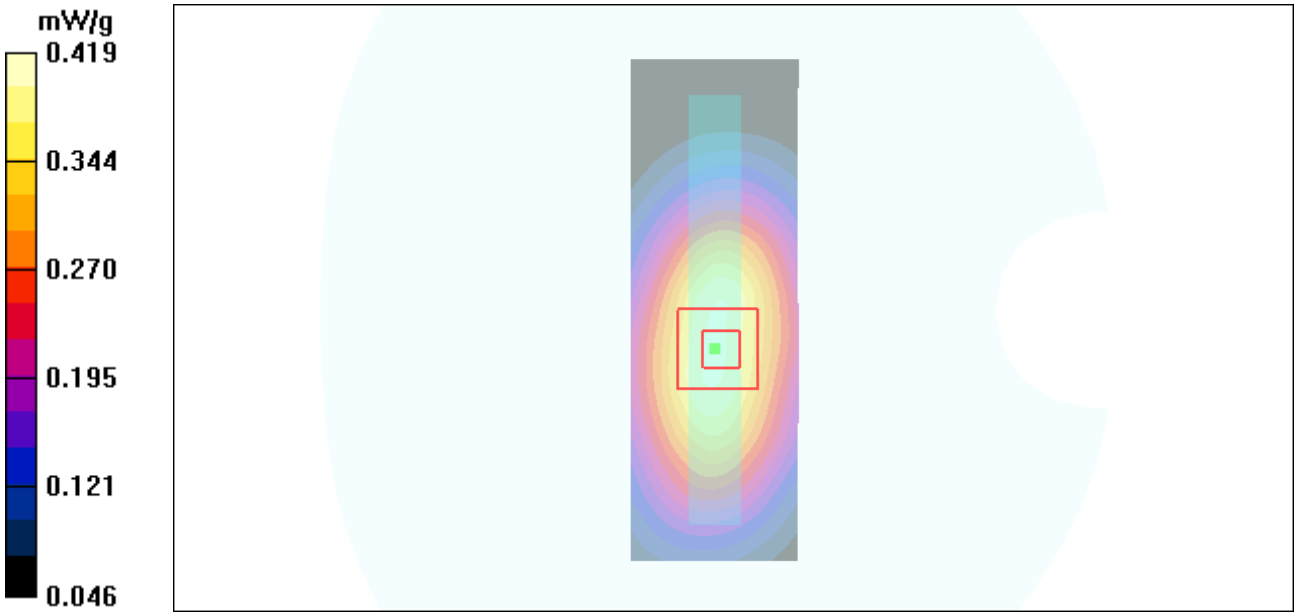


Figure 30 Body, Left Edge, GSM 850 GPRS (4Txslots) Channel 128

GSM 850 GPRS (4Txslots) Right Edge Low (Battery 1)

Date/Time: 4/19/2012 10:23:45 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Edge Low/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.443 mW/g

Right Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.8 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 0.660 W/kg
SAR(1 g) = 0.434 mW/g; SAR(10 g) = 0.302 mW/g
Maximum value of SAR (measured) = 0.464 mW/g

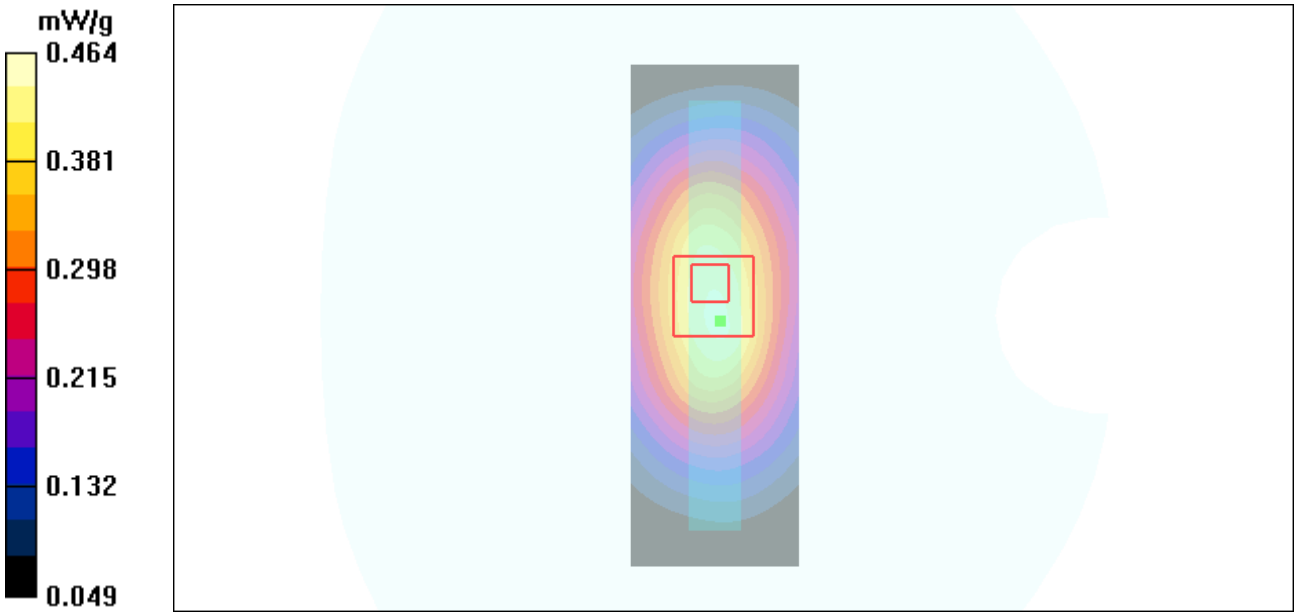


Figure 31 Body, Right Edge, GSM 850 GPRS (4Txslots) Channel 128

GSM 850 GPRS (4Txslots) Bottom Edge Low (Battery 1)

Date/Time: 4/19/2012 10:35:40 PM
Communication System: GSM850 + GPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Bottom Edge Low/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.123 mW/g

Bottom Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.59 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 0.176 W/kg
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.129 mW/g

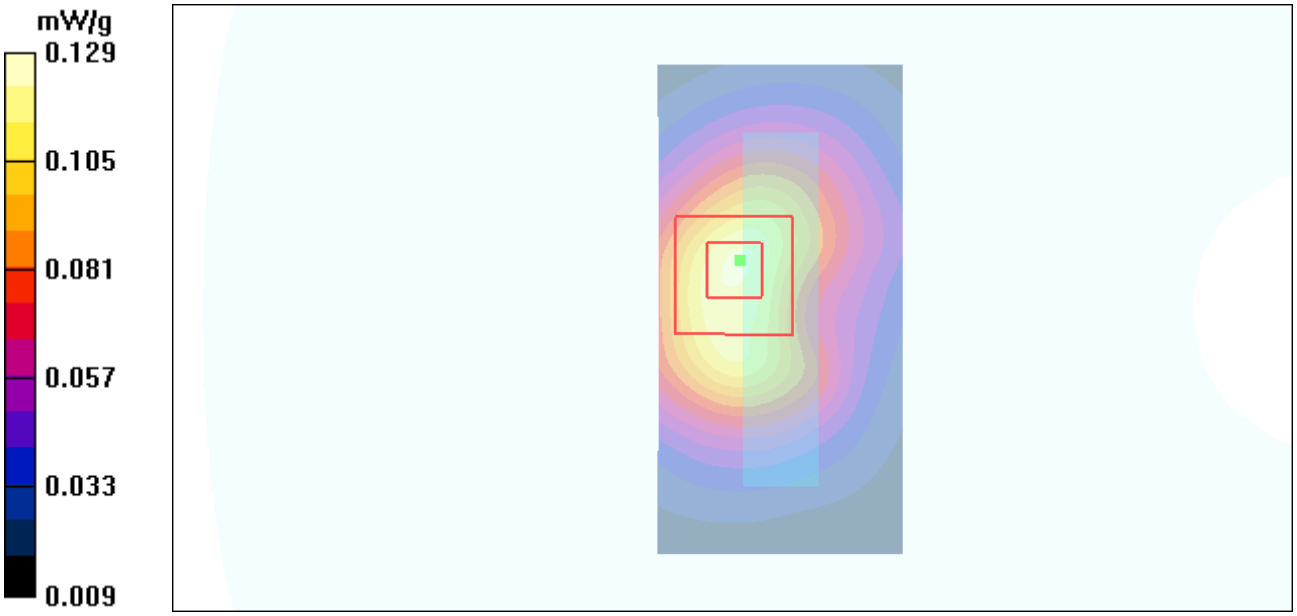


Figure 32 Body, Bottom Edge, GSM 850 GPRS (4Txslots) Channel 128

GSM 850 EGPRS (4Txslots) Back Side Low (Battery 1)

Date/Time: 4/19/2012 11:29:27 PM
Communication System: GSM850 + EGPRS(4Up); Frequency: 824.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.16 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.0 V/m; Power Drift = -0.155 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.885 mW/g; SAR(10 g) = 0.624 mW/g
Maximum value of SAR (measured) = 1.02 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.0 V/m; Power Drift = -0.155 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.799 mW/g
Maximum value of SAR (measured) = 1.15 mW/g

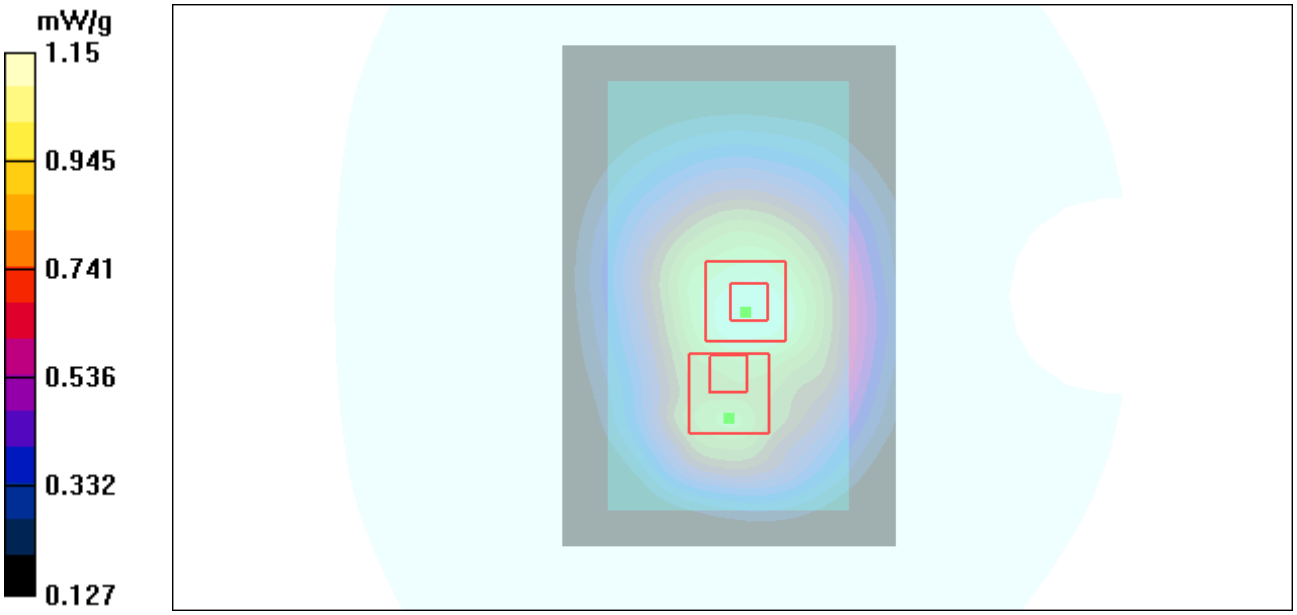


Figure 33 Body, Back Side, GSM 850 EGPRS (4Txslots) Channel 128

GSM 850 with Stereo Headset 1 Back Side Low (Battery 1)

Date/Time: 4/19/2012 11:50:10 PM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.809 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.9 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.660 mW/g; SAR(10 g) = 0.441 mW/g
Maximum value of SAR (measured) = 0.733 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.9 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 0.980 W/kg
SAR(1 g) = 0.769 mW/g; SAR(10 g) = 0.572 mW/g
Maximum value of SAR (measured) = 0.806 mW/g

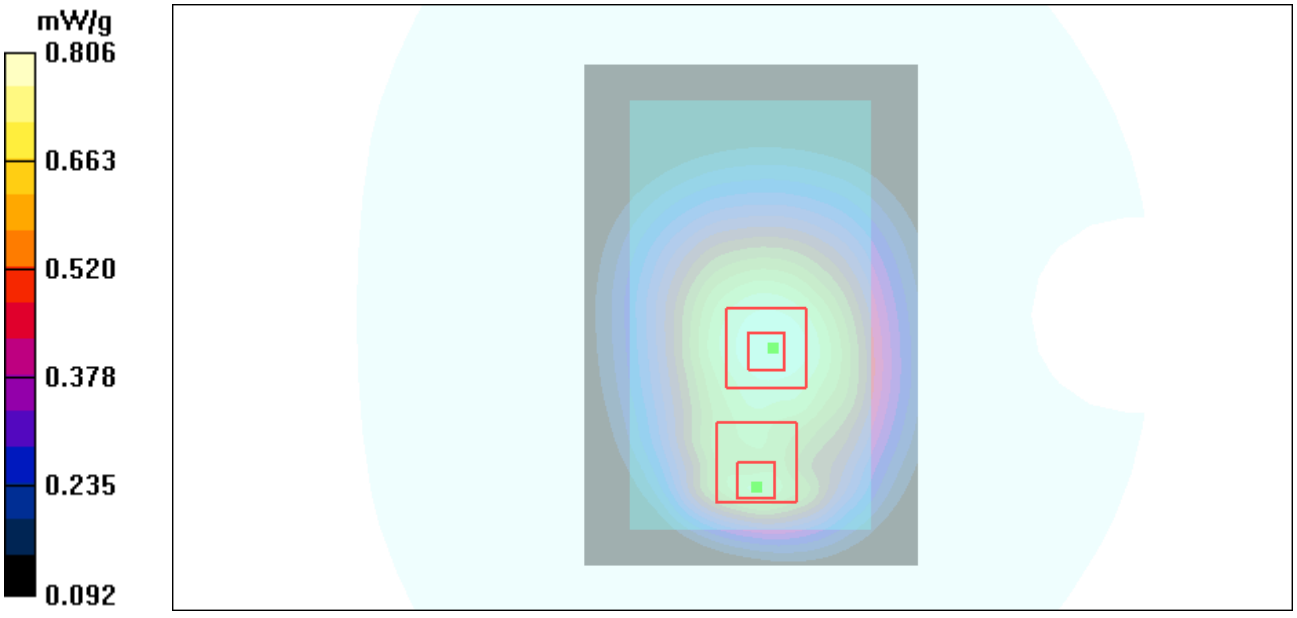


Figure 34 Body with Stereo Headset 1, Back Side, GSM 850 Channel 128

GSM 850 with Stereo Headset 2 Back Side Low (Battery 1)

Date/Time: 4/20/2012 12:10:10 AM
Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.764 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.5 V/m; Power Drift = 0.006 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.657 mW/g; SAR(10 g) = 0.430 mW/g
Maximum value of SAR (measured) = 0.731 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.5 V/m; Power Drift = 0.006 dB
Peak SAR (extrapolated) = 0.907 W/kg
SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.528 mW/g
Maximum value of SAR (measured) = 0.743 mW/g

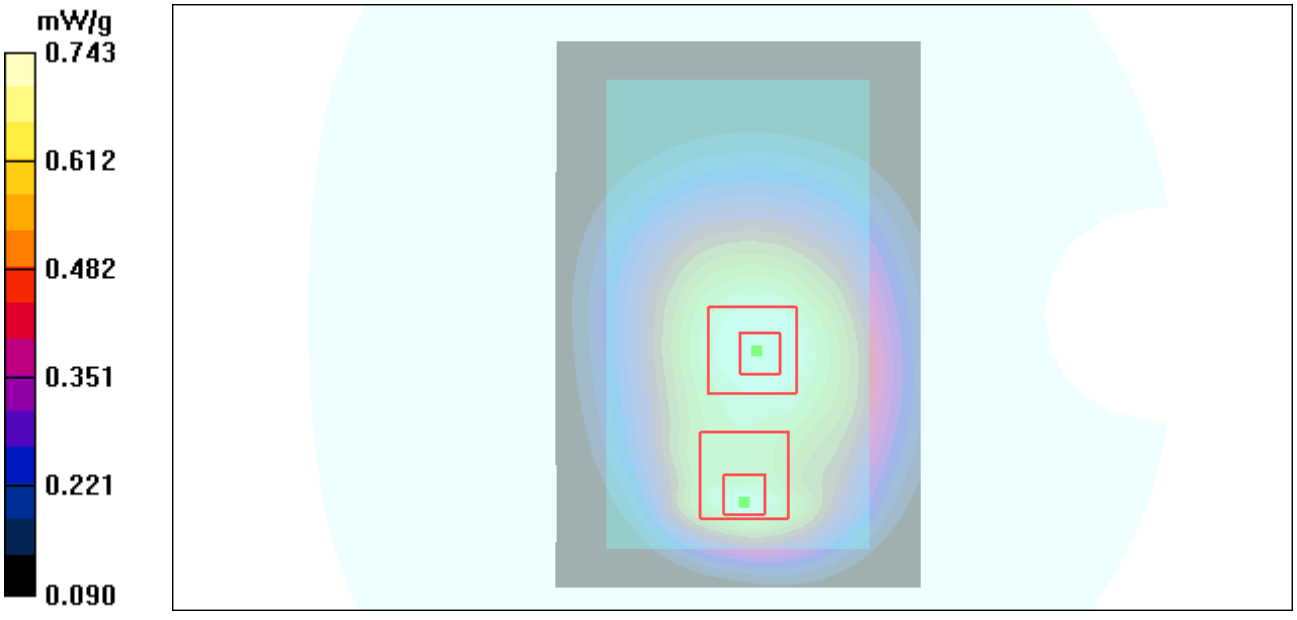


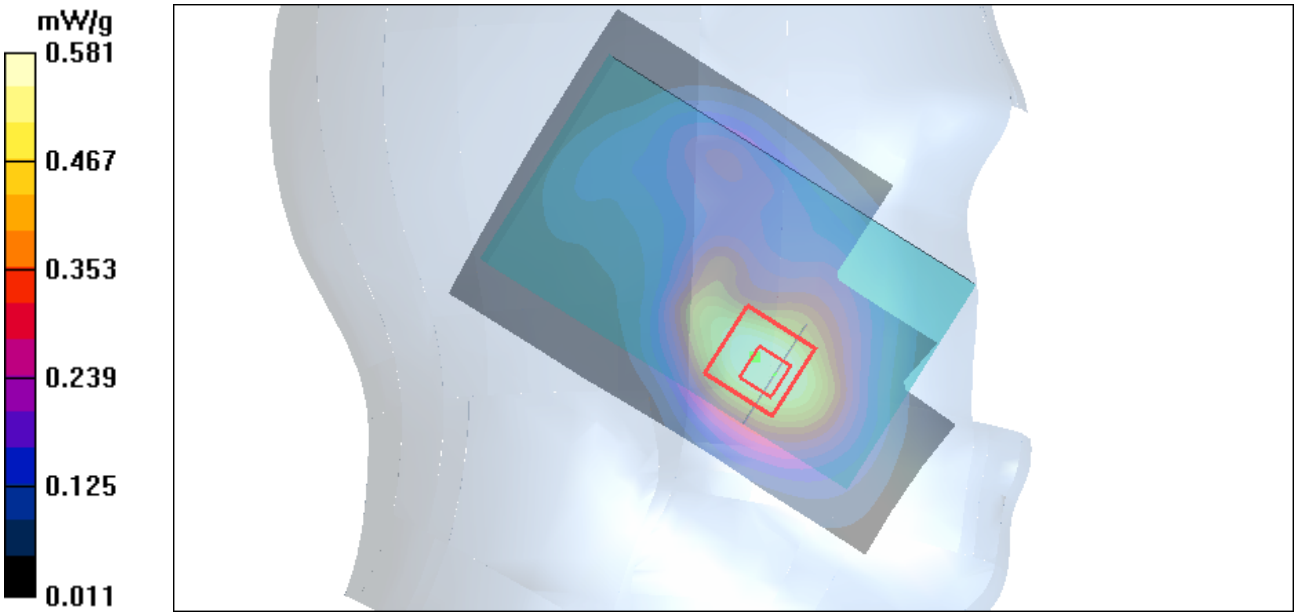
Figure 35 Body with Stereo Headset 2, Back Side, GSM 850 Channel 128

GSM 1900 Left Cheek High (Battery 1)

Date/Time: 4/20/2012 2:04:22 PM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.601 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.57 V/m; Power Drift = 0.095 dB
Peak SAR (extrapolated) = 0.860 W/kg
SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.328 mW/g
Maximum value of SAR (measured) = 0.581 mW/g



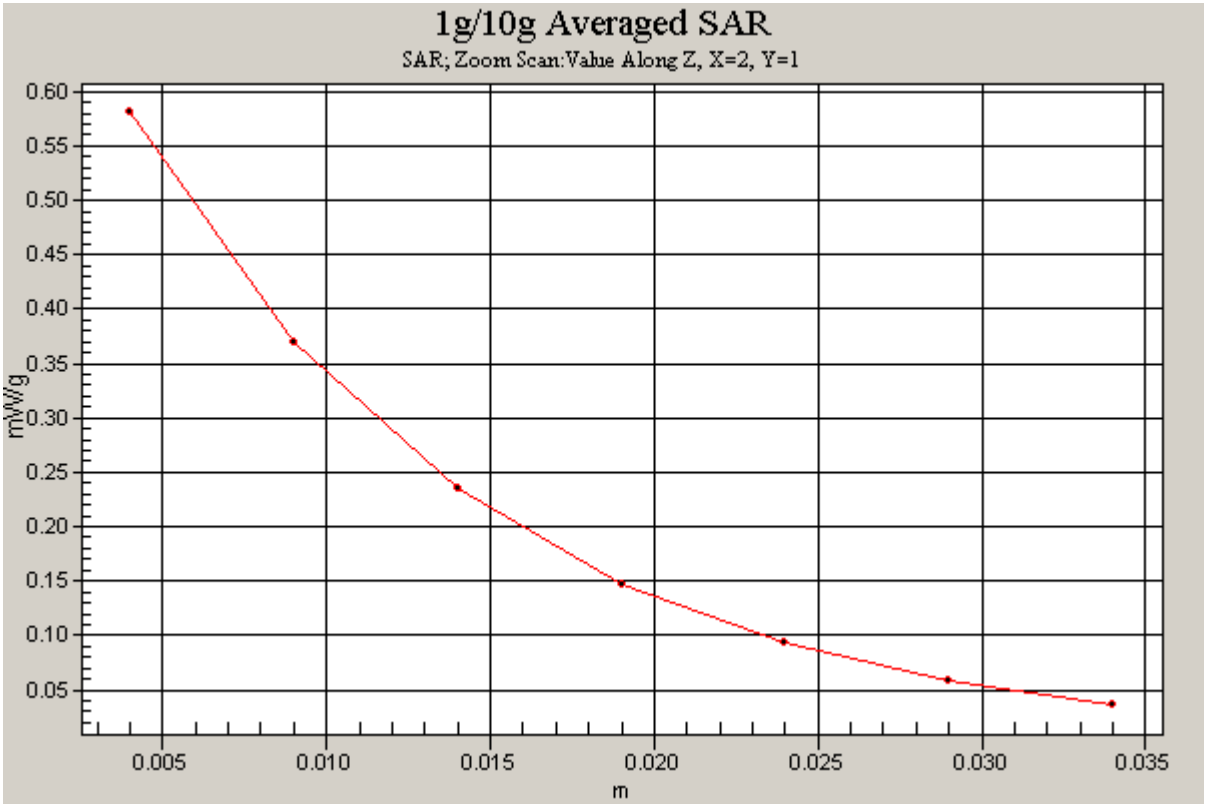


Figure 36 Left Hand Touch Cheek GSM 1900 Channel 810

GSM 1900 Left Cheek Middle (Battery 1)

Date/Time: 4/20/2012 1:35:44 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.546 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.02 V/m; Power Drift = 0.074 dB
Peak SAR (extrapolated) = 0.763 W/kg
SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.300 mW/g
Maximum value of SAR (measured) = 0.530 mW/g

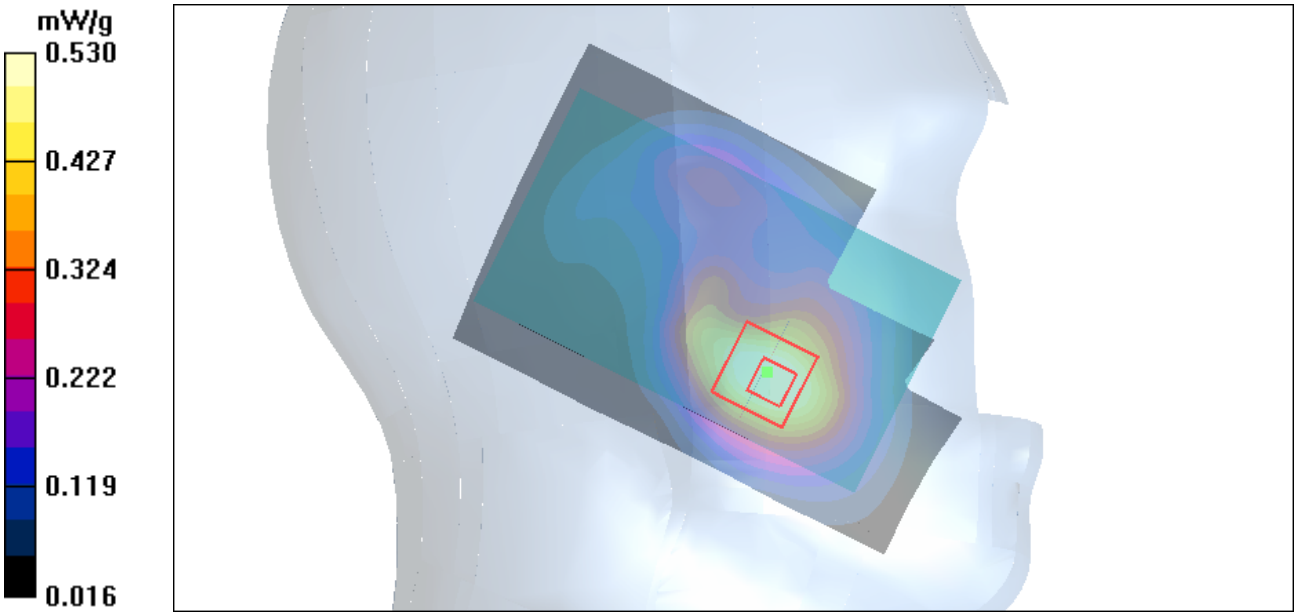


Figure 37 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Cheek Low (Battery 1)

Date/Time: 4/20/2012 1:49:50 PM
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.540 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.00 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.760 W/kg
SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.299 mW/g
Maximum value of SAR (measured) = 0.522 mW/g

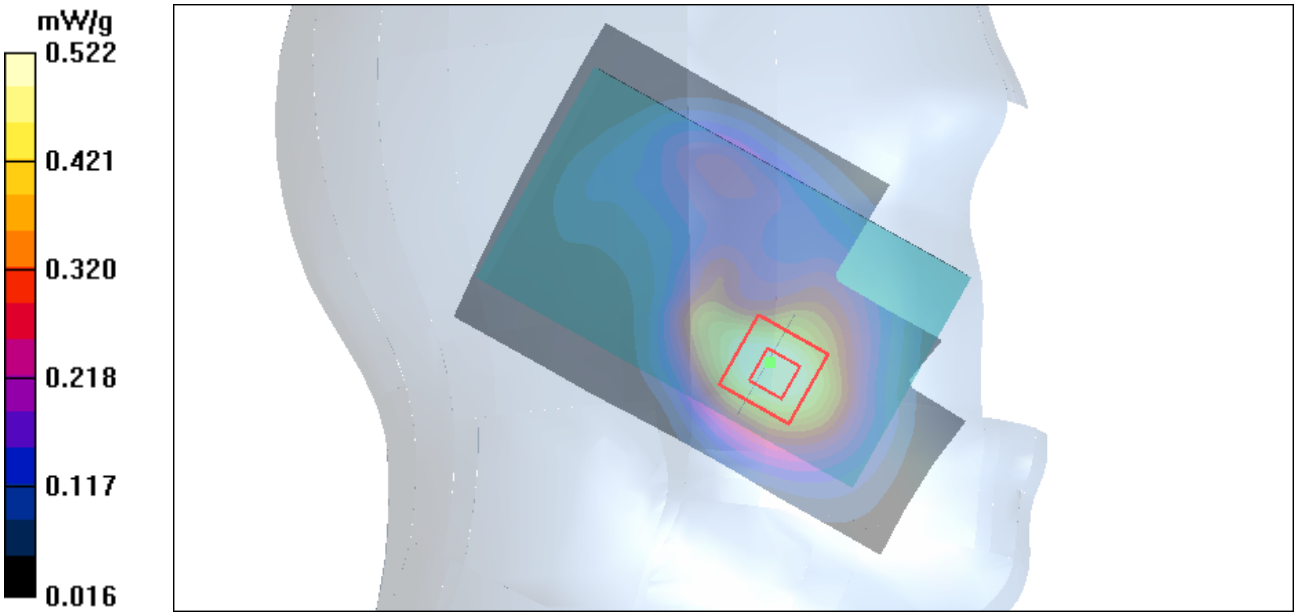


Figure 38 Left Hand Touch Cheek GSM 1900 Channel 512

GSM 1900 Left Tilt High (Battery 1)

Date/Time: 4/20/2012 2:19:50 PM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.179 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 0.256 W/kg
SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.091 mW/g
Maximum value of SAR (measured) = 0.171 mW/g

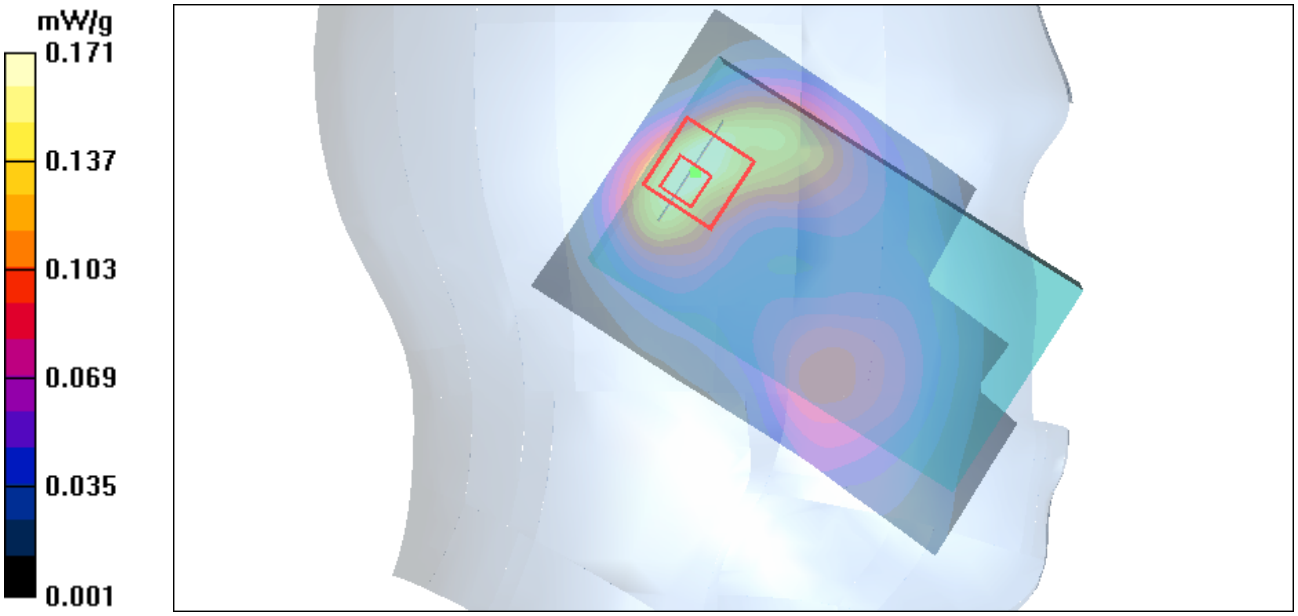


Figure 39 Left Hand Tilt 15° GSM 1900 Channel 810

GSM 1900 Left Tilt Middle (Battery 1)

Date/Time: 4/20/2012 2:47:19 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.158 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.63 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.212 W/kg
SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.078 mW/g
Maximum value of SAR (measured) = 0.145 mW/g

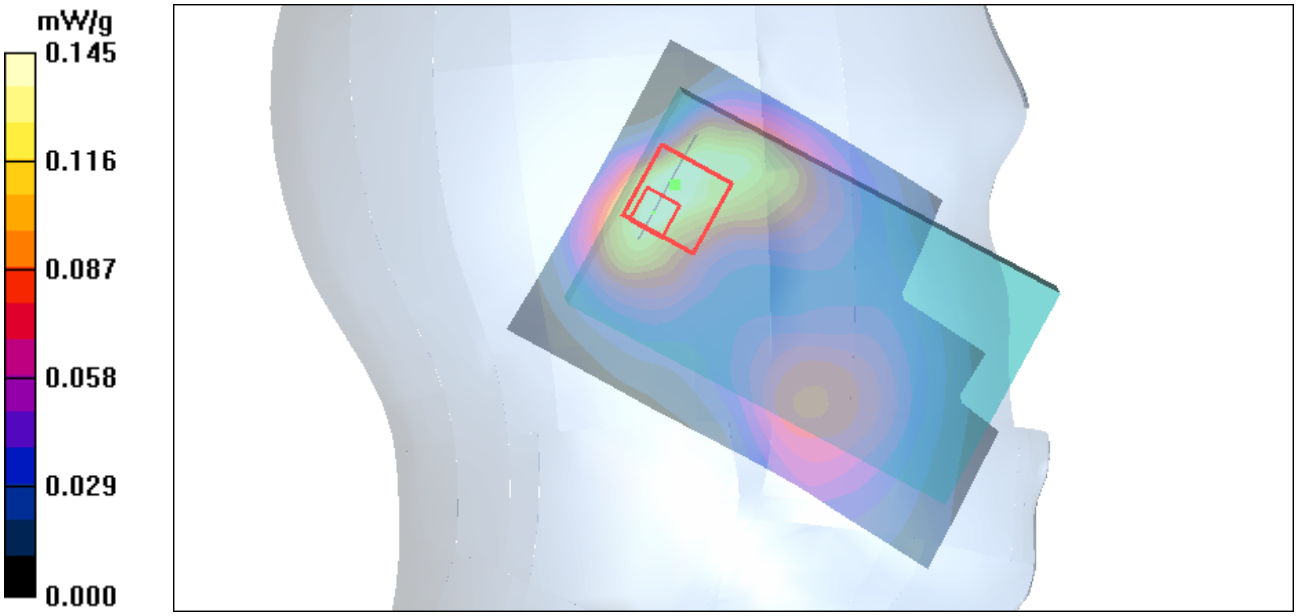


Figure 40 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Left Tilt Low (Battery 1)

Date/Time: 4/20/2012 2:33:28 PM
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.165 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.93 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.152 mW/g

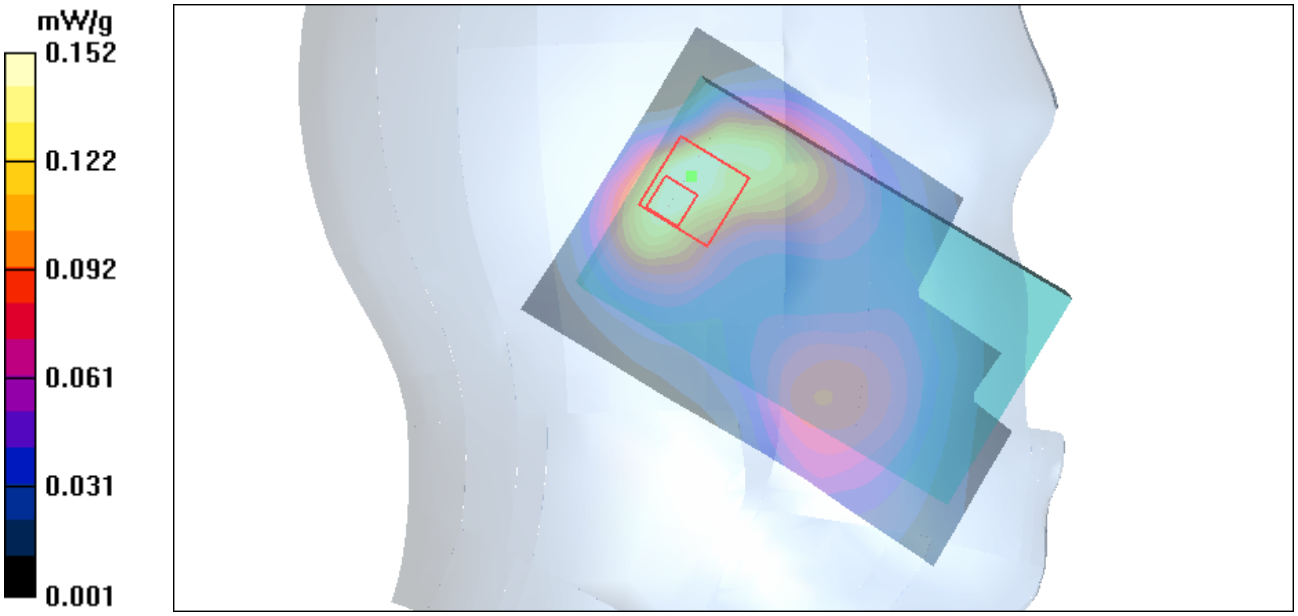


Figure 41 Left Hand Tilt 15° GSM 1900 Channel 512

GSM 1900 Right Cheek High (Battery 1)

Date/Time: 4/20/2012 12:06:05 PM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.375 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.37 V/m; Power Drift = 0.157 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.223 mW/g
Maximum value of SAR (measured) = 0.371 mW/g

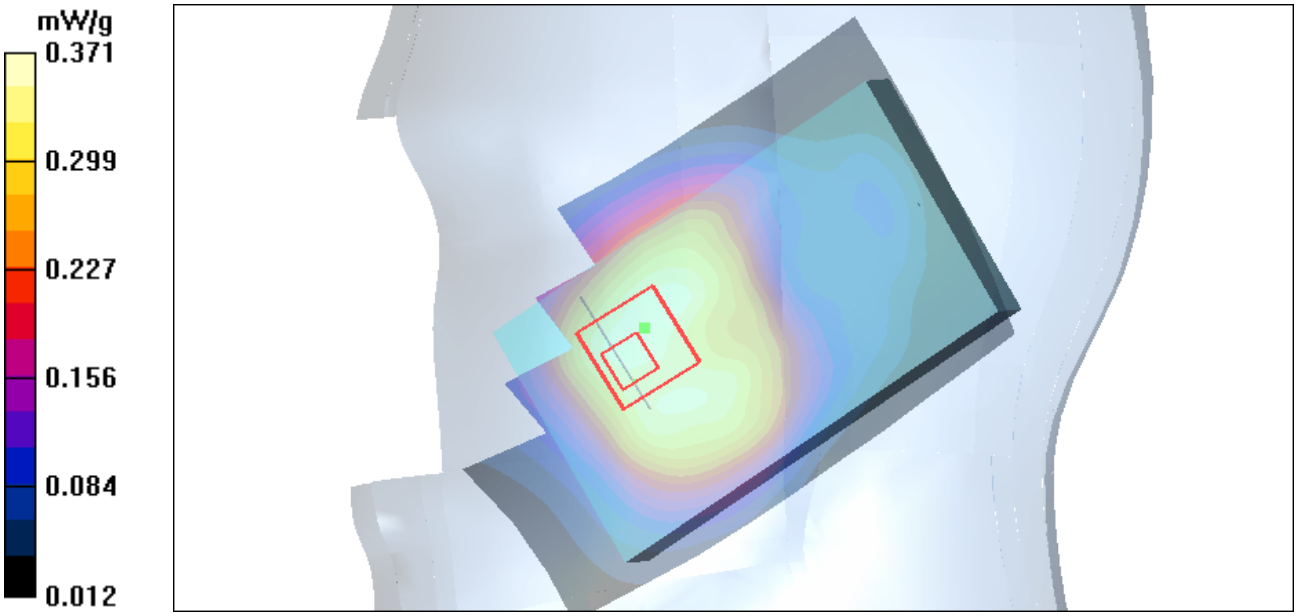


Figure 42 Right Hand Touch Cheek GSM 1900 Channel 810

GSM 1900 Right Cheek Middle (Battery 1)

Date/Time: 4/20/2012 12:22:42 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 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: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.335 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.58 V/m; Power Drift = 0.048 dB
Peak SAR (extrapolated) = 0.504 W/kg
SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.205 mW/g
Maximum value of SAR (measured) = 0.339 mW/g

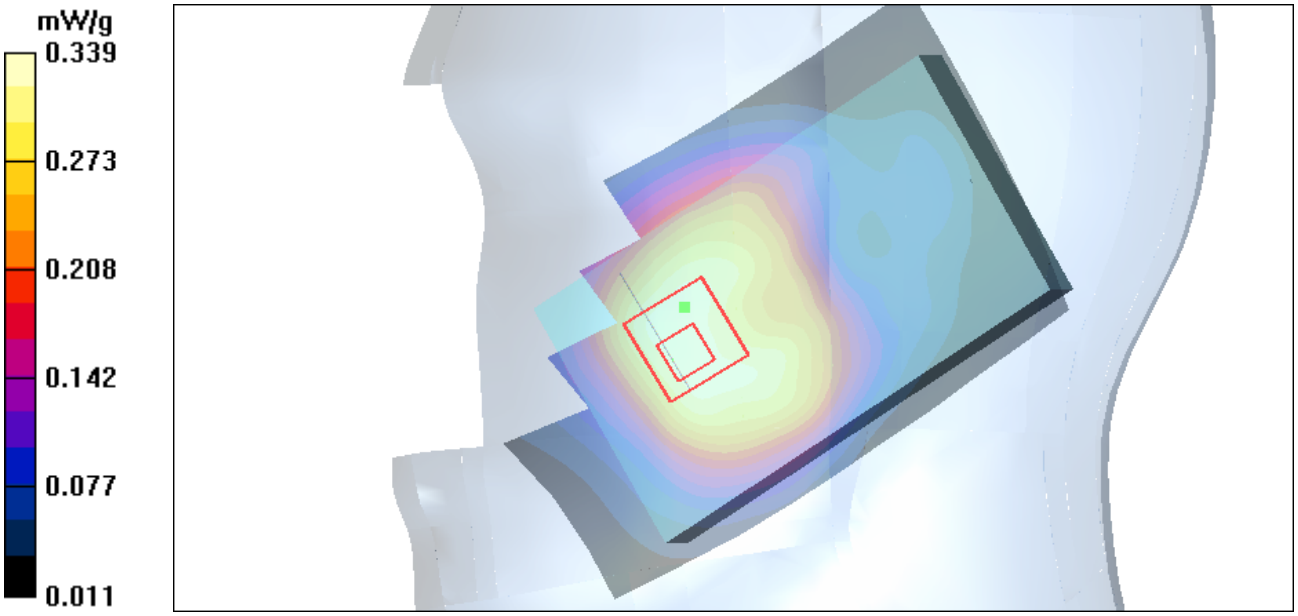


Figure 43 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Cheek Low (Battery 1)

Date/Time: 4/20/2012 12:36:54 PM
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.340 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.57 V/m; Power Drift = 0.061 dB
Peak SAR (extrapolated) = 0.525 W/kg
SAR(1 g) = 0.333 mW/g; SAR(10 g) = 0.211 mW/g
Maximum value of SAR (measured) = 0.354 mW/g

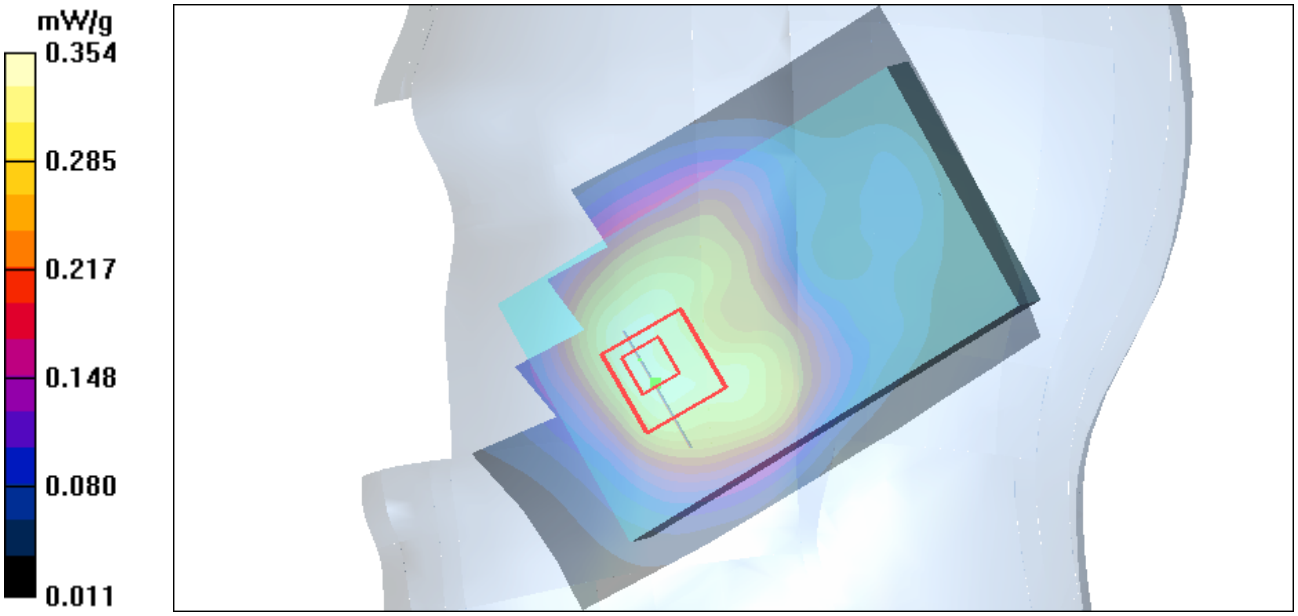


Figure 44 Right Hand Touch Cheek GSM 1900 Channel 512

GSM 1900 Right Tilt High (Battery 1)

Date/Time: 4/20/2012 1:05:26 PM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.217 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = 0.080 dB
Peak SAR (extrapolated) = 0.320 W/kg
SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.106 mW/g
Maximum value of SAR (measured) = 0.214 mW/g

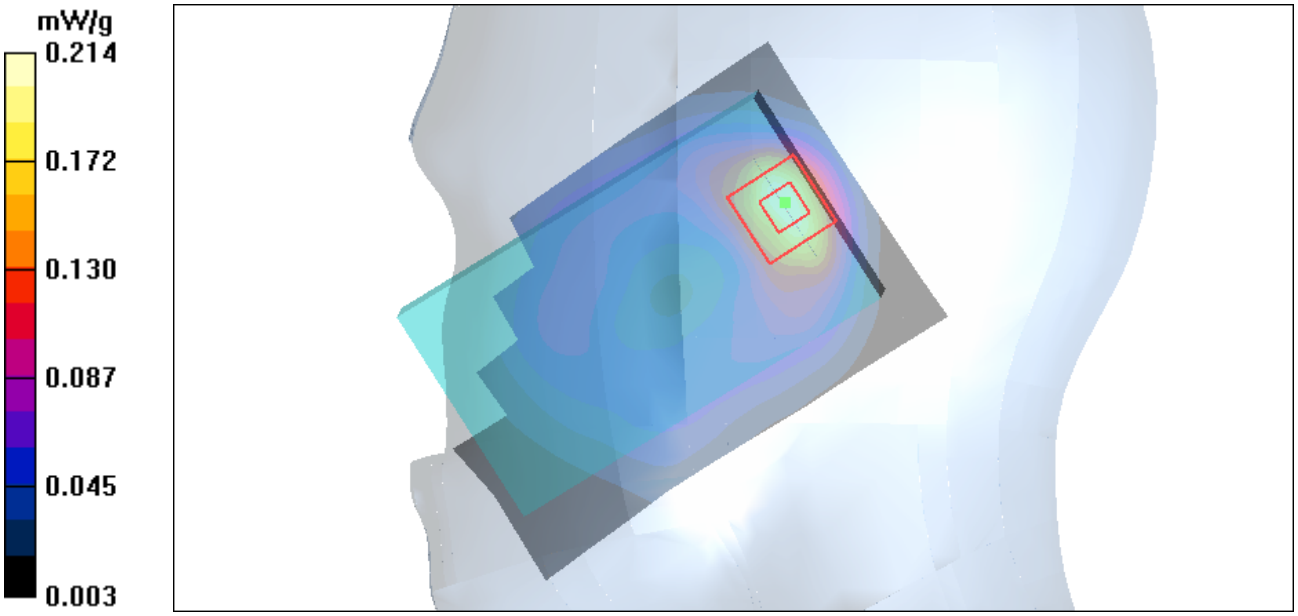


Figure 45 Right Hand Tilt 15° GSM 1900 Channel 810

GSM 1900 Right Tilt Middle (Battery 1)

Date/Time: 4/20/2012 1:19:55 PM
Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1880 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: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.170 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.153 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.173 mW/g

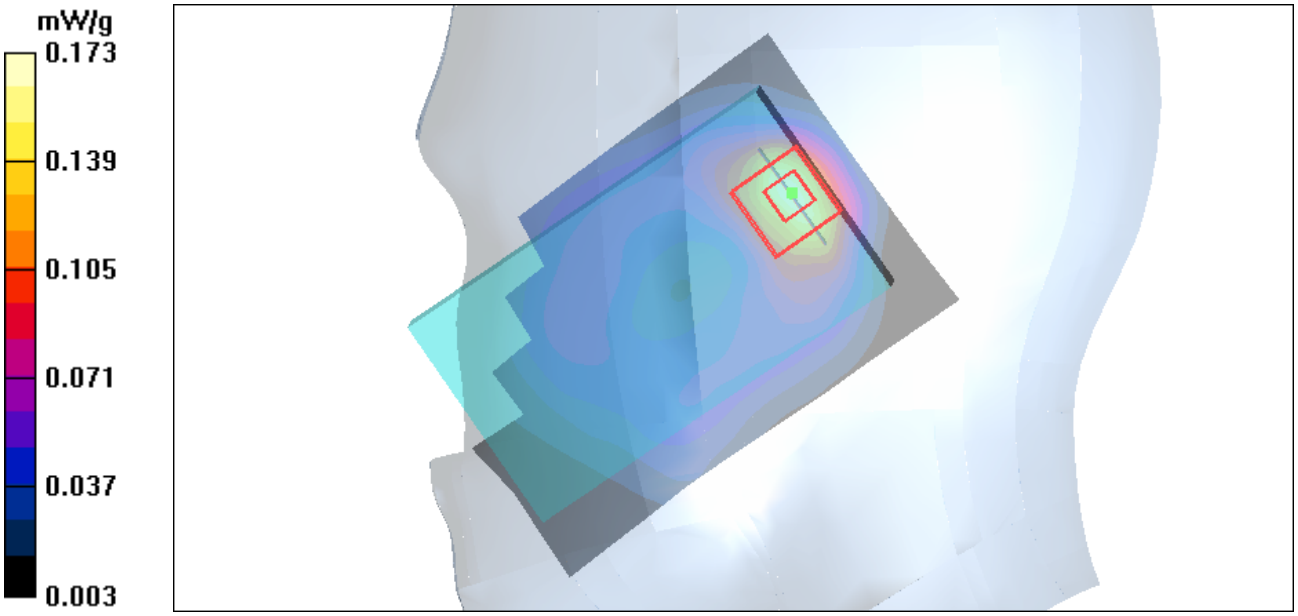


Figure 46 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Tilt Low (Battery 1)

Date/Time: 4/20/2012 12:51:42 PM
Communication System: PCS 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.35 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.178 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.088 mW/g
Maximum value of SAR (measured) = 0.177 mW/g

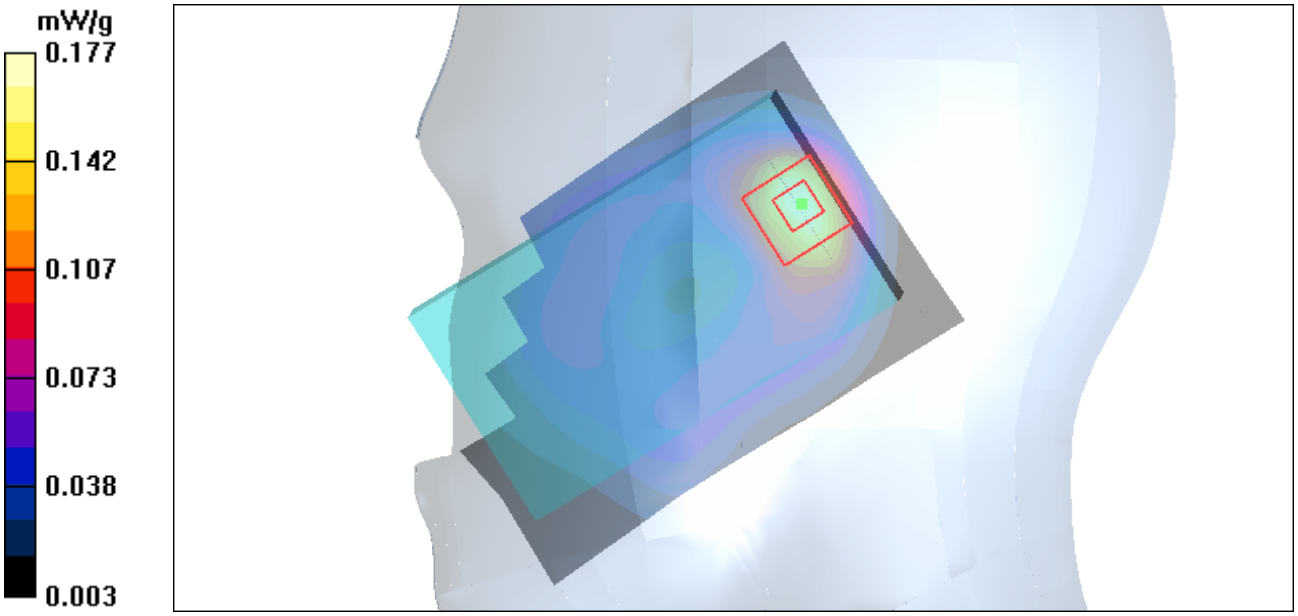


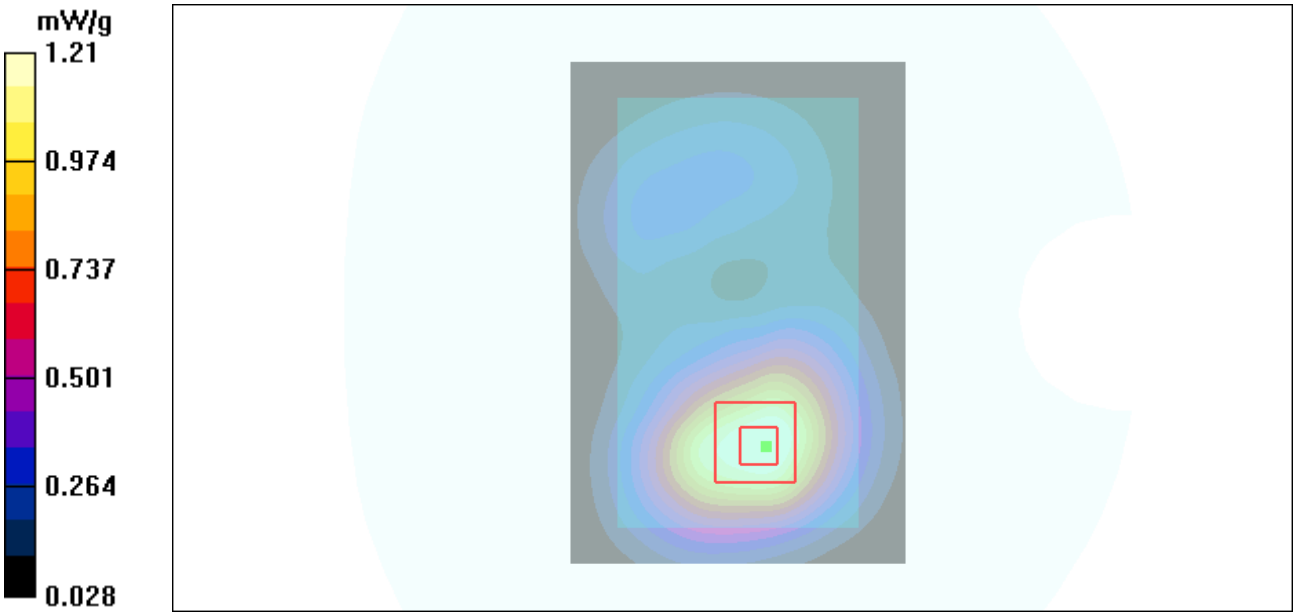
Figure 47 Right Hand Tilt 15° GSM 1900 Channel 512

GSM 1900 GPRS (4Txslots) Back Side High (Battery 1)

Date/Time: 4/20/2012 1:33:26 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.26 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.705 mW/g
Maximum value of SAR (measured) = 1.21 mW/g



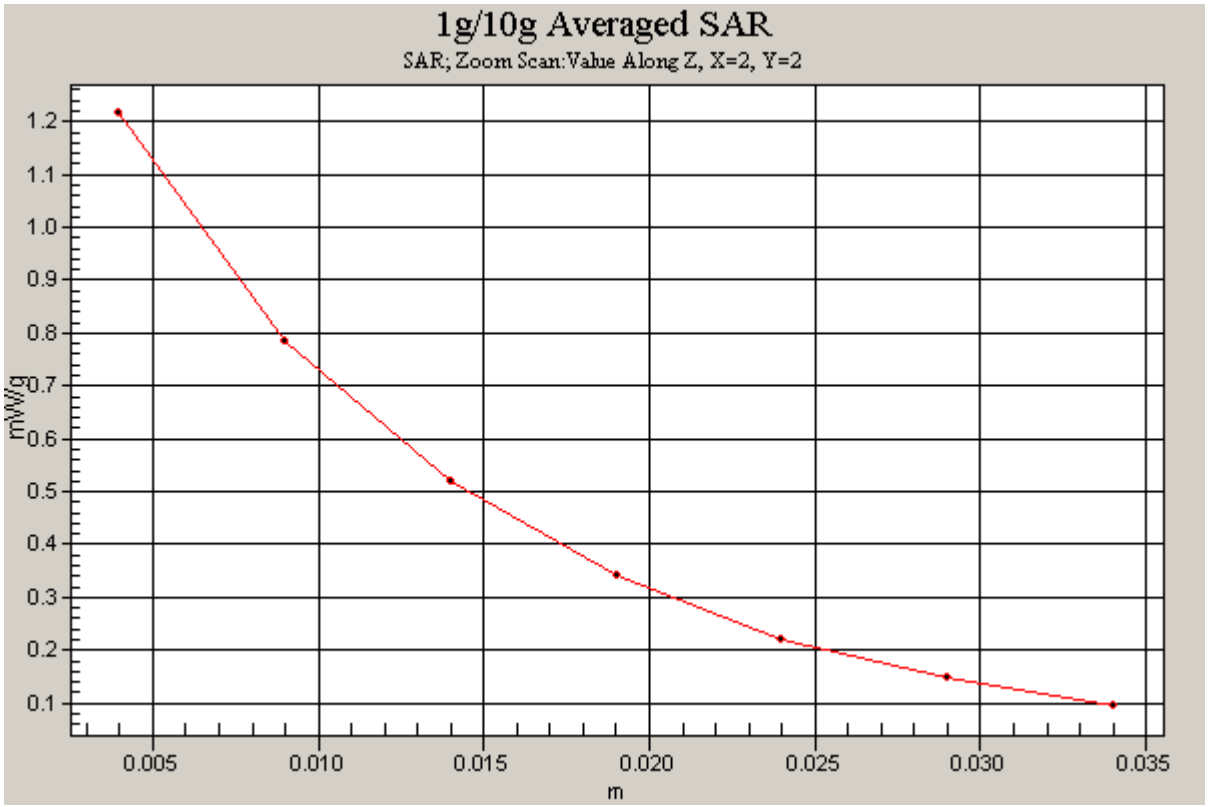


Figure 48 Body, Back Side, GSM 1900 GPRS (4Txslots) Channel 810

GSM 1900 GPRS (4Txslots) Back Side Middle (Battery 1)

Date/Time: 4/20/2012 1:47:15 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1880 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.01 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.94 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.907 mW/g; SAR(10 g) = 0.571 mW/g
Maximum value of SAR (measured) = 0.967 mW/g

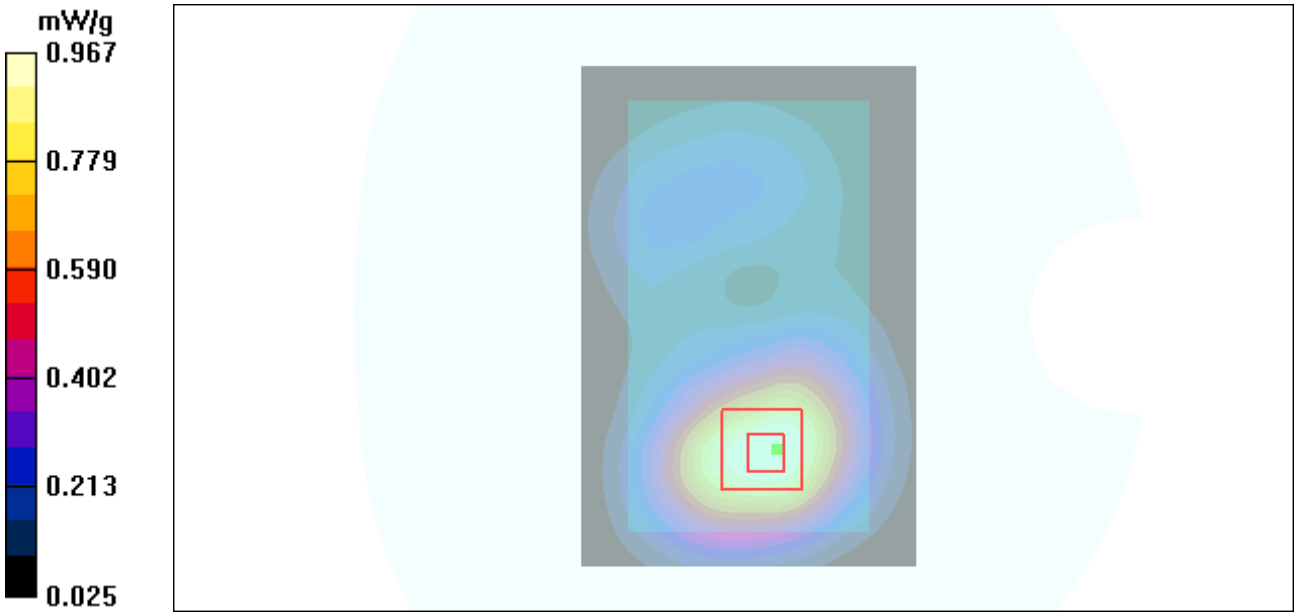


Figure 49 Body, Back Side, GSM 1900 GPRS (4Txslots) Channel 661

GSM 1900 GPRS (4Txslots) Back Side Low (Battery 1)

Date/Time: 4/20/2012 2:01:03 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1850.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.946 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.42 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.852 mW/g; SAR(10 g) = 0.538 mW/g
Maximum value of SAR (measured) = 0.906 mW/g

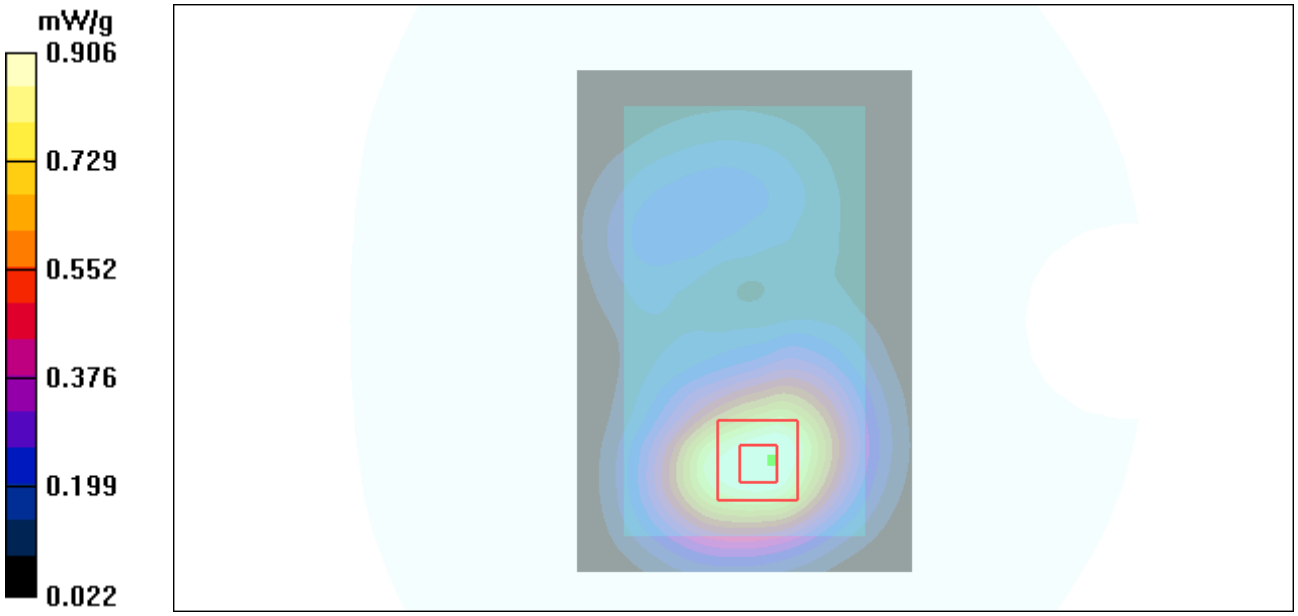


Figure 50 Body, Back Side, GSM 1900 GPRS (4Txslots) Channel 512

GSM 1900 GPRS (4Txslots) Front Side High (Battery 1)

Date/Time: 4/20/2012 1:11:08 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.953 mW/g

Front Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.91 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.873 mW/g; SAR(10 g) = 0.551 mW/g
Maximum value of SAR (measured) = 0.932 mW/g

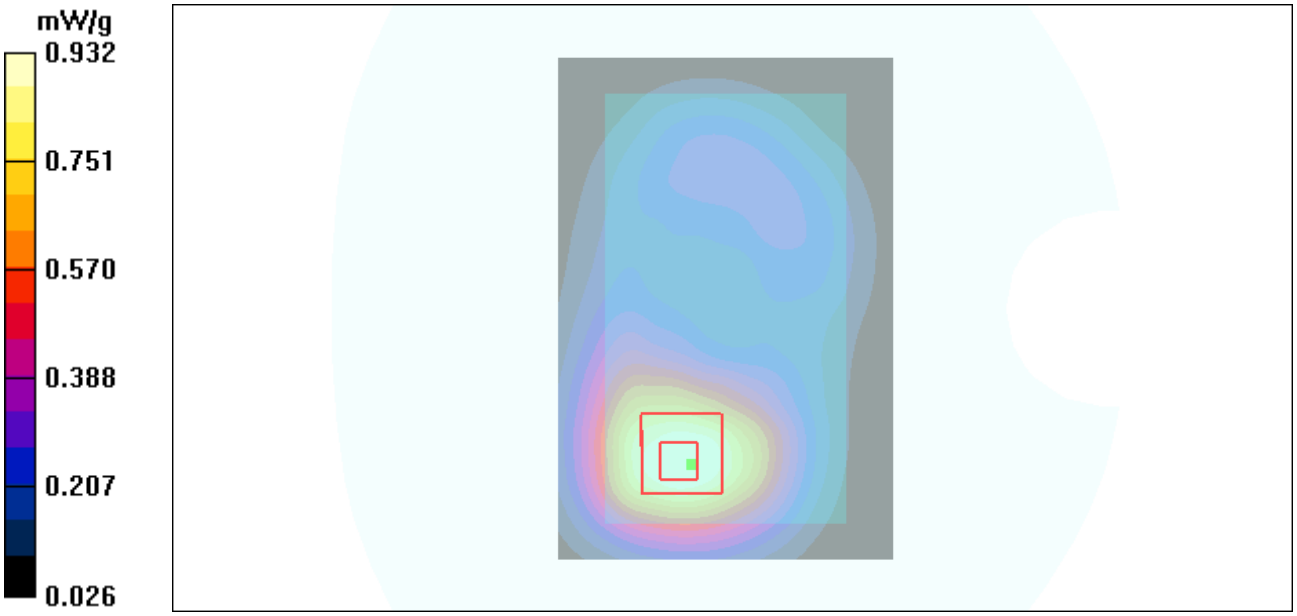


Figure 51 Body, Front Side, GSM 1900 GPRS (4Txslots) Channel 810

GSM 1900 GPRS (4Txslots) Front Side Middle (Battery 1)

Date/Time: 4/20/2012 5:01:12 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1880 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.683 mW/g

Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.71 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.605 mW/g; SAR(10 g) = 0.378 mW/g
Maximum value of SAR (measured) = 0.664 mW/g

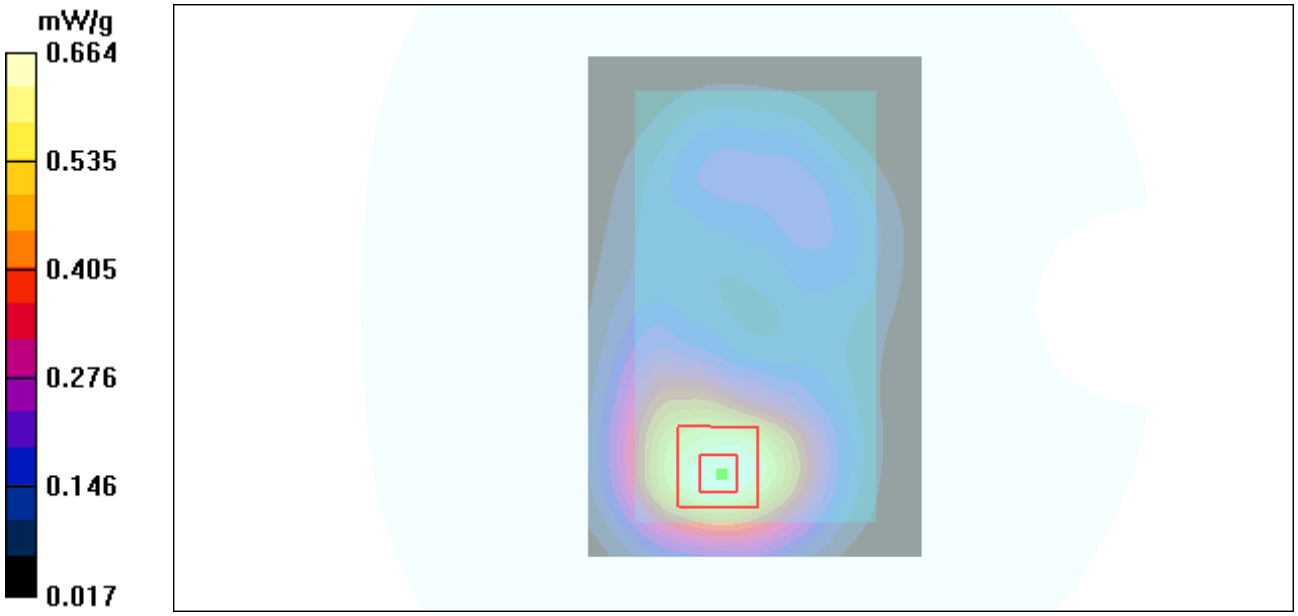


Figure 52 Body, Front Side, GSM 1900 GPRS (4Txslots) Channel 661

GSM 1900 GPRS (4Txslots) Front Side Low (Battery 1)

Date/Time: 4/20/2012 5:16:10 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1850.2 MHz;Duty Cycle: 1:2.075
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.670 mW/g

Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.64 V/m; Power Drift = 0.070 dB
Peak SAR (extrapolated) = 0.895 W/kg
SAR(1 g) = 0.575 mW/g; SAR(10 g) = 0.364 mW/g
Maximum value of SAR (measured) = 0.614 mW/g

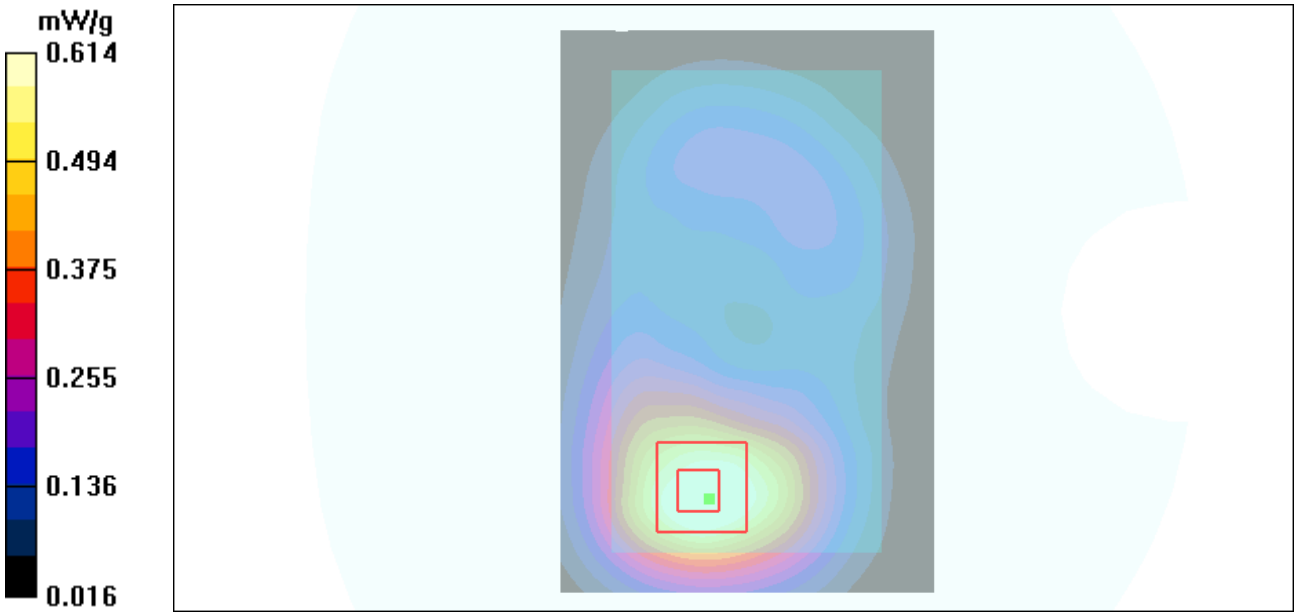


Figure 53 Body, Front Side, GSM 1900 GPRS (4Txslots) Channel 512

GSM 1900 GPRS (4Txslots) Left Edge High (Battery 1)

Date/Time: 4/20/2012 2:18:00 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Edge High/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.342 mW/g

Left Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.501 W/kg
SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.176 mW/g
Maximum value of SAR (measured) = 0.326 mW/g

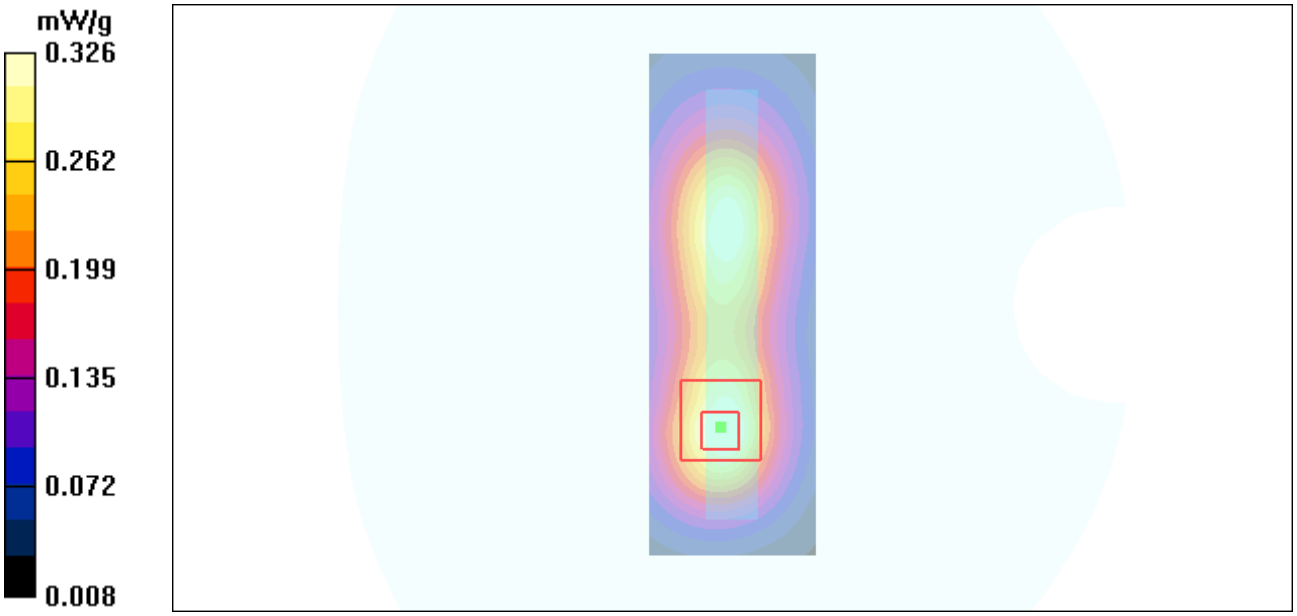


Figure 54 Body, Left Edge, GSM 1900 GPRS (4Txslots) Channel 810

GSM 1900 GPRS (4Txslots) Right Edge High (Battery 1)

Date/Time: 4/20/2012 2:29:38 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Edge High/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.156 mW/g

Right Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.42 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 0.224 W/kg
SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.083 mW/g
Maximum value of SAR (measured) = 0.154 mW/g

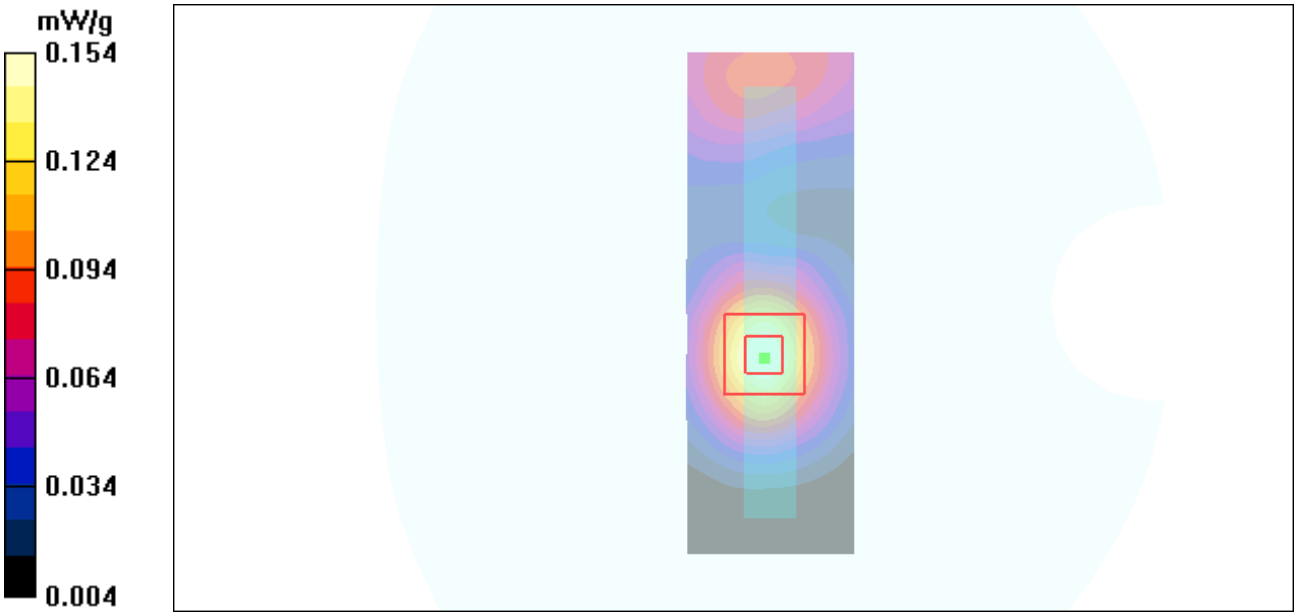


Figure 55 Body, Right Edge, GSM 1900 GPRS (4Txslots) Channel 810

GSM 1900 GPRS (4Txslots) Bottom Edge High (Battery 1)

Date/Time: 4/20/2012 2:41:49 AM
Communication System: PCS 1900+GPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Bottom Edge High/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.620 mW/g

Bottom Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.8 V/m; Power Drift = -0.041 dB
Peak SAR (extrapolated) = 0.854 W/kg
SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.301 mW/g
Maximum value of SAR (measured) = 0.581 mW/g

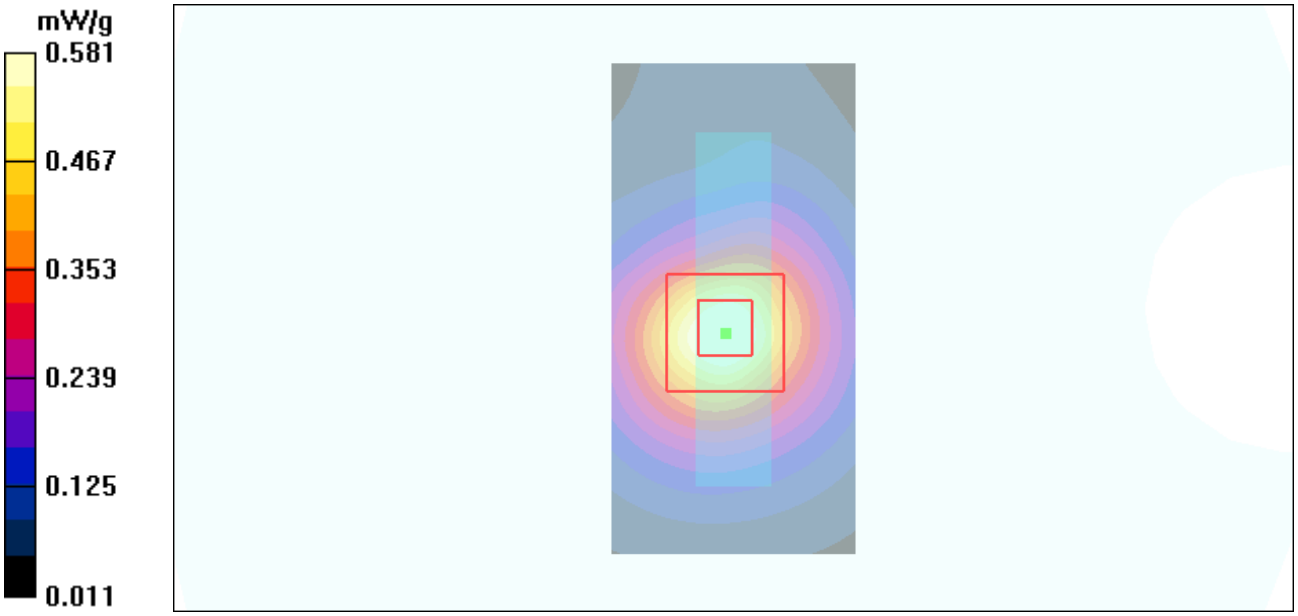


Figure 56 Body, Bottom Edge, GSM 1900 GPRS (4Txslots) Channel 810

GSM 1900 EGPRS (4Txslots) Back Side High (Battery 1)

Date/Time: 4/20/2012 2:53:15 AM
Communication System: PCS 1900+EGPRS(4Up); Frequency: 1909.8 MHz;Duty Cycle: 1:2.075
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.25 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.1 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.686 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

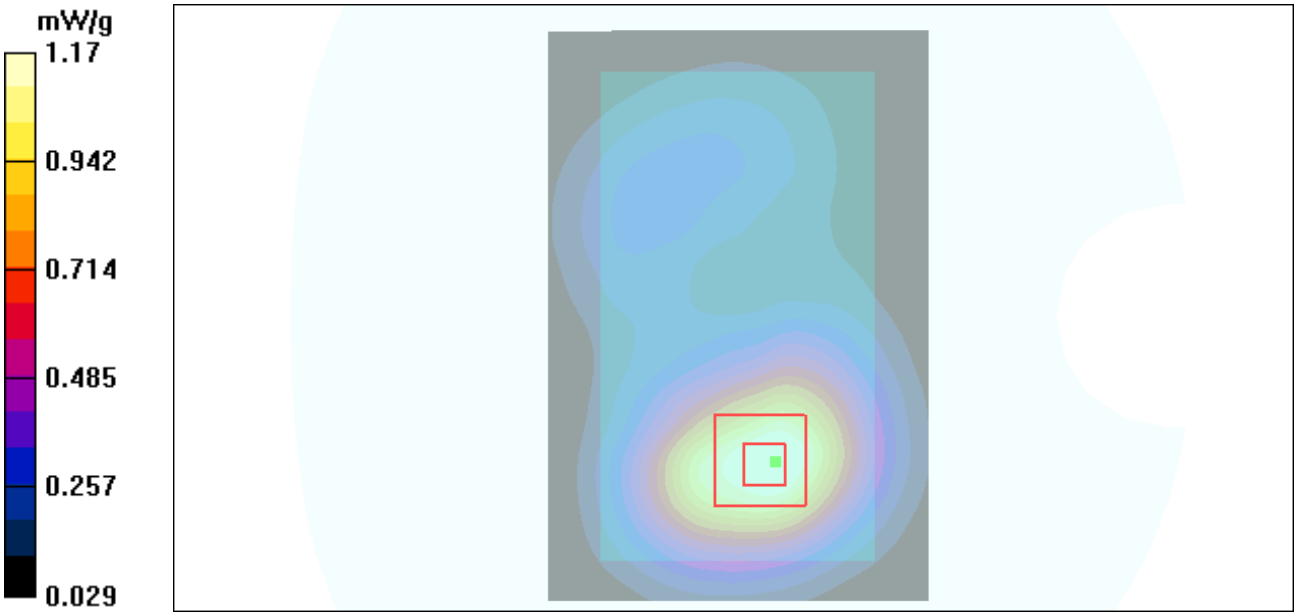


Figure 57 Body, Back Side, GSM 1900 EGPRS (4Txslots) Channel 810

GSM 1900 with Stereo Headset 1 Back Side High (Battery 1)

Date/Time: 4/20/2012 3:31:17 AM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.809 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.53 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.712 mW/g; SAR(10 g) = 0.446 mW/g
Maximum value of SAR (measured) = 0.763 mW/g

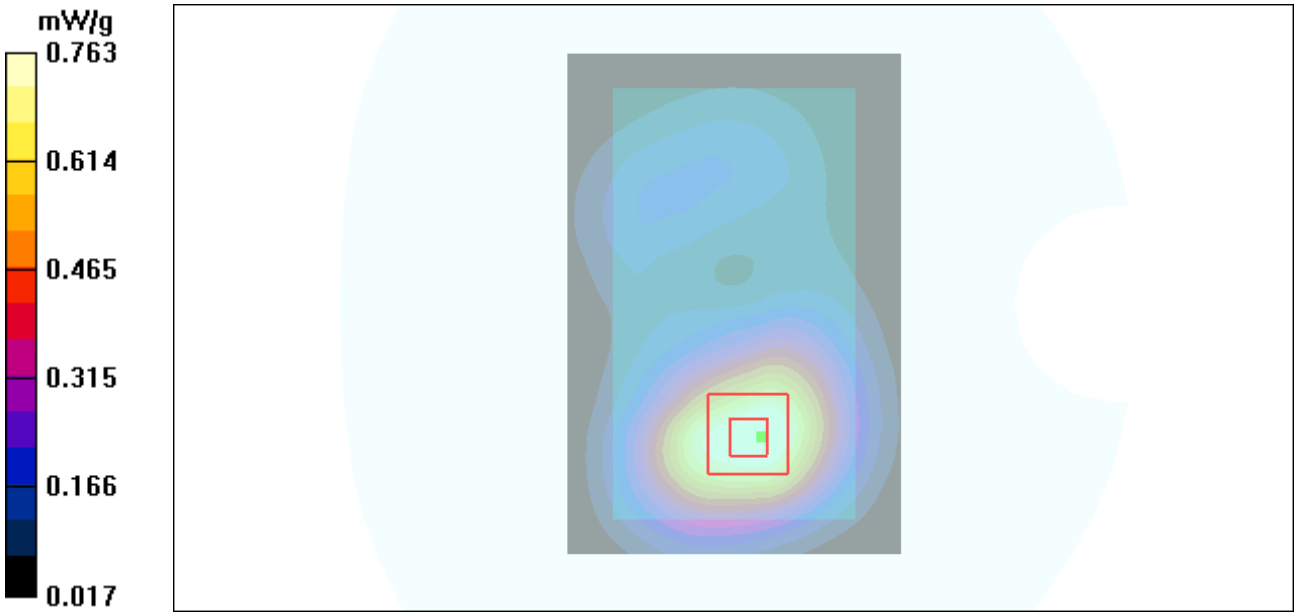


Figure 58 Body with Stereo Headset 1, Back Side, GSM 1900 Channel 810

GSM 1900 with Stereo Headset 2 Back Side High (Battery 1)

Date/Time: 4/20/2012 3:48:12 AM
Communication System: PCS 1900; Frequency: 1909.8 MHz;Duty Cycle: 1:8.3
Medium parameters used: f = 1910 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.802 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.64 V/m; Power Drift = 0.060 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.718 mW/g; SAR(10 g) = 0.451 mW/g
Maximum value of SAR (measured) = 0.767 mW/g

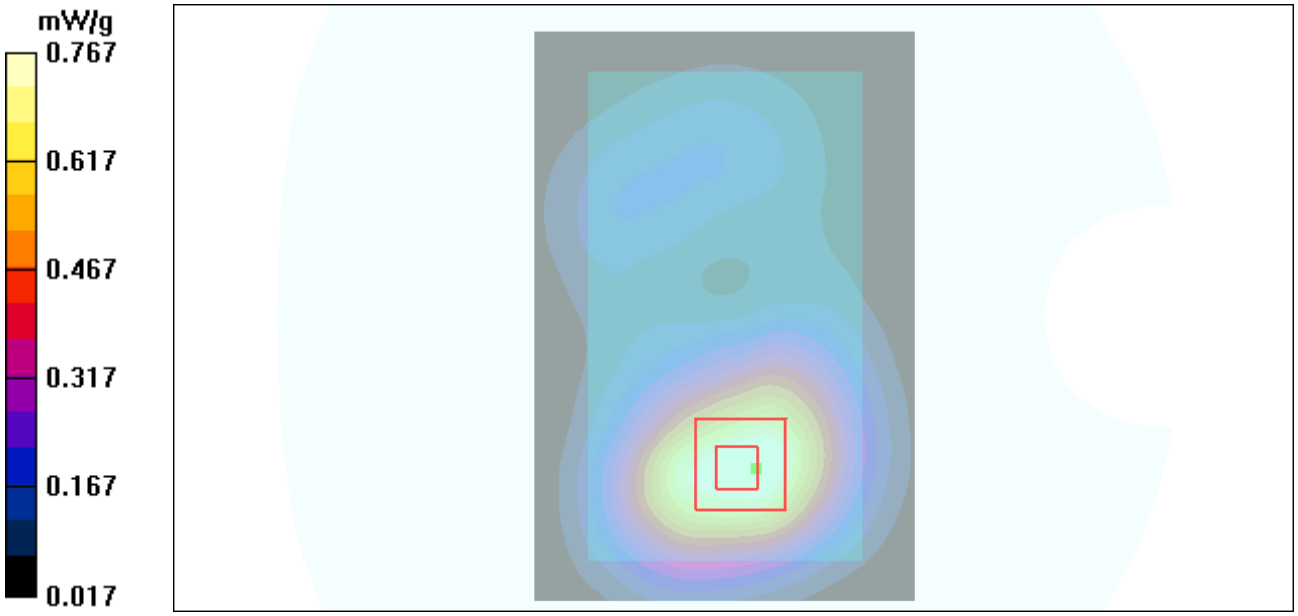


Figure 59 Body with Stereo Headset 2, Back Side, GSM 1900 Channel 810

WCDMA Band II Left Cheek High (Battery 1)

Date/Time: 4/20/2012 8:58:57 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.00 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.67 V/m; Power Drift = 0.041 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.915 mW/g; SAR(10 g) = 0.546 mW/g
Maximum value of SAR (measured) = 0.991 mW/g

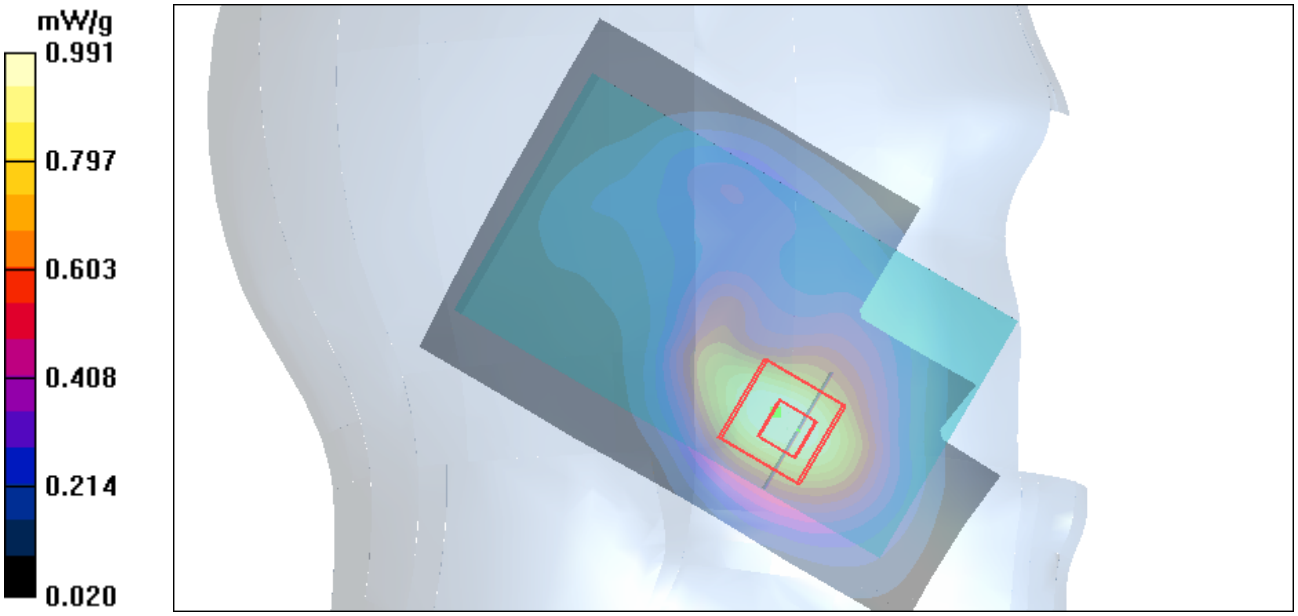


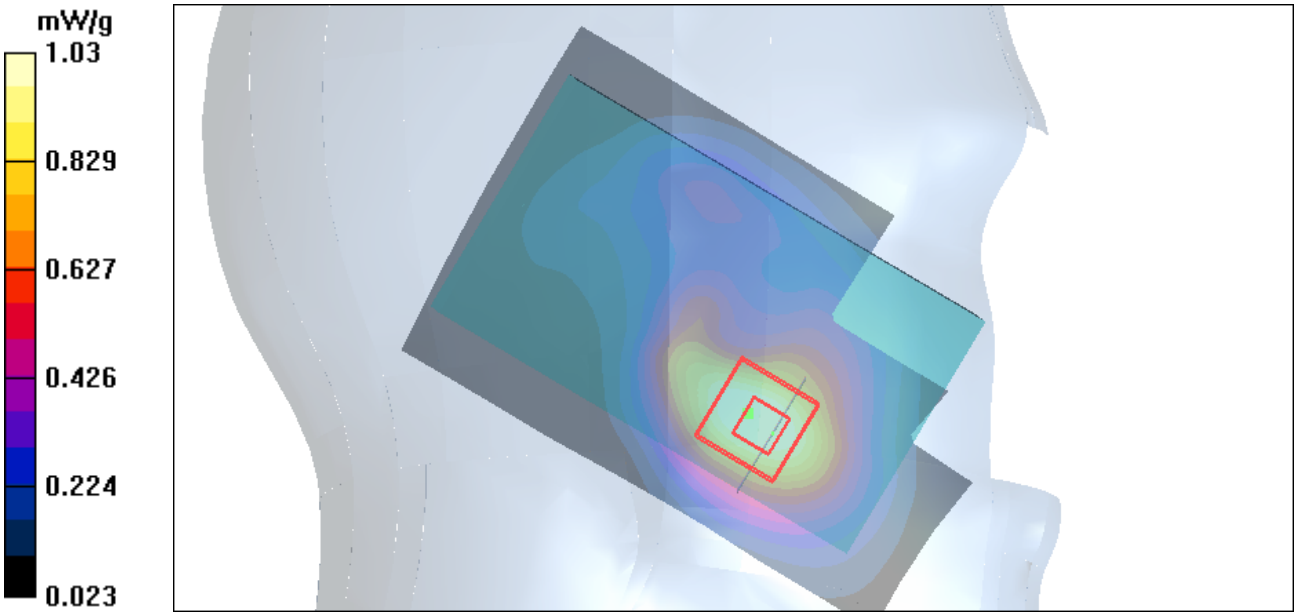
Figure 60 Left Hand Touch Cheek WCDMA Band II Channel 9538

WCDMA Band II Left Cheek Middle (Battery 1)

Date/Time: 4/20/2012 8:30:47 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.67 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.957 mW/g; SAR(10 g) = 0.575 mW/g
Maximum value of SAR (measured) = 1.03 mW/g



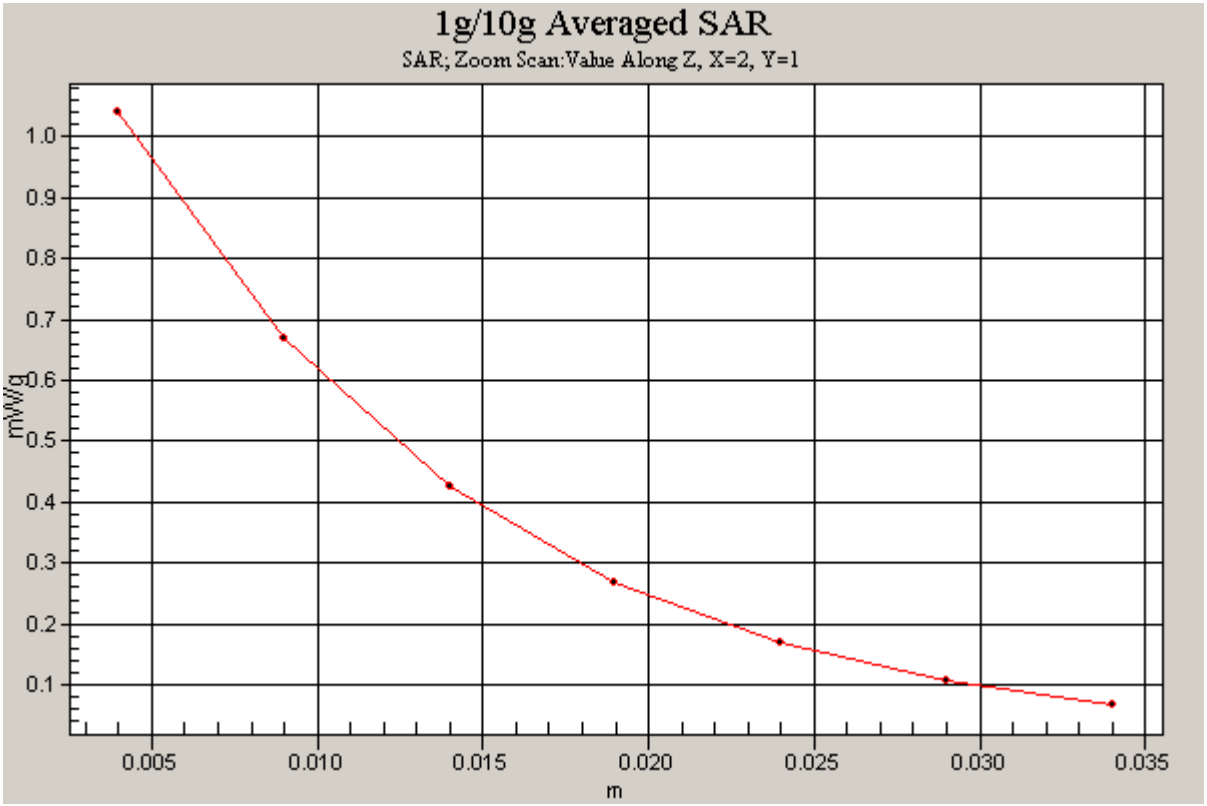


Figure 61 Left Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Left Cheek Low (Battery 1)

Date/Time: 4/20/2012 8:44:55 AM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.06 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.71 V/m; Power Drift = 0.038 dB
Peak SAR (extrapolated) = 1.48 W/kg
SAR(1 g) = 0.944 mW/g; SAR(10 g) = 0.571 mW/g
Maximum value of SAR (measured) = 1.01 mW/g

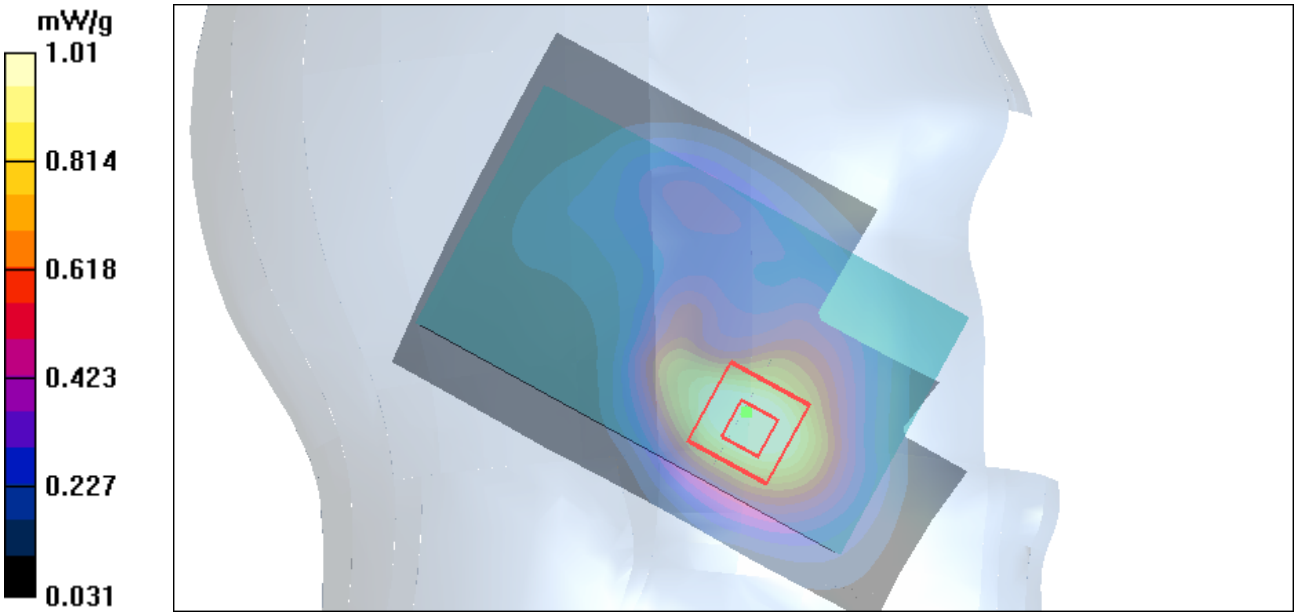


Figure 62 Left Hand Touch Cheek WCDMA Band II Channel 9262

WCDMA Band II Left Tilt High (Battery 1)

Date/Time: 4/20/2012 9:16:08 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.299 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.1 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 0.419 W/kg
SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.150 mW/g
Maximum value of SAR (measured) = 0.281 mW/g

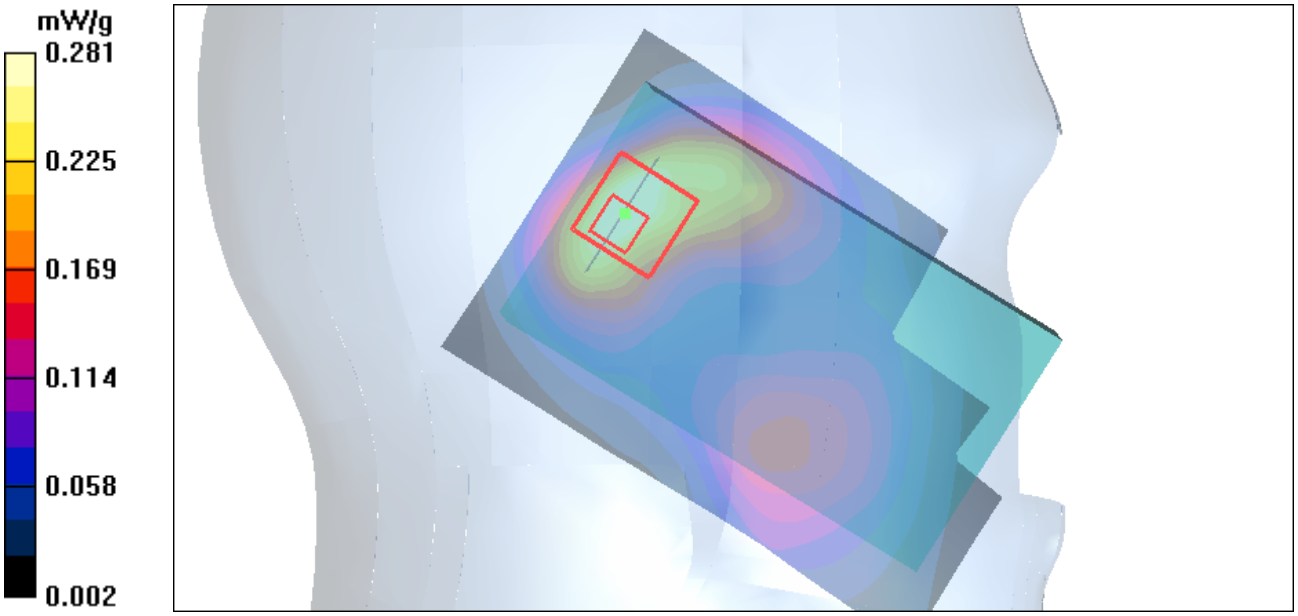


Figure 63 Left Hand Tilt 15° WCDMA Band II Channel 9538

WCDMA Band II Left Tilt Middle (Battery 1)

Date/Time: 4/20/2012 9:43:18 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.282 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 0.401 W/kg
SAR(1 g) = 0.244 mW/g; SAR(10 g) = 0.147 mW/g
Maximum value of SAR (measured) = 0.272 mW/g

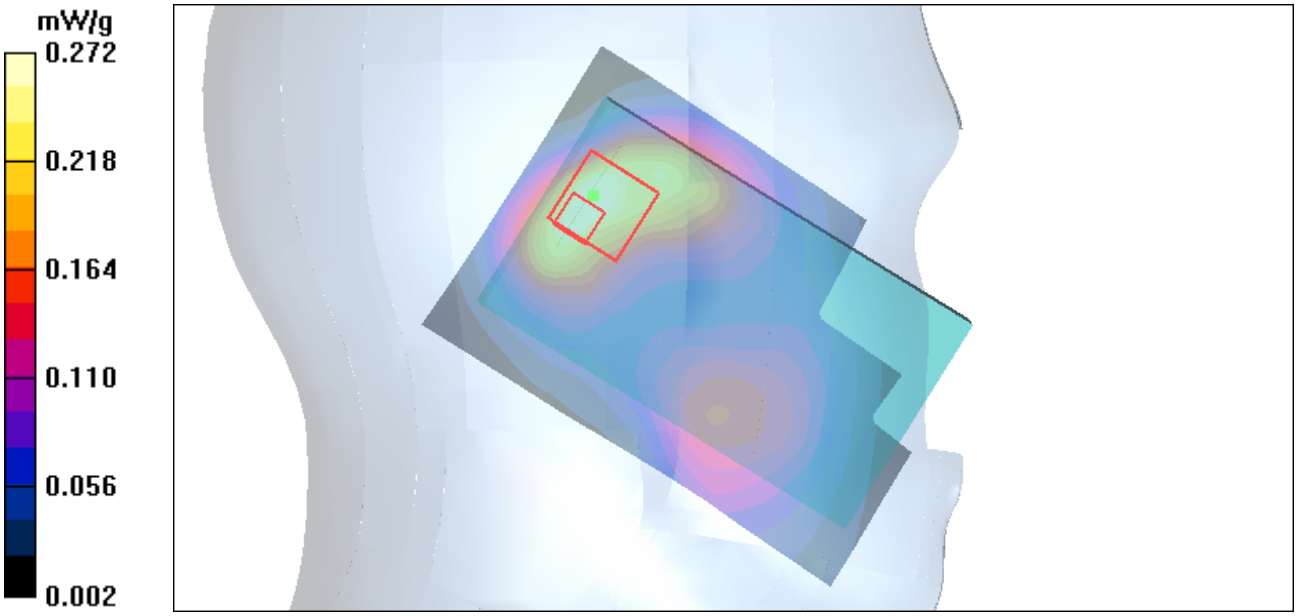


Figure 64 Left Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Left Tilt Low (Battery 1)

Date/Time: 4/20/2012 9:29:40 AM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.302 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = 0.038 dB
Peak SAR (extrapolated) = 0.419 W/kg
SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.155 mW/g
Maximum value of SAR (measured) = 0.283 mW/g

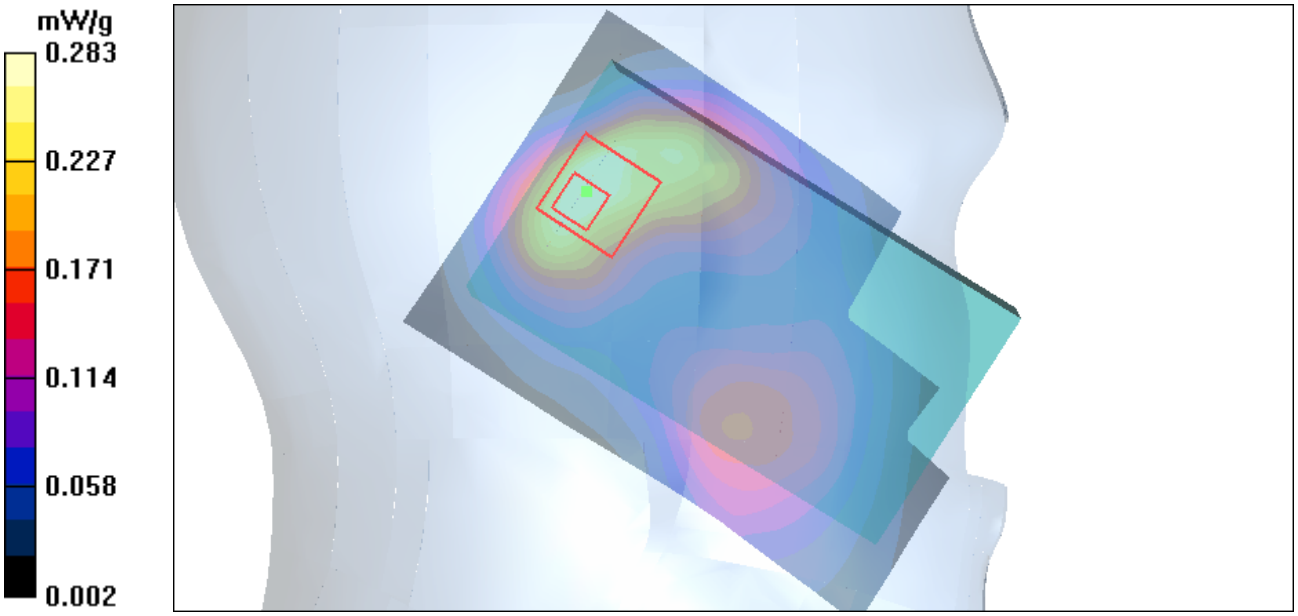


Figure 65 Left Hand Tilt 15° WCDMA Band II Channel 9262

WCDMA Band II Right Cheek High (Battery 1)

Date/Time: 4/20/2012 11:04:15 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.588 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.37 V/m; Power Drift = 0.041 dB
Peak SAR (extrapolated) = 0.816 W/kg
SAR(1 g) = 0.523 mW/g; SAR(10 g) = 0.339 mW/g
Maximum value of SAR (measured) = 0.557 mW/g

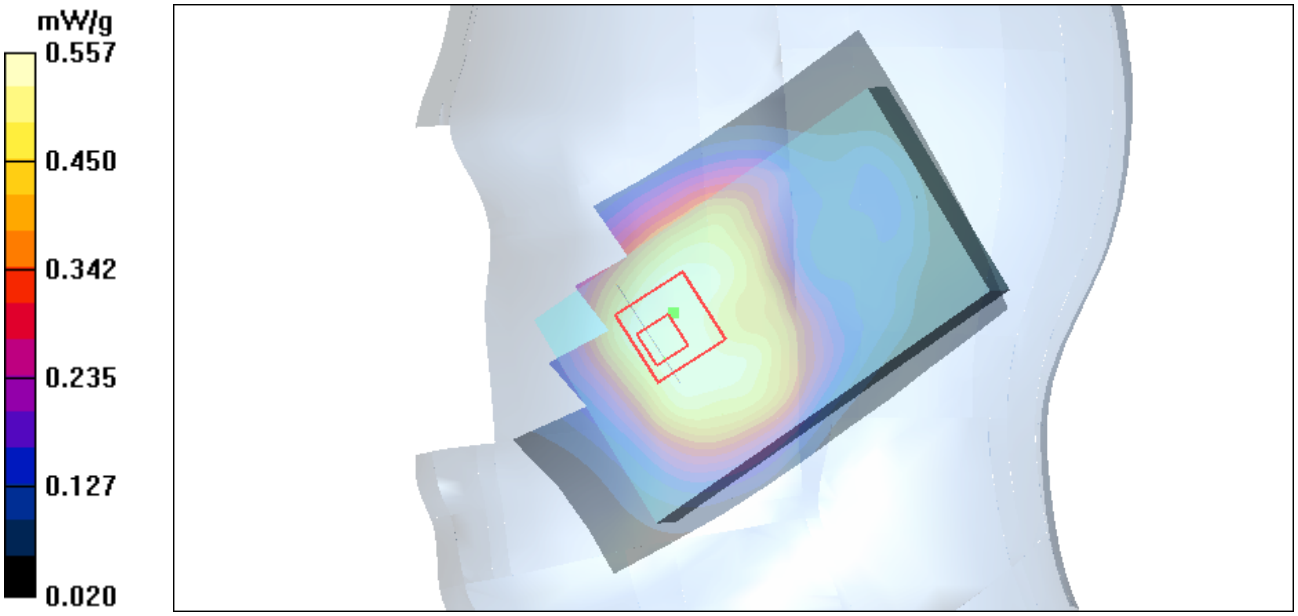


Figure 66 Right Hand Touch Cheek WCDMA Band II Channel 9538

WCDMA Band II Right Cheek Middle (Battery 1)

Date/Time: 4/20/2012 9:59:20 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 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: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.543 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.69 V/m; Power Drift = 0.085 dB
Peak SAR (extrapolated) = 0.795 W/kg
SAR(1 g) = 0.509 mW/g; SAR(10 g) = 0.326 mW/g
Maximum value of SAR (measured) = 0.552 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.69 V/m; Power Drift = 0.085 dB
Peak SAR (extrapolated) = 0.806 W/kg
SAR(1 g) = 0.499 mW/g; SAR(10 g) = 0.325 mW/g
Maximum value of SAR (measured) = 0.549 mW/g

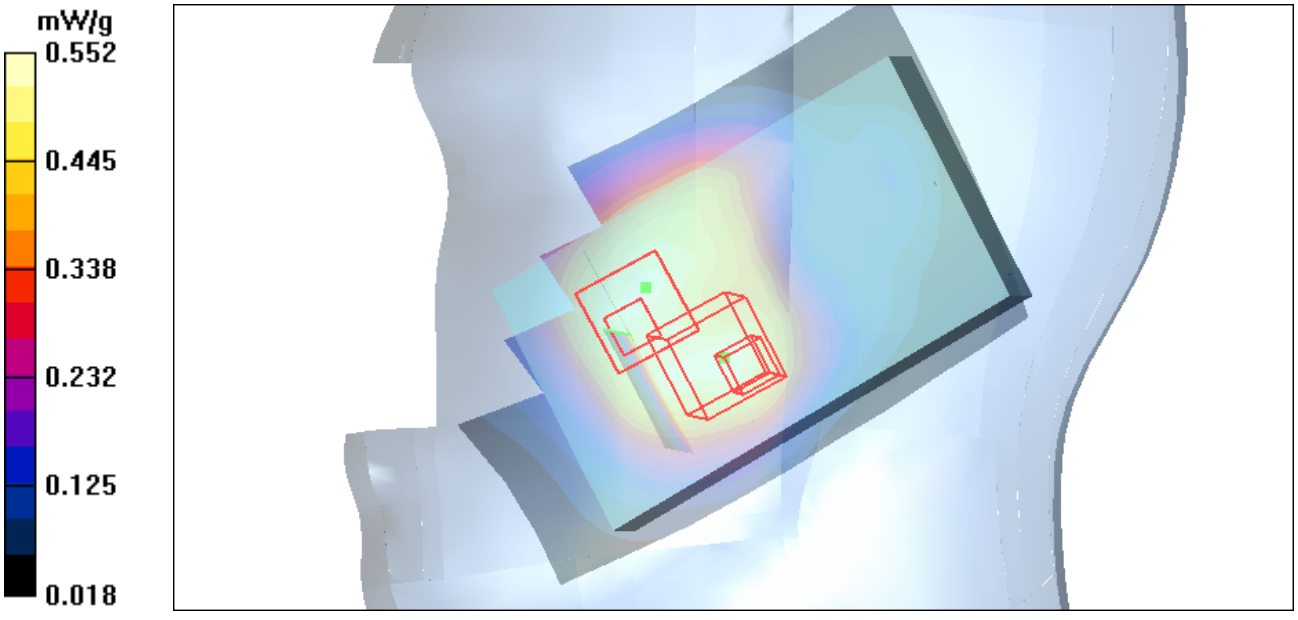


Figure 67 Right Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Right Cheek Low (Battery 1)

Date/Time: 4/20/2012 10:20:26 AM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.583 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.88 V/m; Power Drift = -0.133 dB
Peak SAR (extrapolated) = 0.853 W/kg
SAR(1 g) = 0.543 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.595 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.88 V/m; Power Drift = -0.133 dB
Peak SAR (extrapolated) = 0.875 W/kg
SAR(1 g) = 0.546 mW/g; SAR(10 g) = 0.348 mW/g
Maximum value of SAR (measured) = 0.600 mW/g

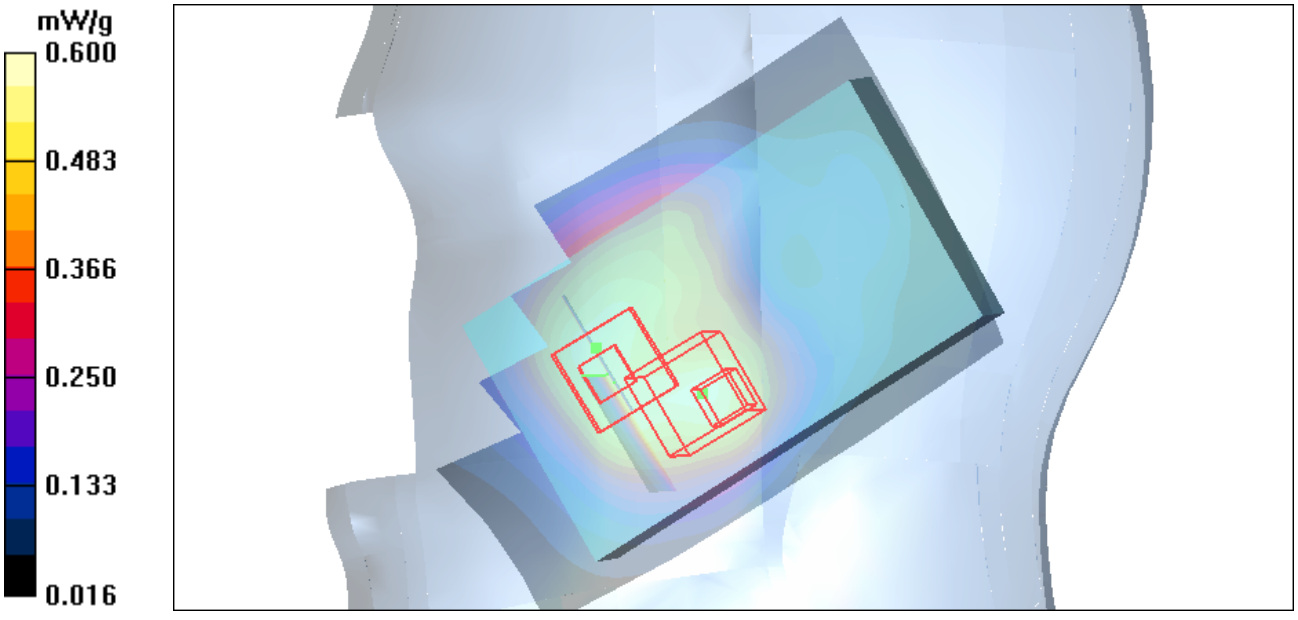


Figure 68 Right Hand Touch Cheek WCDMA Band II Channel 9262

WCDMA Band II Right Tilt High (Battery 1)

Date/Time: 4/20/2012 11:21:47 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.4 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.319 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 0.470 W/kg
SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.159 mW/g
Maximum value of SAR (measured) = 0.317 mW/g

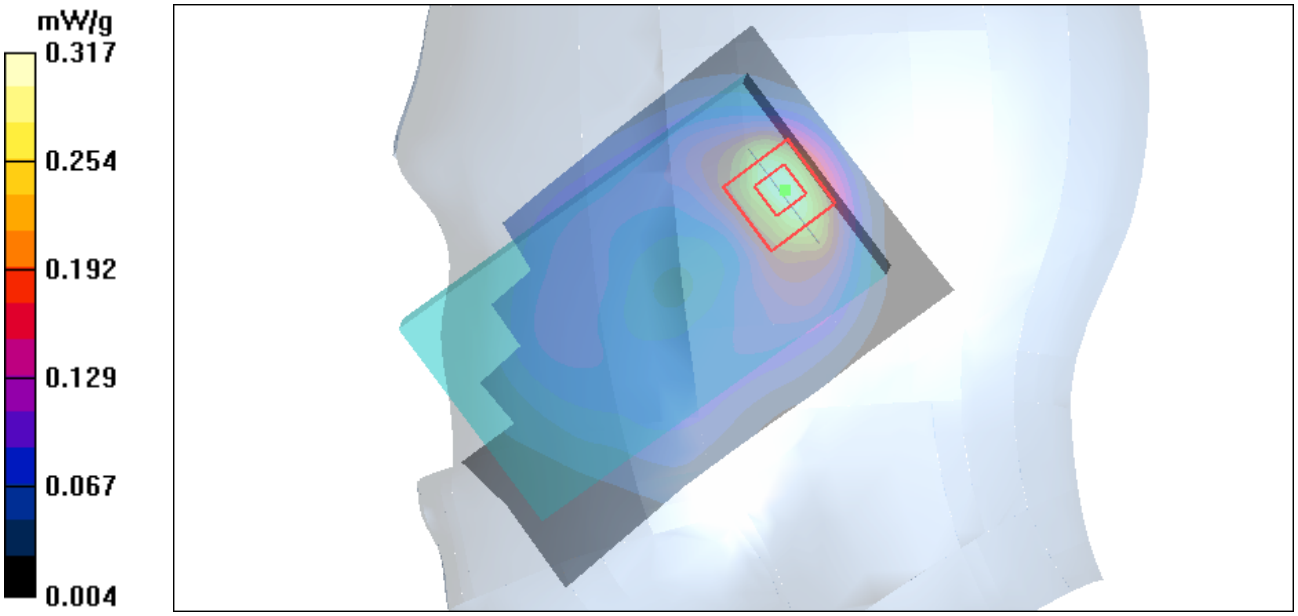


Figure 69 Right Hand Tilt 15° WCDMA Band II Channel 9538

WCDMA Band II Right Tilt Middle (Battery 1)

Date/Time: 4/20/2012 11:50:15 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 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: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.287 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 0.444 W/kg
SAR(1 g) = 0.265 mW/g; SAR(10 g) = 0.149 mW/g
Maximum value of SAR (measured) = 0.300 mW/g

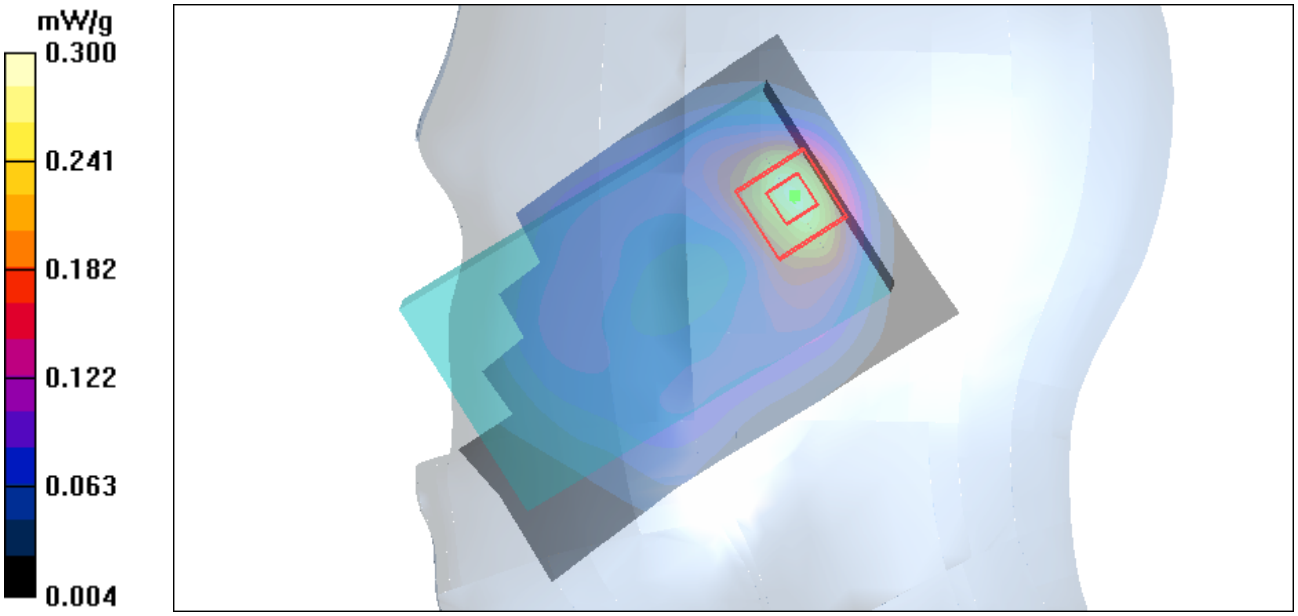


Figure 70 Right Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Right Tilt Low (Battery 1)

Date/Time: 4/20/2012 11:35:40 AM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilt Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.324 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.3 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 0.481 W/kg
SAR(1 g) = 0.291 mW/g; SAR(10 g) = 0.165 mW/g
Maximum value of SAR (measured) = 0.329 mW/g

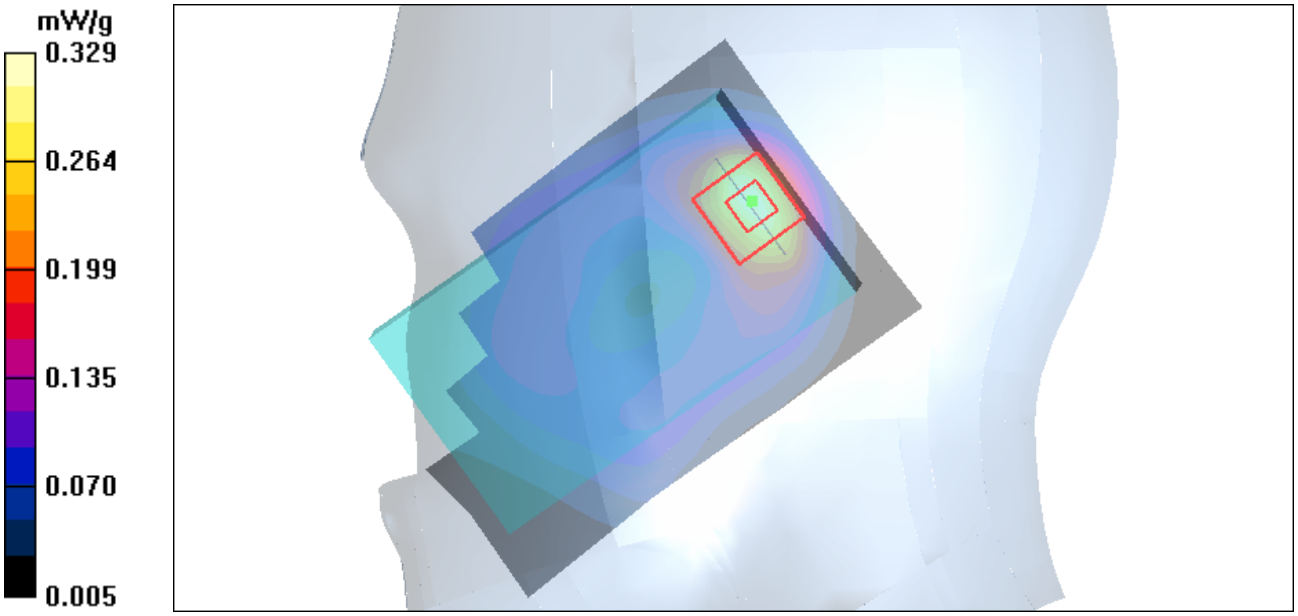


Figure 71 Right Hand Tilt 15° WCDMA Band II Channel 9262

WCDMA Band II Left Cheek Middle (Battery 2)

Date/Time: 4/20/2012 3:04:42 PM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 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 - SN3816; ConvF(7.9, 7.9, 7.9); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.994 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.72 V/m; Power Drift = 0.059 dB
Peak SAR (extrapolated) = 1.40 W/kg
SAR(1 g) = 0.886 mW/g; SAR(10 g) = 0.534 mW/g
Maximum value of SAR (measured) = 0.944 mW/g

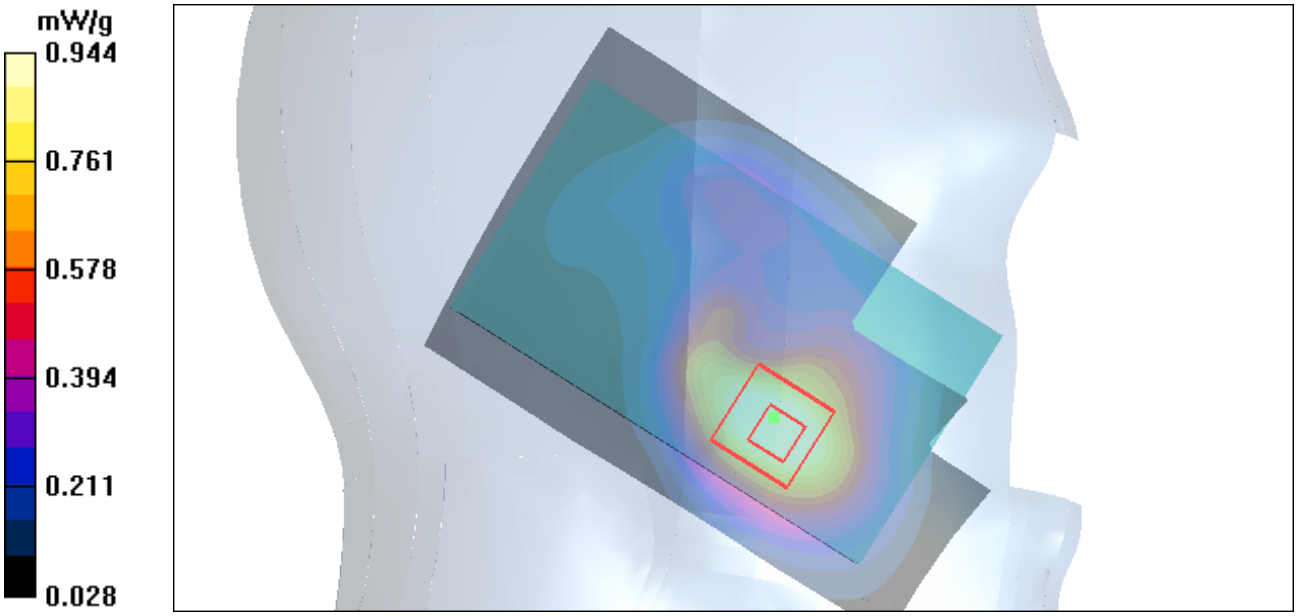


Figure 72 Left Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Back Side High (Battery 1)

Date/Time: 4/19/2012 4:27:08 PM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.57 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.25 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.26 V/m; Power Drift = 0.100 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.702 mW/g
Maximum value of SAR (measured) = 1.20 mW/g

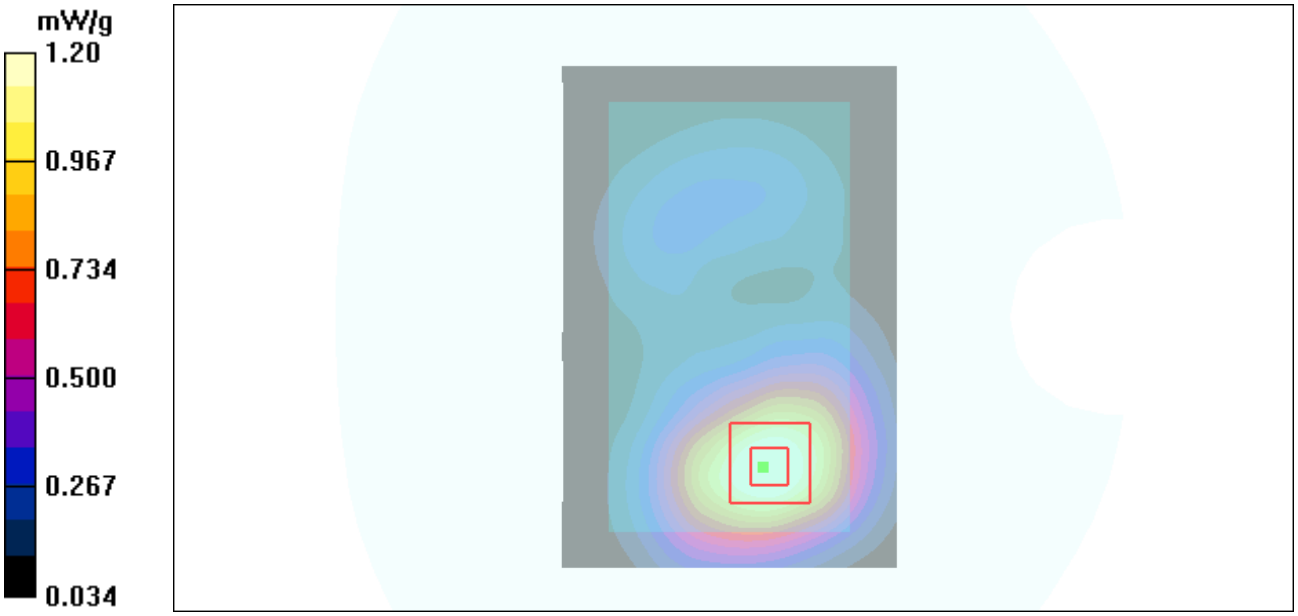


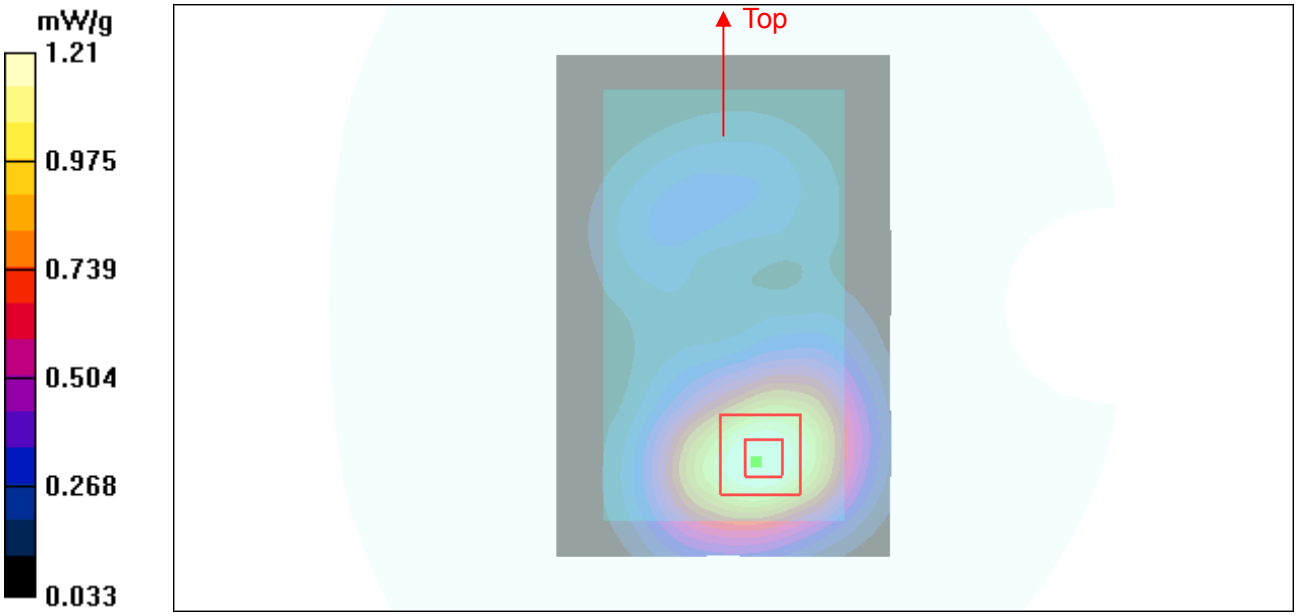
Figure 73 Body, Back Side, WCDMA Band II Channel 9538

WCDMA Band II Back Side Middle (Battery 1)

Date/Time: 4/19/2012 4:55:13 PM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.25 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.35 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 1.74 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.710 mW/g
Maximum value of SAR (measured) = 1.21 mW/g



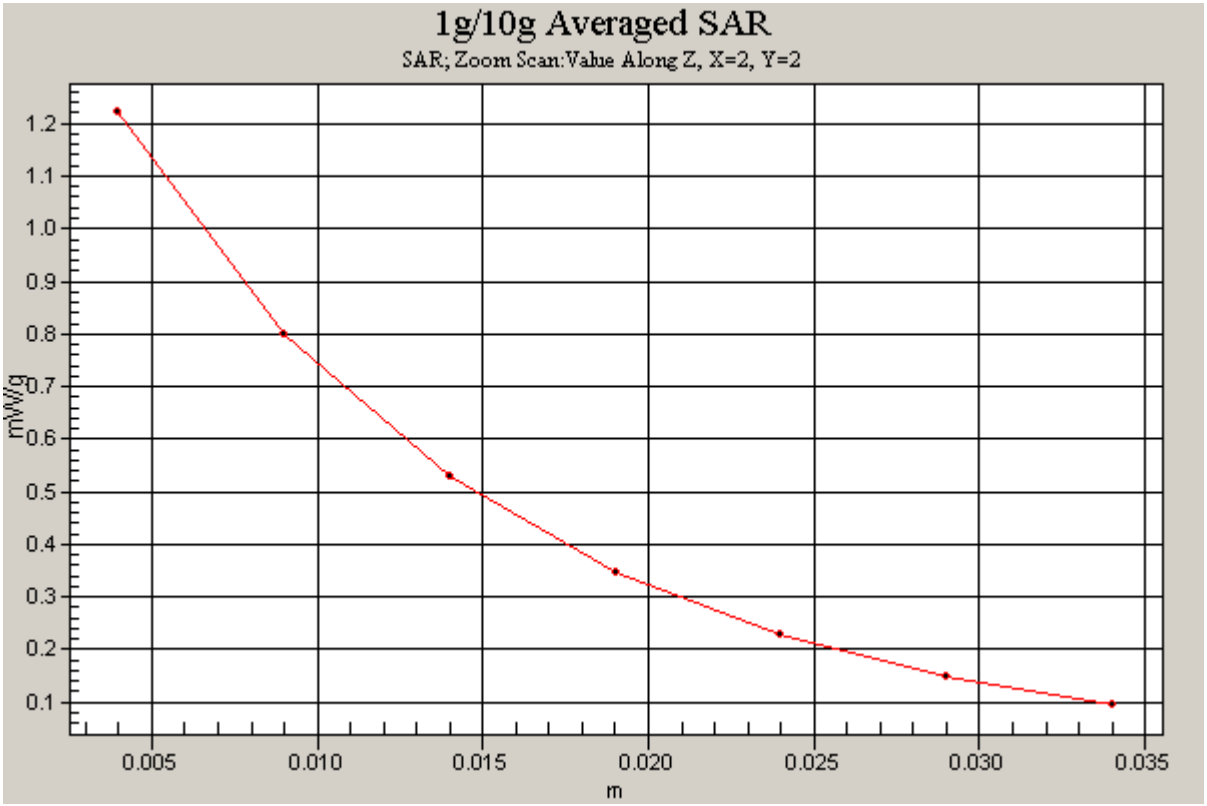


Figure 74 Body, Back Side, WCDMA Band II Channel 9400

WCDMA Band II Back Side Low (Battery 1)

Date/Time: 4/19/2012 4:41:16 PM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.26 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.60 V/m; Power Drift = 0.070 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.706 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

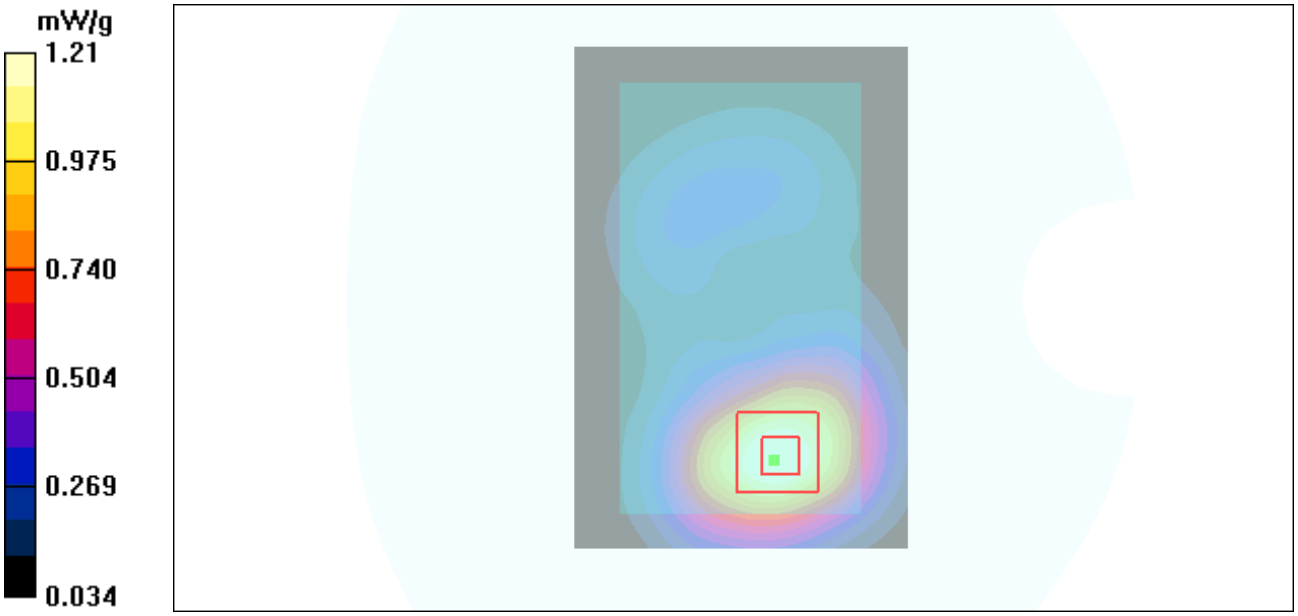


Figure 75 Body, Back Side, WCDMA Band II Channel 9262

WCDMA Band II Front Side High (Battery 1)

Date/Time: 4/20/2012 4:08:17 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.962 mW/g

Front Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.13 V/m; Power Drift = 0.031 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.845 mW/g; SAR(10 g) = 0.533 mW/g
Maximum value of SAR (measured) = 0.902 mW/g

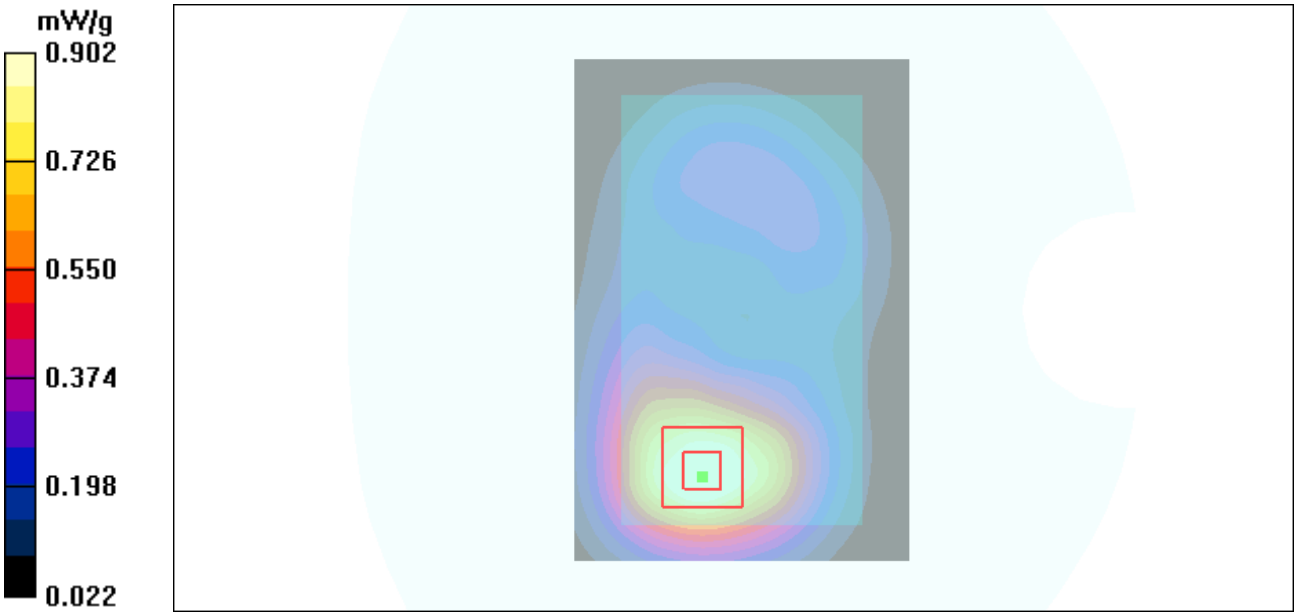


Figure 76 Body, Front Side, WCDMA Band II Channel 9538

WCDMA Band II Front Side Middle (Battery 1)

Date/Time: 4/20/2012 4:22:15 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.963 mW/g

Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.36 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.538 mW/g
Maximum value of SAR (measured) = 0.910 mW/g

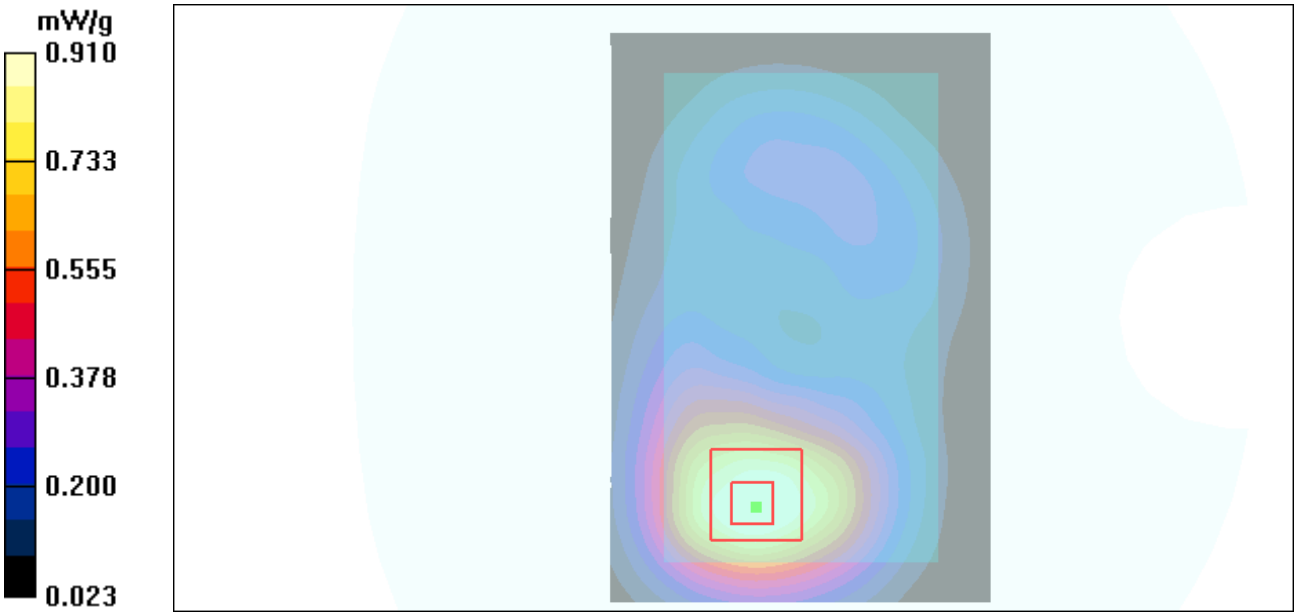


Figure 77 Body, Front Side, WCDMA Band II Channel 9400

WCDMA Band II Front Side Low (Battery 1)

Date/Time: 4/20/2012 4:37:29 AM
Communication System: WCDMA Band II; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.970 mW/g

Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.42 V/m; Power Drift = 0.062 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.855 mW/g; SAR(10 g) = 0.540 mW/g
Maximum value of SAR (measured) = 0.914 mW/g

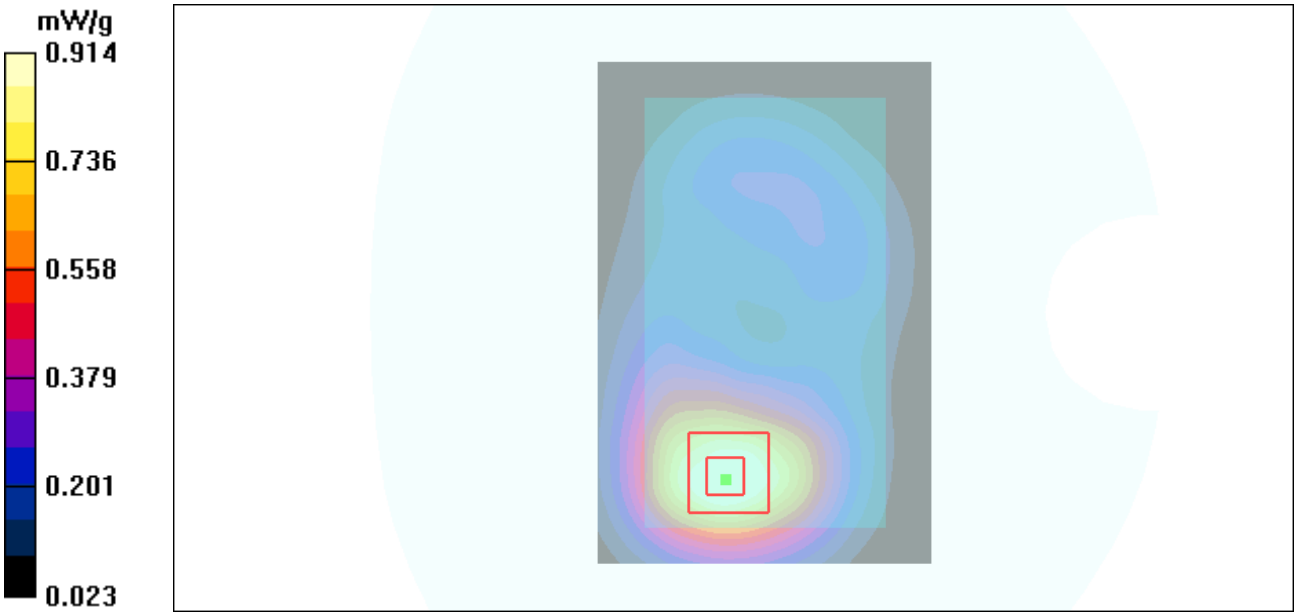


Figure 78 Body, Front Side, WCDMA Band II Channel 9262

WCDMA Band II Left Edge High (Battery 1)

Date/Time: 4/20/2012 5:33:37 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Edge High/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.232 mW/g

Left Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.342 W/kg
SAR(1 g) = 0.207 mW/g; SAR(10 g) = 0.123 mW/g
Maximum value of SAR (measured) = 0.225 mW/g

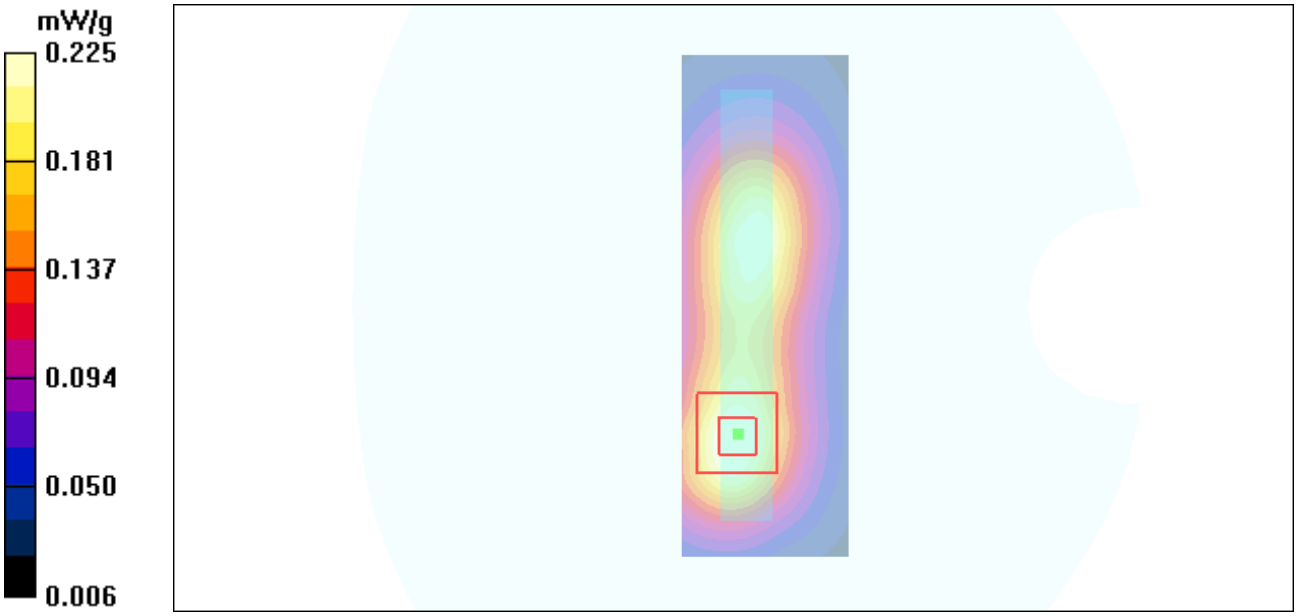


Figure 79 Body, Left Edge, WCDMA Band II Channel 9538

WCDMA Band II Right Edge High (Battery 1)

Date/Time: 4/20/2012 5:51:41 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Edge High/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.123 mW/g

Right Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.87 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 0.181 W/kg
SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.121 mW/g

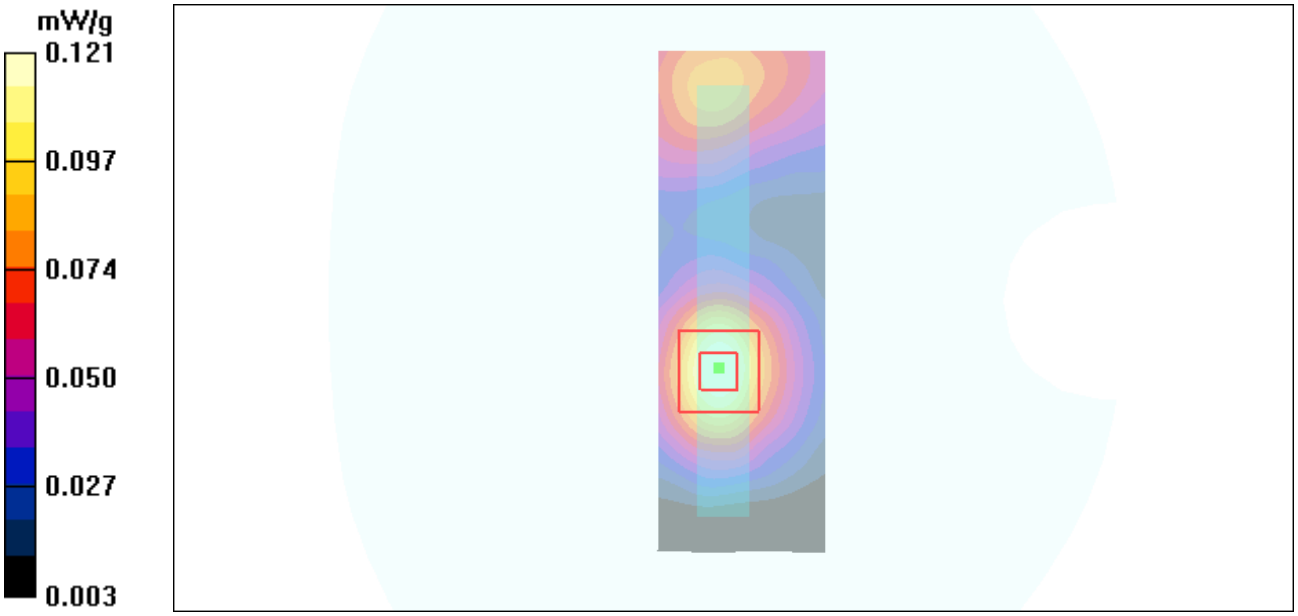


Figure 80 Body, Right Edge, WCDMA Band II Channel 9538

WCDMA Band II Bottom Edge High (Battery 1)

Date/Time: 4/20/2012 6:04:56 AM
Communication System: WCDMA Band II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Bottom Edge High/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.556 mW/g

Bottom Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.7 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.765 W/kg
SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.273 mW/g
Maximum value of SAR (measured) = 0.514 mW/g

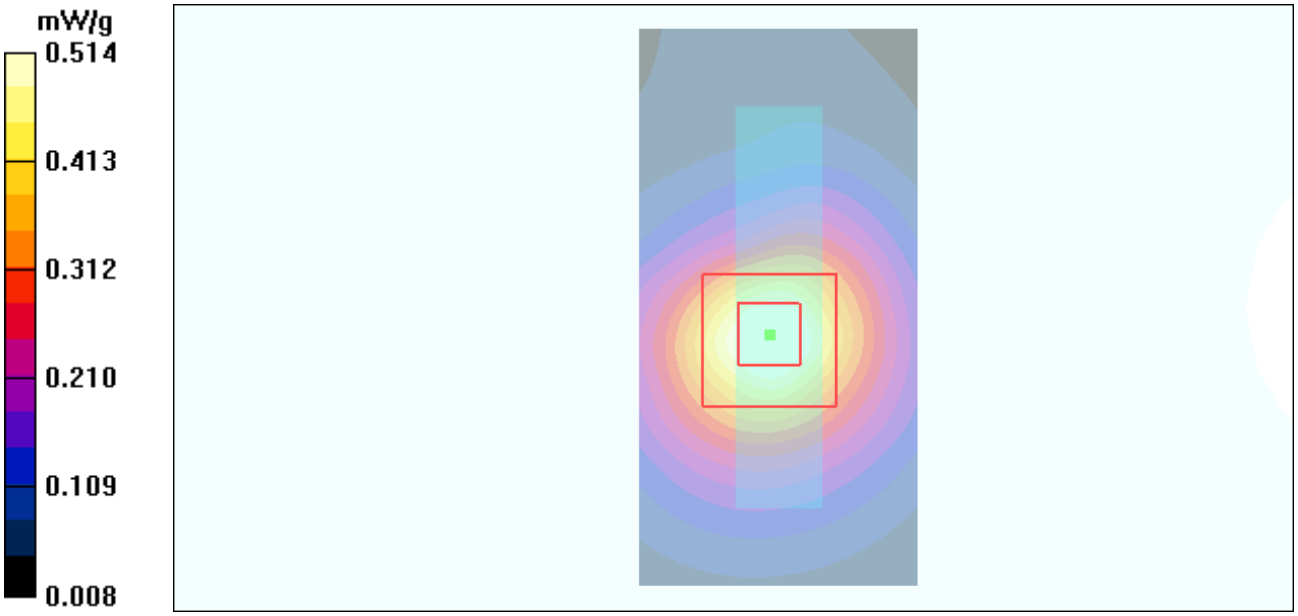


Figure 81 Body, Bottom Edge, WCDMA Band II Channel 9538

WCDMA Band II with Stereo Headset 1 Back Side Middle (Battery 1)

Date/Time: 4/20/2012 6:16:34 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.19 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.0 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 1.60 W/kg
SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.660 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

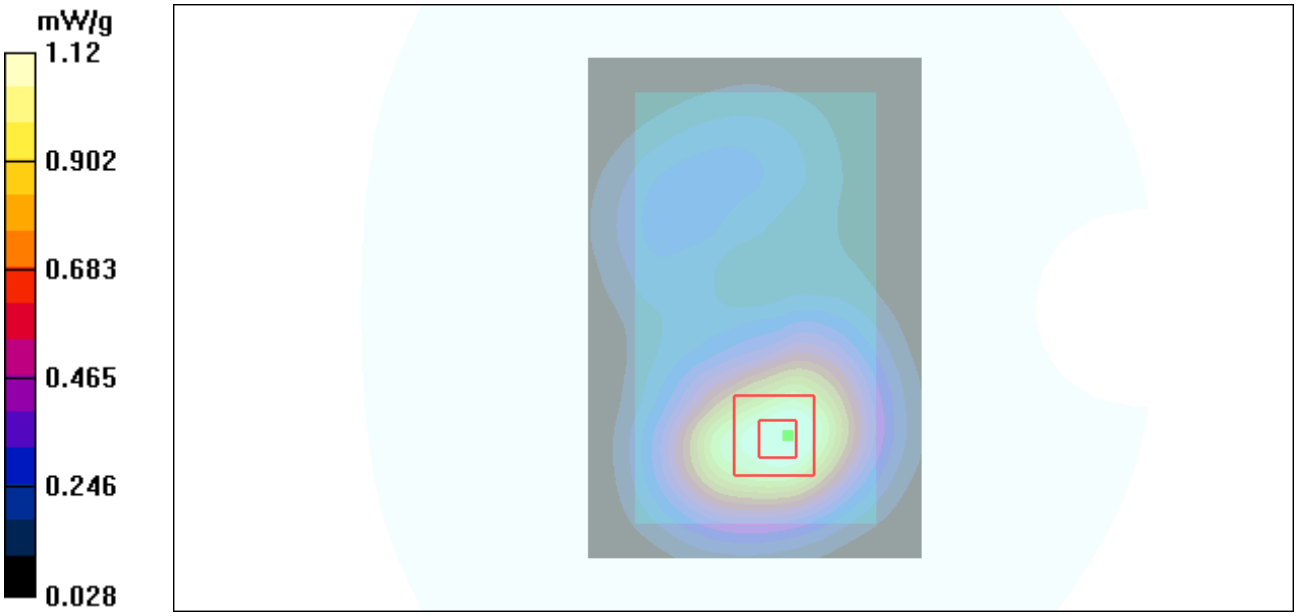


Figure 82 Body with Stereo Headset 1, Back Side, WCDMA Band II Channel 9400

WCDMA Band II with Stereo Headset 2 Back Side Middle (Battery 1)

Date/Time: 4/20/2012 6:38:02 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.13 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = 0.016 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 0.998 mW/g; SAR(10 g) = 0.631 mW/g
Maximum value of SAR (measured) = 1.05 mW/g

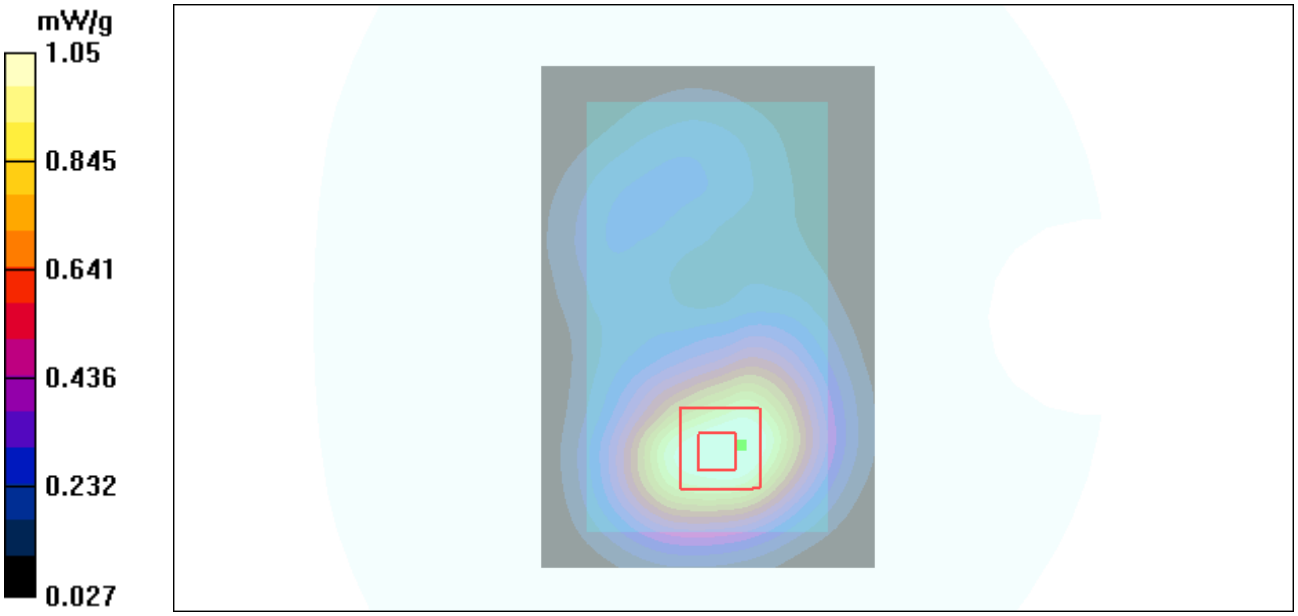


Figure 83 Body with Stereo Headset 2, Back Side, WCDMA Band II Channel 9400

WCDMA Band II Back Side Middle (Battery 2)

Date/Time: 4/20/2012 7:05:10 AM
Communication System: WCDMA Band II; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.25 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.693 mW/g
Maximum value of SAR (measured) = 1.18 mW/g

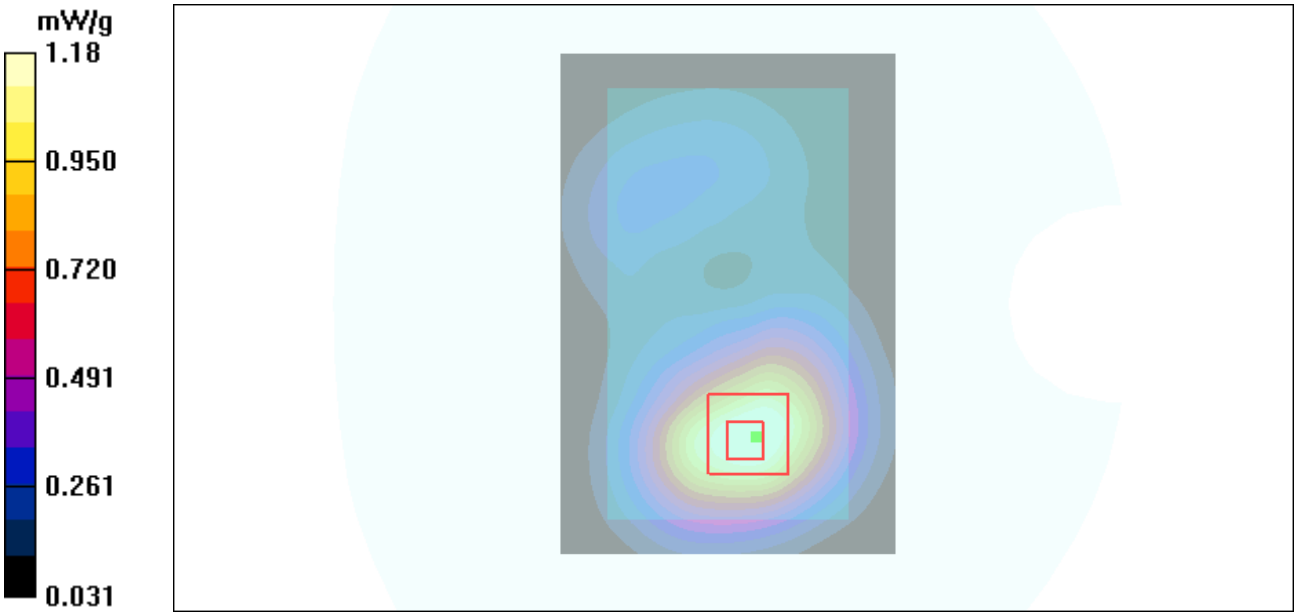


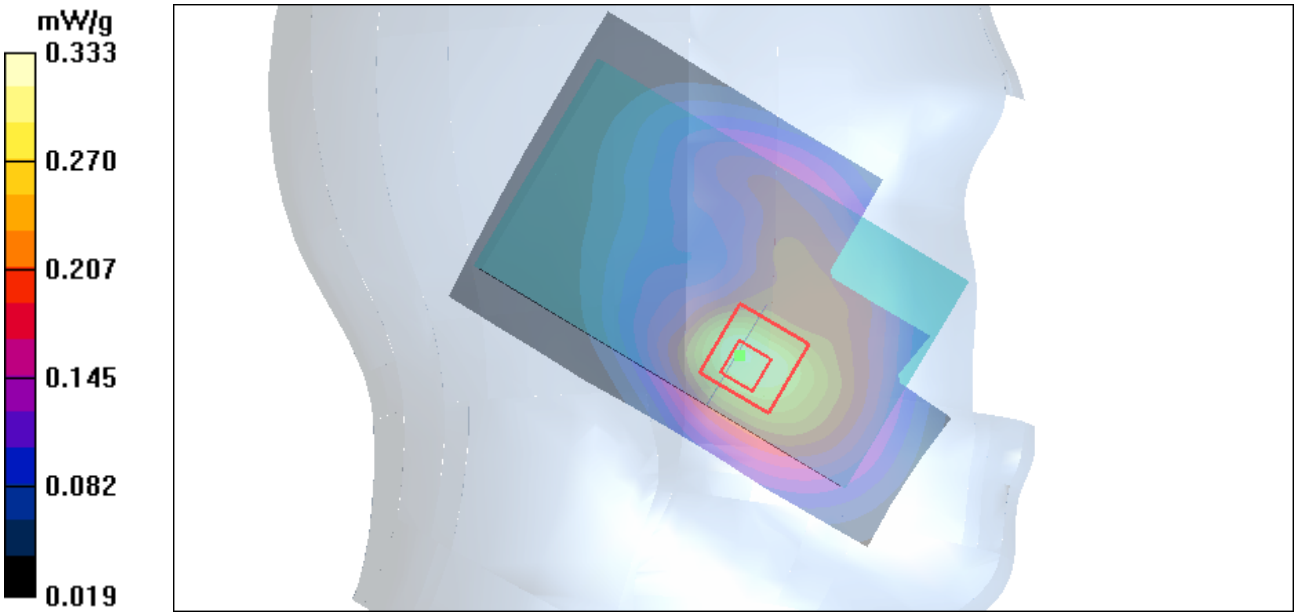
Figure 84 Body, Back Side, WCDMA Band II Channel 9400

WCDMA Band V Left Cheek High (Battery 1)

Date/Time: 4/19/2012 1:09:58 PM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.899 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.314 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.23 V/m; Power Drift = 0.101 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.198 mW/g
Maximum value of SAR (measured) = 0.333 mW/g



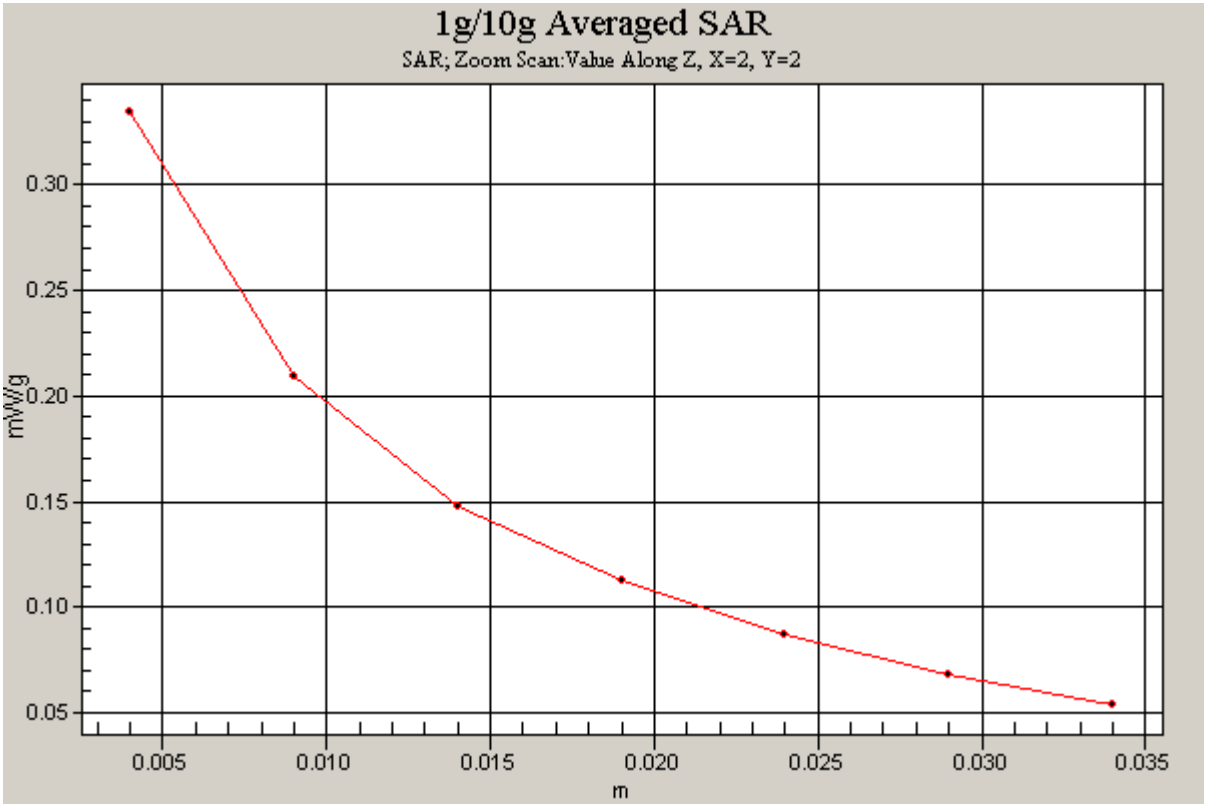


Figure 85 Left Hand Touch Cheek WCDMA Band V Channel 4233

WCDMA Band V Left Cheek Middle (Battery 1)

Date/Time: 4/19/2012 1:40:06 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.281 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.32 V/m; Power Drift = -0.044 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.185 mW/g
Maximum value of SAR (measured) = 0.278 mW/g

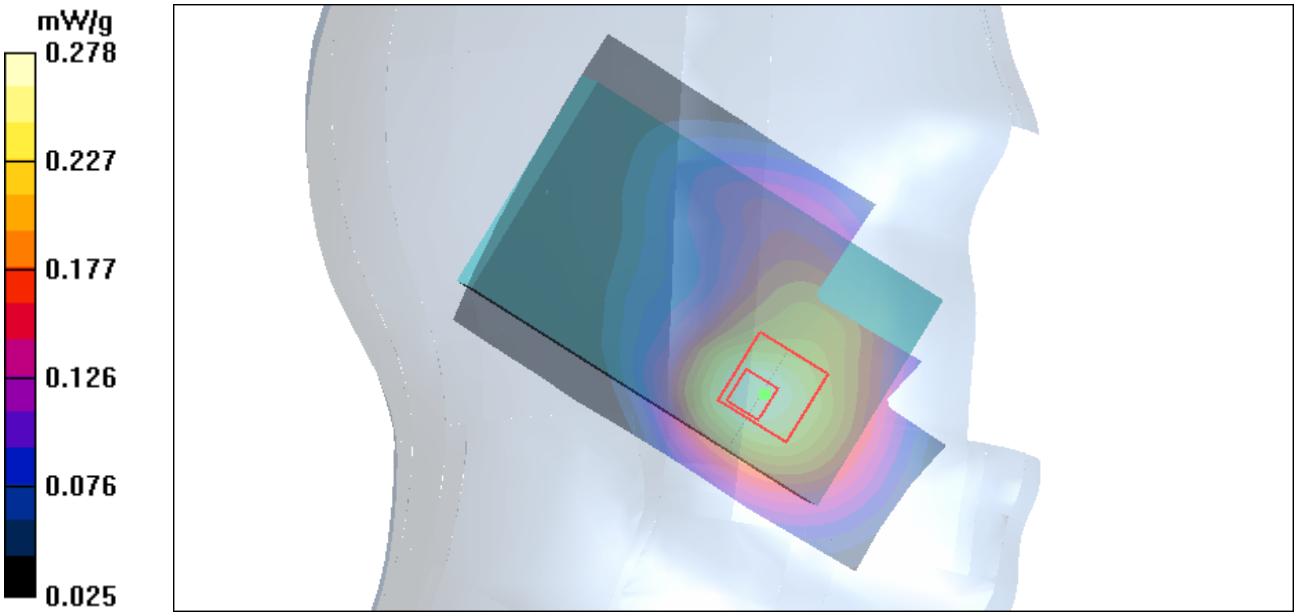


Figure 86 Left Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Left Cheek Low (Battery 1)

Date/Time: 4/19/2012 1:24:15 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.879 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.239 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.57 V/m; Power Drift = 0.158 dB
Peak SAR (extrapolated) = 0.310 W/kg
SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.167 mW/g
Maximum value of SAR (measured) = 0.236 mW/g

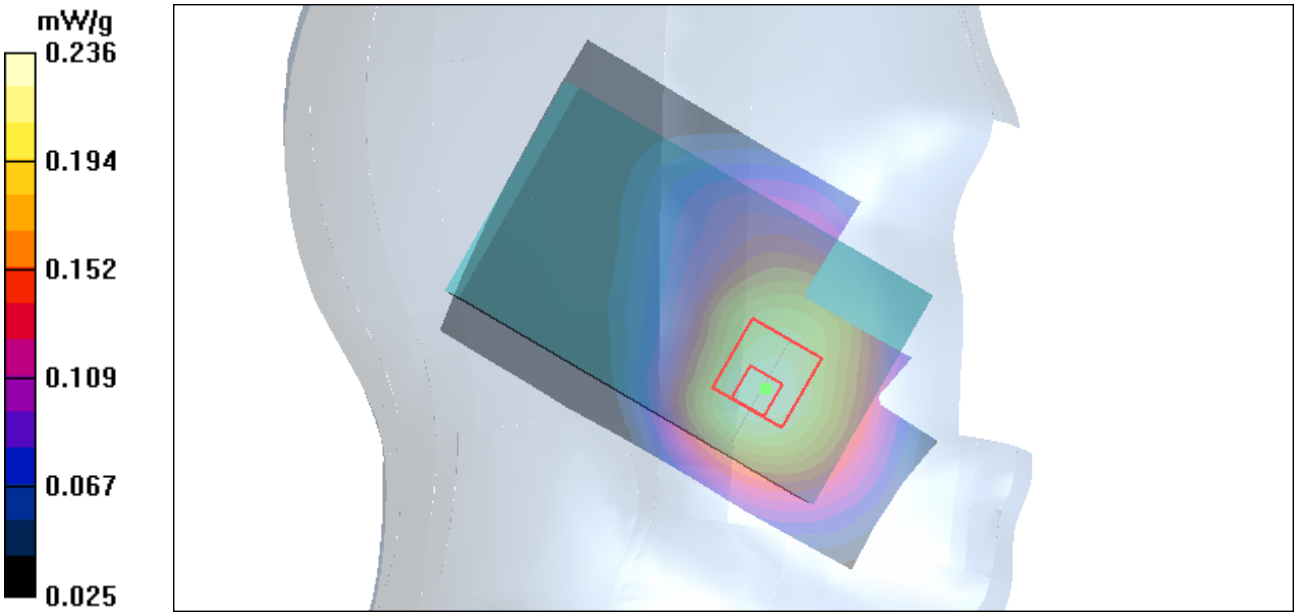


Figure 87 Left Hand Touch Cheek WCDMA Band V Channel 4132

WCDMA Band V Left Tilt High (Battery 1)

Date/Time: 4/19/2012 2:23:01 PM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.899 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.171 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.15 V/m; Power Drift = 0.063 dB
Peak SAR (extrapolated) = 0.195 W/kg
SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.128 mW/g
Maximum value of SAR (measured) = 0.170 mW/g

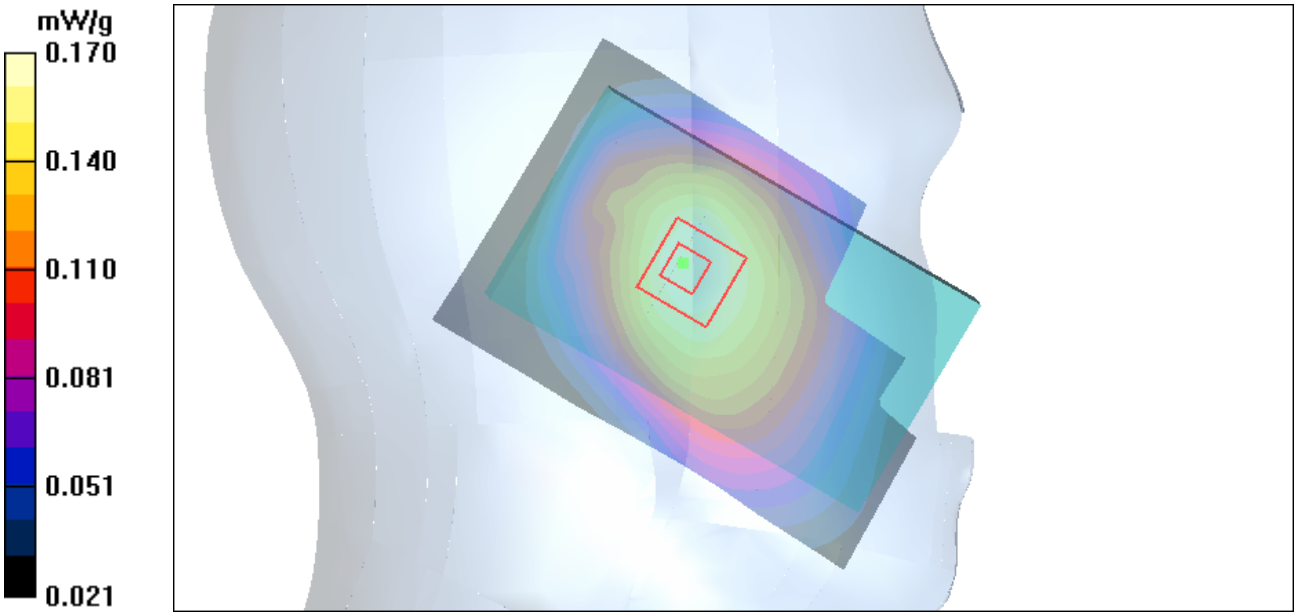


Figure 88 Left Hand Tilt 15° WCDMA Band V Channel 4233

WCDMA Band V Left Tilt Middle (Battery 1)

Date/Time: 4/19/2012 1:54:46 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.199 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.72 V/m; Power Drift = 0.070 dB
Peak SAR (extrapolated) = 0.229 W/kg
SAR(1 g) = 0.189 mW/g; SAR(10 g) = 0.149 mW/g
Maximum value of SAR (measured) = 0.198 mW/g

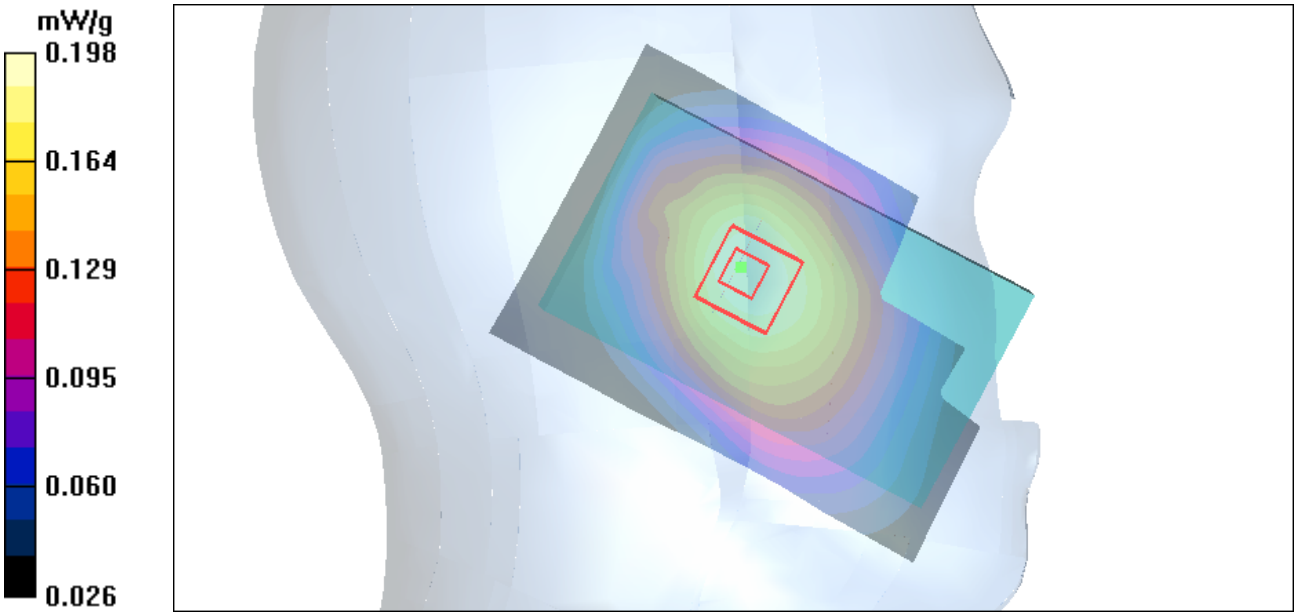


Figure 89 Left Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Left Tilt Low (Battery 1)

Date/Time: 4/19/2012 2:08:49 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.879 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.186 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.36 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.213 W/kg
SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.140 mW/g
Maximum value of SAR (measured) = 0.186 mW/g

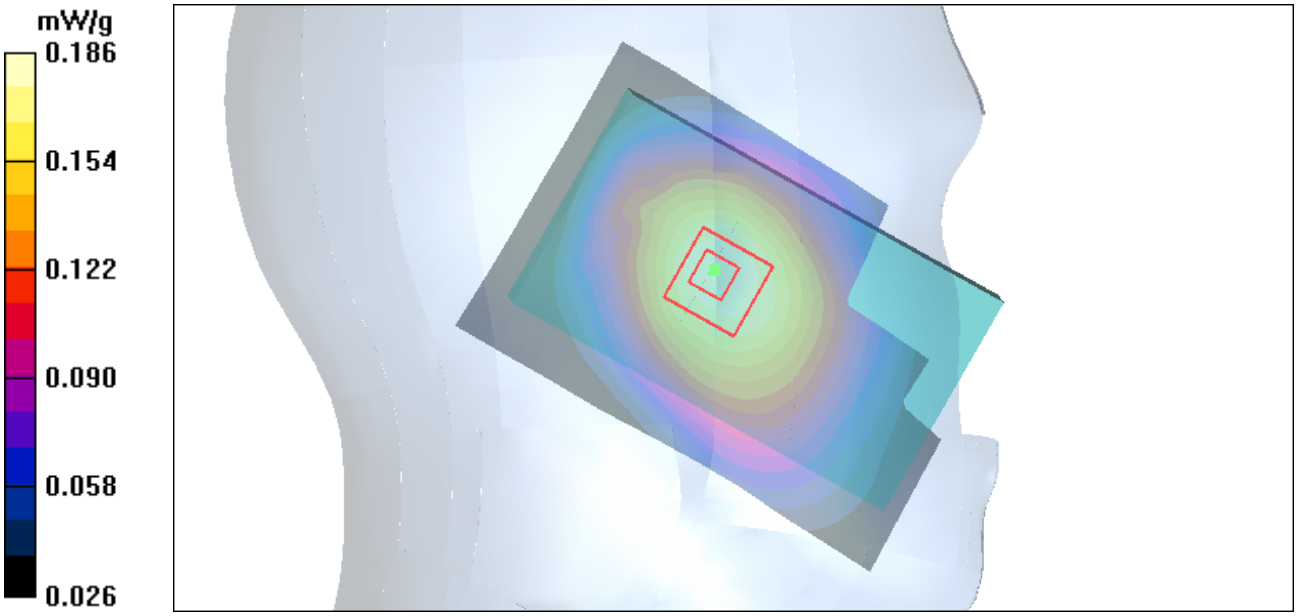


Figure 90 Left Hand Tilt 15° WCDMA Band V Channel 4132

WCDMA Band V Right Cheek High (Battery 1)

Date/Time: 4/19/2012 3:04:58 PM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.899 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.303 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.66 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 0.441 W/kg
SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.209 mW/g
Maximum value of SAR (measured) = 0.307 mW/g

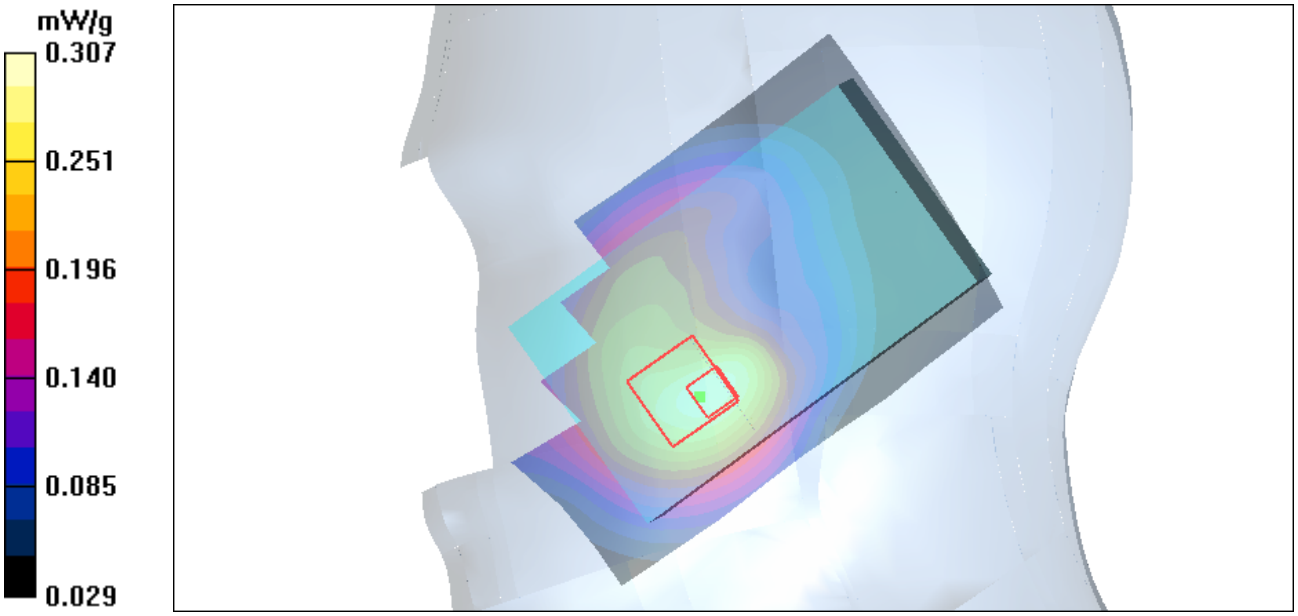


Figure 91 Right Hand Touch Cheek WCDMA Band V Channel 4233

WCDMA Band V Right Cheek Middle (Battery 1)

Date/Time: 4/19/2012 2:49:37 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.316 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.95 V/m; Power Drift = 0.164 dB
Peak SAR (extrapolated) = 0.399 W/kg
SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.226 mW/g
Maximum value of SAR (measured) = 0.311 mW/g

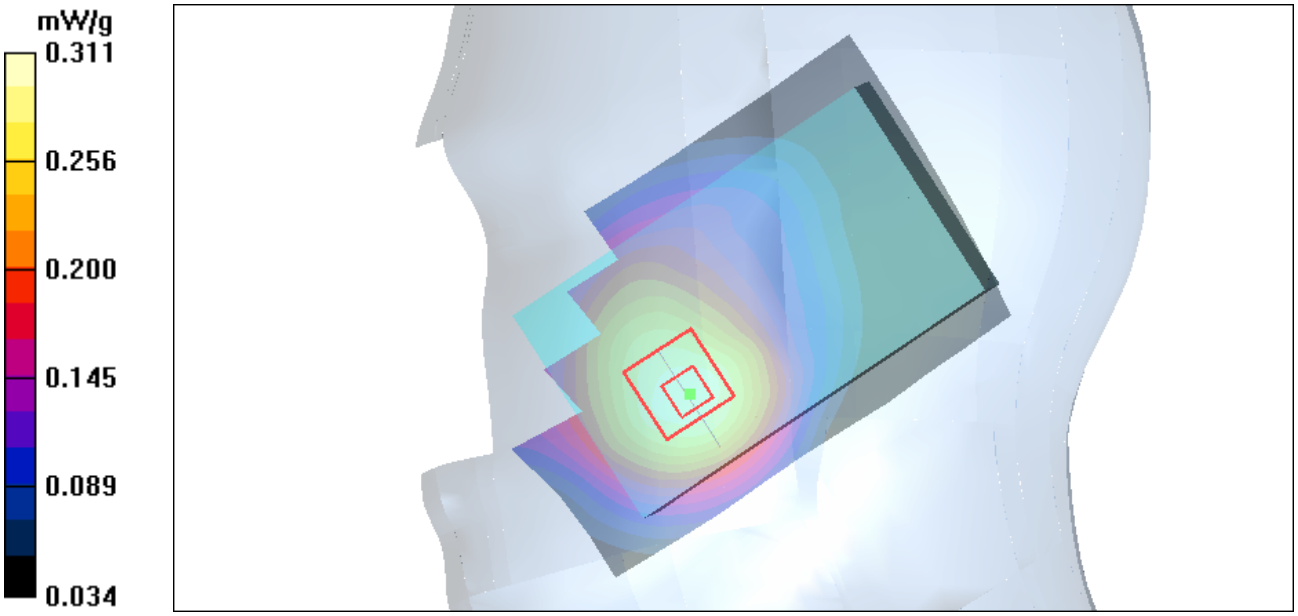


Figure 92 Right Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Right Cheek Low (Battery 1)

Date/Time: 4/19/2012 3:19:24 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.879 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.306 mW/g

Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.55 V/m; Power Drift = 0.094 dB
Peak SAR (extrapolated) = 0.365 W/kg
SAR(1 g) = 0.289 mW/g; SAR(10 g) = 0.221 mW/g
Maximum value of SAR (measured) = 0.302 mW/g

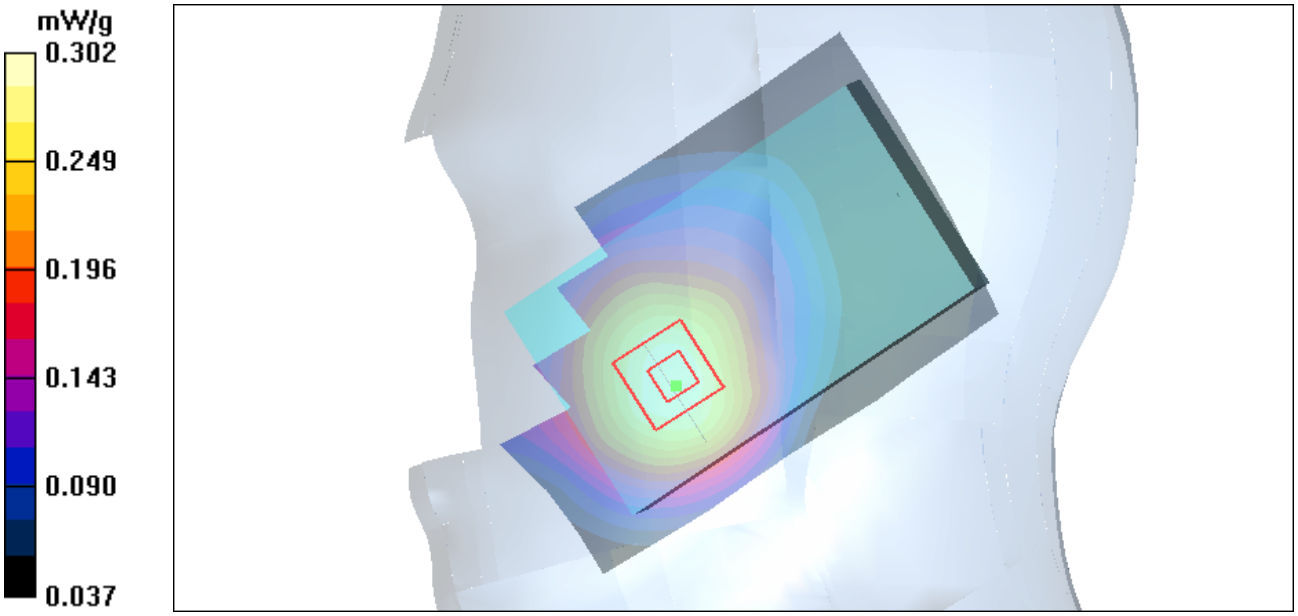


Figure 93 Right Hand Touch Cheek WCDMA Band V Channel 4132

WCDMA Band V Right Tilt High (Battery 1)

Date/Time: 4/19/2012 3:49:20 PM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 0.899 mho/m; ε_r = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.233 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.65 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.271 W/kg
SAR(1 g) = 0.225 mW/g; SAR(10 g) = 0.177 mW/g
Maximum value of SAR (measured) = 0.235 mW/g

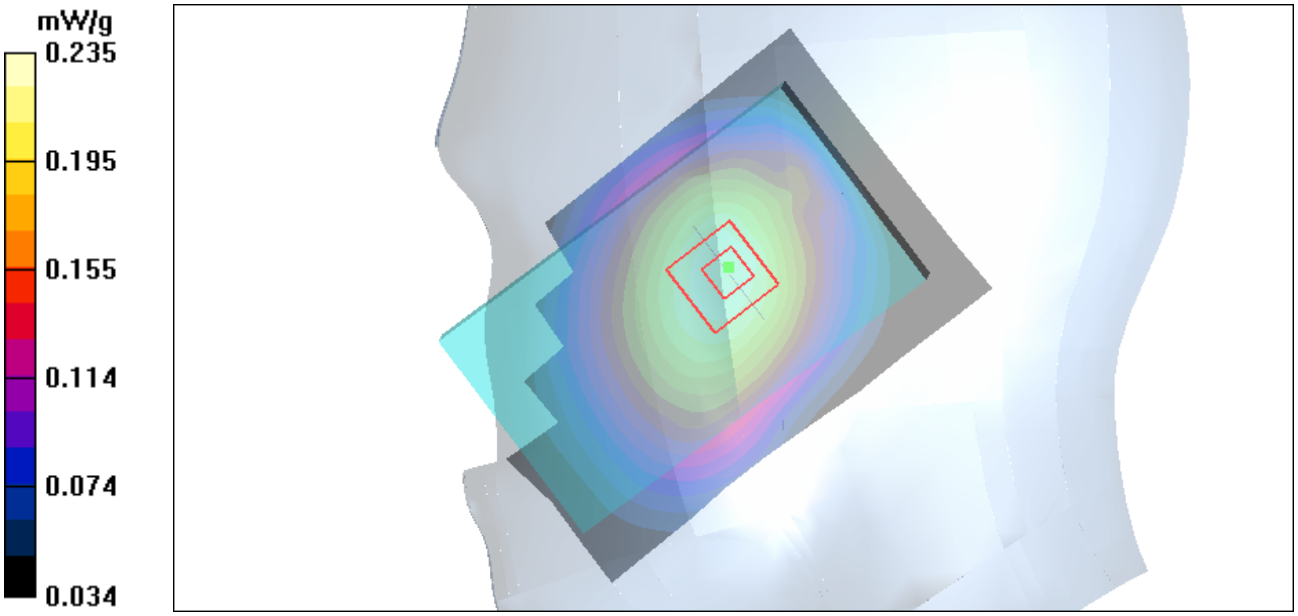


Figure 94 Right Hand Tilt 15° WCDMA Band V Channel 4233

WCDMA Band V Right Tilt Middle (Battery 1)

Date/Time: 4/19/2012 4:03:39 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.89 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.263 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 0.309 W/kg
SAR(1 g) = 0.254 mW/g; SAR(10 g) = 0.199 mW/g
Maximum value of SAR (measured) = 0.263 mW/g

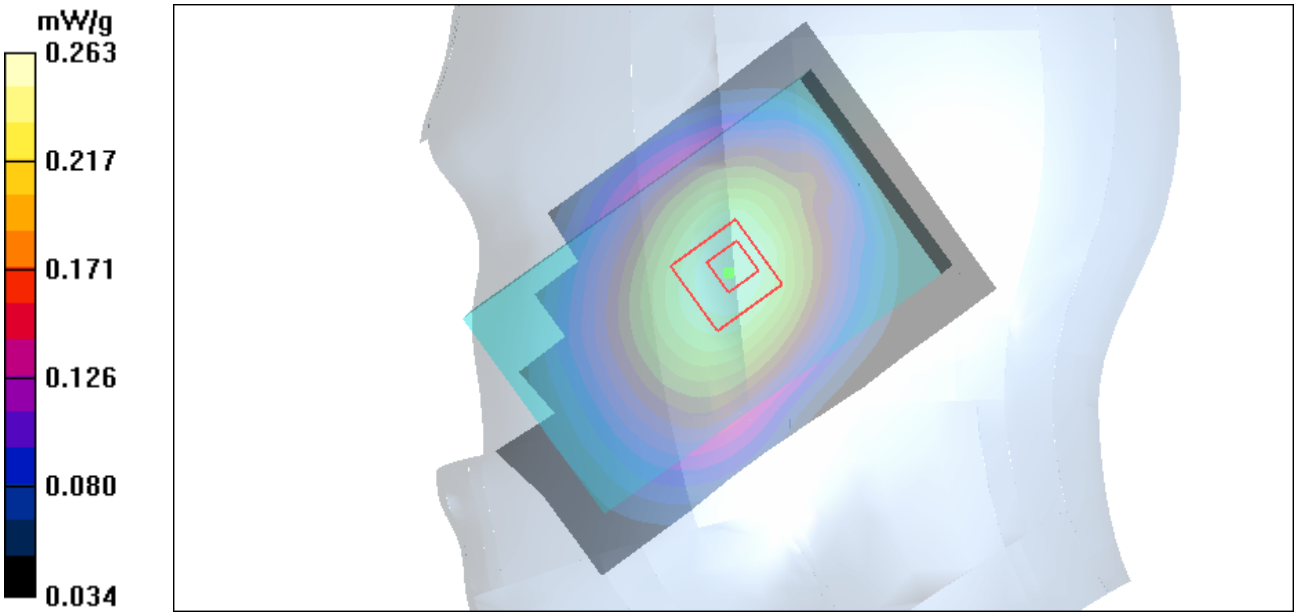


Figure 95 Right Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Right Tilt Low (Battery 1)

Date/Time: 4/19/2012 3:35:00 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.879 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.256 mW/g

Tilt Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.84 V/m; Power Drift = 0.043 dB
Peak SAR (extrapolated) = 0.298 W/kg
SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.255 mW/g

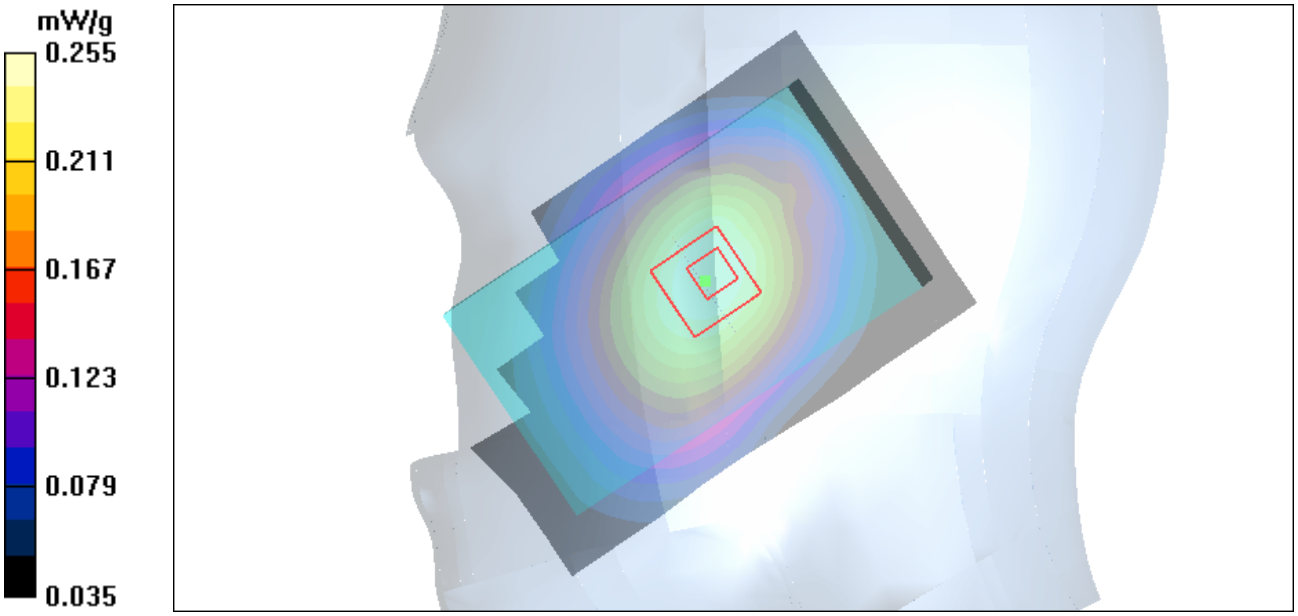


Figure 96 Right Hand Tilt 15° WCDMA Band V Channel 4132

WCDMA Band V Back Side High (Battery 1)

Date/Time: 4/19/2012 8:17:24 PM
Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.735 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.9 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 0.896 W/kg
SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.513 mW/g
Maximum value of SAR (measured) = 0.732 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 26.9 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 0.862 W/kg
SAR(1 g) = 0.545 mW/g; SAR(10 g) = 0.383 mW/g
Maximum value of SAR (measured) = 0.610 mW/g

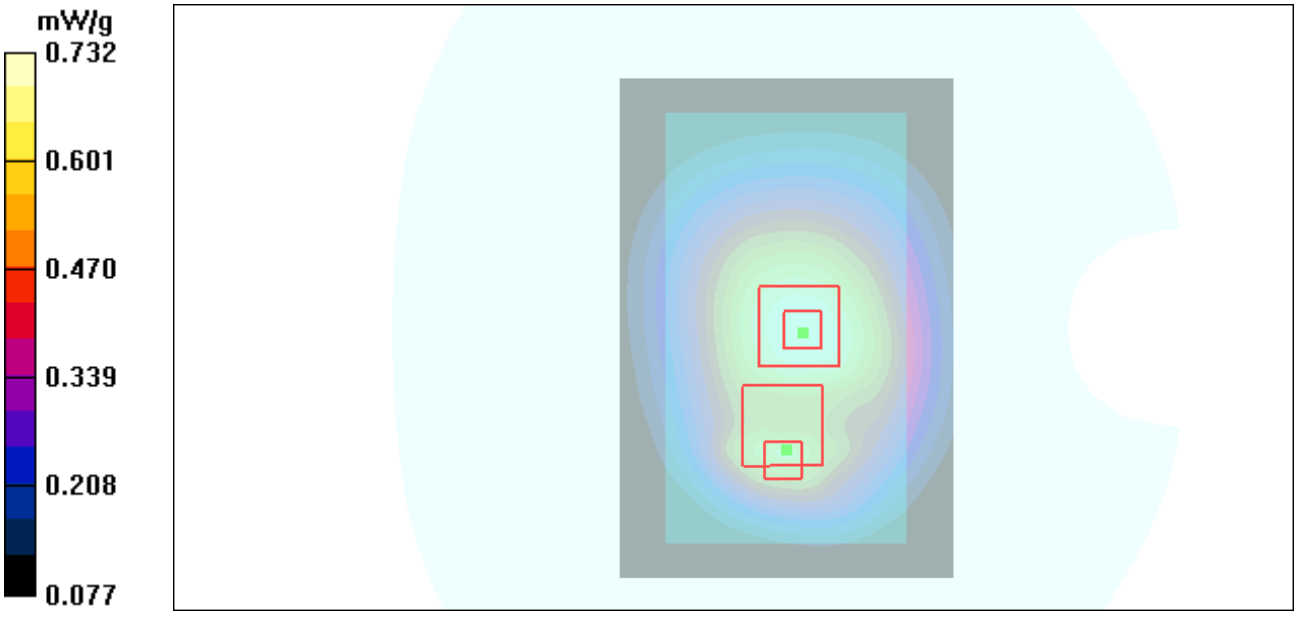


Figure 97 Body, Back Side, WCDMA Band V Channel 4233

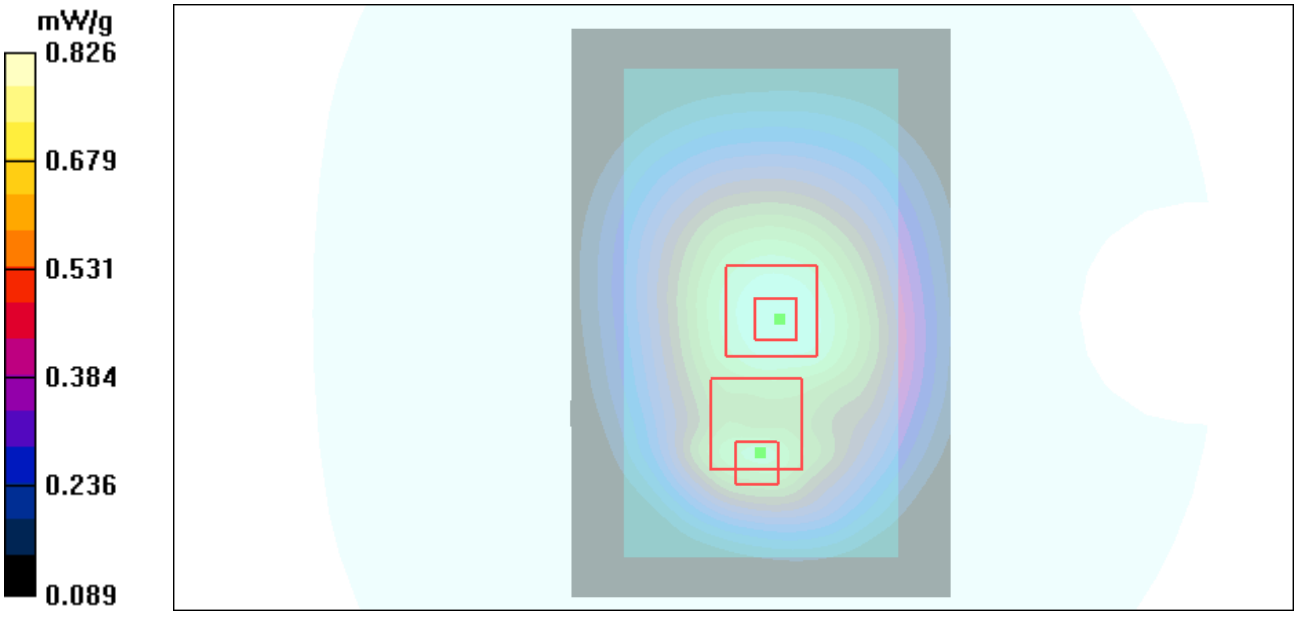
WCDMA Band V Back Side Middle (Battery 1)

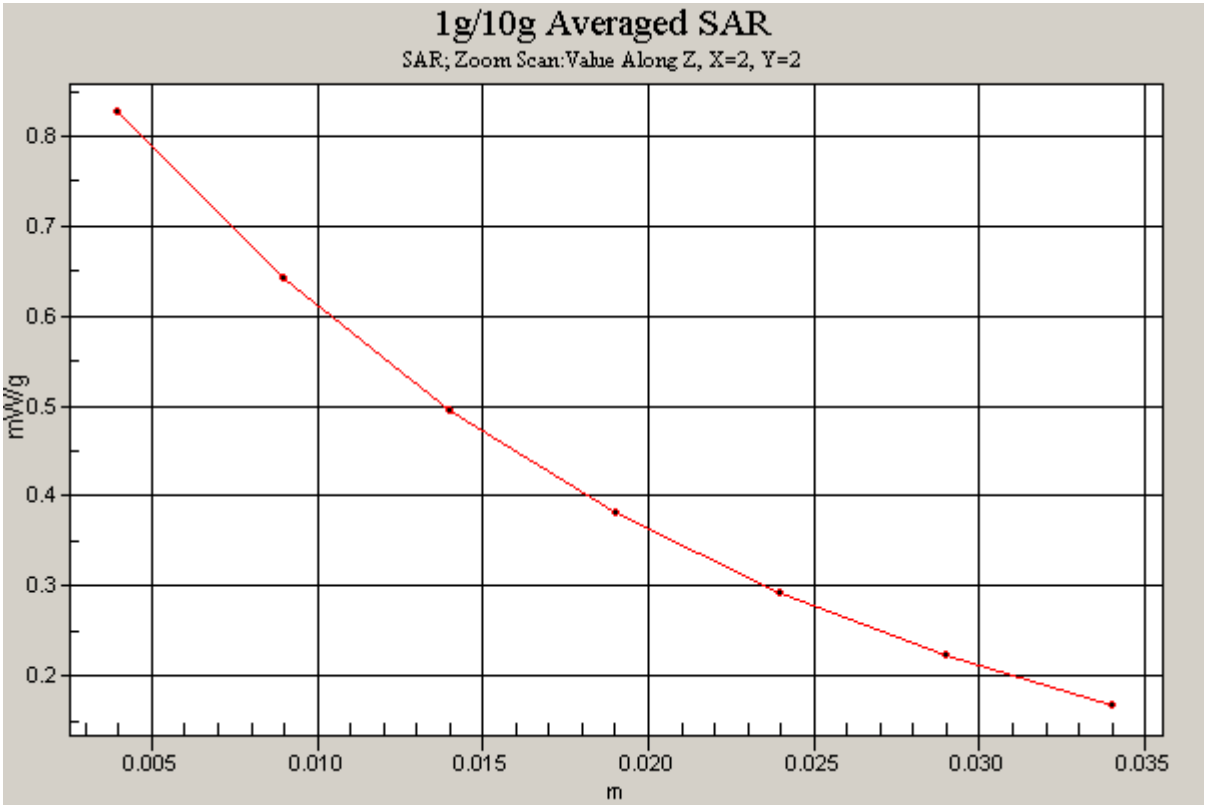
Date/Time: 4/19/2012 7:57:57 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.834 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.8 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 1.00 W/kg
SAR(1 g) = 0.633 mW/g; SAR(10 g) = 0.444 mW/g
Maximum value of SAR (measured) = 0.700 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.8 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.583 mW/g
Maximum value of SAR (measured) = 0.826 mW/g





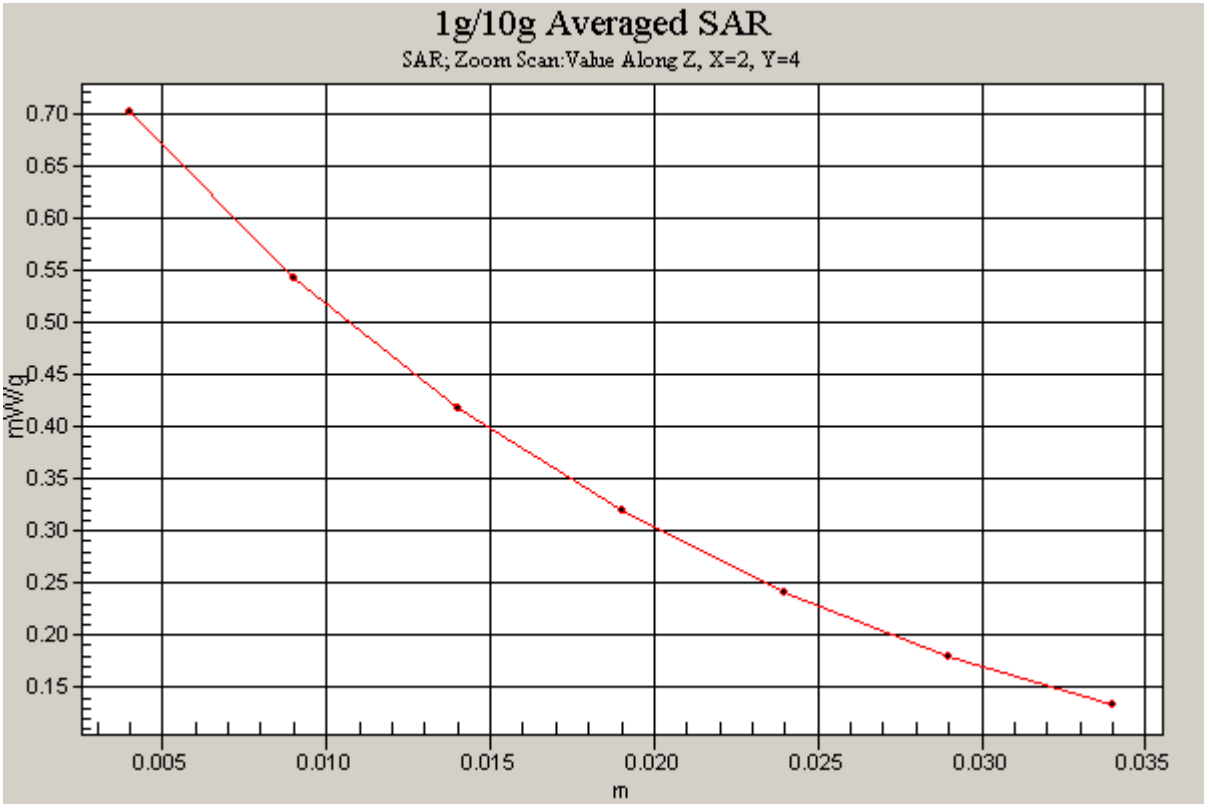


Figure 98 Body, Back Side, WCDMA Band V Channel 4183

WCDMA Band V Back Side Low (Battery 1)

Date/Time: 4/19/2012 6:38:51 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.974 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.749 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.0 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 1.08 W/kg
SAR(1 g) = 0.654 mW/g; SAR(10 g) = 0.405 mW/g
Maximum value of SAR (measured) = 0.728 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.0 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.743 W/kg
SAR(1 g) = 0.520 mW/g; SAR(10 g) = 0.375 mW/g
Maximum value of SAR (measured) = 0.558 mW/g

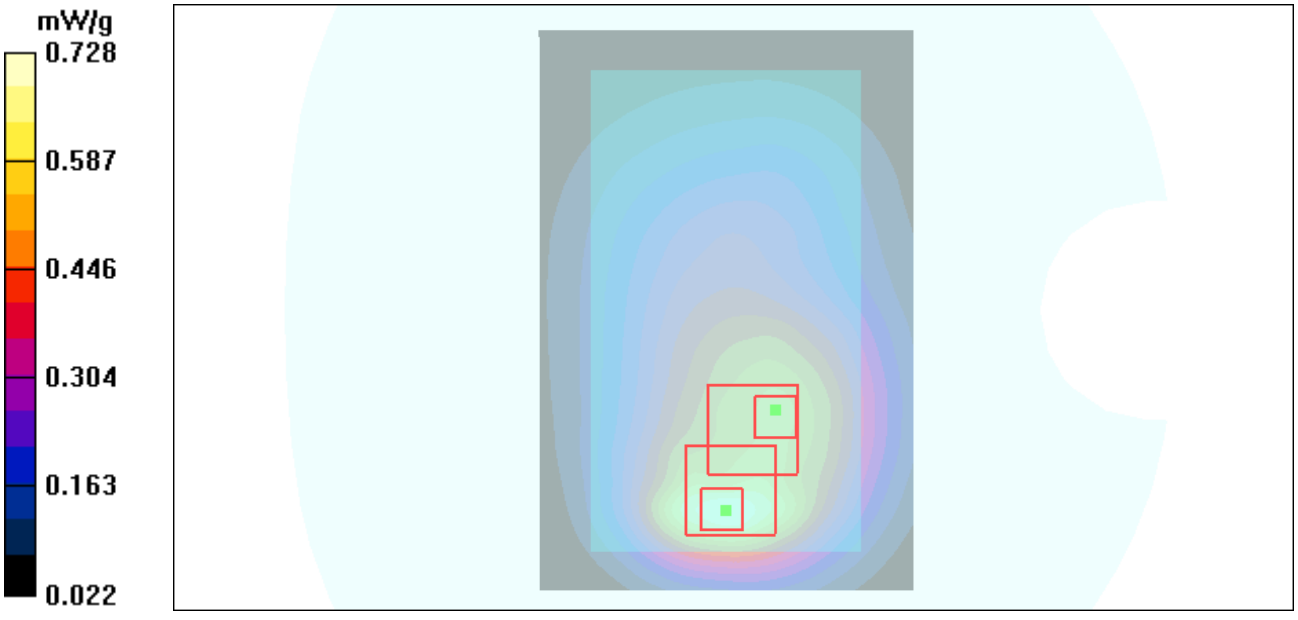


Figure 99 Body, Back Side, WCDMA Band V Channel 4132

WCDMA Band V Front Side Low (Battery 1)

Date/Time: 4/19/2012 7:00:26 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.974 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.410 mW/g

Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.9 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.493 W/kg
SAR(1 g) = 0.391 mW/g; SAR(10 g) = 0.300 mW/g
Maximum value of SAR (measured) = 0.409 mW/g

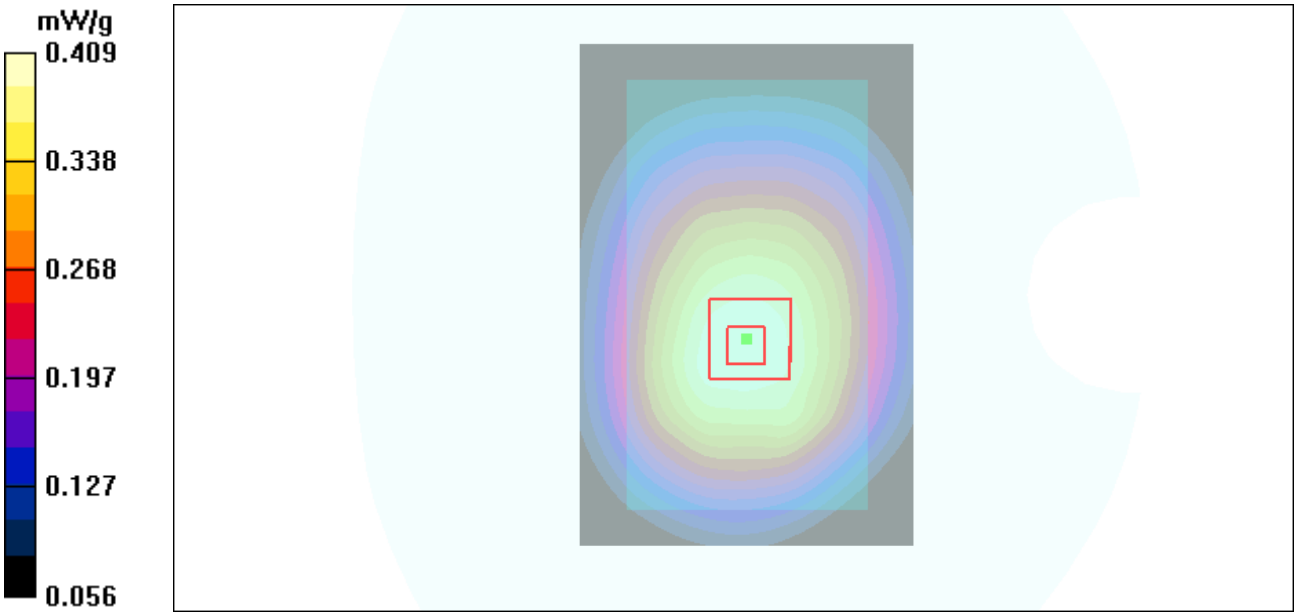


Figure 100 Body, Front Side, WCDMA Band V Channel 4132

WCDMA Band V Left Edge Low (Battery 1)

Date/Time: 4/19/2012 7:20:49 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.974 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Edge Low/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.290 mW/g

Left Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.4 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.384 W/kg
SAR(1 g) = 0.274 mW/g; SAR(10 g) = 0.190 mW/g
Maximum value of SAR (measured) = 0.291 mW/g

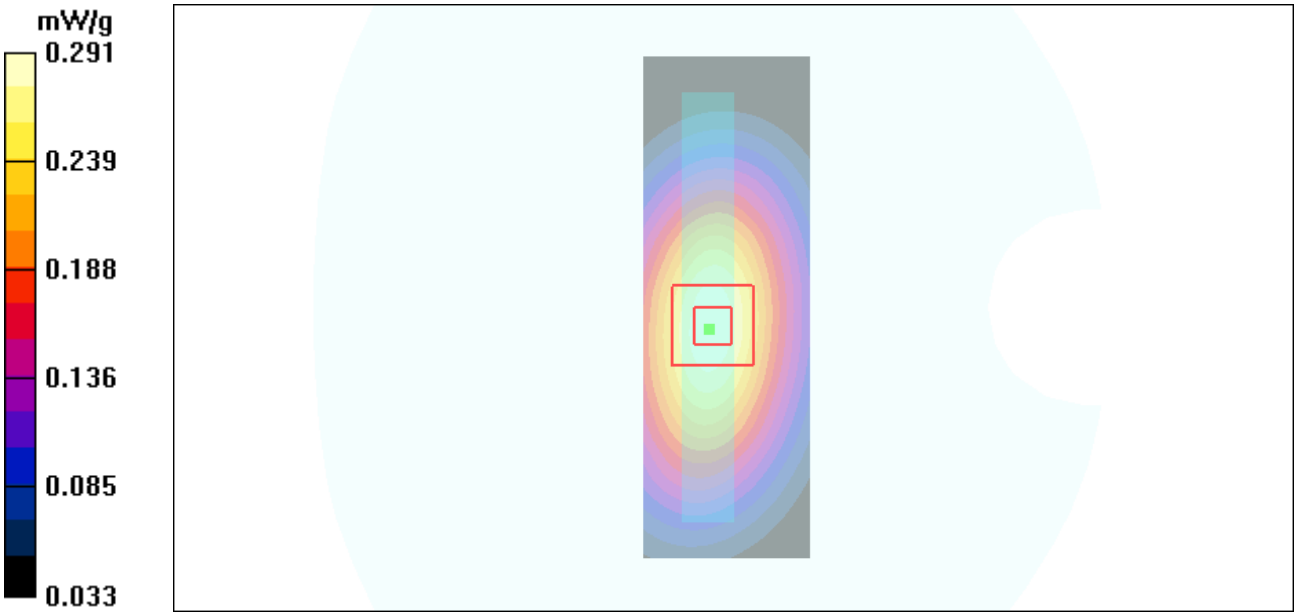


Figure 101 Body, Left Edge, WCDMA Band V Channel 4132

WCDMA Band V Right Edge Low (Battery 1)

Date/Time: 4/19/2012 7:33:48 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.974 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right Edge Low/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.342 mW/g

Right Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.7 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 0.450 W/kg
SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.226 mW/g
Maximum value of SAR (measured) = 0.344 mW/g

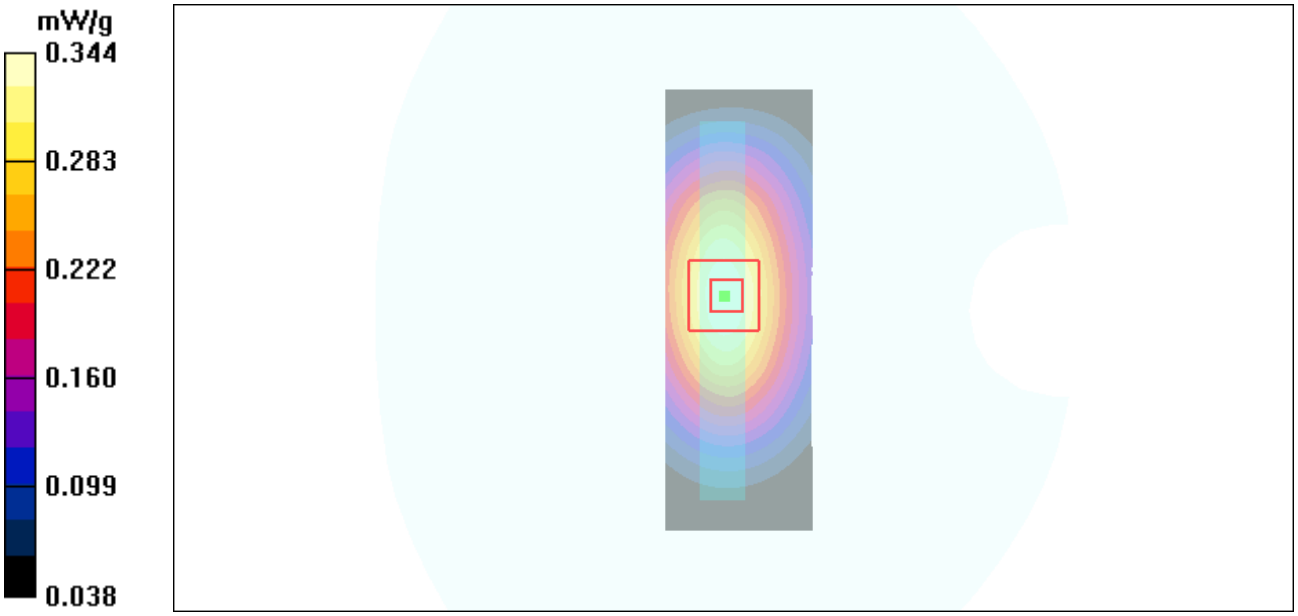


Figure 102 Body, Right Edge, WCDMA Band V Channel 4132

WCDMA Band V Bottom Edge Low (Battery 1)

Date/Time: 4/19/2012 7:46:10 PM
Communication System: WCDMA Band V; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.974 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Bottom Edge Low/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.113 mW/g

Bottom Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.05 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 0.158 W/kg
SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.065 mW/g
Maximum value of SAR (measured) = 0.109 mW/g

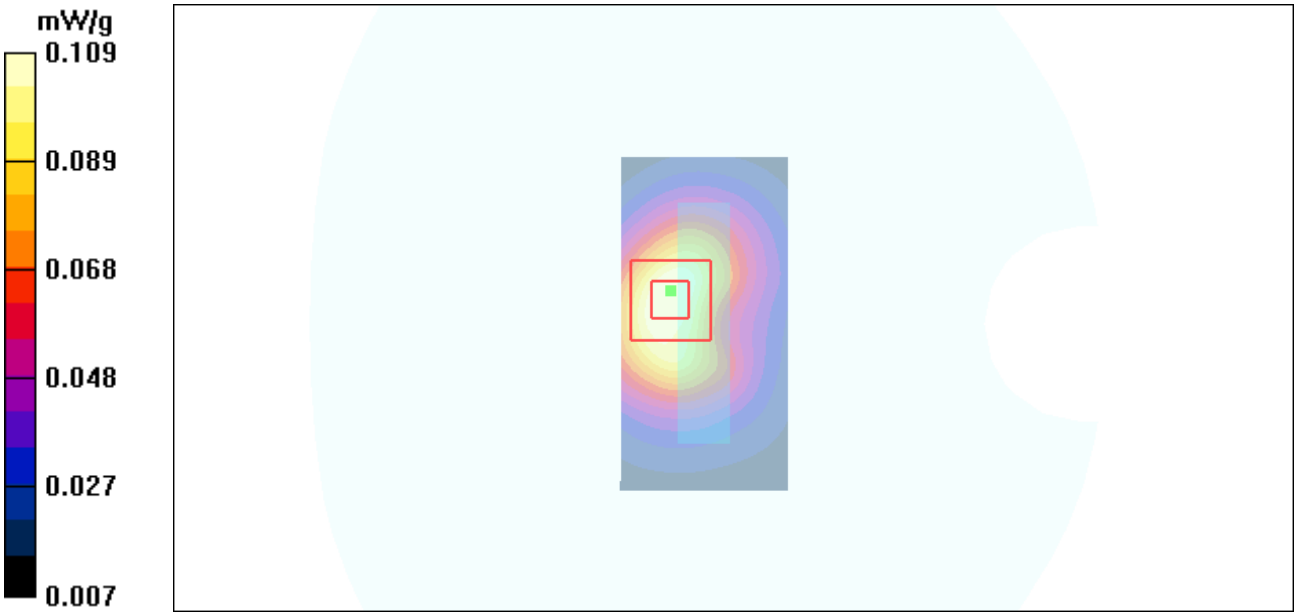


Figure 103 Body, Bottom Edge, WCDMA Band V Channel 4132

WCDMA Band V with Stereo Headset 1 Back Side Middle (Battery 1)

Date/Time: 4/19/2012 9:15:11 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.792 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.427 mW/g
Maximum value of SAR (measured) = 0.672 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.1 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.961 W/kg
SAR(1 g) = 0.746 mW/g; SAR(10 g) = 0.551 mW/g
Maximum value of SAR (measured) = 0.786 mW/g

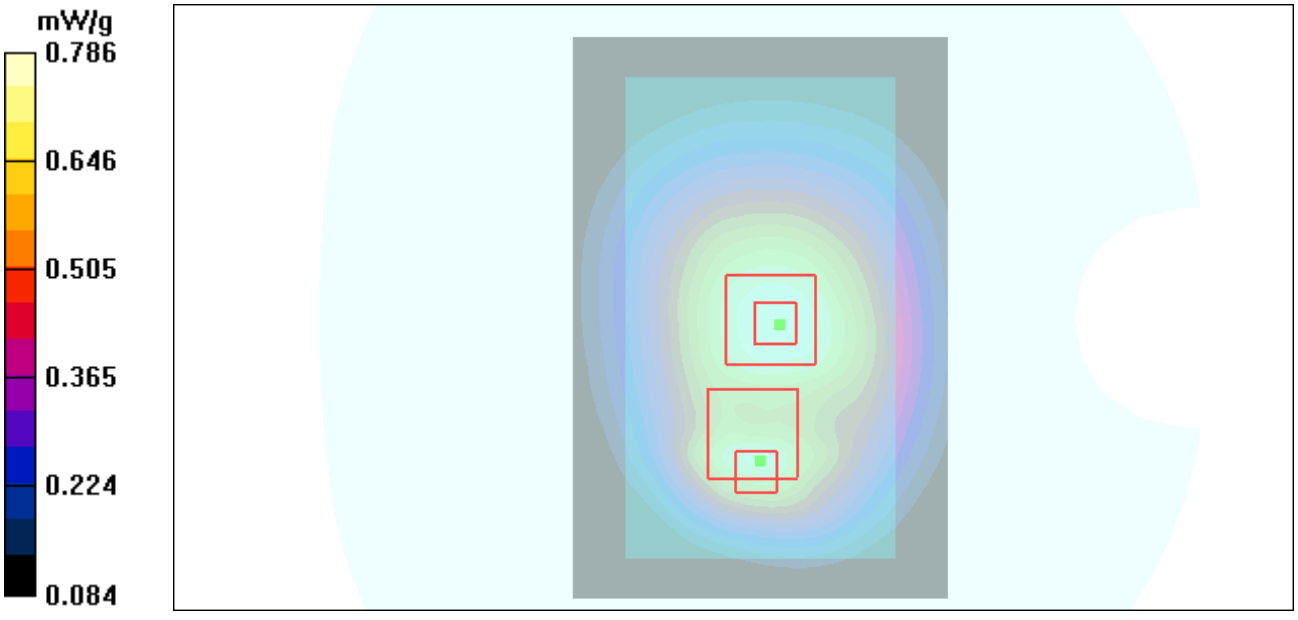


Figure 104 Body with Stereo Headset 1, Back Side, WCDMA Band V Channel 4183

WCDMA Band V with Stereo Headset 2 Back Side Middle (Battery 1)

Date/Time: 4/19/2012 8:37:47 PM
Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.767 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 0.783 W/kg
SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.440 mW/g
Maximum value of SAR (measured) = 0.630 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.651 mW/g; SAR(10 g) = 0.401 mW/g
Maximum value of SAR (measured) = 0.677 mW/g

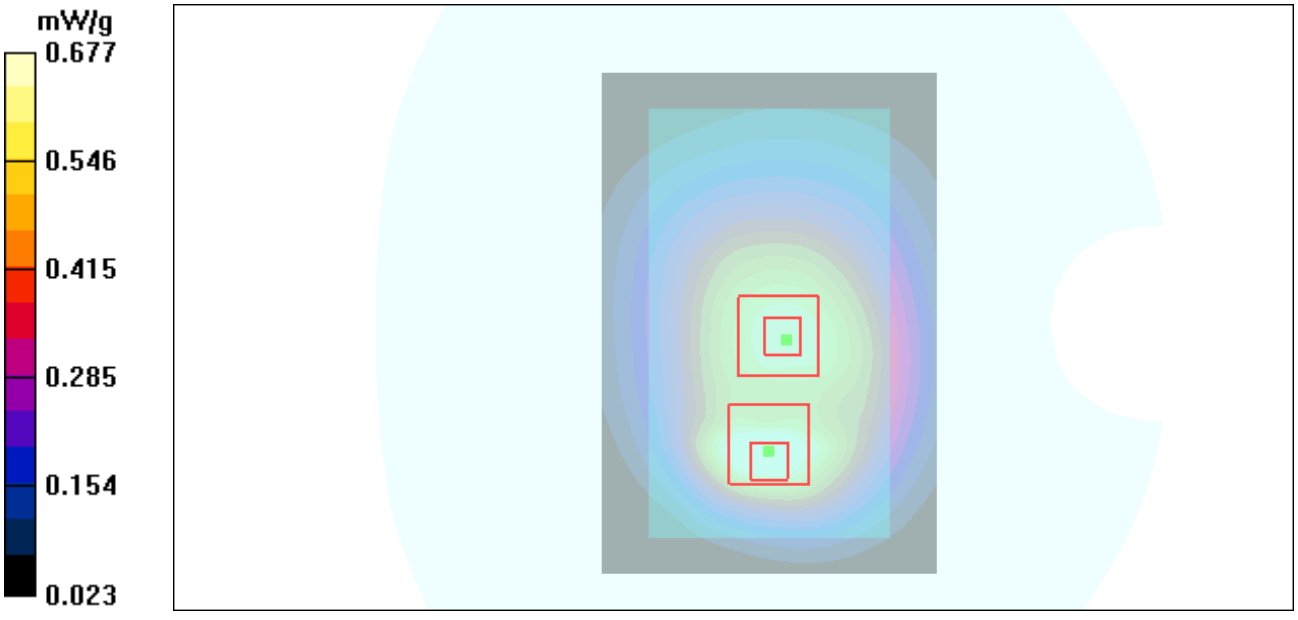


Figure 105 Body with Stereo Headset 2, Back Side, WCDMA Band V Channel 4183

802.11b Left Cheek High (Battery 1)

Date/Time: 4/20/2012 3:51:15 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.89 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.17, 7.17, 7.17); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.116 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.31 V/m; Power Drift = 0.187 dB
Peak SAR (extrapolated) = 0.178 W/kg
SAR(1 g) = 0.095 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.108 mW/g

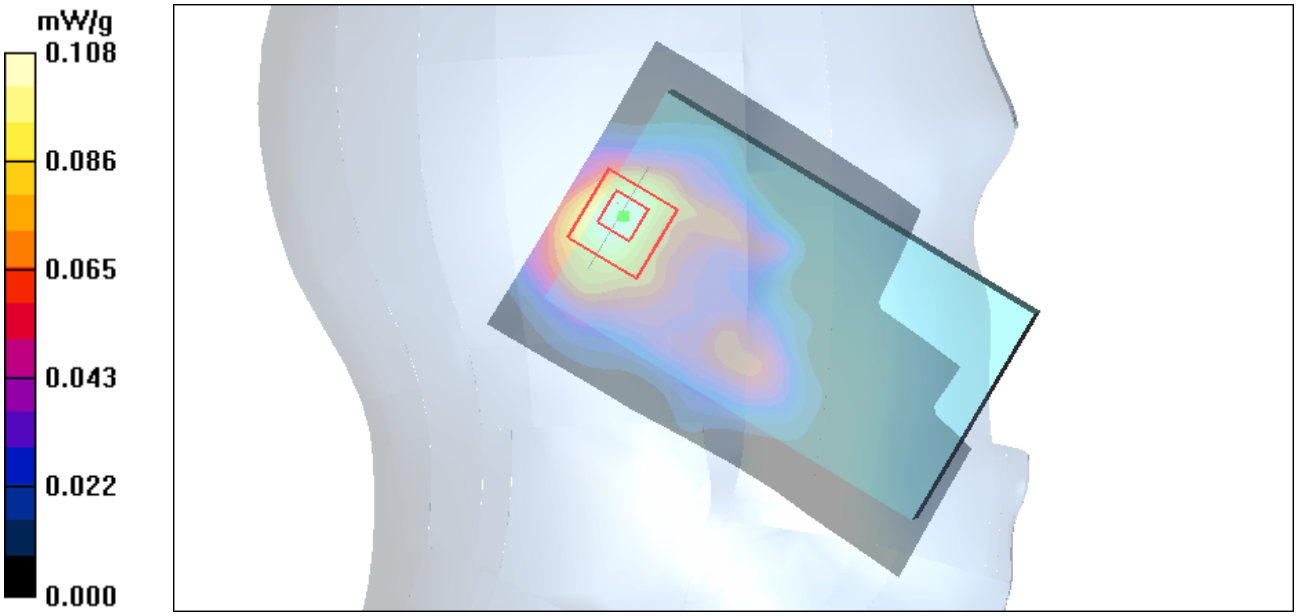


Figure 106 Left Hand Touch Cheek 802.11b Channel 11

802.11b Left Tilt High (Battery 1)

Date/Time: 4/20/2012 4:28:05 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.89 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.17, 7.17, 7.17); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.088 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.67 V/m; Power Drift = 0.183 dB
Peak SAR (extrapolated) = 0.153 W/kg
SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.040 mW/g
Maximum value of SAR (measured) = 0.084 mW/g

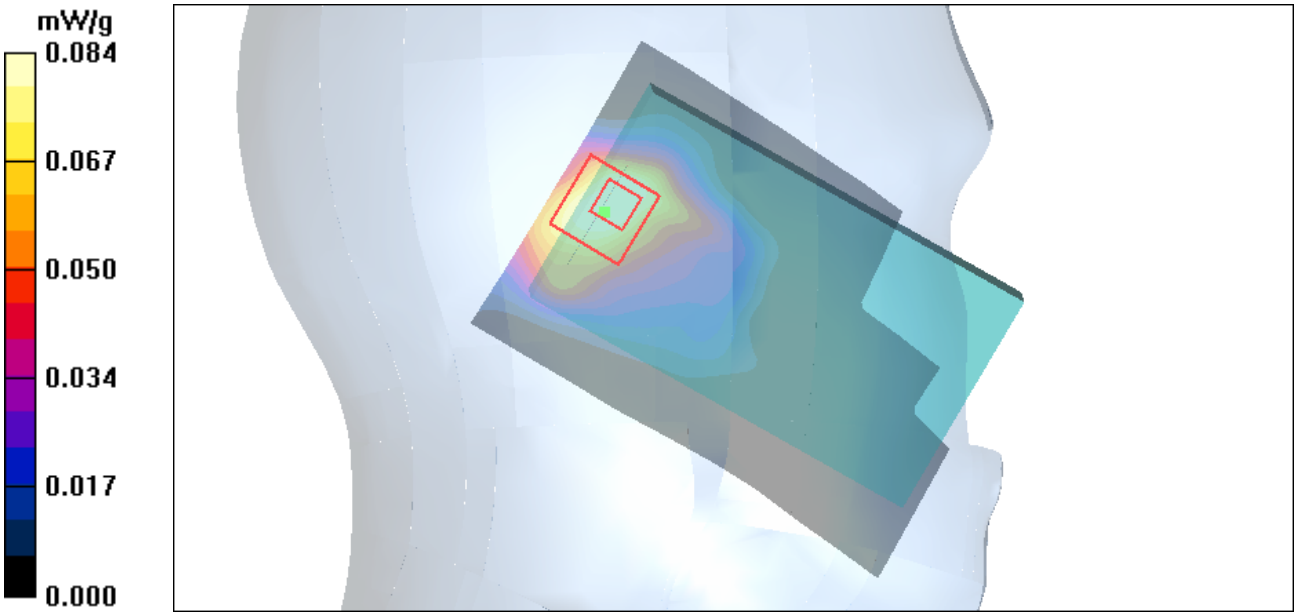


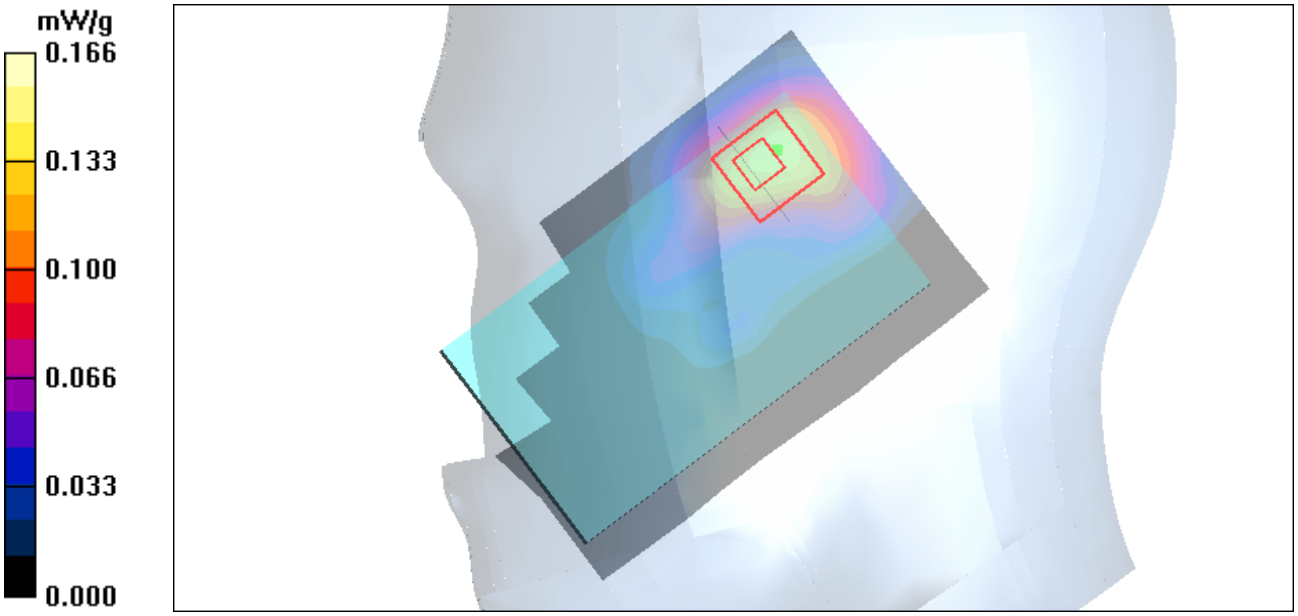
Figure 107 Left Hand Tilt 15° 802.11b Channel 11

802.11b Right Cheek High (Battery 1)

Date/Time: 4/20/2012 4:46:30 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.89 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.17, 7.17, 7.17); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.142 mW/g

Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.72 V/m; Power Drift = 0.054 dB
Peak SAR (extrapolated) = 0.311 W/kg
SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.070 mW/g
Maximum value of SAR (measured) = 0.166 mW/g



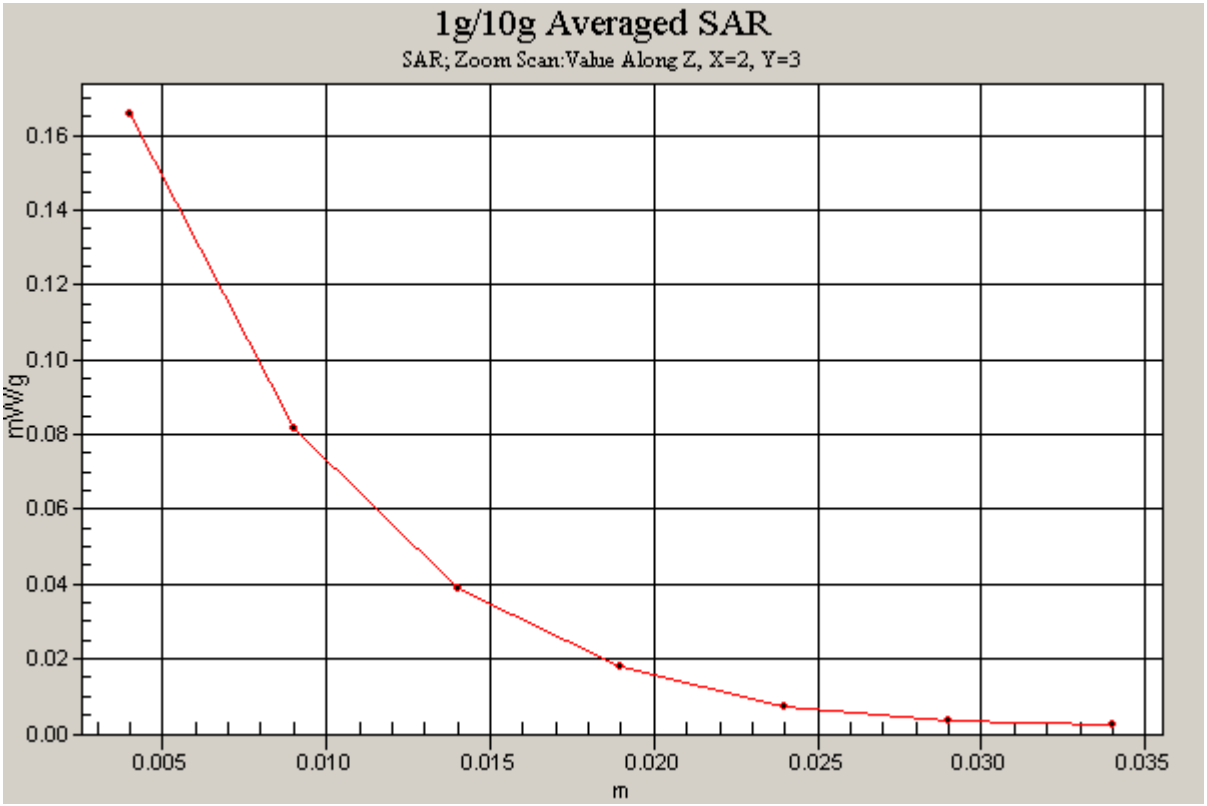


Figure 108 Right Hand Touch Cheek 802.11b Channel 11

802.11b Right Tilt High (Battery 1)

Date/Time: 4/20/2012 5:01:52 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.89 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.17, 7.17, 7.17); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
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 High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.126 mW/g

Tilt High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.52 V/m; Power Drift = 0.156 dB
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.048 mW/g
Maximum value of SAR (measured) = 0.103 mW/g

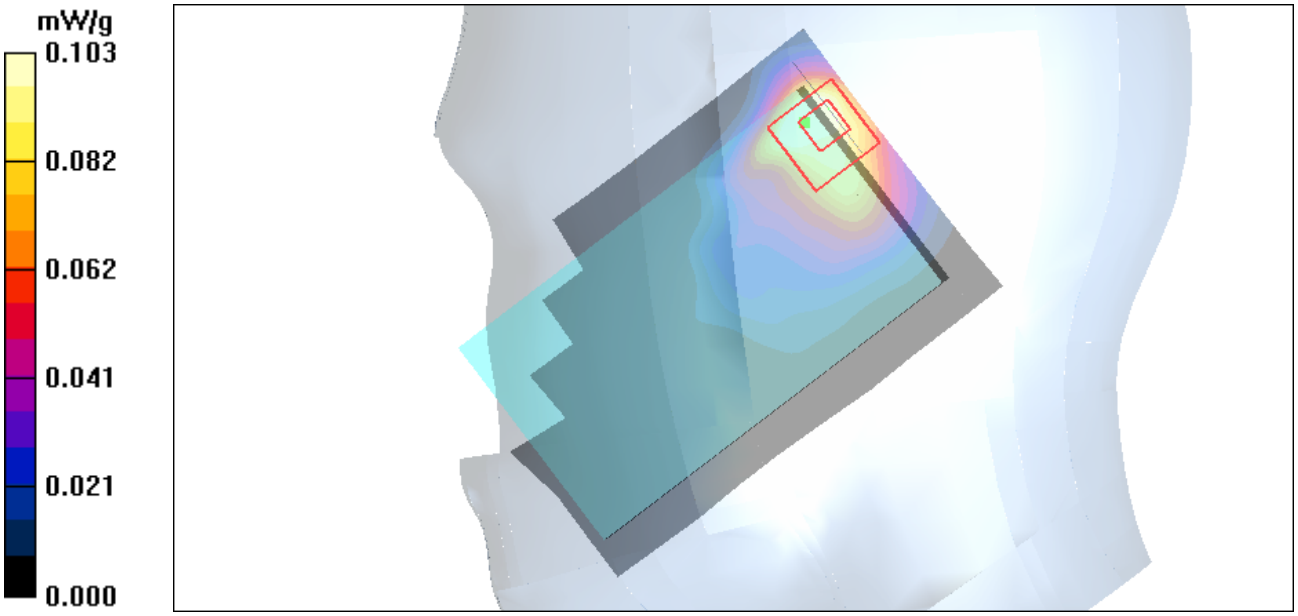


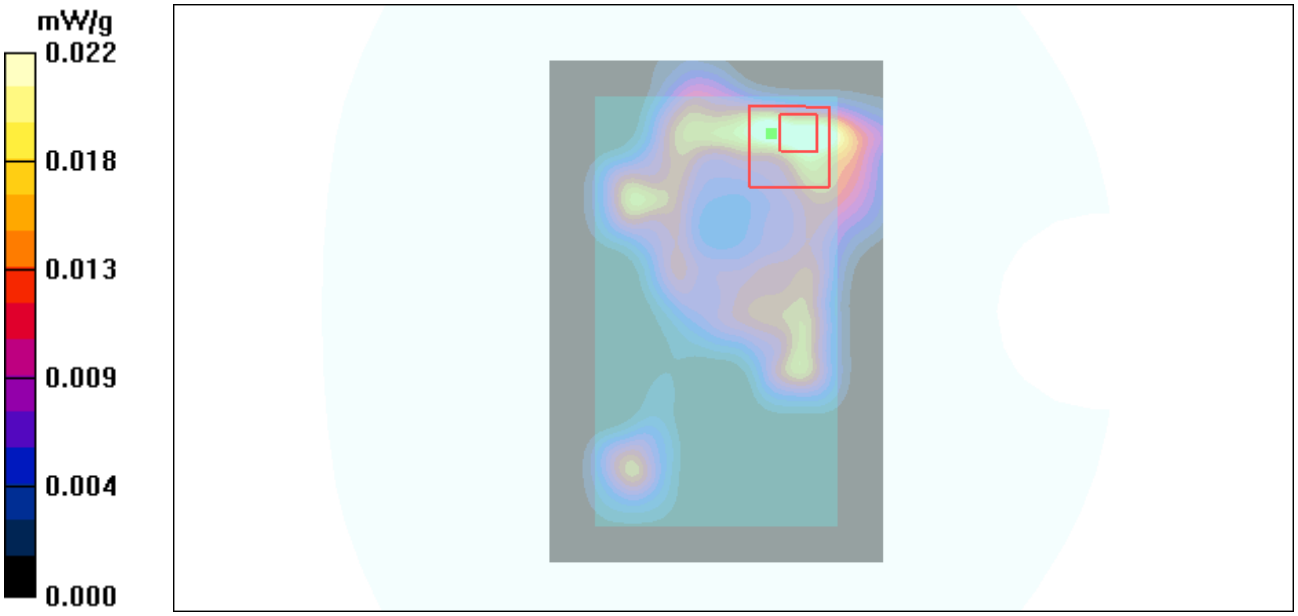
Figure 109 Right Hand Tilt 15° 802.11b Channel 11

802.11b Back Side High (Battery 1)

Date/Time: 4/20/2012 6:05:31 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.92 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.19, 7.19, 7.19); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.026 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.99 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.040 W/kg
SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.007 mW/g
Maximum value of SAR (measured) = 0.022 mW/g



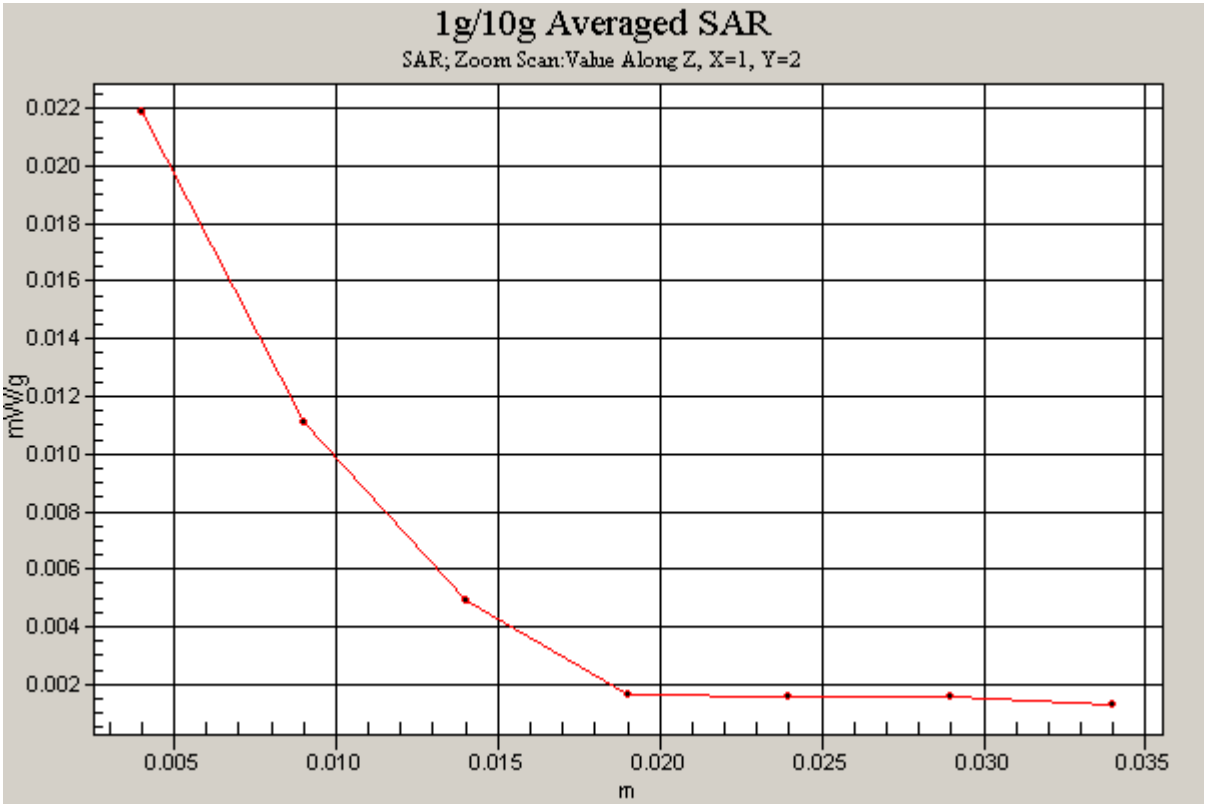


Figure 110 Body, Back Side, 802.11b Channel 11

802.11b Front Side High (Battery 1)

Date/Time: 4/20/2012 6:23:10 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.92 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.19, 7.19, 7.19); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Front Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.008 mW/g

Front Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.27 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.014 W/kg
SAR(1 g) = 0.003 mW/g; SAR(10 g) = 0.001 mW/g
Maximum value of SAR (measured) = 0.005 mW/g

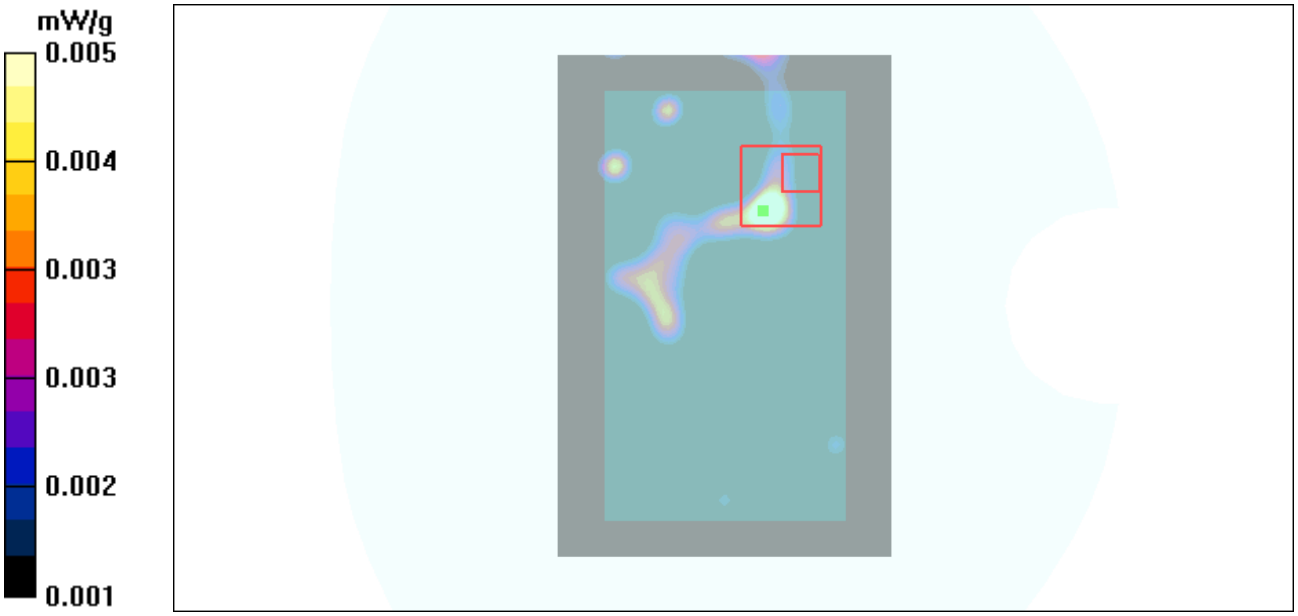


Figure 111 Body, Front Side, 802.11b Channel 11

802.11b Left Edge High (Battery 1)

Date/Time: 4/20/2012 7:07:54 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.92 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.19, 7.19, 7.19); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Left Edge High/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.017 mW/g

Left Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.01 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.018 W/kg
SAR(1 g) = 0.007 mW/g; SAR(10 g) = 0.002 mW/g
Maximum value of SAR (measured) = 0.009 mW/g

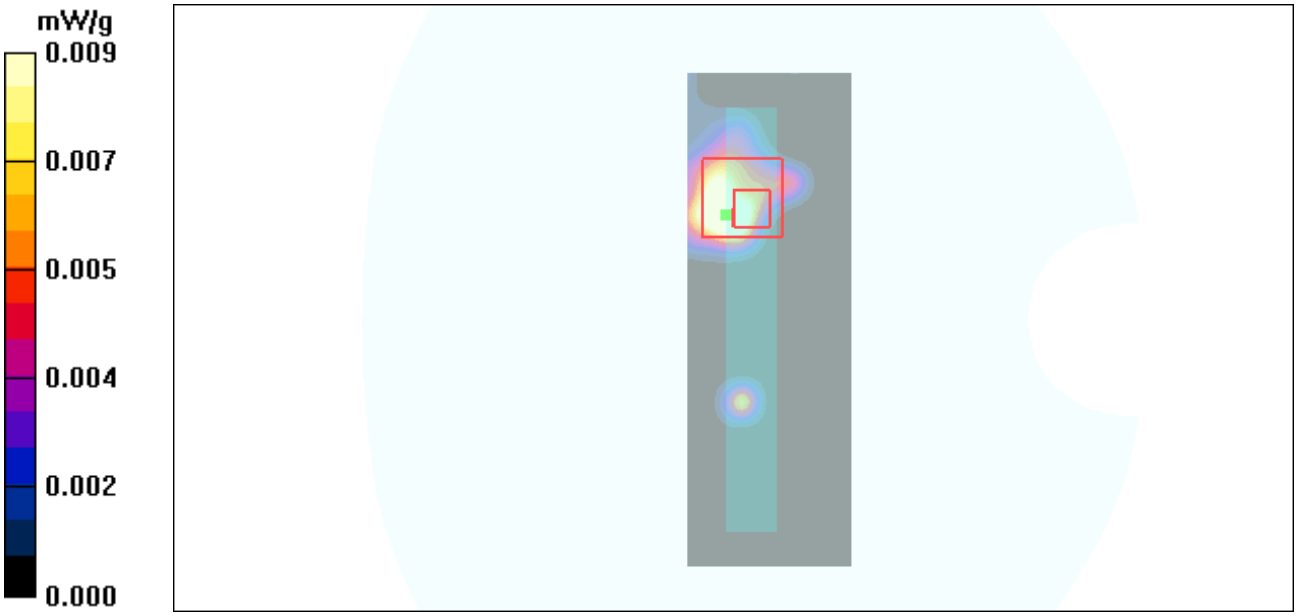


Figure 112 Body, Left Edge, 802.11b Channel 11

802.11b Top Edge High (Battery 1)

Date/Time: 4/20/2012 7:21:08 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.92 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY4 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.19, 7.19, 7.19); Calibrated: 10/3/2011
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Top Edge Low/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.019 mW/g

Top Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.44 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.018 W/kg
SAR(1 g) = 0.011 mW/g; SAR(10 g) = 0.005 mW/g
Maximum value of SAR (measured) = 0.012 mW/g

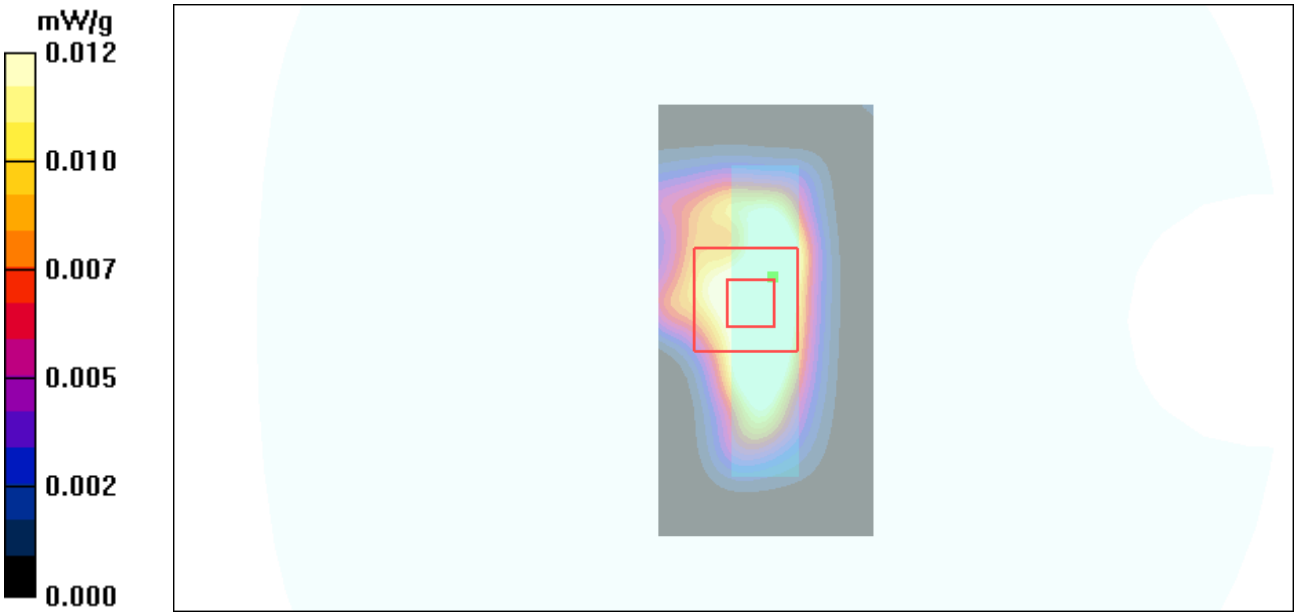


Figure 113 Body, Top Edge, 802.11b Channel 11

ANNEX D: Probe Calibration Certificate

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S C S **Schweizerischer Kalibrierdienst**
Service suisse d'étalonnage
Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client TMC Shanghai (Auden)

Certificate No: EX3-3816_Oct11

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3816

Calibration procedure(s): QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4
Calibration procedure for dosimetric E-field probes

Calibration date: October 3, 2011

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	31-Mar-11 (No. 217-01372)	Apr-12
Power sensor E4412A	MY41498087	31-Mar-11 (No. 217-01372)	Apr-12
Reference 3 dB Attenuator	SN: S5054 (3c)	29-Mar-11 (No. 217-01369)	Apr-12
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Reference 30 dB Attenuator	SN: S5129 (30b)	29-Mar-11 (No. 217-01370)	Apr-12
Reference Probe ES3DV2	SN: 3013	29-Dec-10 (No. ES3-3013_Dec10)	Dec-11
DAE4	SN: 654	3-May-11 (No. DAE4-654_May11)	May-12
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 3, 2011