



OET 65

TEST REPORT

Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510
Model	HUAWEI G510-0200, G510-0200
FCC ID	QISG510-0200
Client	Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

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GENERAL SUMMARY

Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510	Model	HUAWEI G510-0200, G510-0200
Report No.	RHA1211-0105SAR01	FCC ID	QISG510-0200
Client	Huawei Technologies Co., Ltd.		
Manufacturer	Huawei Technologies Co., Ltd.		
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. RSS-102 Issue 4 March 2010: Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) KDB 648474 D01 SAR Handsets Multi Xmitter and Ant, v01r05: SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas. KDB 941225 D03 Test Reduction GSM_GPRS_EDGE v01 Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE KDB 941225 D06 Hot Spot SAR v01 SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities KDB 447498 D01 Mobile Portable RF Exposure V04 Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies		
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: December 5th, 2012		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中
Director

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1. General Information

1.1. Notes of the Test Report

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

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

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

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

1.2. Testing Laboratory

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1.3. Applicant Information

Company: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian,
Longgang District, Shenzhen, 518129, P.R.C
City: Shenzhen
Postal Code: 518129
Country: P.R. China

1.4. Manufacturer Information

Company: Huawei Technologies Co., Ltd.
Address: Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian,
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City: Shenzhen
Postal Code: 518129
Country: P.R.China

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1.5. Information of EUT

General Information

Device Type:	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
State of Sample:	Prototype Unit		
Product Name:	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510		
IMEI:	868496010002088		
Hardware Version:	HD2U8951M		
Software Version:	G510-0200V100R001C00B156SP01		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900; (tested) WiFi (802.11b/g/n HT20); (tested) GSM 900/GSM 1800; (untested) UMTS Band I/ UMTS Band VIII; (untested) Bluetooth; (untested)		
Test Modulation:	(GSM)GMSK		
Device Class:	B		
GPRS Multislot Class(10):	Max Number of Timeslots in Uplink	2	
	Max Number of Timeslots in Downlink	4	
	Max Total Timeslot	5	
EGPRS Multislot Class(10):	Max Number of Timeslots in Uplink	2	
	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
Power Class:	GSM 850: 4		
	GSM 1900: 1		
Power Level:	GSM 850: tested with power level 5		
	GSM 1900: tested with power level 0		
Test Channel: (Low - Middle - High)	128 - 190 - 251	(GSM 850)	(tested)
	512 - 661 - 810	(GSM 1900)	(tested)
	1 - 6 - 11	(802.11b)	(tested)

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Auxiliary Equipment Details

Name	Model	Manufacturer	S/N
Battery 1	HB4W1H	Huawei Technologies Co., Ltd.	MPCC9029191Y0510
Battery 2	HB4W1H	Huawei Technologies Co., Ltd.	MAIC903XXXX00055

Equipment Under Test (EUT) is a HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510. The EUT has a GSM antenna that is used for Tx/Rx, the other is BT/WIFI antenna that can be used for Tx/Rx. It has Personal Wireless Routers (hot spots) function, WIFI calling and Proximity Sensor function.

The detail about EUT and Lithium Battery is in chapter 1.5 in this report. SAR is tested for GSM 850, GSM 1900 and WiFi.

HUAWEI G510-0200, G510-0200 is a variant model of HUAWEI G510-0100, G510-0100. SAR values duplicated from HUAWEI G510-0100, G510-0100 for HUAWEI G510-0200, G510-0200. The report number of HUAWEI G510-0100, G510-0100 is RHA1211-0104SAR01, and HUAWEI G510-0200, G510-0200 were tested in the worst-case position of HUAWEI G510-0100, G510-0100 in each tested mode. The detailed differences between HUAWEI G510-0200, G510-0200 and HUAWEI G510-0100, G510-0100 please refer to the ANNEX J.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

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1.6. The Maximum SAR_{1g} Values

Head SAR Configuration

Mode	Channel	Position	SAR _{1g} (W/kg)
GSM 850	Middle/190	Left, Cheek	0.237
GSM 1900	Middle/661	Right, Cheek	0.288
WiFi(802.11b)	High/11	Left, Tilt	0.167

Body Worn Configuration

Mode	Channel	Position	Separation distance	SAR _{1g} (W/kg)
2Txslots GPRS 850	Middle/190	Back Side	10mm	0.504
2Txslots GPRS 1900	Middle/661	Back Side	10mm	0.667
WiFi(802.11b)	High/11	Back Side	10mm	0.149

Extrapolated SAR Values of the highest measured SAR

Mode	Test Position	Channel	Measurement Result		Tune-up procedures MAX Average Power(dBm)	1g Average Limit 1.6 W/kg
			Average Conducted Power(dBm)	1g Average (W/kg)		Extrapolated Result (W/kg)
GSM850	Left, Cheek	Middle/190	23.61	0.237	24.67	0.303
2Txslots GPRS850	Back Side	Middle/190	24.15	0.504	25.48	0.685
GSM1900	Right, Cheek	Middle/661	20.53	0.288	21.97	0.401
2Txslots GPRS1900	Back Side	Middle/661	21.04	0.667	22.48	0.929

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1.7. Maximum Conducted Power of each tested Mode

Mode		Max Burst Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	32.24	23.21
	GPRS, 2Txslots	29.77	23.75
	EGPRS, 2Txslots	29.77	23.75
GSM 1900	GSM	29.43	20.4
	GPRS, 2Txslots	26.91	20.89
	EGPRS, 2Txslots	26.9	20.88

Mode	Maximum Conducted Power (dBm)
WiFi(802.11b)	14.55

Note: The detail Power refers to Table 9 (Power Measurement Results).

1.8. Test Date

The test performed from December 1, 2012 to December 4, 2012.

2. SAR Measurements System Configuration

2.1. SAR Measurement Set-up

The DASY5 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 DASY5 measurement server.
- The DASY5 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
- DASY5 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.

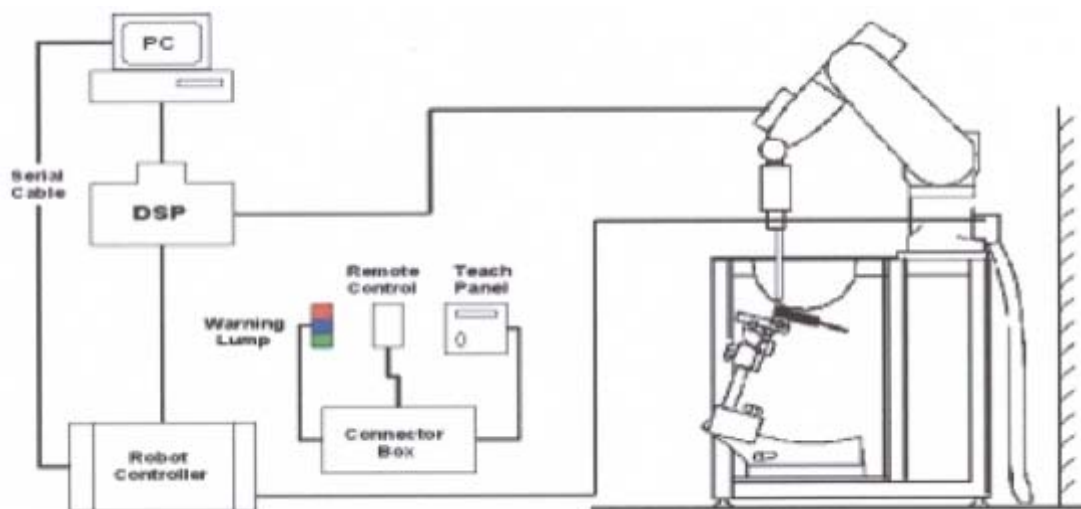


Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

2.2.1. ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors 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 4 GHz Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 μ W/g to > 100 mW/g Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones



Figure 2.ES3DV3 E-field Probe



Figure 3. ES3DV3 E-field probe

2.2.2. E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than $\pm 0.25\text{dB}$. 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 below 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.

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

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m^3).

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

The DASY device holder is designed to cope with the different 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 influence 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)
Available	Special



Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The DASY5 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. $\pm 5\%$.
- The “surface check” measurement tests the optical surface detection system of the DASY5 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 $\pm 0.1\text{mm}$). 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 $\pm 30^\circ$.)
- 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

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spacing of 15mm x 15mm(<2GHz)/ 12mm x 12mm(2GHz ~ 3GHz) 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(<2GHz)/ 7x7x7(2GHz ~ 3GHz) 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 DASY5 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 8mm resolution amounting to 175 measurement points, For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 5x5x7(<2GHz)/ 7x7x7(2GHz ~ 3GHz) 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 DASY5 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 “.DAE4”. 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 DASY5 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.

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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/cm³

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

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

with **P_{pwe}** = equivalent power density of a plane wave in mW/cm²

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.	

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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 $\epsilon=41.5$ $\sigma=0.9$

MIXTURE%	FREQUENCY(Brain) 1900MHz
Water	55.242
Glycol monobutyl	44.452
Salt	0.306
Dielectric Parameters Target Value	f=1900MHz $\epsilon=40.0$ $\sigma=1.40$

MIXTURE%	FREQUENCY(Brain) 2450MHz
Water	62.7
Glycol	36.8
Salt	0.5
Dielectric Parameters Target Value	f=2450MHz $\epsilon=39.20$ $\sigma=1.80$

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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 $\epsilon=55.2$ $\sigma=0.97$

MIXTURE%	FREQUENCY (Body) 1900MHz
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz $\epsilon=53.3$ $\sigma=1.52$

MIXTURE%	FREQUENCY(Body) 2450MHz
Water	73.2
Glycol	26.7
Salt	0.1
Dielectric Parameters Target Value	f=2450MHz $\epsilon=52.70$ $\sigma=1.95$

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4.2. Tissue-equivalent Liquid Properties

Table 4: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ϵ_r	$\sigma(\text{s/m})$	
835MHz (head)	Target value ± 5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	22.0
	Measurement value 2012-12-04	41.46	0.934	21.5
1900MHz (head)	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	22.0
	Measurement value 2012-12-04	39.98	1.41	21.5
2450MHz (head)	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	22.0
	Measurement value 2012-12-04	38.53	1.86	21.5

Table 5: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ϵ_r	$\sigma(\text{s/m})$	
835MHz (body)	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	22.0
	Measurement value 2012-12-01	55.1	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 2012-12-04	52.15	1.523	21.5
2450MHz (body)	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	22.0
	Measurement value 2012-12-01	51.69	1.903	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 ($\pm 10\%$).

System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.

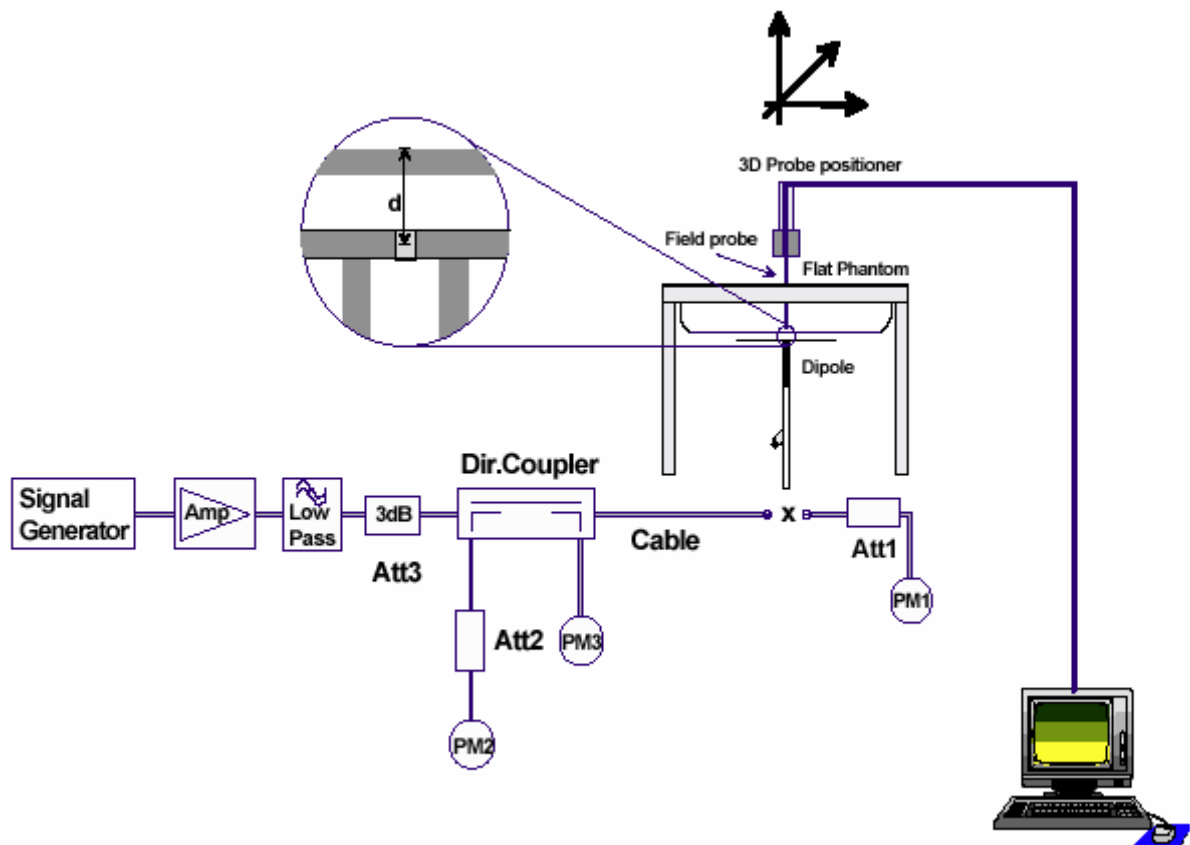


Figure 6 System Check Set-up

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Frequency	Test Date	Dielectric Parameters		Temp (°C)	250mW Measured SAR _{1g}	1W Normalized SAR _{1g}	1W Target SAR _{1g} (±10% Deviation)
		ε _r	σ(s/m)				
835MHz	2012-12-01	55.1	0.986	21.5	2.47	9.88	9.46 (8.51~10.41)
1900MHz	2012-12-04	52.15	1.523	21.5	10.40	41.60	41.70 (37.53~45.87)
2450MHz	2012-12-01	51.69	1.903	21.5	14.10	56.40	51.70 (46.53~56.87)

Note: 1. The graph results see ANNEX B.
2. Target Values used 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. 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 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5; the EGPRS class is 10 for this EUT, it has at most 2 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:

Output power of reductions:

GSM 850

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.2

EGPRS(8PSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	0

EGPRS(GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.2

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GSM 1900

GPRS (GMSK) :

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.5

EGPRS(8PSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	0

EGPRS(GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.5

6.3.2. WIFI Test Configuration

For WLAN SAR testing, WLAN engineering testing software installed on the DUT 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/n SAR tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. Testing at higher data rates is not required when the maximum average output power is less than 0.25dB higher than those measured at the lowest data rate.

802.11b/g/n operating modes are tested independently according to the service requirements in each frequency band. 802.11b/g/n modes are tested on the maximum average output channel;

SAR is not required for 802.11g/n channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels.

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7. Test Results

7.1. Conducted Power Results

Table 8: Conducted Power Measurement Results(initial model: HUAWEI G510-0100, G510-0100)

GSM 850		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM		32.64	32.64	32.58	-9.03dB	23.61	23.61	23.55
GPRS (GMSK)	1Txslot	32.63	32.65	32.57	-9.03dB	23.6	23.62	23.54
	2Txslots	30.16	30.17	30.1	-6.02dB	24.14	24.15	24.08
EGPRS (GMSK)	1Txslot	32.62	32.62	32.55	-9.03dB	23.59	23.59	23.52
	2Txslots	30.14	30.15	30.09	-6.02dB	24.12	24.13	24.07
EGPRS (8PSK)	1Txslot	27.2	27.21	27.19	-9.03dB	18.17	18.18	18.16
	2Txslots	26.18	26.19	26.16	-6.02dB	20.16	20.17	20.14
GSM 1900		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.36	29.56	29.36	-9.03dB	20.33	20.53	20.33
GPRS (GMSK)	1Txslot	29.37	29.55	29.36	-9.03dB	20.34	20.52	20.33
	2Txslots	26.9	27.06	26.89	-6.02dB	20.88	21.04	20.87
EGPRS (GMSK)	1Txslot	29.34	29.54	29.36	-9.03dB	20.31	20.51	20.33
	2Txslots	26.87	27.04	26.89	-6.02dB	20.85	21.02	20.87
EGPRS (8PSK)	1Txslot	25.91	26.1	25.94	-9.03dB	16.88	17.07	16.91
	2Txslots	24.93	25.12	24.96	-6.02dB	18.91	19.1	18.94

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

2) Average power numbers

The maximum power numbers are marks in bold.

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Table 9: Conducted Power Measurement Results(variant model: HUAWEI G510-0200, G510-0200)

GSM 850		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM		32.23	32.24	32.21	-9.03dB	23.2	23.21	23.18
GPRS (GMSK)	1Txslot	32.22	32.23	32.19	-9.03dB	23.19	23.2	23.16
	2Txslots	29.77	29.76	29.71	-6.02dB	23.75	23.74	23.69
EGPRS (GMSK)	1Txslot	32.22	32.23	32.2	-9.03dB	23.19	23.2	23.17
	2Txslots	29.77	29.76	29.73	-6.02dB	23.75	23.74	23.71
EGPRS (8PSK)	1Txslot	26.82	26.83	26.84	-9.03dB	17.79	17.8	17.81
	2Txslots	25.8	25.82	25.83	-6.02dB	19.78	19.8	19.81
GSM 1900		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.25	29.43	29.23	-9.03dB	20.22	20.4	20.2
GPRS (GMSK)	1Txslot	29.26	29.43	29.23	-9.03dB	20.23	20.4	20.2
	2Txslots	26.77	26.91	26.71	-6.02dB	20.75	20.89	20.69
EGPRS (GMSK)	1Txslot	29.24	29.43	29.23	-9.03dB	20.21	20.4	20.2
	2Txslots	26.76	26.9	26.71	-6.02dB	20.74	20.88	20.69
EGPRS (8PSK)	1Txslot	25.83	25.99	25.81	-9.03dB	16.8	16.96	16.78
	2Txslots	24.84	24.99	24.81	-6.02dB	18.82	18.97	18.79

Note:

2) 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

2) Average power numbers

The maximum power numbers are marks in bold.

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7.2. SAR Test Results

7.2.1. GSM 850 (GPRS/EGPRS)

Table 10: SAR Values [GSM 850 (GPRS/EGPRS),initial model: HUAWEI G510-0100, G510-0100]

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	Middle/190	0.220	0.305	-0.013	Figure 13
Left hand, Tilt 15 Degree	Middle/190	0.115	0.157	-0.021	Figure 14
Right hand, Touch Cheek	Middle/190	0.163	0.223	-0.012	Figure 15
Right hand, Tilt 15 Degree	Middle/190	0.117	0.160	-0.039	Figure 16
Worst Case Position of Head with Battery 2					
Left hand, Touch Cheek	Middle/190	0.188	0.260	0.094	Figure 17
Test position of Body with Battery 1 (Distance 10mm)					
Back Side (GSM/1Txslot)	Middle/190	0.452	0.597	-0.115	Figure 18
Back Side (2Txslots)	Middle/190	0.486	0.641	0.043	Figure 19
Front Side(2Txslots)	Middle/190	0.336	0.450	-0.035	Figure 20
Left Edge(2Txslots)	Middle/190	0.168	0.242	-0.025	Figure 21
Right Edge(2Txslots)	Middle/190	0.118	0.171	-0.019	Figure 22
Top Edge(2Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2Txslots)	Middle/190	0.065	0.131	0.161	Figure 23
Worst Case Position of Body with EGPRS (Battery 1,GMSK, Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.445	0.584	-0.160	Figure 24
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)					
Back Side (GSM)	Middle/190	0.320	0.423	-0.052	Figure 25
Worst Case Position of Body with Battery 2 (Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.497	0.662	-0.135	Figure 26

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

- The SAR test shall be performed at the middle frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.
- WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX H). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
- 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.

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Table 11: SAR Values [GSM 850 (GPRS/EGPRS),variant model: HUAWEI G510-0200, G510-0200]

Limit of SAR		10 g Average	1g 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		
Worst case position of Head of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 and Battery 1					
Left Hand, Touch Cheek	Middle/190	0.170	0.237	-0.113	Figure 27
Worst case position of Body of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 (Battery 2,Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.378	0.504	0.025	Figure 28
Note: 1.The value with blue color is the maximum SAR Value of each test band. 2. HUAWEI G510-0200, G510-0200 only tests in the worst case position of HUAWEI G510-0100, G510-0100.					

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7.2.2. GSM 1900 (GPRS/EGPRS)

Table 12: SAR Values [GSM 1900(GPRS/EGPRS),initial model: HUAWEI G510-0100, G510-0100]

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift	
		10 g Average	1 g Average	Drift (dB)	
Test Position of Head with Battery 1					
Left hand, Touch Cheek	Middle/661	0.157	0.263	-0.098	Figure 29
Left hand, Tilt 15 Degree	Middle/661	0.075	0.136	0.037	Figure 30
Right hand, Touch Cheek	Middle/661	0.169	0.279	0.051	Figure 31
Right hand, Tilt 15 Degree	Middle/661	0.072	0.128	-0.081	Figure 32
Worst Case Position of Head with Battery 2					
Right hand, Touch Cheek	Middle/661	0.172	0.283	0.052	Figure 33
Test position of Body with Battery 1 (Distance 10mm)					
Back Side (GSM/1Txslot)	Middle/661	0.394	0.704	-0.019	Figure 34
Back Side (2Txslots)	Middle/661	0.441	0.790	0.039	Figure 35
Front Side(2Txslots)	Middle/661	0.322	0.555	0.023	Figure 36
Left Edge(2Txslots)	Middle/661	0.079	0.130	-0.034	Figure 37
Right Edge(2Txslots)	Middle/661	0.079	0.133	0.124	Figure 38
Top Edge(2Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2Txslots)	Middle/661	0.307	0.556	0.076	Figure 39
Worst Case Position of Body with EGPRS (Battery 1,GMSK, Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.423	0.738	0.015	Figure 40
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)					
Back Side (GSM)	Middle/661	0.415	0.743	-0.095	Figure 41
Worst Case Position of Body with Battery 2 (Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.442	0.784	-0.042	Figure 42

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

- The SAR test shall be performed at the middle frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.
- WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX H). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
- 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.

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Table 13: SAR Values [GSM 1900 (GPRS/EGPRS),variant model: HUAWEI G510-0200, G510-0200]

Limit of SAR		10 g Average	1g 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		
Worst case position of Head of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 and Battery 2					
Right hand, Touch Cheek	Middle/661	0.177	0.288	-0.112	Figure 43
Worst case position of Body of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 (Battery 1,Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.381	0.667	-0.011	Figure 44
Note: 1.The value with blue color is the maximum SAR Value of each test band. 2. HUAWEI G510-0200, G510-0200 only tests in the worst case position of HUAWEI G510-0100, G510-0100.					

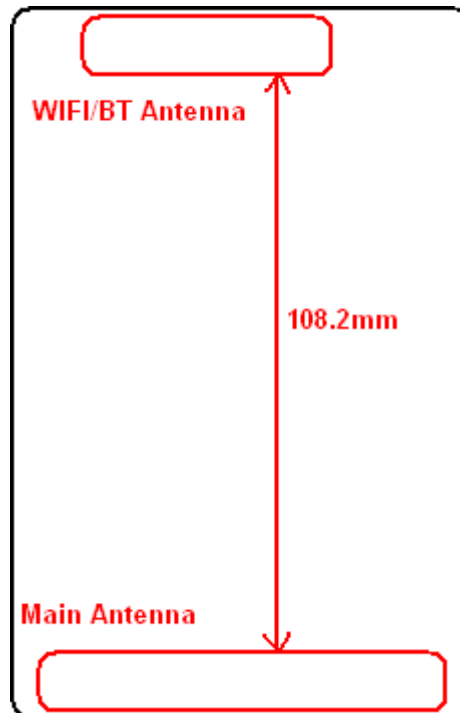
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7.2.3. Bluetooth/WiFi Function

The distance between BT/WIFI antenna and GSM antenna is $>5\text{cm}$. 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
Average Conducted Output Power(dBm)	6.21	6.35	6.12

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	14.19
		2	14.18
		5.5	14.17
		11	14.16
	6	1	14.34
		2	14.34
		5.5	14.32
		11	14.31

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	11	1	14.53
		2	14.55
		5.5	14.52
		11	14.53
11g	1	6	11.74
		9	11.72
		12	11.71
		18	11.7
		24	11.72
		36	11.7
		48	11.7
		54	11.68
	6	6	11.96
		9	11.97
		12	11.94
		18	11.93
		24	11.91
		36	11.9
		48	11.92
		54	11.91
	11	6	12.55
		9	12.57
		12	12.53
		18	12.55
		24	12.53
		36	12.53
		48	12.51
		54	12.52
11n HT20	1	6.5	8.27
		13	8.25
		19.5	8.24
		26	8.24
		39	8.26
		52	8.25

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		58.5	8.23
		65	8.22
	6	6.5	8.32
		13	8.3
		19.5	8.29
		26	8.28
		39	8.28
		52	8.26
		58.5	8.24
		65	8.23
	11	6.5	9.01
		13	9.02
		19.5	9.02
		26	9.06
		39	9.03
		52	9.04
		58.5	9.02
		65	9.02

Note: 1. KDB 248227-SAR is not required for 802.11g/n 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 antenna we can draw the conclusion that:

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

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

Stand-alone SAR are required for WIFI, because WIFI antenna is >5cm from other antennas and the output power of WIFI transmitter is $> 2P_{Ref} = 13.8\text{dBm}$

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Table 14: SAR Values (802.11b, initial model:HUAWEI G510-0100, G510-0100)

Limit of SAR		10 g Average	1g Average	Power Drift (dB)	Graph Results
		2.0 W/kg	1.6 W/kg	± 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	0.055	0.121	0.020	Figure 45
Left hand, Tilt 15 Degree	High/11	0.069	0.160	0.009	Figure 46
Right hand, Touch cheek	High/11	0.046	0.098	-0.002	Figure 47
Right hand, Tilt 15 Degree	High/11	0.062	0.136	0.066	Figure 48
Worst Case Position of Head with Battery 2					
Left hand, Tilt 15 Degree	High/11	0.068	0.159	0.185	Figure 49
Test position of Body with Battery 1 (Distance 10mm)					
Back Side	High/11	0.071	0.143	0.096	Figure 50
Front Side	High/11	0.020	0.038	0.078	Figure 51
Left Edge	High/11	0.004	0.007	0.095	Figure 52
Right Edge	High/11	0.007	0.012	0.099	Figure 53
Top Edge	High/11	0.044	0.095	0.175	Figure 54
Bottom Edge	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)					
Back Side	High/11	0.075	0.152	0.011	Figure 55
Worst Case Position of Body with Battery 2 (Distance 10mm)					
Back Side	High/11	0.070	0.140	0.042	Figure 56
Note: 1. The value with blue color is the maximum SAR Value of each test band. 2. SAR test at the channel with the maximum averaged output power channel. 3. WLAN antenna is located at Top edge; antenna-to- Bottom edge distance is more than 2.5 cm (see ANNEX H). 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 channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.					

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Table 15: SAR Values (802.11b, variant model:HUAWEI G510-0200, G510-0200)

Limit of SAR		10 g Average	1g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift	
		10 g Average	1 g Average	(dB)	
Worst case position of Head of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 and Battery 1					
Left hand, Tilt 15 Degree	High/11	0.072	0.167	0.146	Figure 57
Worst case position of Body of HUAWEI G510-0100, G510-0100 with HUAWEI G510-0200, G510-0200 (Battery 1,Distance 10mm)					
Back Side	High/11	0.075	0.149	0.011	Figure 58
Note: 1.The value with blue color is the maximum SAR Value of each test band. 2. HUAWEI G510-0200, G510-0200 only tests in the worst case position of HUAWEI G510-0100, G510-0100.					

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Simultaneous SAR

About WIFI and GSM Antenna,

SAR _{1g} (W/kg) Test Position	GSM850	GSM1900	WIFI (802.11b)	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.237	0.263	0.121	0.358
Left hand, Tilt 15 Degree	0.157	0.136	0.167	0.324
Right hand, Touch cheek	0.223	0.288	0.098	0.386
Right hand, Tilt 15 Degree	0.160	0.128	0.136	0.296
Body, Back Side (10mm)	0.504	0.667	0.149	0.816
Body, Front Side (10mm)	0.450	0.555	0.038	0.593
Body, Left Edge (10mm)	0.242	0.130	0.007	0.249
Body, Right Edge (10mm)	0.171	0.133	0.012	0.183
Body, Top Edge (10mm)	N/A	N/A	0.095	0.095
Body, Bottom Edge (10mm)	0.131	0.556	N/A	0.556
Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value. 2. MAX. ΣSAR_{1g} =Unlicensed SAR_{MAX} +Licensed SAR_{MAX} 3. The gray values are test data of the initial model.				

WIFI antenna is >5cm from GSM Antenna. (GSM Antenna SAR_{MAX})0.667 +(WIFI Antenna SAR_{MAX}) 0.149 =0.816 <1.6, So the Simultaneous SAR are not required for WIFI and GSM antenna.

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About BT and GSM Antenna,

SAR _{1g} (W/kg) Test Position	GSM850	GSM1900	BT	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.237	0.263	0	0.237
Left hand, Tilt 15 Degree	0.157	0.136	0	0.157
Right hand, Touch cheek	0.223	0.288	0	0.288
Right hand, Tilt 15 Degree	0.160	0.128	0	0.160
Body, Back Side (10mm)	0.504	0.667	0	0.667
Body, Front Side (10mm)	0.450	0.555	0	0.555
Body, Left Edge (10mm)	0.242	0.130	0	0.242
Body, Right Edge (10mm)	0.171	0.133	0	0.171
Body, Top Edge (10mm)	N/A	N/A	0	0
Body, Bottom Edge (10mm)	0.131	0.556	0	0.556
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 requirements. 4. The gray values are test data of the initial model.				

BT antenna is >5cm from GSM Antenna. (GSM Antenna SAR_{MAX})0.667 +(BT Antenna SAR_{MAX})0 =0.667 <1.6, So the Simultaneous SAR are not required for BT and GSM antenna.

About BT and WIFI Antenna, BT antenna is < 2.5cm from WIFI Antenna. (WIFI Antenna SAR_{MAX})0.167 +(BT Antenna SAR_{MAX})0 =0.167 <1.6, So the Simultaneous SAR are not required for BT and WIFI antenna.

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8. 700MHz to 3GHz 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	∞

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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		$u_c' = \sqrt{\sum_{i=1}^{24} c_i^2 u_i^2}$					11.50	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N	k=2		23.00	

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9. Main Test Instruments

Table 16: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 11, 2012	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 24, 2012	One year
05	Power sensor	E9327A	US40441622	September 23, 2012	One year
06	Signal Generator	HP 8341B	2730A00804	September 11, 2012	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	ES3DV3	3189	June 22, 2012	One year
12	DAE	DAE4	1317	January 23, 2012	One year
13	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	Two years
14	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	Two years
15	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	Two years
16	Temperature Probe	JM222	AA1009129	March 15, 2012	One year
17	Hygrothermograph	WS-1	64591	September 27, 2012	One year

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

ANNEX A: Test Layout



Picture 1: Specific Absorption Rate Test Layout

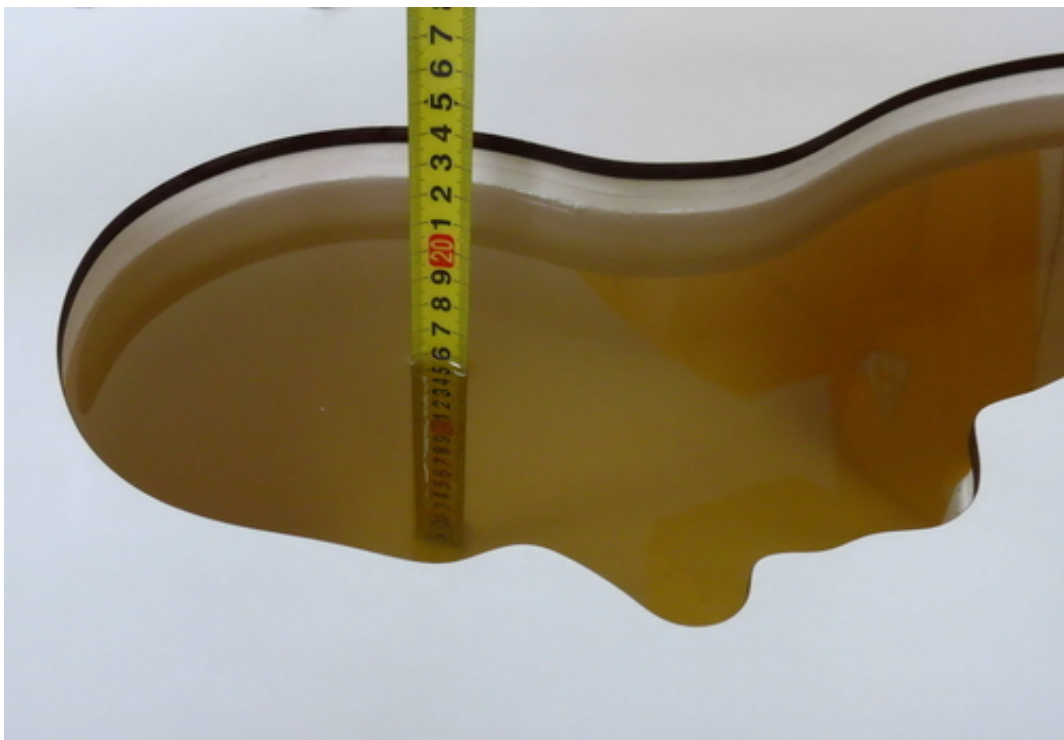
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Picture 2: Liquid depth in the flat Phantom (835MHz, 15.4cm depth)

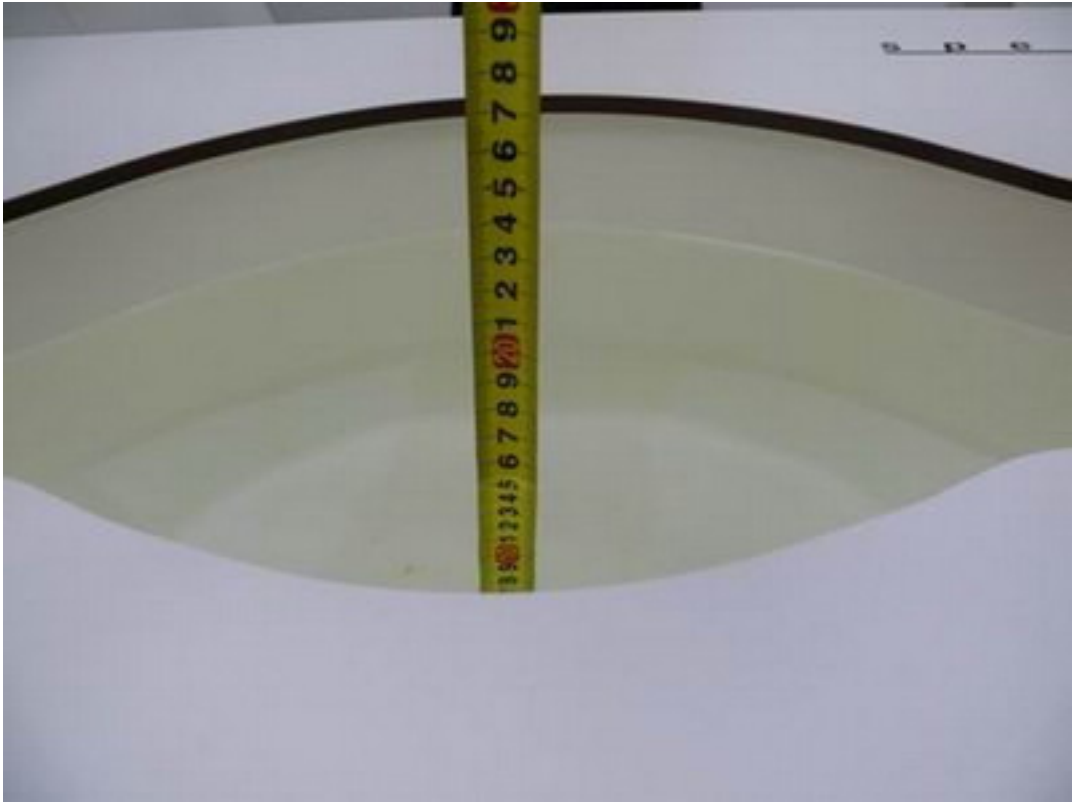


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)

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

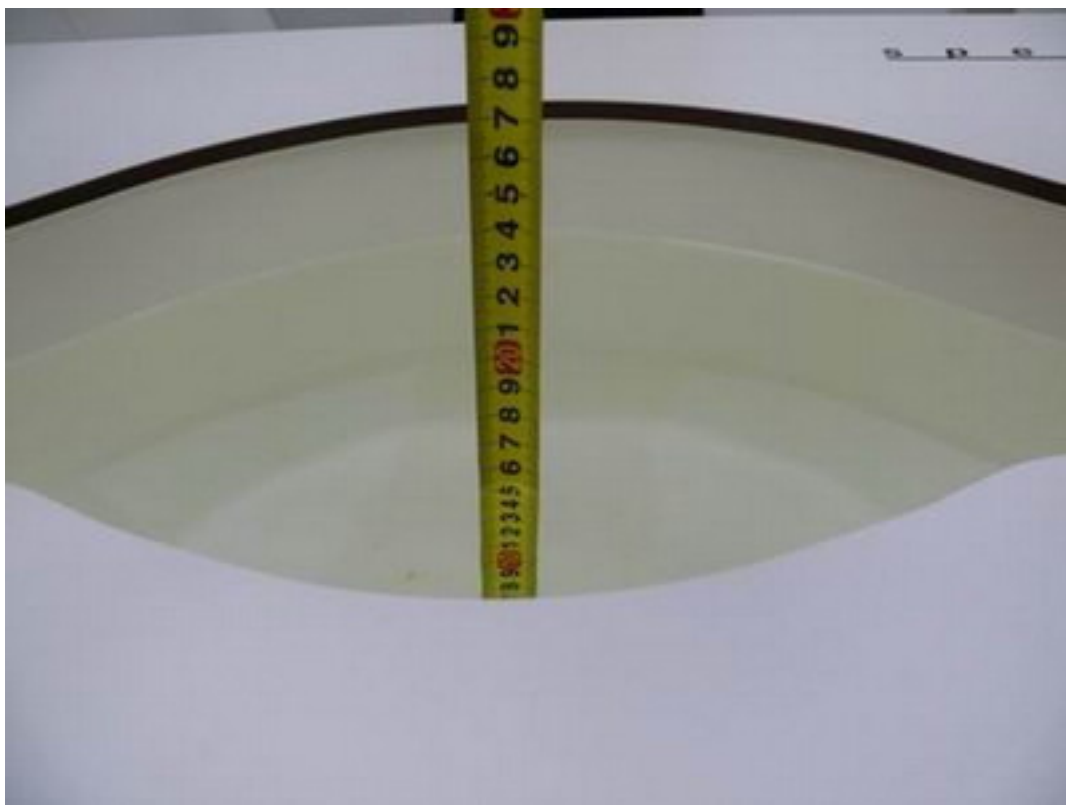


Picture 5: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)

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



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

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

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

Date/Time: 12/4/2012 9:40:55 AM

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.934 \text{ mho/m}$; $\epsilon_r = 41.46$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 2.65 mW/g

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

Reference Value = 55.1 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 3.64 W/kg

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

Maximum value of SAR (measured) = 2.64 mW/g

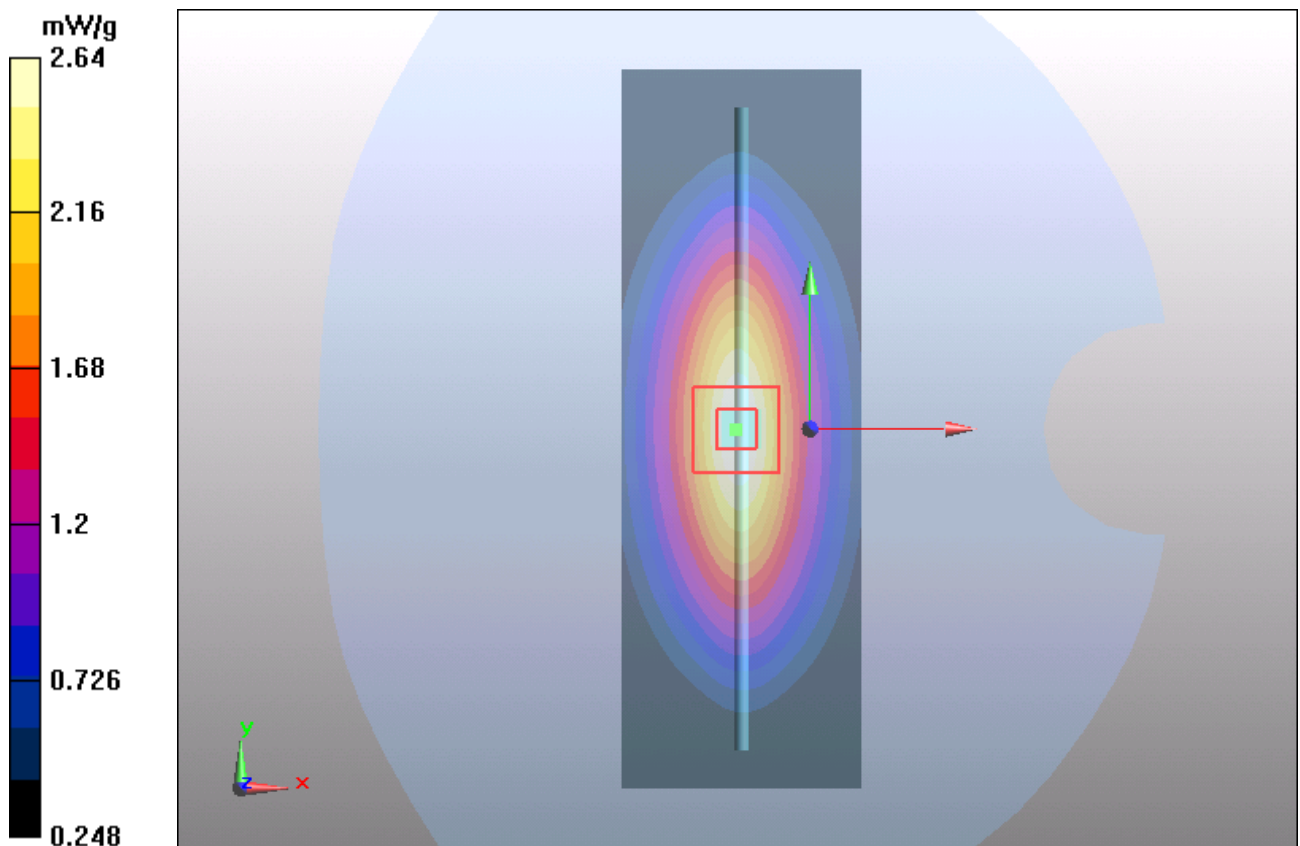


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time: 12/1/2012 9:17:30 AM

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.986 \text{ mho/m}$; $\epsilon_r = 55.1$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3°C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

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

Reference Value = 53.5 V/m ; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 3.63 W/kg

SAR(1 g) = 2.47 mW/g ; SAR(10 g) = 1.63 mW/g

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

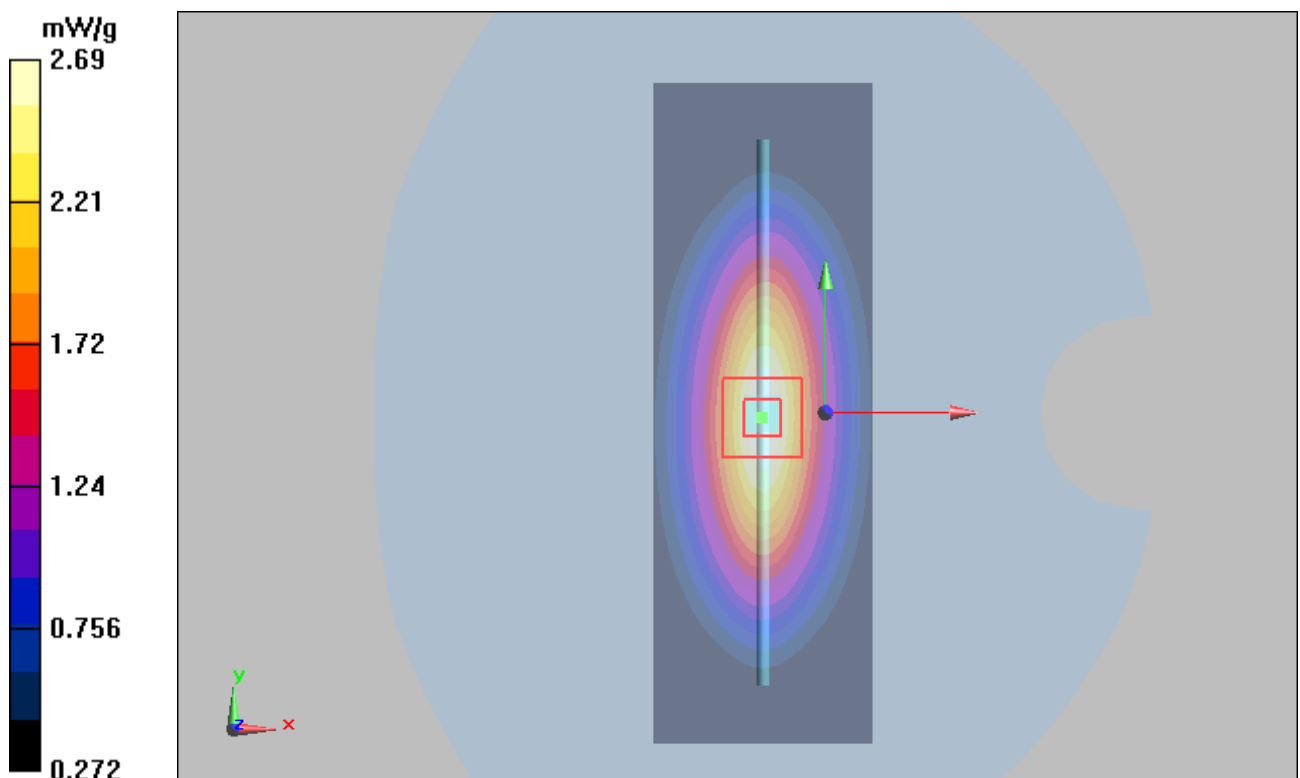


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 12/4/2012 1:21:23 PM

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.41$ mho/m; $\epsilon_r = 39.98$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 12.6 mW/g

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

Reference Value = 88.8 V/m; Power Drift = 0.107 dB

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.33 mW/g

Maximum value of SAR (measured) = 11.5 mW/g

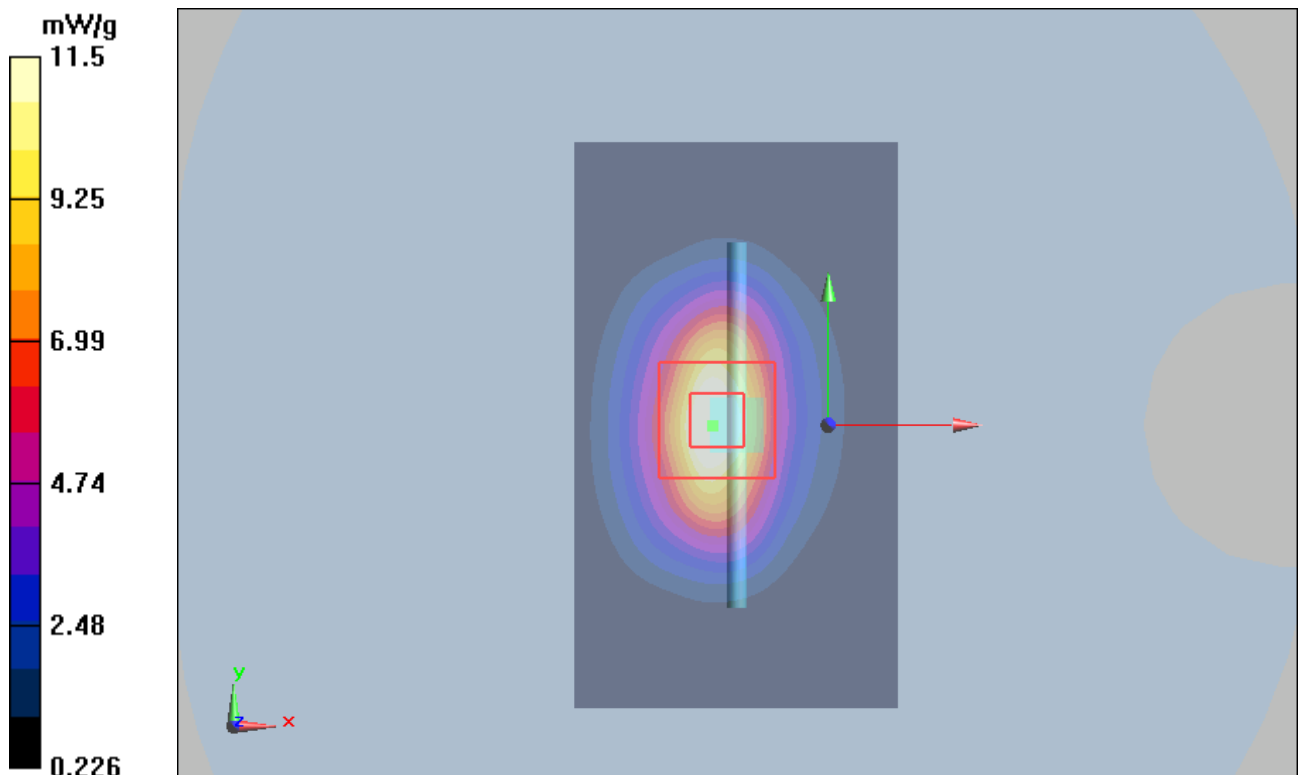


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 12/4/2012 4:21:18 PM

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.523$ mho/m; $\epsilon_r = 52.15$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

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

Reference Value = 87.8 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.49 mW/g

Maximum value of SAR (measured) = 11.6 mW/g

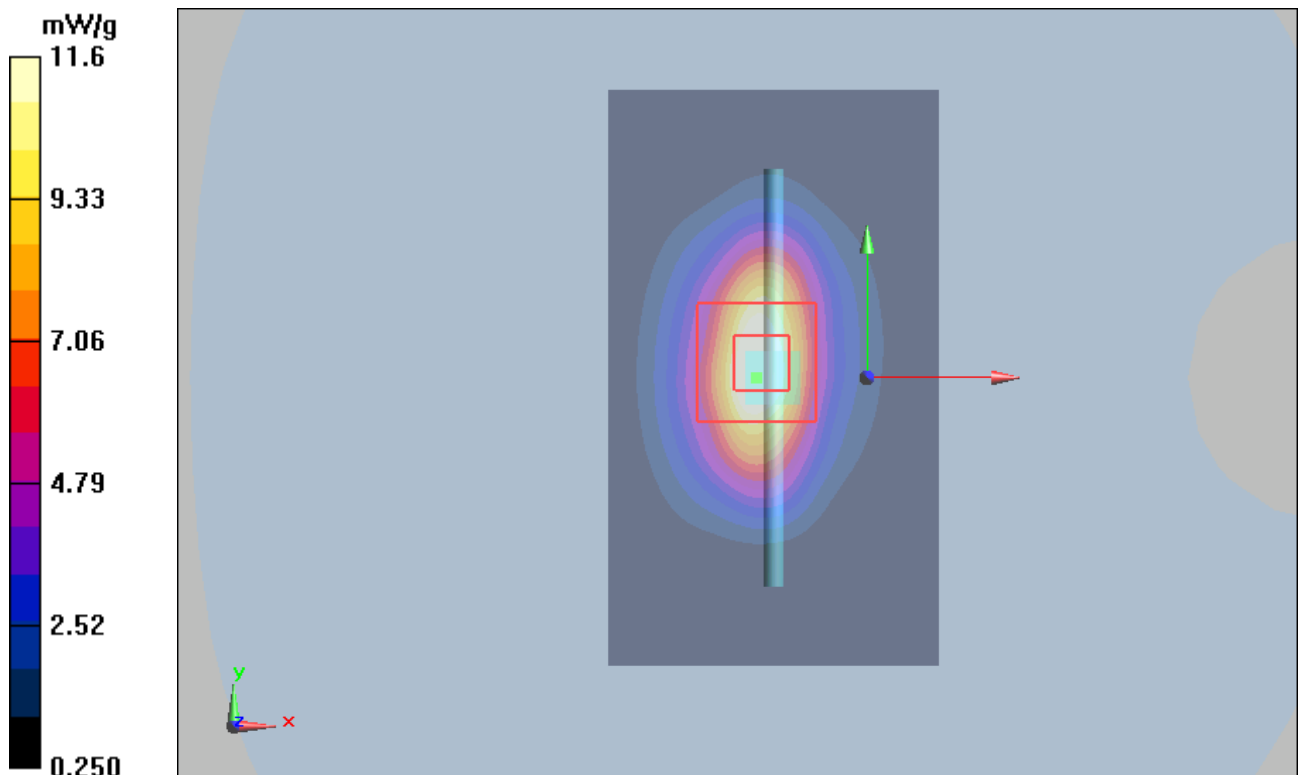


Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date/Time: 12/4/2012 2:51:56 PM

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.53$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 19.5 mW/g

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

Reference Value = 95.3 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 30.9 W/kg

SAR(1 g) = 14.5 mW/g; SAR(10 g) = 6.67 mW/g

Maximum value of SAR (measured) = 16.4 mW/g

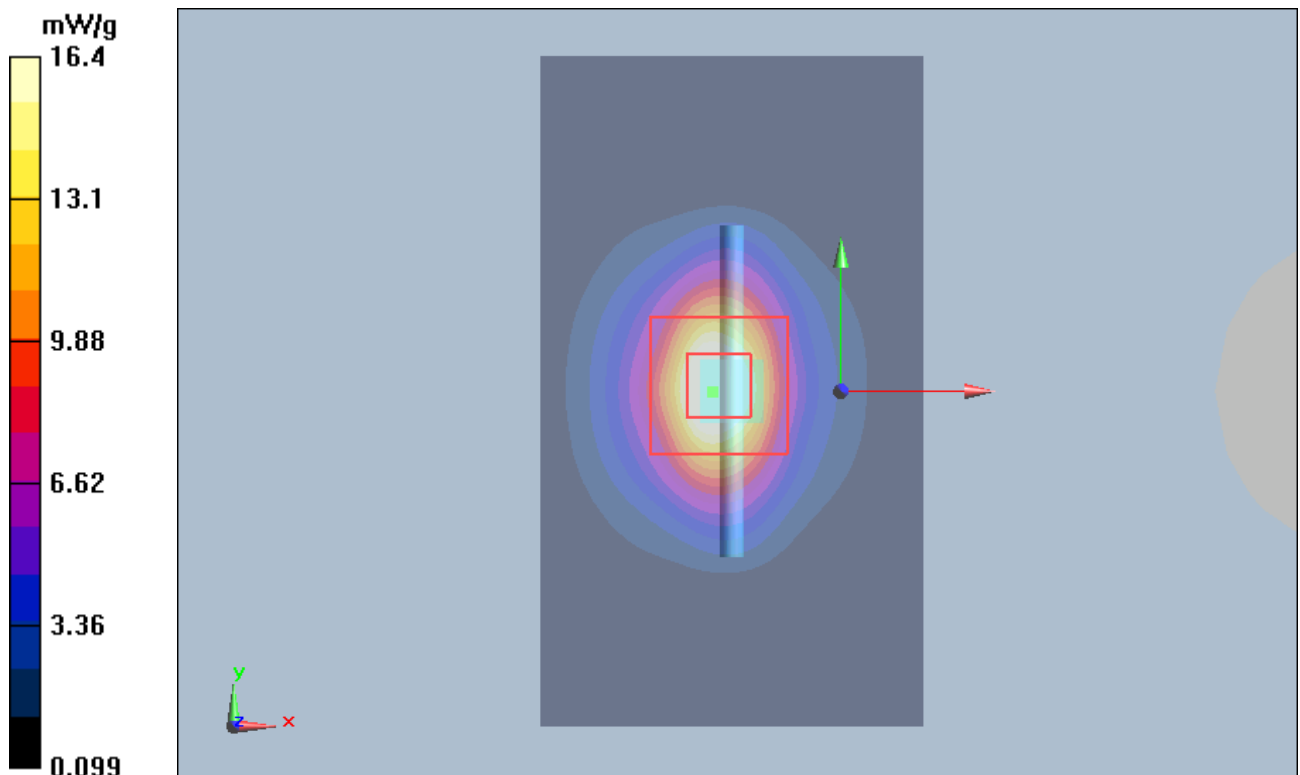


Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date/Time: 12/1/2012 1:09:23 PM

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.903$ mho/m; $\epsilon_r = 51.69$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 18.2 mW/g

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

Reference Value = 93.5 V/m; Power Drift = -0.116 dB

Peak SAR (extrapolated) = 29.3 W/kg

SAR(1 g) = 14.1 mW/g; SAR(10 g) = 6.62 mW/g

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

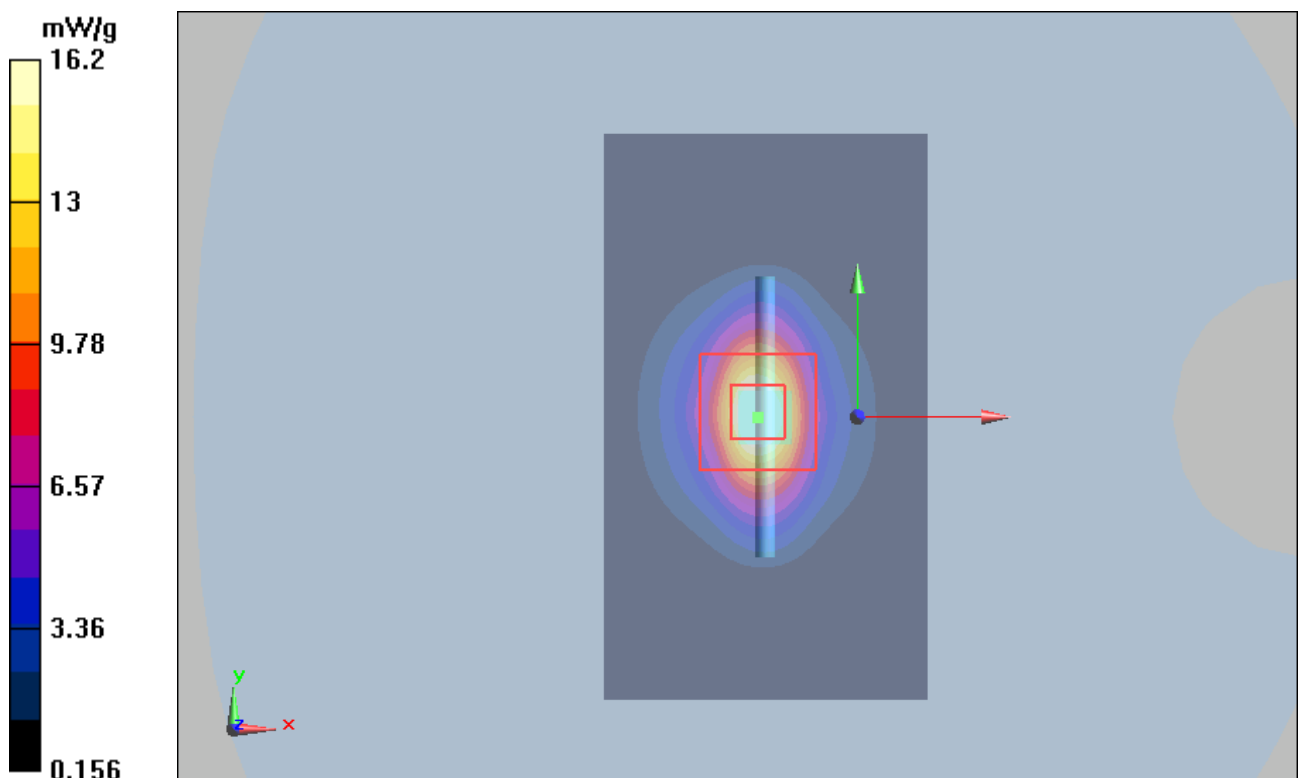


Figure 12 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle (Battery 1)

Date/Time: 11/30/2012 3:26:58 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

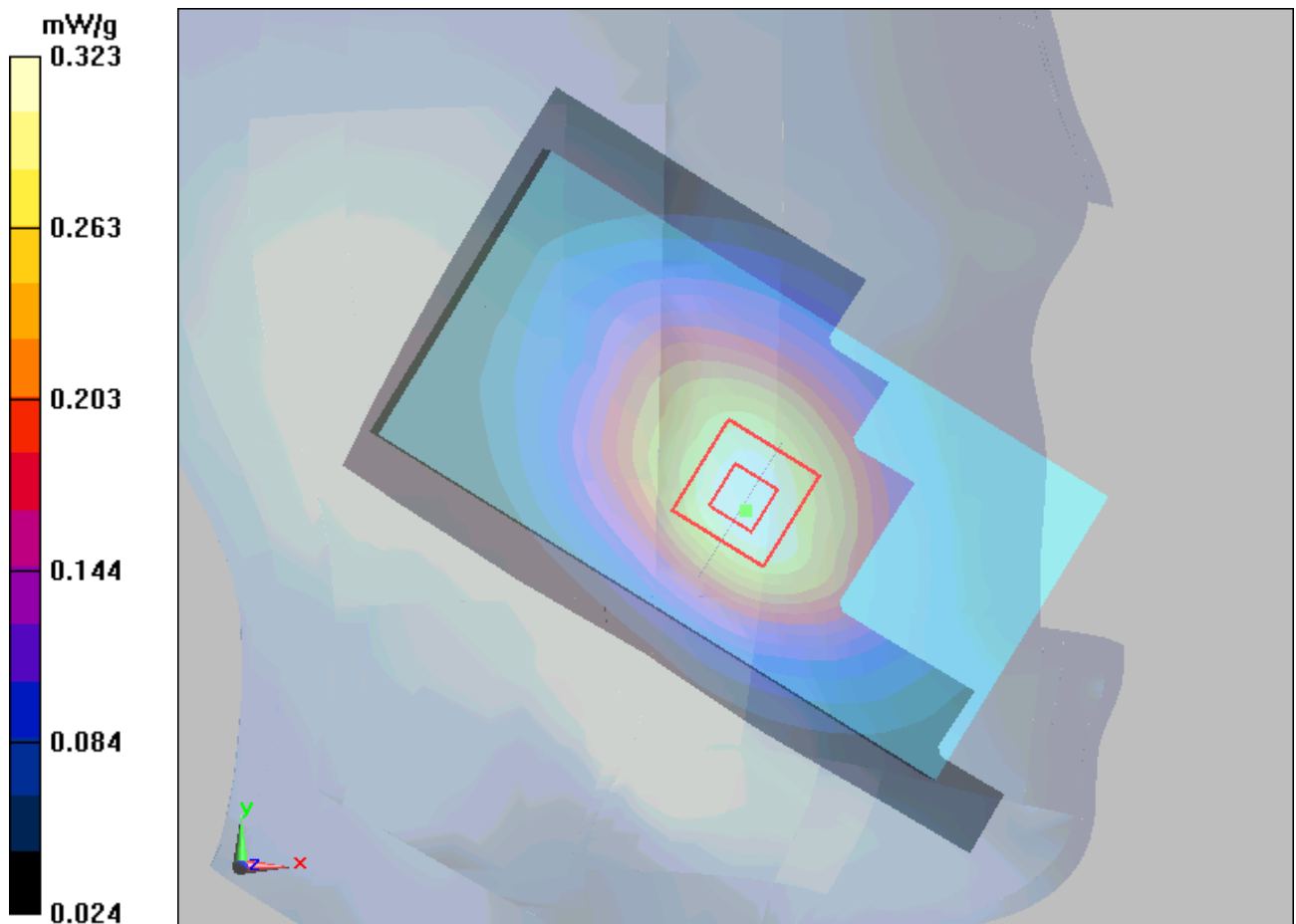
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.41 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.402 W/kg

SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.220 mW/g

Maximum value of SAR (measured) = 0.323 mW/g



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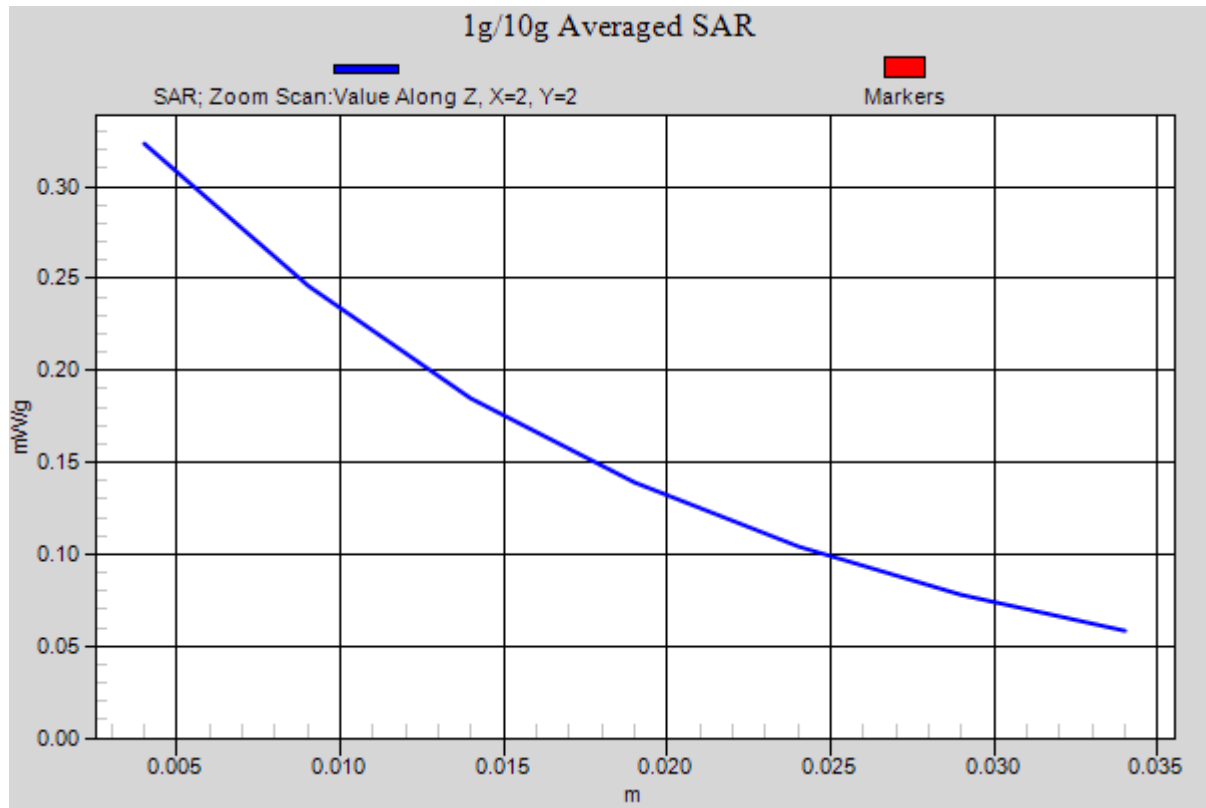


Figure 13 Left Hand Touch Cheek GSM 850 Channel 190

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GSM 850 Left Tilt Middle (Battery 1)

Date/Time: 11/30/2012 3:01:58 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.162 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.66 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.202 W/kg

SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.115 mW/g

Maximum value of SAR (measured) = 0.166 mW/g

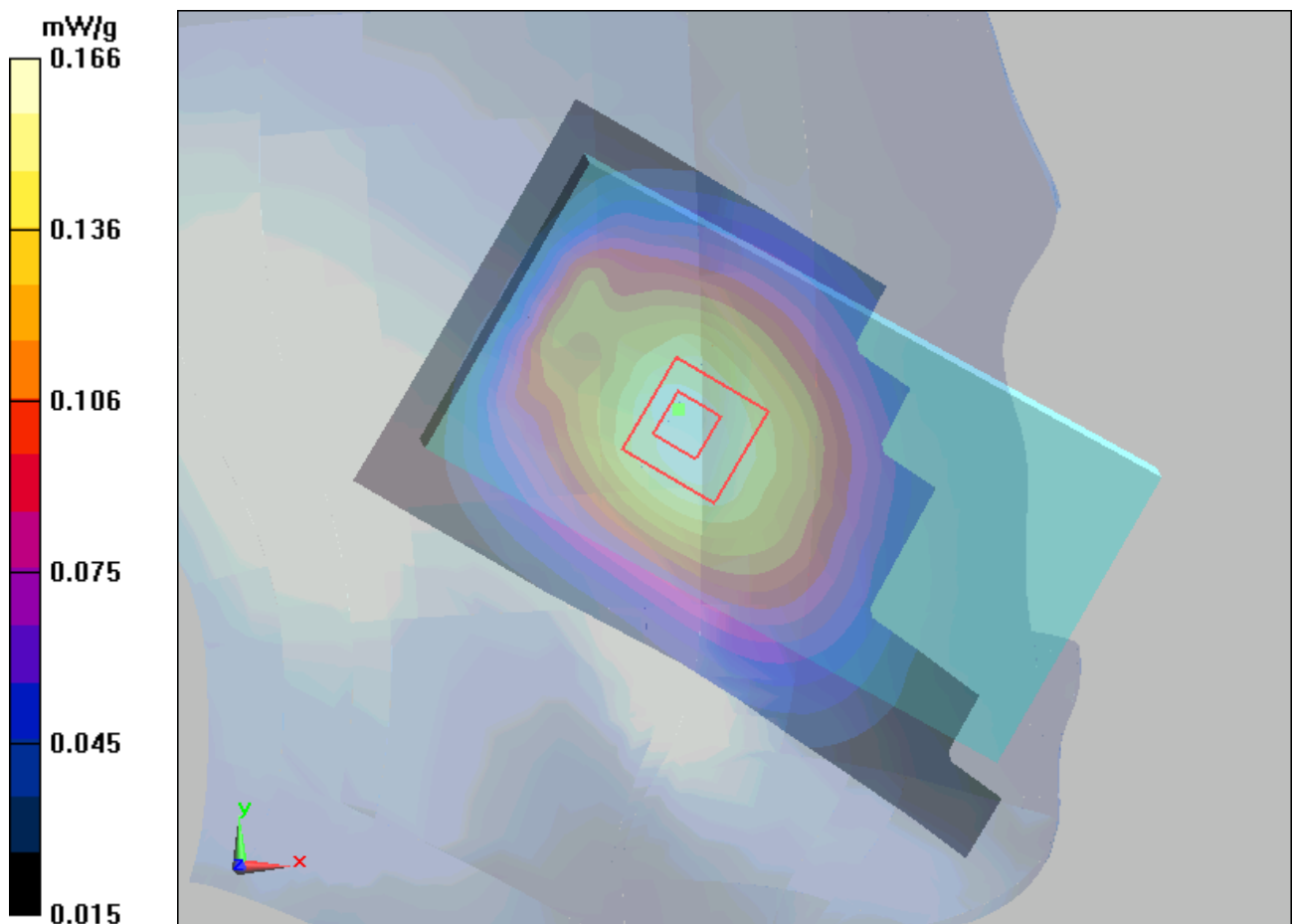


Figure 14 Left Hand Tilt 15° GSM 850 Channel 190

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GSM 850 Right Cheek Middle (Battery 1)

Date/Time: 11/30/2012 1:21:08 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.239 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.95 V/m; Power Drift = -0.012 dB

Peak SAR (extrapolated) = 0.284 W/kg

SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.163 mW/g

Maximum value of SAR (measured) = 0.236 mW/g

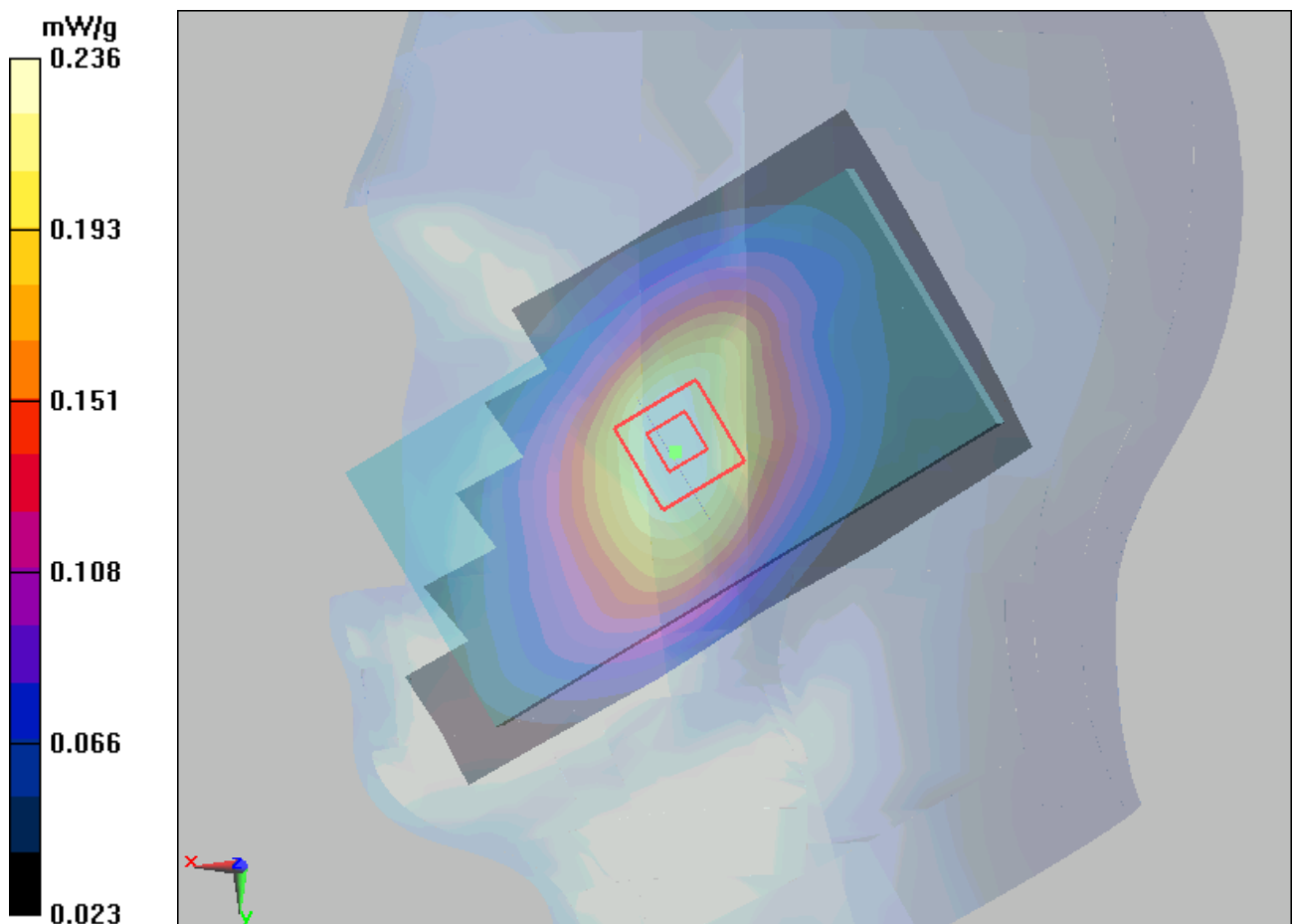


Figure 15 Right Hand Touch Cheek GSM 850 Channel 190

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GSM 850 Right Tilt Middle (Battery 1)

Date/Time: 11/30/2012 1:39:48 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.168 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.13 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.207 W/kg

SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.117 mW/g

Maximum value of SAR (measured) = 0.169 mW/g

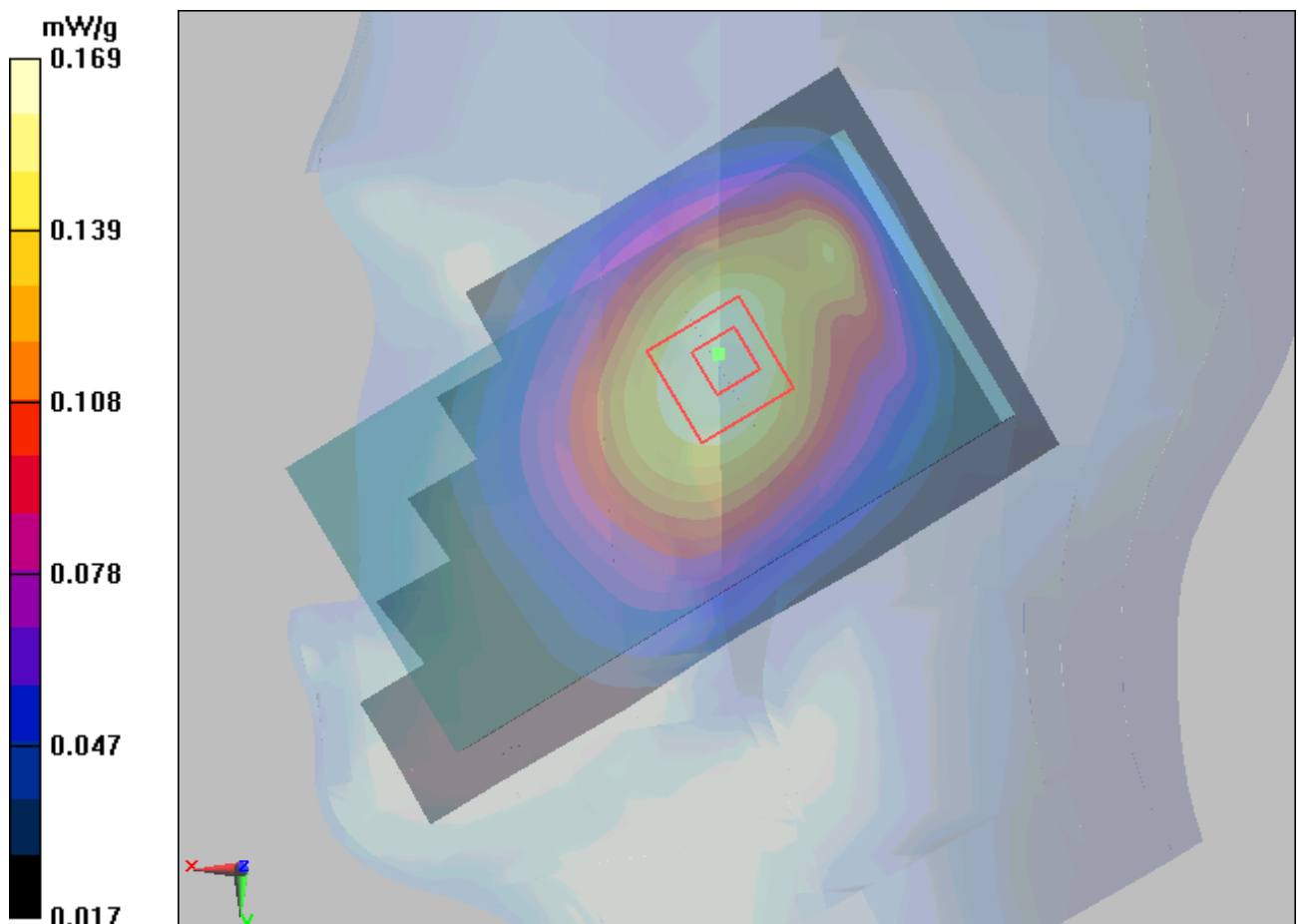


Figure 16 Right Hand Tilt 15° GSM 850 Channel 190

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GSM 850 Left Cheek Middle (Battery 2)

Date/Time: 11/30/2012 2:01:40 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.61 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.343 W/kg

SAR(1 g) = 0.260 mW/g; SAR(10 g) = 0.188 mW/g

Maximum value of SAR (measured) = 0.276 mW/g

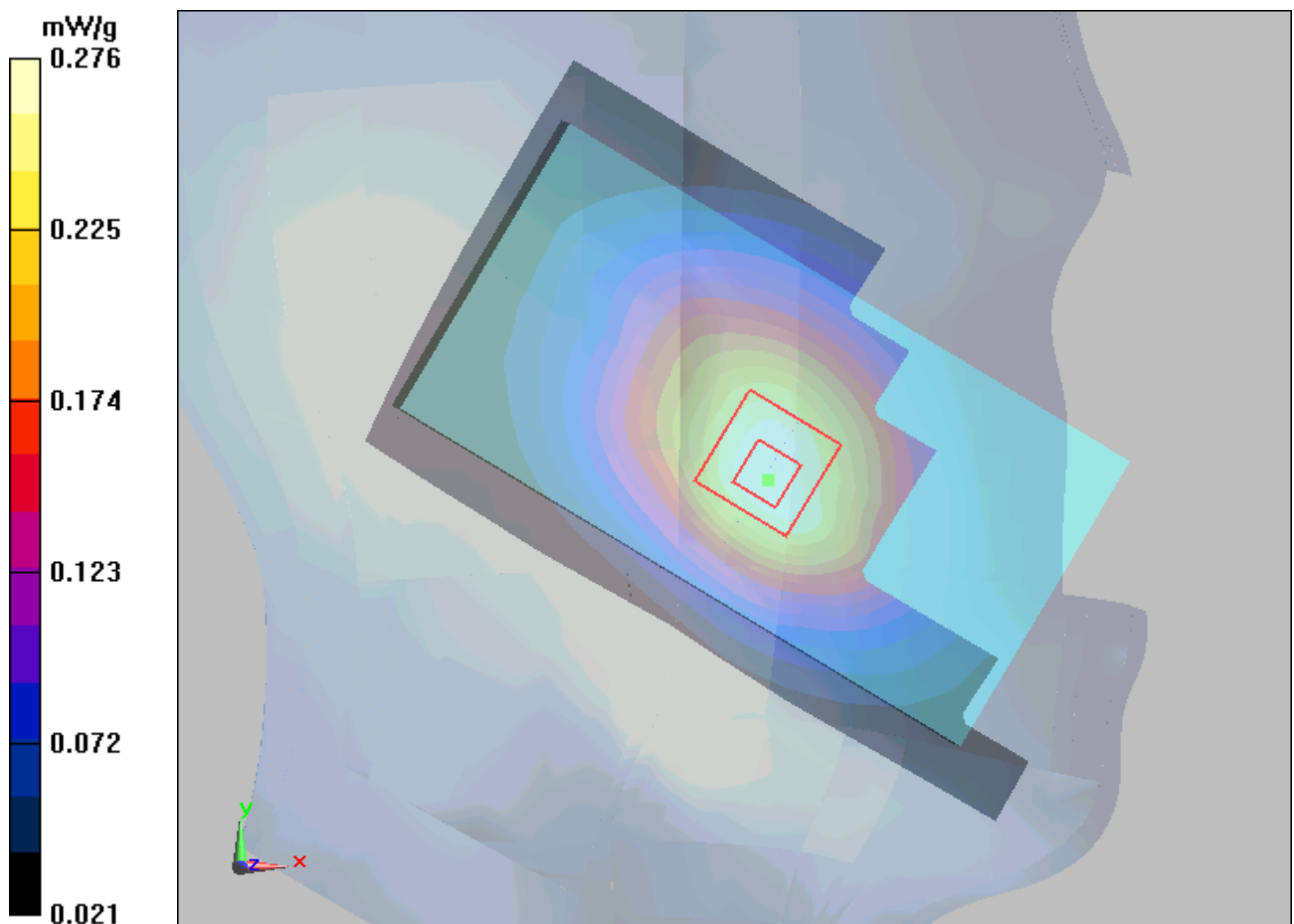


Figure 17 Left Hand Touch Cheek GSM 850 Channel 190

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GSM 850 GPRS (1Txslot) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 5:55:40 PM

Communication System: GPRS 1TX; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.632 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.5 V/m; Power Drift = -0.115 dB

Peak SAR (extrapolated) = 0.743 W/kg

SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.452 mW/g

Maximum value of SAR (measured) = 0.628 mW/g

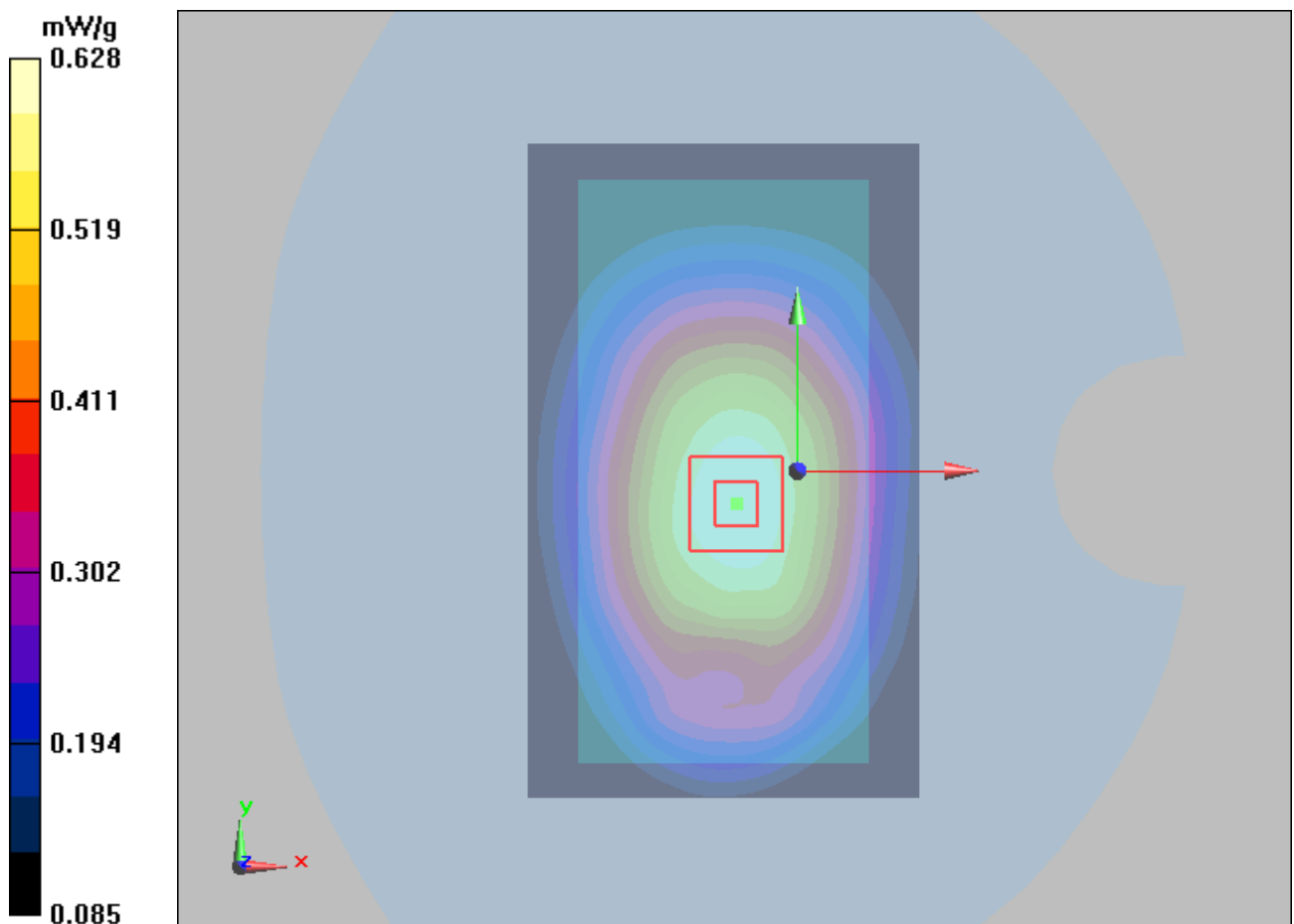


Figure 18 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

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GSM 850 GPRS (2Txslots) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 6:13:50 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.6 V/m; Power Drift = 0.043 dB

Peak SAR (extrapolated) = 0.810 W/kg

SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.486 mW/g

Maximum value of SAR (measured) = 0.676 mW/g

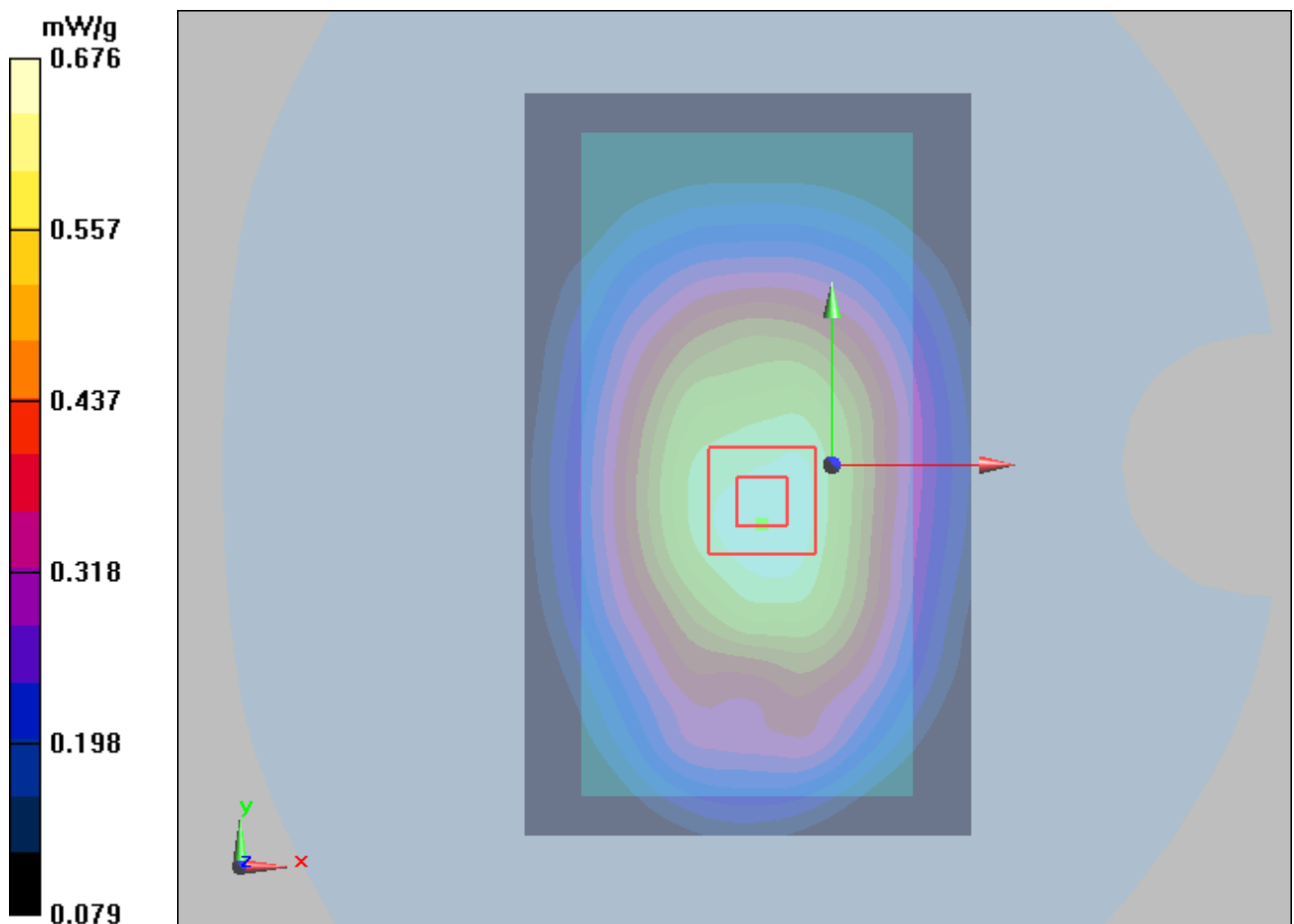


Figure 19 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 GPRS (2Txslots) Front Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 6:36:02 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.451 mW/g

Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 21.8 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.806 W/kg

SAR(1 g) = 0.450 mW/g; SAR(10 g) = 0.336 mW/g

Maximum value of SAR (measured) = 0.464 mW/g

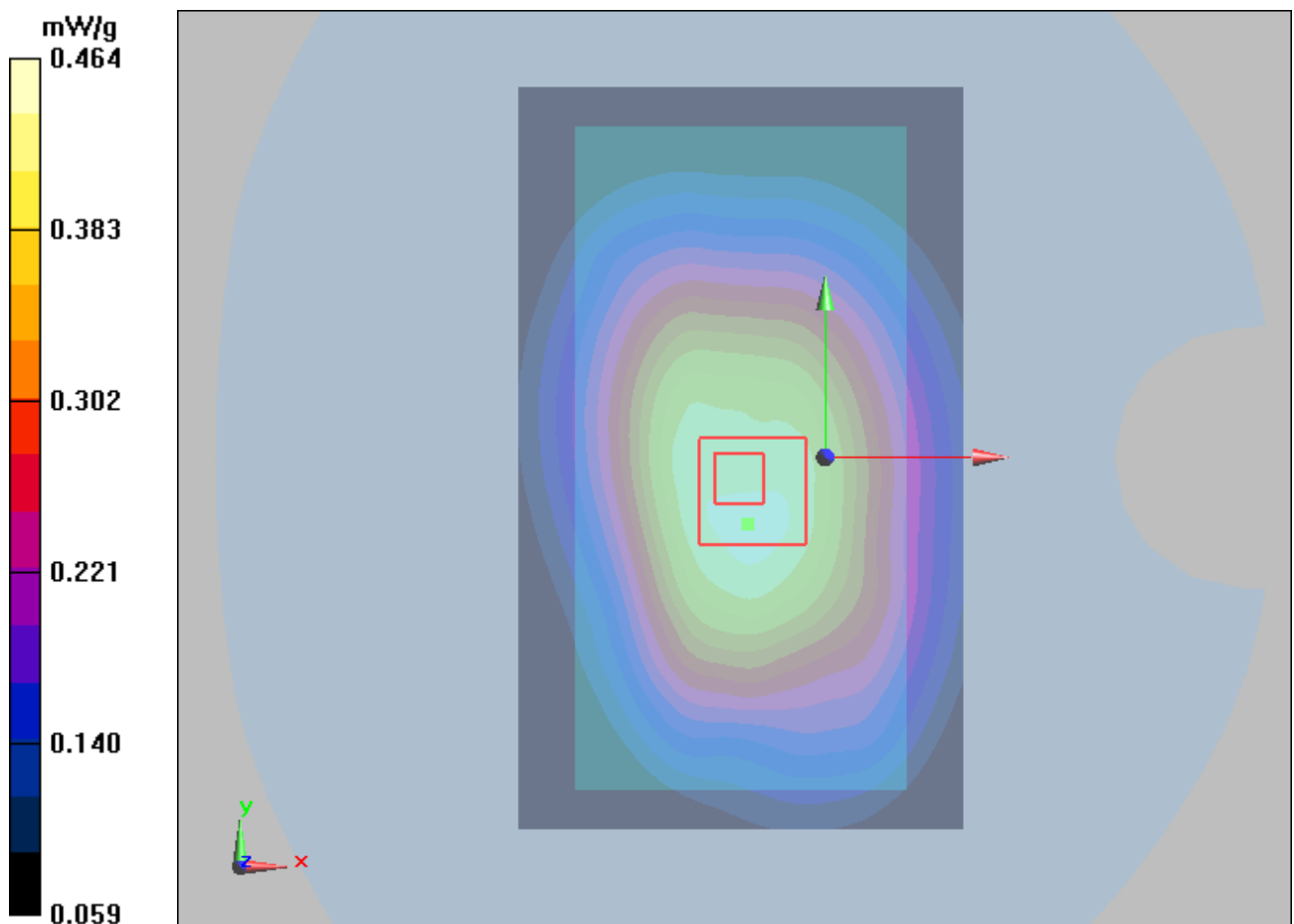


Figure 20 Body, Front Side, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 GPRS (2Txslots) Left Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 7:27:07 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Left Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm

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

Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.4 V/m; Power Drift = -0.025 dB

Peak SAR (extrapolated) = 0.333 W/kg

SAR(1 g) = 0.242 mW/g; SAR(10 g) = 0.168 mW/g

Maximum value of SAR (measured) = 0.260 mW/g

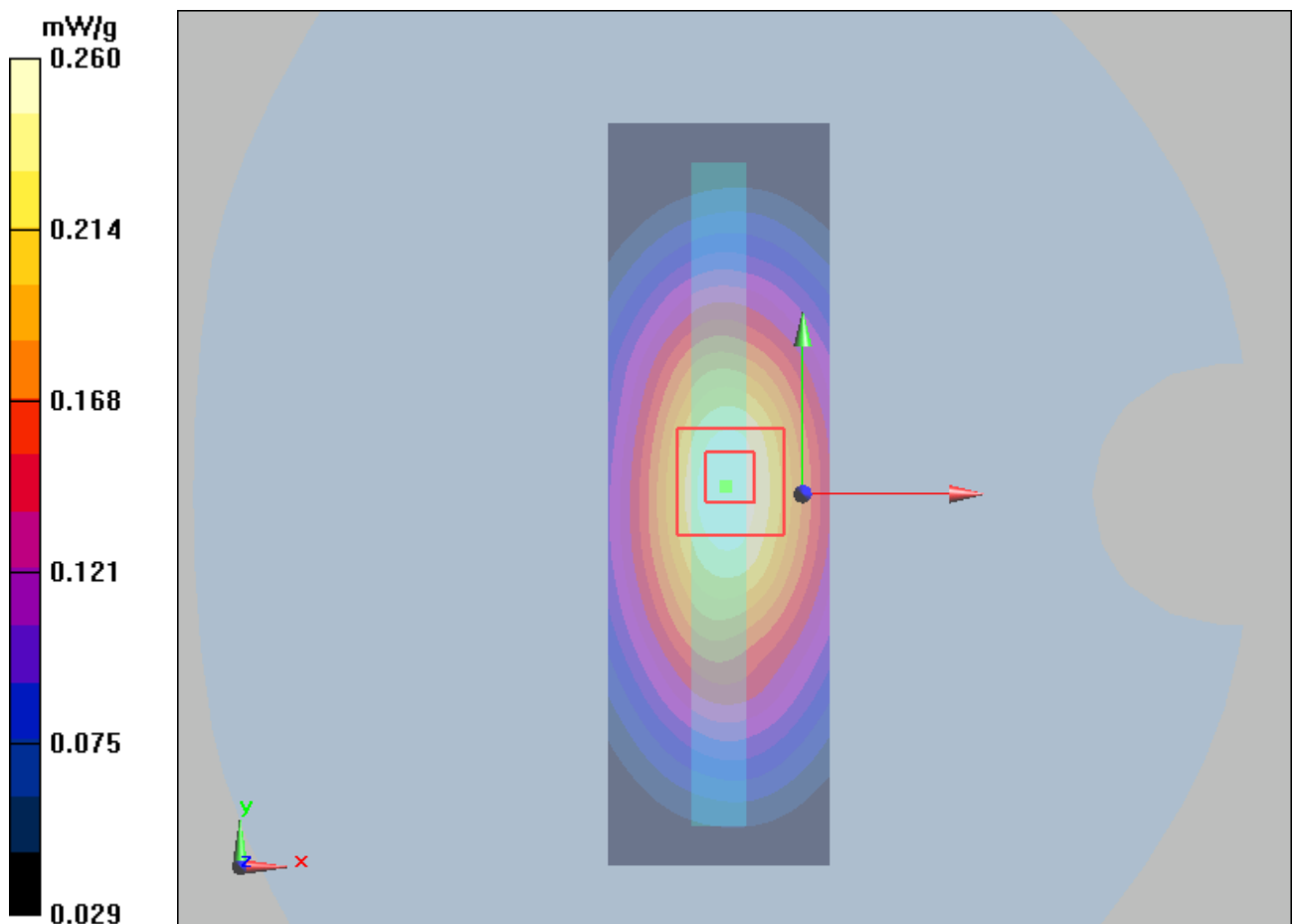


Figure 21 Body, Left Edge, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 GPRS (2Txslots) Right Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 7:42:35 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Right Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm

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

Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 13.8 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.171 mW/g; SAR(10 g) = 0.118 mW/g

Maximum value of SAR (measured) = 0.181 mW/g

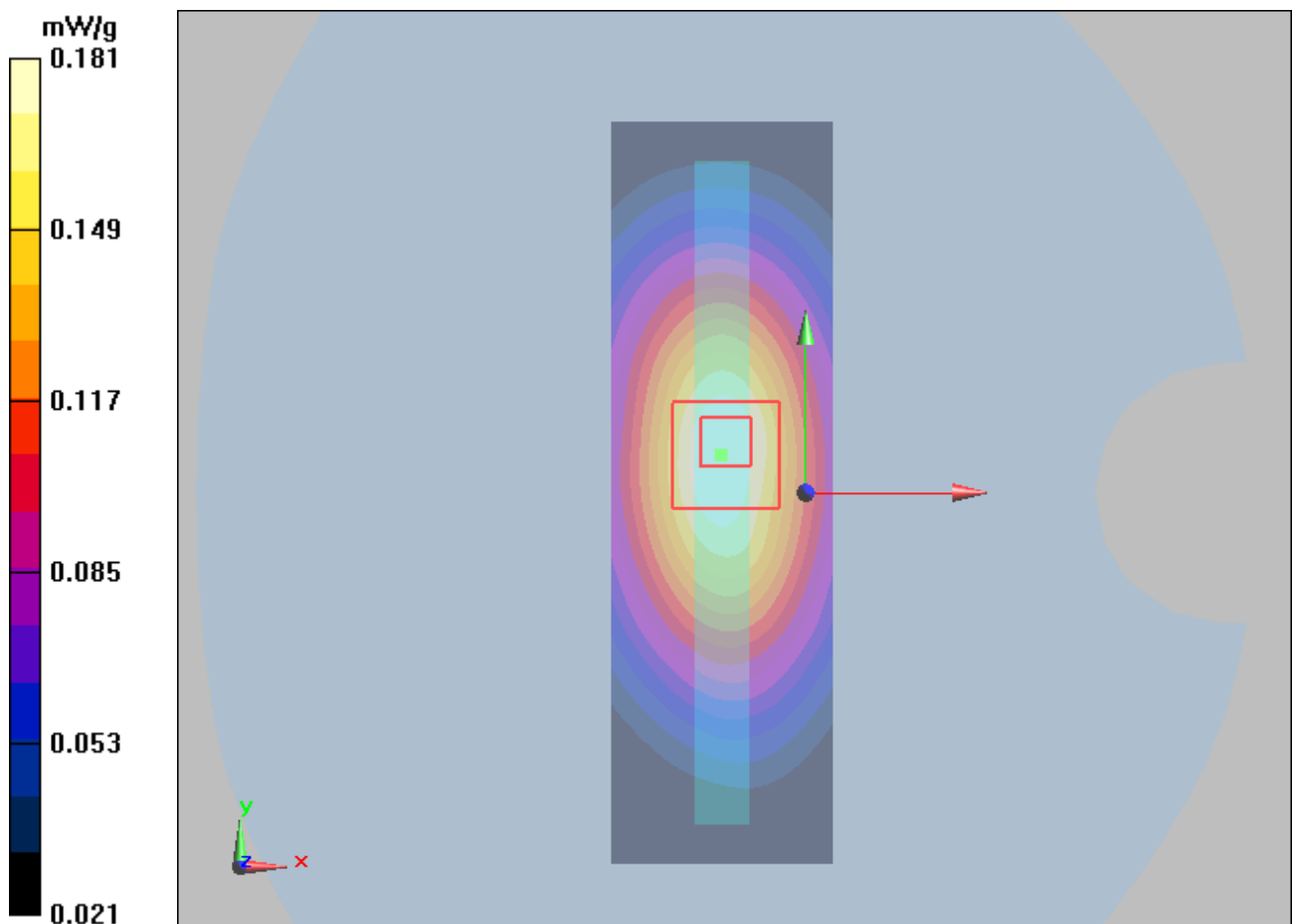


Figure 22 Body, Right Edge, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 GPRS (2Txslots) Bottom Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 7:13:46 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge Middle/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.139 mW/g

Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12 V/m; Power Drift = 0.161 dB

Peak SAR (extrapolated) = 0.473 W/kg

SAR(1 g) = 0.131 mW/g; SAR(10 g) = 0.065 mW/g

Maximum value of SAR (measured) = 0.145 mW/g

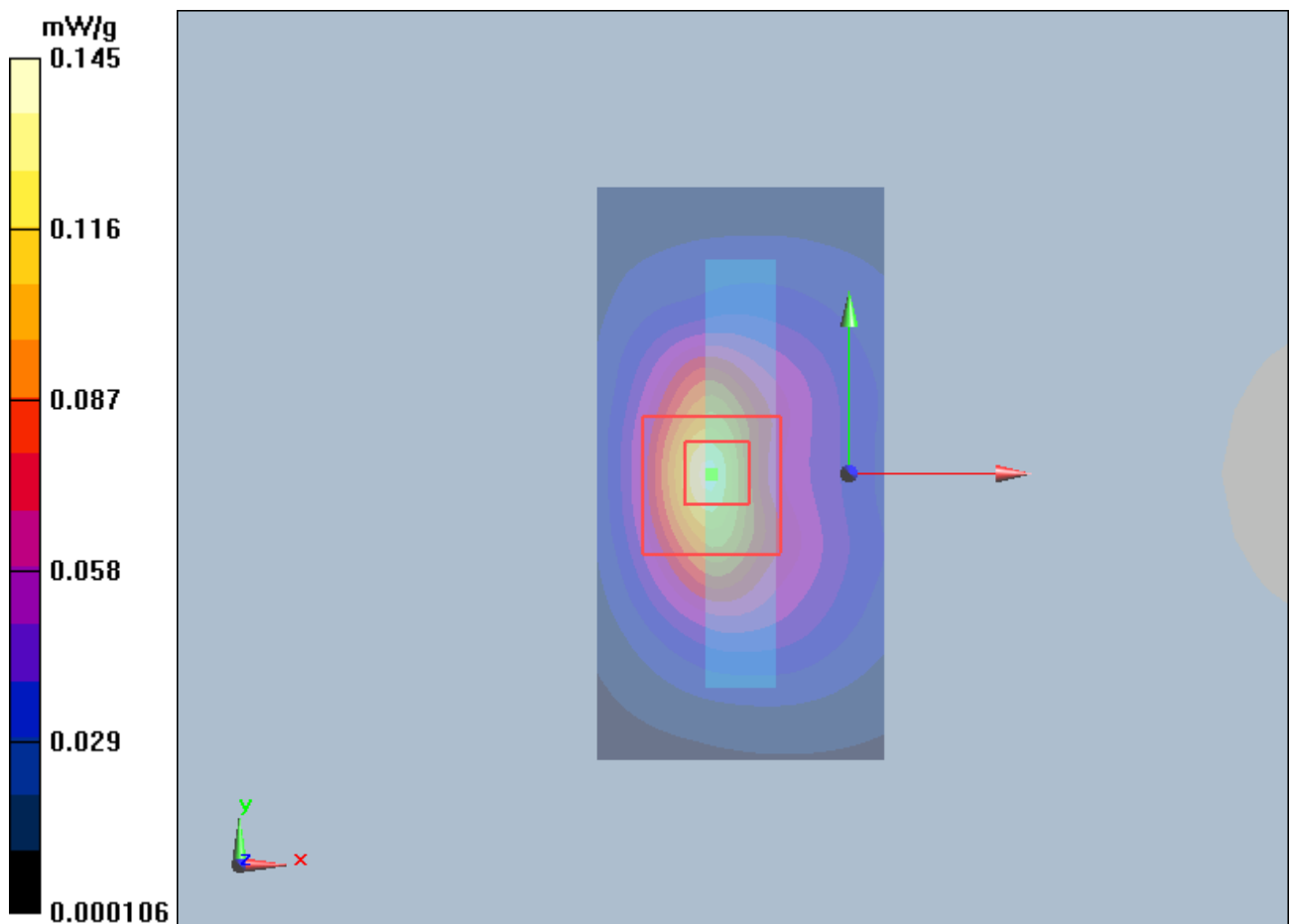


Figure 23 Body, Bottom Edge, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 EGPRS (2Txslots) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 8:00:05 PM

Communication System: EGPRS 2TX; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.607 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.4 V/m; Power Drift = -0.160 dB

Peak SAR (extrapolated) = 0.728 W/kg

SAR(1 g) = 0.584 mW/g; SAR(10 g) = 0.445 mW/g

Maximum value of SAR (measured) = 0.609 mW/g

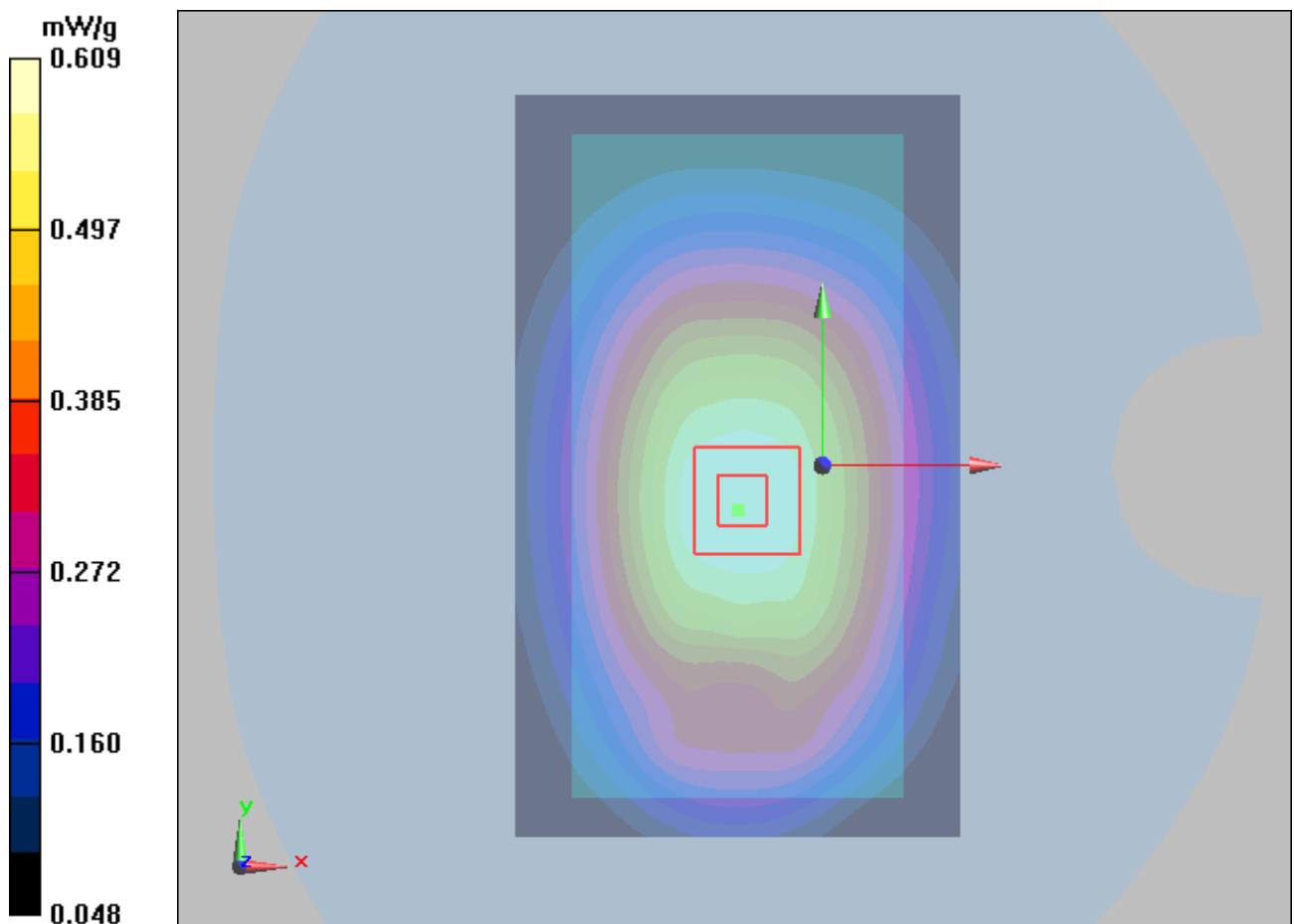


Figure 24 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 190

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GSM 850 with Earphone Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 8:20:44 PM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.441 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20.5 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 0.534 W/kg

SAR(1 g) = 0.423 mW/g; SAR(10 g) = 0.320 mW/g

Maximum value of SAR (measured) = 0.444 mW/g

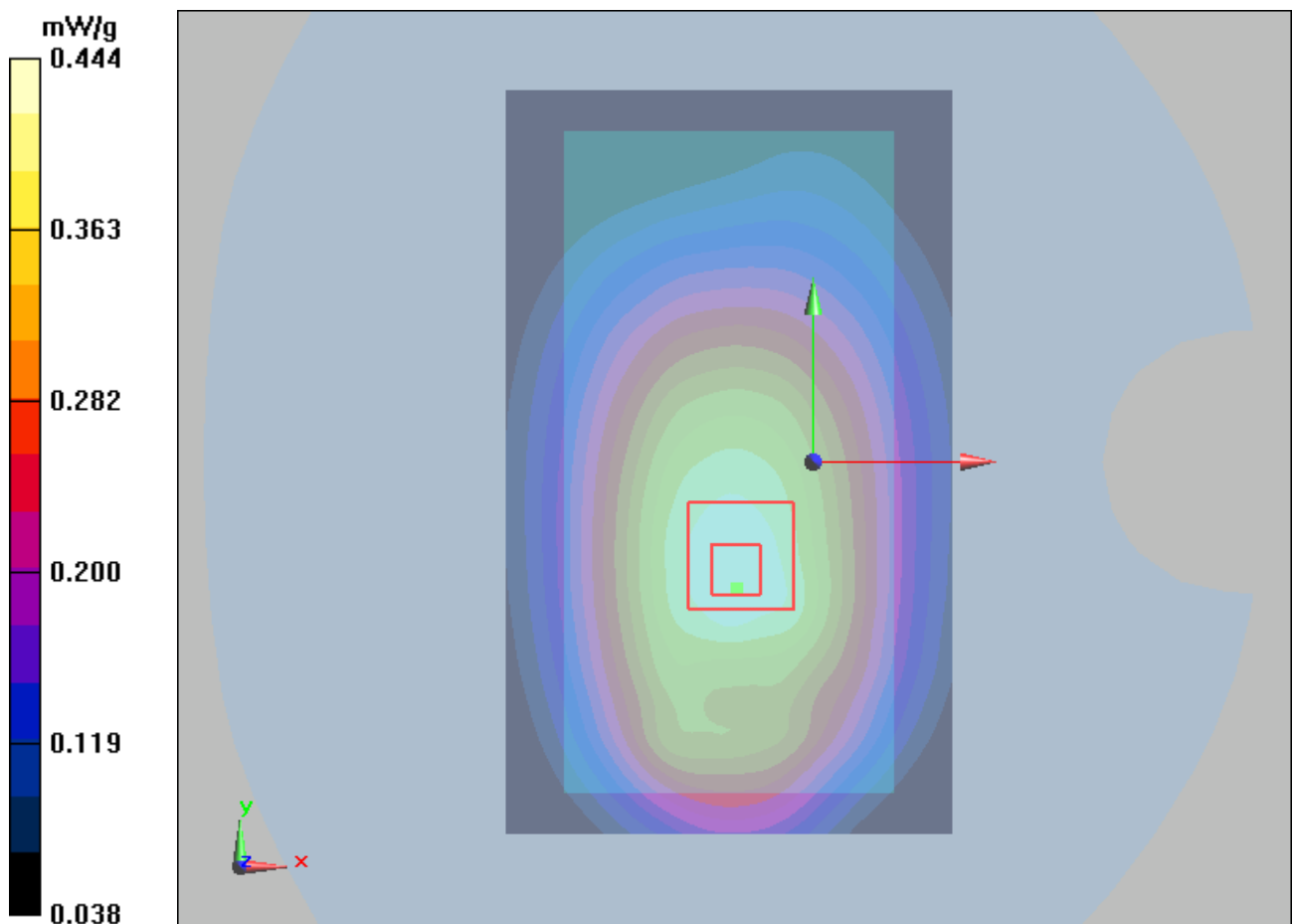


Figure 25 Body with Earphone, Back Side, GSM 850 Channel 190

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GSM 850 GPRS (2Txslots) Back Side Middle (Battery 2, 10mm)

Date/Time: 11/30/2012 8:40:50 PM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.687 mW/g

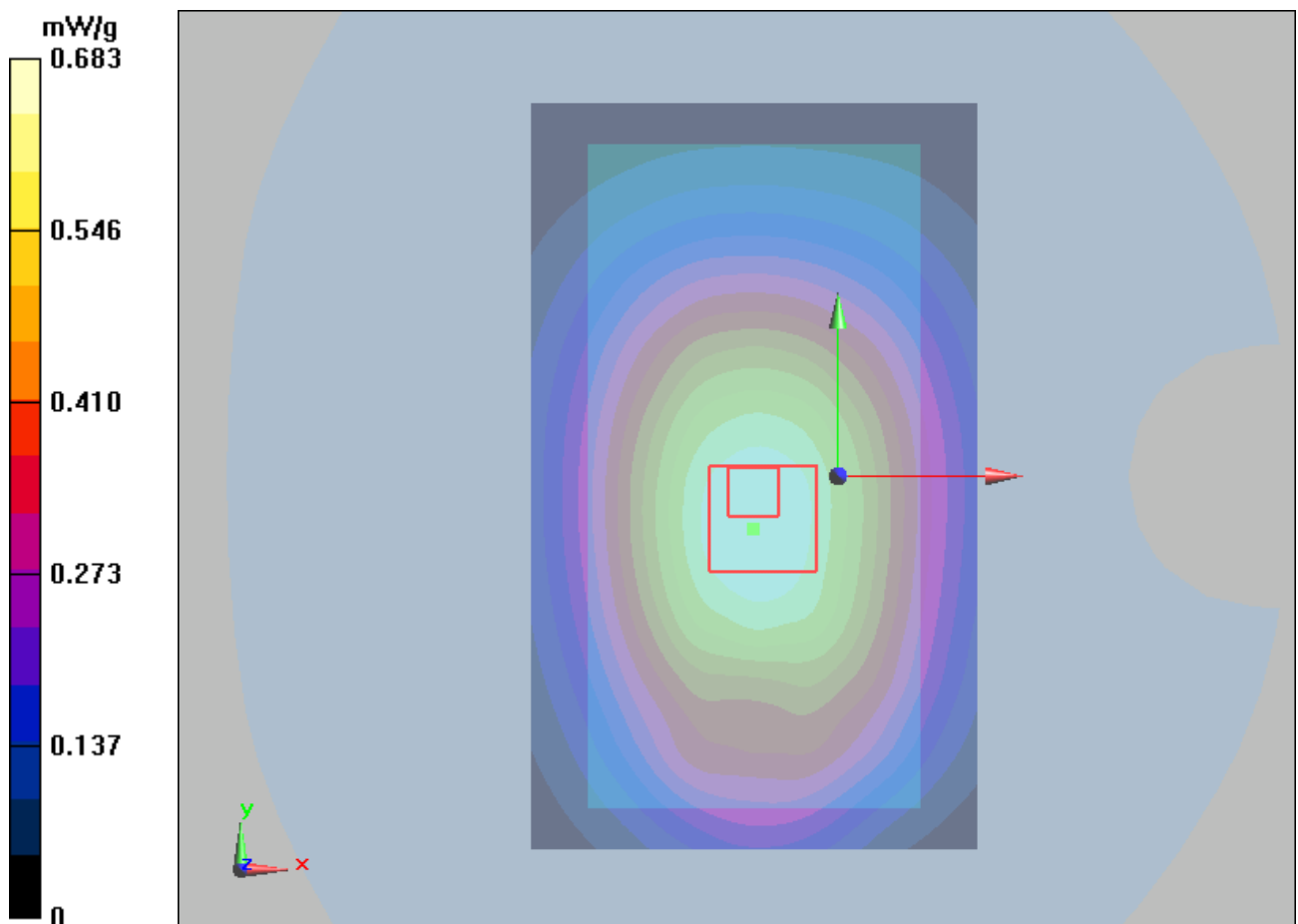
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 26.6 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 1.68 W/kg

SAR(1 g) = 0.662 mW/g; SAR(10 g) = 0.497 mW/g

Maximum value of SAR (measured) = 0.683 mW/g



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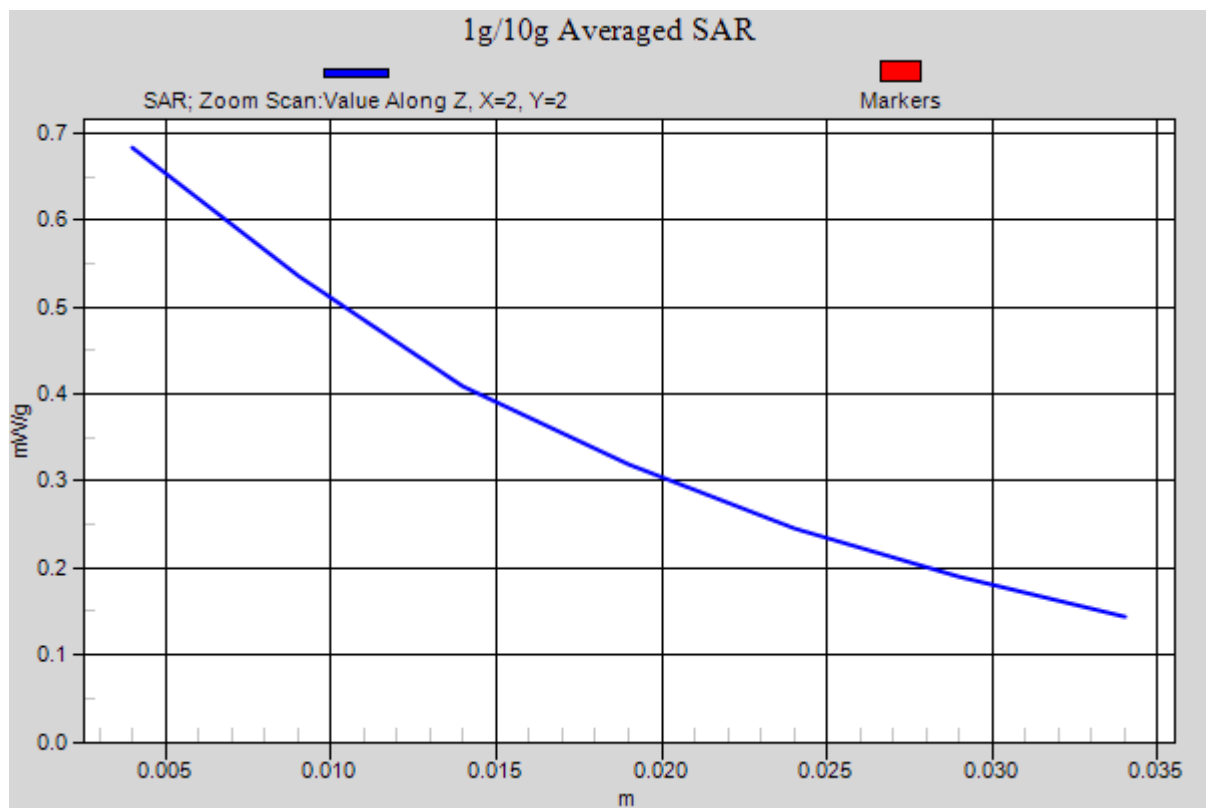


Figure 26 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

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GSM 850 Left Cheek Middle (Battery 1, variant model: HUAWEI G510-0200, G510-0200)

Date/Time: 12/4/2012 11:13:32 AM

Communication System: GSM; Frequency: 836.6 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 837$ MHz; $\sigma = 0.936$ mho/m; $\epsilon_r = 41.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.248 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.15 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.317 W/kg

SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.170 mW/g

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

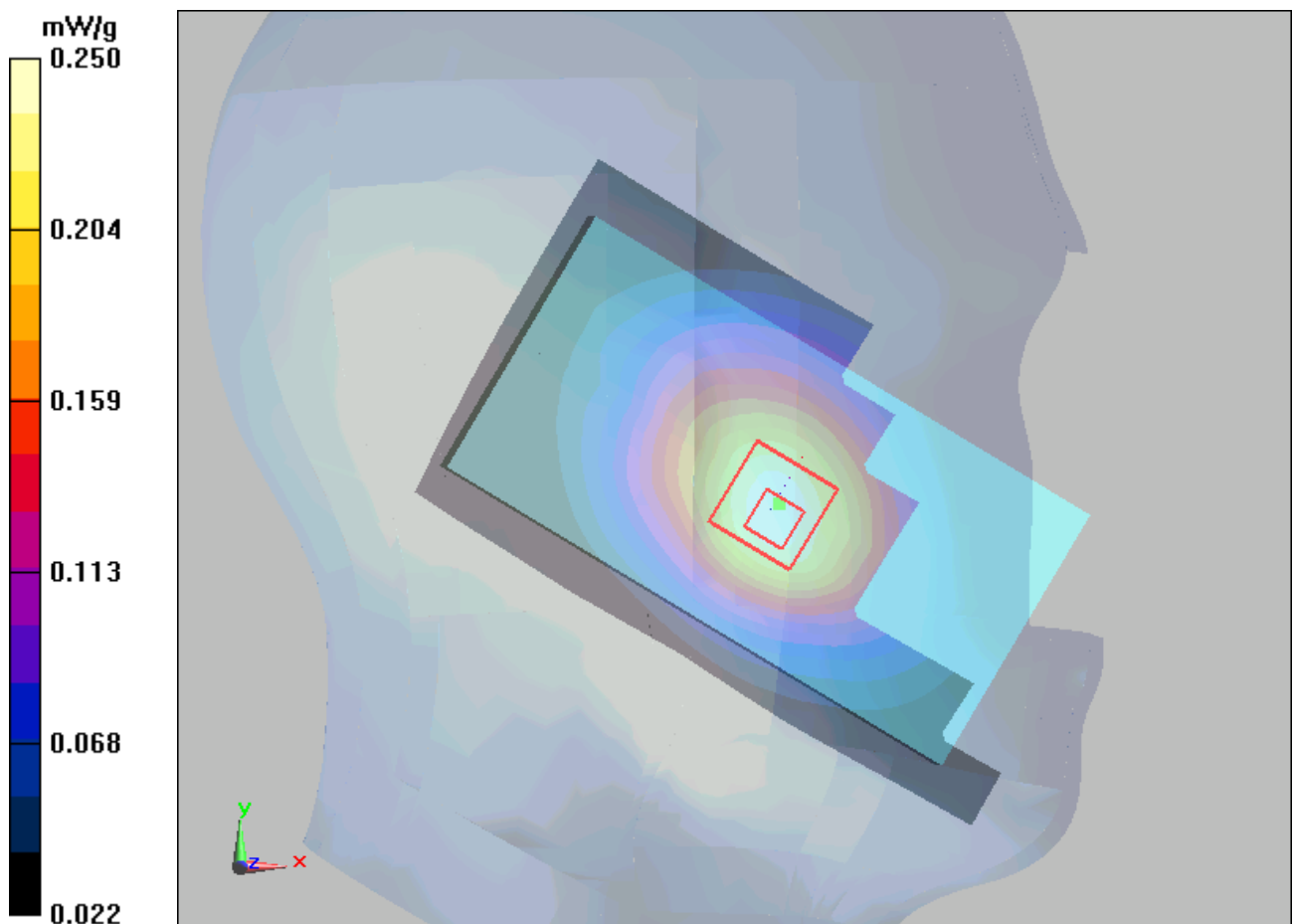


Figure 27 Left Hand Touch Cheek GSM 850 Channel 190

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GSM 850 GPRS (2Txslots) Back Side Middle (Battery 2,variant model: HUAWEI G510-0200, G510-0200, 10mm)

Date/Time: 12/1/2012 10:47:20 AM

Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954

Medium parameters used: $f = 837$ MHz; $\sigma = 0.988$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(5.81, 5.81, 5.81); Calibrated: 6/22/2012

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

Phantom: SAM1; Type: SAM; Serial: TP-1534

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.520 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 22.5 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.378 mW/g

Maximum value of SAR (measured) = 0.515 mW/g

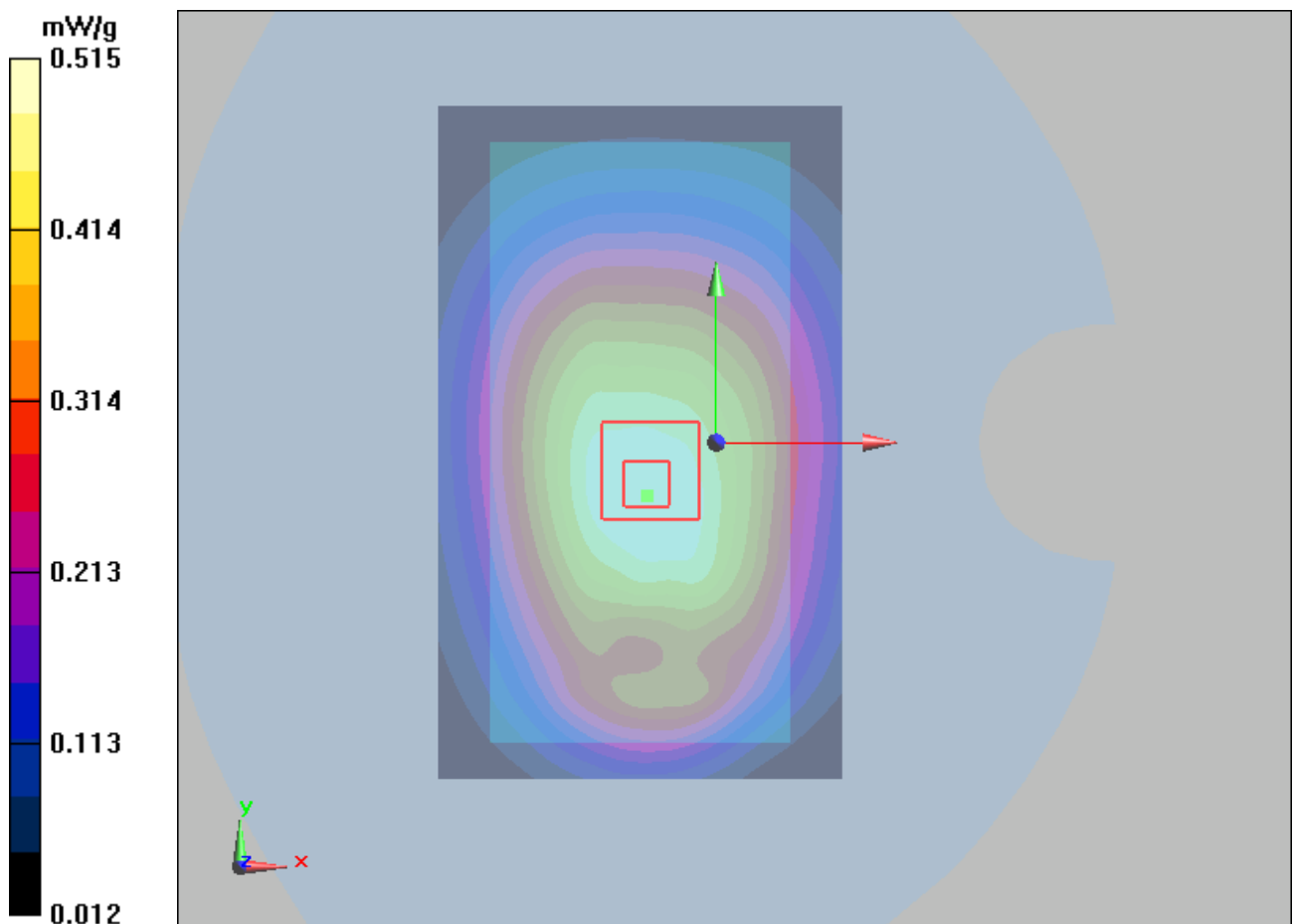


Figure 28 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

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GSM 1900 Left Cheek Middle (Battery 1)

Date/Time: 11/30/2012 4:12:42 PM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): 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 = 7.21 V/m; Power Drift = -0.098 dB

Peak SAR (extrapolated) = 0.412 W/kg

SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.157 mW/g

Maximum value of SAR (measured) = 0.294 mW/g

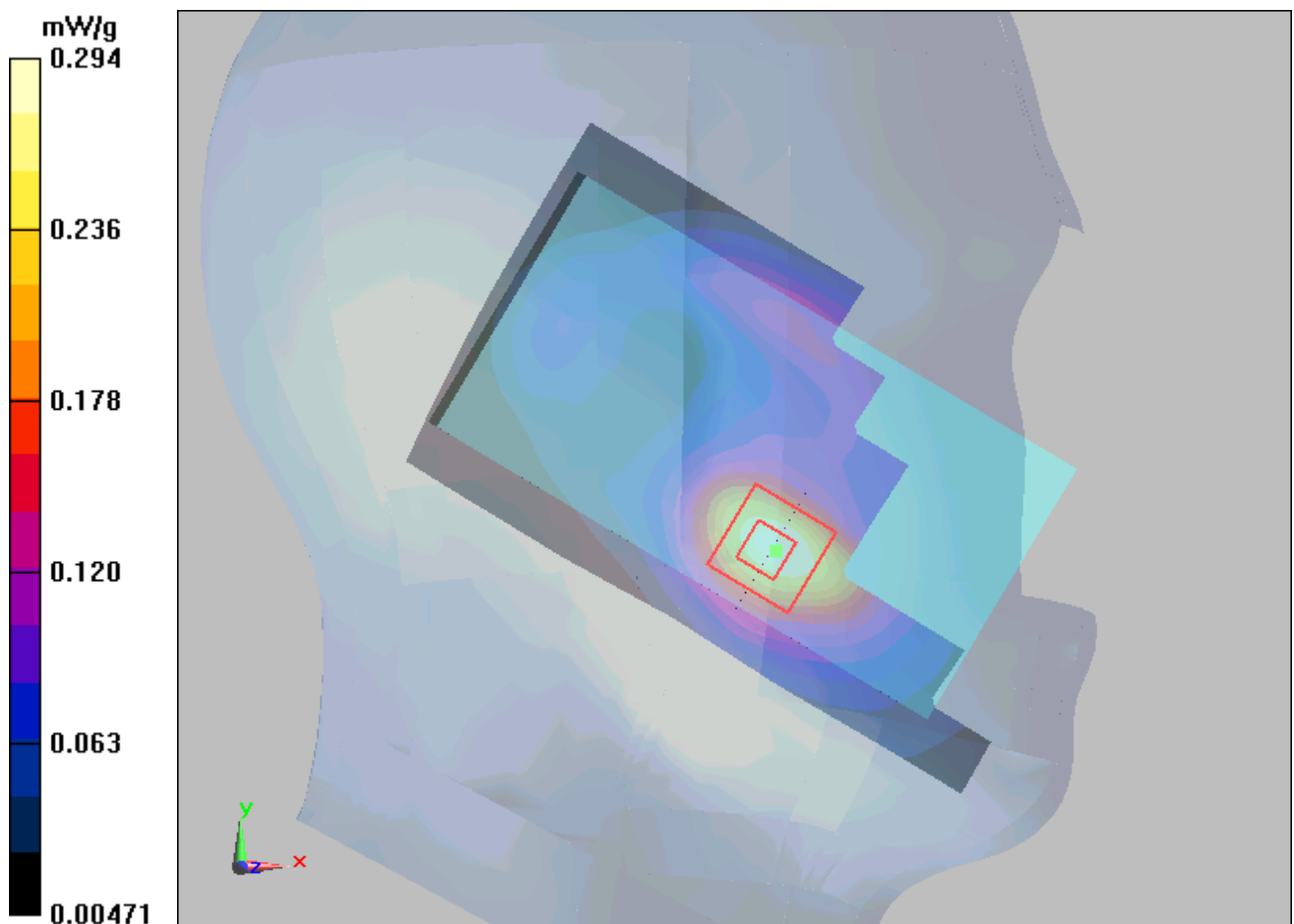


Figure 29 Left Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 Left Tilt Middle (Battery 1)

Date/Time: 11/30/2012 4:28:01 PM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.151 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.54 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 0.226 W/kg

SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.148 mW/g

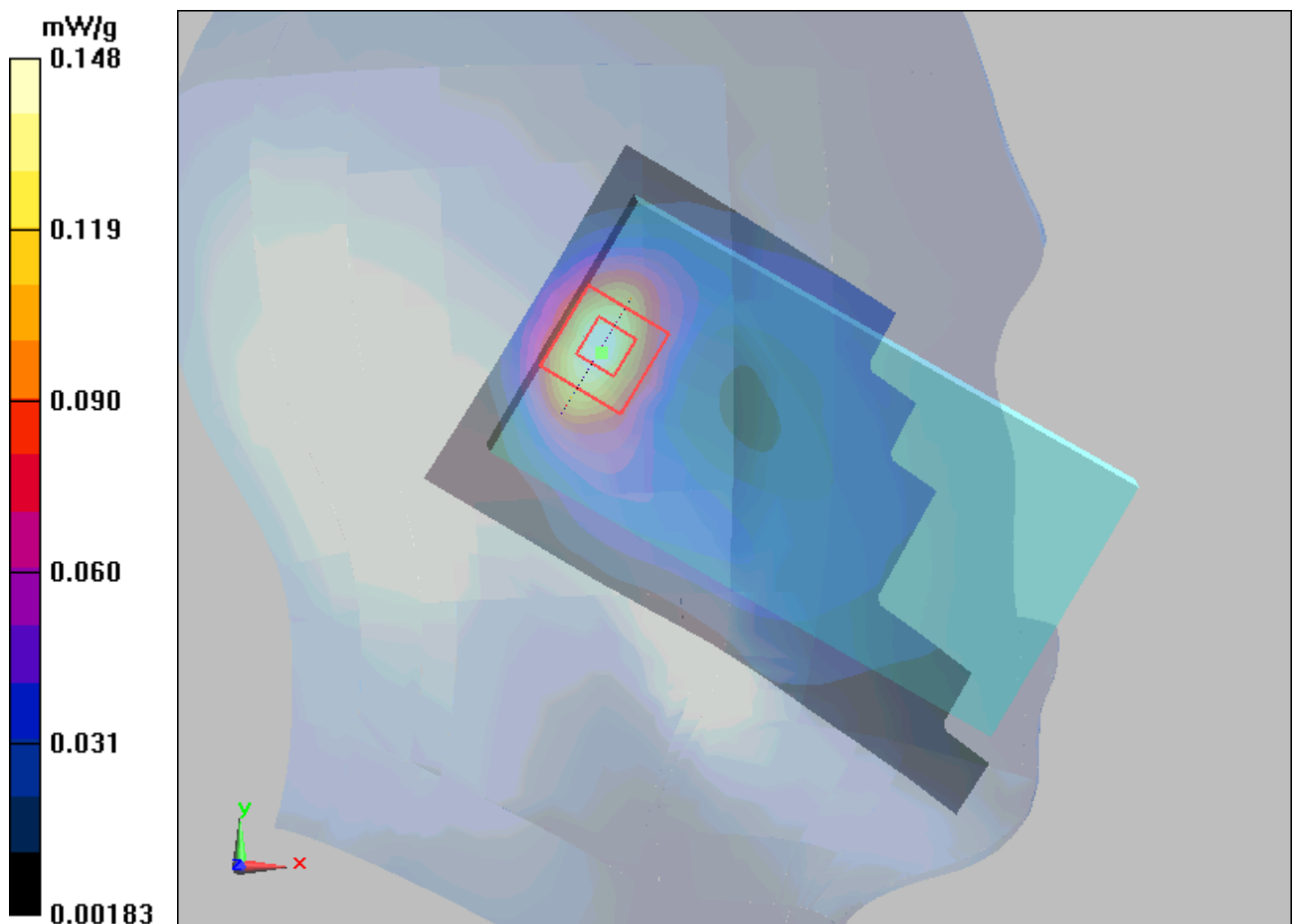


Figure 30 Left Hand Tilt 15° GSM 1900 Channel 661

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GSM 1900 Right Cheek Middle (Battery 1)

Date/Time: 11/30/2012 4:51:06 PM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.291 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.07 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.435 W/kg

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.169 mW/g

Maximum value of SAR (measured) = 0.300 mW/g

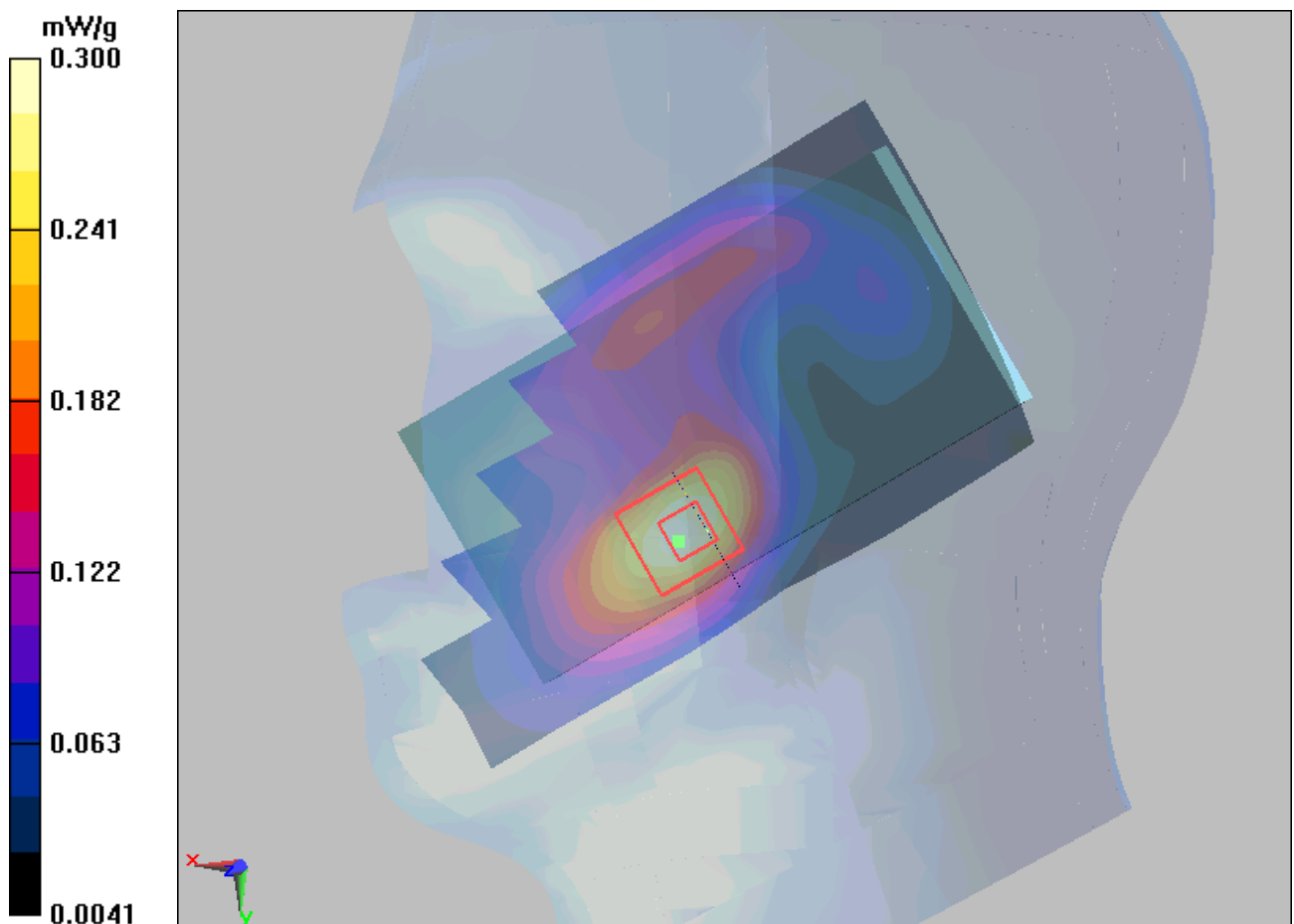


Figure 31 Right Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 Right Tilt Middle (Battery 1)

Date/Time: 11/30/2012 5:06:58 PM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.149 mW/g

Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.3 V/m; Power Drift = -0.081 dB

Peak SAR (extrapolated) = 0.211 W/kg

SAR(1 g) = 0.128 mW/g; SAR(10 g) = 0.072 mW/g

Maximum value of SAR (measured) = 0.143 mW/g

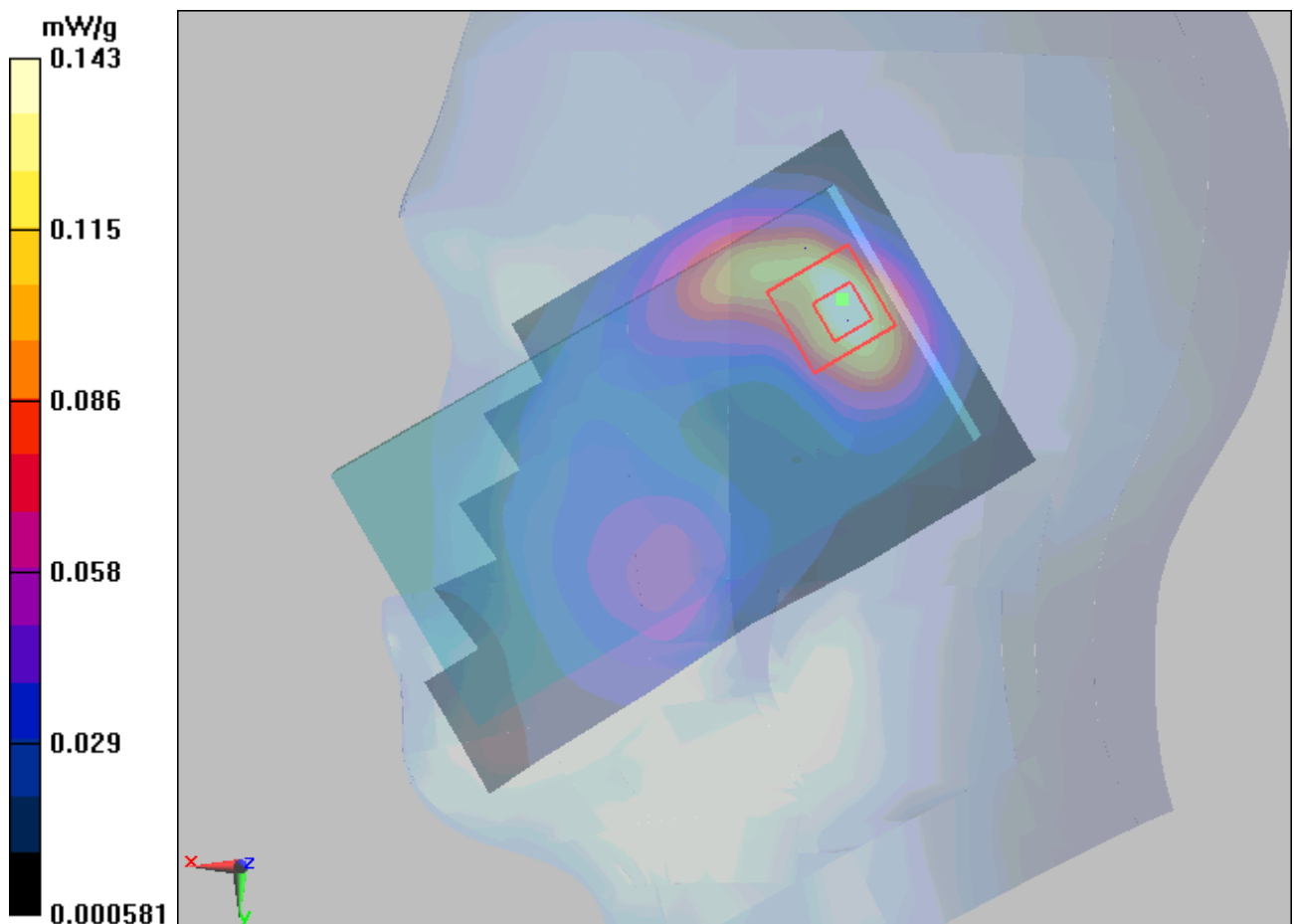


Figure 32 Right Hand Tilt 15° GSM 1900 Channel 661

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GSM 1900 Right Cheek Middle (Battery 2)

Date/Time: 11/30/2012 5:26:33 PM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.299 mW/g

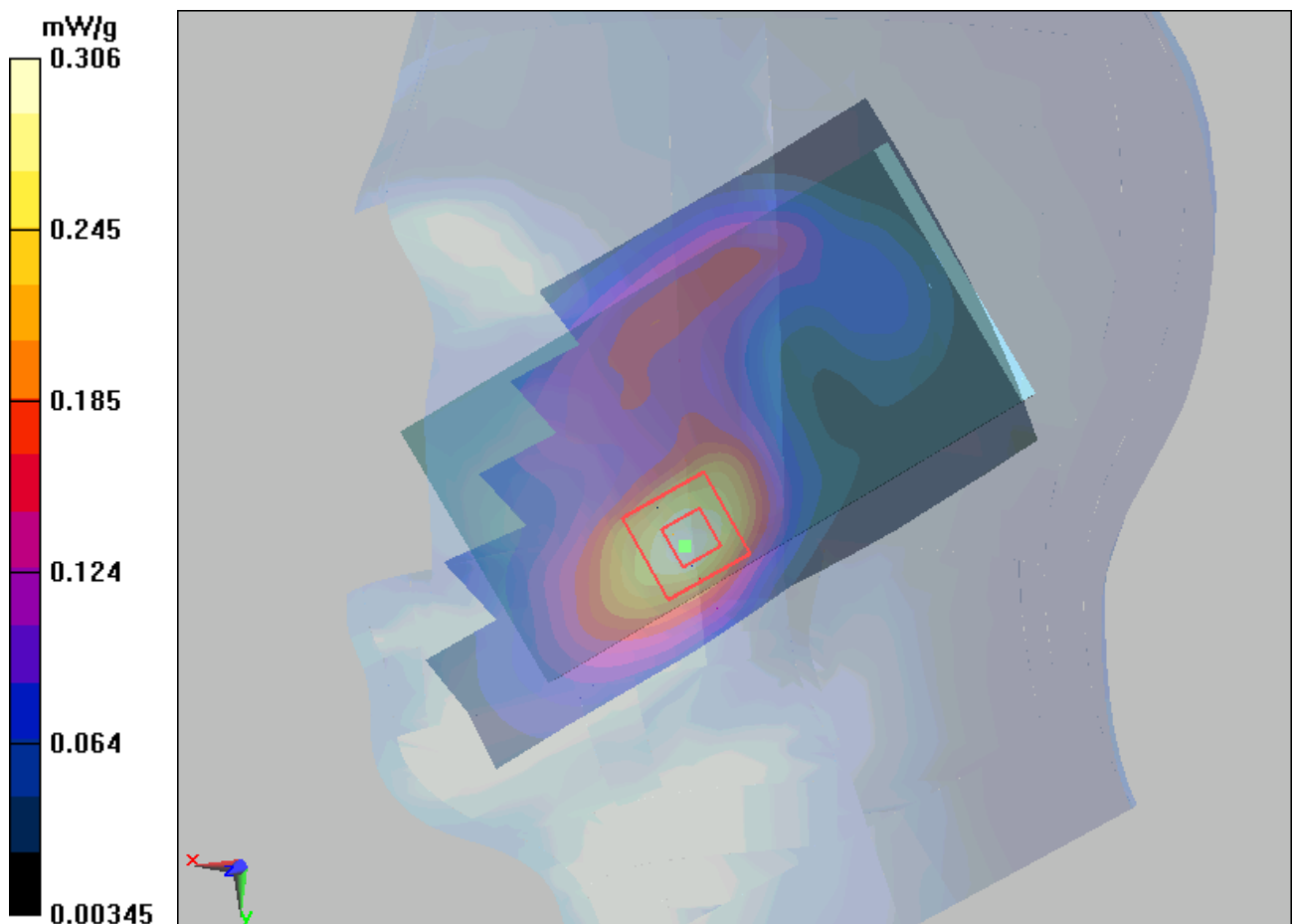
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.74 V/m; Power Drift = 0.052 dB

Peak SAR (extrapolated) = 0.445 W/kg

SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.172 mW/g

Maximum value of SAR (measured) = 0.306 mW/g



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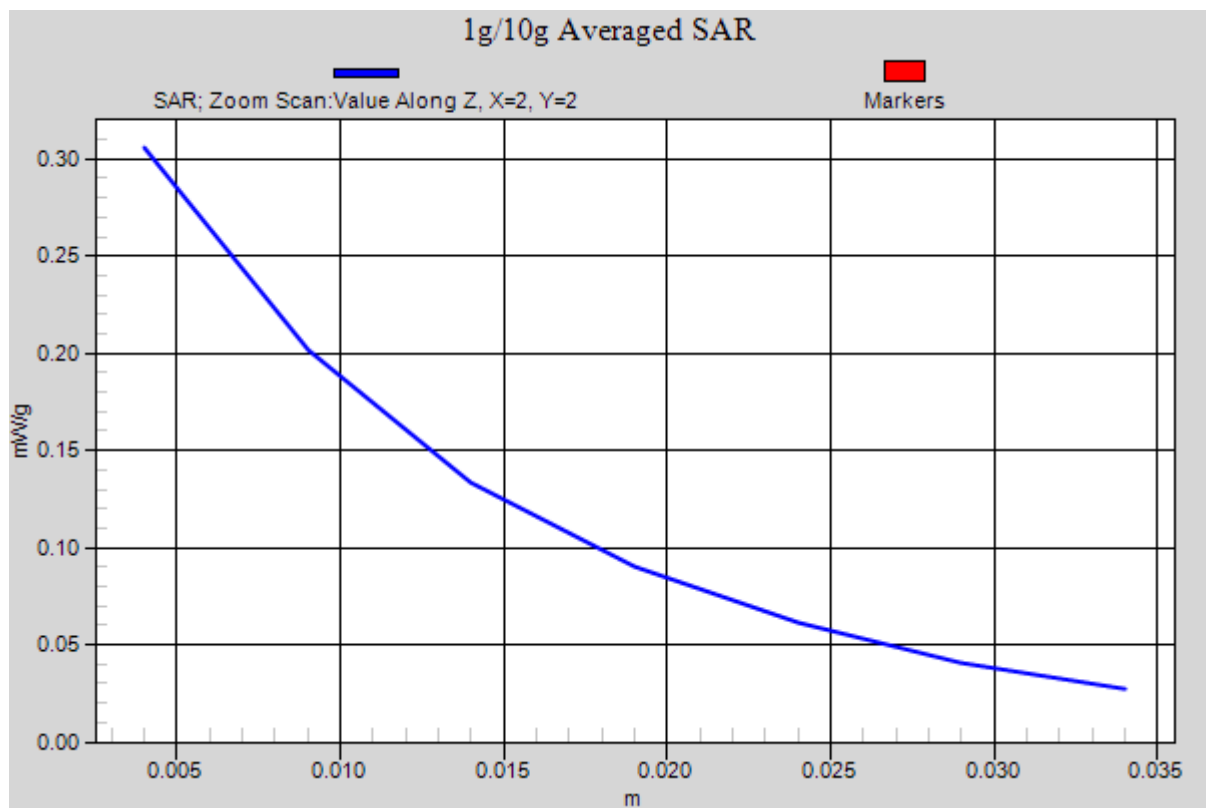


Figure 33 Right Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 GPRS (1Txslot) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 9:18:57 PM

Communication System: GPRS 1TX; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.785 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.27 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 1.19 W/kg

SAR(1 g) = 0.704 mW/g; SAR(10 g) = 0.394 mW/g

Maximum value of SAR (measured) = 0.741 mW/g

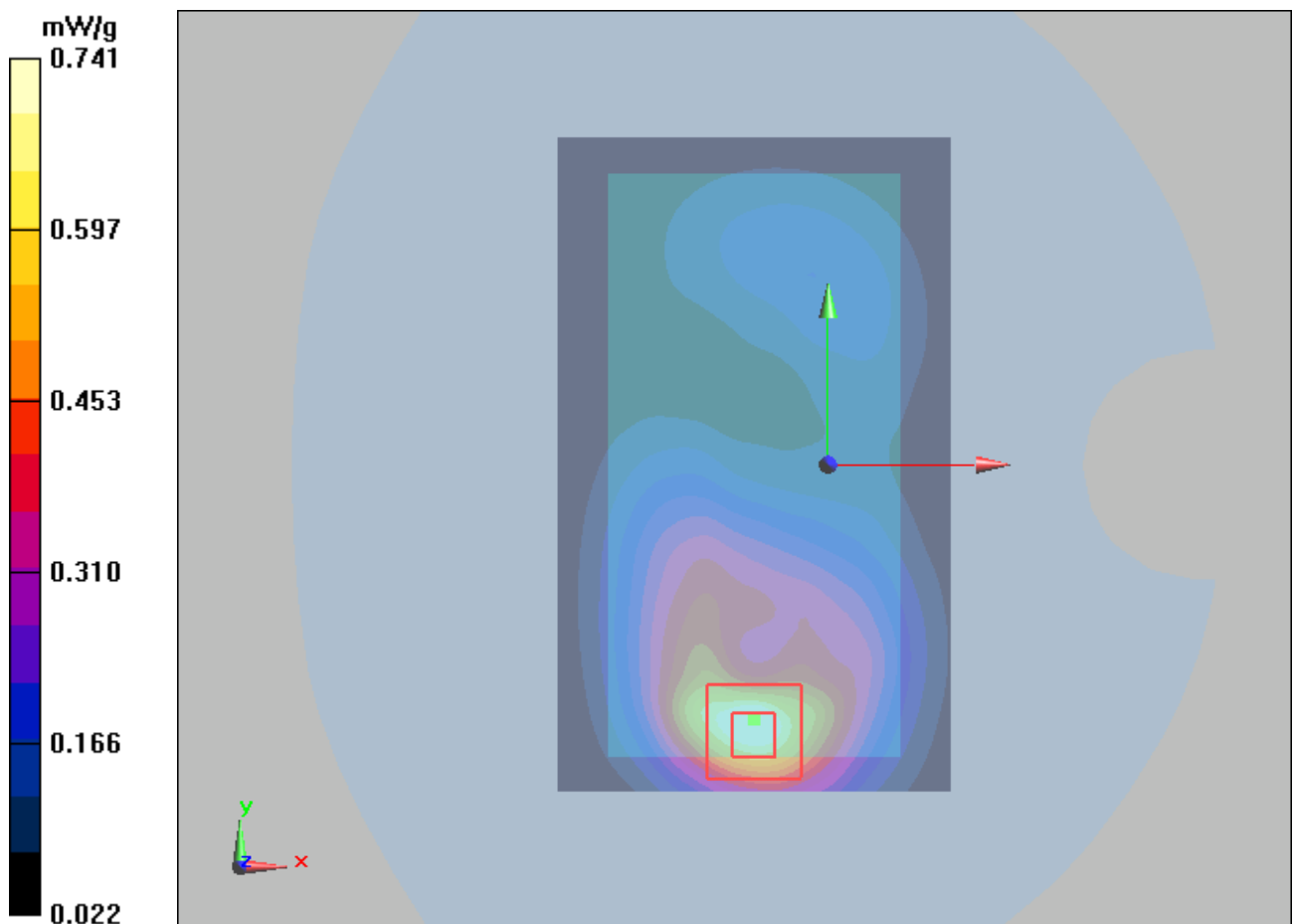


Figure 34 Body, Back Side, GSM 1900 GPRS (1Txslot) Channel 661

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GSM 1900 GPRS (2Txslots) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 9:36:17 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.975 mW/g

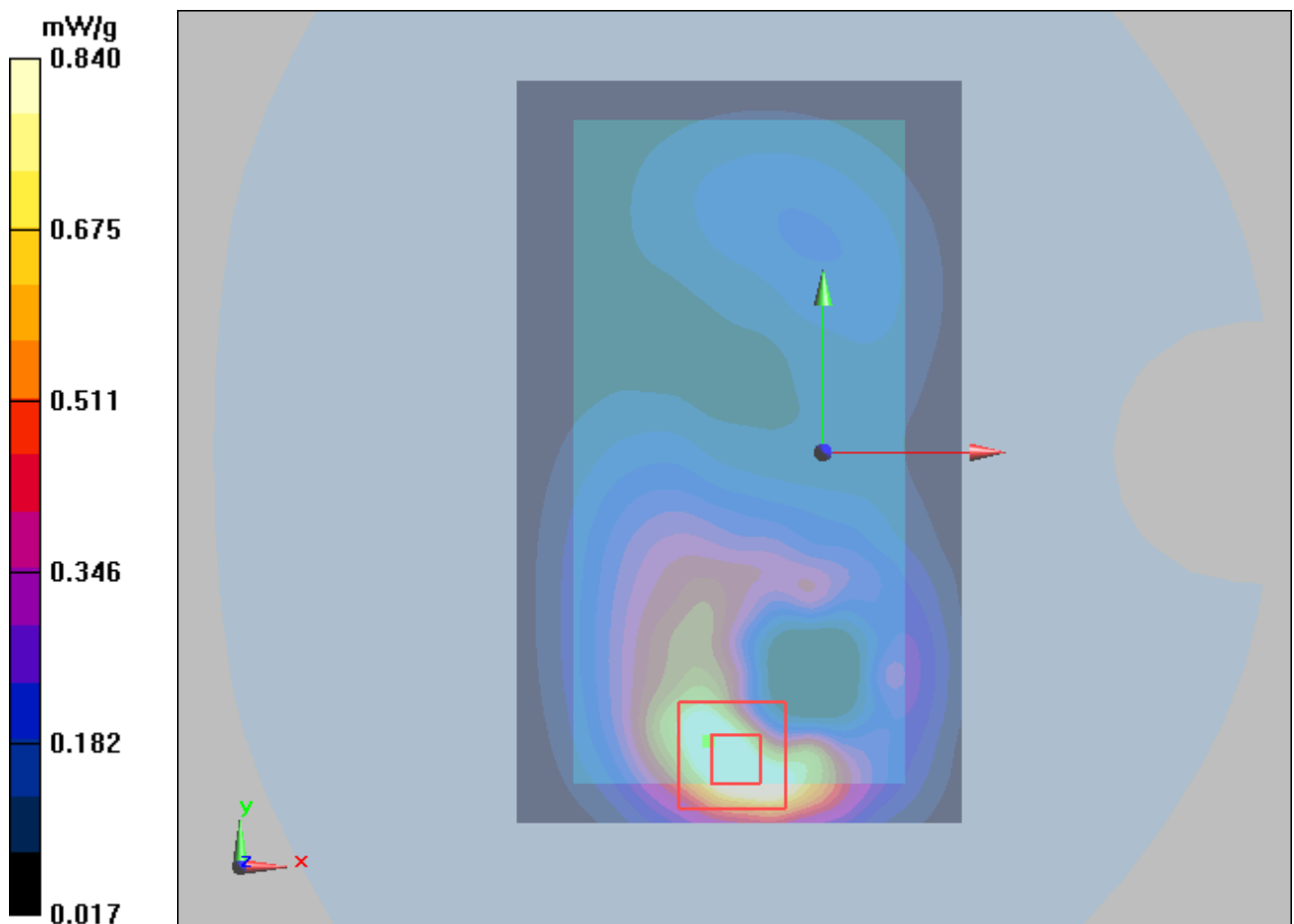
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.71 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.790 mW/g; SAR(10 g) = 0.441 mW/g

Maximum value of SAR (measured) = 0.840 mW/g



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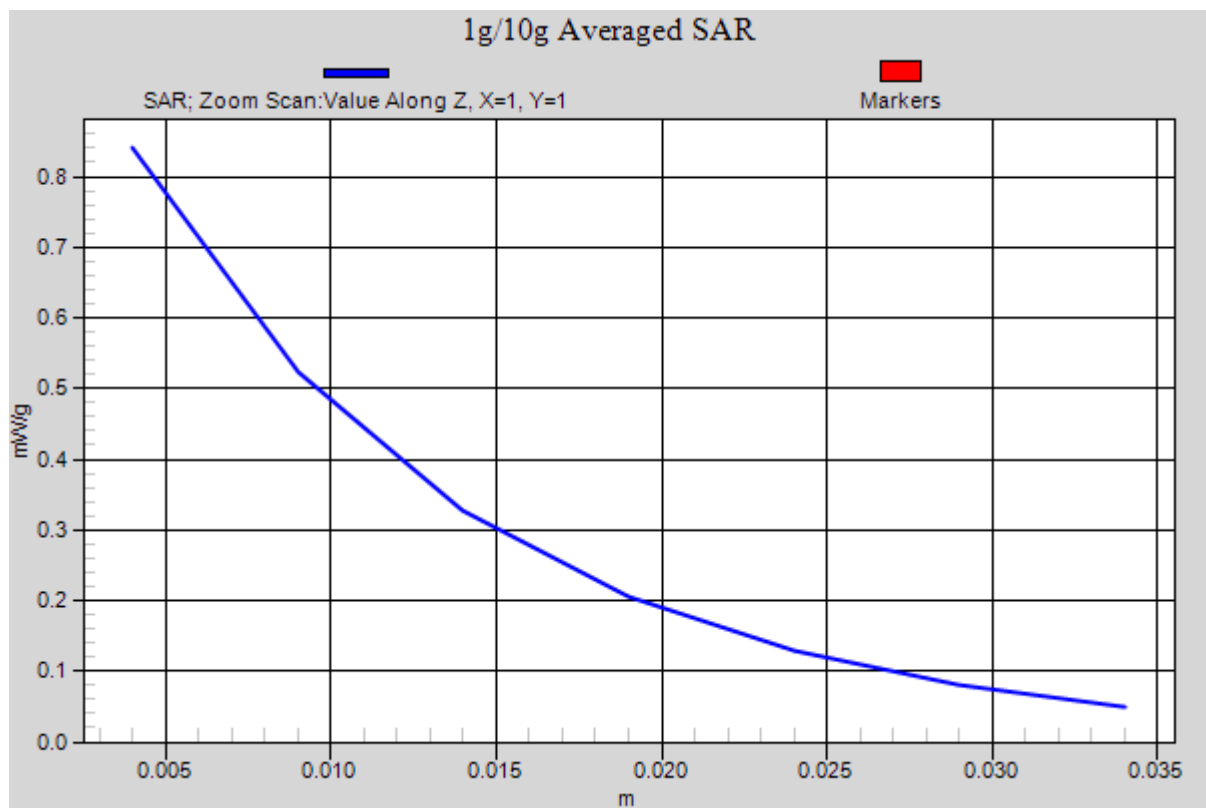


Figure 35 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 GPRS (2Txslots) Front Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 9:55:50 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.564 mW/g

Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.26 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.899 W/kg

SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.322 mW/g

Maximum value of SAR (measured) = 0.616 mW/g

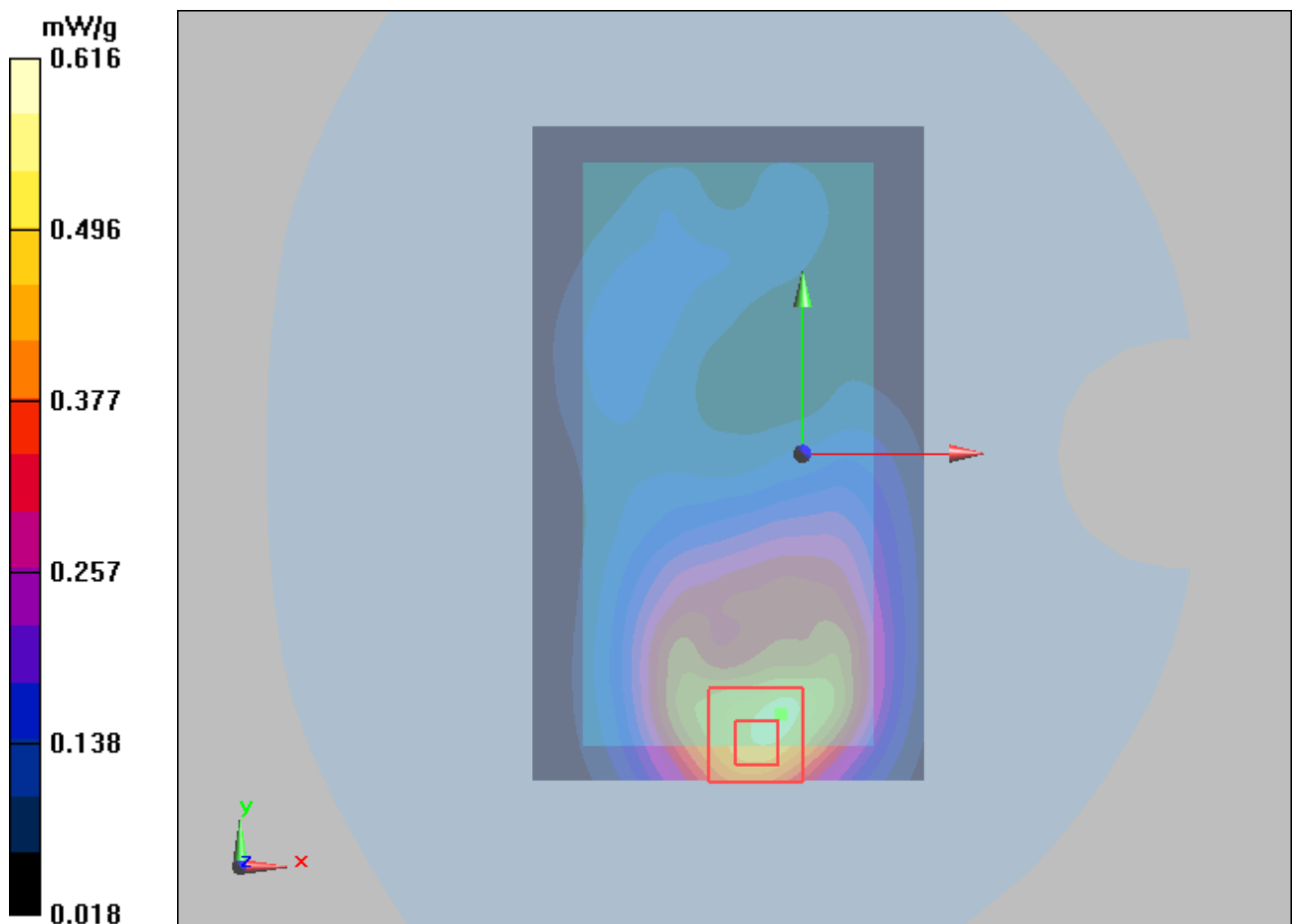


Figure 36 Body, Front Side, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 GPRS (2Txslots)) Left Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 10:38:29 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Left Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.139 mW/g

Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.73 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.130 mW/g; SAR(10 g) = 0.079 mW/g

Maximum value of SAR (measured) = 0.144 mW/g

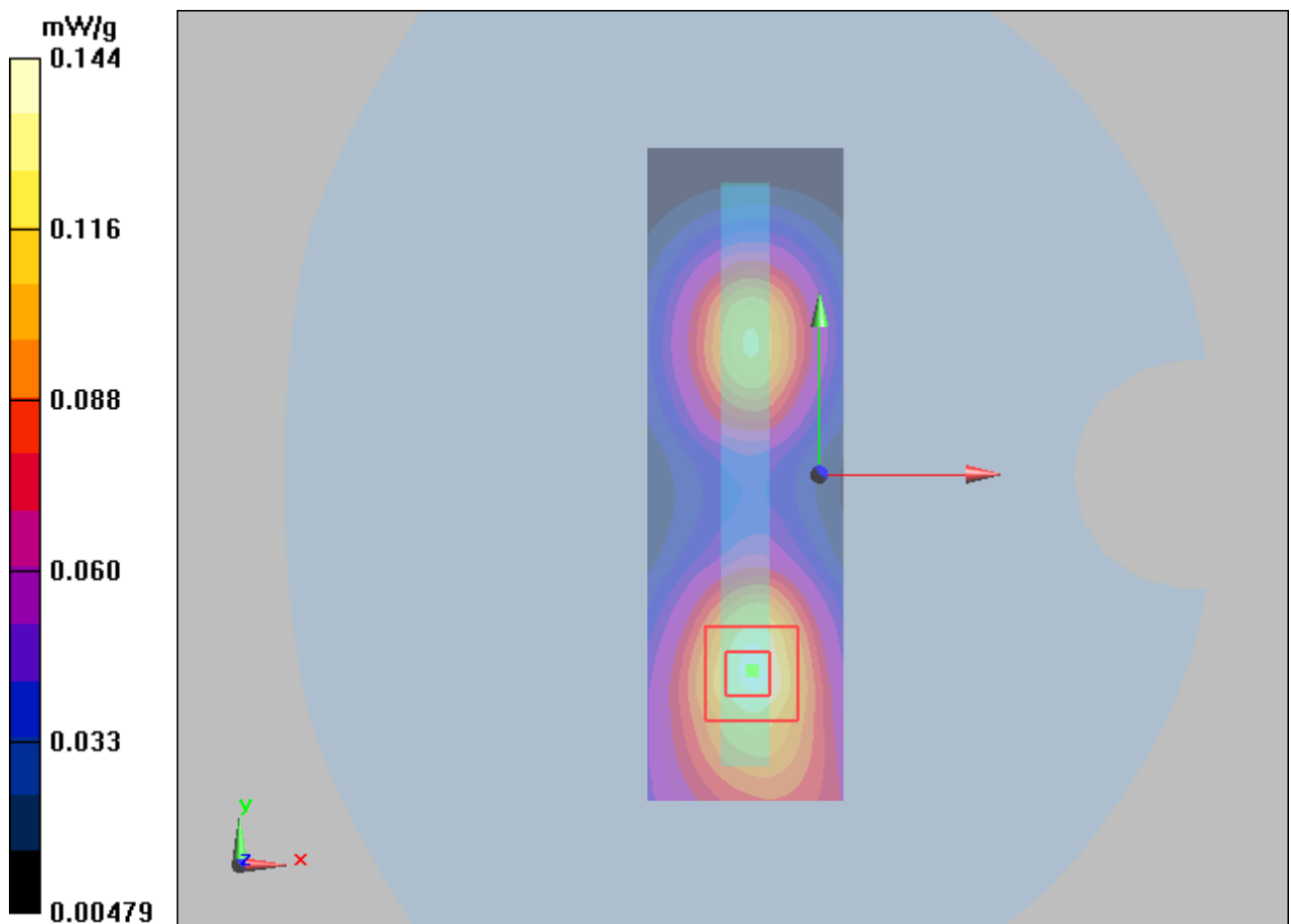


Figure 37 Body, Left Edge, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 GPRS (2Txslots) Right Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 10:59:23 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Right Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.141 mW/g

Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.14 V/m; Power Drift = 0.124 dB

Peak SAR (extrapolated) = 0.218 W/kg

SAR(1 g) = 0.133 mW/g; SAR(10 g) = 0.079 mW/g

Maximum value of SAR (measured) = 0.145 mW/g

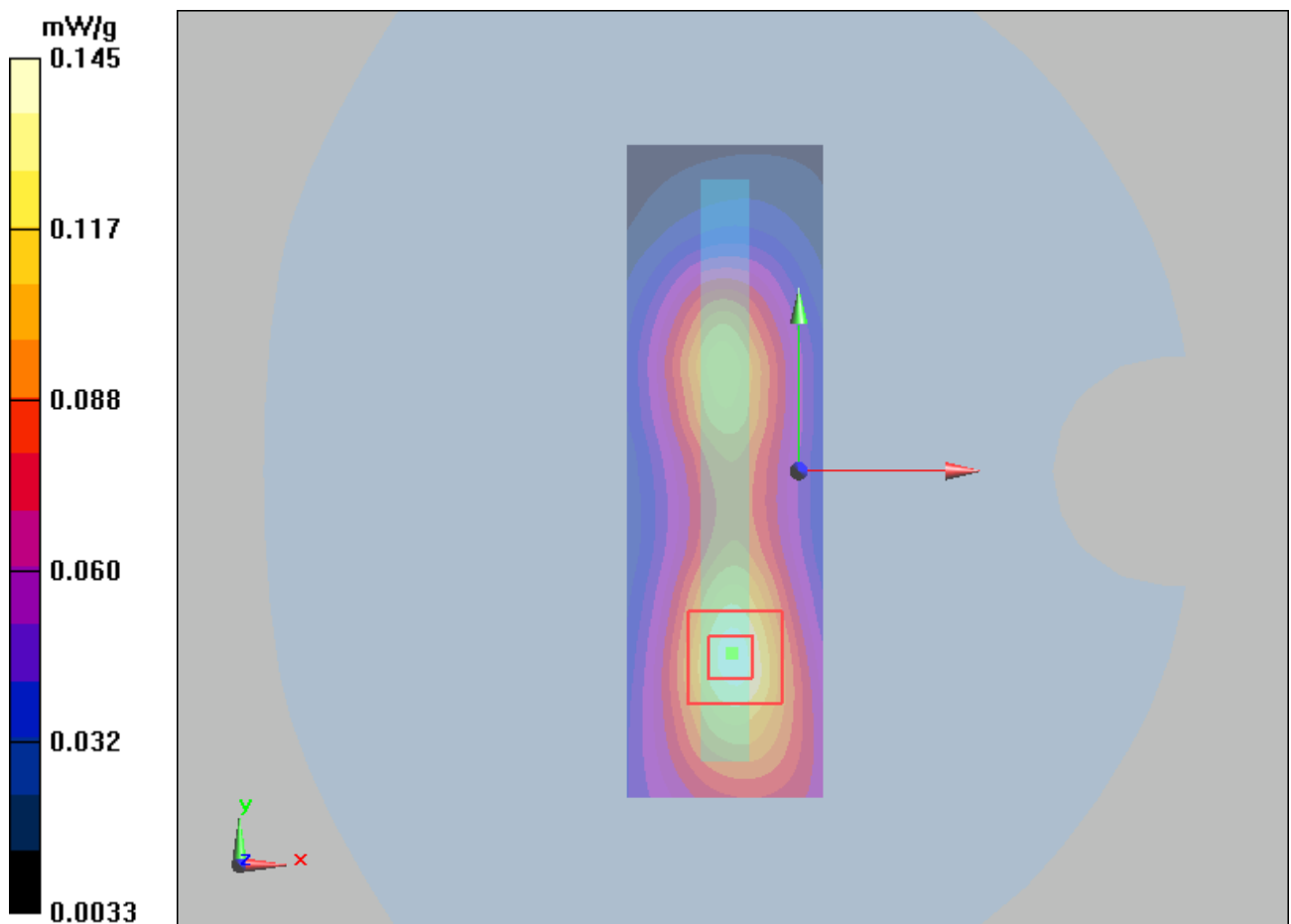


Figure 38 Body, Right Edge, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 GPRS (2Txslots) Bottom Edge Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 10:24:03 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge Middle/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.622 mW/g

Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 20 V/m; Power Drift = 0.076 dB

Peak SAR (extrapolated) = 0.923 W/kg

SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.616 mW/g

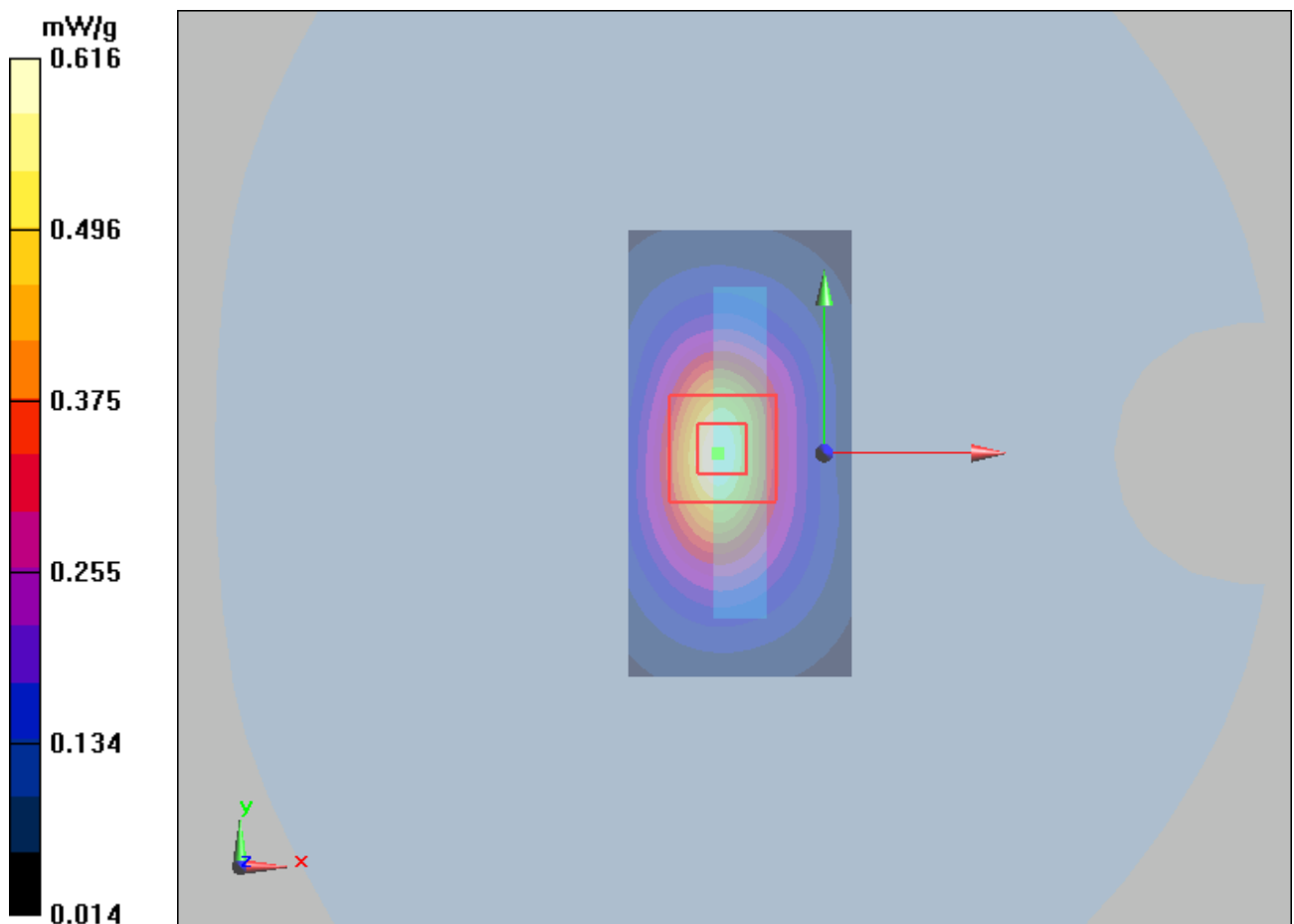


Figure 39 Body, Bottom Edge, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 EGPRS (2Txslots) Back Side Middle (Battery 1, 10mm)

Date/Time: 11/30/2012 11:39:06 PM

Communication System: EGPRS 2TX; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.838 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 8.93 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.423 mW/g

Maximum value of SAR (measured) = 0.797 mW/g

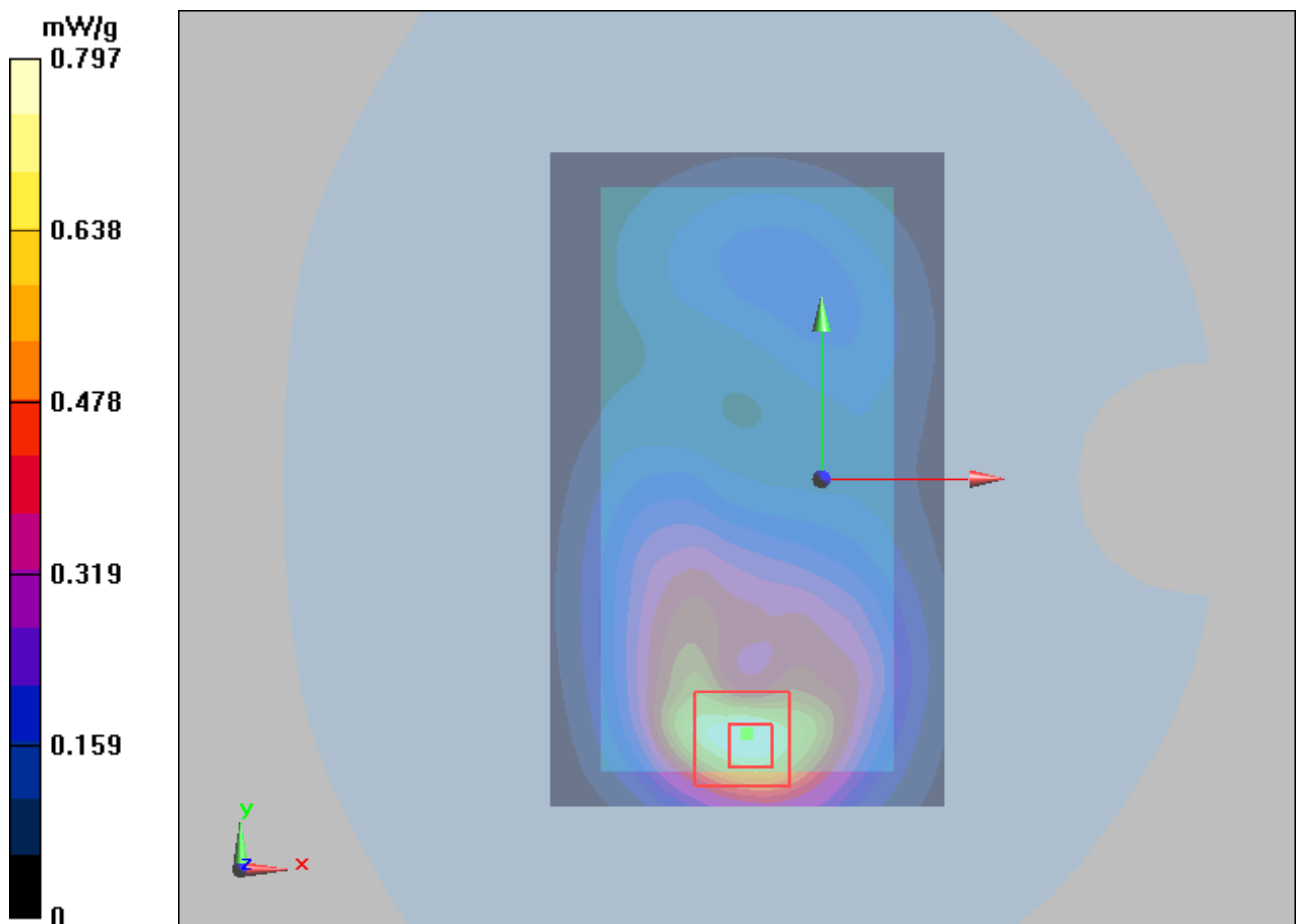


Figure 40 Body, Back Side, GSM 1900 EGPRS (2Txslots) Channel 661

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GSM 1900 with Earphone Back Side Middle (Battery 1, 10mm)

Date/Time: 12/1/2012 12:04:51 AM

Communication System: GSM; Frequency: 1880 MHz; Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.852 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.62 V/m; Power Drift = -0.095 dB

Peak SAR (extrapolated) = 1.28 W/kg

SAR(1 g) = 0.743 mW/g; SAR(10 g) = 0.415 mW/g

Maximum value of SAR (measured) = 0.800 mW/g

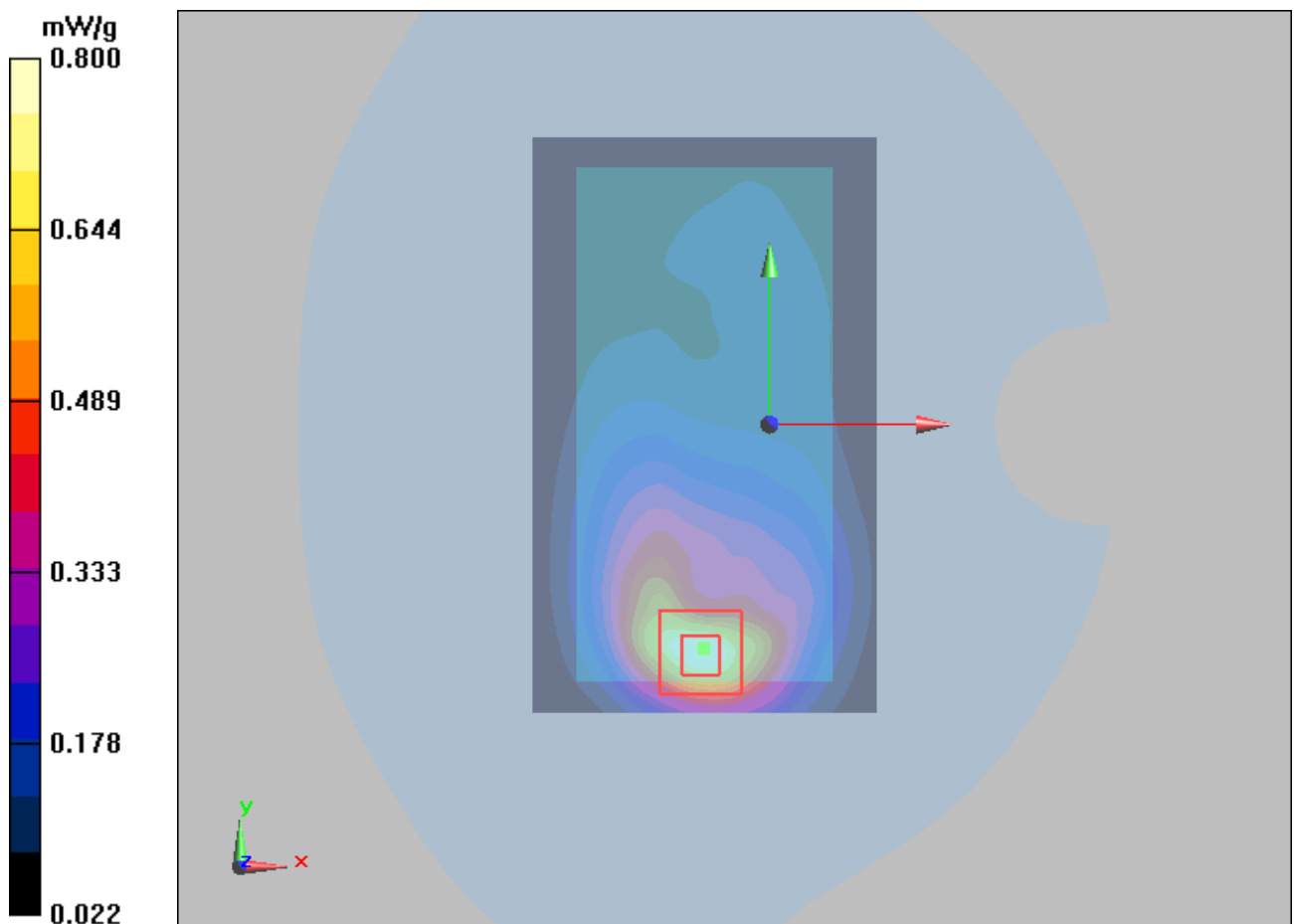


Figure 41 Body with Earphone, Back Side, GSM 1900 Channel 661

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GSM 1900 GPRS (2Txslots) Back Side Middle (Battery 2, 10mm)

Date/Time: 12/1/2012 12:40:35 AM

Communication System: GPRS 2TX ; Frequency: 1880 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.5$ mho/m; $\epsilon_r = 52.2$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.783 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.2 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.784 mW/g; SAR(10 g) = 0.442 mW/g

Maximum value of SAR (measured) = 0.886 mW/g

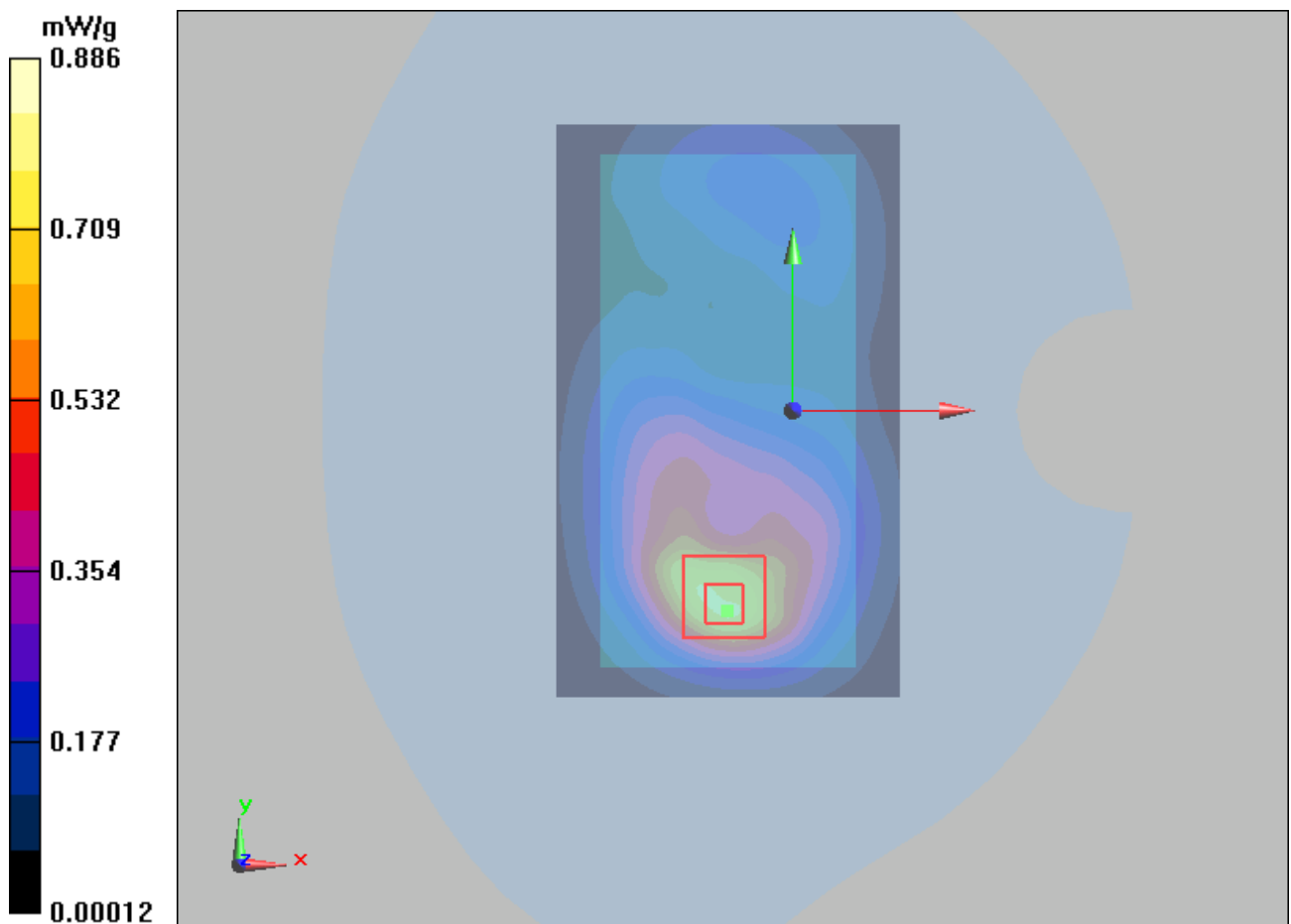


Figure 42 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

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GSM 1900 Right Cheek Middle (Battery 2,variant model: HUAWEI G510-0200, G510-0200)

Date/Time: 12/4/2012 7:07:57 PM

Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.39$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Ambient Temperature:22.3 °C Liquid Temperature: 21.5°C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.311 mW/g

Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.31 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.448 W/kg

SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.177 mW/g

Maximum value of SAR (measured) = 0.314 mW/g

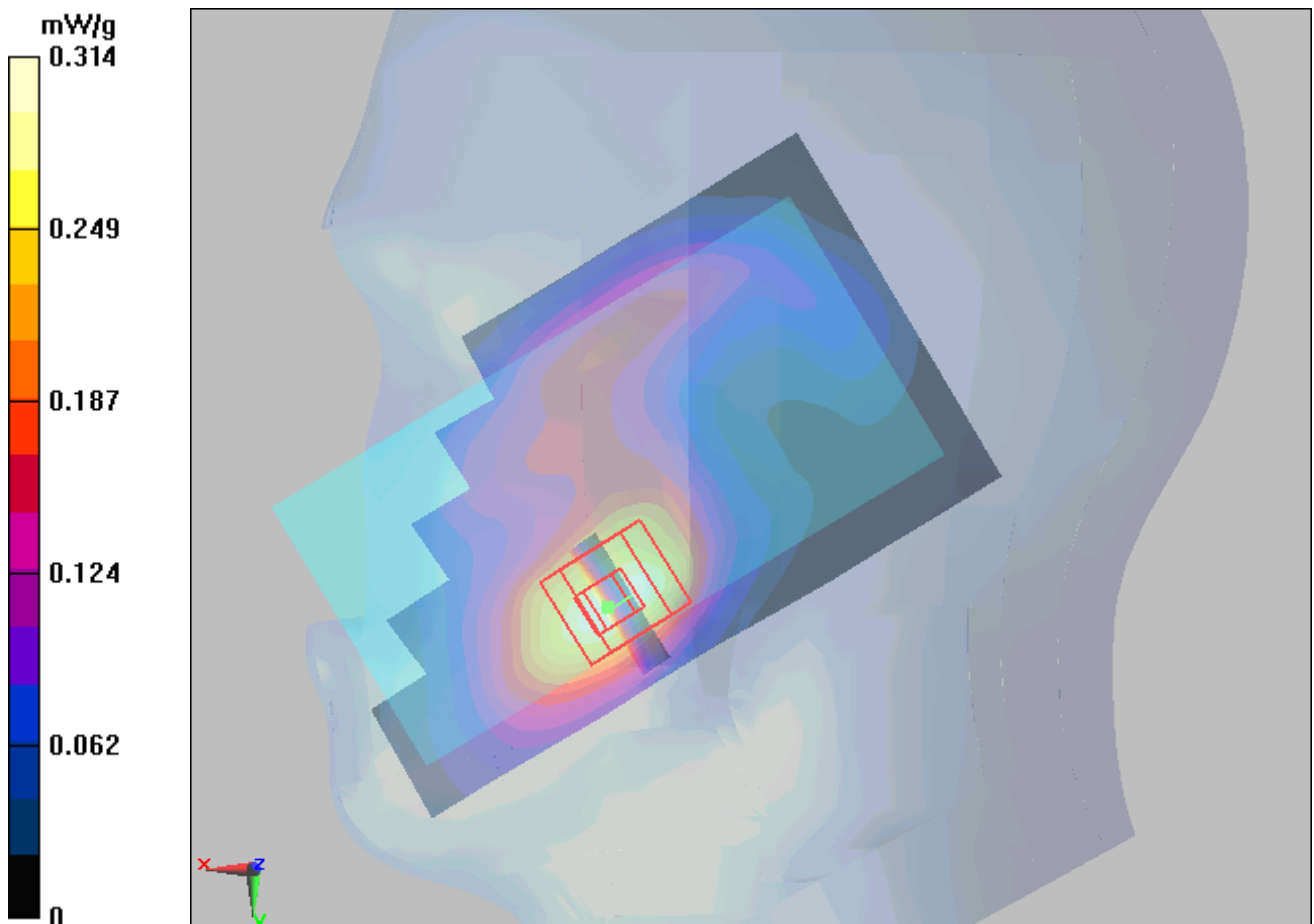


Figure 43 Right Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 GPRS (2Txslots) Back Side Middle (Battery 1,variant model: HUAWEI G510-0200, G510-0200, 10mm)

Date/Time: 12/4/2012 8:17:54 PM

Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954

Medium parameters used: $f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 52.2$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

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

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.7 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 1.1 W/kg

SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.381 mW/g

Maximum value of SAR (measured) = 0.716 mW/g

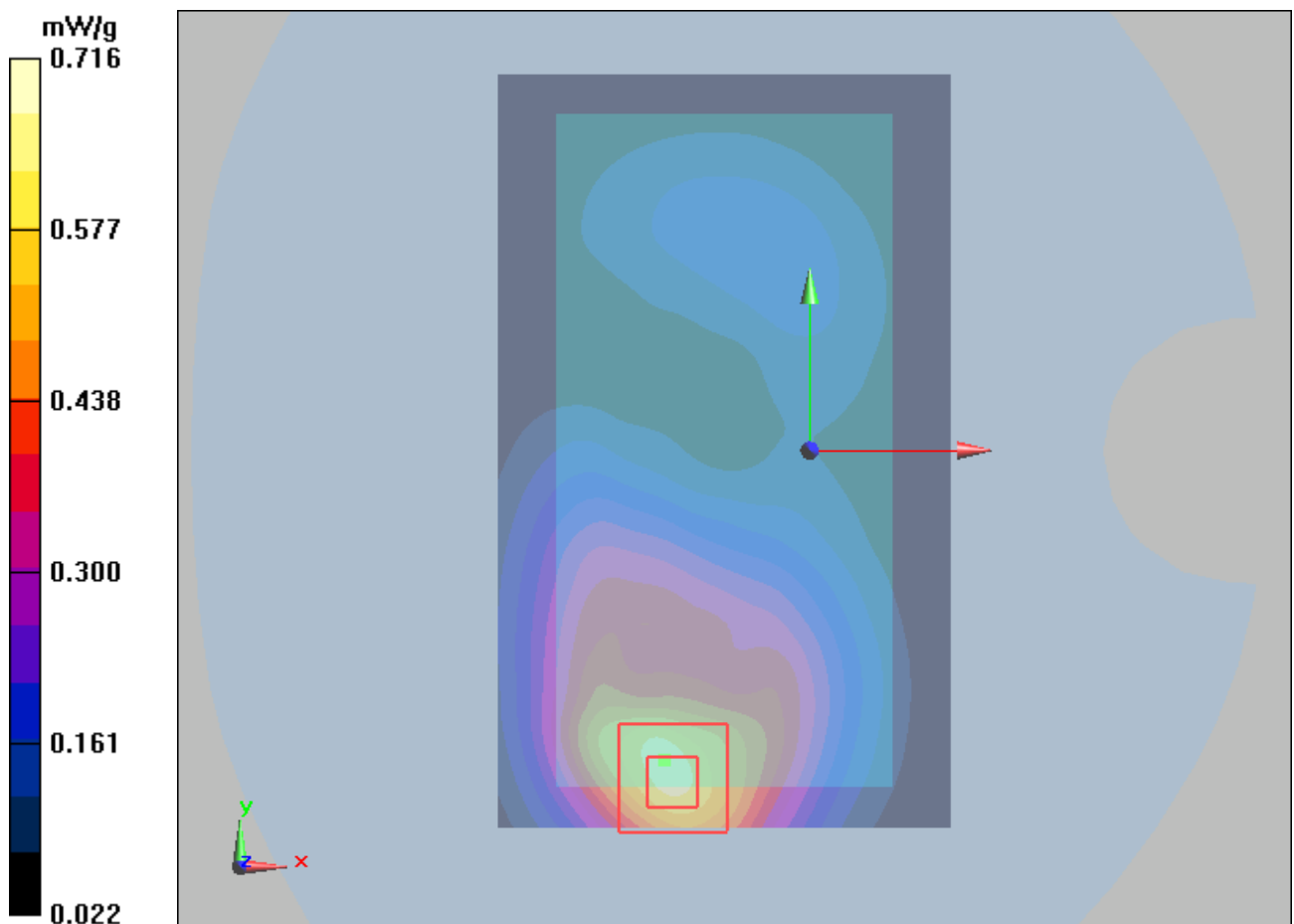


Figure 44 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

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802.11b Left Cheek High (Battery 1)

Date/Time: 12/1/2012 6:40:37 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.140 mW/g

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

Reference Value = 4.91 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.121 mW/g; SAR(10 g) = 0.055 mW/g

Maximum value of SAR (measured) = 0.133 mW/g

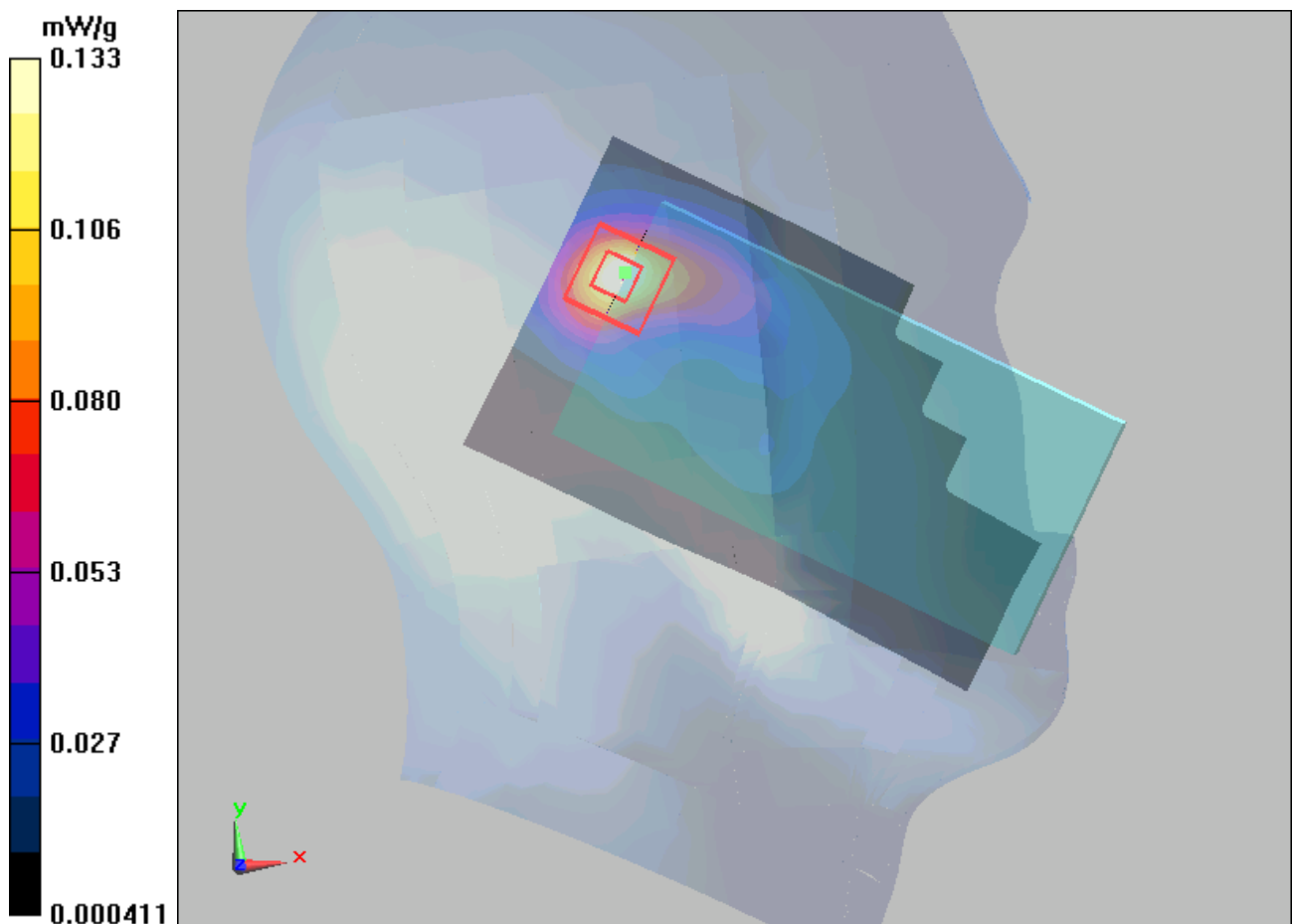


Figure 45 Left Hand Touch Cheek 802.11b Channel 11

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802.11b Left Tilt High (Battery 1)

Date/Time: 12/1/2012 7:03:30 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

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

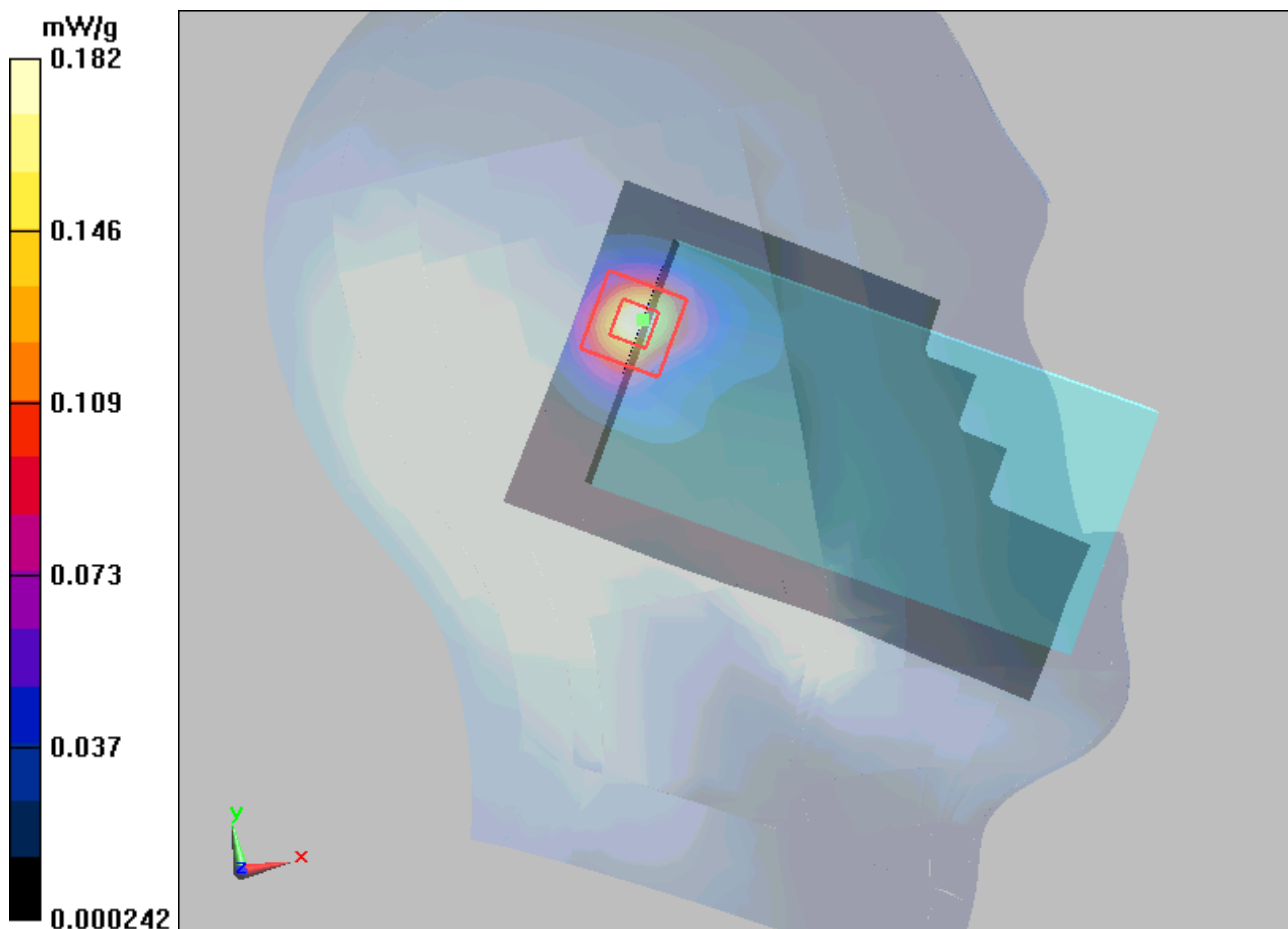
Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.14 V/m; Power Drift = 0.009 dB

Peak SAR (extrapolated) = 0.385 W/kg

SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.069 mW/g

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



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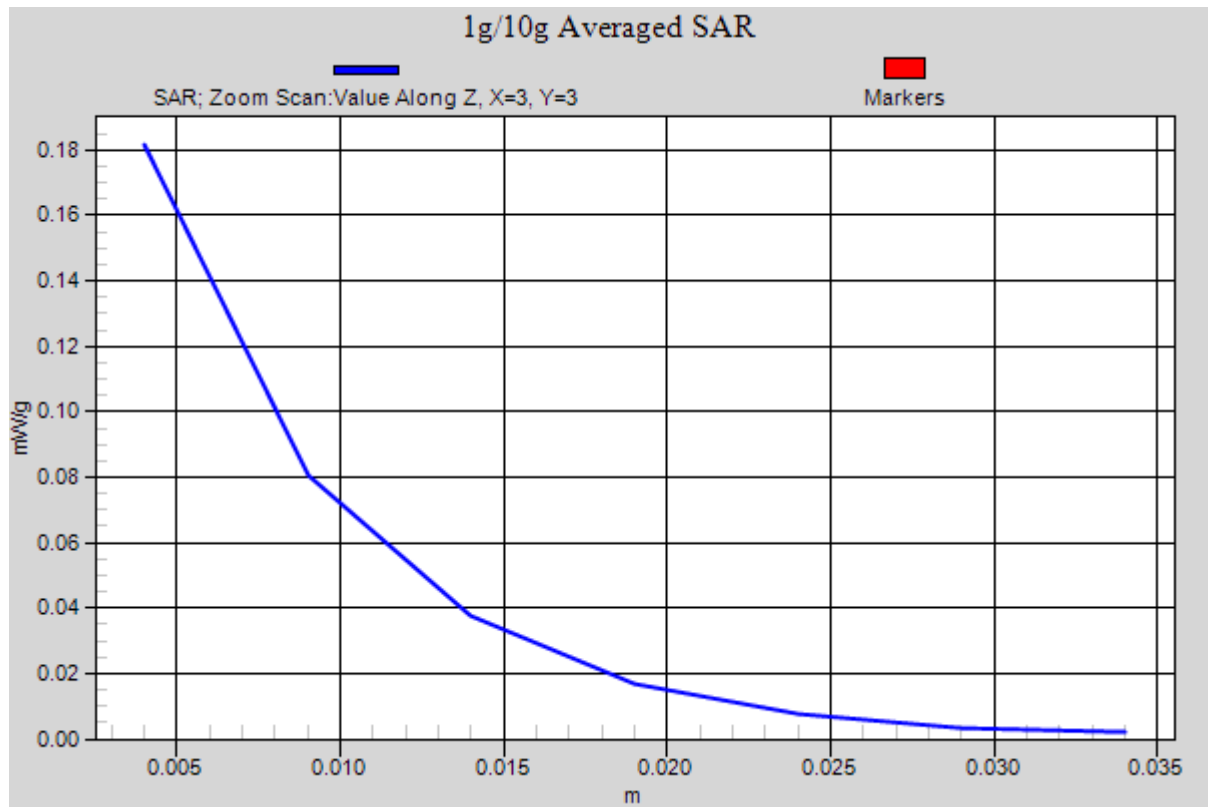


Figure 46 Left Hand Tilt 15° 802.11b Channel 11

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802.11b Right Cheek High (Battery 1)

Date/Time: 12/1/2012 5:51:42 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.106 mW/g

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

Reference Value = 6.75 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.213 W/kg

SAR(1 g) = 0.098 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.108 mW/g

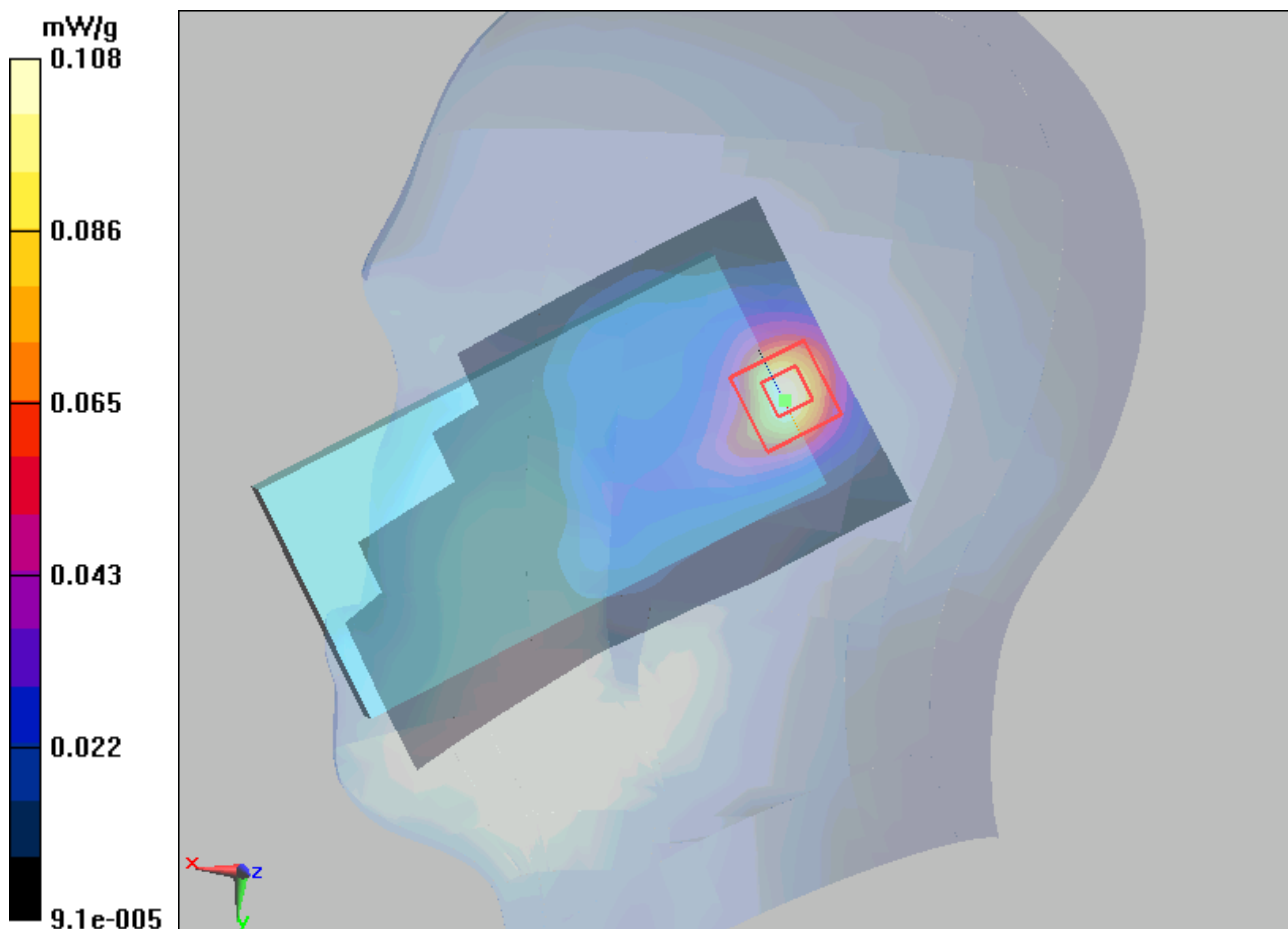


Figure 47 Right Hand Touch Cheek 802.11b Channel 11

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802.11b Right Tilt High (Battery 1)

Date/Time: 12/1/2012 6:14:36 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Right Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.152 mW/g

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

Reference Value = 8.04 V/m; Power Drift = 0.066 dB

Peak SAR (extrapolated) = 0.297 W/kg

SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.062 mW/g

Maximum value of SAR (measured) = 0.154 mW/g

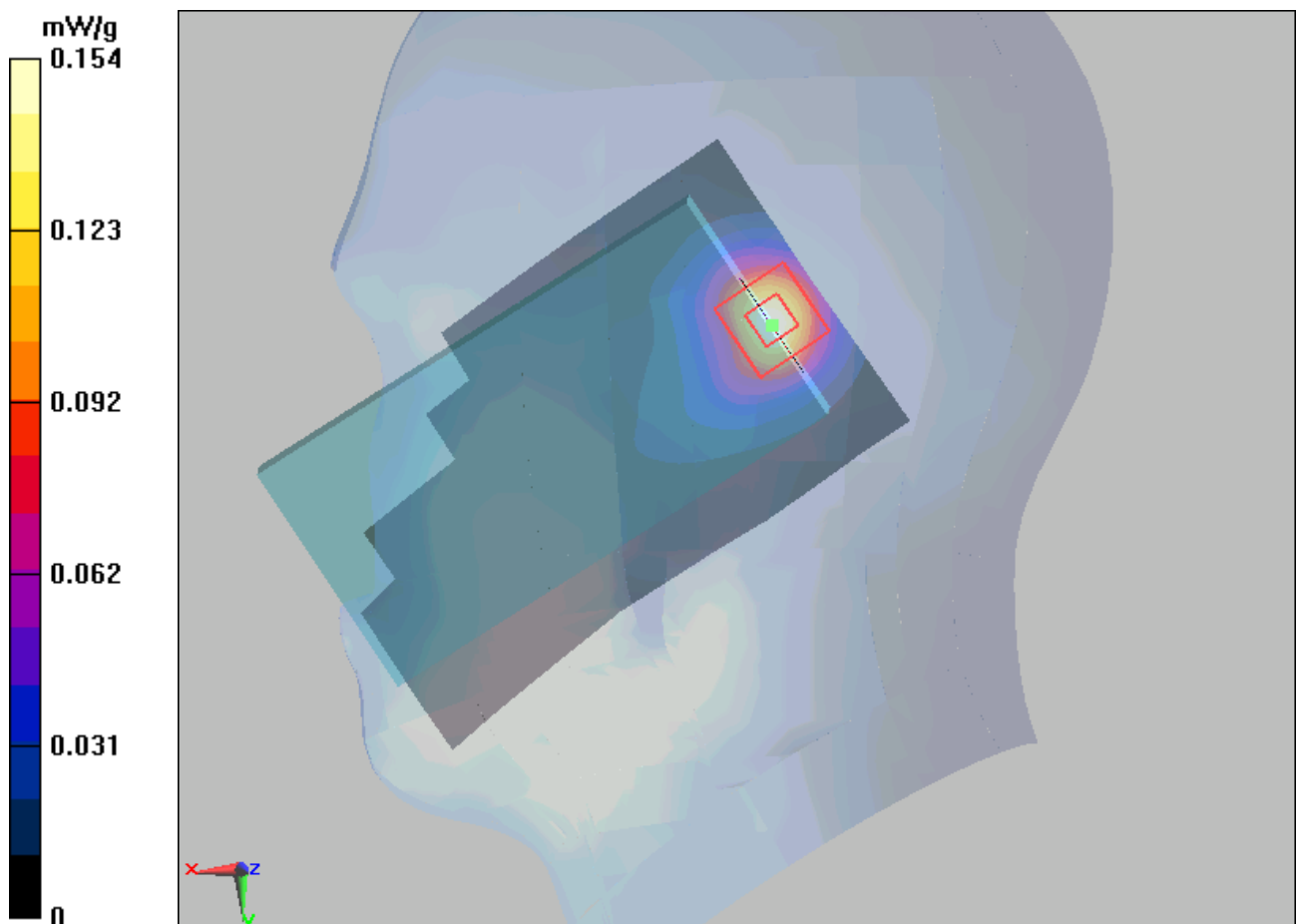


Figure 48 Right Hand Tilt 15° 802.11b Channel 11

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802.11b Left Tilt High (Battery 2)

Date/Time: 12/1/2012 7:27:00 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt High/Area Scan (61x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.184 mW/g

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

Reference Value = 6.12 V/m; Power Drift = 0.185 dB

Peak SAR (extrapolated) = 0.380 W/kg

SAR(1 g) = 0.159 mW/g; SAR(10 g) = 0.068 mW/g

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

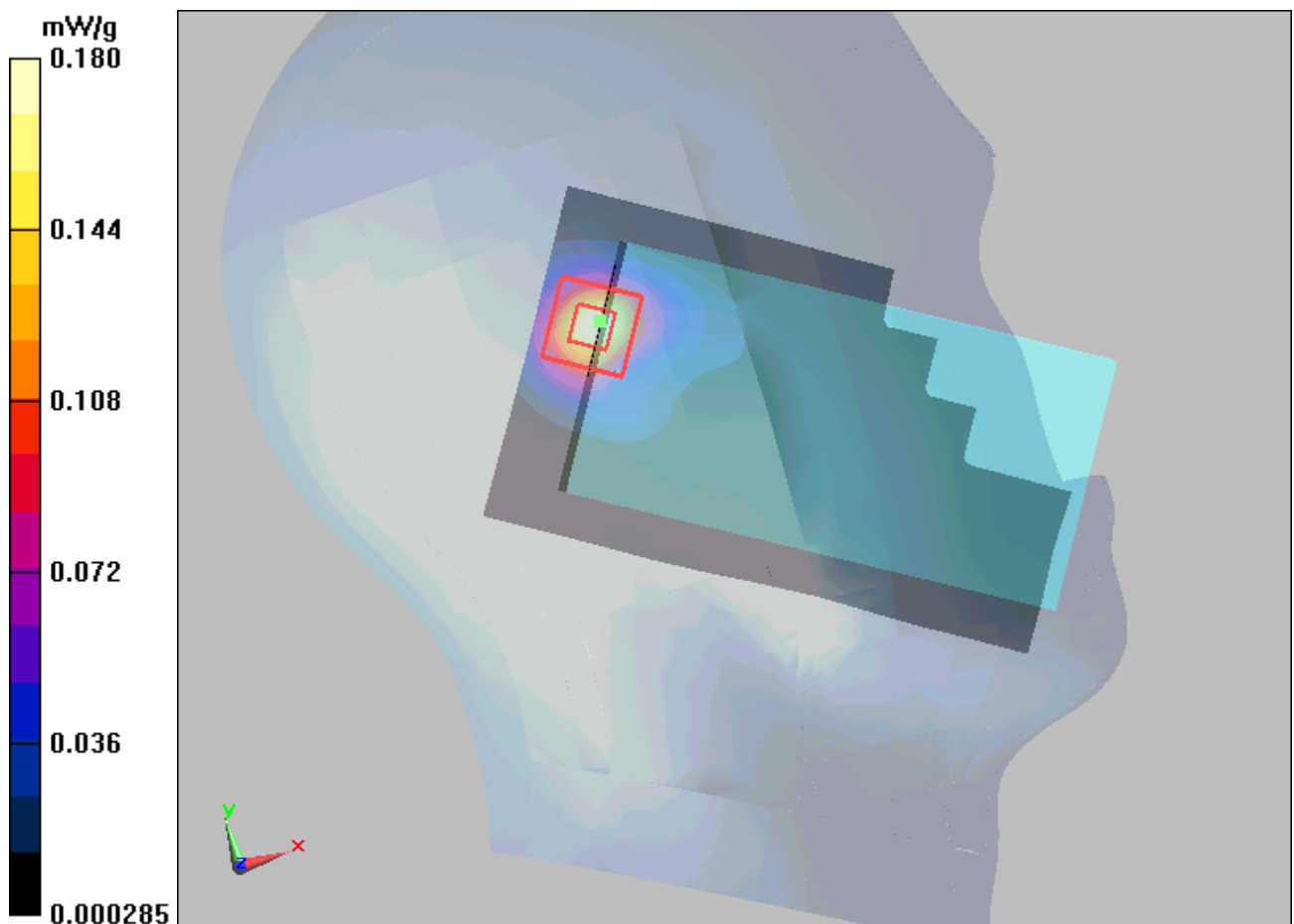


Figure 49 Left Hand Tilt 15° 802.11b Channel 11

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802.11b Back Side High (Battery 1, 10mm)

Date/Time: 12/1/2012 1:10:37 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.154 mW/g

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

Reference Value = 3.96 V/m; Power Drift = 0.096 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.163 mW/g

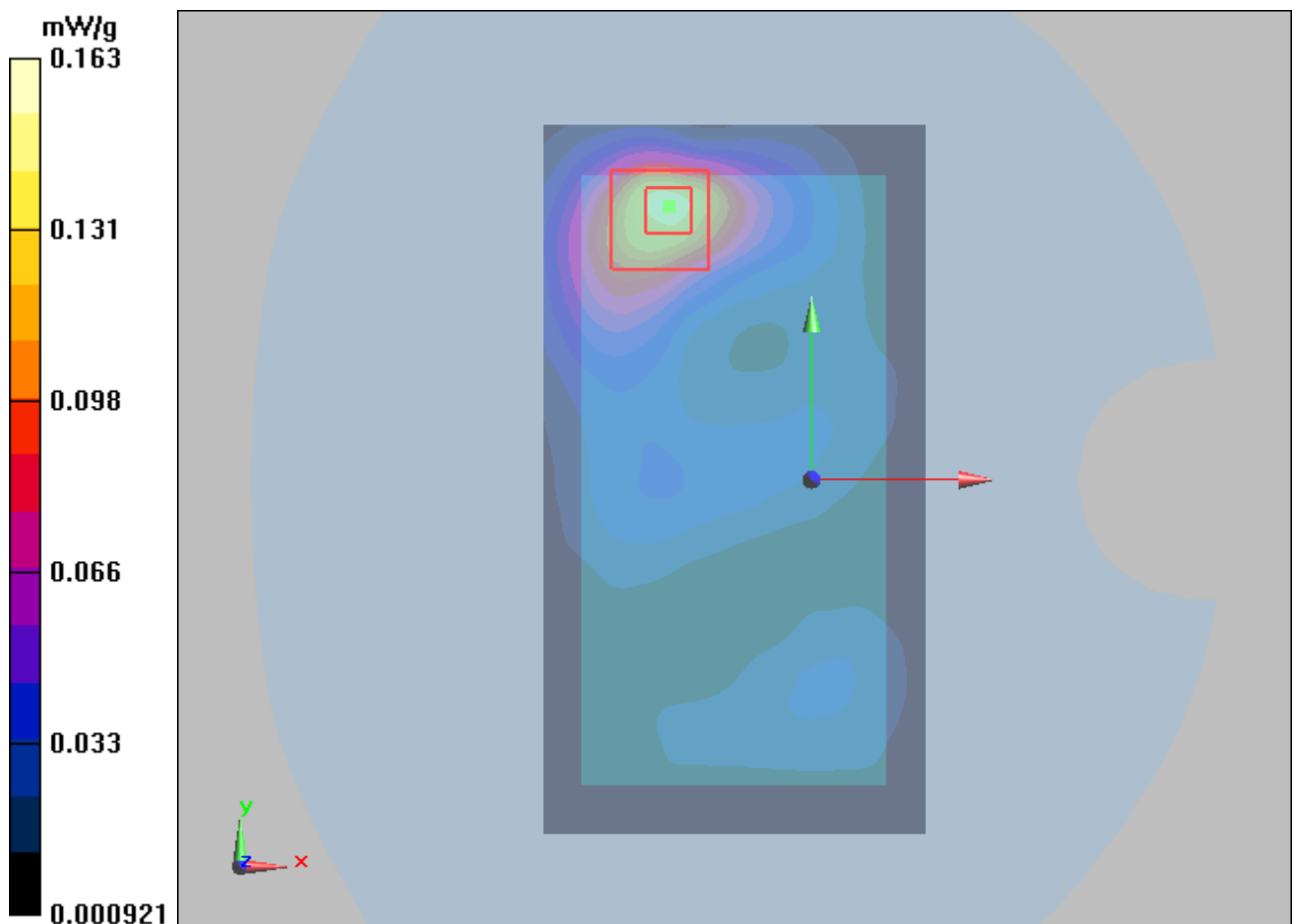


Figure 50 Body, Back Side, 802.11b Channel 11

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802.11b Front Side High (Battery 1, 10mm)

Date/Time: 12/1/2012 12:43:07 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Front Side High/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.040 mW/g

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

Reference Value = 2.75 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.072 W/kg

SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.041 mW/g

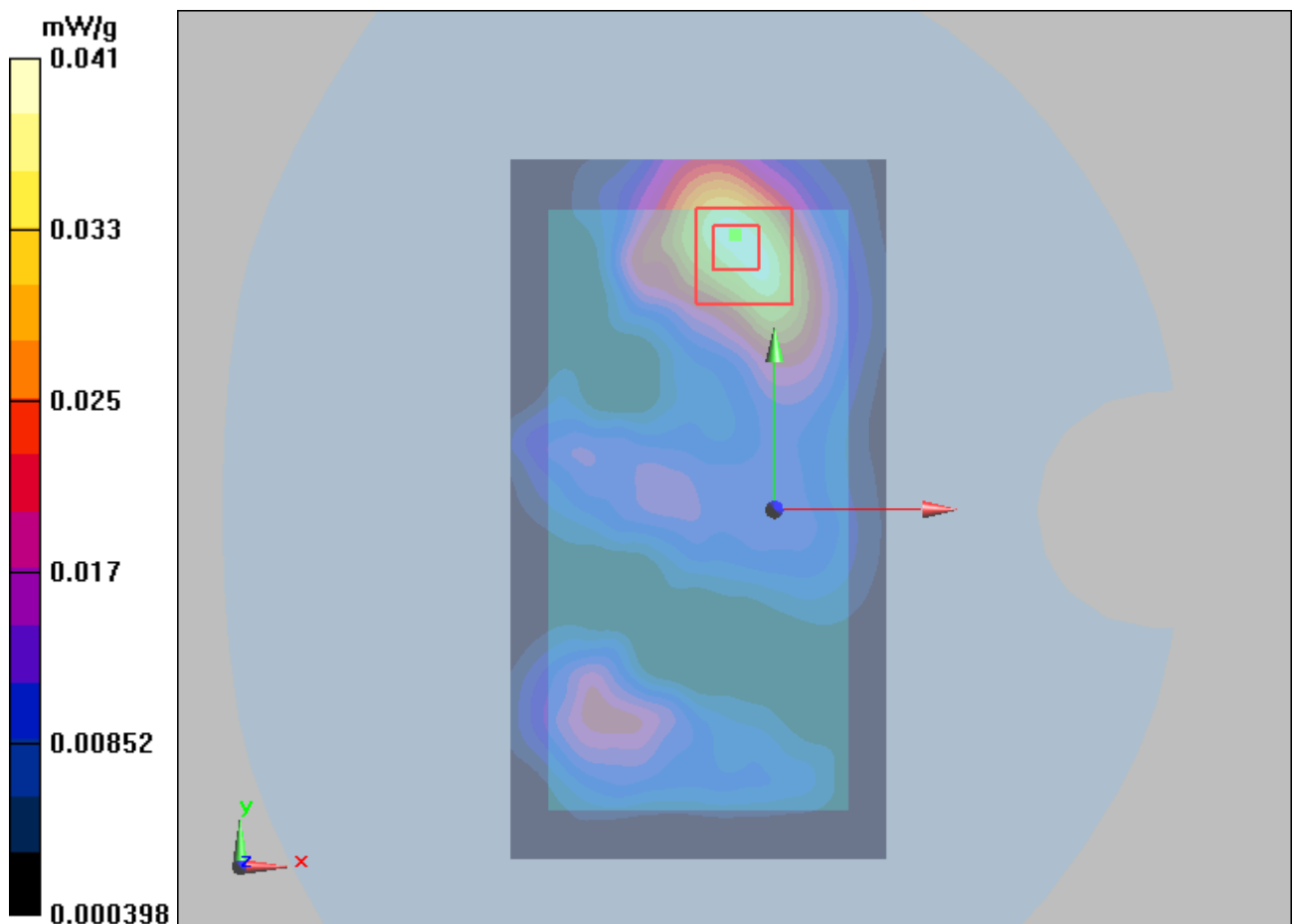


Figure 51 Body, Front Side, 802.11b Channel 11

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802.11b Left Edge High (Battery 1, 10mm)

Date/Time: 12/1/2012 11:34:31 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Left Edge High/Area Scan (31x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.016 mW/g

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

Reference Value = 2.46 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 0.015 W/kg

SAR(1 g) = 0.007 mW/g; SAR(10 g) = 0.004 mW/g

Maximum value of SAR (measured) = 0.00845 mW/g

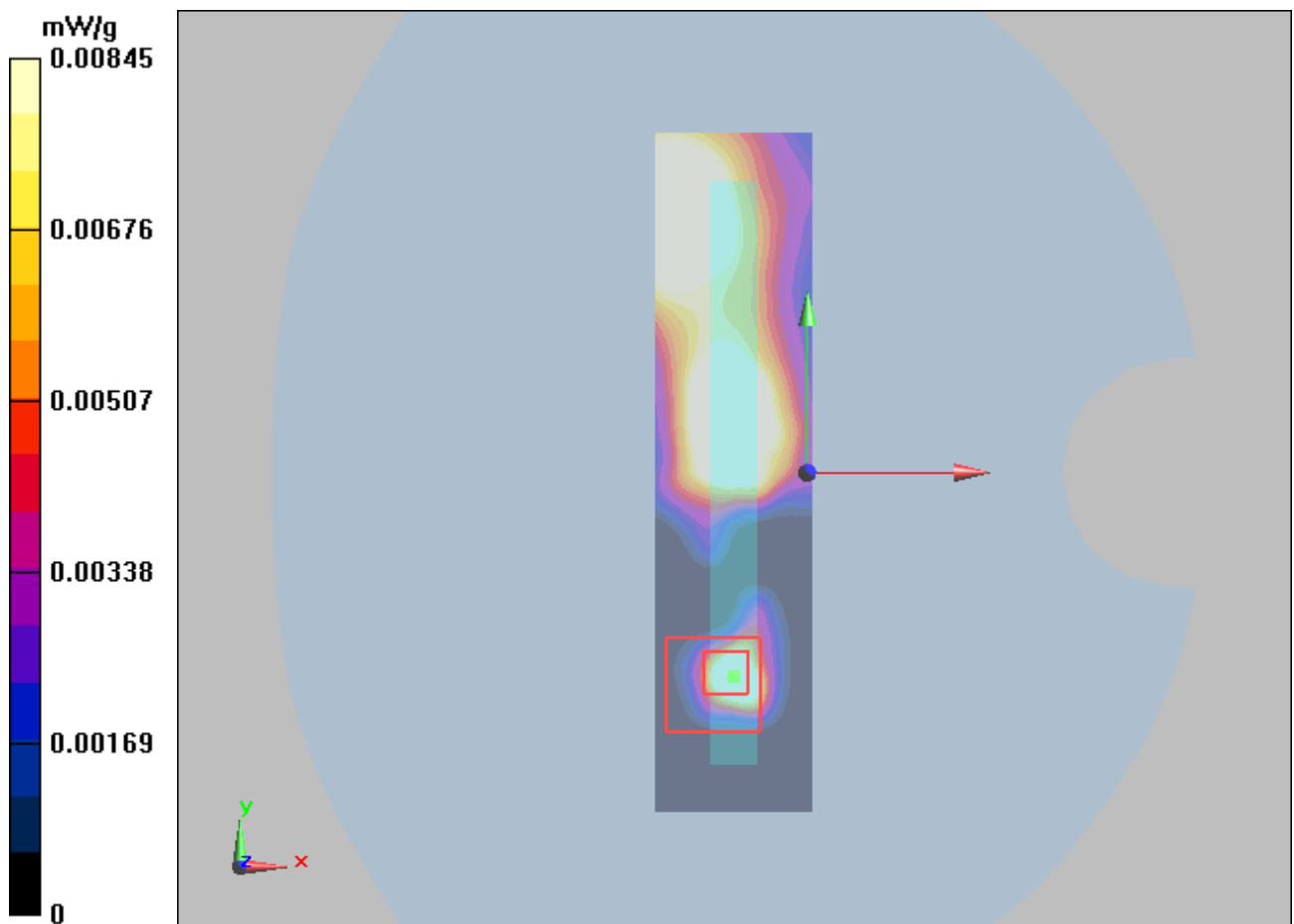


Figure 52 Body, Left Edge, 802.11b Channel 11

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802.11b Right Edge High (Battery 1, 10mm)

Date/Time: 12/1/2012 11:10:39 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Right Edge High/Area Scan (31x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.013 mW/g

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

Reference Value = 2.01 V/m; Power Drift = 0.099 dB

Peak SAR (extrapolated) = 0.027 W/kg

SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.007 mW/g

Maximum value of SAR (measured) = 0.013 mW/g

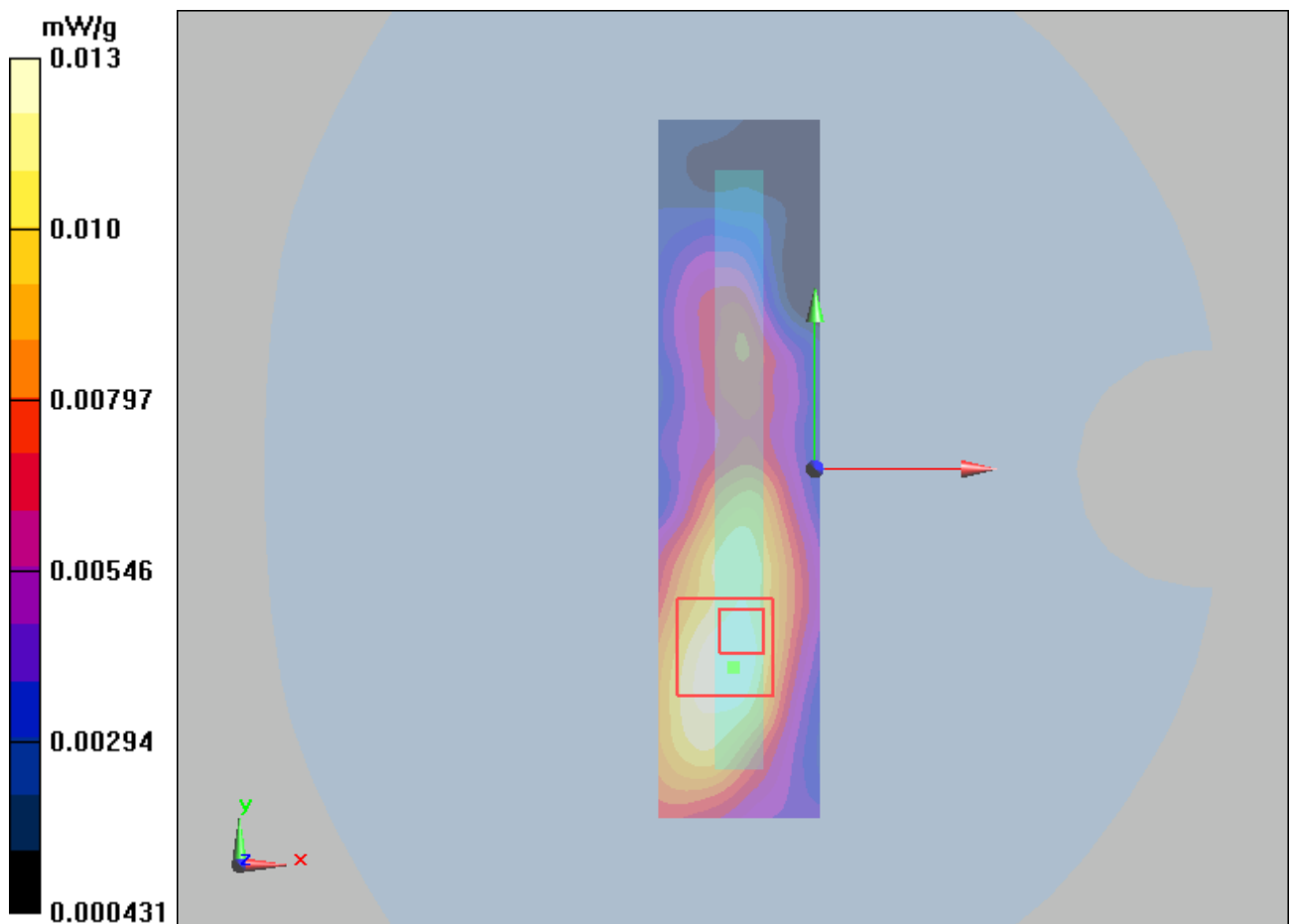


Figure 53 Body, Right Edge, 802.11b Channel 11

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802.11b Top Edge High (Battery 1, 10mm)

Date/Time: 12/1/2012 12:22:17 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Top Edge High/Area Scan (31x71x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.113 mW/g

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

Reference Value = 6.34 V/m; Power Drift = 0.175 dB

Peak SAR (extrapolated) = 0.203 W/kg

SAR(1 g) = 0.095 mW/g; SAR(10 g) = 0.044 mW/g

Maximum value of SAR (measured) = 0.108 mW/g

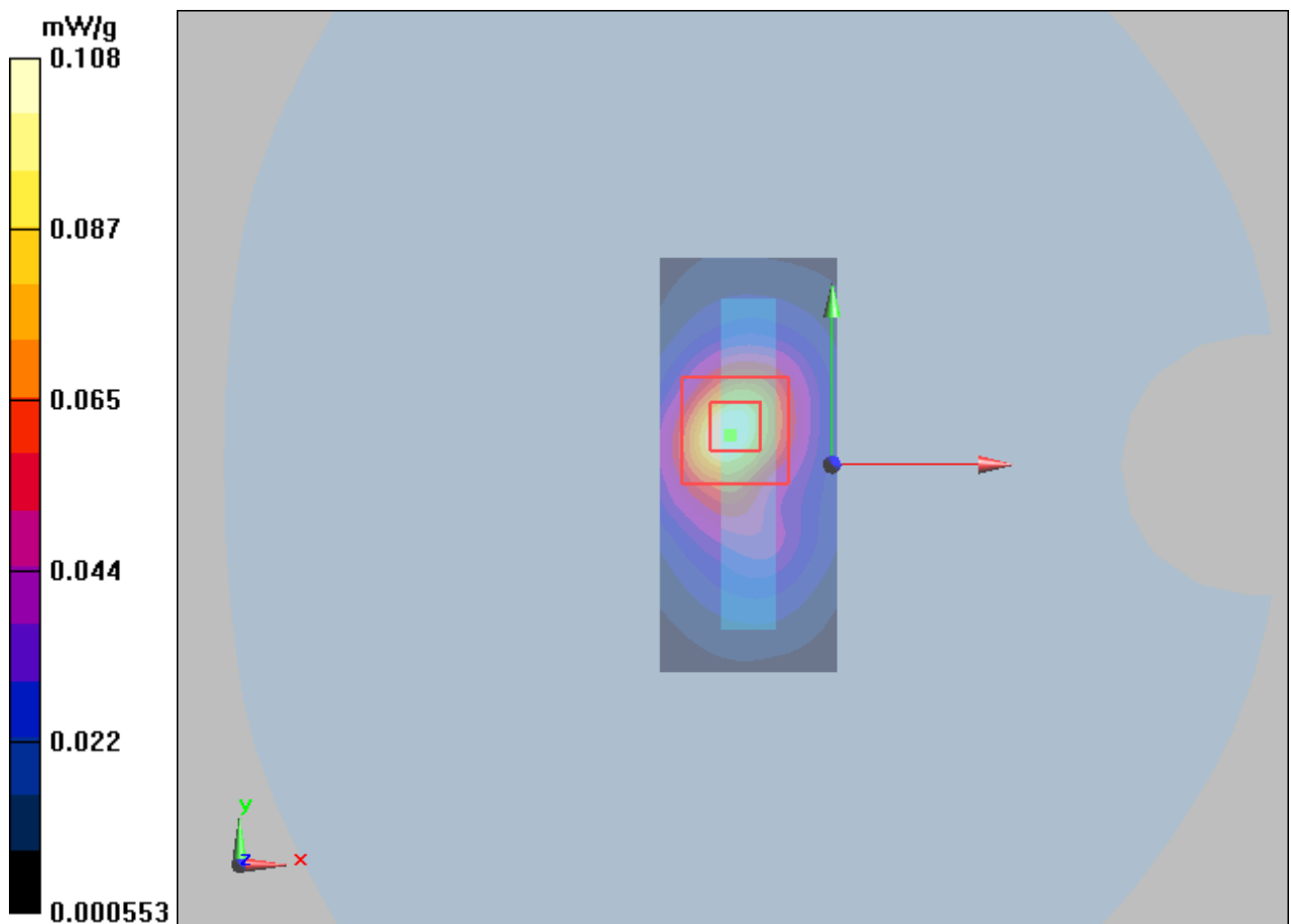


Figure 54 Body, Top Edge, 802.11b Channel 11

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802.11b with Earphone Back Side High (Battery 1, 10mm)

Date/Time: 12/1/2012 1:37:09 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.164 mW/g

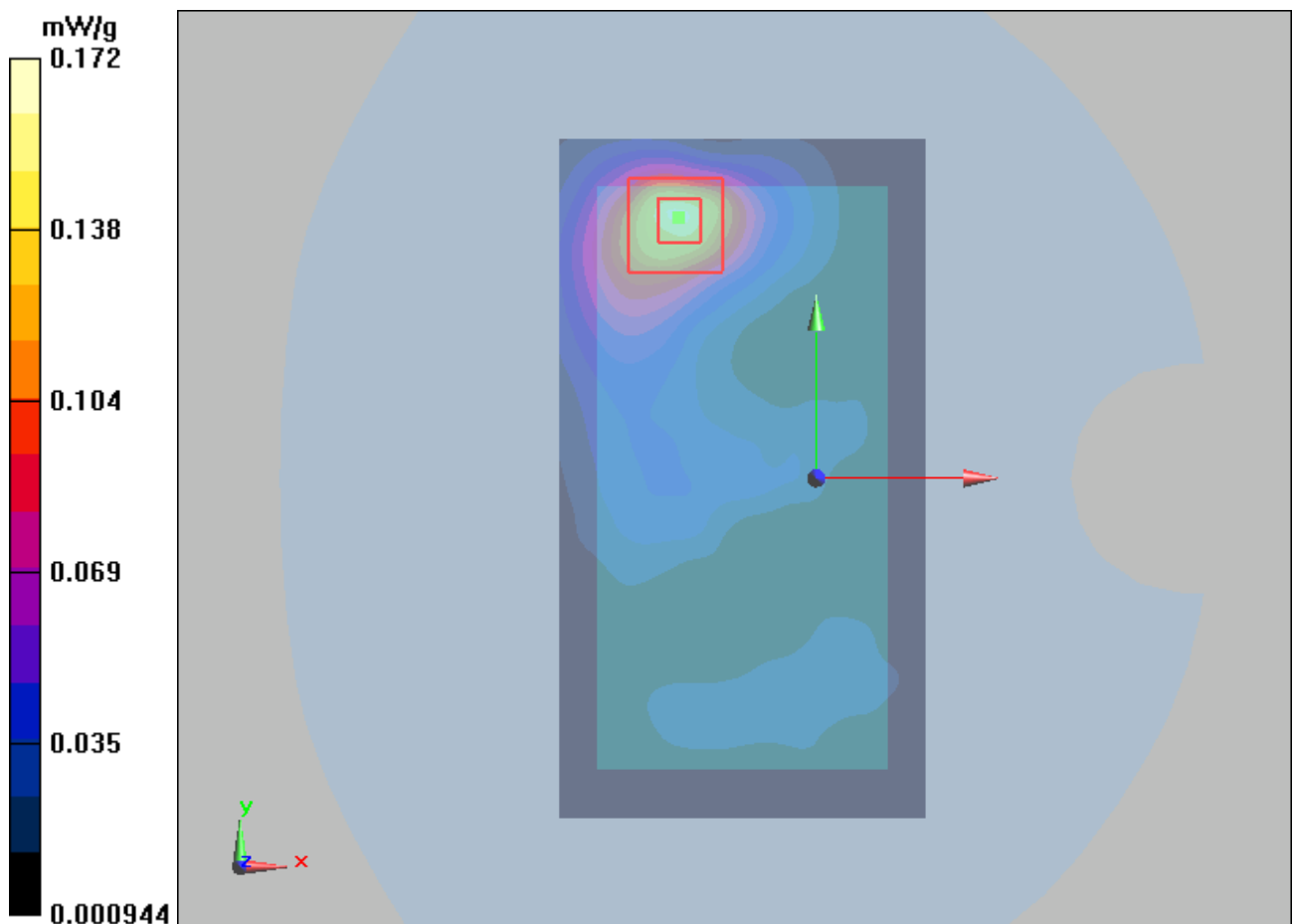
Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.94 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.301 W/kg

SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.075 mW/g

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



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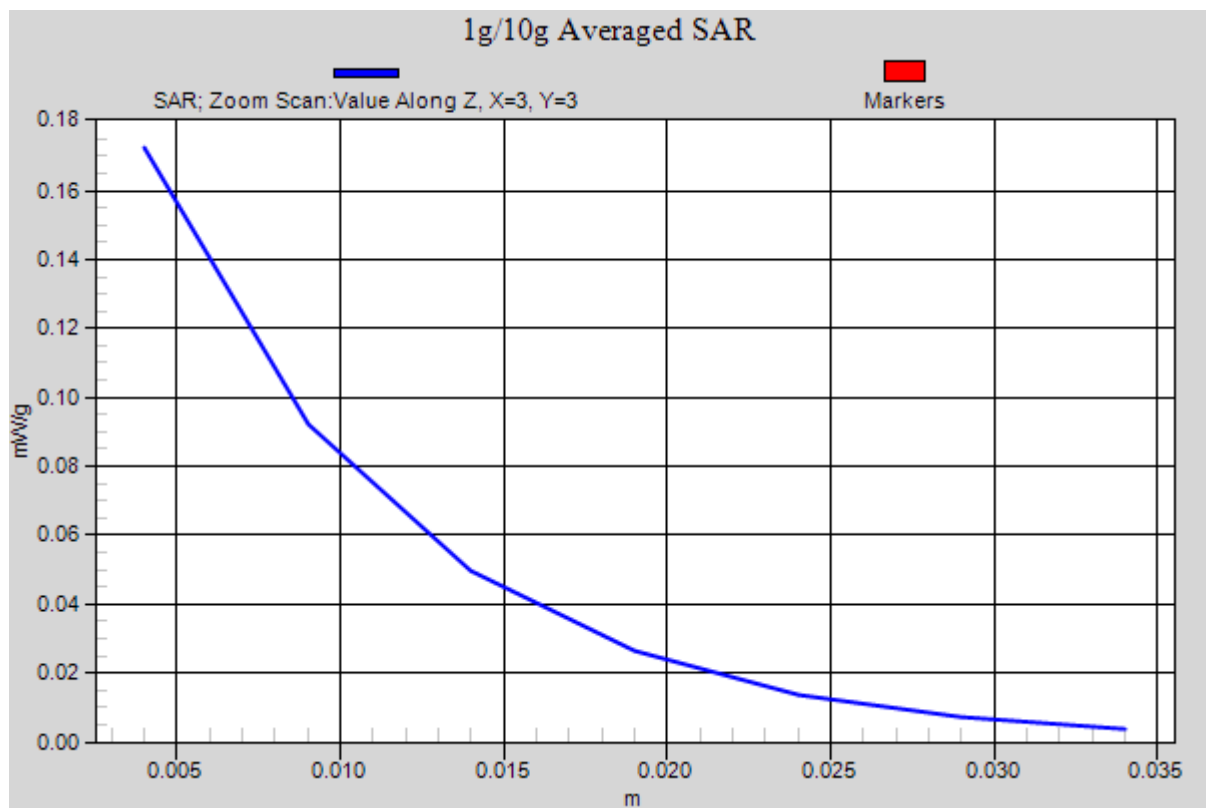


Figure 55 Body with Earphone, Back Side, 802.11b Channel 11

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802.11b Back Side High (Battery 2, 10mm)

Date/Time: 12/1/2012 2:07:14 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.149 mW/g

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

Reference Value = 3.93 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.272 W/kg

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.070 mW/g

Maximum value of SAR (measured) = 0.157 mW/g

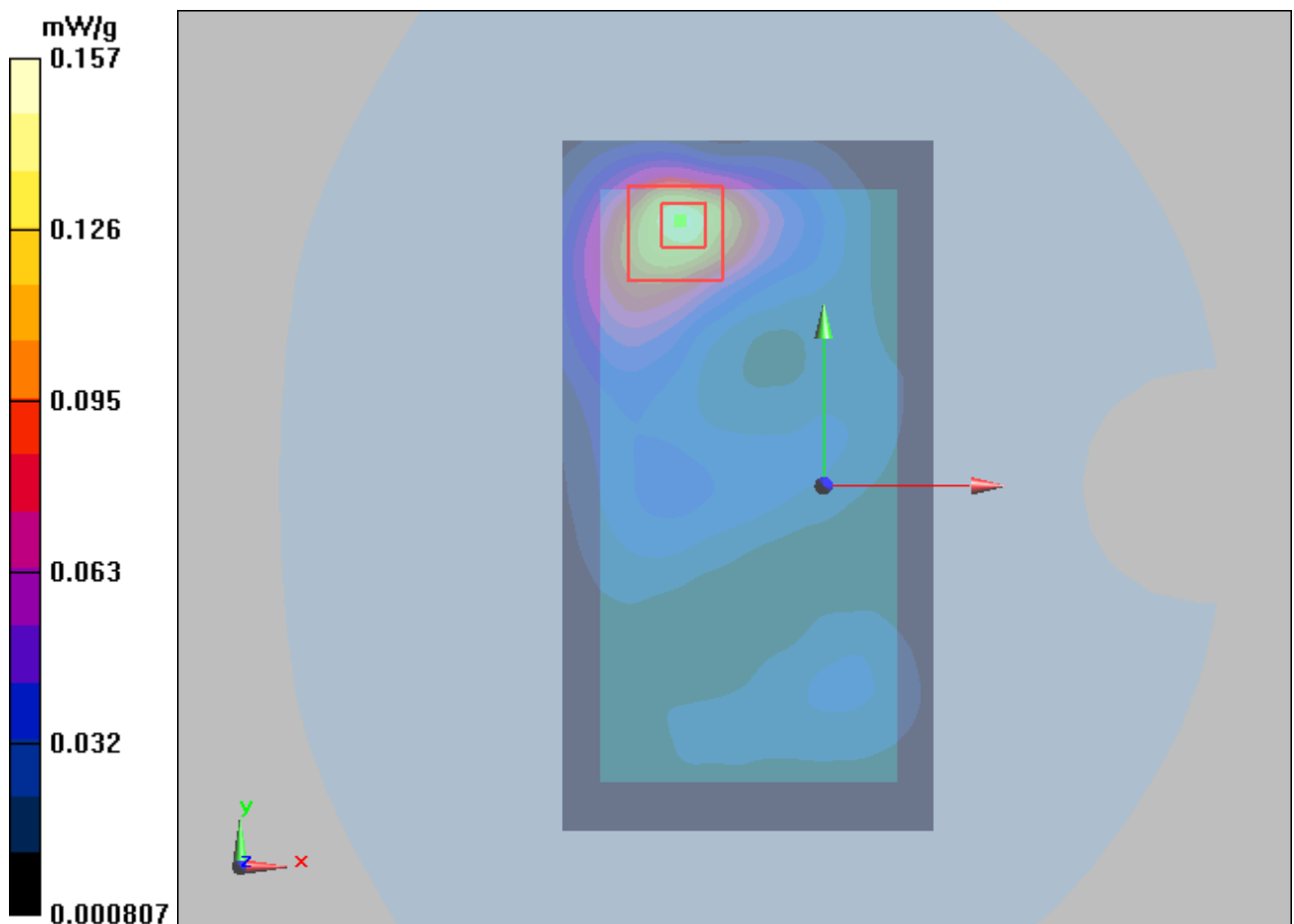


Figure 56 Body, Back Side, 802.11b Channel 11

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802.11b Left Tilt High (Battery 1, variant model: HUAWEI G510-0200, G510-0200)

Date/Time: 12/4/2012 5:51:55 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.5 °C

Phantom section: Left Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(4.14, 4.14, 4.14); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

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

Maximum value of SAR (interpolated) = 0.161 mW/g

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

Reference Value = 7.17 V/m; Power Drift = 0.146 dB

Peak SAR (extrapolated) = 0.393 W/kg

SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.072 mW/g

Maximum value of SAR (measured) = 0.188 mW/g

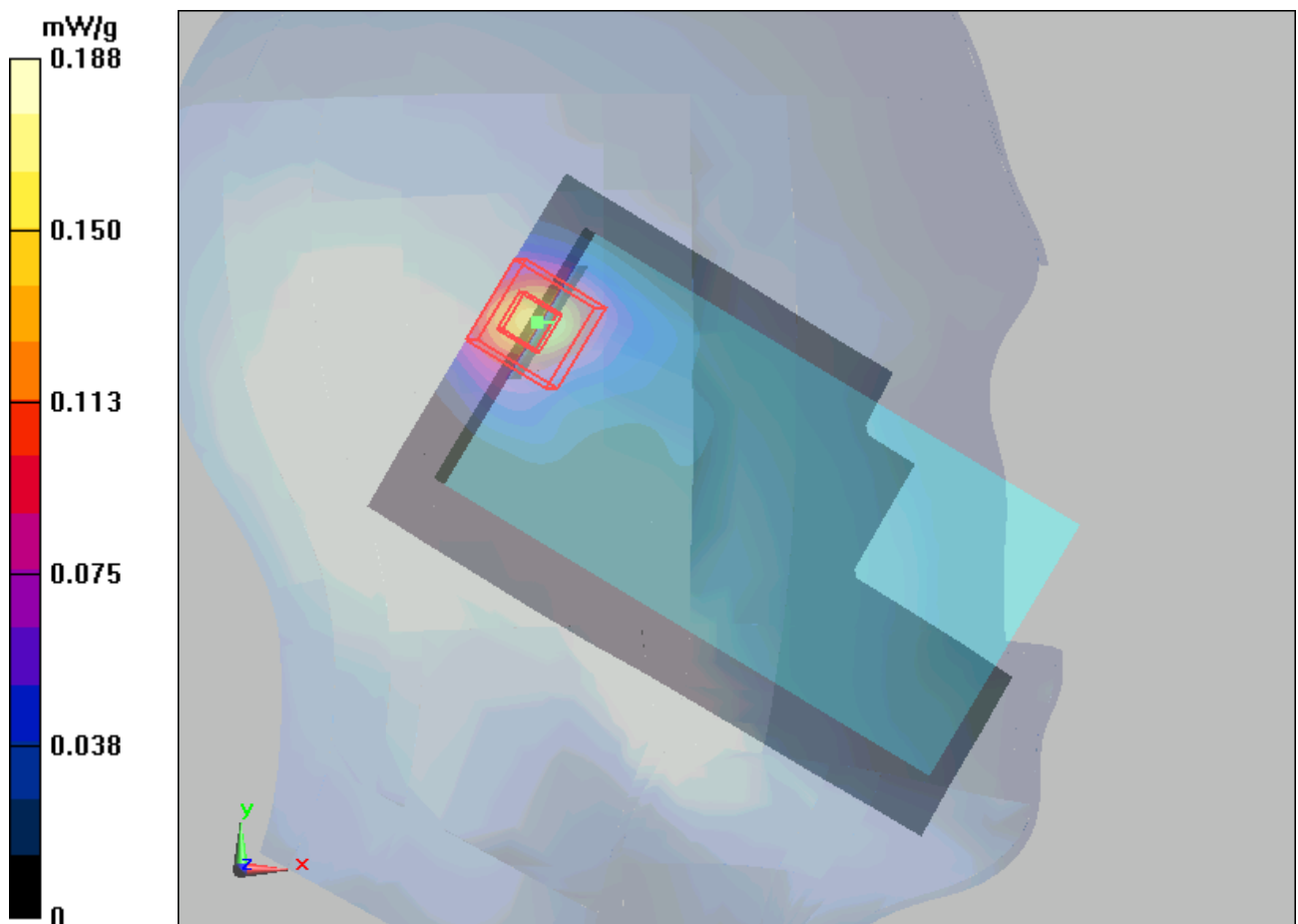


Figure 57 Left Hand Tilt 15° 802.11b Channel 11

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802.11b with Earphone Back Side High (Battery 1,variant model: HUAWEI G510-0200, G510-0200, 10mm)

Date/Time: 12/1/2012 2:39:51 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.92$ mho/m; $\epsilon_r = 51.7$; $\rho = 1000$ kg/m³

Ambient Temperature:22.3 °C Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012

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

Phantom: SAM2; Type: SAM; Serial: TP-1524

Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (71x131x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.145 mW/g

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

Reference Value = 4.06 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.295 W/kg

SAR(1 g) = 0.149 mW/g; SAR(10 g) = 0.075 mW/g

Maximum value of SAR (measured) = 0.169 mW/g

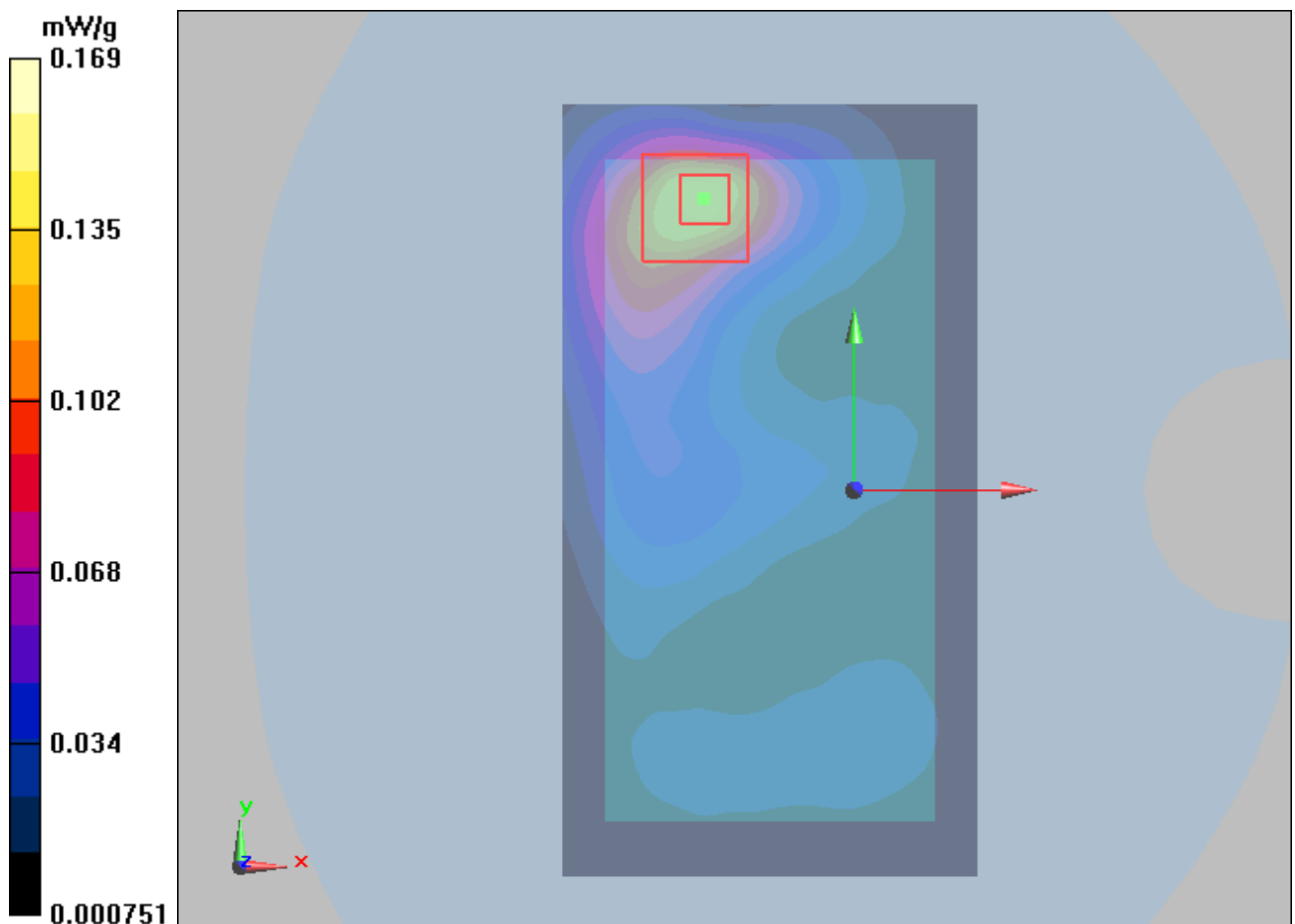


Figure 58 Body with Earphone, Back Side, 802.11b Channel 11