TESTING
No. L2264

OET 65

TEST REPORT

Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510
Model	HUAWEI G510-0251, G510-0251
FCC ID	QISG510-0251
Client	Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; HUAWEI Ascend G510	**Model**	HUAWEI G510-0251, G510-0251
Report No.	RHA1301-0005SAR01R3	**FCC ID**	QISG510-0251
Client	Huawei Technologies Co., Ltd.		
Manufacturer	Huawei Technologies Co., Ltd.		
Reference Standard(s)	**FCC 47CFR §2.1093** Radiofrequency Radiation Exposure Evaluation: Portable Devices **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 865664 D01 SAR measurement 100 MHz to 6 GHz v01:** SAR Measurement Requirements for 100 MHz to 6 GHz **KDB 447498 D01 Mobile Portable RF Exposure v05:** Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies **KDB 648474 D04 SAR Handsets Multi Xmiter and Ant v01:** SAR Evaluation Considerations for Wireless Handsets. **KDB 941225 D01 SAR test for 3G devices v02:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA **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		
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 for the tested bands only. General Judgment: **Pass** (Stamp) **Date of issue: January 25th, 2013**		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中 Director **Revised by** 逯敬宝 SAR Manager **Performed by** 许红梅 SAR Engineer

TABLE OF CONTENT

1. General Information

1.1. Notes of the Test Report

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS), and accreditation number: L2264.

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

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

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

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

1.2. Testing Laboratory

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

1.3. Applicant Information

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

1.4. Manufacturer Information

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

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:	868497010001724		
Hardware Version:	HD2U8951M		
Software Version:	G510-0251V100R001C00B160		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900; (tested) UMTS Band II/UMTS Band V; (tested) WiFi (802.11b/g/n HT20); (tested) GSM 900/GSM 1800/UMTS Band I; (untested) Bluetooth; (untested)		
Test Modulation:	(GSM)GMSK; (UMTS)QPSK		
Device Class:	B		
HSDPA UE Category:	8		
HSUPA UE Category:	6		
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
	UMTS Band II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	UMTS Band V	826.4 ~ 846.6	871.4 ~ 891.6
Power Class:	GSM 850: 4		
	GSM 1900: 1		
	UMTS Band II: 3		

	UMTS Band V: 3		
Power Level	GSM 850: tested with power level 5		
	GSM 1900: tested with power level 0		
	UMTS Band II: tested with power control all up bits		
	UMTS Band V: tested with power control all up bits		
Test Channel: (Low - Middle - High)	128 - 190 - 251	(GSM 850)	(tested)
	512 - 661 - 810	(GSM 1900)	(tested)
	9262 - 9400 - 9538	(UMTS Band II)	(tested)
	4132 - 4183 - 4233	(UMTS Band V)	(tested)
	1 - 6 - 11	(802.11b)	(tested)

Auxiliary Equipment Details

AE1: Battery 1

Model: HB4W1

Manufacturer: Huawei Technologies Co., Ltd.

S/N: BAACA27718040106

AE2: Battery 2

Model: HB4W1

Manufacturer: Huawei Technologies Co., Ltd.

S/N: GAGC922Z18002841

AE3: Battery 3

Model: HB4W1

Manufacturer: Huawei Technologies Co., Ltd.

S/N: CABCC10I18011671

Equipment Under Test (EUT) has a GSM/UMTS 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. The detail about EUT and Lithium Battery is in chapter 1.5 in this report.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. The Maximum Reported SAR_{1g}

Head SAR Configuration

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
GSM 850	Left, Cheek	190/836.6	0.545	0.571
GSM 1900	Right, Cheek	661/1880	0.439	0.440
UMTS Band II	Right, Cheek	9400/1880	0.830	0.971
UMTS Band V	Left, Cheek	4183/836.6	0.307	0.357
WiFi(802.11b)	Left, Tilt	11/2462	0.142	0.198

Body Worn Configuration

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
1Txslot GPRS 850	Back Side	190/836.6	1.170	1.228
1Txslot EGPRS 1900	Back Side	661/1880	0.600	0.672
UMTS Band II	Back Side	9400/1880	1.240	1.450
UMTS Band V	Back Side	4183/836.6	1.160	1.226
WiFi(802.11b)	Back Side	11/2462	0.176	0.246

Hotspot SAR Configuration]

Mode	Test Position	Channel /Frequency(MHz)	Limit SAR_{1g} 1.6 W/kg	
			Measured SAR_{1g} (W/kg)	Reported SAR_{1g} (W/kg)
1Txslot GPRS 850	Back Side	190/836.6	1.170	1.206
1Txslot EGPRS 1900	Back Side	661/1880	0.600	0.606
UMTS Band II	Back Side	9400/1880	1.240	1.447
UMTS Band V	Back Side	4183/836.6	1.160	1.226
WiFi(802.11b)	Back Side	11/2462	0.176	0.246

1.7. Maximum Conducted Power of each tested Mode

Mode		Max Burst Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	33.08	24.05
	GPRS, 1Txslot	33.07	24.04
	EGPRS, 1Txslot	33.05	24.02
GSM 1900	GSM	30.52	21.49
	GPRS, 1Txslot	30.50	21.47
	EGPRS, 1Txslot	30.46	21.43

Mode	Maximum Conducted Power (dBm)
UMTS Band II	23.53
UMTS Band V	23.77
WiFi(802.11b)	14.55

Note: The detail Power refer to Table 13 (Power Measurement Results).

1.8. Test Date

The test performed from January 15, 2013 to January 24, 2013.

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.

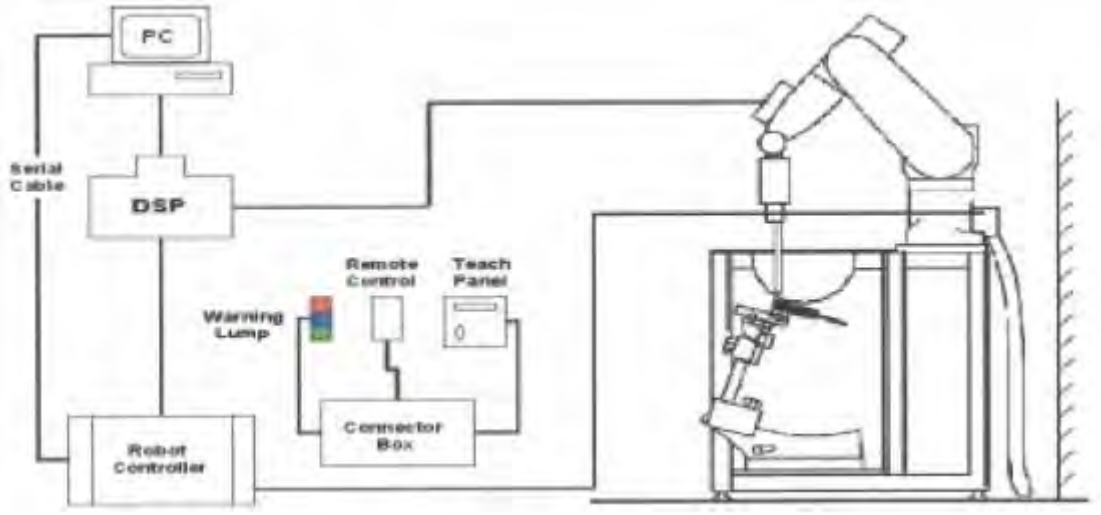

Figure 1 SAR Lab Test Measurement Set-up

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 µW/g to > 100 mW/g Linearity: ± 0.2dB
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 ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

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

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

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

Figure 4 Device Holder

2.3.2. Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden Figure. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness 2±0.1 mm
Filling Volume Approx. 20 liters
Dimensions 810 x 1000 x 500 mm (H x L x W) Aailable Special

Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The 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. ± 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 ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

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

spacing is set according to FCC KDB Publication 865664. During 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

  After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

- 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.

- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

Table 1: Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01v01

Frequency	Maximum Area Scan Resolution (mm) (Δx_{area}, Δy_{area})	Maximum Zoom Scan Resolution (mm) (Δx_{zoom}, Δy_{zoom})	Maximum Zoom Scan Spatial Resolution (mm) $\Delta z_{zoom}(n)$	Minimum Zoom Scan Volume (mm) (x,y,z)
≤ 2 GHz	≤ 15	≤ 8	≤ 5	≥ 30
2-3 GHz	≤ 12	≤ 5	≤ 5	≥ 30
3-4 GHz	≤ 12	≤ 5	≤ 4	≥ 28
4-5 GHz	≤ 10	≤ 4	≤ 3	≥ 25
5-6 GHz	≤ 10	≤ 4	≤ 2	≥ 22

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.

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

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

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

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

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

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

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

$ConvF$ = sensitivity enhancement in solution

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

f = carrier frequency [GHz]

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g

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

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

ρ = equivalent tissue density in g/cm^3

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

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

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

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

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

3. Laboratory Environment

Table 2: The Requirements of the Ambient Conditions

Temperature	Min. = 18°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose. The liquid has previously been proven to be suited for worst-case. The table 3 and table 4 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 3: Composition of the Head Tissue Equivalent Matter

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

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

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

Table 4: Composition of the Body Tissue Equivalent Matter

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

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

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

4.2. Tissue-equivalent Liquid Properties

Table 5: Dielectric Performance of Tissue Simulating Liquid

Frequency	Calibrated Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within ±5%)	
			ε_r	σ(s/m)	ε_r	σ(s/m)	Dev ε_r(%)	Dev σ(%)
835MHz (head)	2013-1-15	21.5	41.25	0.916	41.50	0.90	-0.60%	1.78%
1900MHz (head)	2013-1-17	21.5	39.98	1.408	40.00	1.40	-0.05%	0.57%
2450MHz (head)	2013-1-15	21.5	38.53	1.86	39.20	1.80	-1.71%	3.33%
835MHz (body)	2013-1-16	21.5	55.89	0.990	55.20	0.97	1.25%	2.06%
1900MHz (body)	2013-1-17	21.5	52.56	1.524	53.30	1.52	-1.39%	0.26%
2450MHz (body)	2013-1-24	21.5	52.01	1.901	52.70	1.95	-1.31%	-2.51%

5. System Check

5.1. Description of System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulates, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the table 6 and table 7.

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

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

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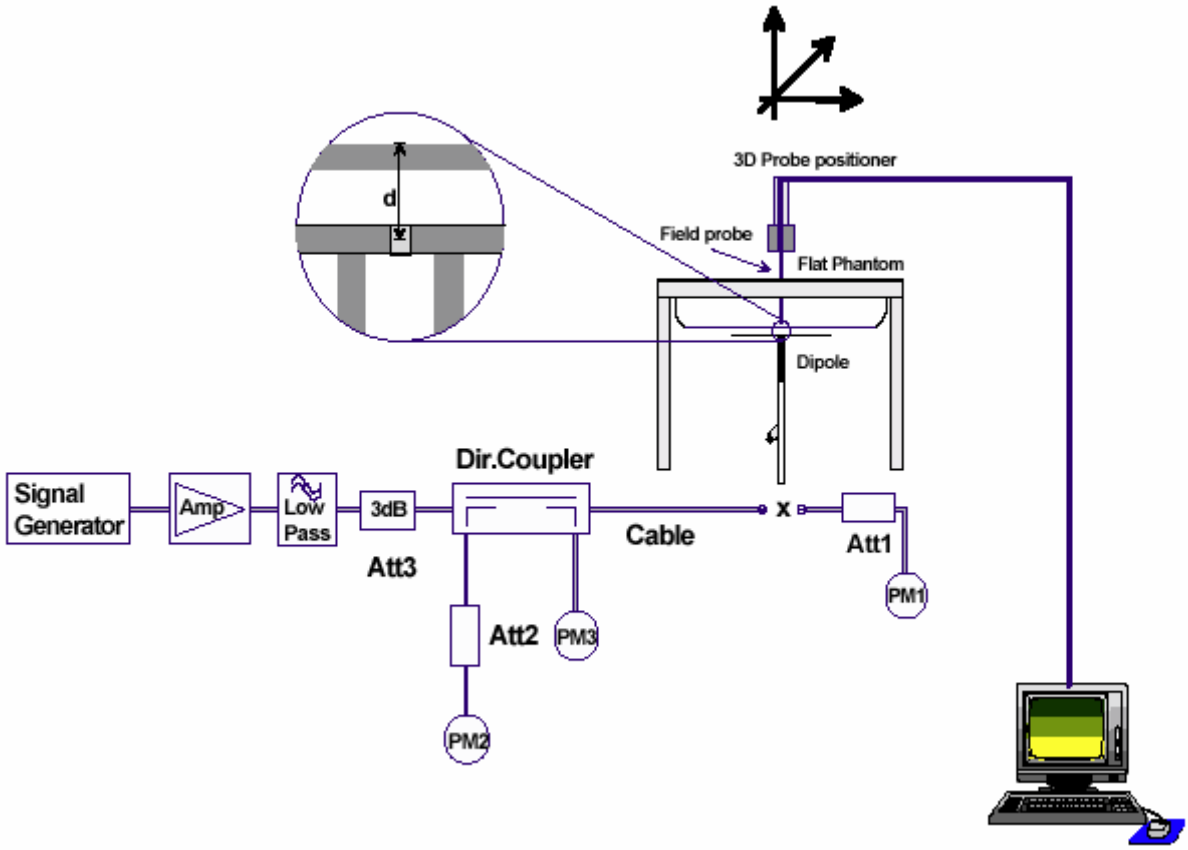


Figure 6 System Check Set-up

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< - 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB Publication 450824:

Dipole D835V2 SN: 4d020				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/26/2011	-27.7	/	52.9	/
8/25/2012	-29.1	5.0%	55.0	2.1Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/26/2011	-25.1	/	48.7	/
8/25/2012	-24.3	3.2 %	50.6	1.9Ω

Dipole D1900V2 SN: 5d060				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/31/2011	-22.3	/	52.6	/
8/30/2012	-21.7	2.7%	51.4	1.2Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/31/2011	-21.3	/	47.3	/
8/30/2012	-20.9	1.9%	45.9	1.4Ω

Dipole D2450V2 SN: 712				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/29/2011	-25.5	/	55.0	/
8/28/2012	-26.8	5.1%	56.5	1.5Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
8/29/2011	-29.0	/	50.4	/
8/28/2012	-29.9	3.1%	52.1	1.7Ω

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)			
835MHz	2013-1-15	41.25	0.916	21.5	2.44	9.76	9.34	4.5%
1900MHz	2013-1-17	39.98	1.408	21.5	9.48	37.92	40.30	-5.9%
2450MHz	2013-1-15	38.53	1.86	21.5	13.70	54.80	53.80	1.9%

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

Table 7: System Check in Body Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g}	Limit (±10% Deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)			
835MHz	2013-1-16	55.89	0.990	21.5	2.41	9.64	9.46	1.9%
1900MHz	2013-1-17	52.56	1.524	21.5	9.93	39.72	41.70	-4.7%
2450MHz	2013-1-24	52.01	1.901	21.5	12.50	50.00	51.70	-3.3%

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 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 with a form factor > 9 cm x 5 cm, 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.

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. Per FCC KDB Publication 648474 D04_v01, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01_v05 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not

contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

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

6.3. Measurement Variability

Per FCC KDB Publication 865664 D01v01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:
1) When the original highest measured SAR is $\geqslant$ 0.80 W/kg, the measurement was repeated once.
2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was $\geqslant$ 1.45 W/kg (~ 10% from the 1-g SAR limit).
3) A third repeated measurement was performed only if the original, first or second repeated measurement was $\geqslant$ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.
4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

6.4. Test Configuration

6.4.1. 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	3

EGPRS(8PSK):

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

EGPRS(GMSK):

Number of timeslots in uplink assignment	**reduction of maximum output power, (dB)**
1	0
2	3

GSM 1900

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	1

EGPRS(GMSK):

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

6.4.2. UMTS Test Configuration

6.4.2.1. Output power Verification

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

6.4.2.2. Head SAR Measurements

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

6.4.2.3. Body SAR Measurements

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

6.4.3. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the 'Body SAR Measurements' procedures of that section. In addition,body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

HSDPA should be configured according to the UE category of a test device.The number of HSDSCH/ HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors(βc, βd), and HS-DPCCH power offset parameters (ΔACK, ΔNACK, ΔCQI) should be set according to values indicated in the Table below.32 The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 8: Subtests for UMTS Release 5 HSDPA

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

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

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

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

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

Table 9: Settings of required H-Set 1 QPSK in HSDPA mode

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

Table 10: HSDPA UE category

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

6.4.4. HSUPA Test Configuration

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

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

Table 11：Sub-Test 5 Setup for Release 6 HSUPA

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

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

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

Note 3: For subtest 1 the βc/βd ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the
signaled gain factors for the reference TFC (TF1, TF1) to βc = 10/15 and βd = 15/15.

Note 4: For subtest 5 the βc/βd ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the
signaled gain factors for the reference TFC (TF1, TF1) to βc = 14/15 and βd = 15/15.

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

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

Table 12: HSUPA UE category

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

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

6.4.5. WIFI Test Configuration

For WLAN SAR testing, WLAN engineering testing software installed on the DUT can provide continuous transmitting RF signal. The Tx power is set to 15 for 802.11 b mode, set to 12 for 802.11 g mode, set to 9 for 802.11 n mode by software, 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.

7. Test Results

7.1. Conducted Power Results

Table 13: Conducted Power Measurement Results

GSM 850		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM		33.08	33.00	32.91	-9.03dB	24.05	23.97	23.88
GPRS (GMSK)	1Txslot	33.07	32.99	32.90	-9.03dB	**24.04**	**23.96**	**23.87**
	2Txslots	29.25	29.2	29.15	-6.02dB	23.23	23.18	23.13
EGPRS (GMSK)	1Txslot	33.05	32.97	32.89	-9.03dB	**24.02**	**23.94**	**23.86**
	2Txslots	29.24	29.18	29.13	-6.02dB	23.22	23.16	23.11
EGPRS (8PSK)	1Txslot	27.20	27.13	27.07	-9.03dB	18.17	18.10	18.04
	2Txslots	26.18	26.11	26.07	-6.02dB	20.16	20.09	20.05
GSM 1900		**Burst Conducted Power(dBm)**				**Average power(dBm)**		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		30.20	30.49	30.48	-9.03dB	21.17	21.49	21.45
GPRS (GMSK)	1Txslot	30.19	30.49	30.48	-9.03dB	**21.16**	**21.47**	**21.45**
	2Txslots	27.17	27.41	27.41	-6.02dB	21.15	21.39	21.39
EGPRS (GMSK)	1Txslot	30.17	30.46	30.44	-9.03dB	**21.14**	**21.43**	**21.41**
	2Txslots	27.15	27.38	27.36	-6.02dB	21.13	21.36	21.34
EGPRS (8PSK)	1Txslot	26.24	26.48	26.45	-9.03dB	17.21	17.45	17.42
	2Txslots	25.24	25.47	25.47	-6.02dB	19.22	19.45	19.45

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.

UMTS Band II		Conducted Power (dBm)		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps RMC	23.32	23.52	23.33
	64kbps RMC	23.30	23.53	23.31
	144kbps RMC	23.33	23.50	23.33
	384kbps RMC	23.31	23.50	23.34
HSDPA	Sub - Test 1	23.33	23.50	23.34
	Sub - Test 2	23.31	23.49	23.35
	Sub - Test 3	22.85	23.05	22.89
	Sub - Test 4	22.86	23.01	22.87
HSUPA	Sub - Test 1	21.33	21.54	21.36
	Sub - Test 2	20.01	20.28	20.10
	Sub - Test 3	20.54	20.77	20.59
	Sub - Test 4	20.00	20.26	21.09
	Sub - Test 5	21.36	21.53	21.37
UMTS Band V		**Conducted Power (dBm)**		
		Channel 4132	Channel 4183	Channel 4233
RMC	12.2kbps RMC	23.45	23.35	23.76
	64kbps RMC	23.43	23.34	**23.77**
	144kbps RMC	23.44	23.34	23.76
	384kbps RMC	23.42	23.31	23.75
HSDPA	Sub - Test 1	23.44	23.35	23.76
	Sub - Test 2	23.40	23.32	23.75
	Sub - Test 3	22.96	22.87	23.29
	Sub - Test 4	23.00	22.85	23.27
HSUPA	Sub - Test 1	21.49	21.35	21.78
	Sub - Test 2	20.15	20.06	20.49
	Sub - Test 3	20.68	20.54	20.96
	Sub - Test 4	20.13	20.08	20.44
	Sub - Test 5	21.50	21.38	21.77

BT Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
Average Conducted Output Power(dBm)	3.91	4.68	3.92

WIFI 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
	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	11.70
		24	11.72
		36	11.70
		48	11.70
		54	11.68
	6	6	11.96
		9	11.97
		12	11.94
		18	11.93
		24	11.91
		36	11.90
		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
		58.5	8.23
		65	8.22
	6	6.5	8.32
		13	8.30
		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

7.2. Standalone SAR Test Exclusion Considerations

Per FCC KDB 447498 D01v05, the SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \sqrt{\text{Frequency (GHz)}} \leqslant 3.0$$

Based on the above equation, Bluetooth SAR was not required;
Head Estimated = $[10^{(6/10)}/5] * (2.441^{1/2}) = 1.244 \leqslant 3.0$
Body Estimated = $[10^{(6/10)}/10] * (2.441^{1/2}) = 0.622 \leqslant 3.0$

Based on the above equation, WiFi SAR was required;
Head Estimated = $[10^{(16/10)}/5]* (2.437^{1/2)} = 12.43 > 3.0$
Body Estimated = $[10^{(16/10)}/10]* (2.437^{1/2)} = 6.215 > 3.0$

7.3. SAR Test Results

7.3.1. GSM 850 (GPRS/EGPRS)

Table 14: SAR Values [GSM 850 (GPRS/EGPRS)]

Test Position	Channel/ Frequency (MHz)	Time slot	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Limit SAR_{1g} 1.6 W/kg				
						Measured SAR_{1g} (W/kg)	Drift (dB)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	190/836.6	GSM	1:8.3	33.2	33	0.529	0.031	1.05	0.554	Figure13
Left/Tilt	190/836.6	GSM	1:8.3	33.2	33	0.320	-0.072	1.05	0.335	Figure14
Right/Cheek	190/836.6	GSM	1:8.3	33.2	33	0.442	0.076	1.05	0.463	Figure15
Right/Tilt	190/836.6	GSM	1:8.3	33.2	33	0.334	0.002	1.05	0.350	Figure16
Worst Case Position of Head with Battery 2										
Left/Cheek	190/836.6	GSM	1:8.3	33.2	33	0.542	-0.072	1.05	0.568	Figure17
Worst Case Position of Head with Battery 3										
Left/Cheek	190/836.6	GSM	1:8.3	33.2	33	0.545	-0.128	1.05	0.571	Figure18
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	251/848.8	1Txslot	1:8.3	33.2	32.9	1.110	0.062	1.07	1.189	Figure19
	190/836.6	1Txslot	1:8.3	33.2	32.99	1.170	-0.053	1.05	1.228	Figure20
	128/824.2	1Txslot	1:8.3	33.2	33.07	1.070	-0.020	1.03	1.103	Figure21
Back Side	251/848.8	2Txslots	1:4.15	30.2	29.15	0.935	-0.079	1.27	1.191	Figure22
	190/836.6	2Txslots	1:4.15	30.2	29.2	0.971	-0.073	1.26	1.222	Figure23
	128/824.2	2Txslots	1:4.15	30.2	29.25	0.901(max.cube)	-0.056	1.24	1.121	Figure24
Front Side	190/836.6	1Txslot	1:8.3	33.2	32.99	0.624	-0.053	1.05	0.655	Figure25
Left Edge	190/836.6	1Txslot	1:8.3	33.2	32.99	0.444	0.033	1.05	0.466	Figure26
Right Edge	190/836.6	1Txslot	1:8.3	33.2	32.99	0.310	0.001	1.05	0.325	Figure27
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	190/836.6	1Txslot	1:8.3	33.2	32.99	0.058	0.120	1.05	0.061	Figure28
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)										
Back Side	190/836.6	GSM	1:8.3	33.2	33	1.030	0.003	1.05	1.079	Figure29
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)										
Back Side	190/836.6	1Txslot	1:8.3	33.2	32.97	1.140	0.091	1.05	1.202	Figure30

Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	190/836.6	1Txslot	1:8.3	33.2	32.99	1.150	-0.092	1.05	1.207	Figure31
Worst Case Position of Body with Battery 3 (Distance 10mm)										
Back Side	190/836.6	1Txslot	1:8.3	33.2	32.99	1.120	0.012	1.05	1.175	Figure32

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

2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.
5. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above.

Table 15: SAR Measurement Variability Results [GSM 850 (GPRS/EGPRS)]

Test Position	Timeslots	Channel	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)	Graph Results
Back Side	GSM/1Txslot	Middle/190	1.17	1.17	1.00	NA	NA	Figure 33

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

7.3.2. GSM 1900 (GPRS/EGPRS)

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

Test Position	Channel/ Frequency (MHz)	Time slot	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Limit SAR_{1g} 1.6 W/kg				
						Measured SAR_{1g} (W/kg)	Drift (dB)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	661/1880	GSM	1:8.3	30.5	30.49	0.385	0.031	1.00	0.386	Figure34
Left/Tilt	661/1880	GSM	1:8.3	30.5	30.49	0.234	-0.072	1.00	0.235	Figure35
Right/Cheek	661/1880	GSM	1:8.3	30.5	30.49	0.439	0.076	1.00	0.440	Figure36
Right/Tilt	661/1880	GSM	1:8.3	30.5	30.49	0.237	0.002	1.00	0.238	Figure37
Worst Case Position of Head with Battery 2										
Right/Cheek	661/1880	GSM	1:8.3	30.5	30.49	0.427	-0.072	1.00	0.428	Figure38
Worst Case Position of Head with Battery 3										
Right/Cheek	661/1880	GSM	1:8.3	30.5	30.49	0.422	-0.128	1.00	0.423	Figure39
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	661/1880	1Txslot	1:8.3	30.5	30.49	0.594	0.062	1.00	0.595	Figure40
Back Side	661/1880	2Txslots	1:4.15	28.0	27.41	0.587	-0.079	1.15	0.672	Figure41
Front Side	661/1880	1Txslot	1:8.3	30.5	30.49	0.578	-0.053	1.00	0.579	Figure42
Left Edge	661/1880	1Txslot	1:8.3	30.5	30.49	0.212	0.033	1.00	0.212	Figure43
Right Edge	661/1880	1Txslot	1:8.3	30.5	30.49	0.191	0.001	1.00	0.191	Figure44
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	661/1880	1Txslot	1:8.3	30.5	30.49	0.417	0.12	1.00	0.418	Figure45
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)										
Back Side	661/1880	1Txslot	1:8.3	30.5	30.46	0.6	0.091	1.01	0.606	Figure46
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	661/1880	1Txslot	1:8.3	30.5	30.49	0.599	-0.092	1.00	0.600	Figure47
Worst Case Position of Body with Battery 3 (Distance 10mm)										
Back Side	661/1880	1Txslot	1:8.3	30.5	30.49	0.6	0.012	1.00	0.601	Figure48

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

2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.
5. Per FCC KDB Publication 648474 D04v01, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

7.3.3. UMTS Band II (WCDMA/HSDPA/HSUPA)

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

Test Position	Channel/ Frequency (MHz)	Channel Type	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Limit SAR_{1g} 1.6 W/kg				
						Measured SAR_{1g} (W/kg)	Drift (dB)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	9538/1907.6	RMC 12.2k	1:1	24.2	23.33	0.516	-0.152	1.22	0.630	Figure49
	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.713	0.031	1.17	0.834	Figure50
	9262/1852.4	RMC 12.2k	1:1	24.2	23.32	0.634	-0.030	1.22	0.776	Figure51
Left/Tilt	4183/836.6	RMC 12.2k	1:1	24.2	23.52	0.443	-0.072	1.17	0.518	Figure52
Right/Cheek	9538/1909.8	RMC 12.2k	1:1	24.2	23.33	0.698	0.076	1.22	0.853	Figure53
	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.816	0.076	1.17	0.954	Figure54
	9262/1850.2	RMC 12.2k	1:1	24.2	23.32	0.786	0.076	1.22	0.963	Figure55
Right/Tilt	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.389	0.002	1.17	0.455	Figure56
Worst Case Position of Head with Battery 2										
Right/Cheek	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.829	-0.072	1.17	0.970	Figure57
Worst Case Position of Head with Battery 3										
Right/Cheek	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.83	-0.072	1.17	0.971	Figure58
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	9538/1909.8	RMC 12.2k	1:1	24.2	23.33	1.10(max.cube)	0.062	1.22	1.344	Figure59
	9400/1880	RMC 12.2k	1:1	24.2	23.52	1.12(max.cube)	-0.053	1.17	1.310	Figure60
	9262/1850.2	RMC 12.2k	1:1	24.2	23.32	1.09(max.cube)	-0.02	1.22	1.335	Figure61
Front Side	9538/1909.8	RMC 12.2k	1:1	24.2	23.33	0.915(max.cube)	0.062	1.22	1.118	Figure62
	9400/1880	RMC 12.2k	1:1	24.2	23.52	1.01(max.cube)	-0.053	1.17	1.181	Figure63
	9262/1850.2	RMC 12.2k	1:1	24.2	23.32	1.03	-0.02	1.22	1.261	Figure64
Left Edge	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.362	0.033	1.17	0.423	Figure65
Right Edge	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.346	0.001	1.17	0.405	Figure66
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	9538/1909.8	RMC 12.2k	1:1	24.2	23.33	0.774	0.062	1.22	0.946	Figure67
	9400/1880	RMC 12.2k	1:1	24.2	23.52	0.803	-0.053	1.17	0.939	Figure68
	9262/1850.2	RMC 12.2k	1:1	24.2	23.32	0.723	-0.02	1.22	0.885	Figure69
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)										

Back Side	9400/1880	RMC 12.2k	1:1	24.2	23.52	1.24	0.003	1.17	1.450	Figure70
Worst Case Position of RMC with HSDPA (Battery 1, Distance 10mm)										
Back Side	9400/1880	RMC 12.2k	1:1	24.1	23.5	1.14	0.197	1.15	1.309	Figure71
Worst Case Position of RMC with HSUPA (Battery 1, Distance 10mm)										
Back Side	9400/1880	RMC 12.2k	1:1	24	21.54	0.787	0.157	1.76	1.387	Figure72
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	9400/1880	RMC 12.2k	1:1	24.2	23.52	1.15(max.cube)	0.091	1.17	1.345	Figure73
Worst Case Position of Body with Battery 3 (Distance 10mm)										
Back Side	9400/1880	RMC 12.2k	1:1	24.2	23.52	1.15	0.012	1.17	1.345	Figure74

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

2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above.

Table 18: SAR Measurement Variability Results [UMTS Band II (WCDMA/HSDPA/HSUPA)]

Test Position	Channel	Measured SAR (1g)	1st Repeated SAR (1g)	Ratio	2nd Repeated SAR (1g)	3rd Repeated SAR (1g)	Graph Results
Back Side	Middle/9400	1.240	1.180	1.05	NA	NA	Figure 75

Note: 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.

2) A second repeated measurement was preformed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).

3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

7.3.4. UMTS Band V (WCDMA/HSDPA/HSUPA)

Table 19: SAR Values [UMTS Band V (WCDMA/HSDPA/HSUPA)]

Test Position	Channel/ Frequency (MHz)	Channel Type	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Limit SAR_{1g} 1.6 W/kg				
						Measured SAR_{1g} (W/kg)	Drift (dB)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	4183/836.6	RMC 12.2k	1:1	24	23.35	0.304	0.031	1.16	0.353	Figure76
Left/Tilt	4183/836.6	RMC 12.2k	1:1	24	23.35	0.179	-0.072	1.16	0.208	Figure77
Right/Cheek	4183/836.6	RMC 12.2k	1:1	24	23.35	0.252	0.076	1.16	0.293	Figure78
Right/Tilt	4183/836.6	RMC 12.2k	1:1	24	23.35	0.197	0.002	1.16	0.229	Figure79
Worst Case Position of Head with Battery 2										
Left/Cheek	4183/836.6	RMC 12.2k	1:1	24	23.35	0.307	-0.072	1.16	0.357	Figure80
Worst Case Position of Head with Battery 3										
Left/Cheek	4183/836.6	RMC 12.2k	1:1	24	23.35	0.305	-0.128	1.16	0.354	Figure81
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	4233/846.6	RMC 12.2k	1:1	24	23.76	1.16	0.062	1.06	1.226	Figure82
	4183/836.6	RMC 12.2k	1:1	24	23.35	0.755	-0.053	1.16	0.877	Figure83
	4132/826.4	RMC 12.2k	1:1	24	23.45	0.921	-0.02	1.14	1.045	Figure84
Front Side	4183/836.6	RMC 12.2k	1:1	24	23.35	0.395	-0.053	1.16	0.459	Figure85
Left Edge	4183/836.6	RMC 12.2k	1:1	24	23.35	0.284	0.033	1.16	0.330	Figure86
Right Edge	4183/836.6	RMC 12.2k	1:1	24	23.35	0.211	0.001	1.16	0.245	Figure87
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	4183/836.6	RMC 12.2k	1:1	24	23.35	0.048	0.12	1.16	0.056	Figure88
Worst Case Position of Body with Earphone (Battery 1, Distance 10mm)										
Back Side	4233/846.6	RMC 12.2k	1:1	24	23.76	0.89	0.003	1.06	0.941	Figure89
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	4233/846.6	RMC 12.2k	1:1	24	23.76	1.15	0.091	1.06	1.215	Figure90
Worst Case Position of Body with Battery 3 (Distance 10mm)										
Back Side	4233/846.6	RMC 12.2k	1:1	24	23.76	1.14	0.012	1.06	1.205	Figure91

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

2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. WCDMA mode were tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.

7.3.5. WIFI (802.11b)

Table 20: SAR Values (802.11b)

Test Position	Channel/ Frequency (MHz)	Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Limit of SAR 1.6 W/kg				
						Measured SAR_{1g} (W/kg)	Drift (dB)	Scaling Factor	Reported SAR_{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	11/2462	DSS	1:1	16	14.55	0.106	0.031	1.40	0.148	Figure92
Left/Tilt	11/2462	DSS	1:1	16	14.55	0.138	-0.072	1.40	0.193	Figure93
Right/Cheek	11/2462	DSS	1:1	16	14.55	0.096	0.076	1.40	0.134	Figure94
Right/Tilt	11/2462	DSS	1:1	16	14.55	0.115	0.002	1.40	0.161	Figure95
Worst Case Position of Head with Battery 2										
Left/Cheek	11/2462	DSS	1:1	16	14.55	0.125	-0.072	1.40	0.175	Figure96
Worst Case Position of Head with Battery 3										
Left/Cheek	11/2462	DSS	1:1	16	14.55	0.142	-0.128	1.40	0.198	Figure97
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	11/2462	DSS	1:1	16	14.55	0.176	0.162	1.40	0.246	Figure98
Front Side	11/2462	DSS	1:1	16	14.55	0.047	0.002	1.40	0.066	Figure99
Left Edge	11/2462	DSS	1:1	16	14.55	0.016	0.079	1.40	0.022	Figure100
Right Edge	11/2462	DSS	1:1	16	14.55	0.012	0.002	1.40	0.017	Figure101
Top Edge	11/2462	DSS	1:1	16	14.55	0.157	-0.013	1.40	0.219	Figure102
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	11/2462	DSS	1:1	16	14.55	0.157	0.036	1.40	0.219	Figure103
Worst Case Position of Body with Battery 3 (Distance 10mm)										
Back Side	11/2462	DSS	1:1	16	14.55	0.169	0.062	1.40	0.236	Figure104

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

2. Per FCC KDB Publication 447498 D01v05, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s).

3. WLAN antenna is located at Top edge; antenna-to- Bottom edge distance is more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.

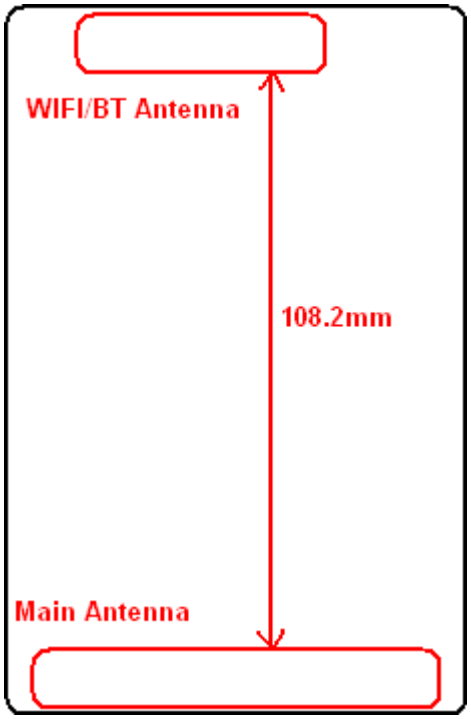
4. KDB 248227-SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

5. Per FCC KDB Publication 648474 D04v01, SAR was evaluated without a headset connected to the device. Since the reported SAR was ≤ 1.2 W/kg, no additional SAR evaluations using a headset cable were required.

7.4. Simultaneous Transmission Conditions

Air-Interface	Band (MHz)	Type	SimultaneousTransmissions	Voice Over Digital Transport (Data)
GSM/UMTS	850	VO	Yes WIFI and BT	NA
	1900	VO		
	850	DT	Yes WIFI and BT	NA
	1900	DT		
WIFI	2450	DT	Yes GSM/WCDMA, GPRS,EGPRS,HSDPA,HSUPA	Yes
Bluetooth (BT)	2400	DT	Yes GSM/WCDMA, GPRS,EGPRS,HSDPA,HSUPA	NA
Note: VO Voice Service only DT Digital Transport				

The location of the antennas inside EUT is shown in ANNEX J:



When standalone SAR is not required to be measured per FCC KDB 447498 D01v05 4.3.2 2), the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

$$\text{Estimated SAR} = \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} * \frac{\sqrt{f\ (GHz)}}{7.5}$$

Per FCC KDB 447498 D01v05 IV.C.1.iii, simultaneous transmission SAR test exclusion may be applied when the sum of the 1-g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤1.6 W/kg. When the sum is greater than the SAR limit, SAR test exclusion is determined by the SAR to peak location separation ratio.

$$\text{Ratio} = \frac{(SAR_1 + SAR_2)^{1.5}}{\text{(min. test separation distance, mm)}} < 0.04$$

GSM/UMTS &WIFI Mode

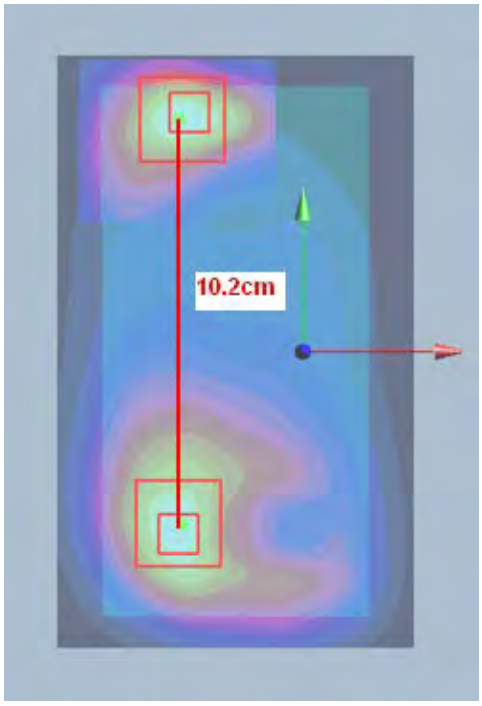
Reported SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band V	WIFI	MAX. Σ SAR_{1g}
Left hand, Touch cheek	0.571	0.386	**0.834**	0.357	**0.148**	0.982
Left hand, Tilt 15 Degree	0.335	0.235	**0.518**	0.208	**0.198**	0.716
Right hand, Touch cheek	0.463	0.440	**0.971**	0.293	**0.134**	1.105
Right hand, Tilt 15 Degree	0.350	0.238	**0.455**	0.229	**0.161**	0.616
Body, Back Side	1.228	0.672	**1.450**	1.226	**0.246**	1.696
Body, Front Side	0.655	0.579	**1.205**	0.459	**0.066**	1.271
Body, Left Edge	**0.466**	0.212	0.423	0.330	**0.022**	0.488
Body, Right Edge	0.325	0.191	**0.405**	0.245	**0.017**	0.422
Body, Top Edge	N/A	N/A	N/A	N/A	**0.219**	N/A
Body, Bottom Edge	0.061	0.418	0.939	0.056	N/A	N/A

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.
2. MAX. ΣSAR_{1g} = Reported $SAR_{Max.WIFI}$ + Reported $SAR_{Max.GSM/UMTS}$

MAX. ΣSAR_{1g} = 1.696 W/kg ＞1.6 W/kg,

Reported SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band V	WIFI	MAX. Σ SAR_{1g}
Body, Back Side	1.228	/	/	/	0.246	1.474
	/	0.672	/	/	0.246	0.918
	/	/	1.450	/	0.246	1.696
	/	/	/	1.226	0.246	1.472
Note: 1.The value with red color is the SAR_{1g} >1.6 W/kg. 2. when the MAX. Σ SAR1g potio>1.6 W/kg in a position, simultaneous transmission conditions of other bands also need consideration in this position.						

The position $SAR_{Max.GSM/UMTS}$ is (x_1= -30.5, y_1= -43.5,z_1= -206.5),
the position $SAR_{Max.WIFI}$ is (x_2= -30.5, y_2=58.5,z_2= -206.2),
so the distance between the $SAR_{Max.GSM/UMTS}$ and $SAR_{Max.WIFI}$ is 102mm.



Ratio =[(Reported $SAR_{Max.GSM/UMTS}$)1.450W/kg +(Reported $SAR_{Max.WIFI}$) 0.246W/kg]$^{3/2}$ /Peak SAR Location Separation =1.696$^{3/2}$ /102 =0.02 <0.04
So the Simultaneous SAR are not required for wifi and GSM/WCDMA antenna.

GSM/UMTS &BT Mode

Head Estimated $SAR_{Max.BT}$ = [$10^{(6/10)}$/5] * ($2.441^{1/2}$/7.5)= 0.166 W/kg

Body Estimated $SAR_{Max.BT}$ = [$10^{(6/10)}$/10] * ($2.441^{1/2}$/7.5)= 0.083 W/kg

Reported SAR_{1g}(W/kg) / Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band V	BT	MAX. Σ SAR_{1g}
Left hand, Touch cheek	0.571	0.386	**0.834**	0.357	0.166	1.000
Left hand, Tilt 15 Degree	0.335	0.235	**0.518**	0.208	0.166	0.684
Right hand, Touch cheek	0.463	0.440	**0.971**	0.293	0.166	1.137
Right hand, Tilt 15 Degree	0.350	0.238	**0.455**	0.229	0.166	0.621
Body, Back Side	1.228	0.672	**1.450**	1.226	0.083	1.533
Body, Front Side	0.655	0.579	**1.205**	0.459	0.083	1.288
Body, Left Edge	**0.466**	0.212	0.423	0.330	0.083	0.549
Body, Right Edge	0.325	0.191	**0.405**	0.245	0.083	0.488
Body, Top Edge	N/A	N/A	N/A	N/A	0.083	N/A
Body, Bottom Edge	0.061	0.418	**0.939**	0.056	0.083	1.022

Note: 1.The value with blue color is the maximum ΣSAR_{1g} Value.

2. MAX. ΣSAR_{1g} = Estimated $SAR_{Max.BT}$ + Reported $SAR_{Max.GSM/UMTS}$

MAX. ΣSAR_{1g} = 1.533 W/kg <1.6 W/kg, So the Simultaneous SAR are not required for BT and GSM/UMTS antenna.

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	∞

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	

9. Main Test Instruments

Table 21: List of Main Instruments

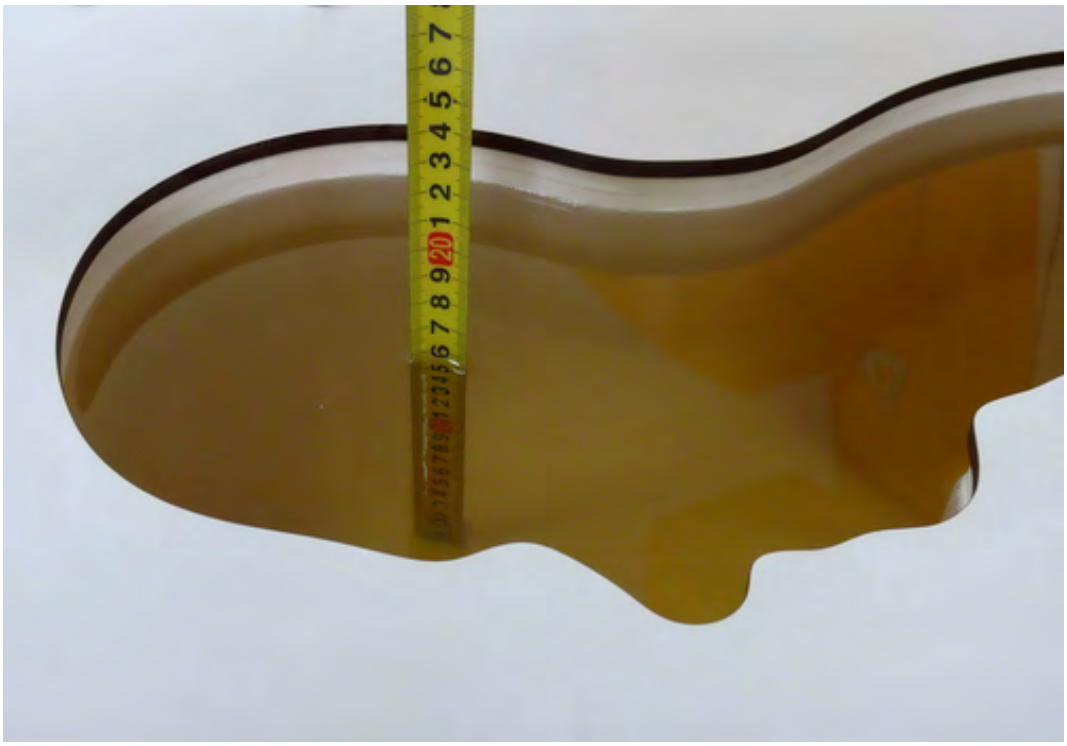
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 11, 2012	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 11, 2012	One year
04	Power sensor	Agilent N8481H	MY50350004	September 24, 2012	One year
05	Power sensor	E9327A	US40441622	January 2, 2013	One year
06	Signal Generator	HP 8341B	2730A00804	September 10, 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 1, 2012	One year
11	E-field Probe	ES3DV3	3189	June 22, 2012	One year
12	DAE	DAE4	1317	January 23, 2012	One year
13	DAE	DAE4	905	June 21, 2012	One year
14	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	Three years
15	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	Three years
16	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	Three years
17	Temperature Probe	JM222	AA1009129	March 15, 2012	One year
18	Hygrothermograph	WS-1	64591	September 27, 2012	One year

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

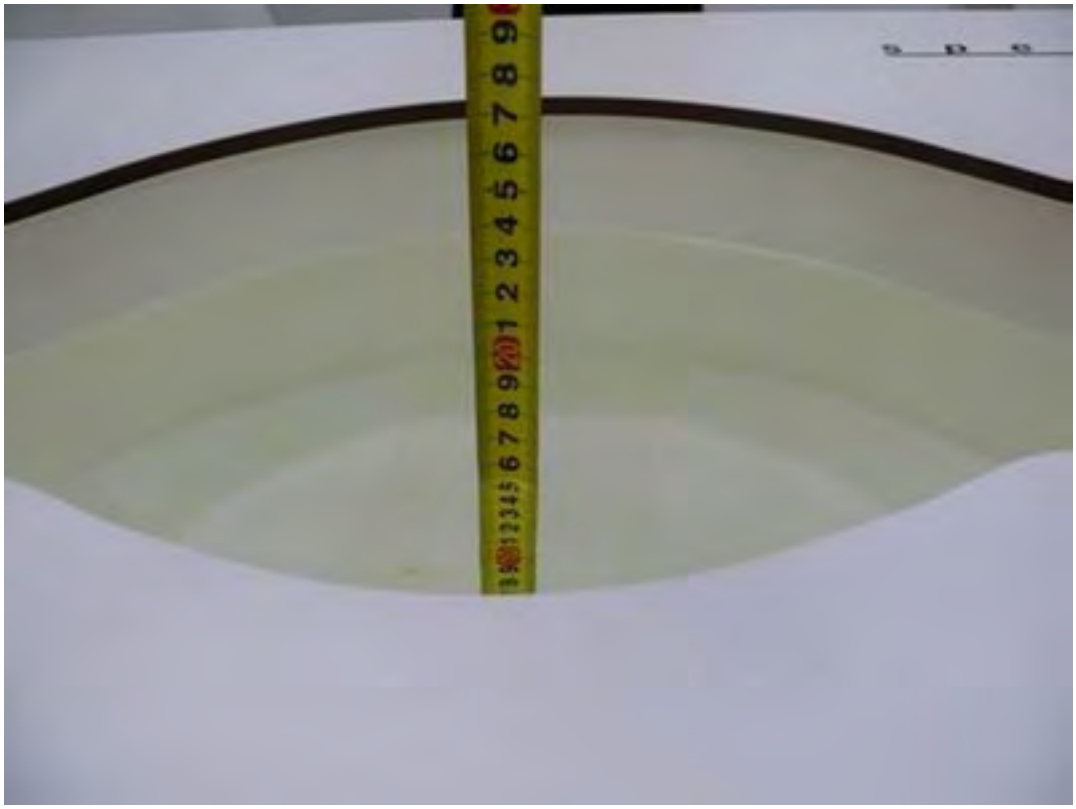
ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout

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

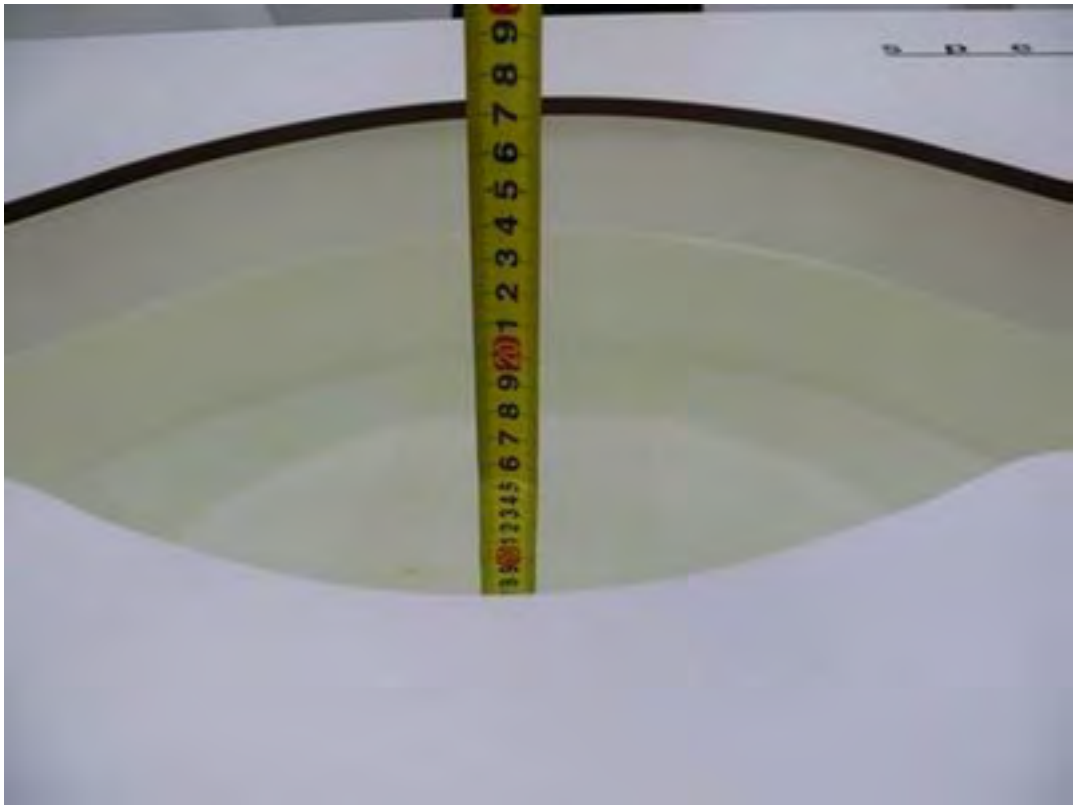


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



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

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



Picture 6: Liquid depth in the flat Phantom (2450 MHz, 15.3cm 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: 1/15/2013 3:00:38 PM

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

Medium parameters used: f = 835 MHz; σ = 0.916 mho/m; ε_r = 41.25; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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) = 2.64 mW/g

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

Reference Value = 54.4 V/m; Power Drift = -0.076 dB

Peak SAR (extrapolated) = 3.67 W/kg

SAR(1 g) = 2.44 mW/g; SAR(10 g) = 1.6 mW/g

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

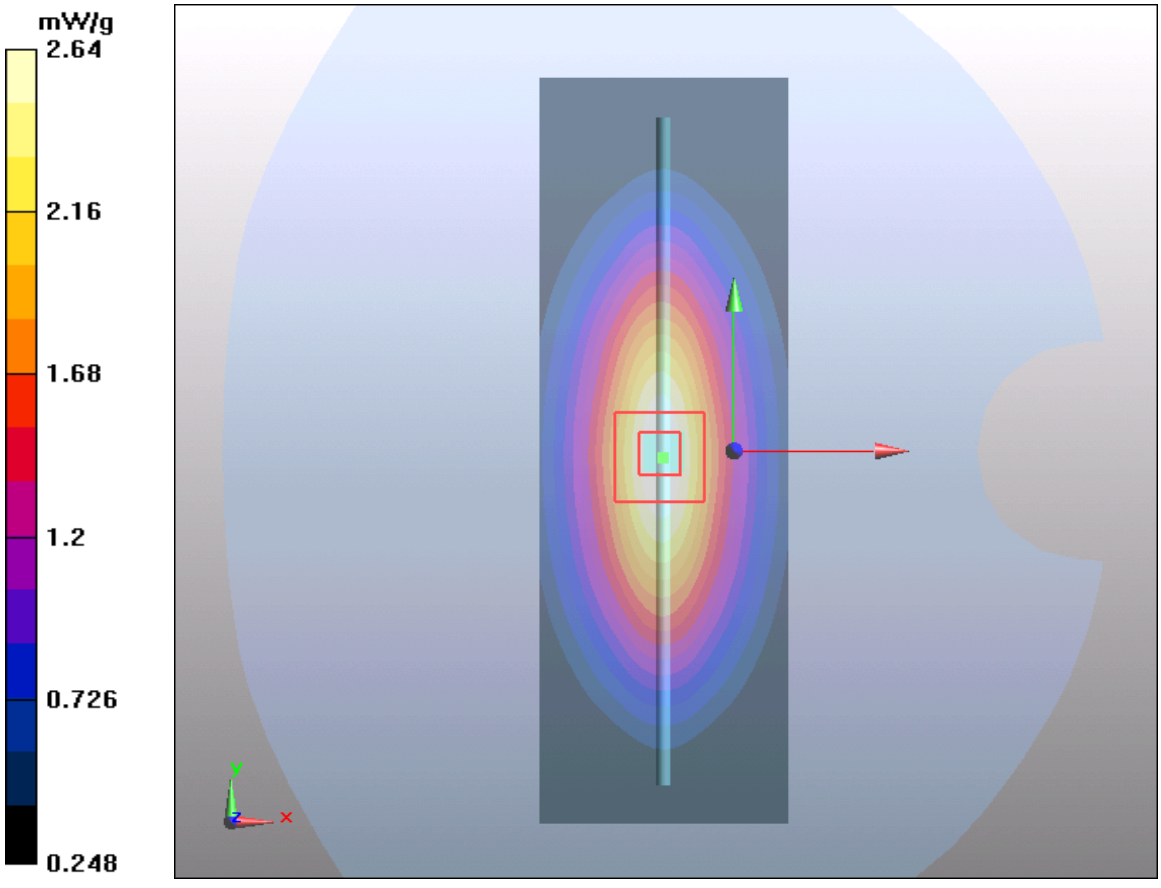


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time: 1/16/2013 12:29:37 PM

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

Medium parameters used: f = 835 MHz; σ = 0.990 mho/m; ε_r = 55.89; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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) = 2.58 mW/g

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

Reference Value = 51.9 V/m; Power Drift = -0.058 dB

Peak SAR (extrapolated) = 3.5 W/kg

SAR(1 g) = 2.41 mW/g; SAR(10 g) = 1.6 mW/g

Maximum value of SAR (measured) = 2.6 mW/g

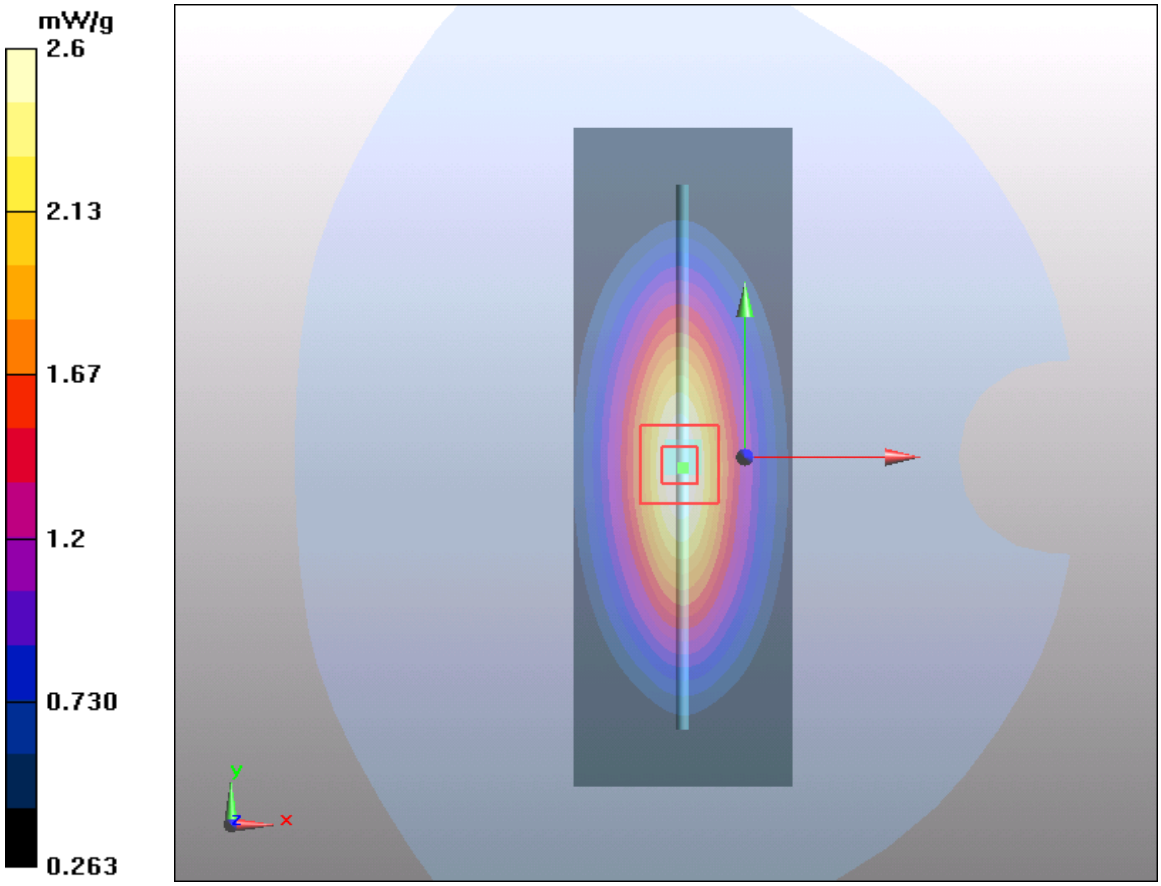


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 1/17/2013 7:44:55 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.408 mho/m; ε_r = 39.98; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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) = 11.3 mW/g

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

Reference Value = 85.5 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.48 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.7 mW/g

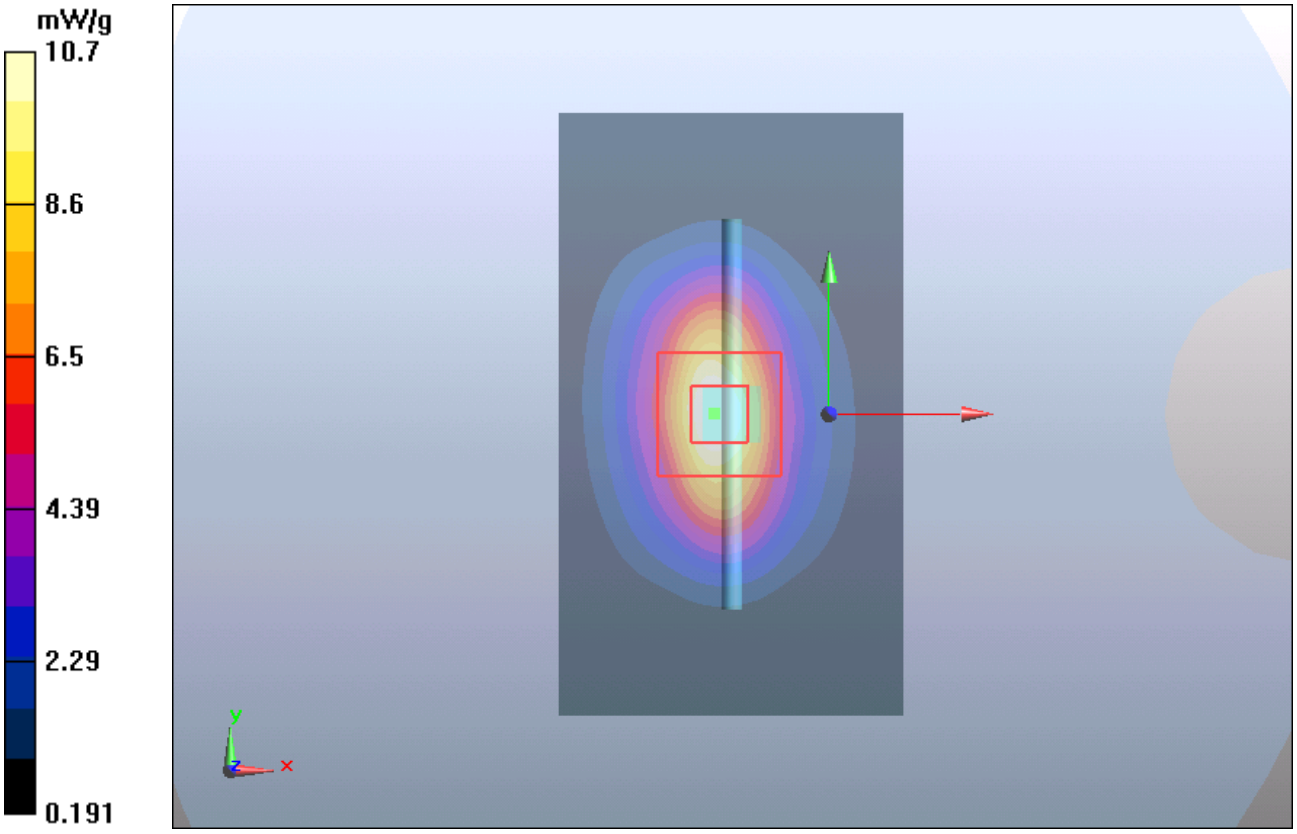


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 1/17/2013 3:07:25 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.524 mho/m; ε_r = 52.56; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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) = 12.2 mW/g

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

Reference Value = 82.3 V/m; Power Drift = 0.068 dB

Peak SAR (extrapolated) = 17.8 W/kg

SAR(1 g) = 9.93 mW/g; SAR(10 g) = 5.25 mW/g

Maximum value of SAR (measured) = 11.3 mW/g

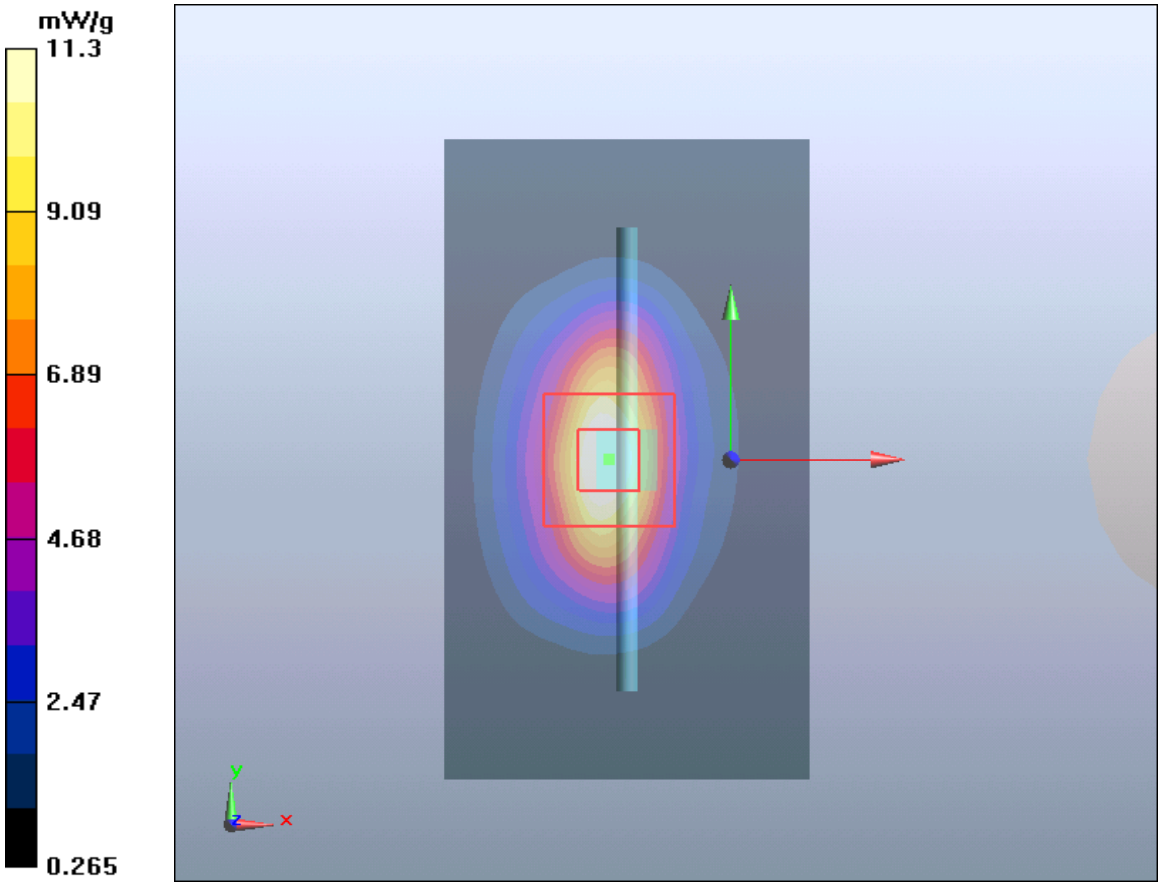


Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date/Time: 1/15/2013 1:00:12 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.86 mho/m; ε_r = 38.53; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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=12mm, dy=12mm

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 = 88.8 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 30 W/kg

SAR(1 g) = 13.7 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 15.9 mW/g

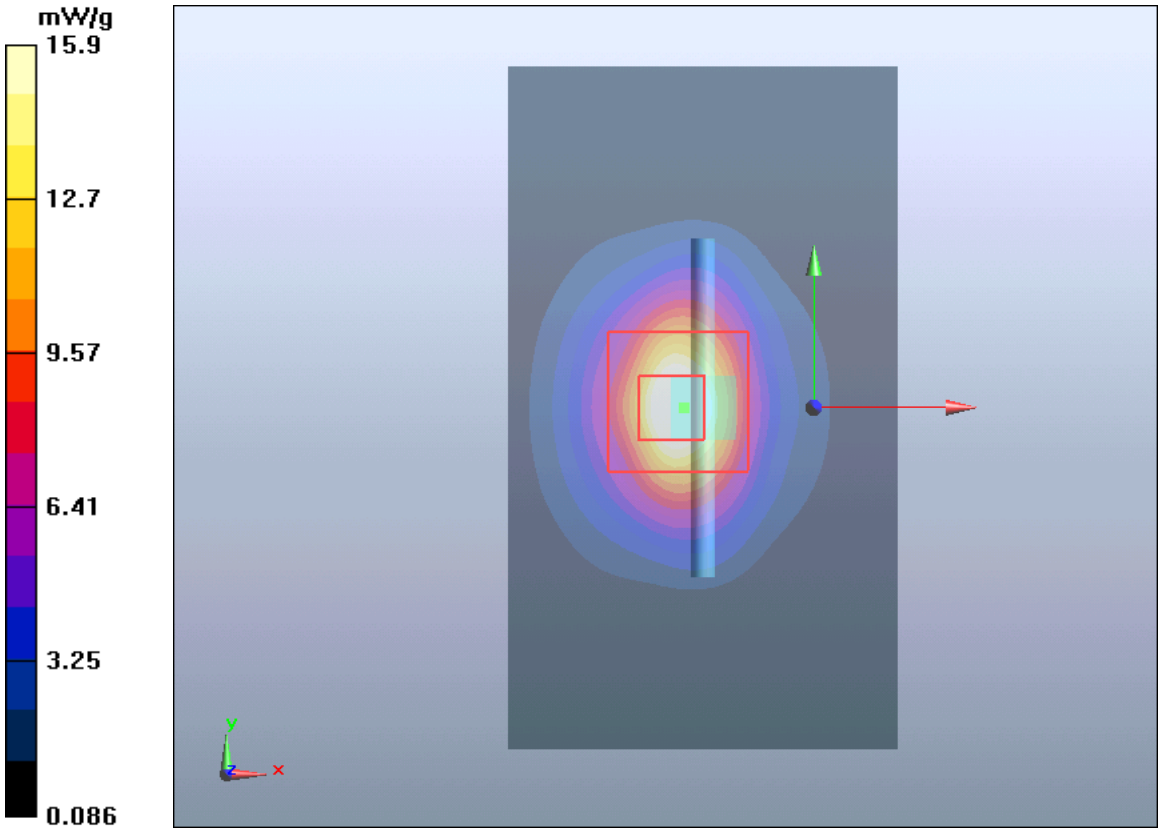


Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date/Time: 1/24/2013 4:10:59 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.901 mho/m; ε_r = 52.01; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

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

Electronics: DAE4 Sn905; Calibrated: 6/21/2012

Sensor-Surface: 4mm (Mechanical Surface Detection)

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=12mm, dy=12mm

Maximum value of SAR (interpolated) = 16 mW/g

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

Reference Value = 81.2 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 25.4 W/kg

SAR(1 g) = 12.5 mW/g; SAR(10 g) = 6.20 mW/g

Maximum value of SAR (measured) = 14.4 mW/g

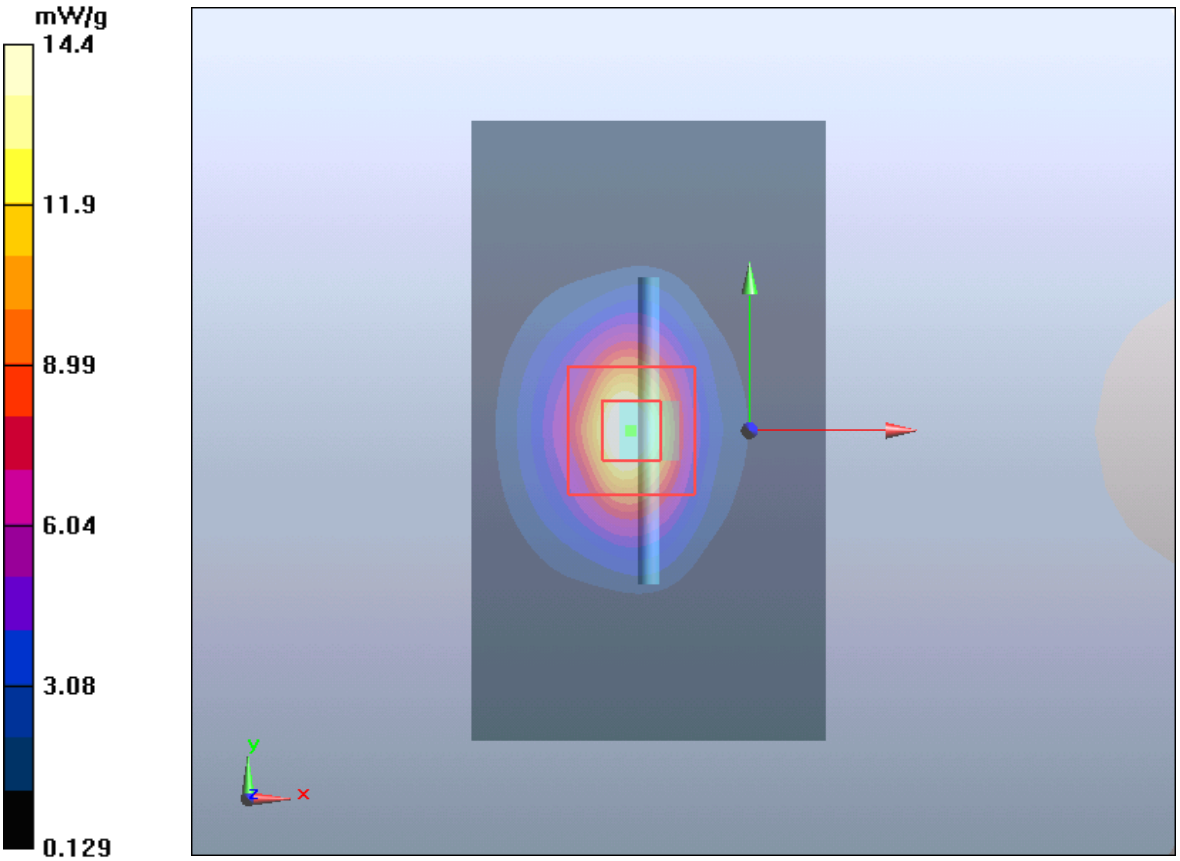


Figure 12 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle (Battery 1)

Date/Time: 1/15/2013 9:06:57 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.550 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.68 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 0.663 W/kg
SAR(1 g) = 0.529 mW/g; SAR(10 g) = 0.405 mW/g
Maximum value of SAR (measured) = 0.553 mW/g

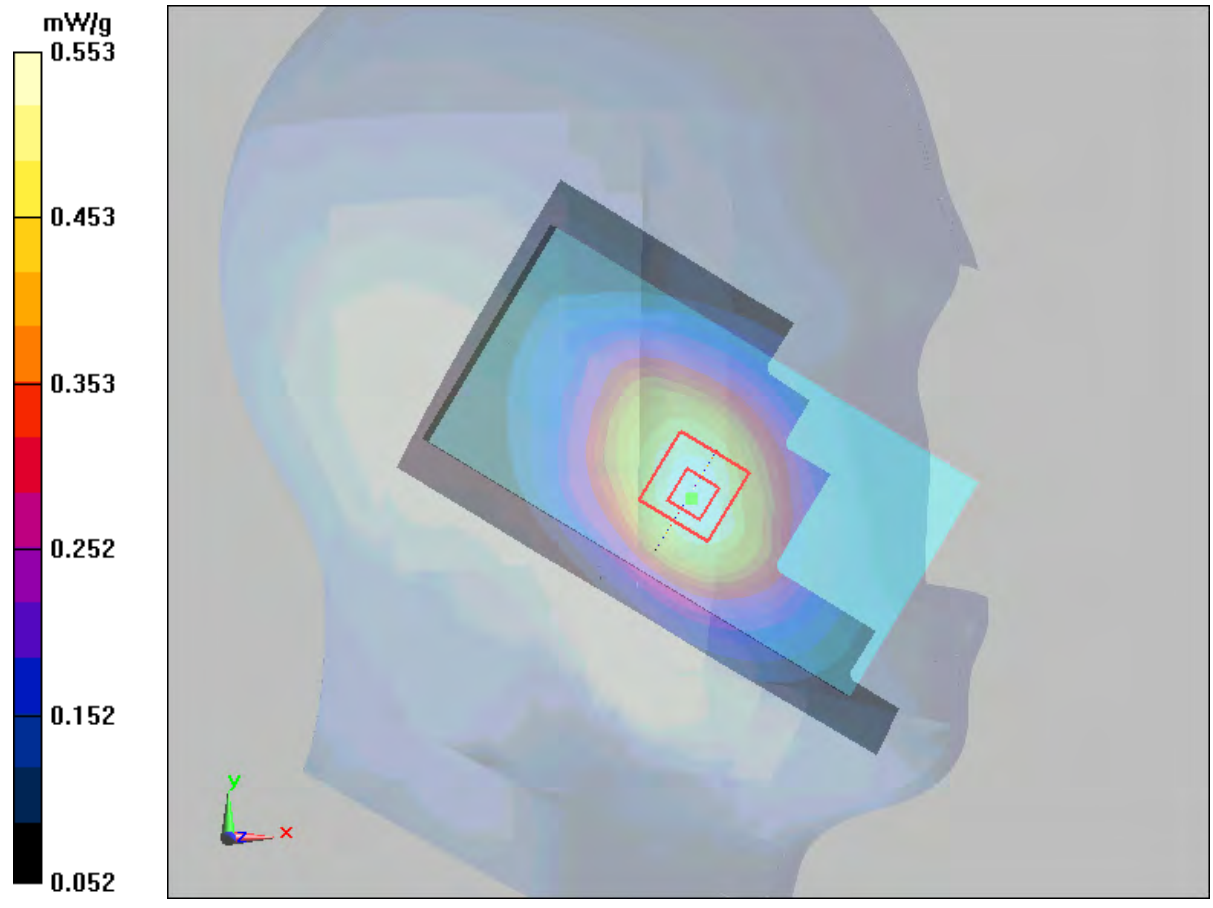


Figure 13 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Tilt Middle (Battery 1)

Date/Time: 1/15/2013 9:23:29 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.331 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.072 dB
Peak SAR (extrapolated) = 0.396 W/kg
SAR(1 g) = 0.320 mW/g; SAR(10 g) = 0.245 mW/g
Maximum value of SAR (measured) = 0.331 mW/g

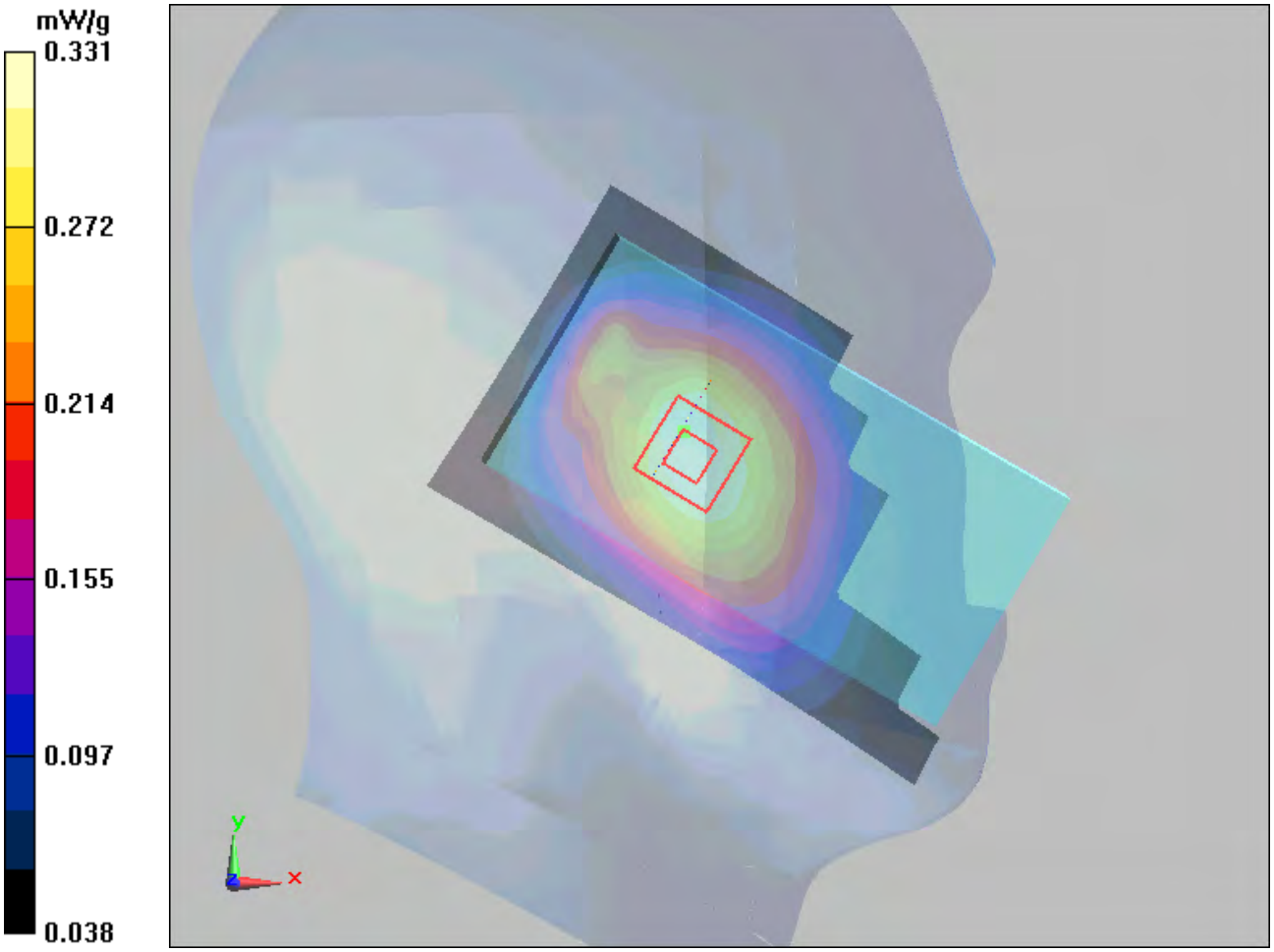


Figure 14 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle (Battery 1)

Date/Time: 1/15/2013 9:45:49 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.464 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.95 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.442 mW/g; SAR(10 g) = 0.338 mW/g
Maximum value of SAR (measured) = 0.469 mW/g

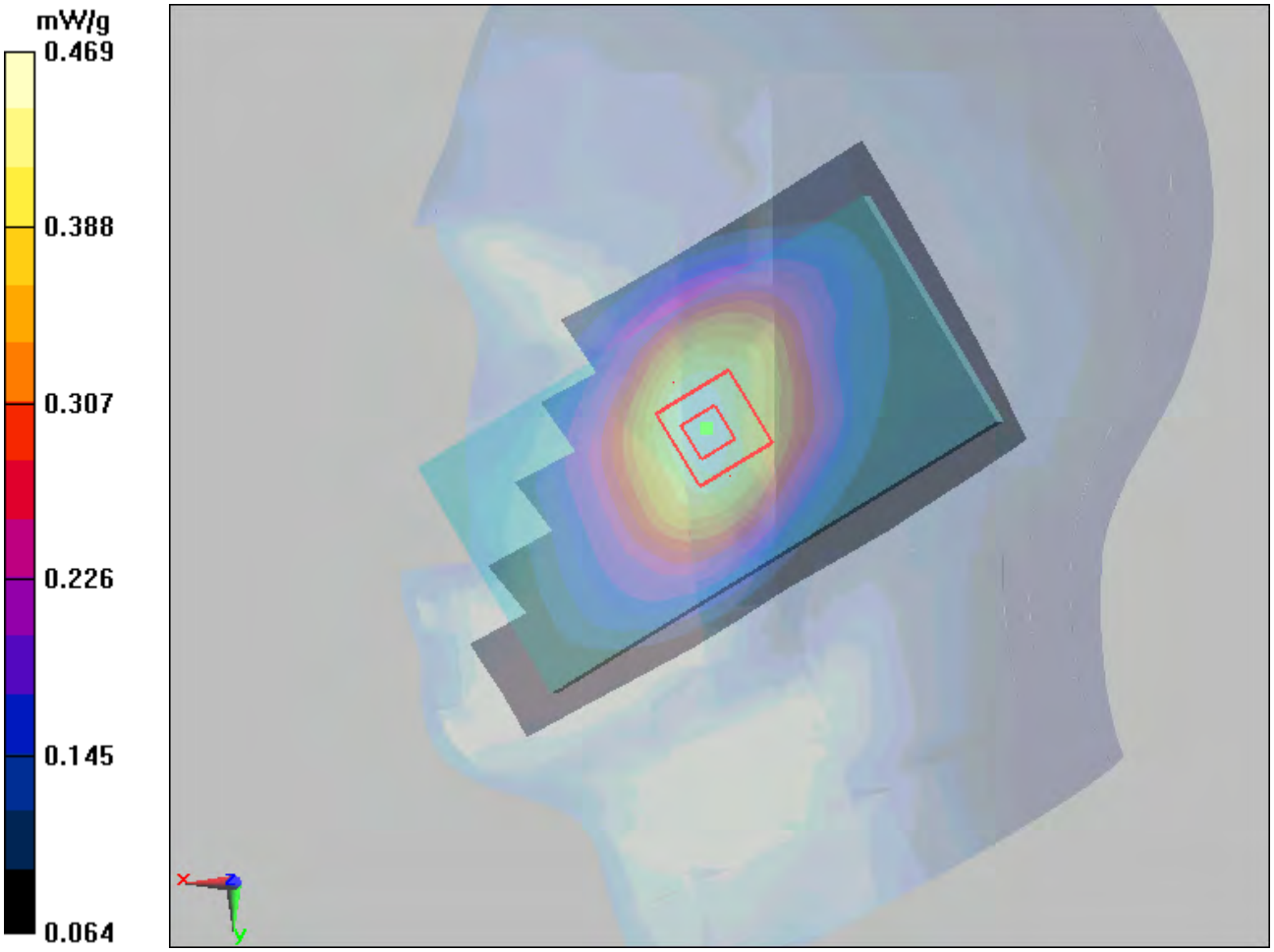


Figure 15 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle (Battery 1)

Date/Time: 1/15/2013 10:02:35 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.348 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.334 mW/g; SAR(10 g) = 0.255 mW/g
Maximum value of SAR (measured) = 0.349 mW/g

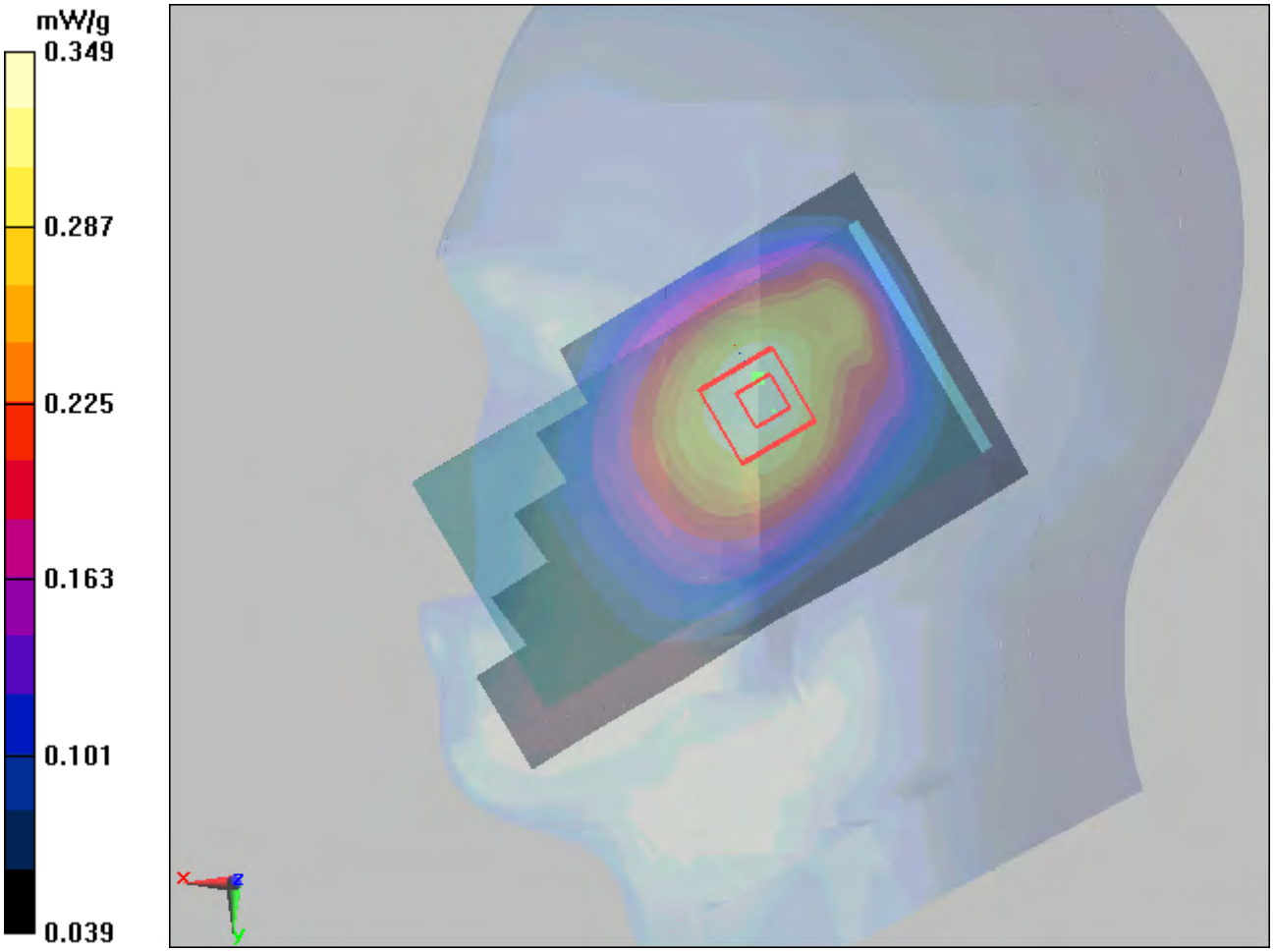


Figure 16 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Left Cheek Middle (Battery 2)

Date/Time: 1/15/2013 10:26:58 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.565 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.55 V/m; Power Drift = -0.072 dB
Peak SAR (extrapolated) = 0.690 W/kg
SAR(1 g) = 0.542 mW/g; SAR(10 g) = 0.411 mW/g
Maximum value of SAR (measured) = 0.564 mW/g

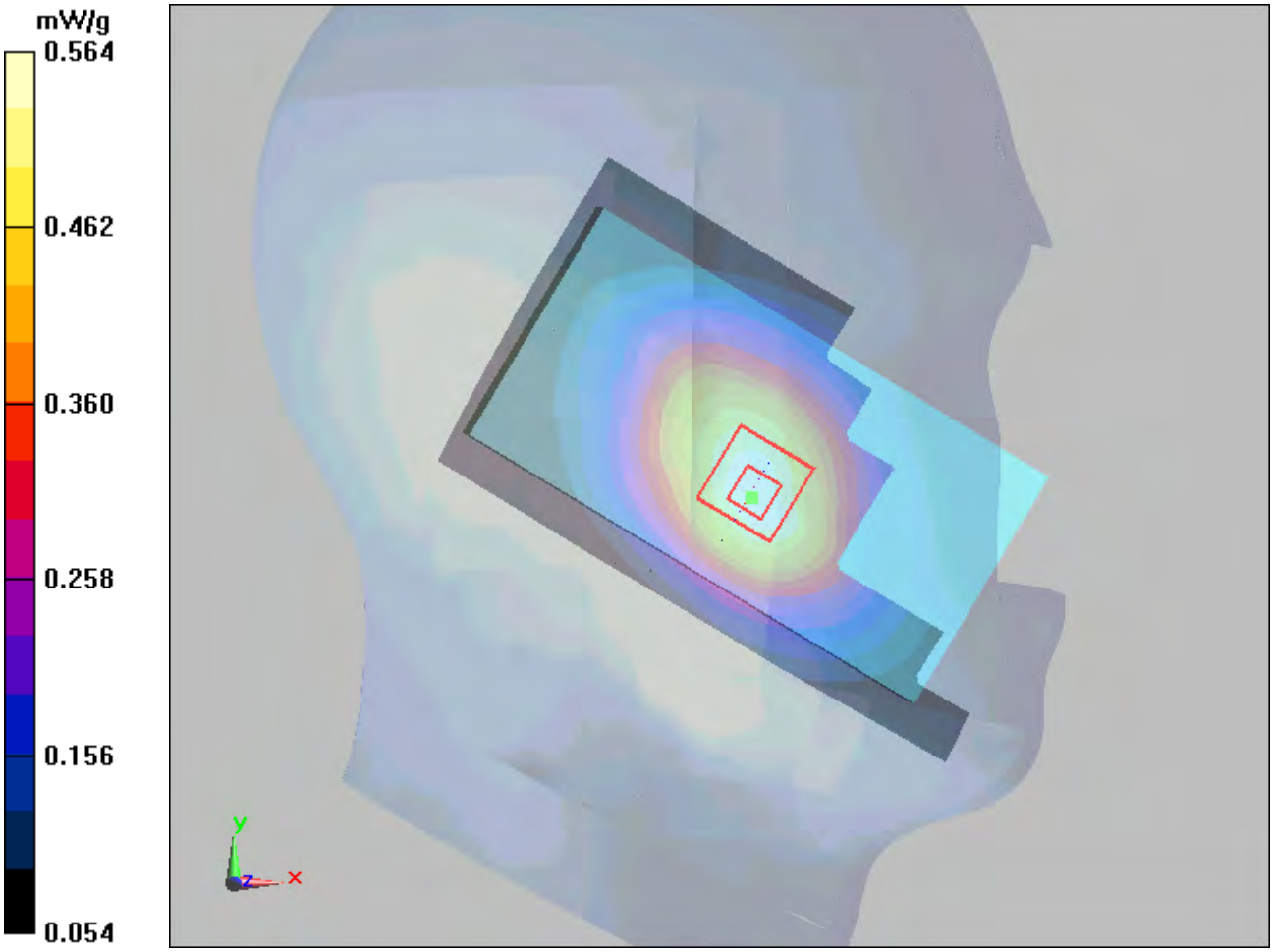
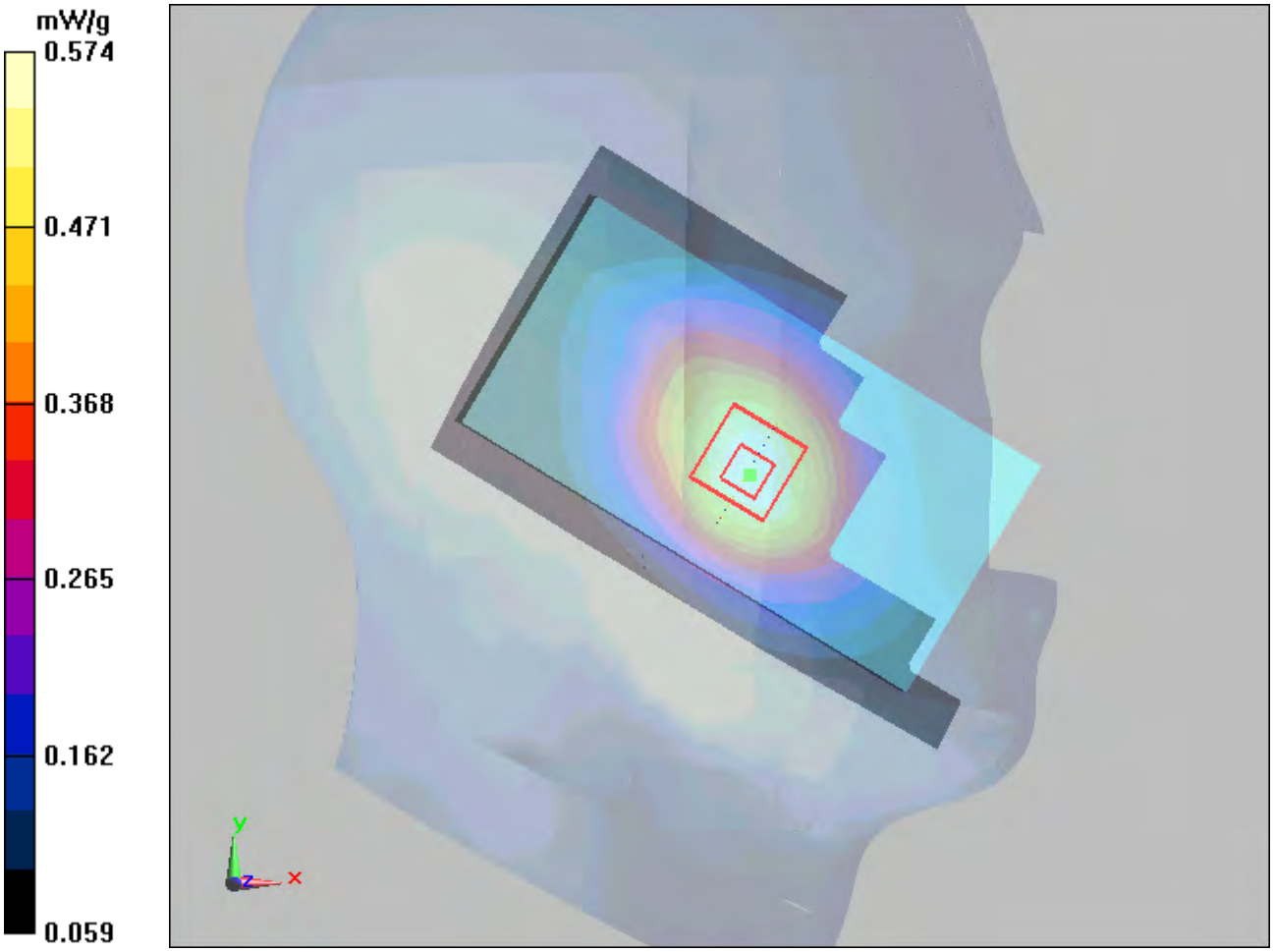


Figure 17 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Cheek Middle (Battery 3)

Date/Time: 1/15/2013 11:00:32 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.572 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.15 V/m; Power Drift = -0.128 dB
Peak SAR (extrapolated) = 0.691 W/kg
SAR(1 g) = 0.545 mW/g; SAR(10 g) = 0.413 mW/g
Maximum value of SAR (measured) = 0.574 mW/g



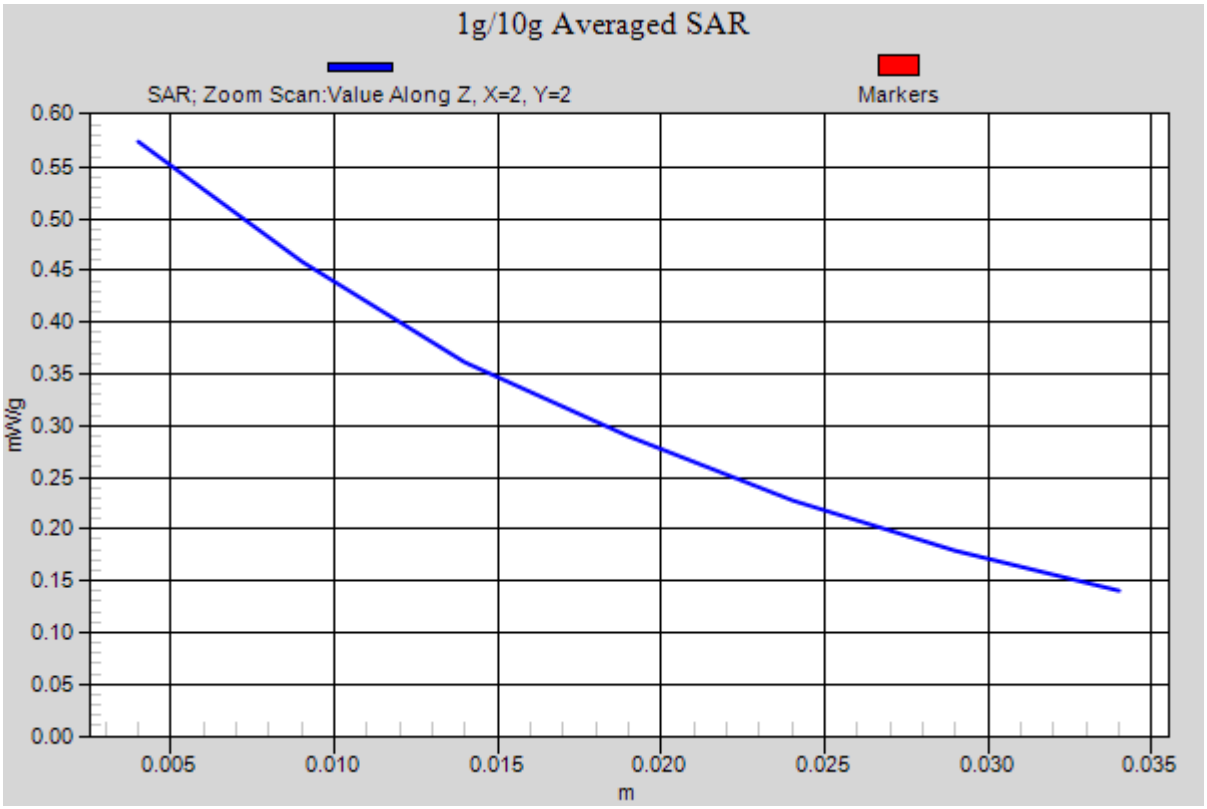


Figure 18 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 GPRS (1Txslot) Back Side High (Battery 1)

Date/Time: 1/16/2013 2:34:43 PM
Communication System: GPRS 1TX; Frequency: 848.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = 0.062 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.839 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

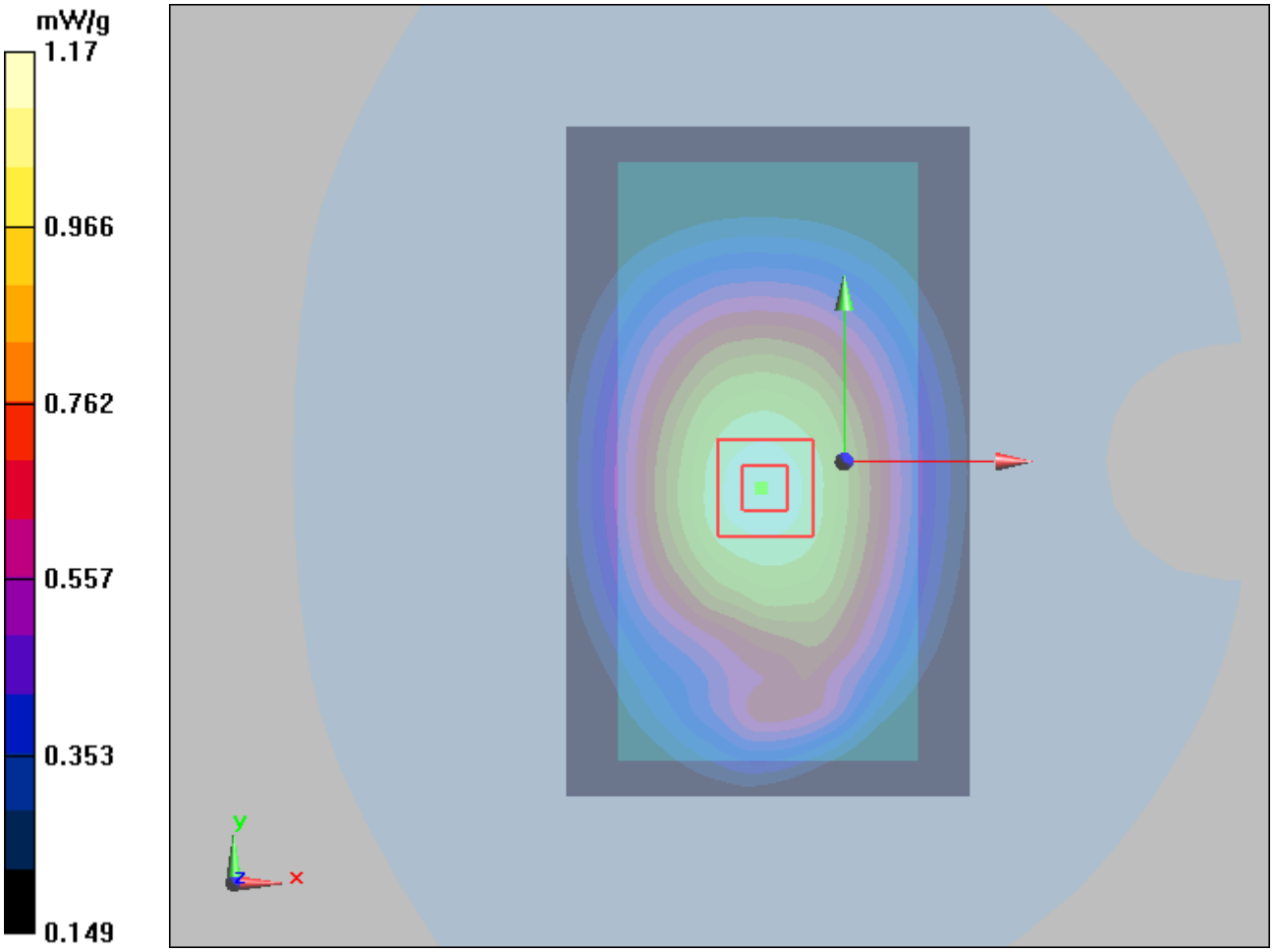
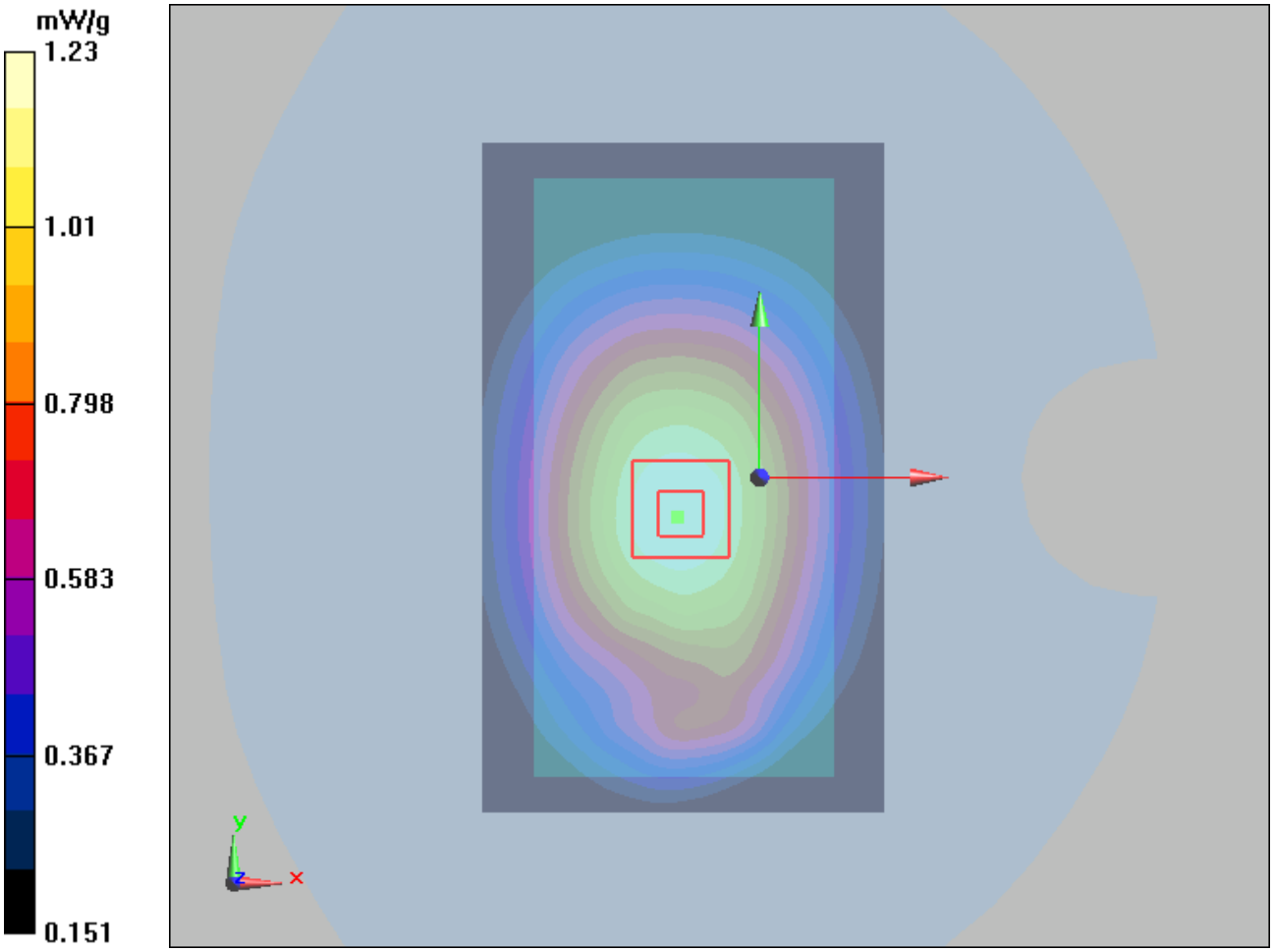


Figure 19 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 251

GSM 850 GPRS (1Txslot) Back Side Middle (Battery 1)

Date/Time: 1/16/2013 1:59:09 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.23 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.5 V/m; Power Drift = -0.053 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.885 mW/g
Maximum value of SAR (measured) = 1.23 mW/g



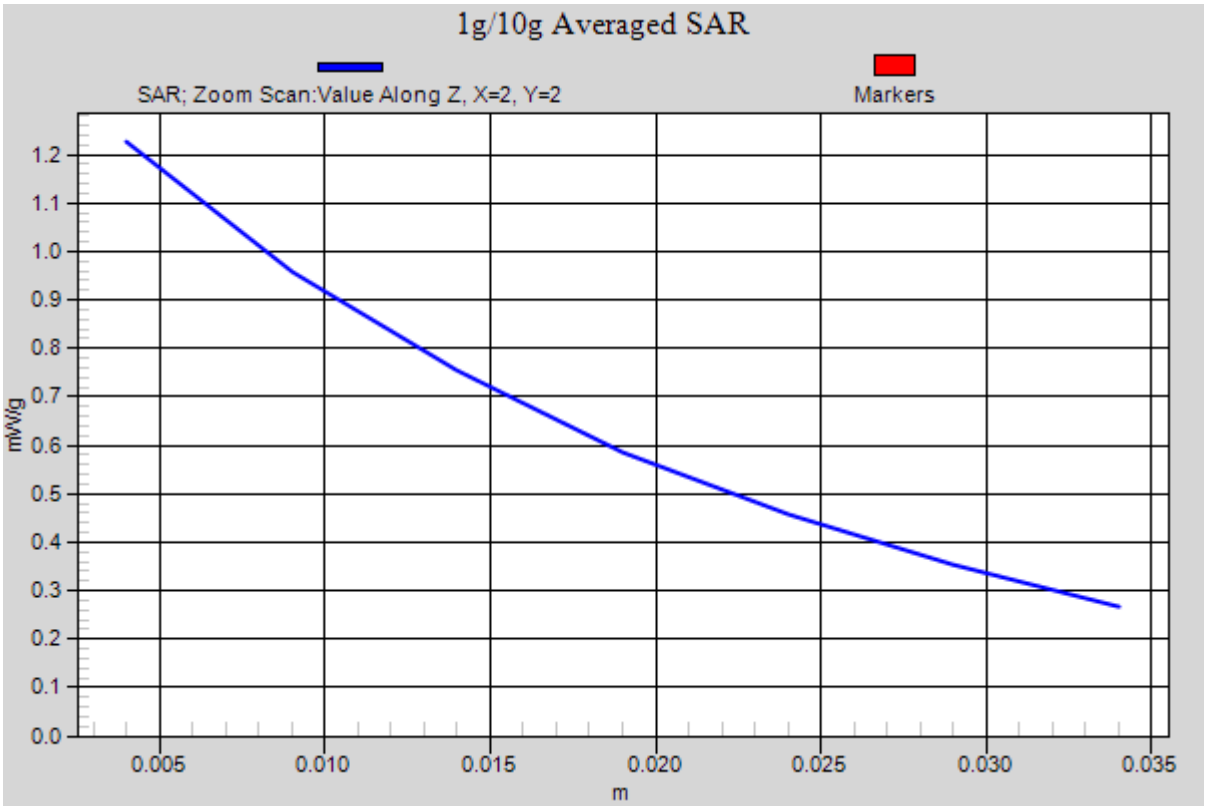


Figure 20 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Back Side Low (Battery 1)

Date/Time: 1/16/2013 2:51:48 PM
Communication System: GPRS 1TX; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.12 mW/g
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 1.3 W/kg
SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.814 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

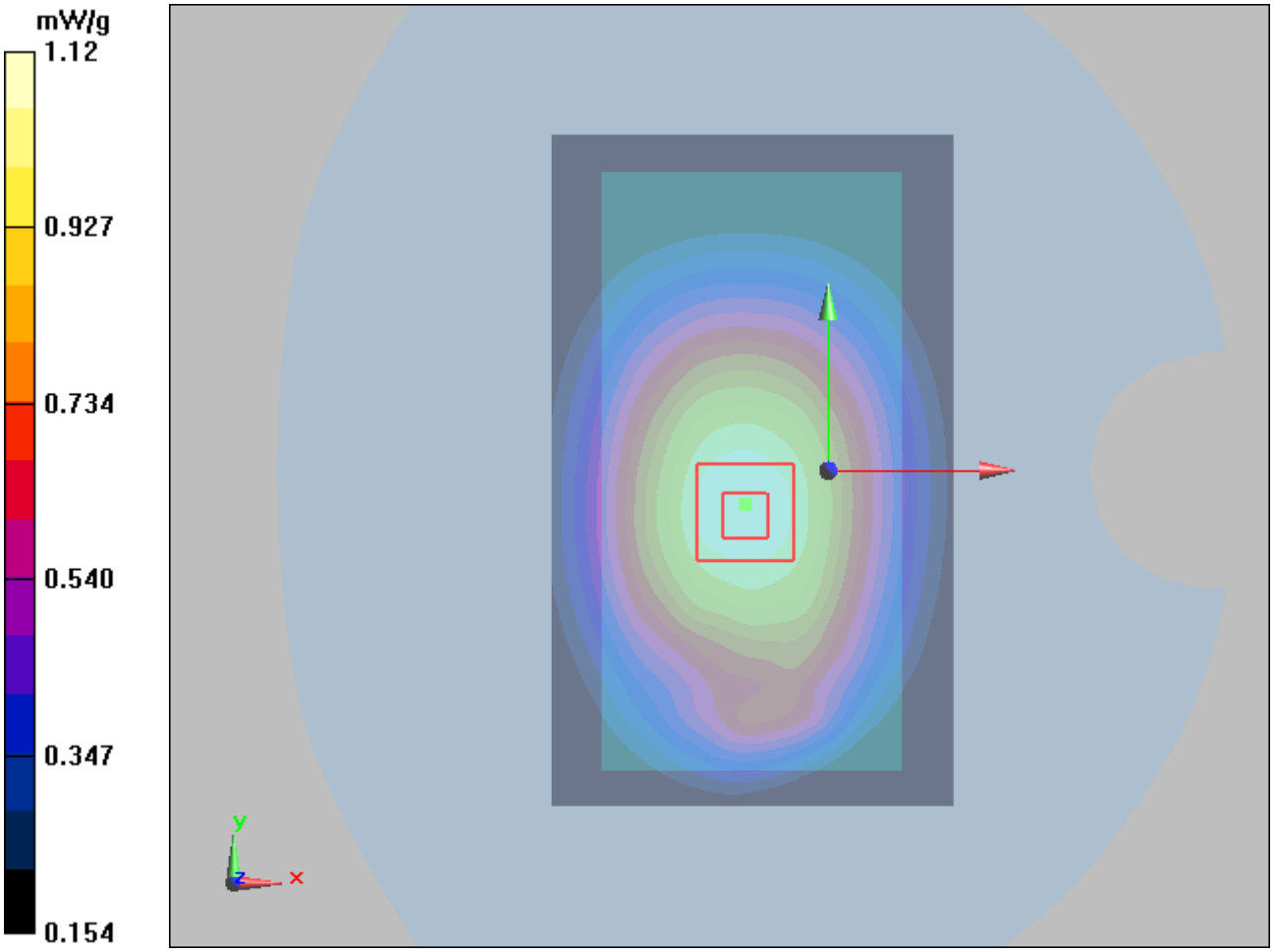


Figure 21 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 128

GSM 850 GPRS (2Txslots) Back Side High (Battery 1)

Date/Time: 1/16/2013 3:09:20 PM
Communication System: GPRS 2TX ; Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 55.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.982 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.6 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.707 mW/g
Maximum value of SAR (measured) = 0.980 mW/g

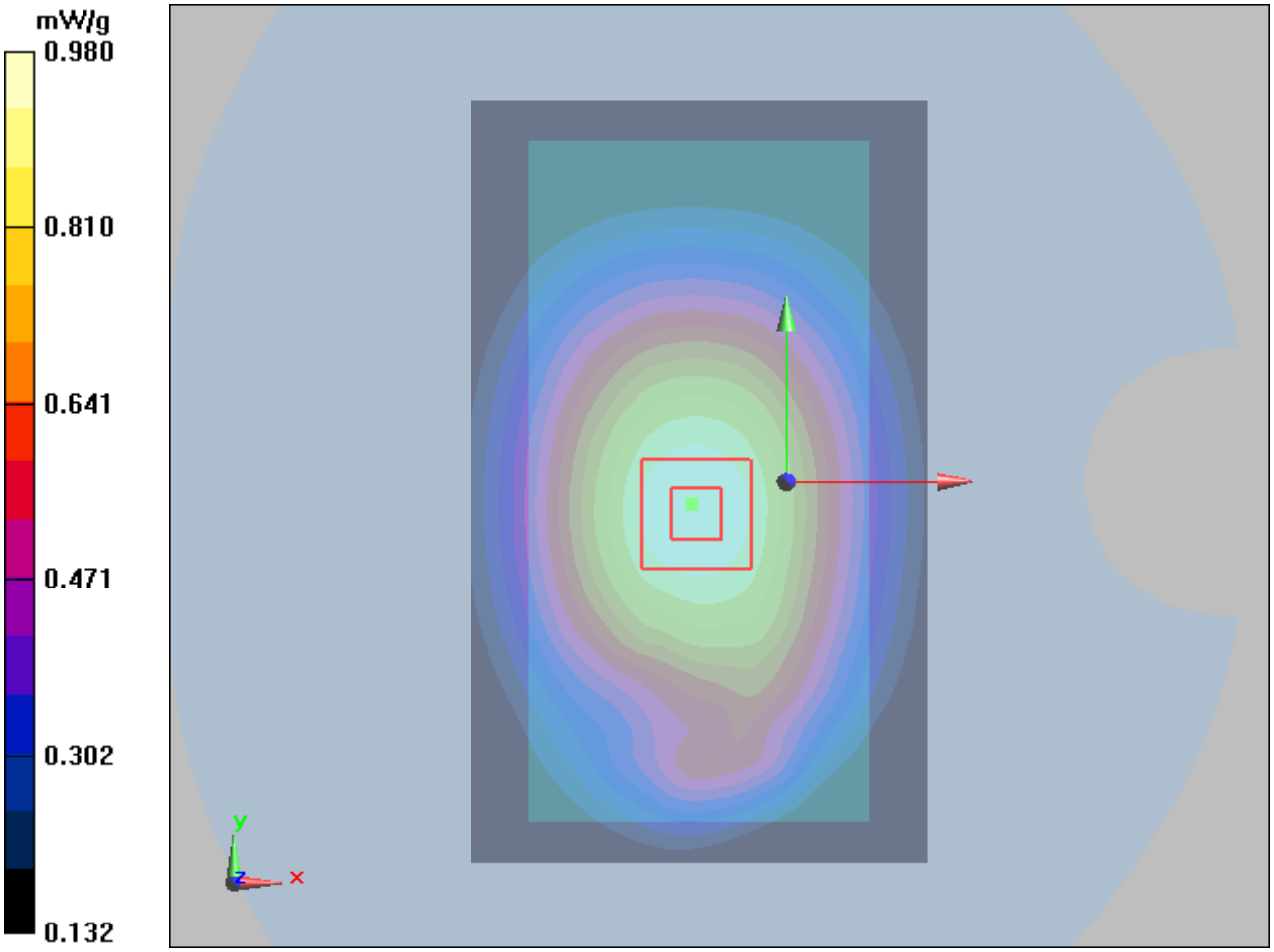


Figure 22 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 251

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

Date/Time: 1/16/2013 2:17:12 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.01 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.2 V/m; Power Drift = -0.073 dB
Peak SAR (extrapolated) = 2.44 W/kg
SAR(1 g) = 0.971 mW/g; SAR(10 g) = 0.728 mW/g
Maximum value of SAR (measured) = 0.992 mW/g

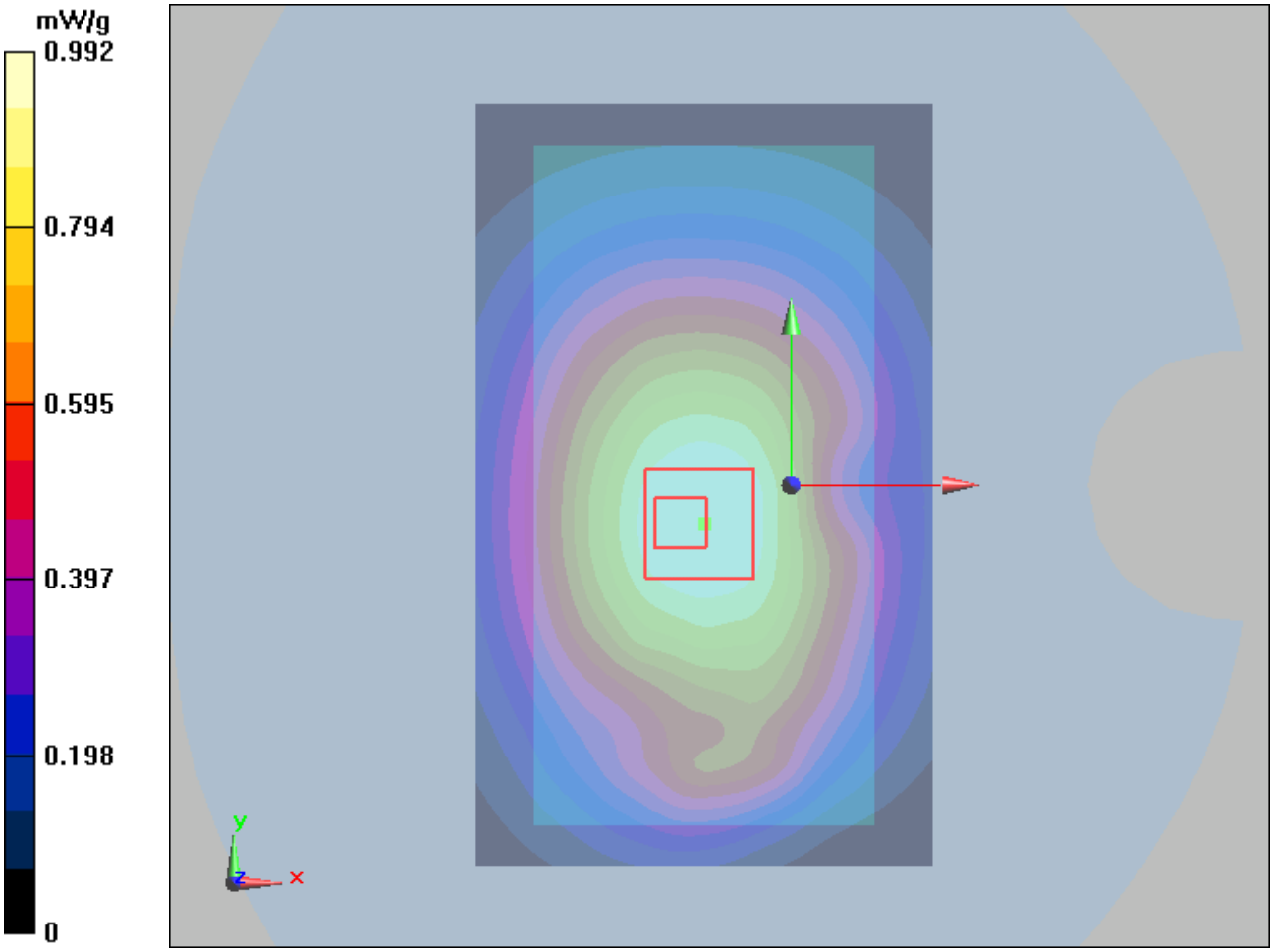


Figure 23 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Back Side Low (Battery 1)

Date/Time: 1/16/2013 3:26:31 PM
Communication System: GPRS 2TX ; Frequency: 824.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.978 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.940 mW/g
Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.1 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 0.834 W/kg
SAR(1 g) = 0.607 mW/g; SAR(10 g) = 0.405 mW/g
Maximum value of SAR (measured) = 0.699 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.1 V/m; Power Drift = -0.056 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.901 mW/g; SAR(10 g) = 0.683 mW/g
Maximum value of SAR (measured) = 0.947 mW/g

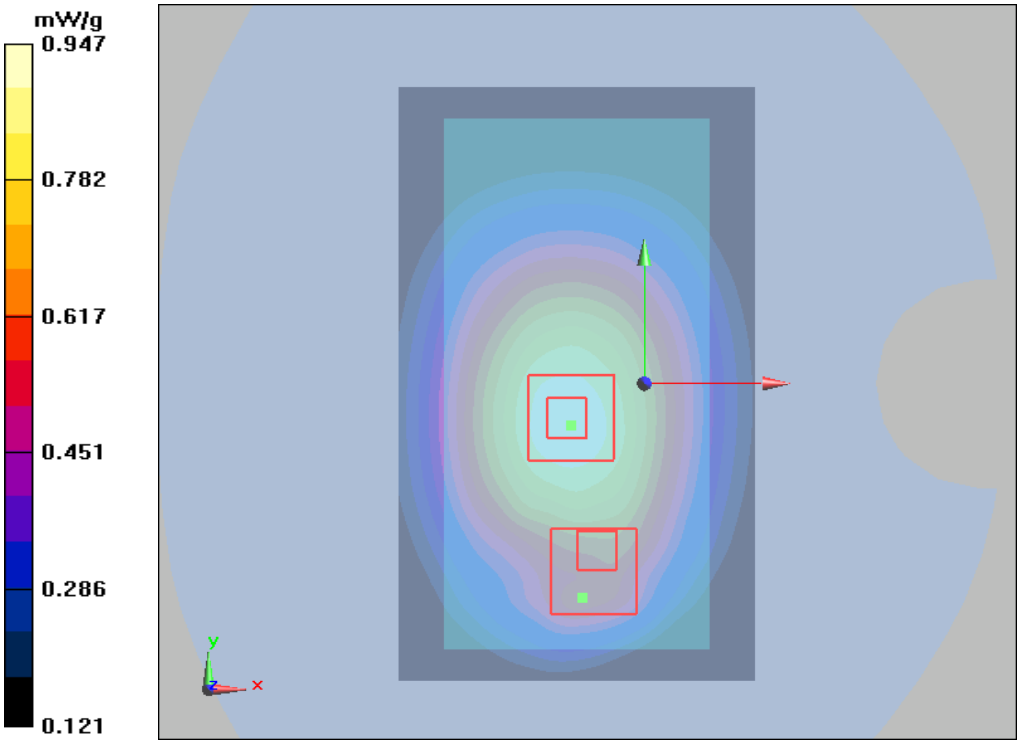


Figure 24 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 128

GSM 850 GPRS (1Txslot) Front Side Middle (Battery 1)

Date/Time: 1/16/2013 8:16:00 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.650 mW/g
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.6 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.783 W/kg
SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.480 mW/g
Maximum value of SAR (measured) = 0.653 mW/g

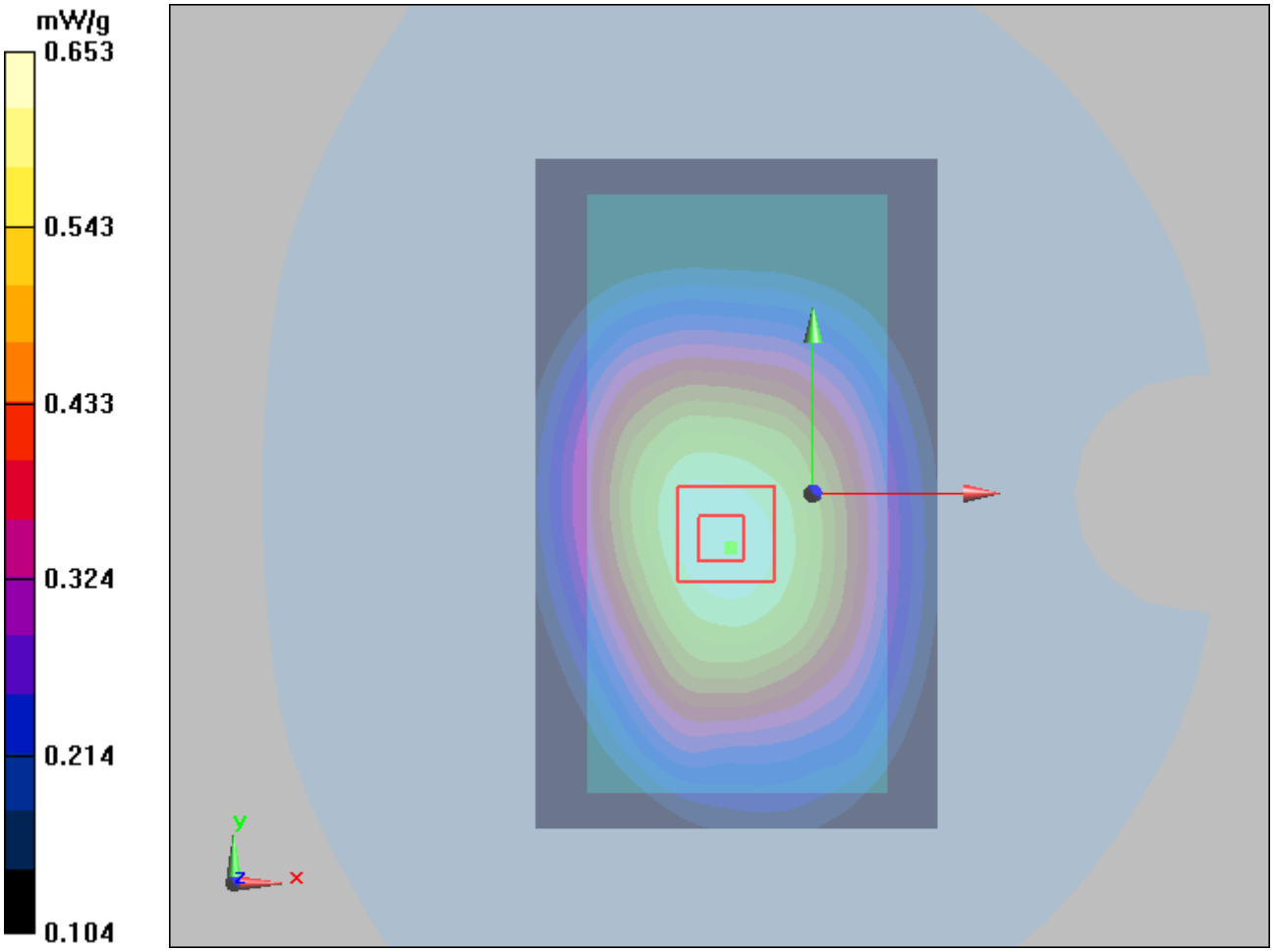


Figure 25 Body, Front Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Left Edge Middle (Battery 1)

Date/Time: 1/16/2013 7:44:10 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.451 mW/g
Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 21.5 V/m; Power Drift = 0.033 dB
Peak SAR (extrapolated) = 0.644 W/kg
SAR(1 g) = 0.444 mW/g; SAR(10 g) = 0.297 mW/g
Maximum value of SAR (measured) = 0.458 mW/g

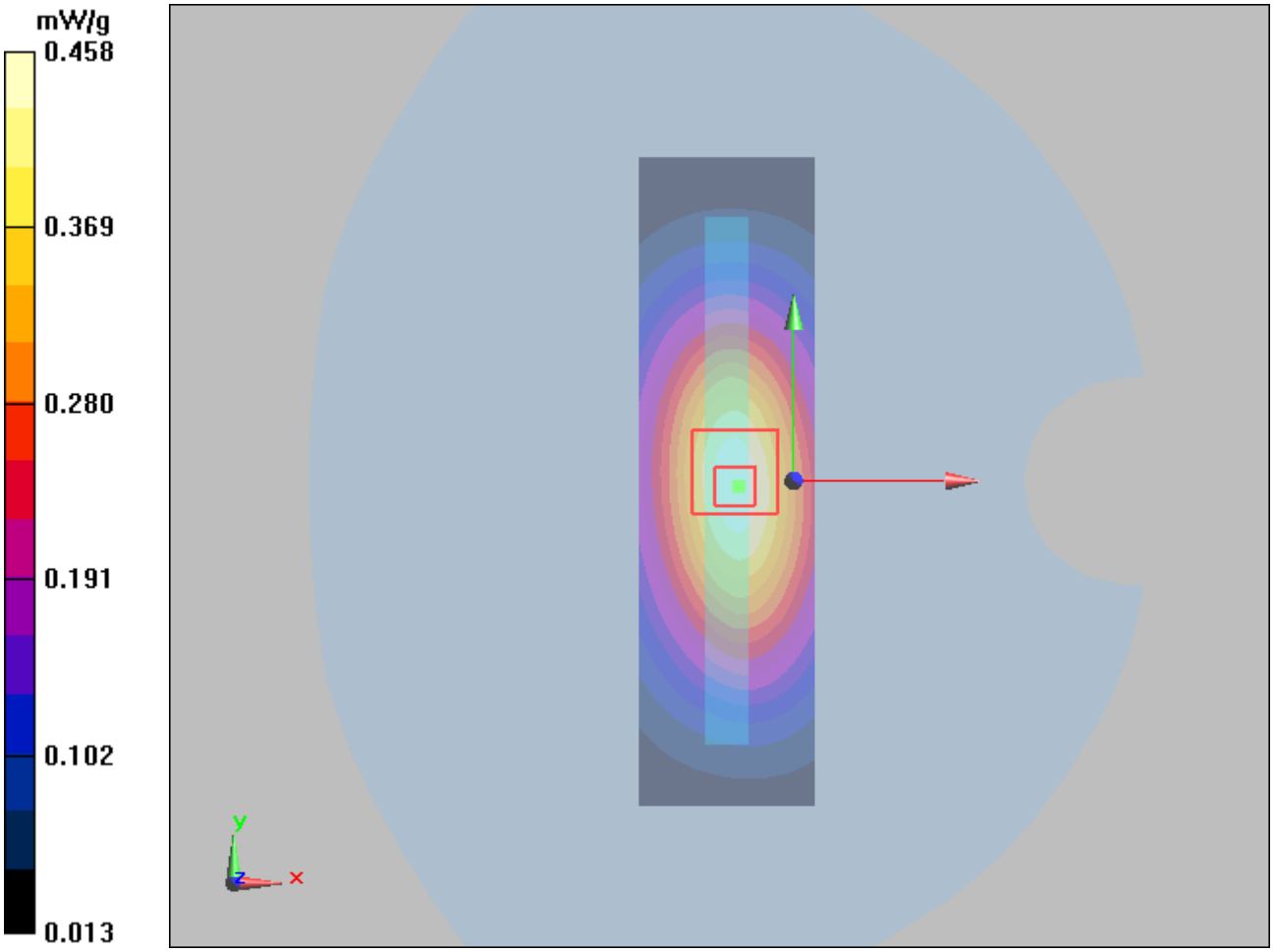


Figure 26 Body, Left Edge, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Right Edge Middle (Battery 1)

Date/Time: 1/16/2013 7:59:54 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.330 mW/g
Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.9 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 0.424 W/kg
SAR(1 g) = 0.310 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.331 mW/g

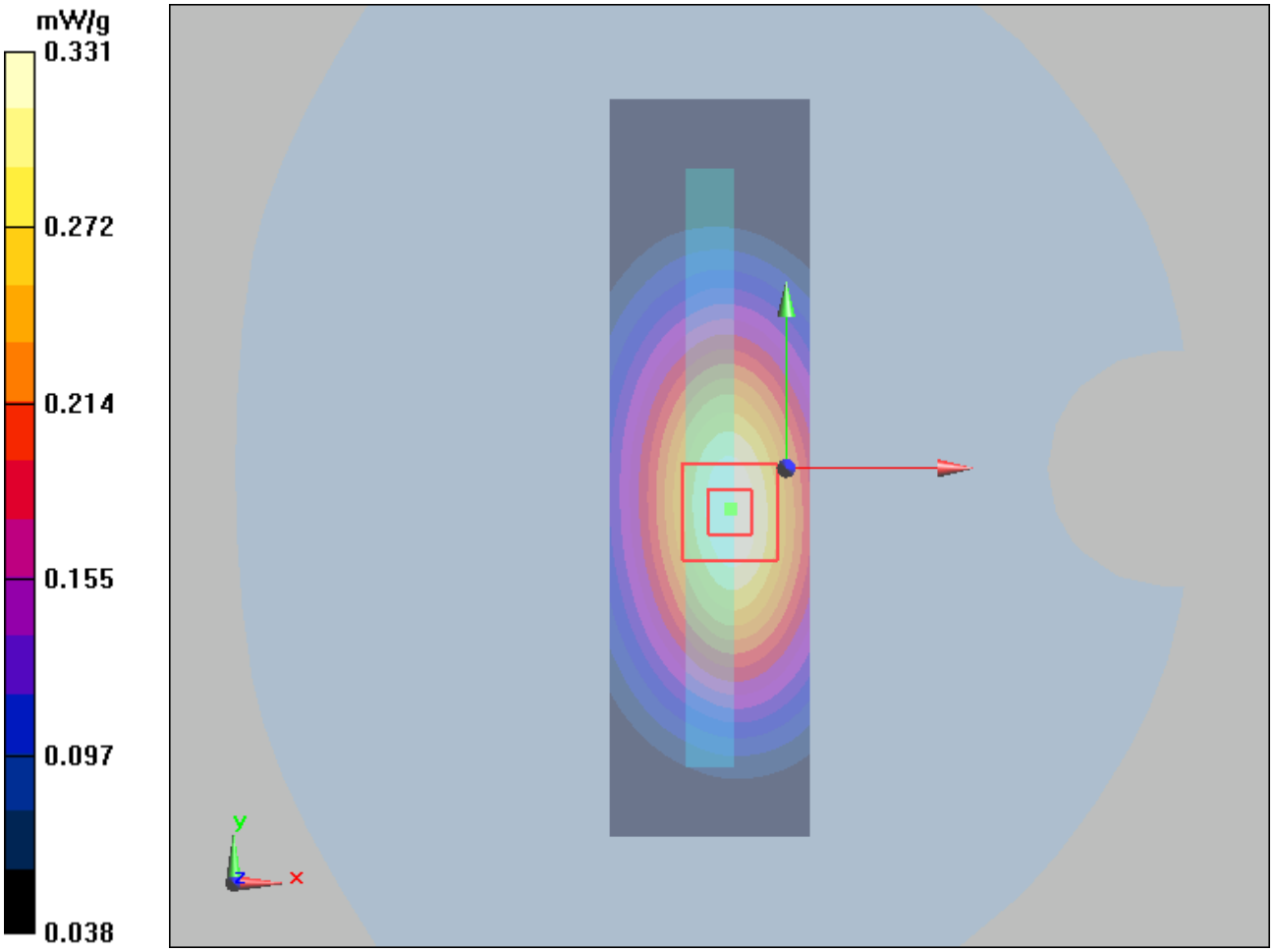


Figure 27 Body, Right Edge, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Bottom Edge Middle (Battery 1)

Date/Time: 1/16/2013 7:28:47 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.066 mW/g
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.23 V/m; Power Drift = 0.120 dB
Peak SAR (extrapolated) = 0.097 W/kg
SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.034 mW/g
Maximum value of SAR (measured) = 0.064 mW/g

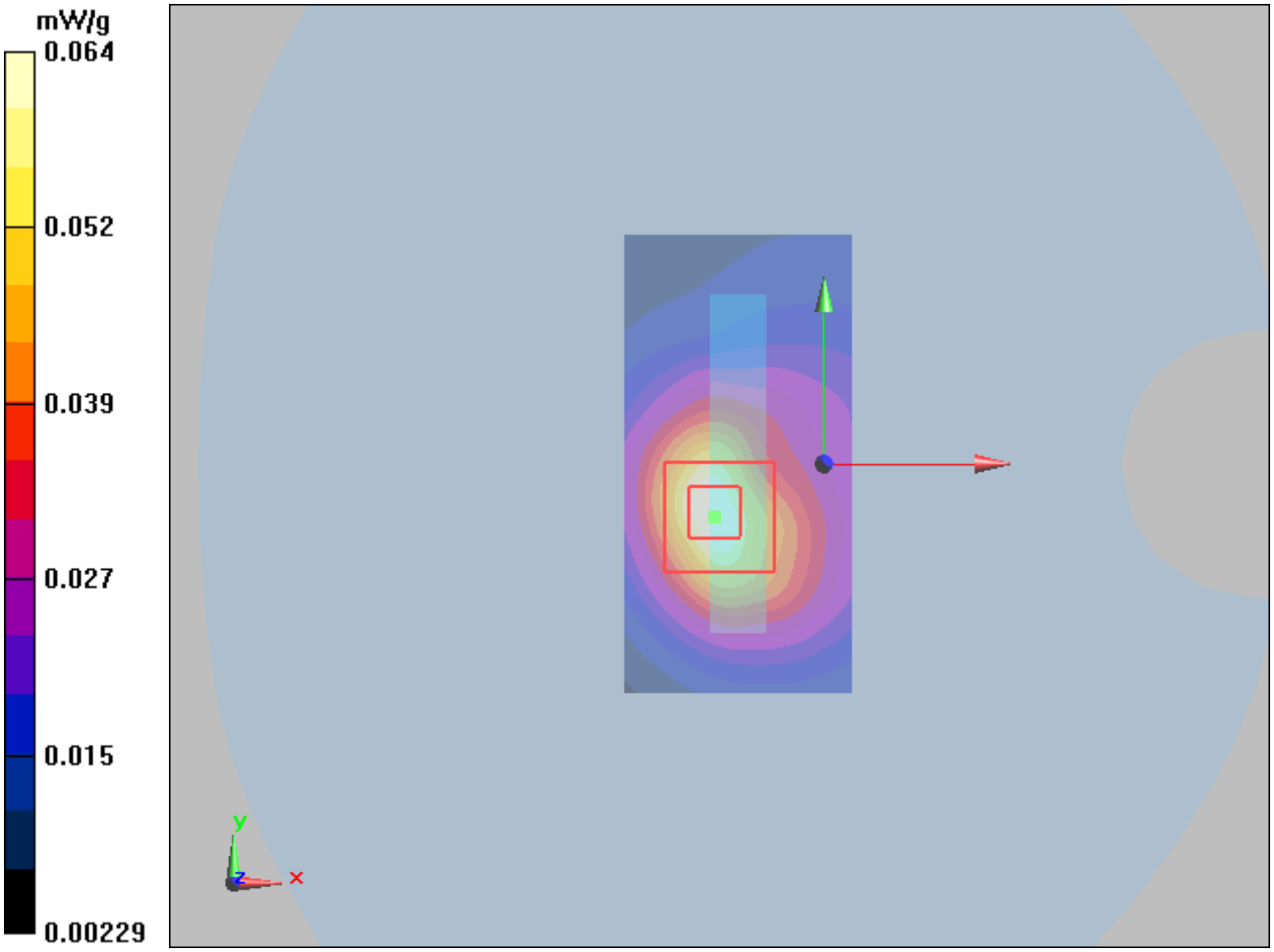


Figure 28 Body, Bottom Edge, GSM 850 GPRS (TX slot) Channel 190

GSM 850 with Earphone Back Side Middle (Battery 1)

Date/Time: 1/16/2013 5:00:06 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.08 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.6 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.755 mW/g; SAR(10 g) = 0.515 mW/g
Maximum value of SAR (measured) = 0.872 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.6 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.781 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

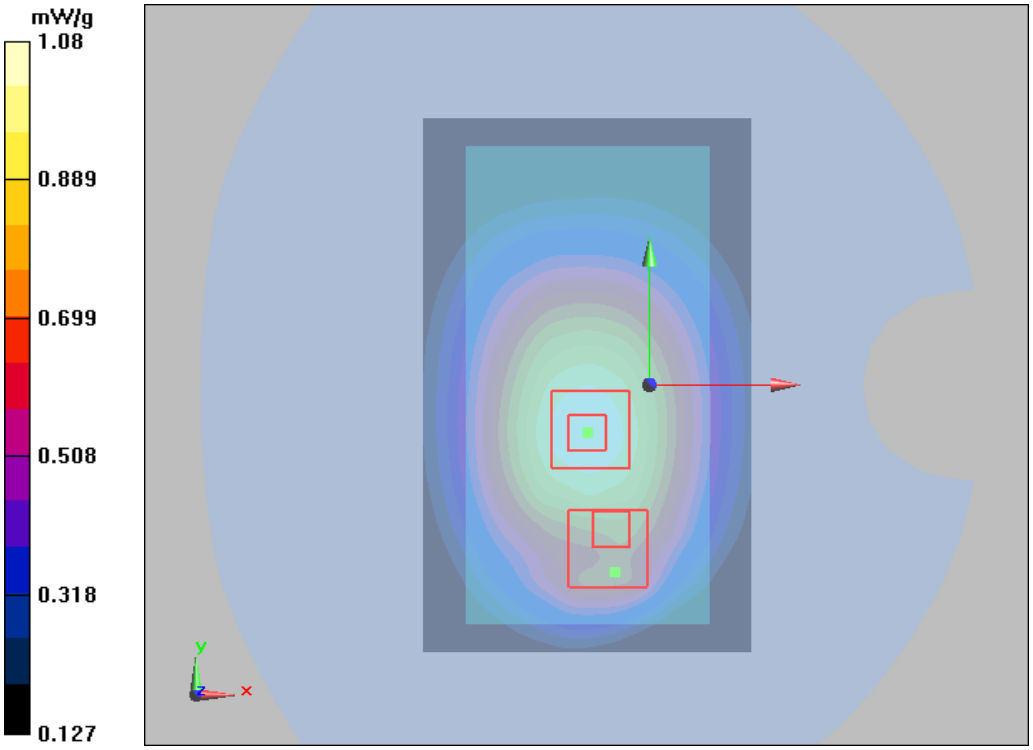


Figure 29 Body with Earphone, Back Side, GSM 850 Channel 190

GSM 850 EGPRS (Txslot) Back Side Middle (Battery 1)

Date/Time: 1/16/2013 3:52:44 PM
Communication System: EGPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.19 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.8 V/m; Power Drift = 0.091 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.857 mW/g
Maximum value of SAR (measured) = 1.22 mW/g

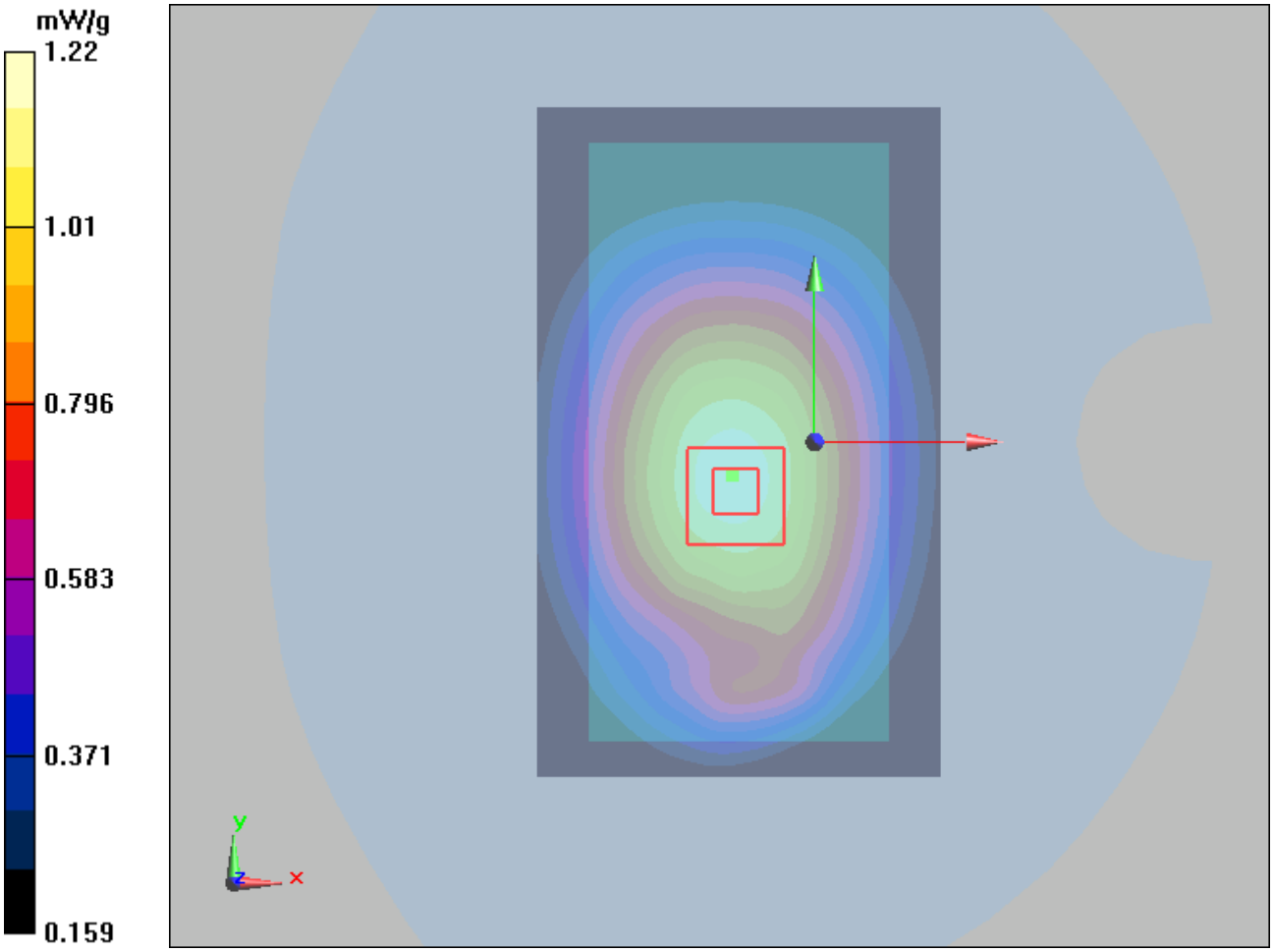


Figure 30 Body, Back Side, GSM 850 EGPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Back Side Middle (Battery 2)

Date/Time: 1/16/2013 4:16:20 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.19 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.3 V/m; Power Drift = -0.092 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.869 mW/g
Maximum value of SAR (measured) = 1.2 mW/g

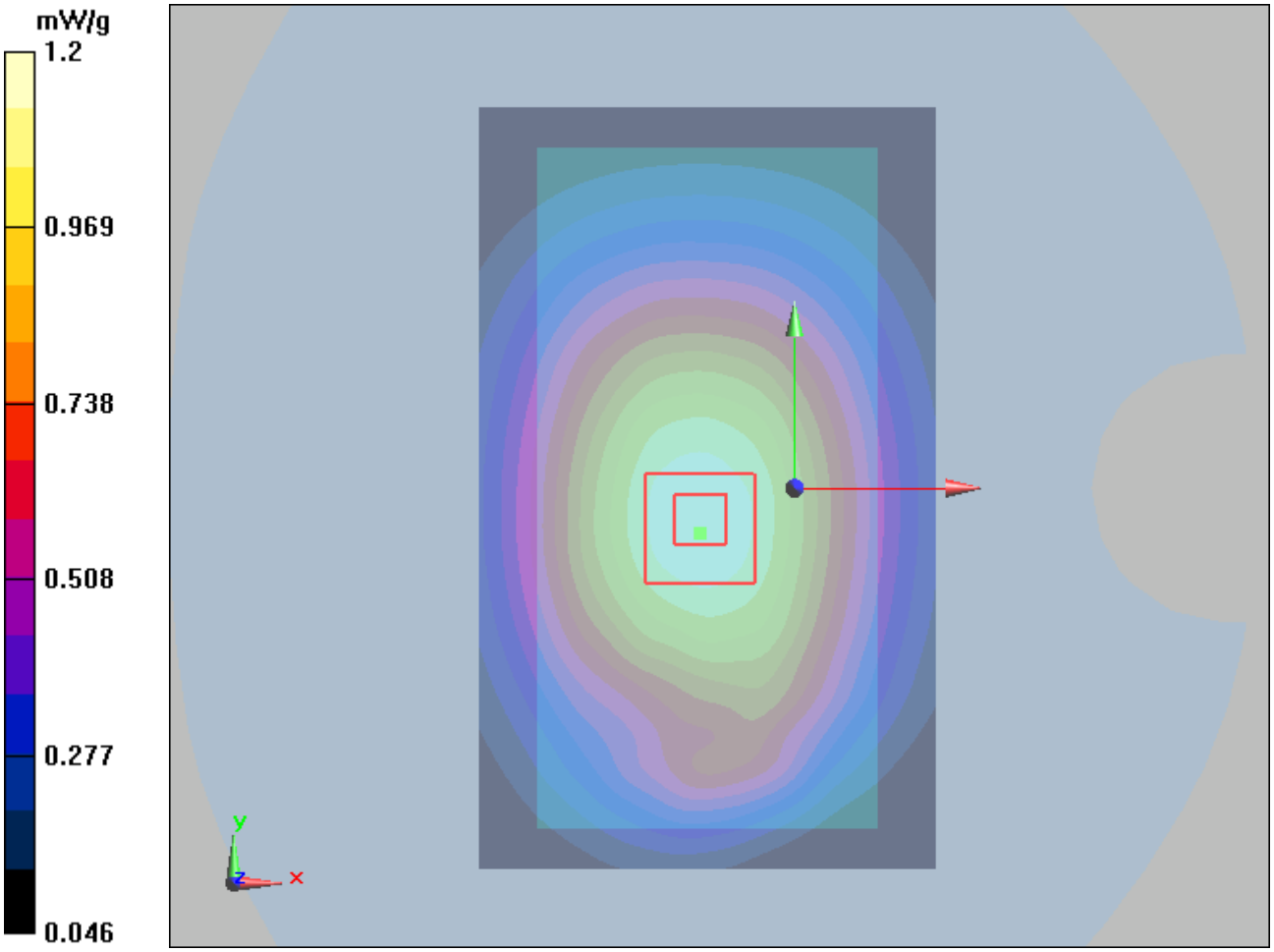


Figure 31 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Back Side Middle (Battery 3)

Date/Time: 1/16/2013 4:39:43 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.19 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.8 V/m; Power Drift = 0.012 dB
Peak SAR (extrapolated) = 1.4 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.858 mW/g
Maximum value of SAR (measured) = 1.18 mW/g

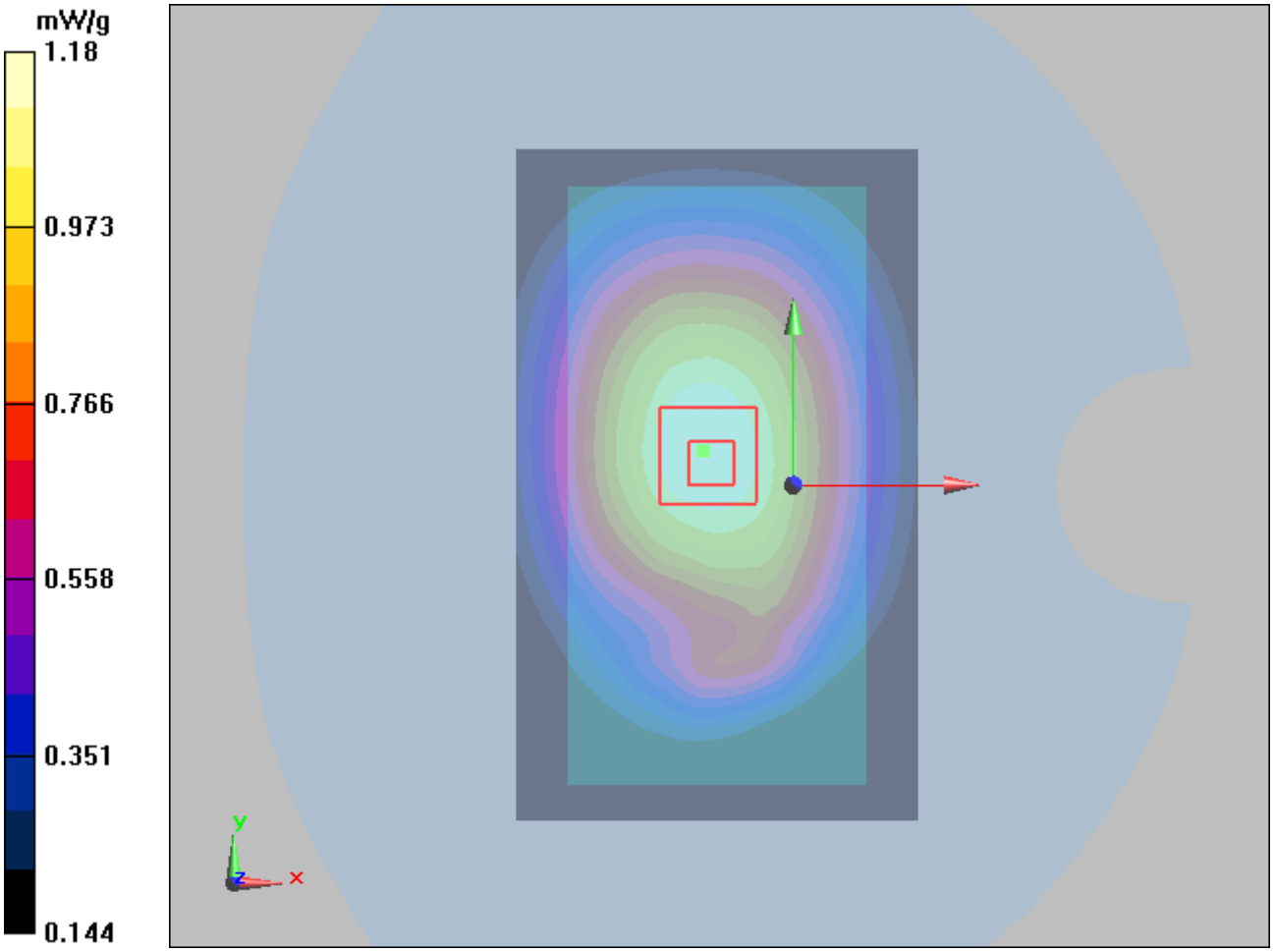


Figure 32 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Back Side Middle (Repeated Test,Battery 1)

Date/Time: 1/16/2013 11:25:20 PM
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.23 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 35.8 V/m; Power Drift = -0.105 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.887 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

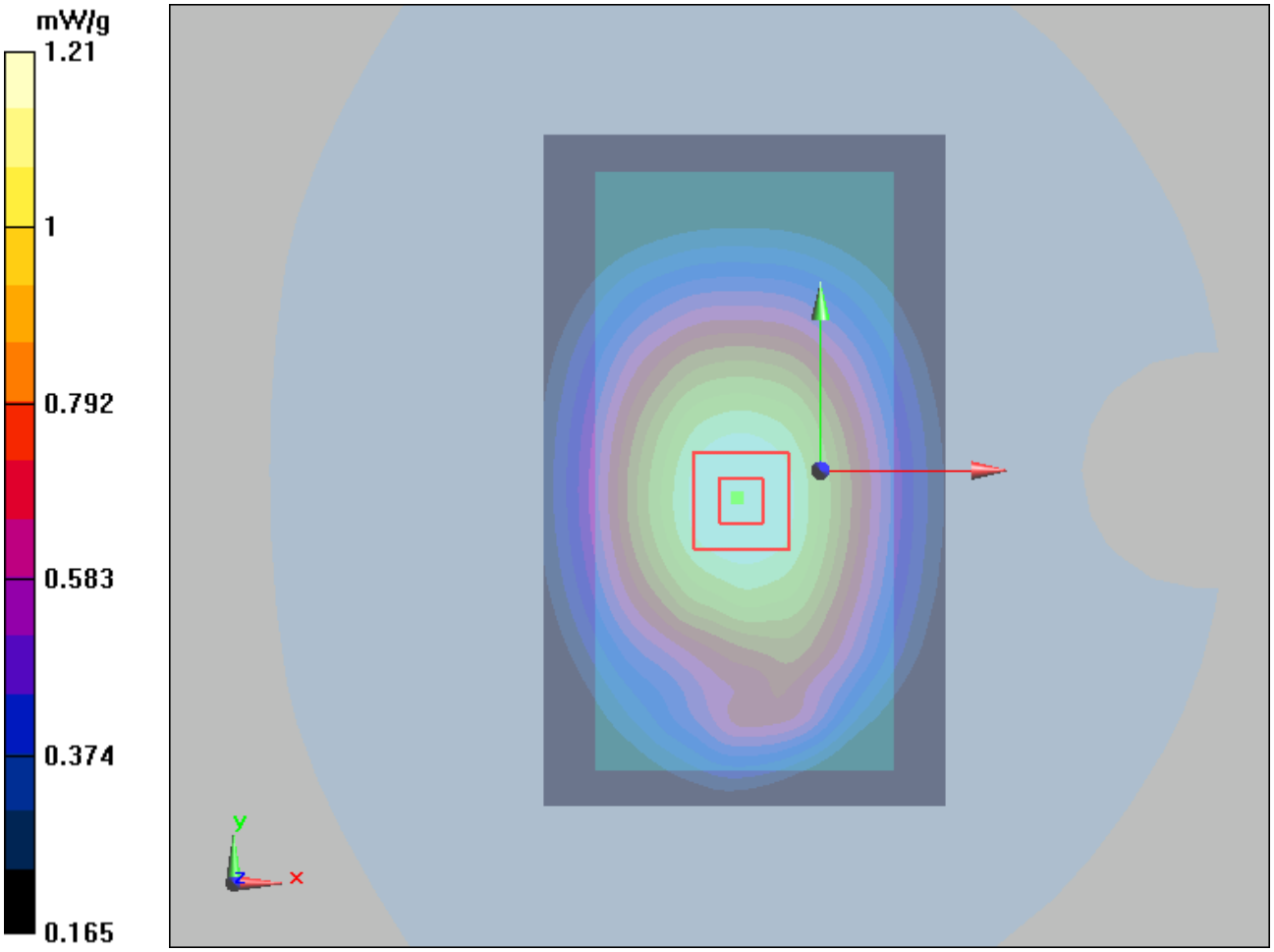


Figure 33 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 1900 Left Cheek Middle (Battery 1)

Date/Time: 1/17/2013 9:51:45 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.402 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.19 V/m; Power Drift = 0.028 dB
Peak SAR (extrapolated) = 0.617 W/kg
SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.236 mW/g
Maximum value of SAR (measured) = 0.419 mW/g

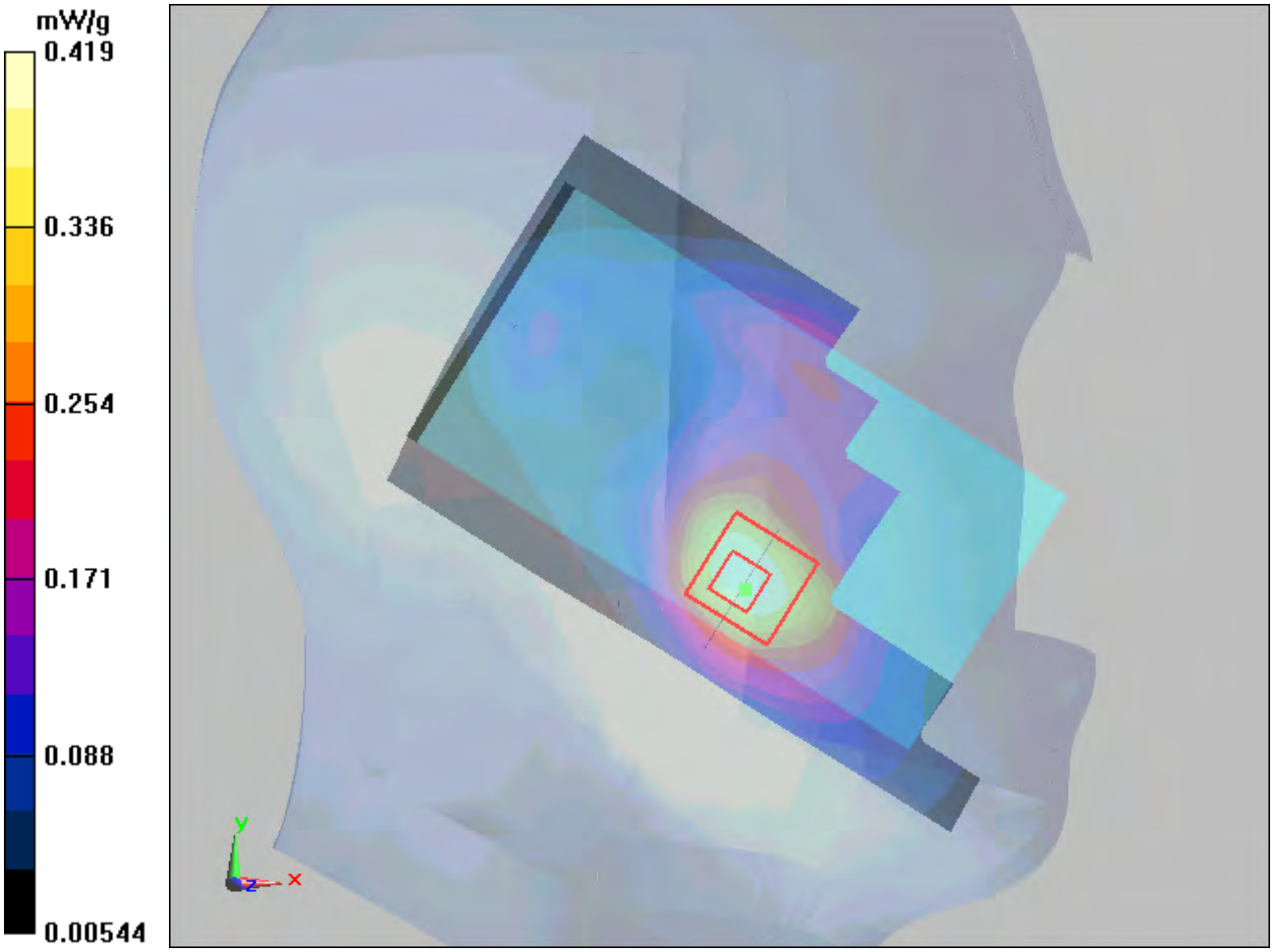


Figure 34 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Tilt Middle (Battery 1)

Date/Time: 1/17/2013 10:07:56 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.270 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.118 dB
Peak SAR (extrapolated) = 0.395 W/kg
SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.129 mW/g
Maximum value of SAR (measured) = 0.260 mW/g

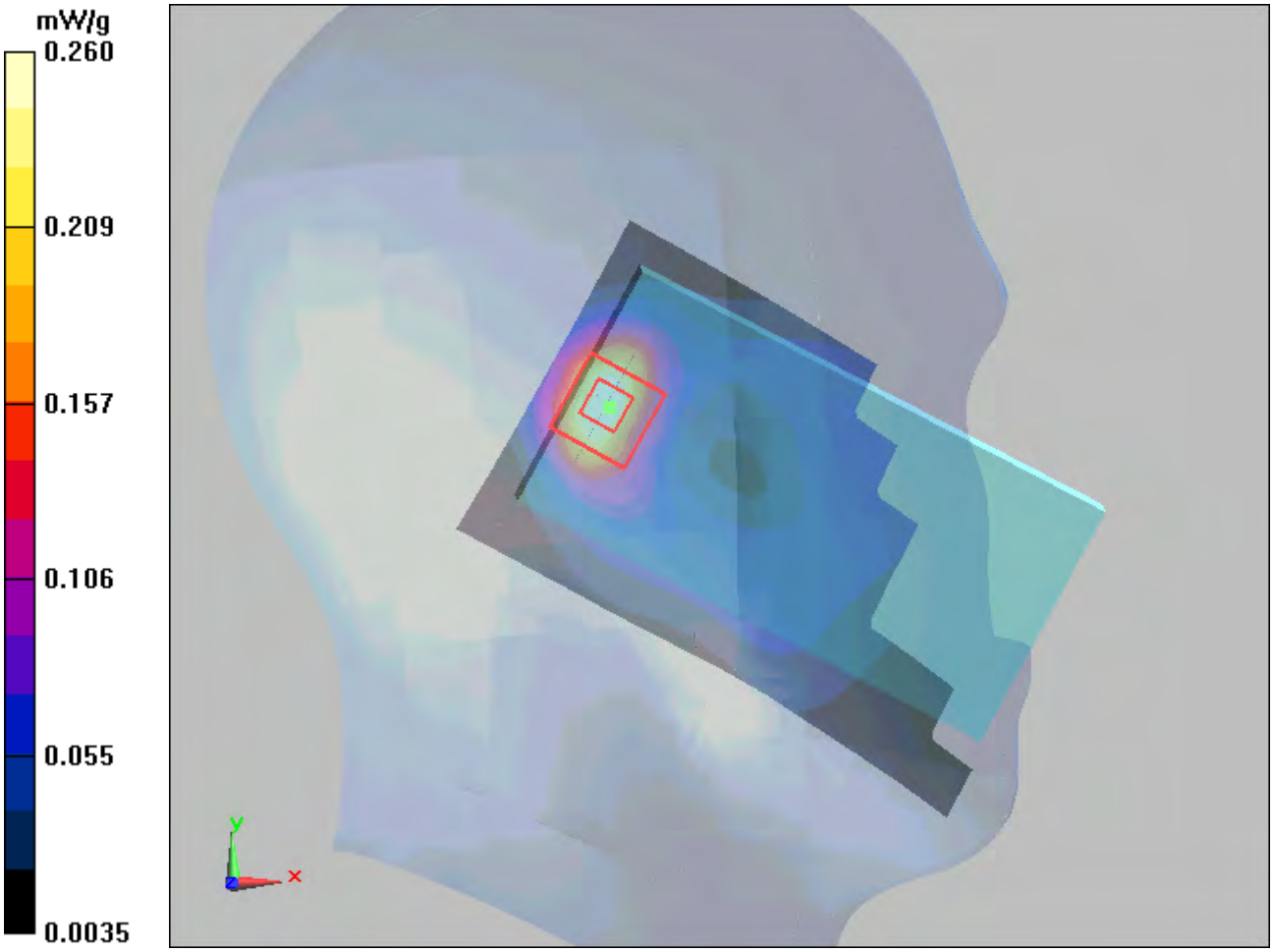
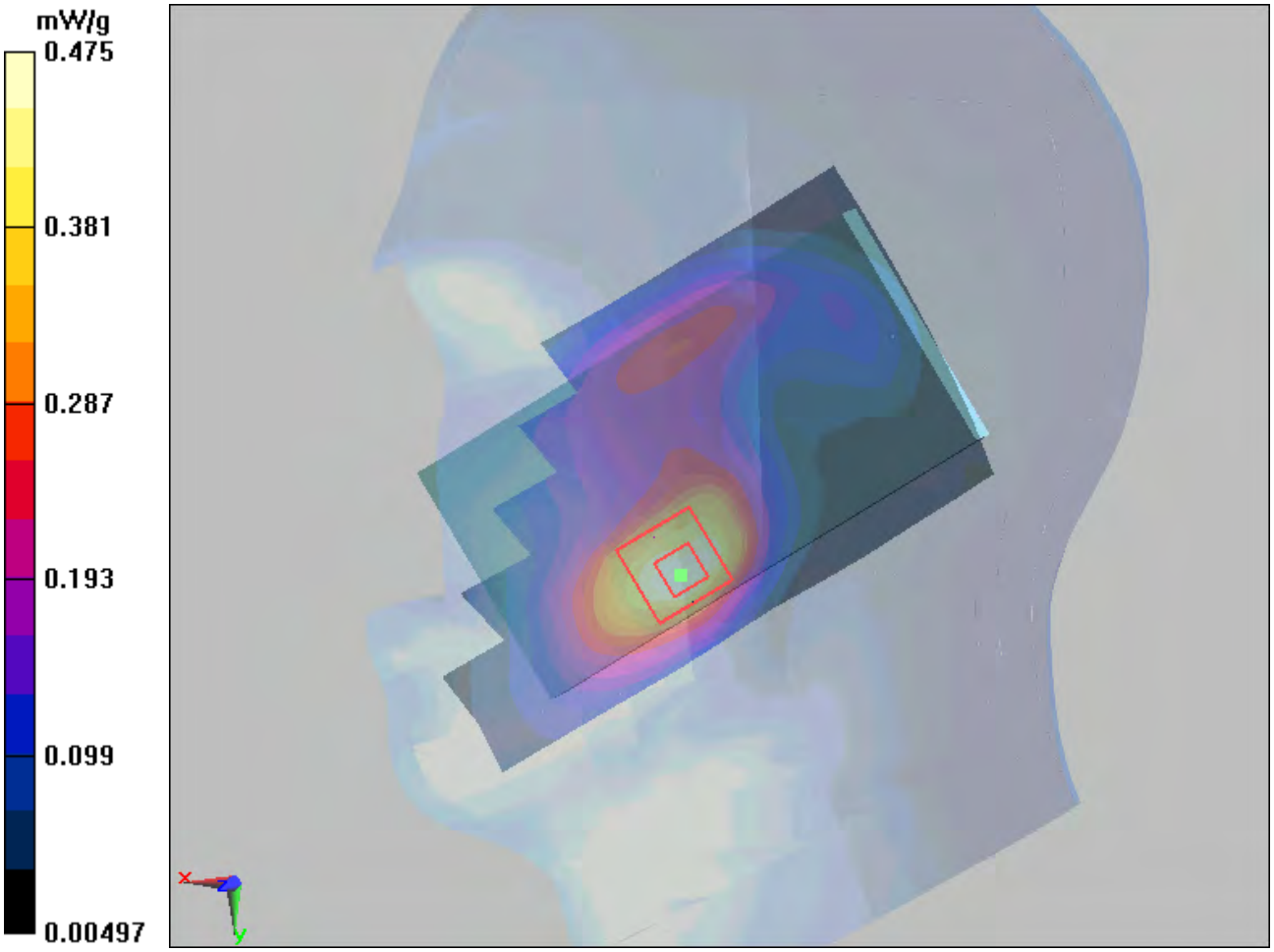


Figure 35 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle (Battery 1)

Date/Time: 1/17/2013 9:14:38 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.484 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.23 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 0.697 W/kg
SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.270 mW/g
Maximum value of SAR (measured) = 0.475 mW/g



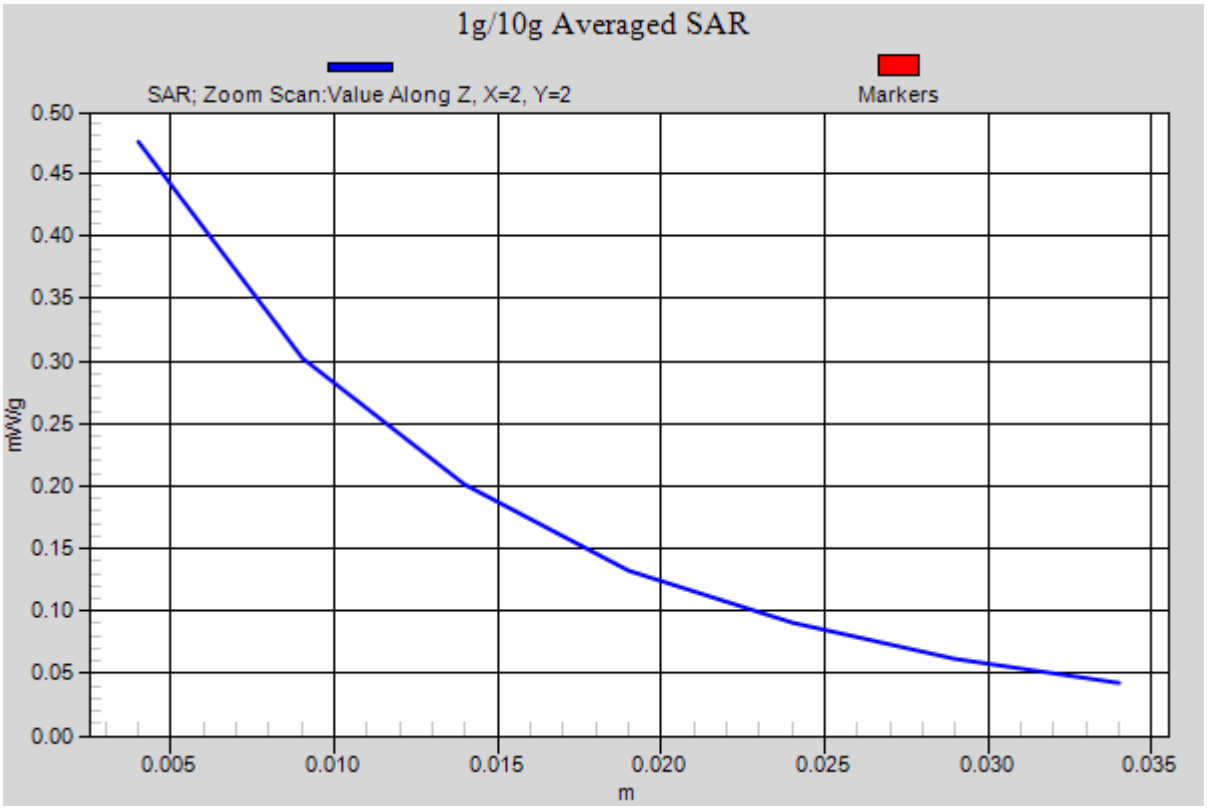


Figure 36 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle (Battery 1)

Date/Time: 1/17/2013 9:31:16 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.299 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 0.404 W/kg
SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.133 mW/g
Maximum value of SAR (measured) = 0.264 mW/g

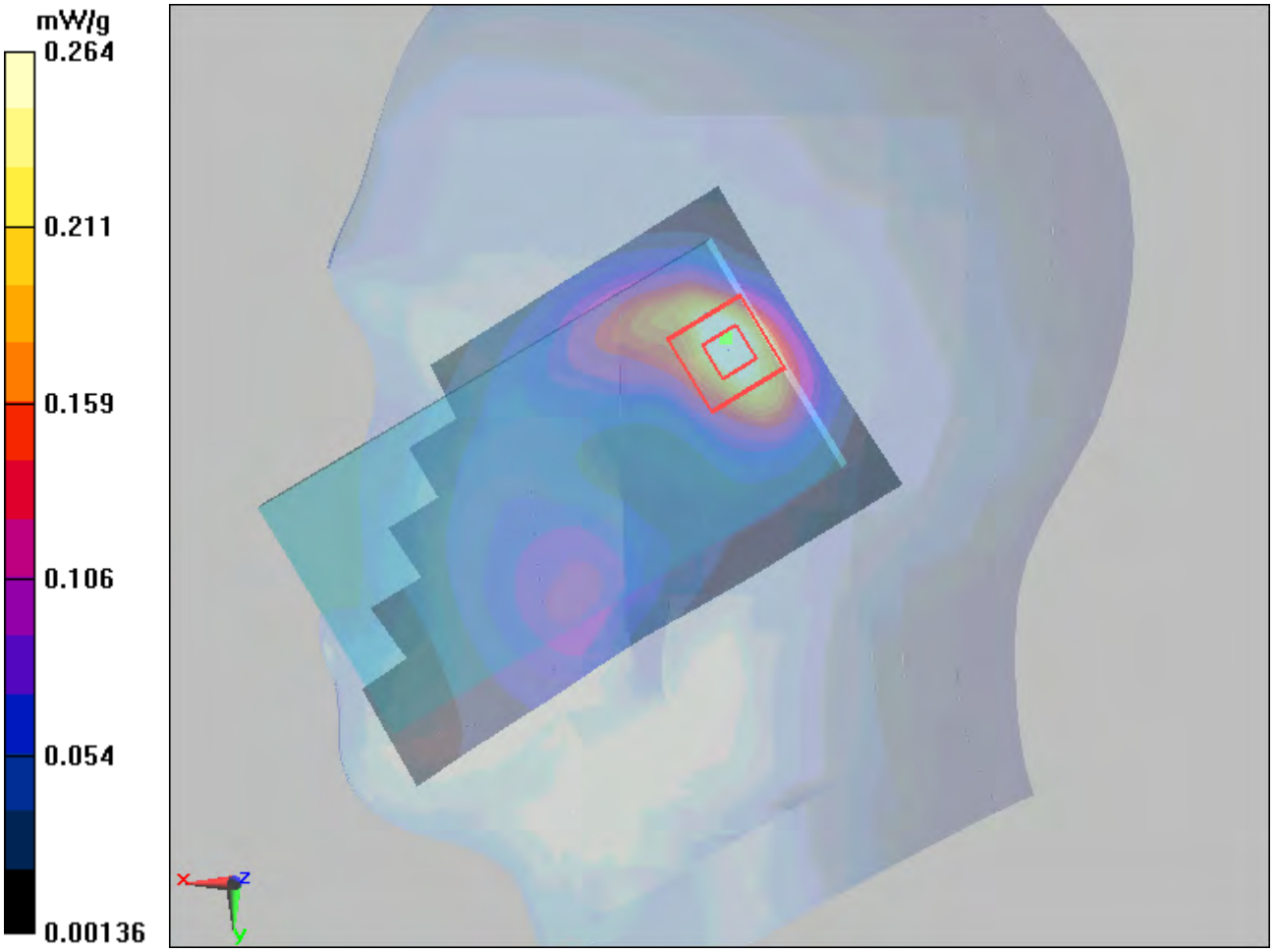


Figure 37 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle (Battery 2)

Date/Time: 1/18/2013 2:19:06 AM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.481 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 0.671 W/kg
SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.467 mW/g

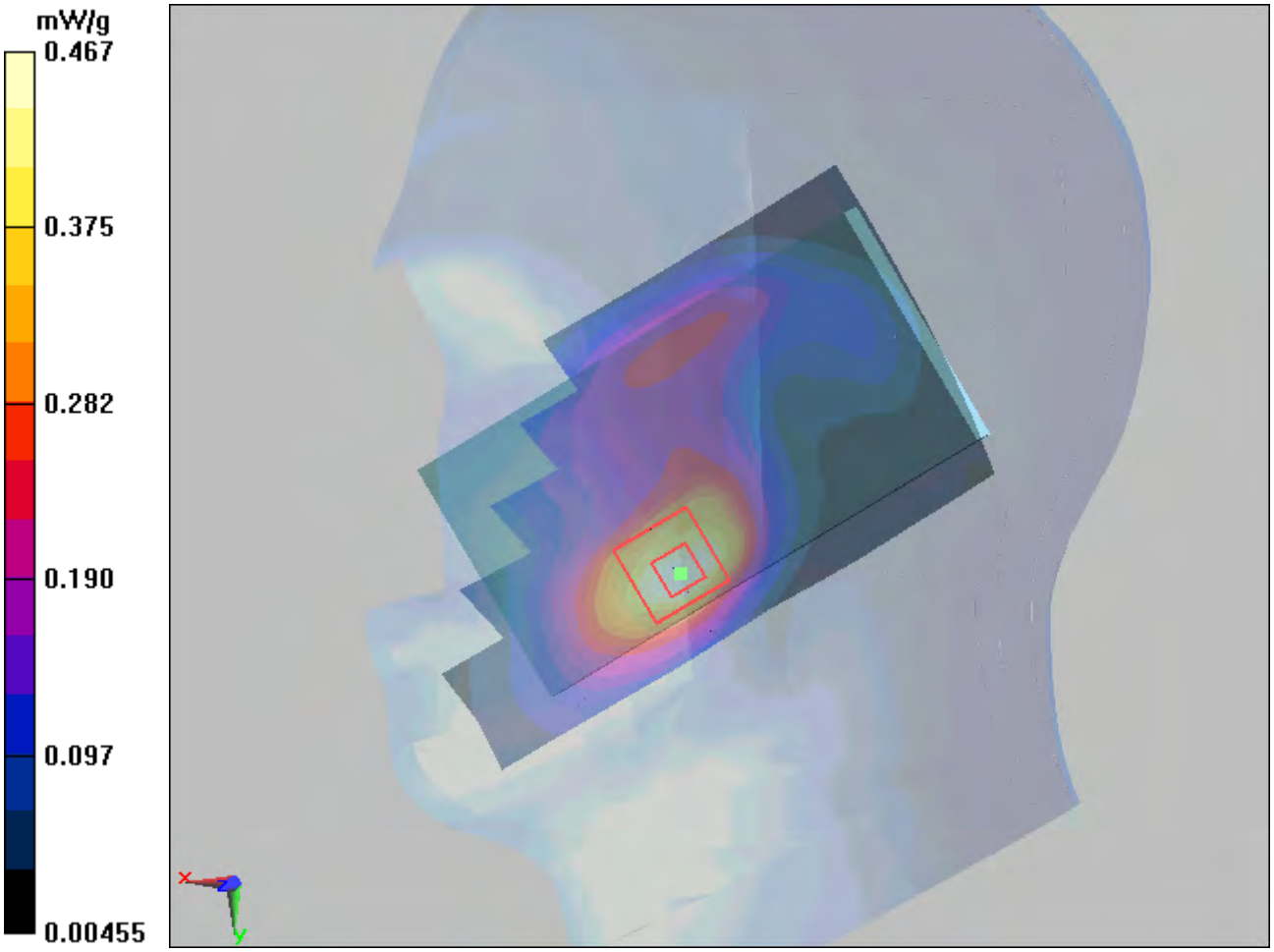


Figure 38 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Cheek Middle (Battery 3)

Date/Time: 1/18/2013 2:35:21 AM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.473 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.84 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.661 W/kg
SAR(1 g) = 0.422 mW/g; SAR(10 g) = 0.262 mW/g
Maximum value of SAR (measured) = 0.457 mW/g

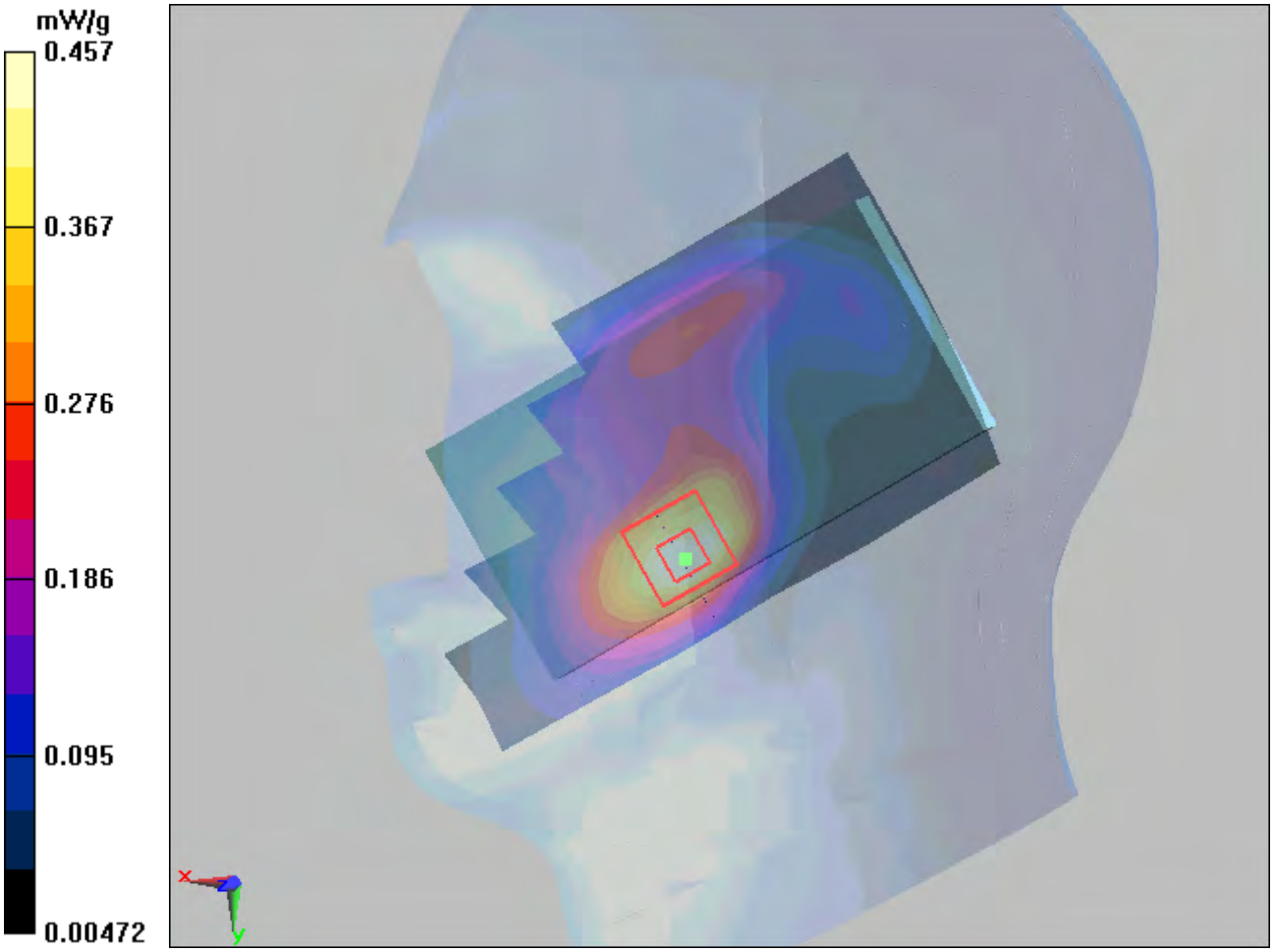


Figure 39 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 GPRS (1Txslot) Back Side Middle (Battery 1)

Date/Time: 1/17/2013 5:10:39 PM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.657 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.12 V/m; Power Drift = -0.170 dB
Peak SAR (extrapolated) = 1.3 W/kg
SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.350 mW/g
Maximum value of SAR (measured) = 0.647 mW/g

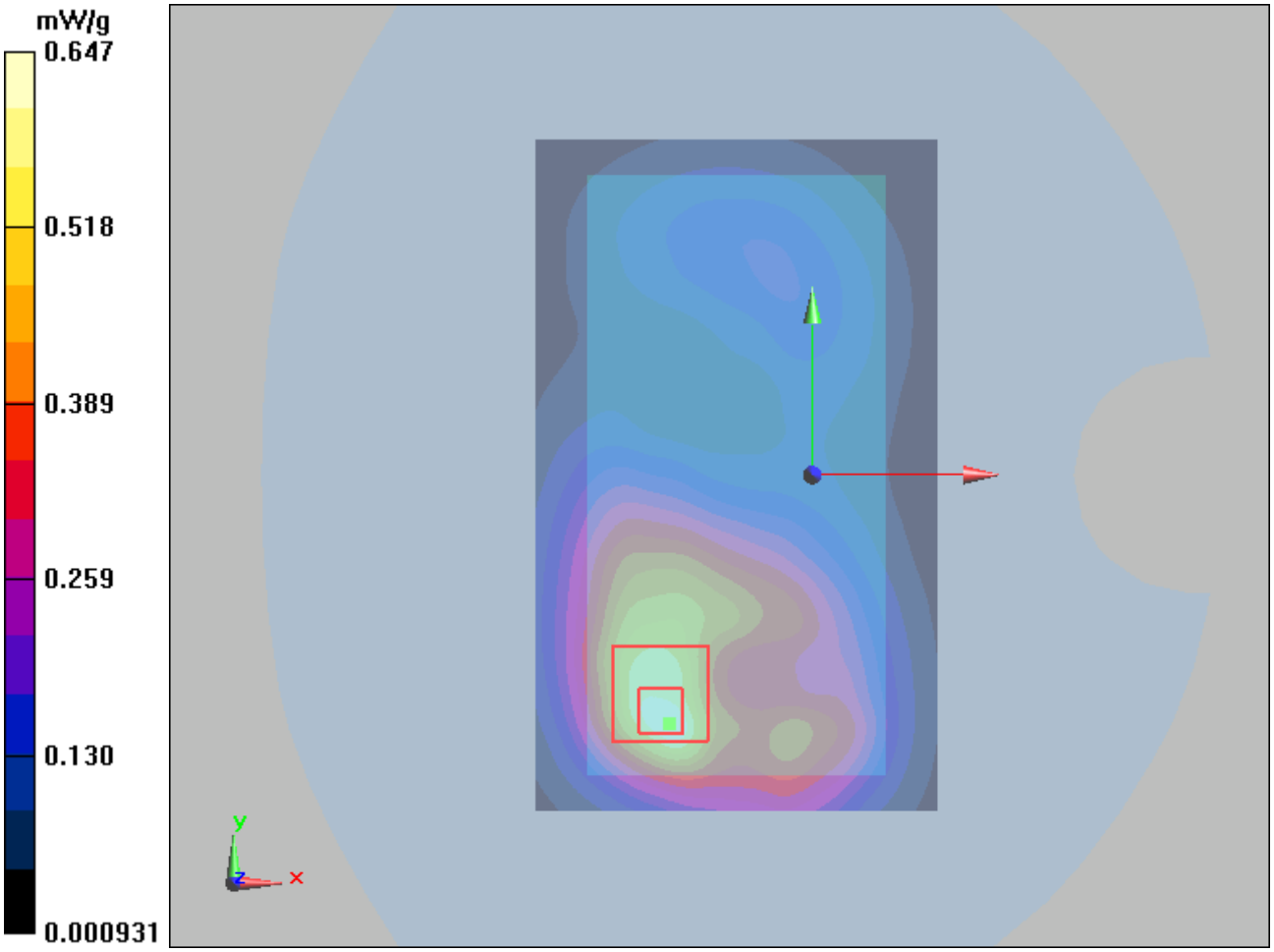


Figure 40 Body, Back Side, GSM 1900 GPRS (1Txslot) Channel 661

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

Date/Time: 1/17/2013 5:32:19 PM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.647 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.92 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 1.82 W/kg
SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.349 mW/g
Maximum value of SAR (measured) = 0.635 mW/g

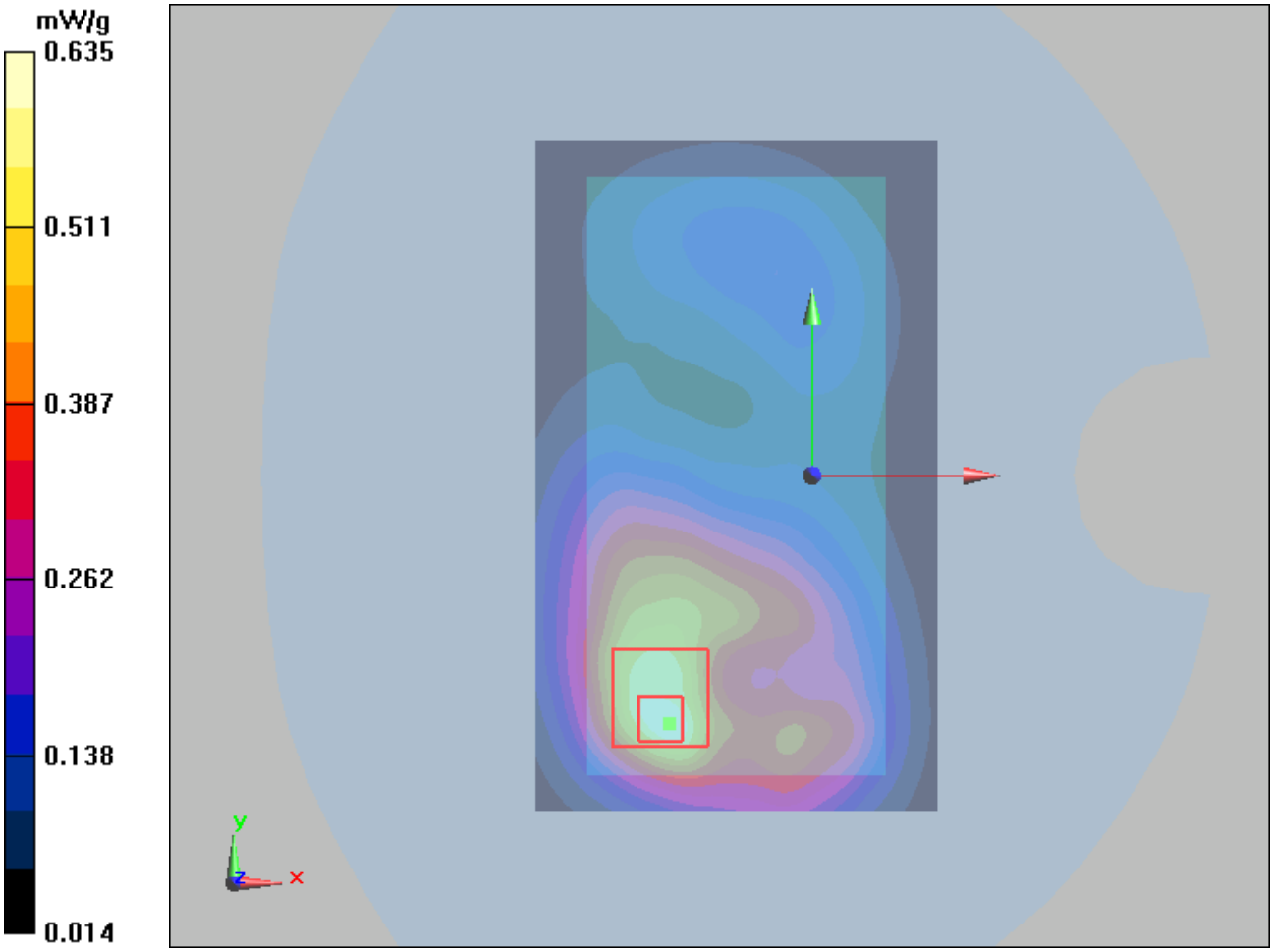


Figure 41 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (1Txslot) Front Side Middle (Battery 1)

Date/Time: 1/18/2013 3:22:39 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.668 mW/g
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.03 V/m; Power Drift = -0.093 dB
Peak SAR (extrapolated) = 0.934 W/kg
SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.624 mW/g

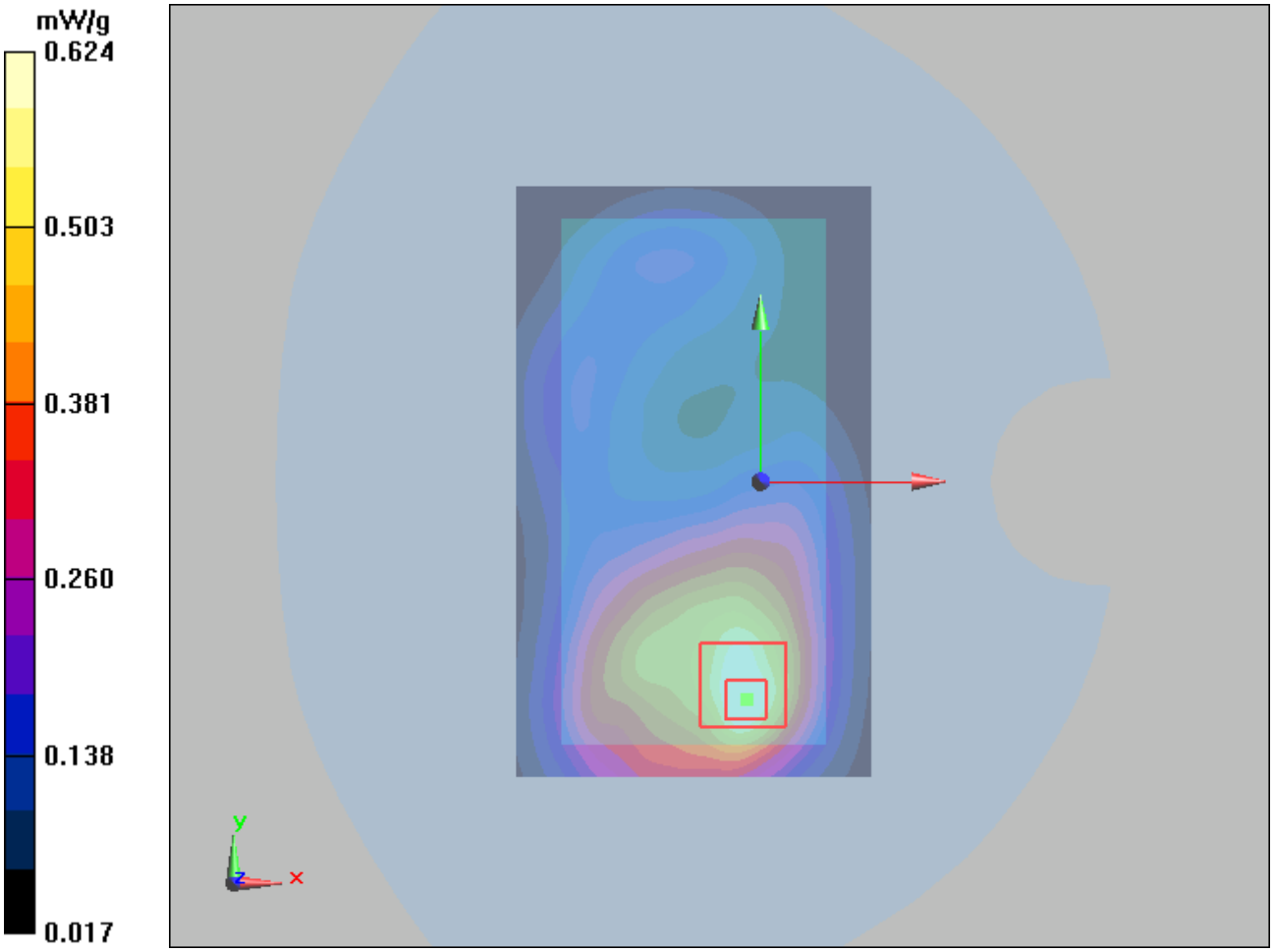


Figure 42 Body, Front Side, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Left Edge Middle (Battery 1)

Date/Time: 1/18/2013 3:42:15 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.230 mW/g
Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.57 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.340 W/kg
SAR(1 g) = 0.212 mW/g; SAR(10 g) = 0.126 mW/g
Maximum value of SAR (measured) = 0.232 mW/g

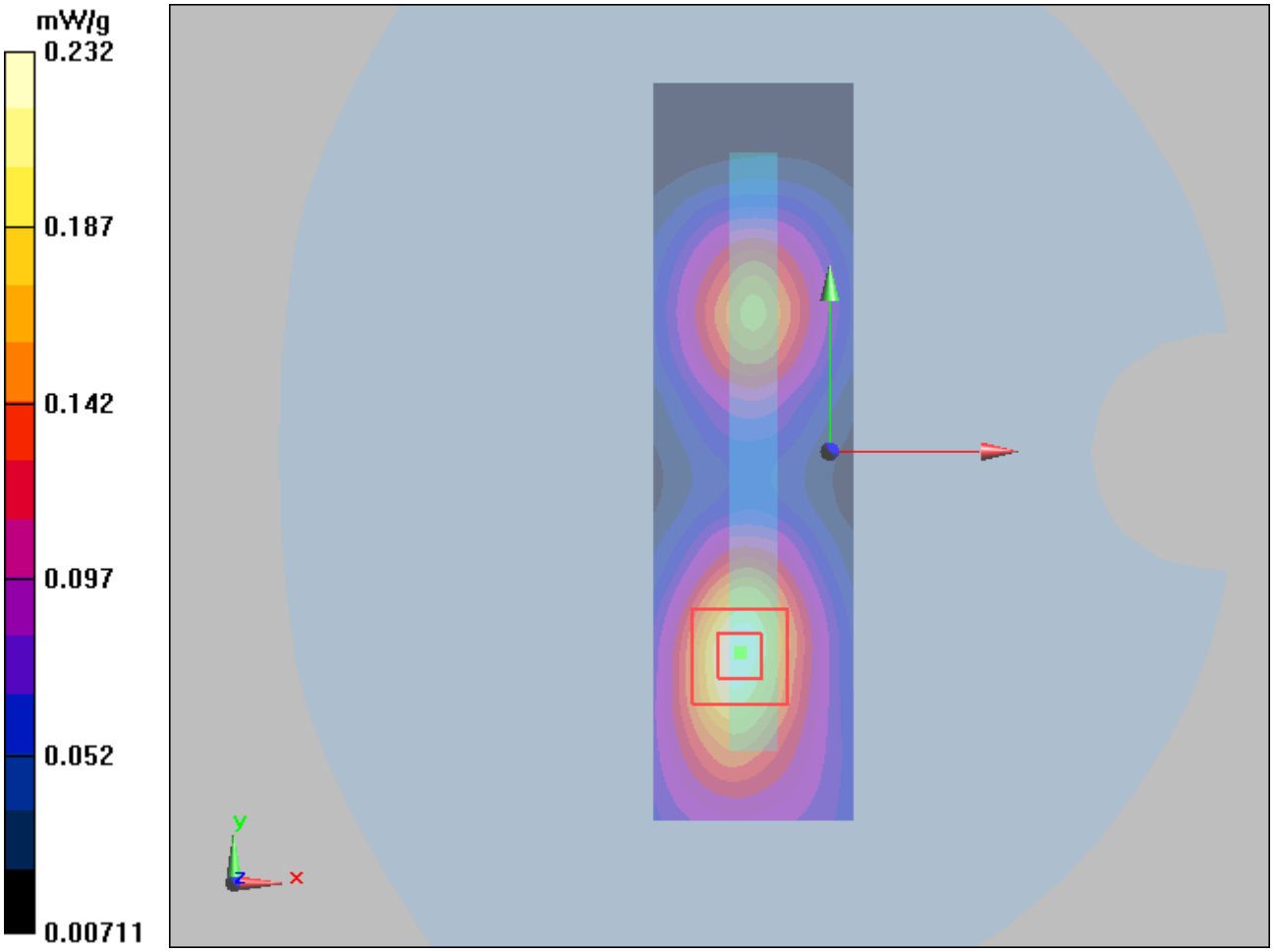


Figure 43 Body, Left Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Right Edge Middle (Battery 1)

Date/Time: 1/18/2013 3:56:09 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.204 mW/g
Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.73 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.390 W/kg
SAR(1 g) = 0.191 mW/g; SAR(10 g) = 0.114 mW/g
Maximum value of SAR (measured) = 0.205 mW/g

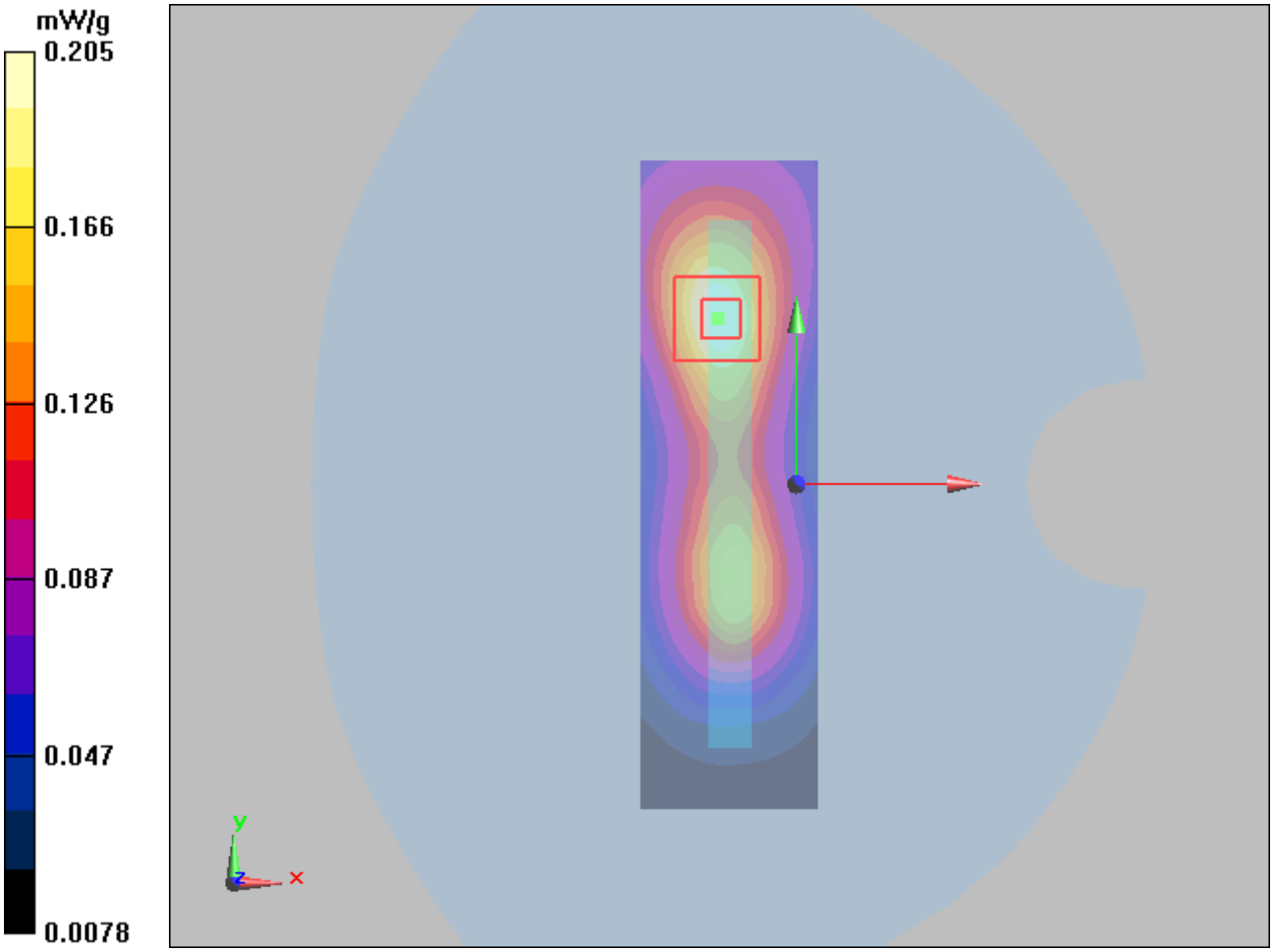


Figure 44 Body, Right Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Bottom Edge Middle (Battery 1)

Date/Time: 1/18/2013 4:11:23 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.461 mW/g
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.4 V/m; Power Drift = 0.073 dB
Peak SAR (extrapolated) = 0.699 W/kg
SAR(1 g) = 0.417 mW/g; SAR(10 g) = 0.235 mW/g
Maximum value of SAR (measured) = 0.460 mW/g

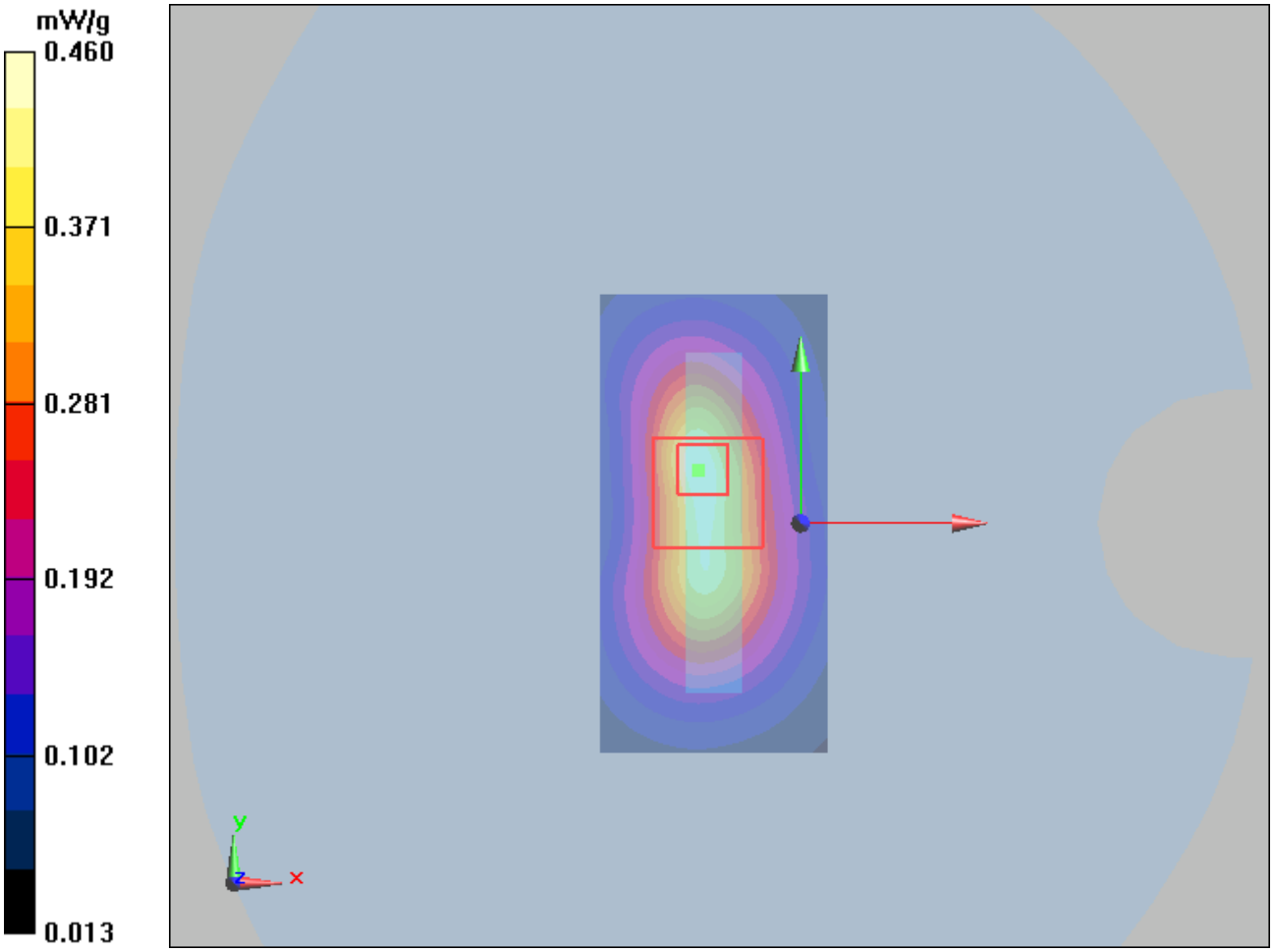


Figure 45 Body, Bottom Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 EGPRS (1Txslot) Back Side Middle (Battery 1)

Date/Time: 1/18/2013 4:24:16 AM
Communication System: EGPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.665 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.82 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.987 W/kg
SAR(1 g) = 0.600 mW/g; SAR(10 g) = 0.359 mW/g
Maximum value of SAR (measured) = 0.649 mW/g

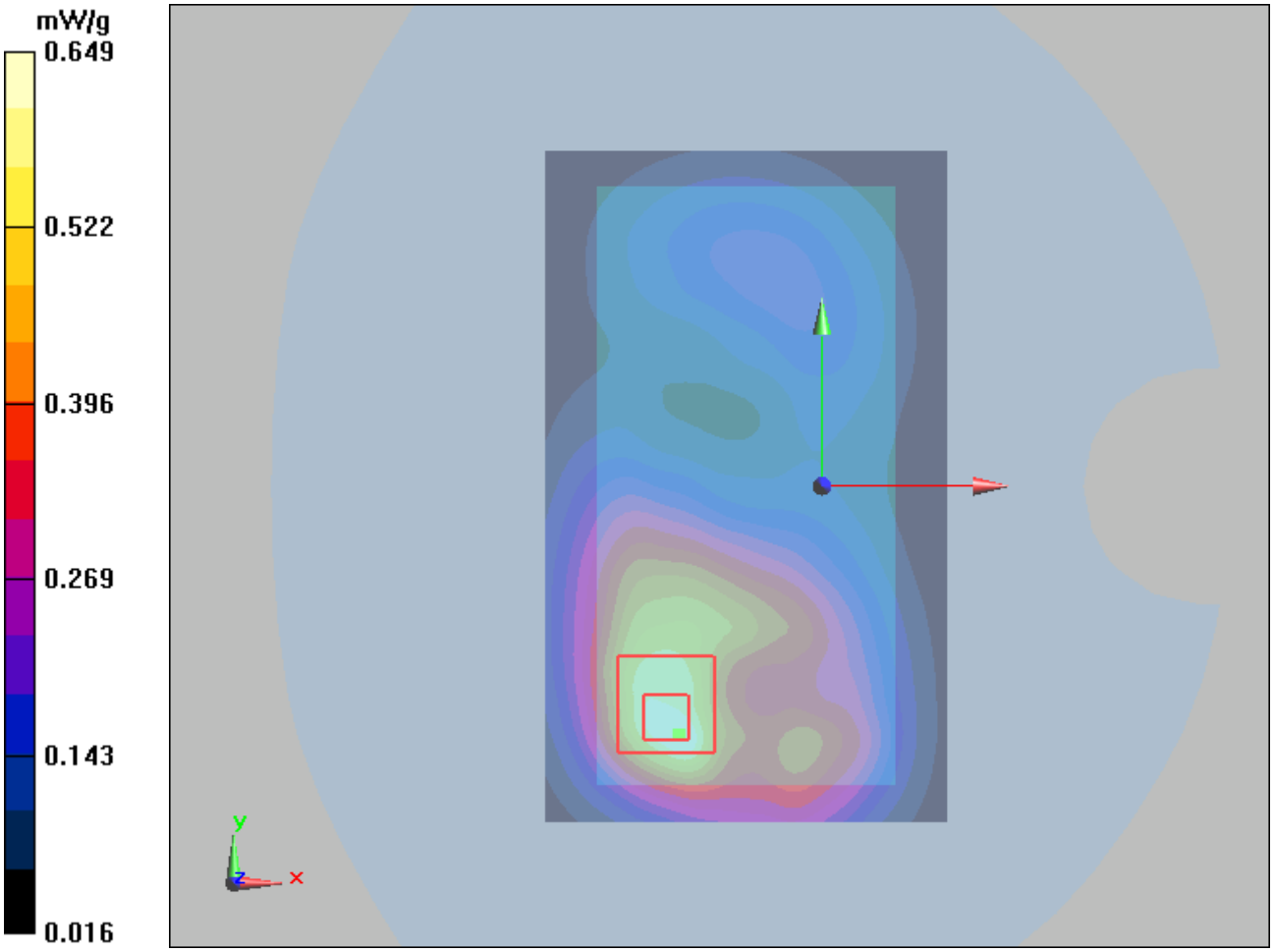


Figure 46 Body, back side, GSM 1900 EGPRS (1Txslot) Channel 661

GSM 1900 EGPRS (1Txslot) Back Side Middle (Battery 2)

Date/Time: 1/18/2013 4:40:38 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.668 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.8 V/m; Power Drift = 0.009 dB
Peak SAR (extrapolated) = 0.988 W/kg
SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.359 mW/g
Maximum value of SAR (measured) = 0.649 mW/g

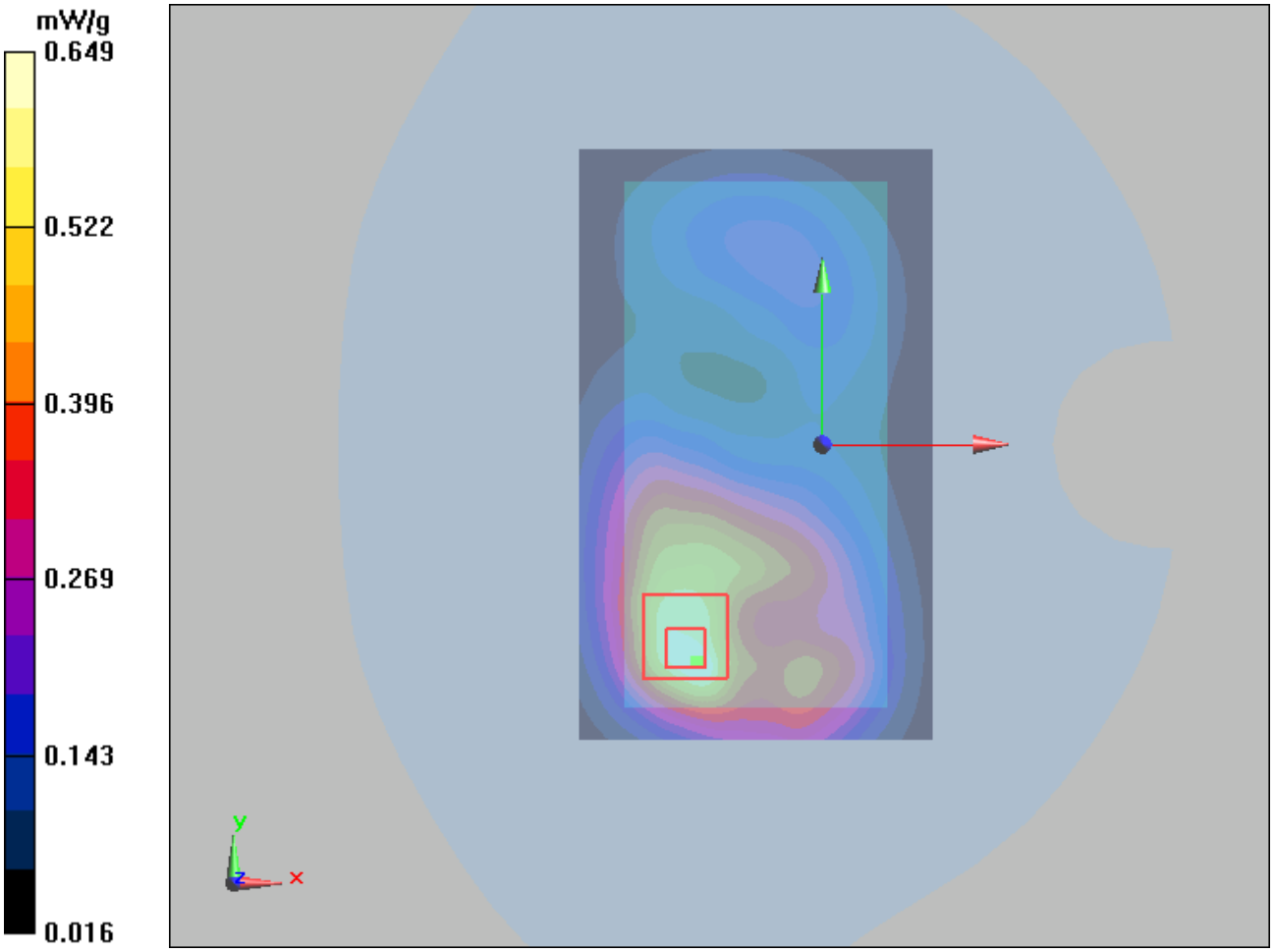
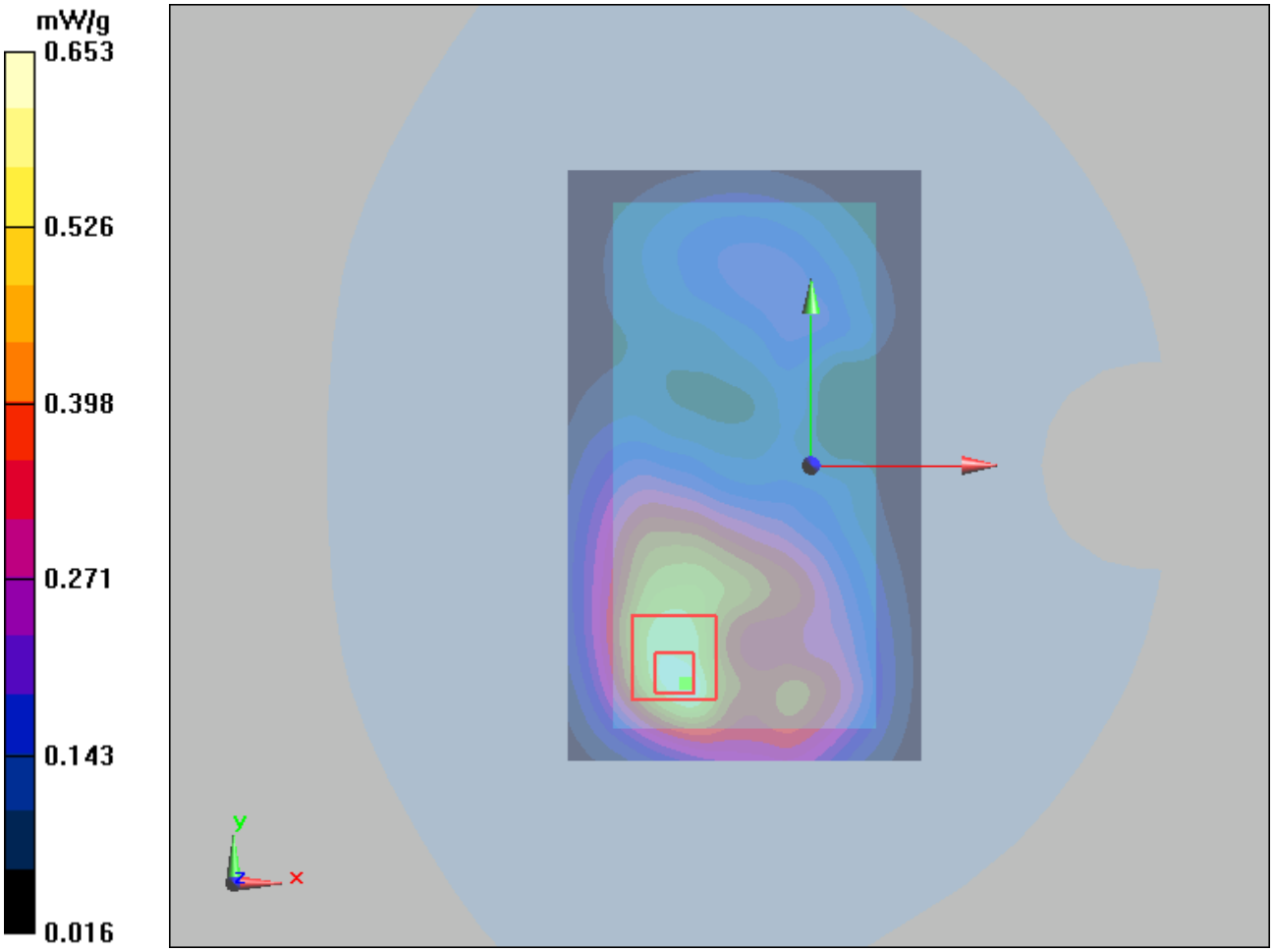


Figure 47 Body, Back Side, GSM 1900 Channel 661

GSM 1900 EGPRS (1Txslot) Back Side Middle (Battery 3)

Date/Time: 1/18/2013 4:56:31 AM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.663 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.82 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1 W/kg
SAR(1 g) = 0.600 mW/g; SAR(10 g) = 0.359 mW/g
Maximum value of SAR (measured) = 0.653 mW/g



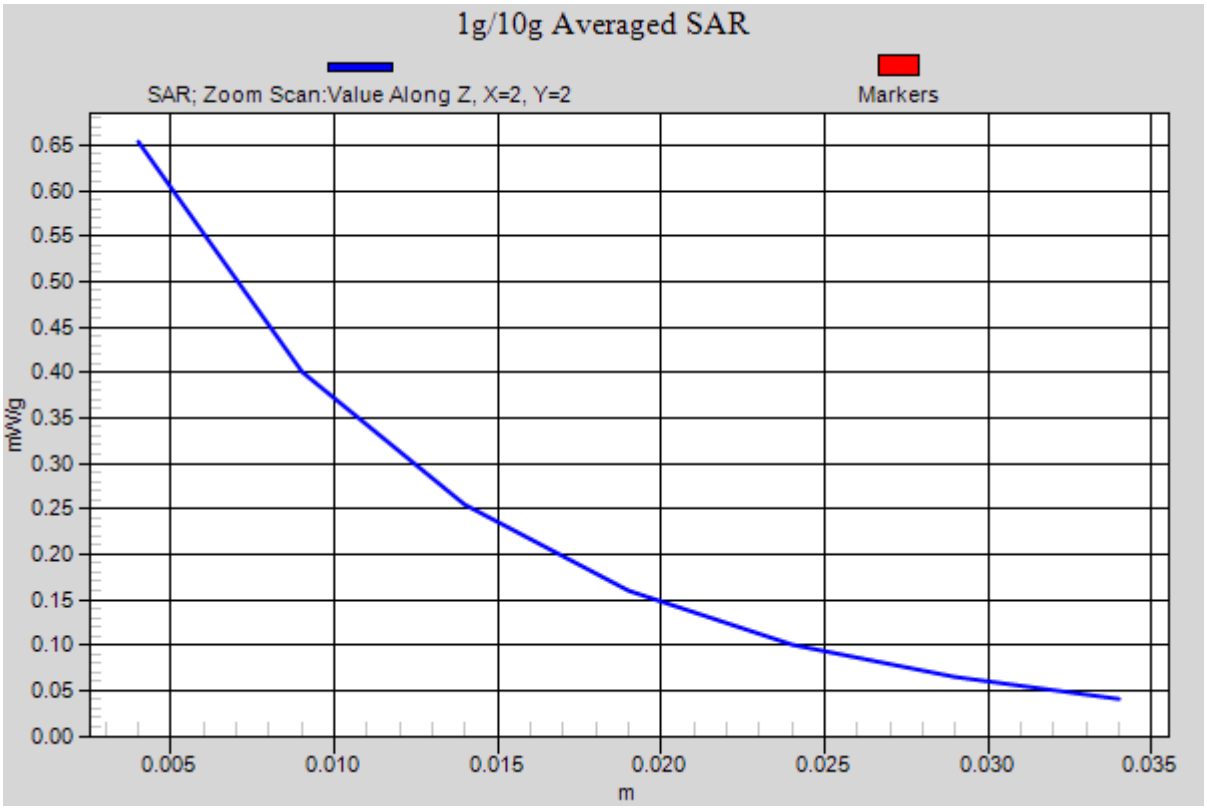


Figure 48 Body, Back Side, GSM 1900 Channel 661

UMTS Band II Left Cheek High (Battery 1)

Date/Time: 1/18/2013 2:58:54 AM
Communication System: WCDMA ; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.41 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.36, 4.36, 4.36); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.555 mW/g
Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 0.836 W/kg
SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.559 mW/g

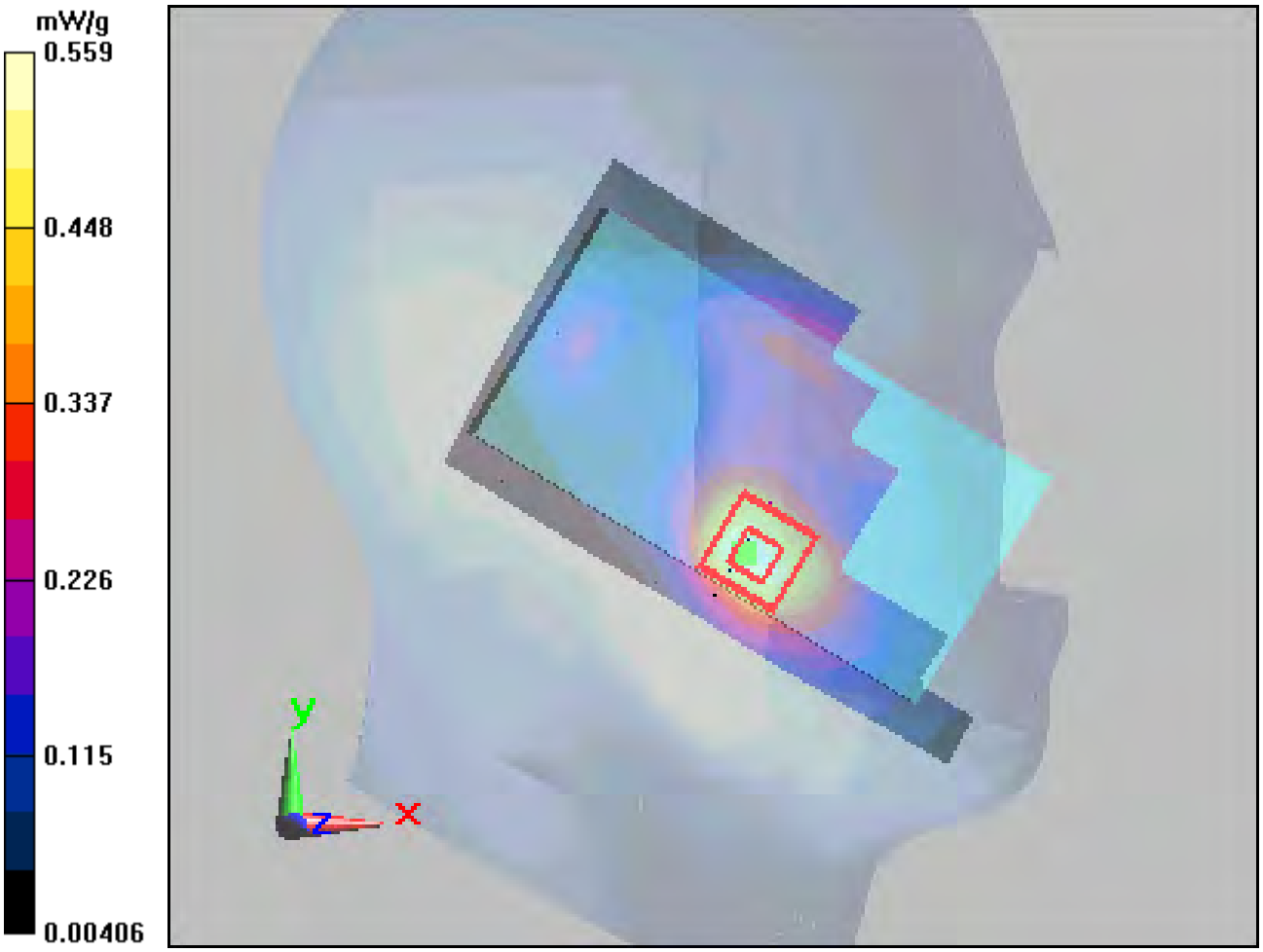


Figure 49 Left Hand Touch Cheek UMTS Band II Channel 9538

UMTS Band II Left Cheek Middle (Battery 1)

Date/Time: 1/17/2013 10:48:54 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.759 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = 0.155 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.713 mW/g; SAR(10 g) = 0.437 mW/g
Maximum value of SAR (measured) = 0.779 mW/g

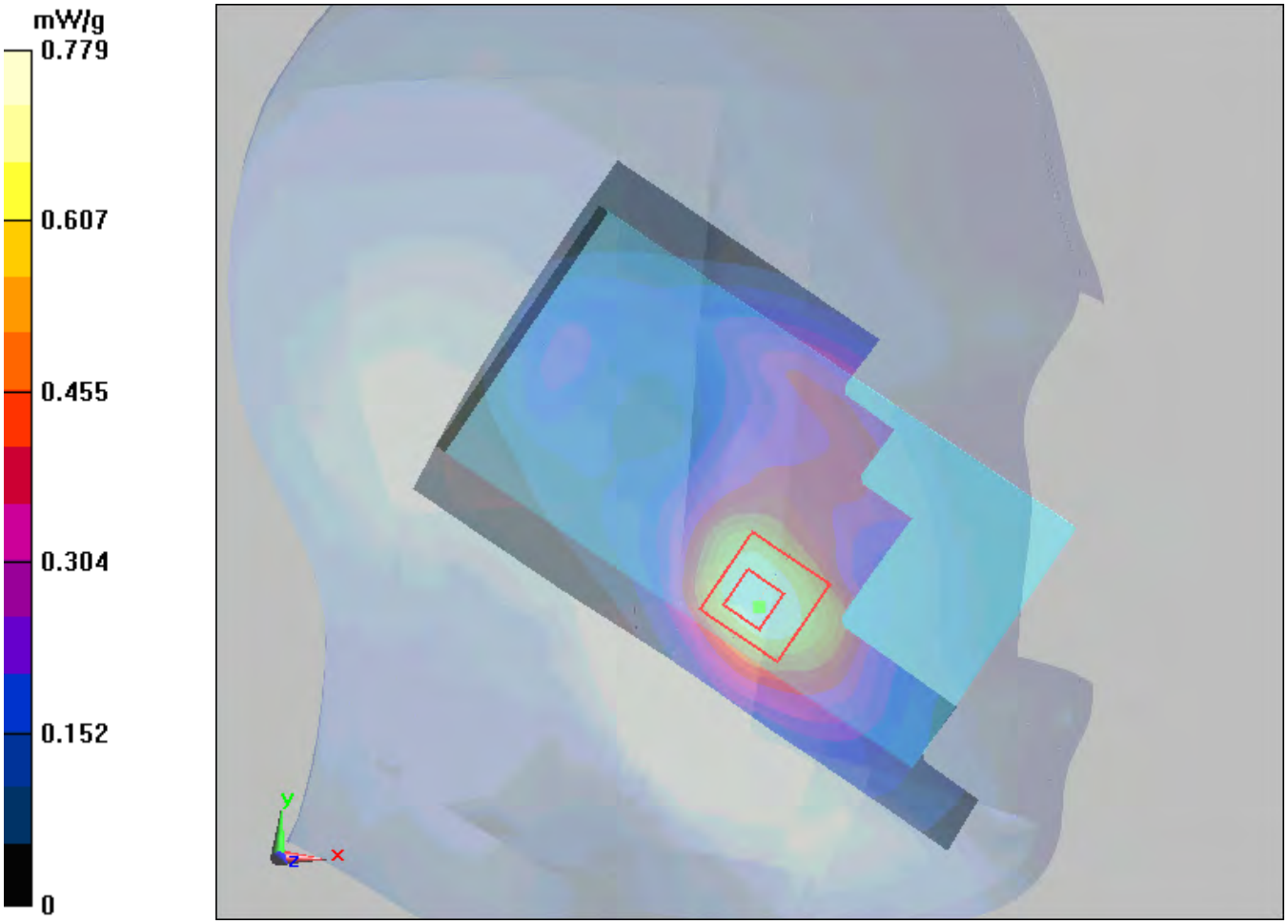


Figure 50 Left Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Left Cheek Low (Battery 1)

Date/Time: 1/18/2013 3:18:54 AM
Communication System: WCDMA ; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.693 mW/g
Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.2 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.387 mW/g
Maximum value of SAR (measured) = 0.700 mW/g

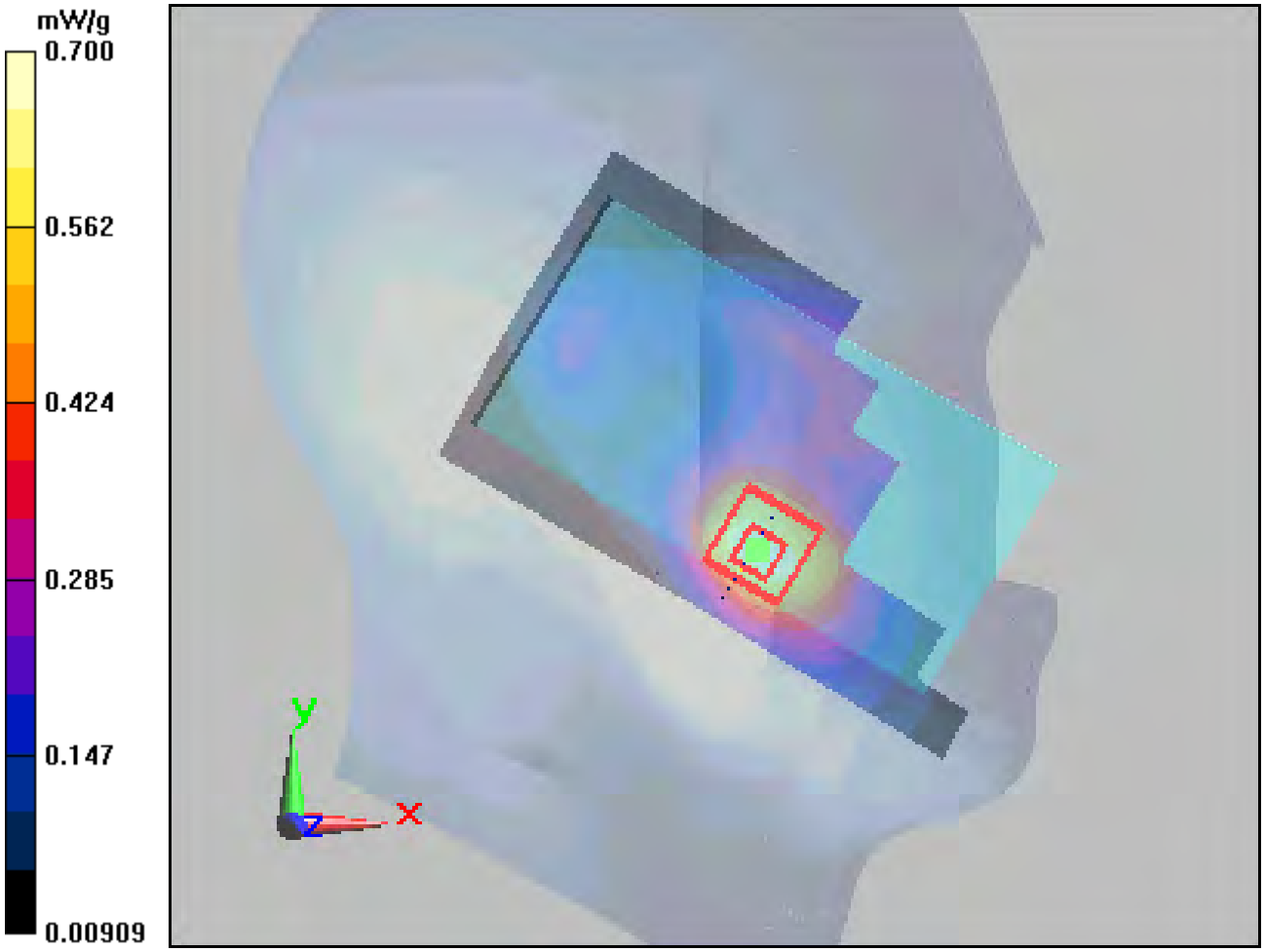


Figure 51 Left Hand Touch Cheek UMTS Band II Channel 9262

UMTS Band II Left Tilt Middle (Battery 1)

Date/Time: 1/17/2013 11:04:27 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.500 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.9 V/m; Power Drift = -0.079 dB
Peak SAR (extrapolated) = 0.753 W/kg
SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.243 mW/g
Maximum value of SAR (measured) = 0.495 mW/g

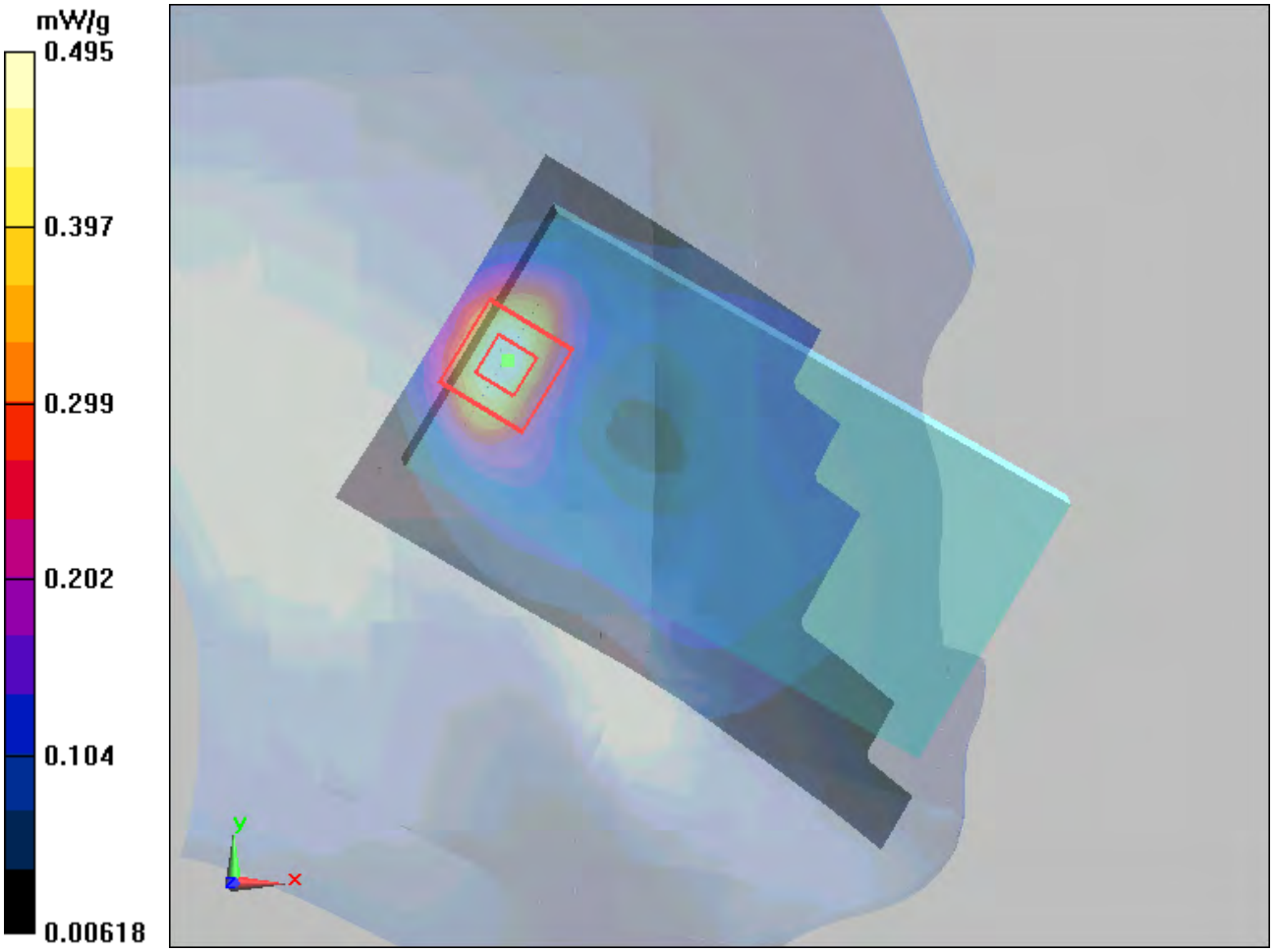


Figure 52 Left Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II Right Cheek High (Battery 1)

Date/Time: 1/17/2013 11:58:50 PM
Communication System: WCDMA ; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.41 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.794 mW/g
Cheek High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.698 mW/g; SAR(10 g) = 0.426 mW/g
Maximum value of SAR (measured) = 0.767 mW/g

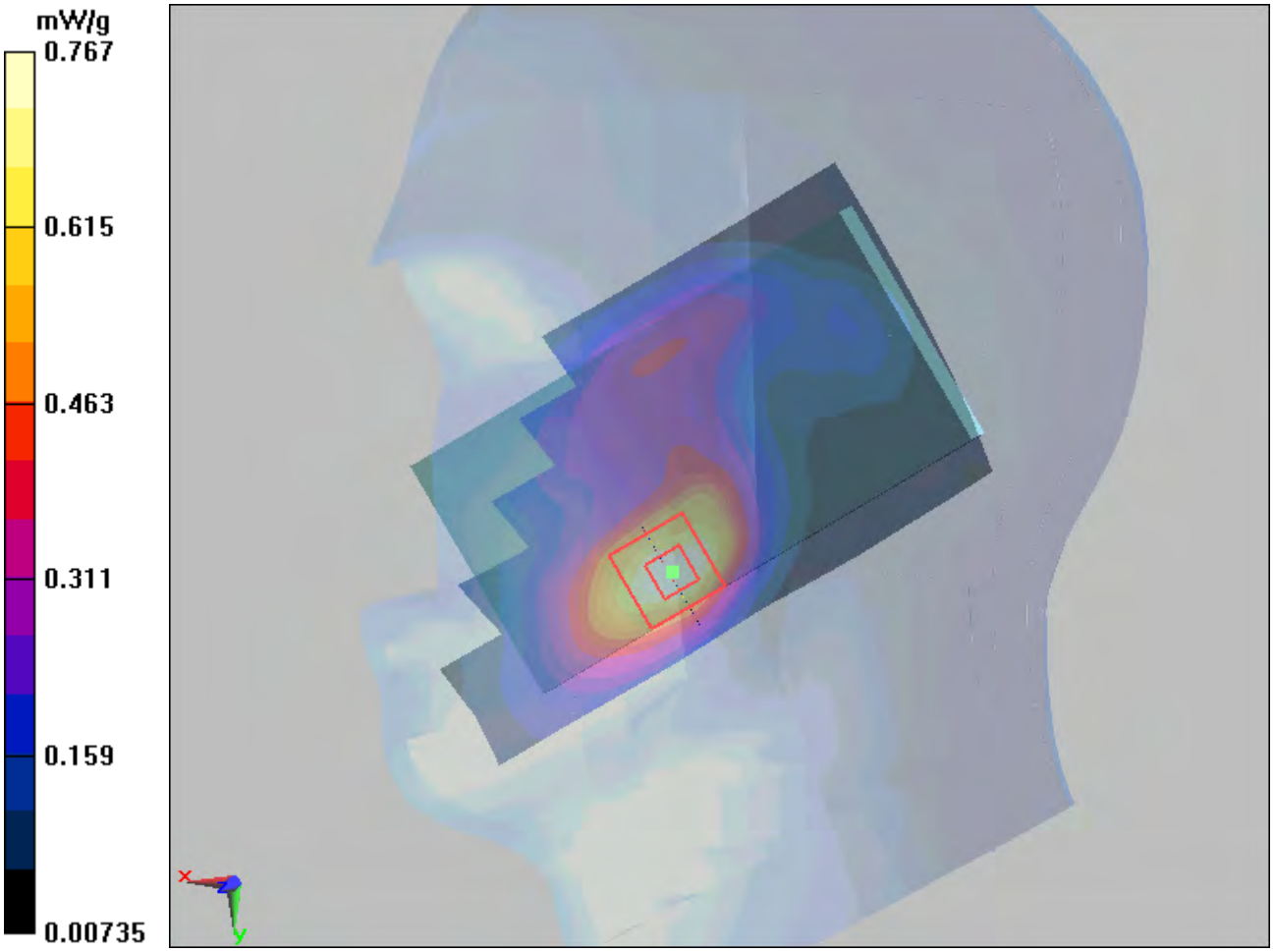


Figure 53 Right Hand Touch Cheek UMTS Band II Channel 9538

UMTS Band II Right Cheek Middle (Battery 1)

Date/Time: 1/17/2013 11:23:25 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.917 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.006 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.502 mW/g
Maximum value of SAR (measured) = 0.896 mW/g

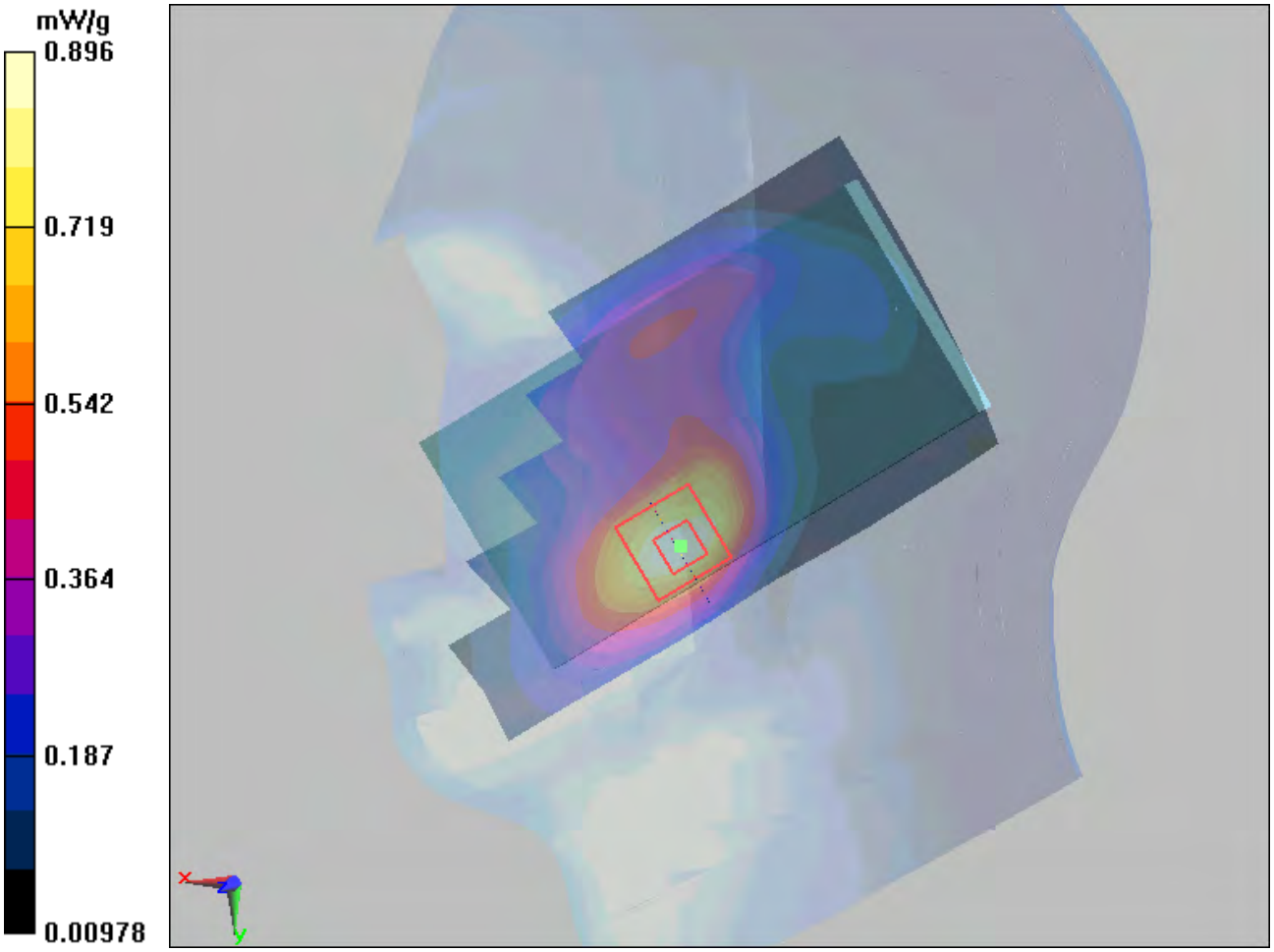


Figure 54 Right Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Right Cheek Low (Battery 1)

Date/Time: 1/18/2013 12:14:36 AM
Communication System: WCDMA ; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.896 mW/g
Cheek Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.176 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.488 mW/g
Maximum value of SAR (measured) = 0.848 mW/g

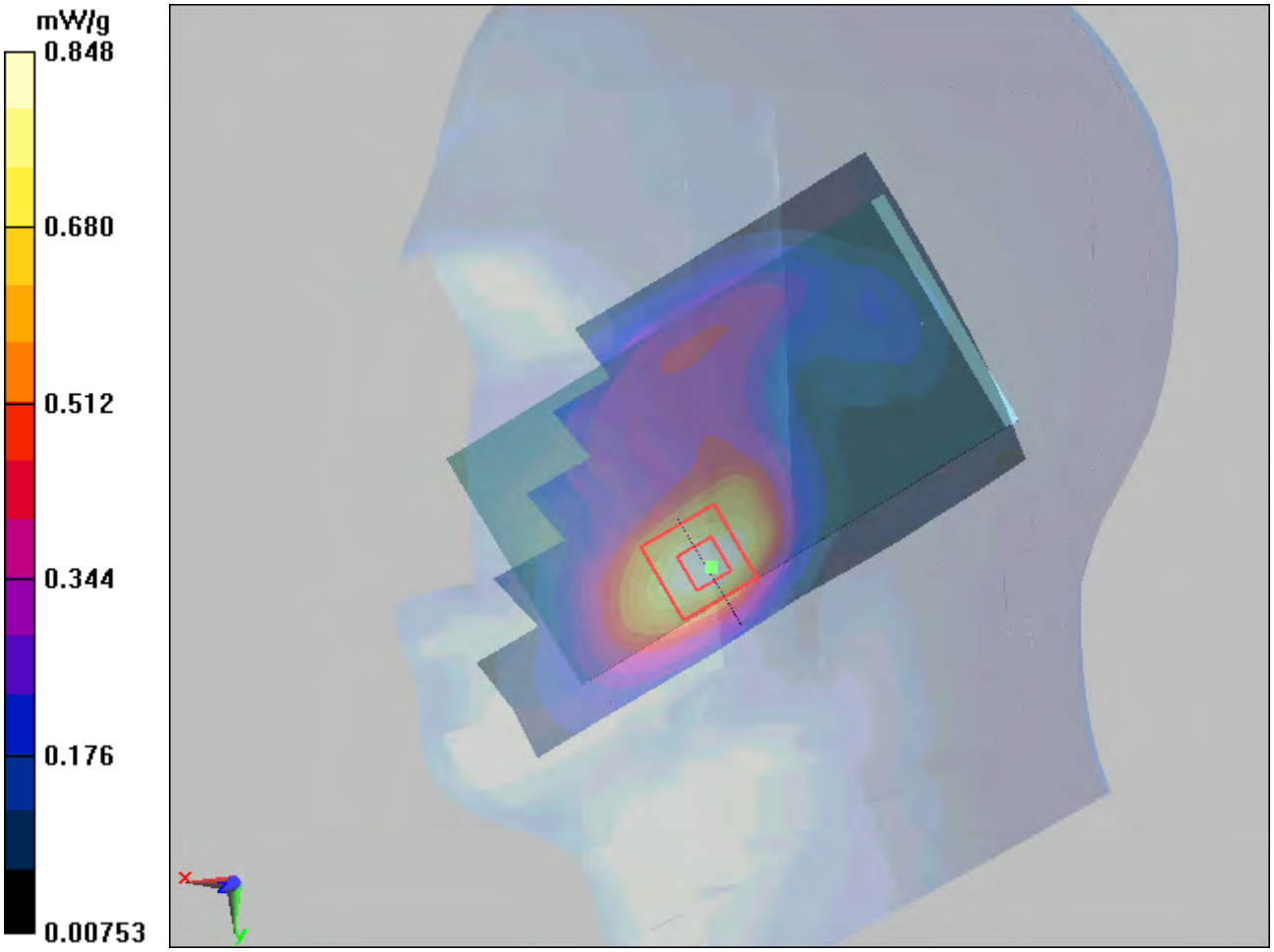


Figure 55 Right Hand Touch Cheek UMTS Band II Channel 9262

UMTS Band II Right Tilt Middle (Battery 1)

Date/Time: 1/17/2013 11:38:56 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.479 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.1 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 0.656 W/kg
SAR(1 g) = 0.389 mW/g; SAR(10 g) = 0.219 mW/g
Maximum value of SAR (measured) = 0.434 mW/g

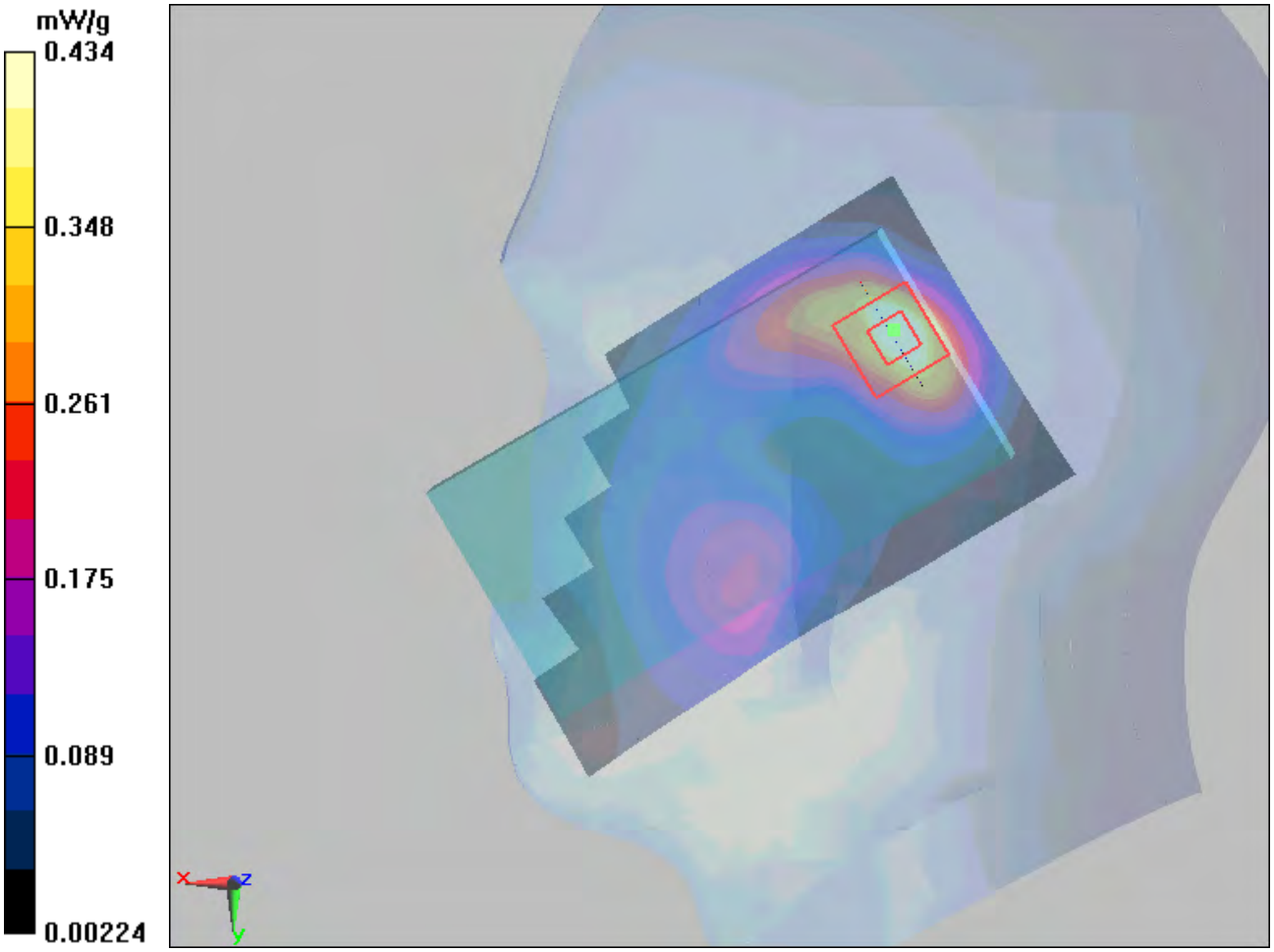


Figure 56 Right Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II Right Cheek Middle (Battery 2)

Date/Time: 1/18/2013 1:25:39 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.903 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.8 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.513 mW/g
Maximum value of SAR (measured) = 0.905 mW/g

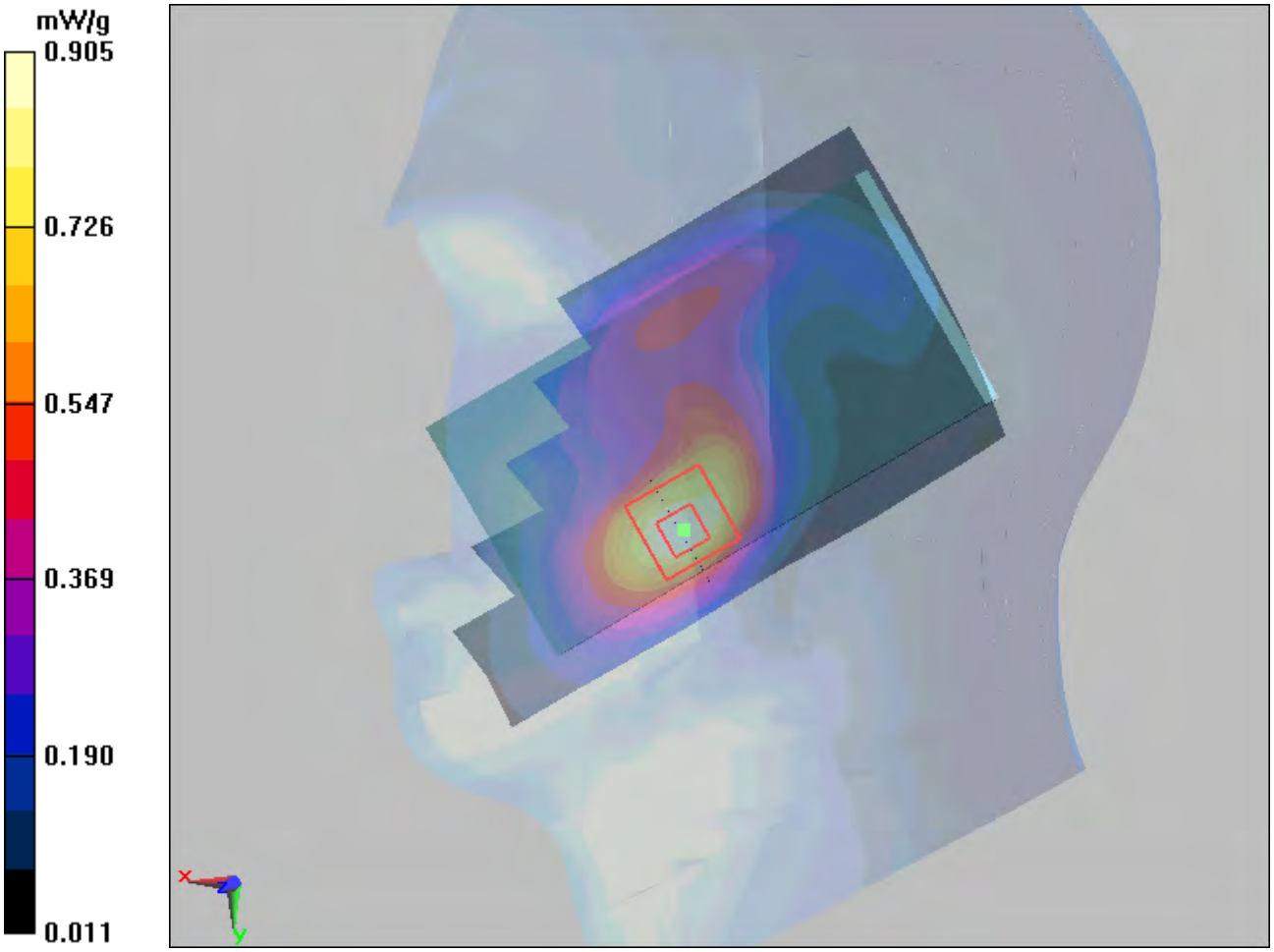
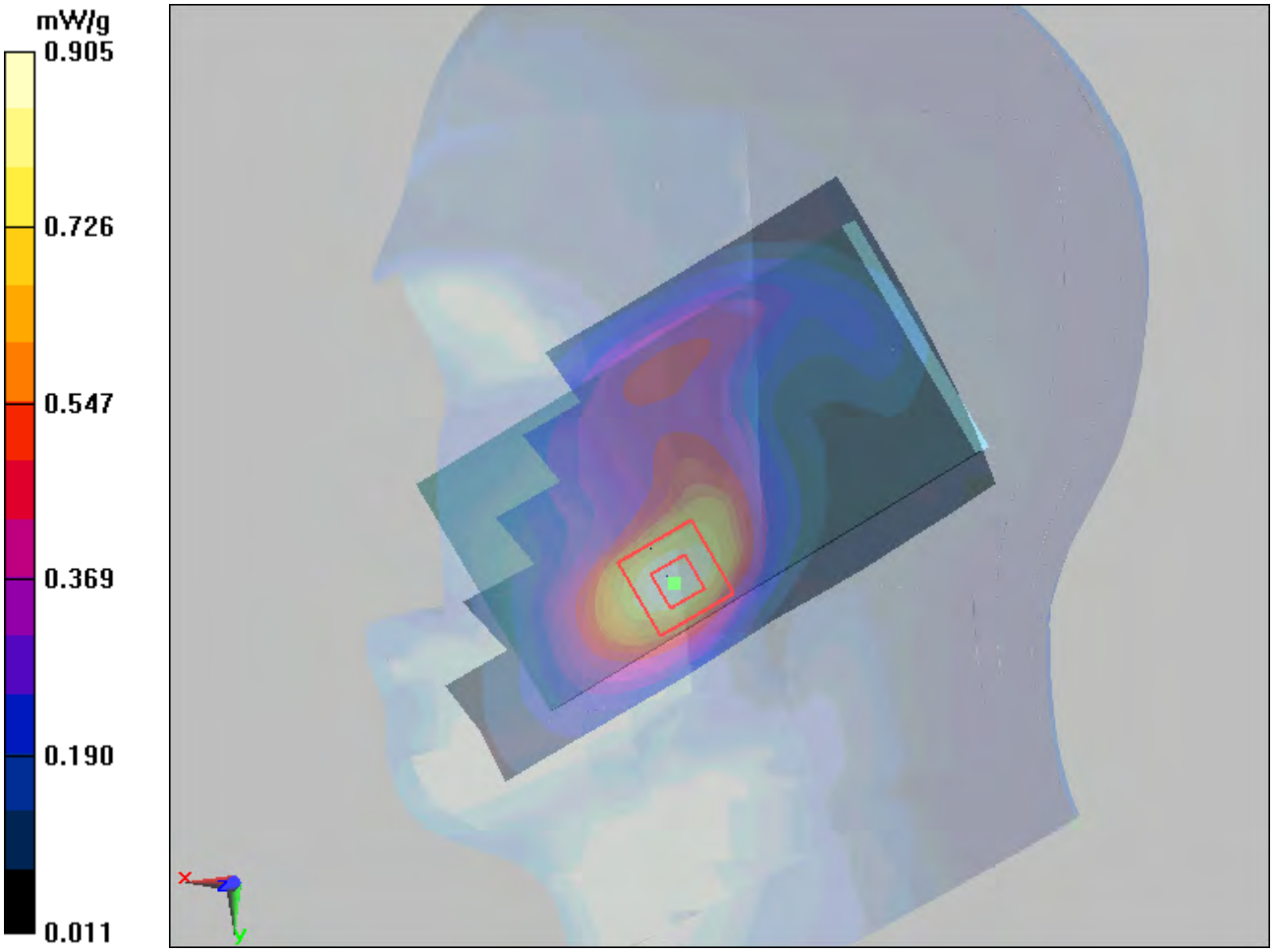


Figure 57 Right Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Right Cheek Middle (Battery 3)

Date/Time: 1/18/2013 1:49:42 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 6/22/2012
Electronics: DAE4 Sn1317; Calibrated: 1/23/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.908 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.7 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.830 mW/g; SAR(10 g) = 0.511 mW/g
Maximum value of SAR (measured) = 0.905 mW/g



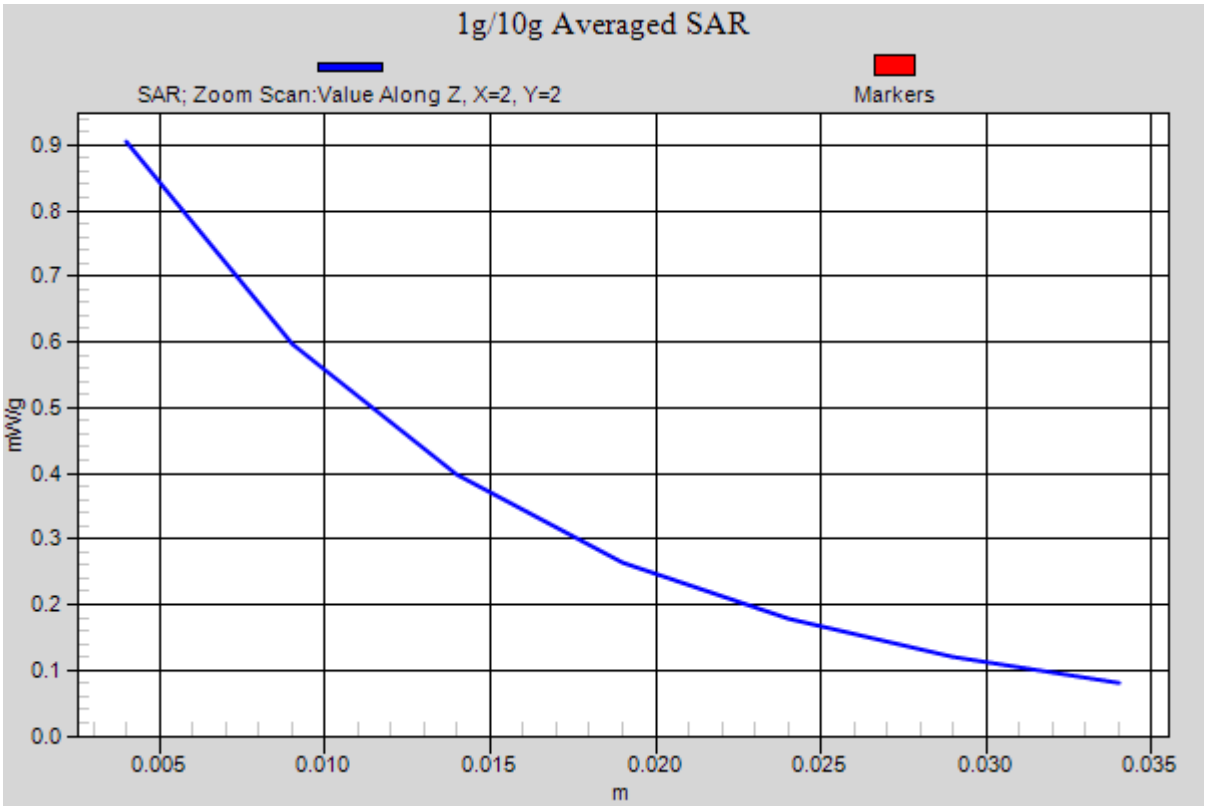


Figure 58 Right Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Back Side High (Battery 1)

Date/Time: 1/17/2013 6:02:35 PM
Communication System: WCDMA ; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.53 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.21 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 1.28 W/kg
SAR(1 g) = 0.742 mW/g; SAR(10 g) = 0.443 mW/g
Maximum value of SAR (measured) = 0.834 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.8 V/m; Power Drift = 0.086 dB
Peak SAR (extrapolated) = 1.83 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.648 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

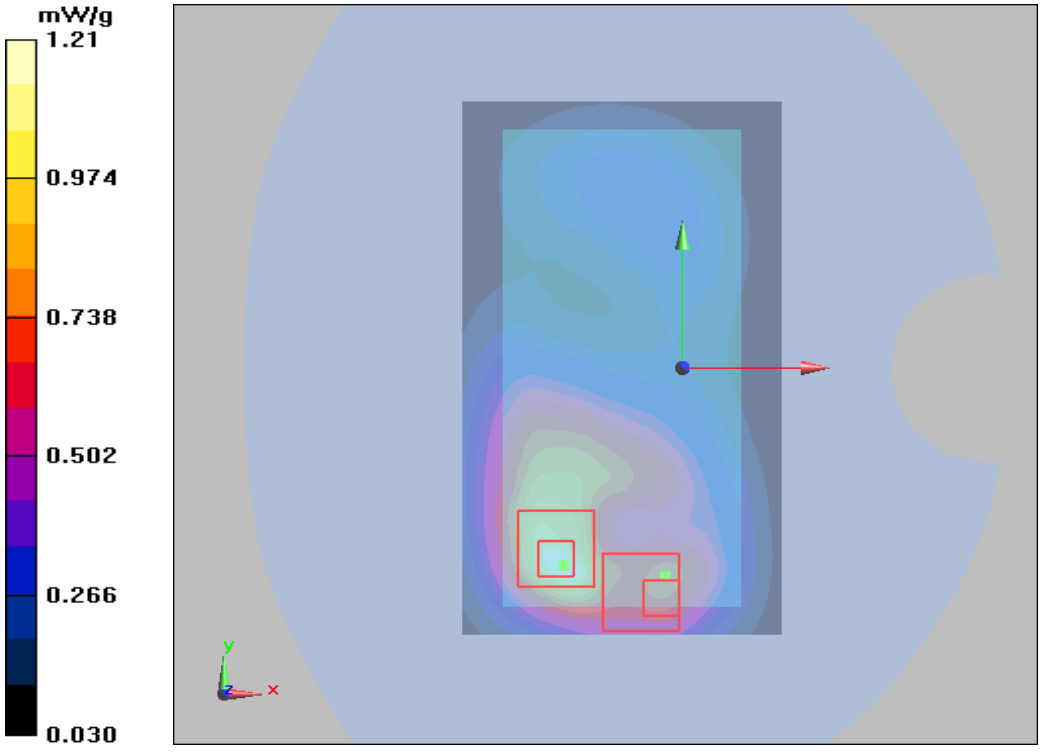


Figure 59 Body, Back Side, UMTS Band II Channel 9538

UMTS Band II Back Side Middle (Battery 1)

Date/Time: 1/17/2013 4:37:30 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.22 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.7 V/m; Power Drift = 0.194 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.757 mW/g; SAR(10 g) = 0.448 mW/g
Maximum value of SAR (measured) = 0.857 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.7 V/m; Power Drift = 0.194 dB
Peak SAR (extrapolated) = 1.84 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.674 mW/g
Maximum value of SAR (measured) = 1.22 mW/g

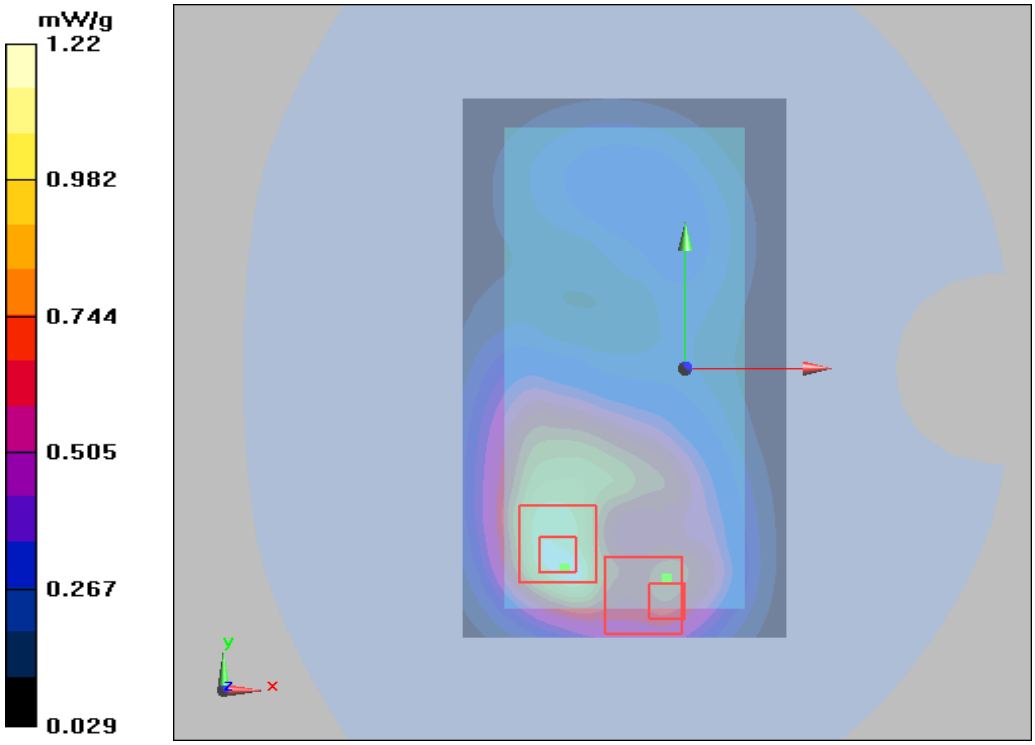


Figure 60 Body, Back Side, UMTS Band II Channel 9400

UMTS Band II Back Side Low (Battery 1)

Date/Time: 1/17/2013 6:27:52 PM
Communication System: WCDMA ; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.47 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g
Back Side Low/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 0.712 mW/g; SAR(10 g) = 0.417 mW/g
Maximum value of SAR (measured) = 0.934 mW/g

Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.669 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

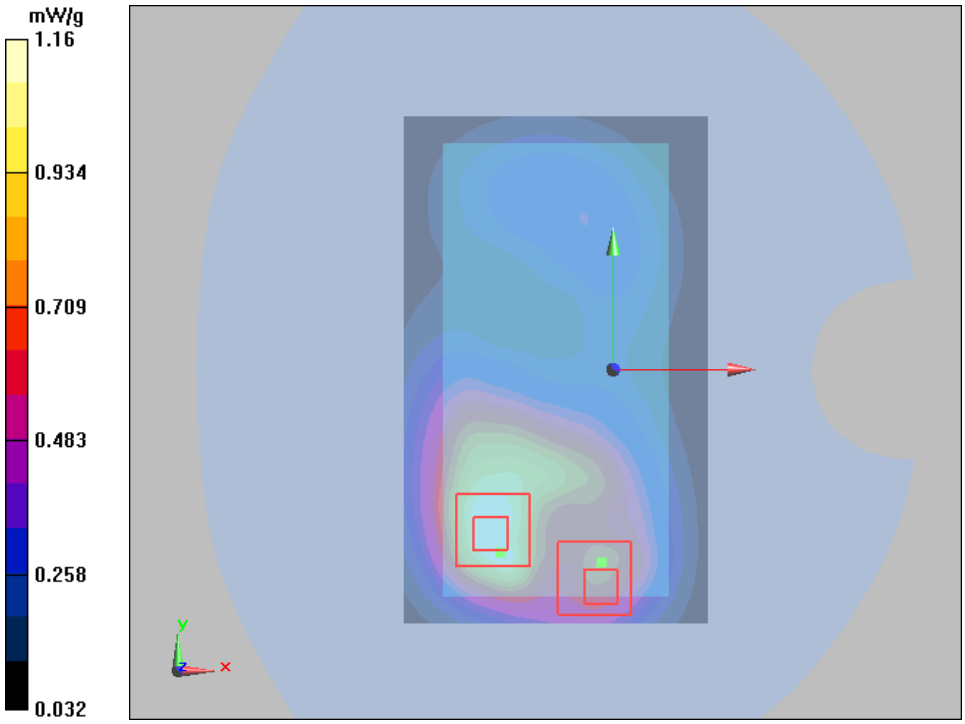


Figure 61 Body, Back Side, UMTS Band II Channel 9262

UMTS Band II Front Side High (Battery 1)

Date/Time: 1/17/2013 4:20:30 PM
Communication System: WCDMA ; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.53 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.04 mW/g

Front Side High/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = 0.080 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.705 mW/g; SAR(10 g) = 0.433 mW/g
Maximum value of SAR (measured) = 0.836 mW/g
Front Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = 0.080 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.915 mW/g; SAR(10 g) = 0.557 mW/g
Maximum value of SAR (measured) = 0.975 mW/g

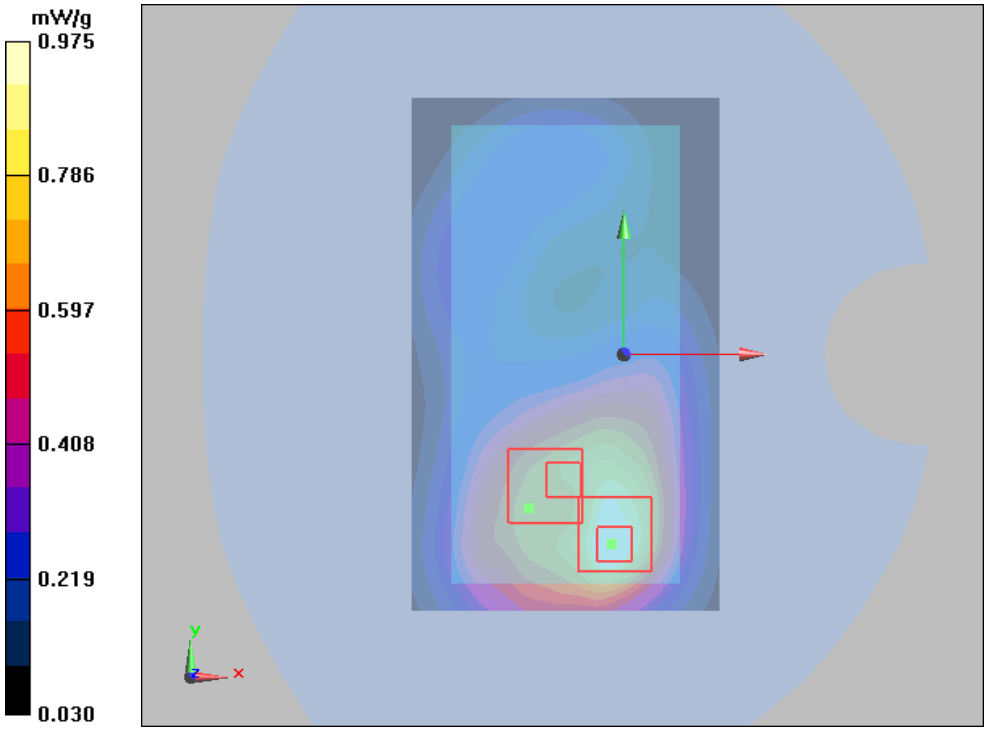


Figure 62 Body, Front Side, UMTS Band II Channel 9538

UMTS Band II Front Side Middle (Battery 1)

Date/Time: 1/17/2013 4:01:56 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.14 mW/g

Front Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = -0.068 dB
Peak SAR (extrapolated) = 1.39 W/kg
SAR(1 g) = 0.832 mW/g; SAR(10 g) = 0.508 mW/g
Maximum value of SAR (measured) = 0.953 mW/g
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = -0.068 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.625 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

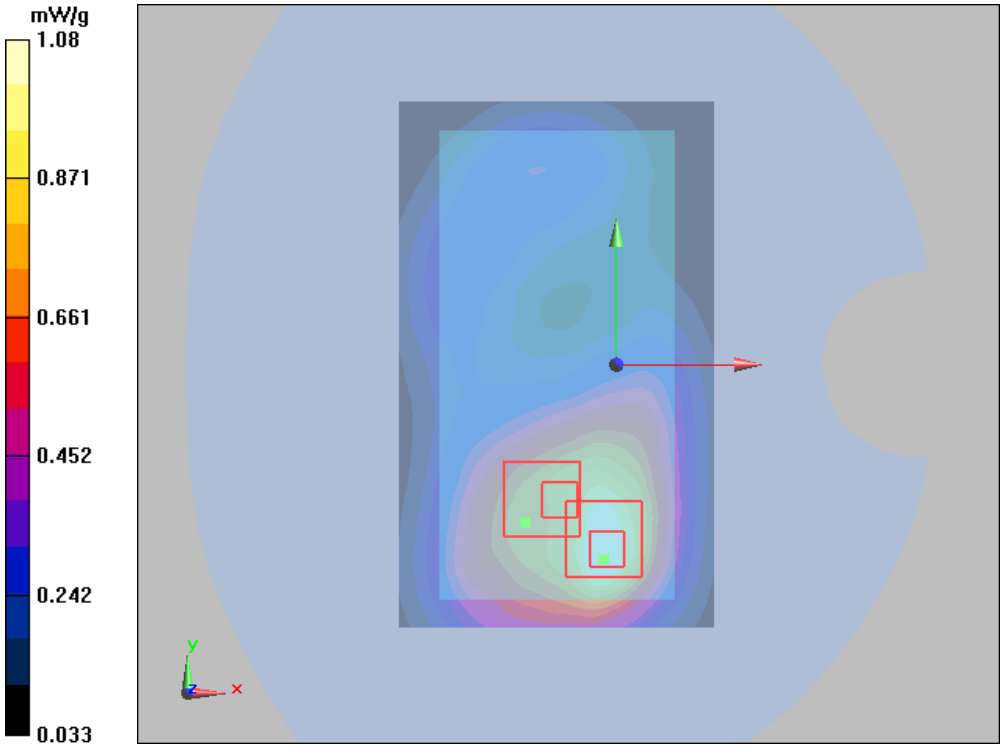


Figure 63 Body, Front Side, UMTS Band II Channel 9400

UMTS Band II Front Side Low (Battery 1)

Date/Time: 1/18/2013 6:04:56 AM
Communication System: WCDMA ; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.47 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Front Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.15 mW/g
Front Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 1.64 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.644 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

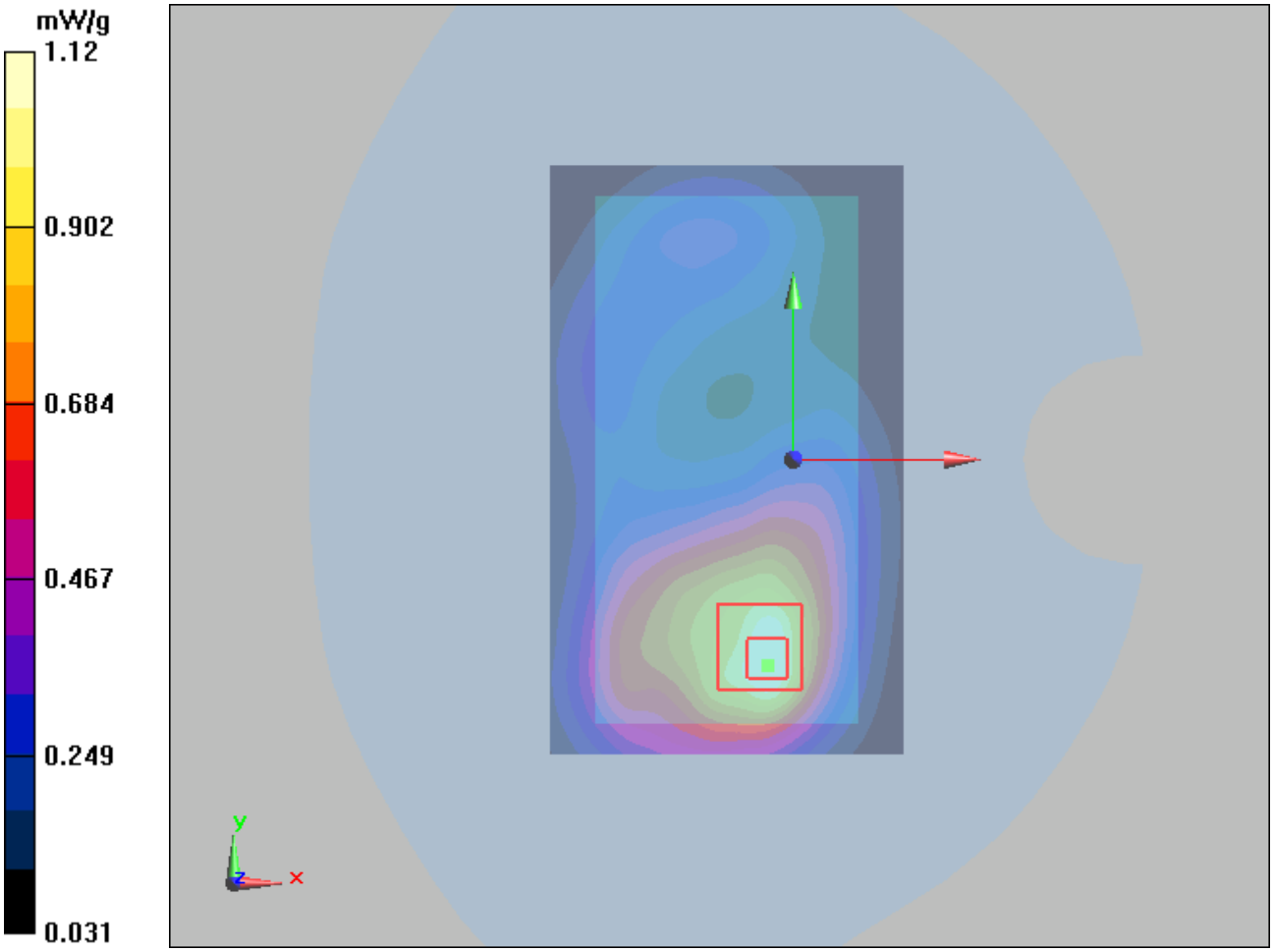


Figure 64 Body, Front Side, UMTS Band II Channel 9262

UMTS Band II Left Edge Middle (Battery 1)

Date/Time: 1/18/2013 7:06:20 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.383 mW/g
Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.7 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 0.574 W/kg
SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.217 mW/g
Maximum value of SAR (measured) = 0.396 mW/g

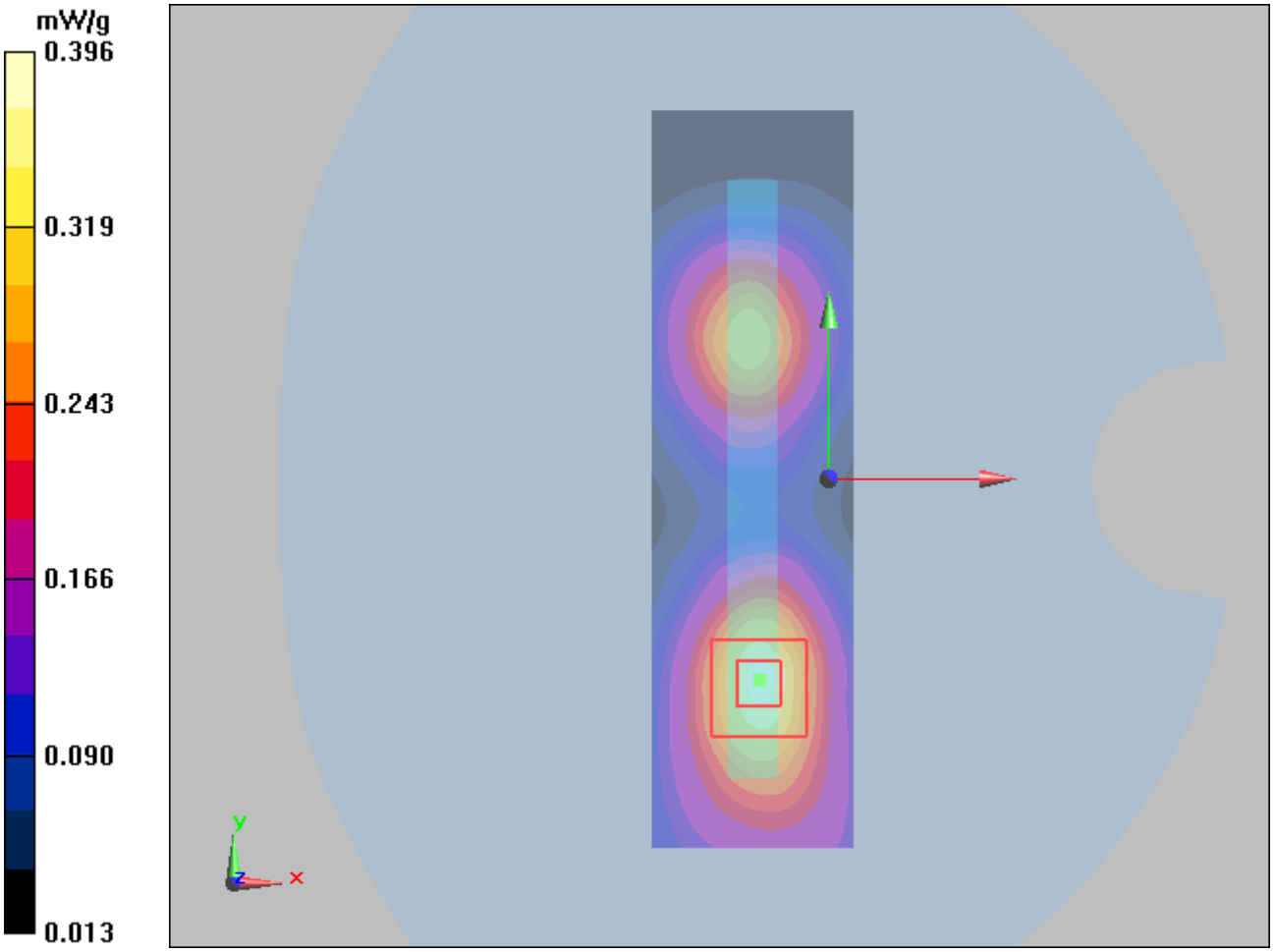


Figure 65 Body, Left Edge, UMTS Band II Channel 9400

UMTS Band II Right Edge Middle (Battery 1)

Date/Time: 1/18/2013 7:20:39 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.370 mW/g
Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.554 W/kg
SAR(1 g) = 0.346 mW/g; SAR(10 g) = 0.212 mW/g
Maximum value of SAR (measured) = 0.376 mW/g

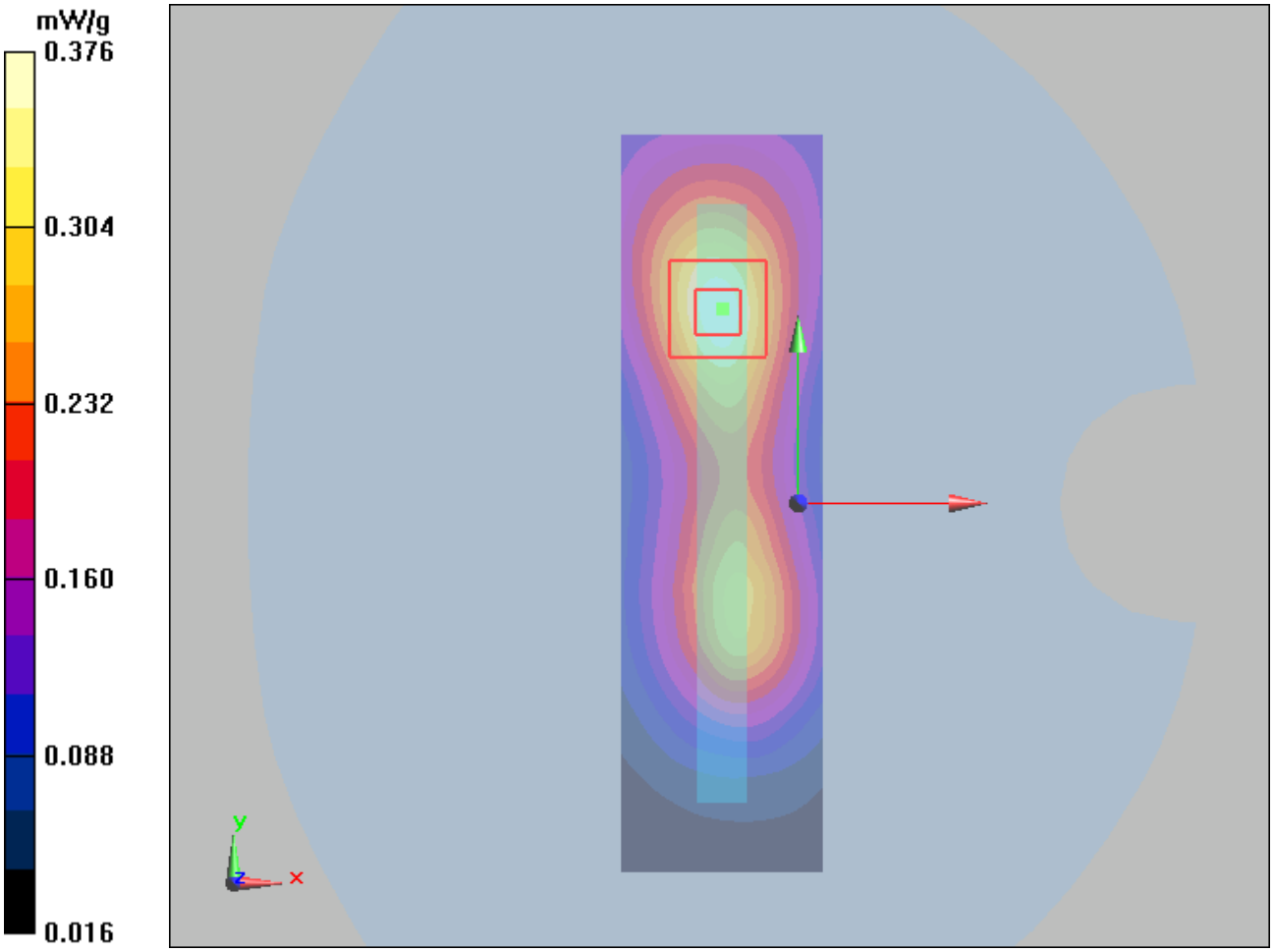


Figure 66 Body, Right Edge, UMTS Band II Channel 9400

UMTS Band II Bottom Edge High (Battery 1)

Date/Time: 1/18/2013 6:51:47 AM
Communication System: WCDMA ; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1908 MHz; σ = 1.53 mho/m; ε_r = 52.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge High/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.861 mW/g
Bottom Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.4 W/kg
SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.450 mW/g
Maximum value of SAR (measured) = 0.855 mW/g

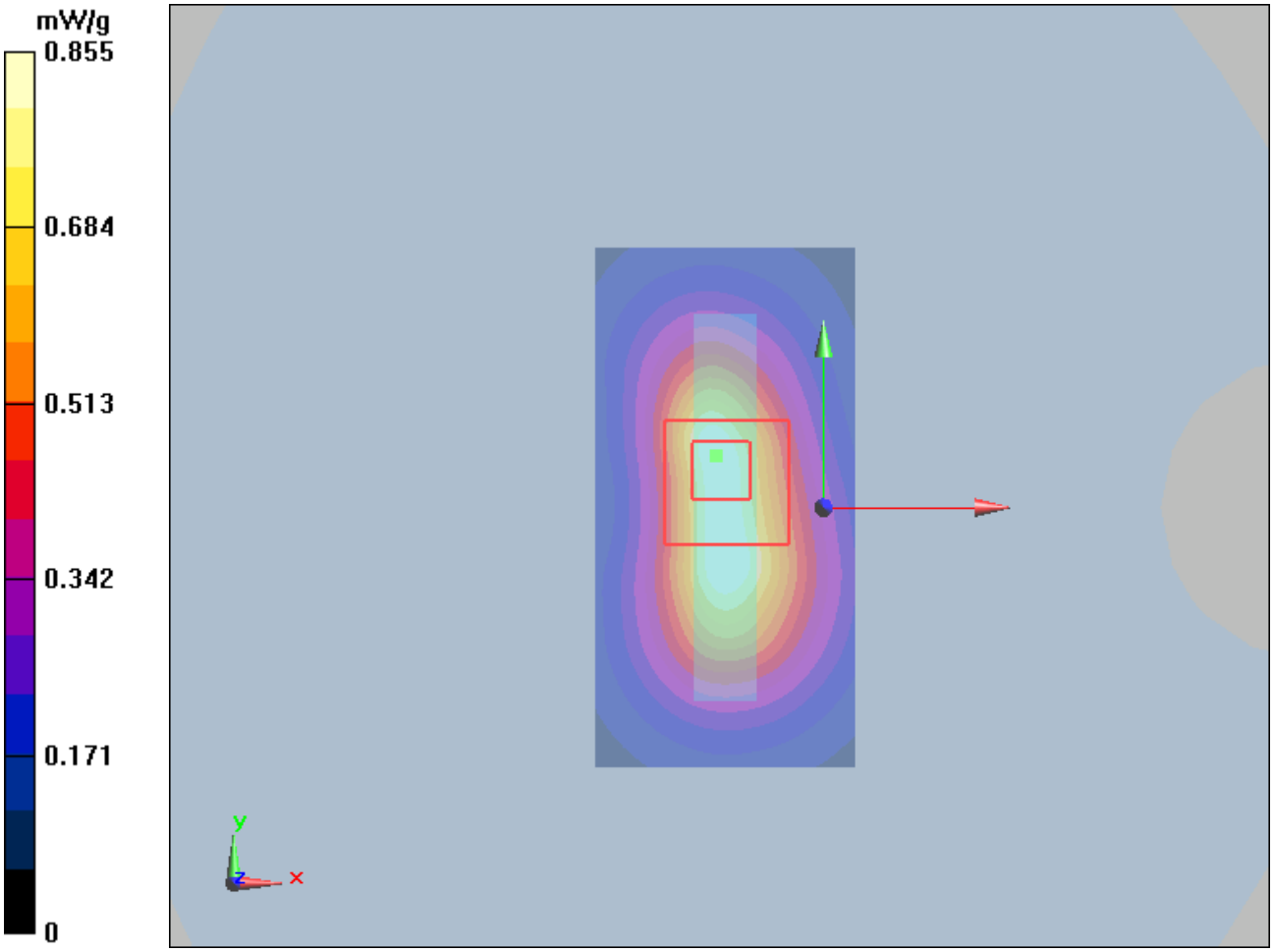


Figure 67 Body, Bottom Edge, UMTS Band II Channel 9538

UMTS Band II Bottom Edge Middle (Battery 1)

Date/Time: 1/18/2013 6:23:11 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.889 mW/g
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24 V/m; Power Drift = 0.087 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.871 mW/g

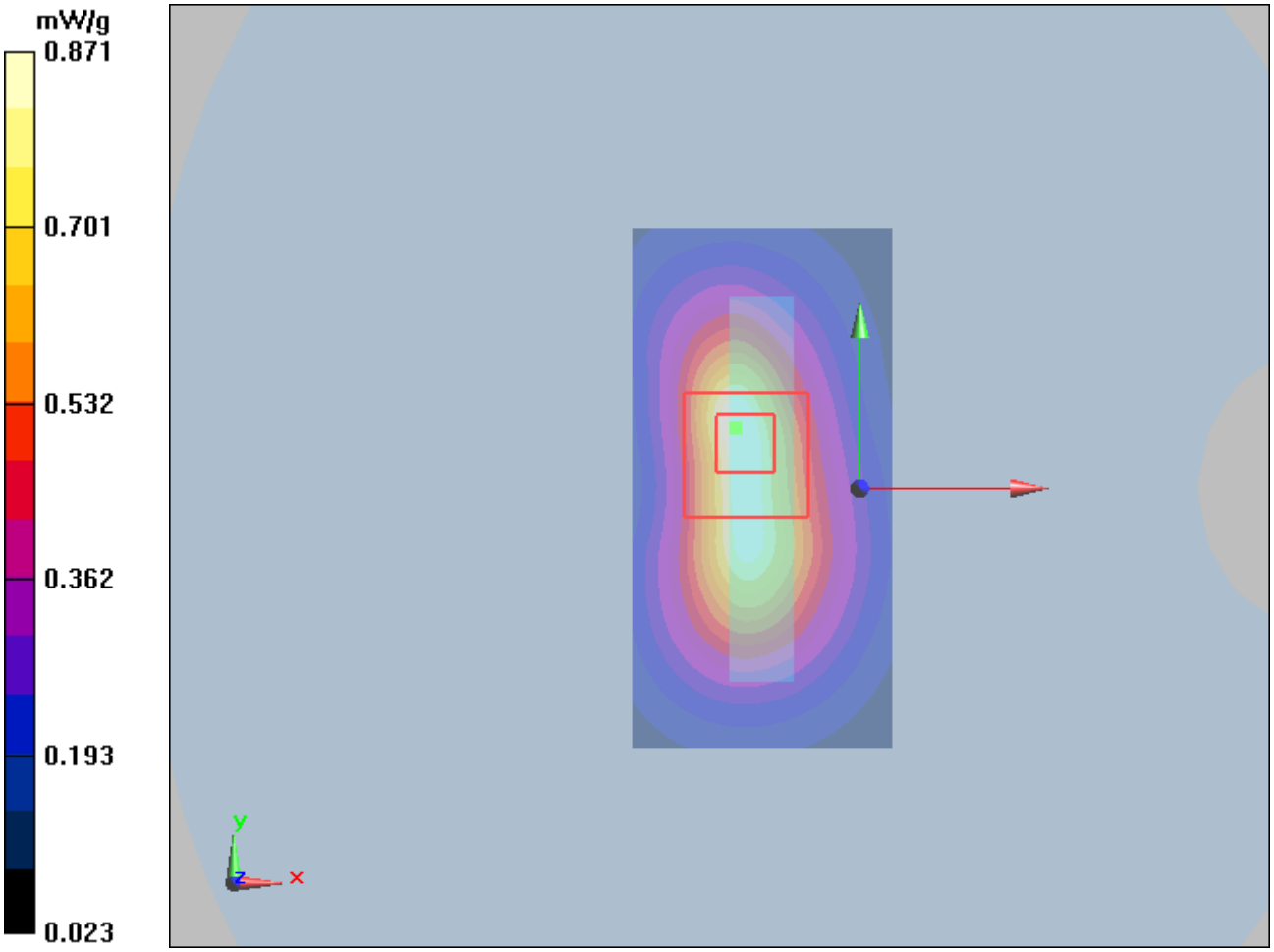


Figure 68 Body, Bottom Edge, UMTS Band II Channel 9400

UMTS Band II Bottom Edge Low (Battery 1)

Date/Time: 1/18/2013 6:40:02 AM
Communication System: WCDMA ; Frequency: 1852.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.47 mho/m; ε_r = 52.7; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge Low/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.811 mW/g
Bottom Edge Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 23.3 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 1.2 W/kg
SAR(1 g) = 0.723 mW/g; SAR(10 g) = 0.411 mW/g
Maximum value of SAR (measured) = 0.798 mW/g

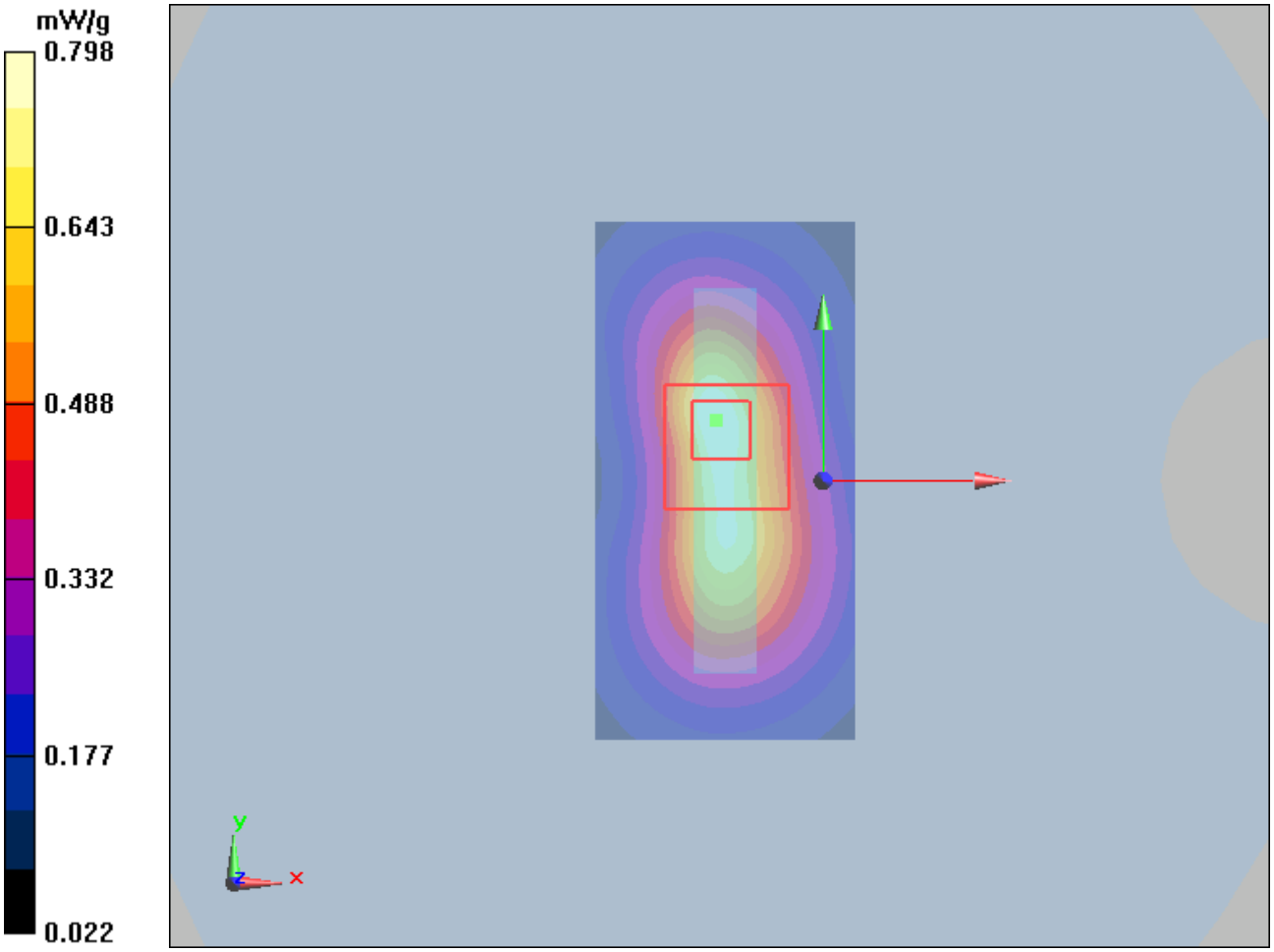
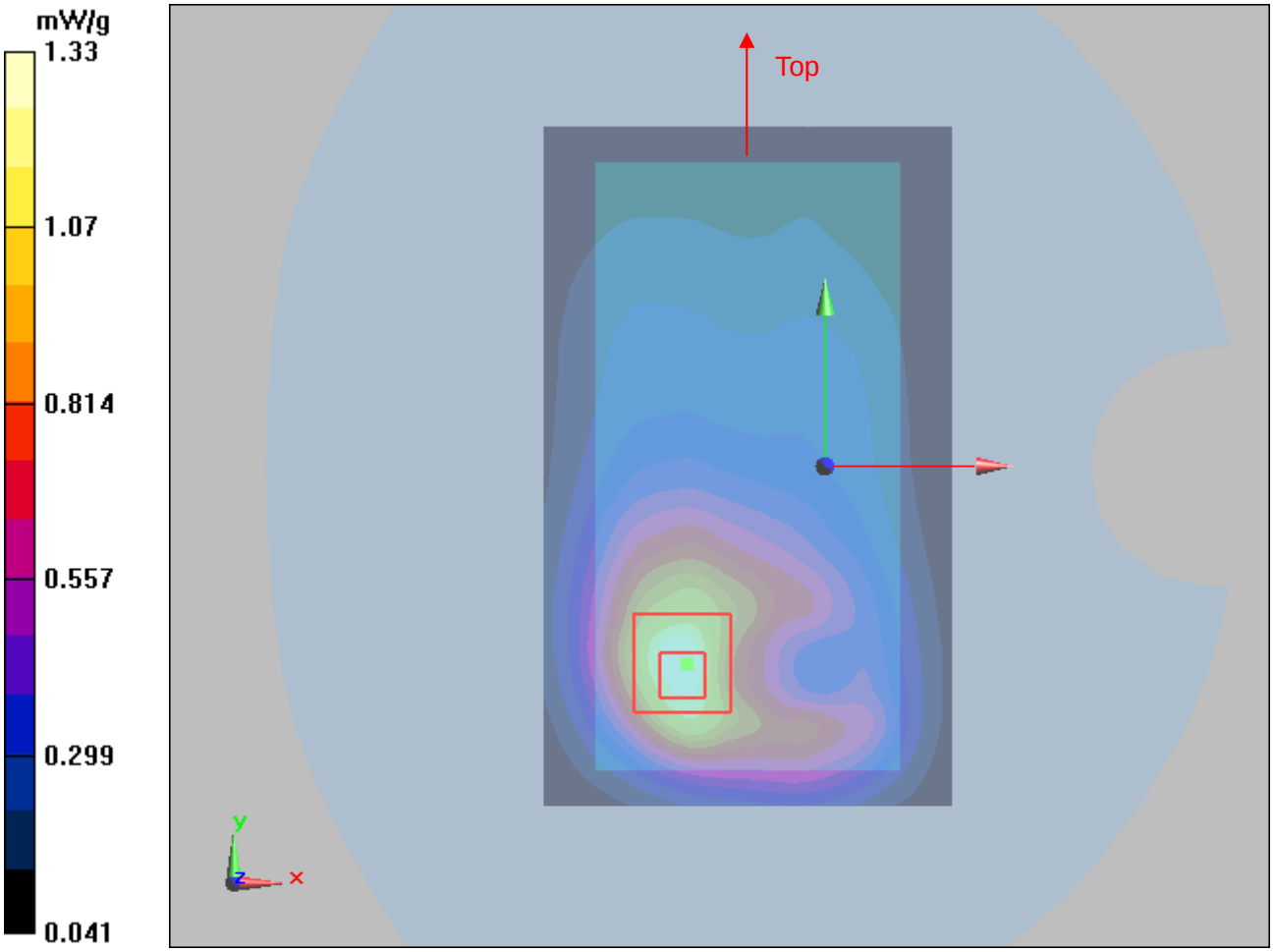


Figure 69 Body, Bottom Edge, UMTS Band II Channel 9262

UMTS Band II with Earphone Back Side Middle (Battery 1)

Date/Time: 1/18/2013 12:09:07 PM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.35 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 2.03 W/kg
SAR(1 g) = 1.24 mW/g; SAR(10 g) = 0.740 mW/g
Maximum value of SAR (measured) = 1.33 mW/g



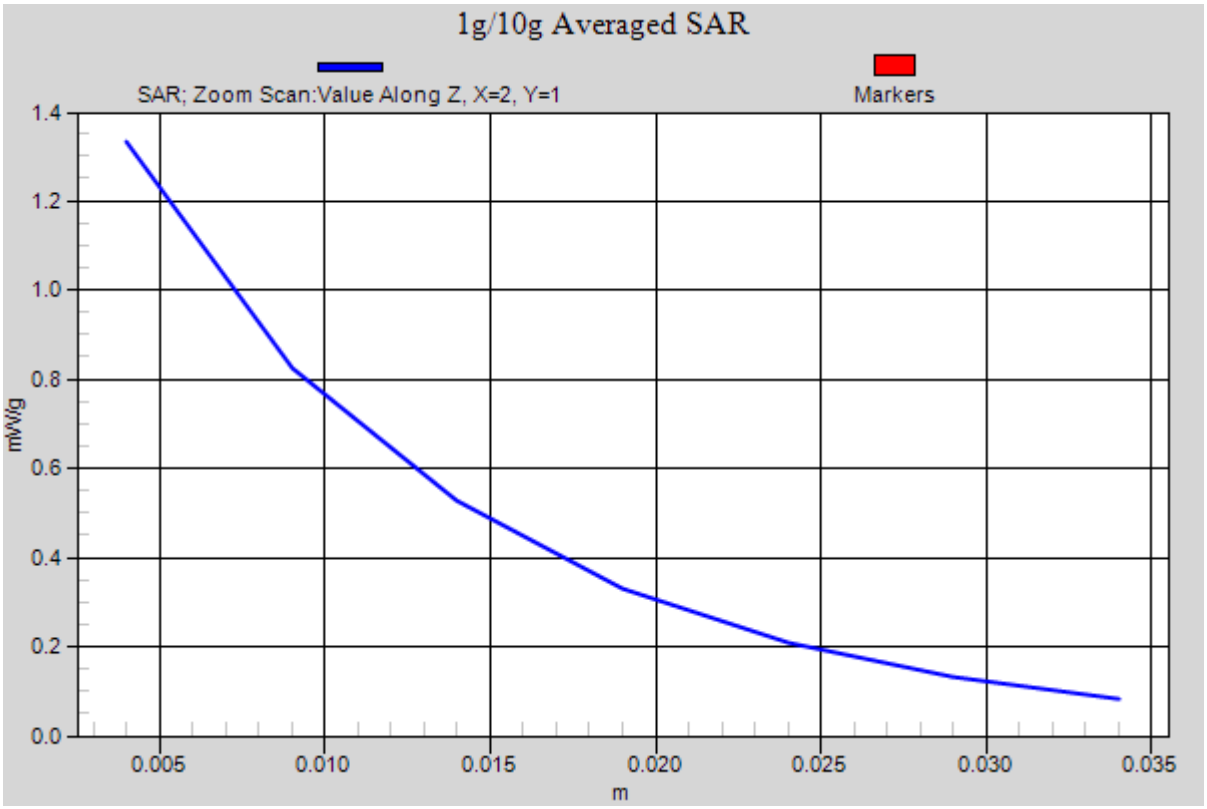


Figure 70 Body with Earphone, Back Side, UMTS Band II Channel 9538

UMTS Band II Back Side HSDPA Middle (Battery 1)

Date/Time: 1/18/2013 8:01:19 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.22 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = 0.197 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.470 mW/g
Maximum value of SAR (measured) = 1.01 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = 0.197 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.682 mW/g
Maximum value of SAR (measured) = 1.25 mW/g

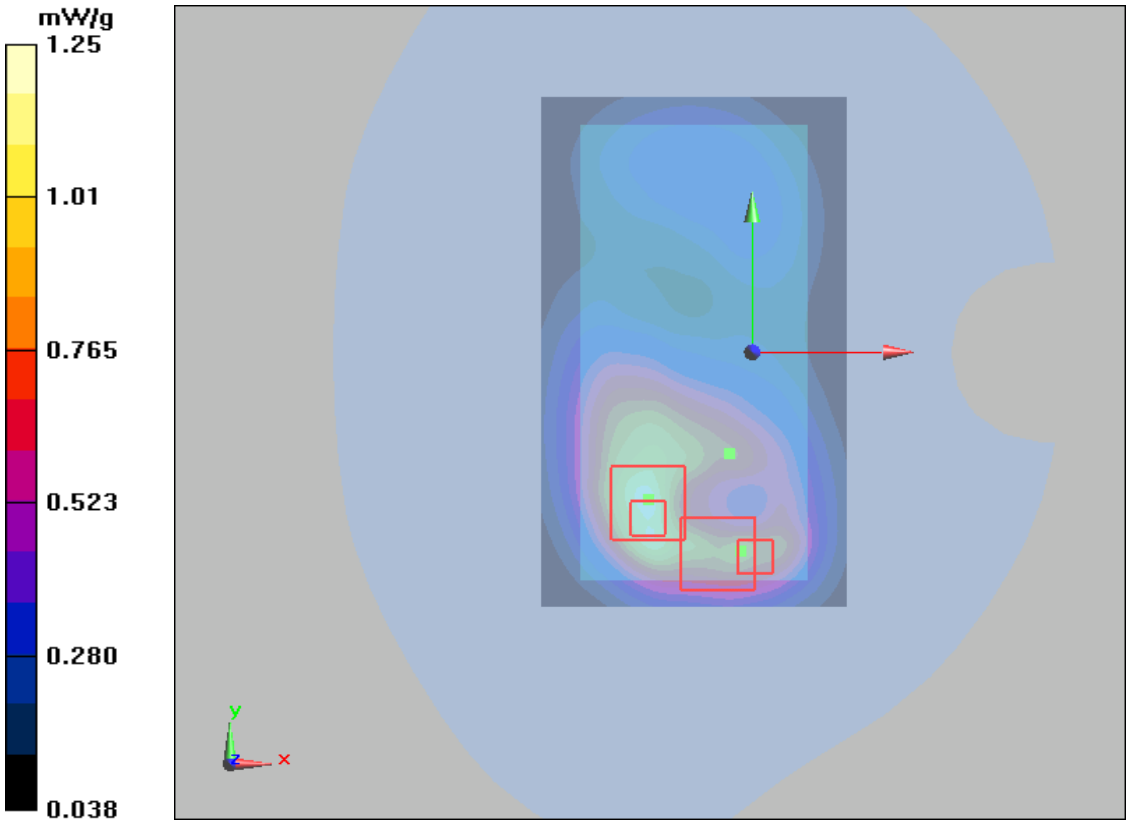


Figure 71 Body, Back Side, UMTS Band II HSDPA Channel 9400

UMTS Band II Back Side HSUPA Middle (Battery 1)

Date/Time: 1/18/2013 8:39:44 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.863 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = 0.157 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.581 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.717 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = 0.157 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.787 mW/g; SAR(10 g) = 0.484 mW/g
Maximum value of SAR (measured) = 0.840 mW/g

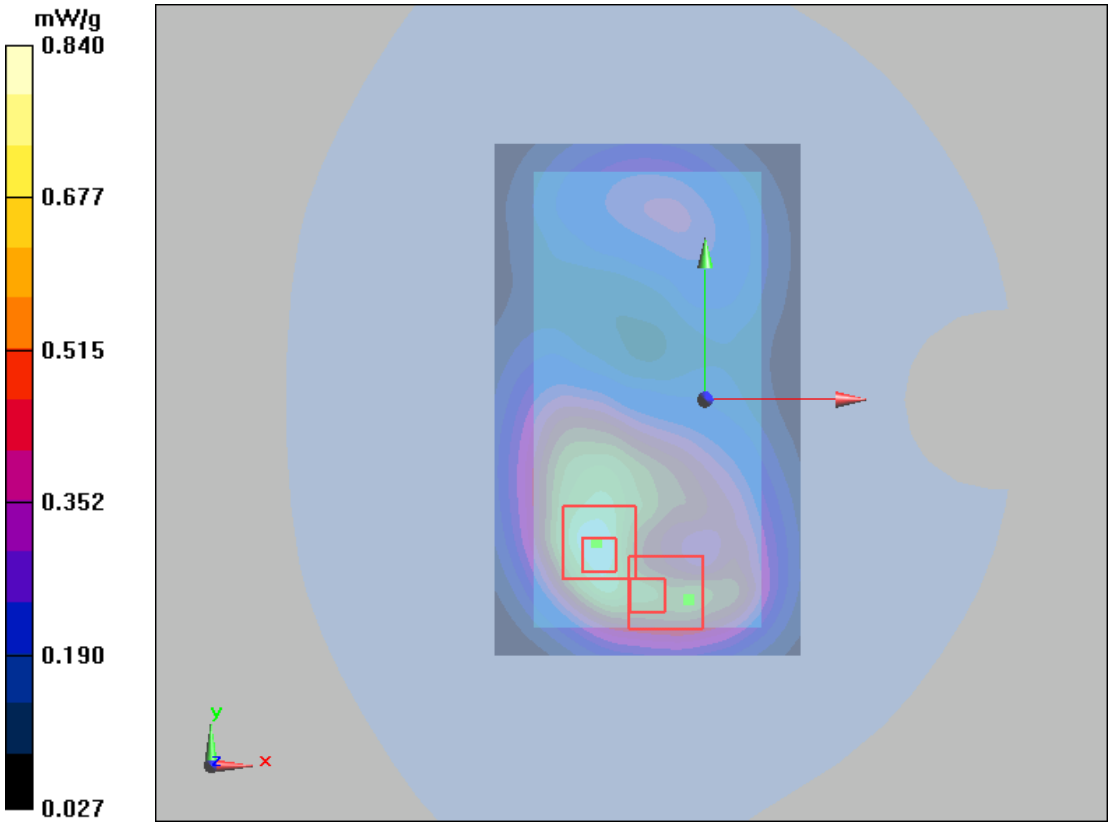


Figure 72 Body, Back Side, UMTS Band II HSUPA Channel 9400

UMTS Band II Back Side Middle (Battery 2)

Date/Time: 1/18/2013 5:15:46 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.27 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.905 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.692 mW/g
Maximum value of SAR (measured) = 1.25 mW/g

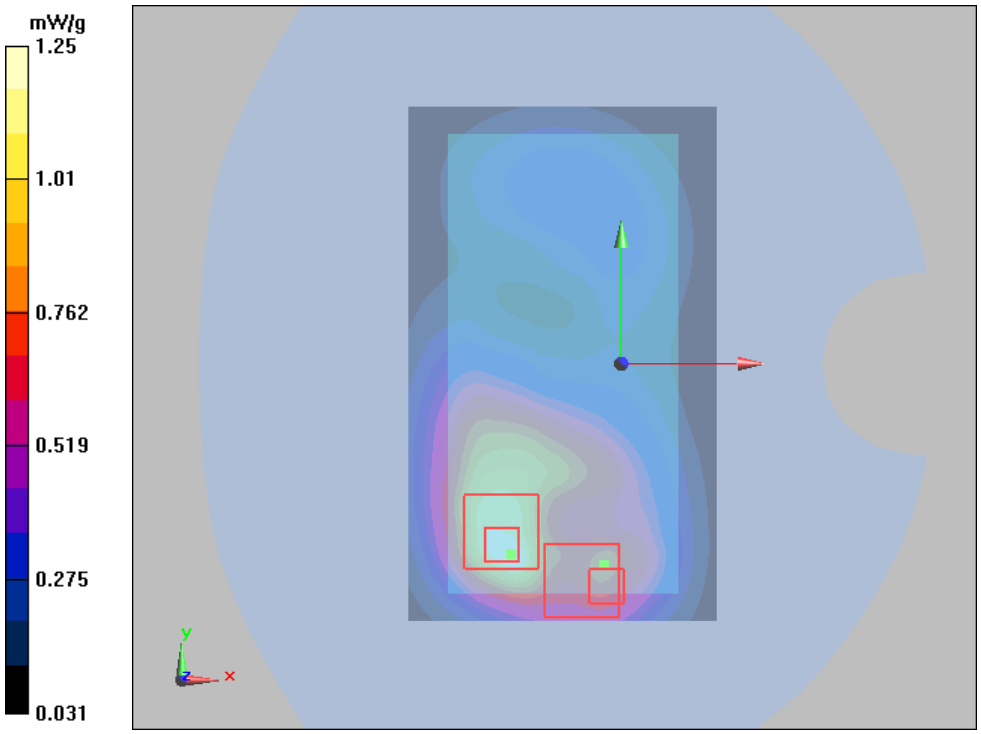


Figure 73 Body, Back Side, UMTS Band II Channel 9538

UMTS Band II Back Side Middle (Battery 3)

Date/Time: 1/18/2013 7:36:44 AM
Communication System: WCDMA ; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 1.28 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 1.9 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.695 mW/g
Maximum value of SAR (measured) = 1.26 mW/g

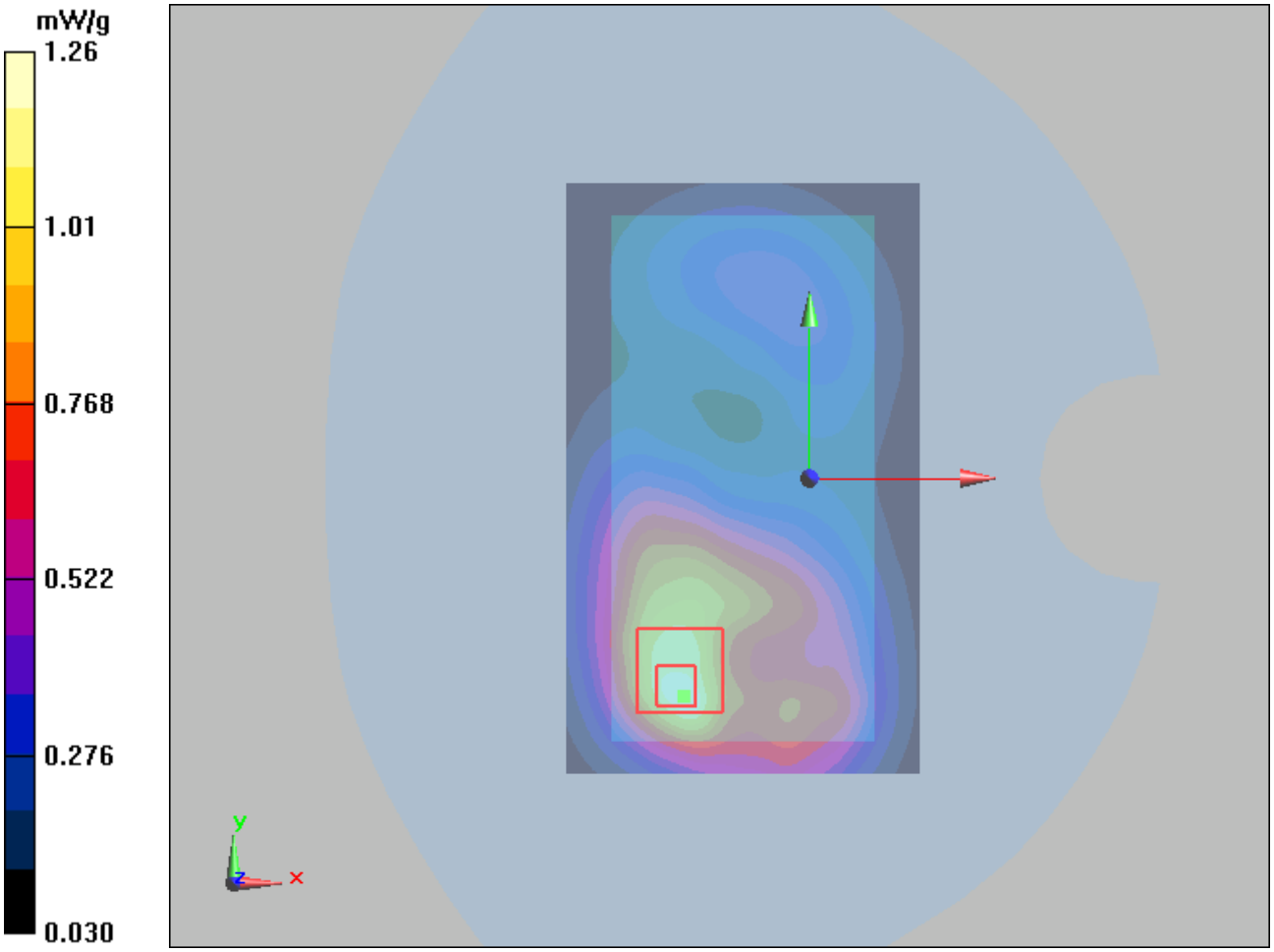


Figure 74 Body, Back Side, UMTS Band II Channel 9538

UMTS Band II with Earphone Back Side Middle (Repeated Test,Battery 1)

Date/Time: 1/18/2013 7:50:52 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.5 mho/m; ε_r = 52.6; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

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

Sensor-Surface: 4mm (Mechanical Surface Detection)

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) = 1.28 mW/g

Back Side Middle/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.4 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 1.42 W/kg

SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.481 mW/g

Maximum value of SAR (measured) = 0.988 mW/g

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

Reference Value = 15.4 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 1.94 W/kg

SAR(1 g) = 1.18 mW/g; SAR(10 g) = 0.708 mW/g

Maximum value of SAR (measured) = 1.29 mW/g

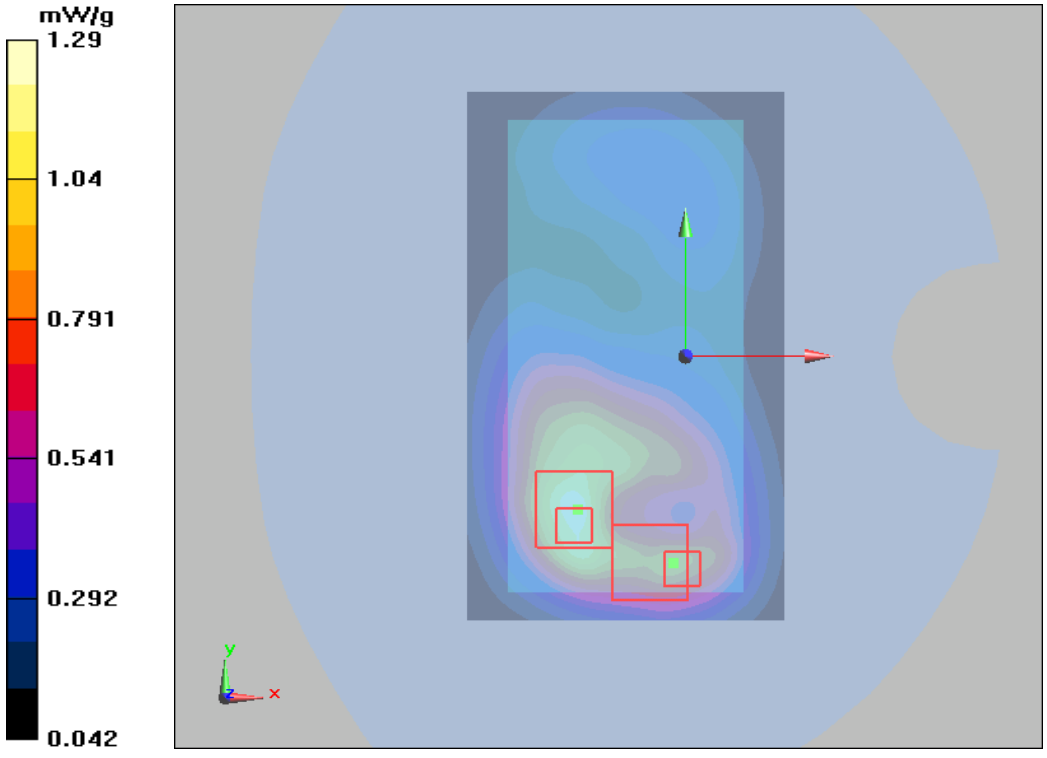


Figure 75 Body with Earphone, Back Side, UMTS Band II Channel 9538

UMTS Band V Left Cheek Middle (Battery 1)

Date/Time: 1/16/2013 12:40:27 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.319 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.13 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 0.392 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.229 mW/g
Maximum value of SAR (measured) = 0.320 mW/g

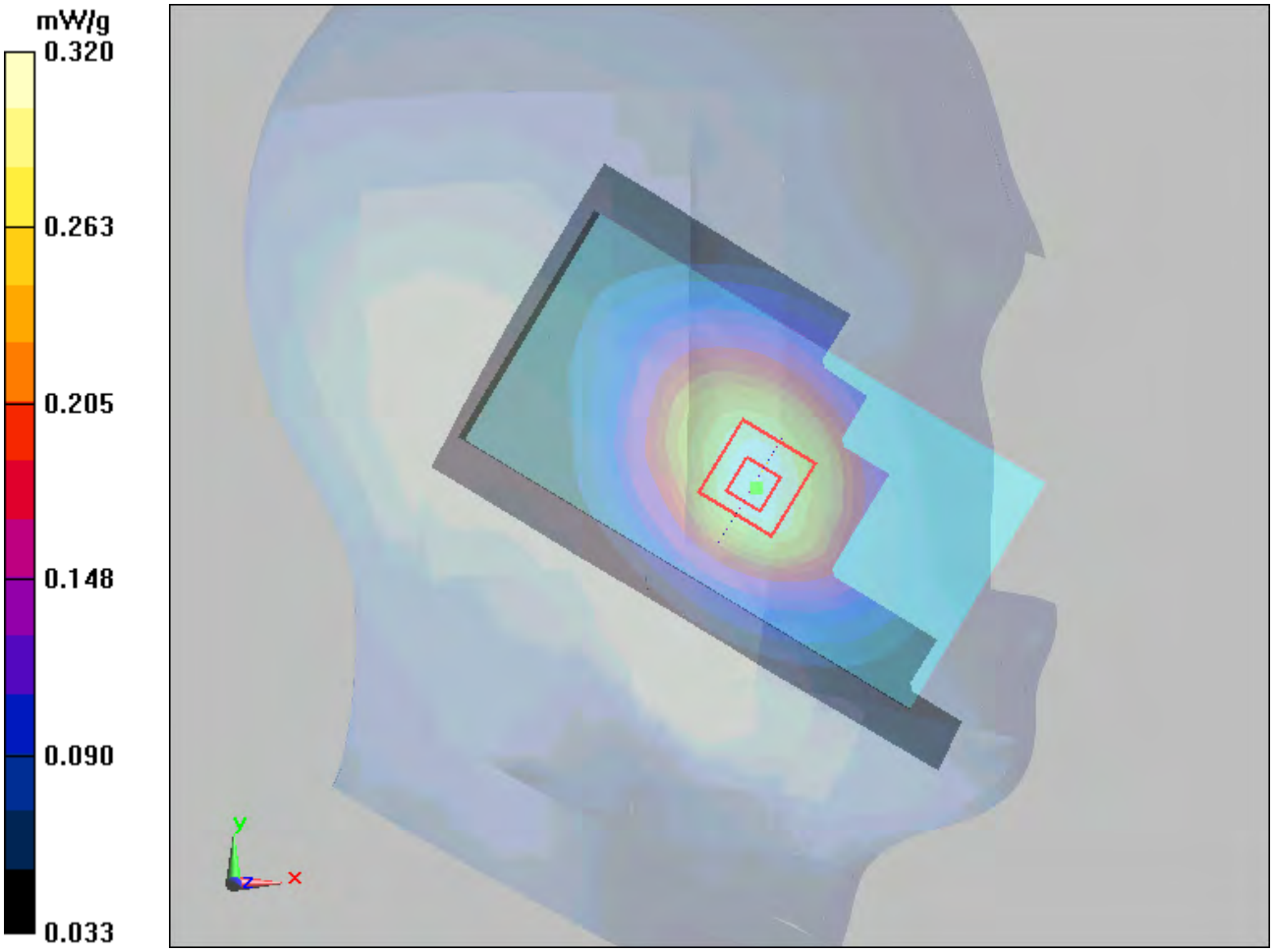


Figure 76 Left Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Left Tilt Middle (Battery 1)

Date/Time: 1/16/2013 1:30:42 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.185 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.76 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 0.221 W/kg
SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.138 mW/g
Maximum value of SAR (measured) = 0.187 mW/g

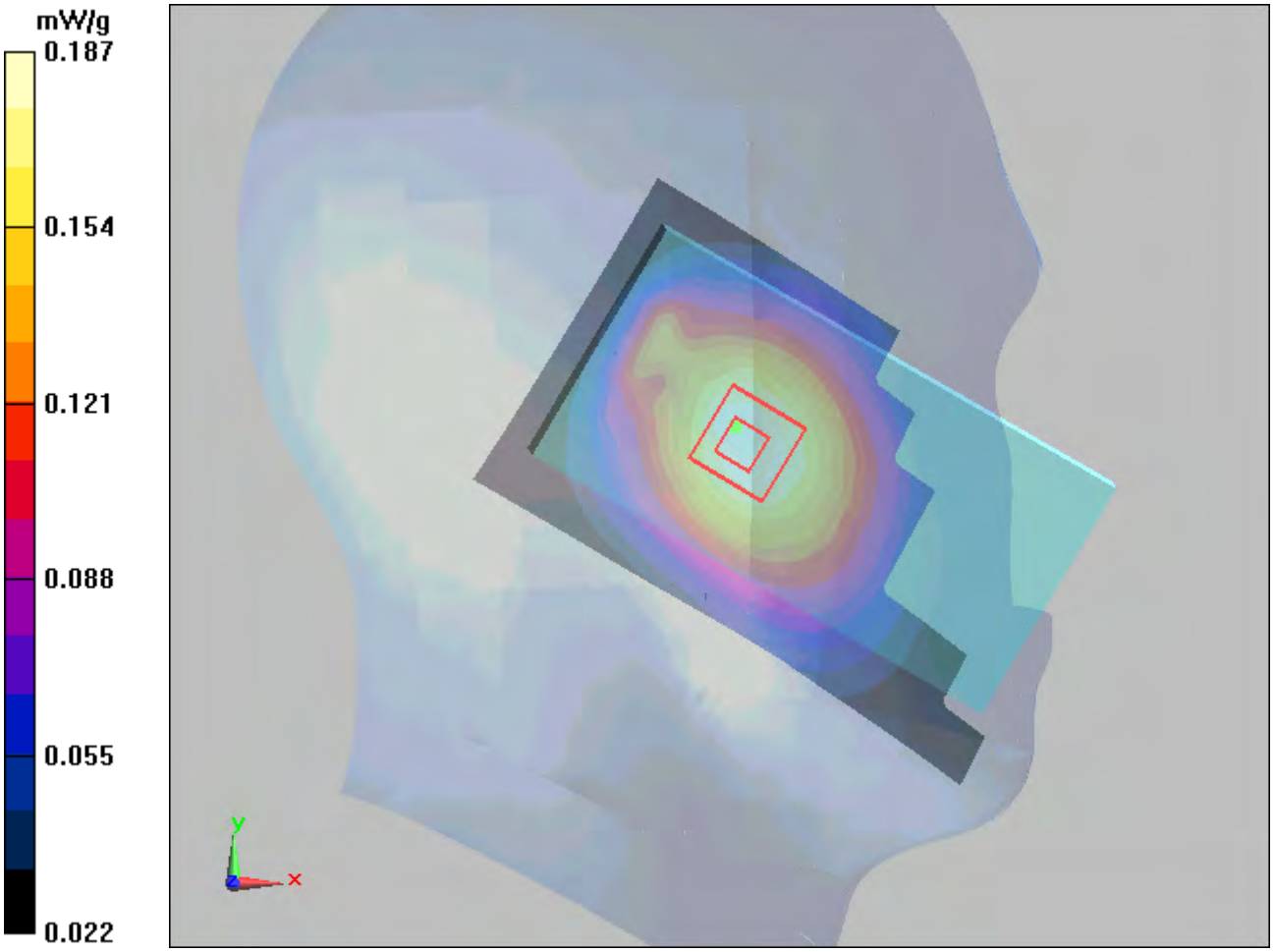


Figure 77 Left Hand Tilt 15° UMTS Band V Channel 4183

UMTS Band V Right Cheek Middle (Battery 1)

Date/Time: 1/16/2013 12:05:02 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.279 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 = -0.086 dB
Peak SAR (extrapolated) = 0.308 W/kg
SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.266 mW/g

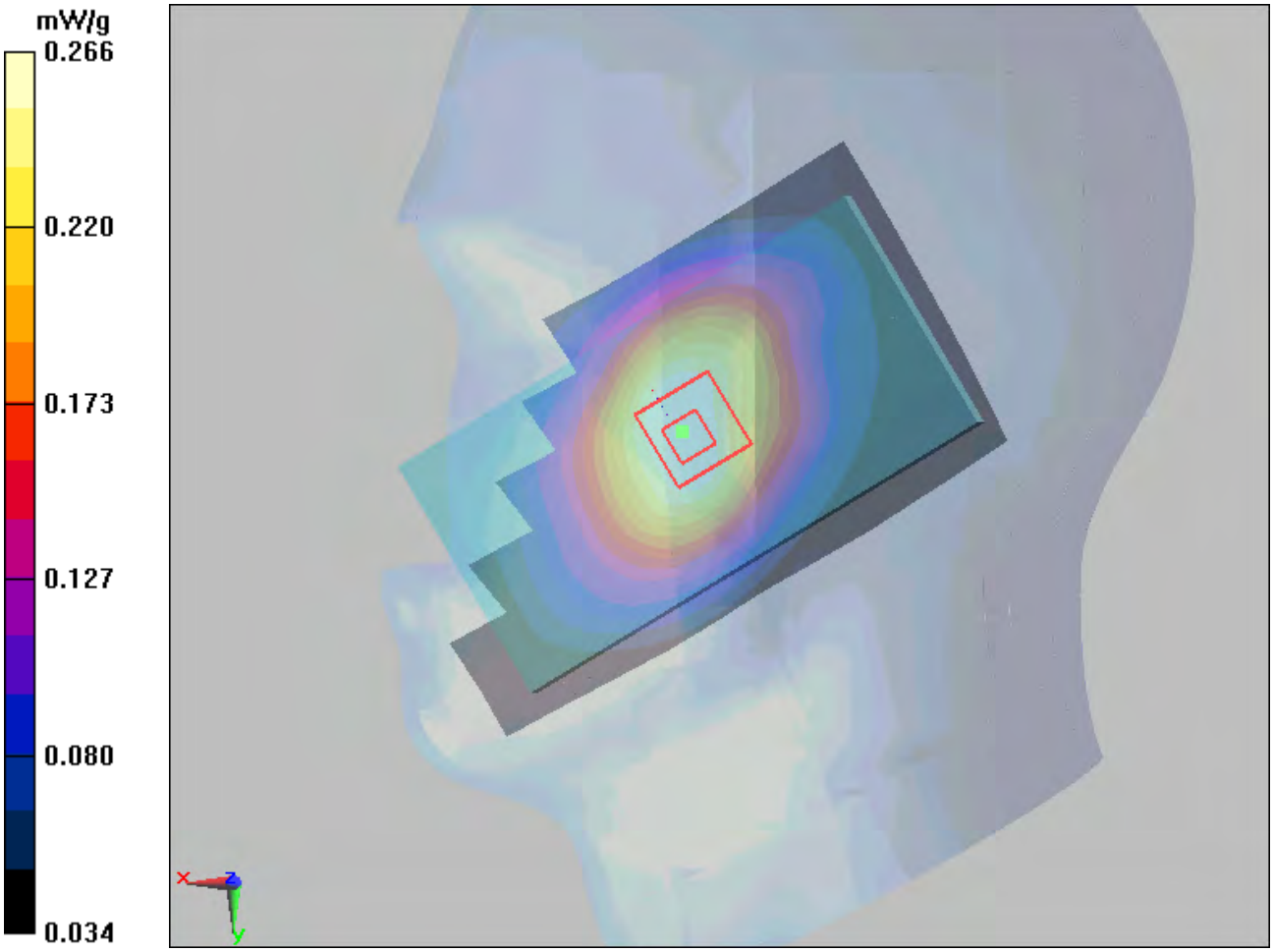


Figure 78 Right Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Right Tilt Middle (Battery 1)

Date/Time: 1/16/2013 12:21:42 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.206 mW/g
Tilt Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.246 W/kg
SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.149 mW/g
Maximum value of SAR (measured) = 0.205 mW/g

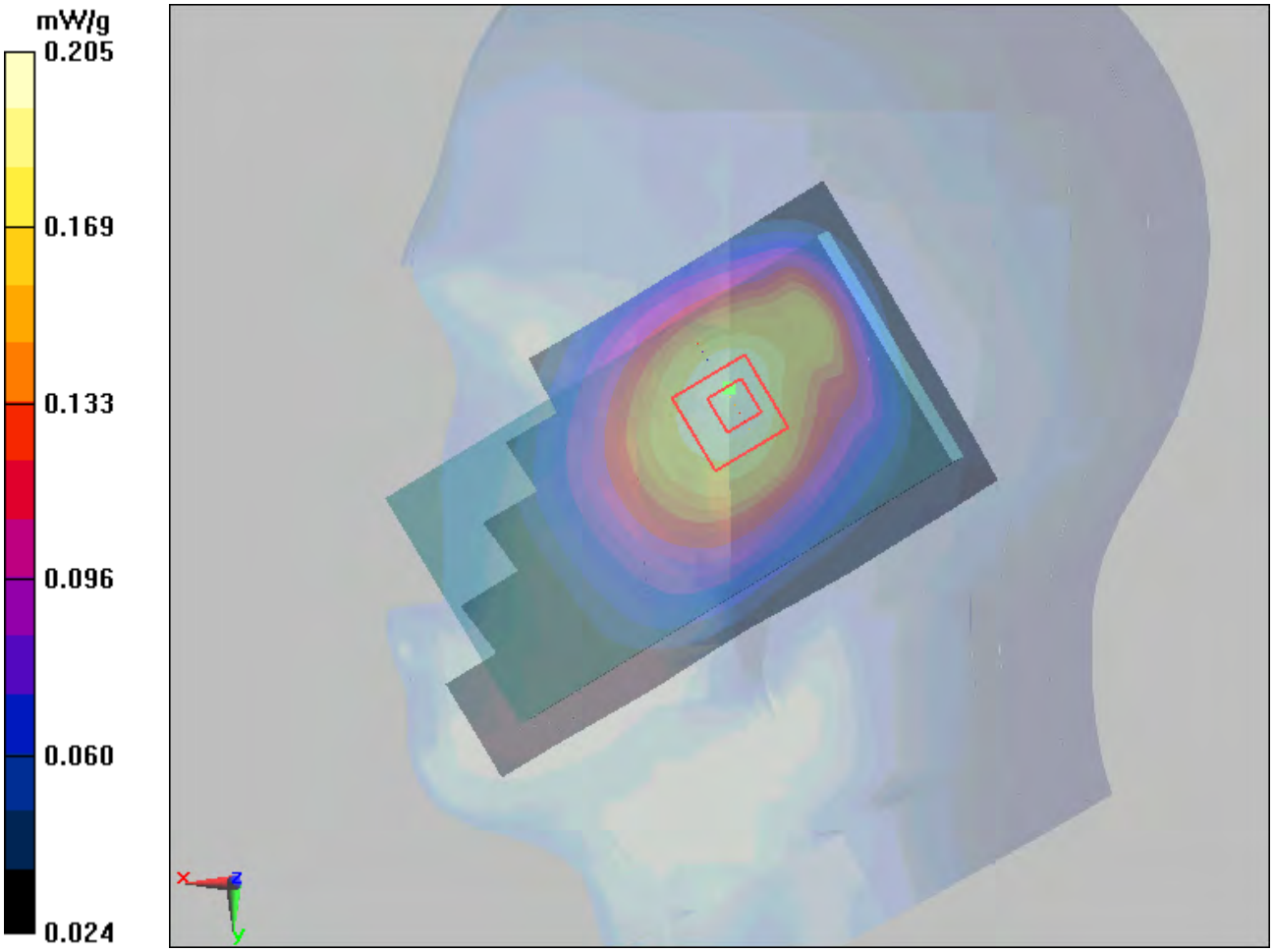
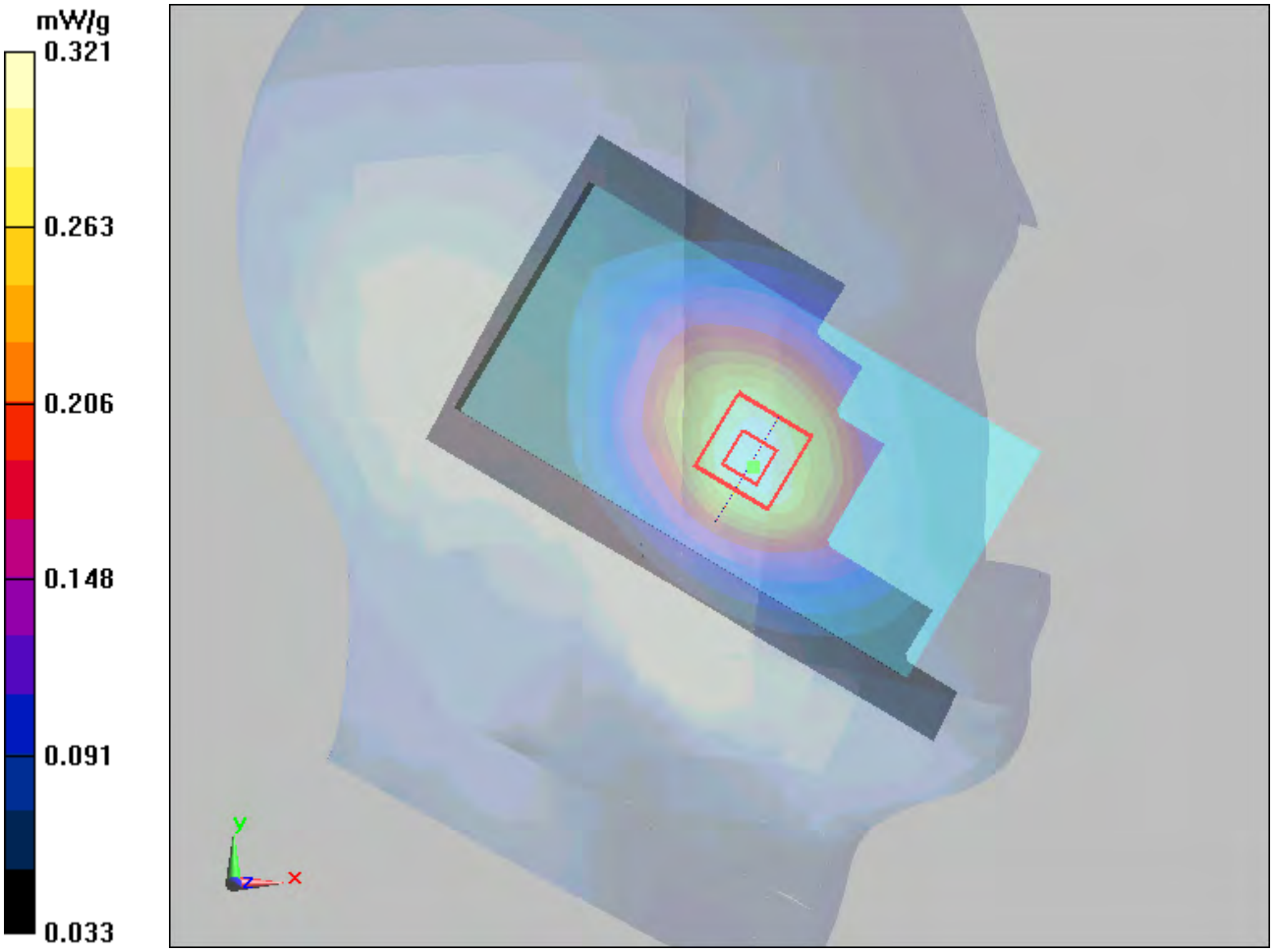


Figure 79 Right Hand Tilt 15° UMTS Band V Channel 4183

UMTS Band V Left Cheek Middle (Battery 2)

Date/Time: 1/16/2013 12:57:56 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.319 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.99 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 0.391 W/kg
SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.230 mW/g
Maximum value of SAR (measured) = 0.321 mW/g



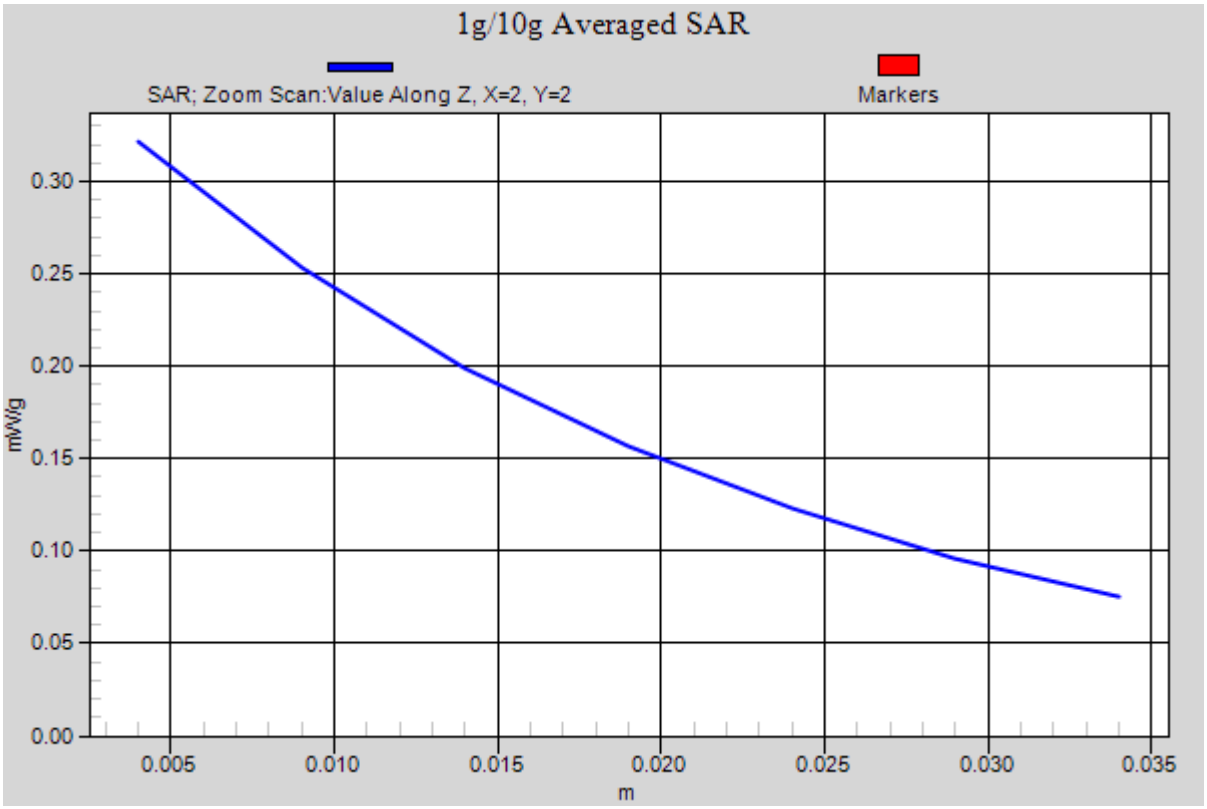


Figure 80 Left Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Left Cheek Middle (Battery 3)

Date/Time: 1/16/2013 1:14:26 AM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.918 mho/m; ε_r = 41.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.317 mW/g
Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.92 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 0.389 W/kg
SAR(1 g) = 0.305 mW/g; SAR(10 g) = 0.230 mW/g
Maximum value of SAR (measured) = 0.320 mW/g

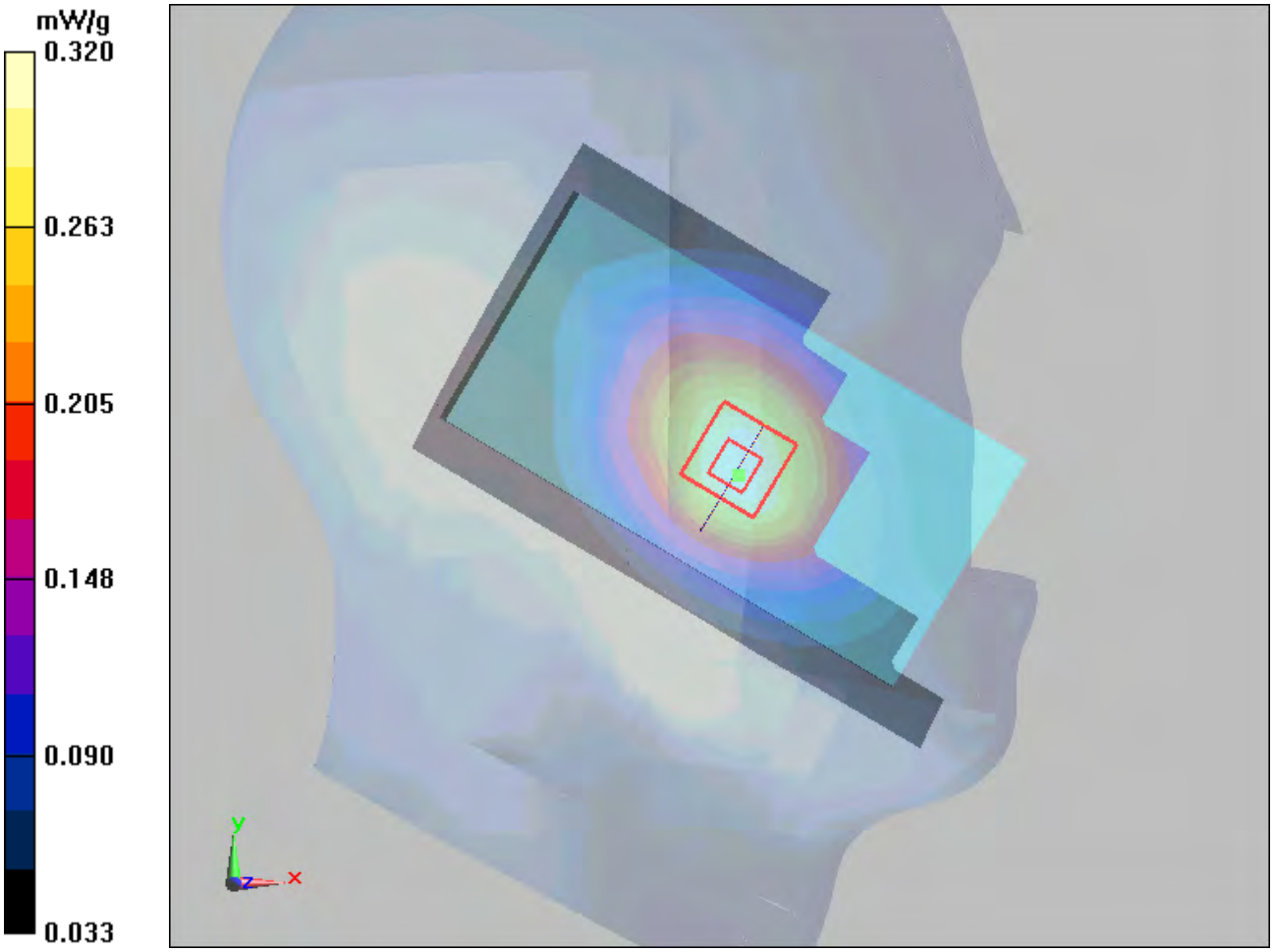


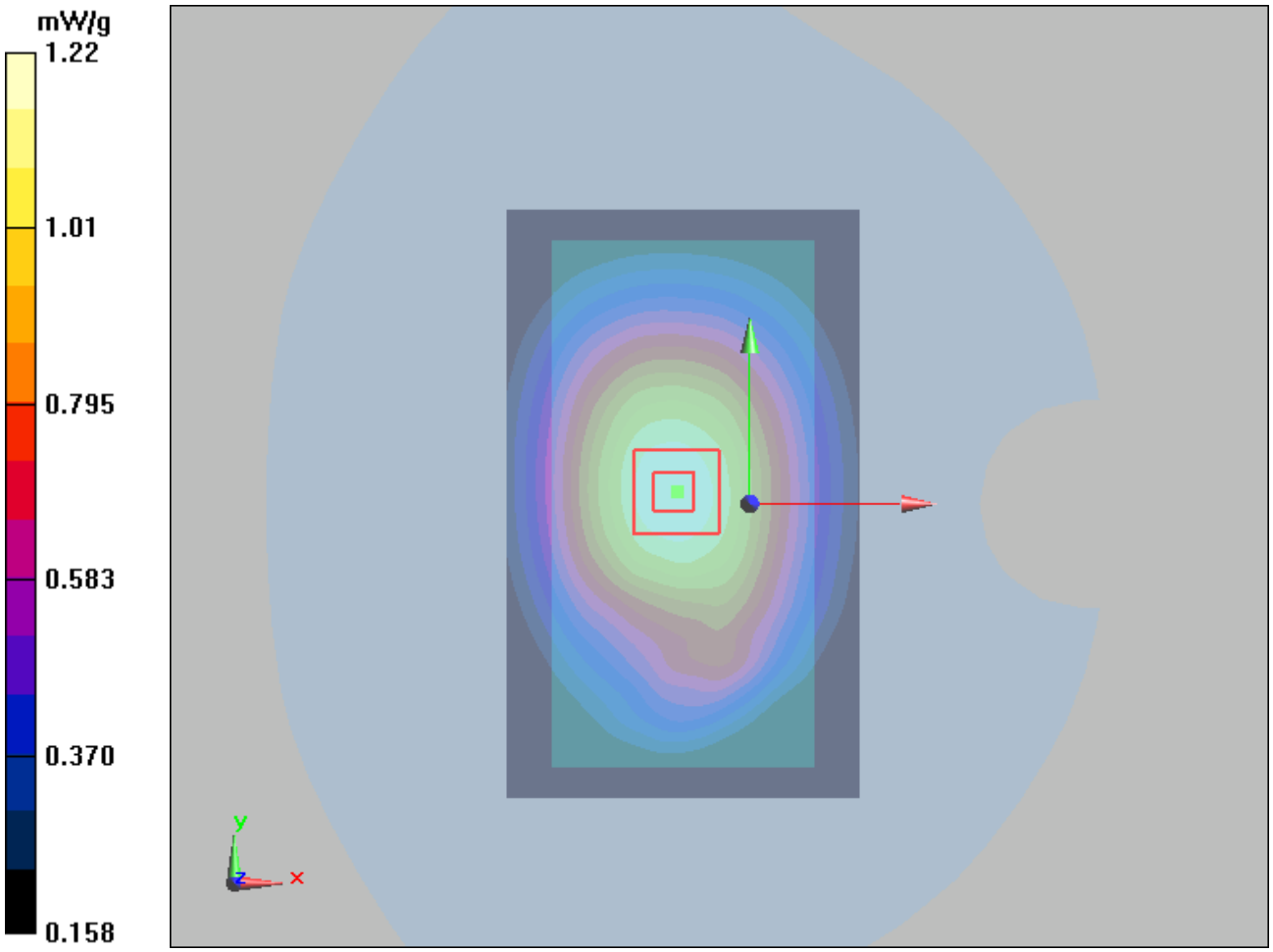
Figure 81 Left Hand Touch Cheek UMTS Band V Channel 4183

UMTS Band V Back Side High (Battery 1)

Date/Time: 1/16/2013 6:04:39 PM
Communication System: WCDMA ; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.22 mW/g

Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.8 V/m; Power Drift = 0.111 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.16 mW/g; SAR(10 g) = 0.881 mW/g
Maximum value of SAR (measured) = 1.22 mW/g



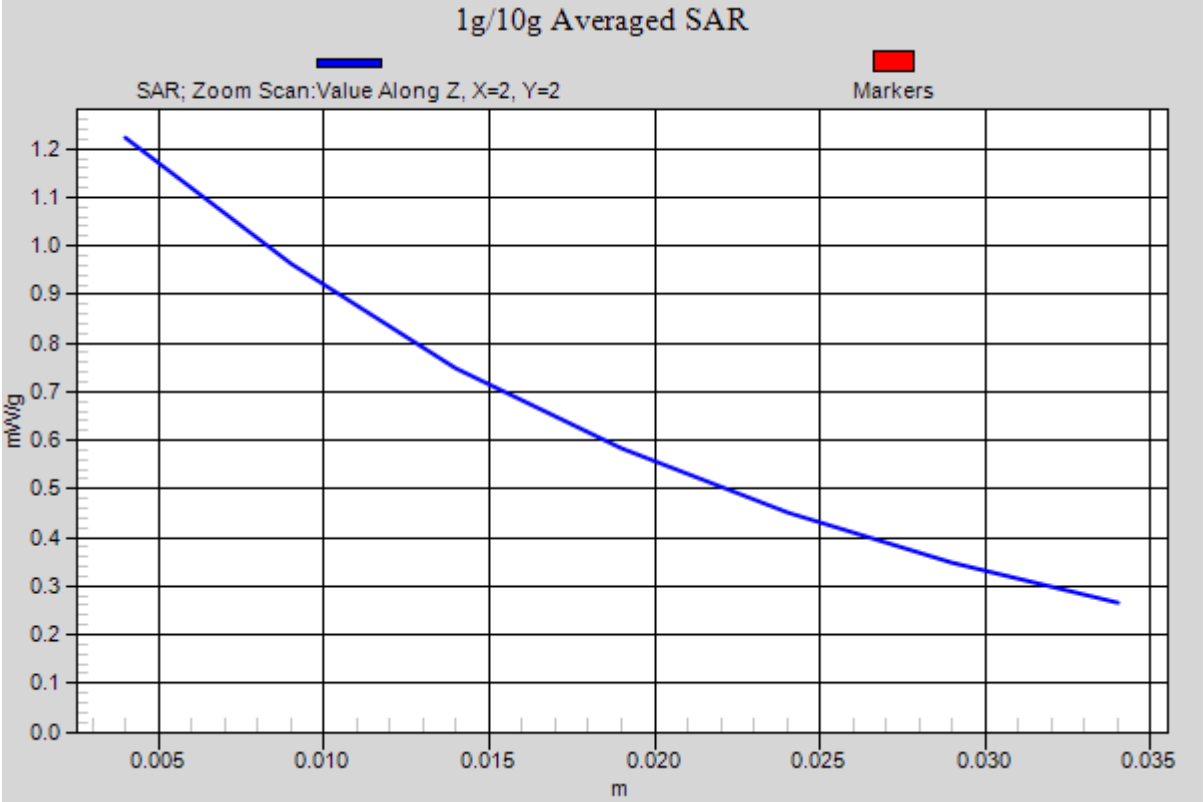


Figure 82 Body, Back Side, UMTS Band V Channel 4233

UMTS Band V Back Side Middle (Battery 1)

Date/Time: 1/16/2013 10:15:49 PM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.800 mW/g
Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 28.4 V/m; Power Drift = -0.042 dB
Peak SAR (extrapolated) = 0.940 W/kg
SAR(1 g) = 0.755 mW/g; SAR(10 g) = 0.573 mW/g
Maximum value of SAR (measured) = 0.792 mW/g

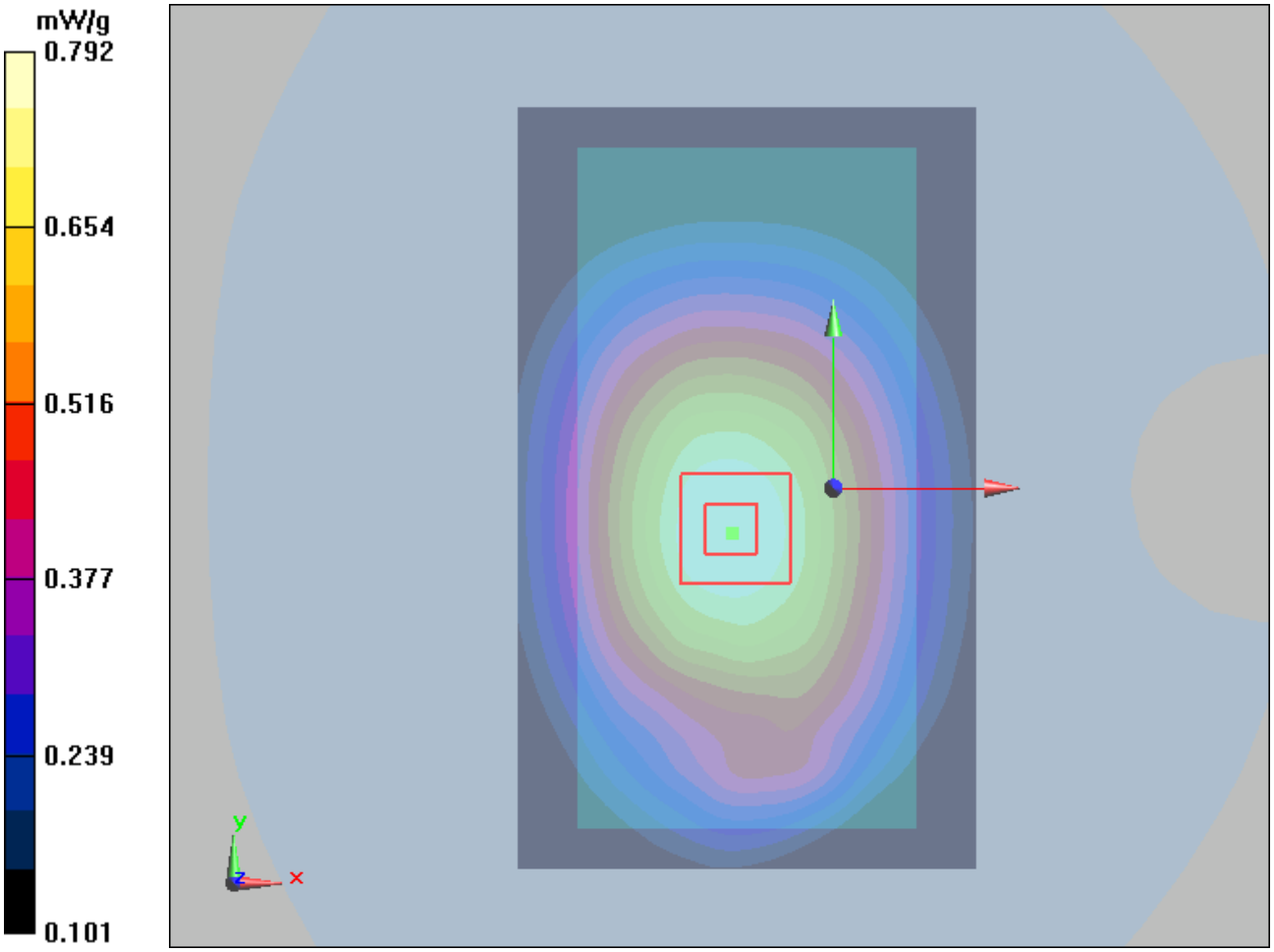


Figure 83 Body, Back Side, UMTS Band V Channel 4183

UMTS Band V Back Side Low (Battery 1)

Date/Time: 1/16/2013 6:00:39 PM
Communication System: WCDMA ; Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.98 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.956 mW/g
Back Side Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.7 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.921 mW/g; SAR(10 g) = 0.698 mW/g
Maximum value of SAR (measured) = 0.965 mW/g

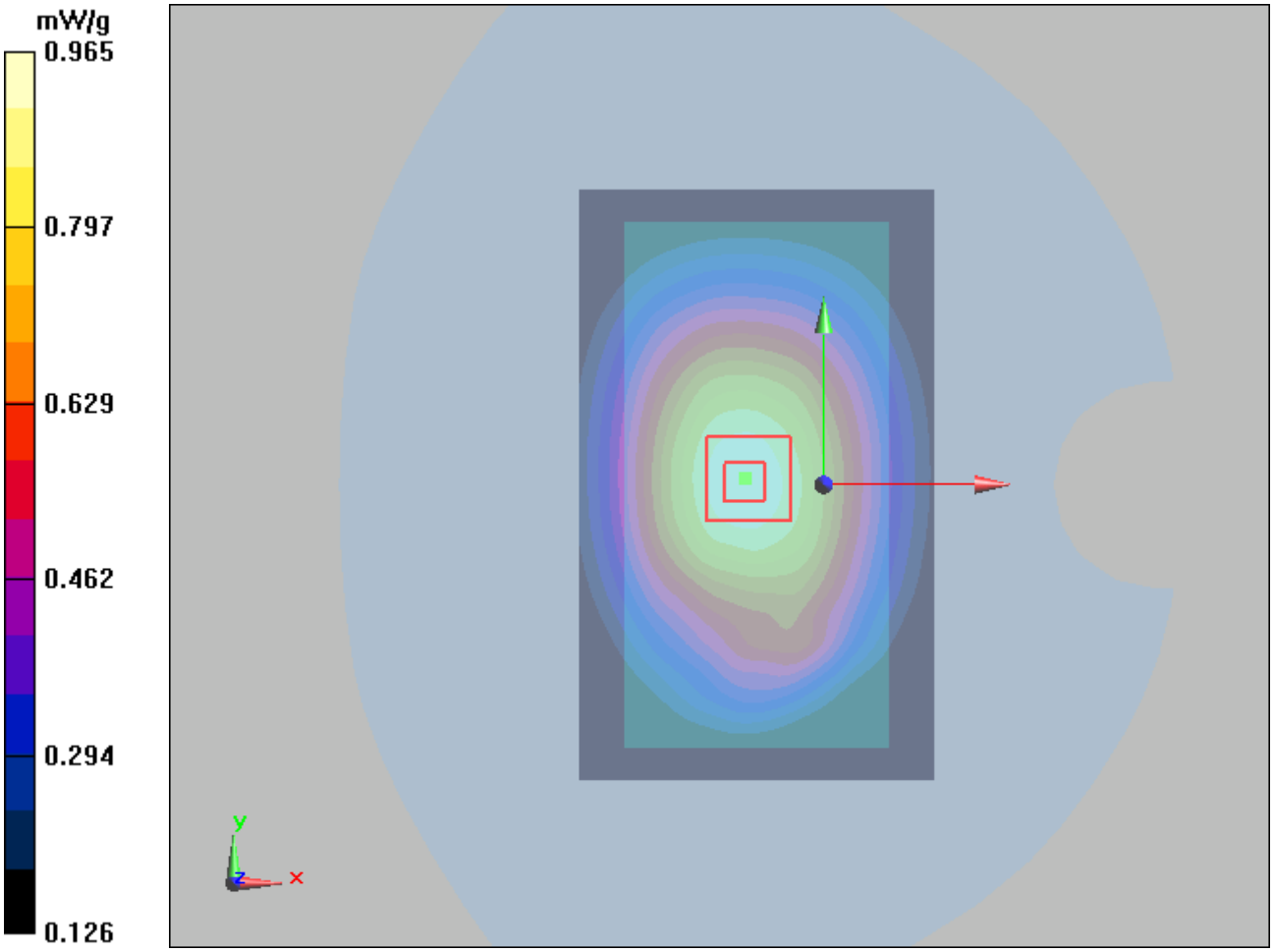


Figure 84 Body, Back Side, UMTS Band V Channel 4132

UMTS Band V Front Side Middle (Battery 1)

Date/Time: 1/16/2013 8:36:27 PM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.418 mW/g
Front Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 20.9 V/m; Power Drift = -0.040 dB
Peak SAR (extrapolated) = 0.485 W/kg
SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.304 mW/g
Maximum value of SAR (measured) = 0.414 mW/g

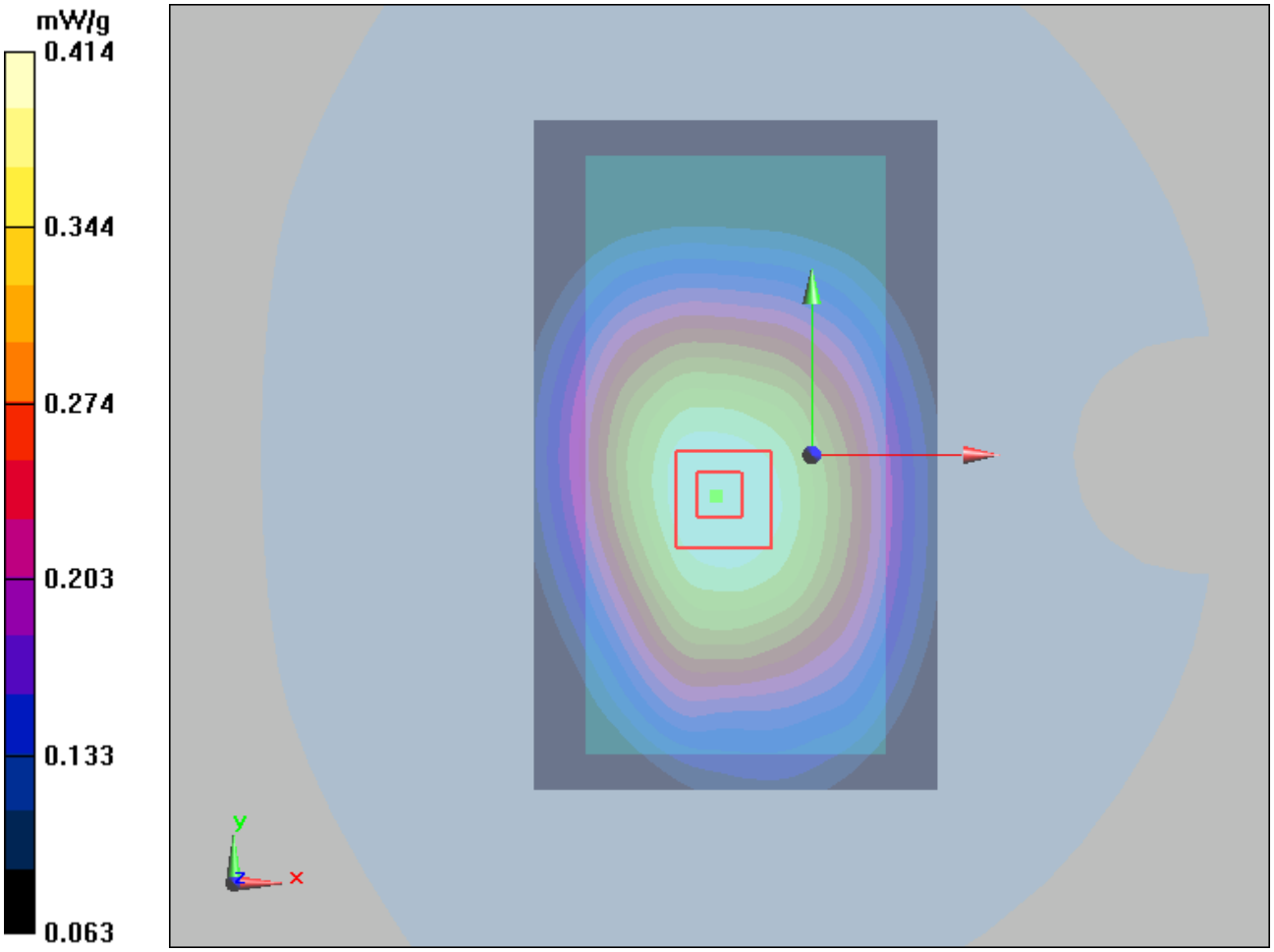


Figure 85 Body, Front Side, UMTS Band V Channel 4183

UMTS Band V Left Edge Middle (Battery 1)

Date/Time: 1/16/2013 8:56:09 PM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.297 mW/g
Left Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.6 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 0.391 W/kg
SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.198 mW/g
Maximum value of SAR (measured) = 0.301 mW/g

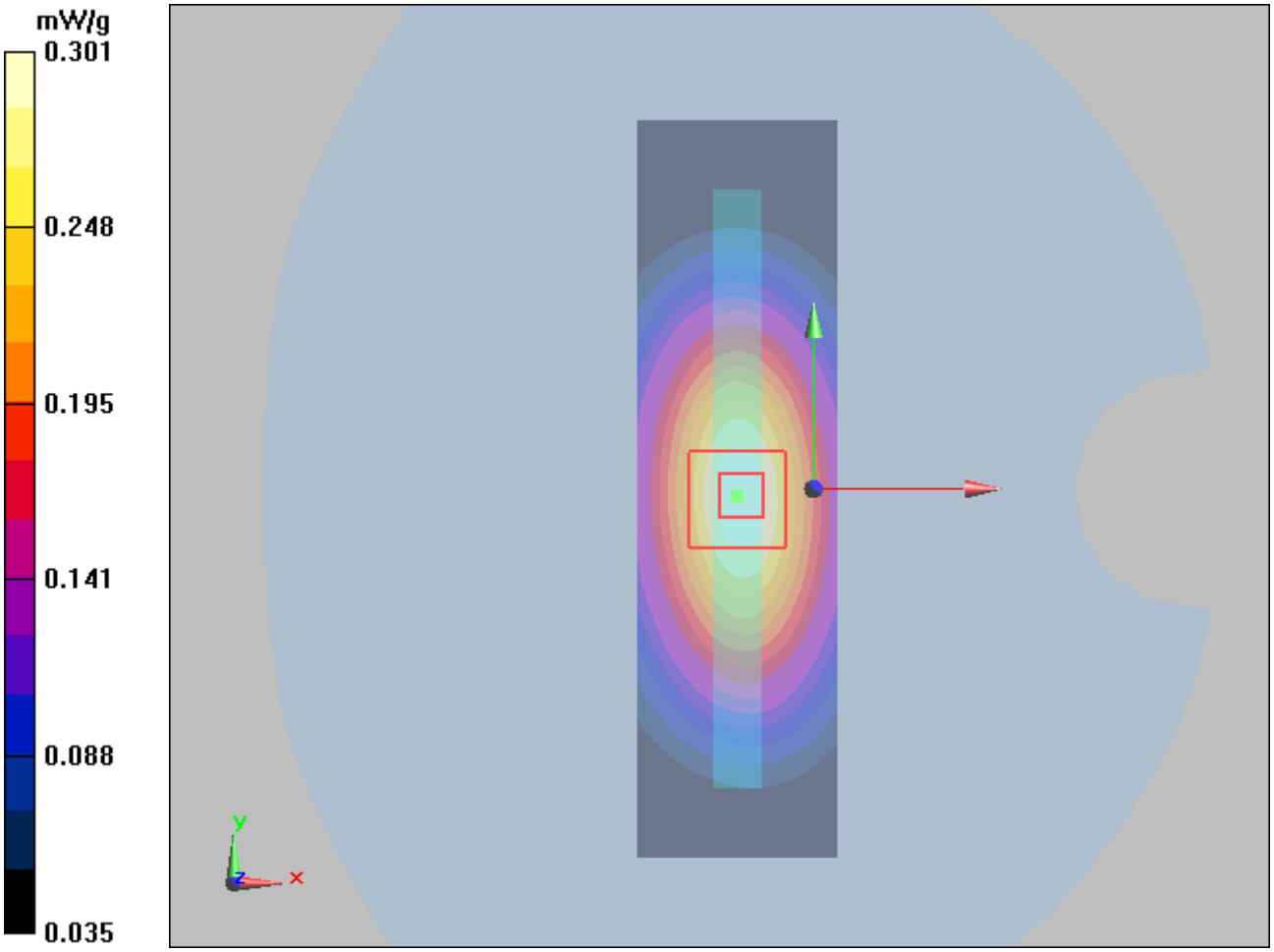


Figure 86 Body, Left Edge, UMTS Band V Channel 4183

UMTS Band V Right Edge Middle (Battery 1)

Date/Time: 1/16/2013 9:13:49 PM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x111x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.225 mW/g
Right Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.2 V/m; Power Drift = -0.100 dB
Peak SAR (extrapolated) = 0.296 W/kg
SAR(1 g) = 0.211 mW/g; SAR(10 g) = 0.145 mW/g
Maximum value of SAR (measured) = 0.226 mW/g

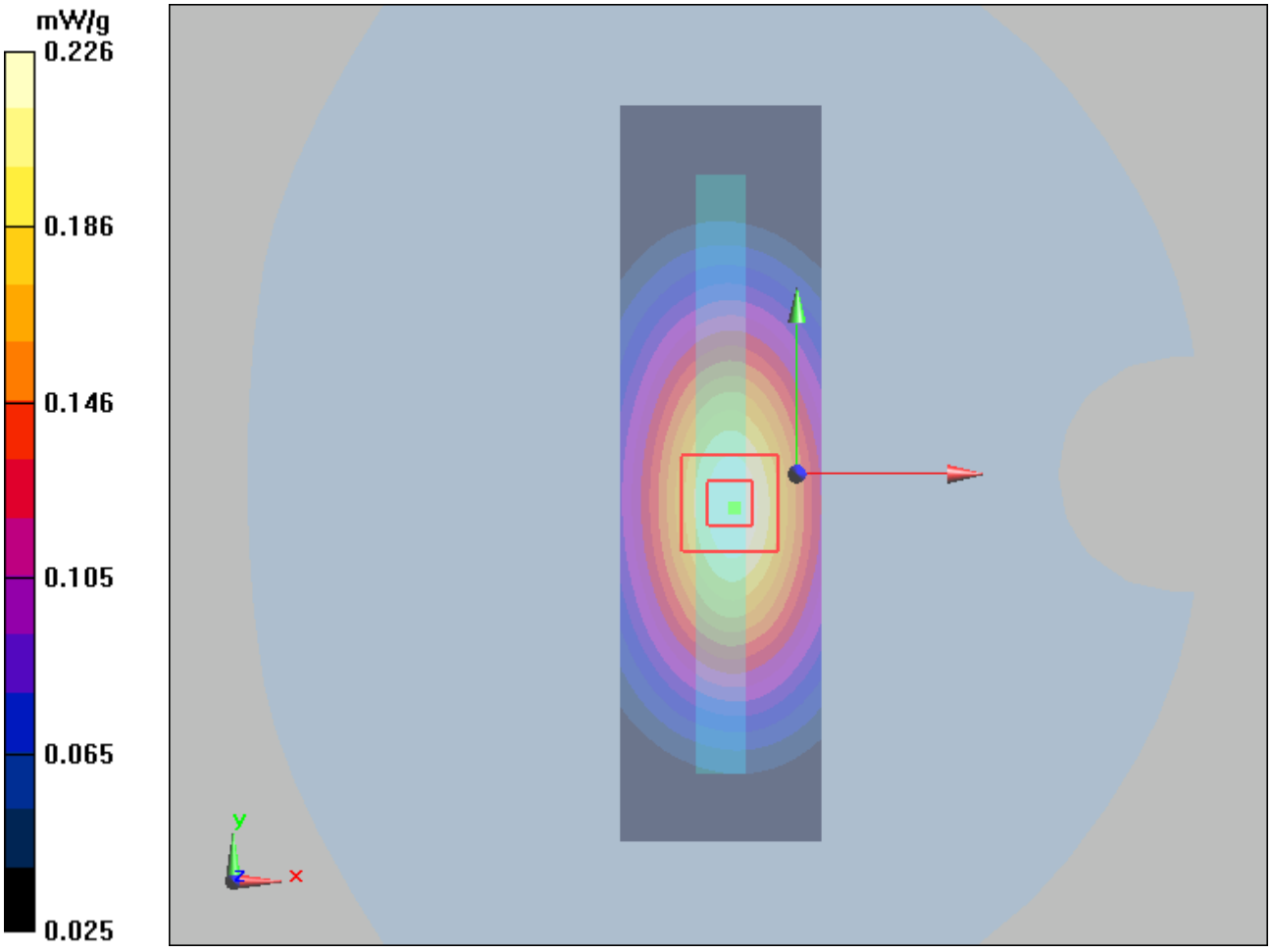


Figure 87 Body, Right Edge, UMTS Band V Channel 4183

UMTS Band V Bottom Edge Middle (Battery 1)

Date/Time: 1/16/2013 9:53:29 PM
Communication System: WCDMA ; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 837 MHz; σ = 0.992 mho/m; ε_r = 55.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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) = 0.054 mW/g
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.13 V/m; Power Drift = 0.076 dB
Peak SAR (extrapolated) = 0.081 W/kg
SAR(1 g) = 0.048 mW/g; SAR(10 g) = 0.028 mW/g
Maximum value of SAR (measured) = 0.053 mW/g

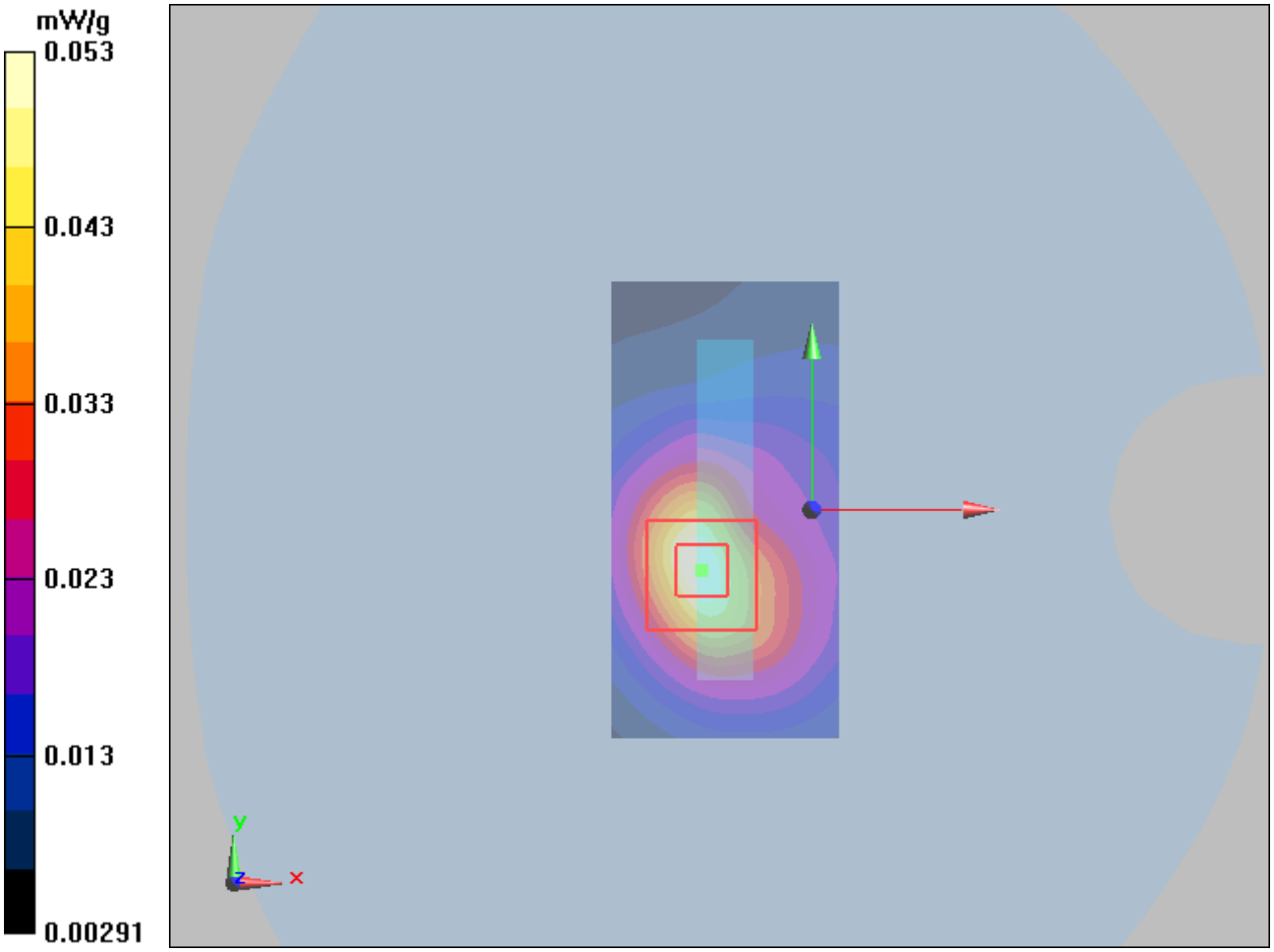


Figure 88 Body, Bottom Edge, UMTS Band V Channel 4183

UMTS Band V with Earphone Back Side High (Battery 1)

Date/Time: 1/16/2013 6:37:52 PM
Communication System: WCDMA ; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59
Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.923 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.4 V/m; Power Drift = 0.128 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.503 mW/g
Maximum value of SAR (measured) = 0.852 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 30.4 V/m; Power Drift = 0.128 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.890 mW/g; SAR(10 g) = 0.671 mW/g
Maximum value of SAR (measured) = 0.932 mW/g

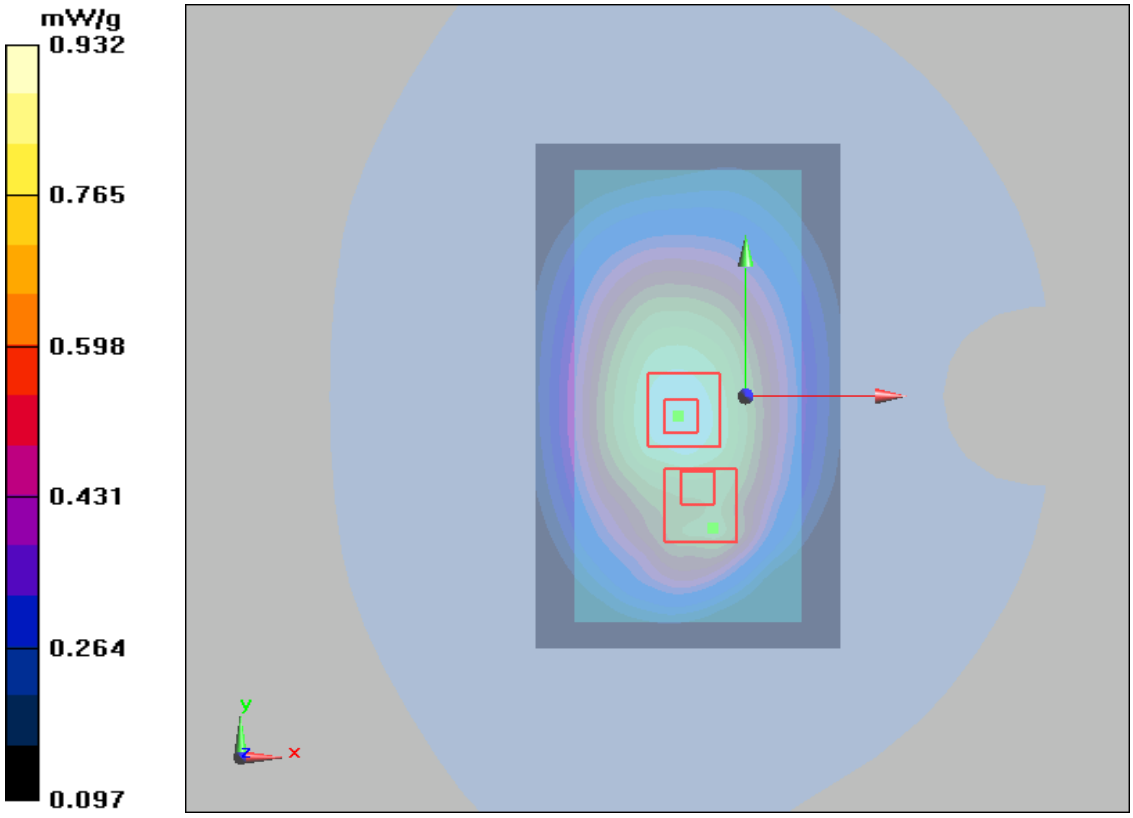


Figure 89 Body with Earphone, Back Side, UMTS Band V Channel 4233

UMTS Band V Back Side High (Battery 2)

Date/Time: 1/16/2013 10:44:04 PM
Communication System: WCDMA ; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.2 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.4 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.868 mW/g
Maximum value of SAR (measured) = 1.21 mW/g

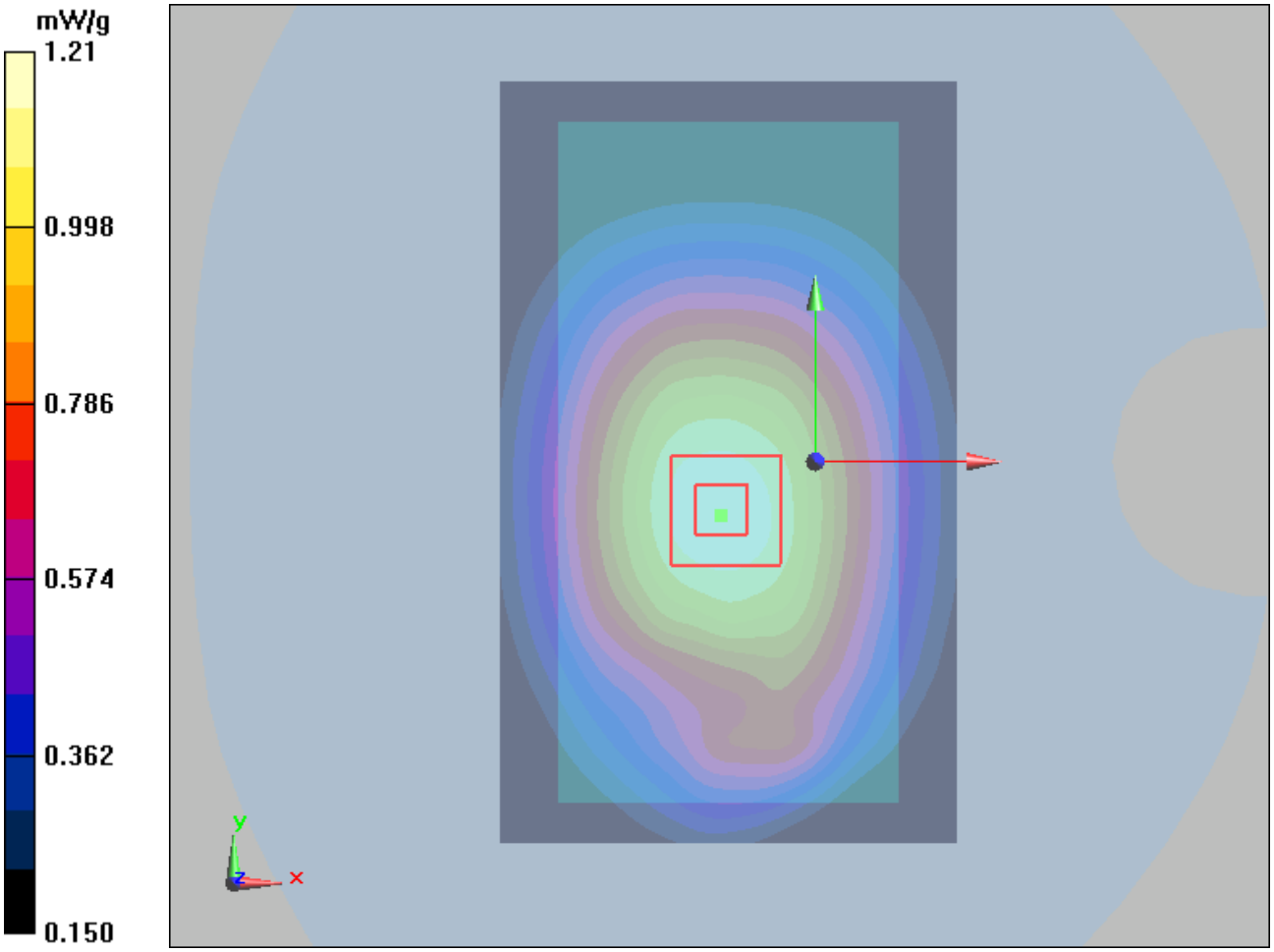


Figure 90 Body, Back Side, UMTS Band V Channel 4233

UMTS Band V Back Side High (Battery 3)

Date/Time: 1/16/2013 11:01:58 PM
Communication System: WCDMA ; Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 55.8; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.2 mW/g
Back Side High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 34.6 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.866 mW/g
Maximum value of SAR (measured) = 1.2 mW/g

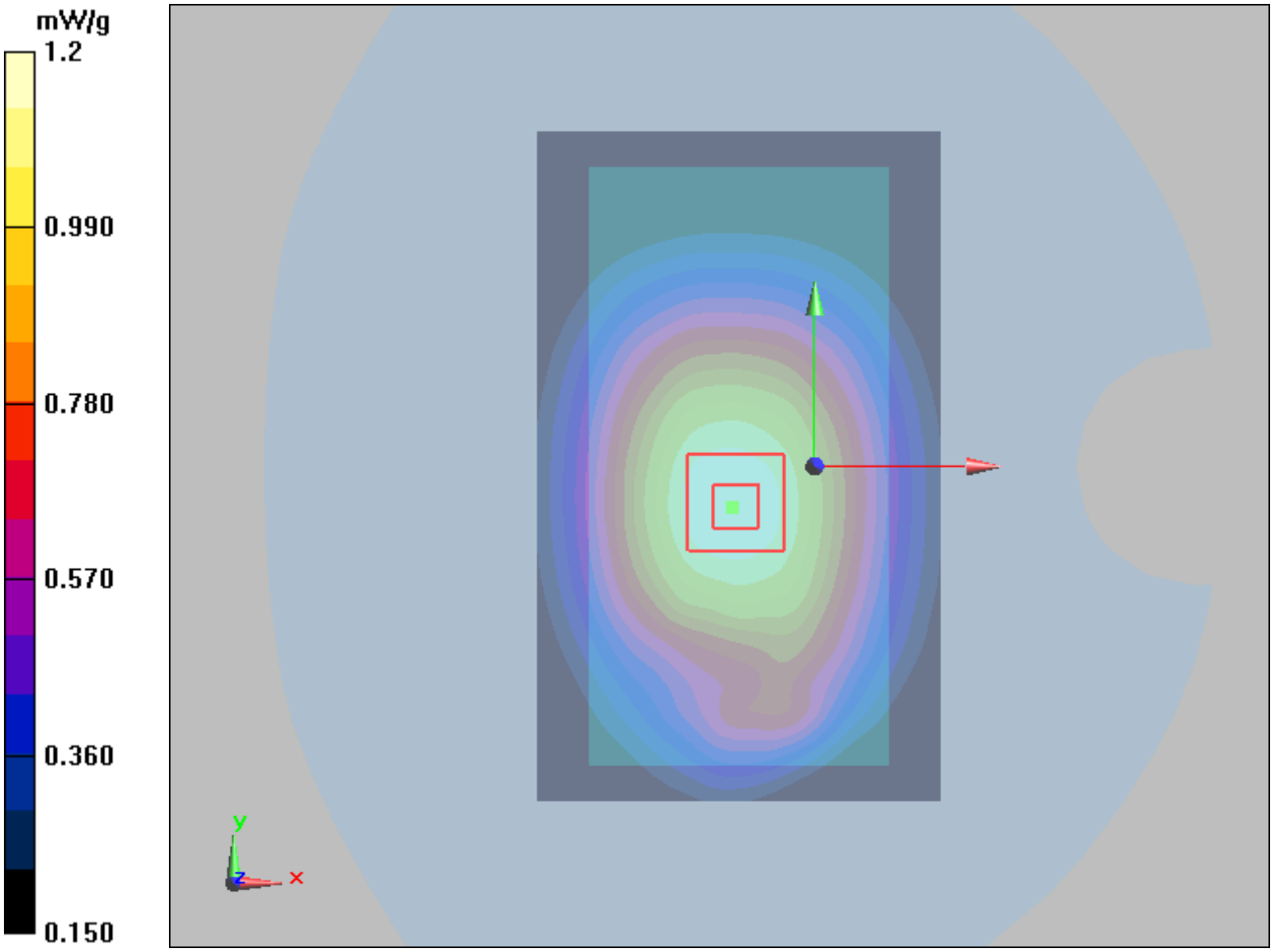


Figure 91 Body, Back Side, UMTS Band V Channel 4233

802.11b Left Cheek High(Battery 1)

Date/Time: 1/15/2013 5:29:12 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.127 mW/g
Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.45 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.253 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.046 mW/g
Maximum value of SAR (measured) = 0.118 mW/g

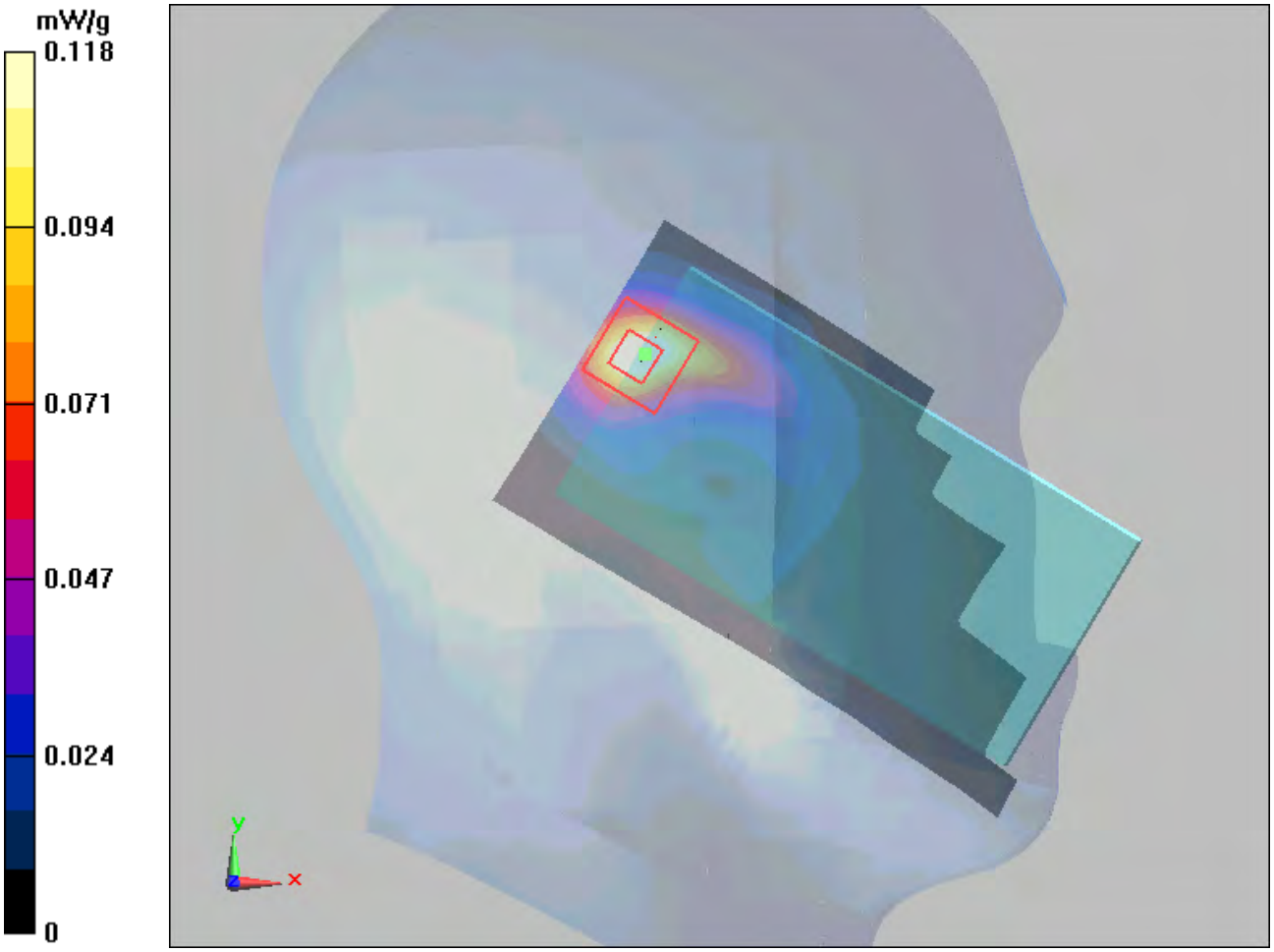


Figure 92 Left Hand Touch Cheek 802.11b Channel 11

802.11b Left Tilt High(Battery 1)

Date/Time: 1/15/2013 6:01:29 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.159 mW/g
Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.16 V/m; Power Drift = 0.188 dB
Peak SAR (extrapolated) = 0.325 W/kg
SAR(1 g) = 0.138 mW/g; SAR(10 g) = 0.059 mW/g
Maximum value of SAR (measured) = 0.157 mW/g

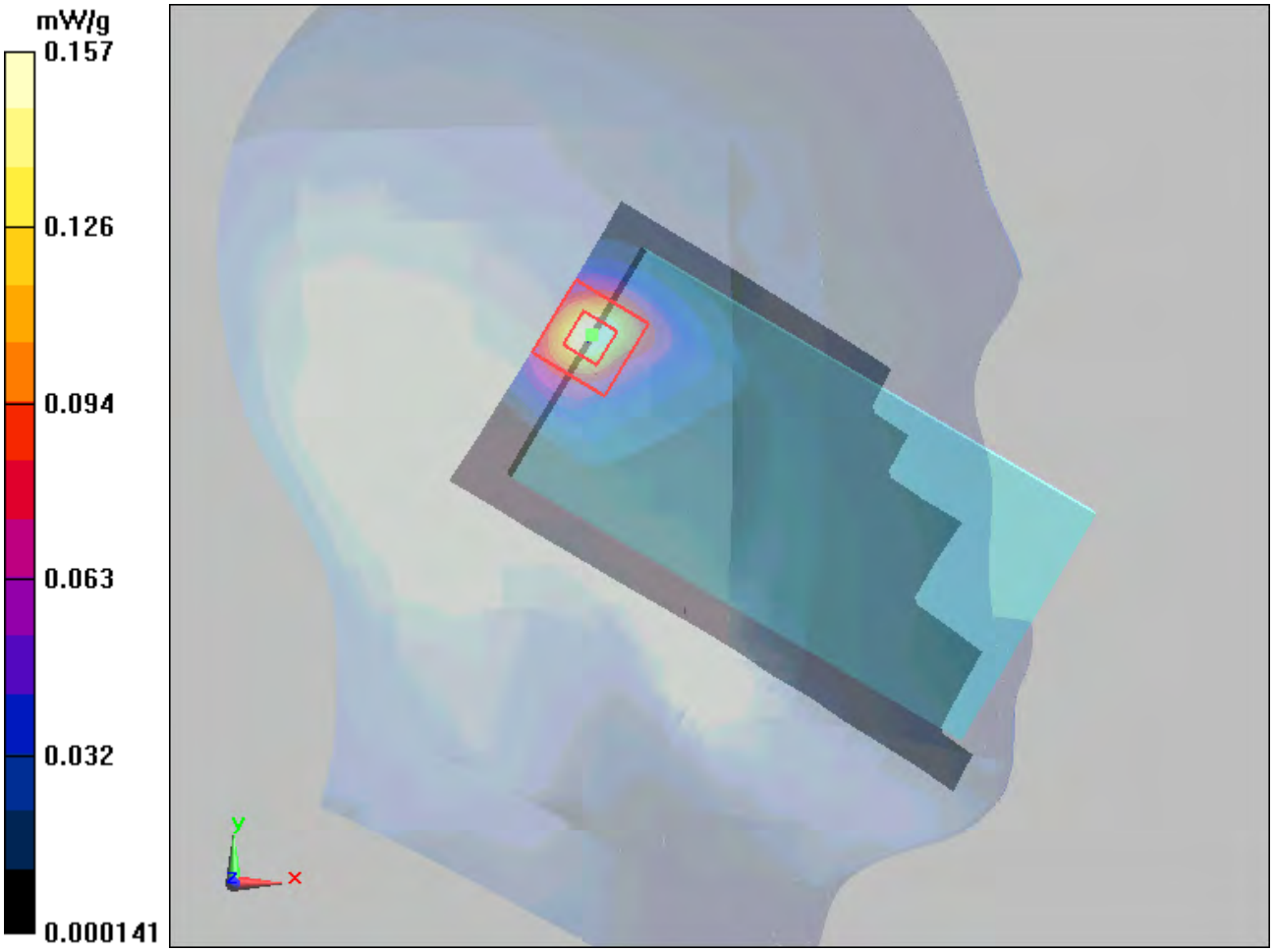


Figure 93 Left Hand Tilt 15° 802.11b Channel 11

802.11b Right Cheek High(Battery 1)

Date/Time: 1/15/2013 6:35:42 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.107 mW/g
Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.42 V/m; Power Drift = 0.083 dB
Peak SAR (extrapolated) = 0.219 W/kg
SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.106 mW/g

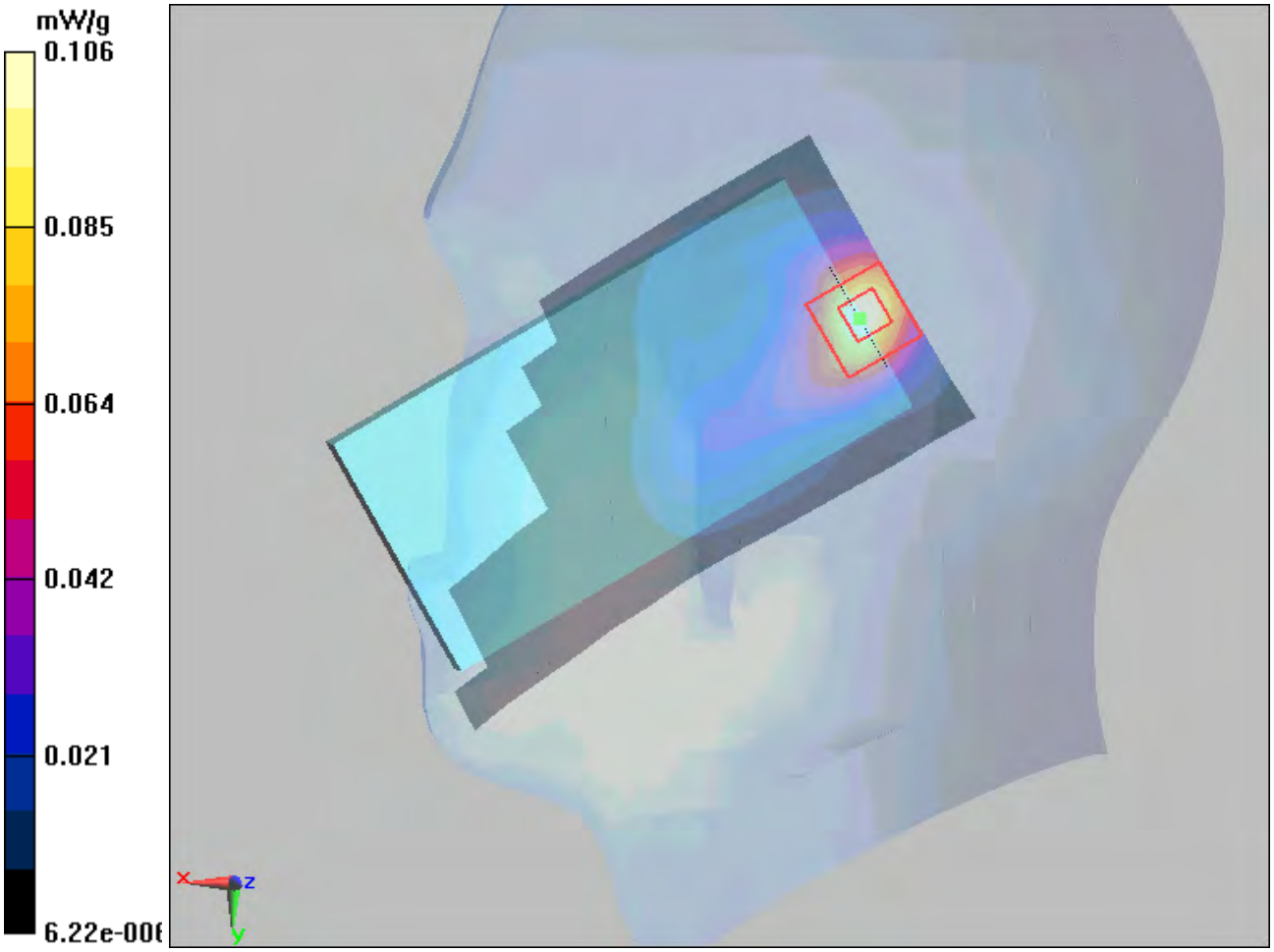


Figure 94 Right Hand Touch Cheek 802.11b Channel 11

802.11b Right Tilt High(Battery 1)

Date/Time: 1/15/2013 7:04:38 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.134 mW/g
Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.36 V/m; Power Drift = 0.108 dB
Peak SAR (extrapolated) = 0.263 W/kg
SAR(1 g) = 0.115 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.126 mW/g

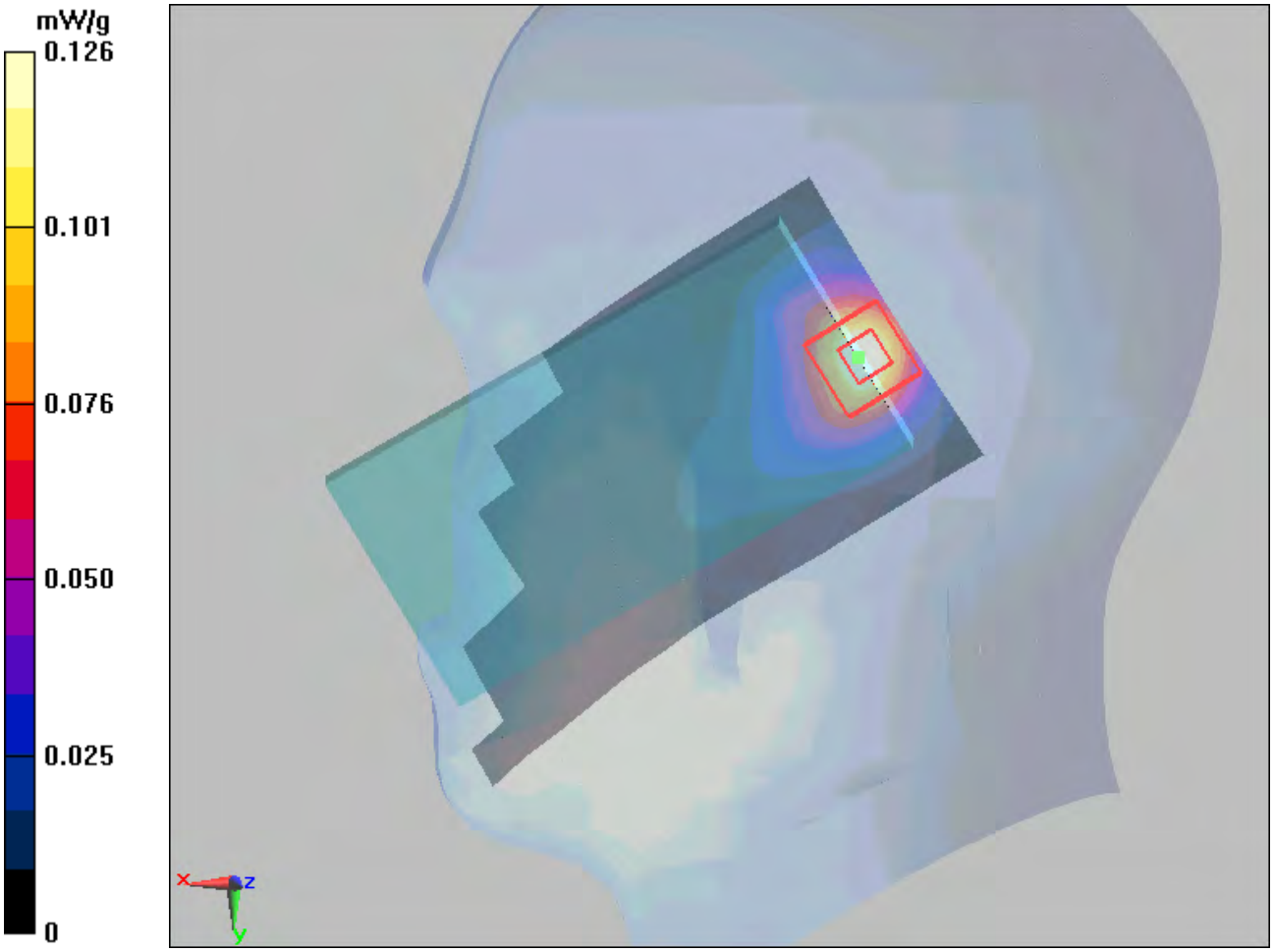


Figure 95 Right Hand Tilt 15° 802.11b Channel 11

802.11b Left Tilt High(Battery 2)

Date/Time: 1/15/2013 7:38:01 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.150 mW/g
Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.97 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.298 W/kg
SAR(1 g) = 0.125 mW/g; SAR(10 g) = 0.052 mW/g
Maximum value of SAR (measured) = 0.147 mW/g

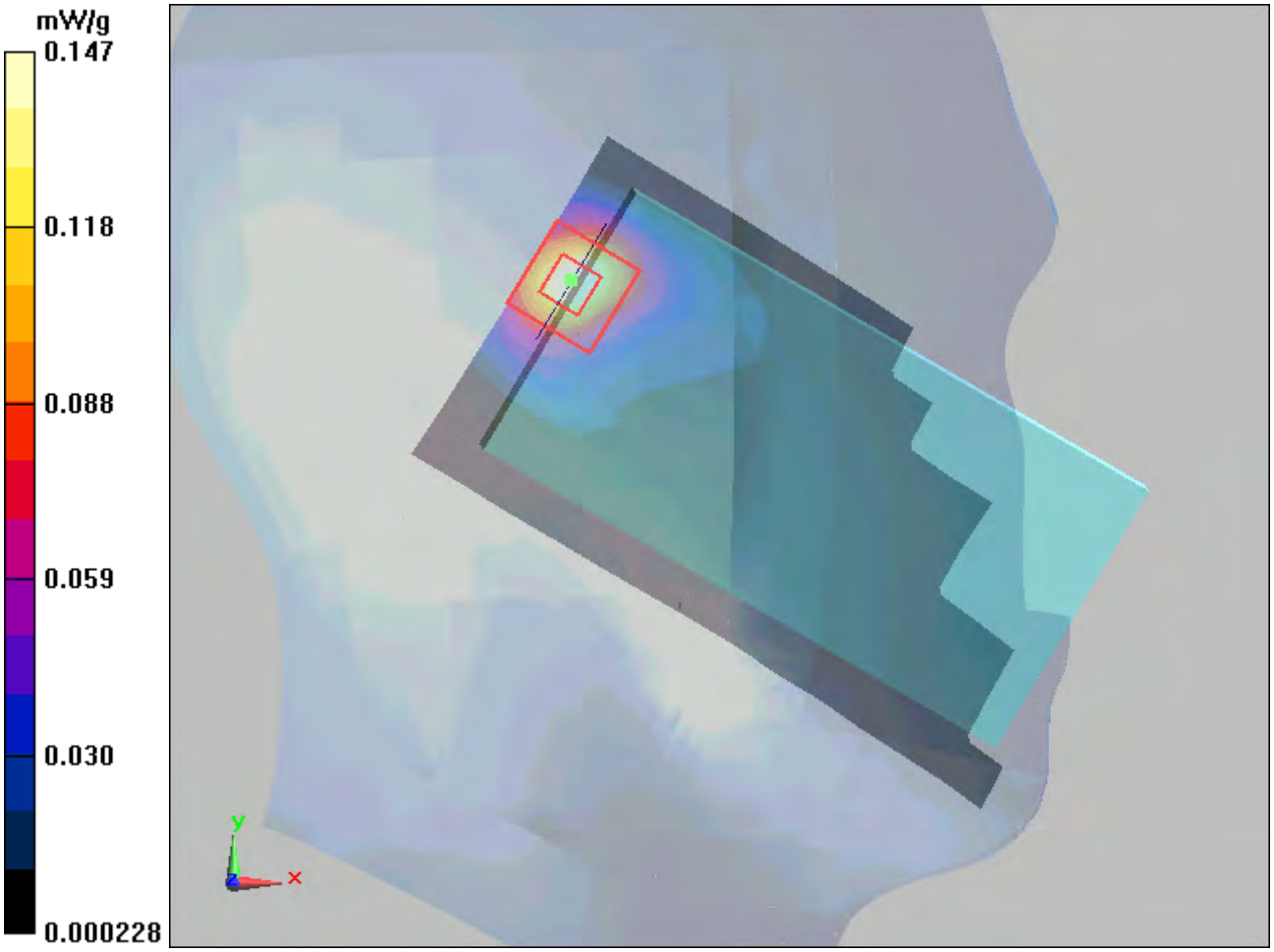
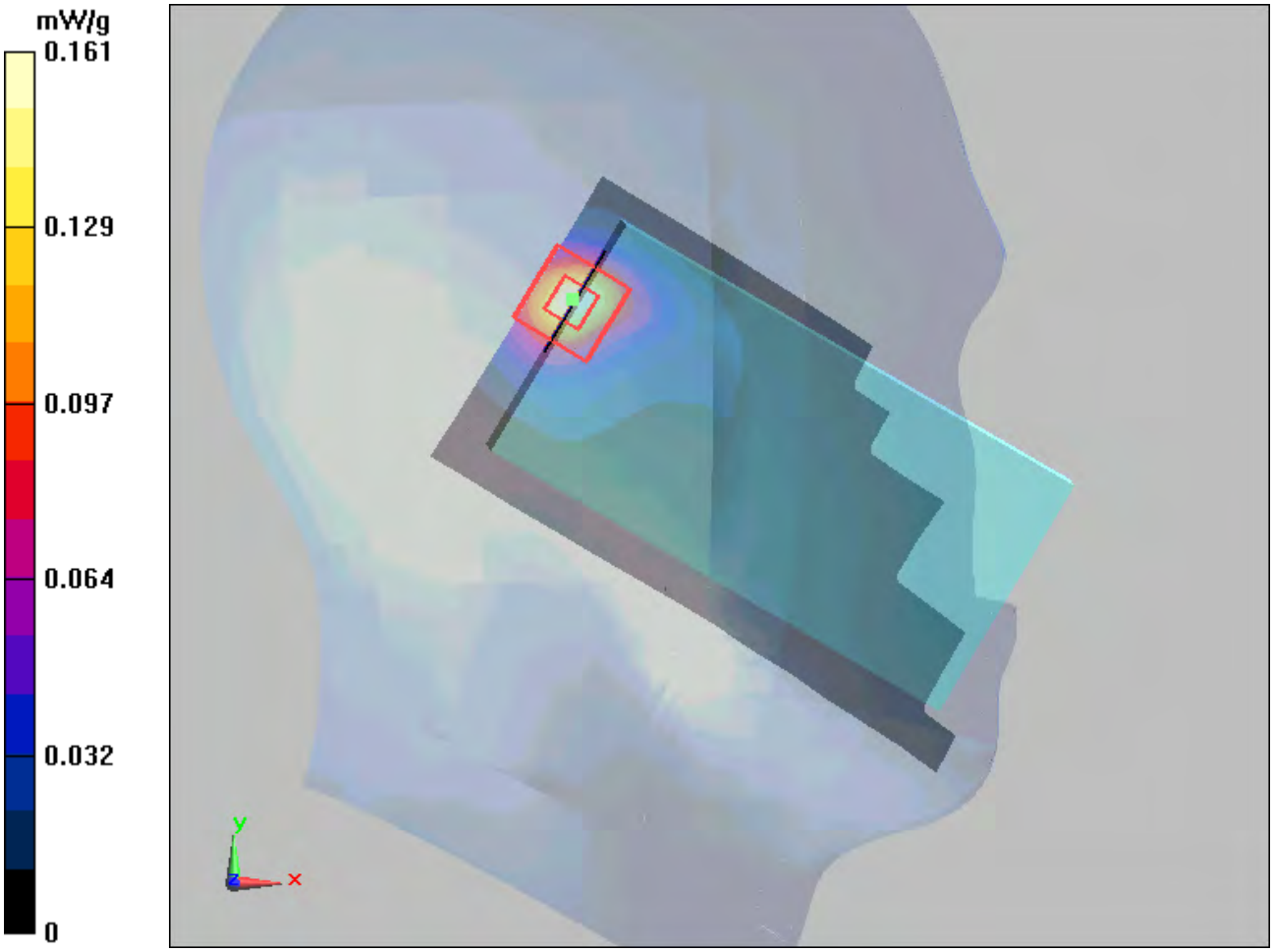


Figure 96 Left Hand Tilt 15° 802.11b Channel 11

802.11b Left Tilt High(Battery 3)

Date/Time: 1/15/2013 8:09:09 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.88 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (71x131x1): Measurement grid: dx=12mm, dy=12mm
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 = 6.42 V/m; Power Drift = 0.090 dB
Peak SAR (extrapolated) = 0.339 W/kg
SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.060 mW/g
Maximum value of SAR (measured) = 0.161 mW/g



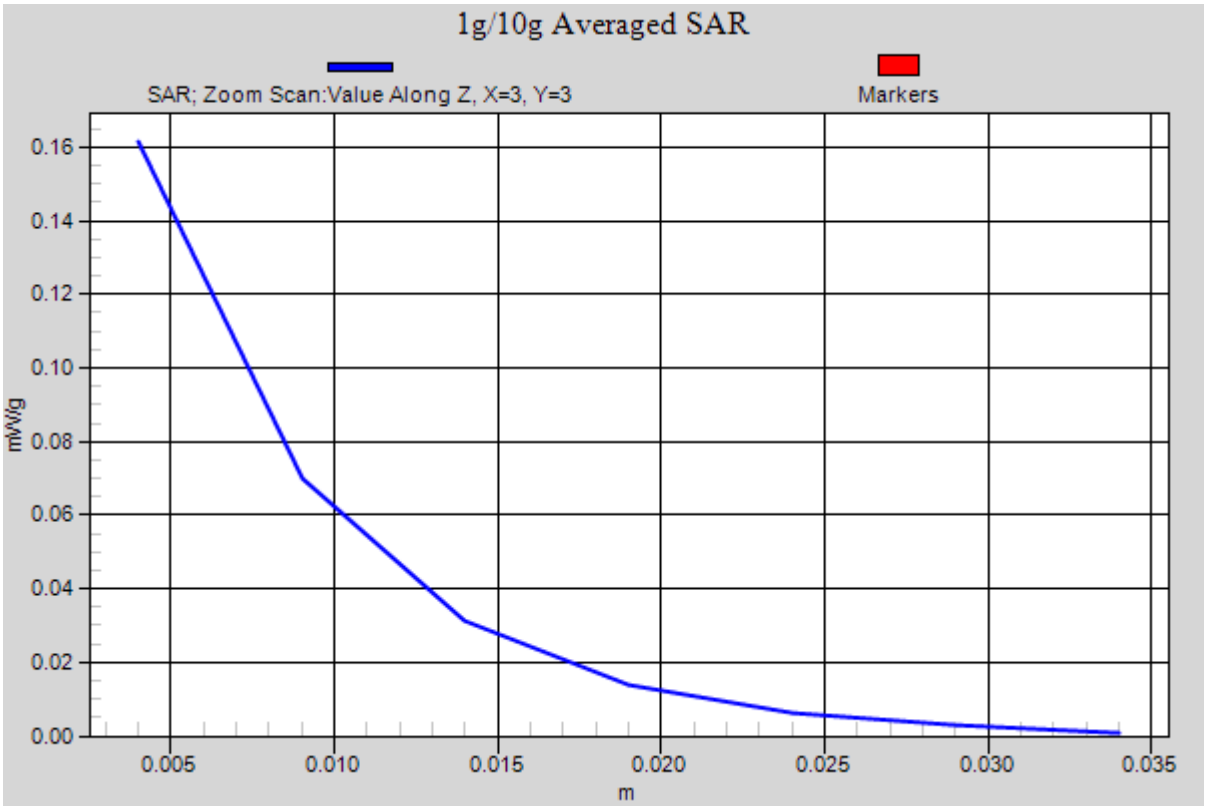


Figure 97 Left Hand Tilt 15° 802.11b Channel 11

802.11b Back Side High(Battery 1)

Date/Time: 1/24/2013 5:40:49 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x61x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.178 mW/g
Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.1 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 0.423 W/kg
SAR(1 g) = 0.176 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.199 mW/g

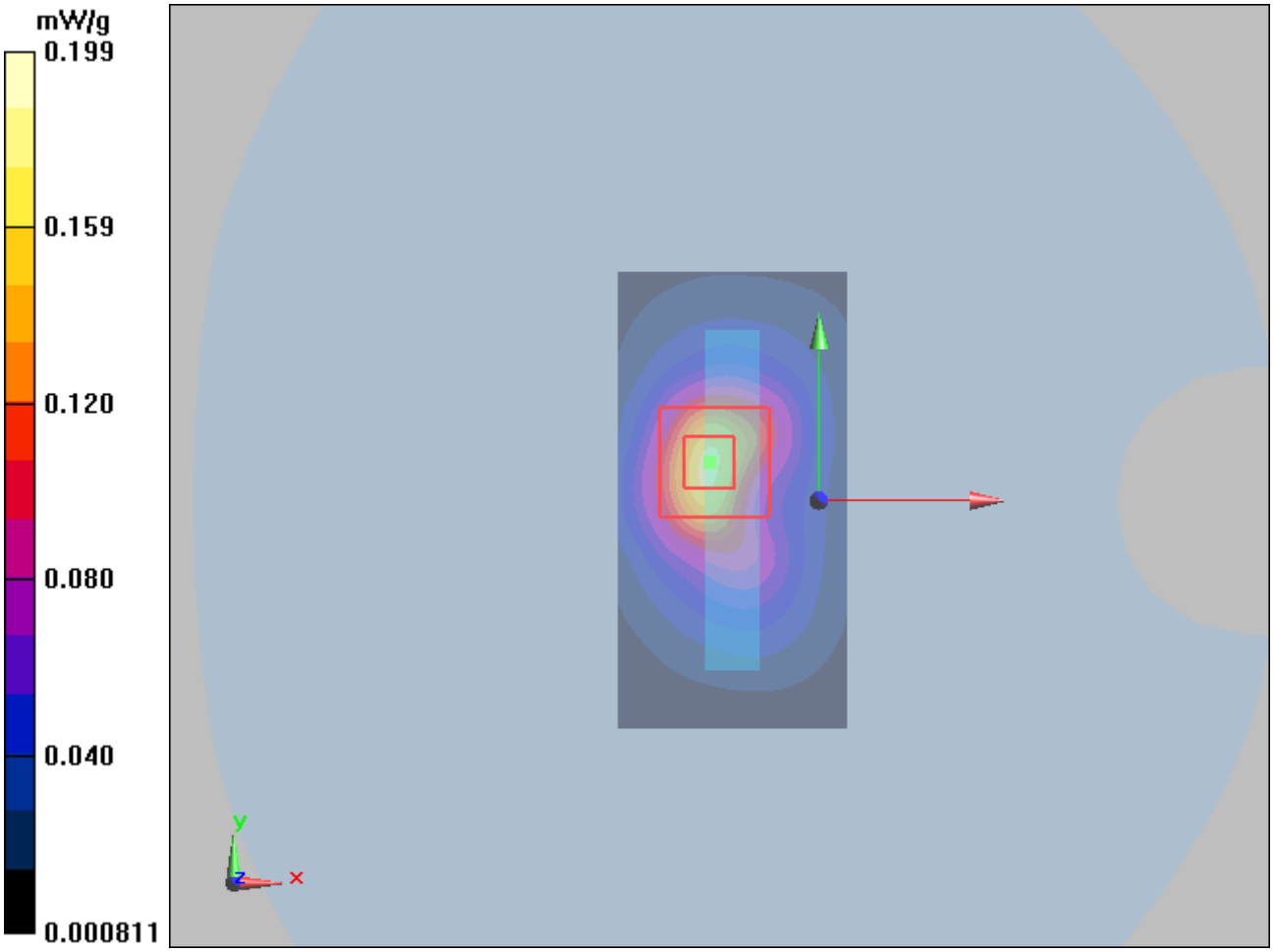


Figure 98 Body, Back Side, 802.11b Channel 11

802.11b Front Side High(Battery 1)

Date/Time: 1/24/2013 6:21:18 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.053 mW/g
Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.95 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.103 W/kg
SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.024 mW/g
Maximum value of SAR (measured) = 0.051 mW/g

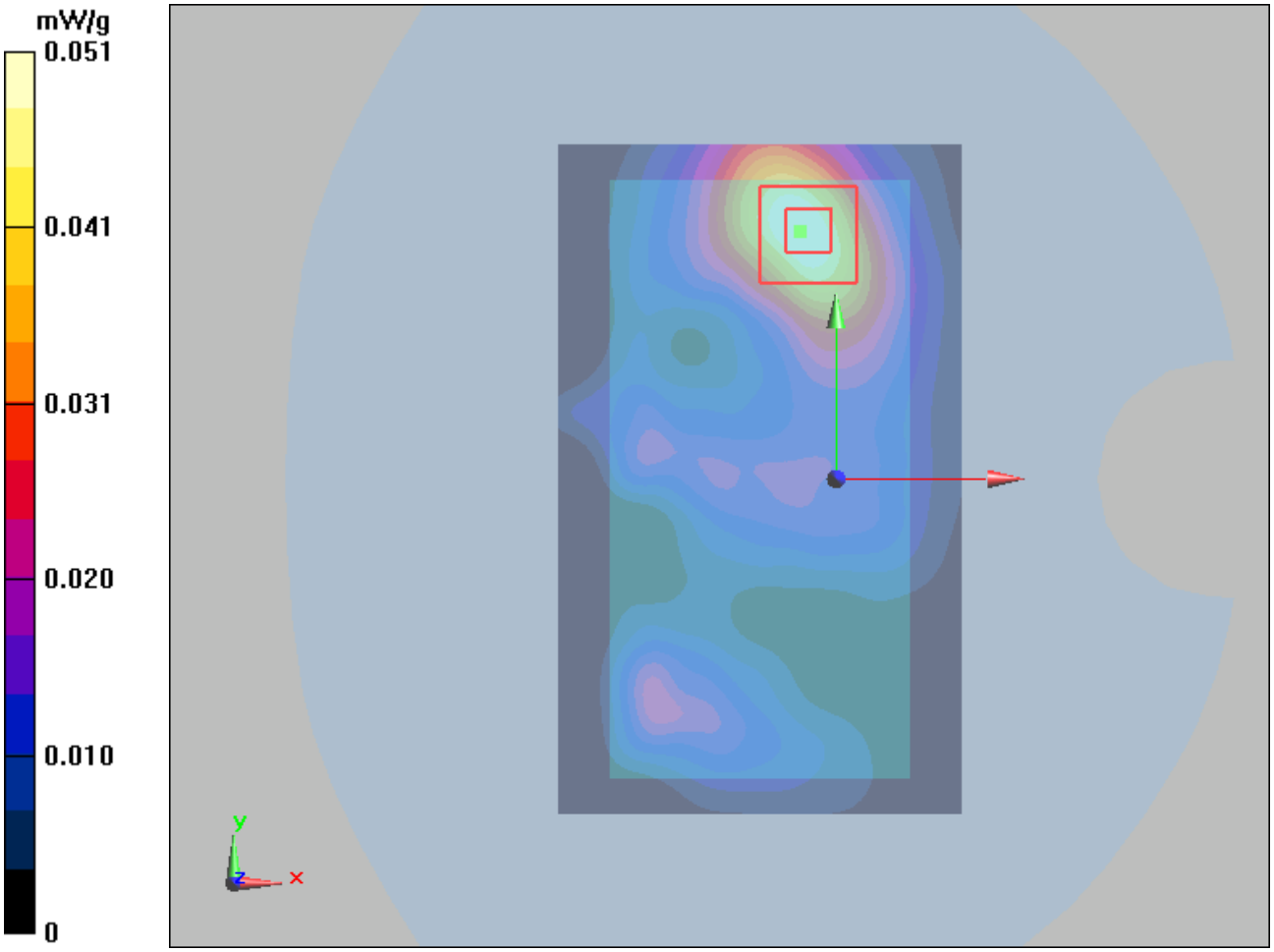


Figure 99 Body, Front Side, 802.11b Channel 11

802.11b Left Edge High(Battery 1)

Date/Time: 1/24/2013 6:57:56 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.021 mW/g
Left Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.19 V/m; Power Drift = 0.079 dB
Peak SAR (extrapolated) = 0.032 W/kg
SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.00767 mW/g
Maximum value of SAR (measured) = 0.018 mW/g

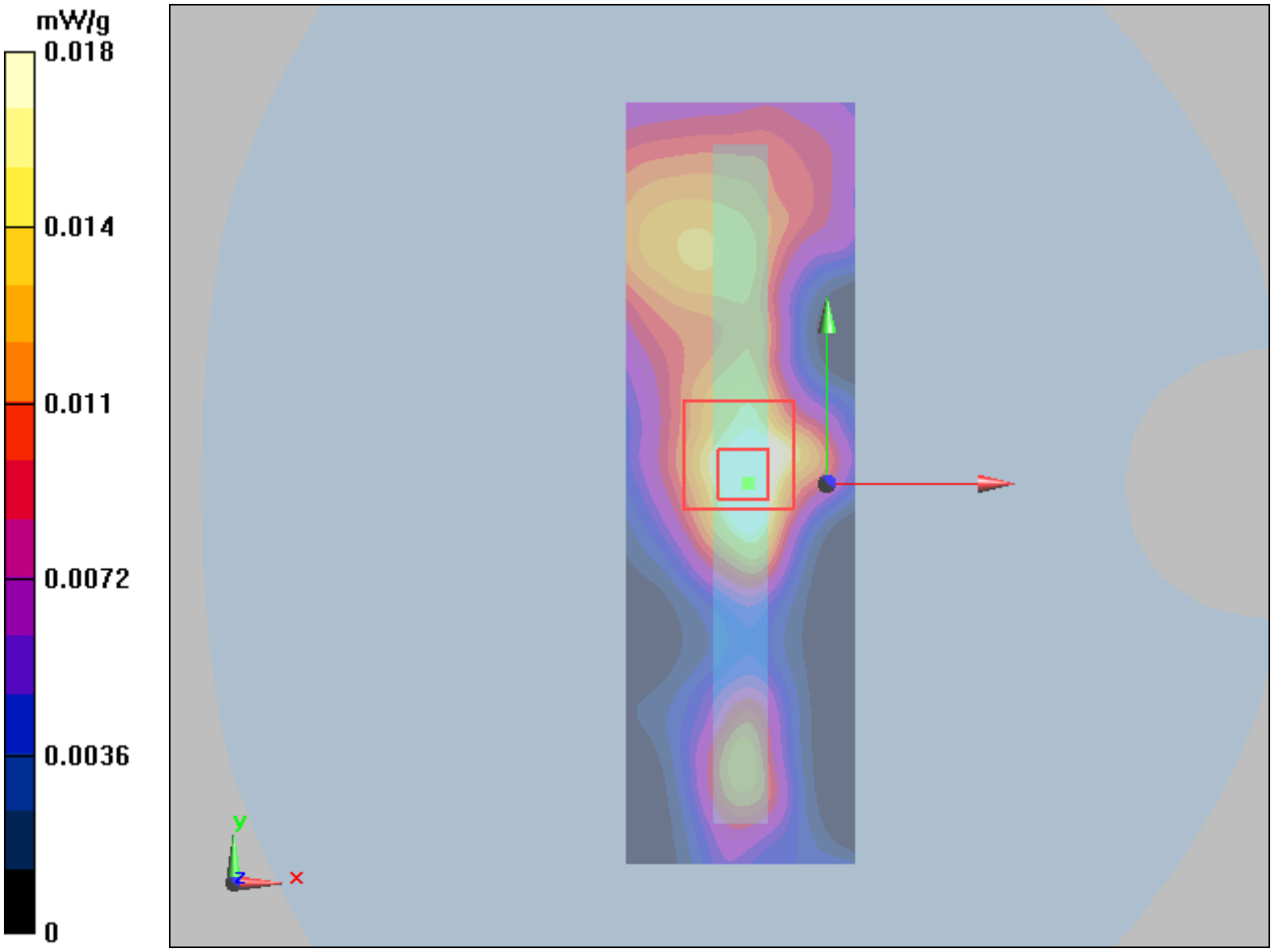


Figure 100 Body, Left Edge, 802.11b Channel 11

802.11b Right Edge High(Battery 1)

Date/Time: 1/24/2013 7:23:50 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (31x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.012 mW/g
Right Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.4 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 0.029 W/kg
SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.00588 mW/g
Maximum value of SAR (measured) = 0.014 mW/g

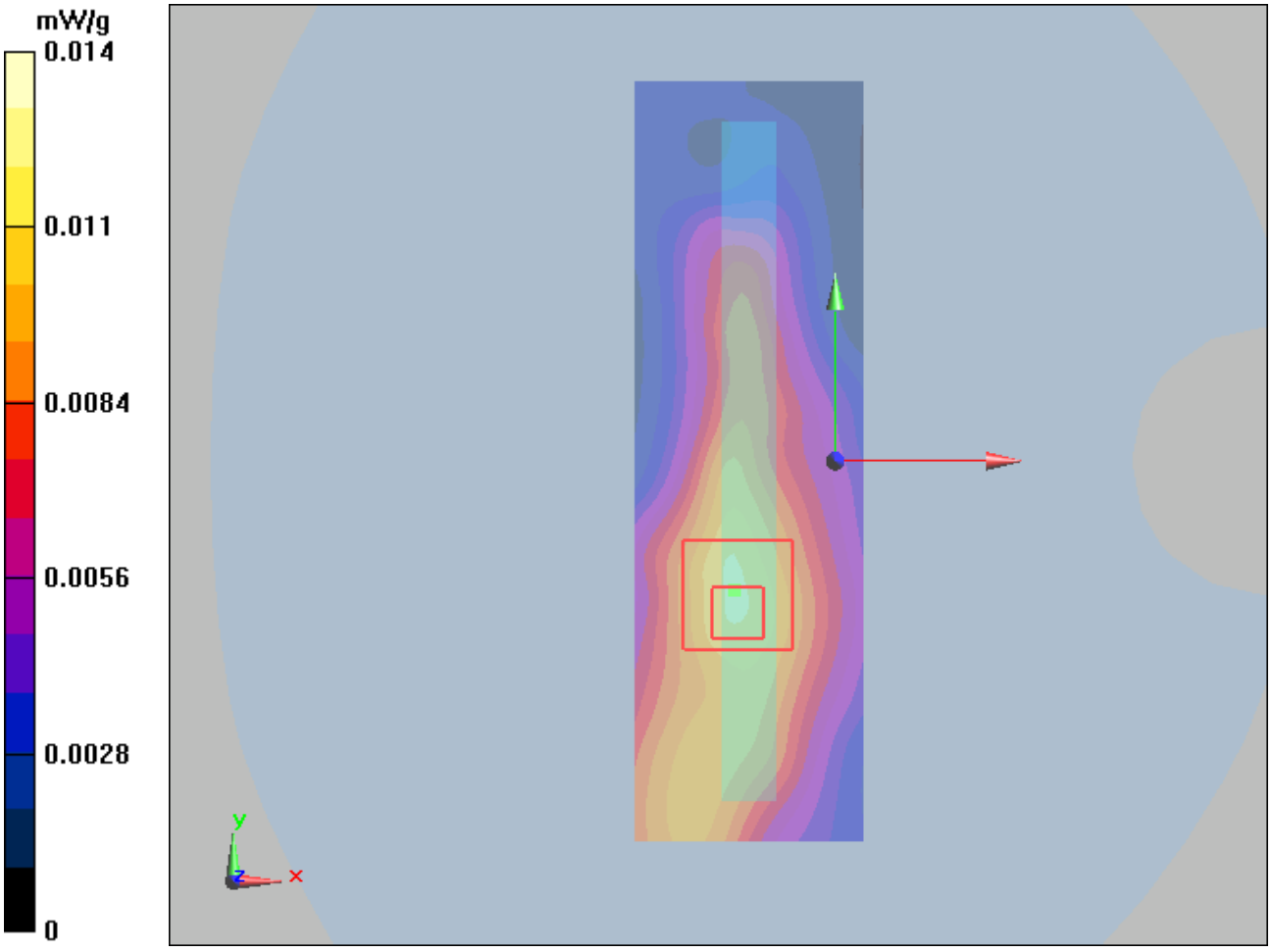


Figure 101 Body, Right Edge, 802.11b Channel 11

802.11b Top Edge High(Battery 1)

Date/Time: 1/24/2013 7:52:38 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.177 mW/g
Top Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.97 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.354 W/kg
SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.073 mW/g
Maximum value of SAR (measured) = 0.170 mW/g

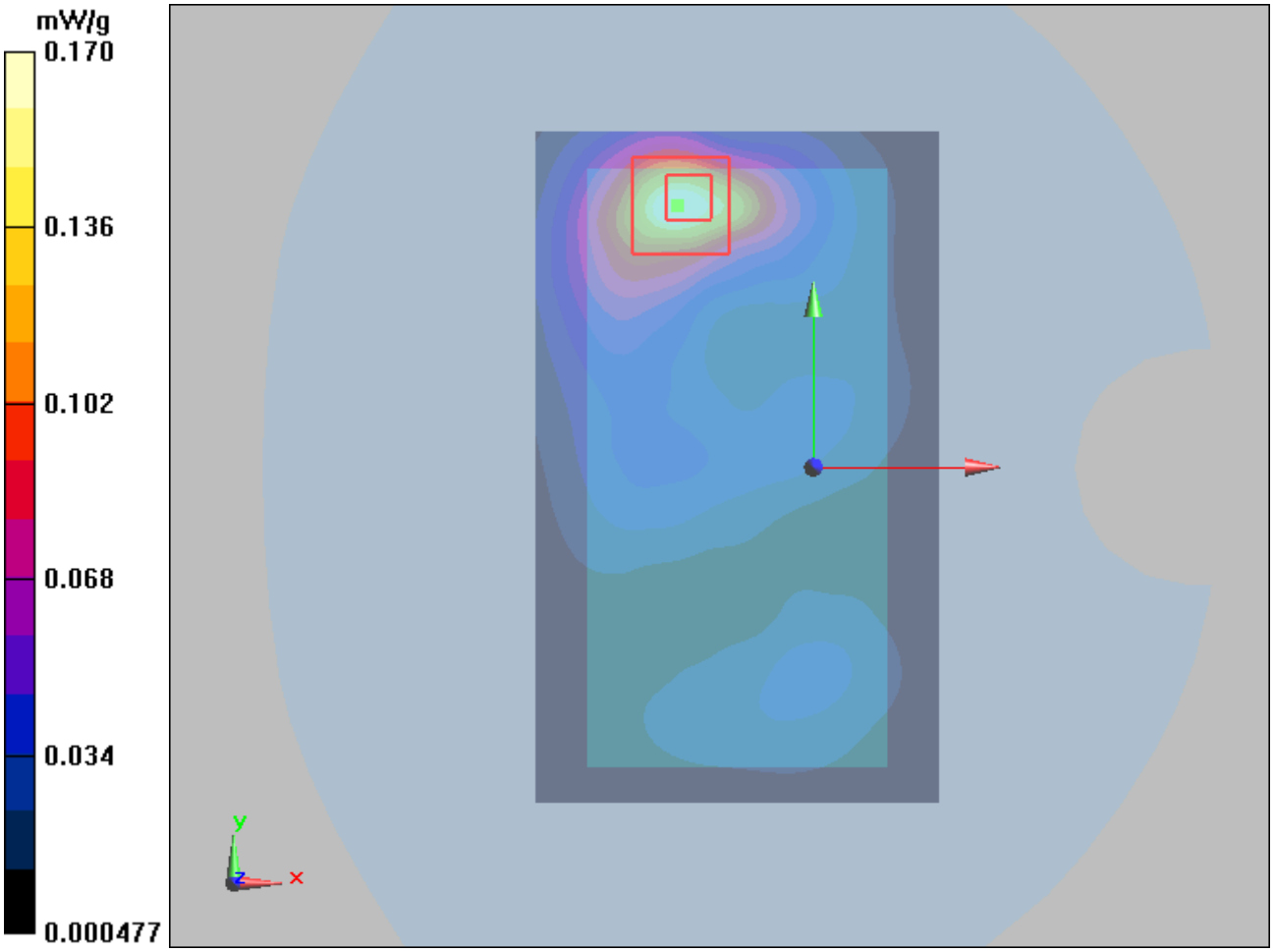


Figure 102 Body, Top Edge, 802.11b Channel 11

802.11b Back Side High(Battery 2)

Date/Time: 1/24/2013 8:38:22 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: ES3DV3 - SN3189; ConvF(3.96, 3.96, 3.96); Calibrated: 6/22/2012
Electronics: DAE4 Sn 905; Calibrated: 6/21/2012
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.186 mW/g
Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.87 V/m; Power Drift = 0.036 dB
Peak SAR (extrapolated) = 0.347 W/kg
SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.074 mW/g
Maximum value of SAR (measured) = 0.174 mW/g

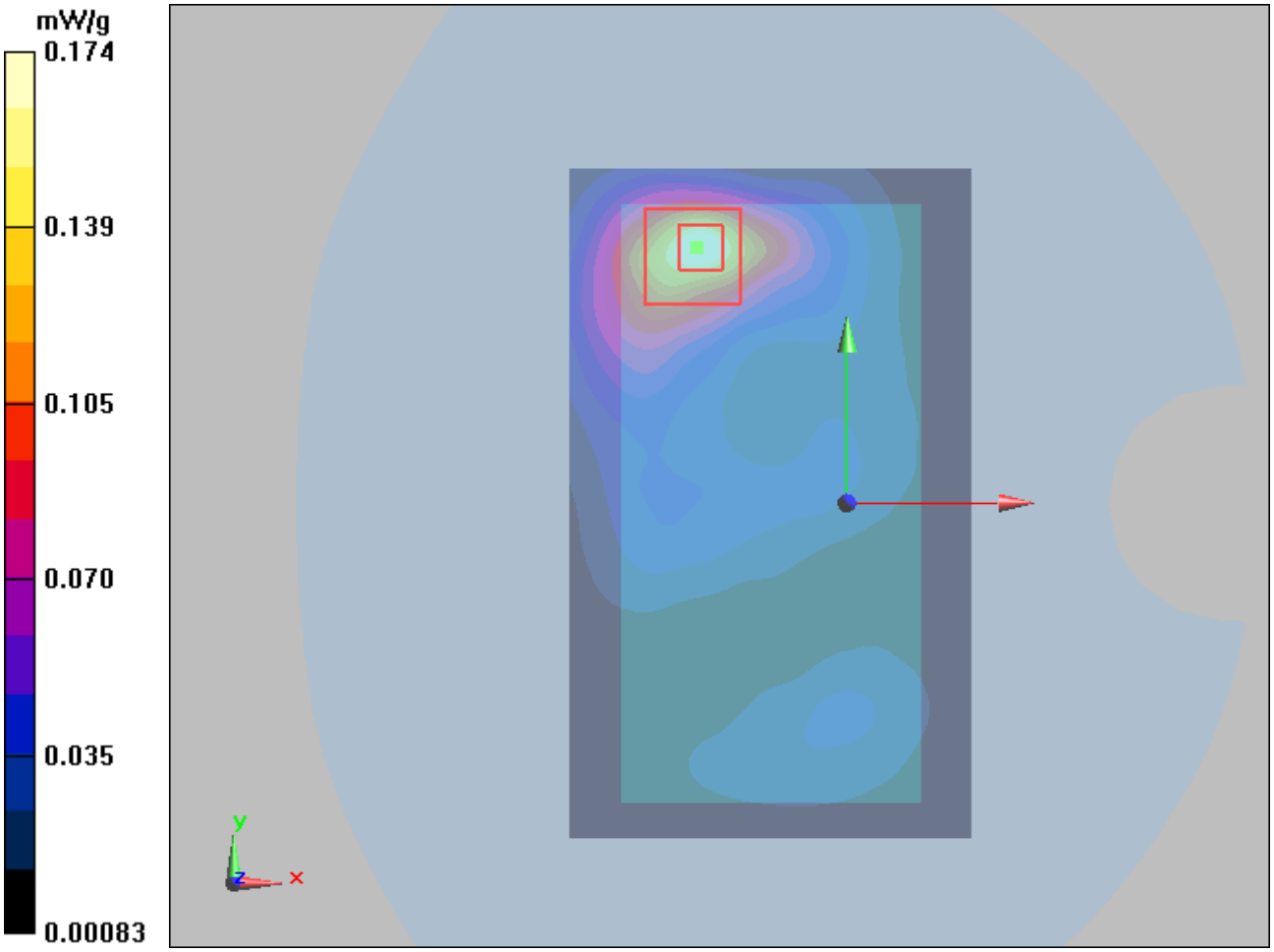


Figure 103 Body, Back Side, 802.11b Channel 11

802.11b Back Side High(Battery 3)

Date/Time: 1/24/2013 9:03:48 PM
Communication System: 802.11b; Frequency: 2462 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2462 MHz; σ = 1.98 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
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
Sensor-Surface: 4mm (Mechanical Surface Detection)
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 (61x101x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (interpolated) = 0.193 mW/g
Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.88 V/m; Power Drift = 0.062 dB
Peak SAR (extrapolated) = 0.380 W/kg
SAR(1 g) = 0.169 mW/g; SAR(10 g) = 0.079 mW/g
Maximum value of SAR (measured) = 0.183 mW/g

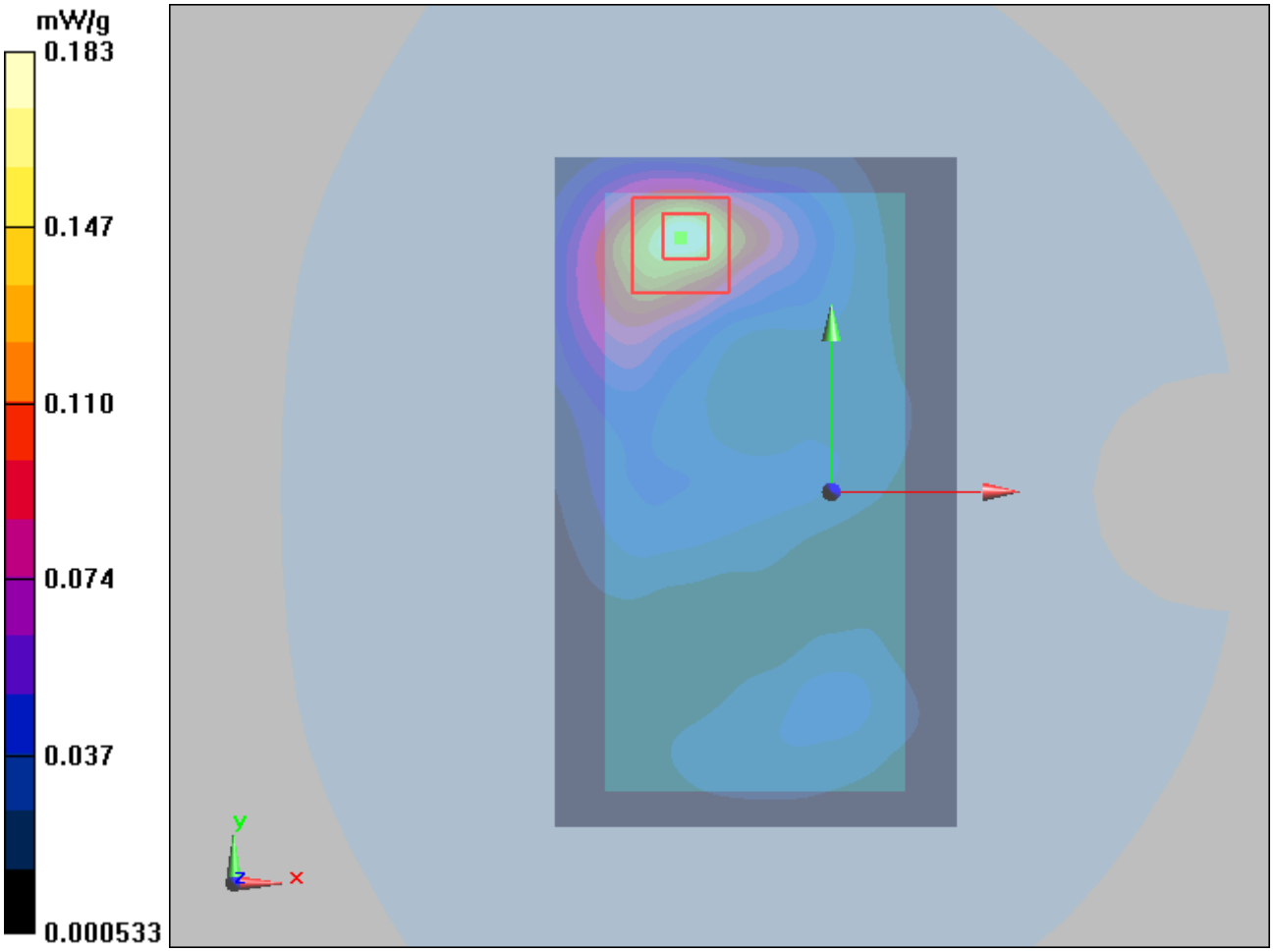


Figure 104 Body, Back Side, 802.11b Channel 11

ANNEX D: Probe Calibration Certificate

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

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

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

Accreditation No.: SCS 108

Client TA-Shanghai (Auden)

Certificate No: ES3-3189_Jun12

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3189

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

Calibration date: June 22, 2012

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	10-Jan-12 (No. DAE4-660_Jan12)	Jan-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

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

Issued: June 22, 2012

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

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

Accredited by the Swiss Accreditation Service (SAS) Accreditation No.: **SCS 108**
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.