



OET 65

TEST REPORT

Product Name	Smart Phone
Model Name	HUAWEI P6-U06
FCC ID	QISP6-U06
Client	Huawei Technologies Co., Ltd.
Manufacturer	Huawei Technologies Co., Ltd.
Date of issue	July 26, 2013

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GENERAL SUMMARY

Reference Standard(s)	<p>FCC 47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices</p> <p>ANSI C95.1, 1992: Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.(IEEE Std C95.1-1991)</p> <p>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.</p> <p>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.</p> <p>RSS-102 Issue 4 March 2010: Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)</p> <p>KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r01: SAR Measurement Requirements for 100 MHz to 6 GHz</p> <p>KDB 447498 D01 Mobile Portable RF Exposure v05r01: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies</p> <p>KDB 648474 D04 Handset SAR v01r01: SAR Evaluation Considerations for Wireless Handsets.</p> <p>KDB 941225 D01 SAR test for 3G devices v02: SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA</p> <p>KDB 941225 D03 Test Reduction GSM_GPRS_EDGE v01:Recommended SAR Test Reduction Procedures for GSM/GPRS/EDGE</p> <p>KDB 941225 D06 Hotspot Mode SAR v01r01: SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities</p>
Conclusion	<p>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.</p> <p>General Judgment: Pass</p>
Comment	<p>The test result only responds to the measured sample.</p>

Approved by 杨伟中
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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

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1.3. Applicant Information

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

1.4. Manufacturer Information

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

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1.5. Information of EUT

General Information

Device Type:	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
State of Sample:	Prototype Unit		
Product IMEI:	860505020977093		
Hardware Version:	HD1UEDGEM		
Software Version:	P6-U06V100R001C00B100		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900; (tested) UMTS Band II/UMTS Band IV/ UMTS Band V; (tested) WiFi (802.11b); (tested) WiFi (802.11g/n HT20/ n HT40); (untested) GSM 900/GSM 1800; (untested) UMTS Band I/UMTS Band VIII; (untested) Bluetooth; (untested)		
Test Modulation:	(GSM)GMSK; (UMTS)QPSK		
Device Class:	B		
HSDPA UE Category:	14		
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 IV	1712.4 ~ 1752.6	2112.4 ~ 2152.6
	UMTS Band V	826.4 ~ 846.6	871.4 ~ 891.6
	WIFI(2.4G)	2412 ~ 2462	2412 ~ 2462
Power Class:	GSM 850: 4		

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	GSM 1900: 1		
	UMTS Band II: 3		
	UMTS Band IV: 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 IV: 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)
	1312 - 1413 - 1513	(UMTS Band IV)	(tested)
	4132 - 4182 - 4233	(UMTS Band V)	(tested)
	1-6-11	(802.11b)	(tested)

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Auxiliary Equipment Details

AE1: Battery 1

Model: HB3742A0EBC
Manufacturer: Huawei Technologies Co., Ltd.
S/N: CABD302FNNT14859

AE2: Battery 2

Model: HB3742A0EBC
Manufacturer: Huawei Technologies Co., Ltd.
S/N: SUCD305925300613

Equipment under Test (EUT) has a GSM/UMTS antenna that is used for Tx/Rx, the second is BT/WIFI antenna that can be used for Tx/Rx and the third is WIFI MRC antenna that can be used for Tx/Rx. It consists of EUT and battery and the detail about these 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.

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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	Right, cheek	190/836.6	0.193	0.252
GSM 1900	Left, cheek	661/1880	0.119	0.123
UMTS Band II	Left, cheek	9400/1880	0.236	0.272
UMTS Band IV	Left, cheek	1413/1732.6	0.436	0.499
UMTS Band V	Right, cheek	4182/836.4	0.217	0.253
WiFi(802.11b)	Left, cheek	11/2462	0.213	0.222

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)
2Txslots GPRS 850	Back side	190/836.6	0.330	0.417
2Txslots EGPRS 1900	Back side	661/1880	0.446	0.476
UMTS Band II	Front side	9262/1852.4	0.850	0.956
UMTS Band IV	Front side	1513/1752.6	0.983	1.108
UMTS Band V	Back side	4182/836.4	0.321	0.375
WiFi(802.11b)	Front side	11/2462	0.018	0.019

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)
2Txslots GPRS 850	Back side	190/836.6	0.330	0.417
2Txslots EGPRS 1900	Bottom side	661/1880	0.827	0.896
UMTS Band II	Bottom side	9262/1852.4	1.060	1.160
UMTS Band IV	Bottom side	1513/1752.6	1.050	1.094
UMTS Band V	Back side	4182/836.4	0.321	0.375
WiFi(802.11b)	Front side	11/2462	0.018	0.019

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1.7. Maximum Conducted Power of each tested Mode

Mode		Max Burst Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	32.45	23.42
	GPRS, 2Txslots	30.49	24.47
	EGPRS, 2Txslots	30.47	24.45
GSM 1900	GSM	29.64	20.61
	GPRS, 2Txslots	26.64	20.62
	EGPRS, 2Txslots	26.67	20.65

Mode	Maximum Conducted Power (dBm)
UMTS Band II	22.79
UMTS Band IV	22.94
UMTS Band V	23.24
WiFi(802.11b)	16.73

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

1.8. Test Date

The test performed from July 20, 2013 to July 26, 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.

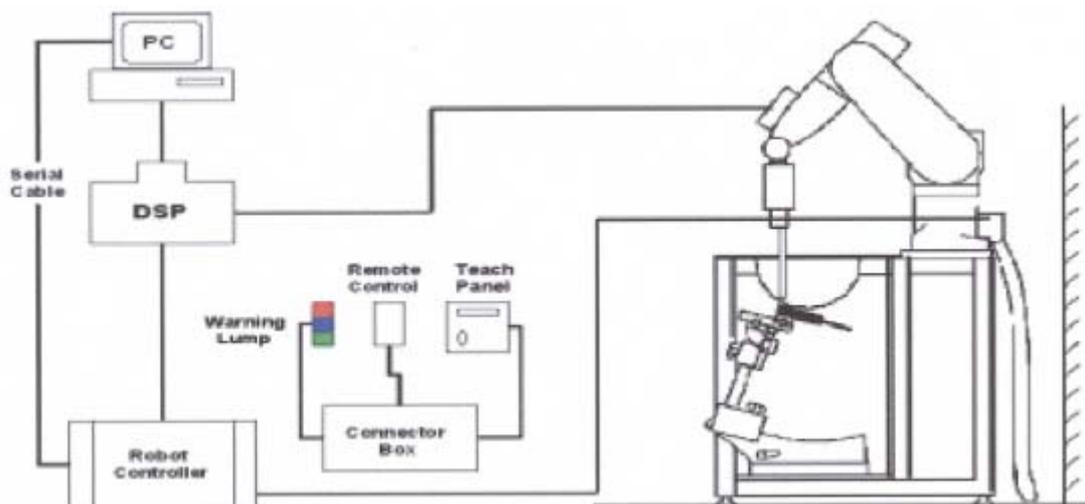


Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

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

2.2.1. EX3DV4 Probe Specification

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



Figure 2.EX3DV4 E-field Probe



Figure 3. EX3DV4 E-field probe

2.2.2. E-field Probe Calibration

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

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

The DASY device holder is designed to cope with the different positions given in the standard.

It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.



Figure 4 Device Holder

2.3.2. Phantom

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

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



Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

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

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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 D01

Frequency	Maximum Area Scan Resolution (mm) ($\Delta x_{area}, \Delta y_{area}$)	Maximum Zoom Scan Resolution (mm) ($\Delta x_{zoom}, \Delta y_{zoom}$)	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.

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

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

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

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

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

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

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

$ConvF$ = sensitivity enhancement in solution

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

f = carrier frequency [GHz]

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

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

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

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

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

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

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

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

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

ρ = equivalent tissue density in g/cm³

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

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

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

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

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

3. Laboratory Environment

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

MIXTURE%	FREQUENCY(Brain) 1750MHz
Water	55.24
Glycol	44.45
Salt	0.31
Dielectric Parameters Target Value	f=1750MHz $\epsilon=40.1$ $\sigma=1.37$

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

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

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

MIXTURE%	FREQUENCY(Body) 1750MHz
Water	69.91
Glycol	29.97
Salt	0.12
Dielectric Parameters Target Value	f=1750MHz $\epsilon=53.4$ $\sigma=1.49$

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

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

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4.2. Tissue-equivalent Liquid Properties

Table 5: Dielectric Performance of Tissue Simulating Liquid

Frequency	Test Date	Temp °C	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)	2013-7-20	21.5	41.25	0.92	41.50	0.90	-0.60	2.22
1750MHz (head)	2013-7-25	21.5	39.17	1.40	40.10	1.37	-2.32	2.19
1900MHz (head)	2013-7-25	21.5	38.33	1.45	40.00	1.40	-4.18	3.57
2450MHz (head)	2013-7-23	21.5	38.32	1.88	39.20	1.80	-2.24	4.44
835MHz (body)	2013-7-20	21.5	54.35	1.01	55.20	0.97	-1.54	4.12
1750MHz (body)	2013-7-24	21.5	52.12	1.47	53.40	1.49	-2.40	-1.34
1900MHz (body)	2013-7-26	21.5	52.56	1.52	53.30	1.52	-1.39	0.00
2450MHz (body)	2013-7-24	21.5	51.69	1.90	52.70	1.95	-1.92	-2.56

5. System Check

5.1. Description of System Check

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

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

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

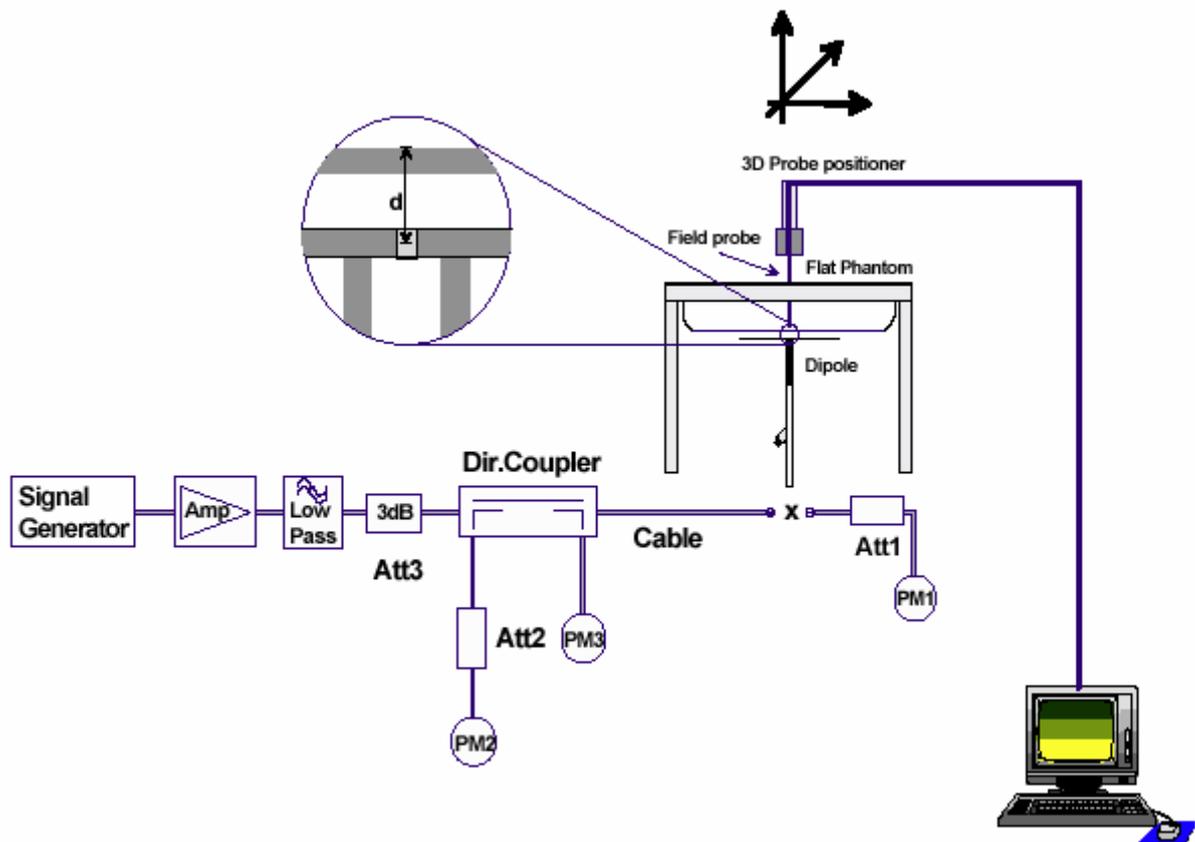


Figure 6 System Check Set-up

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Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 2 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 865664 D01:

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 D1750V2 SN: 1023				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
6/20/2012	-51.7	/	49.9	/
6/19/2013	-50.2	2.9%	48.6	1.3Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	ΔΩ
6/20/2012	-27.9	/	46.1	/
6/19/2013	-26.1	6.5%	44.7	1.4Ω

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

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Dipole D2450V2 SN: 786				
Head Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	$\Delta\Omega$
8/29/2011	-25.5	/	55.0	/
8/28/2012	-26.8	5.1%	56.5	1.5 Ω
Body Liquid				
Date of Measurement	Return Loss(dB)	Δ %	Impedance (Ω)	$\Delta\Omega$
8/29/2011	-29.0	/	50.4	/
8/28/2012	-29.9	3.1%	52.1	1.7 Ω

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5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp (°C)	250mW Measured SAR _{1g}	1W Normalized SAR _{1g}	1W Target SAR _{1g}	Limit (±10% Deviation)
		ε _r	σ(s/m)		(W/kg)			
835MHz	2013-7-20	41.25	0.92	21.5	2.44	9.76	9.34	4.50%
1750MHz	2013-7-25	39.17	1.4	21.5	8.45	33.80	35.8	-5.59%
1900MHz	2013-7-25	38.33	1.45	21.5	9.48	37.92	40.30	-5.91%
2450MHz	2013-7-23	38.32	1.88	21.5	13.70	54.80	53.80	1.86%

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 (°C)	250mW Measured SAR _{1g}	1W Normalized SAR _{1g}	1W Target SAR _{1g}	Limit (±10% Deviation)
		ε _r	σ(s/m)		(W/kg)			
835MHz	2013-7-20	54.35	1.01	21.5	2.41	9.64	9.46	1.90%
1750MHz	2013-7-24	52.12	1.47	21.5	9.24	36.96	37.0	-0.11%
1900MHz	2013-7-26	52.56	1.52	21.5	9.93	39.72	41.70	-4.75%
2450MHz	2013-7-24	51.69	1.9	21.5	12.50	50.00	51.70	-3.29%

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 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, and the distance between the device and the phantom was kept 15mm for body worn.

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, 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 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.

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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 D01, 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 ≥ 0.80 W/kg, the measurement was repeated once.
- 2) A second repeated measurement was performed 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

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 level is set to “5” for GSM 850, set to “0” for GSM 1900. Since the GPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5; the EGPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5.

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

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

Output power of reductions:

GSM 850

GPRS (GMSK) :

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

EGPRS(8PSK):

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

EGPRS(GMSK):

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

GSM 1900

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	3

EGPRS(GMSK):

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

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 (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 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: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

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, Δ_{ACK} and $\Delta_{NACK} = 8$ ($A_{hs} = 30/15$) with $\beta_{hs} = 30/15 * \beta_c$, and $\Delta_{CQI} = 7$ ($A_{hs} = 24/15$) with $\beta_{hs} = 24/15 * \beta_c$.

Note3: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. 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 β_c/β_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 $\beta_c = 11/15$ and $\beta_d = 15/15$.

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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. 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	$\beta_{hs}^{(1)}$	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: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15, \beta_{hs}/\beta_c = 24/15$. 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 β_c/β_d 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d 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 $\beta_c = 14/15$ and $\beta_d = 15/15$.

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: β_{ed} can not be set directly; it is set by Absolute Grant Value.

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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. This RF signal utilized in SAR measurement has almost 100% duty cycle and its crest factor is 1.

For the 802.11b/g/n SAR tests, a communication link is set up with the test mode software for WIFI mode test. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. Each channel should be tested at the lowest data rate. Testing at higher data rates is not required when the maximum average output power is less than 0.25dB higher than those measured at the lowest data rate.

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

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

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7. Test Results

7.1. Conducted Power Results

Table 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		32.36	32.34	32.45	-9.03dB	23.33	23.31	23.42
GPRS (GMSK)	1Txslot	32.35	32.34	32.43	-9.03dB	23.32	23.31	23.4
	2Txslots	30.42	30.48	30.49	-6.02dB	24.40	24.46	24.47
EGPRS (GMSK)	1Txslot	32.31	32.28	32.39	-9.03dB	23.28	23.25	23.36
	2Txslots	30.42	30.41	30.47	-6.02dB	24.40	24.39	24.45
EGPRS (8PSK)	1Txslot	26.85	26.81	26.84	-9.03dB	17.82	17.78	17.81
	2Txslots	24.85	24.84	24.83	-6.02dB	18.83	18.82	18.81
GSM 1900(Hotspot Open)		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.55	29.57	29.54	-9.03dB	20.52	20.54	20.51
GPRS (GMSK)	1Txslot	27.55	27.48	27.41	-9.03dB	18.52	18.45	18.38
	2Txslots	24.57	24.45	24.44	-6.02dB	18.55	18.43	18.42
EGPRS (GMSK)	1Txslot	27.55	27.48	27.41	-9.03dB	18.52	18.45	18.38
	2Txslots	24.59	24.45	24.44	-6.02dB	18.57	18.43	18.42
EGPRS (8PSK)	1Txslot	23.92	23.83	23.76	-9.03dB	14.89	14.80	14.73
	2Txslots	20.93	20.82	20.78	-6.02dB	14.91	14.80	14.76
GSM 1900(Hotspot Closed)		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.63	29.64	29.63	-9.03dB	20.6	20.61	20.6
GPRS (GMSK)	1Txslot	29.62	29.56	29.50	-9.03dB	20.59	20.53	20.47
	2Txslots	26.64	26.52	26.52	-6.02dB	20.62	20.50	20.50
EGPRS (GMSK)	1Txslot	29.63	29.55	29.49	-9.03dB	20.60	20.52	20.46
	2Txslots	26.67	26.53	26.53	-6.02dB	20.65	20.51	20.51
EGPRS (8PSK)	1Txslot	25.99	25.91	25.84	-9.03dB	16.96	16.88	16.81
	2Txslots	22.99	22.90	22.87	-6.02dB	16.97	16.88	16.85

Note:

1) Division Factors

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

1Txslot = 1 transmit time slot out of 8 time slots

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

2Txslots = 2 transmit time slots out of 8 time slots

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

2) Average power numbers

The maximum power numbers are marks in bold.

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UMTS Band II(Hotspot Open)		Conducted Power (dBm)		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps RMC	19.14	18.91	19.02
	64kbps RMC	19.13	18.89	19.01
	144kbps RMC	19.1	18.88	18.99
	384kbps RMC	19.11	18.84	18.98
HSDPA	Sub - Test 1	19.14	18.88	18.98
	Sub - Test 2	18.85	18.62	18.68
	Sub - Test 3	18.75	18.47	18.59
	Sub - Test 4	18.74	18.42	18.53
HSUPA	Sub - Test 1	18.09	17.86	17.85
	Sub - Test 2	18.2	18.36	18.44
	Sub - Test 3	18.07	18.08	18.23
	Sub - Test 4	18.71	18.51	18.55
	Sub - Test 5	18.29	18.73	18.59
UMTS Band II(Hotspot Closed)		Conducted Power (dBm)		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps RMC	22.79	22.68	22.66
	64kbps RMC	22.76	22.66	22.64
	144kbps RMC	22.77	22.64	22.63
	384kbps RMC	22.74	22.63	22.64
HSDPA	Sub - Test 1	22.69	22.67	22.64
	Sub - Test 2	22.41	22.23	22.18
	Sub - Test 3	22.04	21.87	21.82
	Sub - Test 4	21.72	21.55	21.53
HSUPA	Sub - Test 1	21.97	21.65	21.63
	Sub - Test 2	20.53	20.31	20.32
	Sub - Test 3	21.53	21.26	21.29
	Sub - Test 4	20.71	20.47	20.51
	Sub - Test 5	21.21	21.23	21.19
UMTS Band IV(Hotspot Open)		Conducted Power (dBm)		
		Channel 1312	Channel 1413	Channel 1513
RMC	12.2kbps RMC	19.24	18.92	19.12

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	64kbps RMC	19.17	18.9	19.11
	144kbps RMC	19.15	18.87	18.98
	384kbps RMC	19.12	18.85	18.99
HSDPA	Sub - Test 1	19.14	18.88	18.89
	Sub - Test 2	18.87	18.92	18.72
	Sub - Test 3	18.76	18.57	18.69
	Sub - Test 4	18.74	18.49	18.79
HSUPA	Sub - Test 1	18.09	17.96	17.96
	Sub - Test 2	18.2	18.86	18.38
	Sub - Test 3	18.07	18.28	18.34
	Sub - Test 4	18.71	18.53	18.62
	Sub - Test 5	18.29	18.73	18.69
UMTS Band IV(Hotspot Closed)		Conducted Power (dBm)		
		Channel 1312	Channel 1413	Channel 1513
RMC	12.2kbps RMC	22.91	22.71	22.78
	64kbps RMC	22.89	22.69	22.74
	144kbps RMC	22.88	22.7	22.72
	384kbps RMC	22.89	22.71	22.76
HSDPA	Sub - Test 1	22.94	22.71	22.85
	Sub - Test 2	22.36	22.15	22.21
	Sub - Test 3	22.01	21.81	22.29
	Sub - Test 4	21.74	21.49	21.58
HSUPA	Sub - Test 1	21.94	21.71	21.79
	Sub - Test 2	20.51	20.34	20.43
	Sub - Test 3	21.53	21.35	21.46
	Sub - Test 4	20.69	20.31	20.6
	Sub - Test 5	21.52	21.29	21.36
UMTS Band V		Conducted Power (dBm)		
		Channel 4132	Channel 4182	Channel 4233
RMC	12.2kbps RMC	23.13	23.13	23.08
	64kbps RMC	23.08	23.02	22.07
	144kbps RMC	23.11	23.04	22.07
	384kbps RMC	23.12	23.13	22.07
HSDPA	Sub - Test 1	23.24	23.08	23.15

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	Sub - Test 2	22.63	22.54	22.62
	Sub - Test 3	22.62	22.16	22.2
	Sub - Test 4	21.9	21.83	21.87
HSUPA	Sub - Test 1	22.07	21.91	21.97
	Sub - Test 2	20.56	20.38	20.40
	Sub - Test 3	21.50	21.36	21.46
	Sub - Test 4	20.57	20.48	20.51
	Sub - Test 5	22.78	22.61	22.67

The average output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
GFSK(dBm)	8.42	8.82	8.25
π/4DQPSK(dBm)	4.64	4.82	4.63
8DPSK(dBm)	4.71	4.82	4.63

The output power of WIFI antenna is as following:

WIFI Antenna

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
802.11b	1	1	16.29
		2	16.14
		5.5	15.55
		11	15.12
	6	1	16.08
		2	15.96
		5.5	15.39
		11	14.82
	11	1	16.73
		2	16.50
		5.5	16.00
		11	15.55
802.11g	1	6	13.41
		9	13.05
		12	12.39
		18	11.87
		24	11.06
		36	10.15
		48	9.34
		54	9.08

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	6	6	12.85
		9	12.74
		12	12.35
		18	11.77
		24	11.01
		36	10.18
		48	9.19
		54	8.81
	11	6	13.55
		9	13.26
		12	12.89
		18	12.27
		24	11.59
		36	10.48
		48	9.58
		54	9.21
802.11n HT20	1	MCS0	12.06
		MCS1	11.44
		MCS2	10.79
		MCS3	10.32
		MCS4	9.25
		MCS5	8.50
		MCS6	7.83
		MCS7	7.85
	6	MCS0	12.05
		MCS1	11.40
		MCS2	10.65
		MCS3	10.02
		MCS4	9.07
		MCS5	8.38
		MCS6	7.77
		MCS7	7.77
	11	MCS0	12.51
		MCS1	11.74
		MCS2	11.16
		MCS3	10.59
		MCS4	9.66
		MCS5	8.87
		MCS6	8.22
		MCS7	8.27
802.11n HT40	3	MCS0	10.50
		MCS1	9.99
		MCS2	9.19

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		MCS3	8.42
		MCS4	7.36
		MCS5	6.72
		MCS6	6.33
		MCS7	6.12
	6	MCS0	10.92
		MCS1	10.05
		MCS2	9.07
		MCS3	8.35
		MCS4	7.35
		MCS5	6.75
		MCS6	6.36
	9	MCS7	6.12
		MCS0	11.36
		MCS1	10.11
		MCS2	9.31
		MCS3	8.80
		MCS4	7.65
		MCS5	6.86
	MCS6	6.69	
	MCS7	6.44	

WIFI MRC Antenna

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
802.11b	1	1	15.33
		2	14.68
		5.5	15.08
		11	15.33
	6	1	15.65
		2	15.58
		5.5	15.12
		11	15.08
	11	1	16.12
		2	15.86
		5.5	15.54
		11	15.14
802.11g	1	6	11.91
		9	11.68
		12	11.41
		18	11.06
		24	10.5

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		36	9.68	
		48	9.15	
		54	8.66	
	6	6	12.28	
		9	12.14	
		12	11.84	
		18	11.43	
		24	10.77	
		36	10.11	
		48	9.57	
		54	9.12	
		11	6	12.73
			9	12.41
	12		12.14	
	18		11.76	
	24		11.25	
	36		10.44	
	48		9.68	
	54	9.53		
	802.11n HT20	1	MCS0	11.28
MCS1			10.68	
MCS2			10.33	
MCS3			9.73	
MCS4			9.18	
MCS5			8.48	
MCS6			8.25	
MCS7			8.16	
6		MCS0	11.65	
		MCS1	11.18	
		MCS2	10.74	
		MCS3	10.38	
		MCS4	9.44	
		MCS5	8.89	
		MCS6	8.66	
		MCS7	8.54	
11		MCS0	11.84	
		MCS1	11.54	
		MCS2	10.99	
		MCS3	10.65	
		MCS4	9.73	
		MCS5	9.32	
		MCS6	8.98	
MCS7		8.71		

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802.11n HT40	3	MCS0	10.56
		MCS1	9.87
		MCS2	9.21
		MCS3	8.69
		MCS4	7.74
		MCS5	7.05
		MCS6	6.91
		MCS7	6.66
	6	MCS0	10.86
		MCS1	10.26
		MCS2	9.45
		MCS3	8.96
		MCS4	8.05
		MCS5	7.45
		MCS6	7.35
		MCS7	6.91
	9	MCS0	11.02
		MCS1	10.32
		MCS2	9.45
		MCS3	9.02
		MCS4	8.12
		MCS5	7.64
		MCS6	7.48
		MCS7	7.05

7.2. Standalone SAR Test Exclusion Considerations

Per FCC KDB 447498 D01, the SAR exclusion threshold for distances <50mm is defined by the following equation:

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

Based on the above equation, Bluetooth SAR was not required;

$$\text{Head Evaluation} = [10^{(9/10)}/5] * (2.480^{1/2}) = 2.5 < 3.0$$

$$\text{Body Evaluation} = [10^{(9/10)}/10] * (2.480^{1/2}) = 1.25 < 3.0$$

Based on the above equation, WIFI SAR was required;

$$\text{Head Evaluation} = [10^{(16.9/10)}/5] * (2.462^{1/2}) = 15.37 > 3.0$$

$$\text{Body Evaluation} = [10^{(16.9/10)}/10] * (2.462^{1/2}) = 7.68 > 3.0$$

Based on the above equation, WIFI MRC SAR was required;

$$\text{Head Evaluation} = [10^{(16.3/10)}/5] * (2.462^{1/2}) = 13.39 > 3.0$$

$$\text{Body Evaluation} = [10^{(16.3/10)}/10] * (2.462^{1/2}) = 6.69 > 3.0$$

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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)	Drift ± 0.21dB	Limit SAR _{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	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	33.5	32.34	0.140	0.154	1.31	0.201	Figure15
Left/Tilt	190/836.6	GSM	1:8.3	33.5	32.34	0.050	0.114	1.31	0.149	Figure16
Right/Cheek	190/836.6	GSM	1:8.3	33.5	32.34	-0.060	0.165	1.31	0.216	Figure17
Right/Tilt	190/836.6	GSM	1:8.3	33.5	32.34	0.070	0.092	1.31	0.120	Figure18
Worst Case Position of Head with Battery 2										
Right/Cheek	190/836.6	GSM	1:8.3	33.5	32.34	-0.058	0.193	1.31	0.252	Figure19
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	190/836.6	2Txslots	1:2.07	31.5	30.48	0.020	0.316	1.26	0.400	Figure20
Front Side	190/836.6	2Txslots	1:2.07	31.5	30.48	-0.010	0.312	1.26	0.393	Figure21
Left Edge	190/836.6	2Txslots	1:2.07	31.5	30.48	-0.010	0.099	1.26	0.125	Figure22
Right Edge	190/836.6	2Txslots	1:2.07	31.5	30.48	-0.020	0.156	1.26	0.197	Figure23
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	2Txslots	1:2.07	31.5	30.48	-0.040	0.089	1.26	0.112	Figure24
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)										
Back Side	190/836.6	2Txslots	1:2.07	31.5	30.48	0.020	0.299	1.26	0.378	Figure25
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	190/836.6	2Txslots	1:2.07	31.5	30.48	-0.010	0.330	1.26	0.417	Figure26

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

2. Per FCC KDB Publication 447498 D01, 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 multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
5. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.
6. Per FCC KDB Publication 648474 D04, 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

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7.3.2. GSM 1900 (GPRS/EGPRS)

Table 15: SAR Values [GSM 1900(GPRS/EGPRS)]

Test Position	Channel/ Frequency (MHz)	Time slot	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB		Limit SAR _{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results	
Test Position of Head with Battery 1											
Left/Cheek	661/1880	GSM	1:8.3	29.8	29.64	0.079	0.119	1.04	0.123	Figure27	
Left/Tilt	661/1880	GSM	1:8.3	29.8	29.64	0.110	0.031	1.04	0.032	Figure28	
Right/Cheek	661/1880	GSM	1:8.3	29.8	29.64	0.090	0.113	1.04	0.117	Figure29	
Right/Tilt	661/1880	GSM	1:8.3	29.8	29.64	0.054	0.034	1.04	0.036	Figure30	
Worst Case Position of Head with Battery 2											
Left/Cheek	661/1880	GSM	1:8.3	29.8	29.64	0.048	0.102	1.04	0.106	Figure31	
Test position of Body with Battery 1 (Distance 15mm)											
Back Side	661/1880	2Txslots	1:2.07	26.8	26.52	0.180	0.446	1.07	0.476	Figure32	
Front Side	661/1880	2Txslots	1:2.07	26.8	26.52	0.090	0.411	1.07	0.438	Figure33	
Test position of Body with Battery 1 (Distance 10mm)											
Back Side	661/1880	2Txslots	1:2.07	24.8	24.45	0.060	0.588	1.08	0.637	Figure34	
Front Side	661/1880	2Txslots	1:2.07	24.8	24.45	0.022	0.540	1.08	0.585	Figure35	
Left Edge	661/1880	2Txslots	1:2.07	24.8	24.45	-0.020	0.039	1.08	0.043	Figure36	
Right Edge	661/1880	2Txslots	1:2.07	24.8	24.45	0.063	0.028	1.08	0.030	Figure37	
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Bottom Edge	810/1909.8	2Txslots	1:2.07	24.8	24.44	0.043	0.752	1.09	0.817	Figure38	
	661/1880	2Txslots	1:2.07	24.8	24.45	0.130	0.827	1.08	0.896	Figure39	
	512/1850.2	2Txslots	1:2.07	24.8	24.49	0.120	0.786	1.07	0.844	Figure40	
Worst Case Position of Body with EGPRS (Battery 1, GMSK, Distance 10mm)											
Bottom Edge	661/1880	2Txslots	1:2.07	24.8	24.45	0.110	0.786	1.08	0.852	Figure41	
Worst Case Position of Body with Battery 2 (Distance 10mm)											
Bottom Edge	661/1880	2Txslots	1:2.07	24.8	24.45	0.120	0.810	1.08	0.878	Figure42	
Worst Case Position of Body with Battery 1 (1st Repeated SAR, Distance 10mm)											
Bottom Edge	661/1880	2Txslots	1:2.07	24.8	24.45	-0.160	0.827	1.08	0.896	Figure43	

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- Note: 1. The value with blue color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, 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 multiple slots are used, SAR should be tested to account for the maximum source-based time-averaged output power.
 5. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.
 6. Per FCC KDB Publication 648474 D04, 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.

Table 16: SAR Measurement Variability Results [GSM 1900(GPRS/EGPRS)]

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 st Repeated SAR (1g)	Ratio	2 nd Repeated SAR (1g)	3 rd Repeated SAR (1g)
Bottom Edge	661/1880	0.827	0.827	1.0	N/A	N/A

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

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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)	Drift ± 0.21dB	Limit SAR _{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.055	0.223	1.15	0.257	Figure44
Left/Tilt	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.11	0.079	1.15	0.091	Figure45
Right/Cheek	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.027	0.217	1.15	0.250	Figure46
Right/Tilt	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.021	0.080	1.15	0.092	Figure47
Worst Case Position of Head with Battery 2										
Left/Cheek	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.061	0.236	1.15	0.272	Figure48
Test position of Body with Battery 1 (Distance 15mm)										
Back Side	9538/1907.6	RMC 12.2k	1:1	23.3	22.66	0.06	0.698	1.16	0.809	Figure49
	9400/1880	RMC 12.2k	1:1	23.3	22.68	0.14	0.768	1.15	0.886	Figure50
	9262/1852.4	RMC 12.2k	1:1	23.3	22.79	0.02	0.782	1.12	0.879	Figure51
Front Side	9538/1907.6	RMC 12.2k	1:1	23.3	22.66	0.031	0.647	1.16	0.750	Figure52
	9400/1880	RMC 12.2k	1:1	23.3	22.68	-0.13	0.735	1.15	0.848	Figure53
	9262/1852.4	RMC 12.2k	1:1	23.3	22.79	0.1	0.850	1.12	0.956	Figure54
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.01	0.673	1.09	0.736	Figure55
Front Side	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.16	0.604	1.09	0.661	Figure56
Left Edge	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.15	0.071	1.09	0.077	Figure57
Right Edge	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.069	0.025	1.09	0.027	Figure58
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	9538/1907.6	RMC 12.2k	1:1	19.3	19.01	0.05	0.954	1.07	1.020	Figure59
	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.13	0.975	1.09	1.067	Figure60
	9262/1852.4	RMC 12.2k	1:1	19.3	19.13	-0.19	1.02	1.04	1.061	Figure61
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Bottom Side	9400/1880	RMC 12.2k	1:1	19.3	18.91	0.11	1.06	1.09	1.160	Figure62
Worst Case Position of Body with Battery 1 (1st Repeated SAR, Distance 10mm)										

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Bottom Side	9400/1880	RMC 12.2k	1:1	19.3	18.91	-0.19	1.05	1.09	1.149	Figure63
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- Note: 1. The value with blue color is the maximum SAR Value of each test band.
2. Per FCC KDB Publication 447498 D01, 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 without HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
 5. Per FCC KDB Publication 648474 D04, 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.

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

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 st Repeated SAR (1g)	Ratio	2 nd Repeated SAR (1g)	3 rd Repeated SAR (1g)
Bottom Side	9400/1880	0.975	1.05	1.08	N/A	N/A

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

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7.3.1. UMTS Band IV (WCDMA/HSDPA/HSUPA)

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

Test Position	Channel/ Frequency (MHz)	Channel Type	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit SAR _{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	0.09	0.436	1.15	0.499	Figure64
Left/Tilt	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	0.023	0.044	1.15	0.051	Figure65
Right/Cheek	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	-0.032	0.250	1.15	0.286	Figure66
Right/Tilt	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	0.03	0.056	1.15	0.064	Figure67
Worst Case Position of Head with Battery 2										
Left/Cheek	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	0.03	0.354	1.15	0.406	Figure68
Test position of Body with Battery 1 (Distance 15mm)										
Back Side	1513/1752.6	RMC 12.2k	1:1	23.3	22.78	-0.11	0.784	1.13	0.884	Figure69
	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	0.16	0.702	1.15	0.804	Figure70
	1312/1712.4	RMC 12.2k	1:1	23.3	22.91	0.08	0.612	1.09	0.670	Figure71
Front Side	1513/1752.6	RMC 12.2k	1:1	23.3	22.78	-0.05	0.983	1.13	1.108	Figure72
	1413/1732.6	RMC 12.2k	1:1	23.3	22.71	-0.04	0.906	1.15	1.038	Figure73
	1312/1712.4	RMC 12.2k	1:1	23.3	22.91	0.11	0.829	1.09	0.907	Figure74
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	1413/1732.6	RMC 12.2k	1:1	19.3	18.92	0.001	0.617	1.09	0.673	Figure75
Front Side	1513/1752.6	RMC 12.2k	1:1	19.3	19.12	-0.026	0.995	1.04	1.037	Figure76
	1413/1732.6	RMC 12.2k	1:1	19.3	18.92	-0.02	0.830	1.09	0.906	Figure77
	1312/1712.4	RMC 12.2k	1:1	19.3	19.24	0.048	0.793	1.01	0.804	Figure78
Left Edge	1413/1732.6	RMC 12.2k	1:1	19.3	18.92	0.042	0.074	1.09	0.081	Figure79
Right Edge	1413/1732.6	RMC 12.2k	1:1	19.3	18.92	0.095	0.047	1.09	0.051	Figure80
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	1513/1752.6	RMC 12.2k	1:1	19.3	19.12	0.09	1.05	1.04	1.094	Figure81
	1413/1732.6	RMC 12.2k	1:1	19.3	18.92	0.09	0.929	1.09	1.014	Figure82
	1312/1712.4	RMC 12.2k	1:1	19.3	19.24	0.06	0.810	1.01	0.821	Figure83
Worst Case Position of Body with Battery 2 (Distance 10mm)										

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Bottom Edge	1513/1752.6	RMC 12.2k	1:1	19.3	19.12	0.05	0.991	1.04	1.033	Figure84
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Worst Case Position of Body with Battery 1 (1st Repeated SAR, Distance 10mm)

Bottom Edge	1513/1752.6	RMC 12.2k	1:1	19.3	19.12	0.08	1.05	1.04	1.094	Figure85
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Note: 1. The value with blue color is the maximum SAR Value of each test band.

2. Per FCC KDB Publication 447498 D01, 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 without HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
5. Per FCC KDB Publication 648474 D04, 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.

Table 20: SAR Measurement Variability Results [UMTS Band IV (WCDMA/HSDPA/HSUPA)]

Test Position	Channel/ Frequency (MHz)	Measured SAR (1g)	1 st Repeated SAR (1g)	Ratio	2 nd Repeated SAR (1g)	3 rd Repeated SAR (1g)
Bottom Edge	1513/1752.6	1.05	1.05	1.0	N/A	N/A

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

2) A second repeated measurement was performed 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

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

Table 21: SAR Values [UMTS Band V (WCDMA/HSDPA/HSUPA)]

Test Position	Channel/Frequency (MHz)	Channel Type	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit SAR _{1g} 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	4182/836.4	RMC 12.2k	1:1	23.8	23.13	-0.16	0.172	1.17	0.201	Figure86
Left/Tilt	4182/836.4	RMC 12.2k	1:1	23.8	23.13	-0.08	0.121	1.17	0.141	Figure87
Right/Cheek	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.03	0.183	1.17	0.214	Figure88
Right/Tilt	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.02	0.118	1.17	0.138	Figure89
Worst Case Position of Head with Battery 2										
Right/Cheek	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.06	0.217	1.17	0.253	Figure90
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.02	0.282	1.17	0.329	Figure91
Front Side	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.03	0.275	1.17	0.321	Figure92
Left Edge	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.04	0.108	1.17	0.126	Figure93
Right Edge	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.024	0.173	1.17	0.202	Figure94
Top Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bottom Edge	4182/836.4	RMC 12.2k	1:1	23.8	23.13	0.04	0.078	1.17	0.091	Figure95
Worst Case Position of Body with Battery 2 (Distance 10mm)										
Back Side	4182/836.4	RMC 12.2k	1:1	23.8	23.13	-0.01	0.321	1.17	0.375	Figure96

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

2. Per FCC KDB Publication 447498 D01, 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 without HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.

5. Per FCC KDB Publication 648474 D04, 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.

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7.3.3. WIFI (802.11b, WIFI)

Table 22: SAR Values (802.11b)

Test Position	Channel/Frequency (MHz)	Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21dB	Limit of SAR 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	11/2462	DSSS	1:1	16.9	16.73	0.1	0.054	1.04	0.056	Figure97
Left/Tilt	11/2462	DSSS	1:1	16.9	16.73	0.07	0.043	1.04	0.045	Figure98
Right/Cheek	11/2462	DSSS	1:1	16.9	16.73	0.056	0.135	1.04	0.140	Figure99
Right/Tilt	11/2462	DSSS	1:1	16.9	16.73	-0.103	0.101	1.04	0.105	Figure100
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	11/2462	DSSS	1:1	16.9	16.73	0.093	0.007	1.04	0.008	Figure101
Front Side	11/2462	DSSS	1:1	16.9	16.73	0.1947	0.018	1.04	0.019	Figure102
Left Edge	11/2462	DSSS	1:1	16.9	16.73	0.116	0.012	1.04	0.012	Figure103
Right Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Top Edge	11/2462	DSSS	1:1	16.9	16.73	0.043	0.014	1.04	0.014	Figure104
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)										
Front Side	11/2462	DSSS	1:1	16.9	16.73	-0.0316	0.017	1.04	0.018	Figure105

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

2. Per FCC KDB Publication 447498 D01, 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, near to left edge ; antenna-to- Bottom/Right 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 D04, 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.

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7.3.4. WIFI (802.11b, WIFI MRC)

Table 23: SAR Values (802.11b)

Test Position	Channel/Frequency (MHz)	Mode	Duty Cycle	Maximum Allowed Power (dBm)	Conducted Power (dBm)	Drift ± 0.21 dB	Limit of SAR 1.6 W/kg			
						Drift (dB)	Measured SAR _{1g} (W/kg)	Scaling Factor	Reported SAR _{1g} (W/kg)	Graph Results
Test Position of Head with Battery 1										
Left/Cheek	11/2462	DSSS	1:1	16.3	16.12	0.0562	0.213	1.04	0.222	Figure106
Left/Tilt	11/2462	DSSS	1:1	16.3	16.12	0.0325	0.105	1.04	0.109	Figure107
Right/Cheek	11/2462	DSSS	1:1	16.3	16.12	-0.064	0.053	1.04	0.055	Figure108
Right/Tilt	11/2462	DSSS	1:1	16.3	16.12	0.095	0.026	1.04	0.027	Figure109
Worst Case Position of Head with Battery 2										
Left/Cheek	11/2462	DSSS	1:1	16.3	16.12	0.039	0.185	1.04	0.193	Figure110
Test position of Body with Battery 1 (Distance 10mm)										
Back Side	11/2462	DSSS	1:1	16.3	16.12	-0.11	0.005	1.04	0.005	Figure111
Front Side	11/2462	DSSS	1:1	16.3	16.12	0.044	0.007	1.04	0.008	Figure112
Left Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Right Edge	11/2462	DSSS	1:1	16.3	16.12	0.088	0.005	1.04	0.006	Figure113
Top Edge	11/2462	DSSS	1:1	16.3	16.12	0.0334	0.006	1.04	0.006	Figure114
Bottom Edge	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

2. Per FCC KDB Publication 447498 D01, 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, near to right edge; antenna-to- Bottom/left 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 1/4 dB higher than measured on the corresponding 802.11b channels.

5. Per FCC KDB Publication 648474 D04, 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.

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7.4. Simultaneous Transmission Conditions

Air-Interface	Band (MHz)	Type	Simultaneous Transmissions	Voice Over Digital Transport (Data)
GSM/UMTS	850	VO	Yes WIFI, WIFI MRC, or BT	NA
	1750	VO		
	1900	VO		
	850	DT	Yes WIFI, WIFI MRC or BT	NA
	1750	DT		
	1900	DT		
WIFI	2450	DT	Yes GSM/WCDMA, GPRS,EGPRS,HSDPA,HSUPA	NA
WIFI MRC	2450	DT	Yes GSM/WCDMA, GPRS,EGPRS,HSDPA,HSUPA	NA
Bluetooth (BT)	2450	DT	Yes GSM/WCDMA, GPRS,EGPRS,HSDPA,HSUPA	NA
Note: VO Voice Service only DT Digital Transport				

When standalone SAR is not required to be measured per FCC KDB 447498 D01, the following equation must be used to estimate the standalone 1g SAR for simultaneous transmission assessment involving that transmitter.

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

Per FCC KDB 447498 D01, 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.

$$\text{Ratio} = \frac{(\text{SAR}_1 + \text{SAR}_2)^{1.5}}{(\text{peak location separation, mm})} < 0.04$$

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GSM/UMTS & WIFI Mode(Hotspot Open)

Reported SAR _{1g} (W/kg)							
Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	WIFI	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.056	0.555
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.045	0.194
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.140	0.426
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.105	0.243
Body, Back Side	0.417	0.637	0.736	0.673	0.375	0.008	0.744
Body, Front Side	0.393	0.585	0.661	1.037	0.321	0.019	1.056
Body, Left Edge	0.125	0.043	0.077	0.081	0.126	0.012	0.138
Body, Right Edge	0.197	0.030	0.027	0.051	0.202	N/A	0.202
Body, Top Edge	N/A	N/A	N/A	N/A	N/A	0.014	0.014
Body, Bottom Edge	0.112	0.896	1.160	1.094	0.091	N/A	1.160

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} = 1.160 W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for WIFI and GSM/UMTS antenna.

GSM/UMTS & WIFI Mode(Hotspot Closed)

Reported SAR _{1g} (W/kg)							
Test Position	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	WIFI	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.056	0.555
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.045	0.194
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.140	0.426
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.105	0.243
Body, Back Side	0.417	0.476	0.886	0.884	0.375	0.008	0.894
Body, Front Side	0.393	0.438	0.956	1.108	0.321	0.019	1.127

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} = 1.127 W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for WIFI and GSM/UMTS antenna.

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GSM/UMTS & WIFI MRC Mode(Hotspot Open)

Reported SAR _{1g} (W/kg)	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	WIFI MRC	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.222	0.721
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.109	0.258
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.055	0.341
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.027	0.165
Body, Back Side	0.417	0.637	0.736	0.673	0.375	0.005	0.741
Body, Front Side	0.393	0.585	0.661	1.037	0.321	0.008	1.045
Body, Left Edge	0.125	0.043	0.077	0.081	0.126	N/A	0.126
Body, Right Edge	0.197	0.030	0.027	0.051	0.202	0.006	0.208
Body, Top Edge	N/A	N/A	N/A	N/A	N/A	0.006	0.006
Body, Bottom Edge	0.112	0.896	1.160	1.094	0.091	N/A	1.160

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} = 1.160W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for WIFI MRC and GSM/UMTS antenna.

GSM/UMTS & WIFI MRC Mode(Hotspot Closed)

Reported SAR _{1g} (W/kg)	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	WIFI MRC	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.222	0.721
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.109	0.258
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.055	0.341
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.027	0.165
Body, Back Side	0.417	0.476	0.886	0.884	0.375	0.005	0.891
Body, Front Side	0.393	0.438	0.956	1.108	0.321	0.008	1.116

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} = 1.116 W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for WIFI MRC and GSM/UMTS antenna.

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GSM/UMTS & BT Mode(Hotspot Open)

Head Estimated SAR_{Max.BT} = $[10^{(9/10)}/5] * (2.480^{1/2}/7.5) = 0.334 \text{ W/kg}$

Body Estimated SAR_{Max.BT} = $[10^{(9/10)}/10] * (2.480^{1/2}/7.5) = 0.167 \text{ W/kg}$

Reported SAR _{1g} (W/kg)	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	BT	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.334	0.833
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.334	0.483
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.334	0.62
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.334	0.472
Body, Back Side	0.417	0.637	0.736	0.673	0.375	0.167	0.903
Body, Front Side	0.393	0.585	0.661	1.037	0.321	0.167	1.204
Body, Left Edge	0.125	0.043	0.077	0.081	0.126	0.167	0.293
Body, Right Edge	0.197	0.030	0.027	0.051	0.202	0.167	0.369
Body, Top Edge	N/A	N/A	N/A	N/A	N/A	0.167	N/A
Body, Bottom Edge	0.112	0.896	1.160	1.094	0.091	0.167	1.327

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} = 1.327 W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for BT and GSM/UMTS antenna.

GSM/UMTS & BT Mode(Hotspot Closed)

Head Estimated SAR_{Max.BT} = $[10^{(9/10)}/5] * (2.480^{1/2}/7.5) = 0.334 \text{ W/kg}$

Body Estimated SAR_{Max.BT} = $[10^{(9/10)}/10] * (2.480^{1/2}/7.5) = 0.167 \text{ W/kg}$

Reported SAR _{1g} (W/kg)	GSM 850	GSM 1900	UMTS Band II	UMTS Band IV	UMTS Band V	BT	MAX. Σ SAR _{1g}
Left hand, Touch cheek	0.201	0.123	0.272	0.499	0.201	0.334	0.833
Left hand, Tilt 15 Degree	0.149	0.032	0.091	0.051	0.141	0.334	0.483
Right hand, Touch cheek	0.252	0.117	0.250	0.286	0.253	0.334	0.62
Right hand, Tilt 15 Degree	0.120	0.036	0.092	0.064	0.138	0.334	0.472
Body, Back Side	0.417	0.476	0.886	0.884	0.375	0.167	1.053
Body, Front Side	0.393	0.438	0.956	1.108	0.321	0.167	1.275

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} = 1.275 W/kg < 1.6 W/kg, So the Simultaneous SAR are not required for BT and GSM/UMTS antenna.

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WIFI antenna and BT antenna cannot transmit simultaneously.

WIFI MRC antenna and BT antenna cannot transmit simultaneously.

WIFI MRC antenna and WIFI antenna cannot transmit simultaneously.

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8. 700MHz to 3GHz Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c _i	Standard uncertainty u _i (%)	Degree of freedom V _{eff} or V _i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	-probe calibration	B	6.0	N	1	1	6.0	∞
3	-axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	- Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
6	-boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
7	-probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
8	- System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
9	-readout Electronics	B	1.0	N	1	1	1.0	∞
10	-response time	B	0	R	$\sqrt{3}$	1	0	∞
11	-integration time	B	4.32	R	$\sqrt{3}$	1	2.5	∞
12	-noise	B	0	R	$\sqrt{3}$	1	0	∞
13	-RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	∞
14	-Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
15	-Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
16	-Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
17	-Test Sample Positioning	A	2.9	N	1	1	2.9	71
18	-Device Holder Uncertainty	A	4.1	N	1	1	4.1	5
19	-Output Power Variation - SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Physical parameter								
20	-phantom	B	4.0	R	$\sqrt{3}$	1	2.3	∞

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21	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.64	1.8	∞
22	-liquid conductivity (measurement uncertainty)	B	2.5	N	1	0.64	1.6	9
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	2.5	N	1	0.6	1.5	9
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{24} c_i^2 u_i^2}$					11.50	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N	k=2	23.00		

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9. Main Test Instruments

Table 24: 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 10, 2013	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 25, 2013	One year
08	Dual directional coupler	777D	50146	March 25, 2013	One year
09	Amplifier	IXA-020	0401	No Calibration Requested	
10	BTS	E5515C	MY48360988	December 1, 2012	One year
11	E-field Probe	EX3DV4	3753	January 17, 2013	One year
12	DAE	DAE4	1317	January 25, 2013	One year
13	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	Two years
14	Validation Kit 1750MHz	D1750V2	1023	June 20, 2012	Two years
15	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	Two years
16	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	Two years
17	Temperature Probe	JM222	AA1009129	March 14, 2013	One year
18	Hygrothermograph	WS-1	64591	September 27, 2012	One year

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

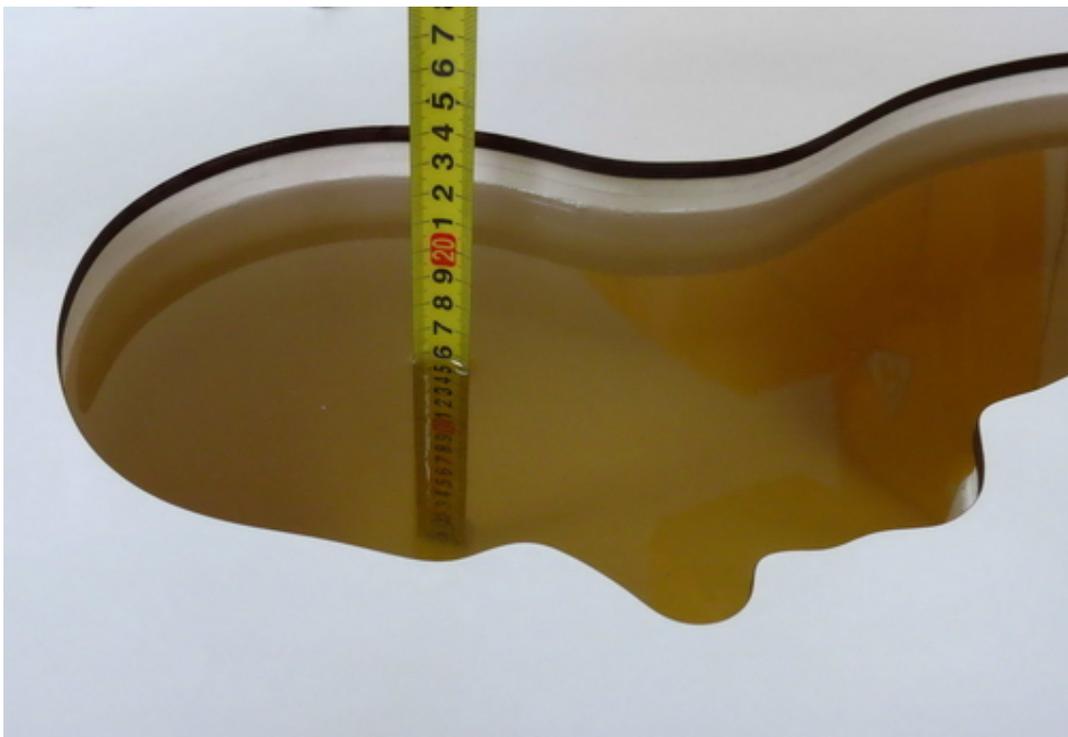
ANNEX A: Test Layout



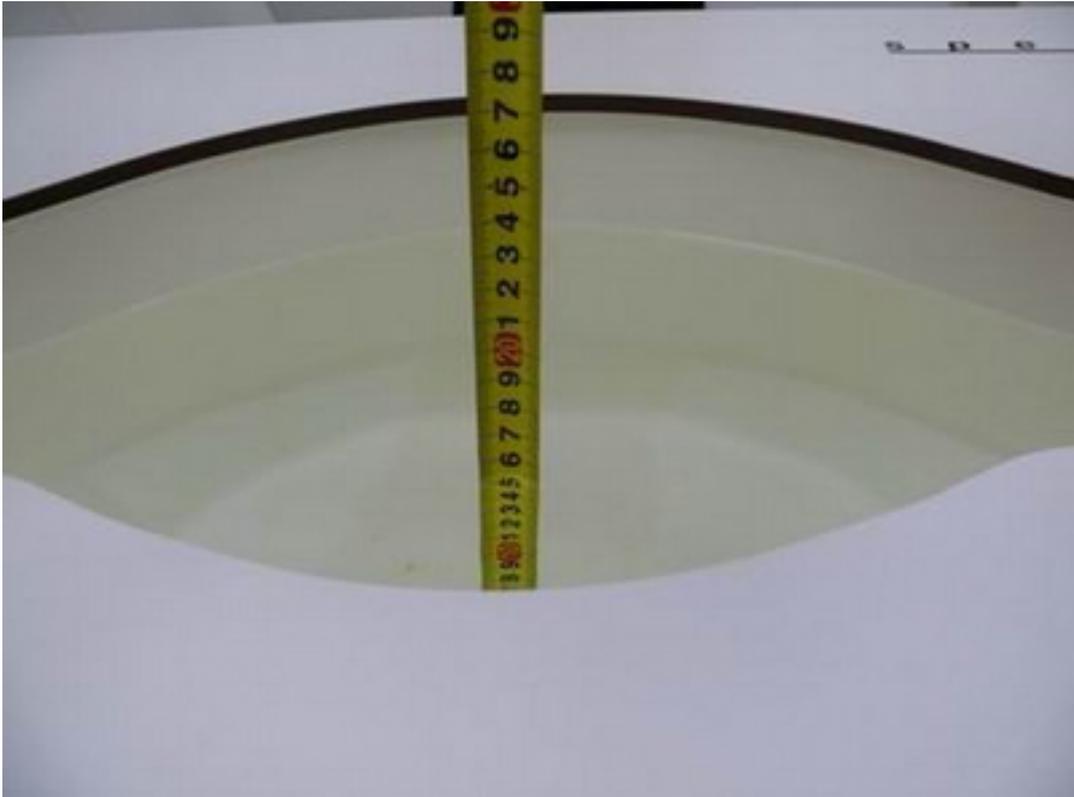
Picture 1: Specific Absorption Rate Test Layout



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



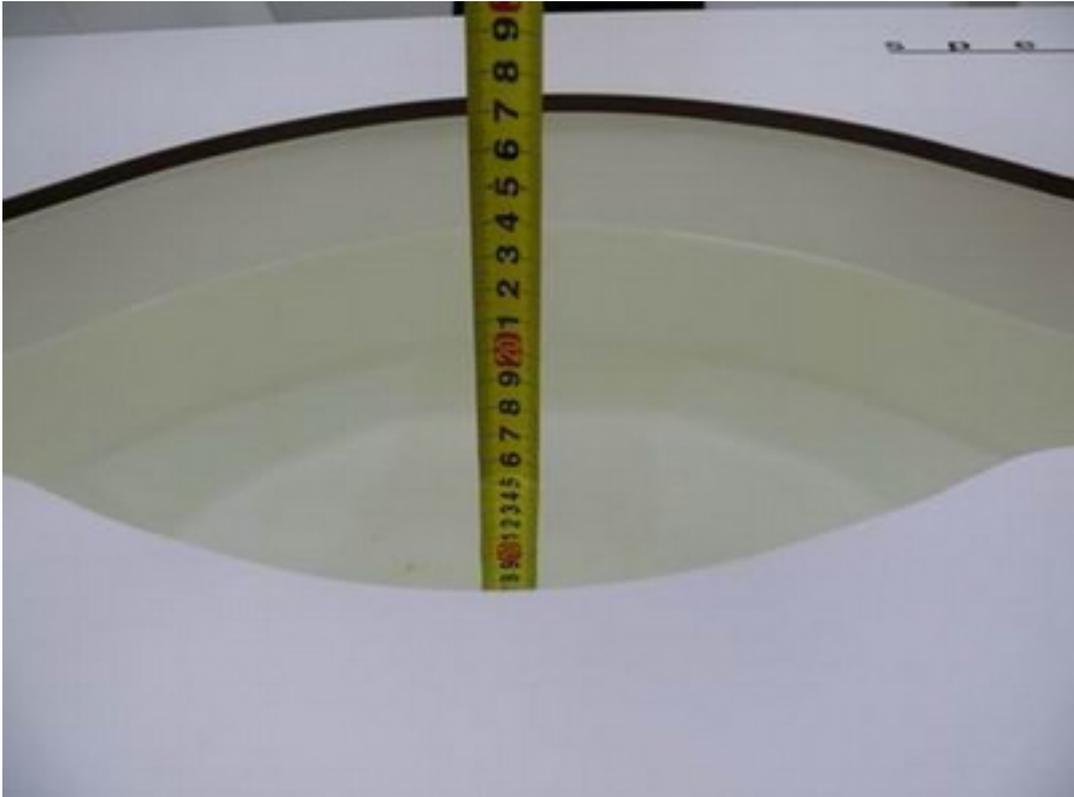
Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



Picture 4: Liquid depth in the flat Phantom (1750 MHz, 15.1cm depth)



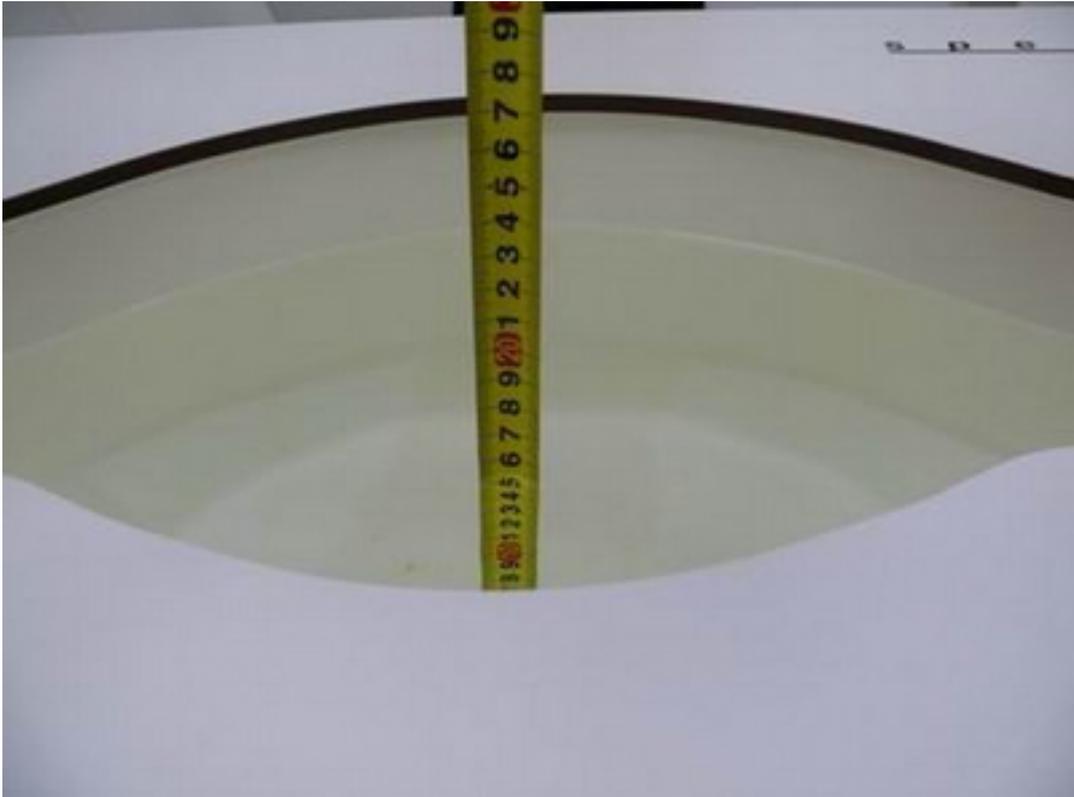
Picture 5: liquid depth in the head Phantom (1750 MHz, 15.3cm depth)



Picture 6: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)



Picture 7: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)



Picture 8: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)



Picture 9: 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: 7/20/2013 3:45:38 AM

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

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.916 \text{ mho/m}$; $\epsilon_r = 41.25$; $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: $22.3 \text{ }^\circ\text{C}$ Liquid Temperature: 21.5°C

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

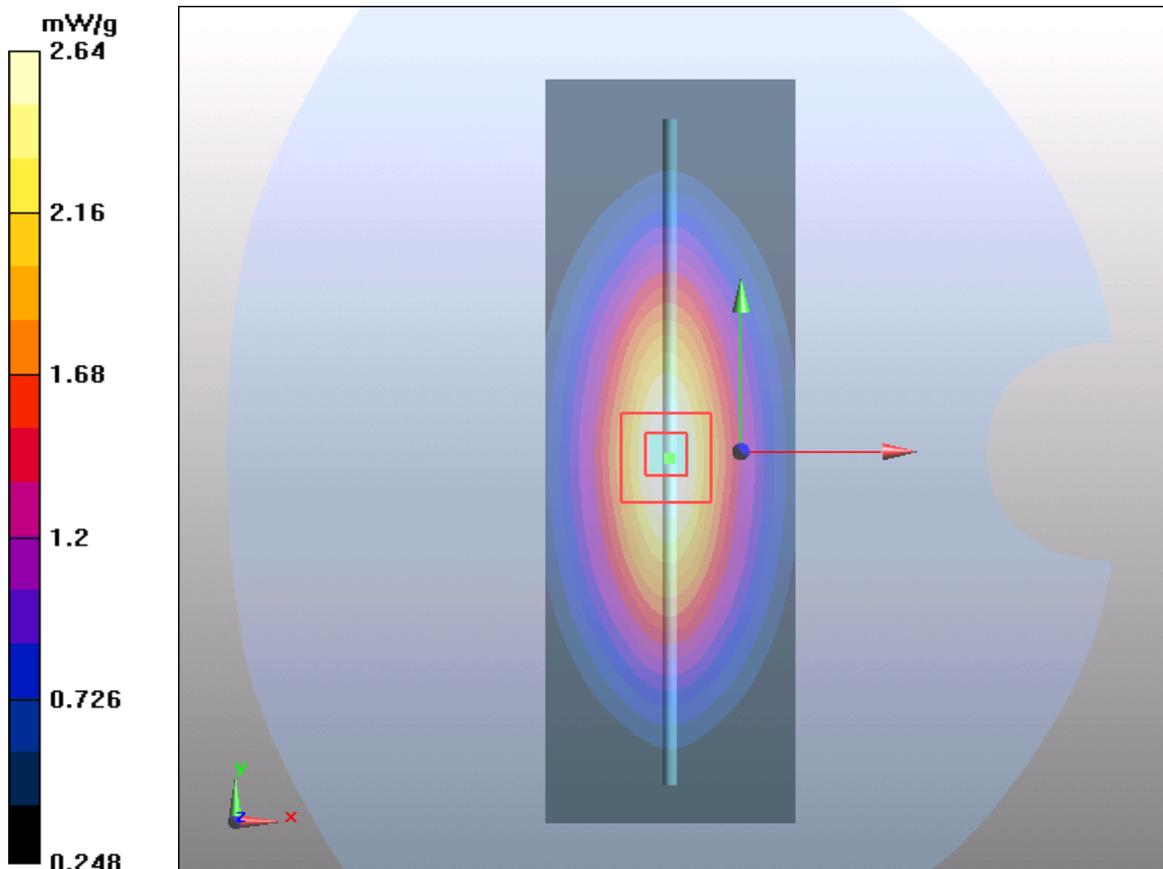


Figure 7 System Performance Check 835MHz 250mW

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System Performance Check at 835 MHz Body TSL

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

Date/Time: 7/20/2013 4:29:37 PM

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

Medium parameters used: $f = 835$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 54.35$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

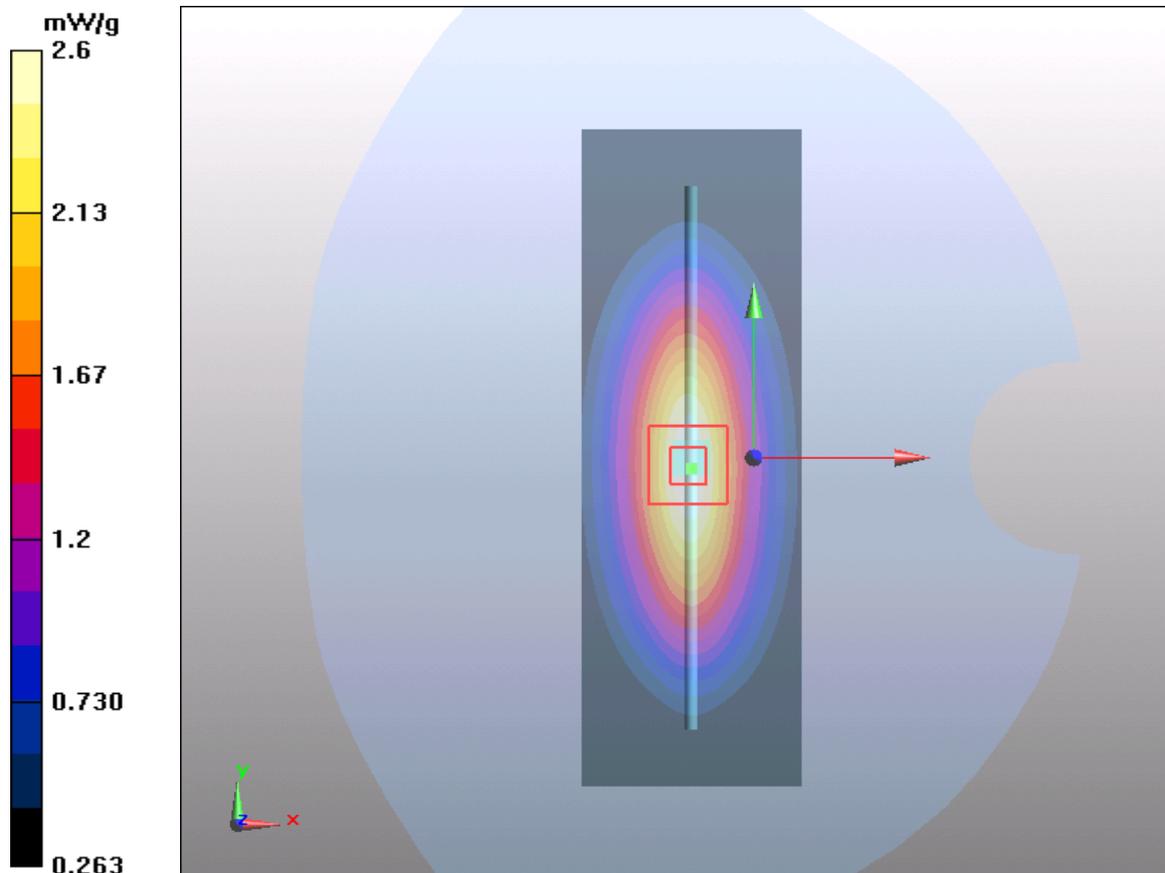


Figure 8 System Performance Check 835MHz 250mW

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System Performance Check at 1750 MHz Head TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1023

Date/Time: 7/25/2013 5:03:44 PM

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.4$ mho/m; $\epsilon_r = 39.17$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Maximum value of SAR (interpolated) = 9.78 mW/g

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

Reference Value = 80 V/m; Power Drift = 0.075 dB

Peak SAR (extrapolated) = 15.5 W/kg

SAR(1 g) = 8.45 mW/g; SAR(10 g) = 4.5 mW/g

Maximum value of SAR (measured) = 9.46 mW/g

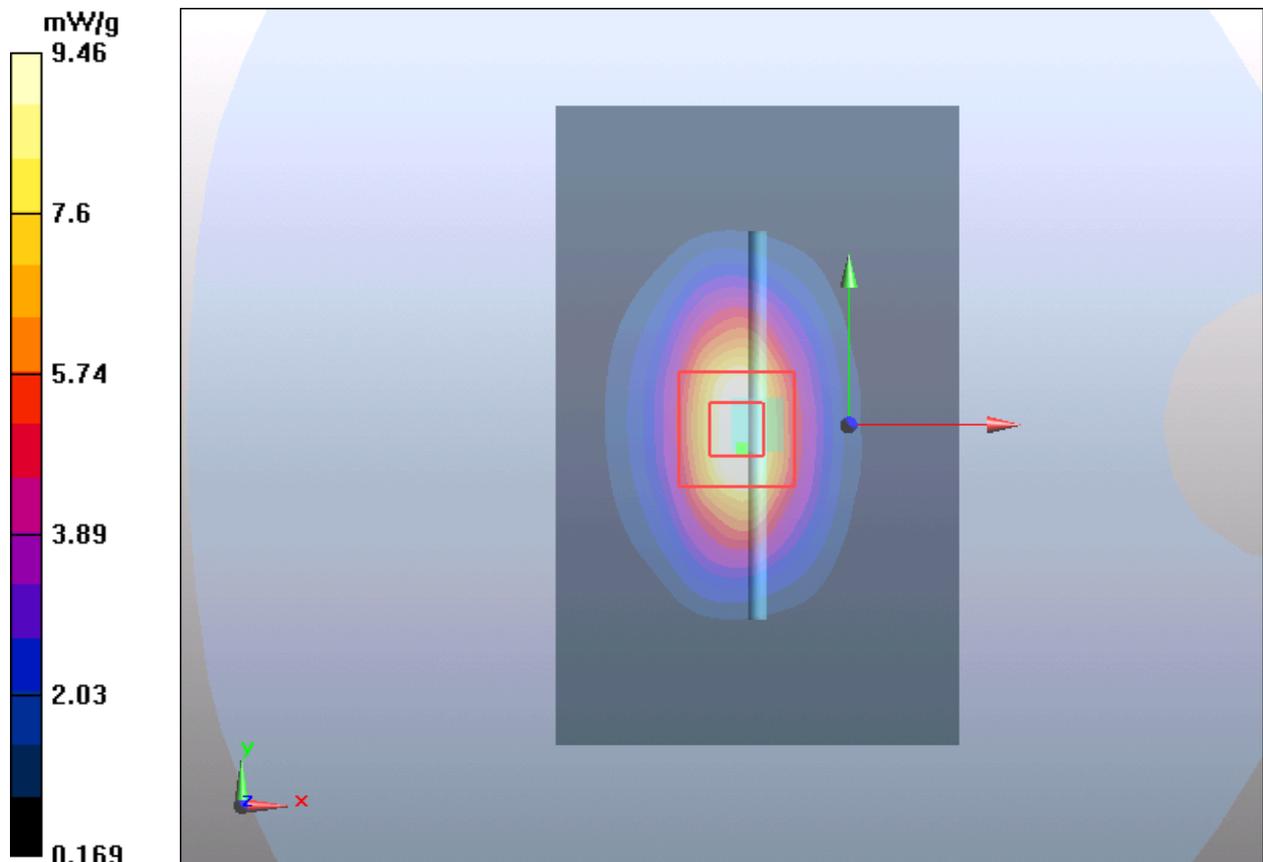


Figure 9 System Performance Check 1750MHz 250mW

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System Performance Check at 1750 MHz Body TSL

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1023

Date/Time: 7/24/2013 11:00:55 PM

Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1750$ MHz; $\sigma = 1.468$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

Ambient Temperature: 22.3 °C Liquid Temperature: 21.7 °C

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Maximum value of SAR (interpolated) = 10.6 mW/g

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

Reference Value = 77.7 V/m; Power Drift = 0.097 dB

Peak SAR (extrapolated) = 16.8 W/kg

SAR(1 g) = 9.24 mW/g; SAR(10 g) = 4.9 mW/g

Maximum value of SAR (measured) = 10.3 mW/g

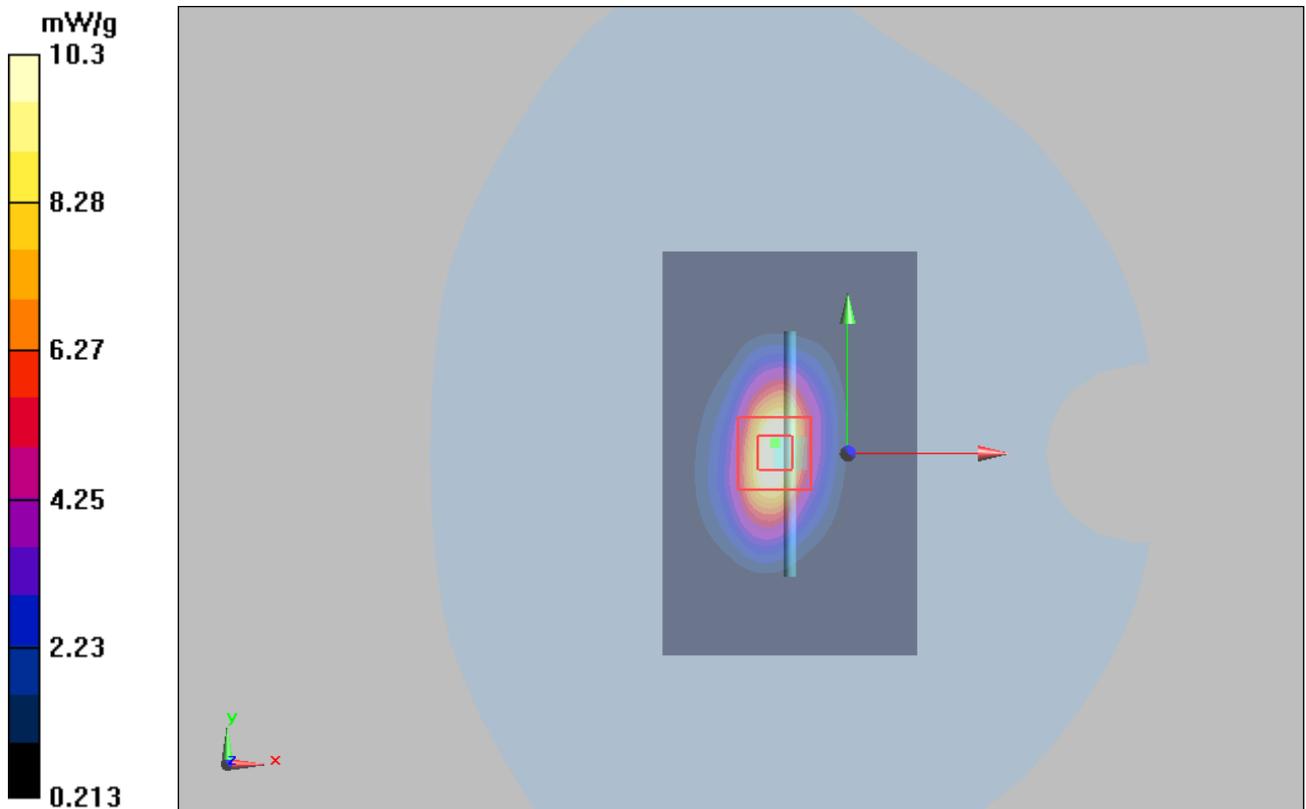


Figure 10 System Performance Check 1750MHz 250mW

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System Performance Check at 1900 MHz Head TSL

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

Date/Time: 7/25/2013 7:00:55 AM

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 38.33$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

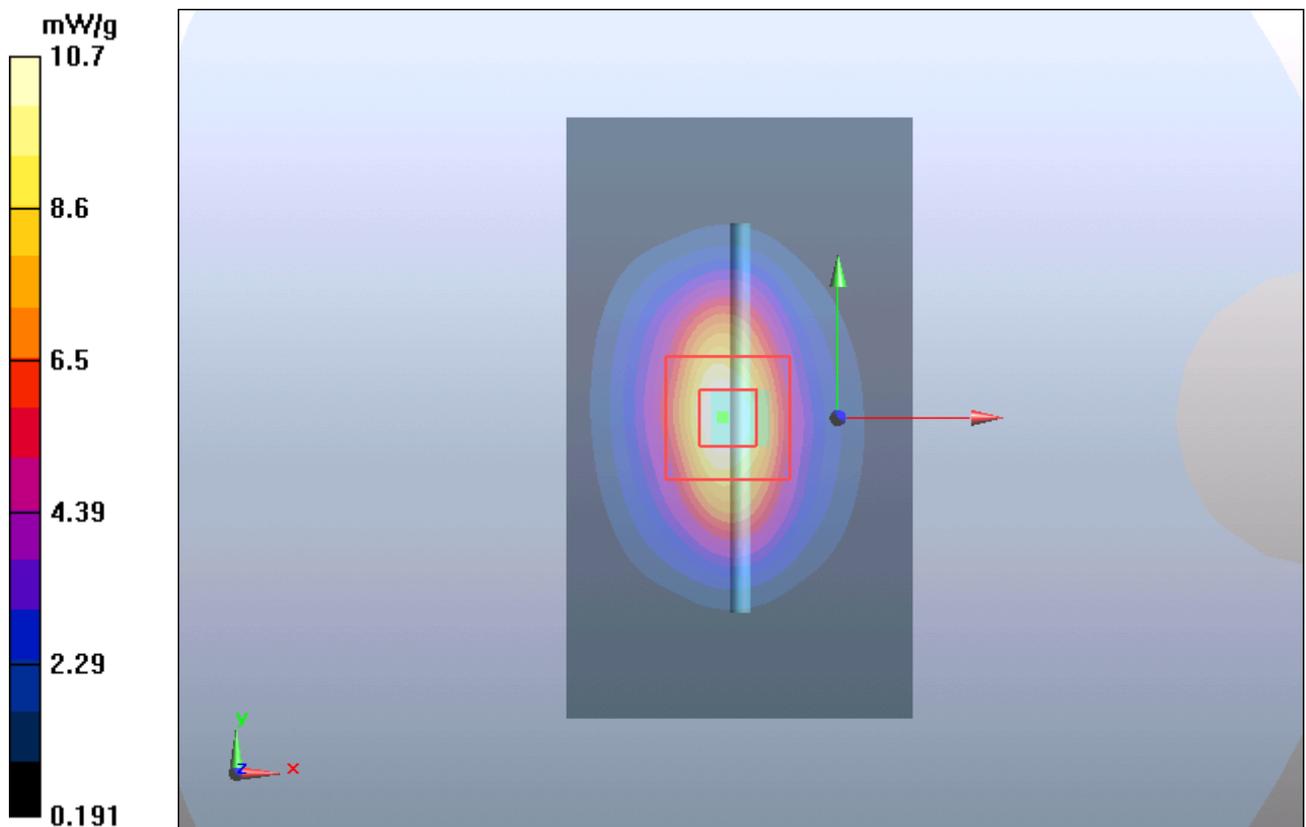


Figure 11 System Performance Check 1900MHz 250mW

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System Performance Check at 1900 MHz Body TSL

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

Date/Time: 7/26/2013 7:30:25 AM

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

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.524$ mho/m; $\epsilon_r = 52.56$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

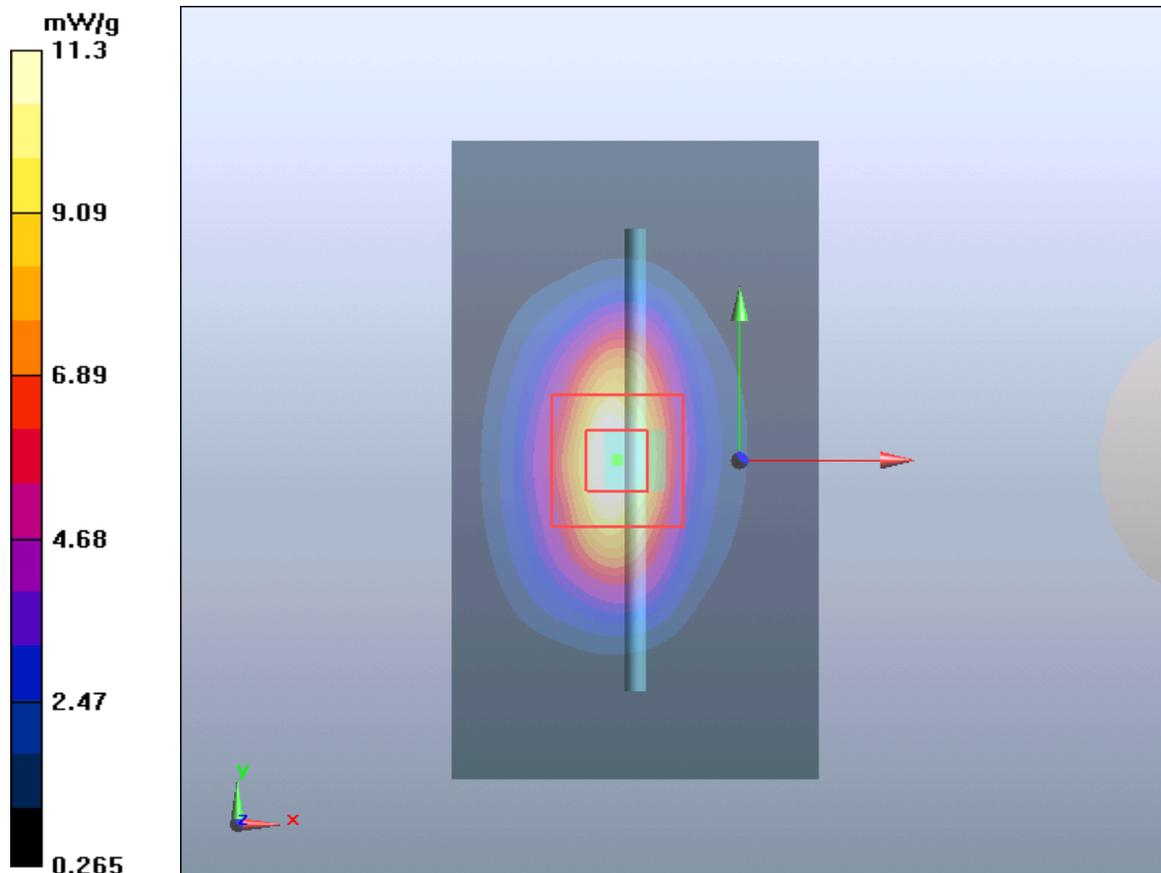


Figure 12 System Performance Check 1900MHz 250mW

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System Performance Check at 2450 MHz Head TSL

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

Date/Time: 7/23/2013 8:52:12 AM

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.88$ mho/m; $\epsilon_r = 38.32$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

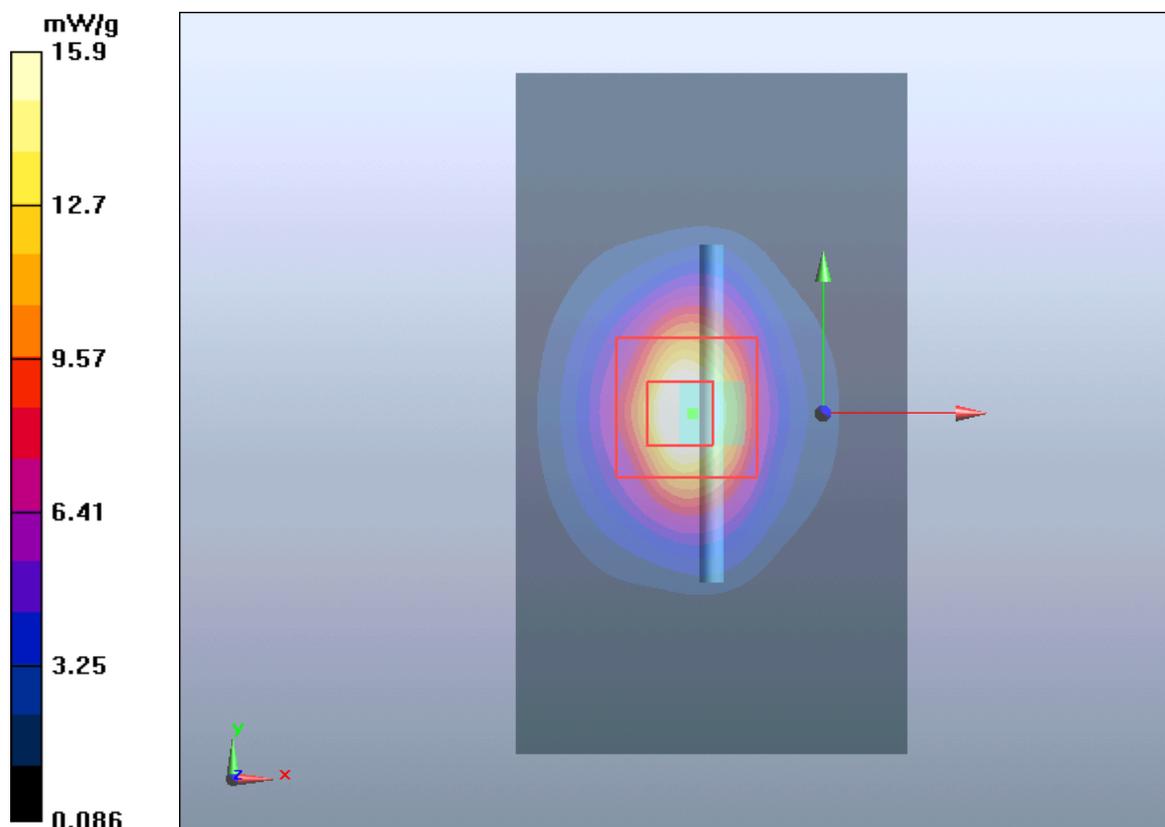


Figure 13 System Performance Check 2450MHz 250mW

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System Performance Check at 2450 MHz Body TSL

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

Date/Time: 7/24/2013 7:45:59 AM

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

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.9$ mho/m; $\epsilon_r = 51.69$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

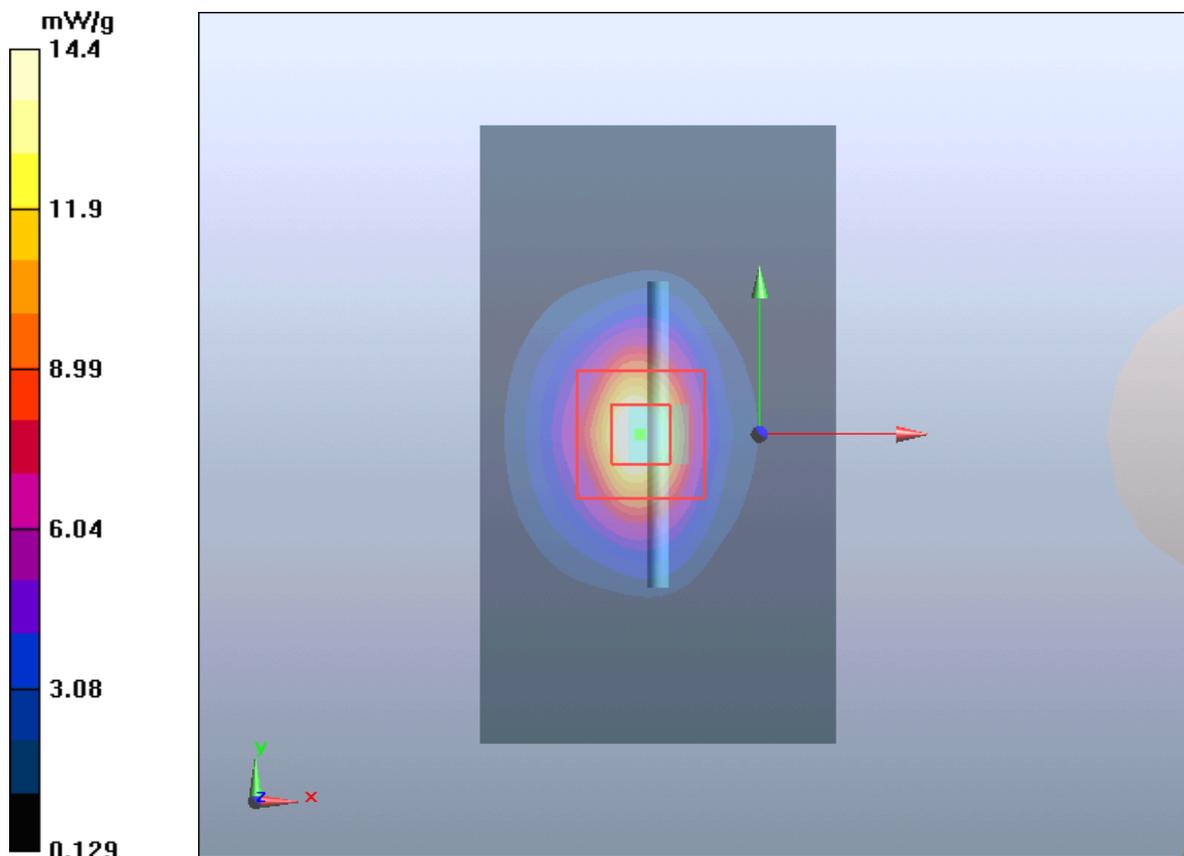


Figure 14 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle (Battery 1)

Date/Time: 7/20/2013 5:10:46 AM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 Left Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.162 W/kg

GSM 850 Left Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.041 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 0.198 mW/g

SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.116 mW/g

Maximum value of SAR (measured) = 0.163 W/kg

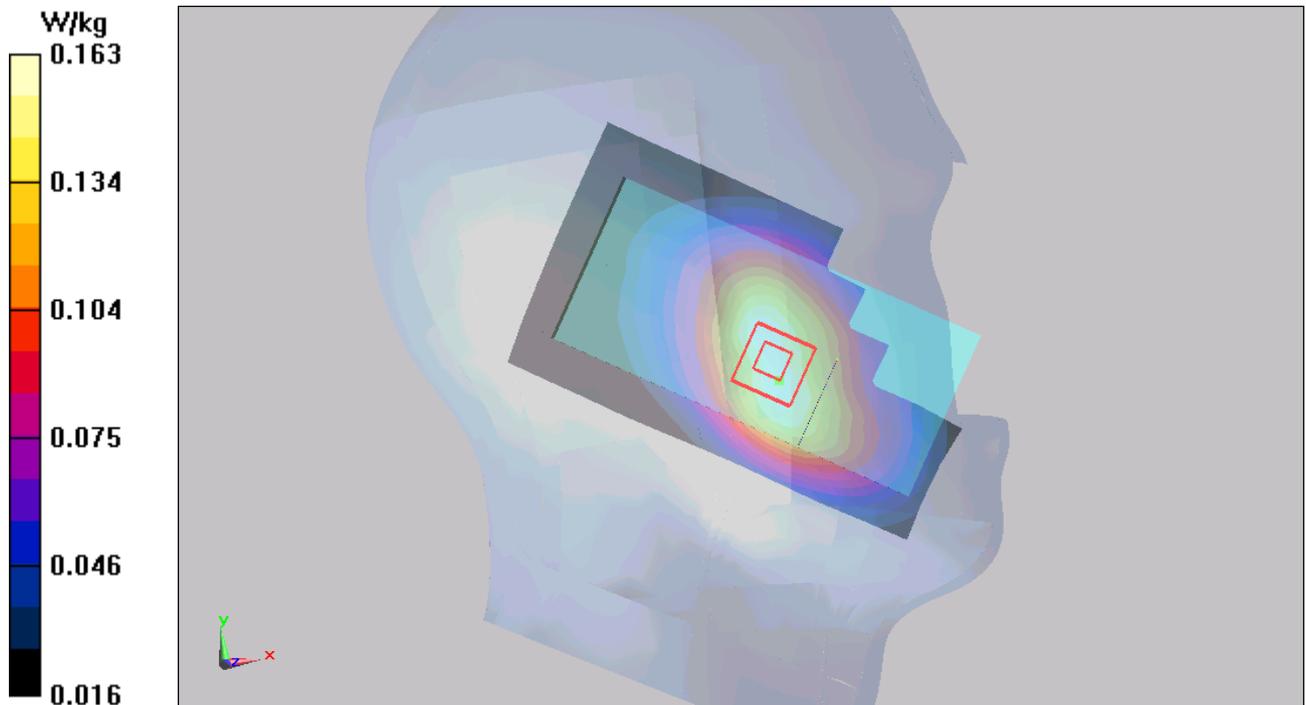


Figure 15 Left Hand Touch Cheek GSM 850 Channel 190

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GSM 850 Left Tilt Middle (Battery 1)

Date/Time: 7/20/2013 5:27:35 AM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 Left Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.117 W/kg

GSM 850 Left Tilt Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.023 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 0.143 mW/g

SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.087 mW/g

Maximum value of SAR (measured) = 0.120 W/kg

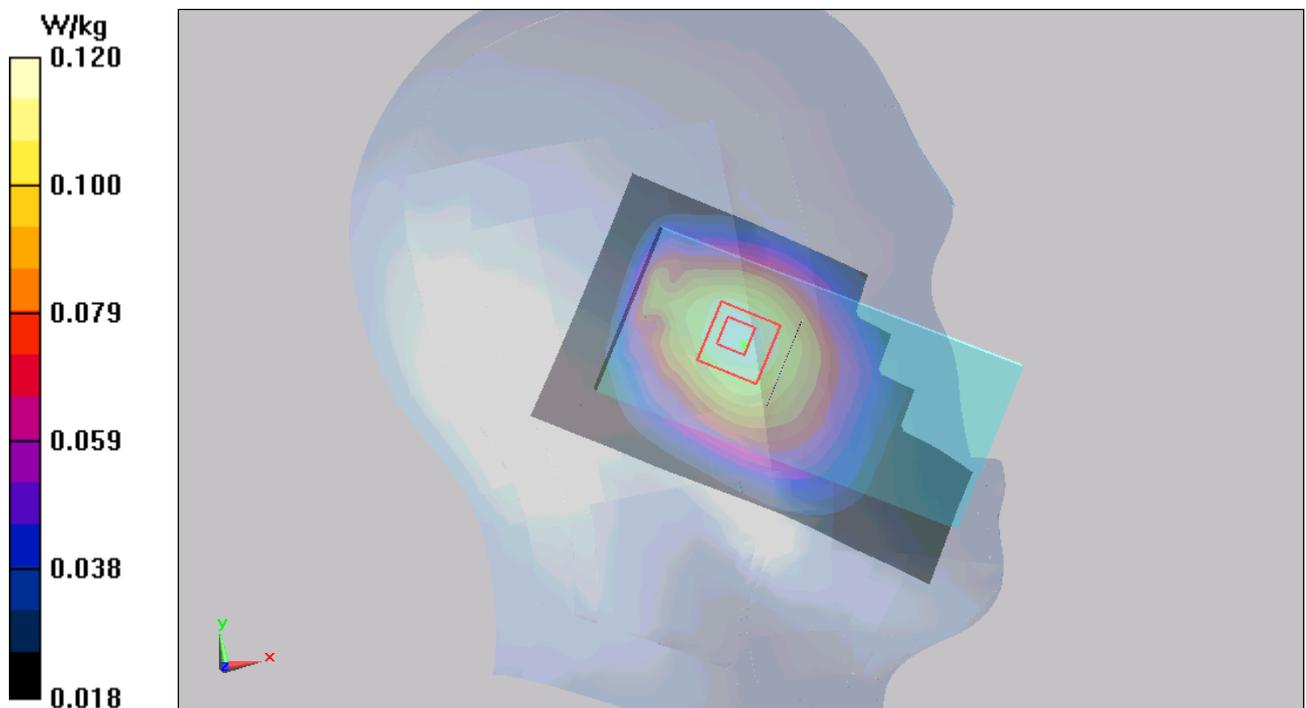


Figure 16 Left Hand Tilt 15° GSM 850 Channel 190

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GSM 850 Right Cheek Middle (Battery 1)

Date/Time: 7/20/2013 5:45:59 AM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 Right Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.171 W/kg

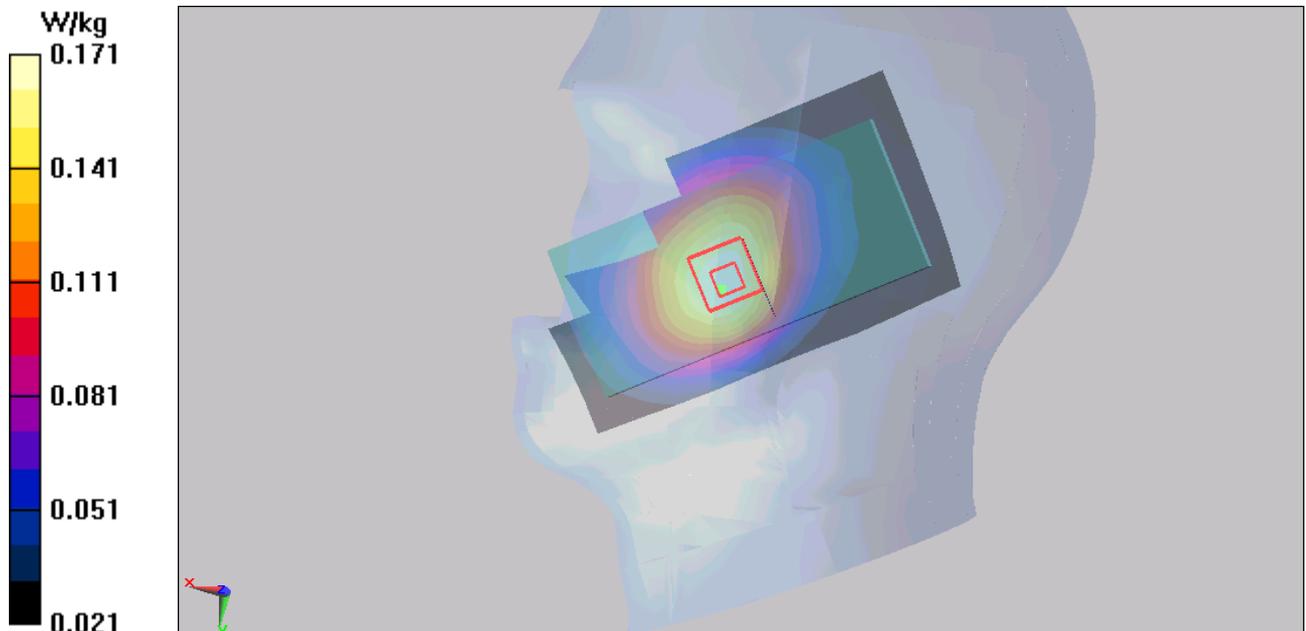
GSM 850 Right Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.910 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.202 mW/g

SAR(1 g) = 0.165 mW/g; SAR(10 g) = 0.128 mW/g

Maximum value of SAR (measured) = 0.171 W/kg



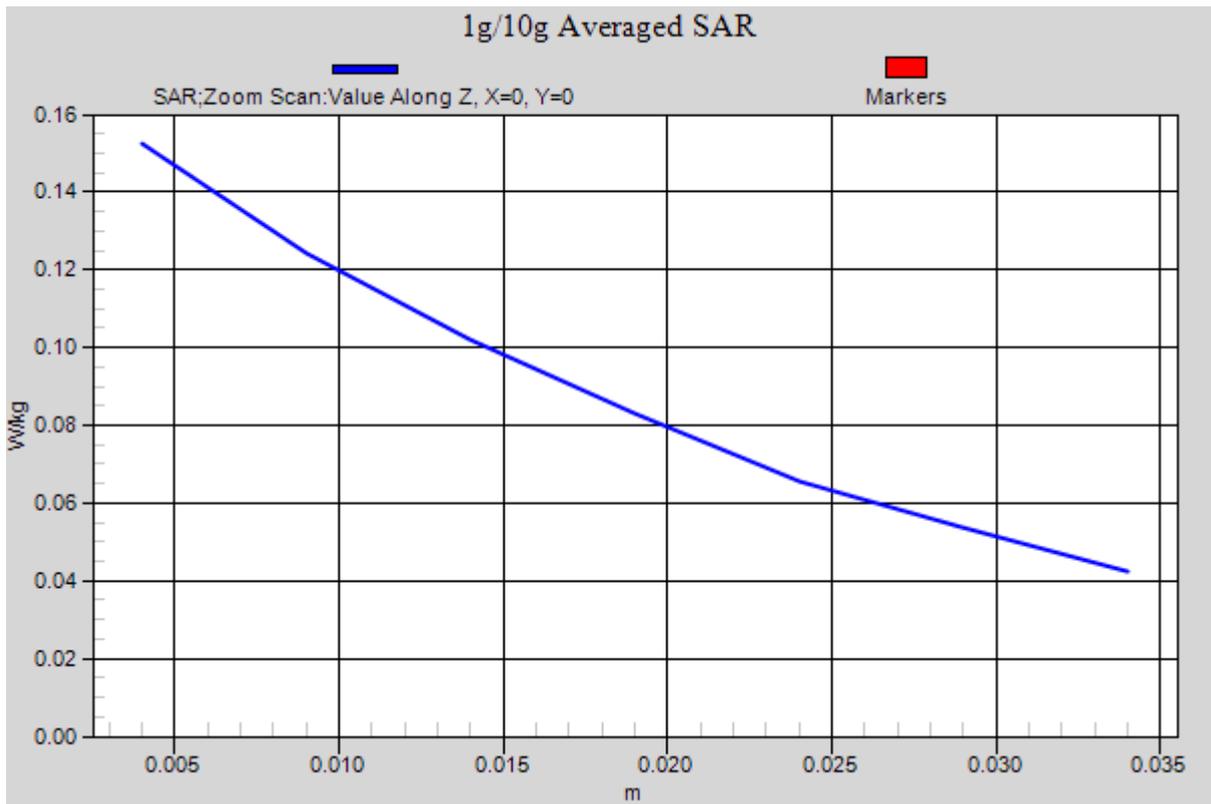


Figure 17 Right Hand Touch Cheek GSM 850 Channel 190

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GSM 850 Right Tilt Middle (Battery 1)

Date/Time: 7/20/2013 6:03:04 AM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 Right Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.0969 W/kg

GSM 850 Right Tilt Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.753 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.114 mW/g

SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.070 mW/g

Maximum value of SAR (measured) = 0.0963 W/kg

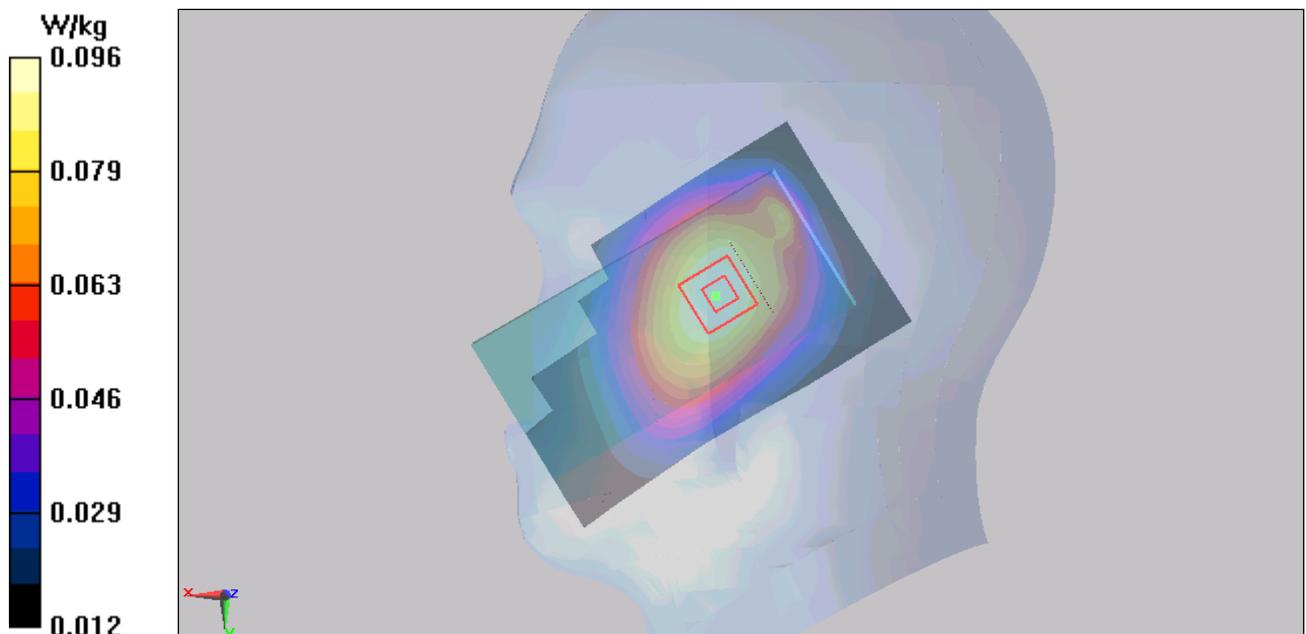


Figure 18 Right Hand Tilt 15° GSM 850 Channel 190

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GSM 850 Right Cheek Middle (Battery 2)

Date/Time: 7/20/2013 9:00:09 AM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 Right Cheek Middle /Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.197 W/kg

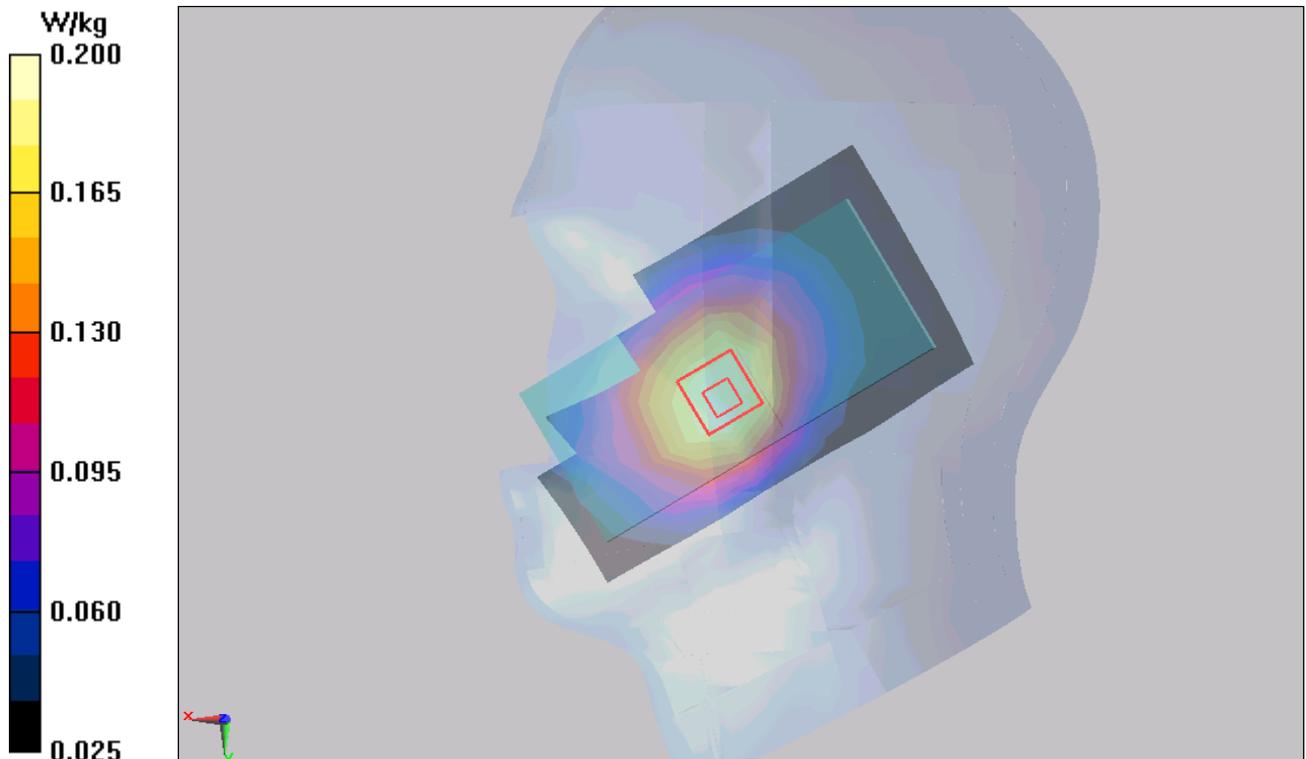
GSM 850 Right Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.665 V/m; Power Drift = -0.058dB

Peak SAR (extrapolated) = 0.235 mW/g

SAR(1 g) = 0.193 mW/g; SAR(10 g) = 0.149 mW/g

Maximum value of SAR (measured) = 0.200 W/kg



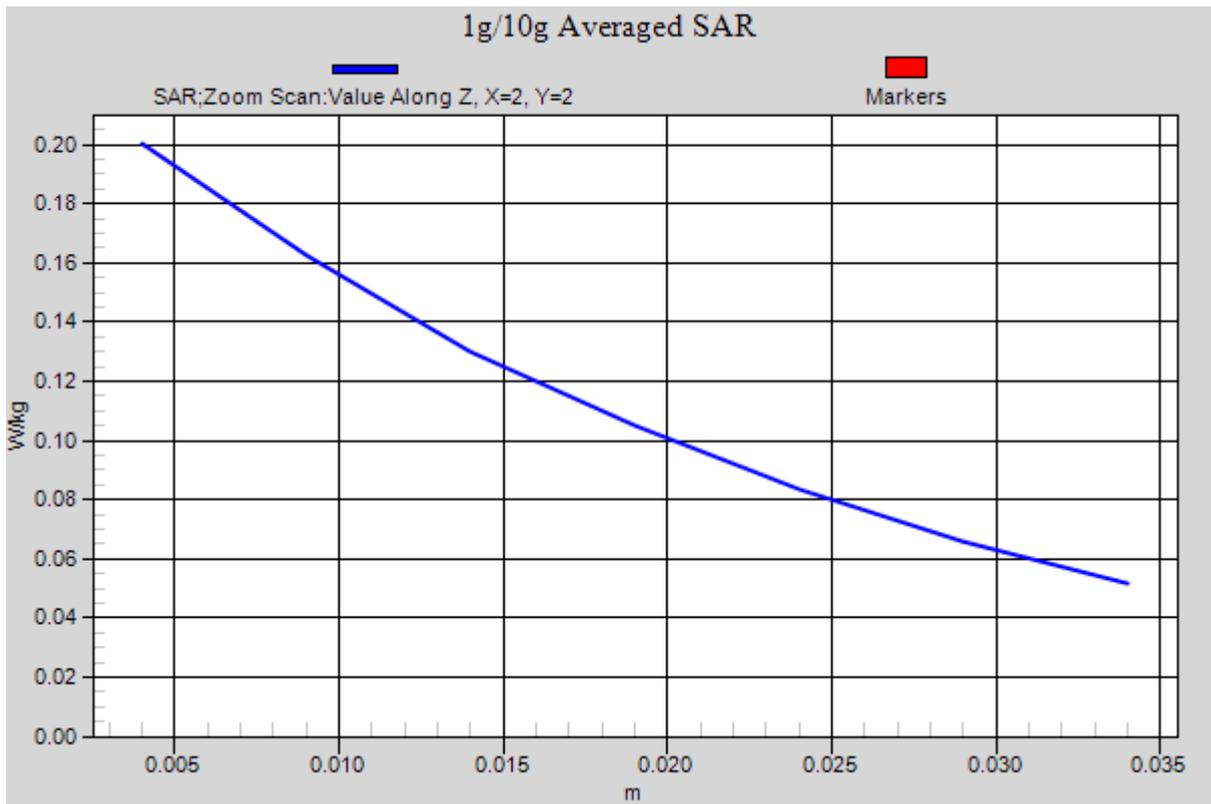


Figure 19 Right Touch Cheek GSM 850 Channel 190

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

Date/Time: 7/20/2013 6:20:55 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots) Back Side Middle /Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.329 W/kg

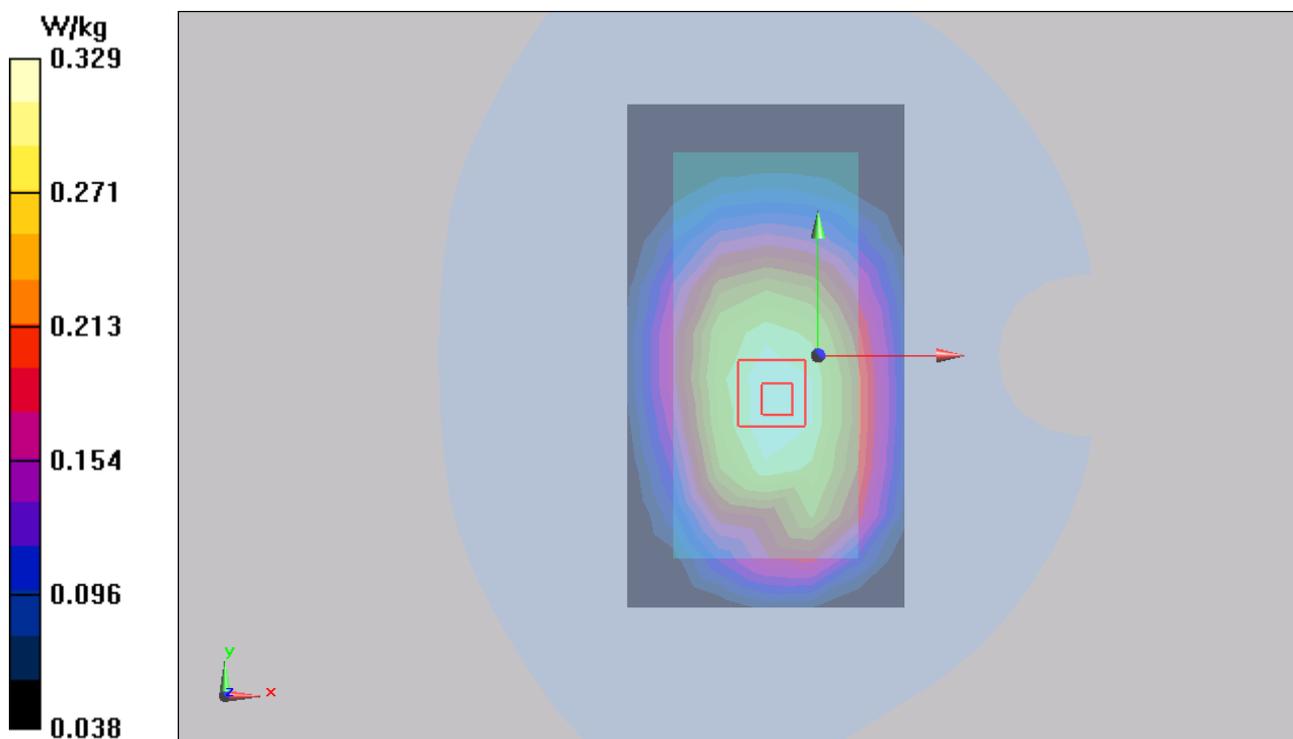
GSM 850 GPRS (2Txslots) Back Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.955 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.392 mW/g

SAR(1 g) = 0.316 mW/g; SAR(10 g) = 0.245 mW/g



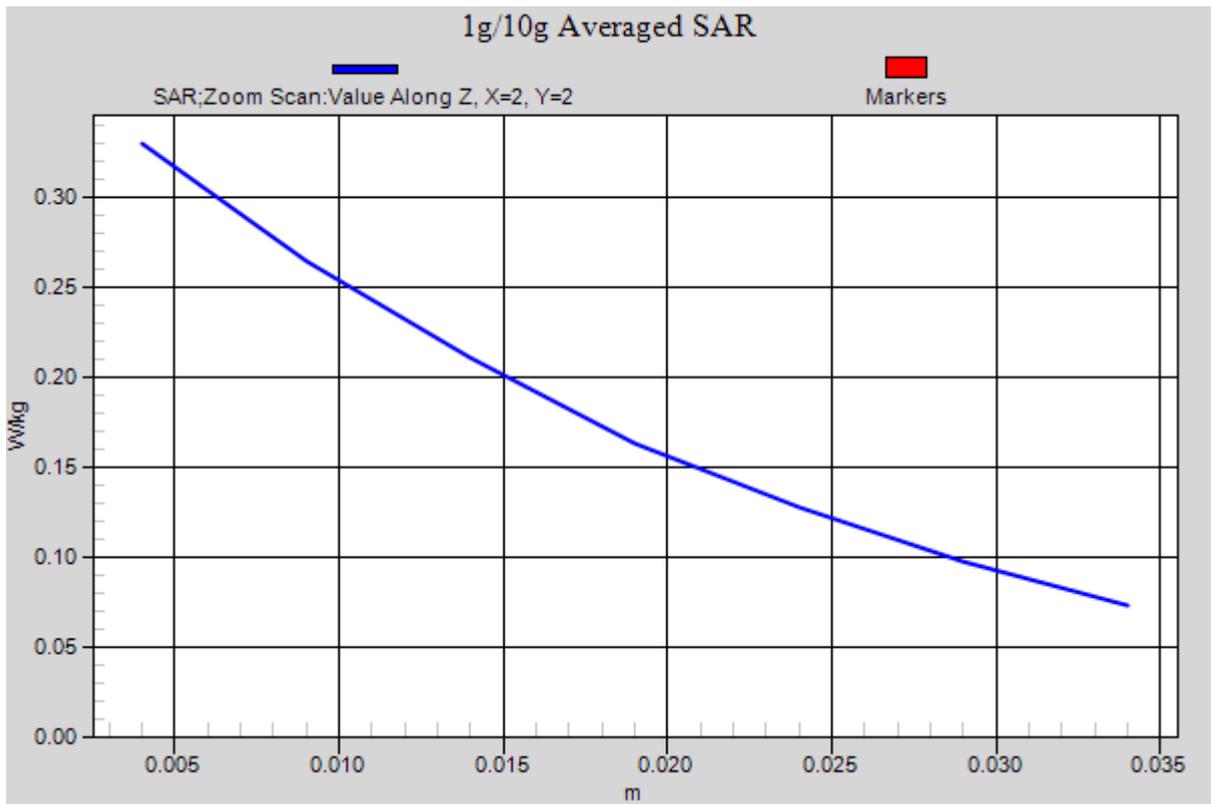


Figure 20 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

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

Date/Time: 7/20/2013 6:01:56 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots)Front Side Middle /Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.325 W/kg

GSM 850 GPRS (2Txslots)Front Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.105 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.383 mW/g

SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.243 mW/g

Maximum value of SAR (measured) = 0.326 W/kg

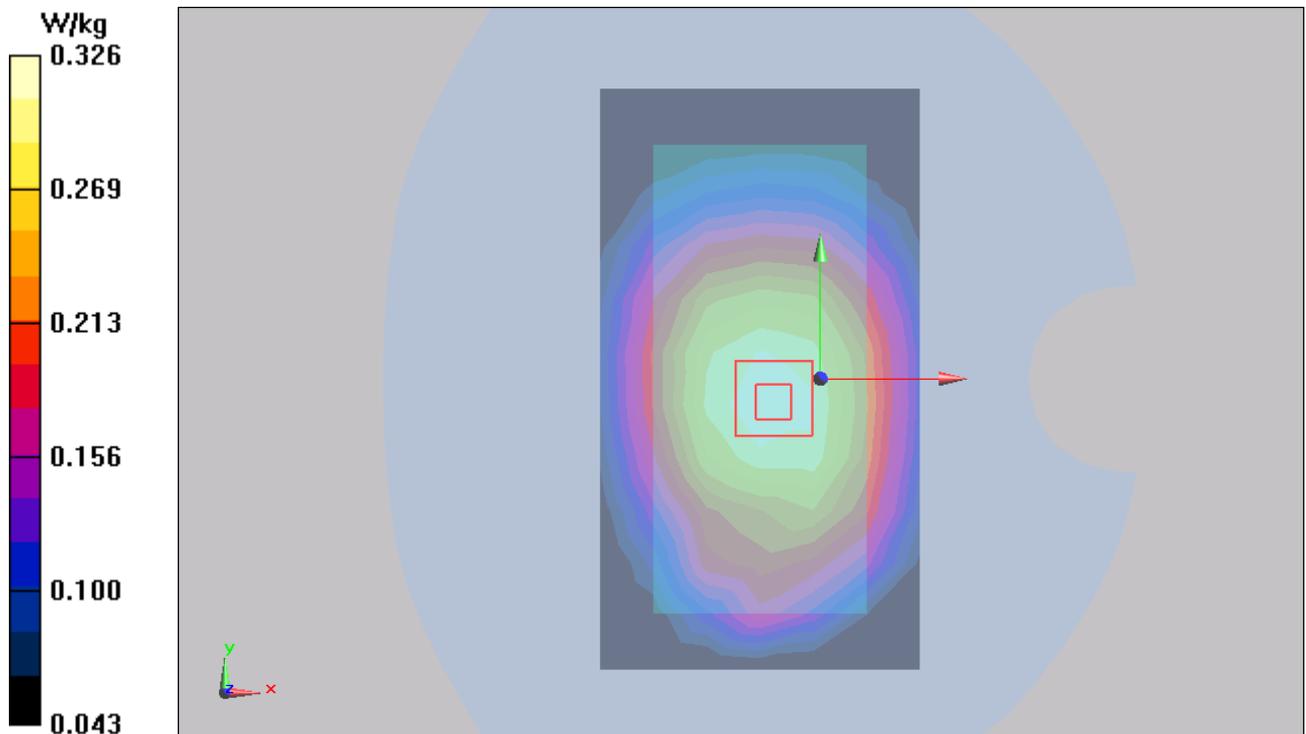


Figure 21 Body, Front Side, GSM 850 GPRS (2Txslots)Channel 190

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

Date/Time: 7/20/2013 6:49:35 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots)Left Edge Middle /Area Scan (4x12x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0985 W/kg

GSM 850 GPRS (2Txslots)Left Edge Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 10.231 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.142 mW/g

SAR(1 g) = 0.099mW/g; SAR(10 g) = 0.067 mW/g

Maximum value of SAR (measured) = 0.106 W/kg

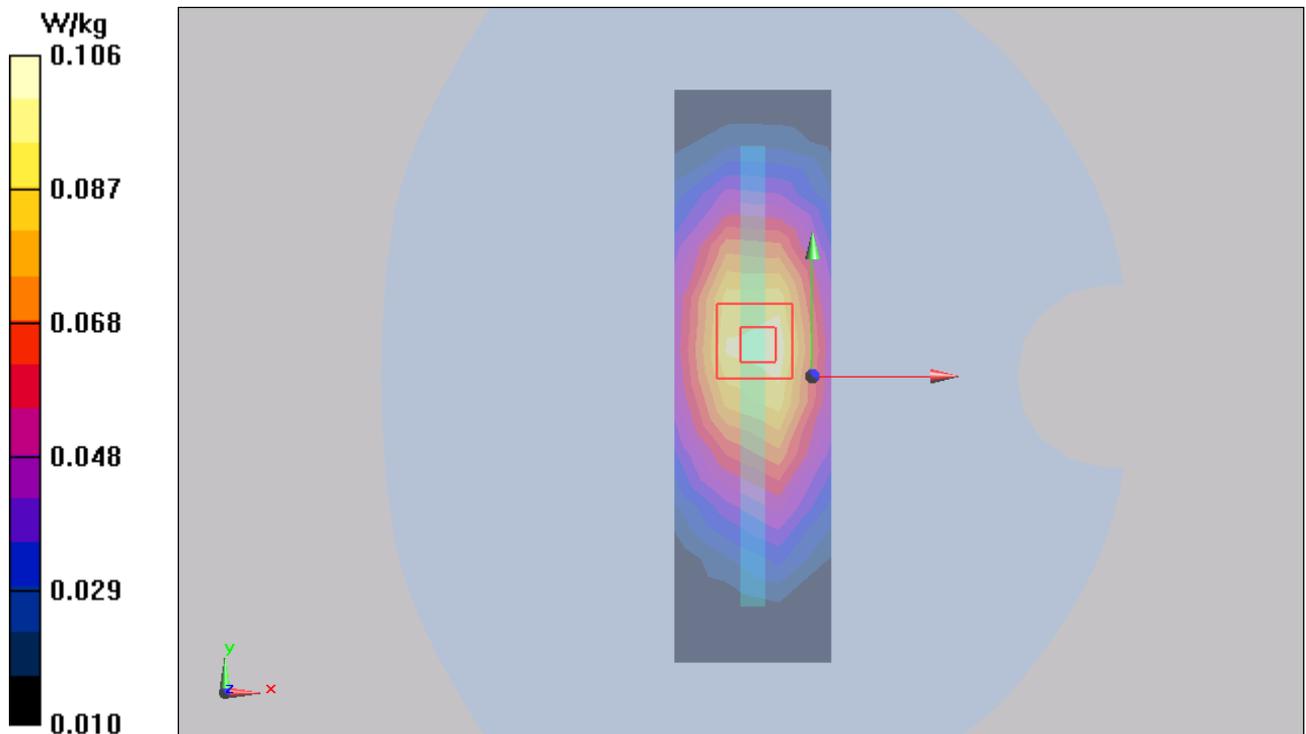


Figure 22 Body, Left Edge, GSM 850 GPRS (2Txslots)Channel 190

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

Date/Time: 7/20/2013 7:04:42 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots)Right Edge Middle /Area Scan (4x12x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.150 W/kg

GSM 850 GPRS (2Txslots)Right Edge Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 12.990 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.223 mW/g

SAR(1 g) = 0.156 mW/g; SAR(10 g) = 0.106 mW/g

Maximum value of SAR (measured) = 0.167 W/kg

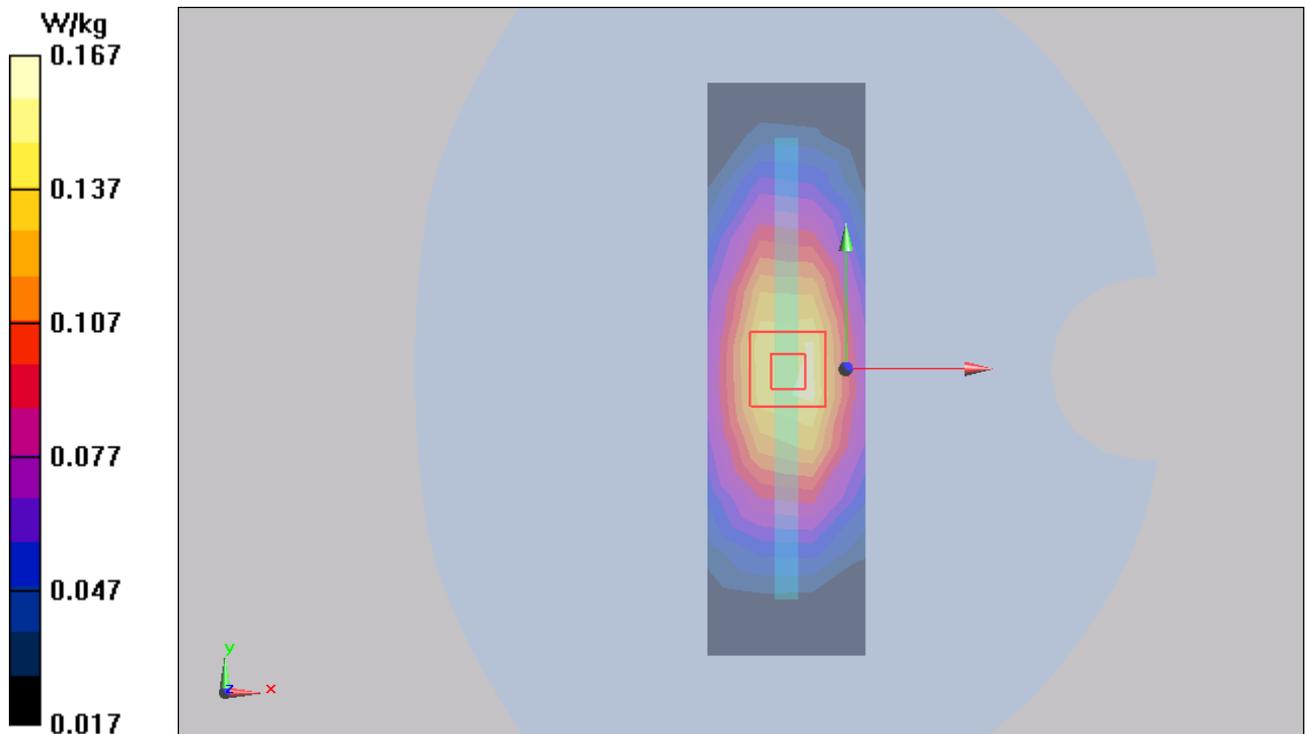


Figure 23 Body, Right Edge, GSM 850 GPRS (2Txslots)Channel 190

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

Date/Time: 7/20/2013 8:29:59 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots)Bottom Edge Middle/ Area Scan (4x7x1): Measurement grid:

dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0811 W/kg

GSM 850 GPRS (2Txslots)Bottom Edge Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.959 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 0.164 mW/g

SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.047 mW/g

Maximum value of SAR (measured) = 0.0996 W/kg

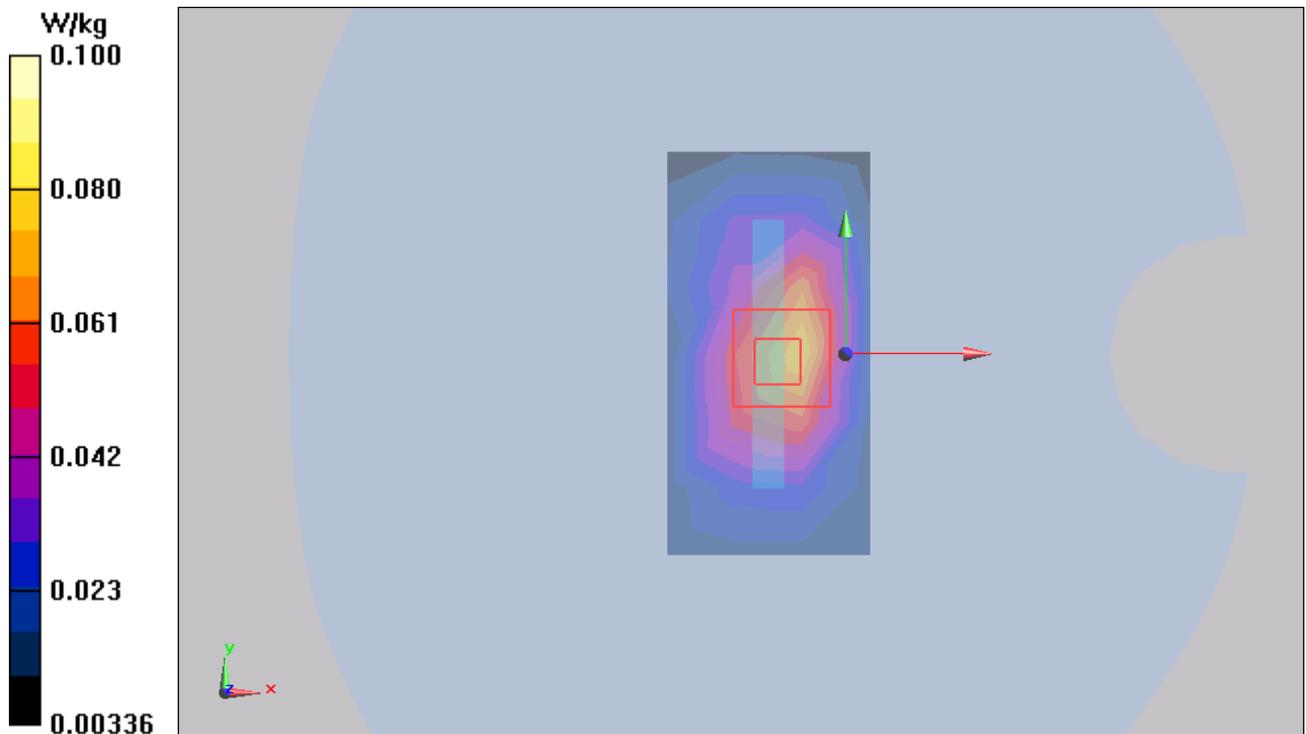


Figure 24 Body, Bottom Edge, GSM 850 GPRS (2Txslots)annel 190

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

Date/Time: 7/20/2013 10:50:32 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.014$ mho/m; $\epsilon_r = 54.339$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 EGPRS (2Txslots) Back Side Middle /Area Scan (7x12x1): Measurement grid:

dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.309 W/kg

GSM 850 EGPRS (2Txslots) Back Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.494 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.366 mW/g

SAR(1 g) = 0.299 mW/g; SAR(10 g) = 0.232 mW/g

Maximum value of SAR (measured) = 0.312 W/kg

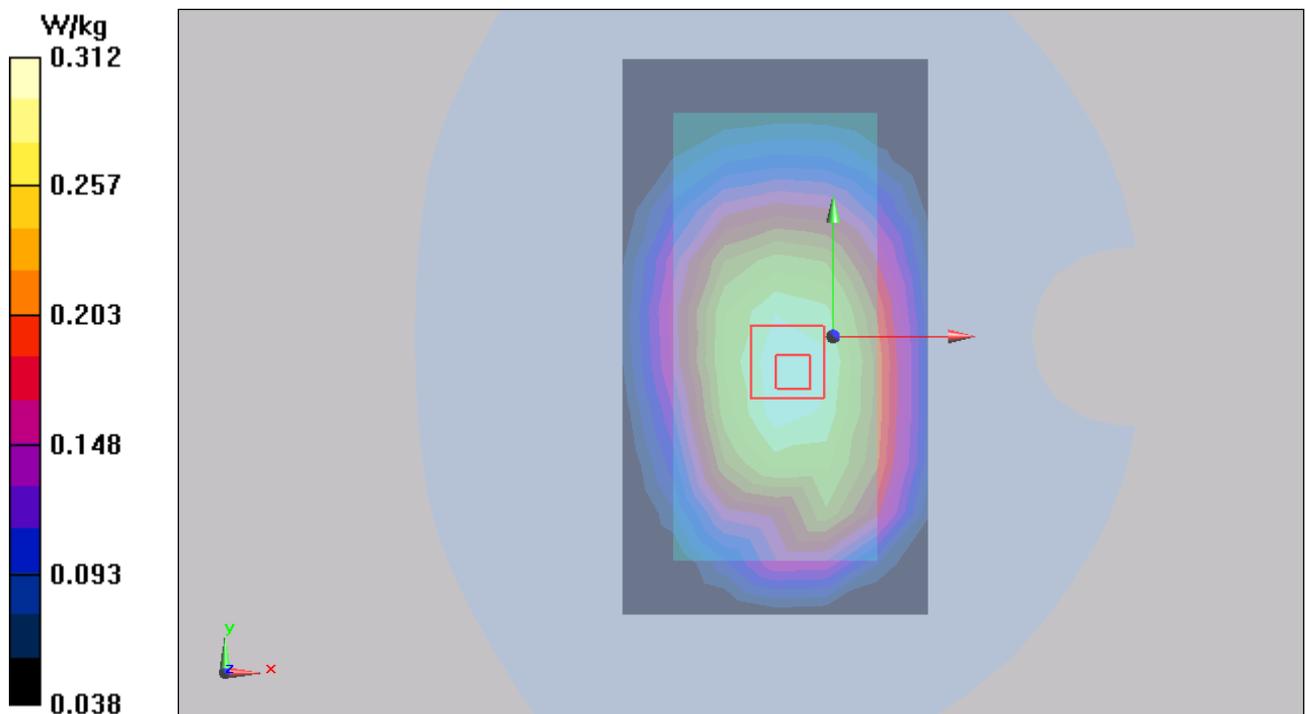


Figure 25 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 190

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

Date/Time: 7/20/2013 7:18:04 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 1.001$ mho/m; $\epsilon_r = 55.318$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

GSM 850 GPRS (2Txslots) Back Side Middle /Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.346 W/kg

GSM 850 GPRS (2Txslots) Back Side Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid:

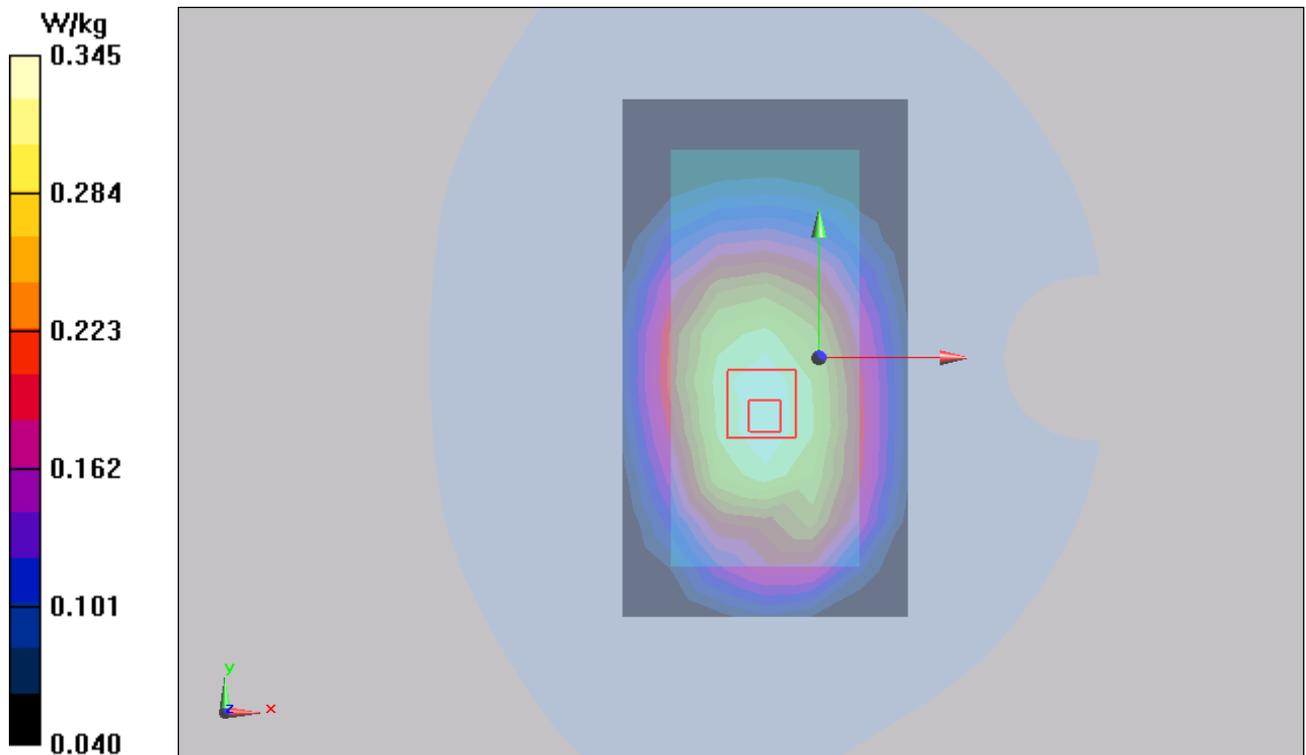
dx=8mm, dy=8mm, dz=5mm

Reference Value = 18.371 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.405 mW/g

SAR(1 g) = 0.330 mW/g; SAR(10 g) = 0.256 mW/g

Maximum value of SAR (measured) = 0.345 W/kg



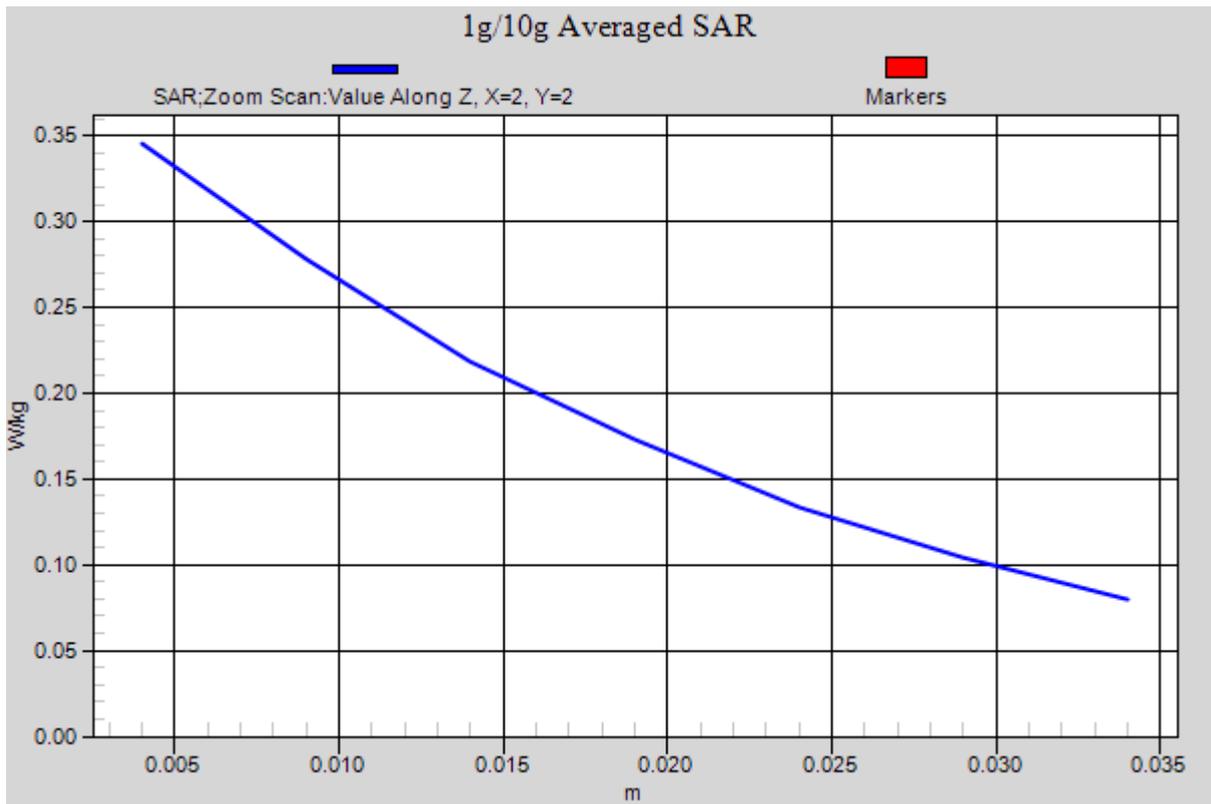


Figure 26 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

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GSM 1900 Left Cheek Middle (Battery 1)

Date/Time: 7/25/2013 9:34:26 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.131 W/kg

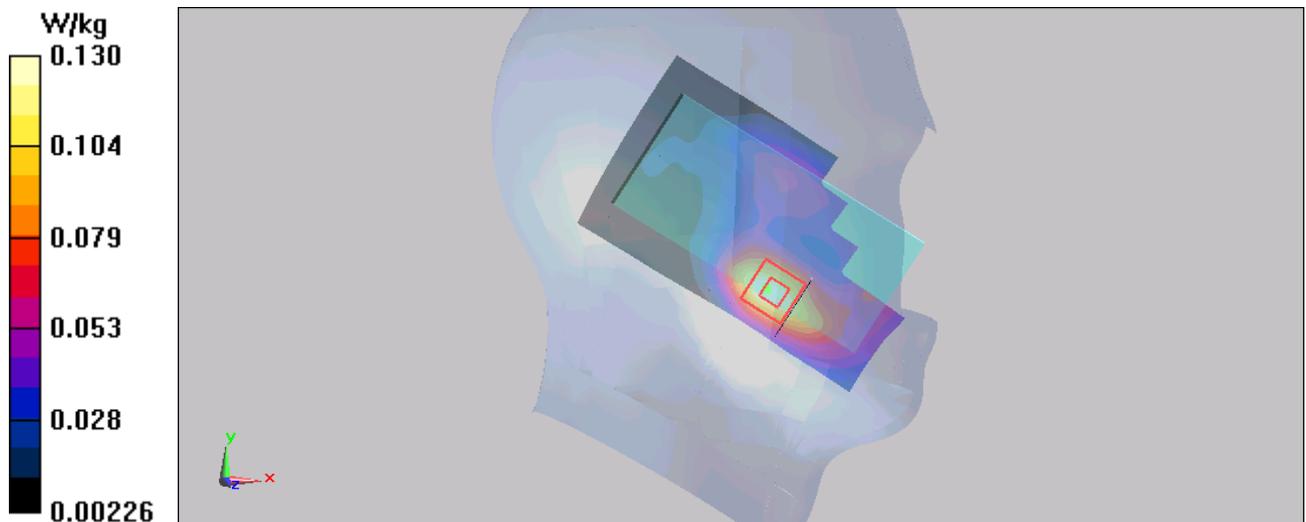
Left Cheek Middle /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.954 V/m; Power Drift = 0.079 dB

Peak SAR (extrapolated) = 0.189 mW/g

SAR(1 g) = 0.119 mW/g; SAR(10 g) = 0.072 mW/g

Maximum value of SAR (measured) = 0.130 W/kg



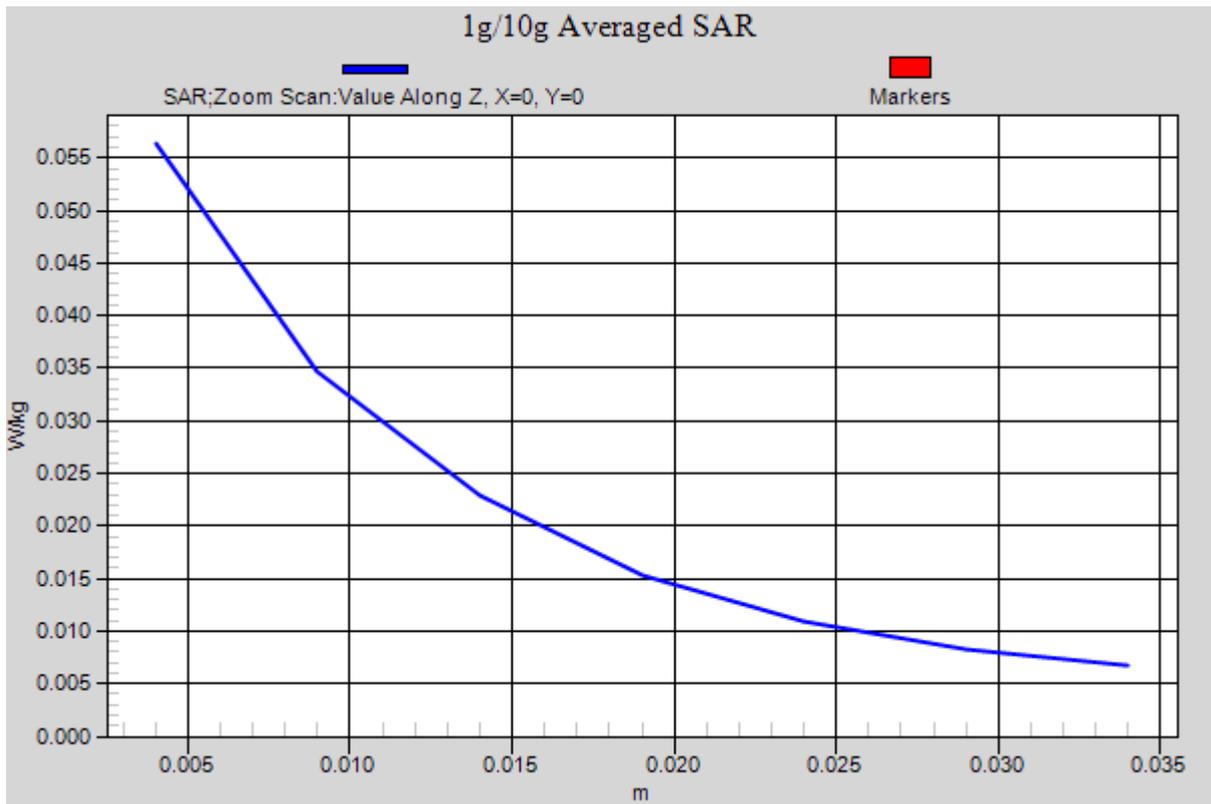


Figure 27 Left Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 Left Tilt Middle (Battery 1)

Date/Time: 7/25/2013 9:51:01 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0368 W/kg

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

Reference Value = 4.812 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.052 mW/g

SAR(1 g) = 0.031 mW/g; SAR(10 g) = 0.018 mW/g

Maximum value of SAR (measured) = 0.0339 W/kg

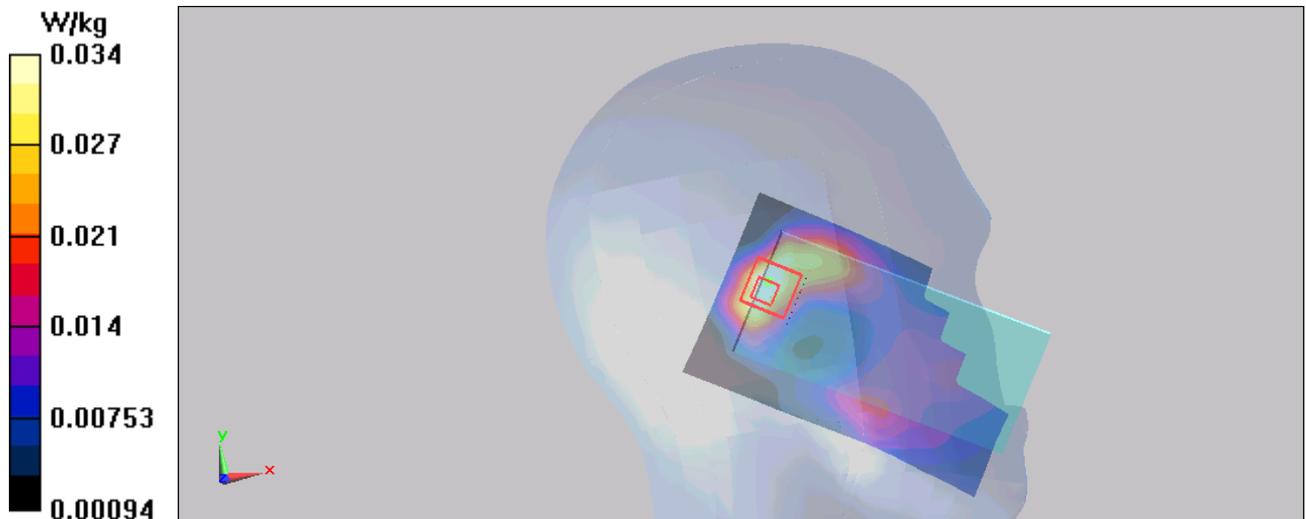


Figure 28 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle (Battery 1)

Date/Time: 7/25/2013 8:52:11 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.122 W/kg

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

Reference Value = 2.849 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.174 mW/g

SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.069 mW/g

Maximum value of SAR (measured) = 0.123 W/kg

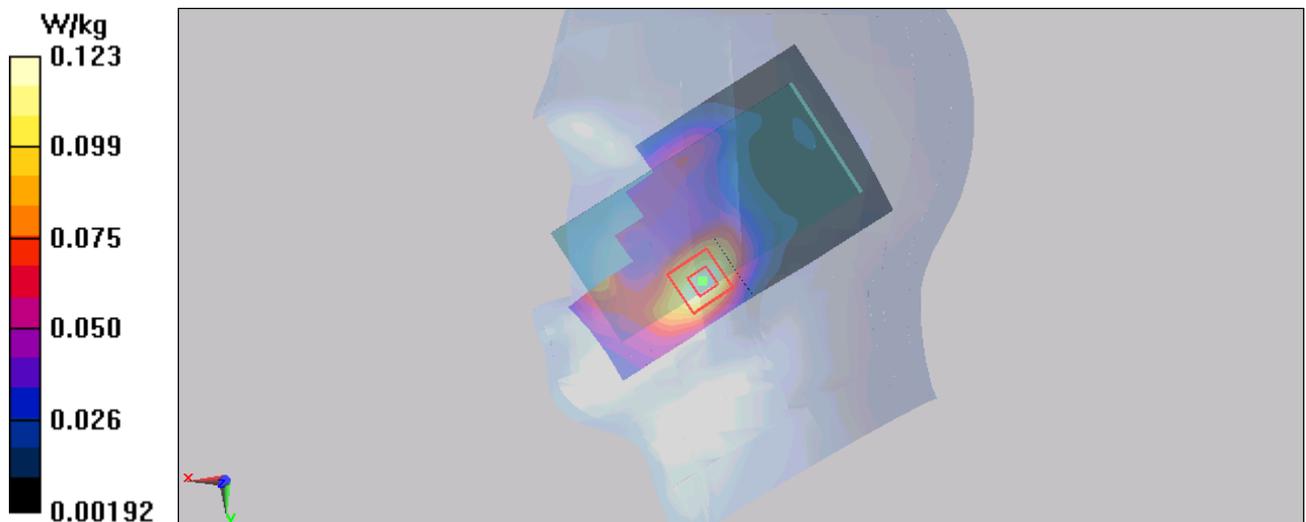


Figure 29 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle (Battery 1)

Date/Time: 7/25/2013 9:15:39 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt Middle /Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0378 W/kg

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

Reference Value = 4.810 V/m; Power Drift = 0.054 dB

Peak SAR (extrapolated) = 0.057 mW/g

SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.019 mW/g

Maximum value of SAR (measured) = 0.0379 W/kg

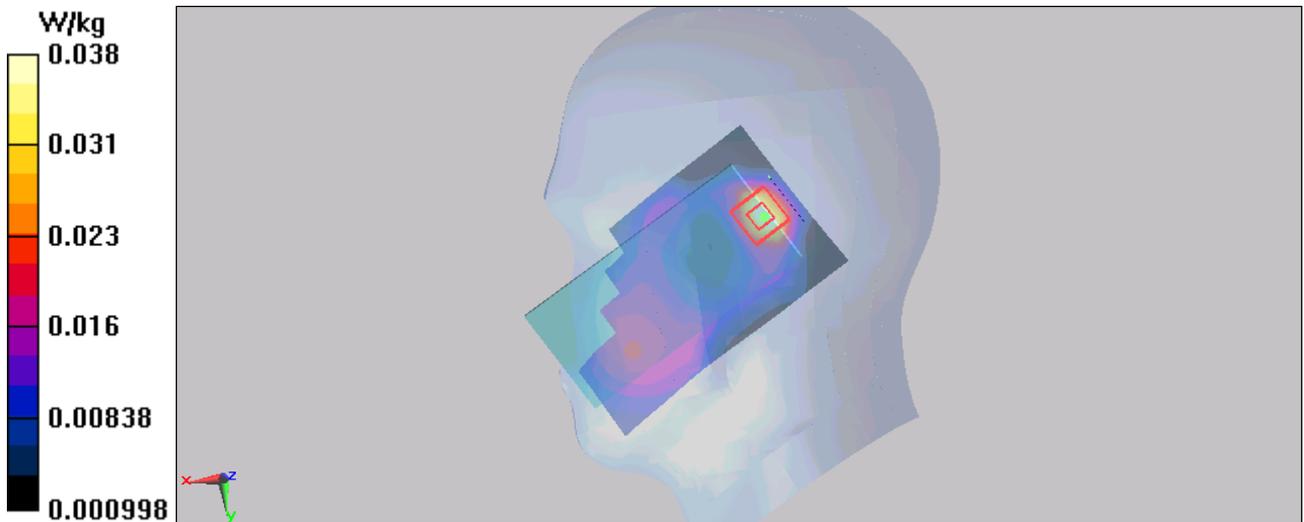


Figure 30 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Left Cheek Middle (Battery 2)

Date/Time: 7/25/2013 8:34:22 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0956 W/kg

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

Reference Value = 2.442 V/m; Power Drift = 0.048dB

Peak SAR (extrapolated) = 0.165 mW/g

SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.060 mW/g

Maximum value of SAR (measured) = 0.108 W/kg

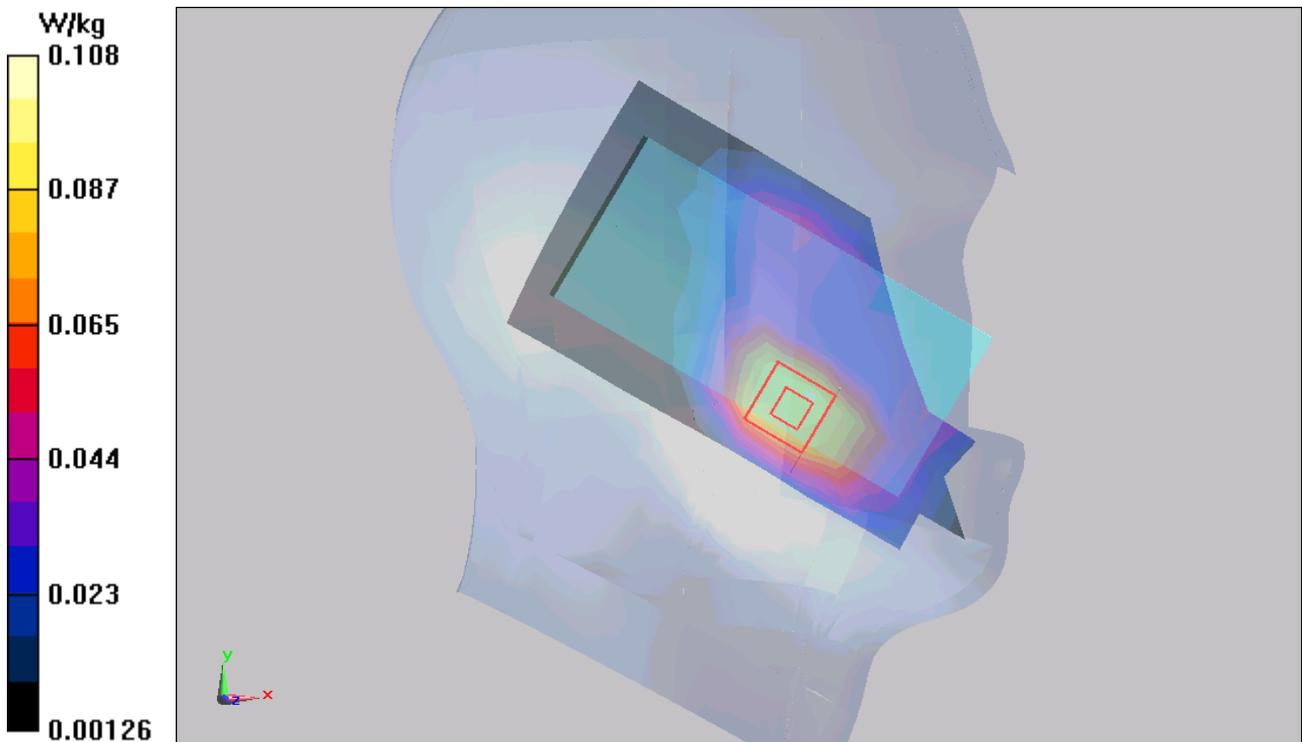


Figure 31 Left Hand Touch Cheek GSM 1900 Channel 661

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GSM 1900 GPRS (2Txslots) Back Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 1:49:15 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.493 W/kg

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

Reference Value = 4.026 V/m; Power Drift = 0.18 dB

Peak SAR (extrapolated) = 0.705 mW/g

SAR(1 g) = 0.446 mW/g; SAR(10 g) = 0.260 mW/g

Maximum value of SAR (measured) = 0.493 W/kg

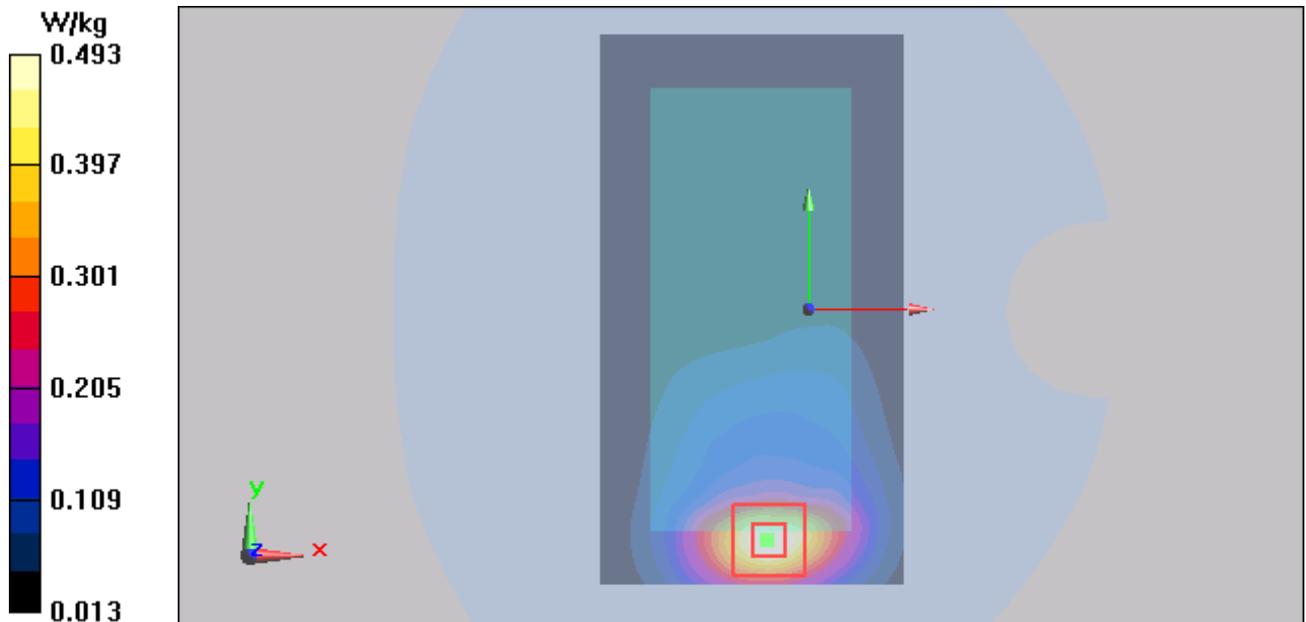


Figure 32 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslot) Front Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 2:31:11 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.453 W/kg

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

Reference Value = 3.714 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.659 mW/g

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.237 mW/g

Maximum value of SAR (measured) = 0.454 W/kg

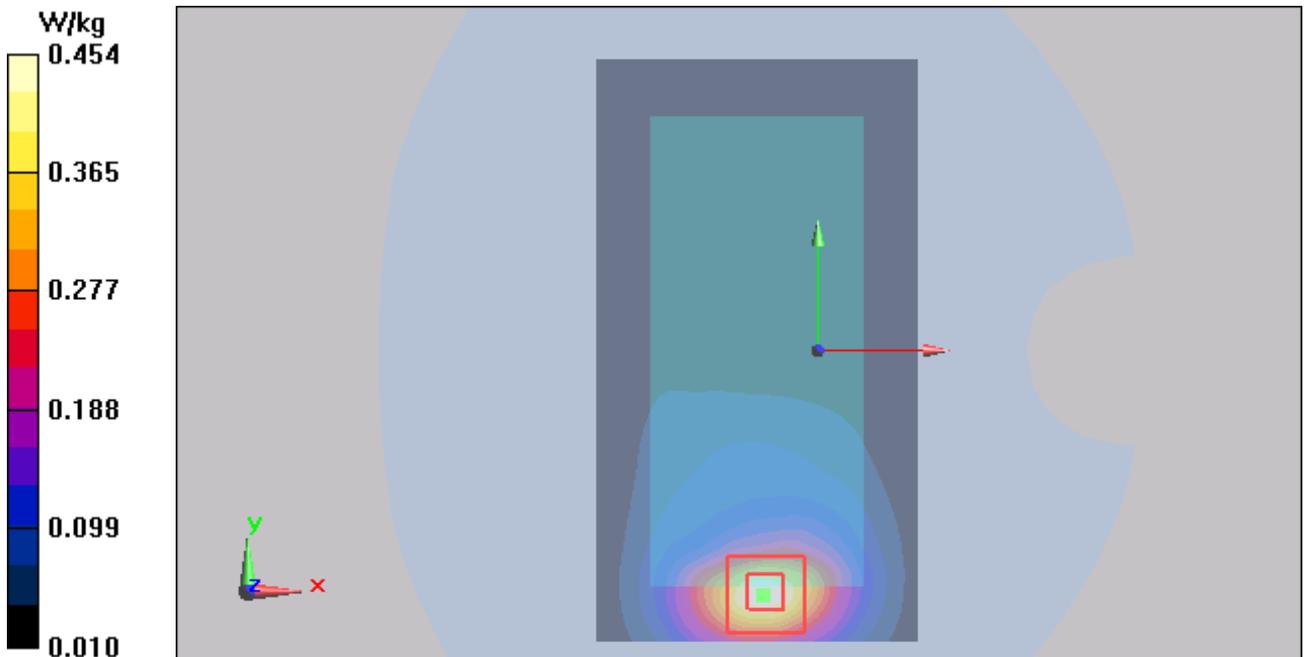


Figure 33 Body, Front Side, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 2:09:29 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.653 W/kg

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

Reference Value = 4.209 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.979 mW/g

SAR(1 g) = 0.588 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.670 W/kg

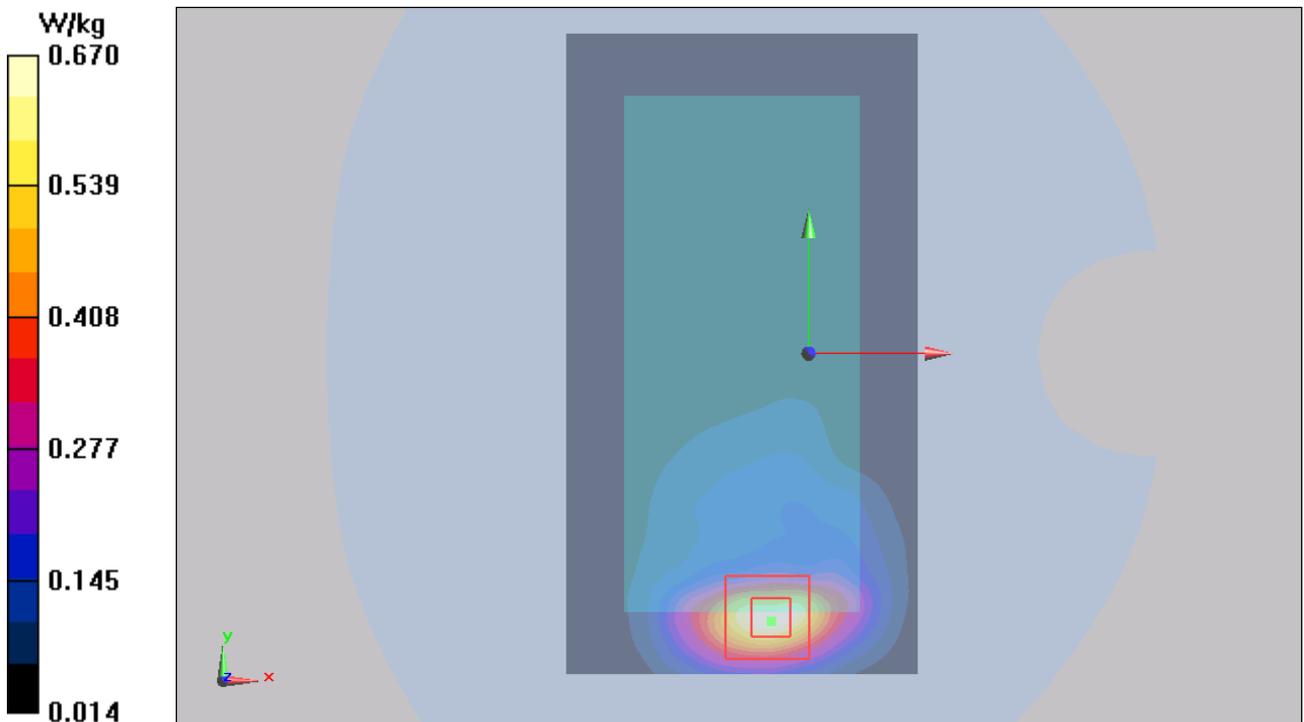


Figure 34 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 2:35:56 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.607 W/kg

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

Reference Value = 3.274 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.917 mW/g

SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.289 mW/g

Maximum value of SAR (measured) = 0.608 W/kg

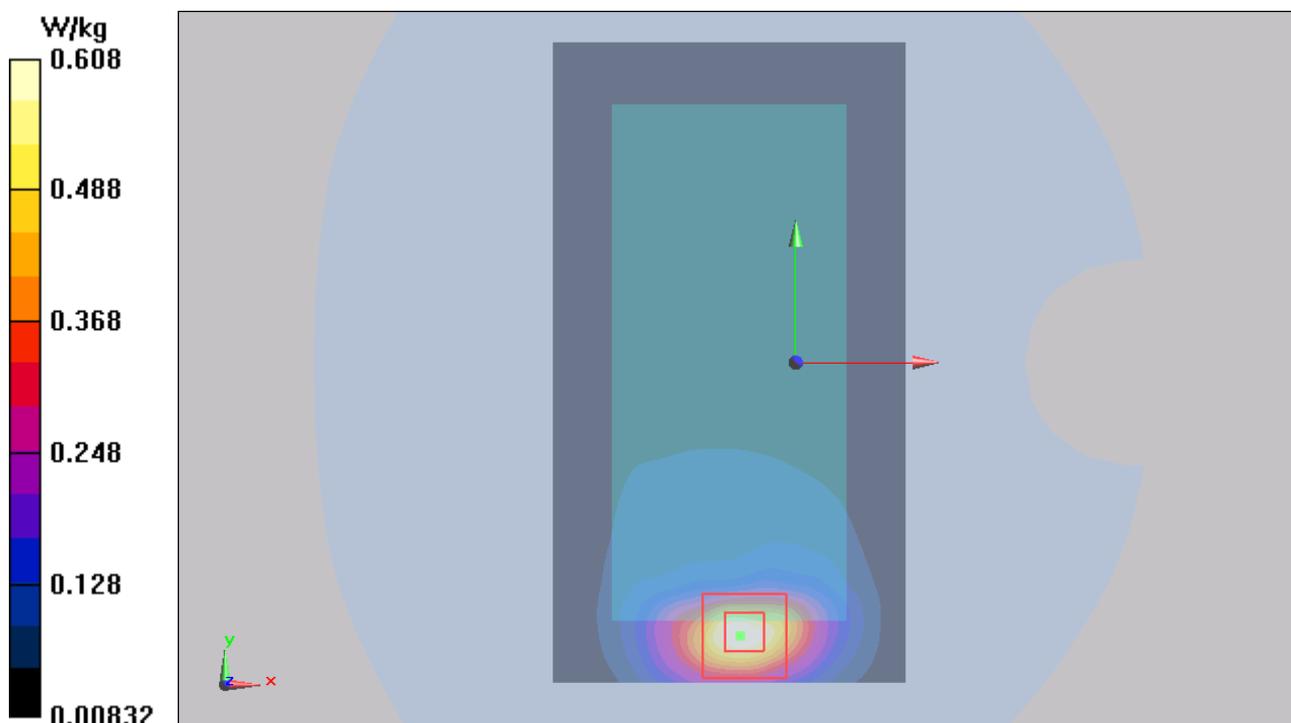


Figure 35 Body, Front Side, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 3:54:56 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Edge Middle/Area Scan (41x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0428 W/kg

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

Reference Value = 3.269 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 0.067 mW/g

SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.0443 W/kg

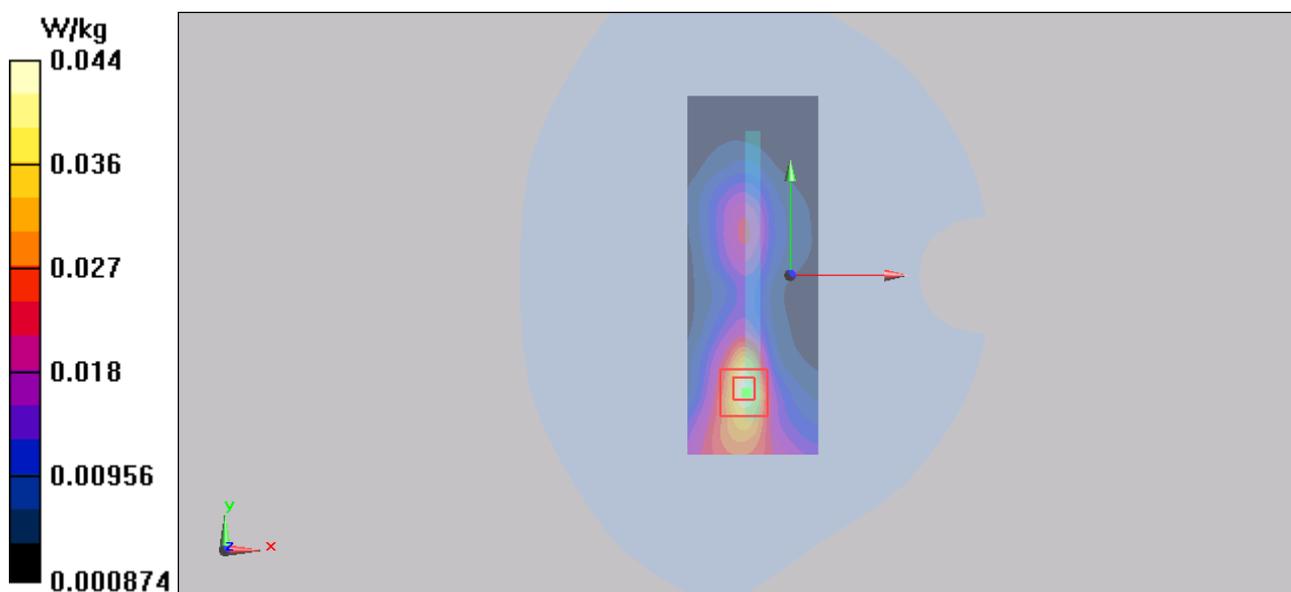


Figure 36 Body, Left Edge, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 2:54:46 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Edge Middle/Area Scan (41x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0298 W/kg

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

Reference Value = 2.535 V/m; Power Drift = 0.063 dB

Peak SAR (extrapolated) = 0.049 mW/g

SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.016 mW/g

Maximum value of SAR (measured) = 0.0299 W/kg

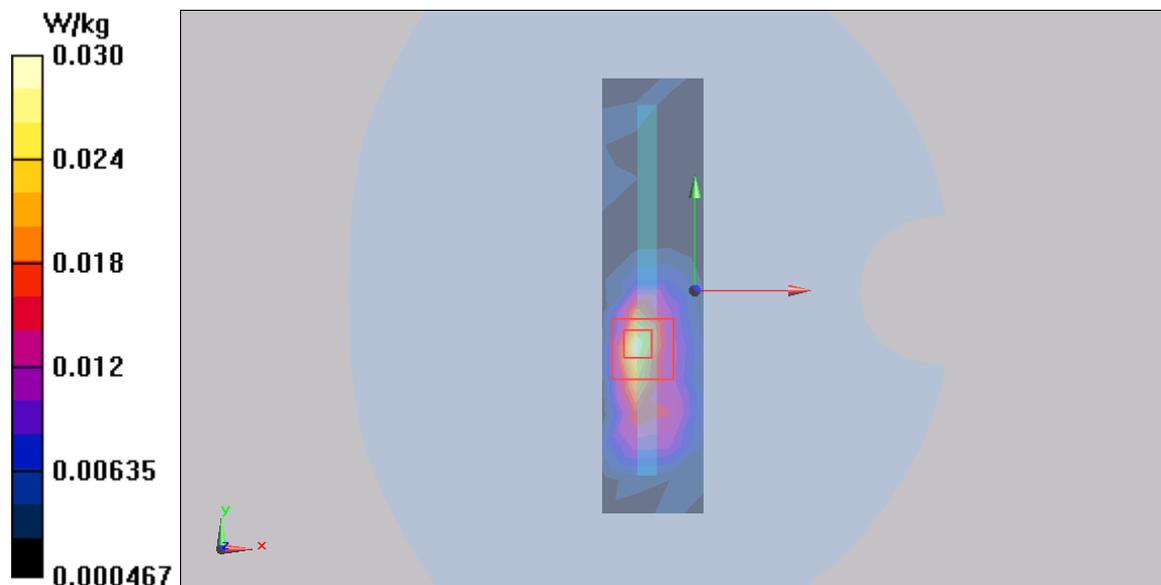


Figure 37 Body, Right Edge, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 9:07:01 AM

Communication System: GPRS 2TX; Frequency: 1909.8 MHz; Duty Cycle: 1:4.14954

Medium parameters used: $f = 1910$ MHz; $\sigma = 1.534$ mho/m; $\epsilon_r = 52.525$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge High/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.749 W/kg

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

Reference Value = 22.279 V/m; Power Drift = 0.043 dB

Peak SAR (extrapolated) = 1.267 mW/g

SAR(1 g) = 0.752 mW/g; SAR(10 g) = 0.399 mW/g

Maximum value of SAR (measured) = 0.845 W/kg

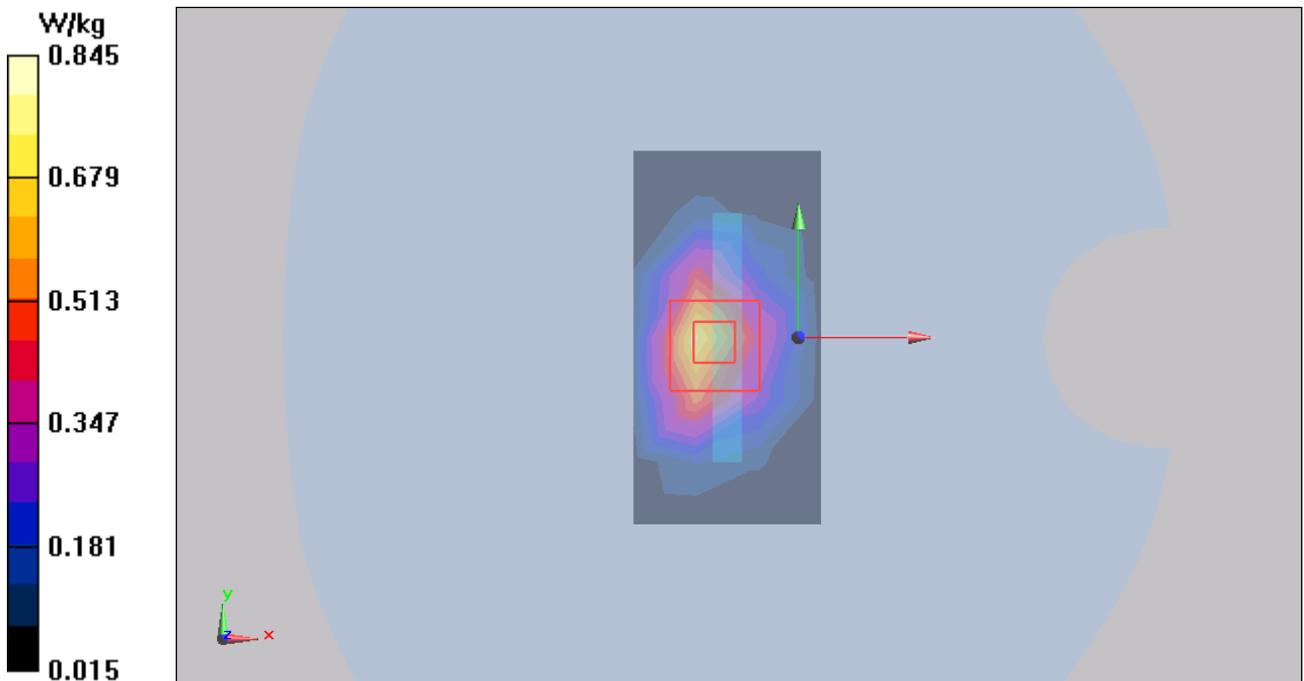


Figure 38 Body, Bottom Edge, GSM 1900 GPRS (2Txslots) Channel 810

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

Date/Time: 7/26/2013 4:59:45 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.837 W/kg

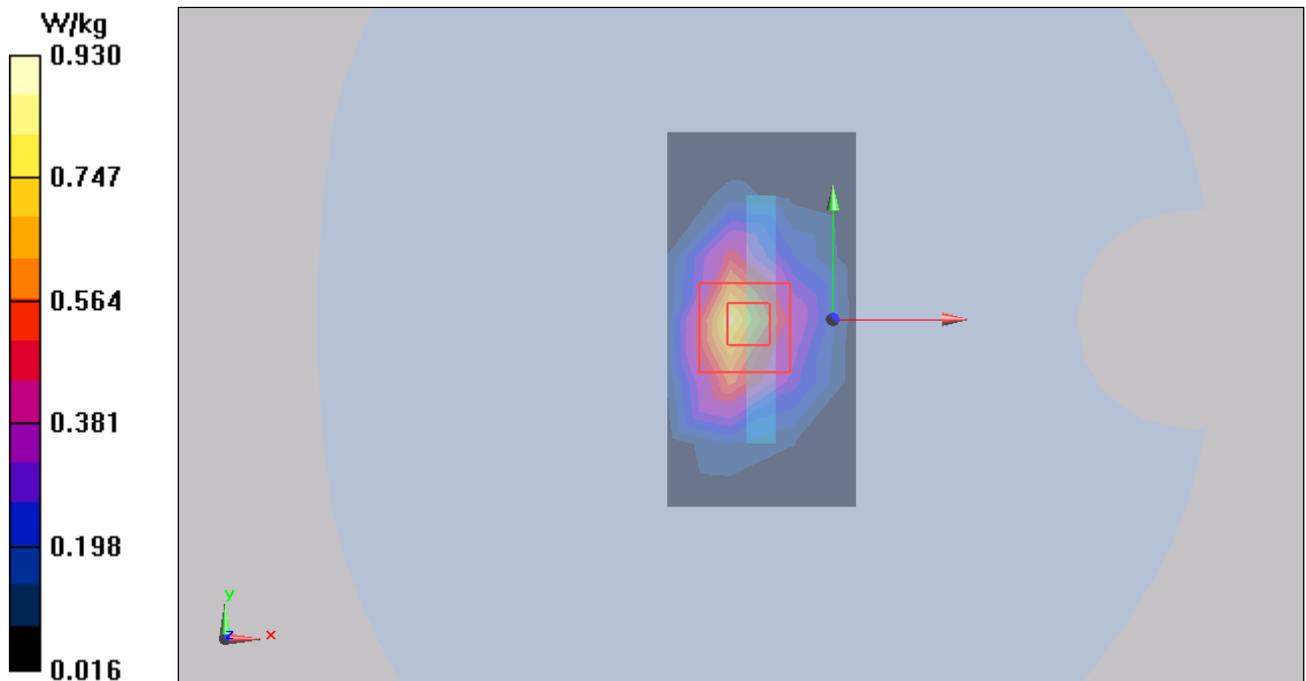
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 24.412 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.398 mW/g

SAR(1 g) = 0.827 mW/g; SAR(10 g) = 0.438 mW/g

Maximum value of SAR (measured) = 0.930 W/kg



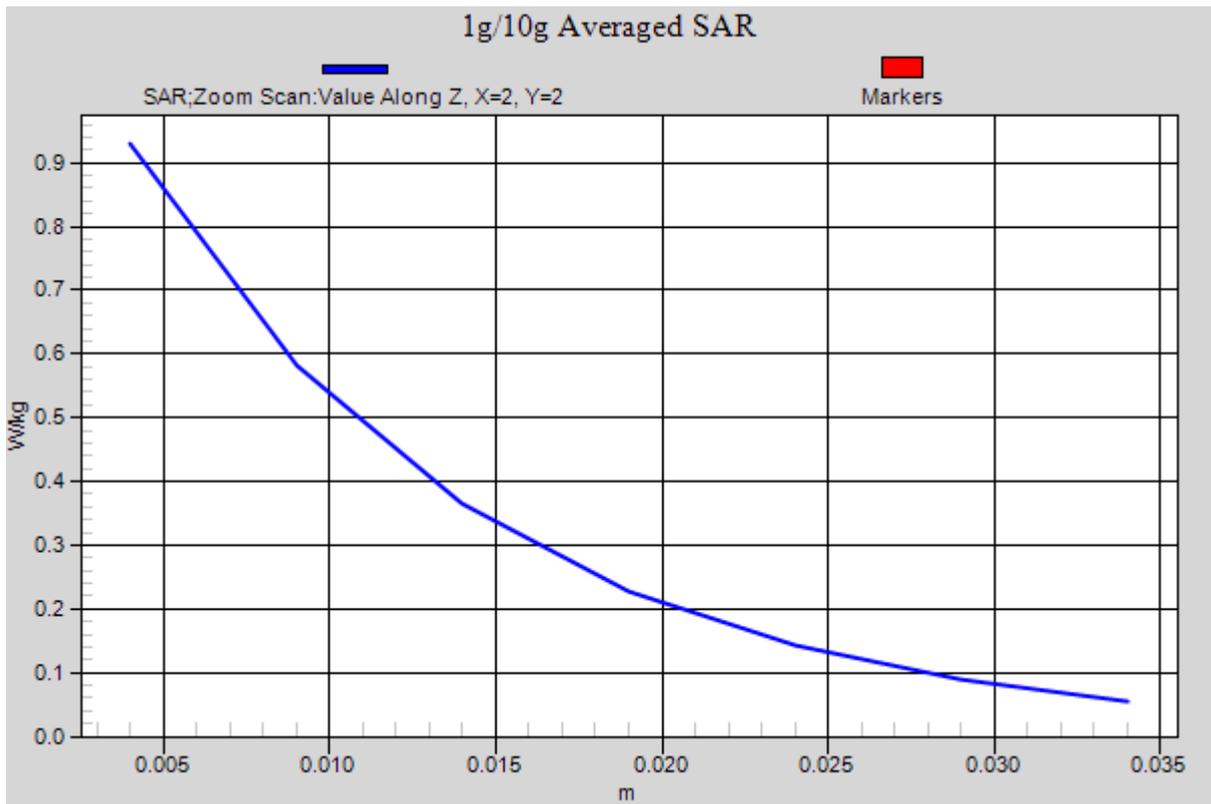


Figure 39 Body, Bottom Edge, GSM 1900 GPRS (2Txslots) Channel 661

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

Date/Time: 7/26/2013 9:17:46 AM

Communication System: GPRS 2TX; Frequency: 1850.2 MHz; Duty Cycle: 1:4.14954

Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.472$ mho/m; $\epsilon_r = 52.664$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Low/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.773 W/kg

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

Reference Value = 24.168 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.313 mW/g

SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.420 mW/g

Maximum value of SAR (measured) = 0.874 W/kg

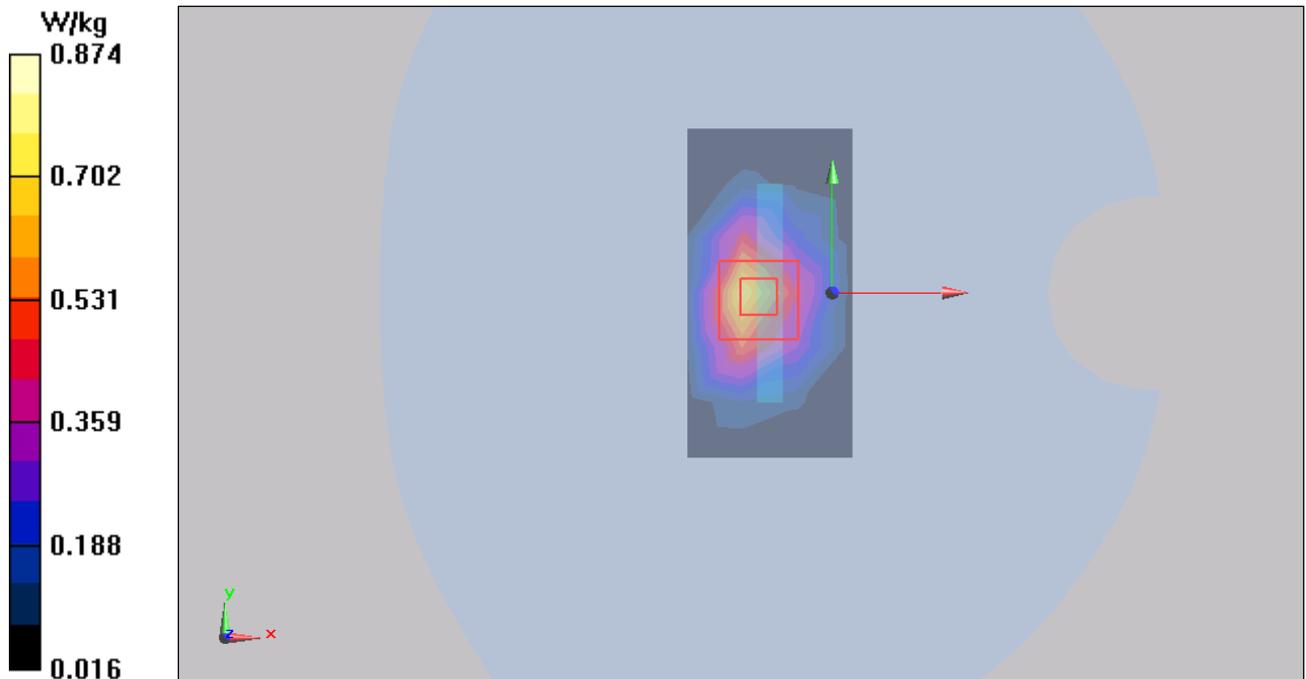


Figure 40 Body, Bottom Edge, GSM 1900 GPRS (2Txslots) Channel 512

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

Date/Time: 7/26/2013 9:30:00 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.792 W/kg

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

Reference Value = 23.741 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.330 mW/g

SAR(1 g) = 0.786 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.888 W/kg

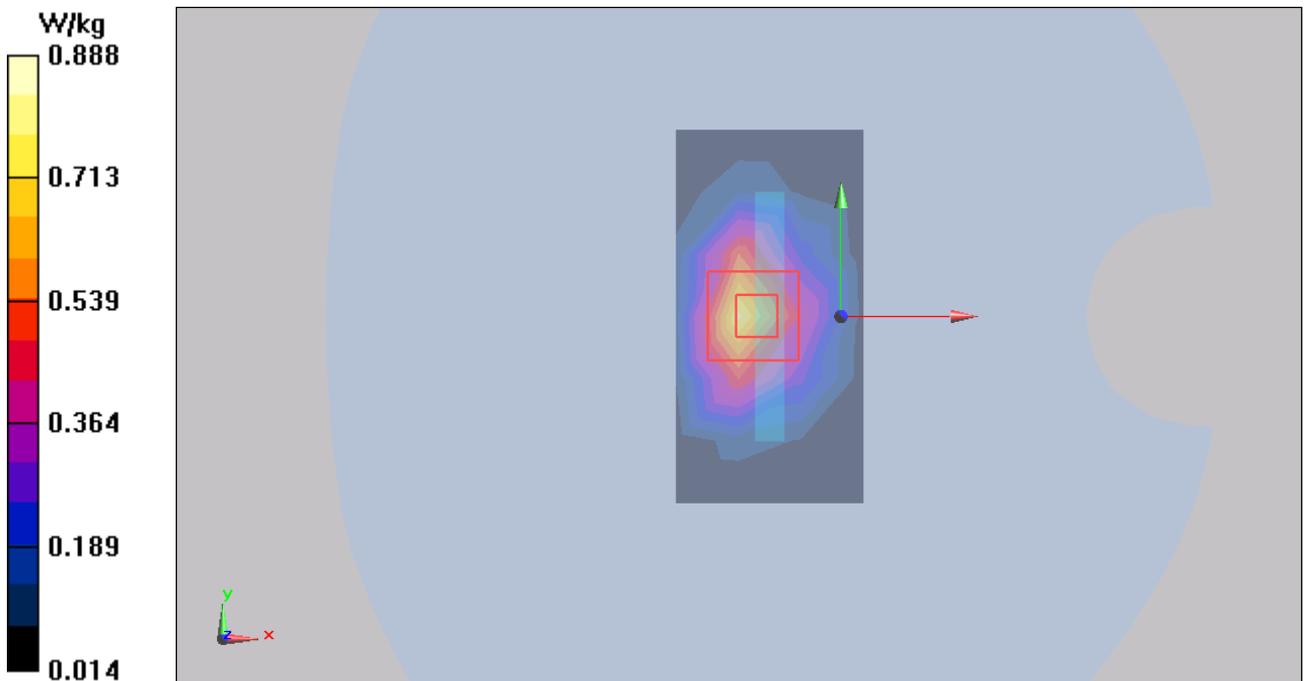


Figure 41 Body, Bottom Edge, GSM 1900 EGPRS (2Txslots) Channel 661

GSM 1900 EGPRS (2Txslots) Bottom Edge Middle (Battery 2, Distance 10mm)

Date/Time: 7/26/2013 10:17:46 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (31x61x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.969 W/kg

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

Reference Value = 24.286 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.353 mW/g

SAR(1 g) = 0.810 mW/g; SAR(10 g) = 0.433 mW/g

Maximum value of SAR (measured) = 0.901 W/kg

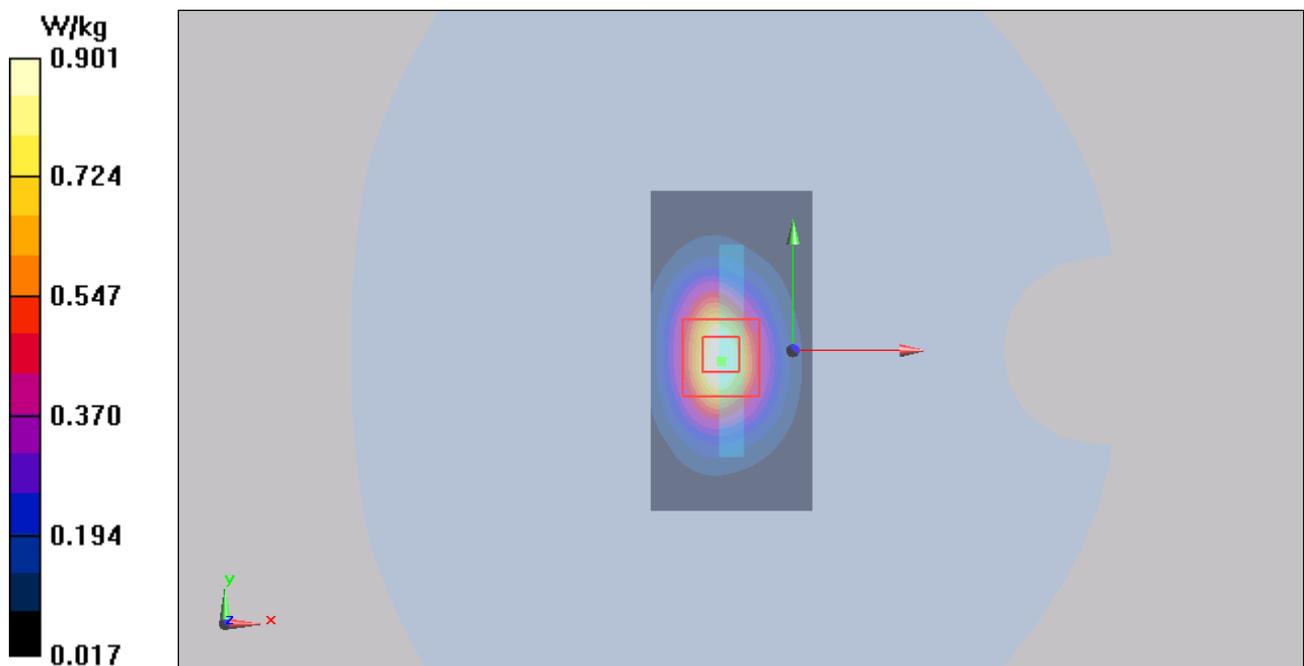


Figure 42 Body, Bottom Edge, GSM 1900 Channel 661

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GSM 1900 EGPRS (2Txslots) Bottom Edge Middle (1st repeated SAR, Battery 1, Distance 10mm)

Date/Time: 7/26/2013 9:40:33 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.790 W/kg

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

Reference Value = 24.986 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 1.421 mW/g

SAR(1 g) = 0.827 mW/g; SAR(10 g) = 0.432 mW/g

Maximum value of SAR (measured) = 0.920 W/kg

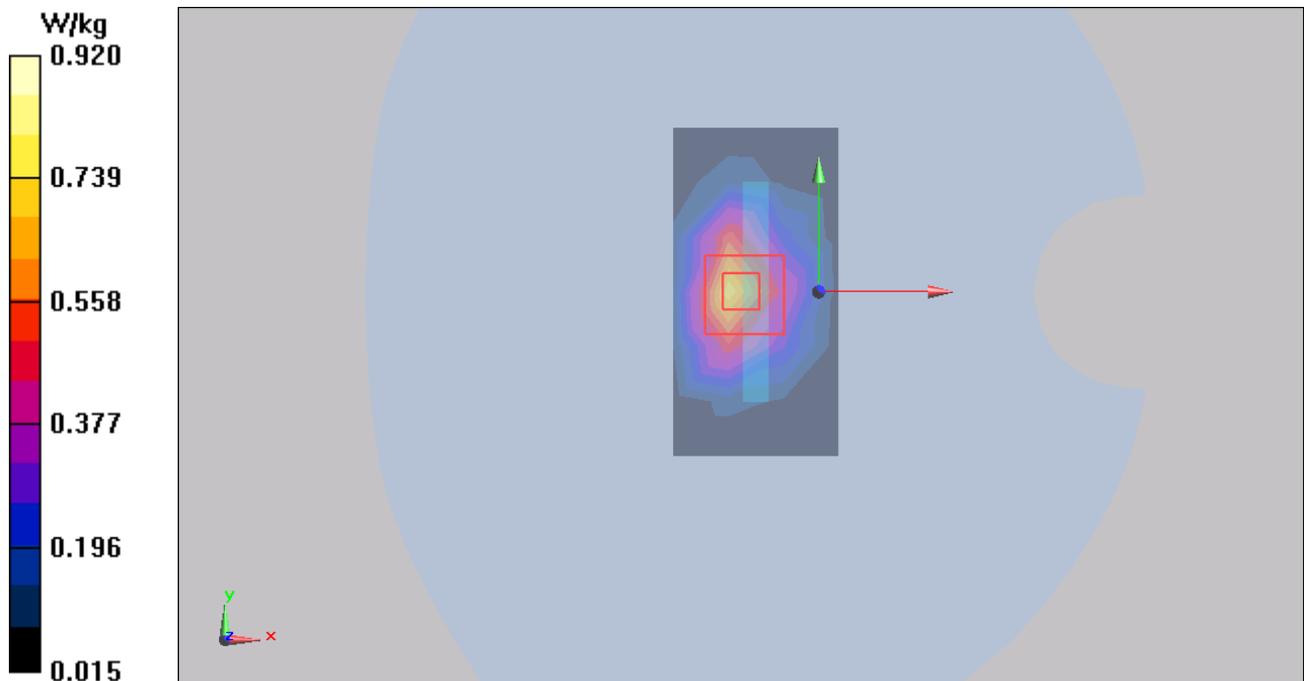


Figure 43 Body, Bottom Edge, GSM 1900 Channel 661

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UMTS Band II Left Cheek Middle (Battery 1)

Date/Time: 7/25/2013 10:52:32 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.232 W/kg

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

Reference Value = 5.072 V/m; Power Drift = 0.055 dB

Peak SAR (extrapolated) = 0.350 mW/g

SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.136 mW/g

Maximum value of SAR (measured) = 0.241 W/kg

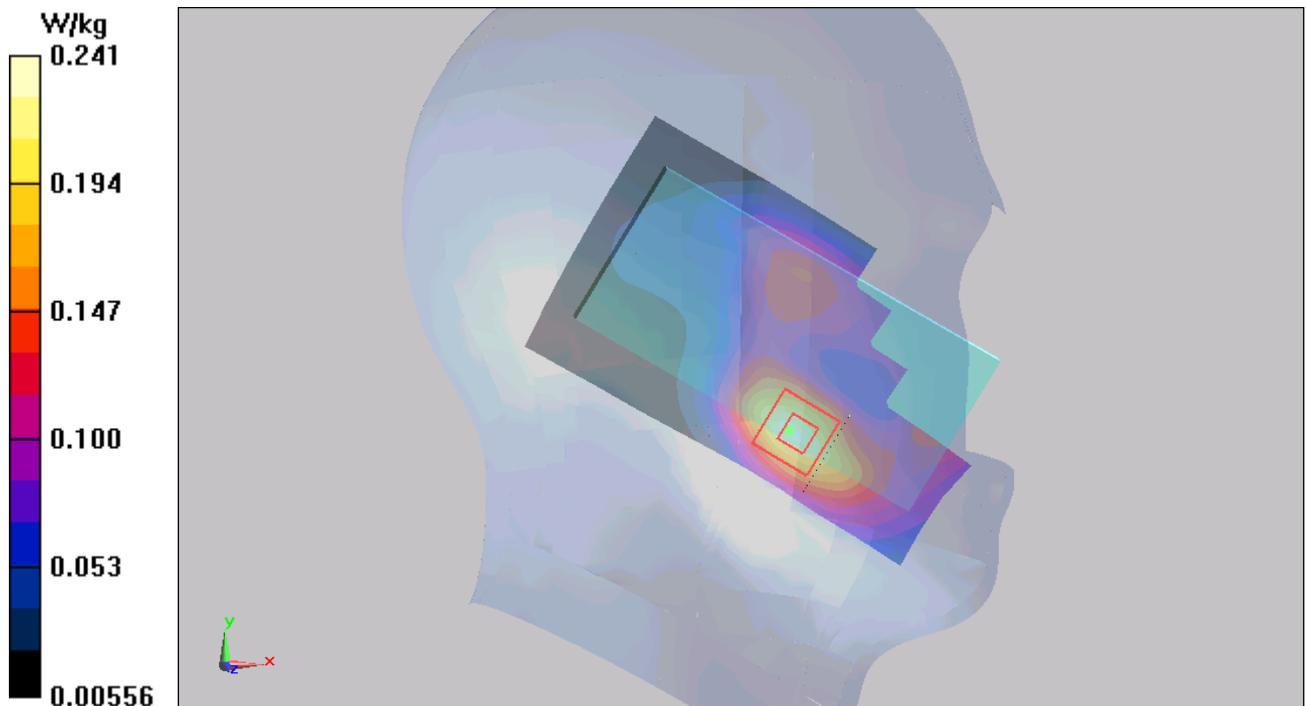


Figure 44 Left Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Left Tilt Middle (Battery 1)

Date/Time: 7/25/2013 11:09:53 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0849 W/kg

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

Reference Value = 7.697 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 0.130 mW/g

SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.045 mW/g

Maximum value of SAR (measured) = 0.0874 W/kg

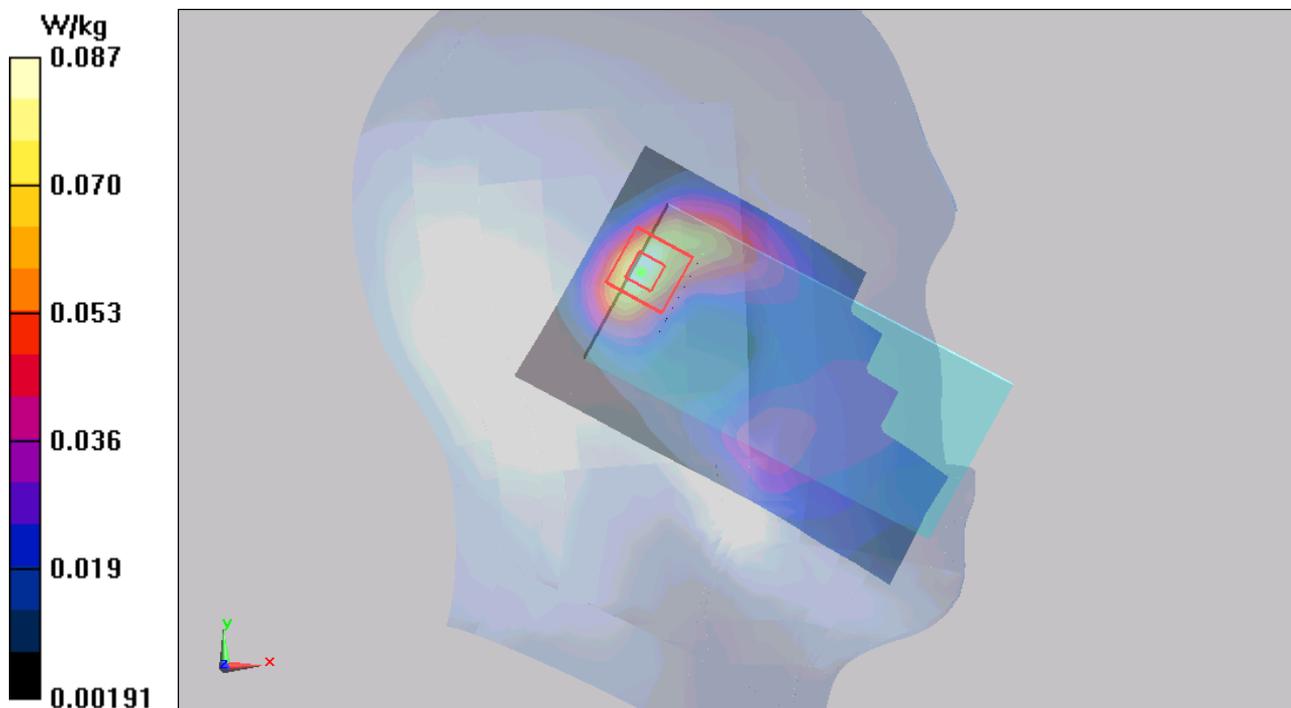


Figure 45 Left Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II Right Cheek Middle (Battery 1)

Date/Time: 7/25/2013 10:17:13 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.231 W/kg

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

Reference Value = 5.506 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 0.335 mW/g

SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.133 mW/g

Maximum value of SAR (measured) = 0.237 W/kg

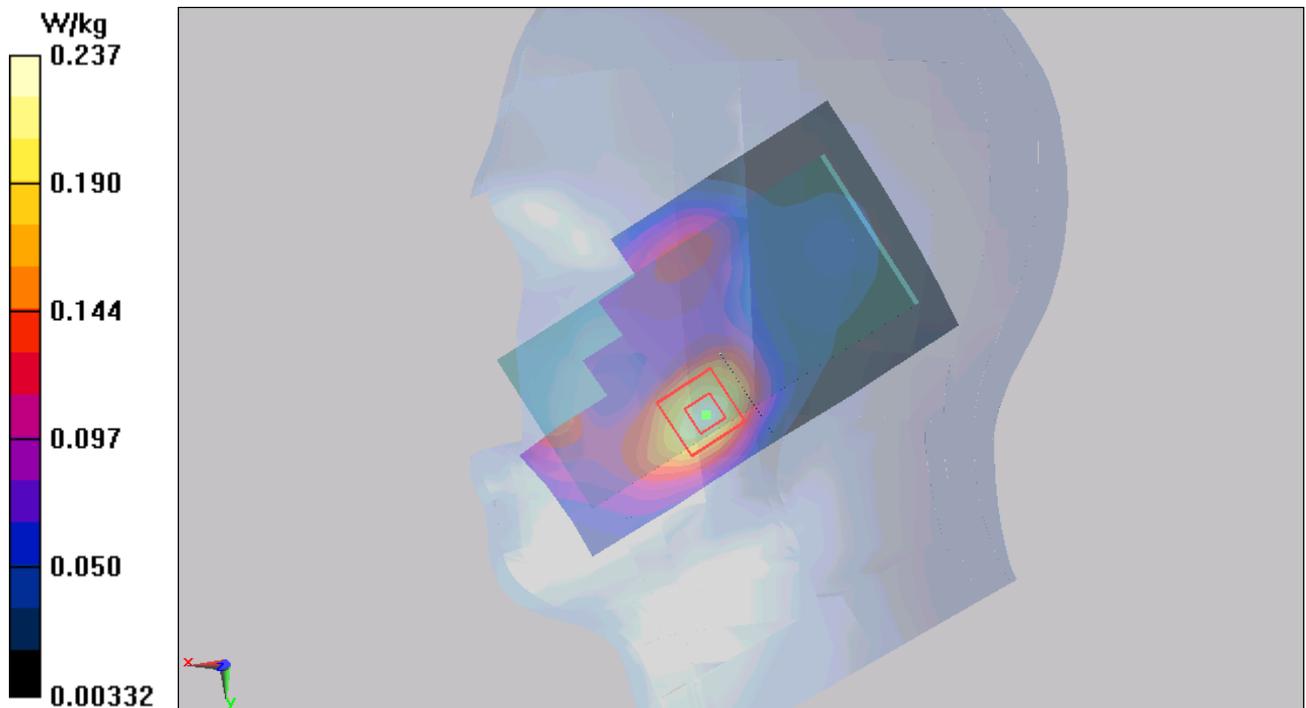


Figure 46 Right Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Right Tilt Middle (Battery 1)

Date/Time: 7/25/2013 10:33:35 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.0847 W/kg

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

Reference Value = 7.800 V/m; Power Drift = 0.021 dB

Peak SAR (extrapolated) = 0.132 mW/g

SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.044 mW/g

Maximum value of SAR (measured) = 0.0892 W/kg

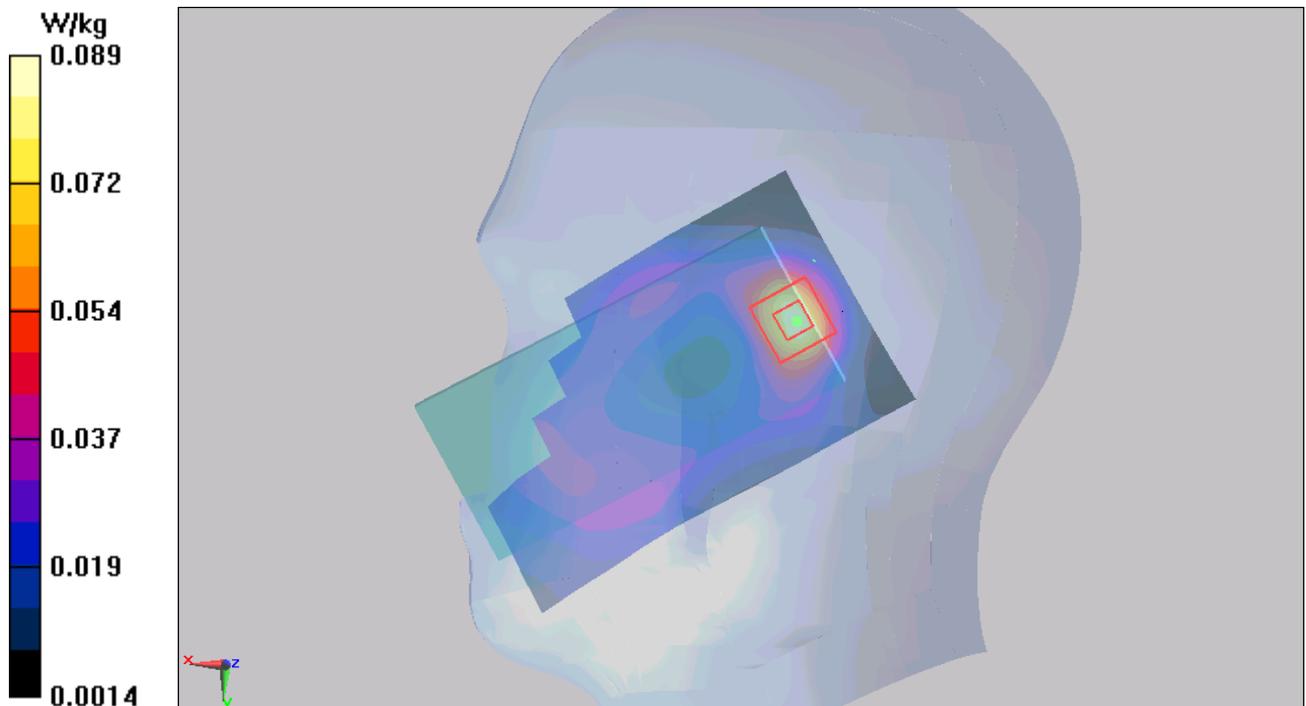


Figure 47 Right Hand Tilt 15° UMTS Band II Channel 9400

UMTS Band II Left Cheek Middle (Battery 2)

Date/Time: 7/25/2013 8:12:48 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.431$ mho/m; $\epsilon_r = 38.381$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.63, 7.63, 7.63); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.213 W/kg

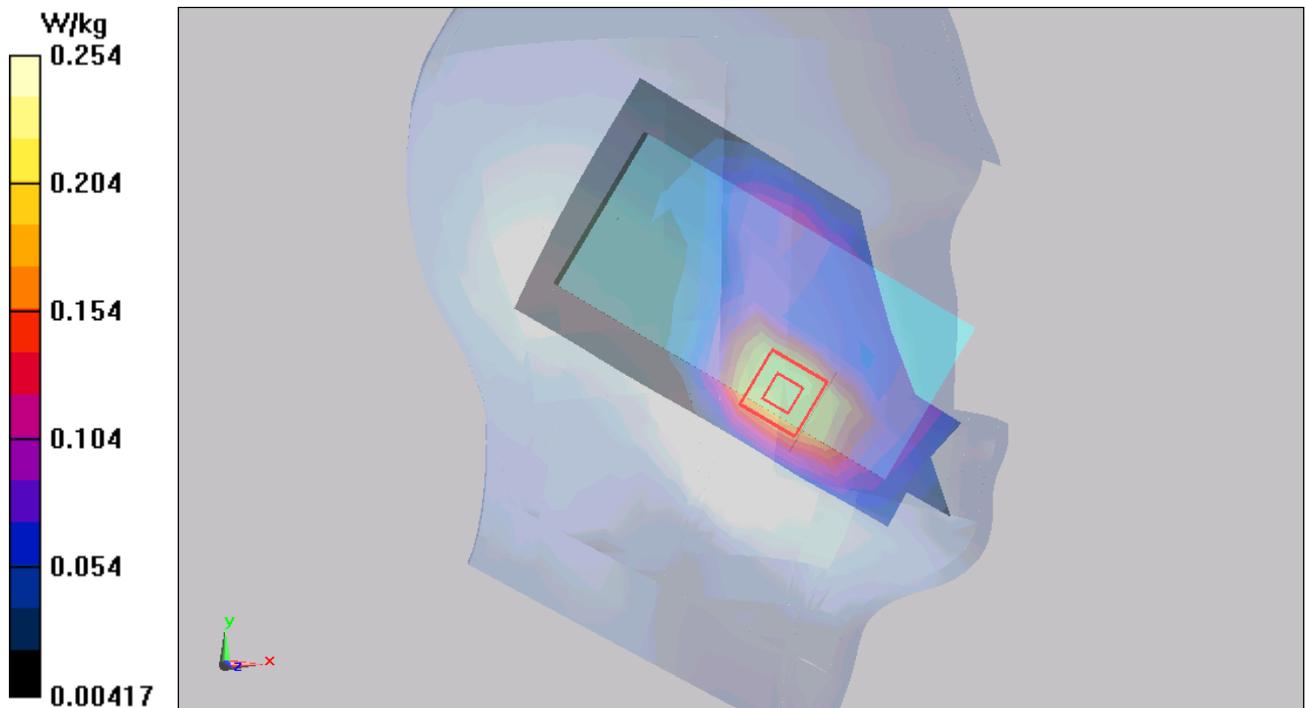
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.074 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 0.377 mW/g

SAR(1 g) = 0.236 mW/g; SAR(10 g) = 0.142 mW/g

Maximum value of SAR (measured) = 0.254 W/kg



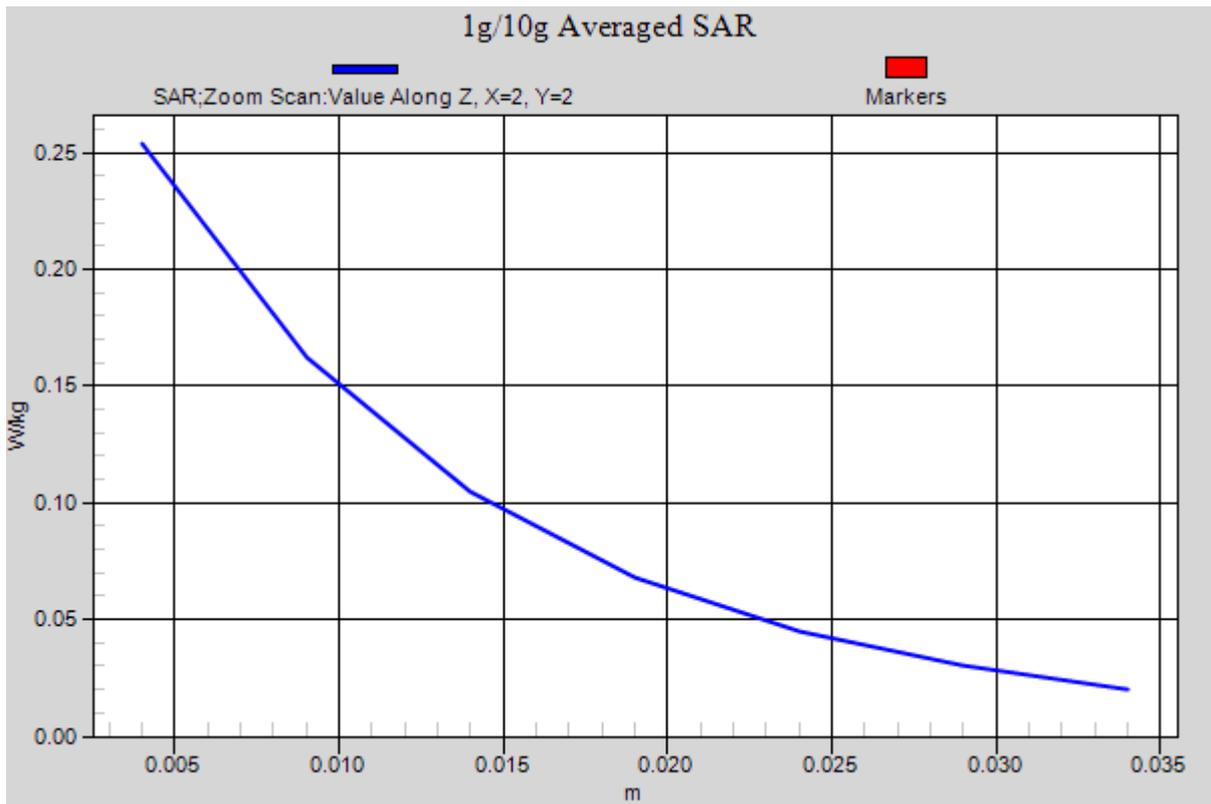


Figure 48 Left Hand Touch Cheek UMTS Band II Channel 9400

UMTS Band II Back Side High (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 4:27:39 PM

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

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.532$ mho/m; $\epsilon_r = 52.533$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side High/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.758 W/kg

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

Reference Value = 6.140 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.107 mW/g

SAR(1 g) = 0.698 mW/g; SAR(10 g) = 0.408 mW/g

Maximum value of SAR (measured) = 0.770 W/kg

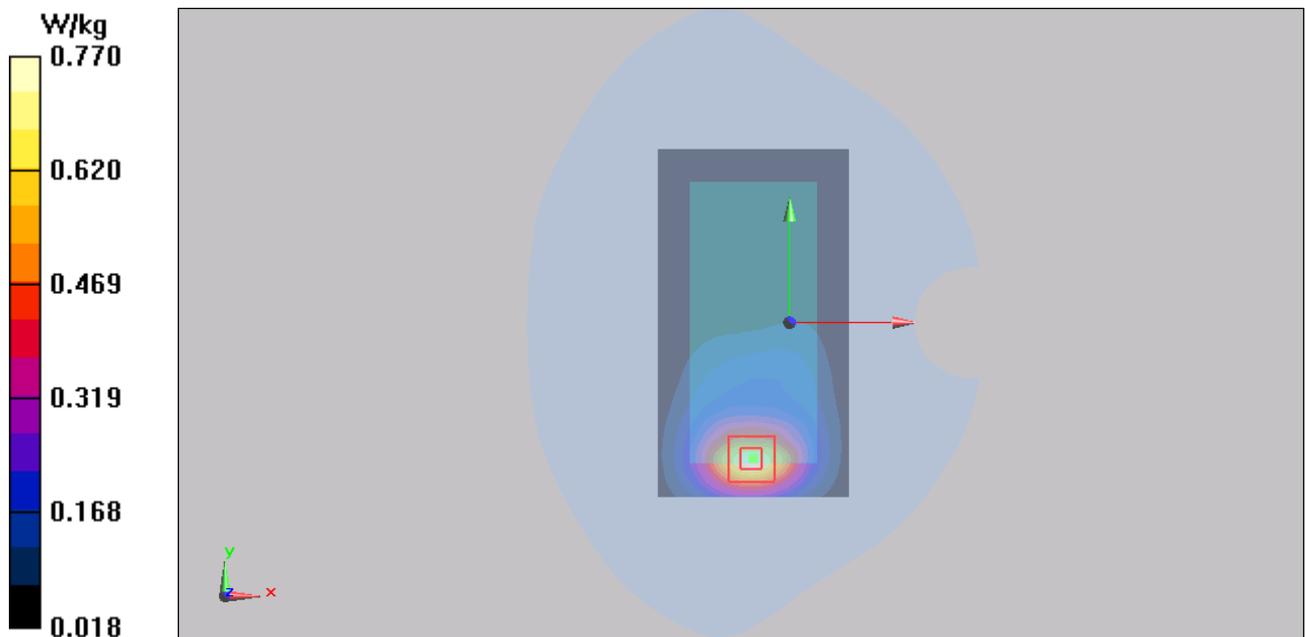


Figure 49 Body, Back Side, UMTS Band II Channel 9538

UMTS Band II Back Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 12:19:49 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.824 W/kg

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

Reference Value = 7.895 V/m; Power Drift = 0.14 dB

Peak SAR (extrapolated) = 1.205 mW/g

SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.452 mW/g

Maximum value of SAR (measured) = 0.848 W/kg

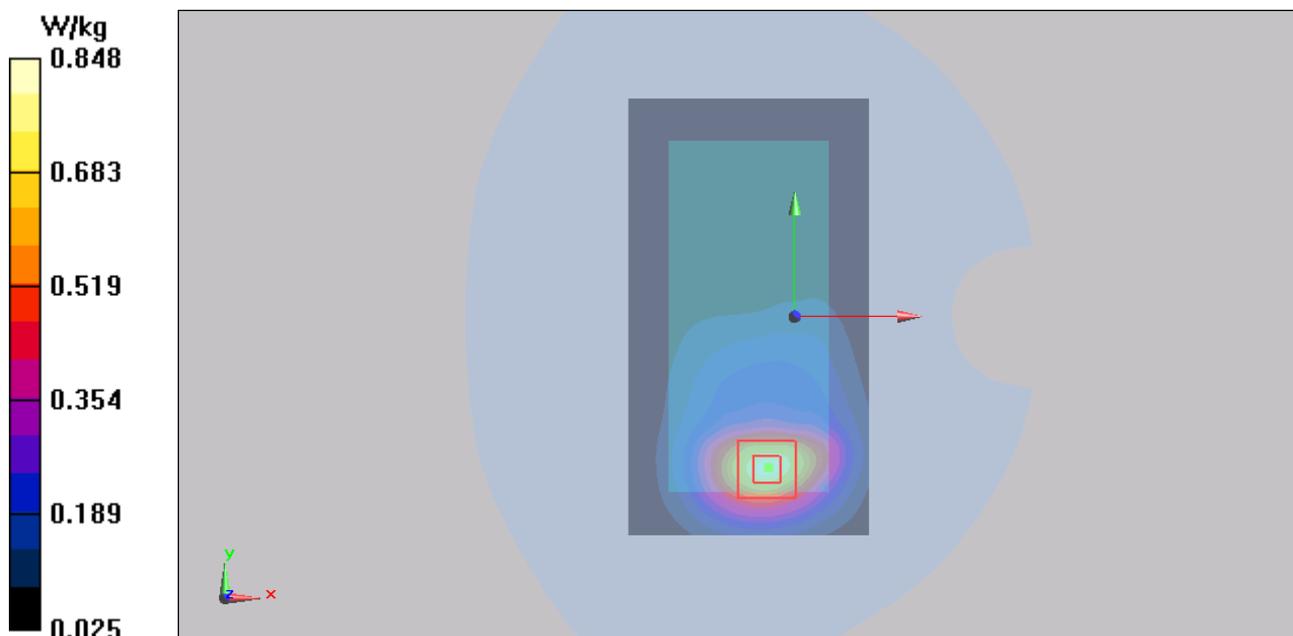


Figure 50 Body, Back Side, UMTS Band II Channel 9400

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UMTS Band II Back Side Low (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 4:10:27 PM

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

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.474$ mho/m; $\epsilon_r = 52.662$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Low/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.869 W/kg

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

Reference Value = 5.622 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 1.215 mW/g

SAR(1 g) = 0.782 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.865 W/kg

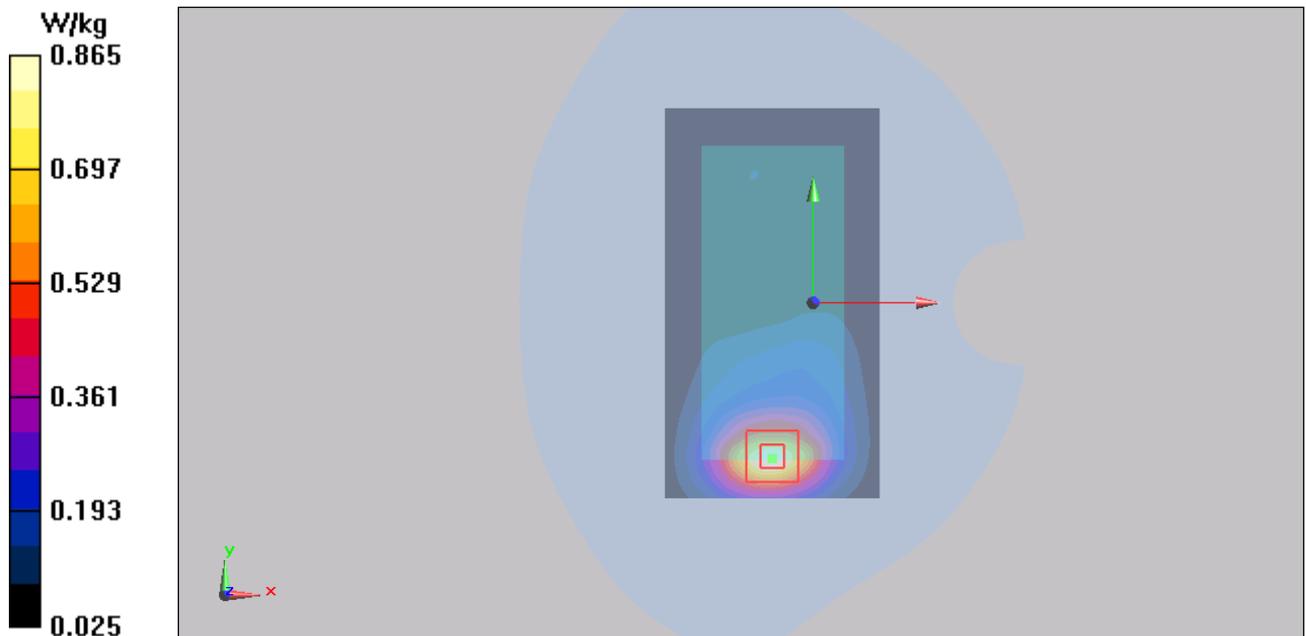


Figure 51 Body, Back Side, UMTS Band II Channel 9262

UMTS Band II Front Side High (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 4:45:54 PM

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

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.532$ mho/m; $\epsilon_r = 52.533$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side High/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.703 W/kg

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

Reference Value = 5.082 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 1.042 mW/g

SAR(1 g) = 0.647 mW/g; SAR(10 g) = 0.374 mW/g

Maximum value of SAR (measured) = 0.717 W/kg

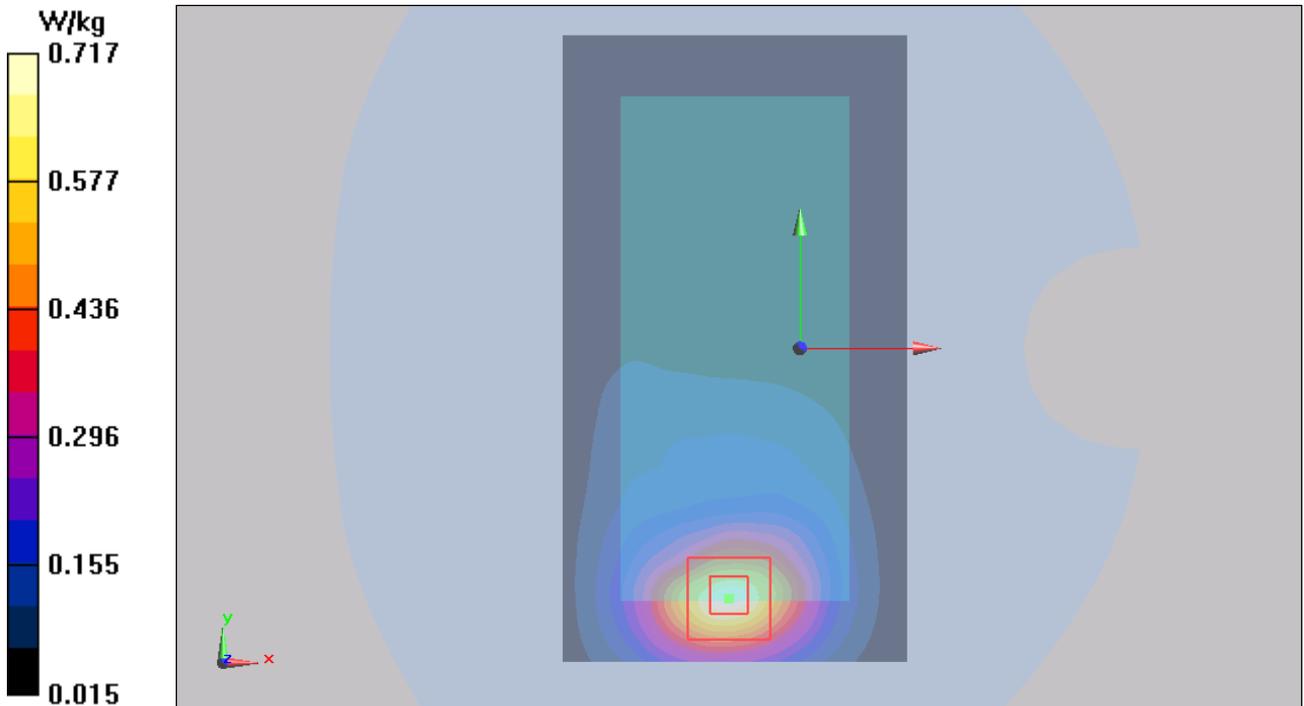


Figure 52 Body, Front Side, UMTS Band II Channel 9538

UMTS Band II Front Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 12:01:31 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.789 W/kg

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

Reference Value = 5.943 V/m; Power Drift = -0.13 dB

Peak SAR (extrapolated) = 1.177 mW/g

SAR(1 g) = 0.735 mW/g; SAR(10 g) = 0.427 mW/g

Maximum value of SAR (measured) = 0.812 W/kg

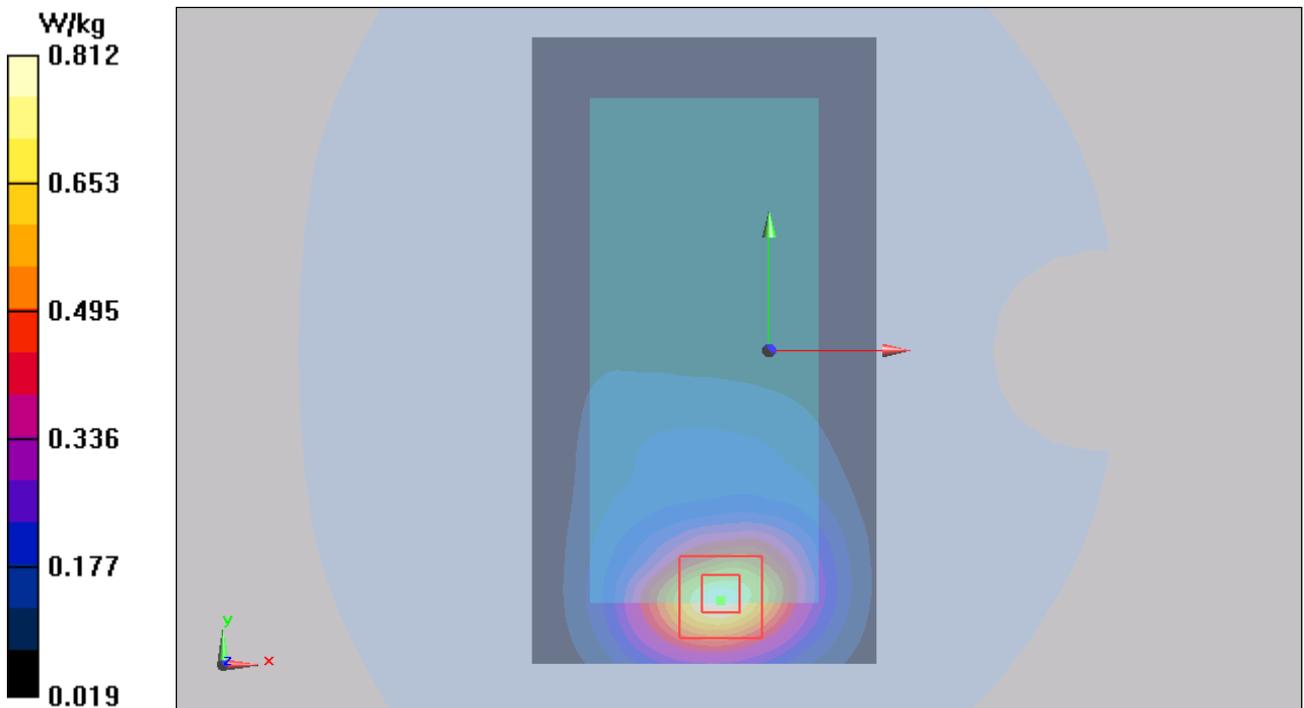


Figure 53 Body, Front Side, UMTS Band II Channel 9400

UMTS Band II Front Side Low (Battery 1, Distance 15mm)

Date/Time: 7/26/2013 5:02:52 PM

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

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.474$ mho/m; $\epsilon_r = 52.662$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Low/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.924 W/kg

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

Reference Value = 4.855 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 1.352 mW/g

SAR(1 g) = 0.850 mW/g; SAR(10 g) = 0.493 mW/g

Maximum value of SAR (measured) = 0.941 W/kg

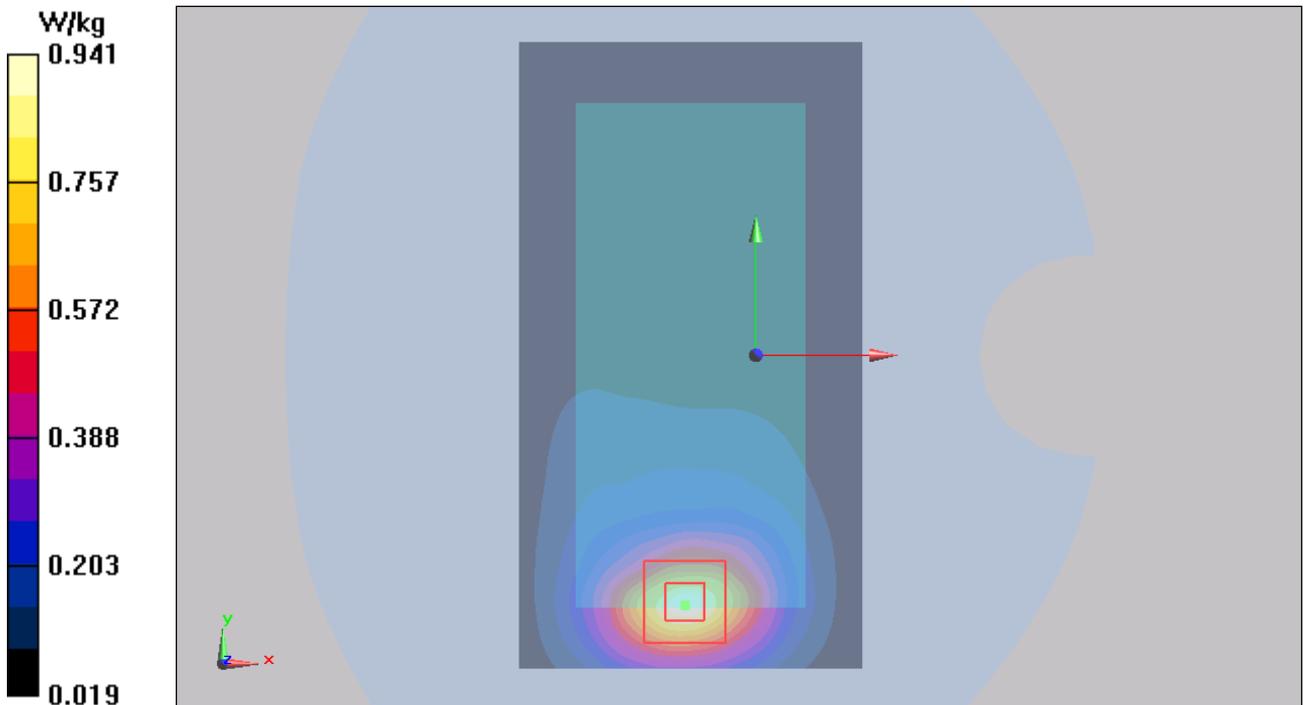


Figure 54 Body, Front Side, UMTS Band II Channel 9262

UMTS Band II Back Side Middle (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 10:46:45 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.570 W/kg

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

Reference Value = 5.693 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 1.105 mW/g

SAR(1 g) = 0.673 mW/g; SAR(10 g) = 0.371 mW/g

Maximum value of SAR (measured) = 0.752 W/kg

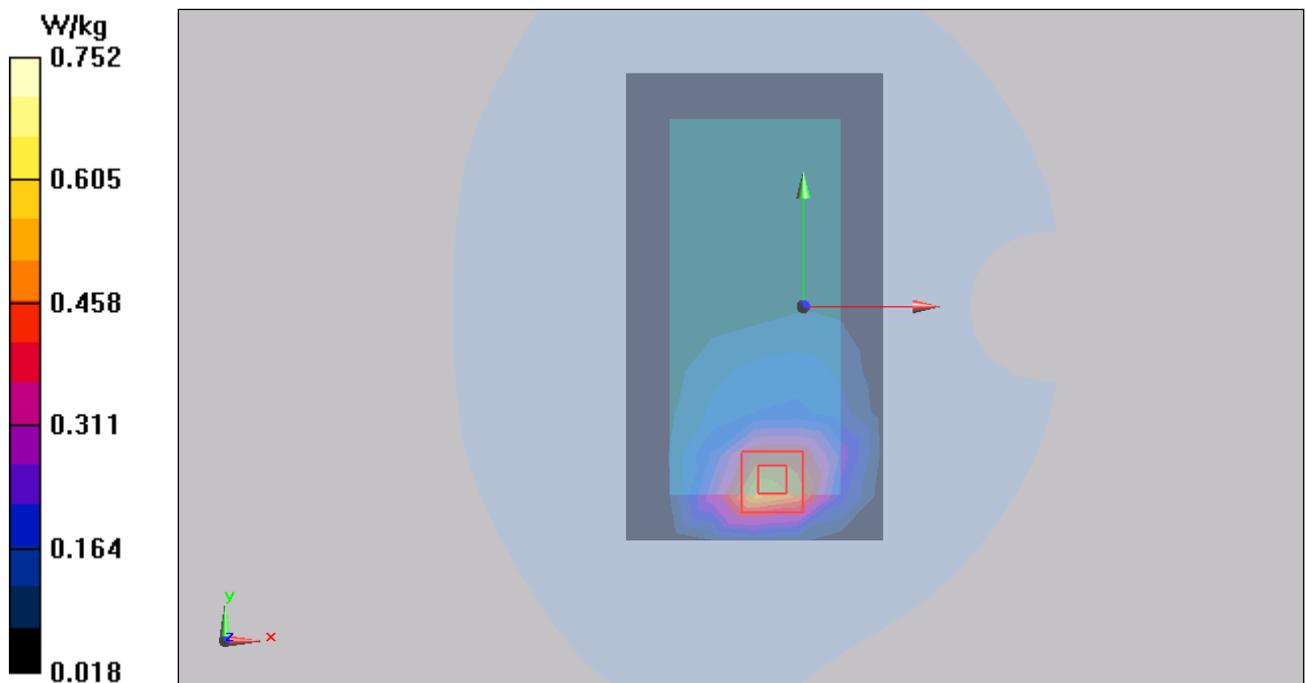


Figure 55 Body, Back Side, UMTS Band II Channel 9400

UMTS Band II Front Side Middle (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 10:28:29 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.575 W/kg

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

Reference Value = 4.704 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 1.022 mW/g

SAR(1 g) = 0.604 mW/g; SAR(10 g) = 0.329 mW/g

Maximum value of SAR (measured) = 0.675 W/kg

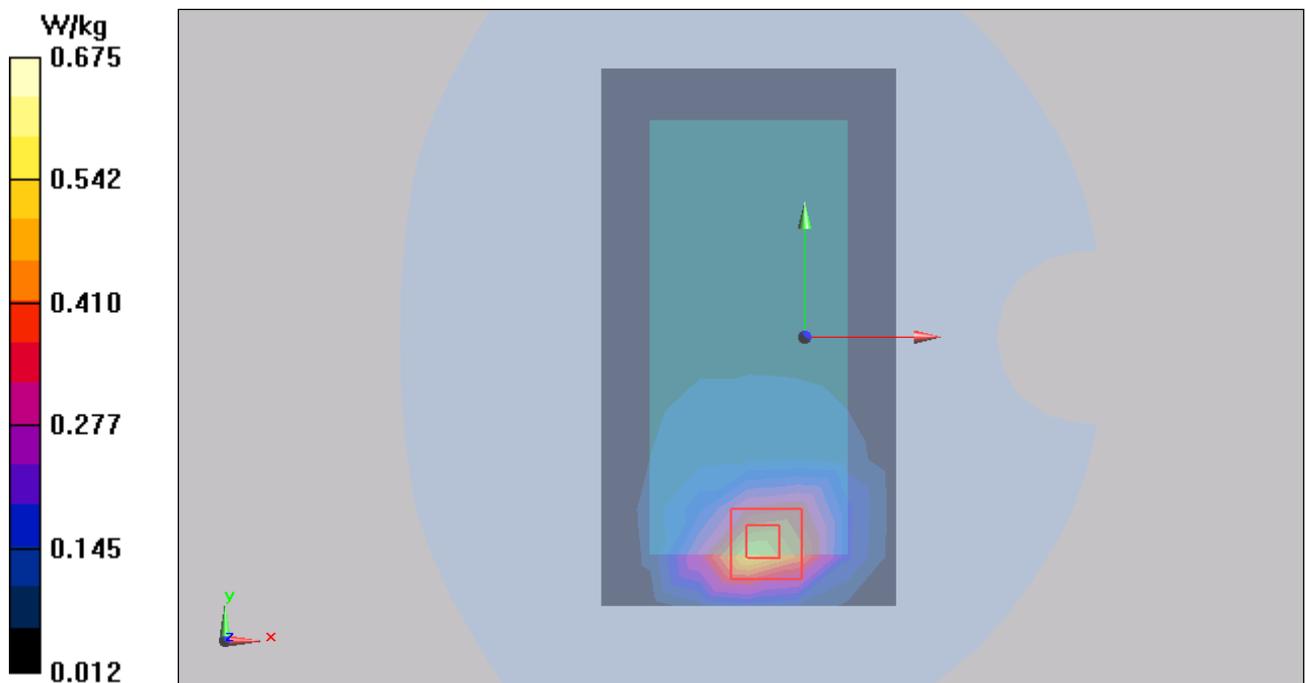


Figure 56 Body, Front Side, UMTS Band II Channel 9400

UMTS Band II Left Edge Middle (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 12:57:07 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Edge Middle/Area Scan (4x12x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0670 W/kg

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

Reference Value = 4.392 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 0.123 mW/g

SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.038 mW/g

Maximum value of SAR (measured) = 0.0794 W/kg

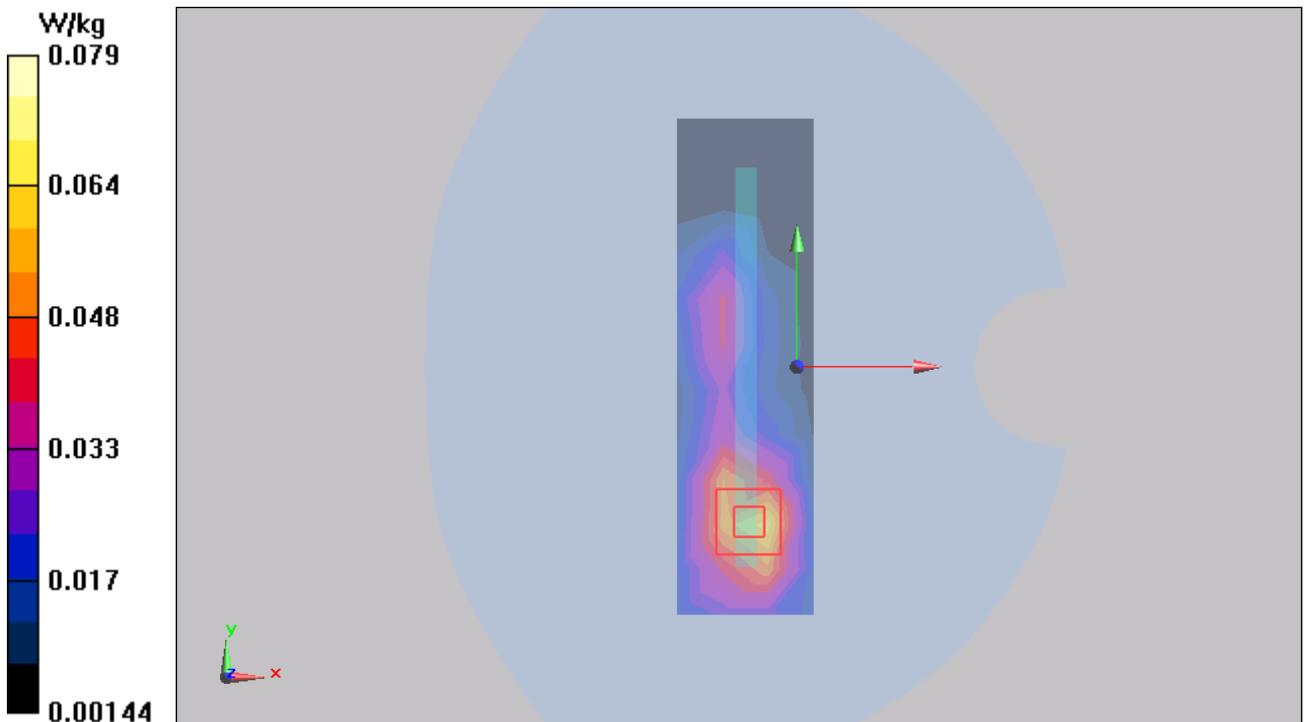


Figure 57 Body, Left Edge, UMTS Band II Channel 9400

UMTS Band II Right Edge Middle (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 1:24:05 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Edge Middle/Area Scan (31x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0353 W/kg

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

Reference Value = 2.971 V/m; Power Drift = 0.069 dB

Peak SAR (extrapolated) = 0.040 mW/g

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.014 mW/g

Maximum value of SAR (measured) = 0.0279 W/kg

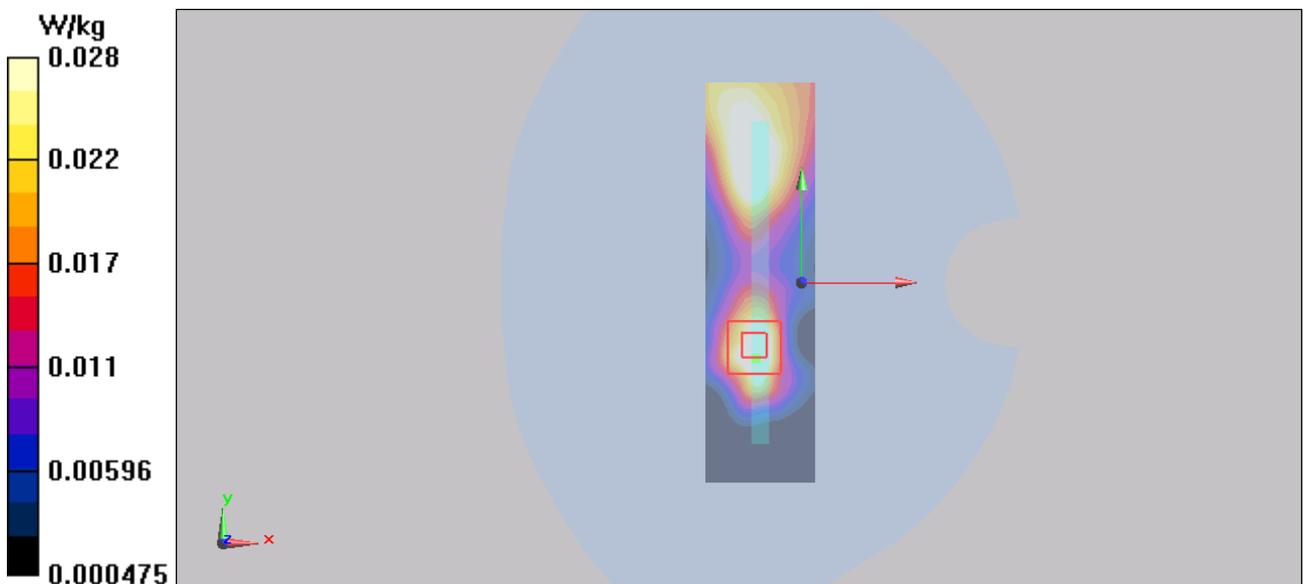


Figure 58 Body, Right Edge, UMTS Band II Channel 9400

UMTS Band II Bottom Edge High (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 11:18:11 AM

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

Medium parameters used: $f = 1908$ MHz; $\sigma = 1.532$ mho/m; $\epsilon_r = 52.533$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge High/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.773 W/kg

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

Reference Value = 26.573 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.635 mW/g

SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.505 mW/g

Maximum value of SAR (measured) = 1.05 W/kg

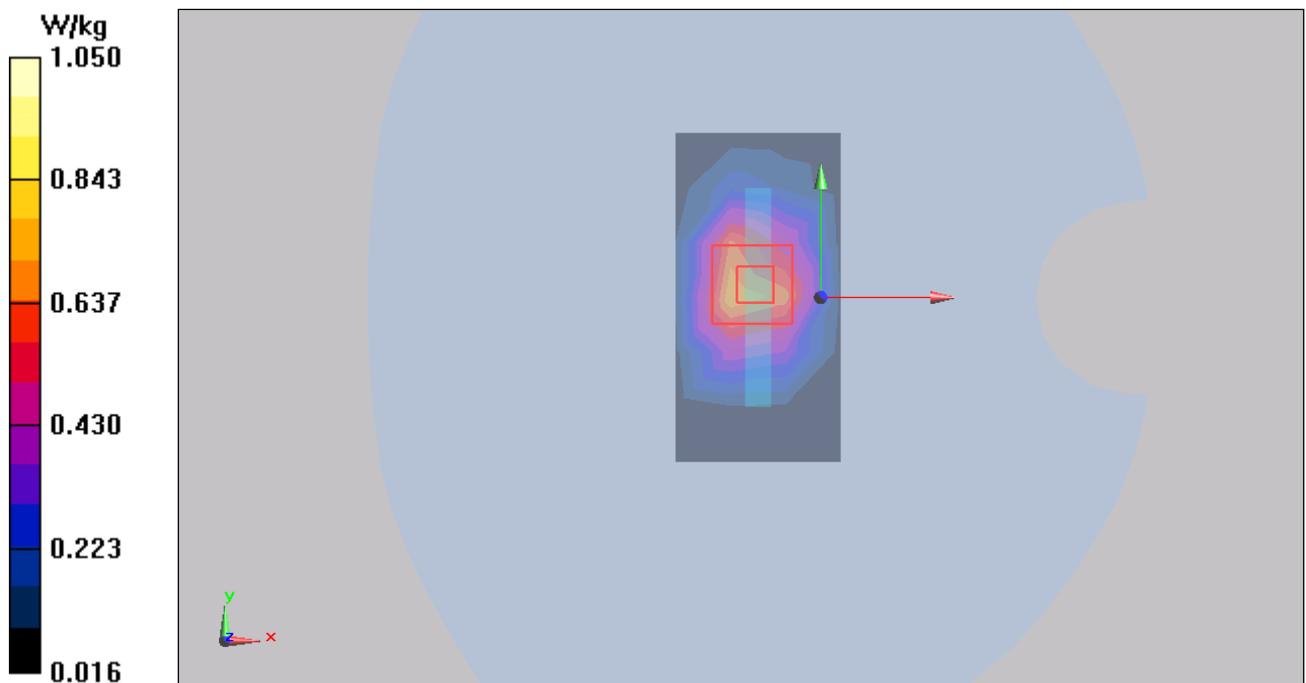


Figure 59 Body, Bottom Edge, UMTS Band II Channel 9538

UMTS Band II Bottom Edge Middle (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 11:05:29 AM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.997 W/kg

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

Reference Value = 25.734 V/m; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.662 mW/g

SAR(1 g) = 0.975 mW/g; SAR(10 g) = 0.520 mW/g

Maximum value of SAR (measured) = 1.08 W/kg

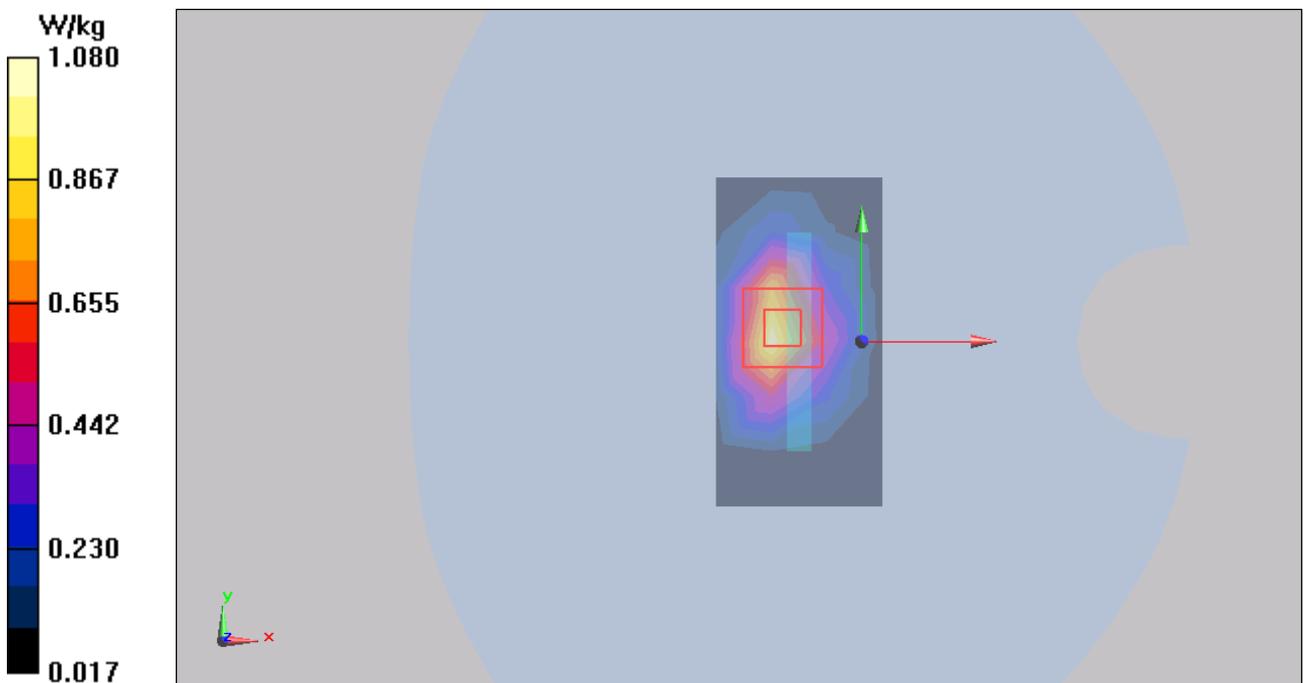


Figure 60 Body, Bottom Edge, UMTS Band II Channel 9400

UMTS Band II Bottom Edge Low (Battery 1, Distance 10mm)

Date/Time: 7/26/2013 3:12:10 PM

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

Medium parameters used (interpolated): $f = 1852.4$ MHz; $\sigma = 1.474$ mho/m; $\epsilon_r = 52.662$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Low /Area Scan (31x61x1): Interpolated grid: dx=10 mm, dy=10mm

Maximum value of SAR (interpolated) = 1.30 W/kg

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

Reference Value = 28.739 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 1.704 mW/g

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.557 mW/g

Maximum value of SAR (measured) = 1.14 W/kg

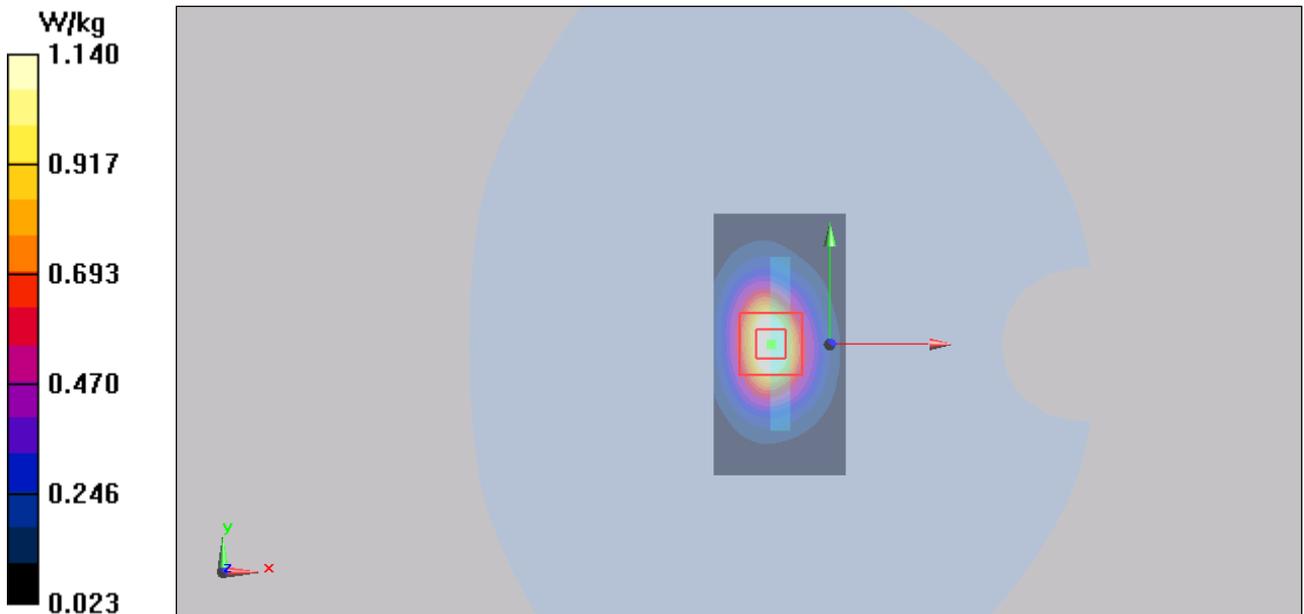


Figure 61 Body, Bottom Edge, UMTS Band II Channel 9262

UMTS Band II Bottom Edge Middle (Battery 2, Distance 10mm)

Date/Time: 7/26/2013 3:48:29 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.03 W/kg

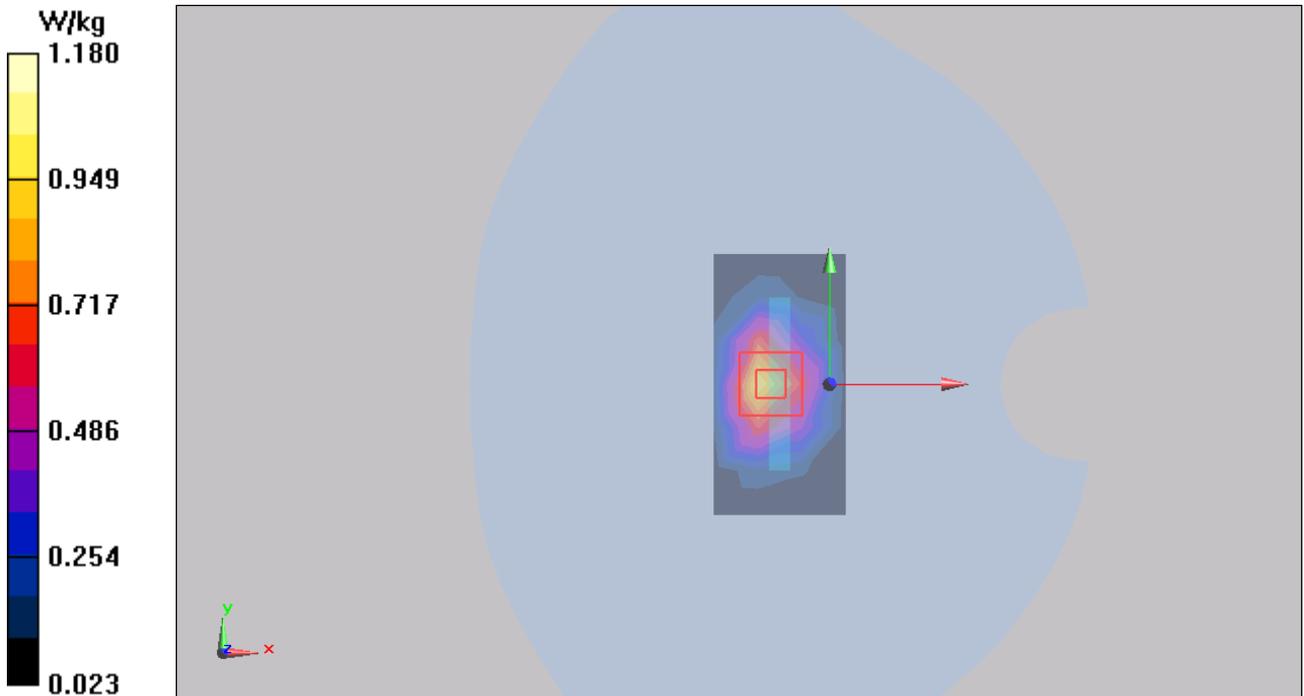
Bottom Edge Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 27.932 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.759 mW/g

SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.574 mW/g

Maximum value of SAR (measured) = 1.18 W/kg



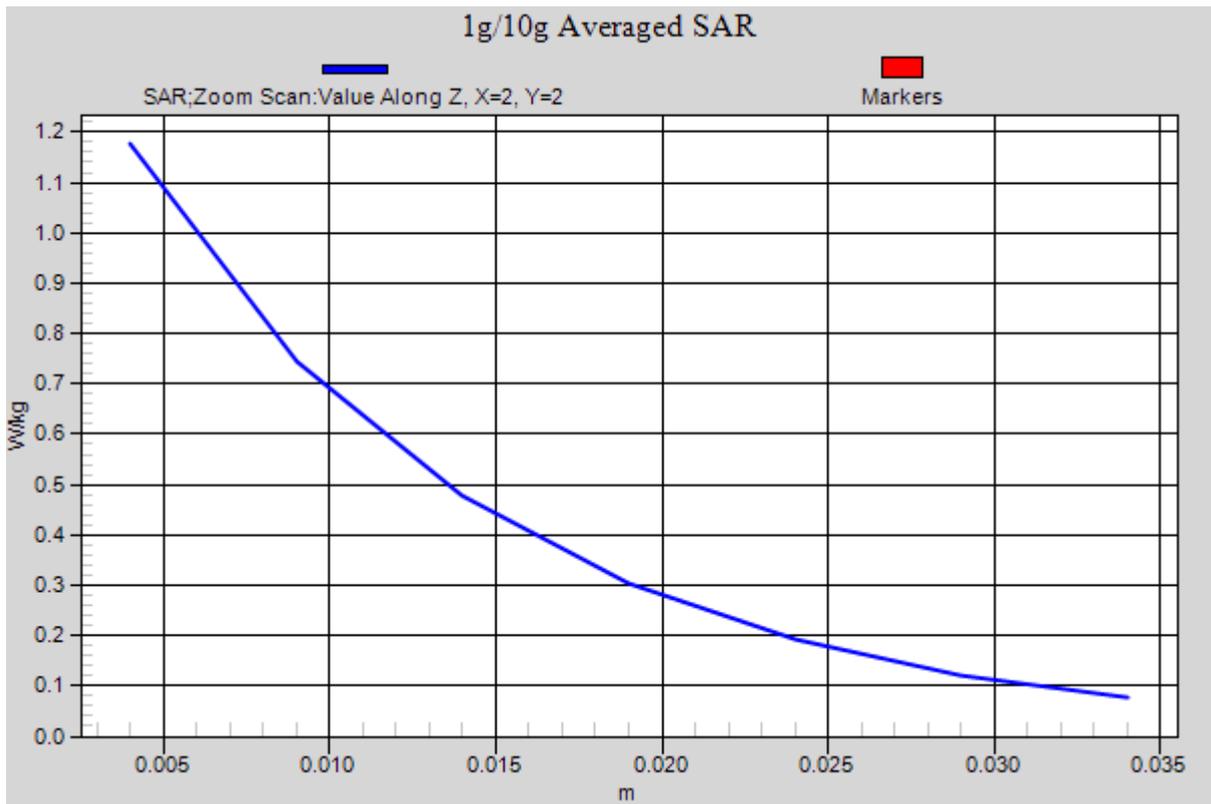


Figure 62 Body, Bottom Edge, UMTS Band II Channel 9400

UMTS Band II Bottom Edge Middle (1st repeated SAR, Battery 1, Distance 10mm)

Date/Time: 7/26/2013 3:28:10 PM

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.503$ mho/m; $\epsilon_r = 52.61$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.33, 7.33, 7.33); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.12 W/kg

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

Reference Value = 28.869 V/m; Power Drift = -0.19 dB

Peak SAR (extrapolated) = 1.753 mW/g

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.573 mW/g

Maximum value of SAR (measured) = 1.17 W/kg

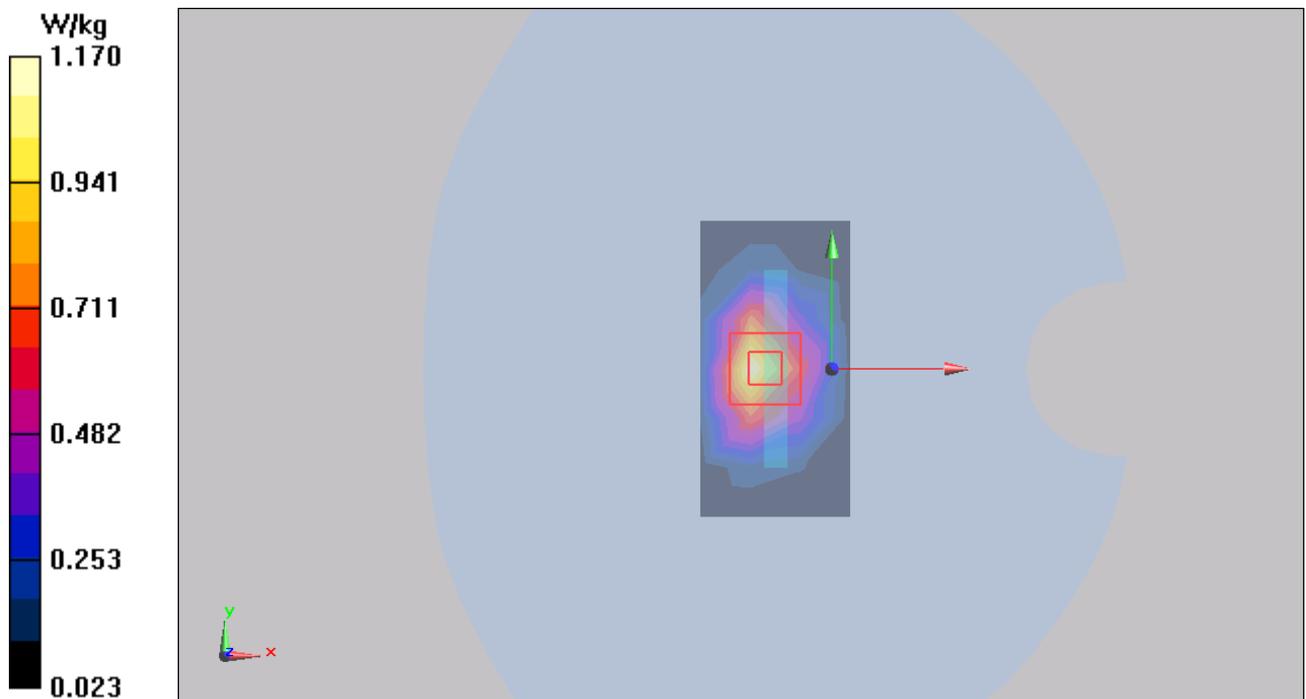


Figure 63 Body, Bottom Edge, UMTS Band II Channel 9400

TA Technology (Shanghai) Co., Ltd.
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UMTS Band IV Left Cheek Middle (Battery 1)

Date/Time: 7/25/2013 6:28:46 PM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.381$ mho/m; $\epsilon_r = 39.221$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.445 W/kg

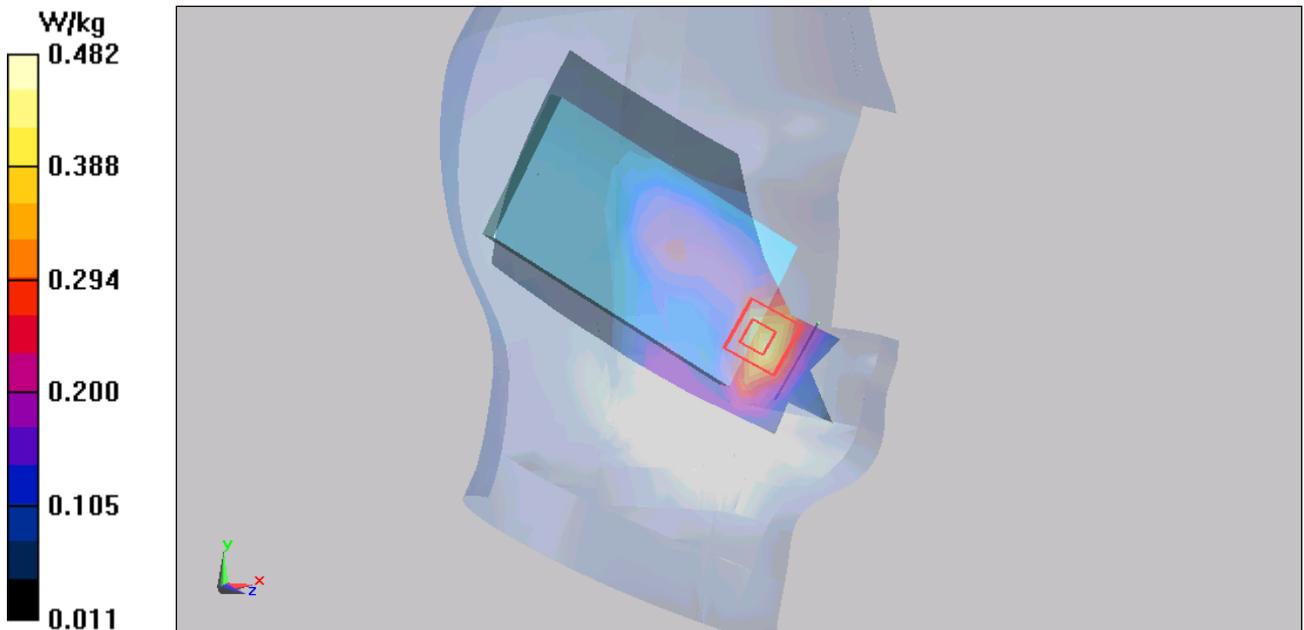
Left Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.845 V/m; Power Drift = 0.090 dB

Peak SAR (extrapolated) = 0.737 mW/g

SAR(1 g) = 0.436 mW/g; SAR(10 g) = 0.246 mW/g

Maximum value of SAR (measured) = 0.482 W/kg



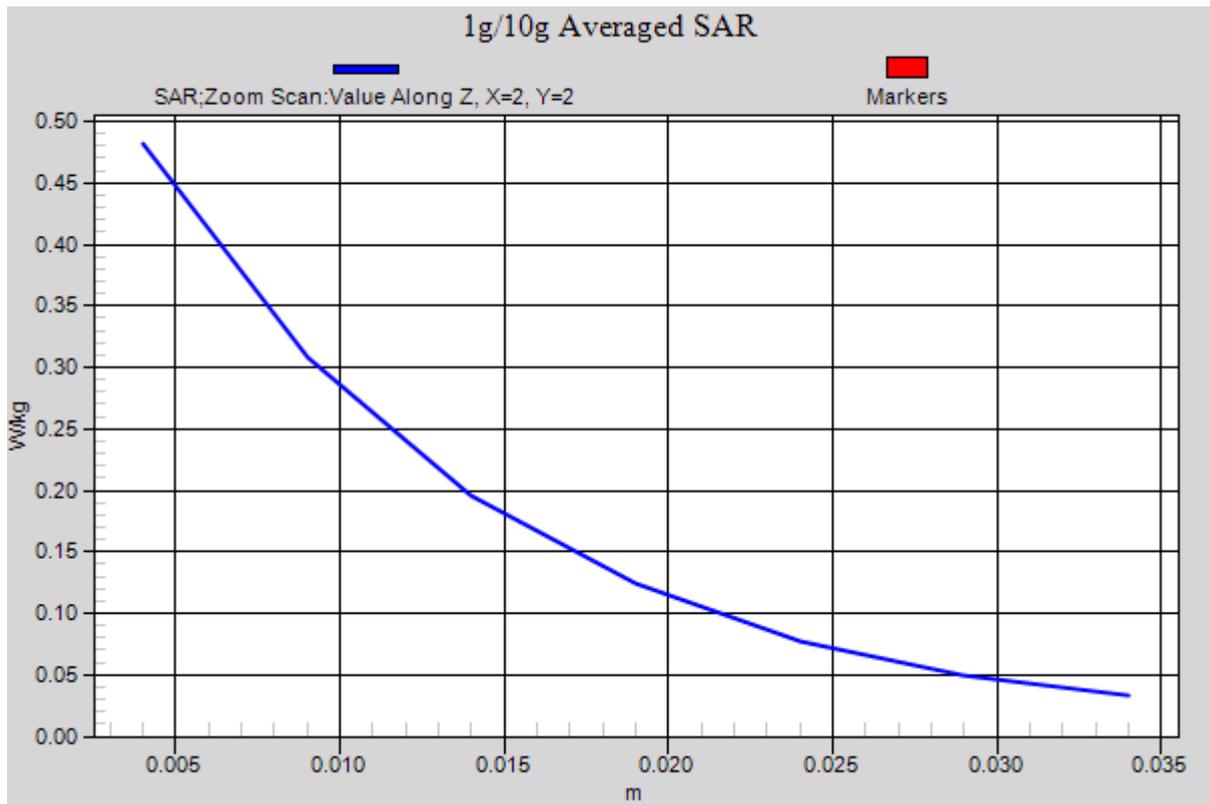


Figure 64 Left Hand Touch Cheek UMTS Band IV Channel 1413

UMTS Band IV Left Tilt Middle (Battery 1)

Date/Time: 7/25/2013 6:48:13 PM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.381$ mho/m; $\epsilon_r = 39.221$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Tilt Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0451 W/kg

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

Reference Value = 5.645 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.074 mW/g

SAR(1 g) = 0.044 mW/g; SAR(10 g) = 0.026 mW/g

Maximum value of SAR (measured) = 0.0457 W/kg

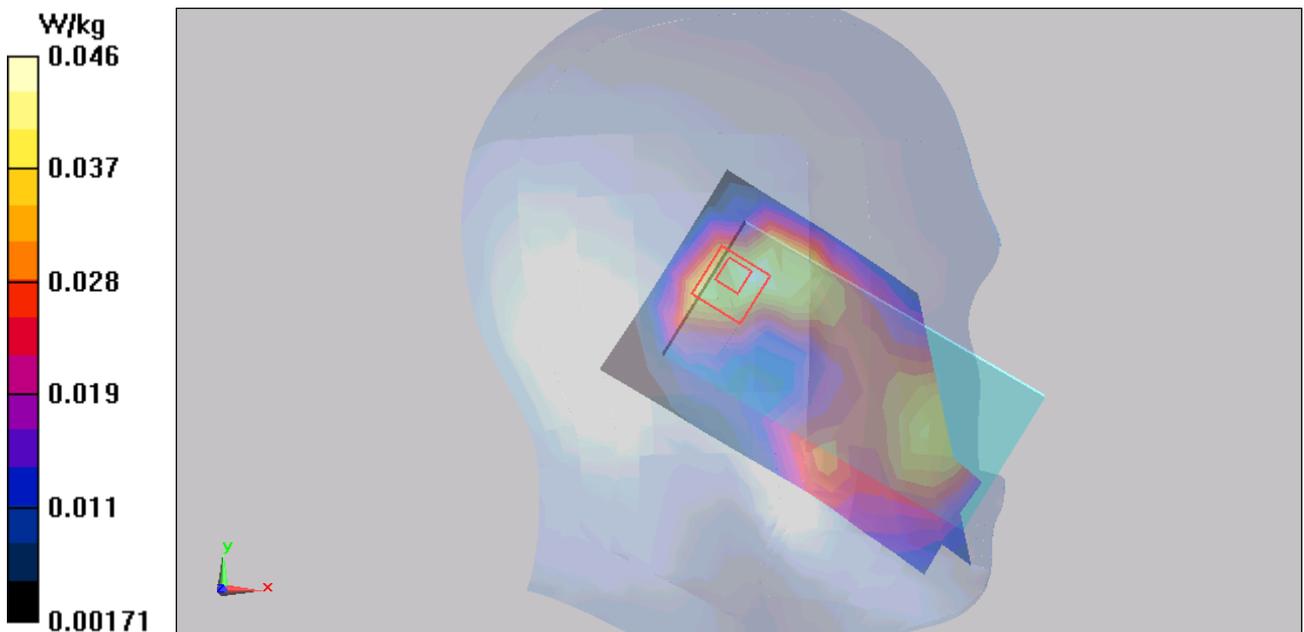


Figure 65 Left Hand Tilt 15° UMTS Band IV Channel 1413

UMTS Band IV Right Cheek Middle (Battery 1)

Date/Time: 7/25/2013 10:28:38 PM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.381$ mho/m; $\epsilon_r = 39.221$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.274 W/kg

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

Reference Value = 4.869 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.363 mW/g

SAR(1 g) = 0.250 mW/g; SAR(10 g) = 0.159 mW/g

Maximum value of SAR (measured) = 0.273 W/kg

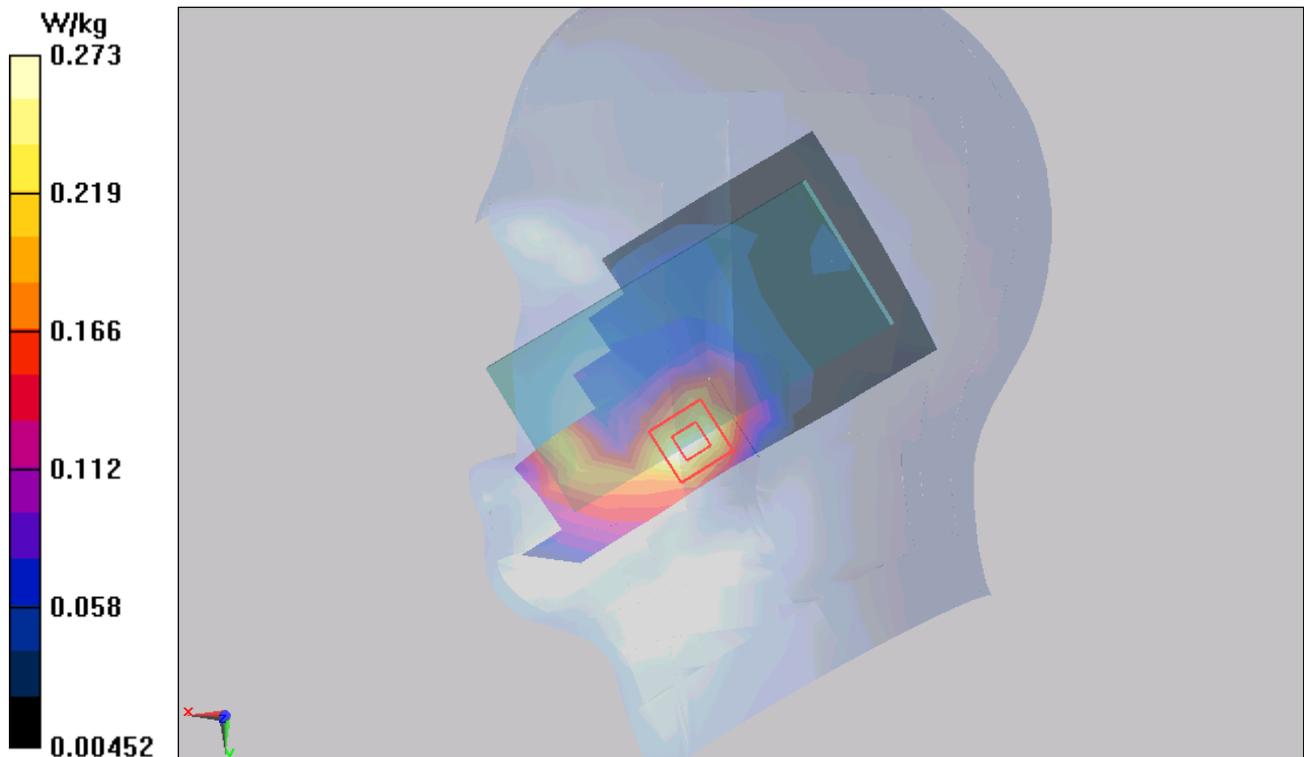


Figure 66 Right Hand Touch Cheek UMTS Band IV Channel 1413

UMTS Band IV Right Tilt Middle (Battery 1)

Date/Time: 7/25/2013 10:45:58 PM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.381$ mho/m; $\epsilon_r = 39.221$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Tilt Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.0555 W/kg

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

Reference Value = 6.456 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.091 mW/g

SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.032 mW/g

Maximum value of SAR (measured) = 0.0621 W/kg

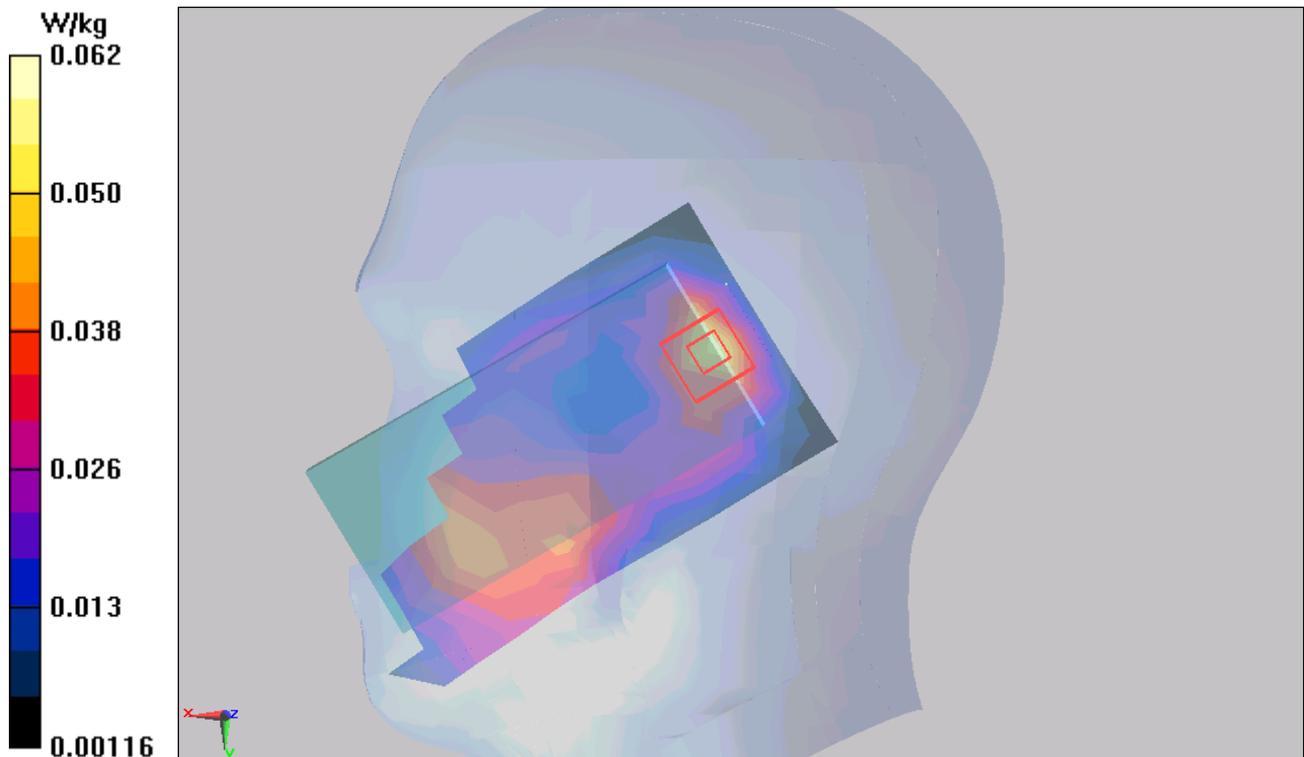


Figure 67 Right Hand Tilt 15° UMTS Band IV Channel 1413

UMTS Band IV Left Cheek Middle (Battery 2)

Date/Time: 7/25/2013 11:14:04 PM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1732.6$ MHz; $\sigma = 1.381$ mho/m; $\epsilon_r = 39.221$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.86, 7.86, 7.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.346 W/kg

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

Reference Value = 6.936 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.533 mW/g

SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.220 mW/g

Maximum value of SAR (measured) = 0.381 W/kg

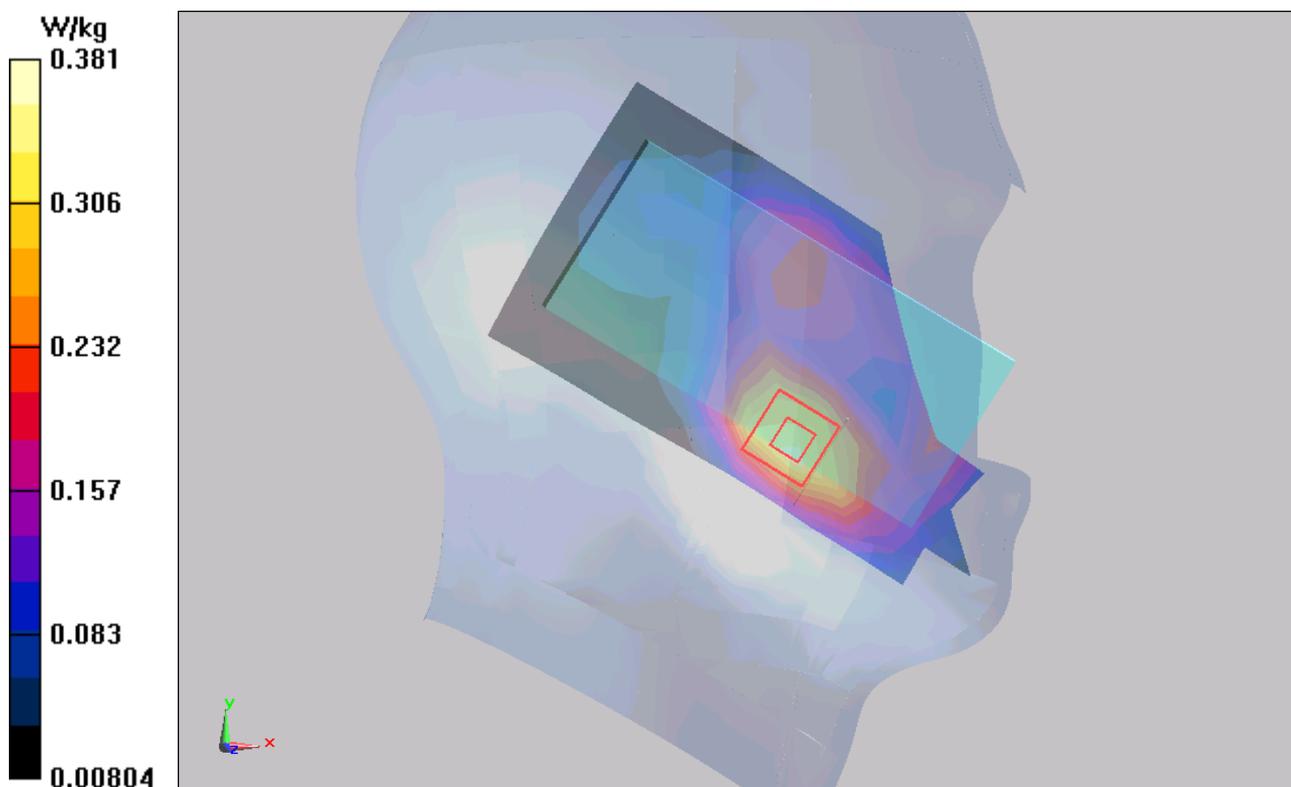


Figure 68 Left Hand Touch Cheek UMTS Band IV Channel 1413

UMTS Band IV Back Side High (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 1:55:15 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side High/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.740 W/kg

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

Reference Value = 6.177 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 1.234 mW/g

SAR(1 g) = 0.784 mW/g; SAR(10 g) = 0.454 mW/g

Maximum value of SAR (measured) = 0.867 W/kg

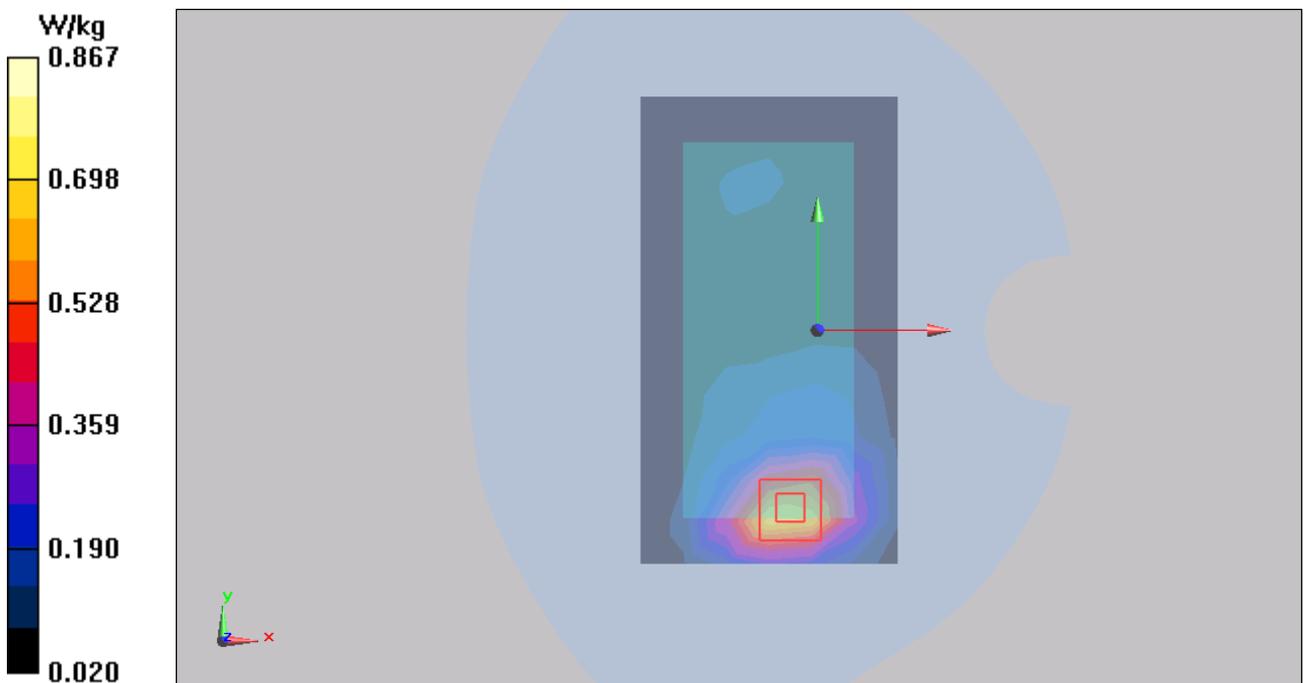


Figure 69 Body, Back Side, UMTS Band IV Channel 1513

UMTS Band IV Back Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 1:37:28 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.653 W/kg

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

Reference Value = 5.516 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 1.108 mW/g

SAR(1 g) = 0.702 mW/g; SAR(10 g) = 0.406 mW/g

Maximum value of SAR (measured) = 0.777 W/kg

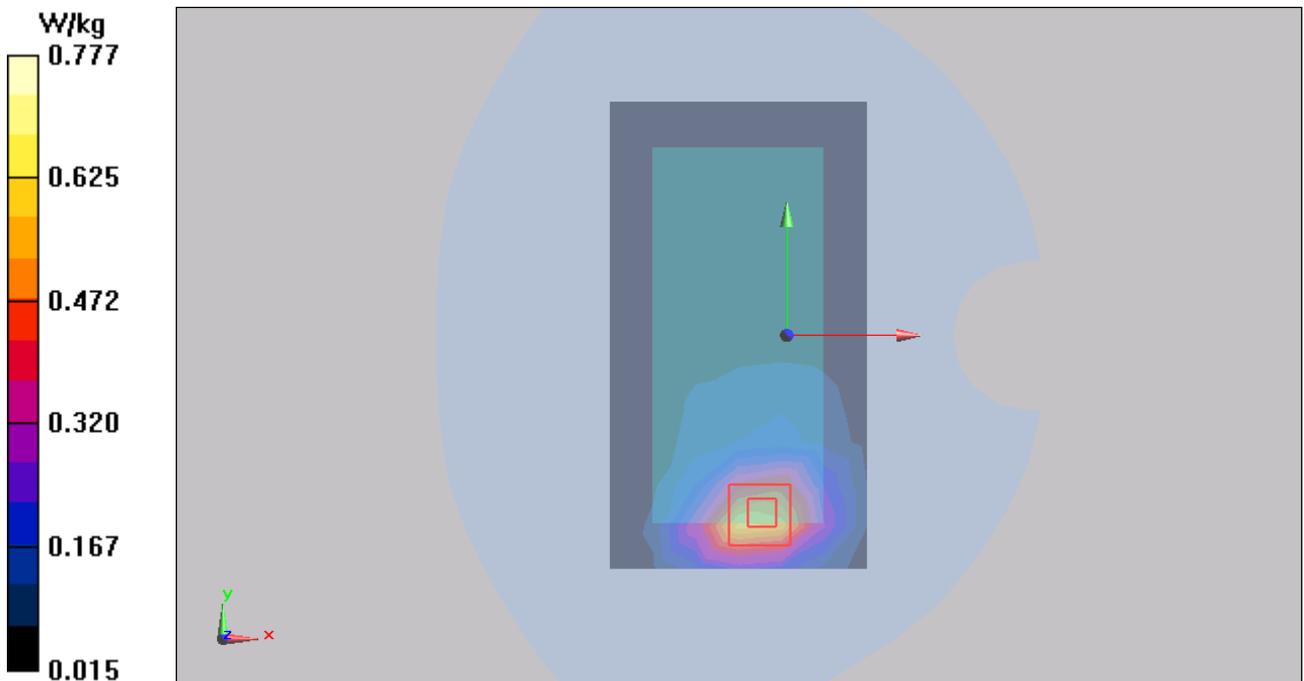


Figure 70 Body, Back Side, UMTS Band IV Channel 1413

UMTS Band IV Back Side Low (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 2:12:29 AM

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.443$ mho/m; $\epsilon_r = 52.223$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Low/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.565 W/kg

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

Reference Value = 4.857 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.964 mW/g

SAR(1 g) = 0.612 mW/g; SAR(10 g) = 0.354 mW/g

Maximum value of SAR (measured) = 0.675 W/kg

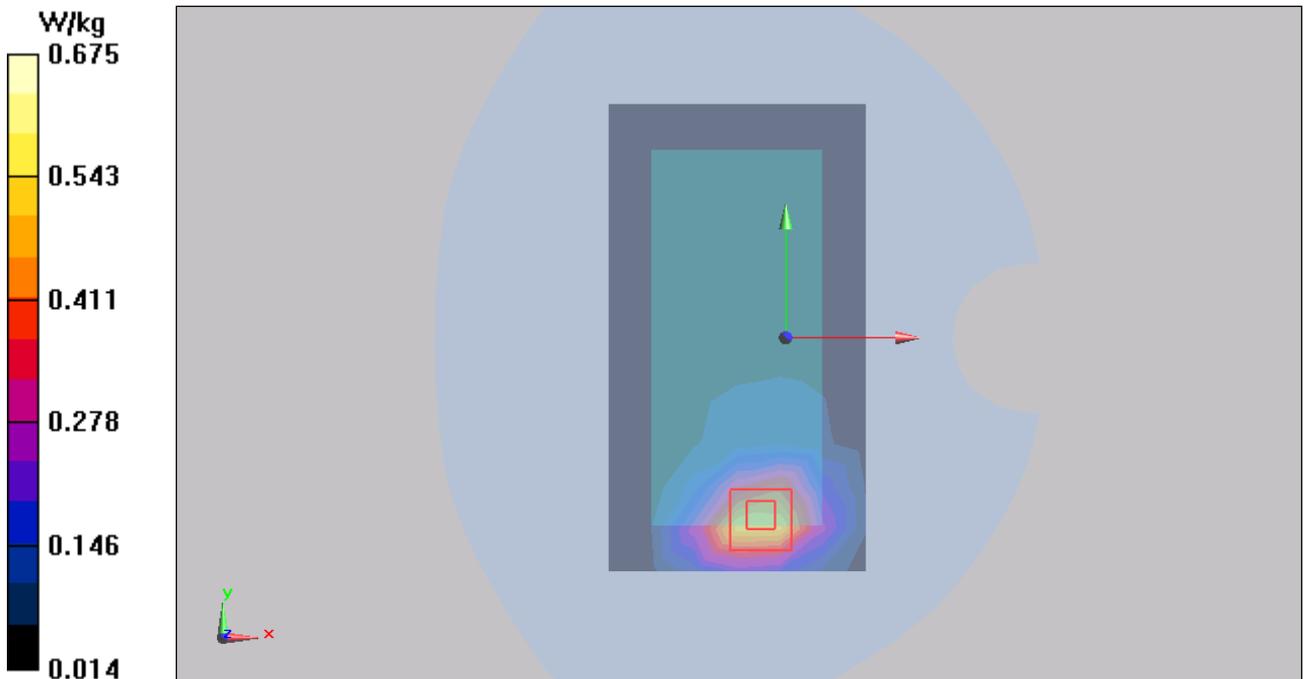


Figure 71 Body, Back Side, UMTS Band IV Channel 1312

UMTS Band IV Front Side High (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 3:05:26 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side High/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.988 W/kg

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

Reference Value = 5.153 V/m; Power Drift = -0.05 dB

Peak SAR (extrapolated) = 1.600 mW/g

SAR(1 g) = 0.983 mW/g; SAR(10 g) = 0.553 mW/g

Maximum value of SAR (measured) = 1.09 W/kg

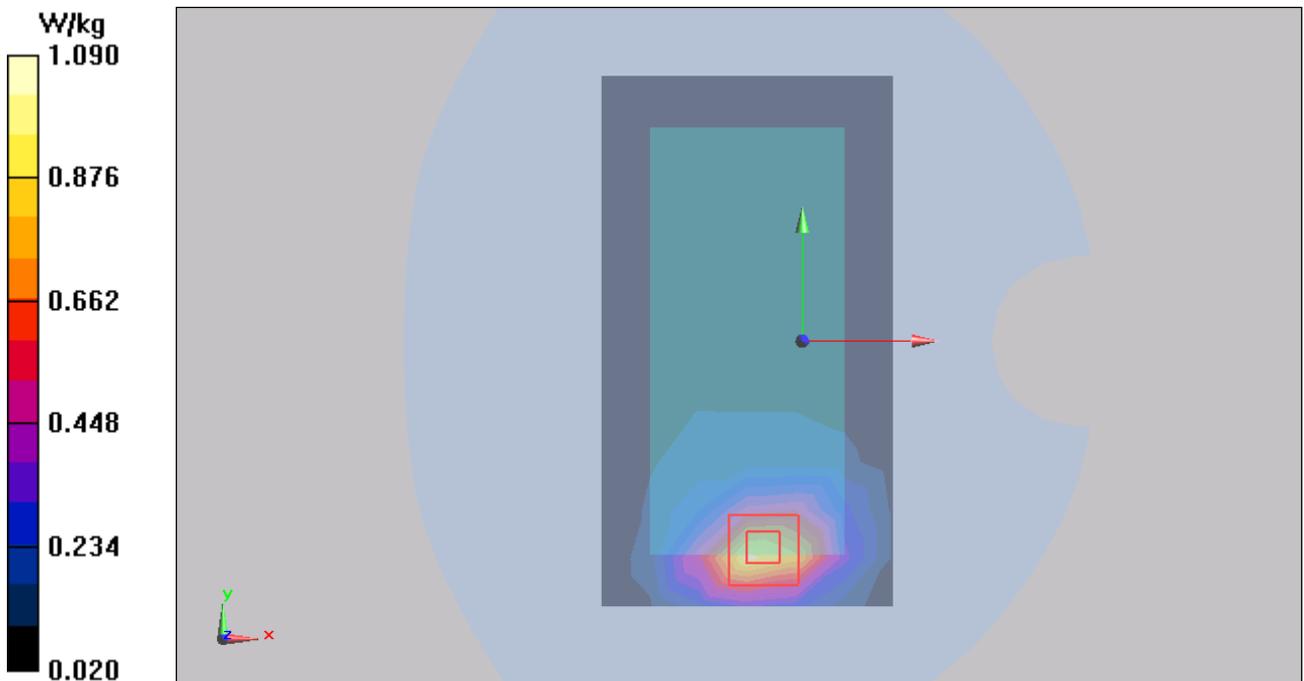


Figure 72 Body, Front Side, UMTS Band IV Channel 1513

UMTS Band IV Front Side Middle (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 2:31:08 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.897 W/kg

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

Reference Value = 4.717 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 1.477 mW/g

SAR(1 g) = 0.906 mW/g; SAR(10 g) = 0.508 mW/g

Maximum value of SAR (measured) = 1.01 W/kg

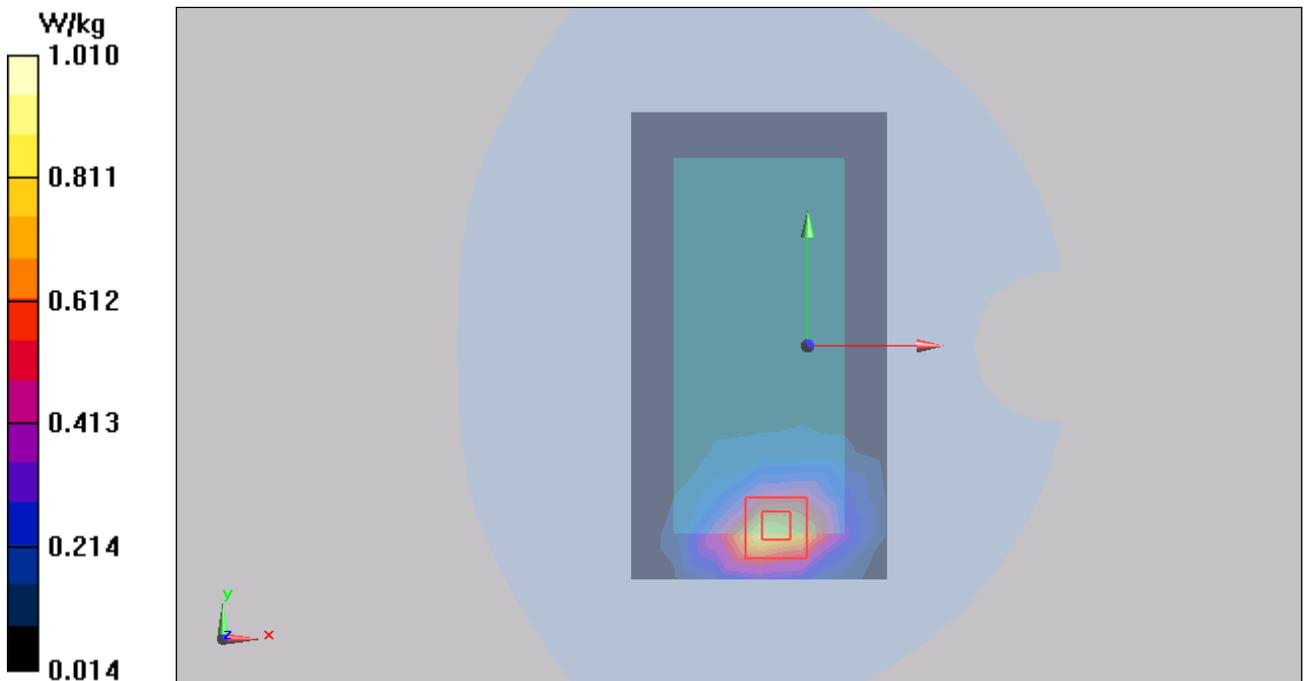


Figure 73 Body, Front Side, UMTS Band IV Channel 1413

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UMTS Band IV Front Side Low (Battery 1, Distance 15mm)

Date/Time: 7/25/2013 2:48:19 AM

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.443$ mho/m; $\epsilon_r = 52.223$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Low/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.808 W/kg

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

Reference Value = 4.169 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.355 mW/g

SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.463 mW/g

Maximum value of SAR (measured) = 0.924 W/kg

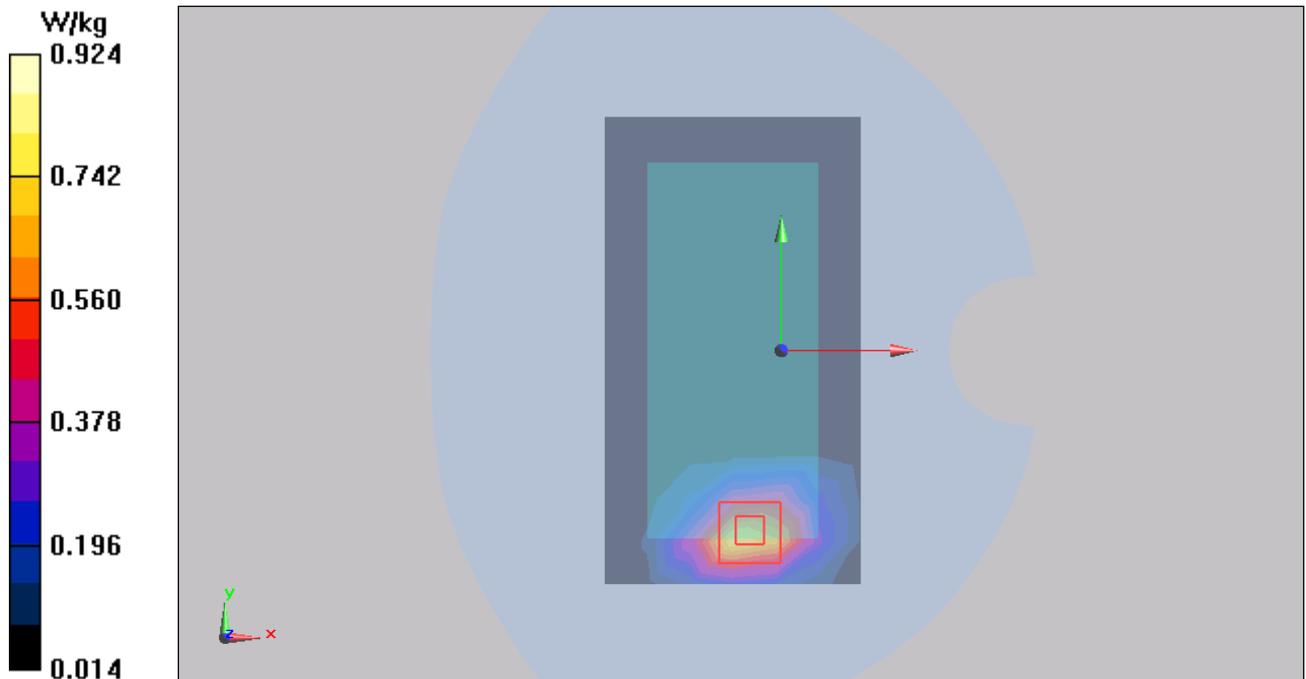


Figure 74 Body, Front Side, UMTS Band IV Channel 1312

UMTS Band IV Back Side Middle (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 12:19:21 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Back Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.573 W/kg

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

Reference Value = 4.964 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 1.022 mW/g

SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.334 mW/g

Maximum value of SAR (measured) = 0.693 W/kg

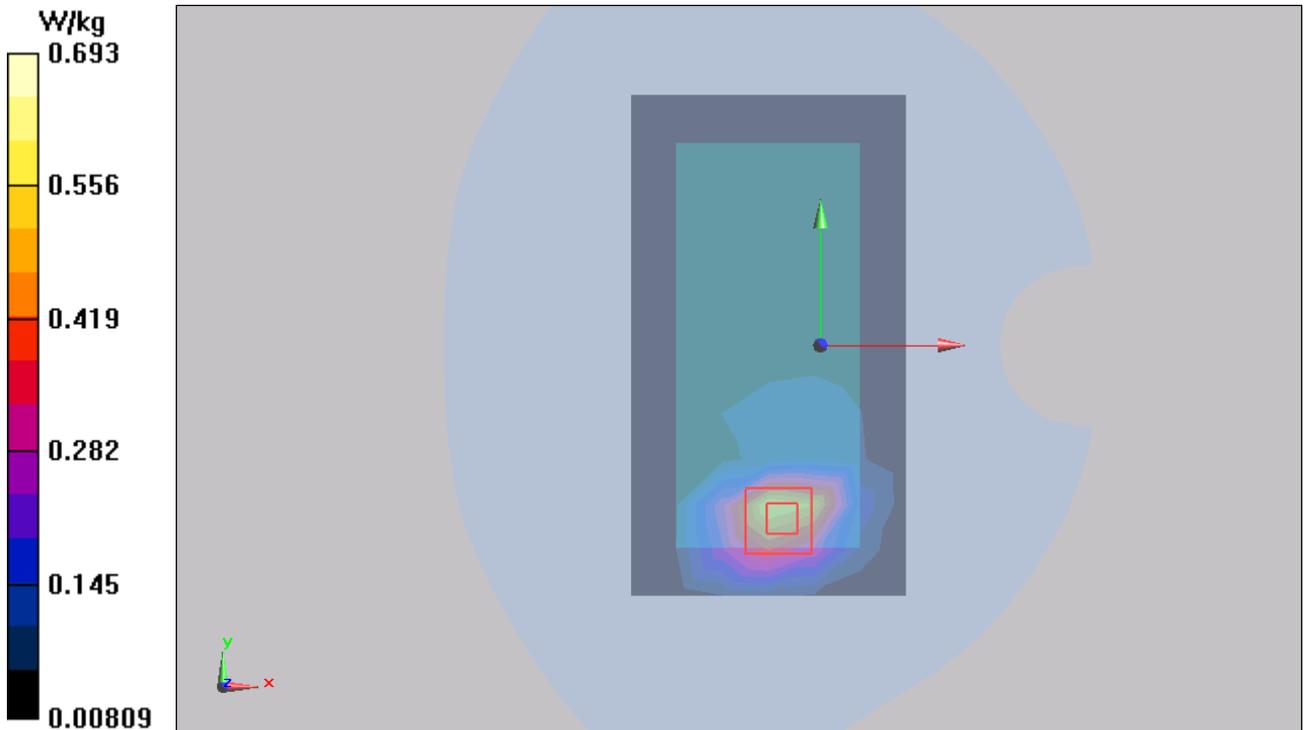


Figure 75 Body, Back Side, UMTS Band IV Channel 1413

UMTS Band IV Front Side High (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 3:45:31 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side High/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.860 W/kg

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

Reference Value = 3.754 V/m; Power Drift = -0.026 dB

Peak SAR (extrapolated) = 2.930 mW/g

SAR(1 g) = 0.995 mW/g; SAR(10 g) = 0.260 mW/g

Maximum value of SAR (measured) = 0.817 W/kg

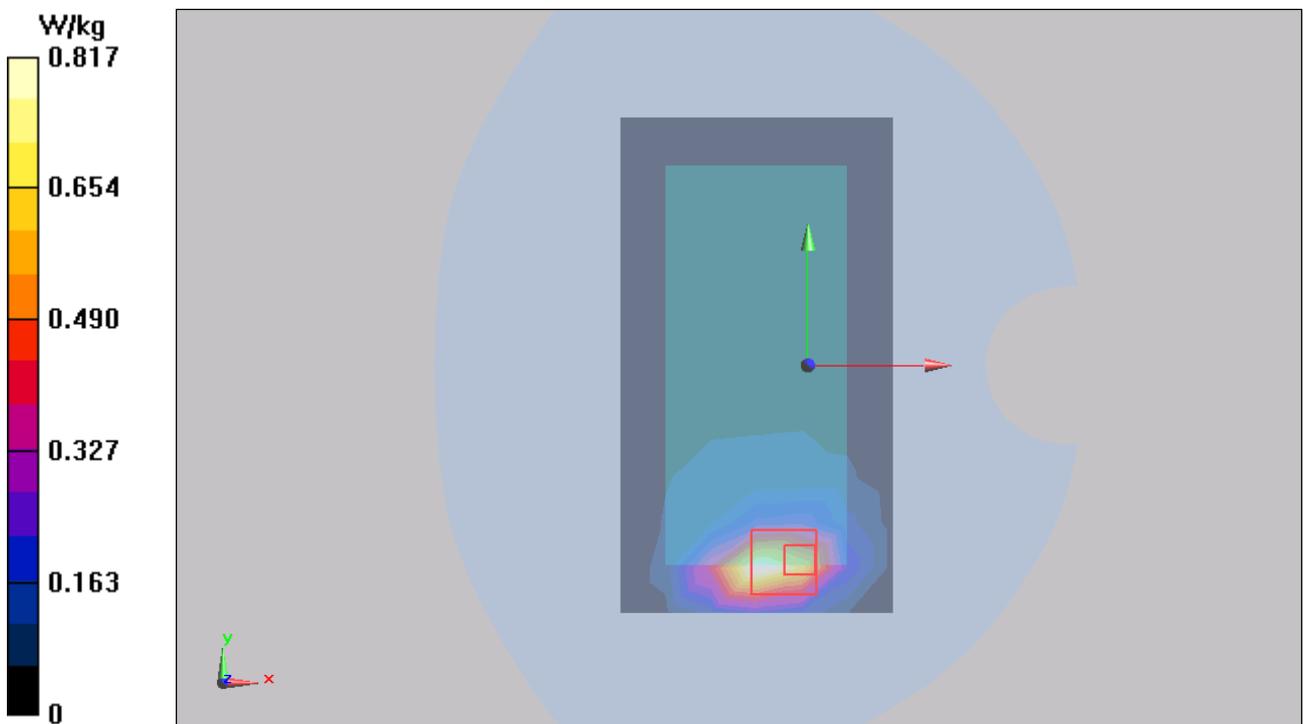


Figure 76 Body, Front Side, UMTS Band IV Channel 1513

UMTS Band IV Front Side Middle (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 3:25:25 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.846 W/kg

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

Reference Value = 3.880 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 1.469 mW/g

SAR(1 g) = 0.830 mW/g; SAR(10 g) = 0.430 mW/g

Maximum value of SAR (measured) = 0.934 W/kg

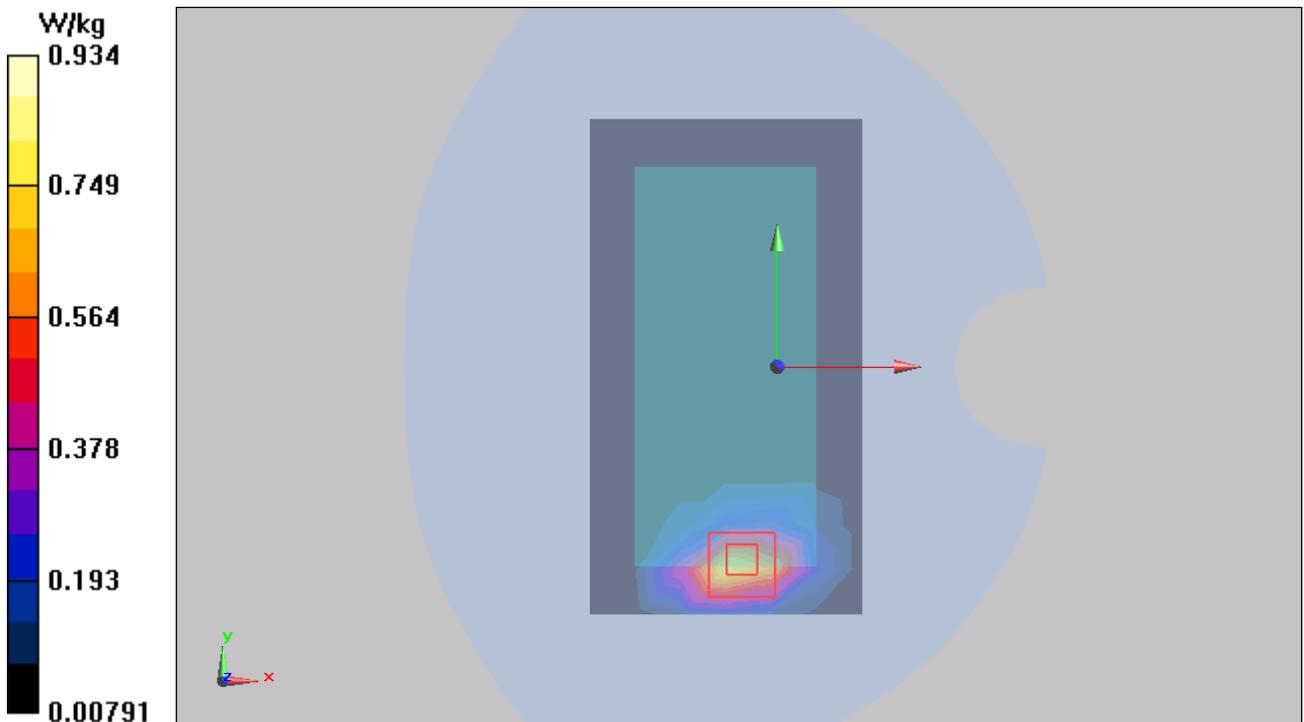


Figure 77 Body, Front Side, UMTS Band IV Channel 1413

UMTS Band IV Front Side Low (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 4:03:44 AM

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.443$ mho/m; $\epsilon_r = 52.223$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Front Side Low/Area Scan (61x111x1): Interpolated grid: dx=15 mm, dy=15 mm

Maximum value of SAR (interpolated) = 0.911 W/kg

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

Reference Value = 3.078 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 1.426 mW/g

SAR(1 g) = 0.793 mW/g; SAR(10 g) = 0.401 mW/g

Maximum value of SAR (measured) = 0.869 W/kg

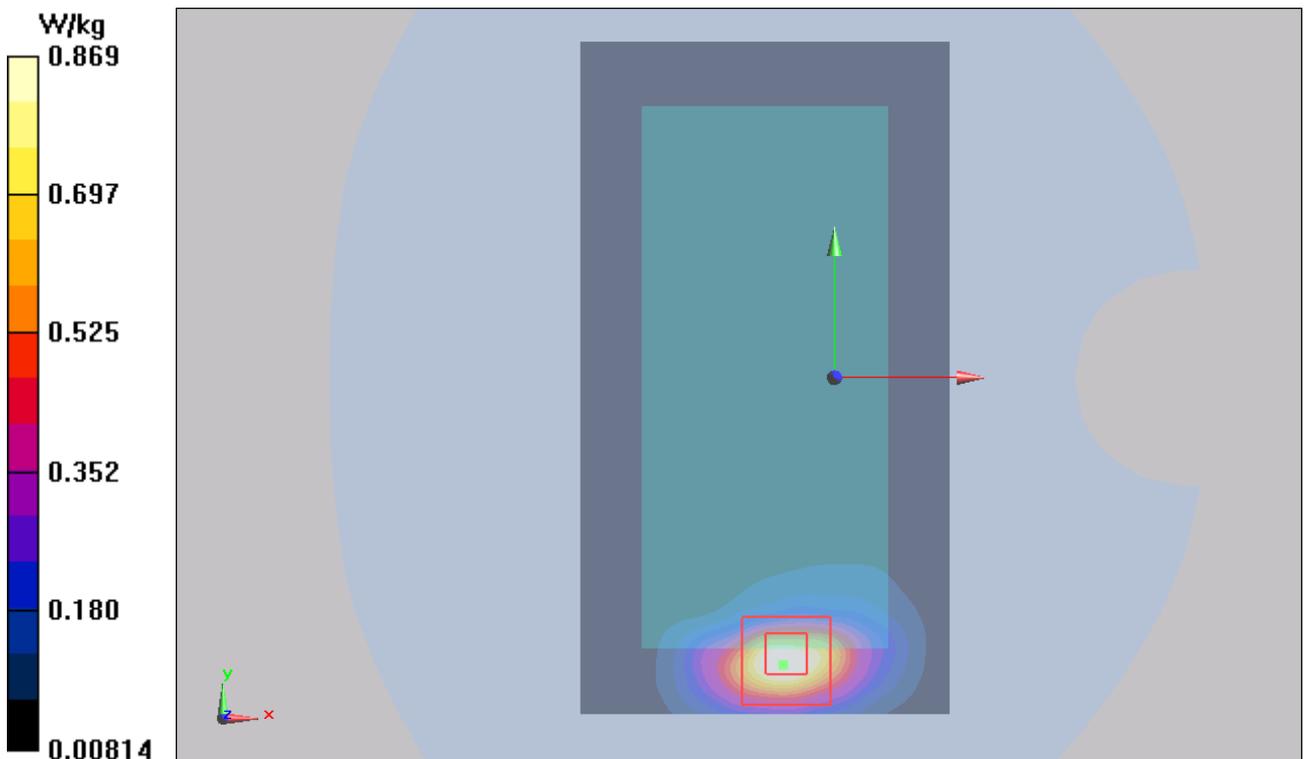


Figure 78 Body, Front Side, UMTS Band IV Channel 1312

UMTS Band IV Left Edge Middle (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 4:56:57 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Left Edge Middle/Area Scan (41x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0747 W/kg

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

Reference Value = 4.579 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 0.134 mW/g

SAR(1 g) = 0.074 mW/g; SAR(10 g) = 0.039 mW/g

Maximum value of SAR (measured) = 0.0825 W/kg

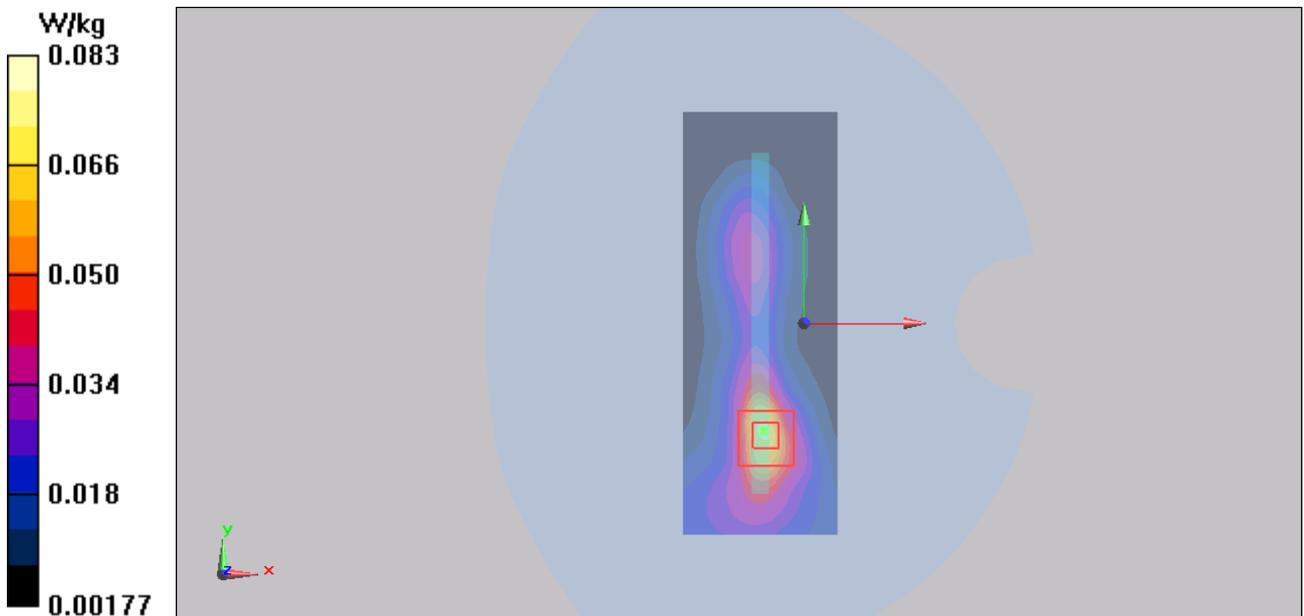


Figure 79 Body, Left Edge, UMTS Band IV Channel 1413

UMTS Band IV Right Edge Middle (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 4:35:10 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Right Edge Middle/Area Scan (41x111x1): Interpolated grid: dx=10 mm, dy=10 mm

Maximum value of SAR (interpolated) = 0.0530 W/kg

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

Reference Value = 2.557 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 0.083 mW/g

SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.024 mW/g

Maximum value of SAR (measured) = 0.0496 W/kg

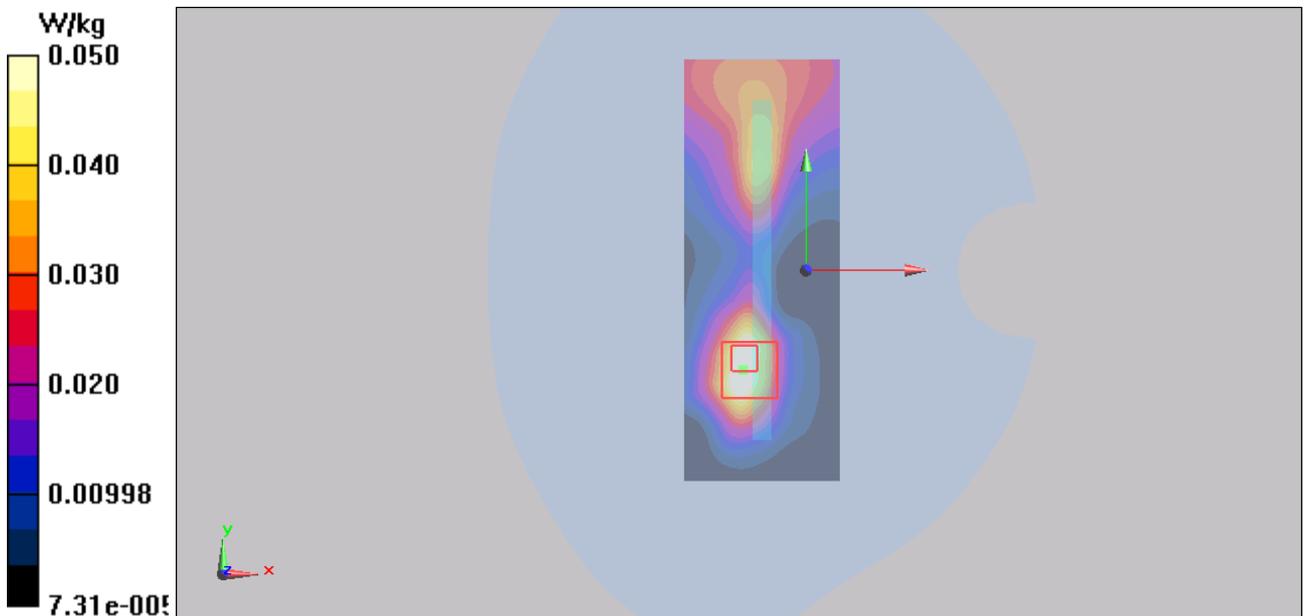


Figure 80 Body, Right Edge, UMTS Band IV Channel 1413

UMTS Band IV Bottom Edge High (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 12:58:01 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge High/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.01 W/kg

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

Reference Value = 28.189 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.761 mW/g

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.559 mW/g

Maximum value of SAR (measured) = 1.18 W/kg

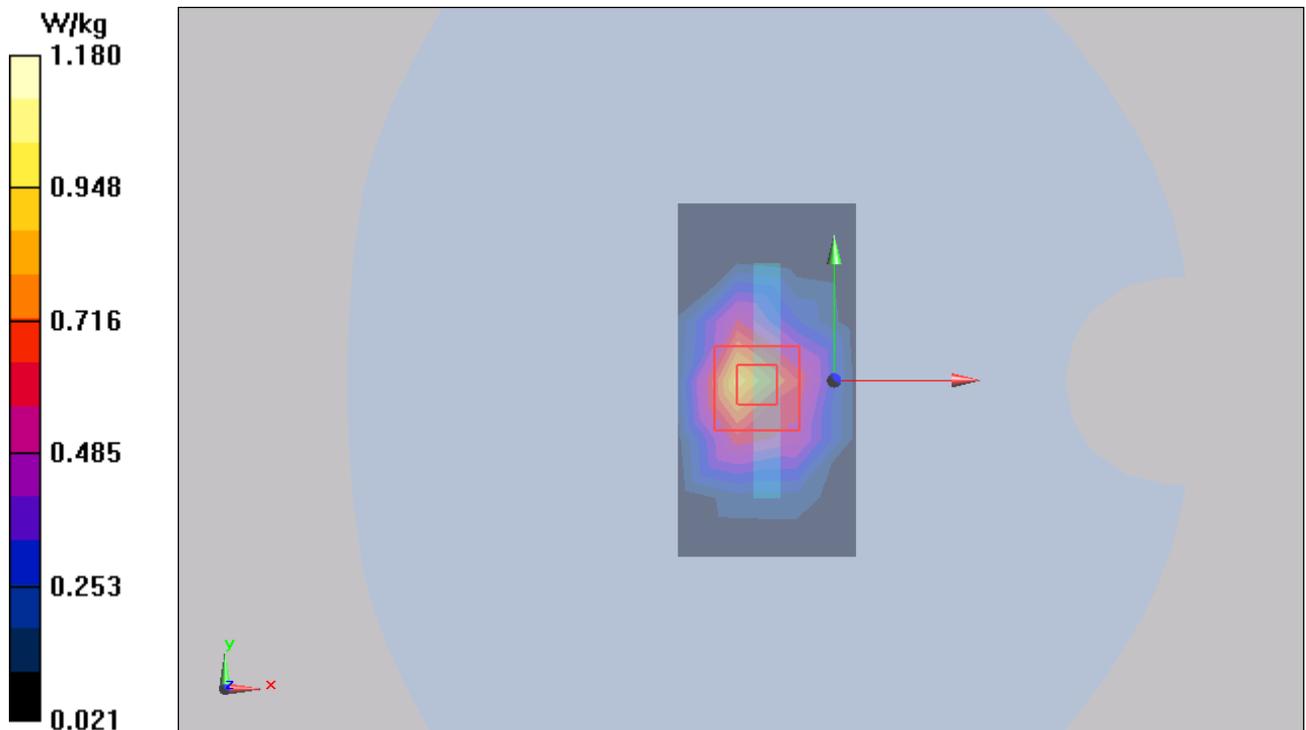


Figure 81 Body, Bottom Edge, UMTS Band IV Channel 1513

UMTS Band IV Bottom Edge Middle(Battery 1, Distance 10mm)

Date/Time: 7/25/2013 12:46:23 AM

Communication System: WCDMA; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1733$ MHz; $\sigma = 1.454$ mho/m; $\epsilon_r = 52.175$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.884 W/kg

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

Reference Value = 26.792 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.561 mW/g

SAR(1 g) = 0.929 mW/g; SAR(10 g) = 0.497 mW/g

Maximum value of SAR (measured) = 1.04 W/kg

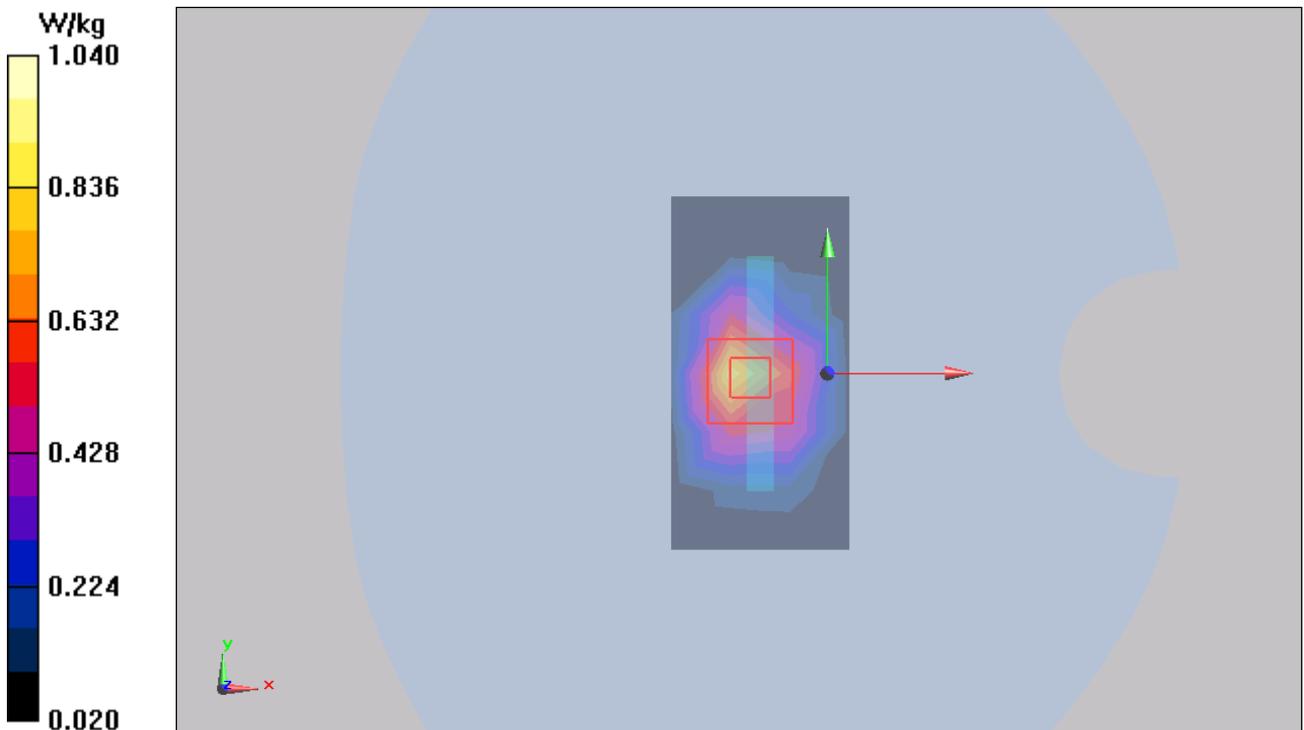


Figure 82 Body, Bottom Edge, UMTS Band IV Channel 1413

UMTS Band IV Bottom Edge Low (Battery 1, Distance 10mm)

Date/Time: 7/25/2013 1:09:06 AM

Communication System: WCDMA; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 1712.4$ MHz; $\sigma = 1.443$ mho/m; $\epsilon_r = 52.223$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge Low/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.750 W/kg

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

Reference Value = 25.261 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.355 mW/g

SAR(1 g) = 0.810 mW/g; SAR(10 g) = 0.434 mW/g

Maximum value of SAR (measured) = 0.905 W/kg

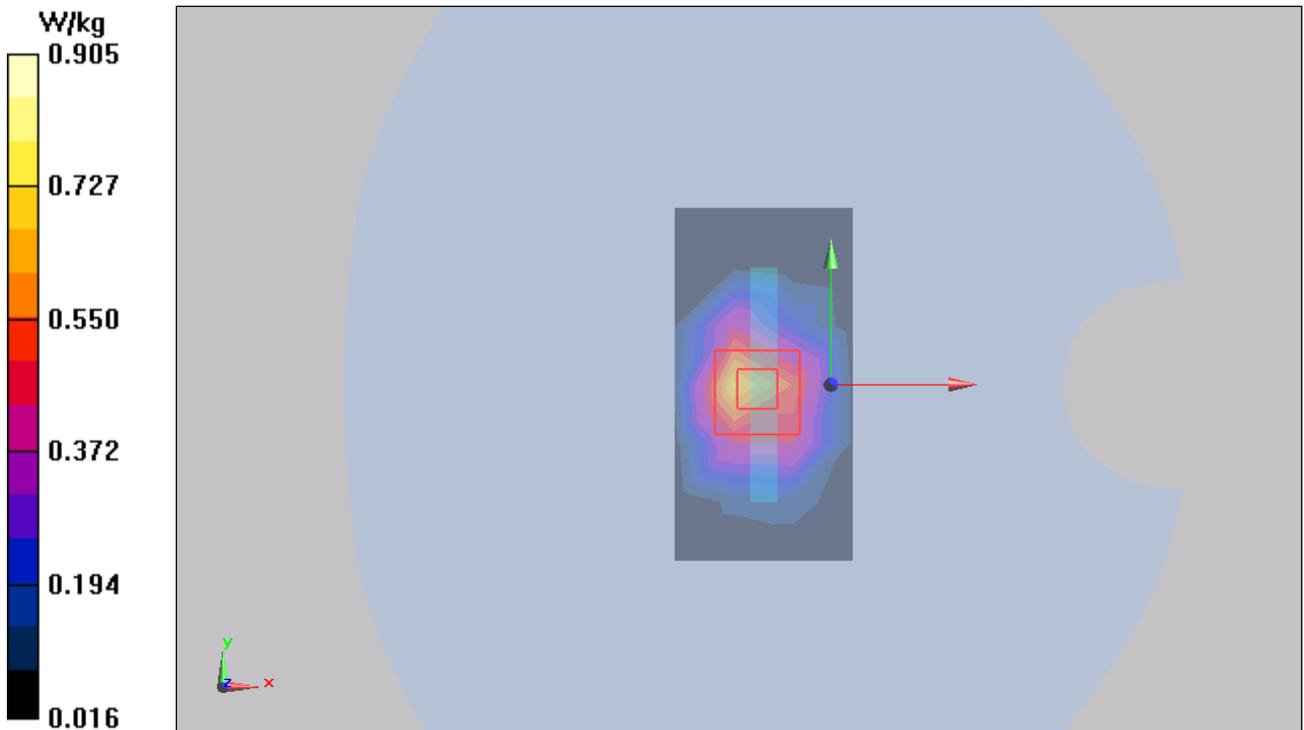


Figure 83 Body, Bottom Edge, UMTS Band IV Channel 1312

UMTS Band IV Bottom Edge High (Battery 2, Distance 10mm)

Date/Time: 7/25/2013 4:20:32 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge High/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.21 W/kg

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

Reference Value = 27.854 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.654 mW/g

SAR(1 g) = 0.991 mW/g; SAR(10 g) = 0.534 mW/g

Maximum value of SAR (measured) = 1.11 W/kg

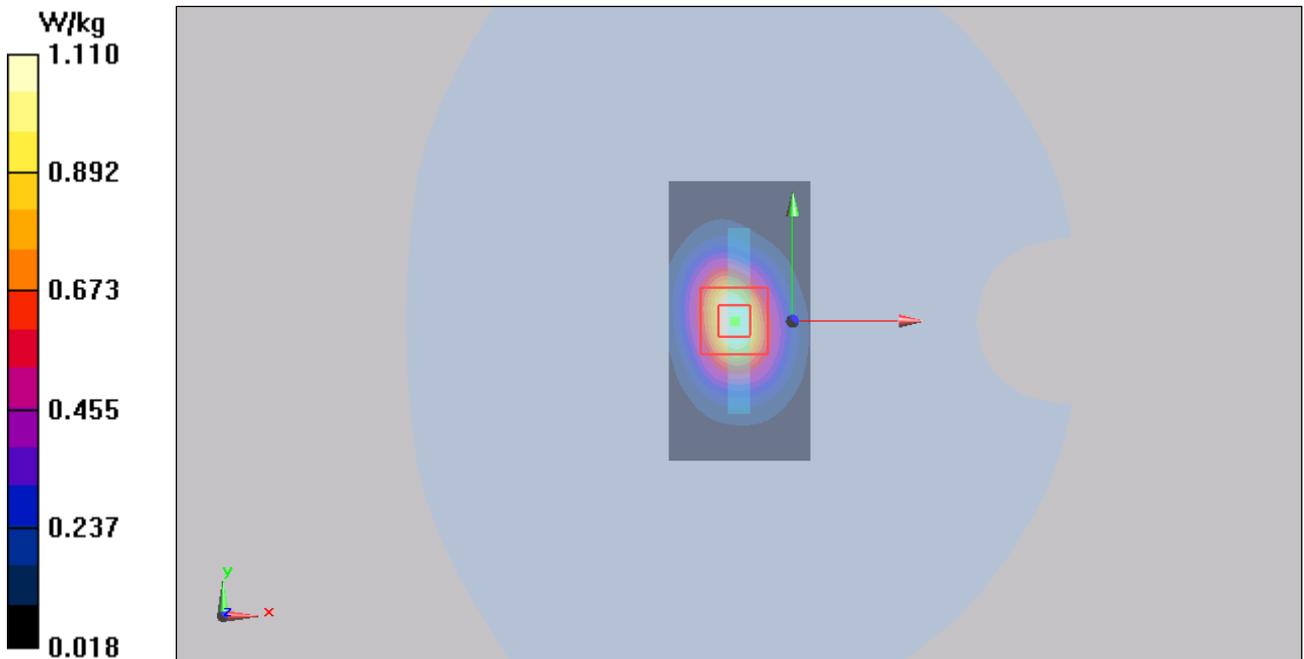


Figure 84 Body, Bottom Edge, UMTS Band IV Channel 1513

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UMTS Band IV Bottom Edge High (1st repeated SAR, Battery 1, Distance 10mm)

Date/Time: 7/25/2013 1:20:27 AM

Communication System: WCDMA; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1753$ MHz; $\sigma = 1.471$ mho/m; $\epsilon_r = 52.12$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(7.82, 7.82, 7.82); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

Bottom Edge High/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.00 W/kg

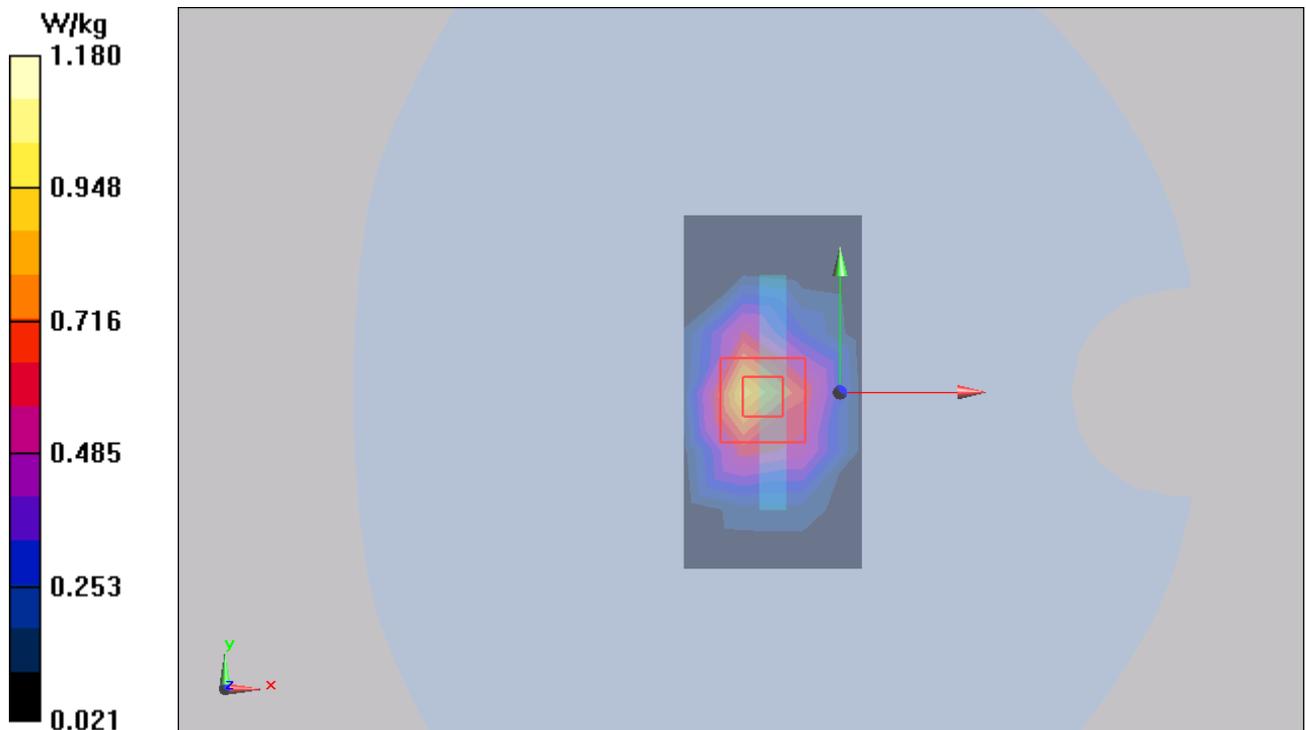
Bottom Edge High/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 28.299 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.764 mW/g

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.559 mW/g

Maximum value of SAR (measured) = 1.18 W/kg



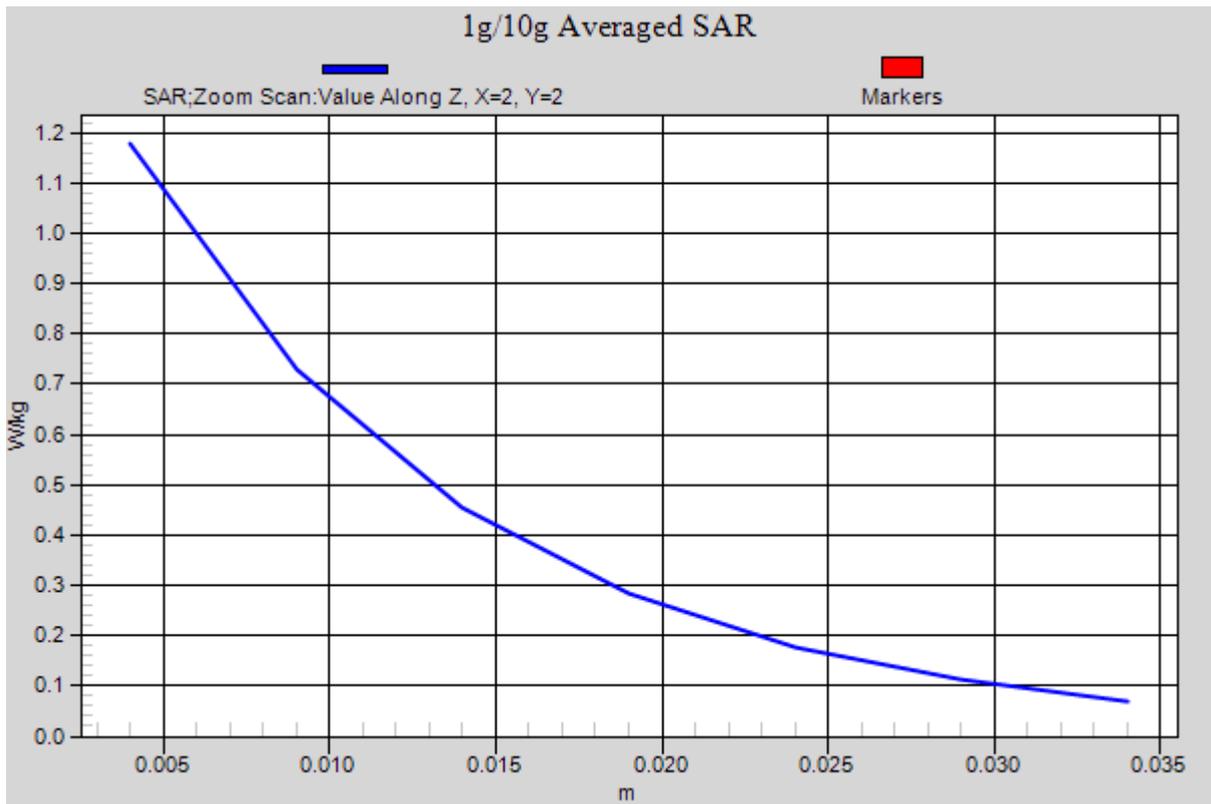


Figure 85 Body, Bottom Edge, UMTS Band IV Channel 1513

UMTS Band V Left Cheek Middle (Battery 1)

Date/Time: 7/20/2013 4:26:13 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.917$ mho/m; $\epsilon_r = 41.236$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Left Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.283 W/kg

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

Reference Value = 5.712 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 0.232 mW/g

SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.116 mW/g

Maximum value of SAR (measured) = 0.187 W/kg

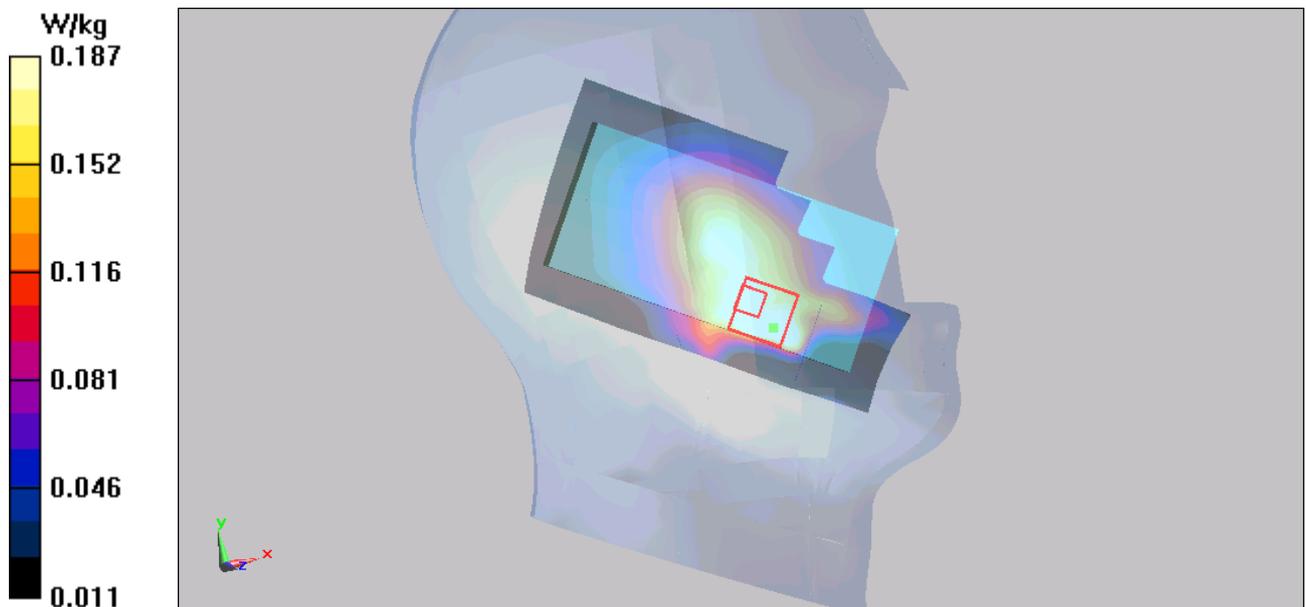


Figure 86 Left Hand Touch Cheek UMTS Band V Channel 4182

UMTS Band V Left Tilt Middle (Battery 1)

Date/Time: 7/20/2013 4:46:28 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.917$ mho/m; $\epsilon_r = 41.236$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Left Tilt Middle/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.173 W/kg

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

Reference Value = 9.583 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 0.152 mW/g

SAR(1 g) = 0.121 mW/g; SAR(10 g) = 0.088 mW/g

Maximum value of SAR (measured) = 0.126 W/kg

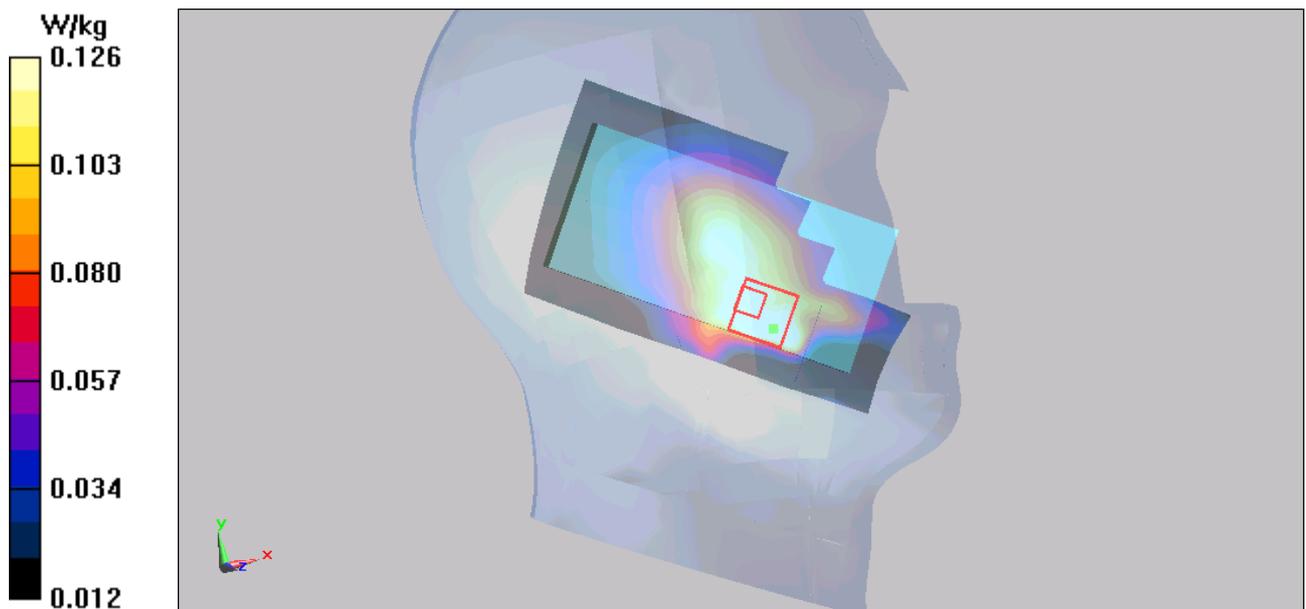


Figure 87 Left Hand Tilt 15° UMTS Band V Channel 4182

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UMTS Band V Right Cheek Middle (Battery 1)

Date/Time: 7/20/2013 3:41:36 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.917$ mho/m; $\epsilon_r = 41.236$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Right Cheek Middle /Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.180 W/kg

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

Reference Value = 5.757 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.300 mW/g

SAR(1 g) = 0.183 mW/g; SAR(10 g) = 0.113 mW/g

Maximum value of SAR (measured) = 0.183 W/kg

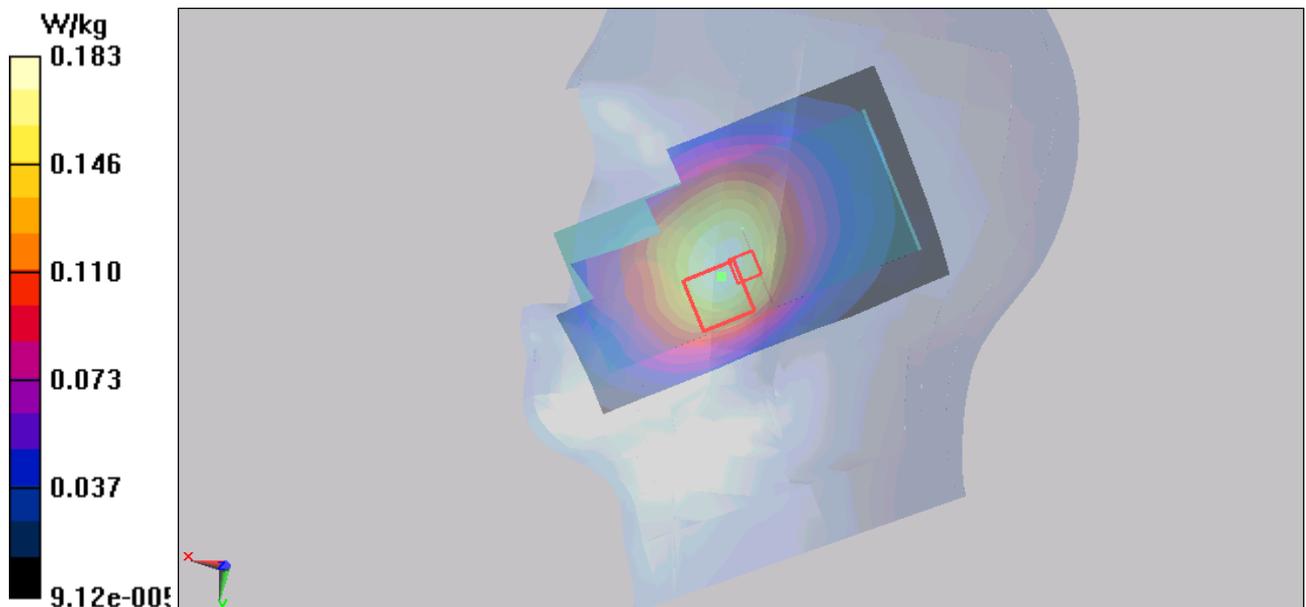


Figure 88 Right Hand Touch Cheek UMTS Band V Channel 4182

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UMTS Band V Right Tilt Middle (Battery 1)

Date/Time: 7/20/2013 4:00:37 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 0.917$ mho/m; $\epsilon_r = 41.236$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Right Tilt Middle/Area Scan (61x111x1): Interpolated grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.121 W/kg

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

Reference Value = 8.769 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.146 mW/g

SAR(1 g) = 0.118 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.124 W/kg

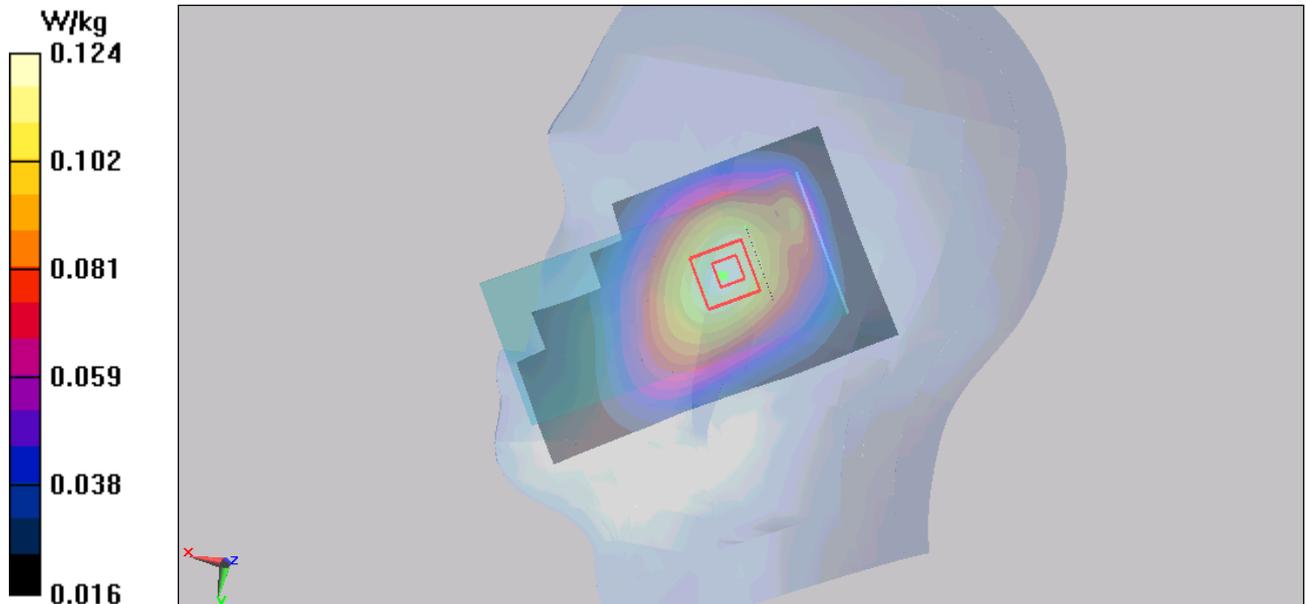


Figure 89 Right Hand Tilt 15° UMTS Band V Channel 4182

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UMTS Band V Right Cheek Middle (Battery 2)

Date/Time: 7/20/2013 3:20:29 PM

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

Medium parameters used: $f = 837$ MHz; $\sigma = 0.918$ mho/m; $\epsilon_r = 41.233$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(8.95, 8.95, 8.95); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Right Cheek Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.220 W/kg

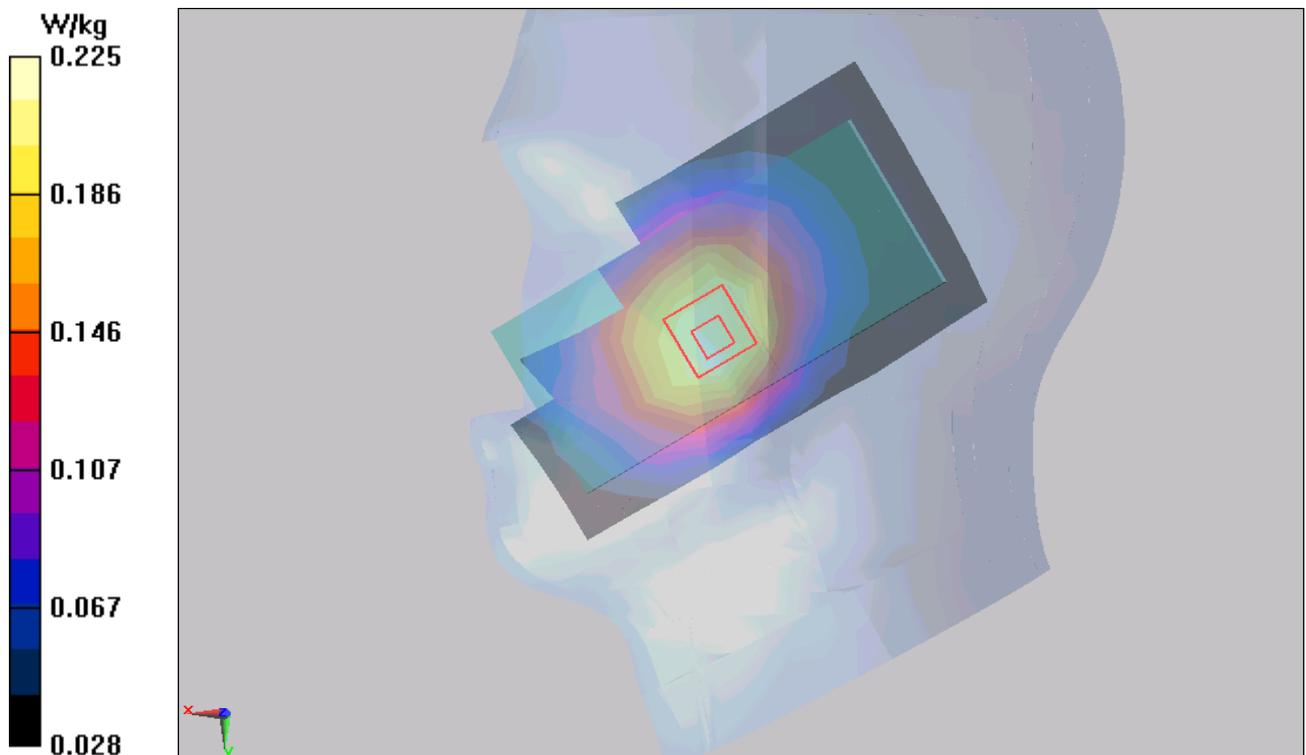
UMTS Band V Right Cheek Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.558 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.268 mW/g

SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.167 mW/g

Maximum value of SAR (measured) = 0.225 W/kg



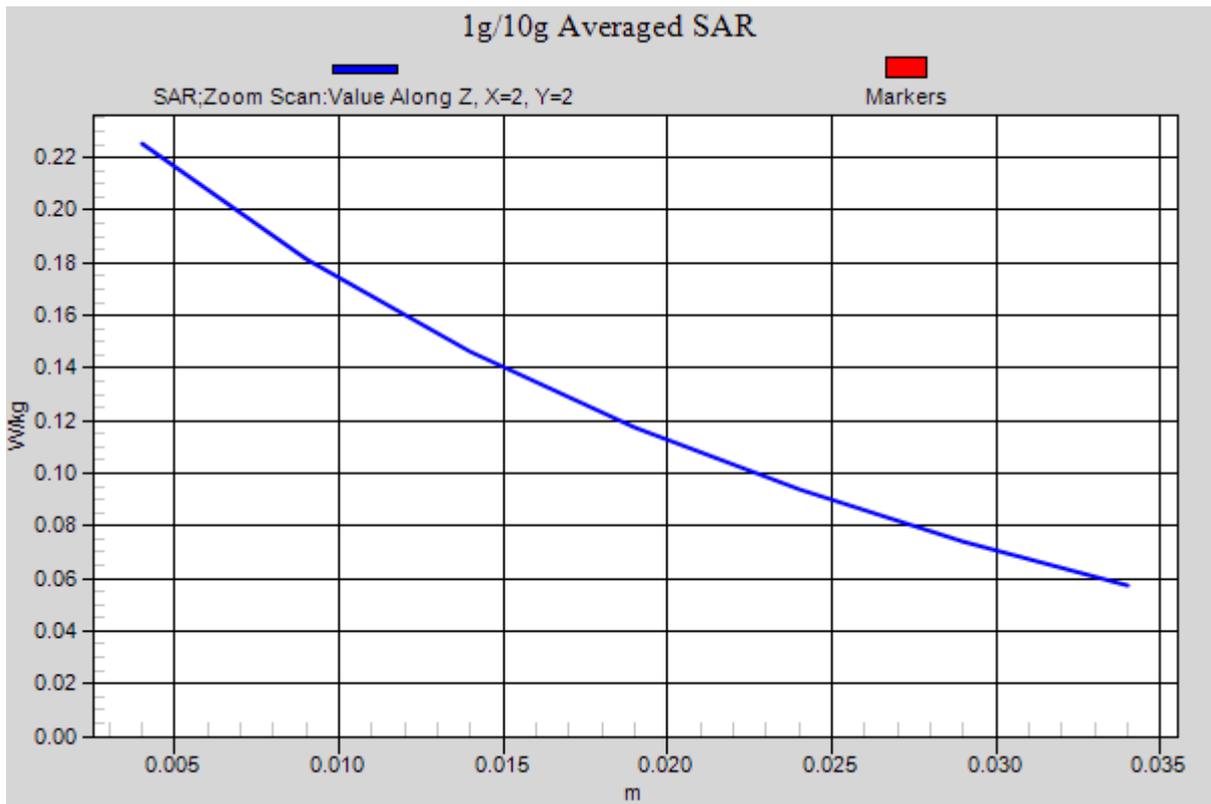


Figure 90 Right Touch Cheek UMTS Band V Channel 4182

UMTS Band V Back Side Middle (Battery 1)

Date/Time: 7/20/2013 10:28:25 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Back Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.291 W/kg

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

Reference Value = 17.009 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.353 mW/g

SAR(1 g) = 0.282 mW/g; SAR(10 g) = 0.212 mW/g

Maximum value of SAR (measured) = 0.299 W/kg

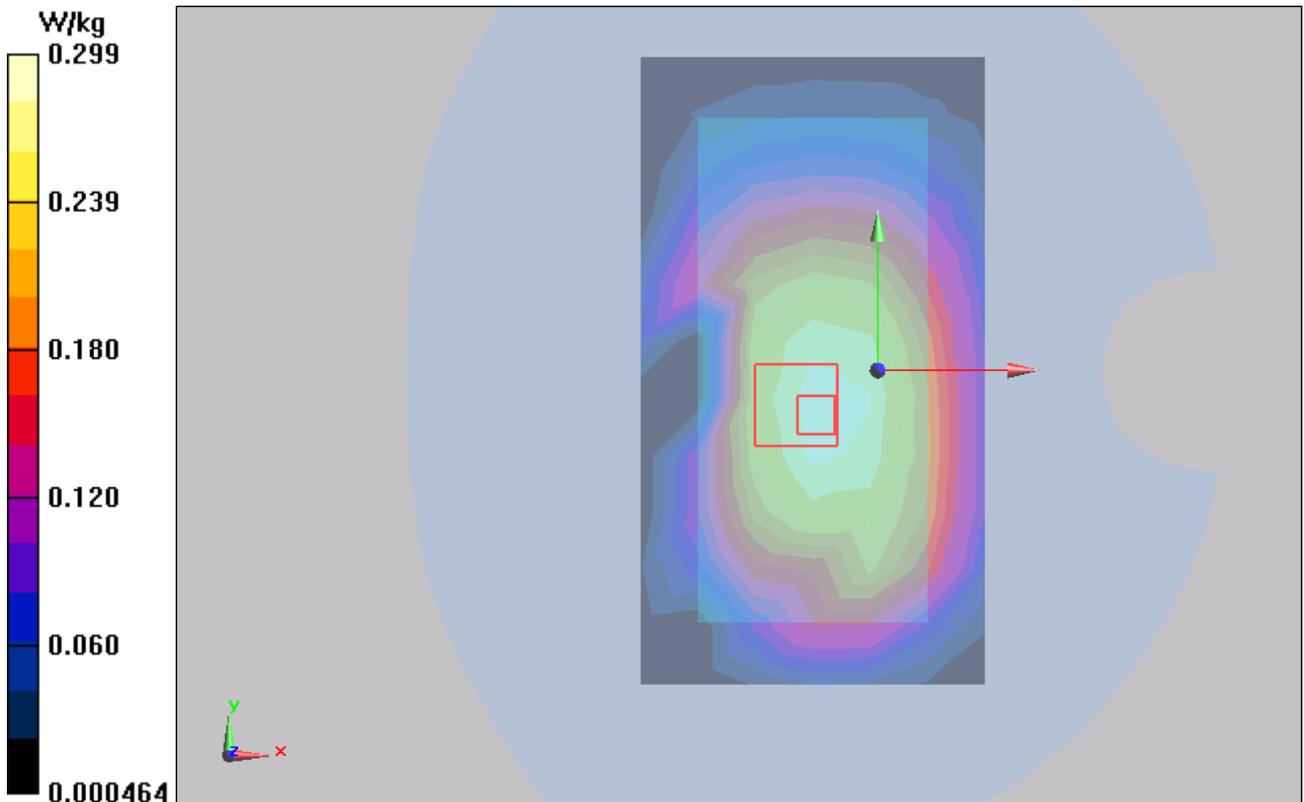


Figure 91 Body, Back Side, UMTS Band V Channel 4182

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UMTS Band V Front Side Middle (Battery 1)

Date/Time: 7/20/2013 10:10:28 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Front Side Middle/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.271 W/kg

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

Reference Value = 16.443 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.597 mW/g

SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.191 mW/g

Maximum value of SAR (measured) = 0.276 W/kg

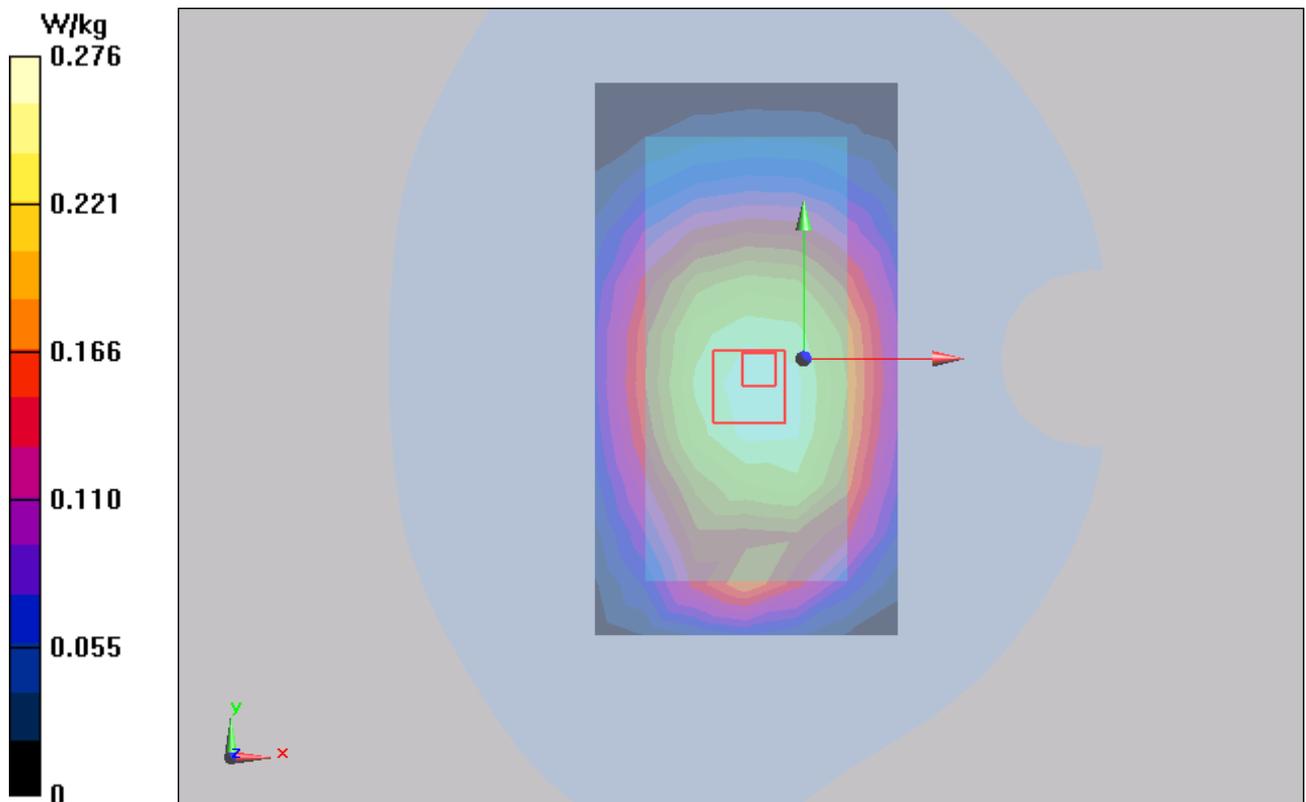


Figure 92 Body, Front Side, UMTS Band V Channel 4182

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UMTS Band V Left Edge Middle (Battery 1)

Date/Time: 7/20/2013 9:33:43 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Left Edge Middle/Area Scan (4x12x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.0905 W/kg

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

Reference Value = 9.666 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.189 mW/g

SAR(1 g) = 0.108 mW/g; SAR(10 g) = 0.063 mW/g

Maximum value of SAR (measured) = 0.101 W/kg

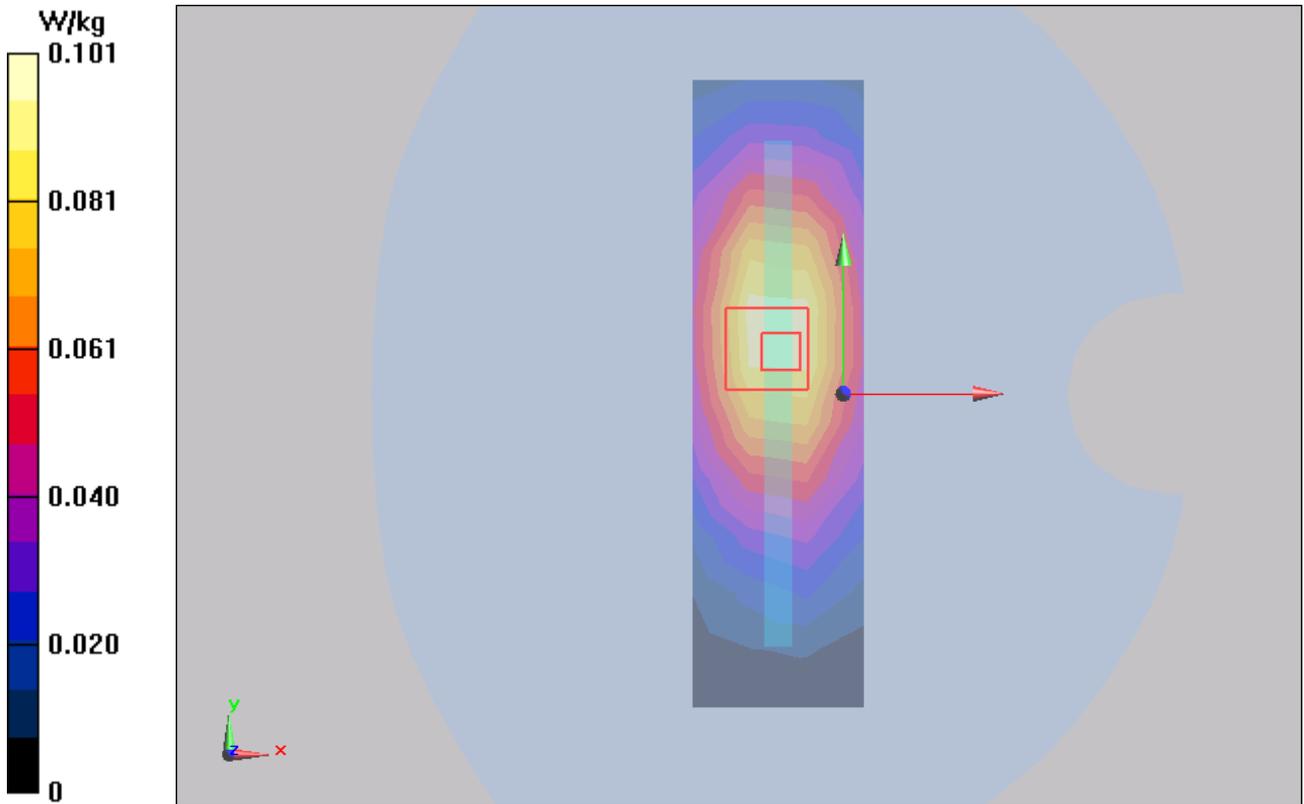


Figure 93 Body, Left Edge, UMTS Band V Channel 4182

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UMTS Band V Right Edge Middle (Battery 1)

Date/Time: 7/20/2013 9:49:06 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Right Edge Middle/Area Scan (4x12x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.152 W/kg

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

Reference Value = 0.762 V/m; Power Drift = 0.024dB

Peak SAR (extrapolated) = 0.531 mW/g

SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.092 mW/g

Maximum value of SAR (measured) = 0.168 W/kg

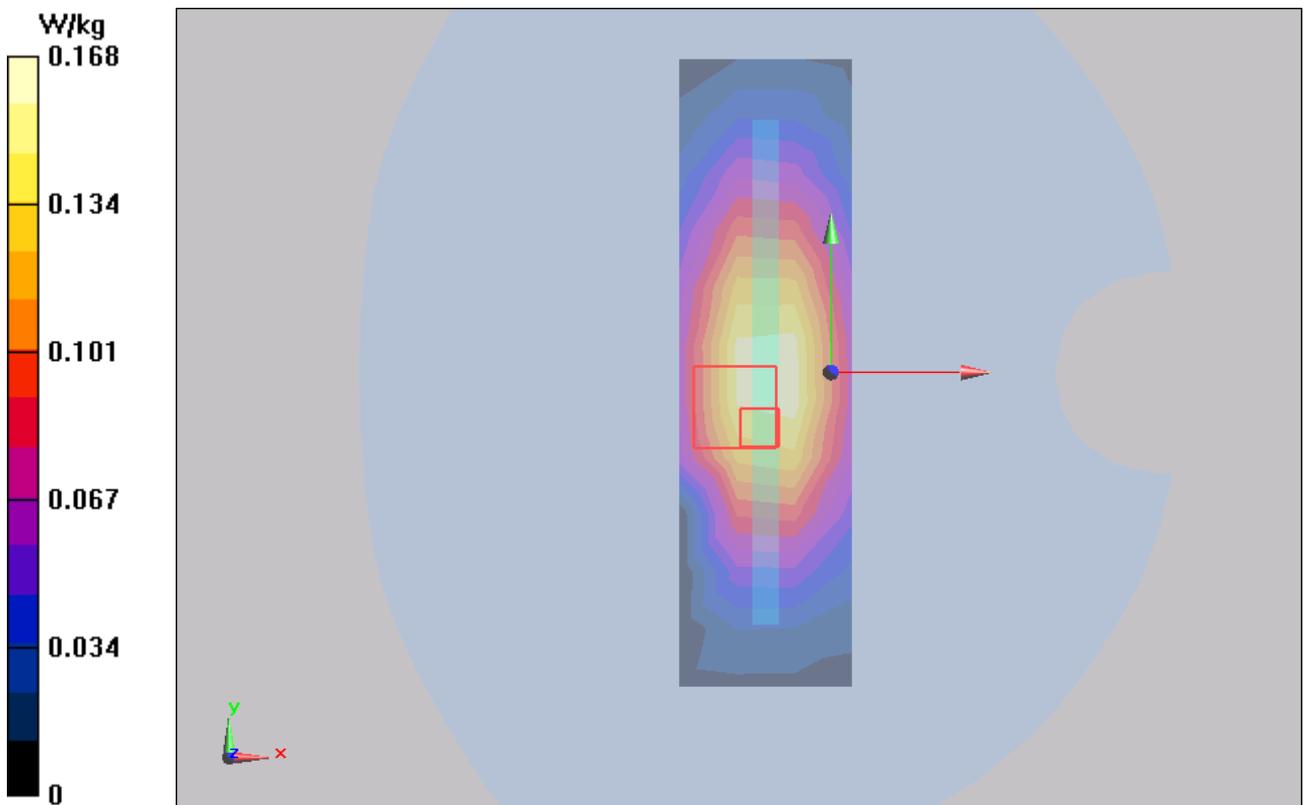


Figure 94 Body, Right Edge, UMTS Band V Channel 4182

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UMTS Band V Bottom Edge Middle (Battery 1)

Date/Time: 7/20/2013 9:19:50 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Bottom Edge Middle/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.0664 W/kg

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

Reference Value = 9.662 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.138 mW/g

SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.034 mW/g

Maximum value of SAR (measured) = 0.0955 W/kg

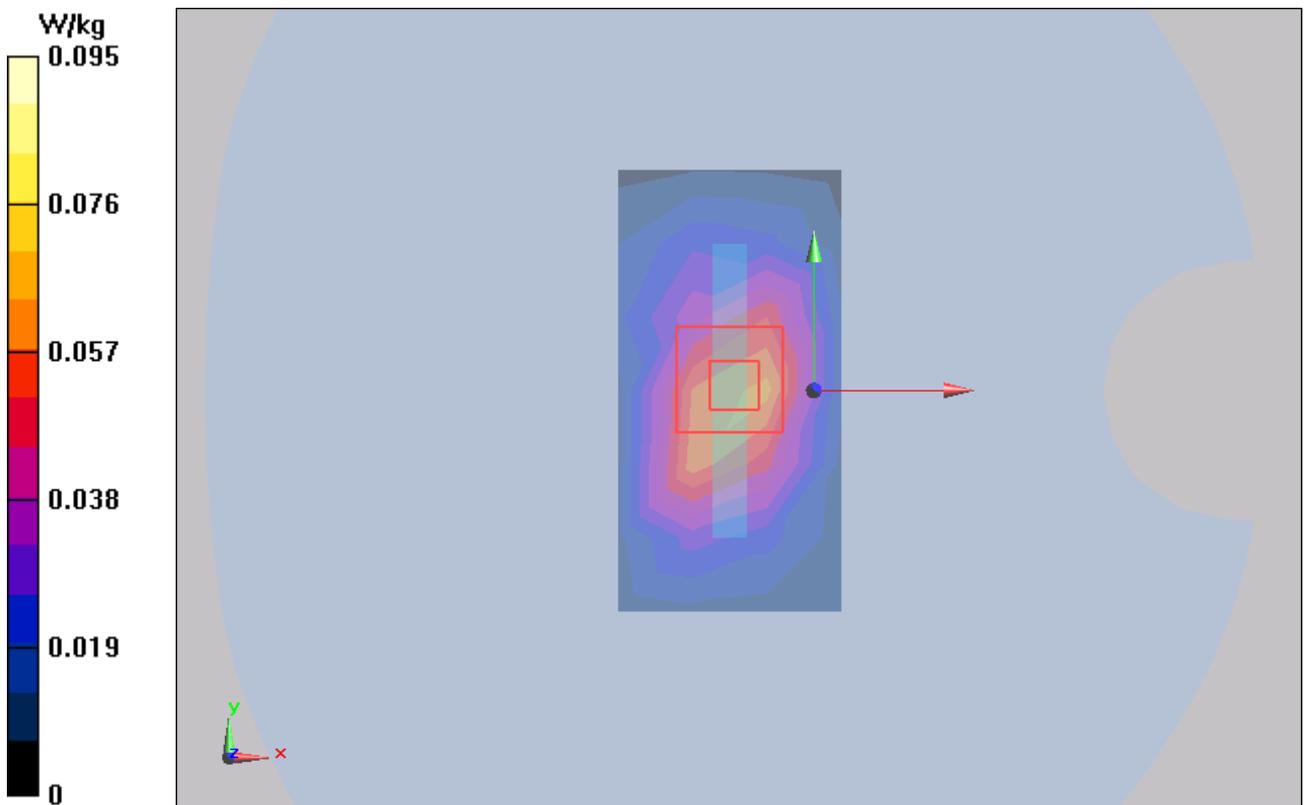


Figure 95 Body, Bottom Edge, UMTS Band V Channel 4182

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UMTS Band V Back Side Middle (Battery 2)

Date/Time: 7/20/2013 7:40:09 PM

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated): $f = 836.4$ MHz; $\sigma = 1.013$ mho/m; $\epsilon_r = 54.344$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(9.05, 9.05, 9.05); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

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

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

UMTS Band V Back Side Middle/Area Scan (7x12x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.339 W/kg

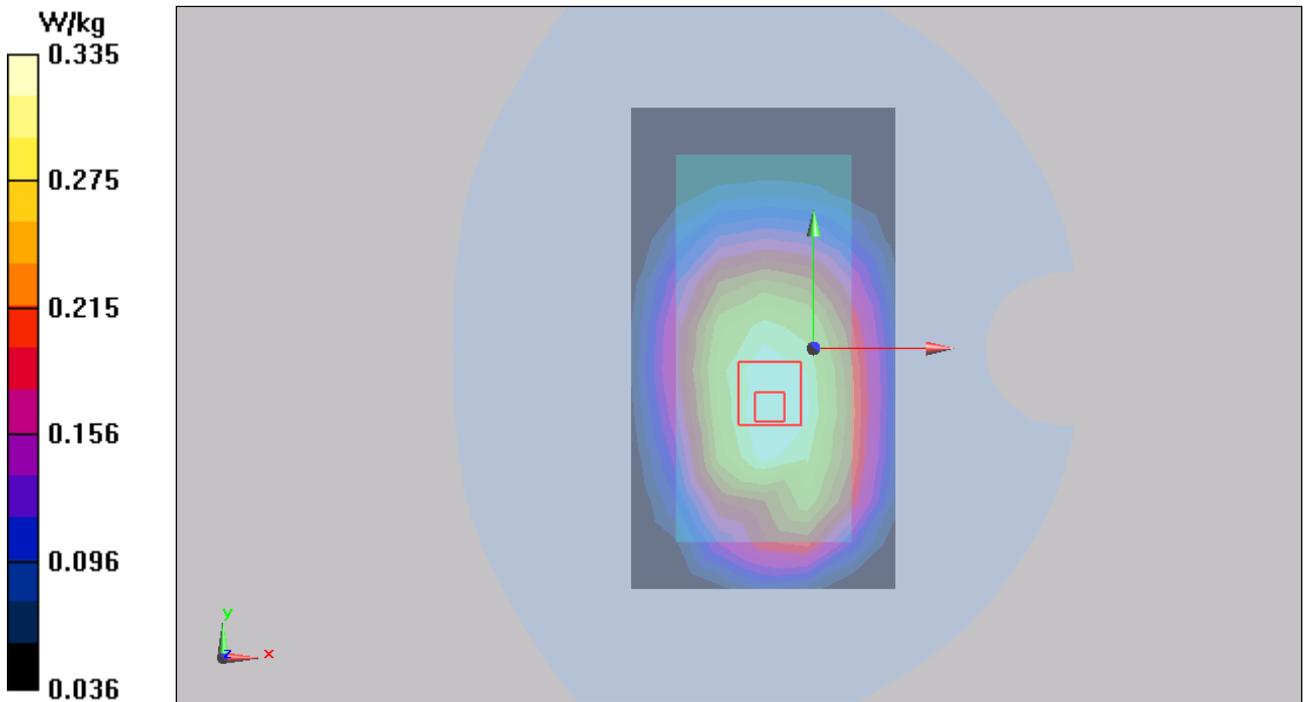
UMTS Band V Back Side Middle/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 17.953 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 0.399 mW/g

SAR(1 g) = 0.321 mW/g; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (measured) = 0.335 W/kg



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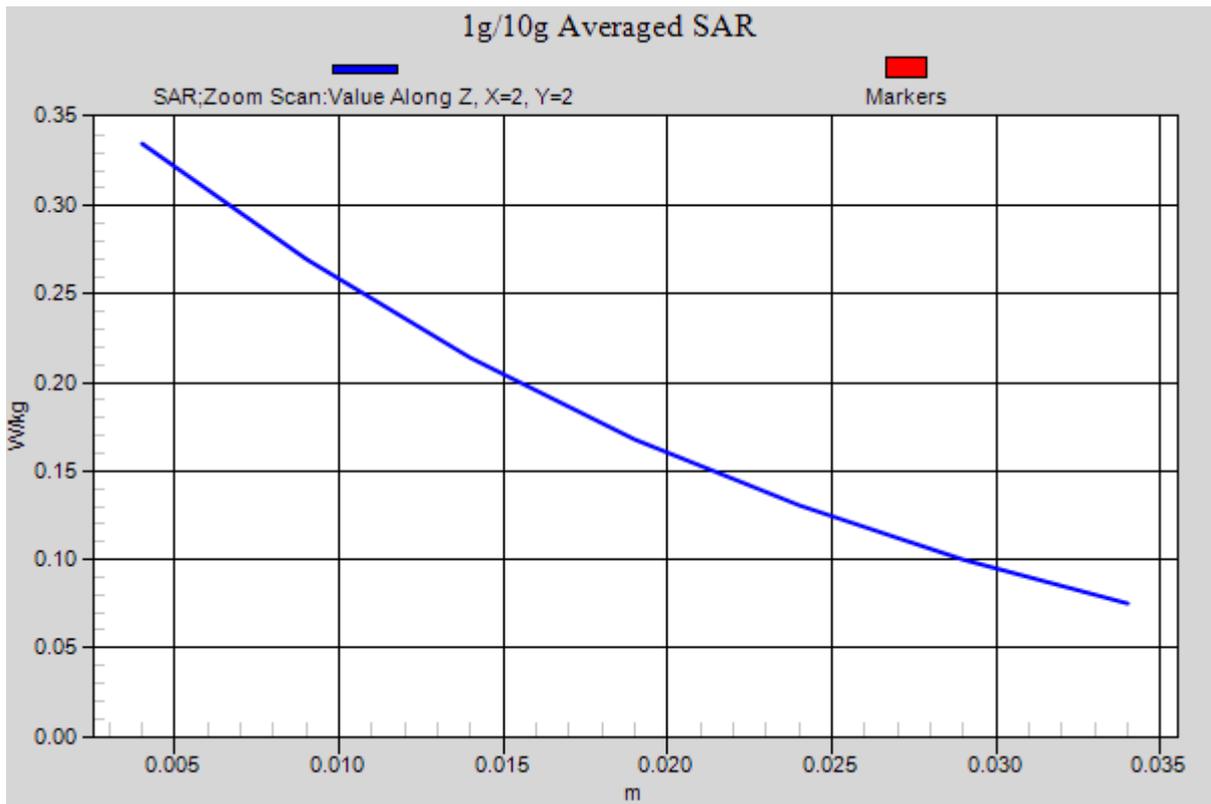


Figure 96 Body, Back Side, UMTS Band V Channel 4182

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802.11b Left Cheek High(Battery 1)

Date/Time: 7/23/2013 10:53:44 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Cheek High/Area Scan (8x14x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0496 W/kg

802.11b Left Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.958 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 0.132 mW/g

SAR(1 g) = 0.054 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.0611 W/kg

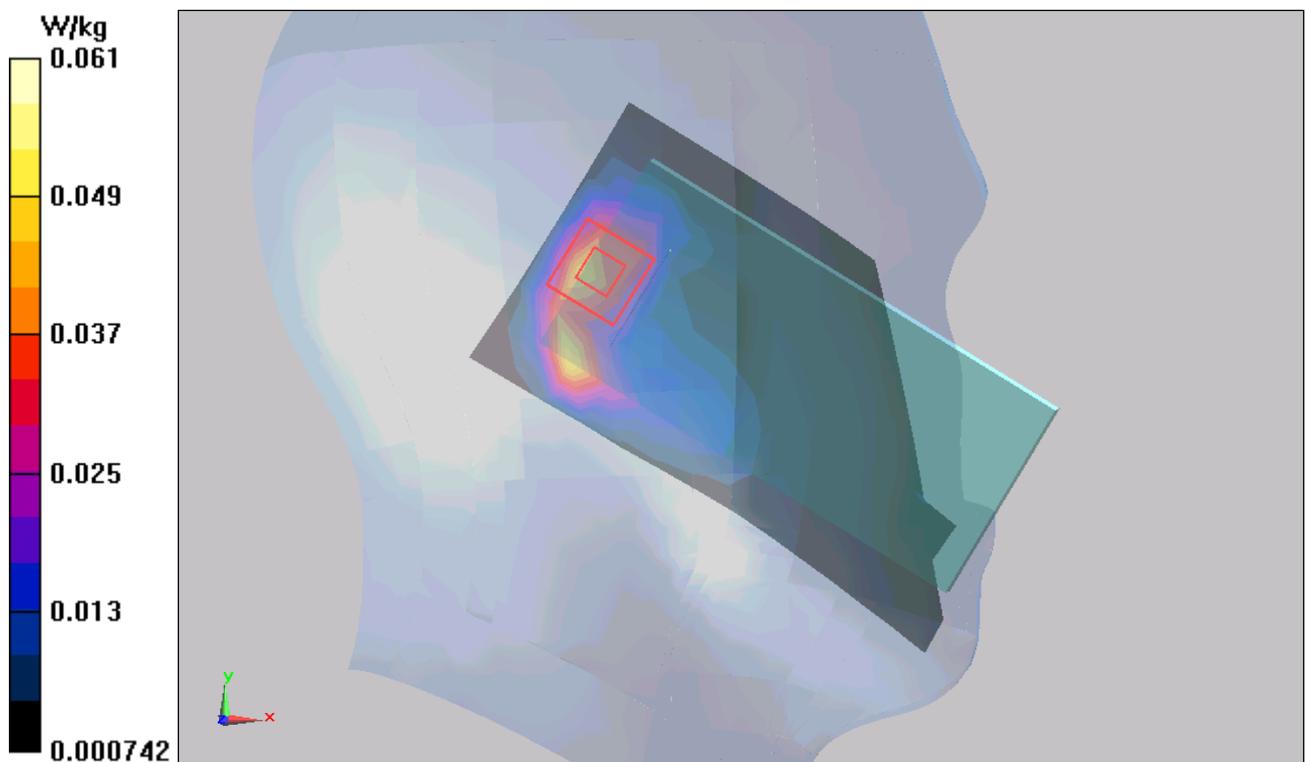


Figure 97 Left Hand Touch Cheek 802.11b Channel 11

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802.11b Left Tilt High(Battery 1)

Date/Time: 7/23/2013 11:12:50 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Tilt High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0386 W/kg

802.11b Left Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.226 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 0.103 mW/g

SAR(1 g) = 0.043mW/g; SAR(10 g) = 0.019 mW/g

Maximum value of SAR (measured) = 0.0480 W/kg

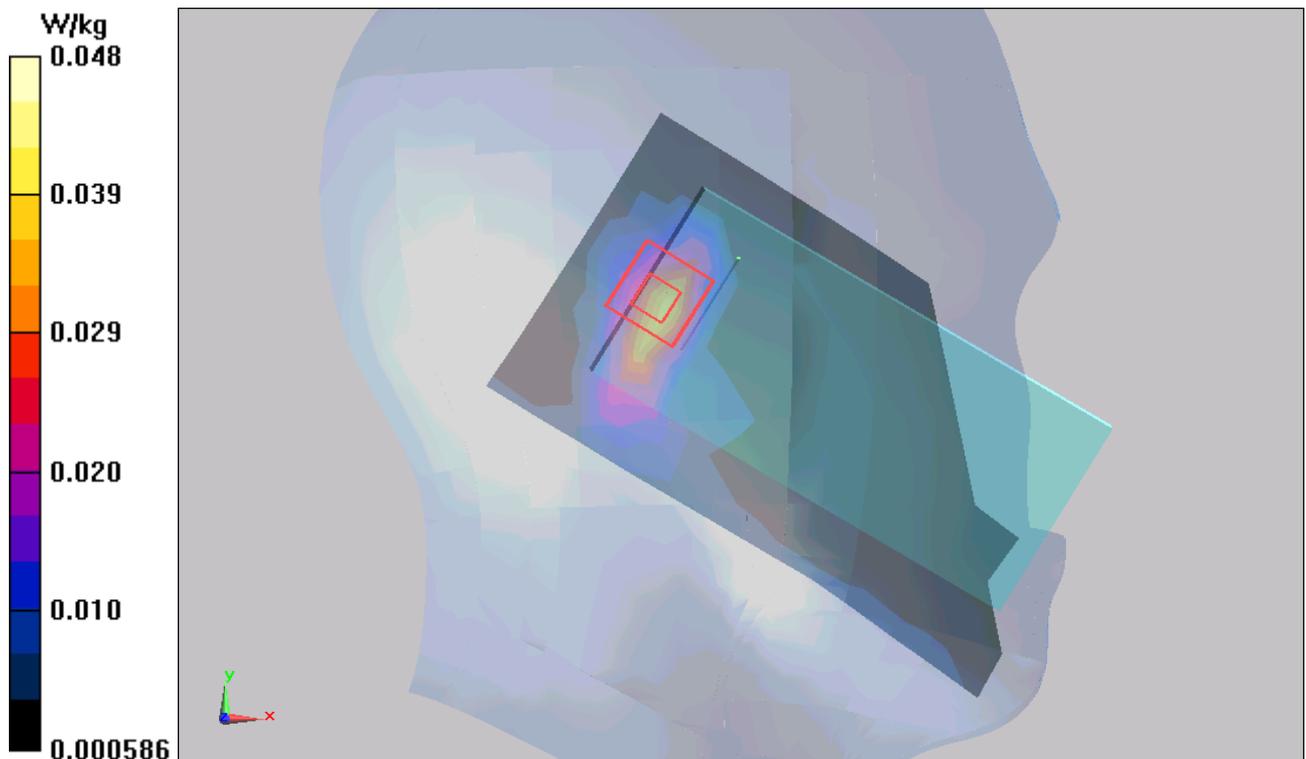


Figure 98 Left Hand Tilt 15° 802.11b Channel 11

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802.11b Right Cheek High(Battery 1)

Date/Time: 7/23/2013 11:37:52 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Right Cheek High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.107 W/kg

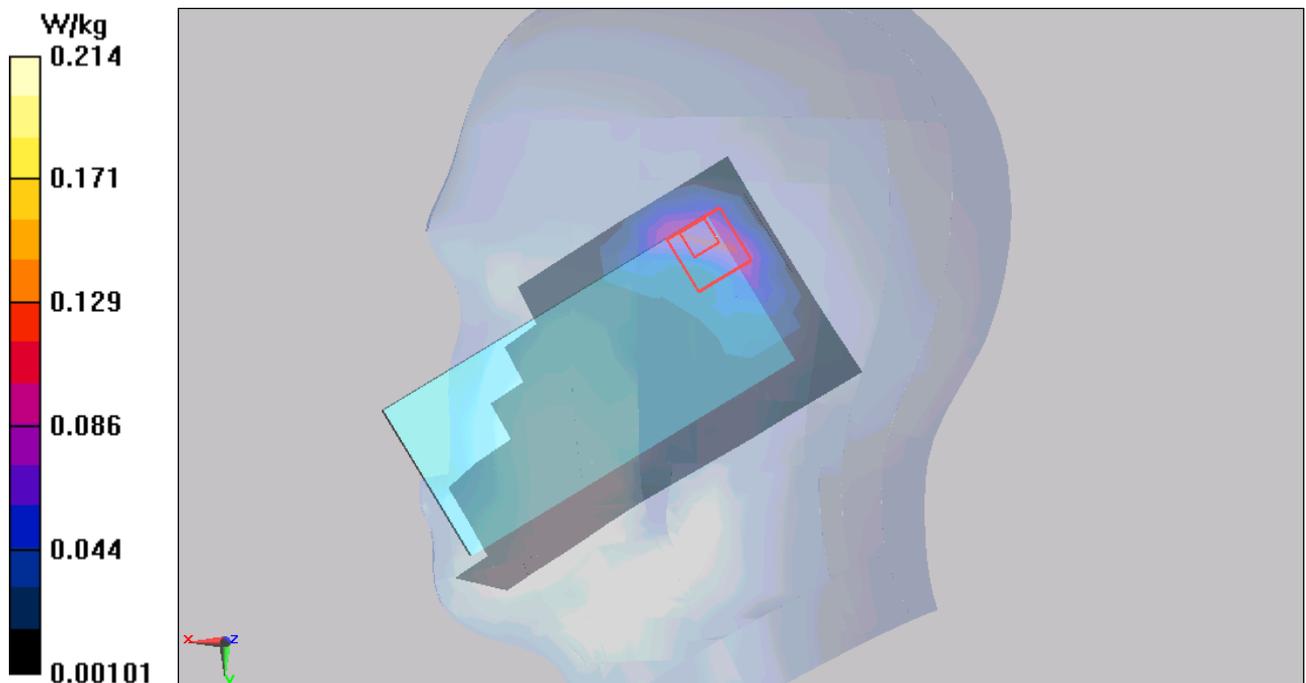
802.11b Right Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.900 V/m; Power Drift = 0.056dB

Peak SAR (extrapolated) = 0.525 mW/g

SAR(1 g) = 0.135 mW/g; SAR(10 g) = 0.047 mW/g

Maximum value of SAR (measured) = 0.214 W/kg



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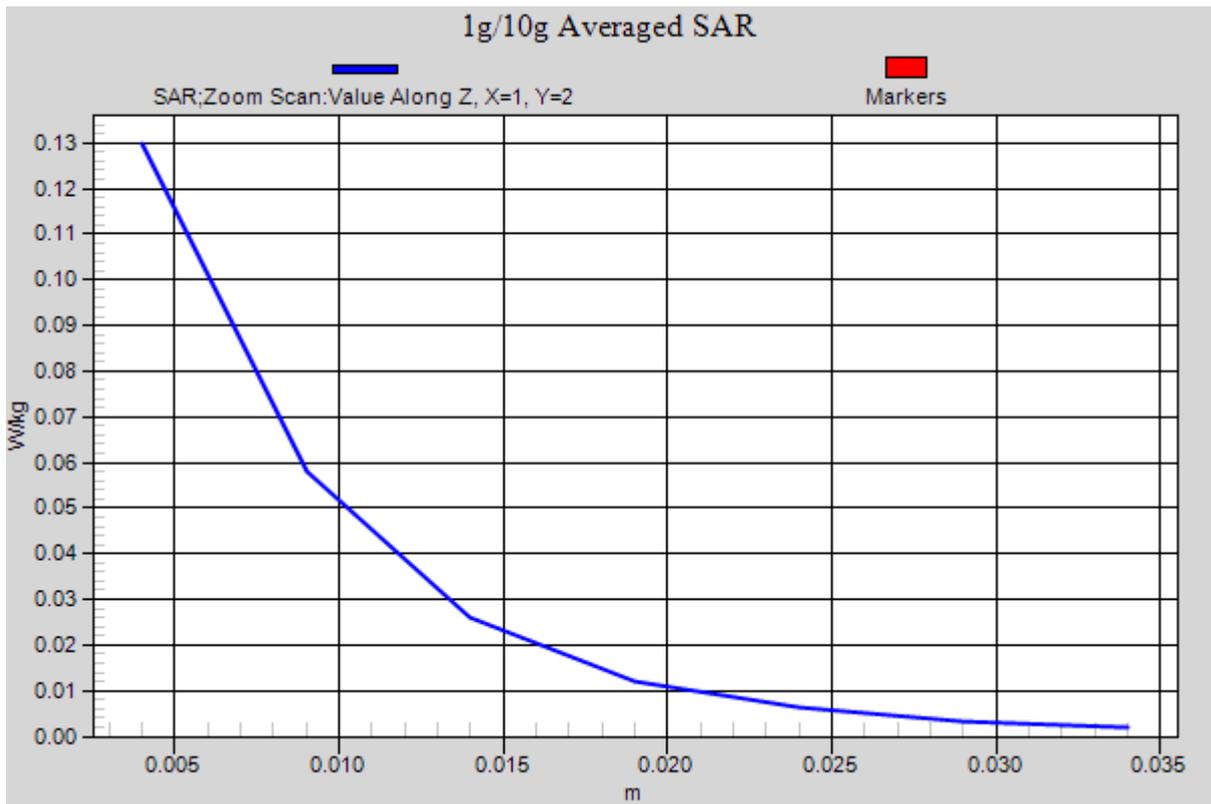


Figure 99 Right Hand Touch Cheek 802.11b Channel 11

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802.11b Right Tilt High(Battery 1)

Date/Time: 7/23/2013 11:54:03 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Right Tilt High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.138 W/kg

802.11b Right Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.533 V/m; Power Drift = -0.103dB

Peak SAR (extrapolated) = 0.296 mW/g

SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.036 mW/g

Maximum value of SAR (measured) = 0.118 W/kg

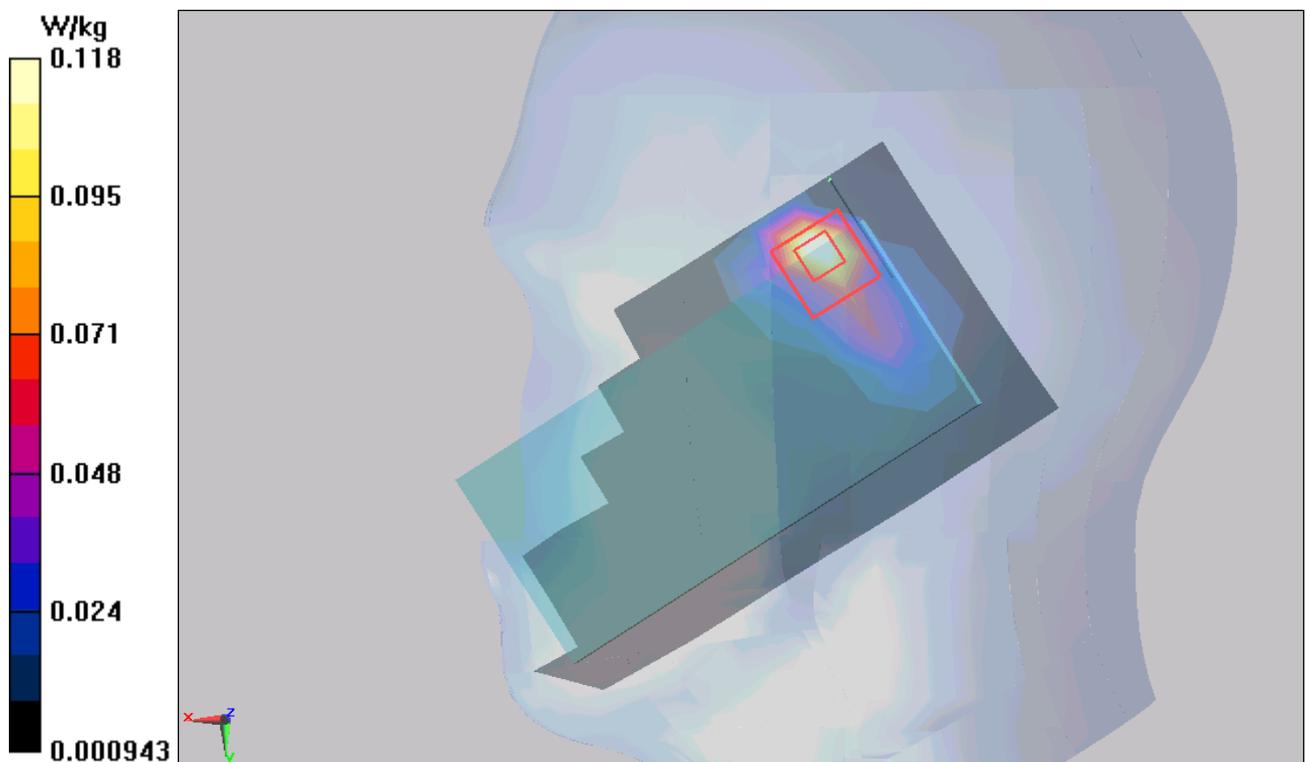


Figure 100 Right Hand Tilt 15° 802.11b Channel 11

802.11b Back Side High(Battery 1)

Date/Time: 7/24/2013 9:39:08 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Back Side High/Area Scan (61x111x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.0124 W/kg

802.11b Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 1.152 V/m; Power Drift = 0.093dB

Peak SAR (extrapolated) = 0.012 mW/g

SAR(1 g) = 0.007 mW/g; SAR(10 g) = 0.00335 mW/g

Maximum value of SAR (measured) = 0.00860 W/kg

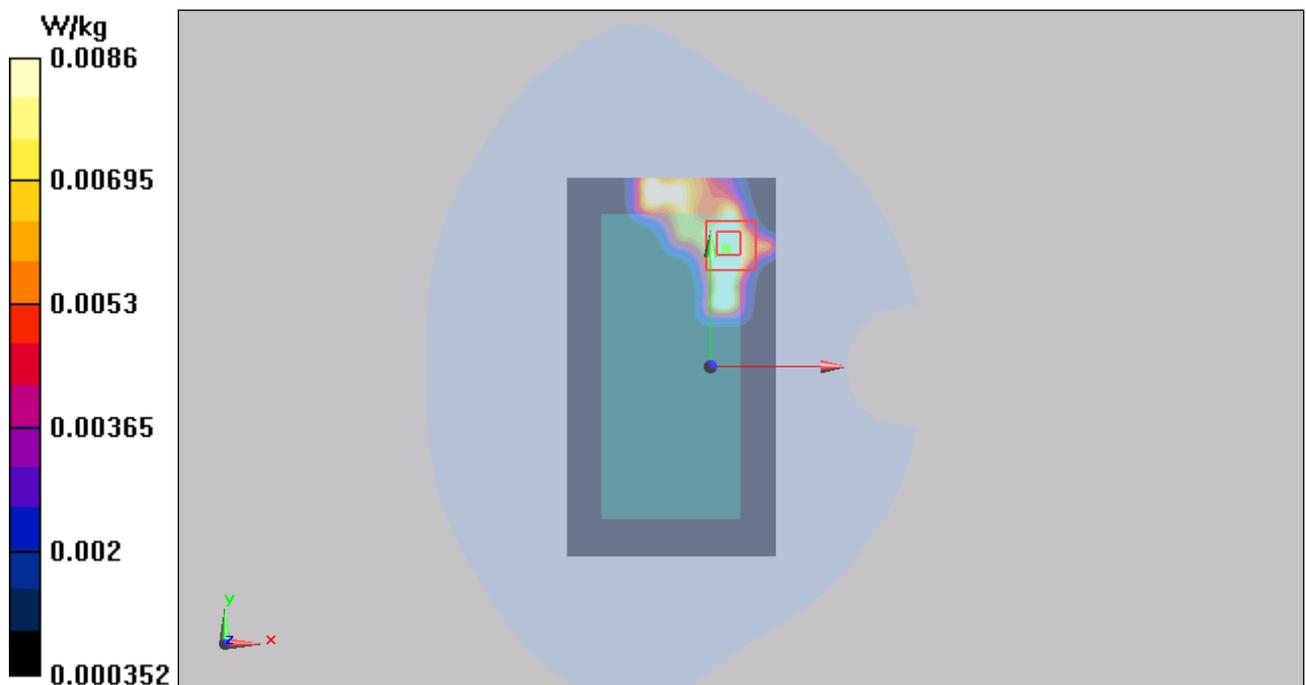


Figure 101 Body, Back Side, 802.11b Channel 11

802.11b Front Side High(Battery 1)

Date/Time: 7/24/2013 10:09:17 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Front Side High/Area Scan (61x111x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.0222 W/kg

802.11b Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.070 V/m; Power Drift = 0.195dB

Peak SAR (extrapolated) = 0.039 mW/g

SAR(1 g) = 0.018 mW/g; SAR(10 g) = 0.00849 mW/g

Maximum value of SAR (measured) = 0.0207 W/kg

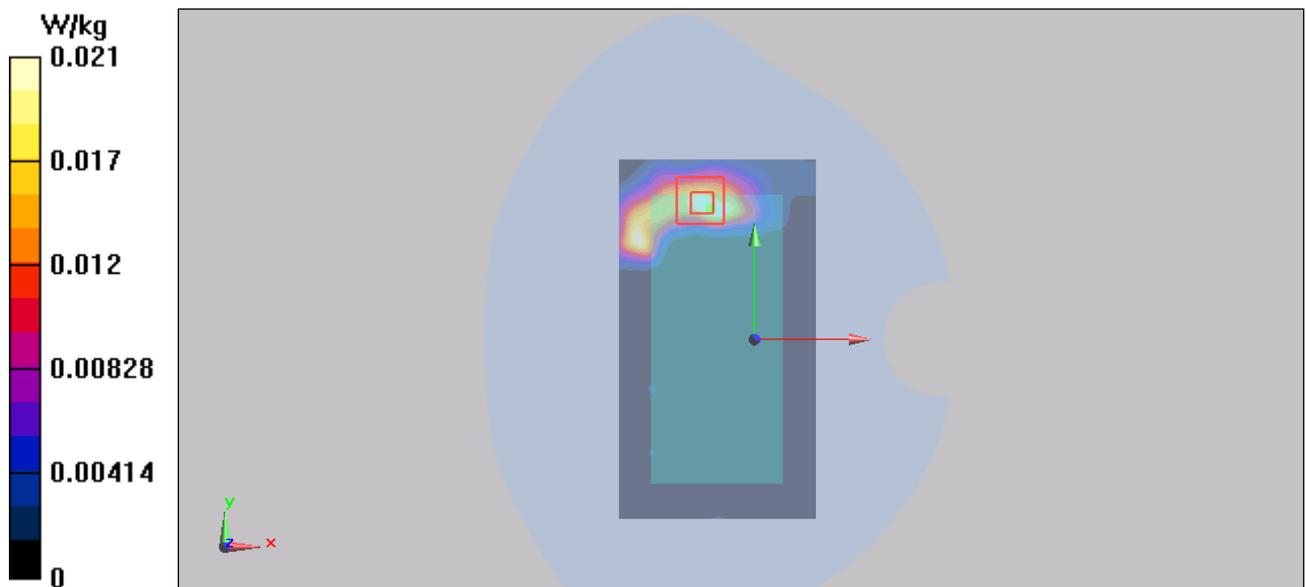


Figure 102 Body, Front Side, 802.11b Channel 11

802.11b Left Edge High(Battery 1)

Date/Time: 7/24/2013 11:51:37 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Edge High/Area Scan (4x14x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 0.0140 W/kg

802.11b Left Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,
dz=5mm

Reference Value = 1.531 V/m; Power Drift = 0.116dB

Peak SAR (extrapolated) = 0.026 mW/g

SAR(1 g) = 0.012 mW/g; SAR(10 g) = 0.0043 mW/g

Maximum value of SAR (measured) = 0.0142 W/kg

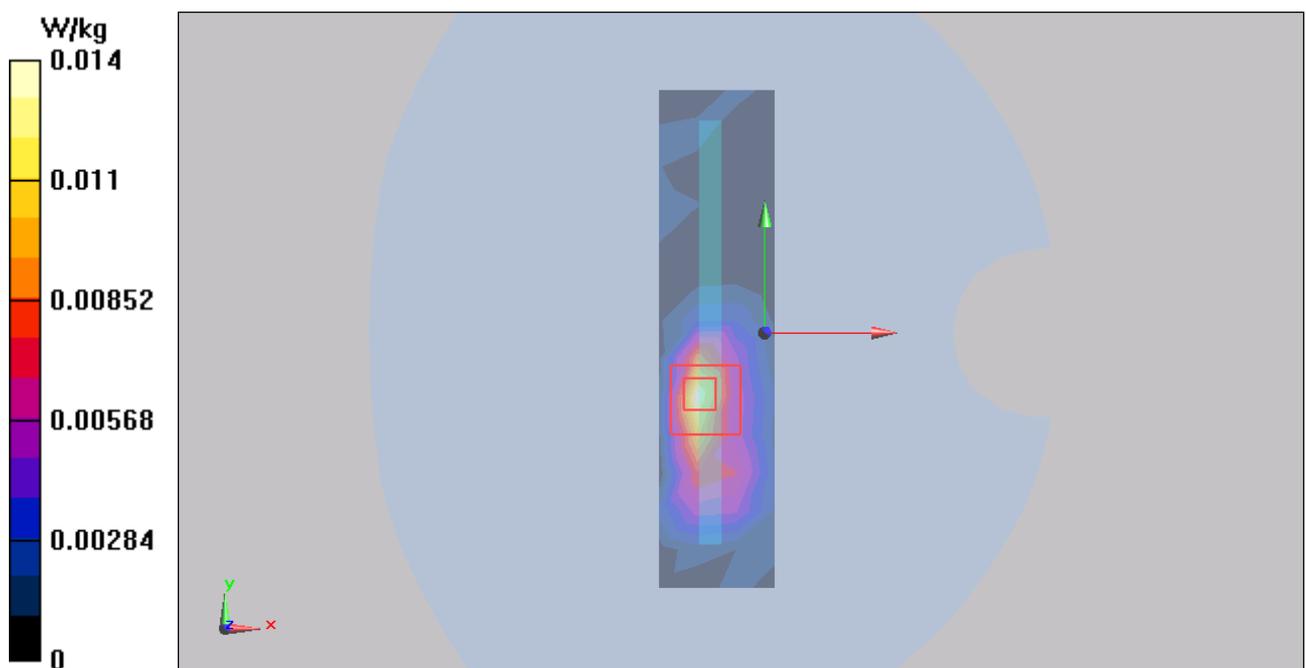


Figure 103 Body, Left Edge, 802.11b Channel 11

802.11b Top Edge High(Battery 1)

Date/Time: 7/24/2013 11:22:28 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Top Edge High/Area Scan (4x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.0144 W/kg

802.11b Top Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 2.903 V/m; Power Drift = 0.043dB

Peak SAR (extrapolated) = 0.034 mW/g

SAR(1 g) = 0.014 mW/g; SAR(10 g) = 0.00492 mW/g

Maximum value of SAR (measured) = 0.0164 W/kg

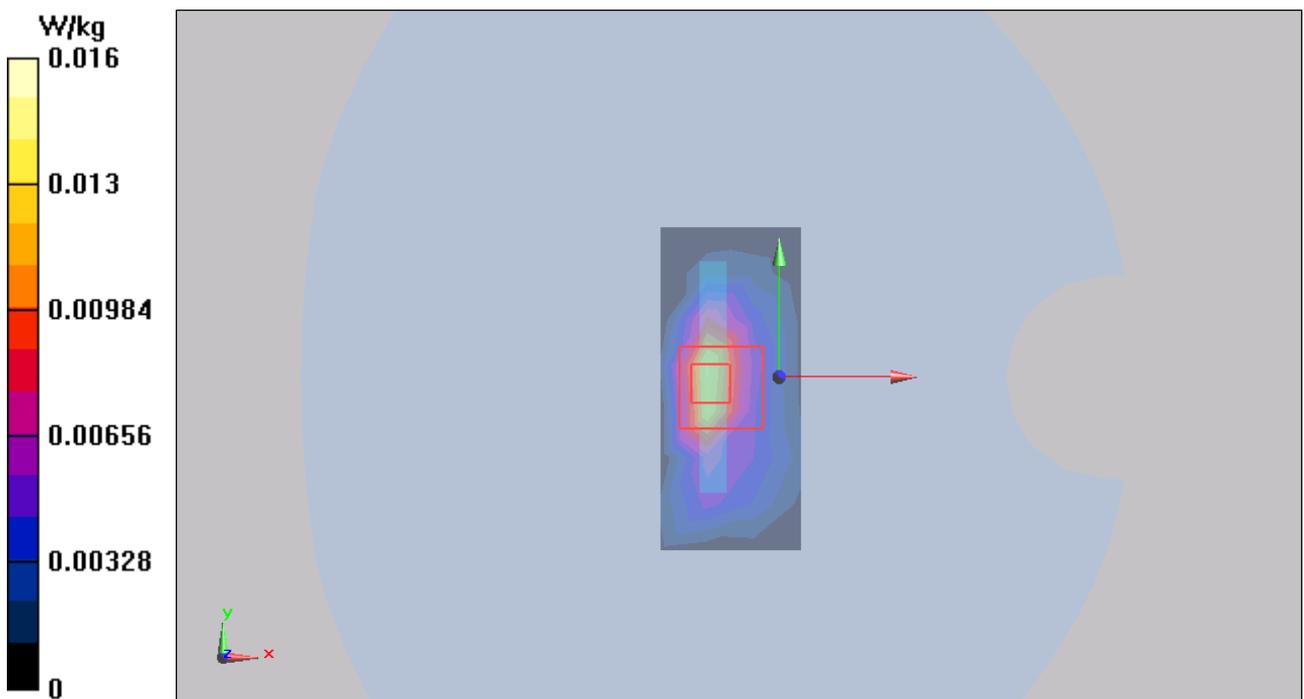


Figure 104 Body, Top Edge, 802.11b Channel 11

802.11b Front Side High(Battery 2)

Date/Time: 7/24/2013 11:02:00 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Front Side High/Area Scan (61x111x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.0248 W/kg

802.11b Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.106 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.036 mW/g

SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00737 mW/g

Maximum value of SAR (measured) = 0.0203 W/kg

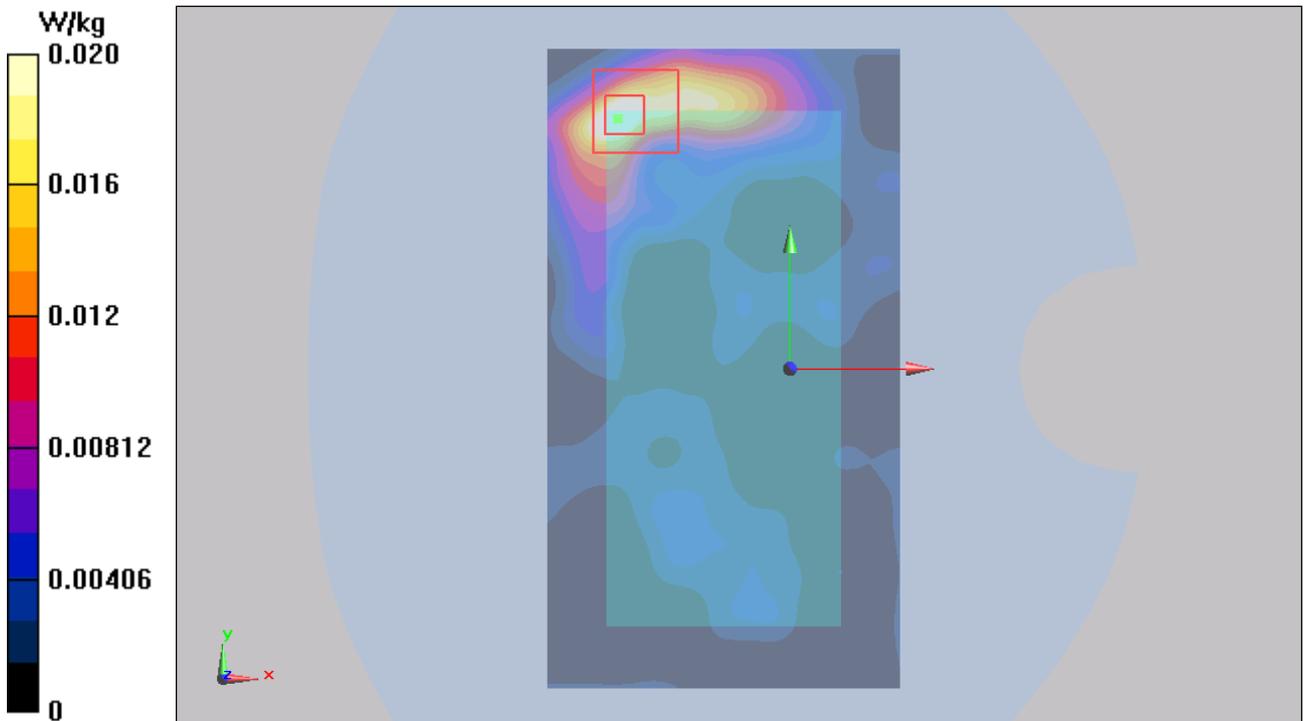


Figure 105 Body, Front Side, 802.11b Channel 11

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802.11b Left Cheek High(Battery 1, WIFI MRC)

Date/Time: 7/23/2013 1:16:35 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Cheek High/Area Scan (8x14x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.195 W/kg

802.11b Left Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

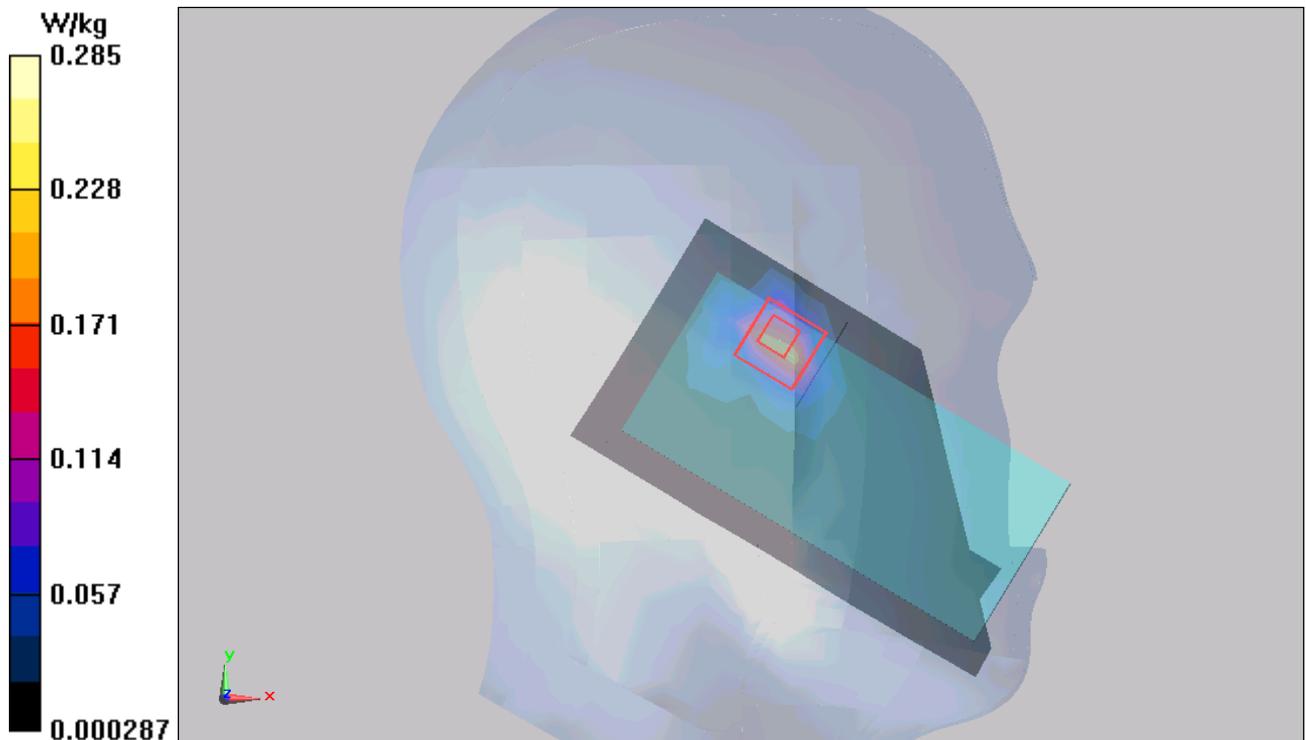
dz=5mm

Reference Value = 1.843 V/m; Power Drift = 0.056dB

Peak SAR (extrapolated) = 0.581 mW/g

SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.076 mW/g

Maximum value of SAR (measured) = 0.285 W/kg



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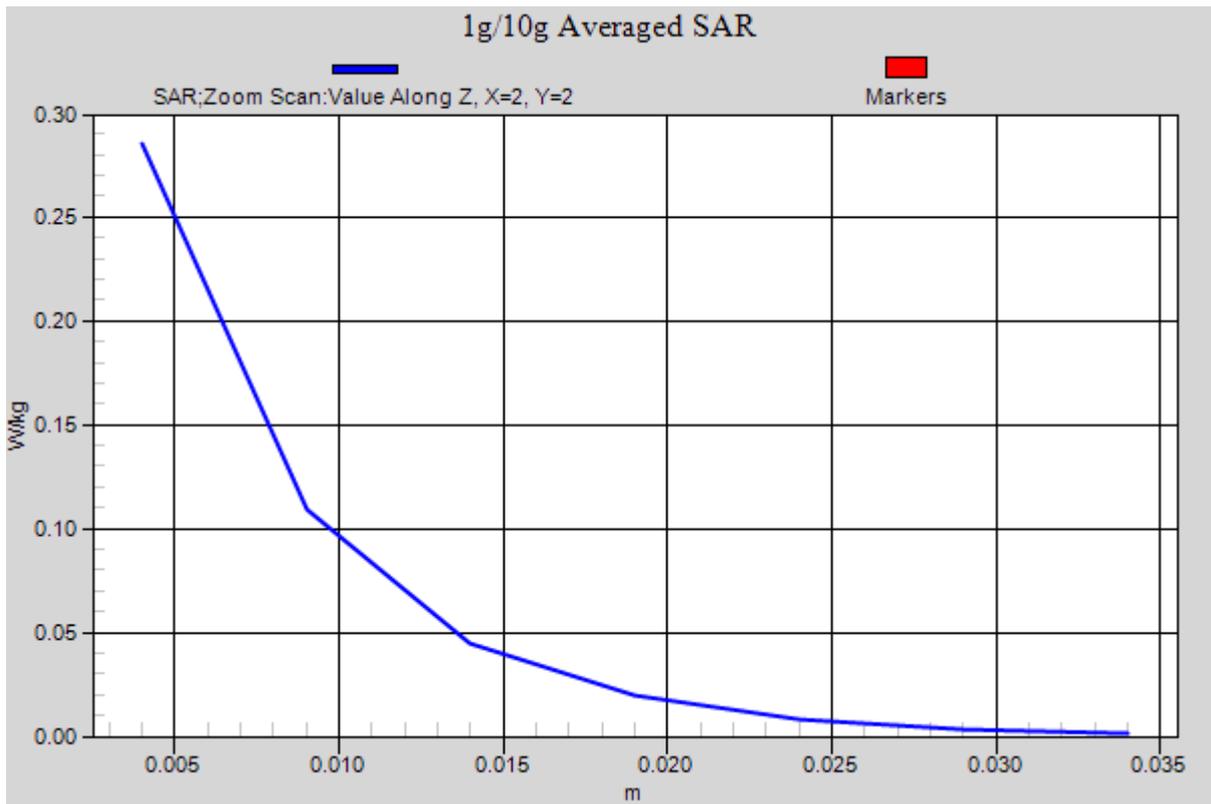


Figure 106 Left Hand Touch Cheek 802.11b Channel 11

802.11b Left Tilt High(Battery 1, WIFI MRC)

Date/Time: 7/23/2013 1:35:17 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Tilt High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0915 W/kg

802.11b Left Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 2.410 V/m; Power Drift = 0.033dB

Peak SAR (extrapolated) = 0.250 mW/g

SAR(1 g) = 0.105 mW/g; SAR(10 g) = 0.043 mW/g

Maximum value of SAR (measured) = 0.127 W/kg

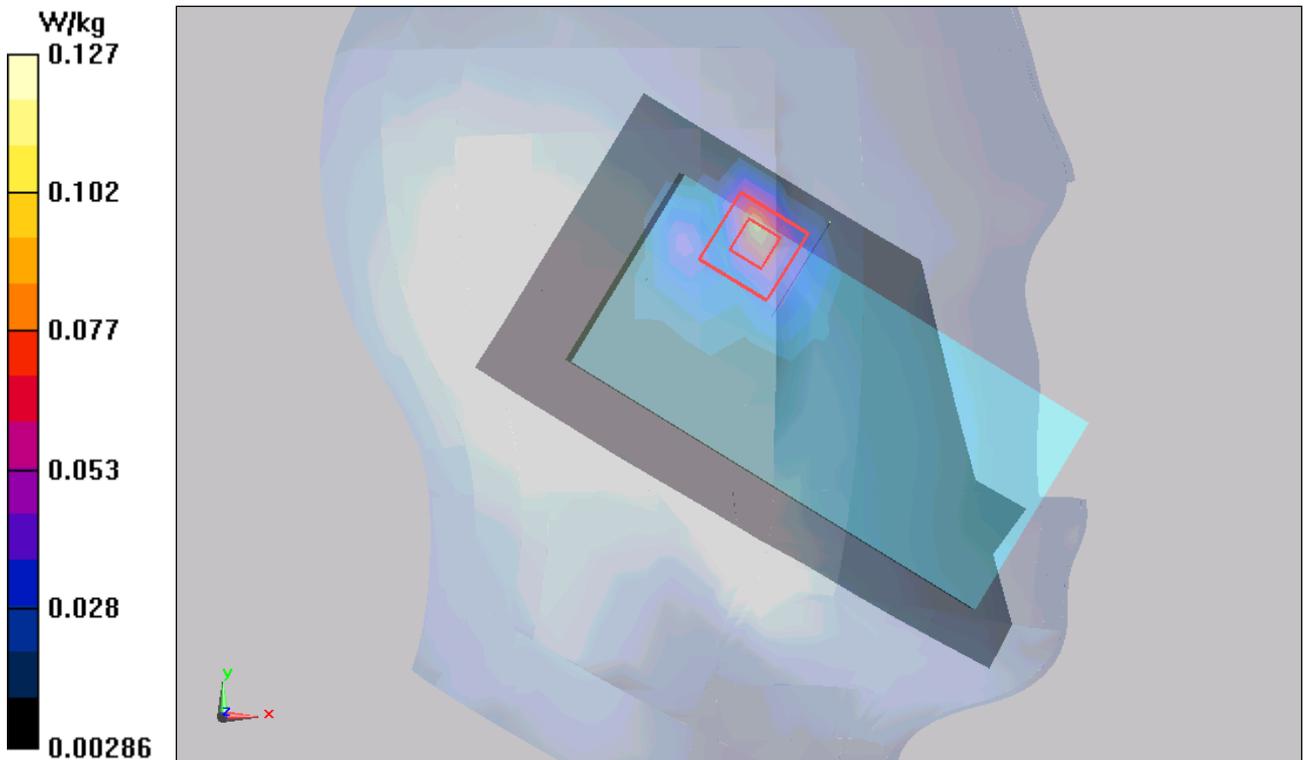


Figure 107 Left Hand Tilt 15° 802.11b Channel 11

802.11b Right Cheek High(Battery 1, WIFI MRC)

Date/Time: 7/23/2013 12:22:56 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Right Cheek High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0542 W/kg

802.11b Right Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 3.206 V/m; Power Drift = -0.064dB

Peak SAR (extrapolated) = 0.179 mW/g

SAR(1 g) = 0.053 mW/g; SAR(10 g) = 0.023 mW/g

Maximum value of SAR (measured) = 0.0777 W/kg

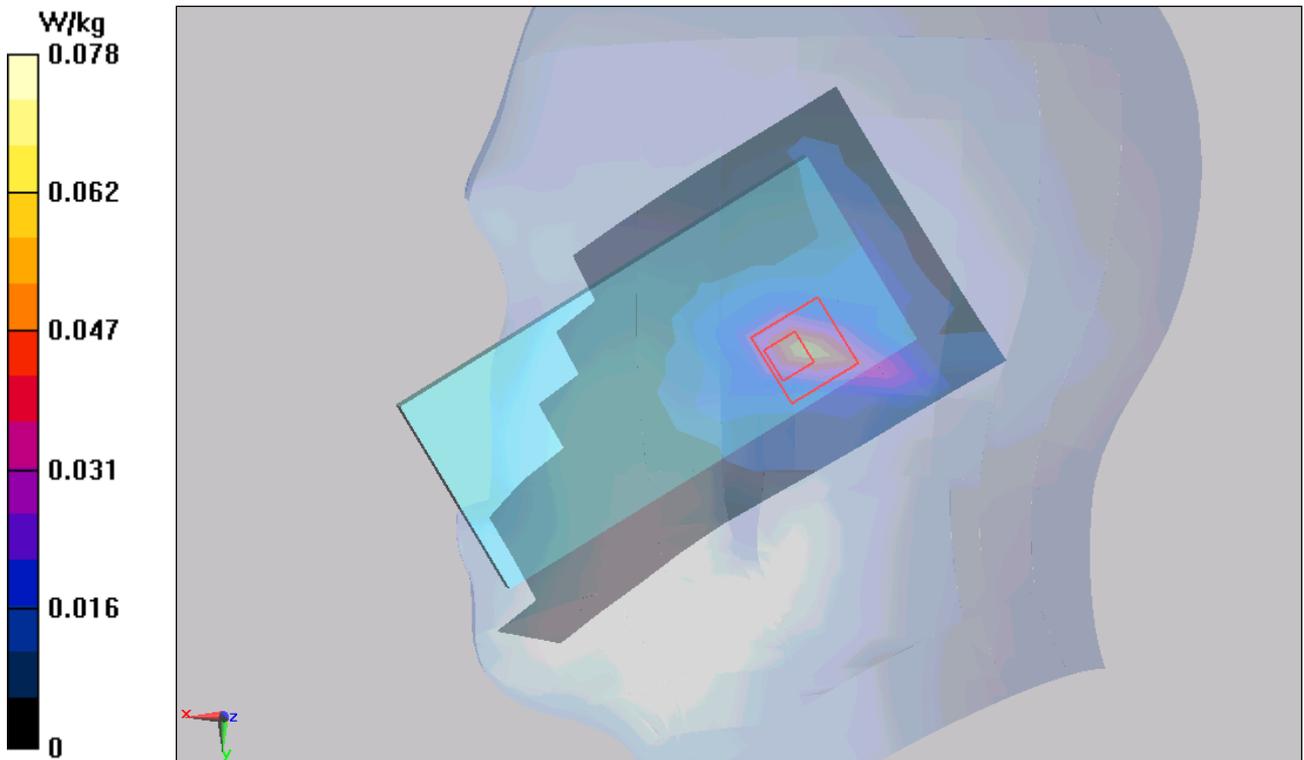


Figure 108 Right Hand Touch Cheek 802.11b Channel 11

802.11b Right Tilt High(Battery 1, WIFI MRC)

Date/Time: 7/23/2013 12:38:55 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Right Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Right Tilt High/Area Scan (7x12x1): Measurement grid: dx=12mm, dy=12mm

Maximum value of SAR (measured) = 0.0204 W/kg

802.11b Right Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.651 V/m; Power Drift = 0.095dB

Peak SAR (extrapolated) = 0.063 mW/g

SAR(1 g) = 0.026 mW/g; SAR(10 g) = 0.011 mW/g

Maximum value of SAR (measured) = 0.0303 W/kg

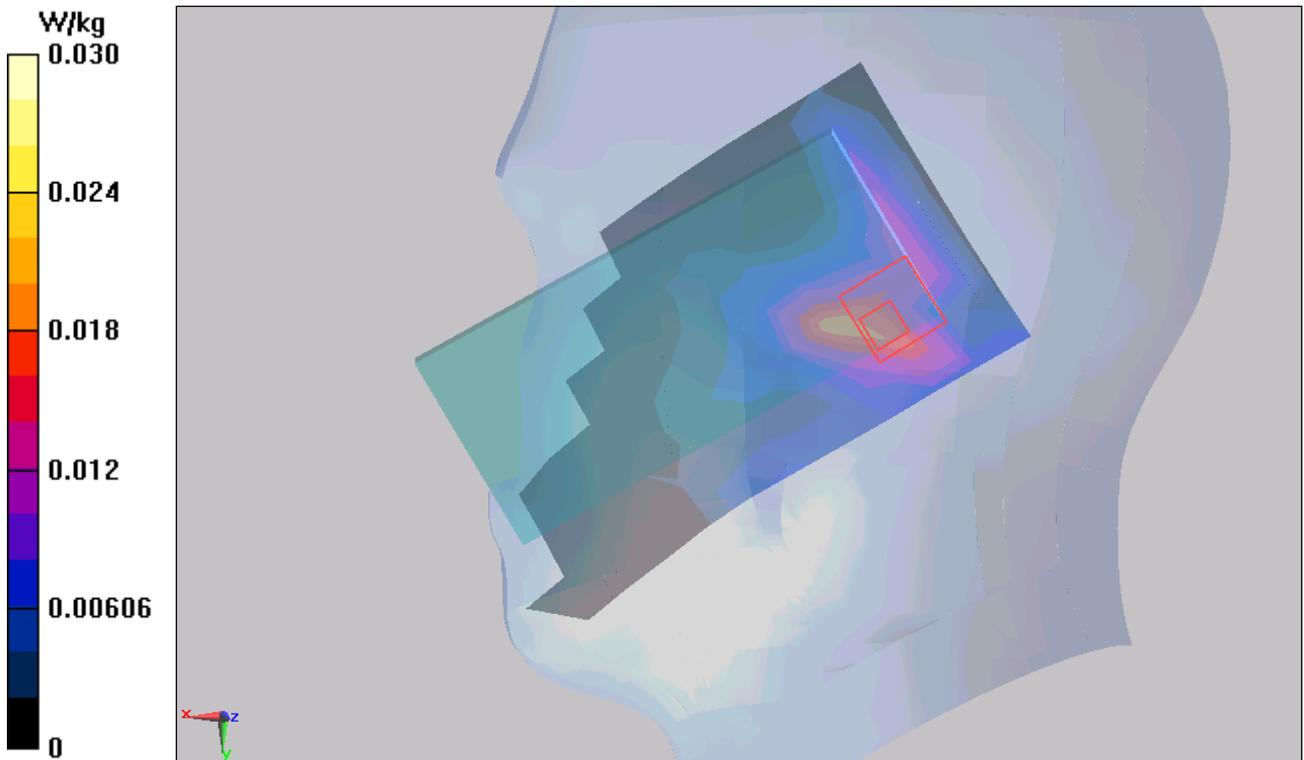


Figure 109 Right Hand Tilt 15° 802.11b Channel 11

802.11b Left Cheek High(Battery 2, WIFI MRC)

Date/Time: 7/23/2013 10:37:44 AM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.895$ mho/m; $\epsilon_r = 38.297$; $\rho = 1000$ kg/m³

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

Phantom section: Left Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.86, 6.86, 6.86); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Left Cheek High/Area Scan (71x131x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.227 W/kg

802.11b Left Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.623 V/m; Power Drift = 0.039 dB

Peak SAR (extrapolated) = 0.486 mW/g

SAR(1 g) = 0.185 mW/g; SAR(10 g) = 0.069 mW/g

Maximum value of SAR (measured) = 0.234 W/kg

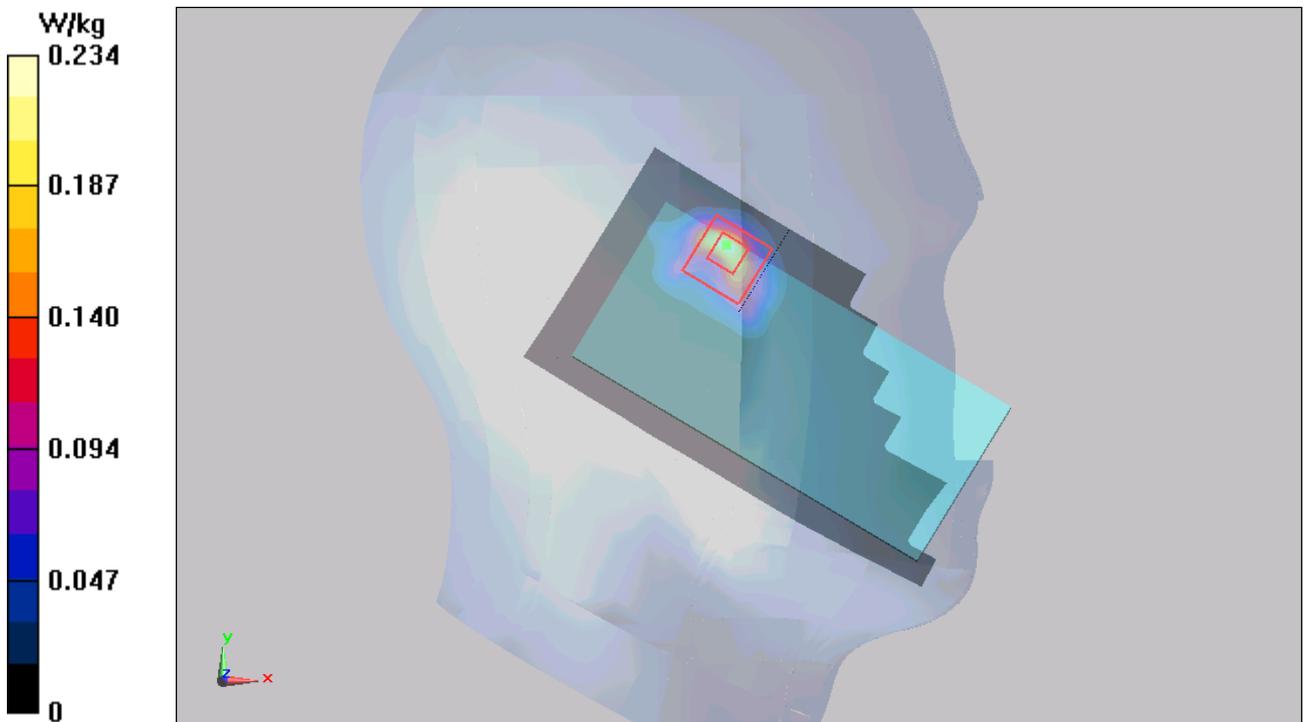


Figure 110 Left Hand Touch Cheek 802.11b Channel 11

802.11b Back Side High(Battery 1, WIFI MRC)

Date/Time: 7/24/2013 8:20:29 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Back Side High/Area Scan (61x111x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00691 W/kg

802.11b Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 1.337 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.0088 mW/g

SAR(1 g) = 0.005 mW/g; SAR(10 g) = 0.00222 mW/g

Maximum value of SAR (measured) = 0.00579 W/kg

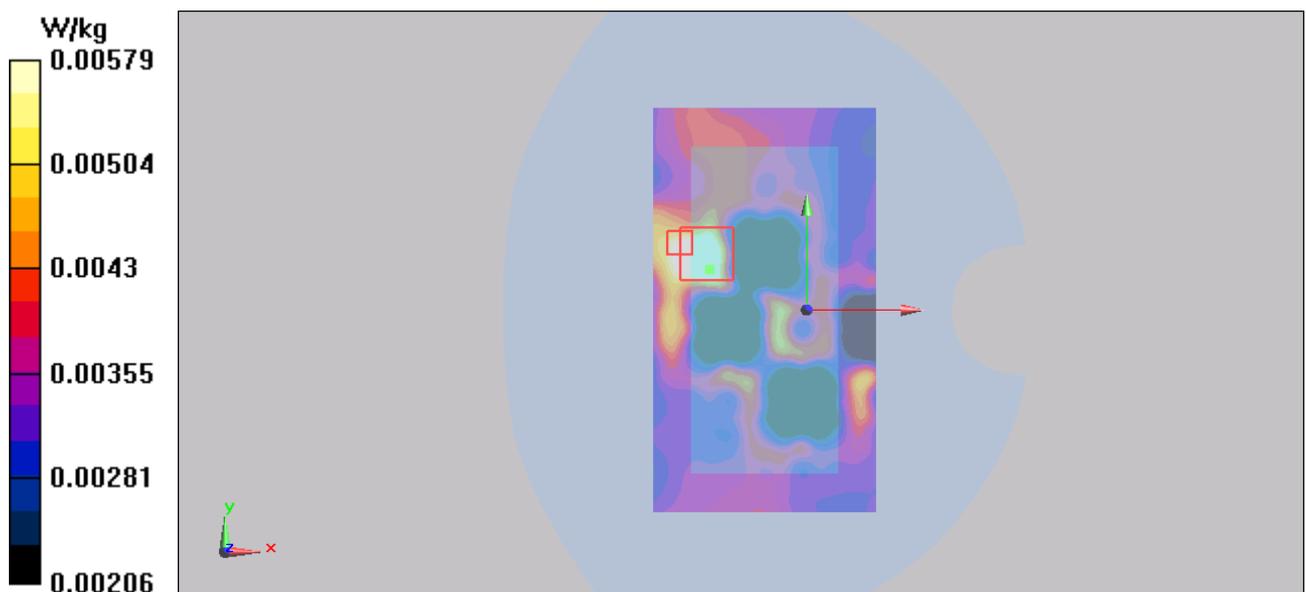


Figure 111 Body, Back Side, 802.11b Channel 11

802.11b Front Side High(Battery 1, WIFI MRC)

Date/Time: 7/24/2013 5:34:44 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Front Side High/Area Scan (61x111x1): Interpolated grid: dx=12mm, dy=12mm

Maximum value of SAR (interpolated) = 0.00790 W/kg

802.11b Front Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.824 V/m; Power Drift = 0.044 dB

Peak SAR (extrapolated) = 0.00935 mW/g

SAR(1 g) = 0.007mW/g; SAR(10 g) = 0.00635 mW/g

Maximum value of SAR (measured) = 0.00777 W/kg

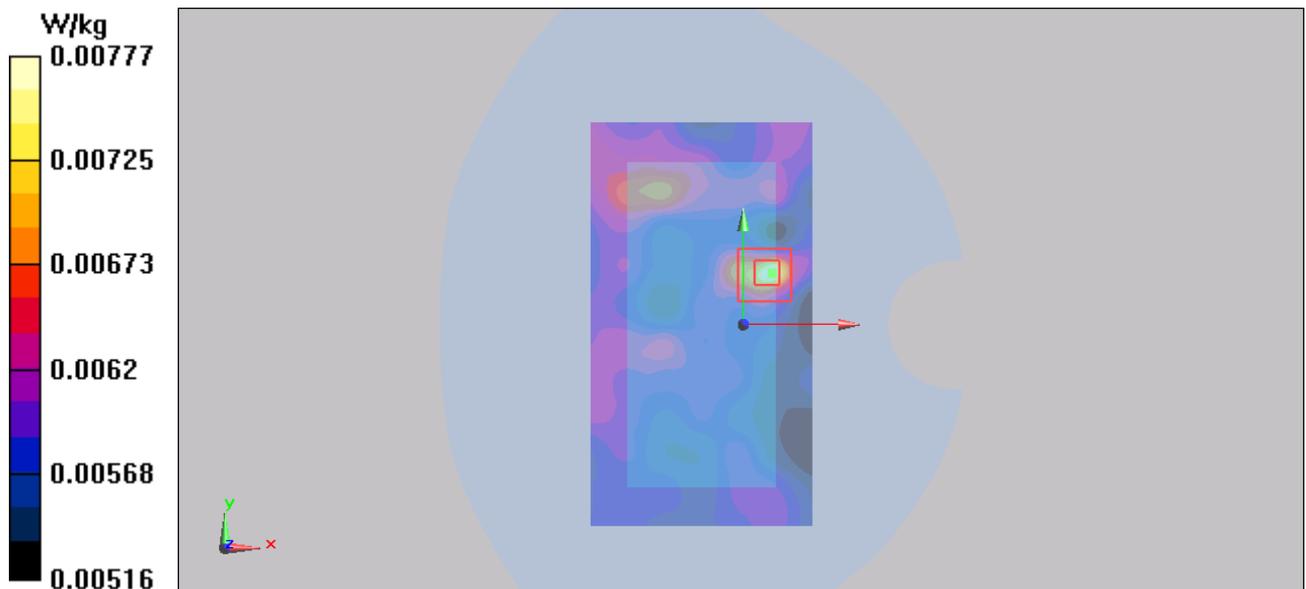


Figure 112 Body, Front Side, 802.11b Channel 11

802.11b Right Edge High(Battery 1, WIFI MRC)

Date/Time: 7/24/2013 1:18:57 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013;

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Right Edge High/Area Scan (4x14x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.00588 W/kg

802.11b Right Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.205 V/m; Power Drift = 0.088 dB

Peak SAR (extrapolated) = 0.021 mW/g

SAR(1 g) = 0.005 mW/g; SAR(10 g) = 0.00137 mW/g

Maximum value of SAR (measured) = 0.00677 W/kg

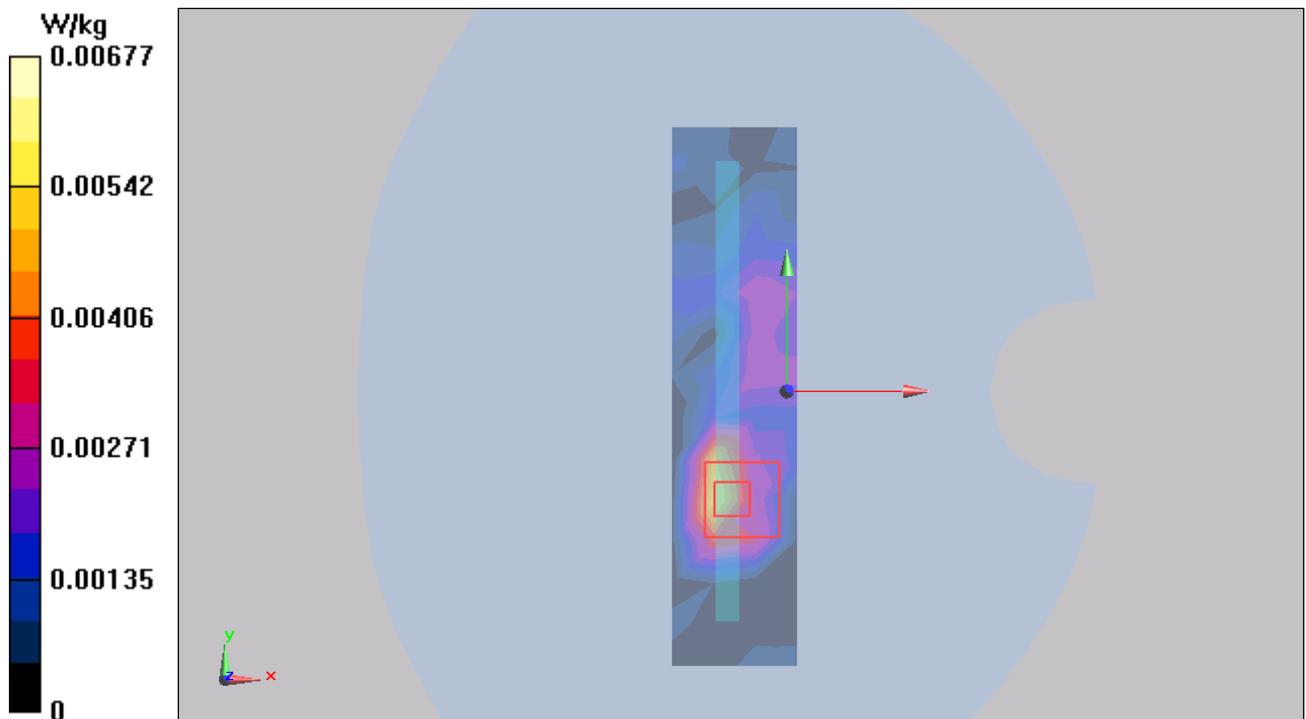


Figure 113 Body, Right Edge, 802.11b Channel 11

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802.11b Top Edge High(Battery 1, WIFI MRC)

Date/Time: 7/24/2013 12:31:01 PM

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

Medium parameters used: $f = 2462$ MHz; $\sigma = 1.916$ mho/m; $\epsilon_r = 51.651$; $\rho = 1000$ kg/m³

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

Phantom section: Flat Section

DASY5 Configuration:

Sensor-Surface: 4mm (Mechanical Surface Detection)

Probe: EX3DV4 - SN3753; ConvF(6.90, 6.90, 6.90); Calibrated: 1/17/2013

Electronics: DAE4 Sn1317; Calibrated: 1/25/2013

Phantom: SAM 2; Type: SAM;

Measurement SW: DASY52, Version 52.8 (2); SEMCAD X Version 14.6.6 (6824)

802.11b Top Edge High/Area Scan (4x8x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 0.00369 W/kg

802.11b Top Edge High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.198 V/m; Power Drift = 0.033dB

Peak SAR (extrapolated) = 0.023 mW/g

SAR(1 g) = 0.006 mW/g; SAR(10 g) = 0.0042 mW/g

Maximum value of SAR (measured) = 0.00692 W/kg

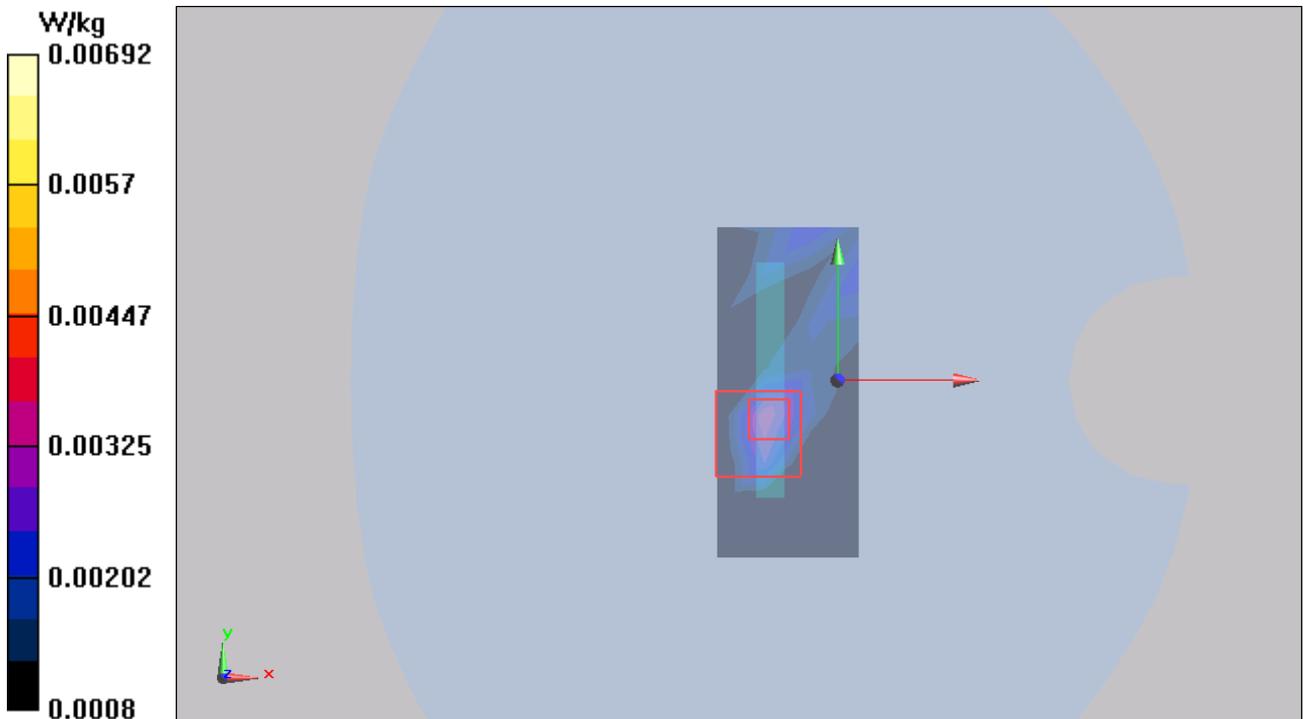


Figure 114 Body, Top Edge, 802.11b Channel 11

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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 **Auden**

Certificate No: **EX3-3753_Jan13**

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3753
Calibration procedure(s)	QA CAL-01.v8, QA CAL-14.v3, QA CAL-23.v4, QA CAL-25.v4 Calibration procedure for dosimetric E-field probes
Calibration date:	January 17, 2013
<p>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.</p> <p>All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.</p> <p>Calibration Equipment used (M&TE critical for calibration)</p>	

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	28-Dec-12 (No. ES3-3013 Dec12)	Dec-13
DAE4	SN: 660	20-Jun-12 (No. DAE4-660_Jun12)	Jun-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-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	
			Issued: January 17, 2013
<p>This calibration certificate shall not be reproduced except in full without written approval of the laboratory.</p>			

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



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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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	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., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- 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
- 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:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E^2 -field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z}** = NORM_{x,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.
- DCP_{x,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
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: A, B, C, D 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 $f \leq 800$ 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 NORM_{x,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.

EX3DV4 – SN:3753

January 17, 2013

Probe EX3DV4

SN:3753

Manufactured: March 16, 2010
Calibrated: January 17, 2013

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

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EX3DV4- SN:3753

January 17, 2013

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.47	0.31	0.45	$\pm 10.1\%$
DCP (mV) ^B	101.8	102.3	102.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	163.7	$\pm 3.5\%$
		Y	0.0	0.0	1.0		168.5	
		Z	0.0	0.0	1.0		159.9	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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EX3DV4- SN:3753

January 17, 2013

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	41.9	0.89	9.46	9.46	9.46	0.45	0.83	± 12.0 %
835	41.5	0.90	8.95	8.95	8.95	0.26	1.19	± 12.0 %
1750	40.1	1.37	7.86	7.86	7.86	0.52	0.79	± 12.0 %
1900	40.0	1.40	7.63	7.63	7.63	0.54	0.73	± 12.0 %
2000	40.0	1.40	7.50	7.50	7.50	0.53	0.77	± 12.0 %
2450	39.2	1.80	6.86	6.86	6.86	0.44	0.80	± 12.0 %
5200	36.0	4.66	4.65	4.65	4.65	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.48	4.48	4.48	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.46	4.46	4.46	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.51	4.51	4.51	0.35	1.80	± 13.1 %
5800	35.3	5.27	4.36	4.36	4.36	0.45	1.80	± 13.1 %

^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

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EX3DV4- SN:3753

January 17, 2013

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
750	55.5	0.96	9.25	9.25	9.25	0.54	0.75	± 12.0 %
835	55.2	0.97	9.05	9.05	9.05	0.68	0.68	± 12.0 %
1750	53.4	1.49	7.82	7.82	7.82	0.50	0.84	± 12.0 %
1900	53.3	1.52	7.33	7.33	7.33	0.31	1.01	± 12.0 %
2000	53.3	1.52	7.43	7.43	7.43	0.57	0.73	± 12.0 %
2300	52.9	1.81	7.07	7.07	7.07	0.74	0.64	± 12.0 %
2450	52.7	1.95	6.90	6.90	6.90	0.80	0.50	± 12.0 %
2600	52.5	2.16	6.66	6.66	6.66	0.80	0.50	± 12.0 %
3500	51.3	3.31	6.30	6.30	6.30	0.38	1.11	± 13.1 %
5200	49.0	5.30	4.38	4.38	4.38	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.13	4.13	4.13	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.09	4.09	4.09	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.10	4.10	4.10	0.45	1.90	± 13.1 %
5800	48.2	6.00	4.02	4.02	4.02	0.55	1.90	± 13.1 %

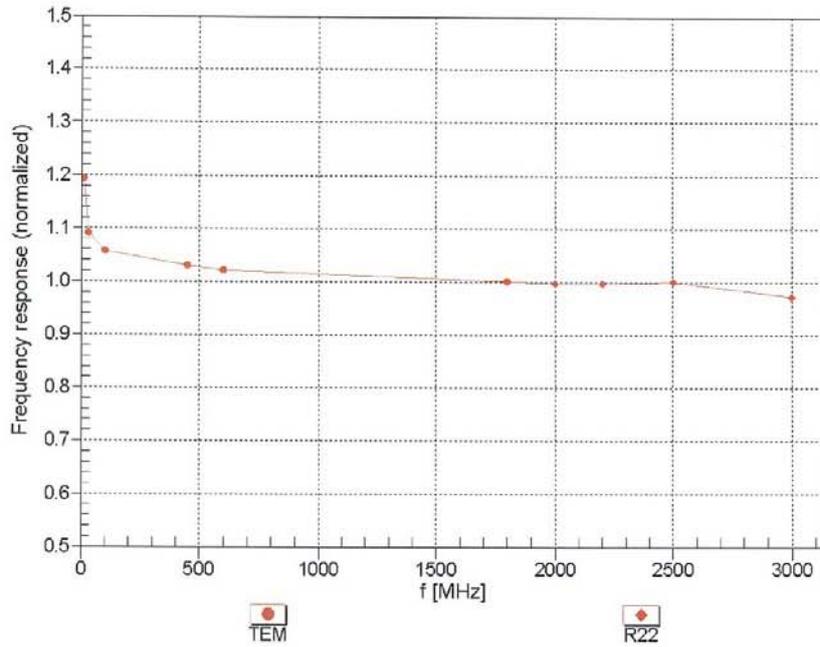
^C Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

EX3DV4- SN:3753

January 17, 2013

Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)

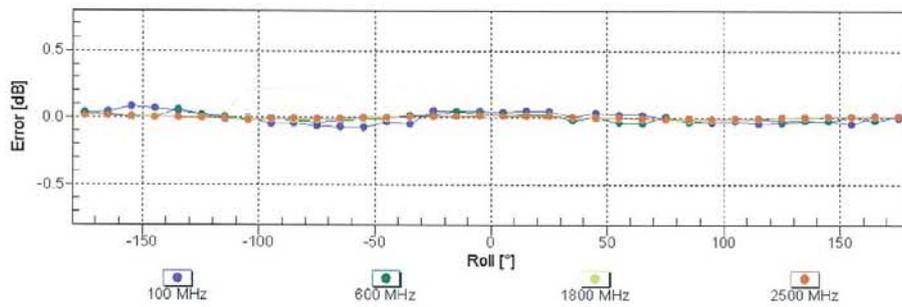
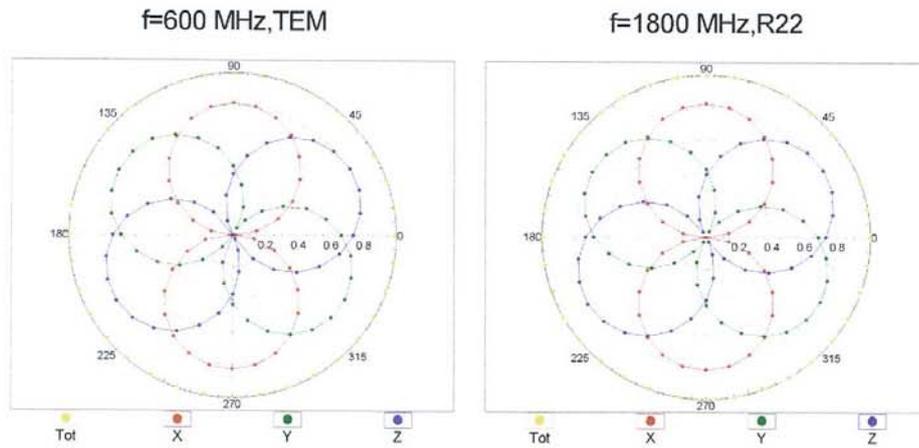


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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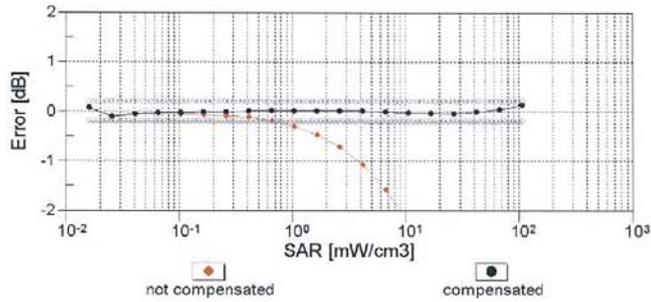
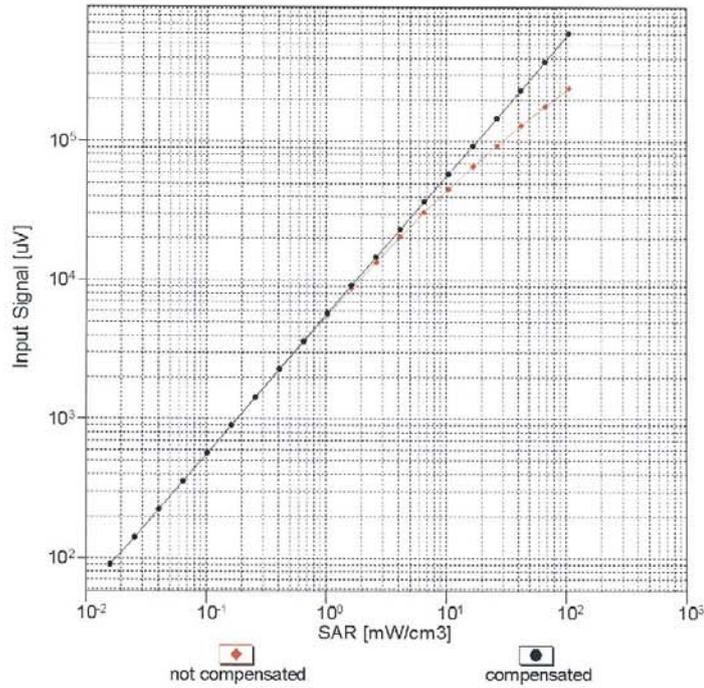
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Dynamic Range $f(\text{SAR}_{\text{head}})$ (TEM cell , $f = 900 \text{ MHz}$)

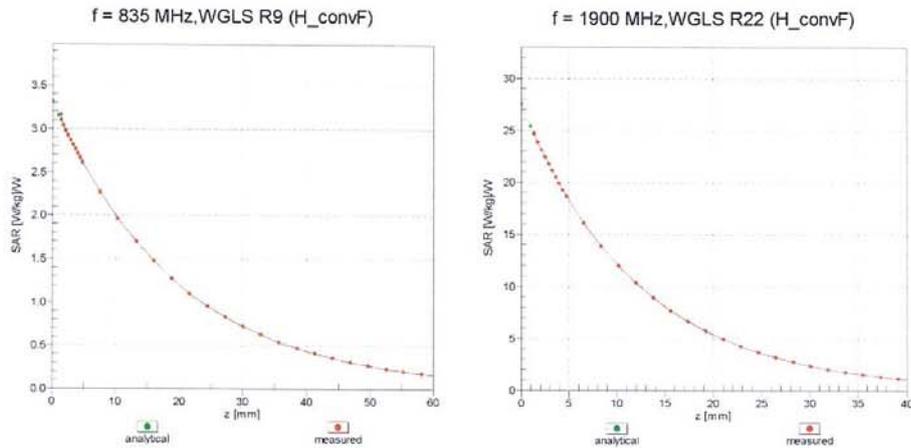


Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

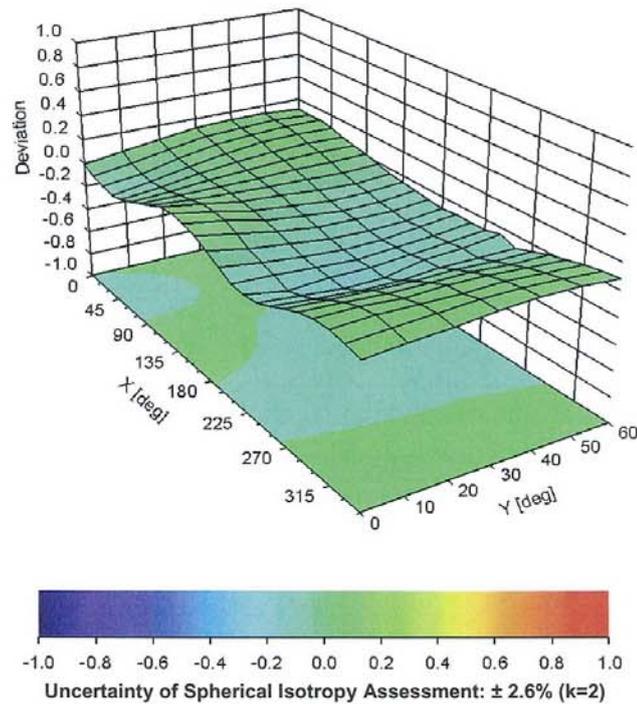
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Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, ϑ), f = 900 MHz



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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3753

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	55.2
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm