TESTING
No. L2264

OET 65

TEST REPORT

Product Name	HUAWEI Ascend Y 200;HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;
Model	HUAWEI U8655-51, U8655-51
FCC ID	QISU8655-51
Client	Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	HUAWEI Ascend Y 200; HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;	**Model**	HUAWEI U8655-51, U8655-51
FCC ID	QISU8655-51		
Report No.	RZA1202-0246SAR01R2		
Client	Huawei Technologies Co., Ltd.		
Manufacturer	Huawei Technologies Co., Ltd.		
Reference Standard(s)	**IEEE Std C95.1, 1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radiofrequency Electromagnetic Fields, 3 kHz to 300 GHz. **IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques. **SUPPLEMENT C Edition 01-01 to OET BULLETIN 65 Edition 97-01 June 2001 including DA 02-1438, published June 2002:** Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions. **RSS-102 Issue 4 March 2010:** Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) **KDB941225 D01 SAR test for 3G devices v02:** SAR Measurement Procedures CDMA 20001x RTT, 1x Ev-Do, WCDMA, HSDPA/HSPA **KDB 648474 D01 SAR Handsets Multi Xmiter and Ant, v01r05:** SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas. **KDB 941225 D06 Hot Spot SAR v01** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards. General Judgment: **Pass** (Stamp) **Date of issue: March 22nd, 2012**		
Comment	The test result only responds to the measured sample.		

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

TABLE OF CONTENT

1. General Information

1.1. Notes of the Test Report

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

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

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

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

1.2. Testing Laboratory

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1.3. Applicant Information

Company:	Huawei Technologies Co., Ltd.
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Postal Code:	518129
Country:	P.R. China
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1.4. Manufacturer Information

Company:	Huawei Technologies Co., Ltd.
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Postal Code:	518129
Country:	P.R.China
Telephone:	0755-28780808
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1.5. Information of EUT

General Information

Device Type:	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
State of Sample:	Prototype Unit		
Product Name:	HUAWEI Ascend Y 200;HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth;		
IMEI:	861894010006280		
Hardware Version:	HD1U8655M		
Software Version:	U8655-51V100R001C00B872		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900; (tested) WCDMA Band II /WCDMA Band V; (tested) WiFi (802.11b/g/n HT20); (tested) GSM 900/GSM 1800/WCDMA Band I; (untested) Bluetooth; (untested)		
Test Modulation:	(GSM)GMSK; (WCDMA)QPSK		
Device Class:	B		
HSDPA UE Category:	8		
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
	WCDMA Band II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	WCDMA Band V	826.4 ~ 846.6	871.4 ~ 891.6
Power Class:	GSM 850: 4, tested with power level 5		
	GSM 1900: 1, tested with power level 0		
	WCDMA Band II: 3, tested with power control all up bits		
	WCDMA Band V: 3, tested with power control all up bits		
Test Channel: (Low - Middle - High)	128 - 190 - 251	(GSM 850)	(tested)
	512 - 661 - 810	(GSM 1900)	(tested)
	9262 - 9400 - 9538	(WCDMA Band II)	(tested)
	4132 - 4183 - 4233	(WCDMA Band V)	(tested)
	1 - 6 - 11	(802.11b)	(tested)

Auxiliary Equipment Details

AE1:Battery

Model:	HB5K1H
Manufacturer:	Huawei Technologies Co., Ltd.
S/N:	WHCBB22HI46N1976

AE2:Battery

Model:	HB5K1
Manufacturer:	Huawei Technologies Co., Ltd.
S/N:	GAGB916XC37L1150

AE3:Battery

Model:	HB5K1
Manufacturer:	Huawei Technologies Co., Ltd.
S/N:	BAABB27F97400267

Equipment Under Test (EUT) is a HUAWEI Ascend Y 200;HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth; The EUT has a GSM/WCDMA antenna that is used for Tx/Rx, the second is diversity antenna that only can be used for Rx, the third is BT/WIFI antenna that can be used for Tx/Rx, the forth is GPS antenna that only can be used for Rx. It has Personal Wireless Routers (hot spots) function and Proximity Sensor function. The detail about EUT and Lithium Battery is in chapter 1.5 in this report. SAR are tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band V and WiFi.

The EUT has Proximity Sensor function. The proximity sensor is a sensor able to detect the presenc e of nearby objects without any physical contact. It can transmit a kind of light pulse, and measure th e time from launching and responding, then calculate the distance trough the time. It only shut off th e LCD and will not reduce the transmit power. Software update need special software tool in a comp uter, and it is not available to the user.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. The Maximum SAR_{1g} Values

Head SAR Configuration

Mode	Channel	Position	SAR_{1g} (W/kg)
GSM 850	Middle/190	Right, Cheek	**0.473**
GSM 1900	Middle/661	Left, Cheek	**0.534**
WCDMA Band II	Middle/9400	Right, Cheek	**0.747**
WCDMA Band V	Middle/4183	Right, Cheek	**0.477**
WiFi(802.11b)	Middle/6	Right, Cheek	**0.129**

Body Worn Configuration

Mode	Channel	Position	Separation distance	SAR_{1g} (W/kg)
2Txslots EGPRS 850	Middle/190	Back Side	10mm	**1.130**
2Txslots GPRS 1900	Middle/661	Back Side	10mm	**0.769**
WCDMA Band II	Low/9262	Back Side	10mm	**1.160**
WCDMA Band V	Low/4132	Back Side	10mm	**1.070**
WiFi(802.11b)	Middle/6	Back Side	10mm	**0.092**

Hotspot SAR Configuration

Mode	Channel	Position	Separation distance	SAR_{1g} (W/kg)
2Txslots EGPRS 850	Middle/190	Back Side	10mm	**1.130**
2Txslots GPRS 1900	Middle/661	Back Side	10mm	**0.769**
WCDMA Band II	Low/9262	Back Side	10mm	**1.160**
WCDMA Band V	Low/4132	Back Side	10mm	**1.070**
WiFi(802.11b)	Middle/6	Back Side	10mm	**0.092**

Simultaneous SAR

SAR1g(W/kg) / Test Position	WCDMA Band II	WIFI (802.11b)	MAX. ΣSAR_{1g}
Body, Back Side	1.160	0.092	1.252

Extrapolated SAR Values of the highest measured SAR

Mode	Test Position	Channel	Measurement Result		Tune-up procedures MAX Power(dBm)	1g Average Limit 1.6 W/kg
			Conducted Power(dBm)	1g Average (W/kg)		Extrapolated Result (W/kg)
GSM850	Right, Cheek	Middle/190	32.15	0.473	33.0	0.575
GSM850	Back Side	Middle/190	32.15	1.030	33.0	1.25
2Txslots GPRS850	Back Side	Middle/190	29.63	1.090	31.0	1.49
2Txslots EGPRS850	Back Side	Middle/190	29.64	1.130	31.0	1.55
GSM1900	Left, Cheek	Middle/661	29.23	0.534	30.0	0.638
GSM1900	Back Side	Middle/661	29.23	0.682	30.0	0.814
2Txslots GPRS1900	Back Side	Middle/661	26.51	0.725	28.0	1.02
2Txslots EGPRS1900	Back Side	Middle/661	26.53	0.769	28.0	1.08
WCDMA Band II	Right,, Cheek	Middle/9400	21.96	0.747	23.0	0.949
WCDMA Band II	Back Side	Low/9262	22.09	1.160	23.0	1.43
WCDMA Band V	Right, Cheek	Middle/4183	23.2	0.477	24.0	0.573
WCDMA Band V	Back Side	Low/4132	23.27	1.070	24.0	1.27

1.7. Maximum Conducted Power of each tested Mode

Mode		Max Burst Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	**32.15**	**23.12**
	GPRS, 2Txslots	**29.64**	**23.62**
	EGPRS, 2Txslots	**29.65**	**23.63**
GSM 1900	GSM	**29.34**	**20.31**
	GPRS, 2Txslots	**26.62**	**20.60**
	EGPRS, 2Txslots	**26.62**	**20.60**

Mode	Maximum Conducted Power (dBm)
WCDMA Band II	**22.18**
WCDMA Band V	**23.27**
WiFi(802.11b)	**14.95**

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

1.8. Test Date

The test performed from February 23, 2012 to March 16, 2012.

2. SAR Measurements System Configuration

2.1. SAR Measurement Set-up

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
- A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
- A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- A unit to operate the optical surface detector which is connected to the EOC.
- The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY5 measurement server.
- The DASY5 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003
- DASY5 software and SEMCAD data evaluation software.
- Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
- The generic twin phantom enabling the testing of left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- System validation dipoles allowing to validate the proper functioning of the system.

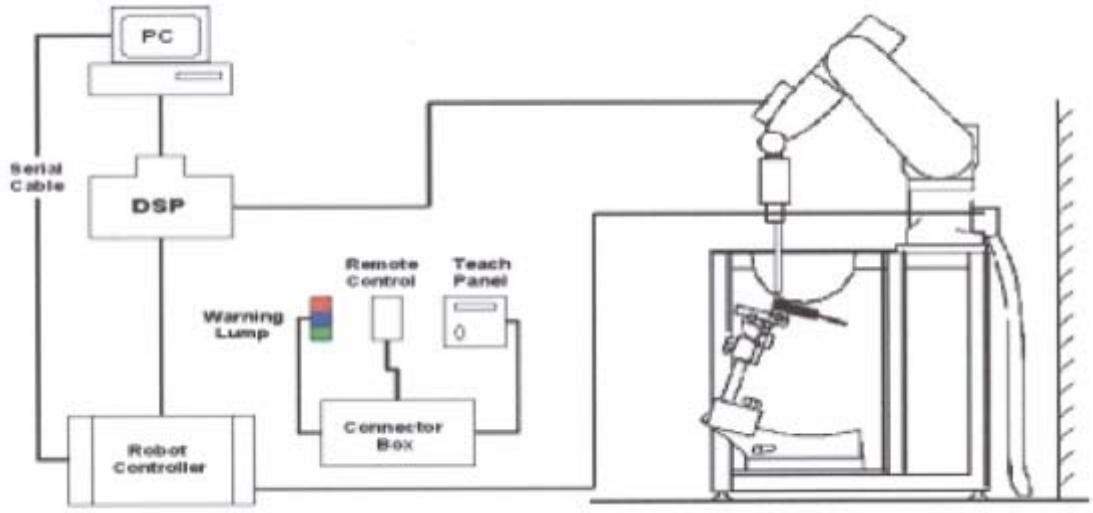

Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY5 E-field Probe System

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

2.2.1. EX3DV4 Probe Specification

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

Figure 2.EX3DV4 E-field Probe

Figure 3. EX3DV4 E-field probe

2.2.2. E-field Probe Calibration

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

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

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

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

Figure 4 Device Holder

2.3.2. Phantom

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

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

Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

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

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.

- The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

- Area Scan

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

spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.
After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

- Zoom Scan
  Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 7x7x7 points within a cube whose base is centered around the maxima found in the preceding area scan.

- Spatial Peak Detection
  The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses.The DASY5 system allows evaluations that combine measured data and robot positions, such as:
  • maximum search
  • extrapolation
  • boundary correction
  • peak search for averaged SAR
  During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.
  Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.
- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

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 ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a lossless media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

2.5.2. Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	Normi, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	Dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	
	- Density	

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics.

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

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

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

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

cf = crest factor of exciting field (DASY parameter)

dcp_i = diode compression point (DASY parameter)

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

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

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

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

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

$ConvF$ = sensitivity enhancement in solution

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

f = carrier frequency [GHz]

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

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

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

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

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

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

with SAR = local specific absorption rate in mW/g

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

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

ρ = equivalent tissue density in g/cm^3

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

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

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

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

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

3. Laboratory Environment

Table 1: The Requirements of the Ambient Conditions

Temperature	Min. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

4. Tissue-equivalent Liquid

4.1. Tissue-equivalent Liquid Ingredients

The liquid is consisted of water, salt, Glycol, Sugar, Preventol and Cellulose.The liquid has previously been proven to be suited for worst-case. The table 2 and table 3 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

Table 2: Composition of the Head Tissue Equivalent Matter

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

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

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

Table 3: Composition of the Body Tissue Equivalent Matter

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

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

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

4.2. Tissue-equivalent Liquid Properties

Table 4: Dielectric Performance of Head Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ε_r	σ(s/m)	
835MHz (Middle)	Target value ± 5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	22.0
	Measurement value 2012-2-23	43.16	0.90	21.7
1880MHz (Middle)	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	22.0
	Measurement value 2012-2-23	40.82	1.41	21.8
	Measurement value 2012-3-16	40.80	1.43	21.8
2437MHz (Middle)	Target value ±5% window	39.22 37.26 — 41.18	1.79 1.70 — 1.88	22.0
	Measurement value 2012-2-26	38.32	1.88	21.8

Table 5: Dielectric Performance of Body Tissue Simulating Liquid

Frequency	Description	Dielectric Parameters		Temp ℃
		ε_r	σ(s/m)	
835MHz (Middle)	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	22.0
	Measurement value 2012-2-24	54.26	0.99	21.7
1880MHz (Middle)	Target value ±5% window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	22.0
	Measurement value 2012-2-25	53.02	1.48	21.8
	Measurement value 2012-3-15	51.60	1.54	21.9
2437MHz (Middle)	Target value ±5% window	52.72 50.08 — 55.36	1.94 1.85 — 2.04	22.0
	Measurement value 2012-2-29	51.69	1.90	21.9

5. System Check

5.1. Description of System Check

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

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

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

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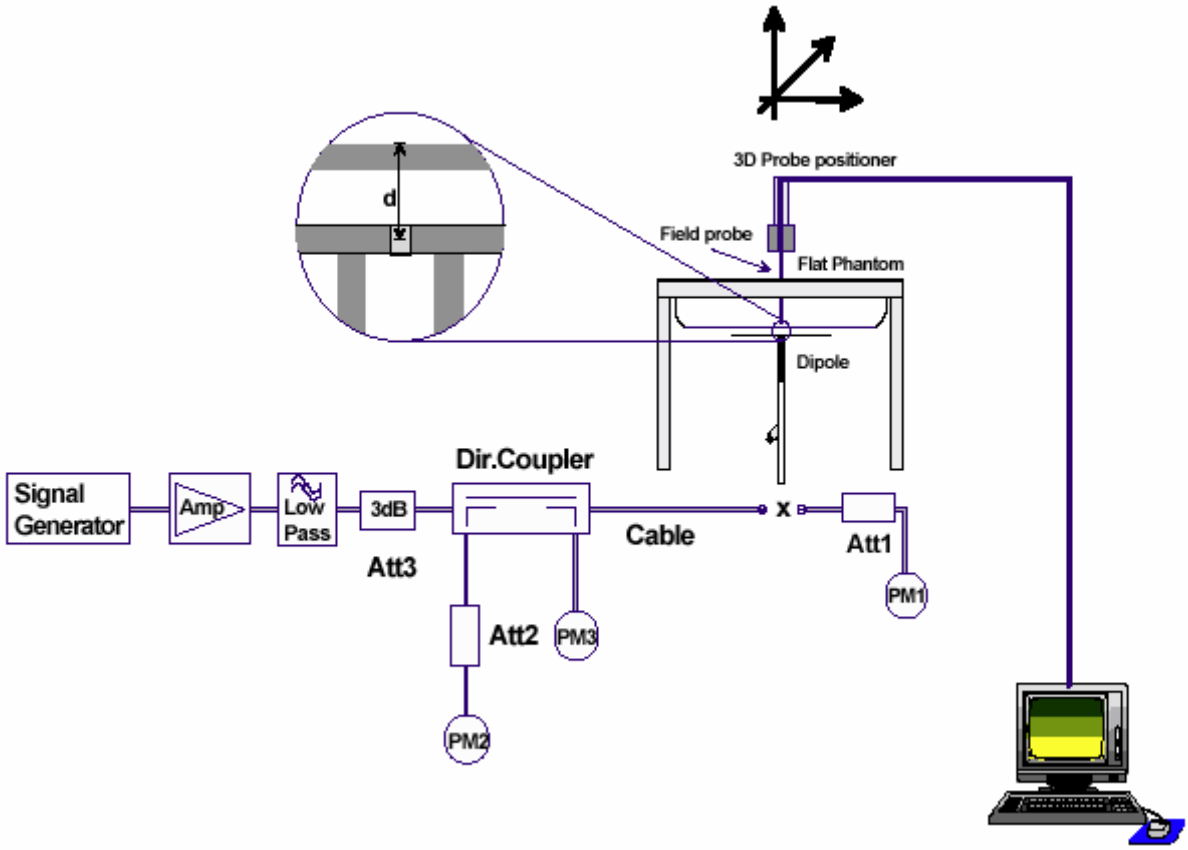


Figure 6 System Check Set-up

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g} (±10%deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)		
835MHz	2012-2-23	43.16	0.90	21.7	2.40	9.60	9.34 (8.41~10.27)
1900MHz	2012-2-23	40.82	1.41	21.8	10.33	41.32	40.30 (36.27~ 44.33)
1900MHz	2012-3-16	40.80	1.43	21.9	10.29	41.16	40.30 (36.27~ 44.33)
2450MHz	2012-2-26	38.32	1.88	21.8	14.06	56.24	53.80 (48.42~ 59.18)

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

Table 7: System Check in Body Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR_{1g}	1W Normalized SAR_{1g}	1W Target SAR_{1g} (±10% deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)		
835MHz	2012-2-24	54.26	0.99	21.7	2.54	10.16	9.46 (8.51~10.41)
1900MHz	2012-2-25	53.02	1.48	21.8	10.20	40.80	41.70 (37.53~45.87)
1900MHz	2012-3-15	51.60	1.54	21.9	10.31	41.24	41.70 (37.53~45.87)
2450MHz	2012-2-29	51.69	1.90	21.9	14.01	56.04	51.70 (46.53~56.87)

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

6. Operational Conditions during Test

6.1. General Description of Test Procedures

A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radiofrequency Channel Number (ARFCN) is allocated to 128, 190 and 251 in the case of GSM 850, to 512, 661 and 810 in the case of GSM 1900. The EUT is commanded to operate at maximum transmitting power.

Connection to the EUT is established via air interface with E5515C, and the EUT is set to maximum output power by E5515C. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30 dB.

6.2. Test Positions

6.2.1. Against Phantom Head

Measurements were made in “cheek” and “tilt” positions on both the left hand and right hand sides of the phantom.
The positions used in the measurements were according to IEEE 1528 - 2003 "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate(SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques".

6.2.2. Body Worn Configuration

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

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

6.3. Test Configuration

6.3.1. GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a System Simulator (SS) by air link. Using E5515C the power lever is set to “5” for GSM 850, set to “0” for GSM 1900. Since the GPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5; the EGPRS class is 10 for this EUT, it has at most 2 timeslots in uplink and at most 4 timeslots in downlink, the maximum total timeslots is 5.

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

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

Output power of reductions:

GSM 850

GPRS (GMSK):

Number of timeslots in uplink assignment	**reduction of maximum output power, (dB)**
1	0
2	2.0

EGPRS (8PSK):

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

EGPRS (GMSK):

Number of timeslots in uplink assignment	**reduction of maximum output power, (dB)**
1	0
2	2.0

GSM 1900

GPRS (GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.0

EGPRS (8PSK):

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

EGPRS (GMSK):

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.0

6.3.2. WCDMA Test Configuration

6.3.2.1. Output power Verification

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

6.3.2.2. Head SAR Measurements

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

6.3.2.3. Body SAR Measurements

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

6.3.3. HSDPA Test Configuration

SAR for body exposure configurations is measured according to the 'Body SAR Measurements' procedures of that section. In addition,body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least ¼ dB higher than that measured without HSDPA using 12.2 kbps RMC or the maximum SAR for 12.2 kbps RMC is above 75% of the SAR limit.30 Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2 kbps RMC configured in Test Loop Mode 1, using the highest body SAR configuration in 12.2 kbps RMC without HSDPA.

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

Table 8: Subtests for UMTS Release 5 HSDPA

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

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

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

7 ($A_{hs=}24/15$) with $\beta_{hs}=24/15*\beta_c$.

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

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

Table 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

Table 11: UE maximum output powers with HS-DPCCH (Release 5 Only)

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

6.3.4. WIFI Test Configuration

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

For the 802.11b/g SAR tests, a communication link is set up with the test mode software for WIFI mode test. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 1, 6 and 11 respectively in the case of 2450 MHz. During the test, at the each test frequency channel, the EUT is operated at the RF continuous emission mode. 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 operating modes are tested independently according to the service requirements in each frequency band.802.11b/g modes are tested on channels1,6,11;however,if output power reduction is necessary for channels 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels must be tested instead.

SAR is not required for 802.11g channels when the maximum average output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels. When the maximum average output channel in each frequency band is not included in the “default test channels”, the maximum channel should be tested instead of an adjacent “default test channels”, these are referred to as the “required test channels” and are illustrated in table 8.

Table 12: “Default Test Channels”

Mode	GHz	Channel	Turbo Channel	“Default Test Channels”			
				15.247		UNII	
				802.11b	802.11g		
802.11b/g	2.412	1#		√	*		
	2.437	6	6	√	*		
	2.462	11#		√	*		

Note: #=when output power is reduced for channel 1 and /or 11to meet restricted band requirements the highest out put channels closet to each of these channels should be tested.

√= “default test channels”

* =possible 802.11g channels with maximum average output 0.25dB>=the “default test channels

”

7. Test Results

7.1. Conducted Power Results

Table 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		32.14	32.15	32.11	-9.03dB	23.11	23.12	23.08
GPRS (GMSK)	1Txslot	32.11	32.14	32.12	-9.03dB	23.08	23.11	23.09
	2Txslots	29.59	29.63	29.64	-6.02dB	**23.57**	**23.61**	**23.62**
EGPRS (GMSK)	1Txslot	32.09	32.12	32.09	-9.03dB	23.06	23.09	23.06
	2Txslots	29.59	29.64	29.65	-6.02dB	**23.57**	**23.62**	**23.63**
EGPRS (8PSK)	1Txslot	26.87	26.89	26.92	-9.03dB	17.84	17.86	17.89
	2Txslots	26.83	26.87	26.92	-6.02dB	20.81	20.85	20.9
GSM 1900		**Burst Conducted Power(dBm)**				**Average power(dBm)**		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.34	29.23	29.18	-9.03dB	20.31	20.20	20.15
GPRS (GMSK)	1Txslot	29.30	29.16	29.19	-9.03dB	20.27	20.13	20.16
	2Txslots	26.62	26.51	26.53	-6.02dB	**20.60**	**20.49**	**20.51**
EGPRS (GMSK)	1Txslot	29.26	29.13	29.19	-9.03dB	20.23	20.10	20.16
	2Txslots	26.62	26.53	26.52	-6.02dB	**20.60**	**20.51**	**20.50**
EGPRS (8PSK)	1Txslot	25.91	25.81	25.74	-9.03dB	16.88	16.78	16.71
	2Txslots	25.87	25.79	25.76	-6.02dB	19.85	19.77	19.74

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.

WCDMA Band V		Conducted Power (dBm)		
		Channel 4132	Channel 4183	Channel 4233
RMC	12.2kbps RMC	23.27	23.20	23.16
	64kbps RMC	23.23	23.15	23.13
	144kbps RMC	23.17	23.16	23.11
	384kbps RMC	23.2	23.14	23.09
HSDPA	Sub - Test 1	23.16	23.04	22.98
	Sub - Test 2	22.96	22.63	22.87
	Sub - Test 3	22.14	22.04	21.98
	Sub - Test 4	22.05	21.91	21.96
WCDMA Band II		**Conducted Power (dBm)**		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps RMC	22.09	21.96	22.11
	64kbps RMC	22.13	21.89	22.18
	144kbps RMC	22.03	21.97	22.16
	384kbps RMC	22.09	22.00	22.11
HSDPA	Sub - Test 1	22.08	21.93	21.98
	Sub - Test 2	21.74	21.60	21.79
	Sub - Test 3	21.29	21.16	21.20
	Sub - Test 4	21.09	21.02	21.17

7.2. SAR Test Results

7.2.1. GSM 850 (GPRS/EGPRS)

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

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head (Battery SN: WHCBB22HI46N1976)					
Left hand, Touch Cheek	Middle/190	0.311	0.402	-0.077	Figure 15
Left hand, Tilt 15 Degree	Middle/190	0.239	0.309	0.039	Figure 16
Right hand, Touch Cheek	Middle/190	0.366	0.473	-0.085	Figure 17
Right hand, Tilt 15 Degree	Middle/190	0.233	0.301	0.007	Figure 18
Worst Case Position of Head with Battery (SN: GAGB916XC37L1150)					
Right hand, Touch Cheek	Middle/190	0.360	0.466	0.017	Figure 19
Worst Case Position of Head with Battery (SN: BAABB27F97400267)					
Right hand, Touch Cheek	Middle/190	0.358	0.463	-0.021	Figure 20
Test position of Body (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side (GSM/1Txslot)	High/251	0.620(max.cube)	0.851(max.cube)	0.025	Figure 21
	Middle/190	0.748(max.cube)	1.030(max.cube)	-0.033	Figure 22
	Low/128	0.695(max.cube)	0.949(max.cube)	-0.052	Figure 23
Back Side (2Txslots)	High/251	0.673(max.cube)	0.920(max.cube)	-0.043	Figure 24
	Middle/190	0.798(max.cube)	1.090(max.cube)	-0.152	Figure 25
	Low/128	0.747(max.cube)	1.020(max.cube)	-0.011	Figure 26
Front Side(2Txslots)	Middle/190	0.503	0.655	-0.178	Figure 27
Left Edge(2Txslots)	Middle/190	0.312	0.455	-0.032	Figure 28
Right Edge(2Txslots)	Middle/190	0.412	0.590	-0.003	Figure 29
Top Edge(2Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2Txslots)	Middle/190	0.082	0.134	0.112	Figure 30
Worst Case Position of Body with Earphone (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side (GSM)	Middle/190	0.437(max.cube)	0.587(max.cube)	-0.113	Figure 31
Worst Case Position of Body with EGPRS (Battery SN: WHCBB22HI46N1976,GMSK, Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.825(max.cube)	1.130(max.cube)	-0.070	Figure 32
Worst Case Position of Body with Battery (SN: GAGB916XC37L1150, Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.813(max.cube)	1.110(max.cube)	-0.086	Figure 33
Worst Case Position of Body with Battery (SN: BAABB27F97400267, Distance 10mm)					
Back Side (2Txslots)	Middle/190	0.821(max.cube)	1.120(max.cube)	-0.111	Figure 34

Note: 1.The value with blue color is the maximum SAR Value of each test band.
2. The SAR test shall be performed at the high, middle and low frequency channels of each operating

mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.

3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.
5. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above.

7.2.2. GSM 1900 (GPRS/EGPRS)

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

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	±0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head (Battery SN: WHCBB22HI46N1976)					
Left hand, Touch Cheek	Middle/661	0.318	0.534	-0.017	Figure 35
Left hand, Tilt 15 Degree	Middle/661	0.122	0.193	-0.108	Figure 36
Right hand, Touch Cheek	Middle/661	0.312	0.483	0.079	Figure 37
Right hand, Tilt 15 Degree	Middle/661	0.118	0.203	0.046	Figure 38
Worst Case Position of Head with Battery (SN: GAGB916XC37L1150)					
Left hand, Touch Cheek	Middle/661	0.317	0.533	0.034	Figure 39
Worst Case Position of Head with Battery (SN: BAABB27F97400267)					
Left hand, Touch Cheek	Middle/661	0.318	0.534	0.103	Figure 40
Test position of Body (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side (GSM/1Txslot)	Middle/661	0.395	0.682	-0.096	Figure 41
Back Side (2Txslots)	Middle/661	0.422	0.725	-0.071	Figure 42
Front Side(2Txslots)	Middle/661	0.364	0.588	-0.183	Figure 43
Left Edge(2Txslots)	Middle/661	0.110	0.197	0.032	Figure 44
Right Edge(2Txslots)	Middle/661	0.086	0.144	0.057	Figure 45
Top Edge(2Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2Txslots)	Middle/661	0.277	0.482	0.050	Figure 46
Worst Case Position of Body with Earphone (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side (GSM)	Middle/661	0.377	0.669	-0.039	Figure 47
Worst Case Position of Body with EGPRS (Battery SN: WHCBB22HI46N1976,GMSK, Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.420	0.723	-0.078	Figure 48
Worst Case Position of Body with Battery (SN: GAGB916XC37L1150, Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.418	0.724	-0.015	Figure 49
Worst Case Position of Body with Battery (SN: BAABB27F97400267, Distance 10mm)					
Back Side (2Txslots)	Middle/661	0.442	0.769	0.066	Figure 50

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

2. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. When SAR tests for EGPRS mode is necessary, GMSK modulation should be used to minimize SAR measurement error due to higher peak-to-average power (PAR) ratios inherent in 8-PSK.

7.2.3. WCDMA Band II (WCDMA/HSDPA)

Table 16: SAR Values [WCDMA Band II (WCDMA/HSDPA)]

Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head (Battery SN: WHCBB22HI46N1976)					
Left Hand, Touch Cheek	Middle/9400	0.419(max.cube)	0.724(max.cube)	-0.057	Figure 51
Left Hand, Tilt 15 Degree	Middle/9400	0.174	0.283	0.014	Figure 52
Right Hand, Touch Cheek	Middle/9400	0.470	0.746	0.121	Figure 53
Right Hand, Tilt 15 Degree	Middle/9400	0.155	0.273	0.018	Figure 54
Worst Case Position of Head with Battery (SN: GAGB916XC37L1150)					
Right Hand, Touch Cheek	Middle/9400	0.472	0.747	0.107	Figure 55
Worst Case Position of Head with Battery (SN: BAABB27F97400267)					
Right Hand, Touch Cheek	Middle/9400	0.470	0.743	0.037	Figure 56
Test position of Body (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	High/9538	0.614	1.090	0.016	Figure 57
	Middle/9400	0.613	1.070	0.038	Figure 58
	Low/9262	0.673	1.150	0.002	Figure 59
Front Side	High/9538	0.563	0.902	-0.080	Figure 60
	Middle/9400	0.523	0.837	0.084	Figure 61
	Low/9262	0.601	0.945	-0.053	Figure 62
Left Edge	Middle/9400	0.154	0.278	-0.068	Figure 63
Right Edge	Middle/9400	0.115	0.195	0.015	Figure 64
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Middle/9400	0.401	0.707	0.123	Figure 65
Worst Case Position of Body with Earphone (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	Low/9262	0.664	1.150	-0.082	Figure 66
Worst Case Position of Body with Battery (SN: GAGB916XC37L1150, Distance 10mm)					
Back Side	Low/9262	0.681	1.160	0.037	Figure 67
Worst Case Position of Body with Battery (SN: BAABB27F97400267, Distance 10mm)					
Back Side	Low/9262	0.674	1.150	-0.051	Figure 68

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

2. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. WCDMA mode were tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
5. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above.

7.2.4. WCDMA Band V (WCDMA/HSDPA)

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

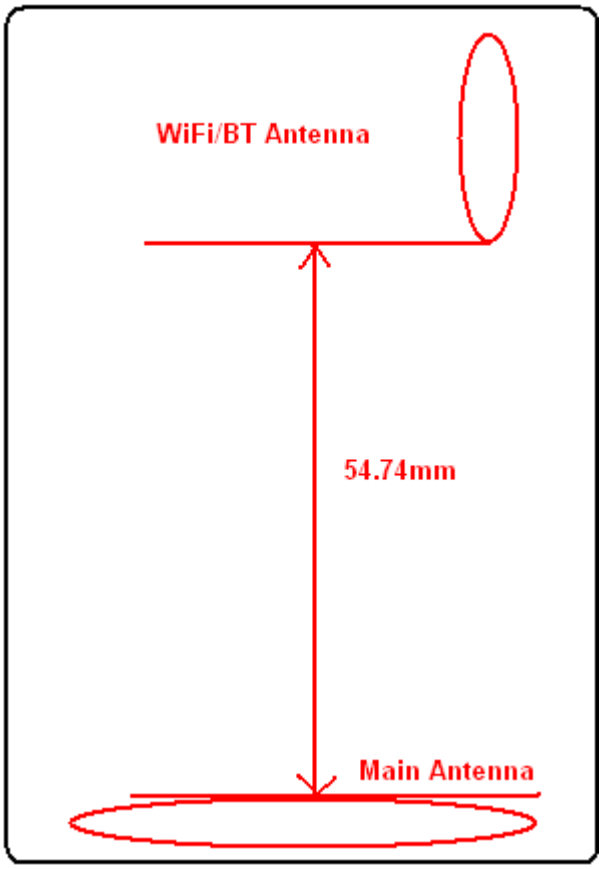
Limit of SAR		10 g Average	1 g Average	Power Drift	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21 dB	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
Test Position of Head (Battery SN: WHCBB22HI46N1976)					
Left Hand, Touch Cheek	Middle/4183	0.298	0.385	0.053	Figure 69
Left Hand, Tilt 15 Degree	Middle/4183	0.243	0.316	0.059	Figure 70
Right Hand, Touch Cheek	Middle/4183	0.336	0.435	-0.004	Figure 71
Right Hand, Tilt 15 Degree	Middle/4183	0.247	0.320	0.043	Figure 72
Worst Case Position of Head with Battery (SN: GAGB916XC37L1150)					
Right Hand, Touch Cheek	Middle/4183	0.371	0.477	0.171	Figure 73
Worst Case Position of Head with Battery (SN: BAABB27F97400267)					
Right Hand, Touch Cheek	Middle/4183	0.364	0.468	-0.032	Figure 74
Test position of Body (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	High/4233	0.606(max.cube)	0.830(max.cube)	-0.040	Figure 75
	Middle/4183	0.645(max.cube)	0.881(max.cube)	-0.054	Figure 76
	Low/4132	0.758(max.cube)	1.040(max.cube)	-0.001	Figure 77
Front Side	Middle/4183	0.414	0.542	-0.061	Figure 78
Left Edge	Middle/4183	0.262	0.380	0.038	Figure 79
Right Edge	Middle/4183	0.338	0.483	0.005	Figure 80
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Middle/4183	0.080	0.128	-0.015	Figure 81
Worst Case Position of Body with Earphone (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	Low/4132	0.503(max.cube)	0.677(max.cube)	0.028	Figure 82
Worst Case Position of Body with Battery (SN: GAGB916XC37L1150, Distance 10mm)					
Back Side	Low/4132	0.786(max.cube)	1.070(max.cube)	-0.018	Figure 83
Worst Case Position of Body with Battery (SN: BAABB27F97400267, Distance 10mm)					
Back Side	Low/4132	0.787(max.cube)	1.070(max.cube)	-0.051	Figure 84

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

2. The SAR test shall be performed at the high, middle and low frequency channels of each operating mode. If the SAR measured at mid-band channel for each test configuration is at least 3.0 dB lower than the SAR limit (< 0.8W/kg), testing at the high and low channels is optional.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm (see ANNEX I). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested.
4. WCDMA mode were tested under RMC 12.2kbps with HSPA (HSDPA/HSUPA) inactive per KDB Publication 941225 D01. HSPA (HSDPA/HSUPA) SAR for body was not required since the average output power of the HSPA (HSDPA/HSUPA) subtests was not more than 0.25 dB higher than the RMC level and the maximum SAR for 12.2kbps RMC was less than 75% SAR limit.
5. The (max.cube) labeling indicates that during the grid scanning an additional peak was found which was within 2.0dB of the highest peak. The value of the highest cube is given in the table above.

7.2.5. Bluetooth/WiFi Function

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



The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
Average Conducted Output Power(dBm)	2.01	4.22	2.85

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	13.89
		2	13.39
		5.5	13.47
		11	13.52
	6	1	14.88
		2	14.67
		5.5	14.55
		11	14.32
	11	1	14.95
		2	14.82
		5.5	14.72
		11	14.65
11g	1	6	12.08
		9	12.02
		12	11.93
		18	11.74
		24	11.53
		36	11.23
		48	10.89
		54	10.78
	6	6	12.82
		9	12.76
		12	12.54
		18	12.59
		24	12.36
		36	12.01
		48	11.98
		54	11.87
	11	6	12.98
		9	12.85
		12	12.77
		18	12.46

		24	12.55
		36	12.19
		48	11.89
		54	11.75
11n HT20	1	6.5	8.95
		13	8.71
		19.5	8.25
		26	8.19
		39	8.01
		52	7.71
		58.5	7.99
		65	7.81
	6	6.5	9.61
		13	9.45
		19.5	9.25
		26	9.13
		39	8.37
		52	8.49
		58.5	8.39
		65	8.35
	11	6.5	9.83
		13	9.56
		19.5	9.47
		26	9.28
		39	8.91
		52	8.85
		58.5	8.49
		65	8.57

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

Output Power Thresholds for Unlicensed Transmitters

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

Stand-alone SAR

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

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

Table 18: SAR Values (802.11b)

Limit of SAR (W/kg)		10 g Average	1g Average	Power Drift (dB)	Graph Results
		2.0	1.6	± 0.21	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1g Average		
Test Position of Head (Battery SN: WHCBB22HI46N1976)					
Left hand, Touch cheek	Middle/6	0.039	0.079	-0.046	Figure 85
Left hand, Tilt 15 Degree	Middle/6	0.033	0.070	0.010	Figure 86
Right hand, Touch cheek	Middle/6	0.058	0.129	0.050	Figure 87
Right hand, Tilt 15 Degree	Middle/6	0.027	0.061	0.050	Figure 88
Worst Case Position of Head with Battery (SN: GAGB916XC37L1150)					
Right hand, Touch cheek	Middle/6	0.055	0.121	0.070	Figure 89
Worst Case Position of Head with Battery (SN: BAABB27F97400267)					
Right hand, Touch cheek	Middle/6	0.054	0.121	0.070	Figure 90
Test position of Body (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	Middle/6	0.046	0.092	-0.078	Figure 91
Front Side	Middle/6	0.014	0.024	-0.073	Figure 92
Left Edge	Middle/6	0.034	0.067	0.040	Figure 93
Right Edge	Middle/6	0.005	0.010	0.186	Figure 94
Top Edge	Middle/6	0.014	0.025	0.018	Figure 95
Bottom Edge	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with Earphone (Battery SN: WHCBB22HI46N1976,Distance 10mm)					
Back Side	Middle/6	0.053	0.091	0.015	Figure 96
Worst Case Position of Body with Battery (SN: GAGB916XC37L1150, Distance 10mm)					
Back Side	Middle/6	0.042	0.087	0.038	Figure 97
Worst Case Position of Body with Battery (SN: BAABB27F97400267, Distance 10mm)					
Back Side	Middle/6	0.044	0.091	0.064	Figure 98

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

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

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

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

Simultaneous SAR

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

About BT and WIFI Antenna,

SAR_{1g}(W/kg) / Test Position	WIFI (802.11b)	BT	MAX. ΣSAR_{1g}
Left hand, Touch cheek	**0.079**	0	0.079
Left hand, Tilt 15 Degree	**0.070**	0	0.070
Right hand, Touch cheek	**0.129**	0	0.129
Right hand, Tilt 15 Degree	**0.061**	0	0.061
Body, Back Side	**0.092**	0	0.092
Body, Front Side	**0.024**	0	0.024
Body, Left Edge	**0.067**	0	0.067
Body, Right Edge	**0.010**	0	0.010
Body, Top Edge	**0.025**	0	0.025
Body, Bottom Edge	N/A	0	0

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

BT antenna is ＜2.5cm from WIFI Antenna. (WIFI Antenna SAR_{MAX})0.129 +(BT Antenna SAR_{MAX})0 =0. 129 ＜1.6, So the Simultaneous SAR are not required for BT and WIFI antenna.

About WIFI and GSM/WCDMA Antenna,

SAR_{1g}(W/kg) / Test Position	GSM850	GSM1900	WCDMA Band II	WCDMA Band V	WIFI (802.11b)	MAX. ΣSAR_{1g}
Left hand, Touch cheek	0.402	0.534	**0.724**	0.385	0.079	0.803
Left hand, Tilt 15 Degree	0.309	0.193	0.283	**0.316**	0.070	0.386
Right hand, Touch cheek	0.473	0.483	**0.747**	0.477	0.129	0.876
Right hand, Tilt 15 Degree	0.301	0.203	0.273	**0.320**	0.061	0.381
Body, Back Side	1.130	0.769	**1.160**	1.070	0.092	1.252
Body, Front Side	0.655	0.588	**0.945**	0.542	0.024	0.969
Body, Left Edge	**0.455**	0.197	0.278	0.380	0.067	0.522
Body, Right Edge	**0.590**	0.144	0.195	0.483	0.010	0.600
Body, Top Edge	N/A	N/A	N/A	N/A	0.025	0.025
Body, Bottom Edge	0.134	0.482	**0.707**	0.128	N/A	0.707

WIFI antenna is ＞5cm from GSM/WCDMA Antenna. (GSM/WCDMA Antenna SAR_{MAX}) 1.160 +(WIFI Antenna SAR_{MAX})0.092 =1.252 ＜1.6, So the Simultaneous SAR are not required for WIFI and GSM/WCDMA Antenna.

8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	c_i	Standard ncertainty $u_i^{'}$ (%)	Degree of freedom V_{eff} or v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	-probe calibration	B	6.0	N	1	1	6.0	∞
3	-axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	∞
4	- Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	∞
6	-boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	∞
7	-probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
8	- System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
9	-readout Electronics	B	1.0	N	1	1	1.0	∞
10	-response time	B	0	R	$\sqrt{3}$	1	0	∞
11	-integration time	B	4.32	R	$\sqrt{3}$	1	2.5	∞
12	-noise	B	0	R	$\sqrt{3}$	1	0	∞
13	-RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	∞
14	-Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
15	-Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
16	-Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
Test sample Related								
17	-Test Sample Positioning	A	2.9	N	1	1	4.92	71
18	-Device Holder Uncertainty	A	4.1	N	1	1	4.1	5
19	-Output Power Variation - SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
Physical parameter								
20	-phantom	B	4.0	R	$\sqrt{3}$	1	2.3	∞

21	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.64	1.8	∞
22	-liquid conductivity (measurement uncertainty)	B	2.5	N	1	0.64	1.6	9
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
24	-liquid permittivity (measurement uncertainty)	B	2.5	N	1	0.6	1.5	9
Combined standard uncertainty		$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					12.16	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N		k=2	24.33	

9. Main Test Instruments

Table 19: List of Main Instruments

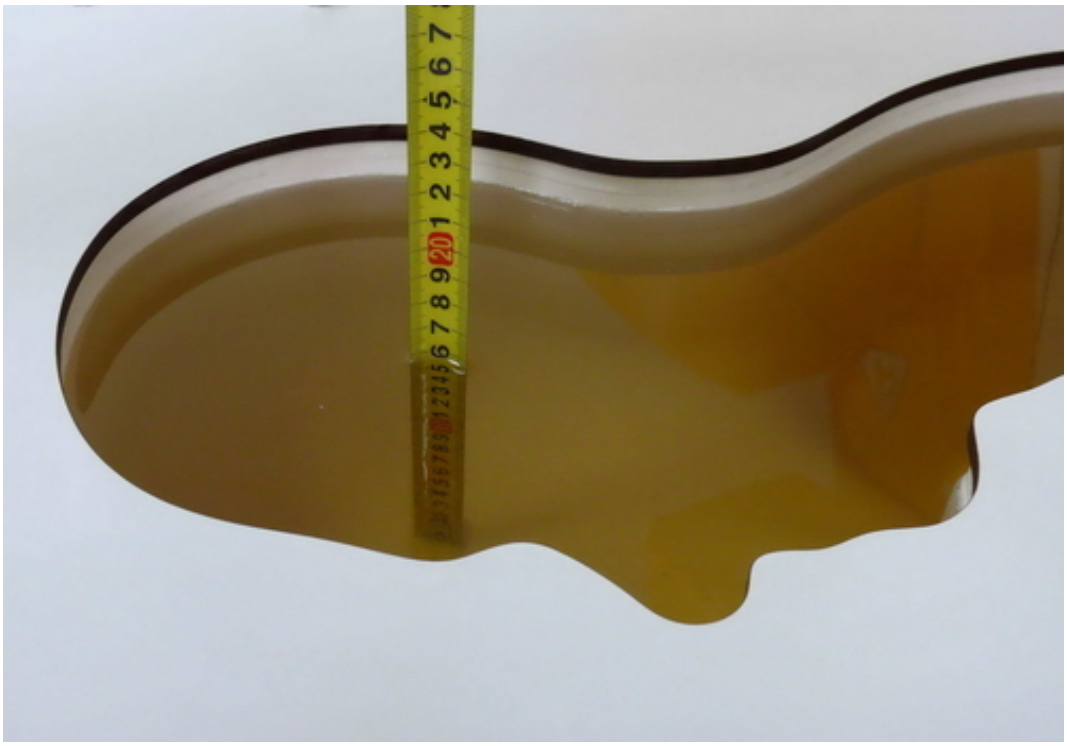
No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 12, 2011	One year
02	Dielectric Probe Kit	Agilent 85070E	US44020115	No Calibration Requested	
03	Power meter	Agilent E4417A	GB41291714	March 12, 2011	One year
04	Power meter	Agilent E4417A	GB41291714	March 11, 2012	One year
05	Power sensor	Agilent N8481H	MY50350004	September 25, 2011	One year
06	Power sensor	E9327A	US40441622	September 24, 2011	One year
07	Signal Generator	HP 8341B	2730A00804	September 12, 2011	One year
08	Amplifier	IXA-020	0401	No Calibration Requested	
09	BTS	E5515C	MY48360988	December 2, 2011	One year
10	E-field Probe	EX3DV4	3816	October 3, 2011	One year
11	DAE	DAE4	871	November 22, 2011	One year
12	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	One year
13	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	One year
14	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	One year
15	Temperature Probe	JM222	AA1009129	March 16, 2011	One year
16	Temperature Probe	JM222	AA1009129	March 15, 2012	One year
17	Hygrothermograph	HTC-1	TASH121602	June 21, 2011	One year
18	Dual directional couper	778D-012	5051P	August 21, 2011	One year
19	Dual directional coupler	777D	50146	August 21, 2011	One year

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

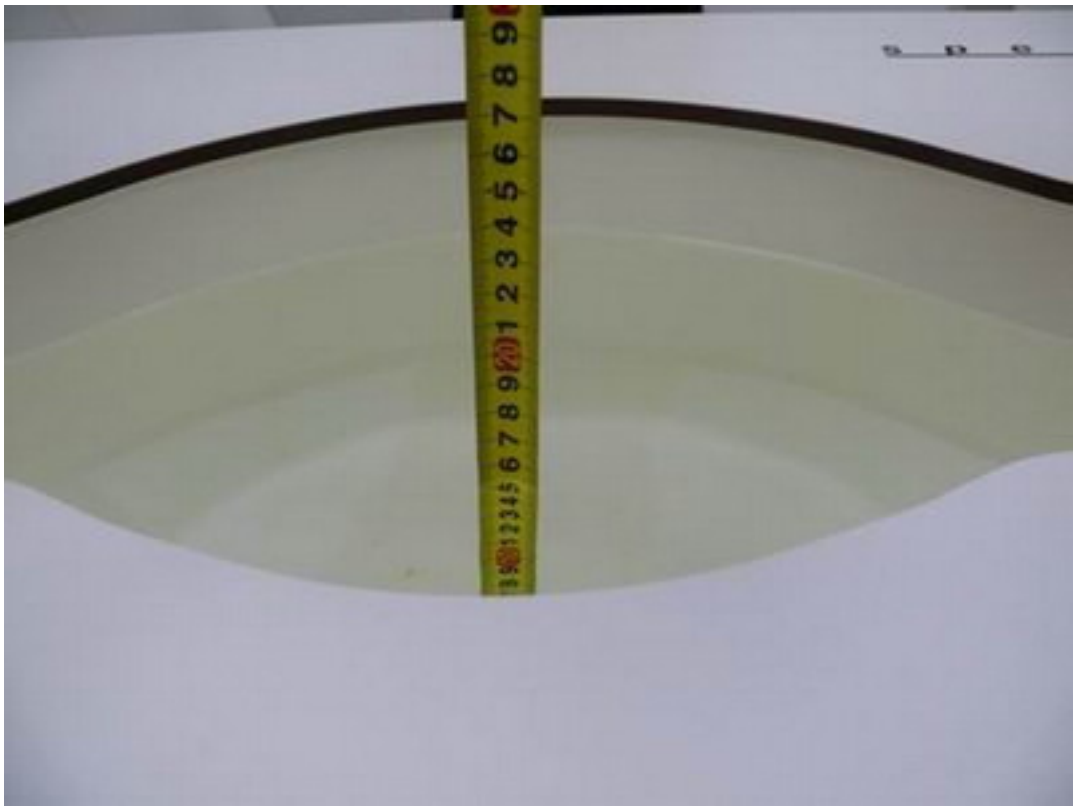
ANNEX A: Test Layout

Picture 1: Specific Absorption Rate Test Layout

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

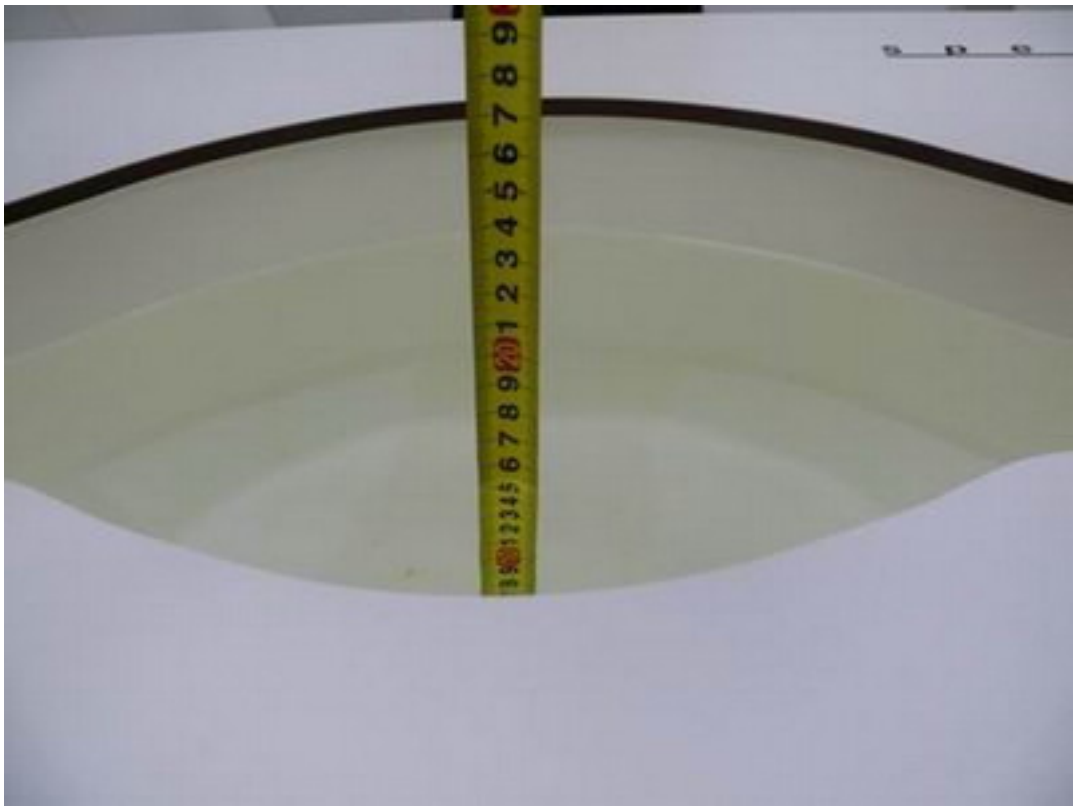


Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



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

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



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

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

ANNEX B: System Check Results

System Performance Check at 835 MHz Head TSL

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

Date/Time: 2/23/2012 9:09:13 AM

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

Medium parameters used: f = 835 MHz; σ = 0.90 mho/m; ε_r = 43.16; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.7℃

Phantom section: Flat Section

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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

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

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

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

Peak SAR (extrapolated) = 3.54 W/kg

SAR(1 g) = 2.40 mW/g; SAR(10 g) = 1.58 mW/g

Maximum value of SAR (measured) = 2.63 mW/g

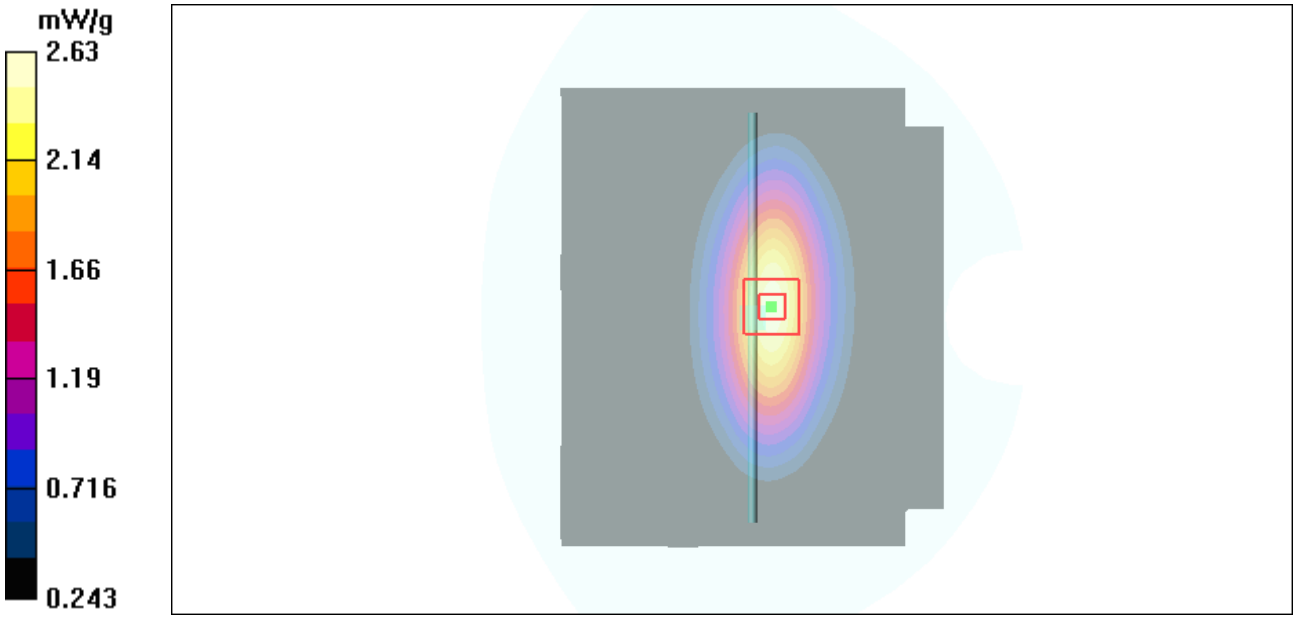


Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time: 2/24/2012 9:20:20 AM

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

Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 54.26; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.7℃

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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 (61x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.72 mW/g

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

Reference Value = 50.9 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 3.63 W/kg

SAR(1 g) = 2.54 mW/g; SAR(10 g) = 1.64 mW/g

Maximum value of SAR (measured) = 2.72 mW/g

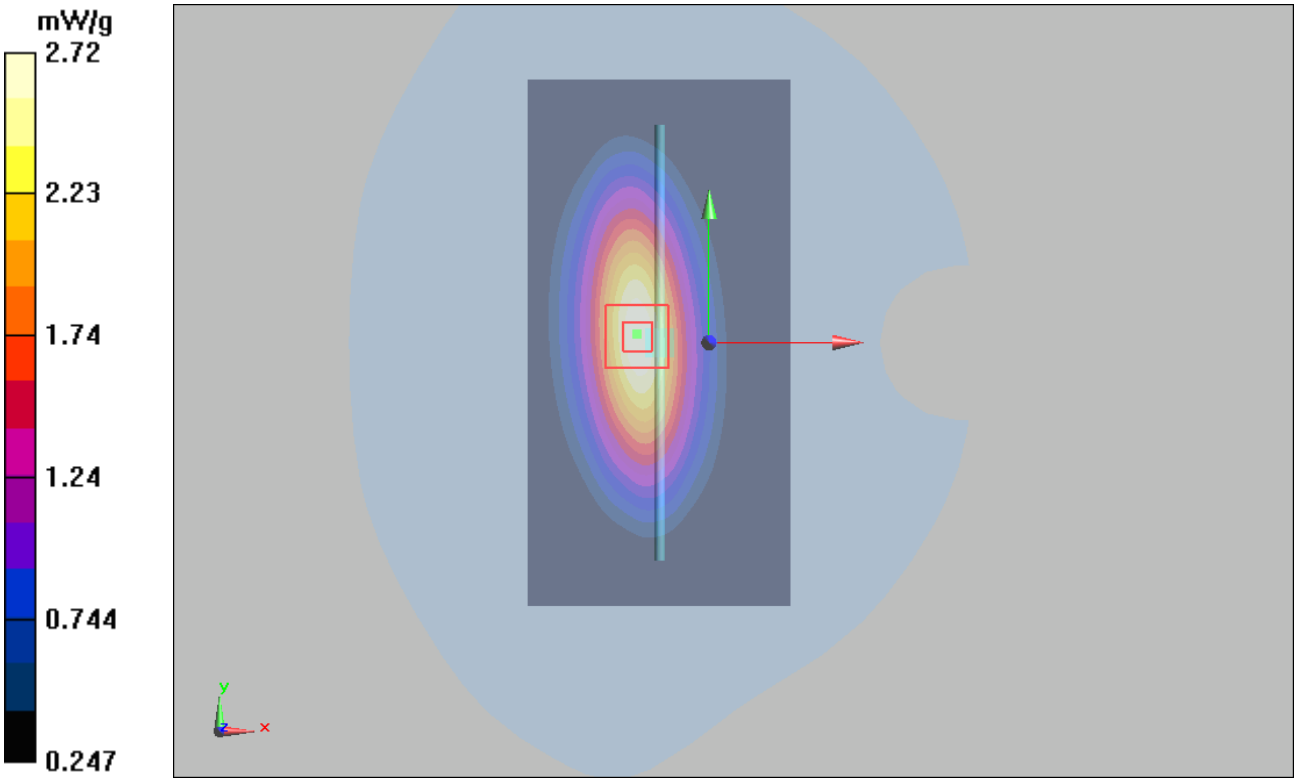


Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 2/23/2012 8:32:34 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.41 mho/m; ε_r = 40.82; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.8℃

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011;

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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) = 12.7 mW/g

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

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

Peak SAR (extrapolated) = 18.9 W/kg

SAR(1 g) = 10.33 mW/g; SAR(10 g) = 5.30 mW/g

Maximum value of SAR (measured) = 11.53 mW/g

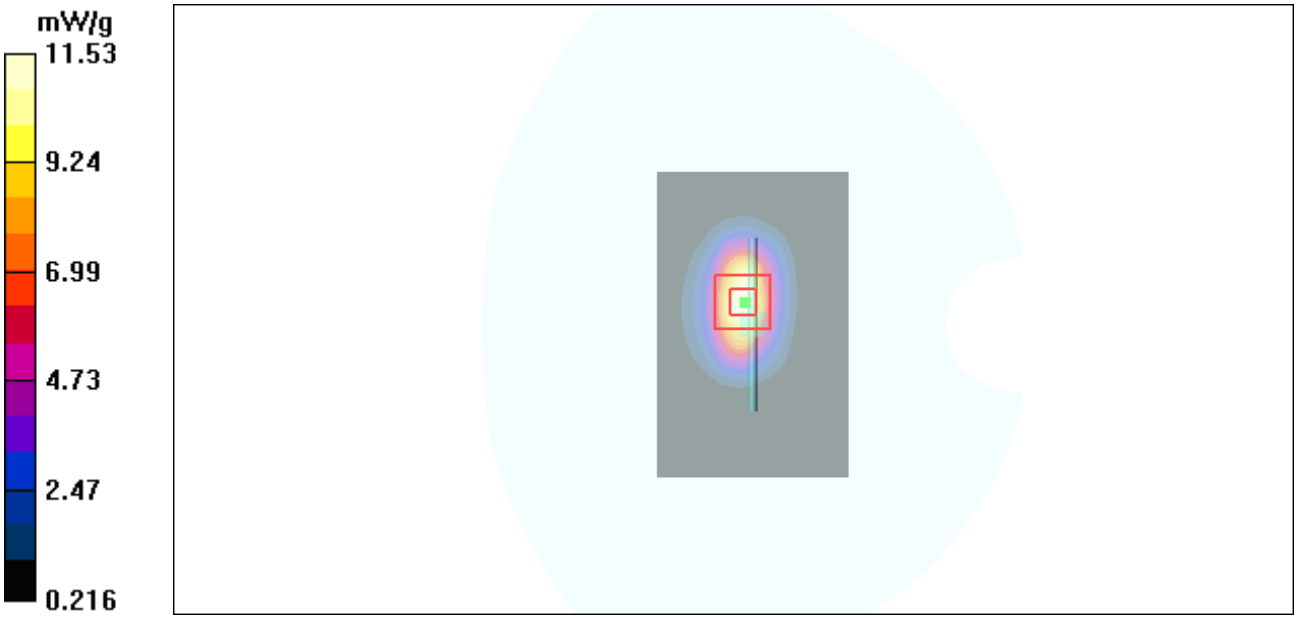


Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 3/16/2012 8:00:34 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.43 mho/m; ε_r = 40.80; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.9℃

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011;

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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) = 12.7 mW/g

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

Reference Value = 81.1 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 18.8 W/kg

SAR(1 g) = 10.29 mW/g; SAR(10 g) = 5.34 mW/g

Maximum value of SAR (measured) = 11.57 mW/g

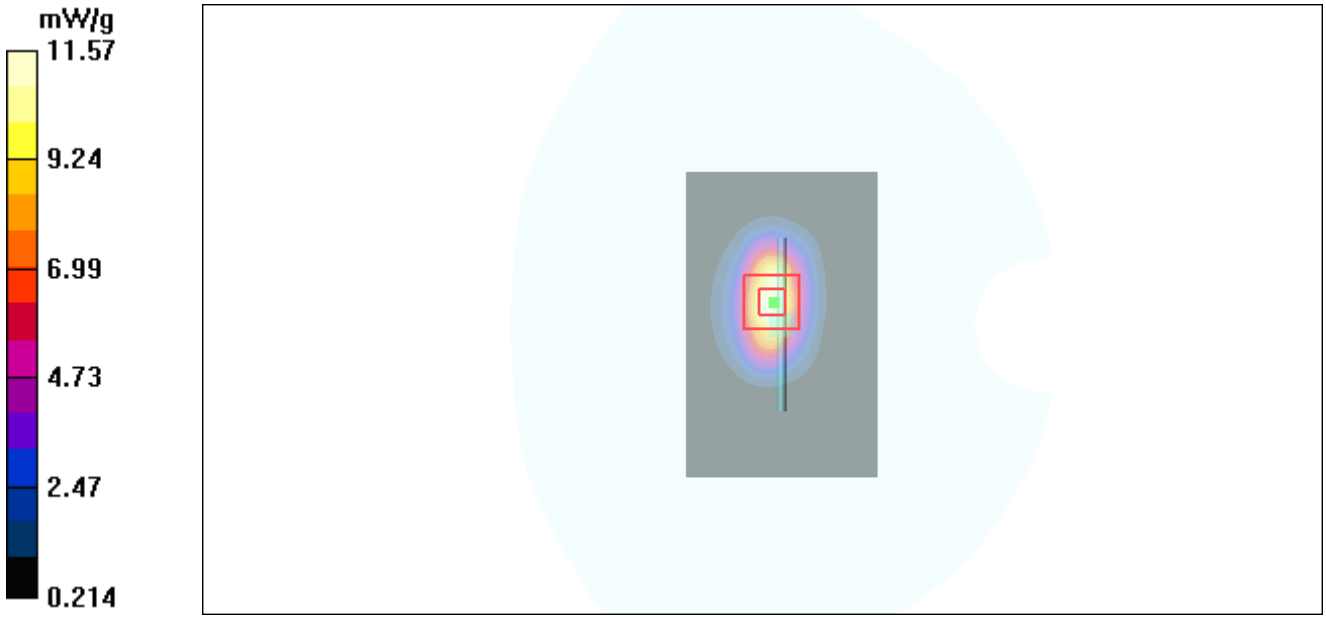


Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 2/25/2012 8:05:19 AM

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

Medium parameters used: f = 1900 MHz; σ = 1.48 mho/m; ε_r = 53.02; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.8℃

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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) = 11.9 mW/g

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

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

Peak SAR (extrapolated) = 17.6 W/kg

SAR(1 g) = 10.20 mW/g; SAR(10 g) = 5.36 mW/g

Maximum value of SAR (measured) = 11.05 mW/g

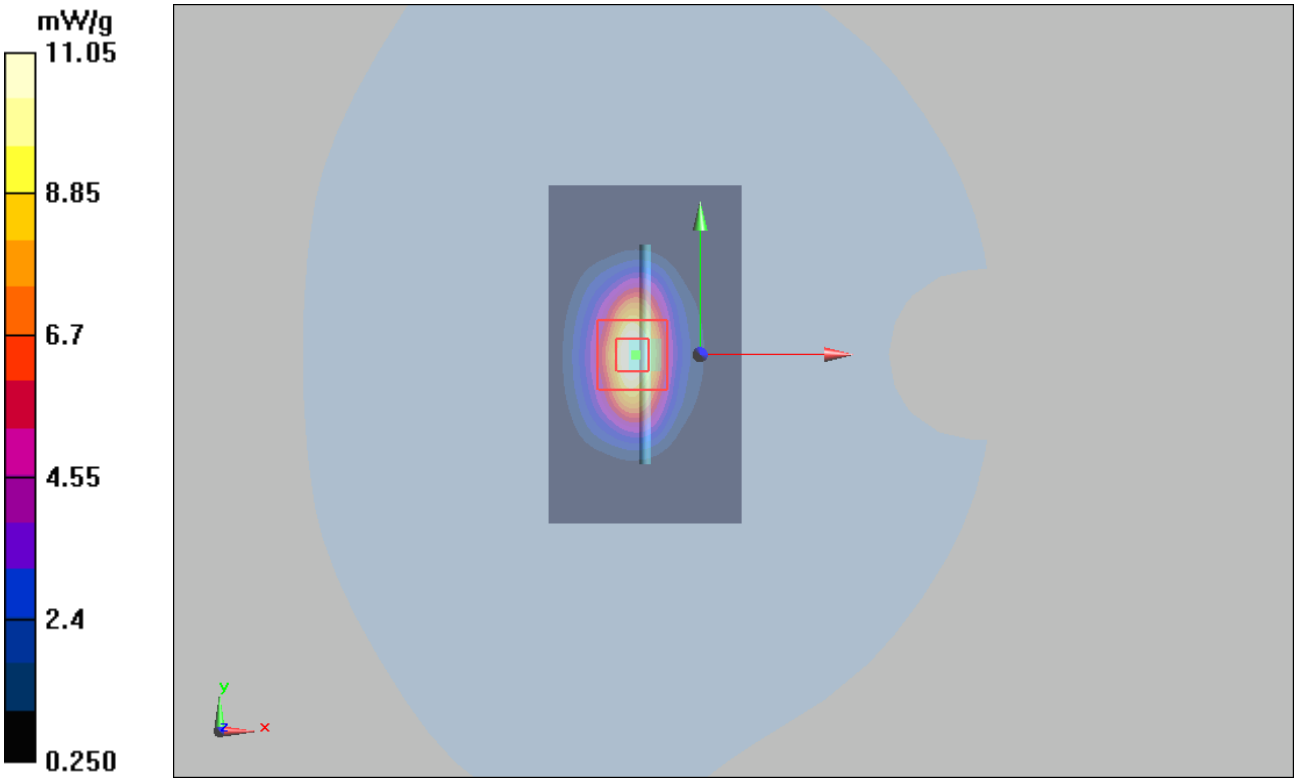


Figure 11 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 3/15/2012 2:32:19 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.54 mho/m; ε_r = 51.60; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liqiud Temperature: 21.9℃

DASY5 Configuration:

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

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

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) = 12.5 mW/g

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

Reference Value = 76.8 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 17.2 W/kg

SAR(1 g) = 10.31 mW/g; SAR(10 g) = 5.51 mW/g

Maximum value of SAR (measured) = 11.13 mW/g

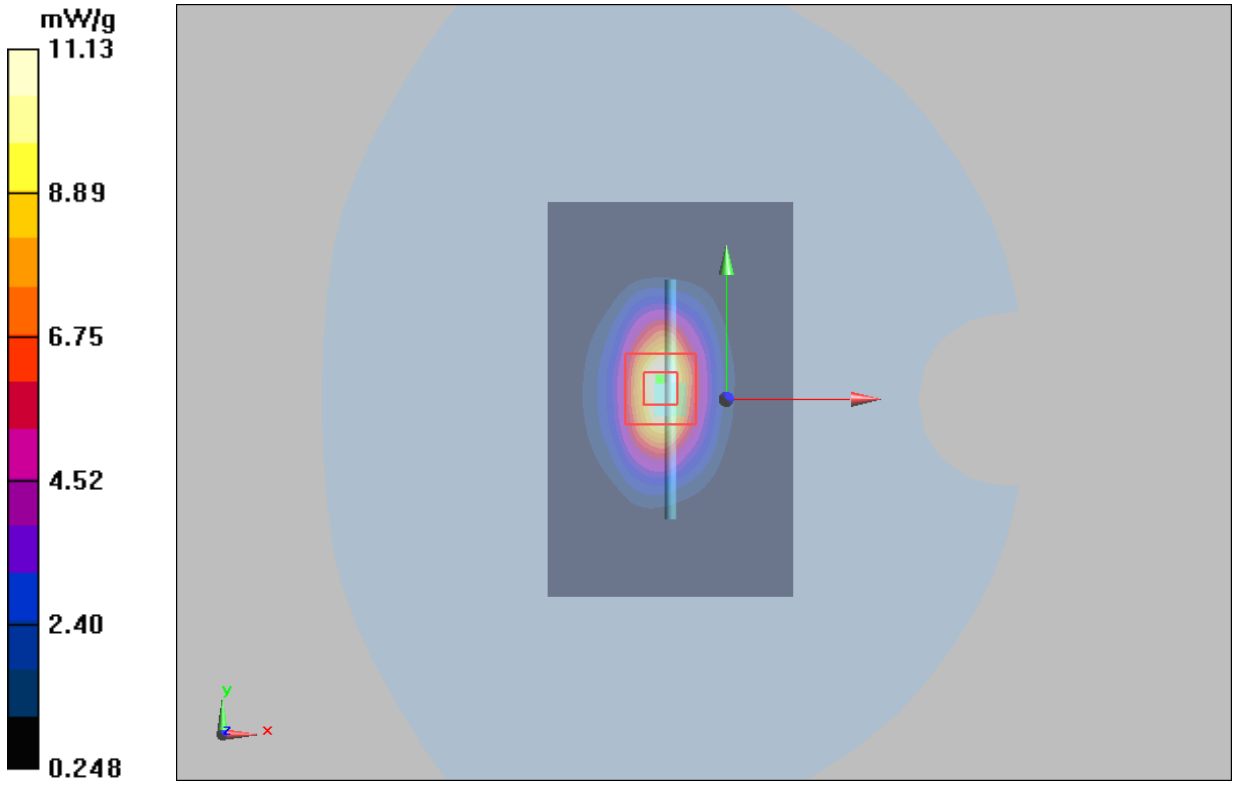


Figure 12 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date/Time: 2/26/2012 12:34:36 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.88 mho/m; ε_r = 38.32; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.8℃

Phantom section: Flat Section

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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

Maximum value of SAR (interpolated) = 21.4 mW/g

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

Reference Value = 67.0 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 14.06 mW/g; SAR(10 g) = 6.52 mW/g

Maximum value of SAR (measured) = 15.68 mW/g

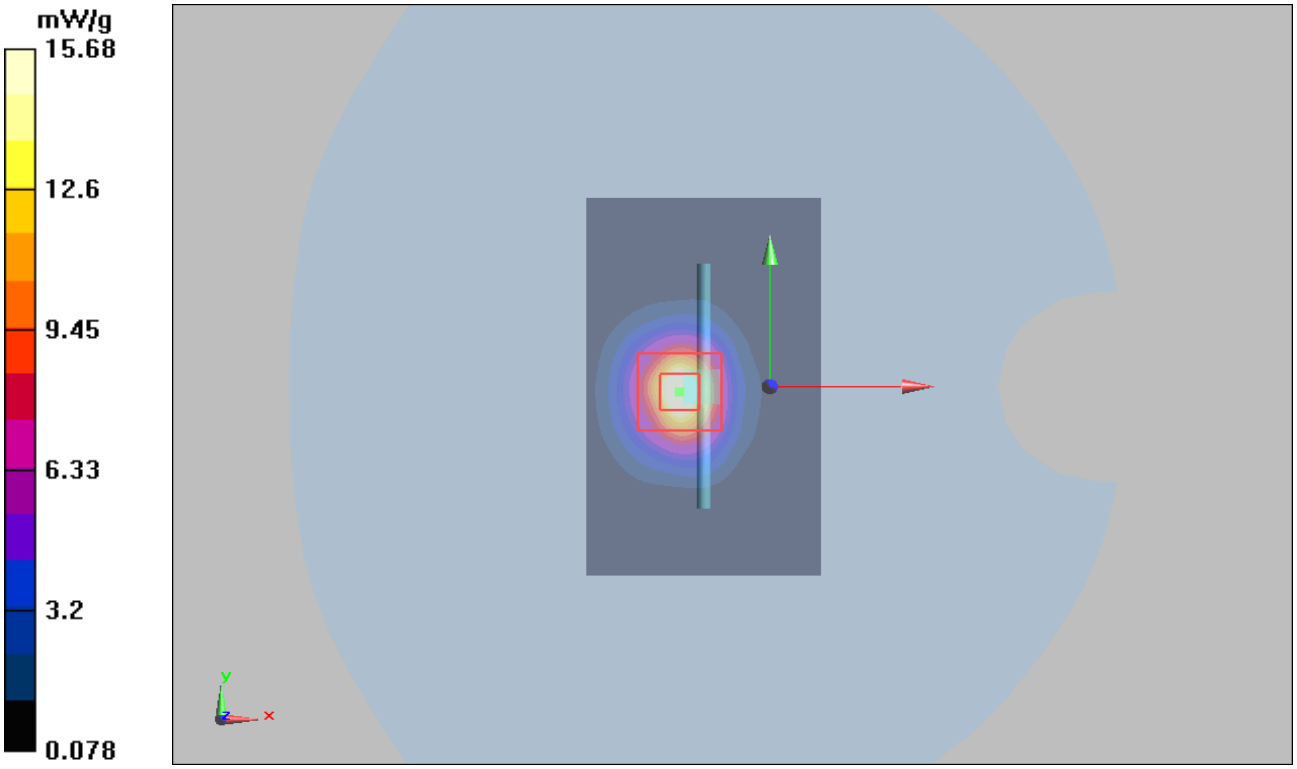


Figure 13 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date/Time: 2/29/2012 1:09:36 PM

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

Medium parameters used: f = 2450 MHz; σ = 1.90 mho/m; ε_r = 51.69; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.9℃

Phantom section: Flat Section

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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

Maximum value of SAR (interpolated) = 21.5 mW/g

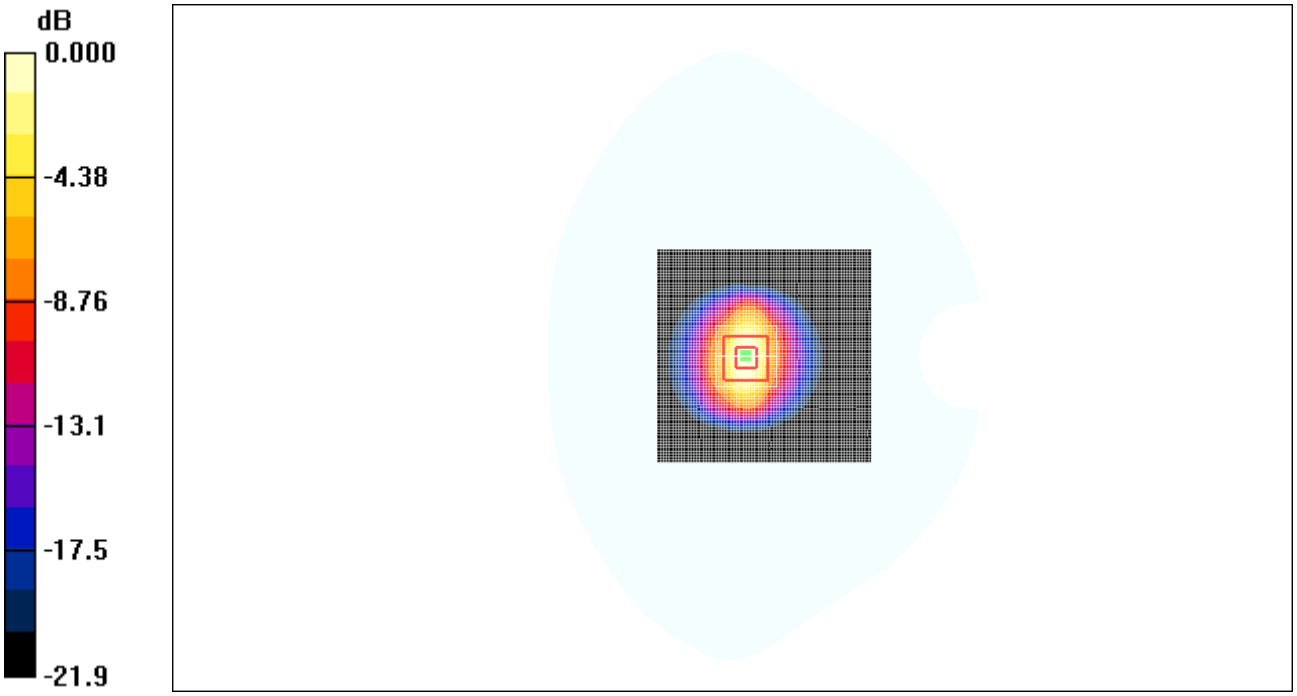
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 71.0 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 28.2 W/kg

SAR(1 g) = 14.01 mW/g; SAR(10 g) = 6.48 mW/g

Maximum value of SAR (measured) = 19.82 mW/g



0 dB = 19.82mW/g

Figure 14 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 5:22:14 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.412 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.64 V/m; Power Drift = -0.077 dB
Peak SAR (extrapolated) = 0.474 W/kg
SAR(1 g) = 0.402 mW/g; SAR(10 g) = 0.311 mW/g
Maximum value of SAR (measured) = 0.422 mW/g

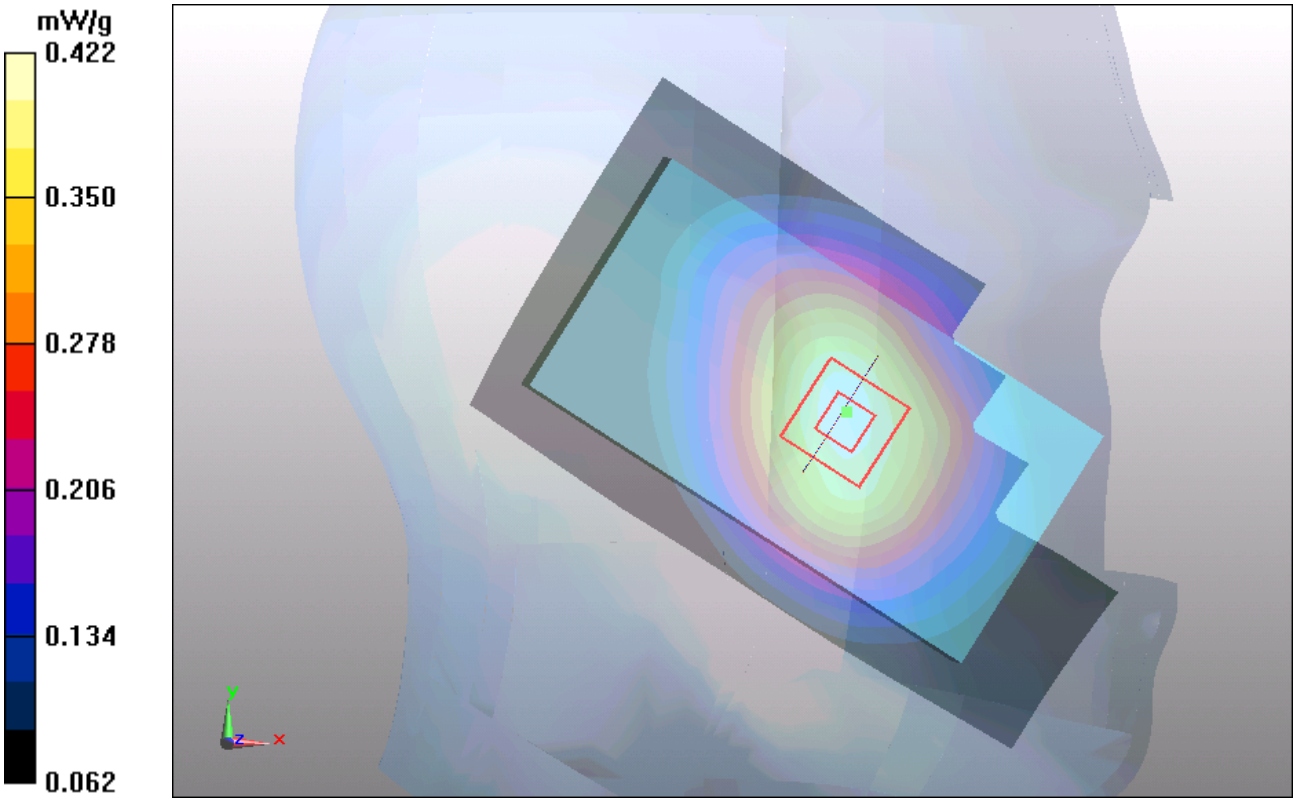


Figure 15 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Tilt Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 5:38:52 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.326 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 0.372 W/kg
SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.239 mW/g
Maximum value of SAR (measured) = 0.324 mW/g

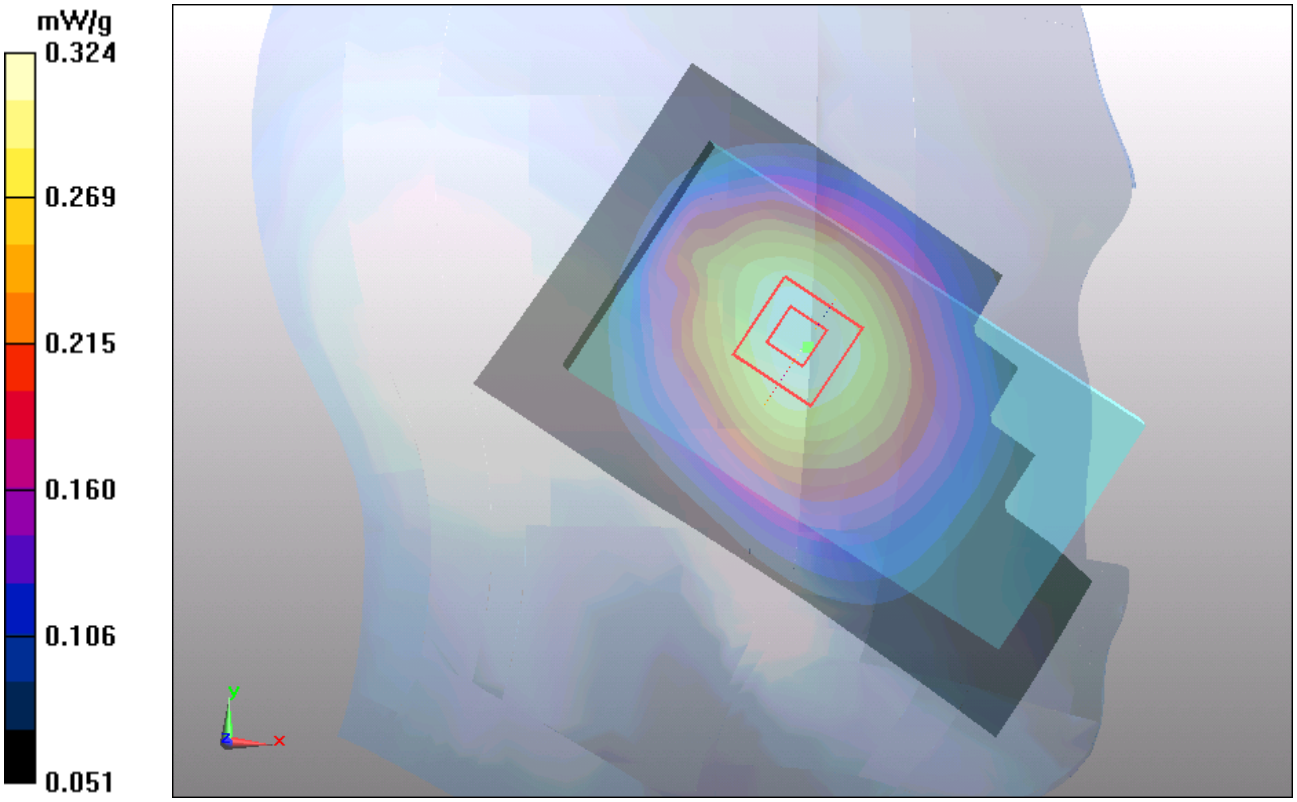


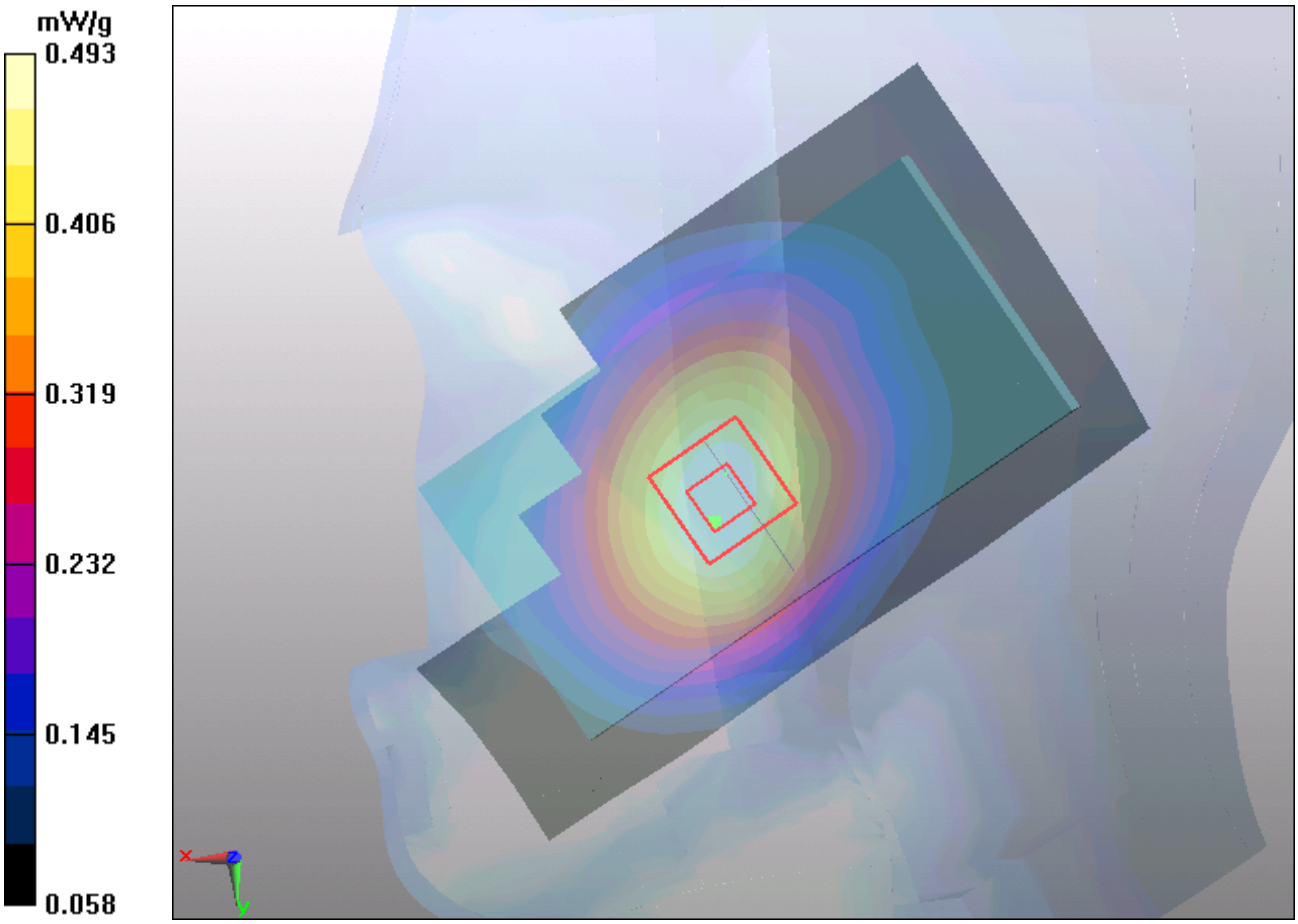
Figure 16 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 4:45:18 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.502 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.27 V/m; Power Drift = -0.085 dB
Peak SAR (extrapolated) = 0.587 W/kg
SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.366 mW/g
Maximum value of SAR (measured) = 0.493 mW/g



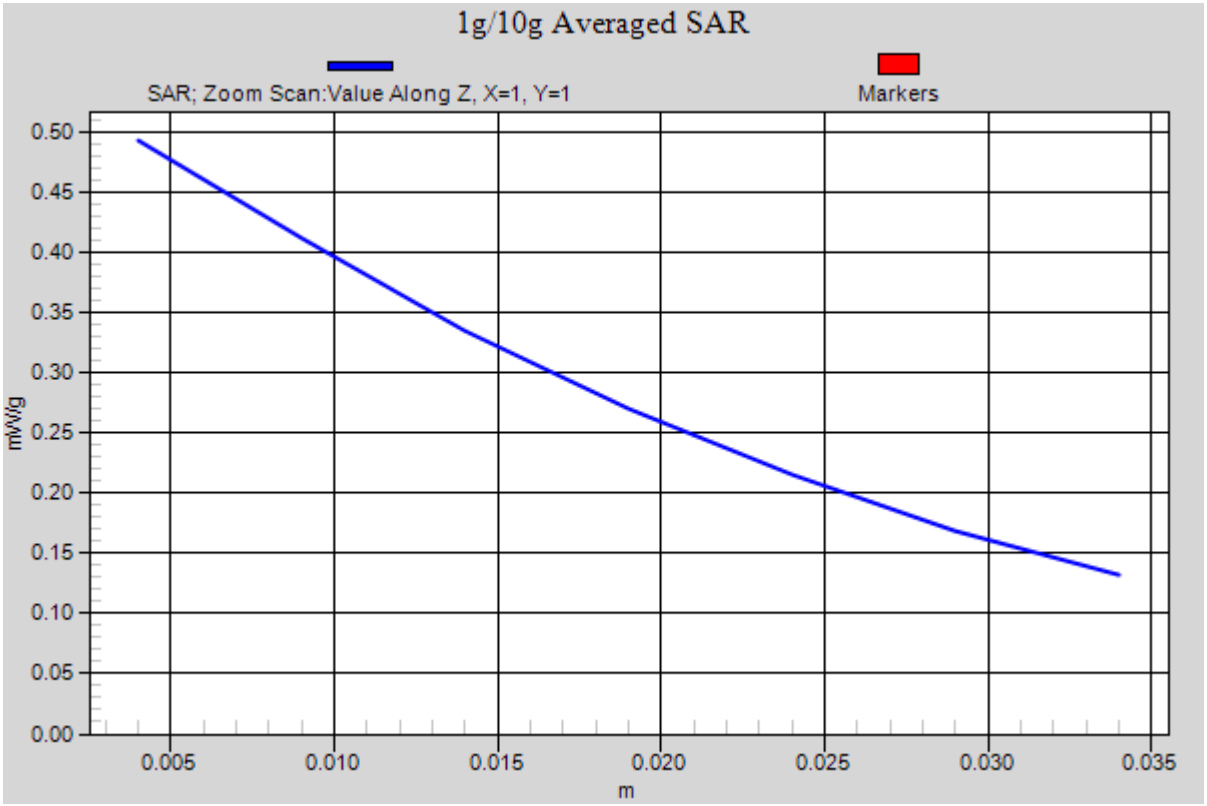


Figure 17 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 5:02:06 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.320 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 0.360 W/kg
SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.233 mW/g
Maximum value of SAR (measured) = 0.314 mW/g

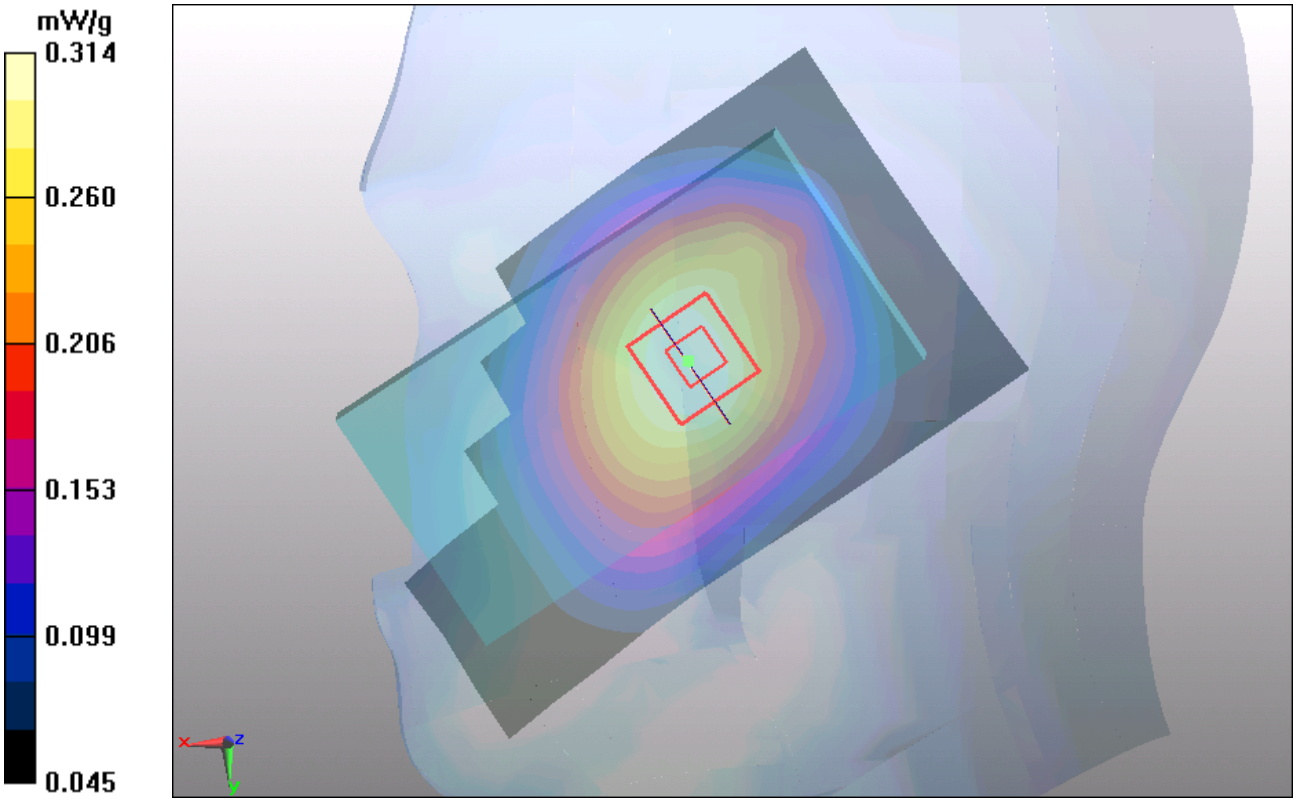


Figure 18 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle (SN: GAGB916XC37L1150)

Date/Time: 2/23/2012 6:01:37 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.494 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.97 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.577 W/kg
SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.360 mW/g
Maximum value of SAR (measured) = 0.484 mW/g

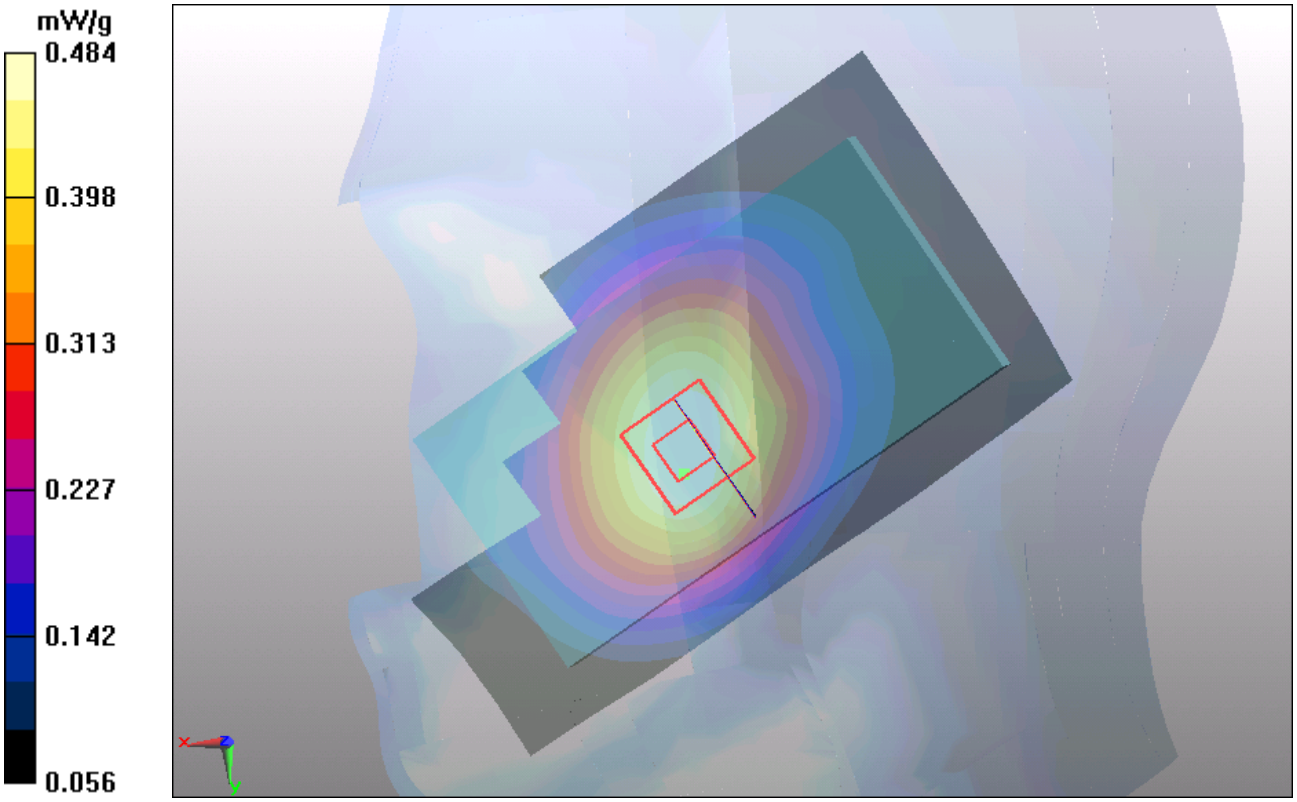


Figure 19 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Cheek Middle (SN: BAABB27F97400267)

Date/Time: 2/23/2012 6:21:04 PM
Communication System: GSM; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.904 mho/m; ε_r = 43.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.22, 9.22, 9.22) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.487 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.39 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 0.550 W/kg
SAR(1 g) = 0.463 mW/g; SAR(10 g) = 0.358 mW/g
Maximum value of SAR (measured) = 0.475 mW/g

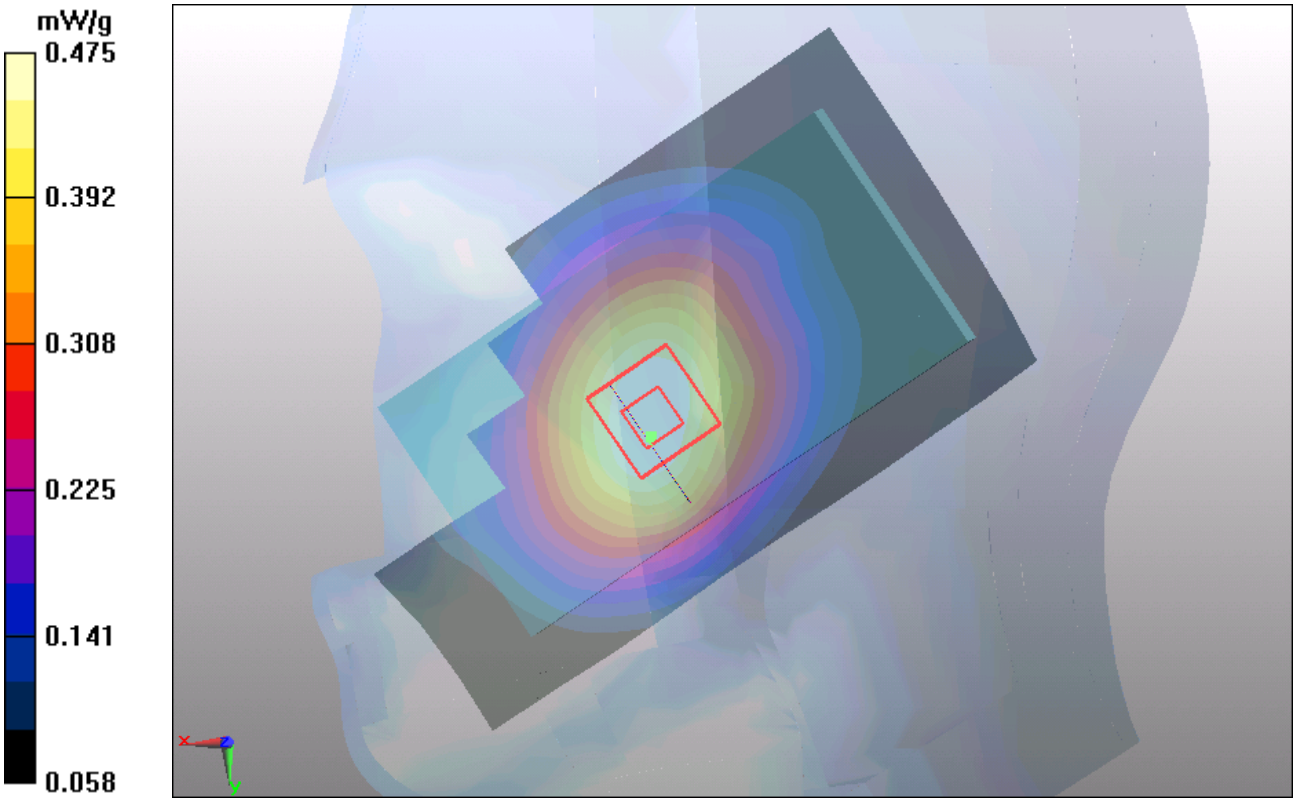


Figure 20 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 GPRS (1Txslot) Back Side High (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 5:39:34 PM
Communication System: GPRS 1TX; Frequency: 846.8 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 847 MHz; σ = 1 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.886 mW/g

Back Side High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.7 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.748 mW/g; SAR(10 g) = 0.522 mW/g
Maximum value of SAR (measured) = 0.839 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.7 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.851 mW/g; SAR(10 g) = 0.620 mW/g
Maximum value of SAR (measured) = 0.895 mW/g

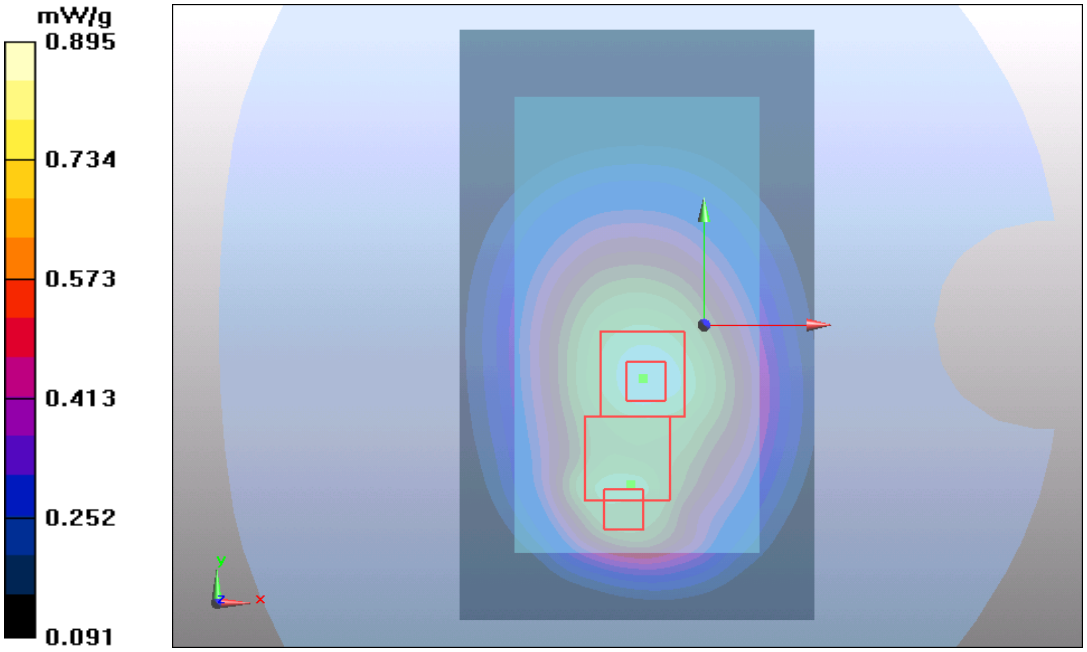


Figure 21 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 251

GSM 850 GPRS (1Txslot) Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 3:29:08 PM,
Communication System: GPRS 1TX; Frequency: 836.6 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.07 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.9 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 1.35 W/kg
SAR(1 g) = 0.894 mW/g; SAR(10 g) = 0.631 mW/g
Maximum value of SAR (measured) = 1.01 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.9 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.748 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

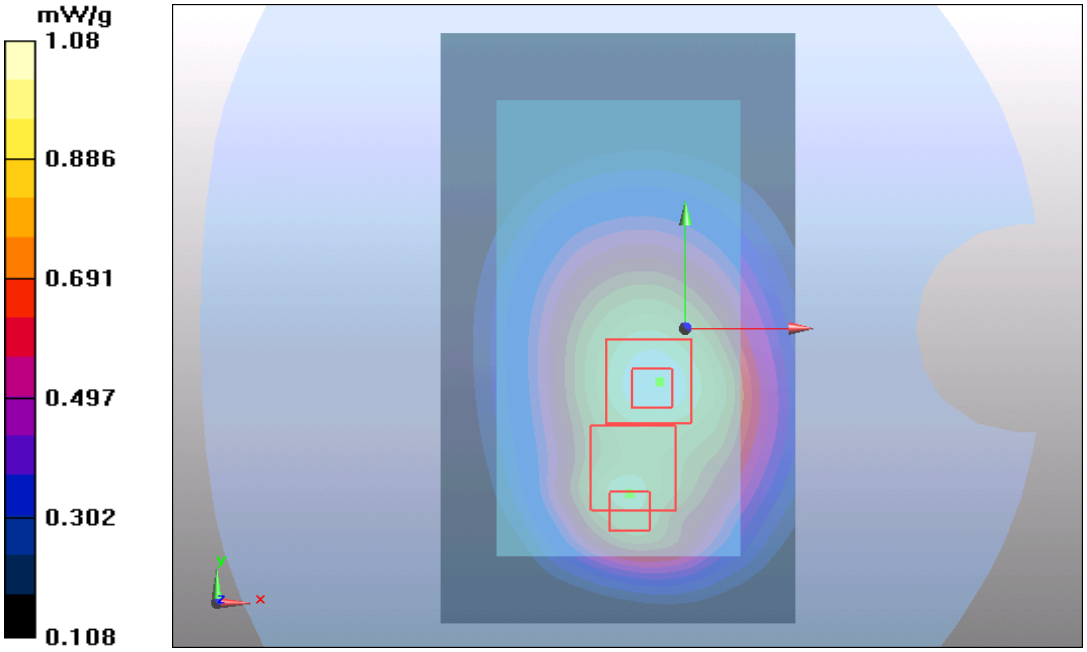


Figure 22 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (1Txslot) Back Side Low (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 5:15:12 PM
Communication System: GPRS 1TX; Frequency: 824.2 MHz;Duty Cycle: 1:8.30042
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.995 mW/g

Back Side Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.7 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 1.26 W/kg
SAR(1 g) = 0.842 mW/g; SAR(10 g) = 0.600 mW/g
Maximum value of SAR (measured) = 0.964 mW/g

Back Side Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.7 V/m; Power Drift = -0.052 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.949 mW/g; SAR(10 g) = 0.695 mW/g
Maximum value of SAR (measured) = 1.000 mW/g

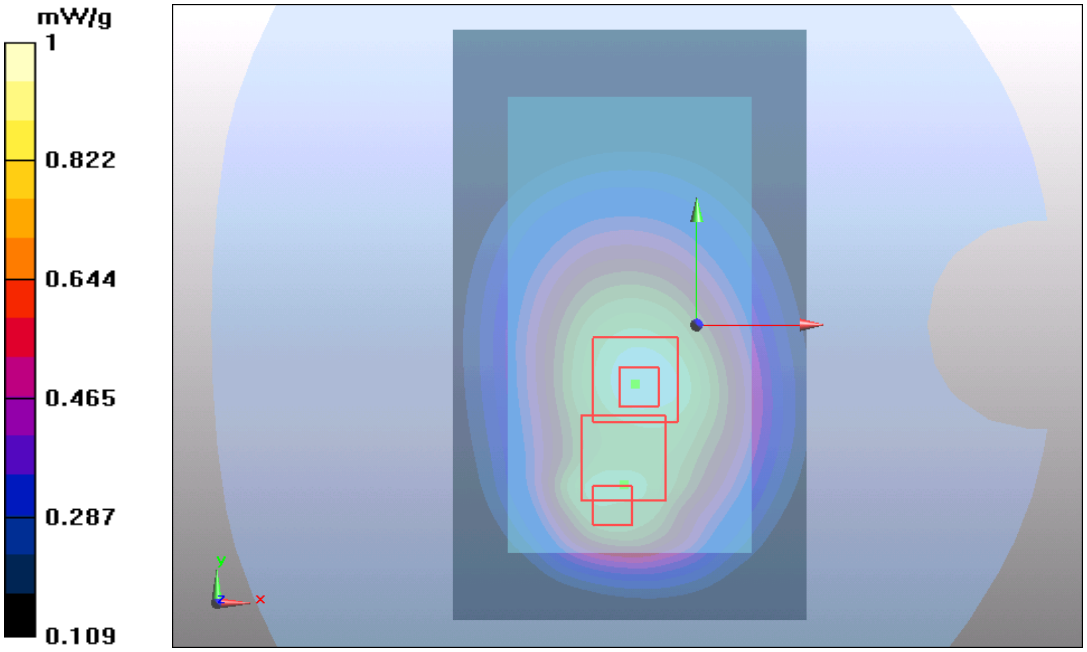


Figure 23 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 128

GSM 850 GPRS (2Txslots) Back Side High (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 4:19:48 PM
Communication System: GPRS 2TX ; Frequency: 848.8 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side High/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.973 mW/g

Back Side High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.3 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.801 mW/g; SAR(10 g) = 0.563 mW/g
Maximum value of SAR (measured) = 0.903 mW/g

Back Side High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.3 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.920 mW/g; SAR(10 g) = 0.673 mW/g
Maximum value of SAR (measured) = 0.971 mW/g

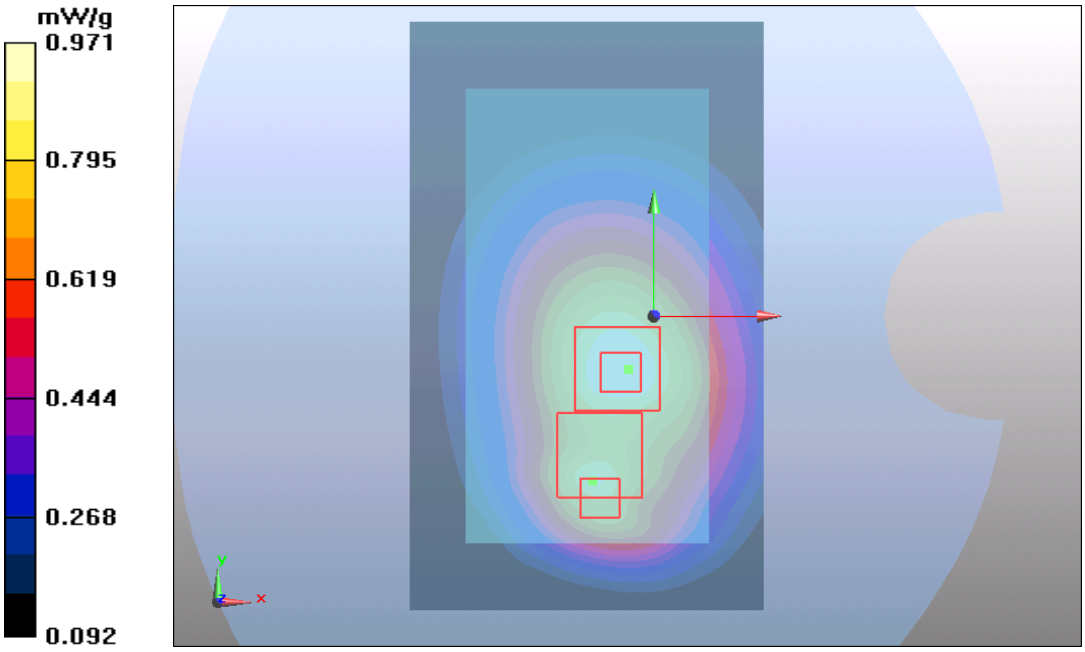


Figure 24 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 251

GSM 850 GPRS (2Txslots) Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 3:55:18 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.17 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 32.3 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.948 mW/g; SAR(10 g) = 0.670 mW/g
Maximum value of SAR (measured) = 1.06 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 32.3 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.798 mW/g
Maximum value of SAR (measured) = 1.15 mW/g

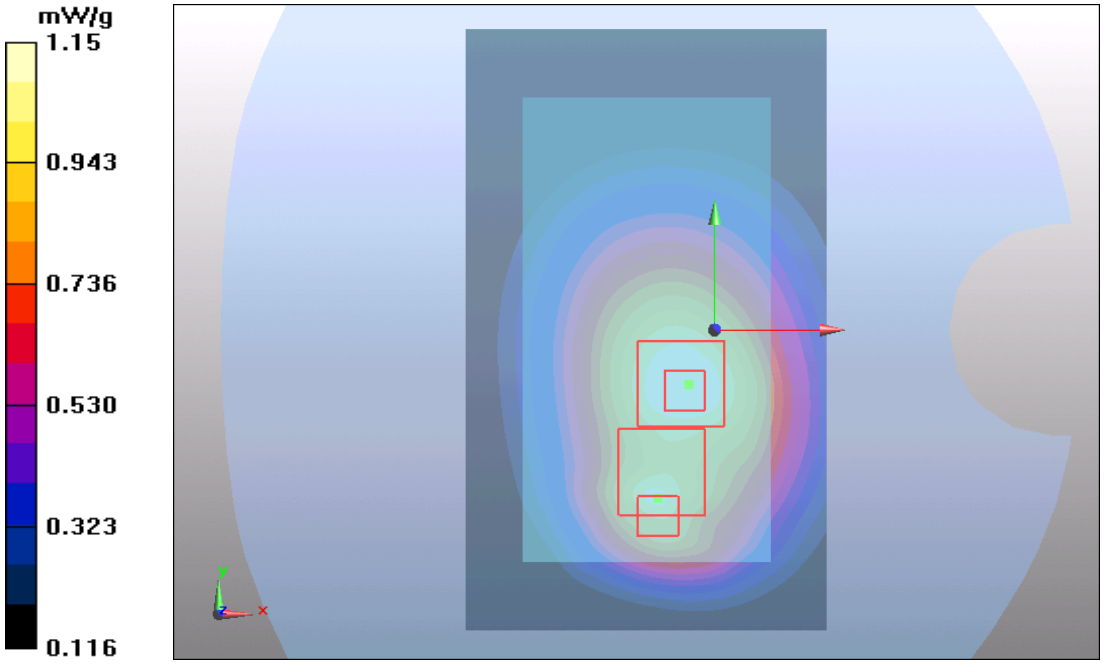


Figure 25 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Back Side Low (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 4:44:27 PM
Communication System: GPRS 2TX ; Frequency: 824.2 MHz;Duty Cycle: 1:4.14954
Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Low/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.08 mW/g

Back Side Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.9 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 1.37 W/kg
SAR(1 g) = 0.905 mW/g; SAR(10 g) = 0.642 mW/g
Maximum value of SAR (measured) = 1.02 mW/g

Back Side Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 30.9 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 1.3 W/kg
SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.747 mW/g
Maximum value of SAR (measured) = 1.08 mW/g

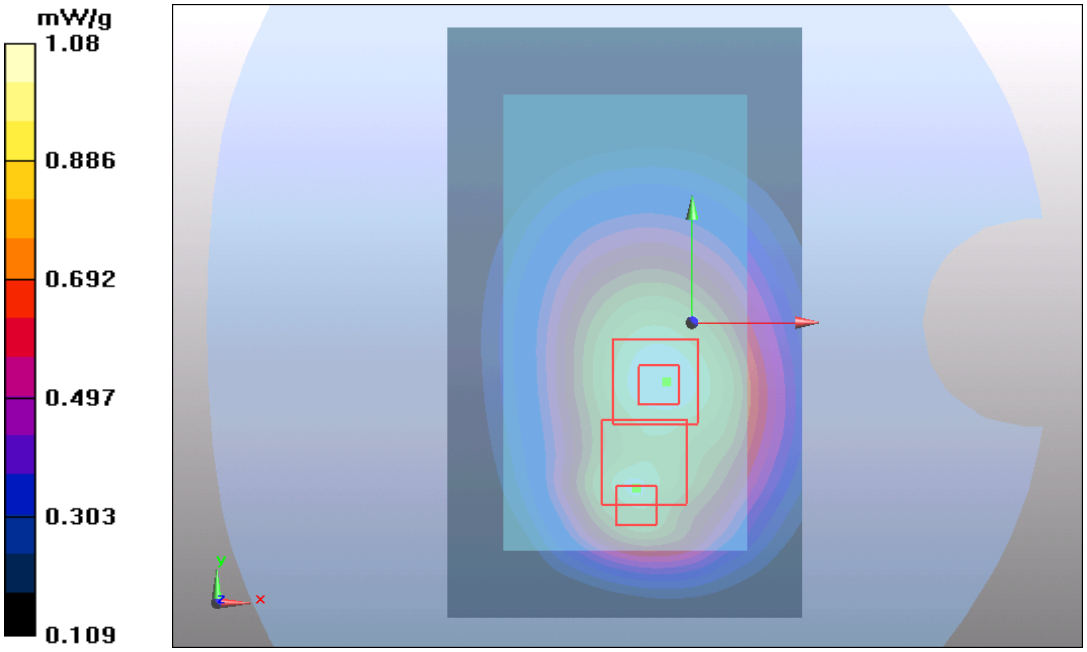


Figure 26 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 128

GSM 850 GPRS (2Txslots) Front Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 6:18:28 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Front Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.696 mW/g

Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.178 dB
Peak SAR (extrapolated) = 0.814 W/kg
SAR(1 g) = 0.655 mW/g; SAR(10 g) = 0.503 mW/g
Maximum value of SAR (measured) = 0.682 mW/g

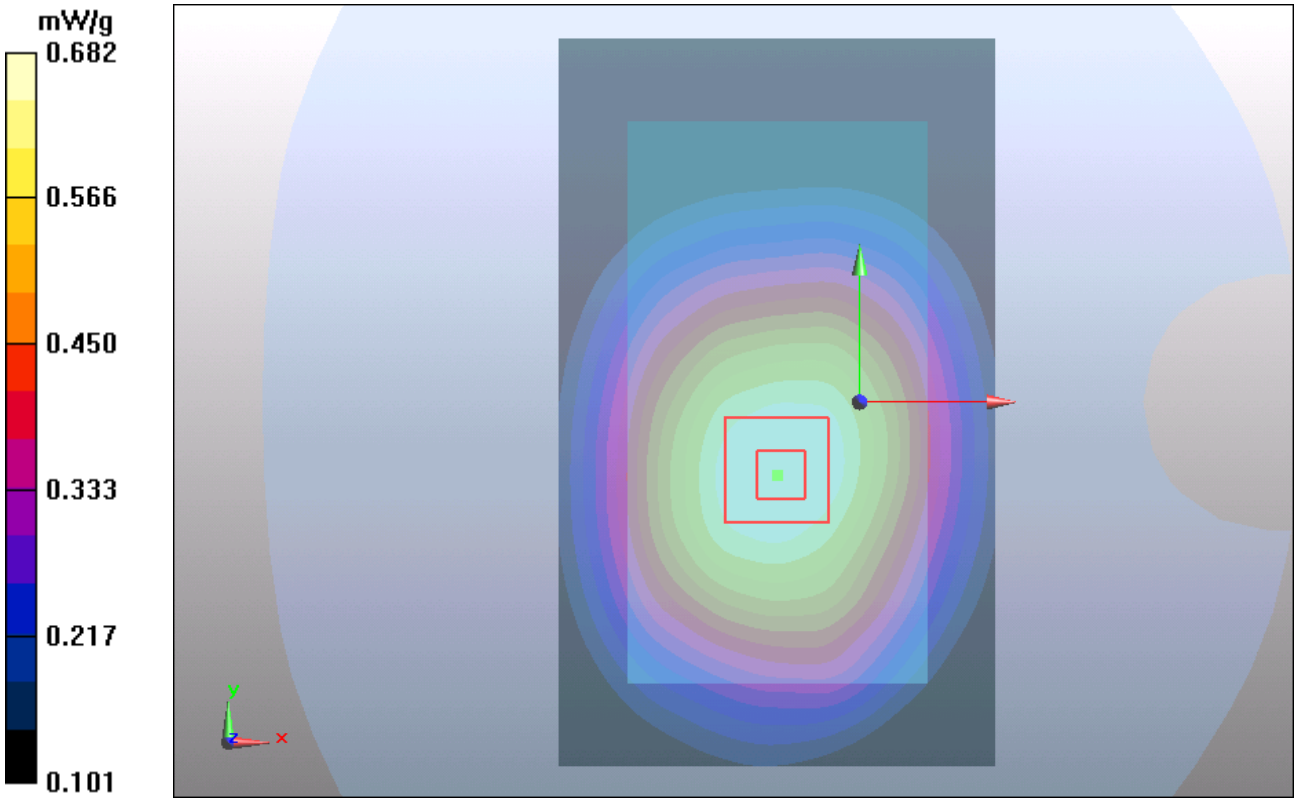


Figure 27 Body, Front Side, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Left Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 6:44:46 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Left Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.485 mW/g

Left Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.3 V/m; Power Drift = -0.032 dB
Peak SAR (extrapolated) = 0.652 W/kg
SAR(1 g) = 0.455 mW/g; SAR(10 g) = 0.312 mW/g
Maximum value of SAR (measured) = 0.486 mW/g

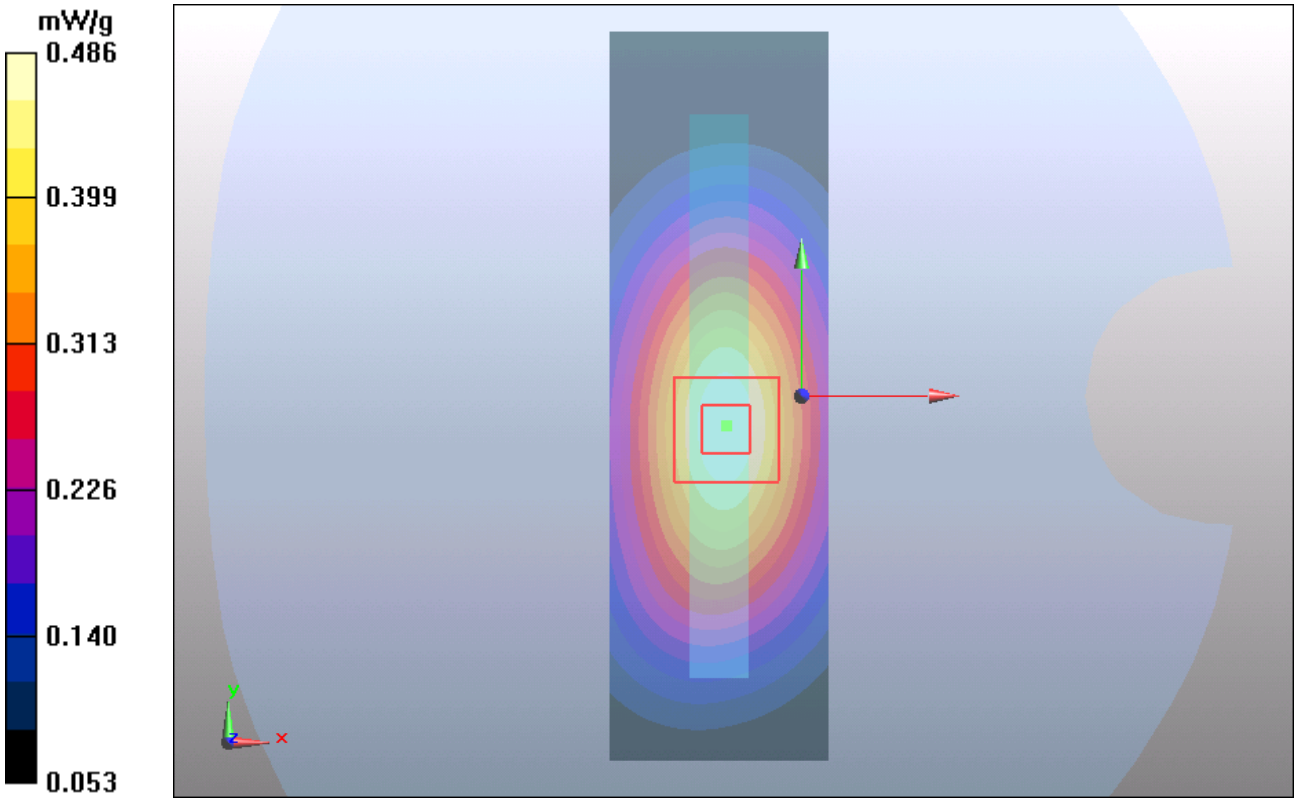


Figure 28 Body, Left Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Right Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 7:02:09 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Right Edge Middle/Area Scan (31x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.625 mW/g

Right Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.4 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 0.800 W/kg
SAR(1 g) = 0.590 mW/g; SAR(10 g) = 0.412 mW/g
Maximum value of SAR (measured) = 0.630 mW/g

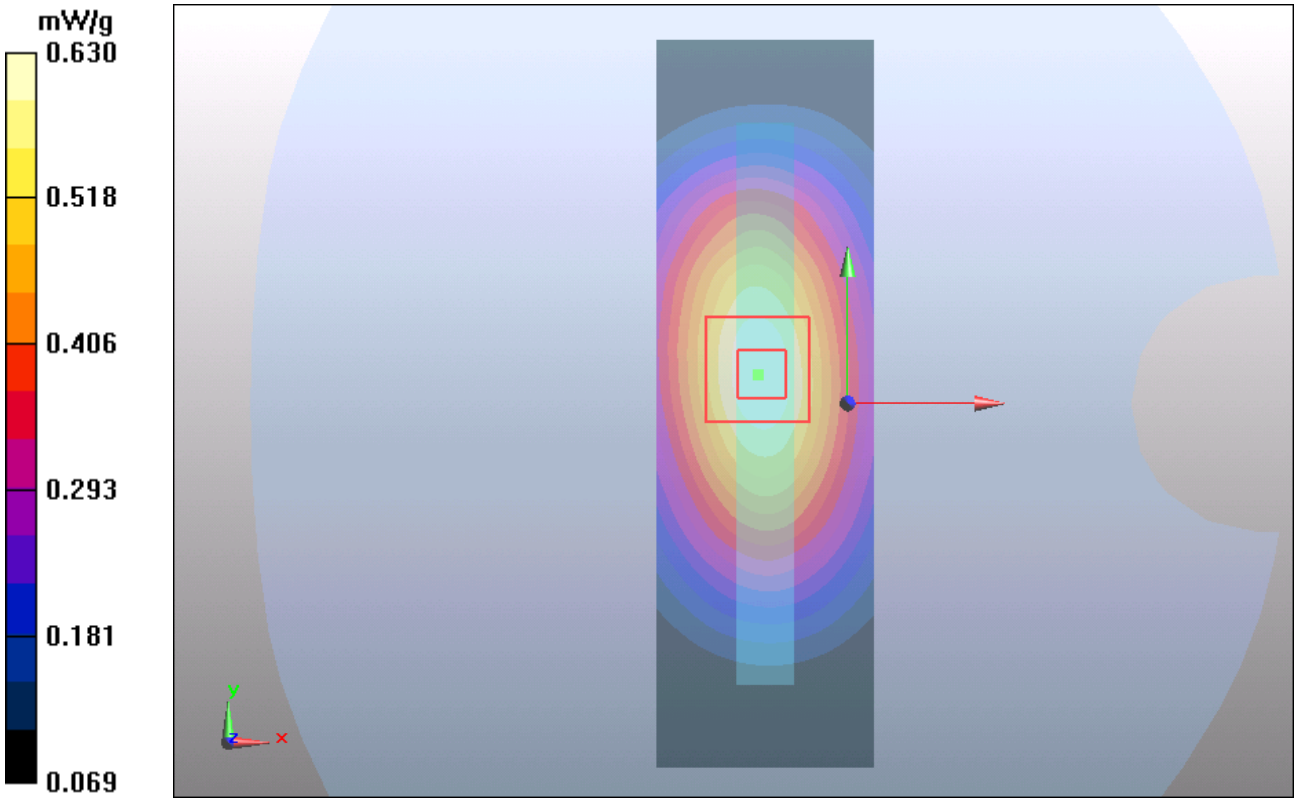


Figure 29 Body, Right Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Bottom Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 7:46:01 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge Middle/Area Scan (51x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.148 mW/g

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12 V/m; Power Drift = 0.112 dB
Peak SAR (extrapolated) = 0.272 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.144 mW/g

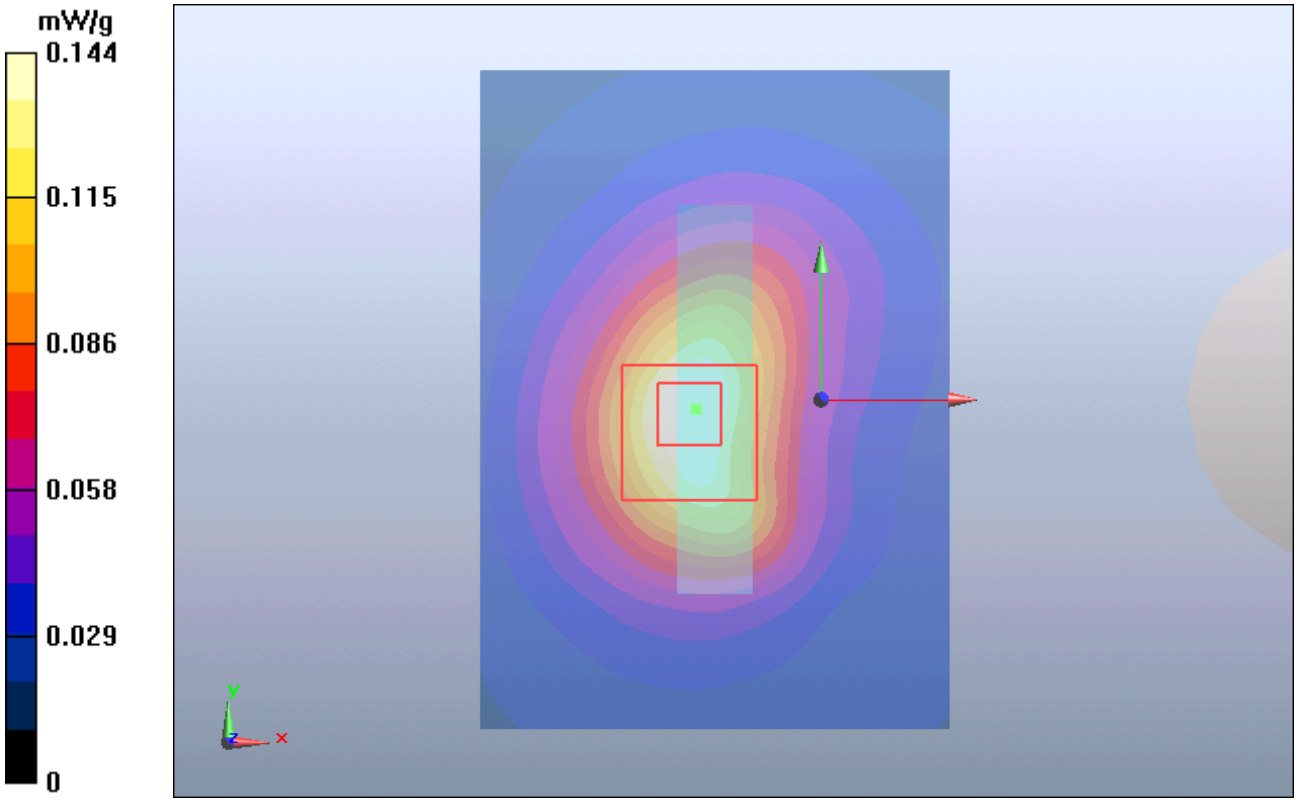


Figure 30 Body, Bottom Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 with Earphone Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 8:42:03 PM

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

Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY5 Configuration:

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

Electronics: DAE4 Sn871; Calibrated: 11/22/2011

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

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

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

Maximum value of SAR (interpolated) = 0.643 mW/g

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

Reference Value = 25.5 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.737 W/kg

SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.437 mW/g

Maximum value of SAR (measured) = 0.614 mW/g

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

Reference Value = 25.5 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.920 W/kg

SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.362 mW/g

Maximum value of SAR (measured) = 0.634 mW/g

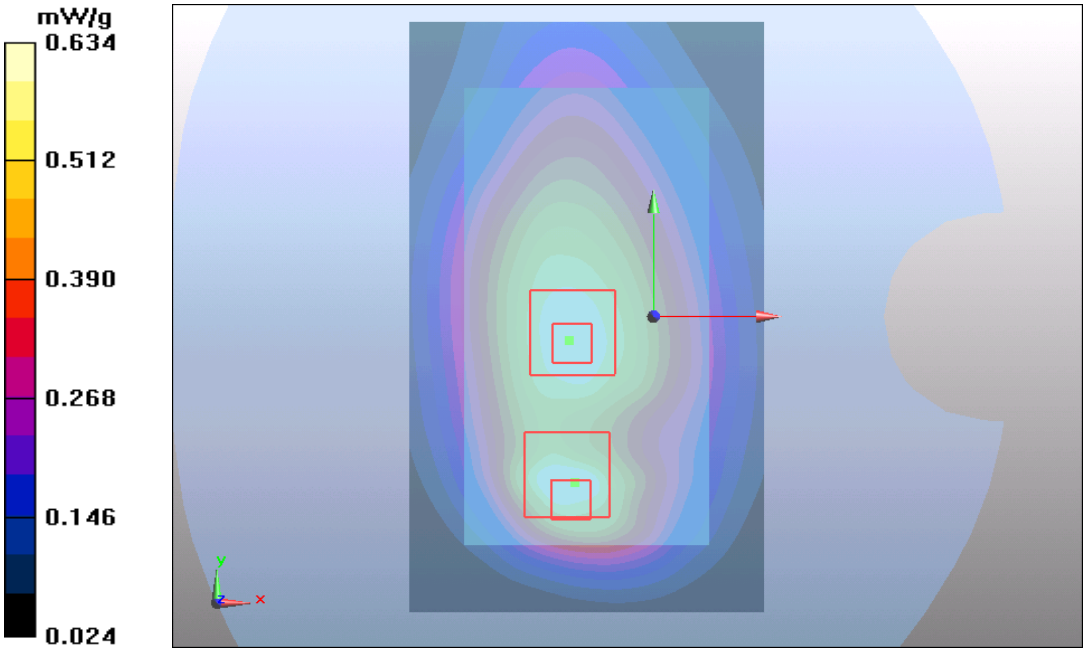


Figure 31 Body with Earphone, Back Side, GSM 850 Channel 190

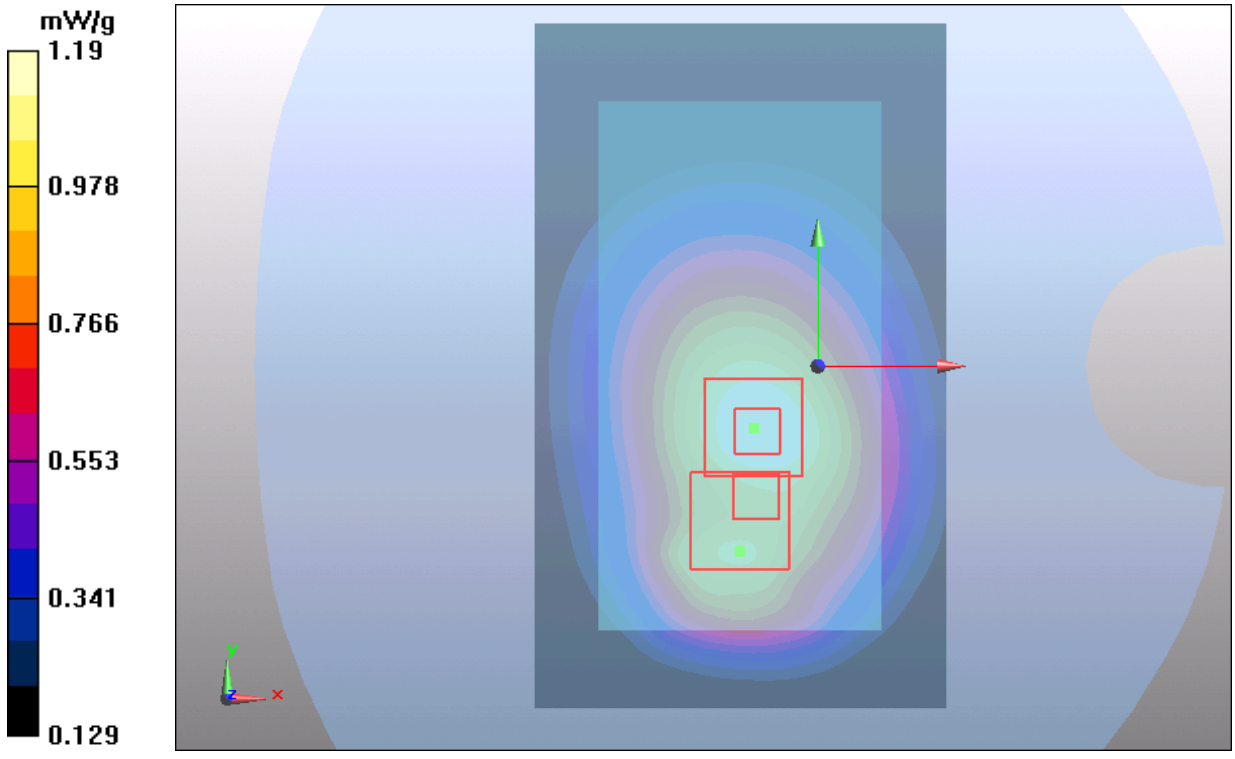
GSM 850 EGPRS (2Txslots) Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/24/2012 9:17:02 PM
Communication System: EGPRS 2TX; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.21 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 0.969 mW/g; SAR(10 g) = 0.689 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 1.45 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.825 mW/g
Maximum value of SAR (measured) = 1.19 mW/g



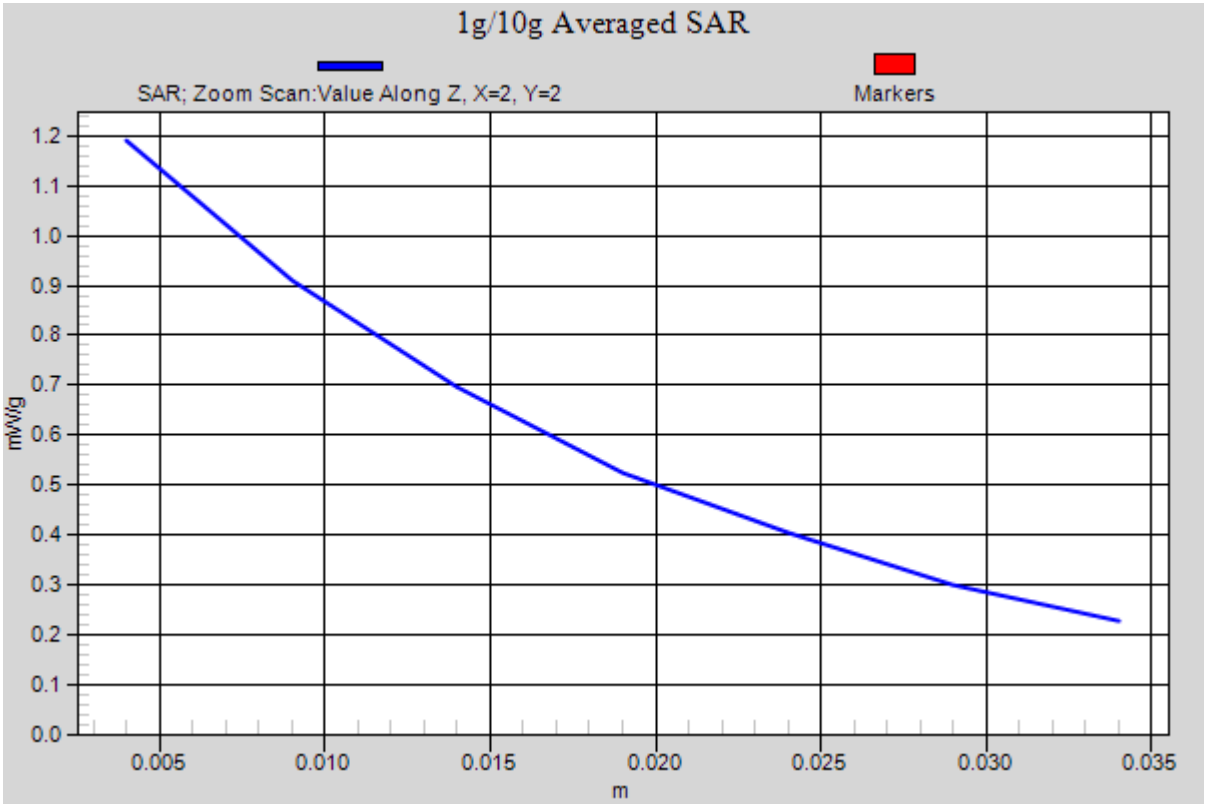


Figure 32 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 190

GSM 850 EGPRS (2Txslots) Back Side Middle (SN: GAGB916XC37L1150)

Date/Time: 2/24/2012 9:45:09 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.18 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.3 V/m; Power Drift = -0.086 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.679 mW/g
Maximum value of SAR (measured) = 1.12 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.3 V/m; Power Drift = -0.086 dB
Peak SAR (extrapolated) = 1.41 W/kg
SAR(1 g) = 1.11 mW/g; SAR(10 g) = 0.813 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

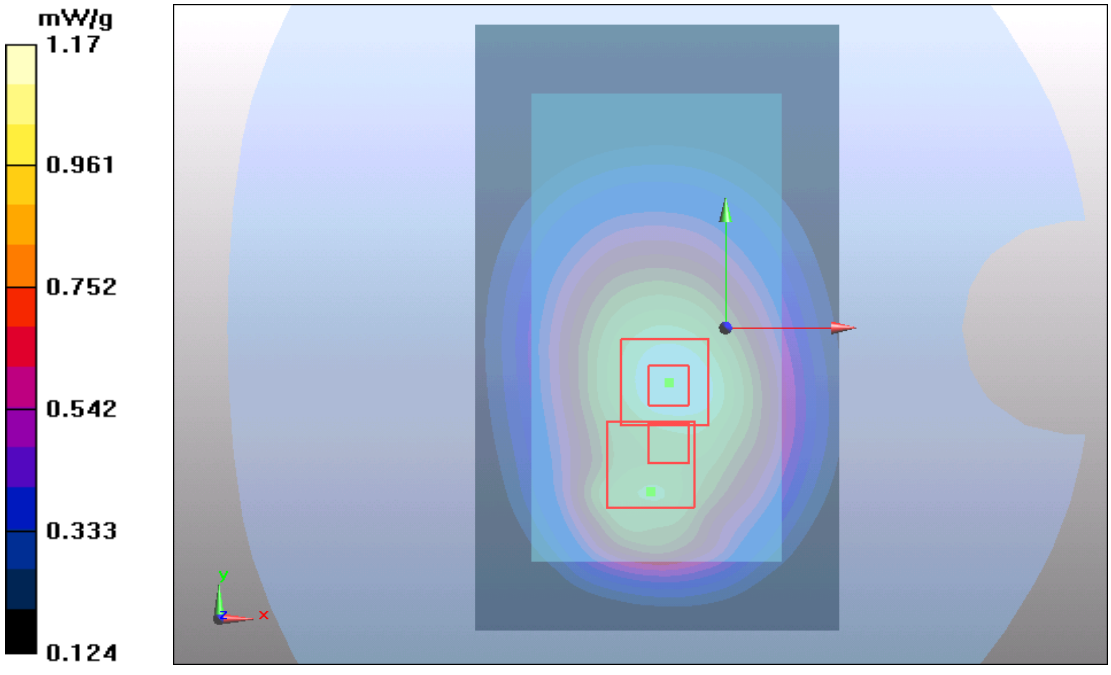


Figure 33 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 190

GSM 850 EGPRS (2Txslots) Back Side Middle (SN: BAABB27F97400267)

Date/Time: 2/24/2012 10:12:17 PM
Communication System: GPRS 2TX ; Frequency: 836.6 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 837 MHz; σ = 0.988 mho/m; ε_r = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(9.38, 9.38, 9.38) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM1; Type: SAM; Serial: TP-1534
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 1.2 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = -0.111 dB
Peak SAR (extrapolated) = 1.44 W/kg
SAR(1 g) = 0.955 mW/g; SAR(10 g) = 0.682 mW/g
Maximum value of SAR (measured) = 1.09 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 33.9 V/m; Power Drift = -0.111 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 1.12 mW/g; SAR(10 g) = 0.821 mW/g
Maximum value of SAR (measured) = 1.19 mW/g

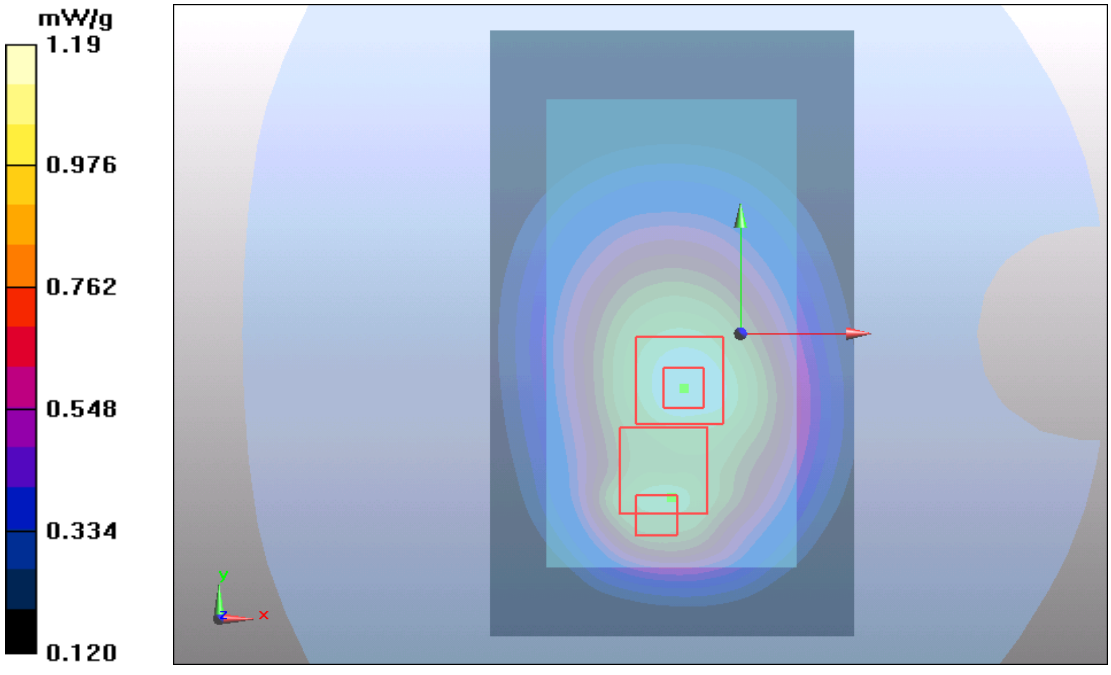


Figure 34 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 190

GSM 1900 Left Cheek Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 11:37:02 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.562 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.87 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 0.895 W/kg
SAR(1 g) = 0.534 mW/g; SAR(10 g) = 0.318 mW/g
Maximum value of SAR (measured) = 0.579 mW/g

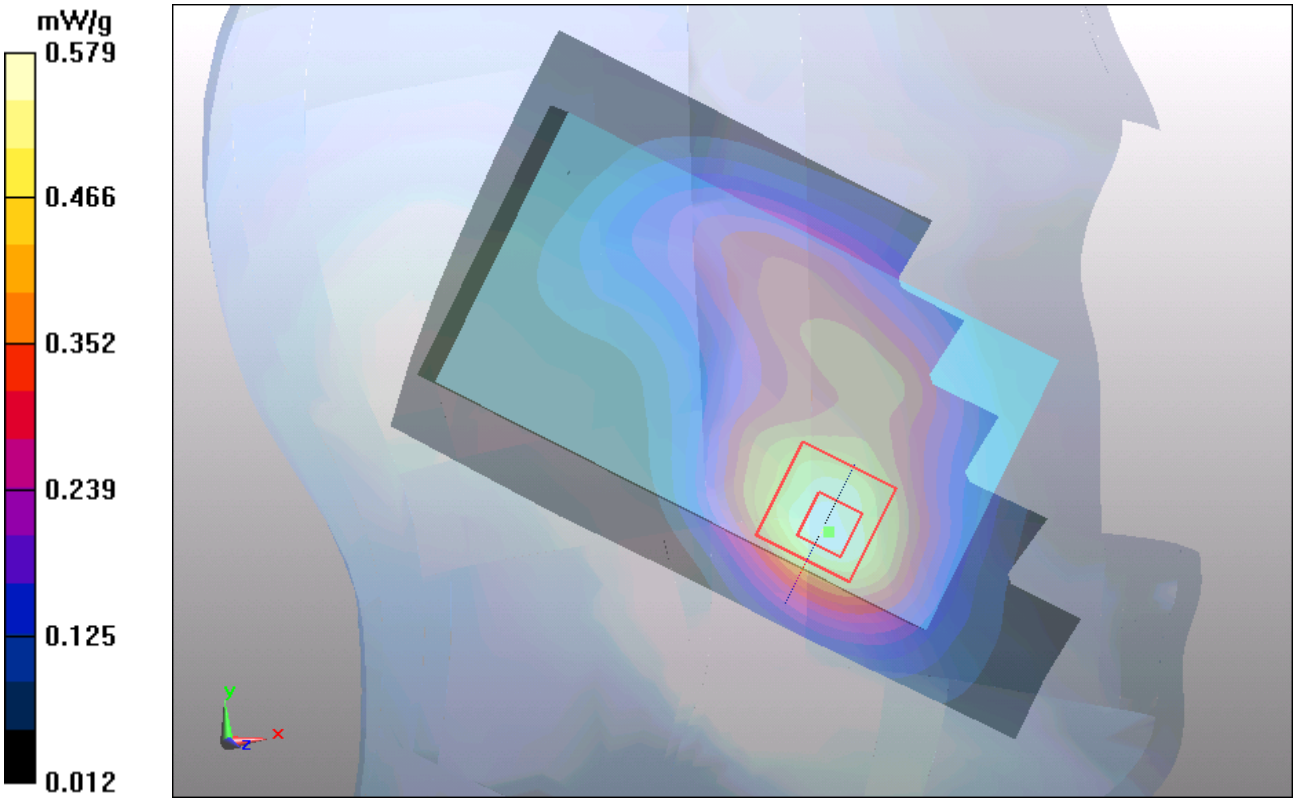


Figure 35 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Tilt Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 10:08:25 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.217 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = -0.108 dB
Peak SAR (extrapolated) = 0.291 W/kg
SAR(1 g) = 0.193 mW/g; SAR(10 g) = 0.122 mW/g
Maximum value of SAR (measured) = 0.199 mW/g

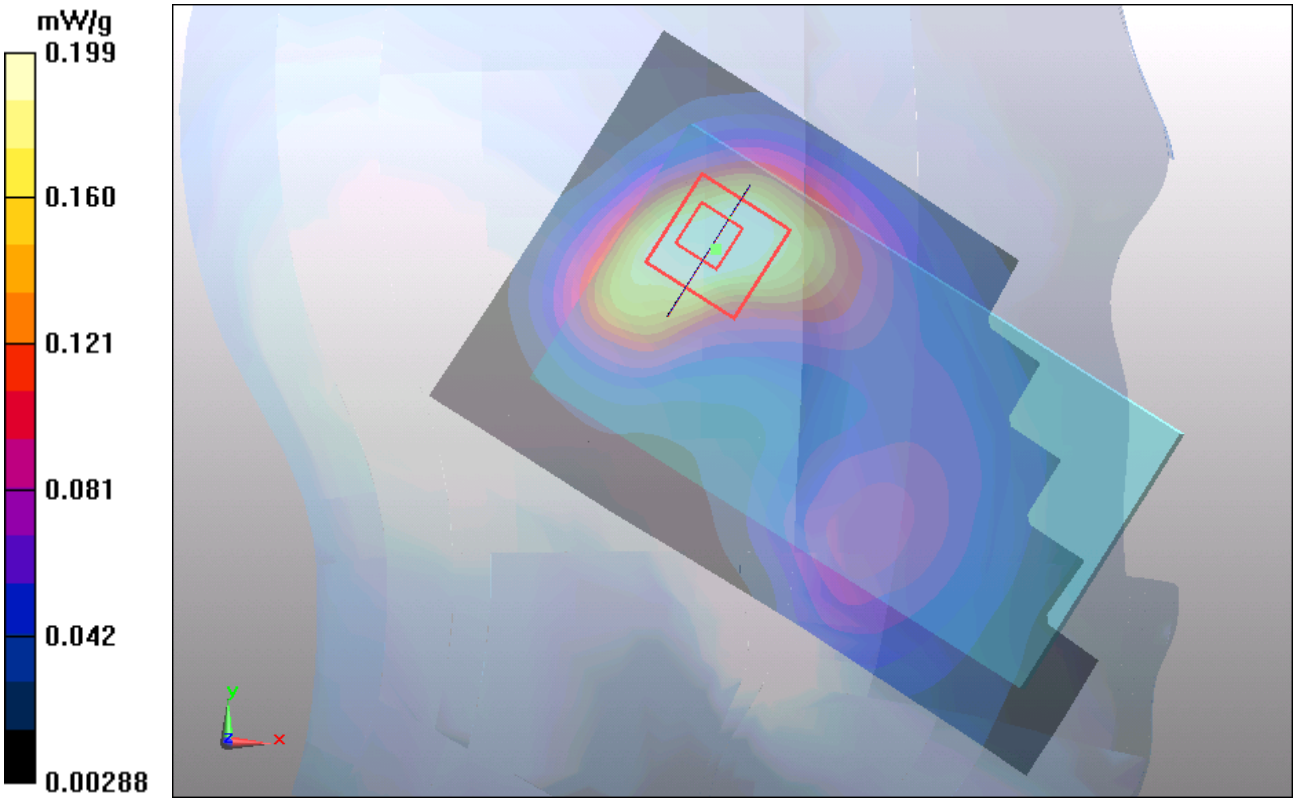


Figure 36 Left Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 10:27:56 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.517 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.83 V/m; Power Drift = 0.079 dB
Peak SAR (extrapolated) = 0.714 W/kg
SAR(1 g) = 0.483 mW/g; SAR(10 g) = 0.312 mW/g
Maximum value of SAR (measured) = 0.506 mW/g

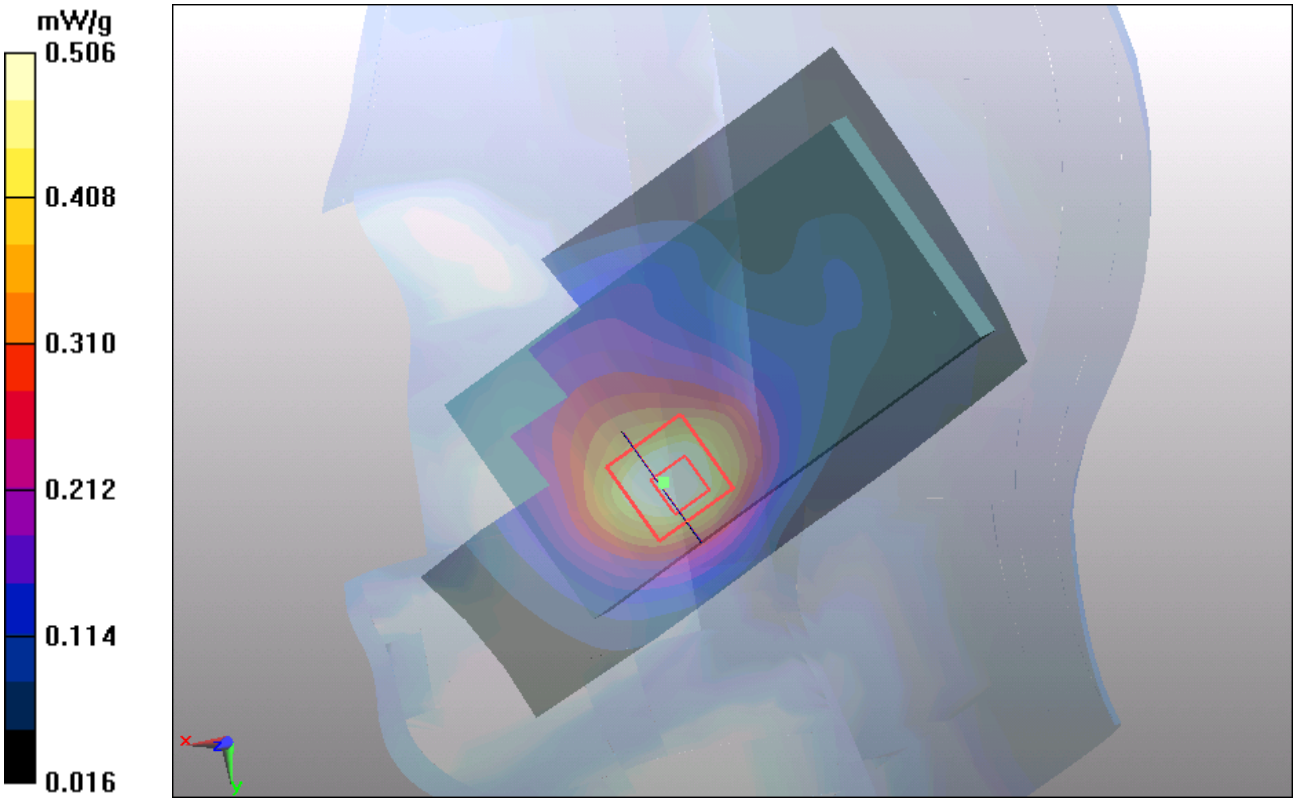


Figure 37 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/23/2012 10:44:47 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Right Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.226 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 0.318 W/kg
SAR(1 g) = 0.203 mW/g; SAR(10 g) = 0.118 mW/g
Maximum value of SAR (measured) = 0.210 mW/g

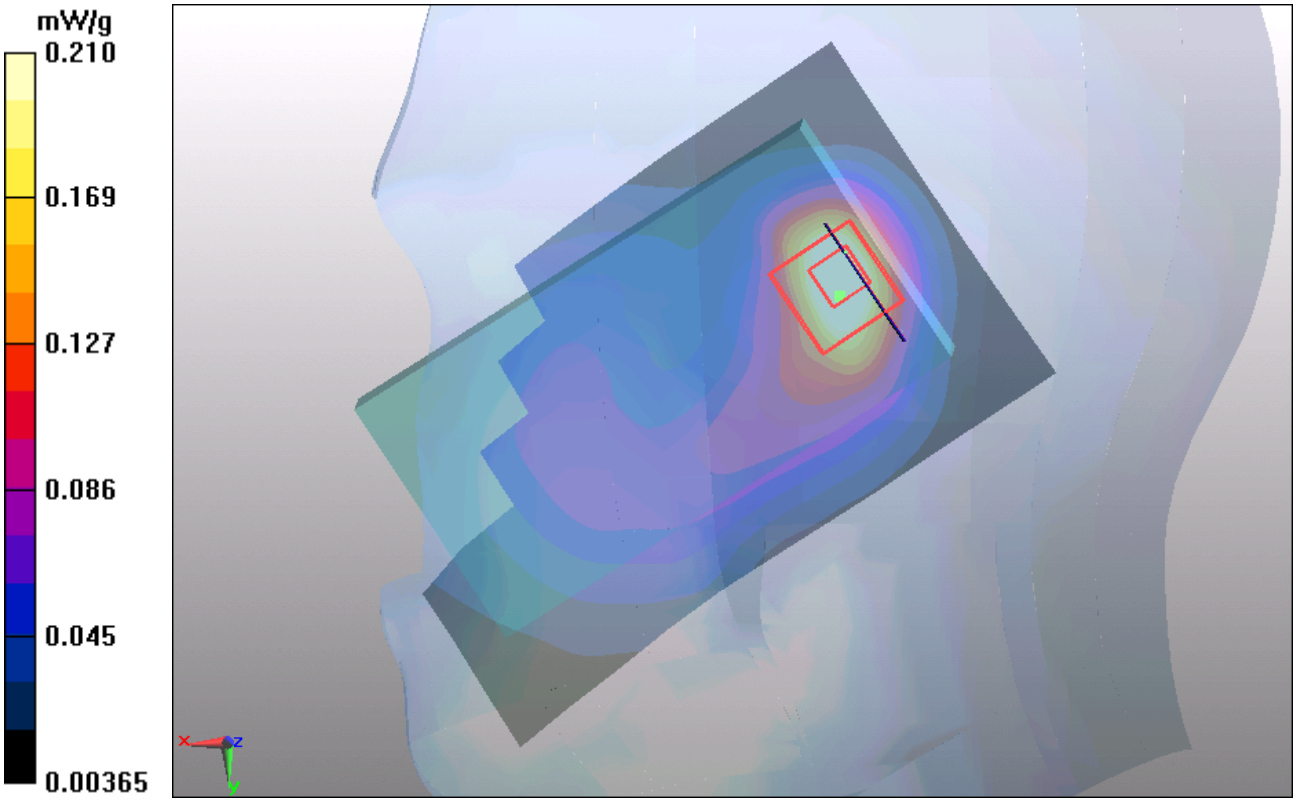


Figure 38 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Left Cheek Middle (SN: GAGB916XC37L1150)

Date/Time: 2/23/2012 11:04:51 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.566 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.8 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.899 W/kg
SAR(1 g) = 0.533 mW/g; SAR(10 g) = 0.317 mW/g
Maximum value of SAR (measured) = 0.571 mW/g

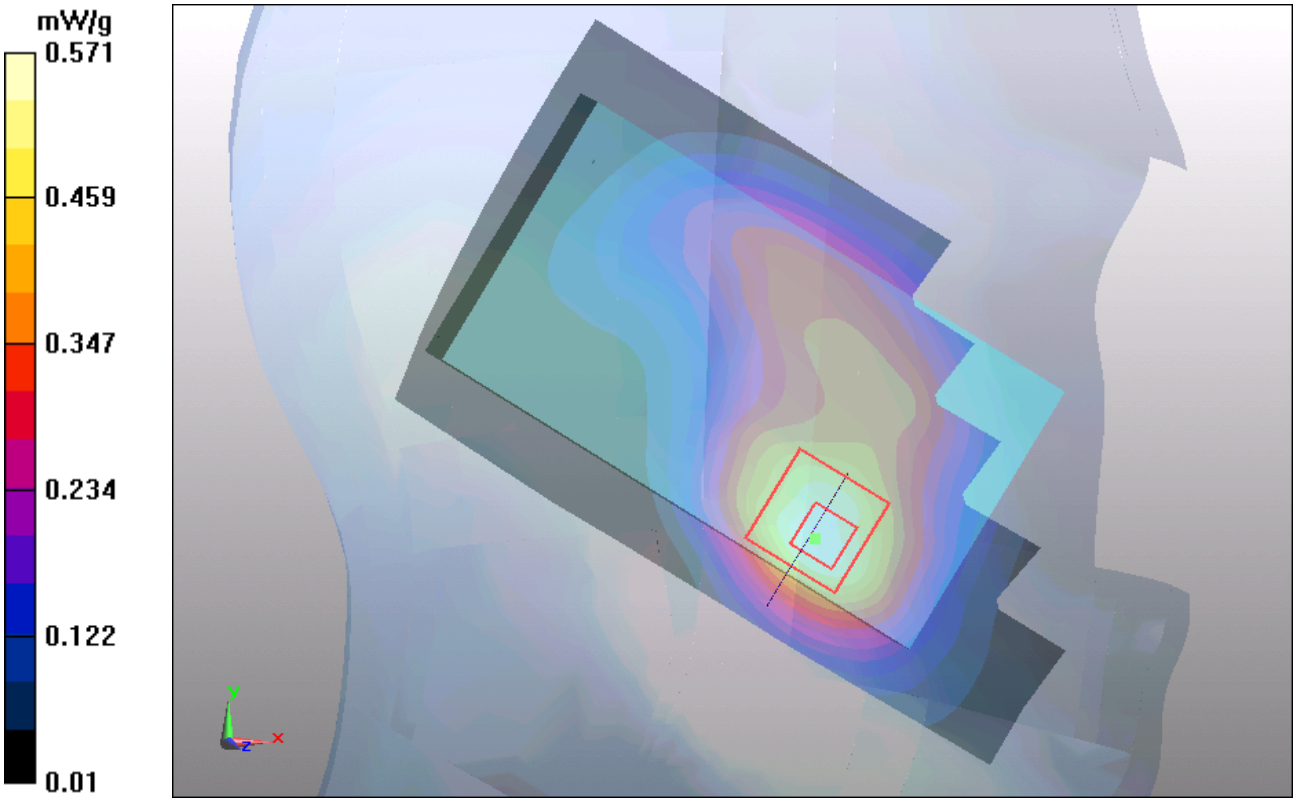


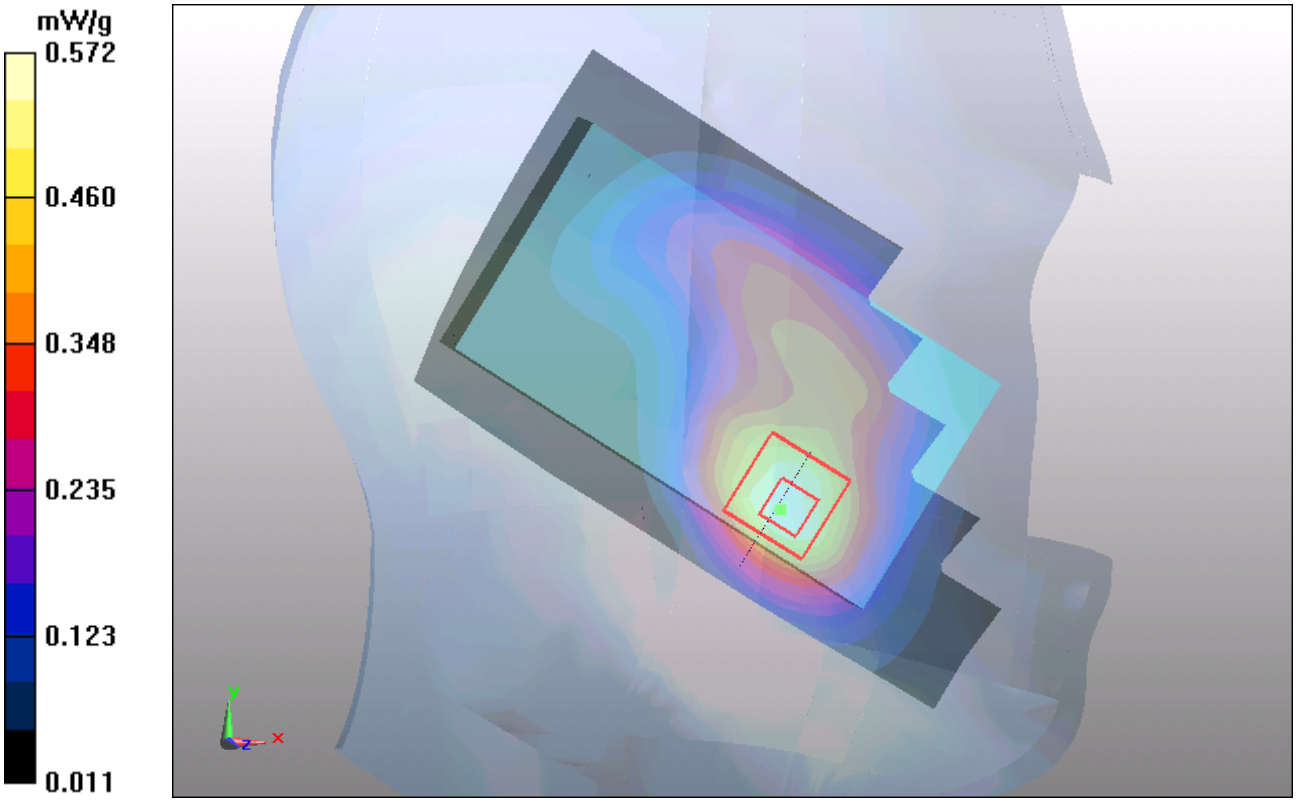
Figure 39 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Cheek Middle (SN: BAABB27F97400267)

Date/Time: 2/23/2012 11:20:46 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Left Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.90, 7.90, 7.90) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.560 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.89 V/m; Power Drift = 0.103 dB
Peak SAR (extrapolated) = 0.891 W/kg
SAR(1 g) = 0.534 mW/g; SAR(10 g) = 0.318 mW/g
Maximum value of SAR (measured) = 0.572 mW/g



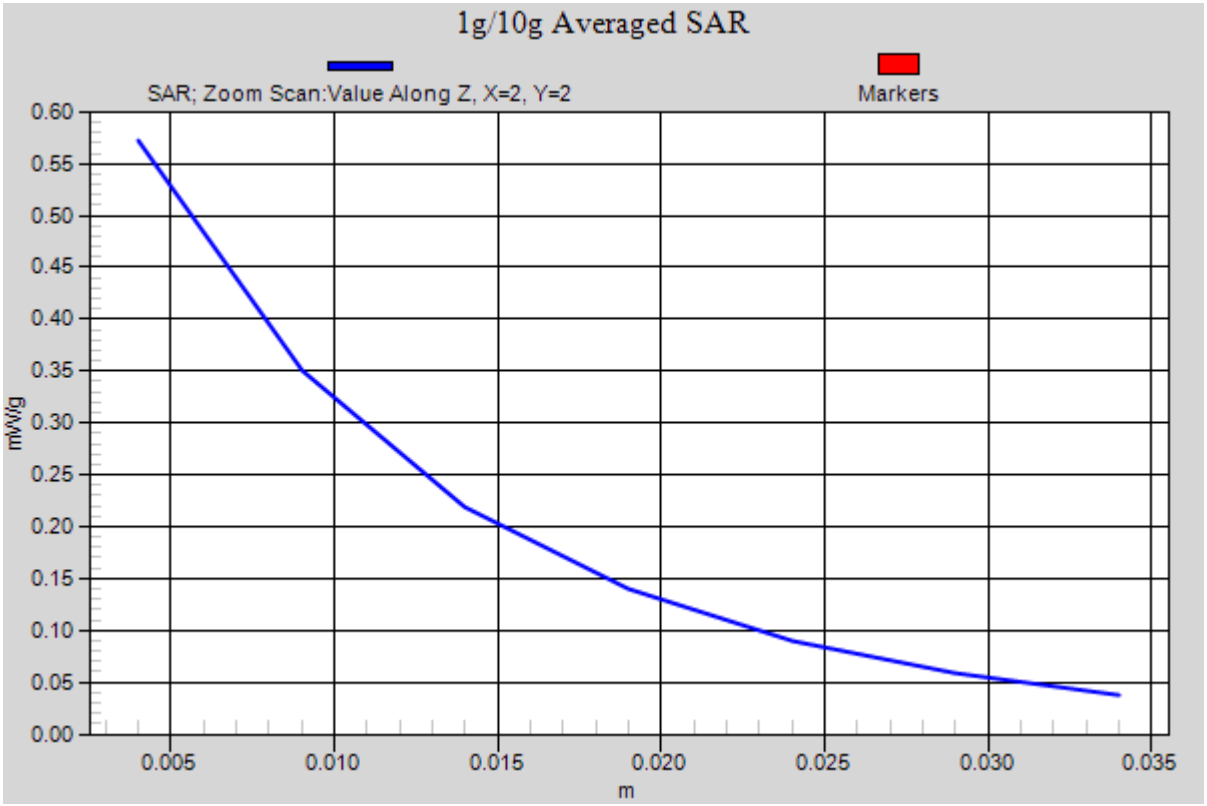


Figure 40 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 GPRS (1Txslot) Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 10:45:06 PM
Communication System: GPRS 1TX; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.713 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.21 V/m; Power Drift = -0.096 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.682 mW/g; SAR(10 g) = 0.395 mW/g
Maximum value of SAR (measured) = 0.719 mW/g

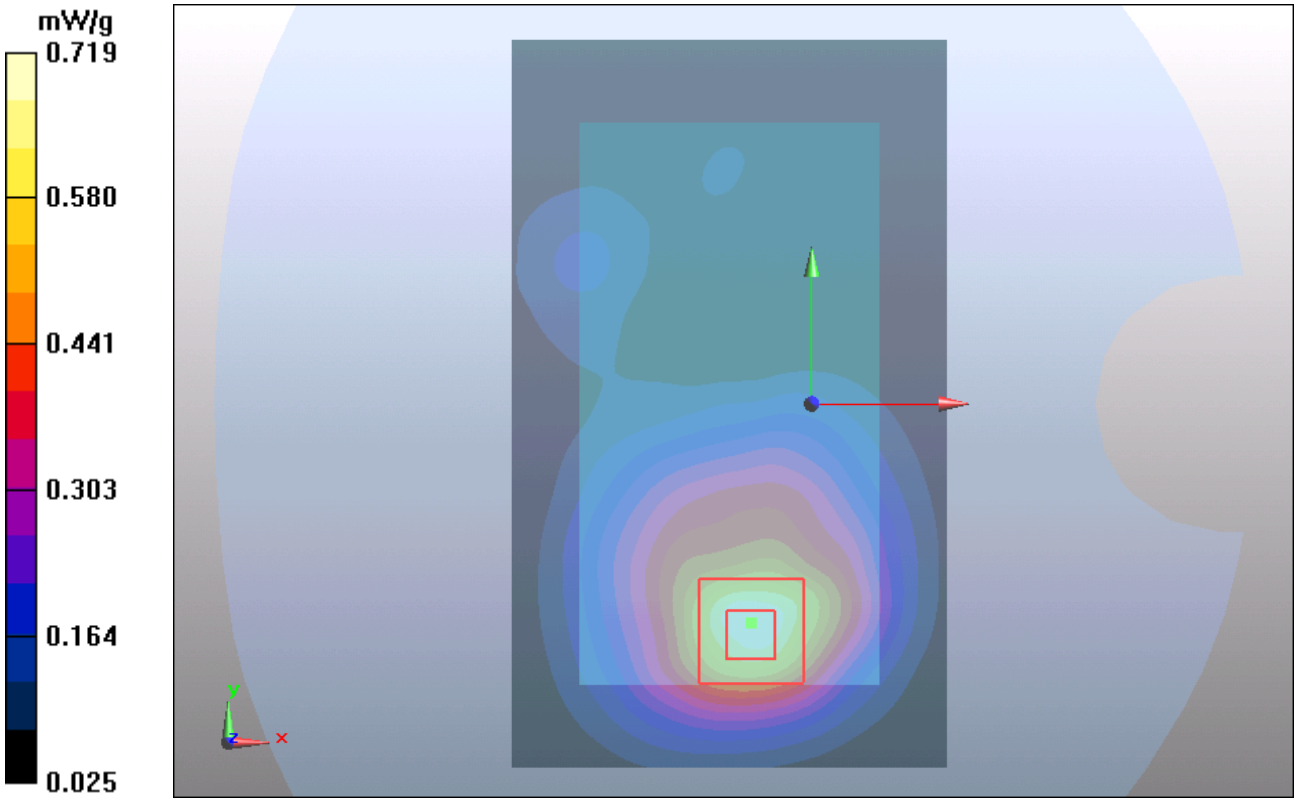


Figure 41 Body, Back Side, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (2Txslots) Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 11:14:06 PM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.765 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.49 V/m; Power Drift = -0.071 dB
Peak SAR (extrapolated) = 1.18 W/kg
SAR(1 g) = 0.725 mW/g; SAR(10 g) = 0.422 mW/g
Maximum value of SAR (measured) = 0.767 mW/g

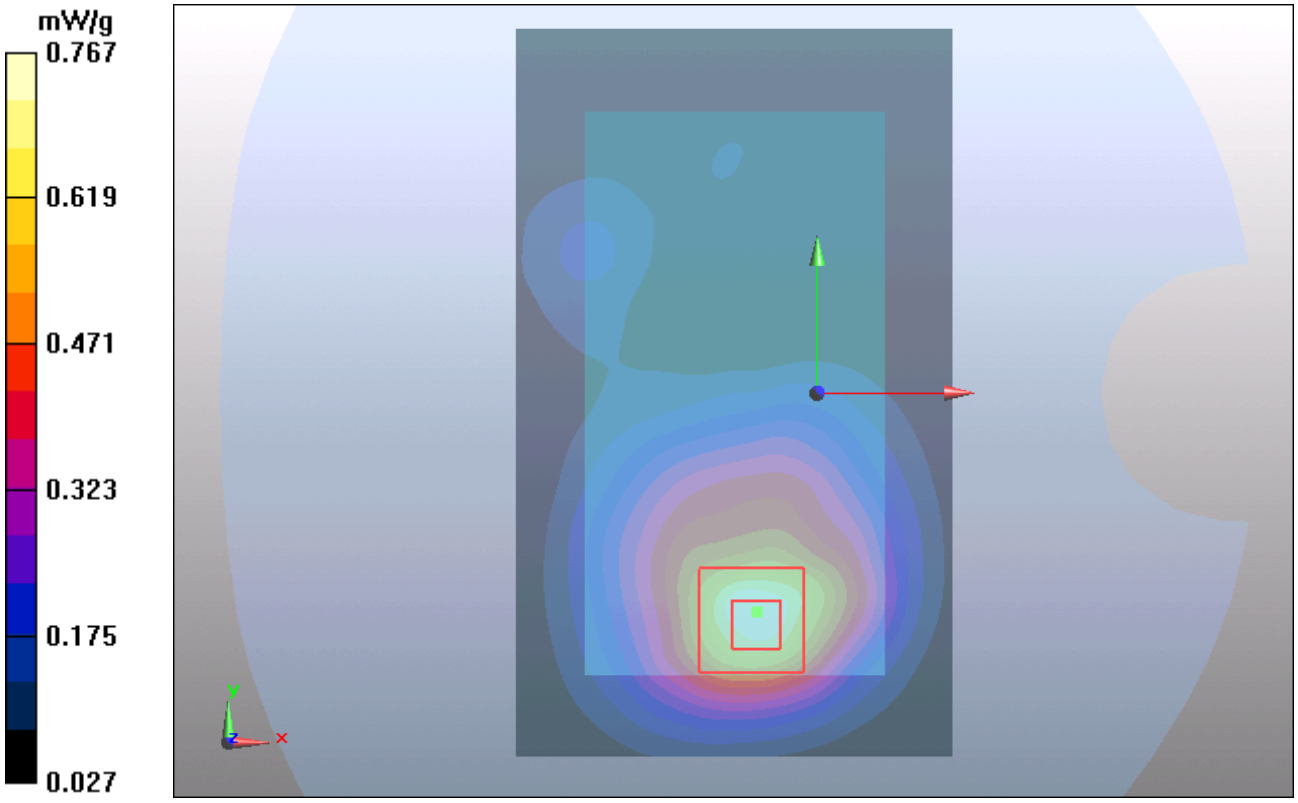


Figure 42 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Front Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 10:47:31 AM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Front Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.643 mW/g

Front Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.3 V/m; Power Drift = -0.183 dB
Peak SAR (extrapolated) = 0.938 W/kg
SAR(1 g) = 0.588 mW/g; SAR(10 g) = 0.364 mW/g
Maximum value of SAR (measured) = 0.629 mW/g

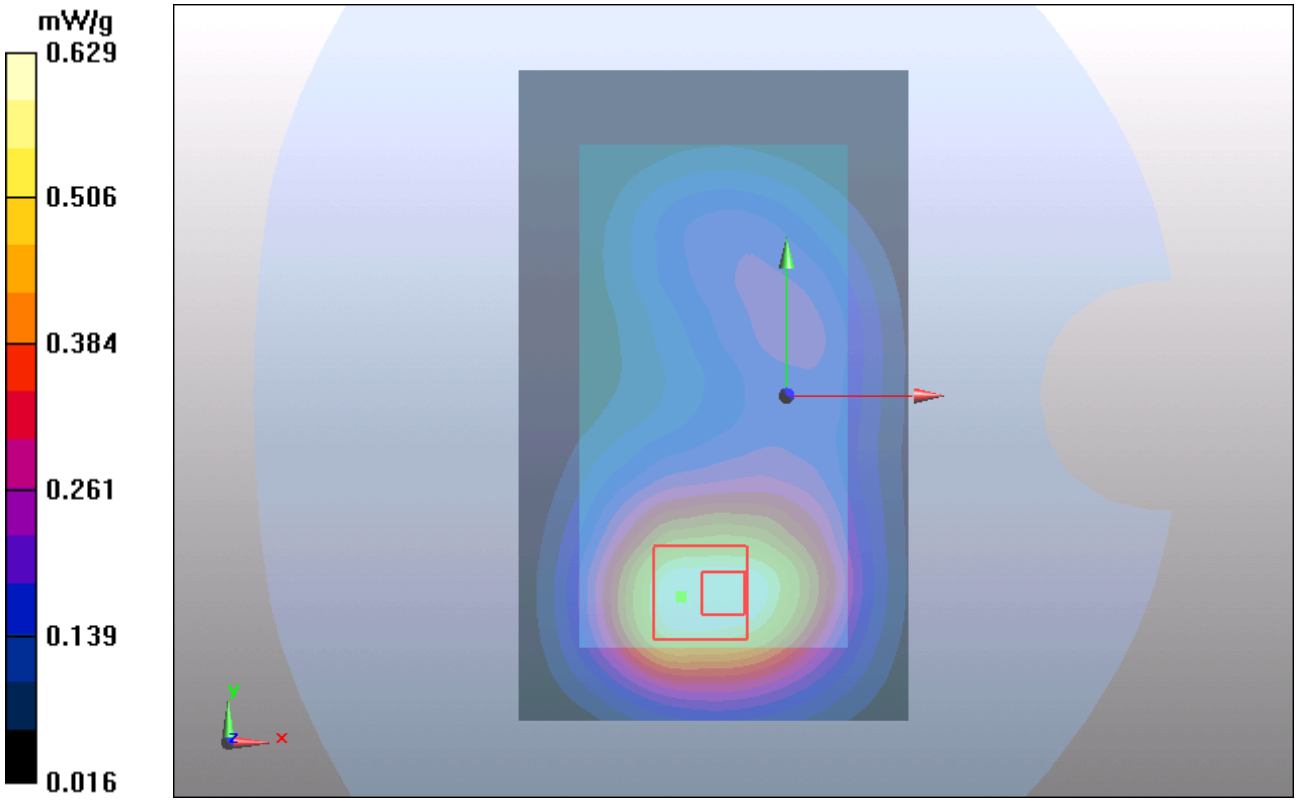


Figure 43 Body, Front Side, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Left Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 11:48:21 AM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Left Edge Middle/Area Scan (41x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.220 mW/g

Left Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.49 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 0.337 W/kg
SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.110 mW/g
Maximum value of SAR (measured) = 0.213 mW/g

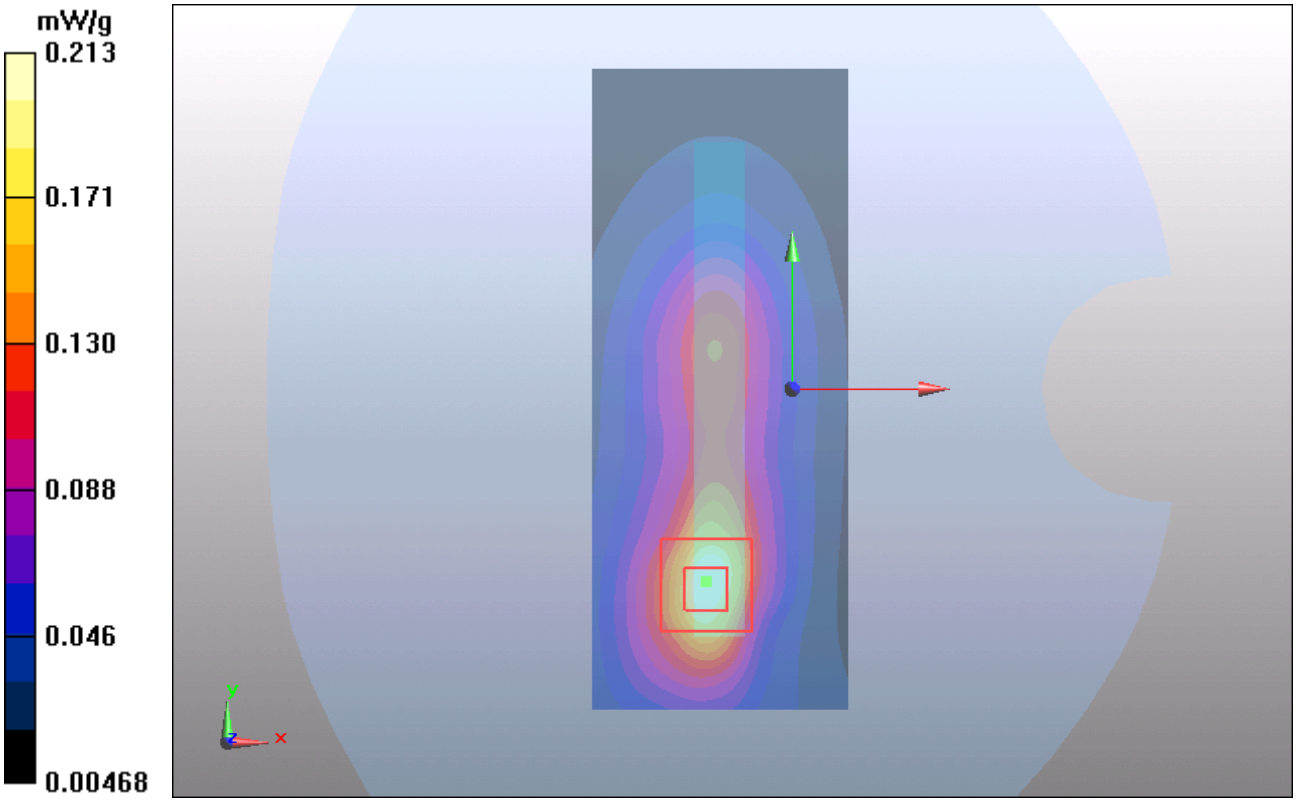


Figure 44 Body, Left Edge, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Right Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 12:04:41 PM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Right Edge Middle/Area Scan (41x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.157 mW/g

Right Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.98 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 0.235 W/kg
SAR(1 g) = 0.144 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.156 mW/g

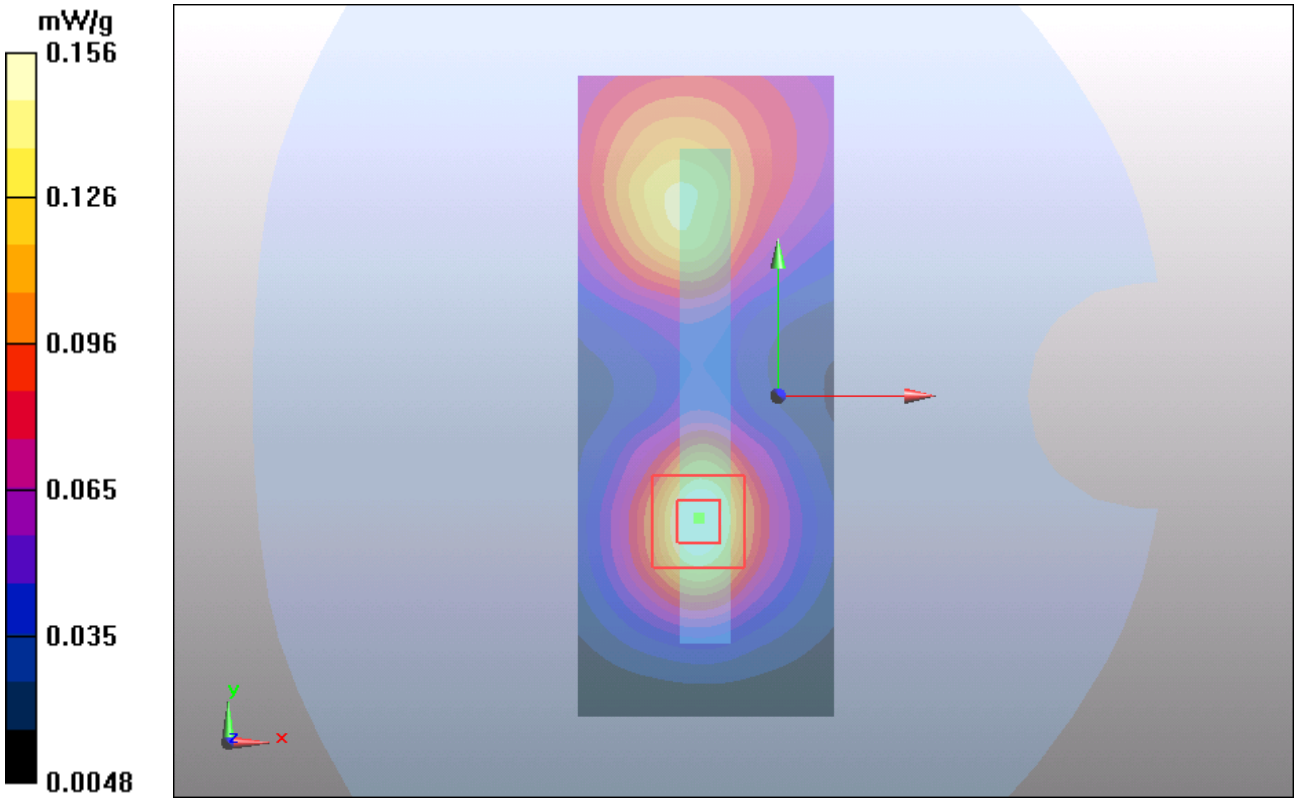


Figure 45 Body, Right Edge, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (2Txslots) Bottom Edge Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 1:11:46 PM
Communication System: GPRS 2TX ; Frequency: 1880 MHz;Duty Cycle: 1:4.14954
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Bottom Edge Middle/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.549 mW/g

Bottom Edge Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19 V/m; Power Drift = 0.050 dB
Peak SAR (extrapolated) = 0.807 W/kg
SAR(1 g) = 0.482 mW/g; SAR(10 g) = 0.277 mW/g
Maximum value of SAR (measured) = 0.529 mW/g

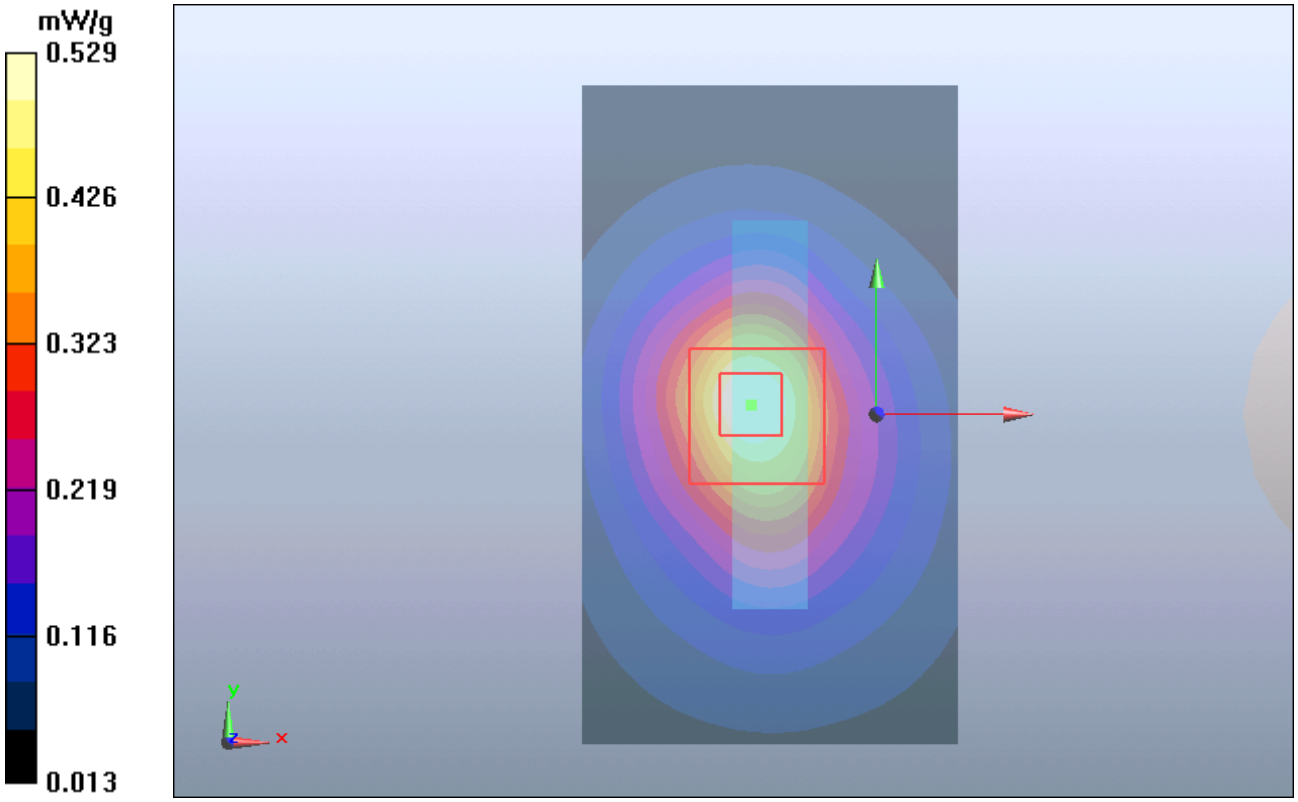


Figure 46 Body, Bottom Edge, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 with Earphone Back Side Middle (SN: WHCBB22HI46N1976)

Date/Time: 2/25/2012 1:55:00 PM
Communication System: GSM; Frequency: 1880 MHz;Duty Cycle: 1:8.30042
Medium parameters used: f = 1880 MHz; σ = 1.47 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Ambient Temperature:22.3 ℃ Liquid Temperature: 21.5℃
Phantom section: Flat Section
DASY5 Configuration:
Probe: EX3DV4 - SN3816; ConvF(7.51, 7.51, 7.51) Calibrated: 10/3/2011
Electronics: DAE4 Sn871; Calibrated: 11/22/2011
Phantom: SAM2; Type: SAM; Serial: TP-1524
Measurement SW: DASY5, V5.2 Build 162; SEMCAD X Version 14.0 Build 59

Back Side Middle/Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.688 mW/g

Back Side Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.377 mW/g
Maximum value of SAR (measured) = 0.740 mW/g

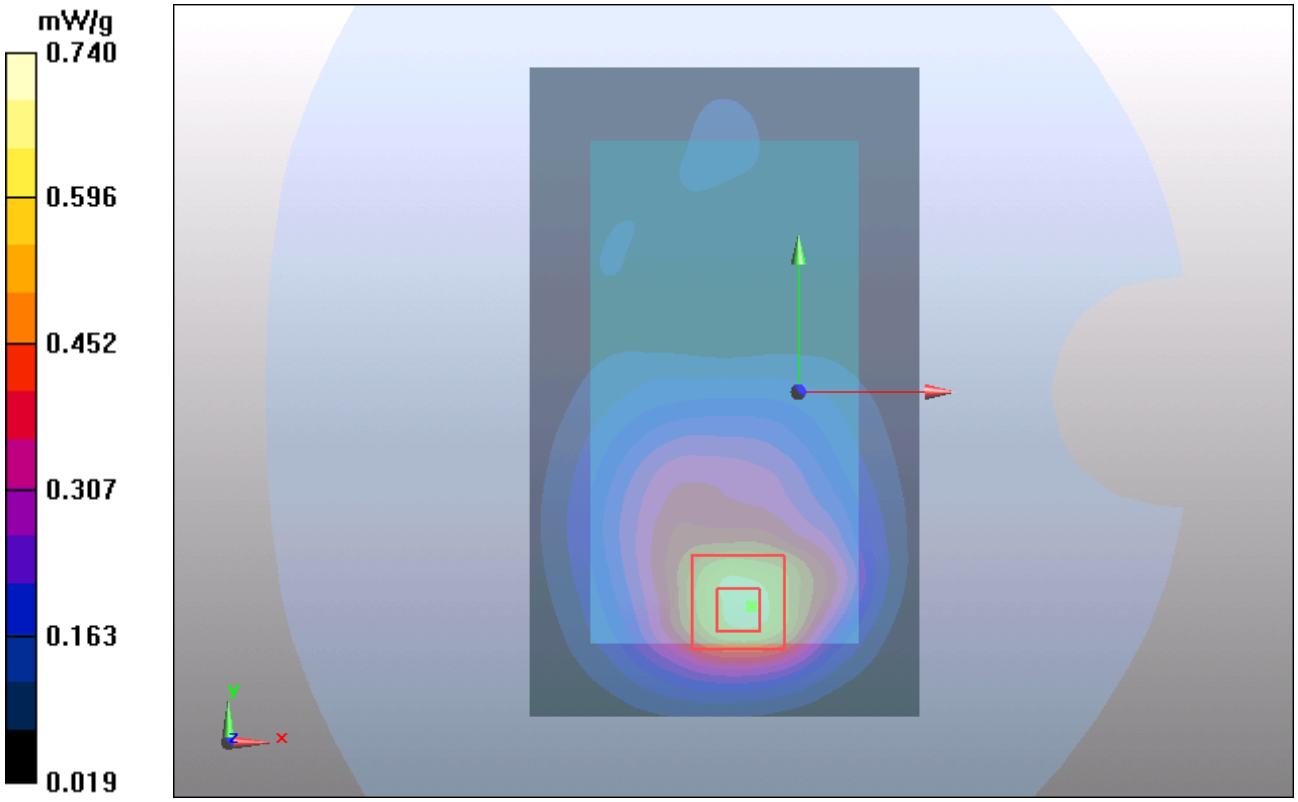


Figure 47 Body with Earphone, Back Side, GSM 1900 Channel 661