TESTING
No. L2264

OET 65

TEST REPORT

Product Name	HUAWEI Ascend Y 100;HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
Model	HUAWEI U8185-5, U8185-5
FCC ID	QISU8185-5
Client	Huawei Technologies Co., Ltd.

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	HUAWEI Ascend Y100;HSDPA/UMTS/ GPRS/GSM/EDGE Mobile Phone with Bluetooth	**Model**	HUAWEI U8185-5, U8185-5
FCC ID	QISU8185-5		
Report No.	RZA1202-0226SAR01R2		
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 7th, 2012**		
Comment	The test result only responds to the measured sample.		

Approved by _____   Revised by _____   Performed by _____

      Director   SAR Manager   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

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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 100;HSDPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
IMEI:	862886011012001
Hardware Version:	HD1U8185M
Software Version:	U8185-5V100R001C00B805
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; (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

	Mode	Tx (MHz)	Rx (MHz)
Operating Frequency Range(s):	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: HB4J1

Manufacturer: Huawei Technologies Co., Ltd.

S/N: GAGBA16XC42K9359

AE2:Battery

Model: HB4J1

Manufacturer: Huawei Technologies Co., Ltd.

S/N: BAABA18XC18B7190

Equipment Under Test (EUT) is a model of HUAWEI Ascend Y100; 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 BT/WIFI antenna that can be used for Tx/Rx, the third is GPS antenna that can be used for Rx. It has Personal Wireless Routers (hot spots) function, and WiFi function. The EUT has Proximity Sensor function. The proximity sensor is a sensor able to detect the presence of nearby objects without any physical contact. It can transmit a kind of light pulse, and measure the time from launching and responding, then calculate the distance trough the time. It only shut off the LCD and will not reduce the transmit power. Software update need special software tool in a computer and it is not available to the user.The detail about EUT and Lithium Battery is in chapter 1.5 in this report. SAR is tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band V and WiFi.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. The Maximum SAR$_{1g}$ Values

Head SAR Configuration

Mode	Channel	Position	SAR$_{1g}$ (W/kg)
GSM 850	Low/128	Right, Cheek	**0.992**
GSM 1900	Middle/661	Right, Cheek	**0.400**
WCDMA Band II	Middle/9400	Left, Cheek	**0.690**
WCDMA Band V	High/4233	Right, Cheek	**0.933**
WiFi(802.11b)	Middle/6	Right, Cheek	**0.087**

Body Worn Configuration

Mode	Channel	Position	Separation distance	SAR$_{1g}$ (W/kg)
2Txslots EGPRS 850	Low/128	Back Side	10mm	**0.913**
GSM 1900	Middle/661	Back Side	10mm	**0.616**
WCDMA Band II	High/9538	Back Side	10mm	**1.230**
WCDMA Band V	Middle/4183	Back Side	10mm	**0.970**
WiFi(802.11b)	Middle/6	Back Side	10mm	**0.054**

Hotspot SAR Configuration

Mode	Channel	Position	Separation distance	SAR$_{1g}$ (W/kg)
2Txslots EGPRS 850	Low/128	Back Side	10mm	**0.913**
GSM 1900	Middle/661	Back Side	10mm	**0.616**
WCDMA Band II	High/9538	Back Side	10mm	**1.230**
WCDMA Band V	Middle/4183	Back Side	10mm	**0.970**
WiFi(802.11b)	Middle/6	Back Side	10mm	**0.054**

Simultaneous SAR

SAR1g(W/kg) / Test Position	WCDMA Band II	WIFI (802.11b)	MAX. ΣSAR$_{1g}$
Body, Back Side	1.230	0.054	**1.284**

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	Low/128	32.88	0.992	33.2	1.068
GSM850	Back Side	Middle/190	32.89	0.794	33.2	0.853
2Txslots GPRS850	Back Side	Low/128	29.95	0.904	30.7	1.074
2Txslots EGPRS850	Back Side	Low/128	29.8	0.913	30.7	1.123
GSM1900	Right, Cheek	Middle/661	29.78	0.400	30.5	0.472
GSM1900	Back Side	Middle/661	29.78	0.616	30.5	0.727
2Txslots GPRS1900	Back Side	Middle/661	26.62	0.613	27.7	0.786
1Txslot EGPRS1900	Back Side	Middle/661	29.72	0.585	30.5	0.700
WCDMA Band II	Left, Cheek	Middle/9400	22.46	0.690	23	0.781
WCDMA Band II	Back Side	High/9538	22.37	1.230	23	1.422
WCDMA Band II HSDPA	Back Side	High/9538	22.36	1.100	23	1.275
WCDMA Band V	Right, Cheek	High/4233	23.37	0.933	24.2	1.129
WCDMA Band V	Back Side	Middle/4183	23.46	0.970	24.2	1.150

1.7. Maximum Conducted Power of each tested Mode

Mode		Max Burst Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	32.89	23.86
	GPRS, 2Txslots	29.96	23.94
	EGPRS, 1Txslot	32.85	23.82
GSM 1900	GSM	29.9	20.87
	GPRS, 1Txslot	29.87	20.84
	EGPRS, 1Txslot	29.86	20.83

Mode	Maximum Conducted Power (dBm)
WCDMA Band II	22.46
WCDMA Band V	23.53
WiFi(802.11b)	14.18

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

1.8. Test Date

The test is performed from February 22, 2012 to March 2, 2012.

2. SAR Measurements System Configuration

2.1. SAR Measurement Set-up

The DASY4 system for performing compliance tests consists of the following items:

● A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).

● A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.

● A data acquisition electronic (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

● A unit to operate the optical surface detector which is connected to the EOC.

● The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY4 measurement server.

● The DASY4 measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. A computer operating Windows 2003

● DASY4 software and SEMCAD data evaluation software.

● Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.

● The generic twin phantom enabling the testing of left-hand and right-hand usage.

● The device holder for handheld mobile phones.

● Tissue simulating liquid mixed according to the given recipes.

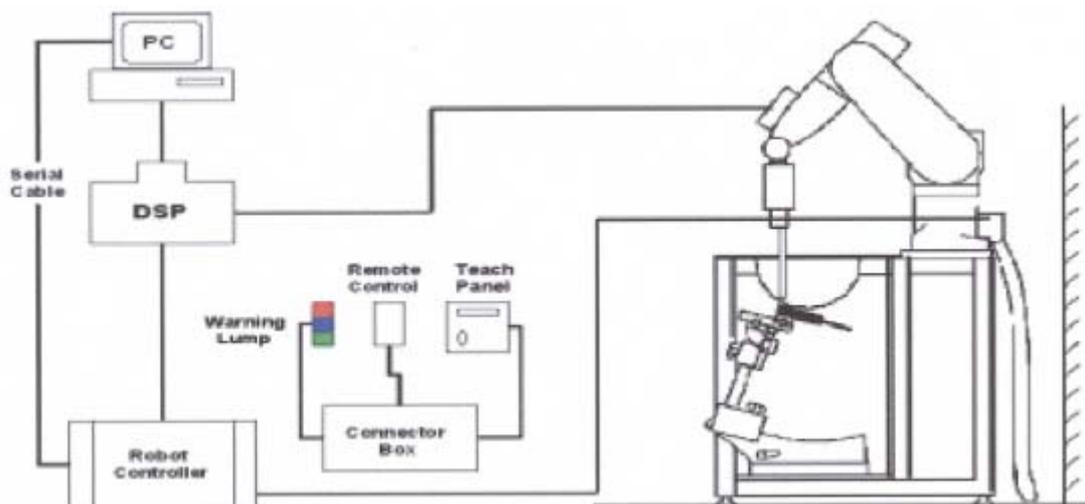● System validation dipoles allowing to validate the proper functioning of the system.

Figure 1 SAR Lab Test Measurement Set-up

2.2. DASY4 E-field Probe System

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

2.2.1. EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core
	Built-in shielding against static charges
	PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Figure 2.EX3DV4 E-field Probe

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 3. EX3DV4 E-field probe

2.2.2. E-field Probe Calibration

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

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

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

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

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

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

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

2.3. Other Test Equipment

2.3.1. Device Holder for Transmitters

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

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

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

Figure 4 Device Holder

2.3.2. Phantom

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

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

Figure 5 Generic Twin Phantom

2.4. Scanning Procedure

The DASY4 installation includes predefined files with recommended procedures for measurements and validation. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

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

● The "surface check" measurement tests the optical surface detection system of the DASY4 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

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

spacing of 15 mm x 15 mm is set. During the scan the distance of the probe to the phantom remains unchanged.

After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

● Zoom Scan

Zoom Scans are used to estimate the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default Zoom Scan is done by 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 DASY4 system allows evaluations that combine measured data and robot positions, such as:

• maximum search

• extrapolation

• boundary correction

• peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 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 DASY4 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DA4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

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

2.5.2. Data Evaluation by SEMCAD

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

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

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY4 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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

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

$$V_i = U_i + U_i^2 \cdot cf / dcp_i$$

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 $\textbf{\textit{SAR}}$ = local specific absorption rate in mW/g

$\textbf{\textit{E}}_{\textbf{\textit{tot}}}$ = total field strength in V/m

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

.   = 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.

$$P_{pwe} = E_{tot}^2 / 3770 \quad \text{or} \quad \textbf{\textit{P}}_{\textbf{\textit{pwe}}} = \textbf{\textit{H}}_{\textbf{\textit{tot}}}^2 \cdot \textbf{37.7}$$

with $\textbf{\textit{P}}_{\textbf{\textit{pwe}}}$ = equivalent power density of a plane wave in mW/cm^2

$\textbf{\textit{E}}_{\textbf{\textit{tot}}}$ = total electric field strength in V/m

$\textbf{\textit{H}}_{\textbf{\textit{tot}}}$ = 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 (head)	Target value ± 5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	22.0
	Measurement value 2012-2-22	42.02	0.91	21.7
1900MHz (head)	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	22.0
	Measurement value 2012-2-28	40.09	1.39	21.8
2450MHz (head)	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	22.0
	Measurement value 2012-3-2	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 (body)	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	22.0
	Measurement value 2012-2-27	54.26	0.99	21.7
1900MHz (body)	Target value ±5% window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	22.0
	Measurement value 2012-2-29	52.14	1.56	21.8
2450MHz (body)	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	22.0
	Measurement value 2012-3-2	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 DASY4 system.
.
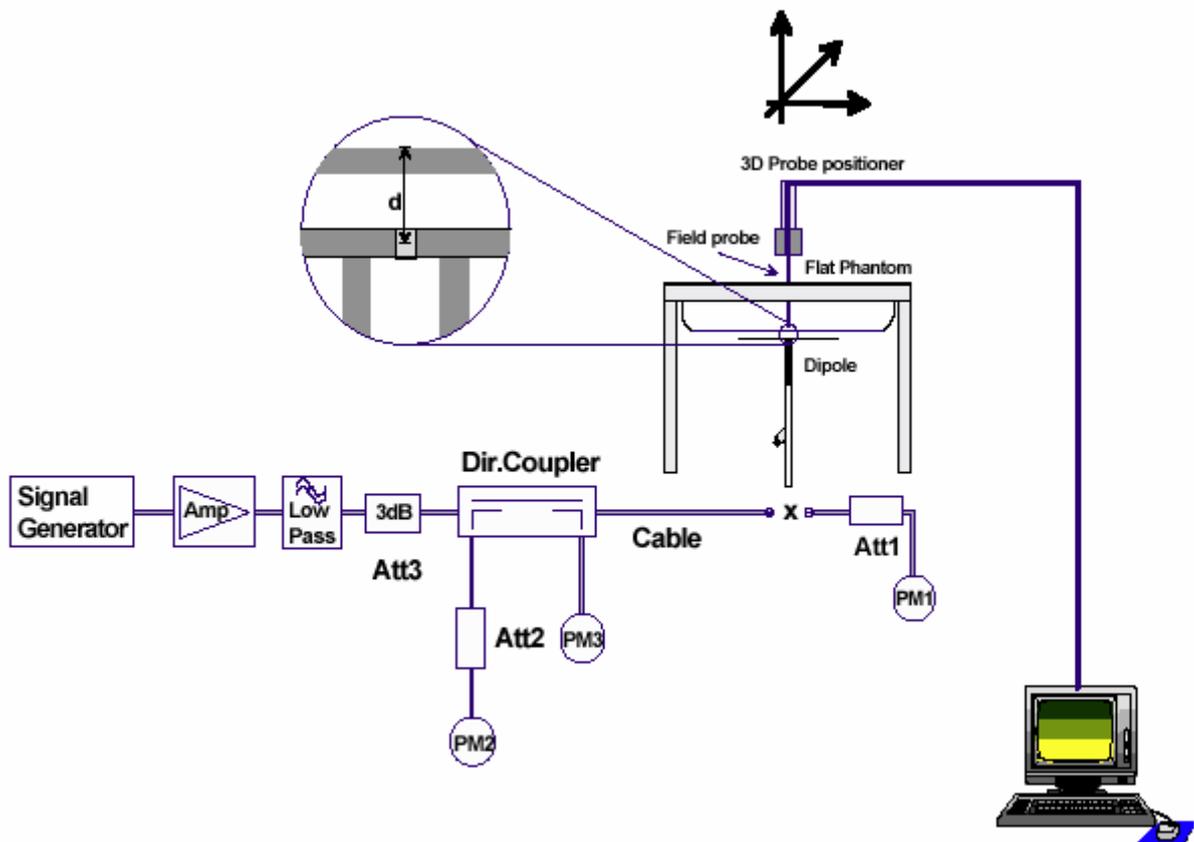
Figure 6 System Check Set-up

5.2. System Check Results

Table 6: System Check in Head Tissue Simulating Liquid

Frequency	Test Date	Dielectric Parameters		Temp	250mW Measured SAR$_{1g}$	1W Normalized SAR$_{1g}$	1W Target SAR$_{1g}$ (±10%deviation)
		ε_r	σ(s/m)	(℃)	(W/kg)		
835MHz	2012-2-22	42.02	0.91	21.7	2.40	9.60	9.34 (8.41~10.27)
1900MHz	2012-2-28	40.09	1.39	21.8	10.33	41.32	40.30 (36.27~ 44.33)
2450MHz	2012-3-2	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	2012-2-27	54.26	0.99	21.7	2.54	10.16	9.46 (8.51~10.41)
1900MHz	2012-2-29	52.14	1.56	21.8	10.20	40.80	41.70 (37.53~45.87)
2450MHz	2012-3-2	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, to 9262, 9400 and 9538 in the case of WCDMA Band II, to 4132, 4183 and 4233 in the case of WCDMA Band V. The EUT is commanded to operate at maximum transmitting power.

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

6.2. Test Positions

6.2.1. Against Phantom Head

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

6.2.2. Body Worn Configuration

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

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

6.3. Test Configuration

6.3.1. GSM Test Configuration

SAR tests for GSM 850 and GSM 1900, a communication link is set up with a System Simulator (SS) by air link. Using E5515C the power lever is set to "5" for GSM 850, set to "0" for GSM 1900. Since the GPRS class is 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	2.5

EGPRS(8PSK):

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

EGPRS(GMSK):

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

GSM 1900

GPRS（GMSK）:

Number of timeslots in uplink assignment	reduction of maximum output power, (dB)
1	0
2	2.8

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	2.8

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 "1's" 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 "1's". 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 "1's". 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(β_c, β_d), 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 $\leftrightarrows$ A_{hs} = β_{hs}/β_c=30/15 $\leftrightarrows$ β_{hs}=30/15*β_c

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

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

support HSDPA in release 6 and later releases.

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

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

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

Table 10: HSDPA UE category

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

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

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

6.3.4. WIFI Test Configuration

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

For the 802.11b/g 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 12.

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		32.88	32.89	32.83	-9.03dB	23.85	23.86	23.8
GPRS (GMSK)	1Txslot	32.87	32.86	32.8	-9.03dB	23.84	23.83	23.77
	2Txslots	29.95	29.96	29.94	-6.02dB	**23.93**	**23.94**	**23.92**
EGPRS (GMSK)	1Txslot	32.85	32.83	32.76	-9.03dB	**23.82**	**23.8**	**23.73**
	2Txslots	29.8	29.8	29.77	-6.02dB	23.78	23.78	23.75
EGPRS (8PSK)	1Txslot	27.21	27.21	27.11	-9.03dB	18.18	18.18	18.08
	2Txslots	27.16	27.13	27.13	-6.02dB	21.14	21.11	21.11

GSM 1900		Burst Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM		29.9	29.78	29.76	-9.03dB	20.87	20.75	20.73
GPRS (GMSK)	1Txslot	29.87	29.76	29.75	-9.03dB	**20.84**	**20.73**	**20.72**
	2Txslots	26.72	26.62	26.64	-6.02dB	20.7	20.6	20.62
EGPRS (GMSK)	1Txslot	29.86	29.72	29.72	-9.03dB	**20.83**	**20.69**	**20.69**
	2Txslots	26.71	26.62	26.63	-6.02dB	20.69	20.6	20.61
EGPRS (8PSK)	1Txslot	26.13	26.06	26.02	-9.03dB	17.1	17.03	16.99
	2Txslots	26.11	25.95	25.99	-6.02dB	20.09	19.93	19.97

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 II		Conducted Power (dBm)		
		Channel 9262	Channel 9400	Channel 9538
RMC	12.2kbps RMC	22.39	22.46	22.37
	64kbps RMC	22.43	22.32	22.4
	144kbps RMC	22.41	22.37	22.42
	384kbps RMC	22.33	22.4	22.35
HSDPA	Sub - Test 1	22.18	22.45	22.36
	Sub - Test 2	21.9	22.16	22.32
	Sub - Test 3	21.29	21.69	21.81
	Sub - Test 4	21.29	21.5	21.52
WCDMA Band V		Conducted Power (dBm)		
		Channel 4132	Channel 4183	Channel 4233
RMC	12.2kbps RMC	23.53	23.46	23.37
	64kbps RMC	23.45	23.42	23.32
	144kbps RMC	23.51	23.4	23.32
	384kbps RMC	23.43	23.46	23.38
HSDPA	Sub - Test 1	23.44	23.39	23.34
	Sub - Test 2	23.19	23.09	23.03
	Sub - Test 3	22.58	22.53	22.39
	Sub - Test 4	22.59	22.49	22.42

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:GAGBA16XC42K9359)					
Left hand, Touch Cheek	Middle/190	0.495	0.644	-0.192	Figure 13
Left hand, Tilt 15 Degree	Middle/190	0.297	0.387	-0.157	Figure 14
Right hand, Touch Cheek	Middle/190	0.600	0.795	-0.062	Figure 15
Right hand, Tilt 15 Degree	Middle/190	0.318	0.416	-0.049	Figure 16
Test Position of Head (Battery: BAABA18XC18B7190)					
Right hand, Touch Cheek	High/251	0.613	0.821	0.003	Figure 17
	Middle/190	0.609	0.802	0.099	Figure 18
	Low/128	0.749	0.992	-0.062	Figure 19
Test position of Body (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side (GSM/1Txslot)	Middle/190	0.565 (max.cube)	0.794 (max.cube)	0.017	Figure 20
Back Side (2Txslots)	High/251	0.588 (max.cube)	0.83 (max.cube)	0.153	Figure 21
	Middle/190	0.584 (max.cube)	0.820 (max.cube)	-0.021	Figure 22
	Low/128	0.636 (max.cube)	0.904 (max.cube)	0.003	Figure 23
Front Side(2Txslots)	Middle/190	0.371	0.515	-0.024	Figure 24
Left Edge(2Txslots)	Middle/190	0.237	0.343	-0.036	Figure 25
Right Edge(2Txslots)	Middle/190	0.298	0.438	0.015	Figure 26
Top Edge(2Txslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2Txslots)	Middle/190	0.071	0.122	-0.192	Figure 27
Worst Case Position of Body with Earphone (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side (GSM)	Low/128	0.407	0.634	0.028	Figure 28
Worst Case Position of Body with EGPRS (Battery:GAGBA16XC42K9359,GMSK, Distance 10mm)					
Back Side (2Txslots)	Low/128	0.652	0.913	-0.072	Figure 29
Worst Case Position of Body with Battery: BAABA18XC18B7190(Distance 10mm)					
Back Side (2Txslots)	Low/128	0.631	0.892	-0.173	Figure 30

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. 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.

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

7.2.2. 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:GAGBA16XC42K9359)					
Left hand, Touch Cheek	Middle/661	0.222	0.386	-0.169	Figure 31
Left hand, Tilt 15 Degree	Middle/661	0.108	0.168	-0.013	Figure 32
Right hand, Touch Cheek	Middle/661	0.243	0.400	-0.073	Figure 33
Right hand, Tilt 15 Degree	Middle/661	0.095	0.145	-0.019	Figure 34
Test Position of Head (Battery: BAABA18XC18B7190)					
Right hand, Touch Cheek	Middle/661	0.241	0.397	-0.014	Figure 35
Test position of Body (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side (GSM/1Txslot)	Middle/661	0.346	0.616	0.053	Figure 36
Back Side (2Txslots)	Middle/661	0.343	0.613	-0.016	Figure 37
Front Side(1Txslot)	Middle/661	0.198	0.347	-0.007	Figure 38
Left Edge(1Txslot)	Middle/661	0.054	0.097	-0.101	Figure 39
Right Edge(1Txslot)	Middle/661	0.052	0.089	0.145	Figure 40
Top Edge(1Txslot)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(1Txslot)	Middle/661	0.270	0.502	-0.195	Figure 41
Worst Case Position of Body with Earphone (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side (GSM)	Middle/661	0.334	0.584	-0.002	Figure 42
Worst Case Position of Body with EGPRS (Battery:GAGBA16XC42K9359,GMSK, Distance 10mm)					
Back Side (1Txslot)	Middle/661	0.330	0.585	-0.004	Figure 43
Worst Case Position of Body with Battery: BAABA18XC18B7190(Distance 10mm)					
Back Side (1Txslot)	Middle/661	0.330	0.584	0.000	Figure 44

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:GAGBA16XC42K9359)					
Left Hand, Touch Cheek	Middle/9400	0.392(max.cube)	0.690(max.cube)	-0.003	Figure 45
Left Hand, Tilt 15 Degree	Middle/9400	0.166	0.255	-0.045	Figure 46
Right Hand, Touch Cheek	Middle/9400	0.363	0.598	-0.073	Figure 47
Right Hand, Tilt 15 Degree	Middle/9400	0.142	0.213	0.016	Figure 48
Test Position of Head (Battery: BAABA18XC18B7190)					
Left Hand, Touch Cheek	Middle/9400	0.365	0.645	0.029	Figure 49
Test position of Body (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	High/9538	0.671	1.230	-0.042	Figure 50
	Middle/9400	0.528	0.928	0.135	Figure 51
	Low/9262	0.434	0.787	0.042	Figure 52
Front Side	Middle/9400	0.322	0.553	-0.022	Figure 53
Left Edge	Middle/9400	0.109	0.193	0.073	Figure 54
Right Edge	Middle/9400	0.120	0.208	0.062	Figure 55
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	High/9538	0.492	0.942	-0.015	Figure 56
	Middle/9400	0.475	0.900	0.174	Figure 57
	Low/9262	0.471	0.898	0.004	Figure 58
Worst Case Position of Body with Earphone (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	High/9538	0.581	1.050	-0.097	Figure 59
Worst Case Position of Body with Battery: BAABA18XC18B7190(Distance 10mm)					
Back Side	High/9538	0.667	1.200	-0.134	Figure 60
Worst Case Position of Body with HSDPA (Battery: GAGBA16XC42K9359,Distance 10mm)					
Back Side	High/9538	0.610	1.100	-0.034	Figure 61

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:GAGBA16XC42K9359)					
Left Hand, Touch Cheek	Middle/4183	0.522	0.688	-0.030	Figure 62
Left Hand, Tilt 15 Degree	Middle/4183	0.284	0.366	-0.061	Figure 63
Right Hand, Touch Cheek	High/4233	0.702	0.933	0.034	Figure 64
	Middle/4183	0.664	0.874	-0.088	Figure 65
	Low/4132	0.557	0.731	0.002	Figure 66
Right Hand, Tilt 15 Degree	Middle/4183	0.343	0.448	0.017	Figure 67
Test Position of Head (Battery: BAABA18XC18B7190)					
Right Hand, Touch Cheek	High/4233	0.668	0.881	-0.095	Figure 68
Test position of Body (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	High/4233	0.673(max.cube)	0.950(max.cube)	0.005	Figure 69
	Middle/4183	0.688(max.cube)	0.970(max.cube)	0.030	Figure 70
	Low/4132	0.589(max.cube)	0.828(max.cube)	0.035	Figure 71
Front Side	Middle/4183	0.449	0.599	0.144	Figure 72
Left Edge	Middle/4183	0.281	0.408	0.098	Figure 73
Right Edge	Middle/4183	0.343	0.491	-0.018	Figure 74
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Middle/4183	0.072	0.127	-0.056	Figure 75
Worst Case Position of Body with Earphone (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	Middle/4183	0.431	0.653	0.138	Figure 76
Worst Case Position of Body with Battery: BAABA18XC18B7190(Distance 10mm)					
Back Side	Middle/4183	0.650	0.907	0.116	Figure 77

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:
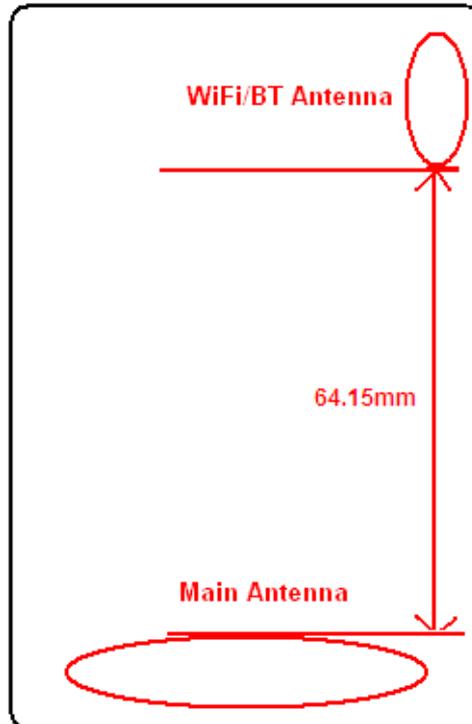
The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
Average Conducted Output Power(dBm)	4.71	4.95	4.62

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	14.18
		2	14.16
		5.5	14.11
		11	14.12
	6	1	13.89
		2	14.01
		5.5	14.06

		11	14.09
	11	1	13.78
		2	14.1
		5.5	13.98
		11	13.94
11g	1	6	12.81
		9	12.72
		12	12.56
		18	12.53
		24	12.63
		36	12.4
		48	12.36
		54	12.25
	6	6	12.88
		9	12.8
		12	12.71
		18	12.65
		24	12.72
		36	12.48
		48	12.41
		54	12.28
	11	6	12.71
		9	12.68
		12	12.59
		18	12.58
		24	12.61
		36	12.41
		48	12.35
		54	12.18
11n HT20	1	6.5	9.65
		13	9.43
		19.5	9.37
		26	9.78
		39	9.71

		52	9.62
		58.5	8.75
		65	9.18
	6	6.5	9.52
		13	9.35
		19.5	9.32
		26	9.79
		39	9.72
		52	9.63
		58.5	8.71
		65	9.1
	11	6.5	9.38
		13	9.23
		19.5	9.19
		26	9.48
		39	9.61
		52	9.51
		58.5	8.58
		65	8.88

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:GAGBA16XC42K9359)					
Left hand, Touch cheek	Middle/6	0.022	0.039	0.042	Figure 78
Left hand, Tilt 15 Degree	Middle/6	0.015	0.029	0.024	Figure 79
Right hand, Touch cheek	Middle/6	0.043	0.087	-0.076	Figure 80
Right hand, Tilt 15 Degree	Middle/6	0.020	0.042	-0.055	Figure 81
Test Position of Head (Battery: BAABA18XC18B7190)					
Right hand, Touch cheek	Middle/6	0.042	0.083	-0.039	Figure 82
Test position of Body (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	Middle/6	0.028	0.054	-0.087	Figure 83
Front Side	Middle/6	0.014	0.024	-0.016	Figure 84
Left Edge	Middle/6	0.017	0.034	-0.117	Figure 85
Right Edge	Middle/6	0.002	0.005	0.090	Figure 86
Top Edge	Middle/6	0.008	0.015	-0.065	Figure 87
Bottom Edge	N/A	N/A	N/A	N/A	N/A
Worst Case Position of Body with Earphone (Battery:GAGBA16XC42K9359,Distance 10mm)					
Back Side	Middle/6	0.028	0.052	-0.072	Figure 88
Worst Case Position of Body with Battery: BAABA18XC18B7190(Distance 10mm)					
Back Side	Middle/6	0.028	0.053	-0.100	Figure 89

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 802.11n 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	0.039	0	0.039
Left hand, Tilt 15 Degree	0.029	0	0.029
Right hand, Touch cheek	0.087	0	0.087
Right hand, Tilt 15 Degree	0.042	0	0.042
Body, Back Side	0.054	0	0.054
Body, Front Side	0.024	0	0.024
Body, Left Edge	0.034	0	0.034
Body, Right Edge	0.005	0	0.005
Body, Top Edge	0.015	0	0.015
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$_{MAX}$) 0.087　+(BT Antenna SAR$_{MAX}$)0 =0.087 ＜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	0.644	0.386	**0.690**	0.688	0.039	0.729
Left hand, Tilt 15 Degree	**0.387**	0.168	0.255	0.366	0.029	0.416
Right hand, Touch cheek	**0.992**	0.400	0.598	0.933	0.087	1.079
Right hand, Tilt 15 Degree	0.416	0.145	0.213	**0.448**	0.042	0.49
Body, Back Side	0.913	0.616	**1.230**	0.970	0.054	1.284
Body, Front Side	0.515	0.347	0.553	**0.599**	0.024	0.623
Body, Left Edge	0.343	0.097	0.193	**0.408**	0.034	0.442
Body, Right Edge	0.438	0.089	0.208	**0.491**	0.005	0.496
Body, Top Edge	N/A	N/A	N/A	N/A	0.015	0.015
Body, Bottom Edge	0.122	0.502	**0.942**	0.127	N/A	0.942
Note: 1.The value with blue color is the maximum ΣSAR$_{1g}$ Value. 2. MAX. ΣSAR$_{1g}$ =Unlicensed SAR$_{MAX}$ +Licensed SAR$_{MAX}$						

WIFI antenna is ＞5cm from GSM/WCDMA Antenna. (GSM/WCDMA Antenna SAR$_{MAX}$)1.230 +(WIFI Antenna SAR$_{MAX}$)0.054 =1.284 ＜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	5.9	N	1	1	5.9	∞
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	$u_c^{'} = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						12.12	
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$		N		k=2		24.24	

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 sensor	Agilent N8481H	MY50350004	September 25, 2011	One year
05	Power sensor	E9327A	US40441622	September 24, 2011	One year
06	Signal Generator	HP 8341B	2730A00804	September 12, 2011	One year
07	Amplifier	IXA-020	0401	No Calibration Requested	
08	BTS	E5515C	MY48360988	December 2, 2011	One year
09	E-field Probe	EX3DV4	3816	October 3, 2011	One year
10	DAE	DAE4	871	November 22, 2011	One year
11	Validation Kit 835MHz	D835V2	4d020	August 26, 2011	One year
12	Validation Kit 1900MHz	D1900V2	5d060	August 31, 2011	One year
13	Validation Kit 2450MHz	D2450V2	786	August 29, 2011	One year
14	Dual directional coupler	777D	50146	August 21, 2011	One year
15	Dual directional coupler	778D-012	5051P	August 21, 2011	One year
16	Temperature Probe	JM222	AA1009129	March 16, 2011	One year
17	Hygrothermograph	HTC-1	TASH121602	June 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)
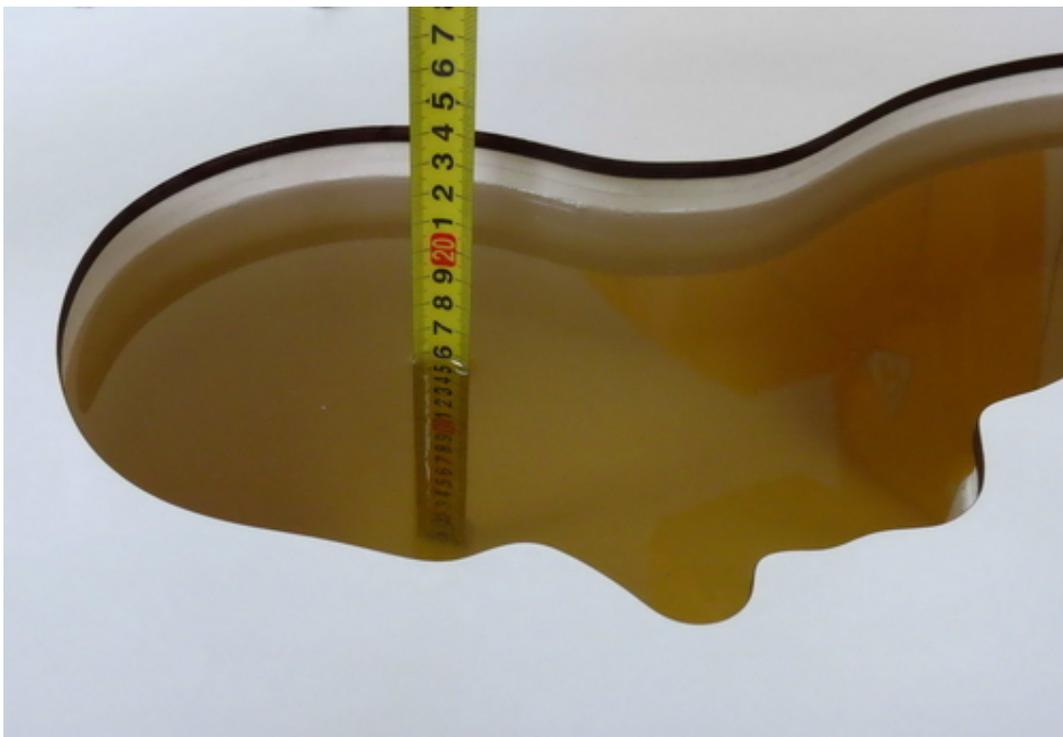
Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)
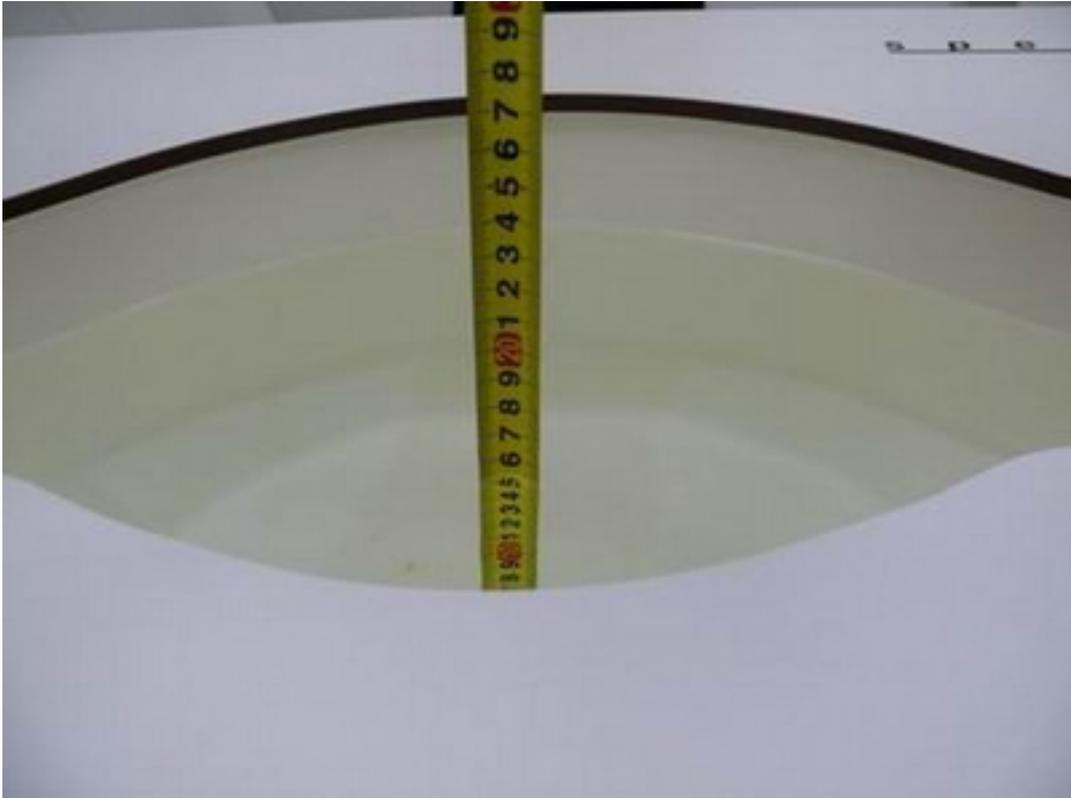
Picture 4: Liquid depth in the flat Phantom (1900 MHz, 15.2cm depth)

Picture 5: liquid depth in the head Phantom (1900 MHz, 15.3cm depth)
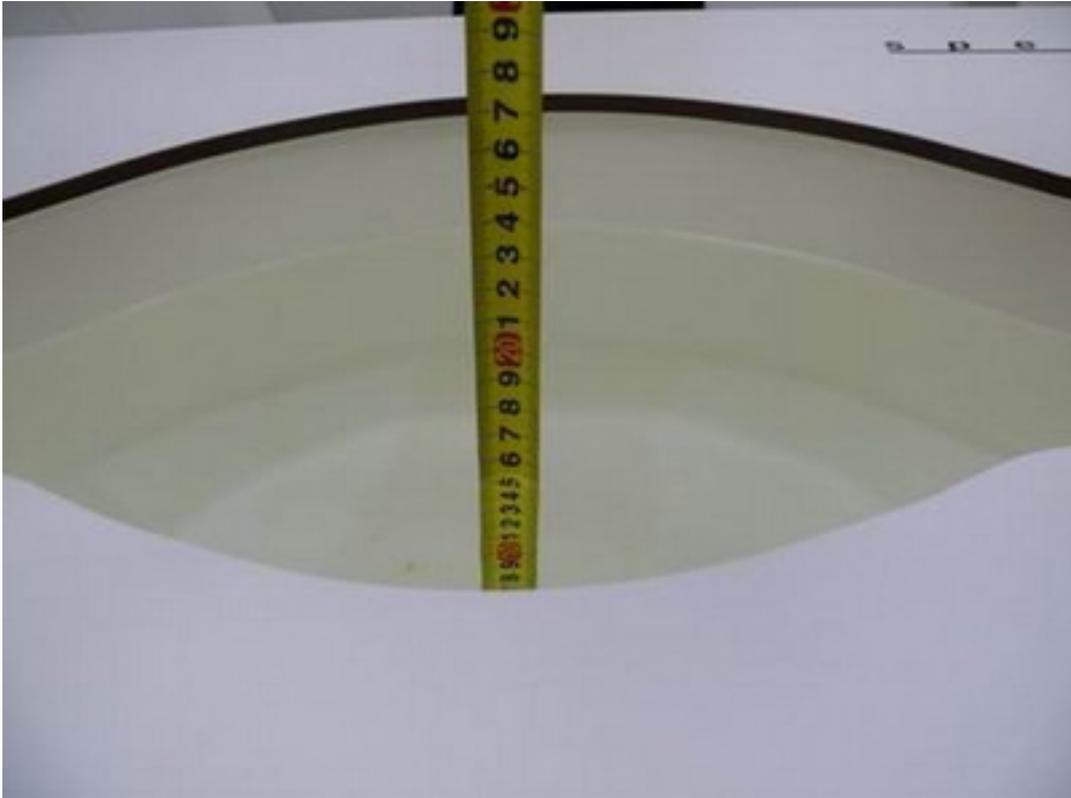
Picture 6: Liquid depth in the flat Phantom (2450 MHz, 15.3cm depth)

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: 2/22/2012 12:00:13 PM

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

Medium parameters used: f = 835 MHz; σ = 0.91 mho/m; ε_r = 42.02; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.7℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

d=15mm, Pin=250mW/Area Scan (101x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.56 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
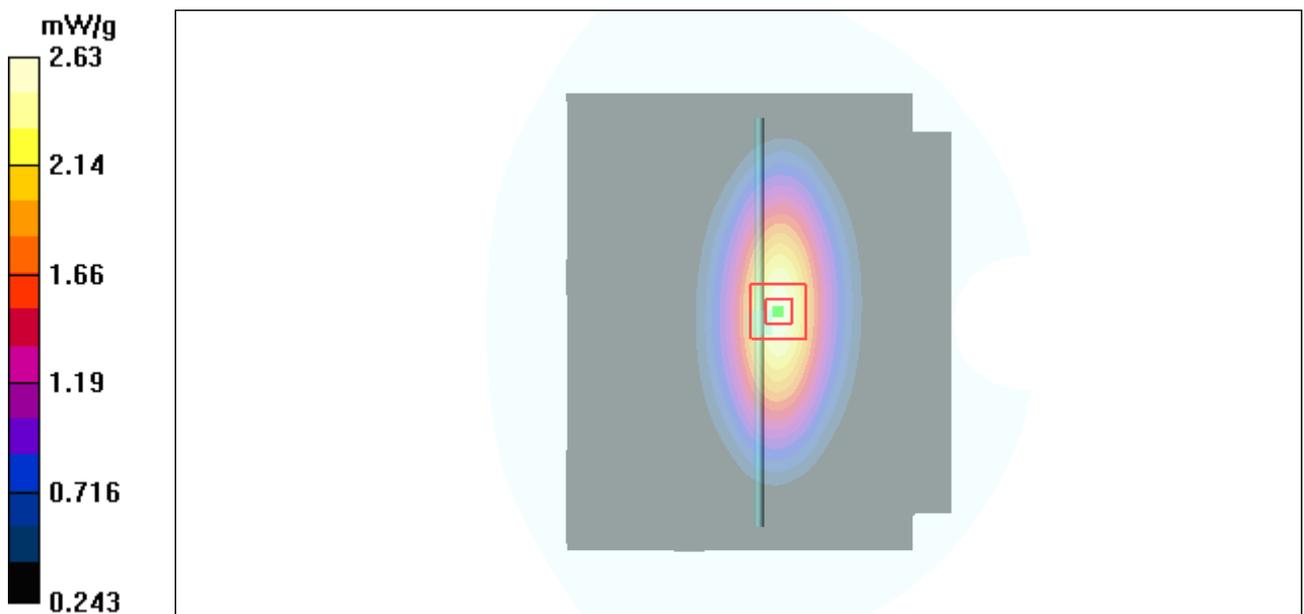
Figure 7 System Performance Check 835MHz 250mW

System Performance Check at 835 MHz Body TSL

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

Date/Time:2/27/2012 6:37:20 PM

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/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.7℃

DASY4 Configuration:

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

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

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

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

d=15mm, Pin=250mW/Area Scan (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
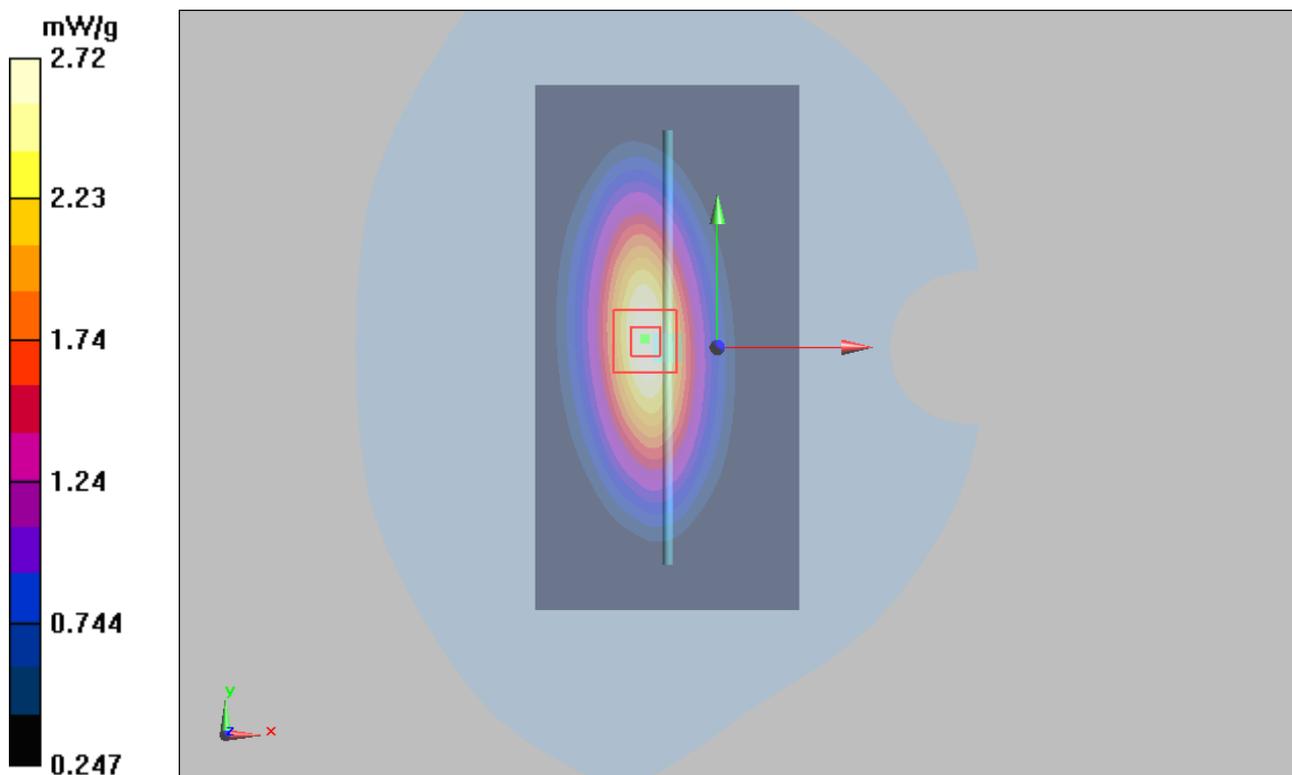
Figure 8 System Performance Check 835MHz 250mW

System Performance Check at 1900 MHz Head TSL

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

Date/Time: 2/28/2012 8:47:34 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.39 mho/m; ε_r = 40.09; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.8℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

d=10mm, Pin=250mW/Area Scan (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
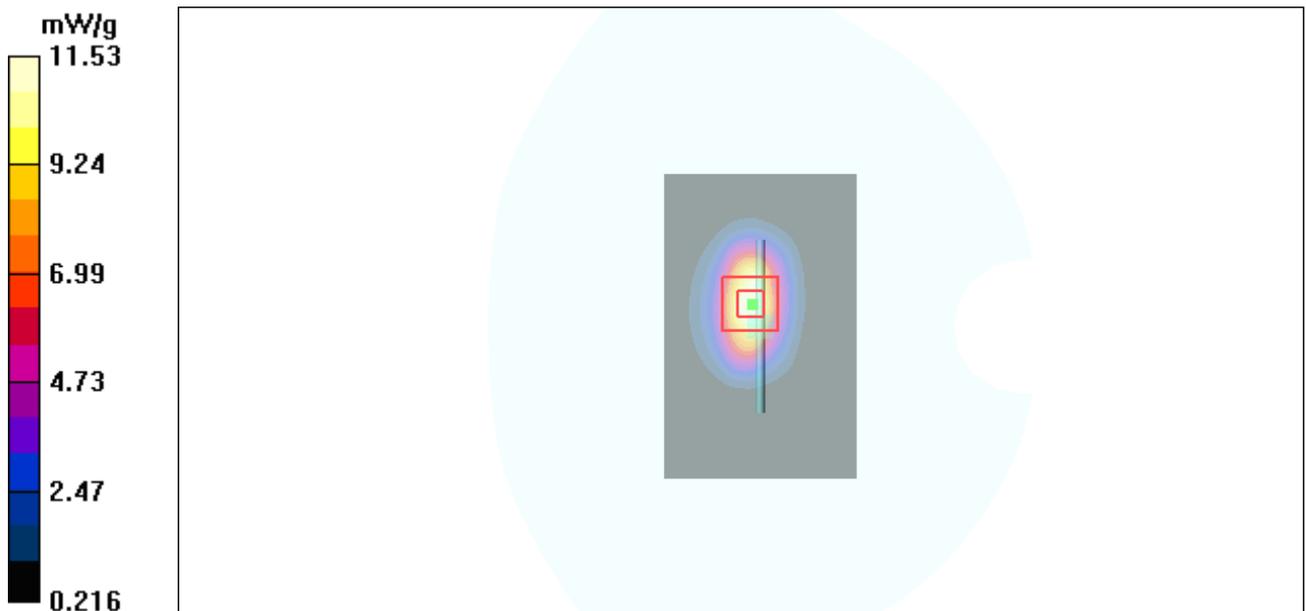
Figure 9 System Performance Check 1900MHz 250mW

System Performance Check at 1900 MHz Body TSL

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

Date/Time: 2/29/2012 1:50:19 PM

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

Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε_r = 52.14; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.8℃

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

d=10mm, Pin=250mW/Area Scan (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
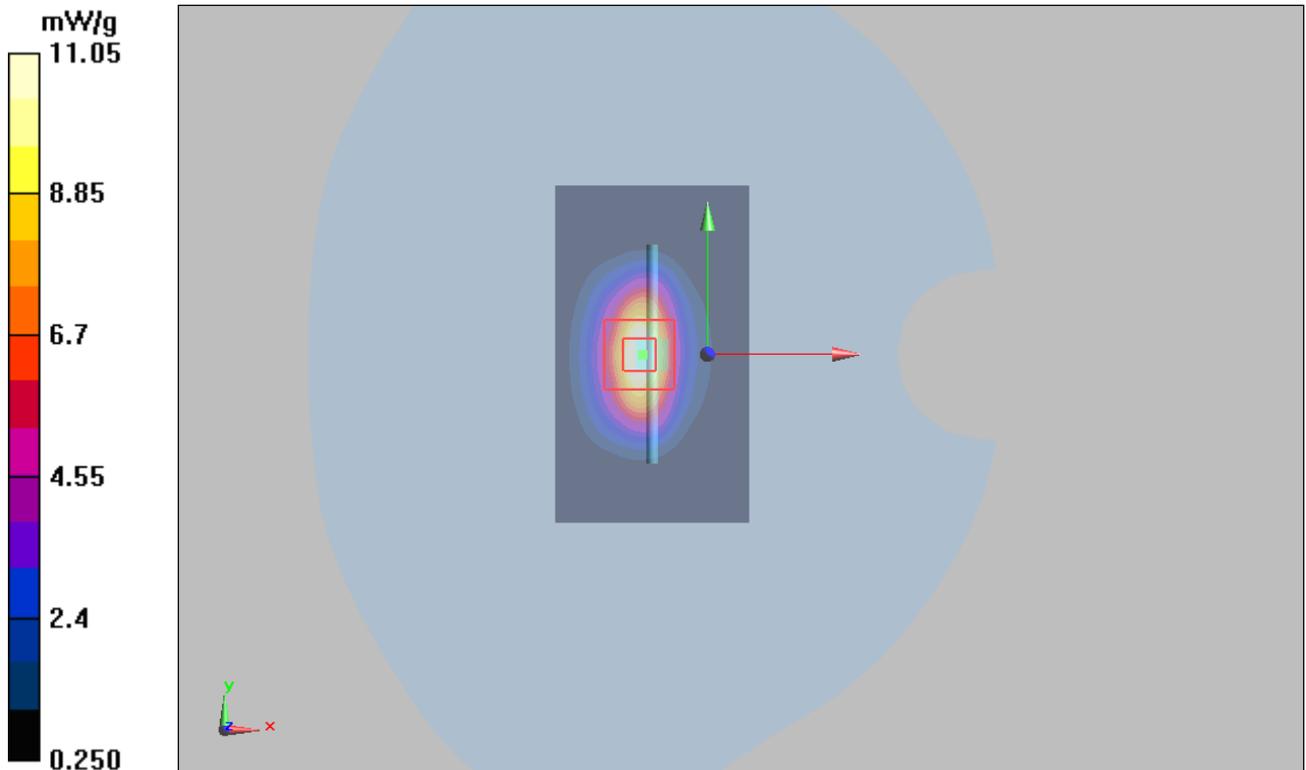
Figure 10 System Performance Check 1900MHz 250mW

System Performance Check at 2450 MHz Head TSL

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

Date/Time: 3/2/2012 12:31:36 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

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

d=10mm, Pin=250mW/Area Scan (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
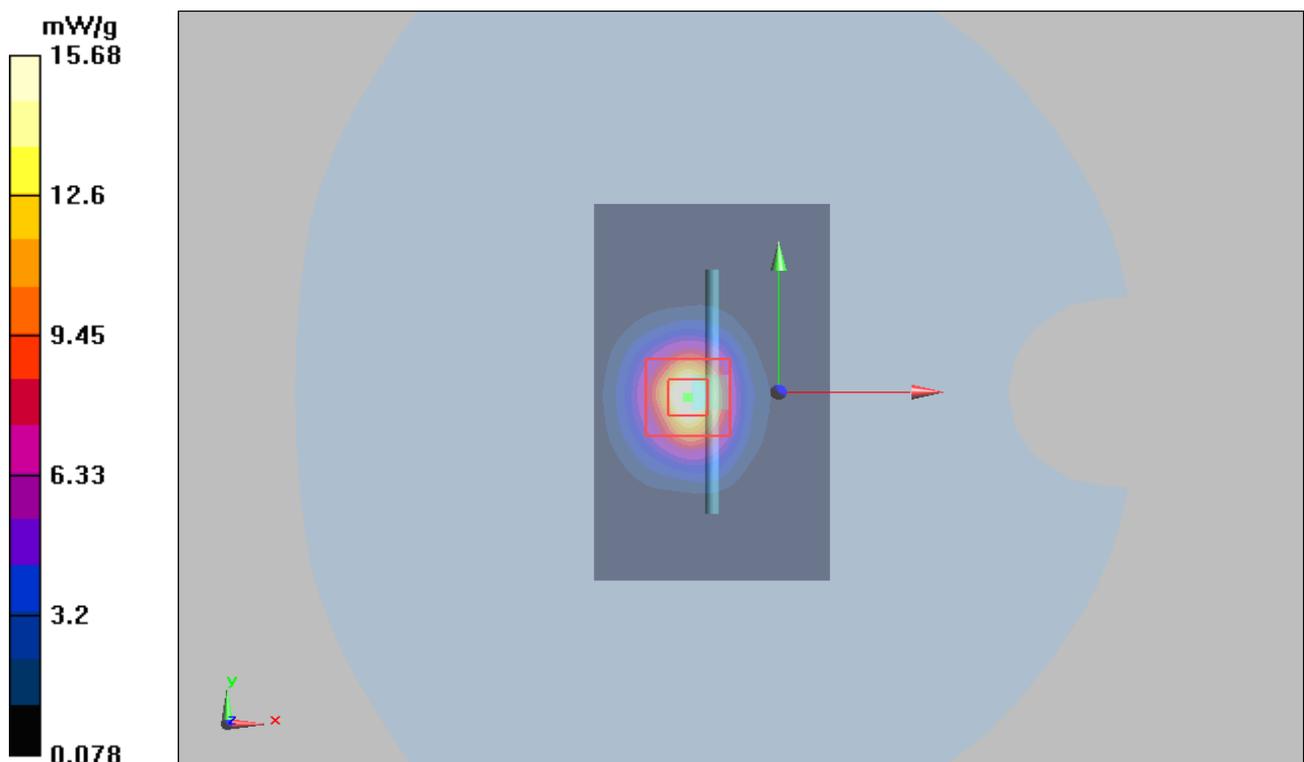
Figure 11 System Performance Check 2450MHz 250mW

System Performance Check at 2450 MHz Body TSL

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

Date/Time: 3/2/2012 10:02:36 AM

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

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

d=10mm, Pin=250mW/Area Scan (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
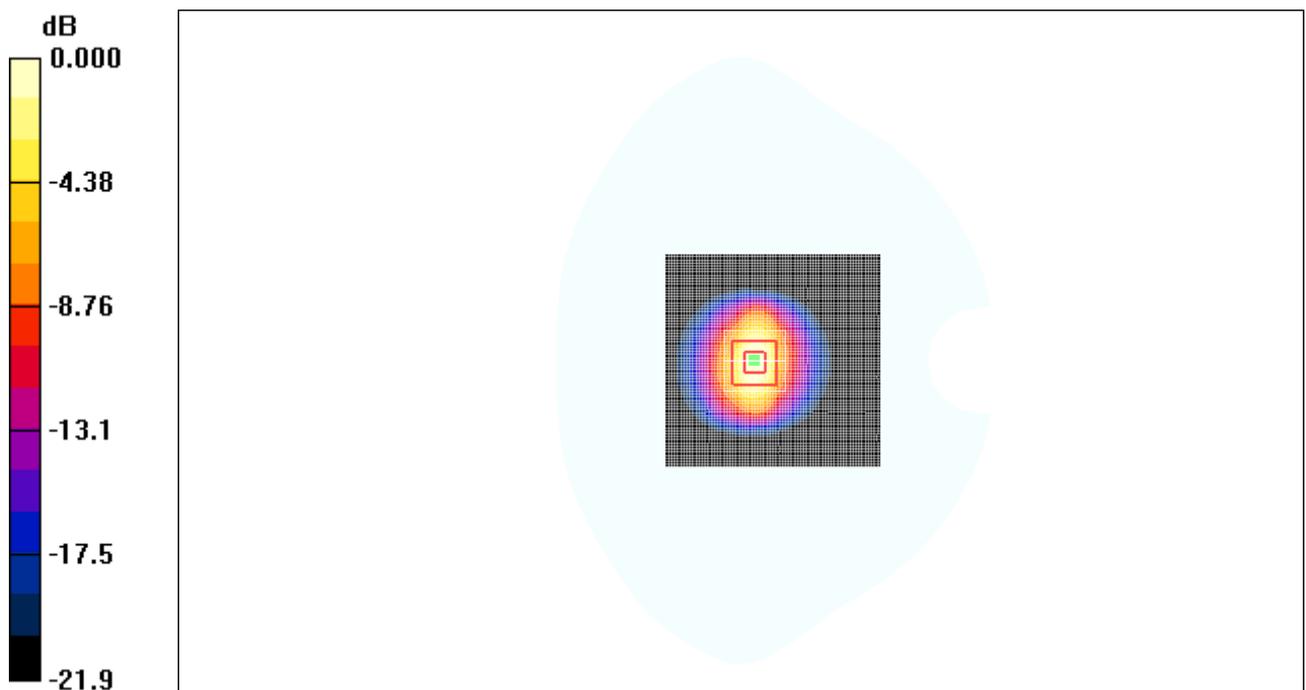
0 dB = 19.82mW/g

Figure 12 System Performance Check 2450MHz 250mW

ANNEX C: Graph Results

GSM 850 Left Cheek Middle (SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 11:12:00 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

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

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.705 mW/g

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

Reference Value = 9.76 V/m; Power Drift = -0.192 dB

Peak SAR (extrapolated) = 0.824 W/kg

SAR(1 g) = 0.644 mW/g; SAR(10 g) = 0.495 mW/g

Maximum value of SAR (measured) = 0.668 mW/g
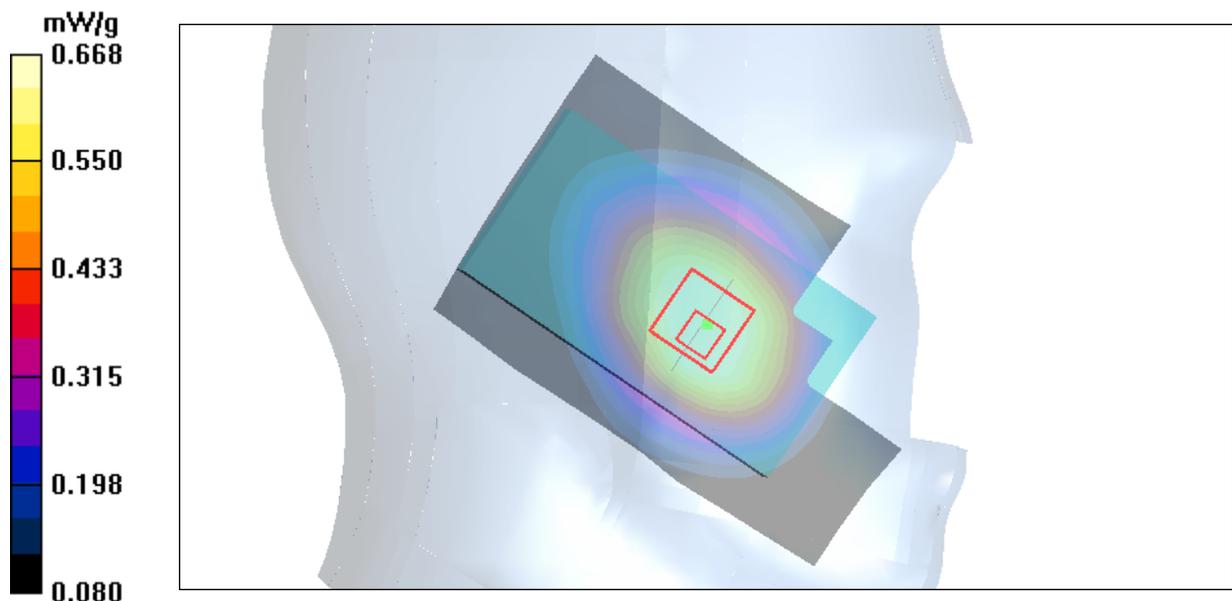
Figure 13 Left Hand Touch Cheek GSM 850 Channel 190

GSM 850 Left Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 10:00:21 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

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

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.402 mW/g

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

Reference Value = 13.7 V/m; Power Drift = -0.157 dB

Peak SAR (extrapolated) = 0.454 W/kg

SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.297 mW/g

Maximum value of SAR (measured) = 0.403 mW/g
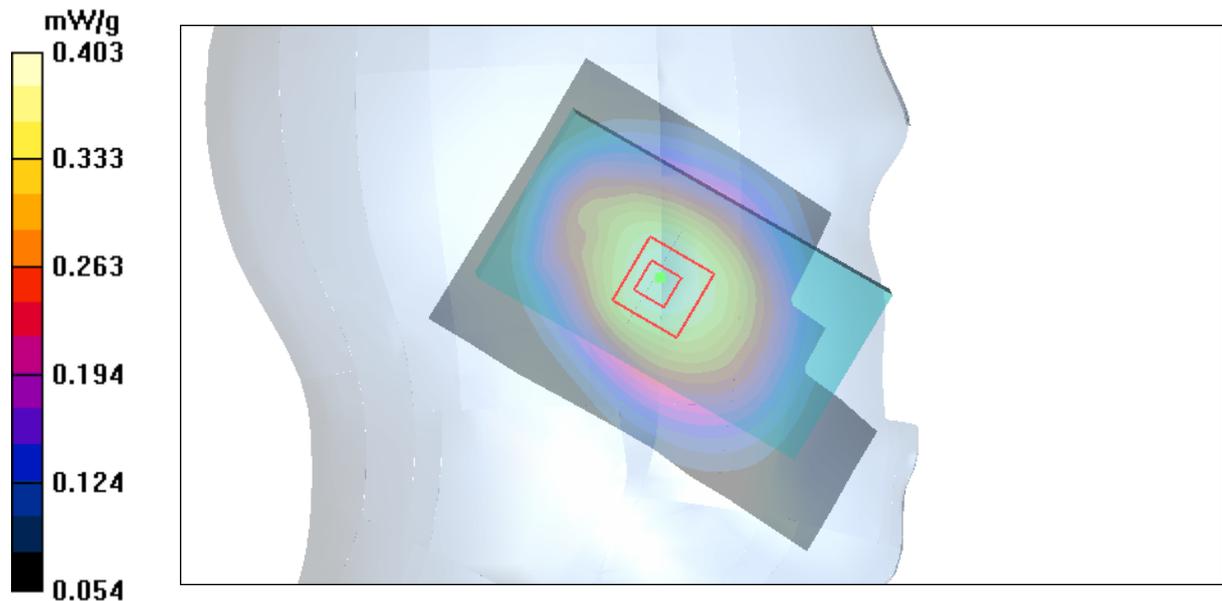
Figure 14 Left Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 11:12:50 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃　　　Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.854 mW/g

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

Reference Value = 9.73 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.795 mW/g; SAR(10 g) = 0.600 mW/g

Maximum value of SAR (measured) = 0.841 mW/g
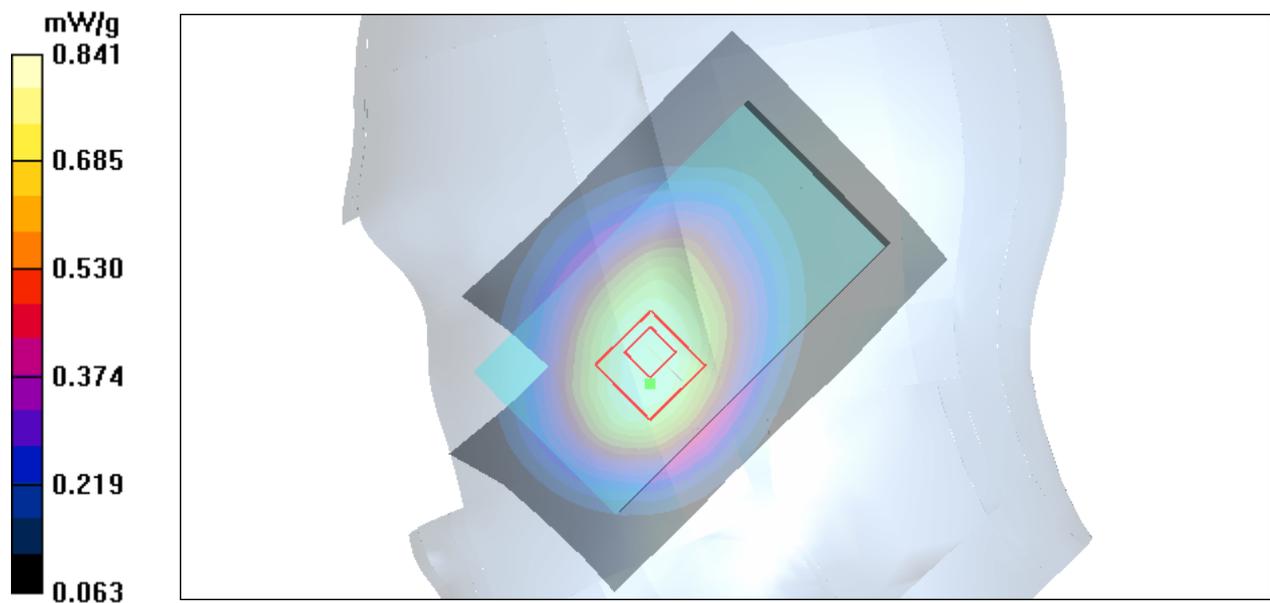
Figure 15 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 11:42:31 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 14.3 V/m; Power Drift = -0.049 dB

Peak SAR (extrapolated) = 0.493 W/kg

SAR(1 g) = 0.416 mW/g; SAR(10 g) = 0.318 mW/g

Maximum value of SAR (measured) = 0.432 mW/g
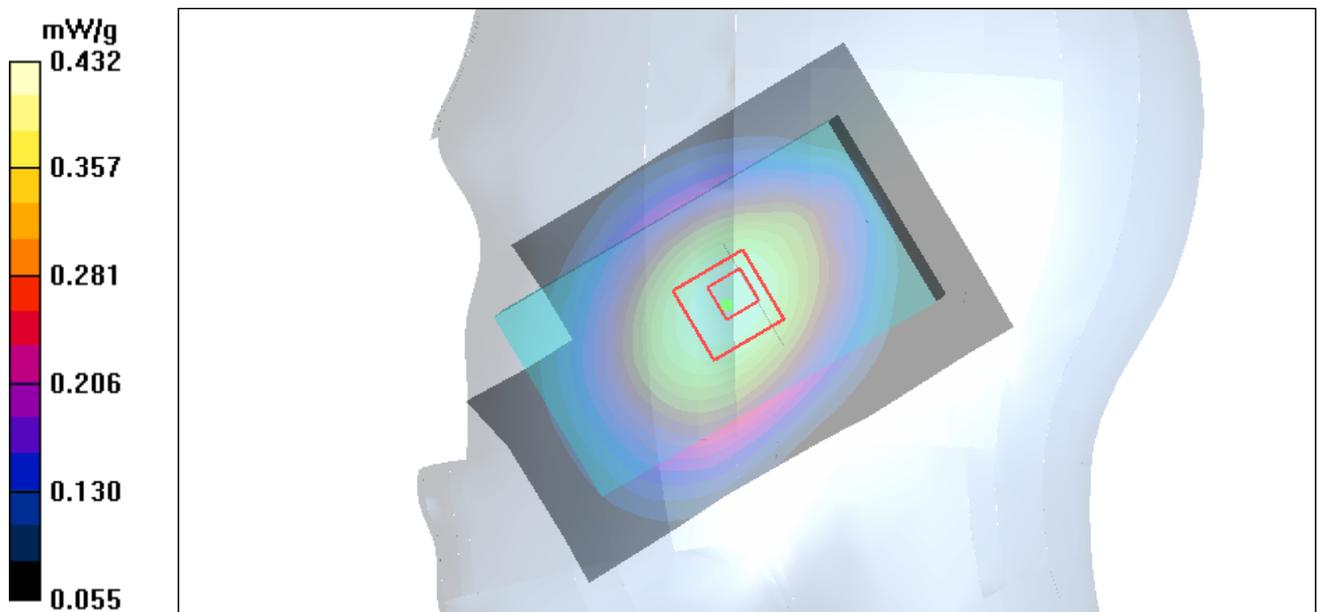
Figure 16 Right Hand Tilt 15° GSM 850 Channel 190

GSM 850 Right Cheek High(SN:BAABA18XC18B7190)

Date/Time: 2/22/2012 1:26:02 PM

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 849 MHz; σ = 0.924 mho/m; ε_r = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.907 mW/g

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

Reference Value = 9.72 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.996 W/kg

SAR(1 g) = 0.821 mW/g; SAR(10 g) = 0.613 mW/g

Maximum value of SAR (measured) = 0.870 mW/g
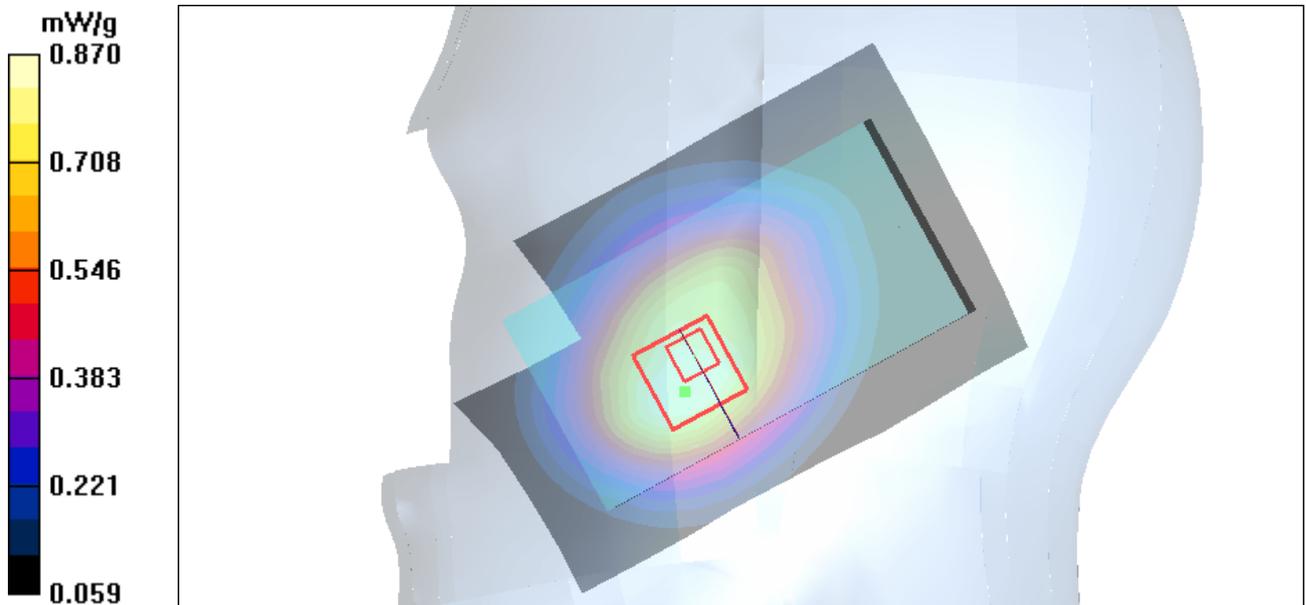
Figure 17 Right Hand Touch Cheek GSM 850 Channel 251

GSM 850 Right Cheek Middle(SN:BAABA18XC18B7190)

Date/Time: 2/22/2012 11:28:35 PM

Communication System: GSM 850; Frequency: 836.6 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.850 mW/g

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

Reference Value = 9.62 V/m; Power Drift = 0.099 dB

Peak SAR (extrapolated) = 0.955 W/kg

SAR(1 g) = 0.802 mW/g; SAR(10 g) = 0.609 mW/g

Maximum value of SAR (measured) = 0.838 mW/g
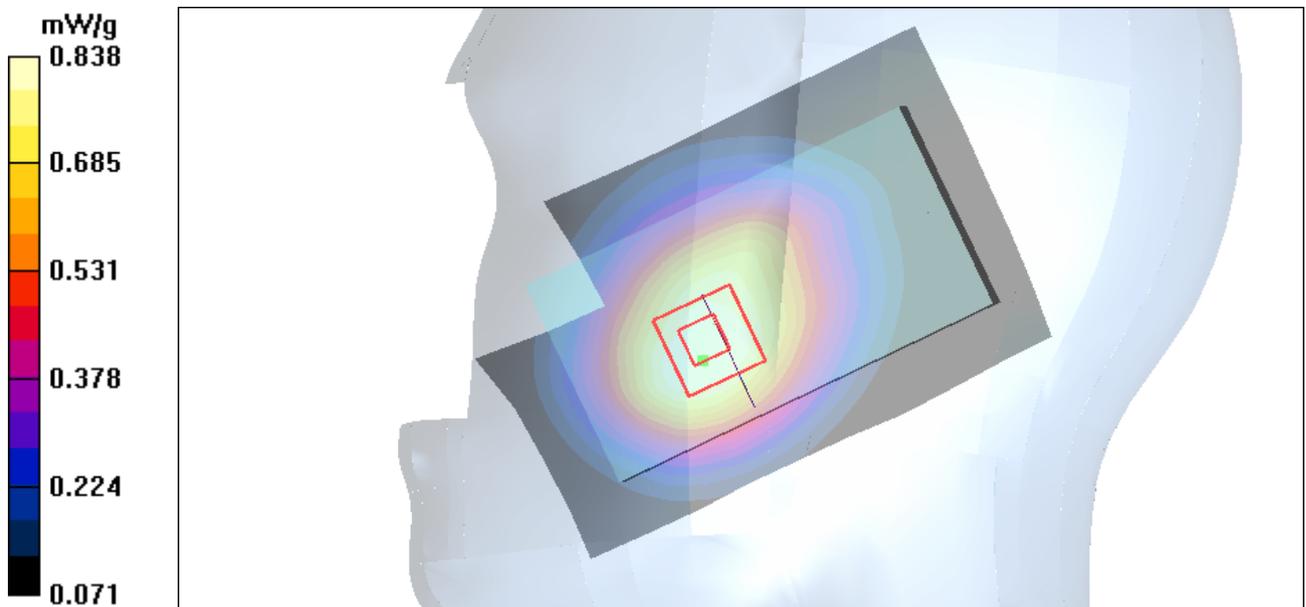
Figure 18 Right Hand Touch Cheek GSM 850 Channel 190

GSM 850 Right Cheek Low(SN:BAABA18XC18B7190)

Date/Time: 2/22/2012 1:40:14 PM

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.899 mho/m; ε_r = 42.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.10 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.992 mW/g; SAR(10 g) = 0.749 mW/g

Maximum value of SAR (measured) = 1.05 mW/g
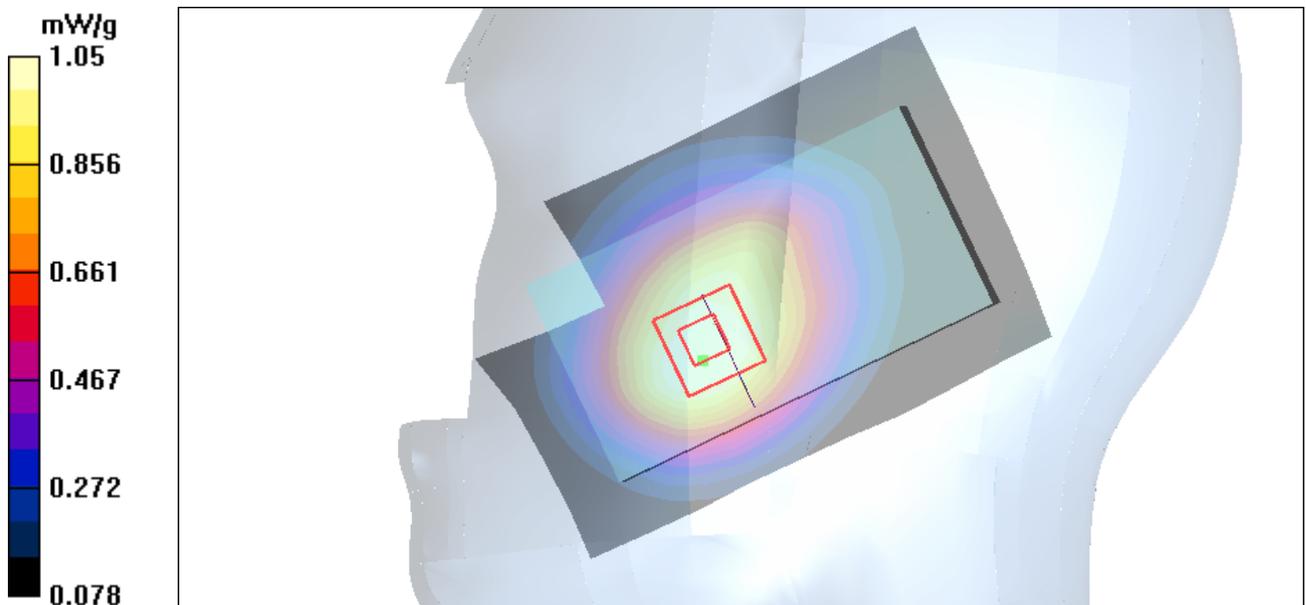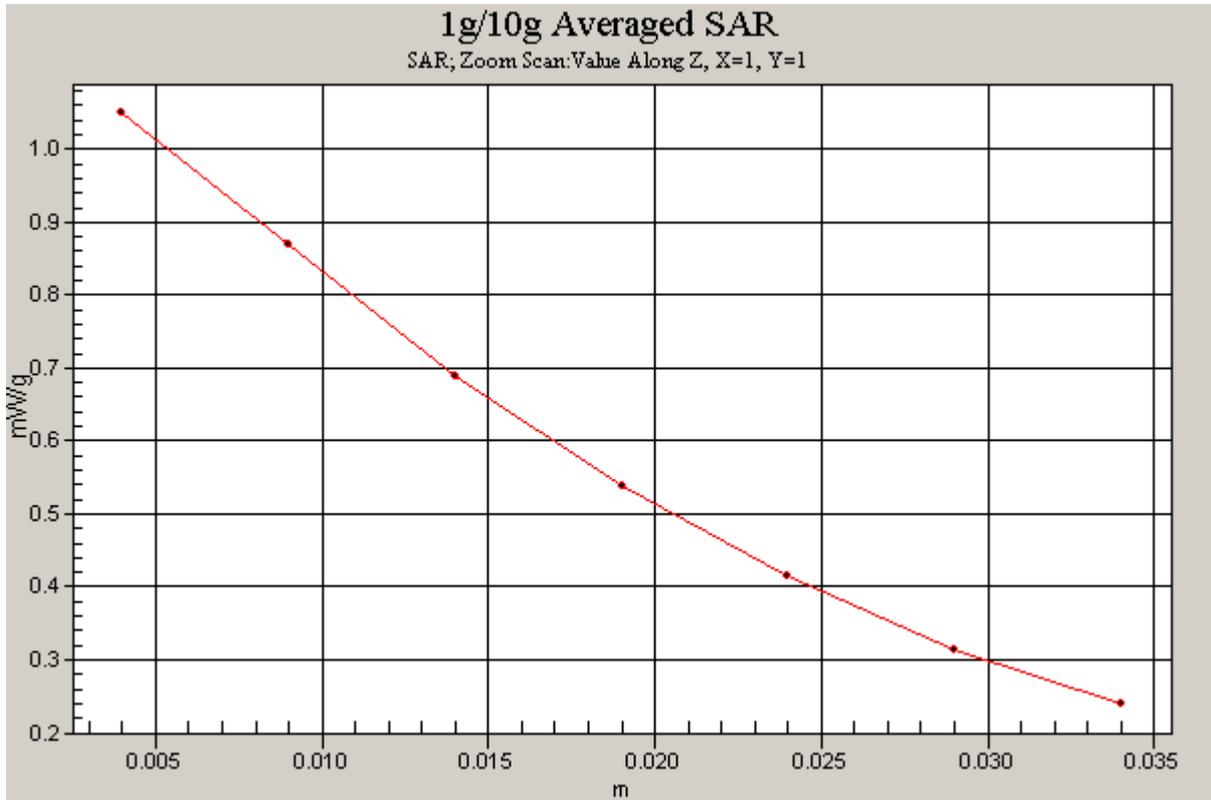
Figure 19 Right Hand Touch Cheek GSM 850 Channel 128

GSM 850 GPRS (1Txslot) Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 9:02:23 PM

Communication System: GSM850 + GPRS(1Up); Frequency: 836.6 MHz;Duty Cycle: 1:8.3

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.854 mW/g

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

Reference Value = 26.9 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 1.85 W/kg

SAR(1 g) = 0.732 mW/g; SAR(10 g) = 0.479 mW/g

Maximum value of SAR (measured) = 0.801 mW/g

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

Reference Value = 26.9 V/m; Power Drift = 0.017 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.794 mW/g; SAR(10 g) = 0.565 mW/g

Maximum value of SAR (measured) = 0.845 mW/g
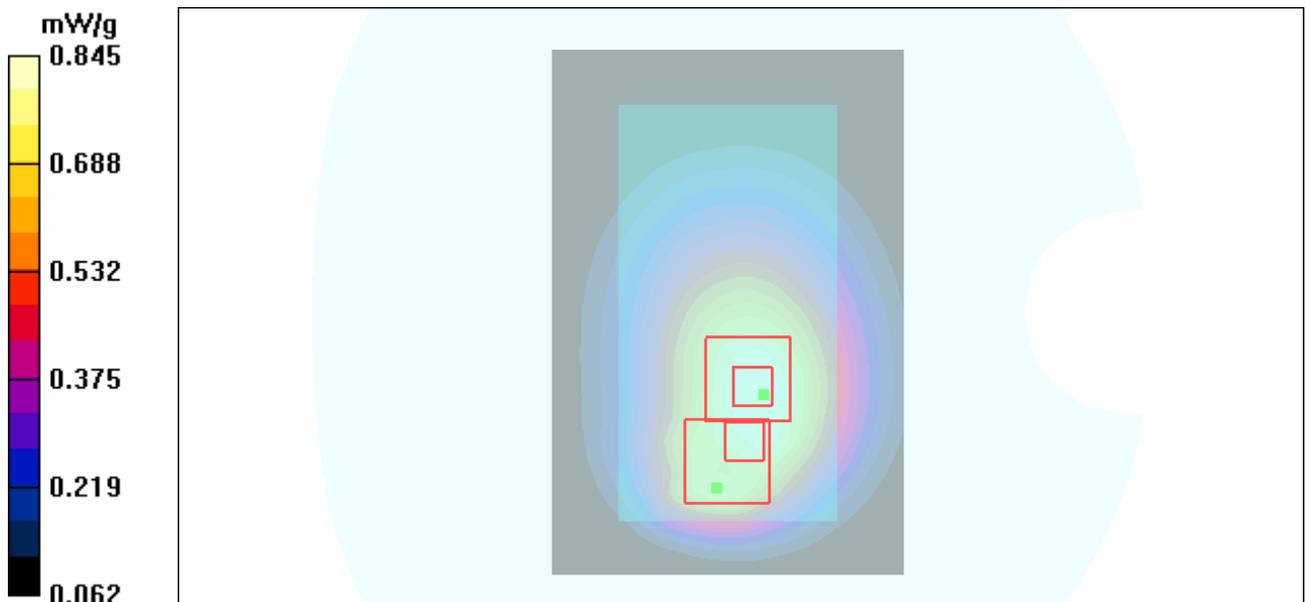
Figure 20 Body, Back Side, GSM 850 GPRS (1Txslot) Channel 190

GSM 850 GPRS (2Txslots) Back Side High(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 9:43:56 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 849 MHz; σ = 1.01 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.885 mW/g

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

Reference Value = 27.2 V/m; Power Drift = 0.153 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.723 mW/g; SAR(10 g) = 0.479 mW/g

Maximum value of SAR (measured) = 0.782 mW/g

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

Reference Value = 27.2 V/m; Power Drift = 0.153 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.830 mW/g; SAR(10 g) = 0.588 mW/g

Maximum value of SAR (measured) = 0.884 mW/g
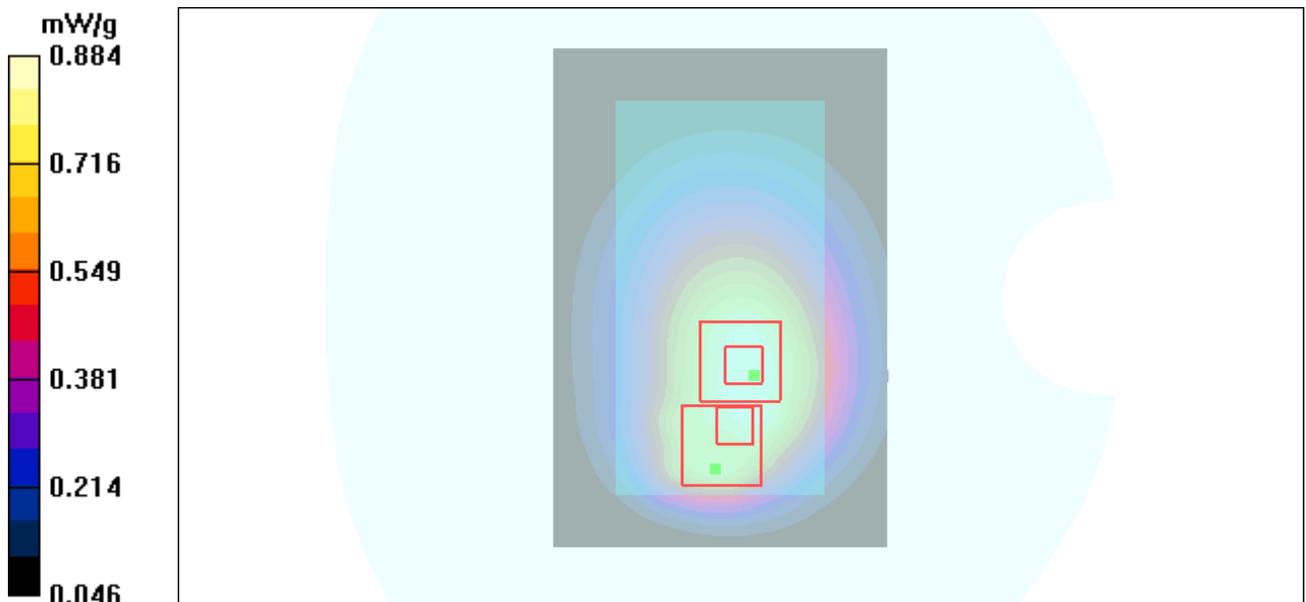
Figure 21 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 251

GSM 850 GPRS (2Txslots) Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 9:21:35 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.882 mW/g

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

Reference Value = 27.5 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.730 mW/g; SAR(10 g) = 0.494 mW/g

Maximum value of SAR (measured) = 0.810 mW/g

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

Reference Value = 27.5 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.820 mW/g; SAR(10 g) = 0.584 mW/g

Maximum value of SAR (measured) = 0.878 mW/g
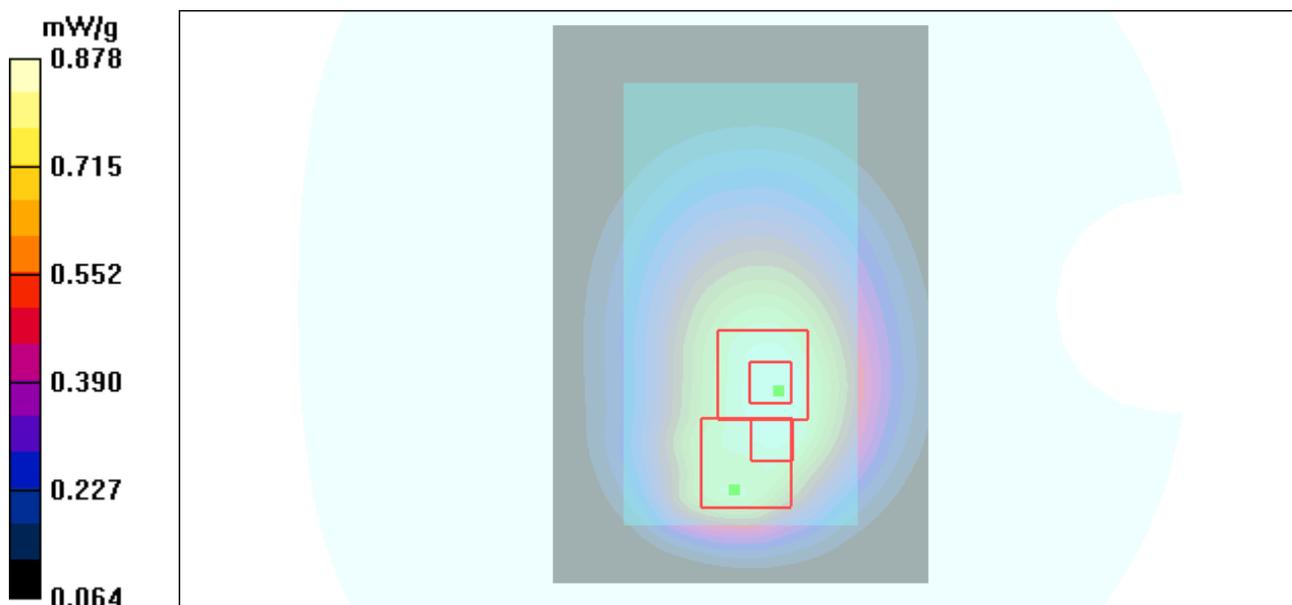
Figure 22 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Back Side Low(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 10:02:41 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4.15

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.990 mW/g

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

Reference Value = 28.7 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 1.37 W/kg

SAR(1 g) = 0.828 mW/g; SAR(10 g) = 0.543 mW/g

Maximum value of SAR (measured) = 0.912 mW/g

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

Reference Value = 28.7 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.904 mW/g; SAR(10 g) = 0.636 mW/g

Maximum value of SAR (measured) = 0.964 mW/g
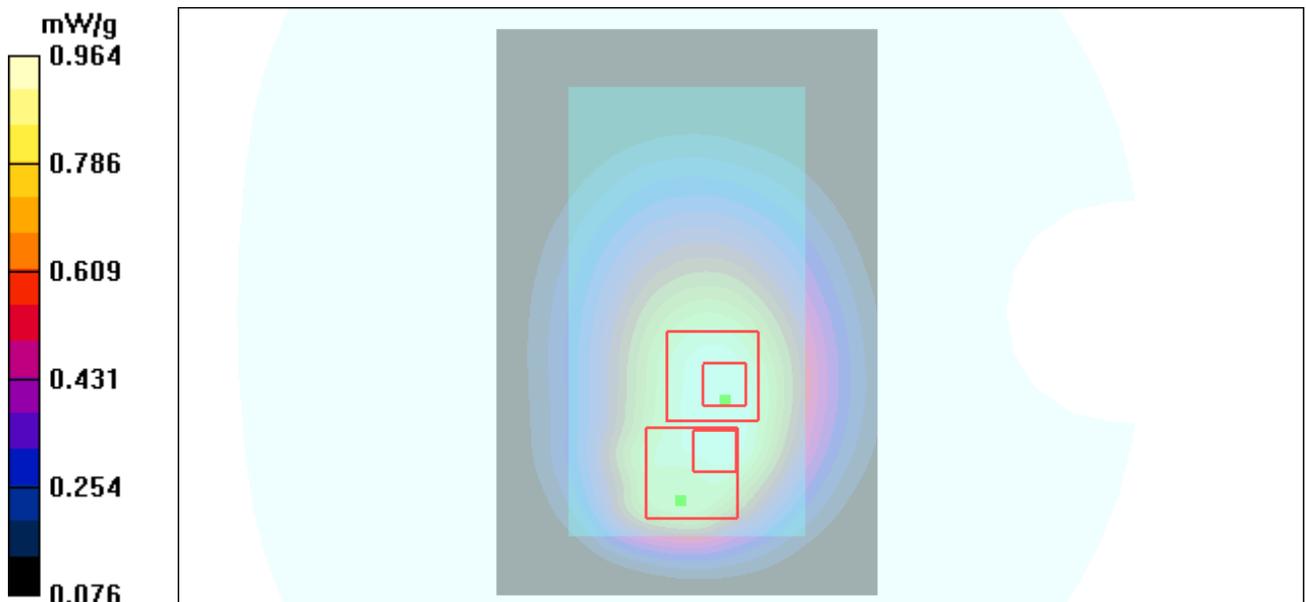
Figure 23 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 128

GSM 850 GPRS (2Txslots) Front Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 10:24:18 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Front Side Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.526 mW/g

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

Reference Value = 22.1 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.515 mW/g; SAR(10 g) = 0.371 mW/g

Maximum value of SAR (measured) = 0.525 mW/g
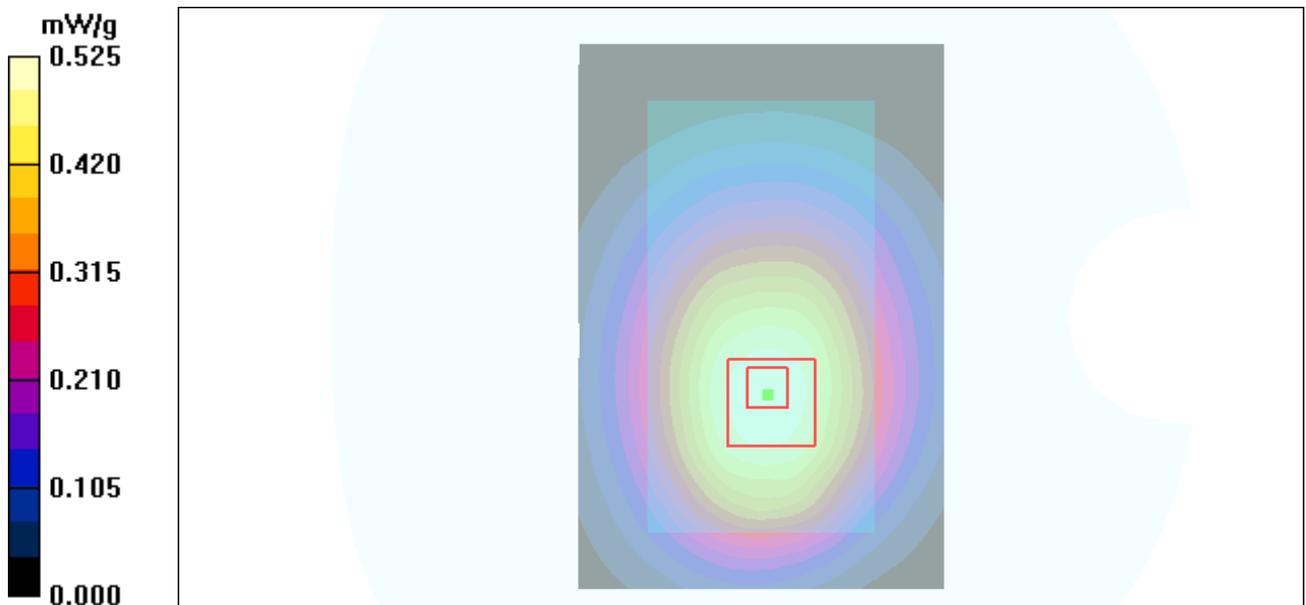
Figure 24 Body, Front Side, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Left Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 9:28:46 AM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Left Edge Middle/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.374 mW/g

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

Reference Value = 19.0 V/m; Power Drift = -0.036 dB

Peak SAR (extrapolated) = 0.455 W/kg

SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.237 mW/g

Maximum value of SAR (measured) = 0.369 mW/g
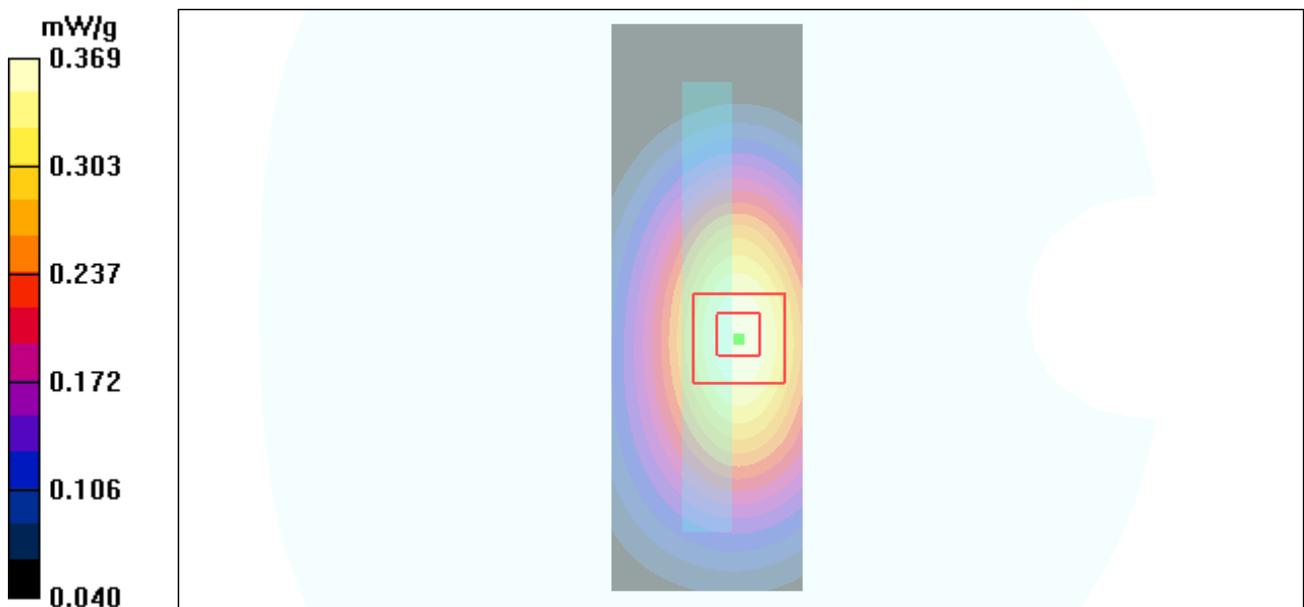
Figure 25 Body, Left Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Right Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 9:40:24 AM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Right Edge Middle/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.469 mW/g

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

Reference Value = 22.1 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 0.563 W/kg

SAR(1 g) = 0.438 mW/g; SAR(10 g) = 0.298 mW/g

Maximum value of SAR (measured) = 0.471 mW/g
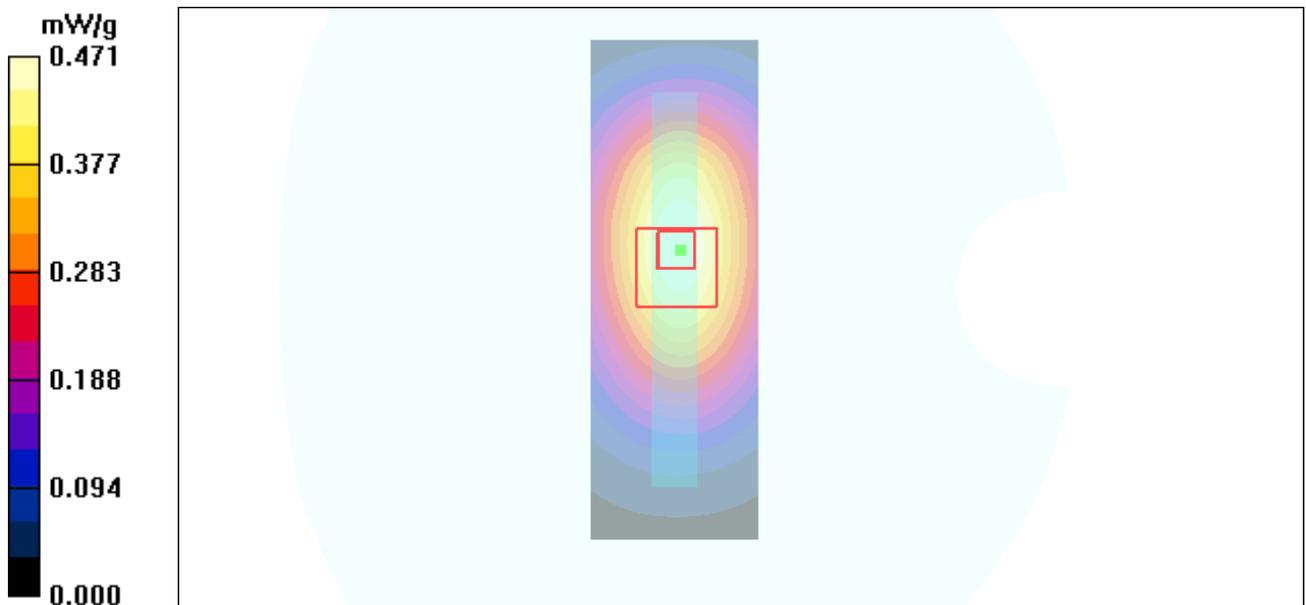
Figure 26 Body, Right Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 GPRS (2Txslots) Bottom Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/27/2012 11:37:39 PM

Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15

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

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

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

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

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

Reference Value = 12.4 V/m; Power Drift = -0.192 dB

Peak SAR (extrapolated) = 0.260 W/kg

SAR(1 g) = 0.122 mW/g; SAR(10 g) = 0.071 mW/g

Maximum value of SAR (measured) = 0.126 mW/g
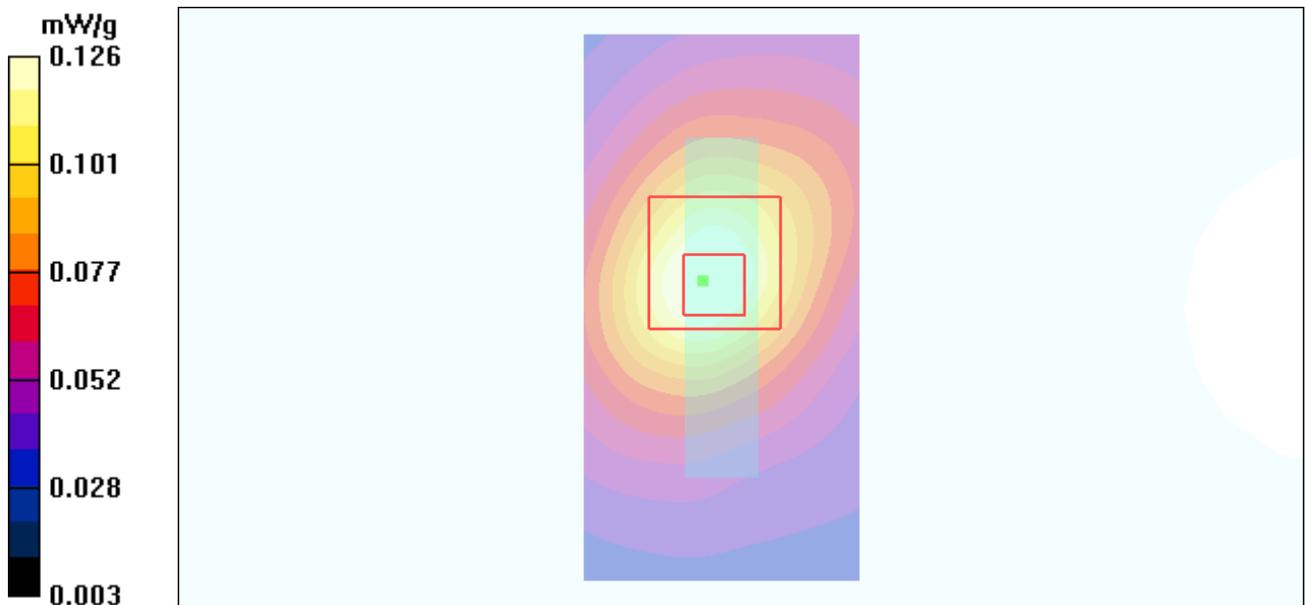
Figure 27 Body, Bottom Edge, GSM 850 GPRS (2Txslots) Channel 190

GSM 850 with Earphone Back Side Low(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 10:10:25 AM

Communication System: GSM 850; Frequency: 824.2 MHz;Duty Cycle: 1:8.3

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; $ε_r$ = 54.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 22.6 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.634 mW/g; SAR(10 g) = 0.407 mW/g
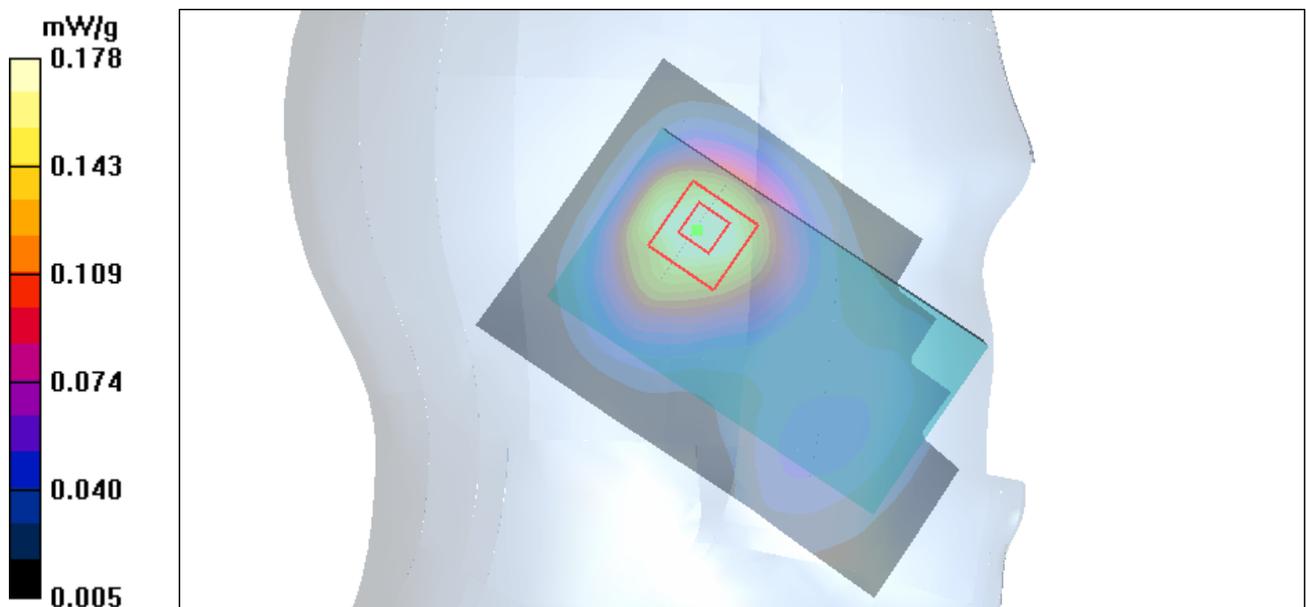
Maximum value of SAR (measured) = 0.691 mW/g
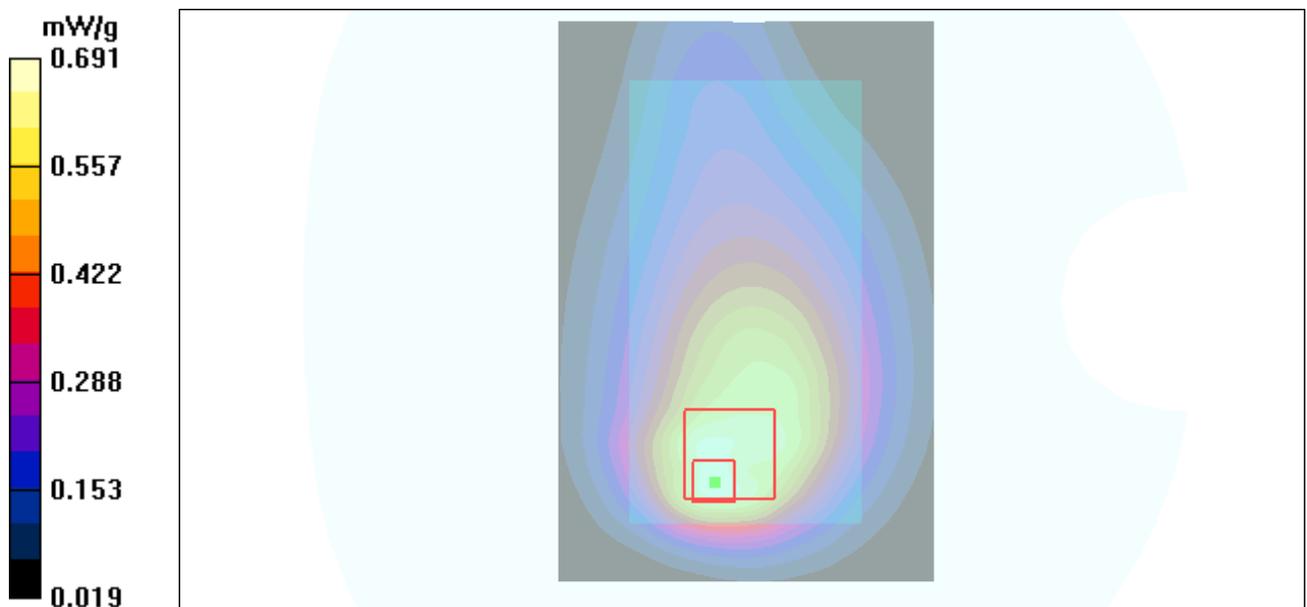
Figure 28 Body with Earphone, Back Side, GSM 850 Channel 128

GSM 850 EGPRS (2Txslots) Back Side Low(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 9:54:23 AM

Communication System: GSM850 + EGPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4.15

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.969 mW/g

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

Reference Value = 30.0 V/m; Power Drift = -0.072 dB

Peak SAR (extrapolated) = 1.20 W/kg

SAR(1 g) = 0.913 mW/g; SAR(10 g) = 0.652 mW/g

Maximum value of SAR (measured) = 0.965 mW/g
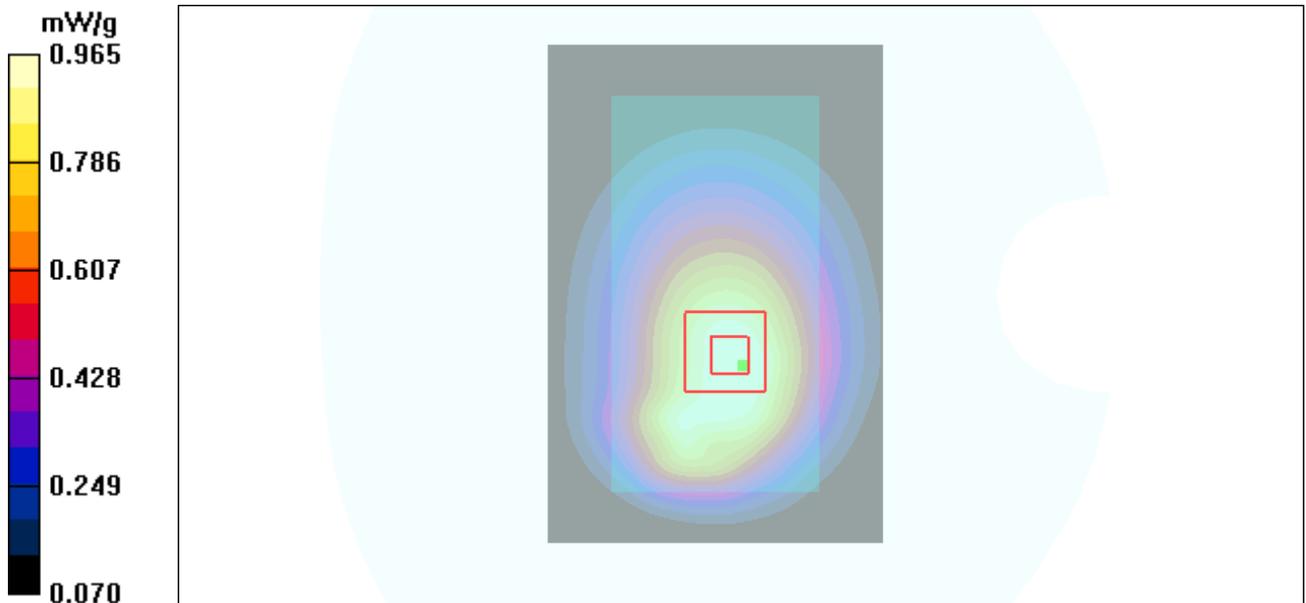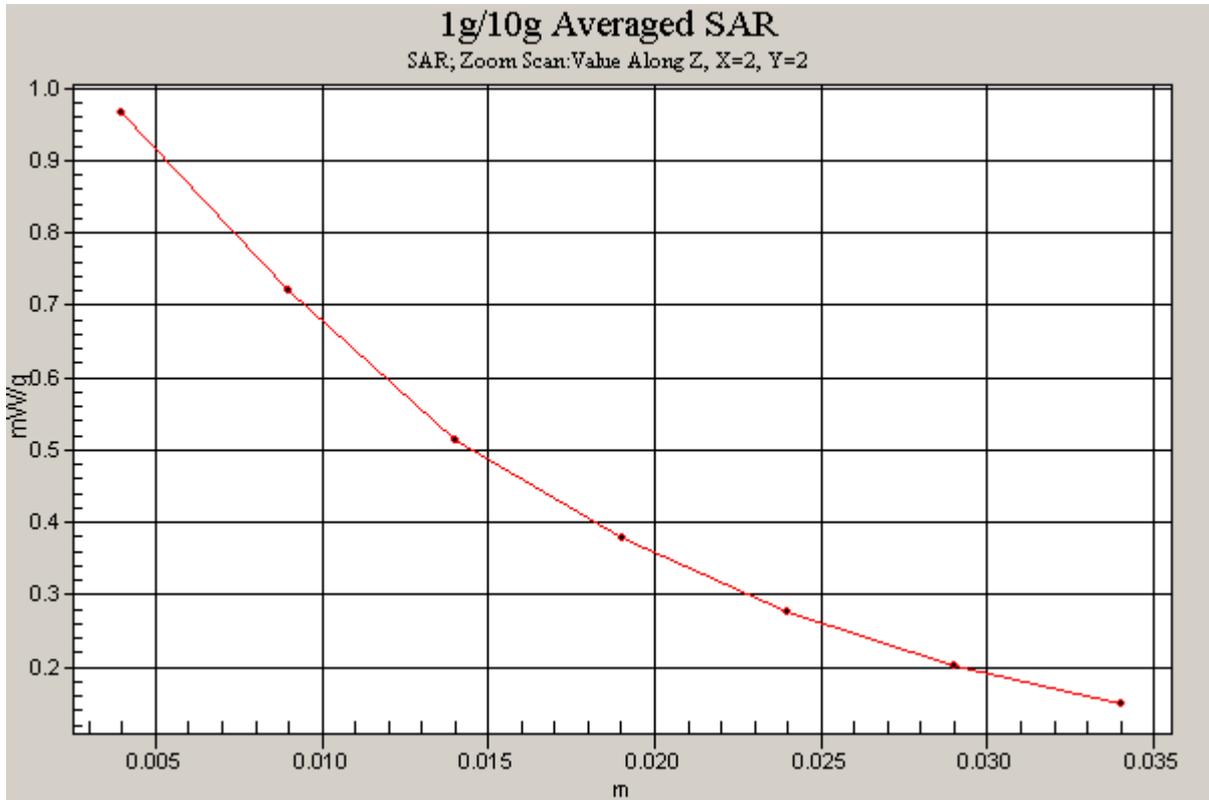
Figure 29 Body, Back Side, GSM 850 EGPRS (2Txslots) Channel 128

GSM 850 GPRS (2Txslots) Back Side Low(SN:BAABA18XC18B7190)

Date/Time: 2/28/2012 10:48:16 AM

Communication System: GSM850 + GPRS(2Up); Frequency: 824.2 MHz;Duty Cycle: 1:4.15

Medium parameters used (interpolated): f = 824.2 MHz; σ = 0.972 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

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

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

Back Side Low/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.944 mW/g

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

Reference Value = 30.6 V/m; Power Drift = -0.173 dB

Peak SAR (extrapolated) = 1.18 W/kg

SAR(1 g) = 0.892 mW/g; SAR(10 g) = 0.631 mW/g

Maximum value of SAR (measured) = 0.940 mW/g
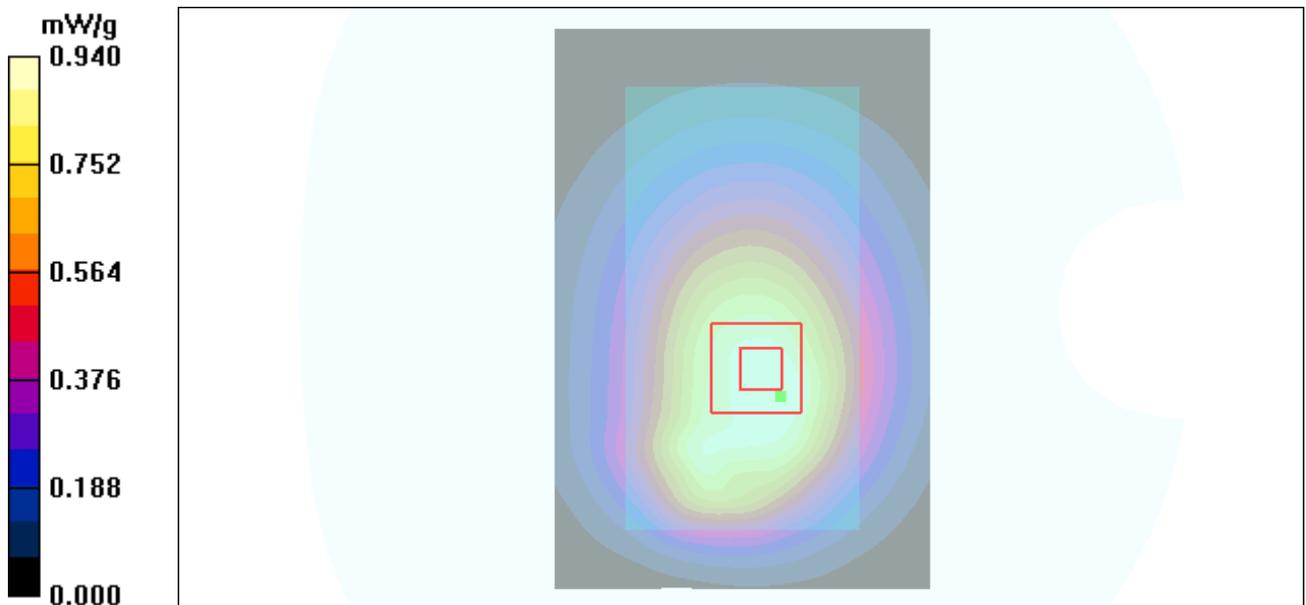
Figure 30 Body, Back Side, GSM 850 GPRS (2Txslots) Channel 128

GSM 1900 Left Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 10:48:01 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.435 mW/g

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

Reference Value = 6.33 V/m; Power Drift = -0.169 dB

Peak SAR (extrapolated) = 0.609 W/kg

SAR(1 g) = 0.386 mW/g; SAR(10 g) = 0.222 mW/g
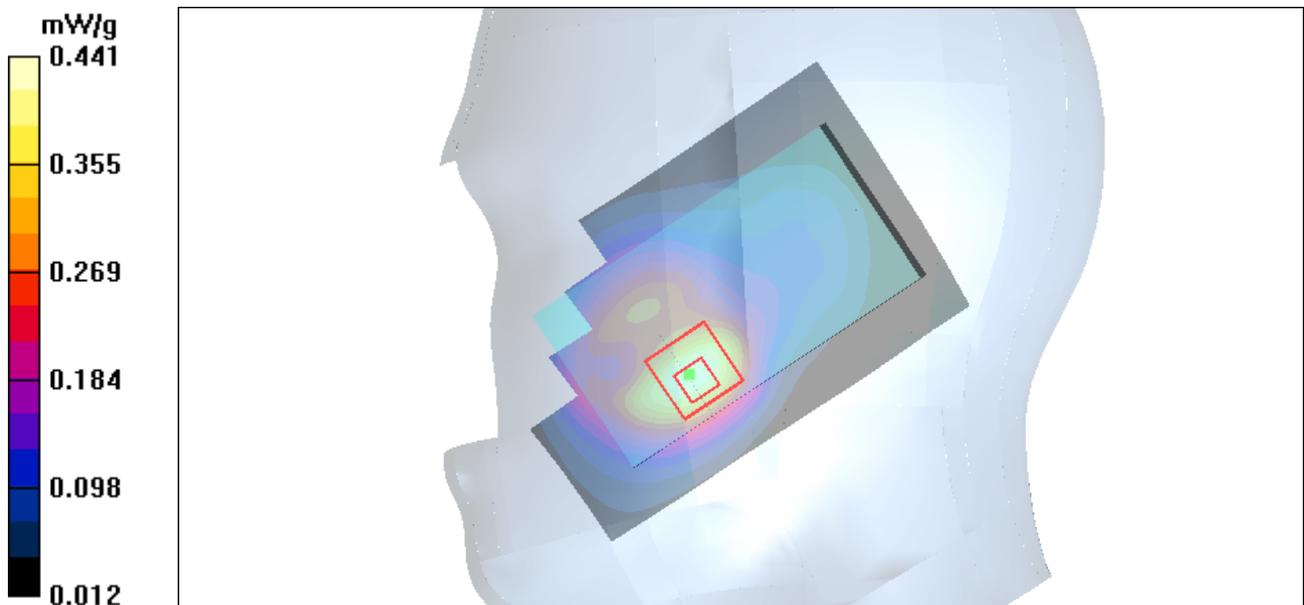
Maximum value of SAR (measured) = 0.436 mW/g
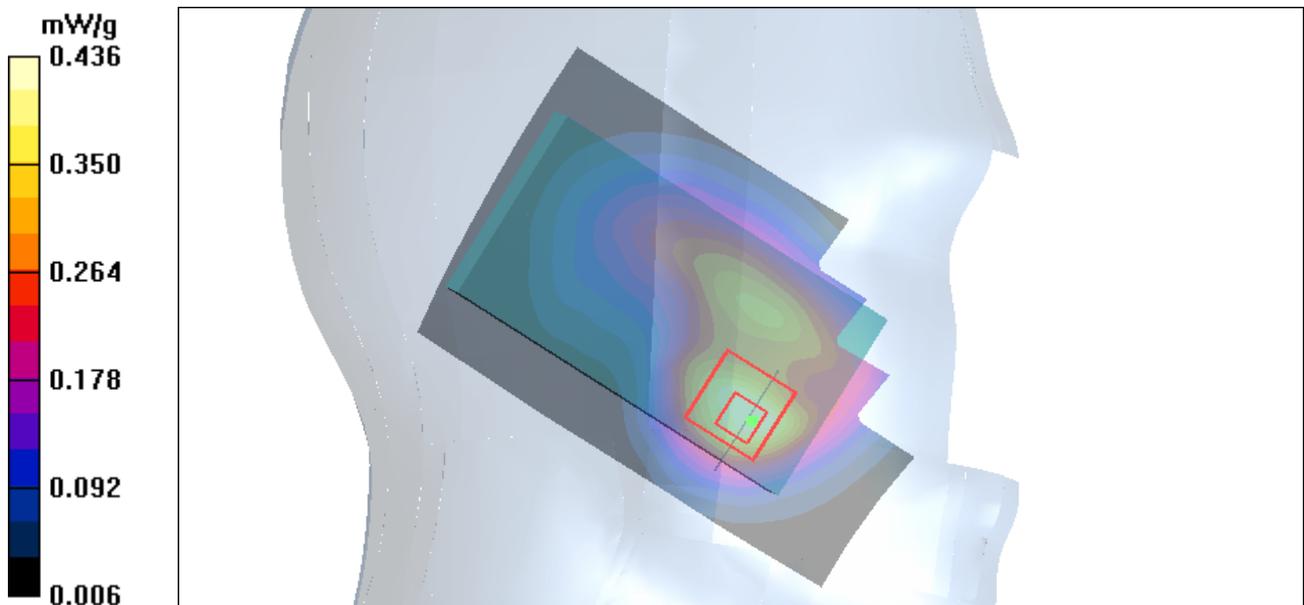
Figure 31 Left Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Left Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 11:03:29 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; $ε_r$ = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.192 mW/g

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

Reference Value = 8.97 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.225 W/kg

SAR(1 g) = 0.168 mW/g; SAR(10 g) = 0.108 mW/g

Maximum value of SAR (measured) = 0.178 mW/g

Figure 32 Left Hand Tilt 15° GSM 1900 Channel 661

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GSM 1900 Right Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 10:13:06 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; $ε_r$ = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.443 mW/g

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

Reference Value = 7.06 V/m; Power Drift = -0.073 dB

Peak SAR (extrapolated) = 0.561 W/kg

SAR(1 g) = 0.400 mW/g; SAR(10 g) = 0.243 mW/g

Maximum value of SAR (measured) = 0.432 mW/g
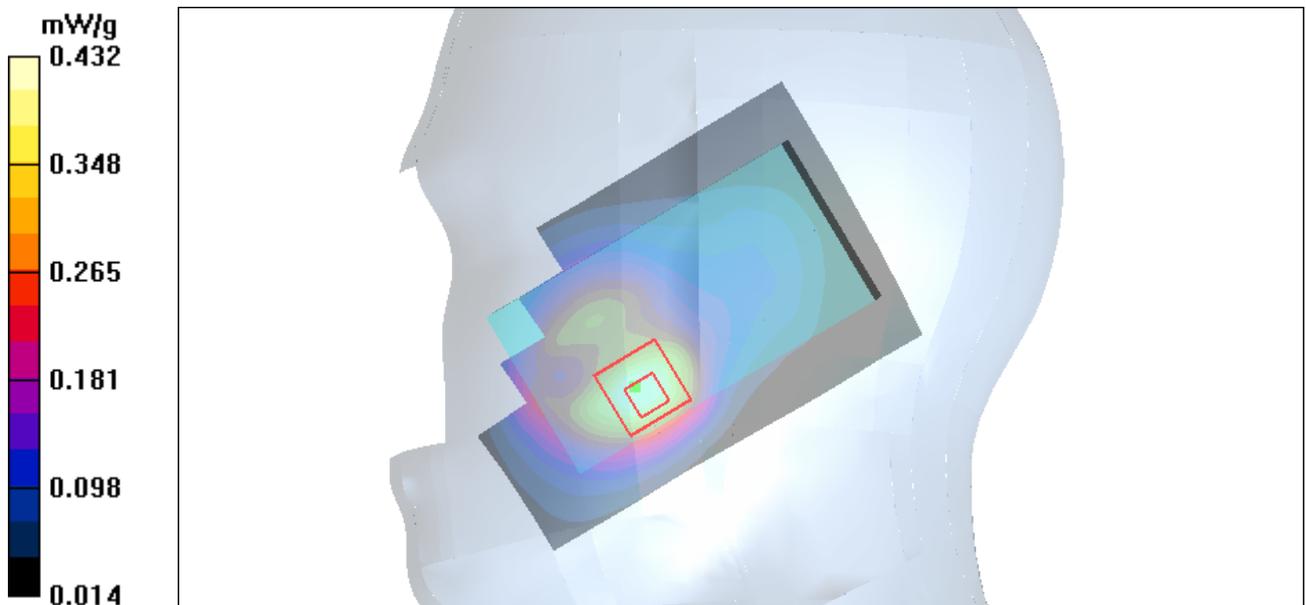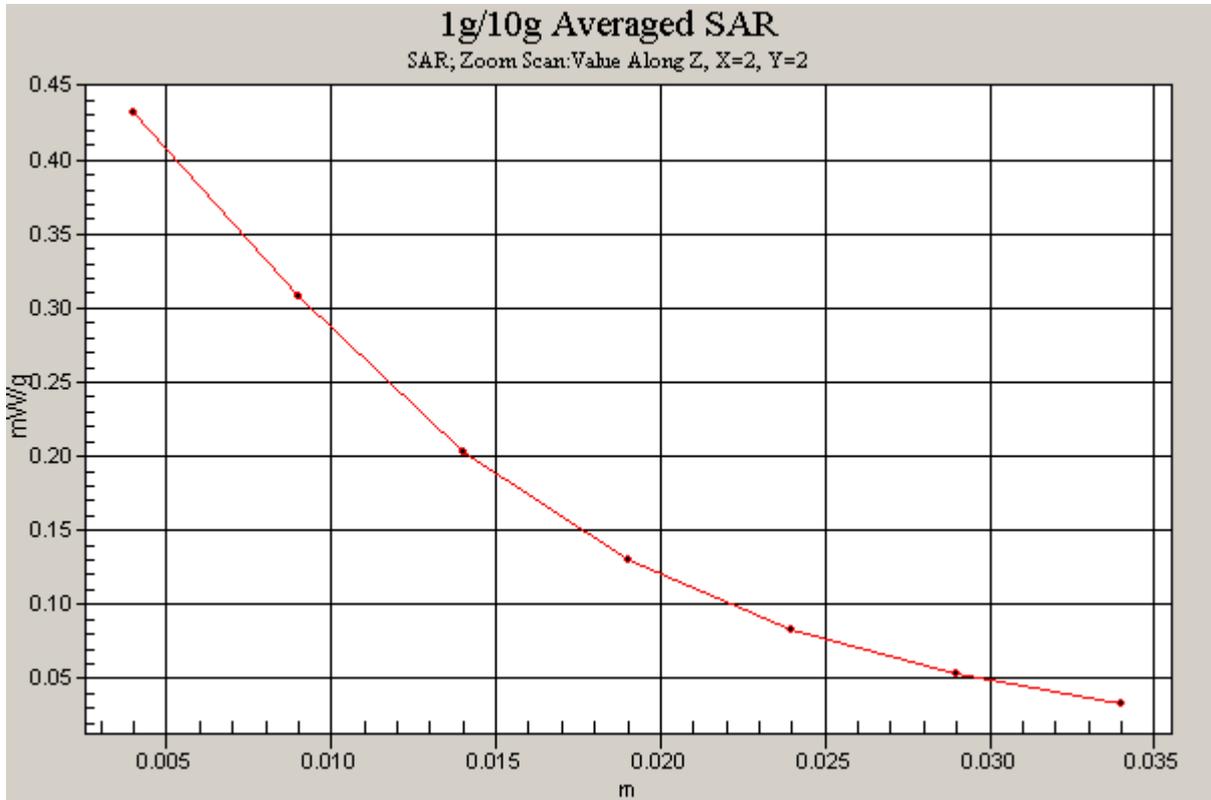
Figure 33 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 Right Tilt Middle (SN:GAGBA16XC42K9359)

Date/Time: 2/28/2012 10:28:30 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; $ε_r$ = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.161 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.019 dB

Peak SAR (extrapolated) = 0.190 W/kg

SAR(1 g) = 0.145 mW/g; SAR(10 g) = 0.095 mW/g

Maximum value of SAR (measured) = 0.152 mW/g
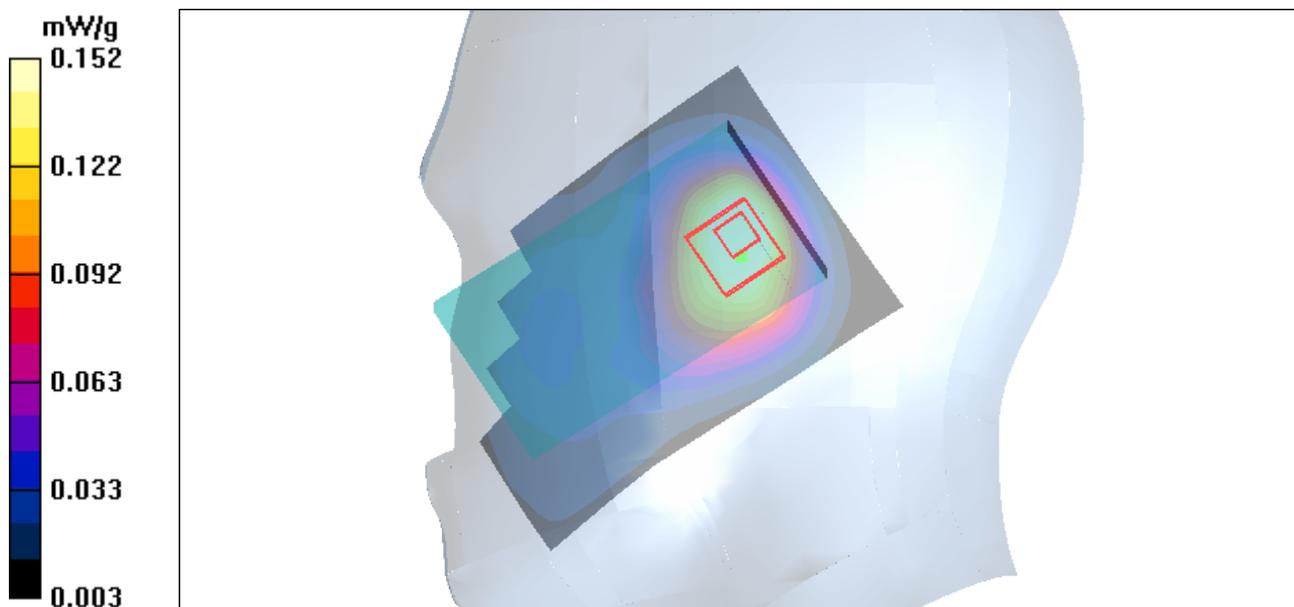
Figure 34 Right Hand Tilt 15° GSM 1900 Channel 661

GSM 1900 Right Cheek Middle(SN:BAABA18XC18B7190)

Date/Time: 2/28/2012 11:19:41 PM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; ε_r = 40.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.446 mW/g

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

Reference Value = 7.07 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.559 W/kg

SAR(1 g) = 0.397 mW/g; SAR(10 g) = 0.241 mW/g

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

Figure 35 Right Hand Touch Cheek GSM 1900 Channel 661

GSM 1900 GPRS (1Txslot) Back Side Middle (SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 3:47:17 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃　　　　Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.702 mW/g

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

Reference Value = 6.74 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.346 mW/g

Maximum value of SAR (measured) = 0.654 mW/g
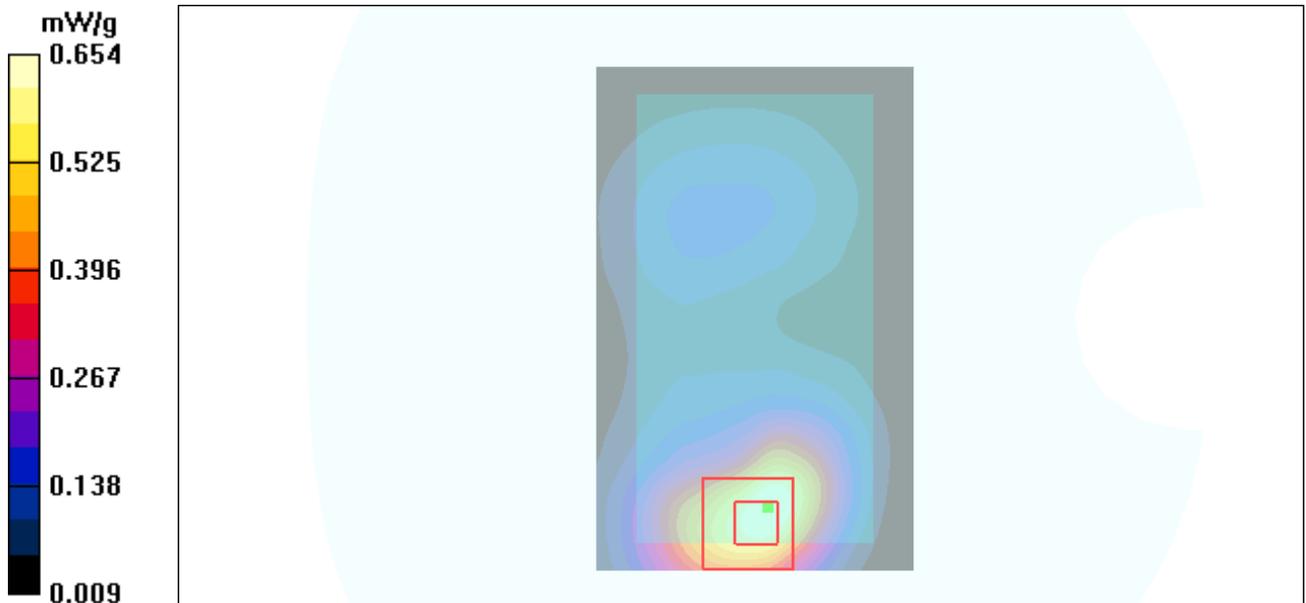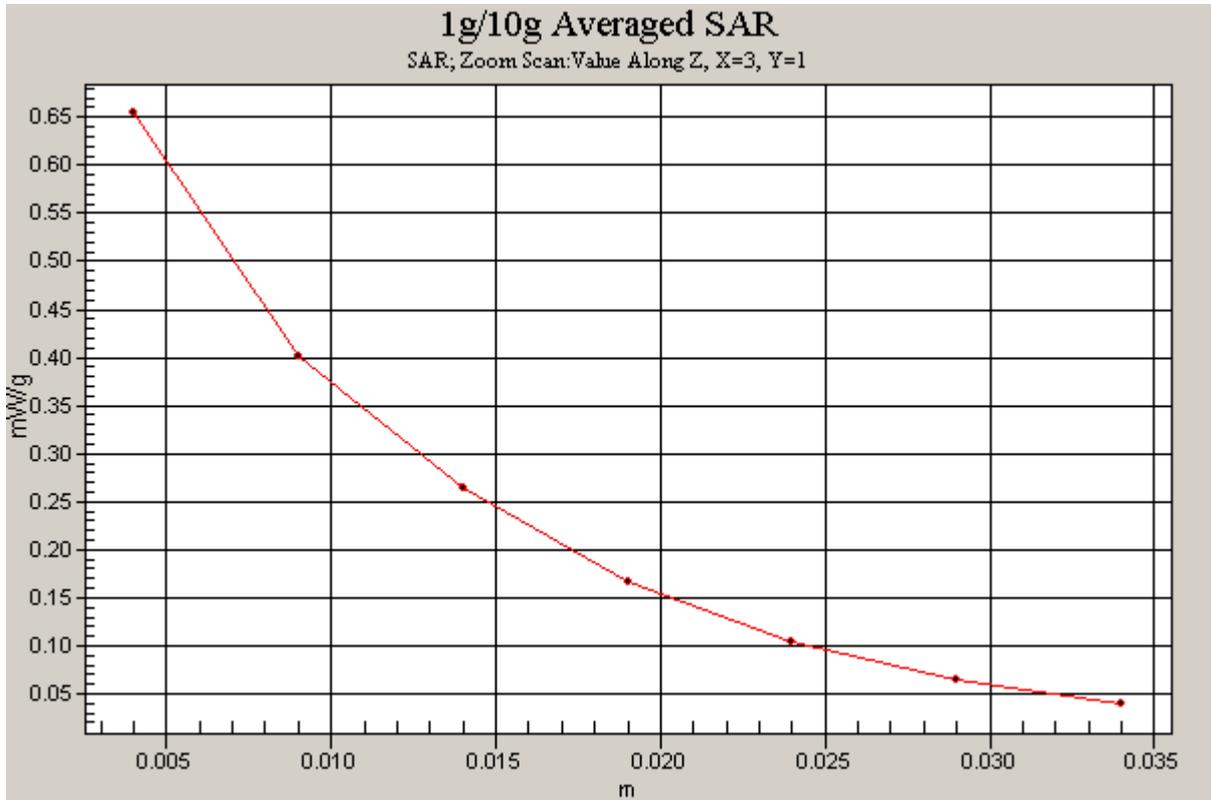
Figure 36 Body, Back Side, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (2Txslots) Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 3:34:27 AM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4.15

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.719 mW/g

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

Reference Value = 6.74 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.613 mW/g; SAR(10 g) = 0.343 mW/g

Maximum value of SAR (measured) = 0.656 mW/g
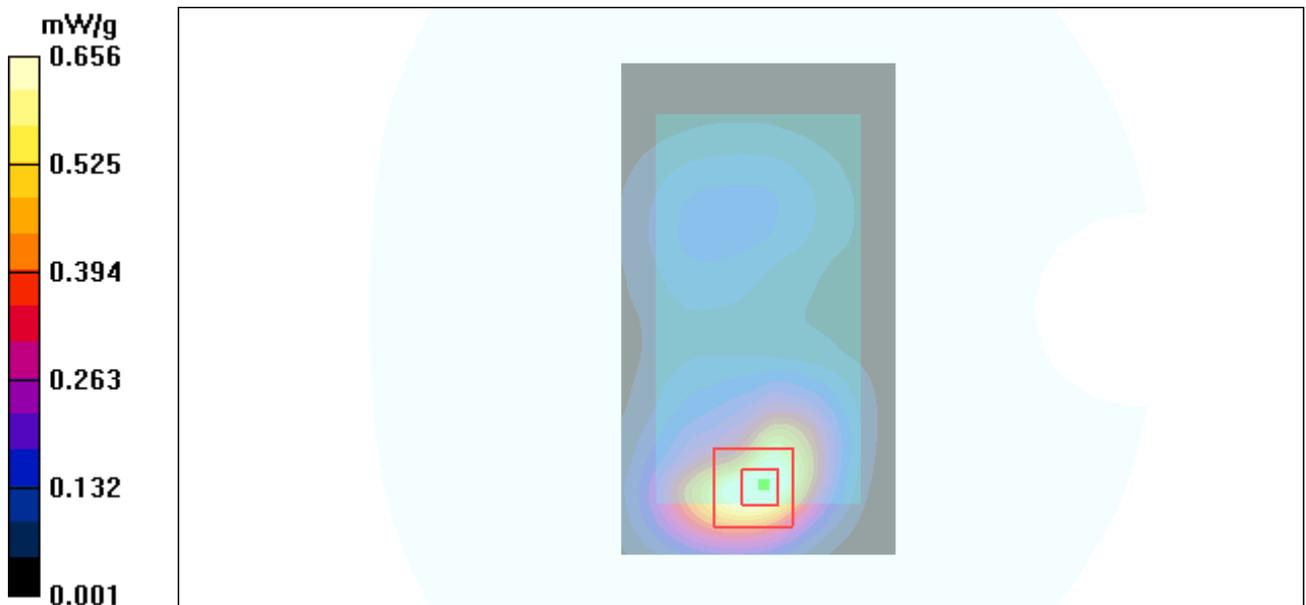
Figure 37 Body, Back Side, GSM 1900 GPRS (2Txslots) Channel 661

GSM 1900 GPRS (1Txslot) Front Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 6:45:52 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; $ε_r$ = 52.2; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Front Side Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.378 mW/g

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

Reference Value = 8.69 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 0.654 W/kg

SAR(1 g) = 0.347 mW/g; SAR(10 g) = 0.198 mW/g
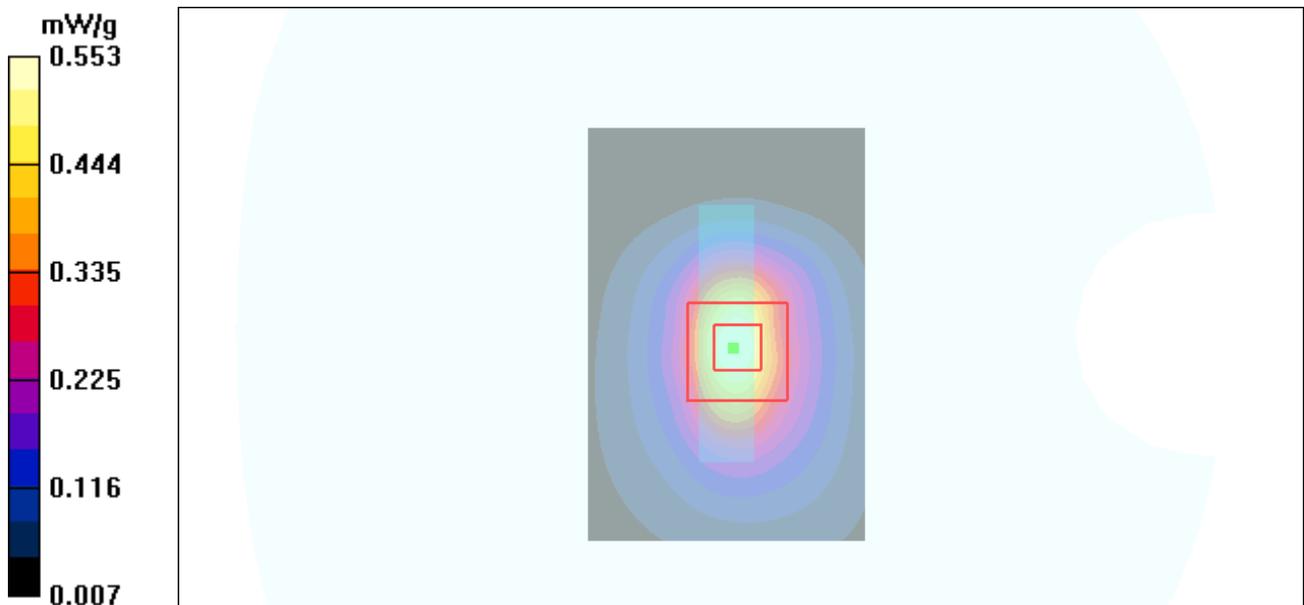
Maximum value of SAR (measured) = 0.368 mW/g
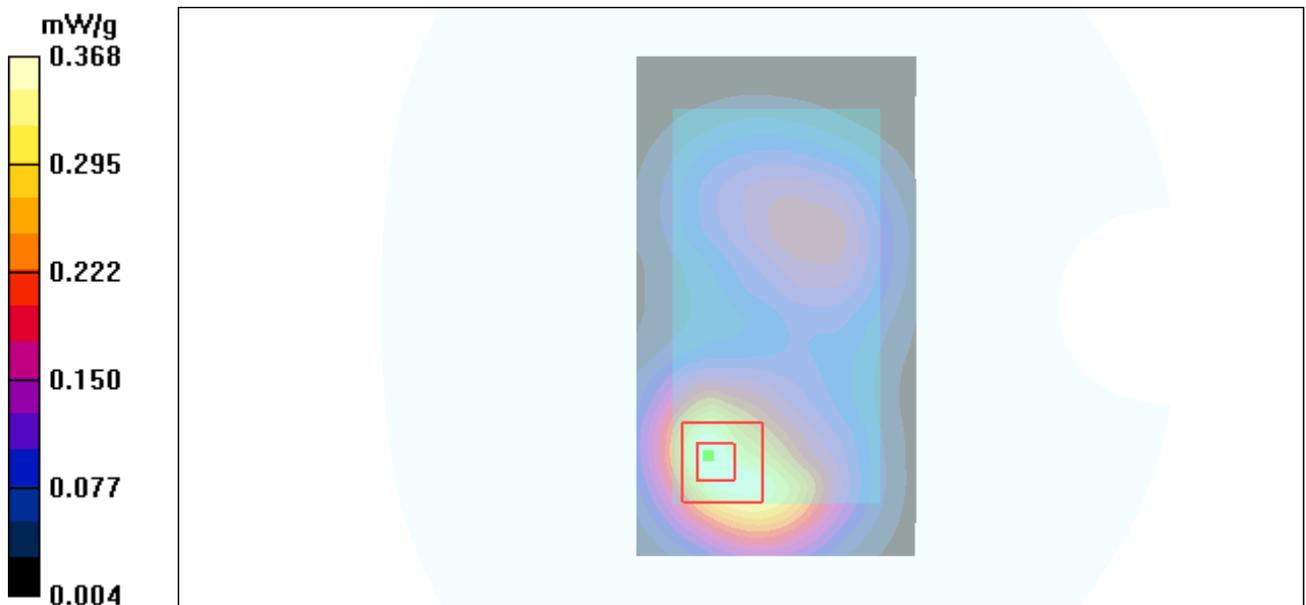
Figure 38 Body, Front Side, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot)) Left Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 7:26:58 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Left Edge Middle/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.117 mW/g

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

Reference Value = 6.73 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 0.176 W/kg

SAR(1 g) = 0.097 mW/g; SAR(10 g) = 0.054 mW/g

Maximum value of SAR (measured) = 0.105 mW/g
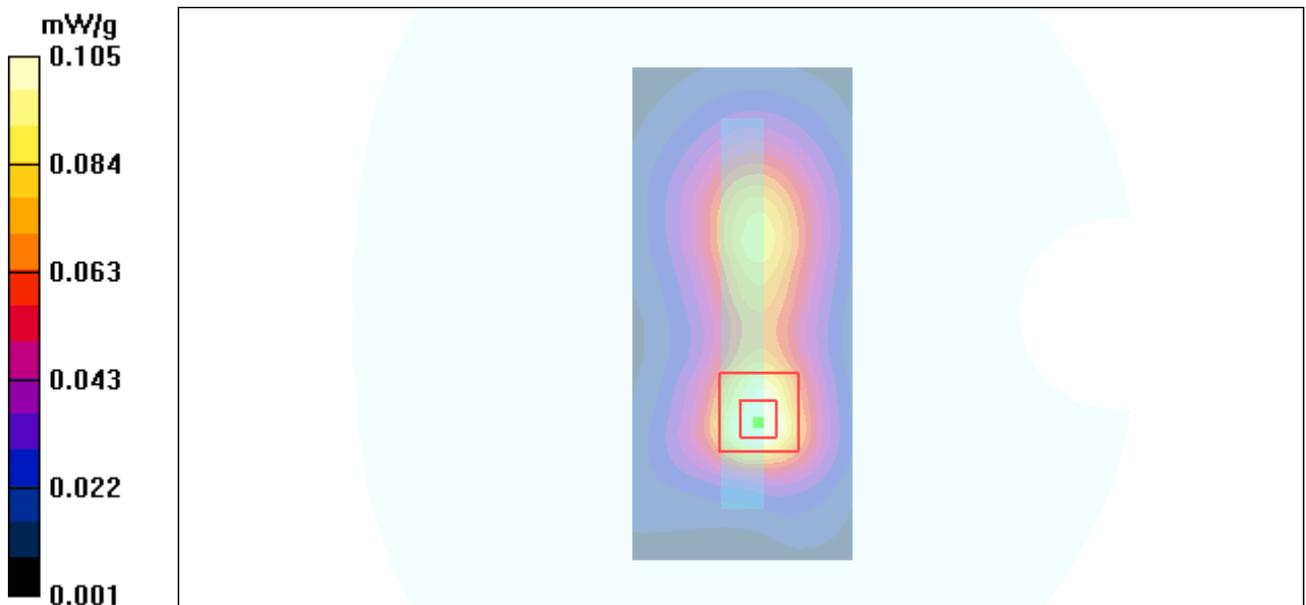
Figure 39 Body, Left Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Right Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 7:41:31 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; $ε_r$ = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Right Edge Middle/Area Scan (41x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.099 mW/g

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

Reference Value = 6.26 V/m; Power Drift = 0.145 dB

Peak SAR (extrapolated) = 0.155 W/kg

SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.052 mW/g

Maximum value of SAR (measured) = 0.095 mW/g
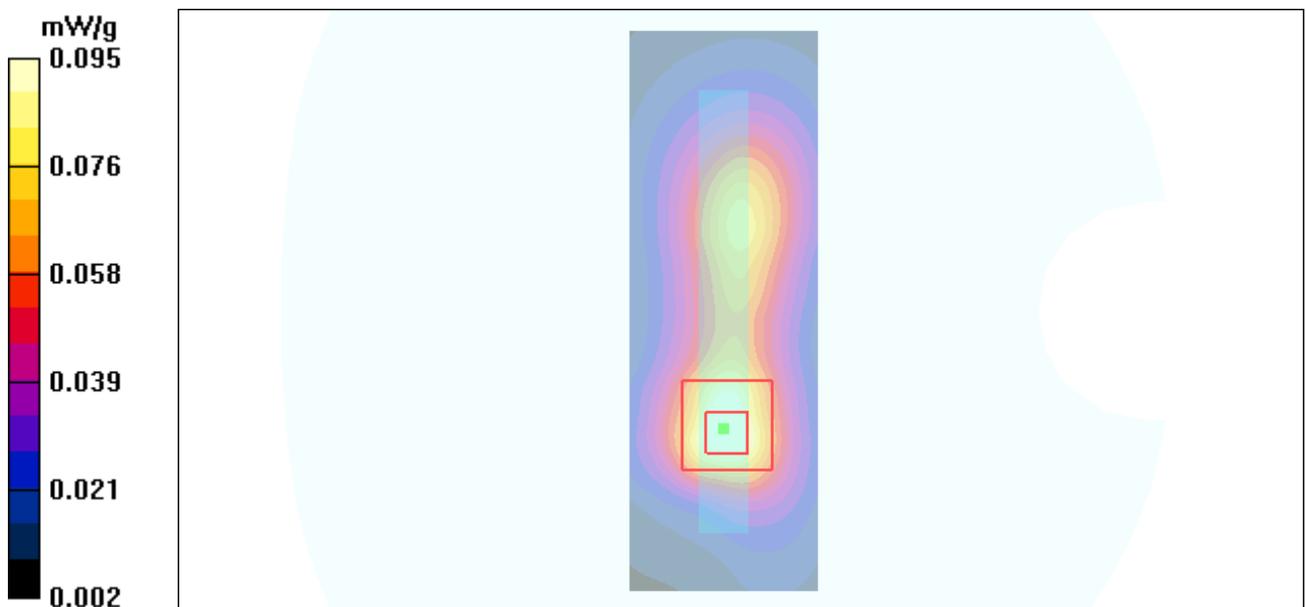
Figure 40 Body, Right Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Bottom Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 7:58:45 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; $ε_r$ = 52.2; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Bottom Edge Middle/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.568 mW/g

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

Reference Value = 19.6 V/m; Power Drift = -0.195 dB

Peak SAR (extrapolated) = 0.927 W/kg

SAR(1 g) = 0.502 mW/g; SAR(10 g) = 0.270 mW/g

Maximum value of SAR (measured) = 0.553 mW/g

Figure 41 Body, Bottom Edge, GSM 1900 GPRS (1Txslot) Channel 661

GSM 1900 with Earphone Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 8:21:56 AM

Communication System: PCS 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; $ε_r$ = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.696 mW/g

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

Reference Value = 7.65 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.584 mW/g; SAR(10 g) = 0.334 mW/g

Maximum value of SAR (measured) = 0.646 mW/g
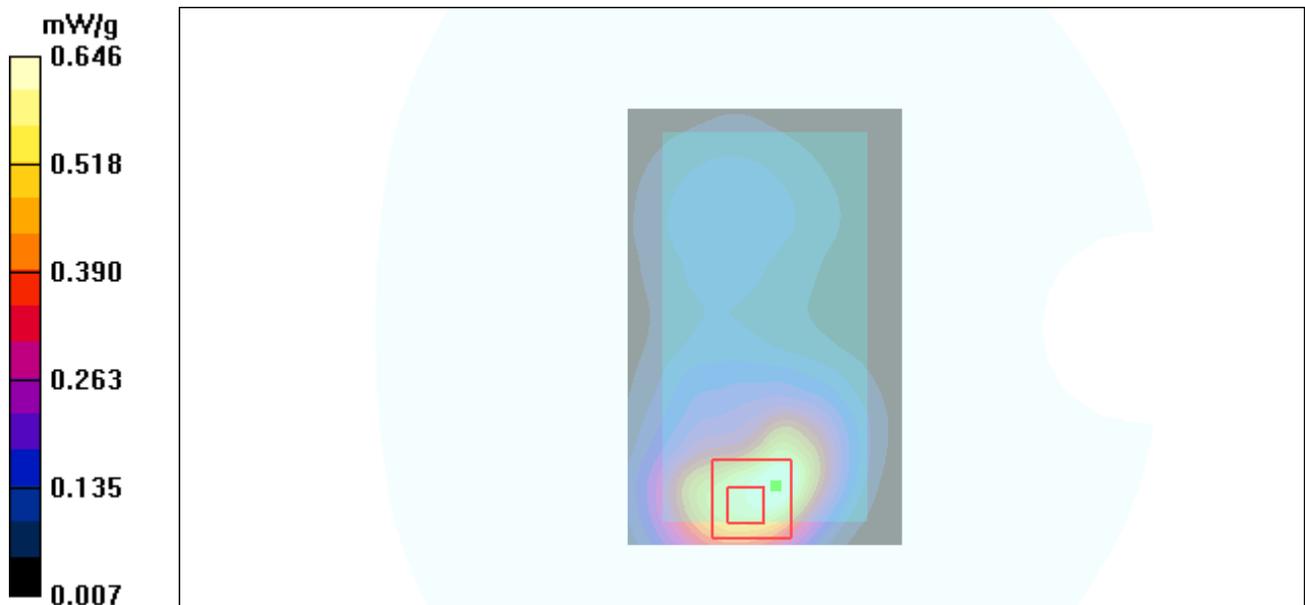
Figure 42 Body with Earphone, Back Side, GSM 1900 Channel 661

GSM 1900 EGPRS (1Txslot) Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 9:33:14 AM

Communication System: PCS 1900+EGPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.692 mW/g

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

Reference Value = 7.83 V/m; Power Drift = -0.004 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.617 mW/g
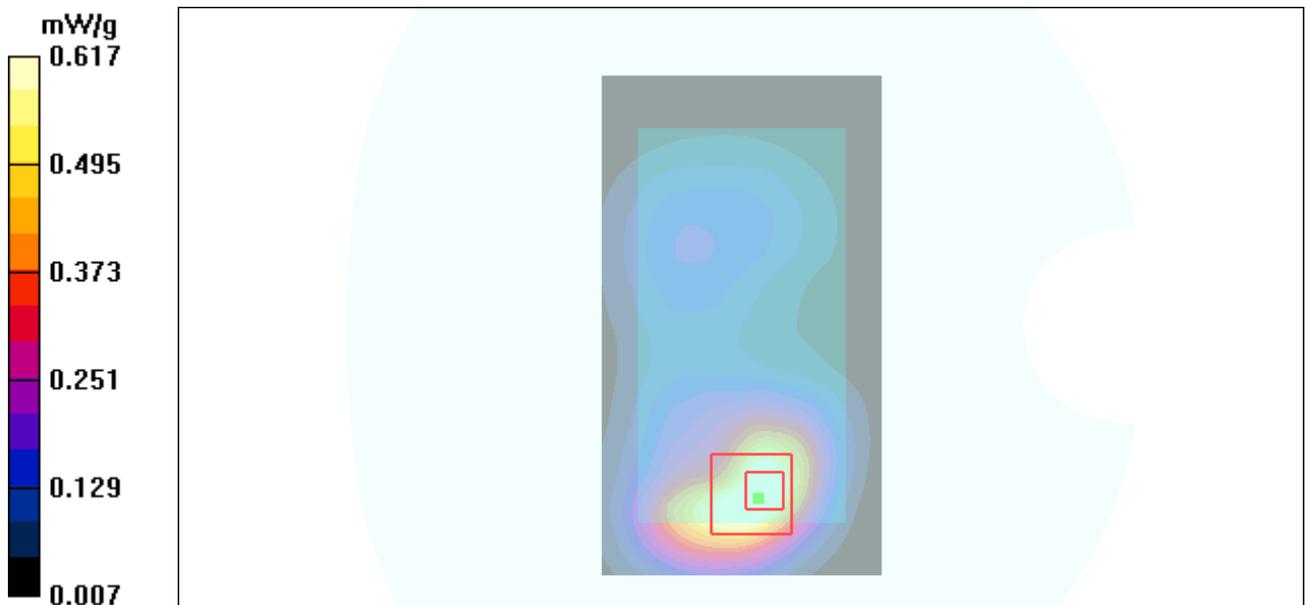
Figure 43 Body, Back Side, GSM 1900 EGPRS (1Txslot) Channel 661

GSM 1900 GPRS (1Txslot) Back Side Middle(SN:BAABA18XC18B7190)

Date/Time: 3/1/2012 8:37:59 AM

Communication System: PCS 1900+GPRS(1Up); Frequency: 1880 MHz;Duty Cycle: 1:8.3

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; $ε_r$ = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.695 mW/g

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

Reference Value = 7.51 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.584 mW/g; SAR(10 g) = 0.330 mW/g

Maximum value of SAR (measured) = 0.624 mW/g
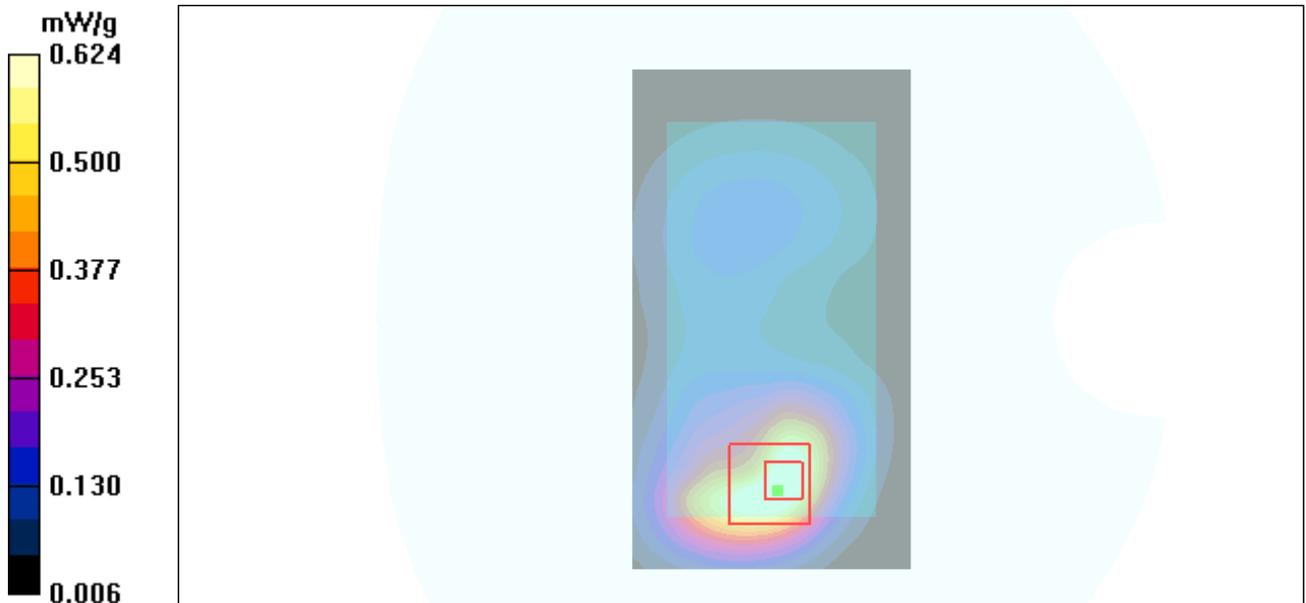
Figure 44 Body, Back Side, GSM 1900 GPRS (1Txslot) Channel 661

WCDMA Band II Left Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 9:37:50 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 39; ρ = 1000 kg/m³

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.777 mW/g

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

Reference Value = 7.19 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.493 mW/g; SAR(10 g) = 0.326 mW/g

Maximum value of SAR (measured) = 0.563 mW/g

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

Reference Value = 7.19 V/m; Power Drift = -0.003 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.690 mW/g; SAR(10 g) = 0.392 mW/g
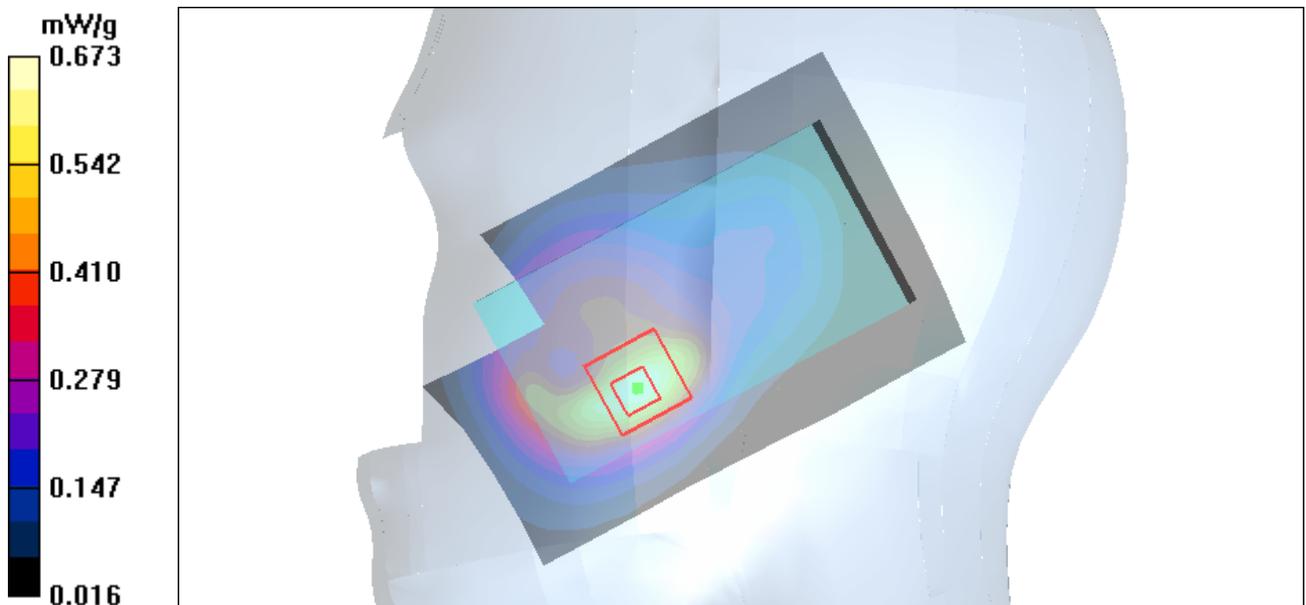
Maximum value of SAR (measured) = 0.786 mW/g
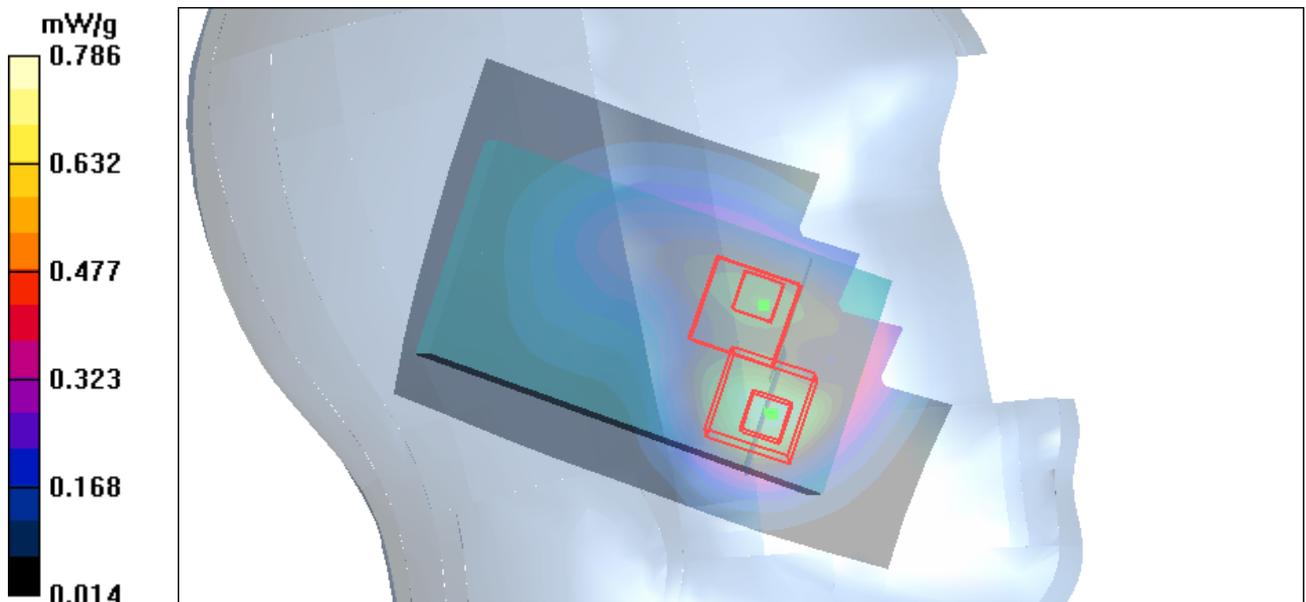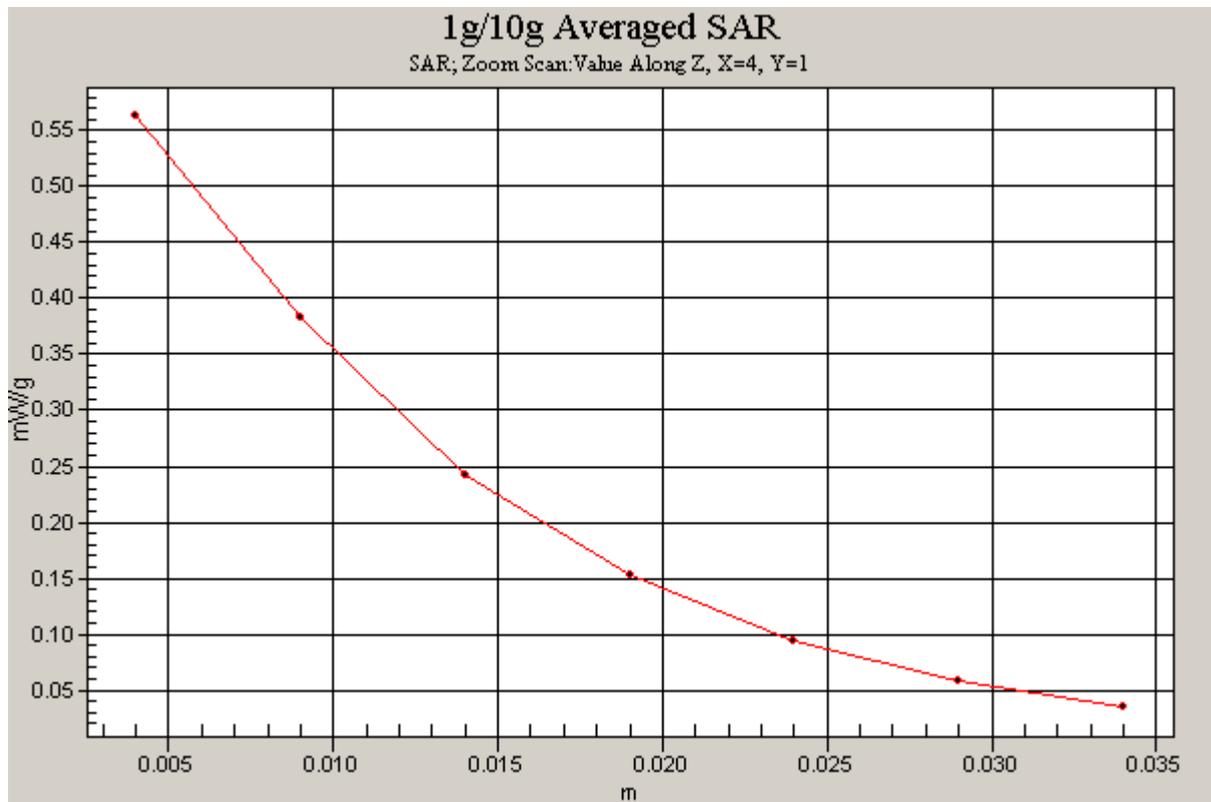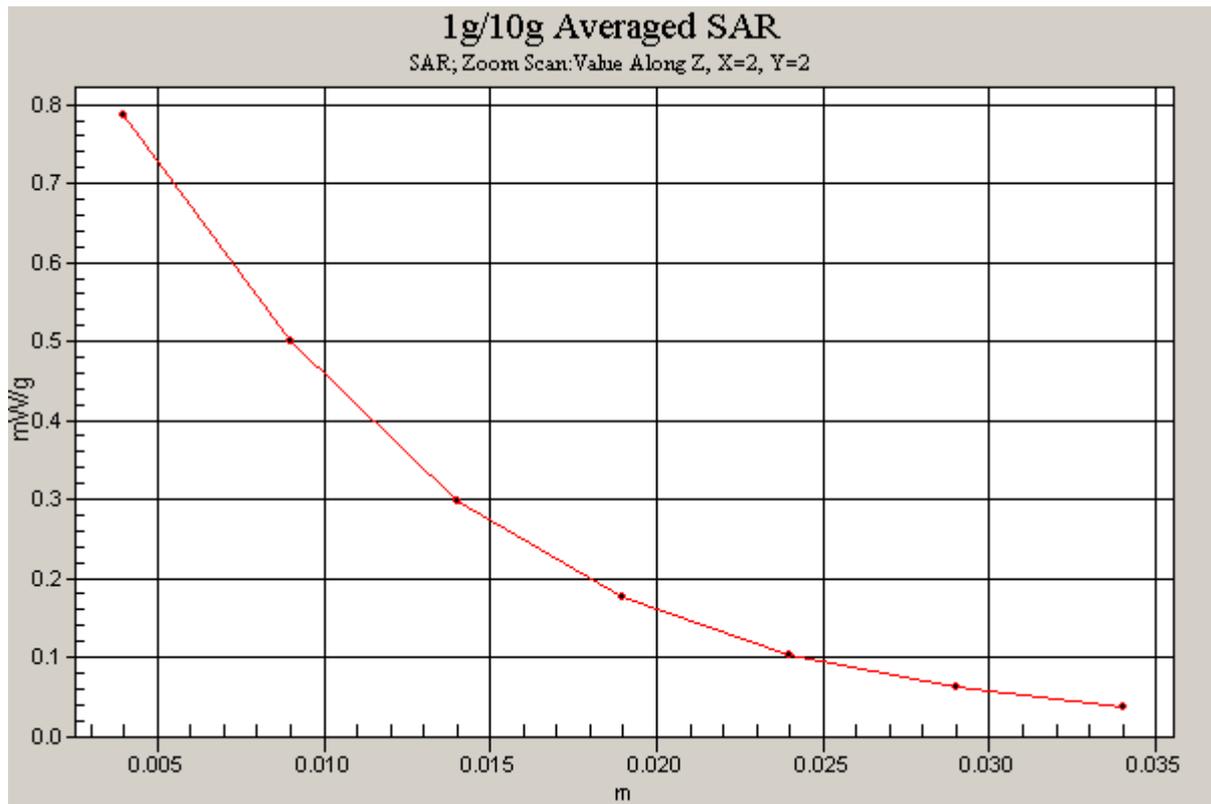
Figure 45 Left Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Left Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 10:56:14 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 39; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.297 mW/g

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

Reference Value = 10.7 V/m; Power Drift = -0.045 dB

Peak SAR (extrapolated) = 0.340 W/kg

SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.166 mW/g

Maximum value of SAR (measured) = 0.268 mW/g
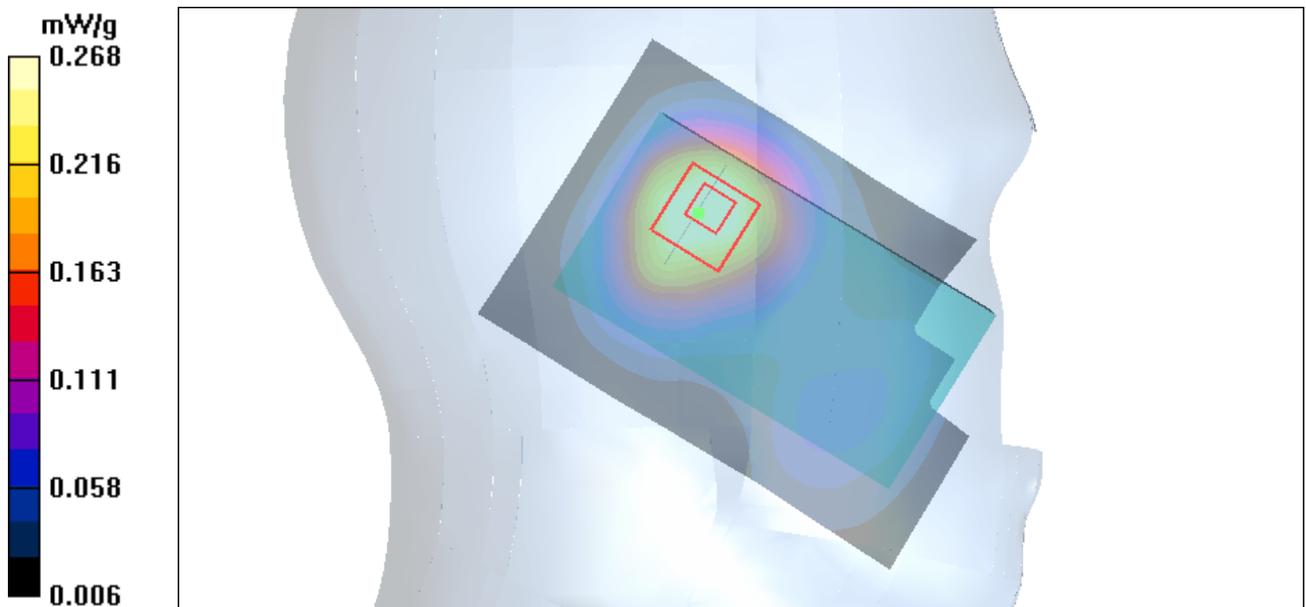
Figure 46 Left Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Right Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 11:13:29 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 39; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.688 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 = -0.073 dB

Peak SAR (extrapolated) = 0.845 W/kg

SAR(1 g) = 0.598 mW/g; SAR(10 g) = 0.363 mW/g

Maximum value of SAR (measured) = 0.673 mW/g

Figure 47 Right Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Right Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 11:27:59 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; ε_r = 39; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.252 mW/g

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

Reference Value = 10.4 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 0.277 W/kg

SAR(1 g) = 0.213 mW/g; SAR(10 g) = 0.142 mW/g

Maximum value of SAR (measured) = 0.227 mW/g
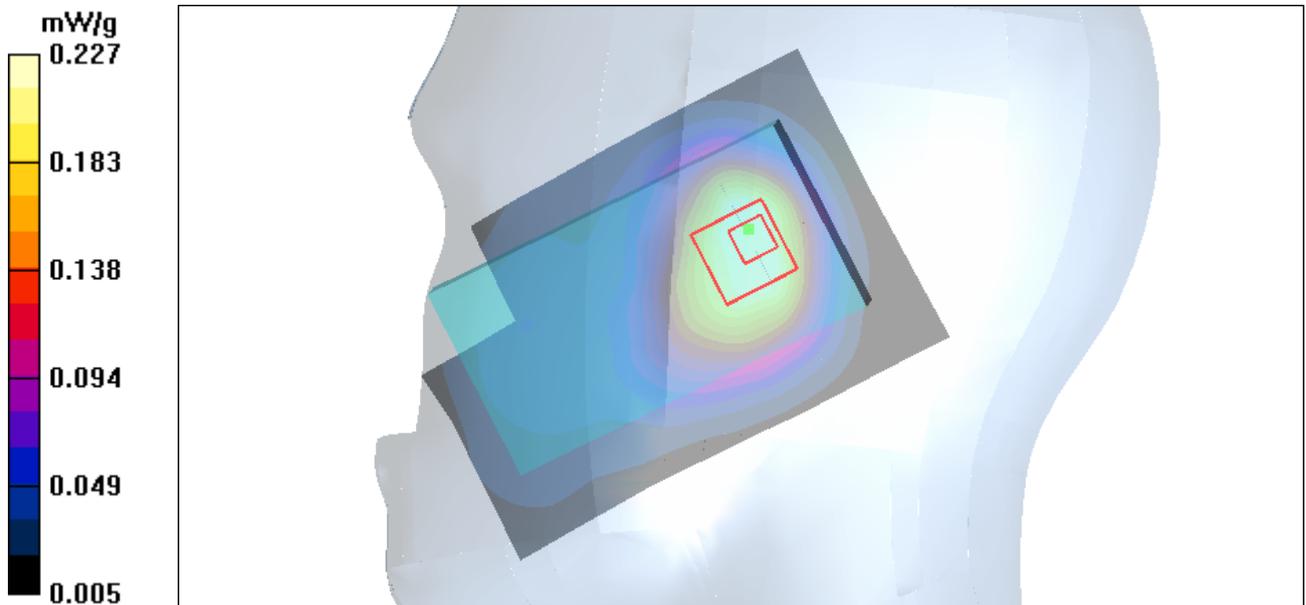
Figure 48 Right Hand Tilt 15° WCDMA Band II Channel 9400

WCDMA Band II Left Cheek Middle(SN:BAABA18XC18B7190)

Date/Time: 2/29/2012 10:41:03 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.42 mho/m; $ε_r$ = 39; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.718 mW/g

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

Reference Value = 6.92 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.645 mW/g; SAR(10 g) = 0.365 mW/g

Maximum value of SAR (measured) = 0.725 mW/g
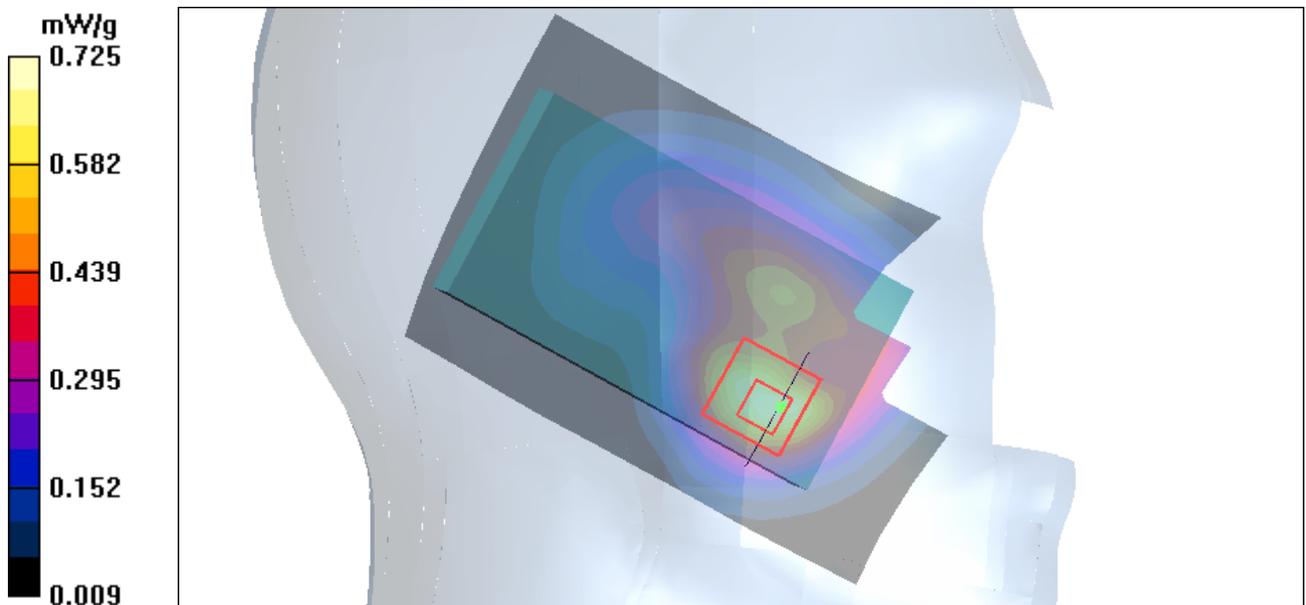
Figure 49 Left Hand Touch Cheek WCDMA Band II Channel 9400

WCDMA Band II Back Side High(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 7:42:57 PM

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

Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; $ε_r$ = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.39 mW/g

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

Reference Value = 9.17 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 2.27 W/kg

SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.671 mW/g

Maximum value of SAR (measured) = 1.31 mW/g
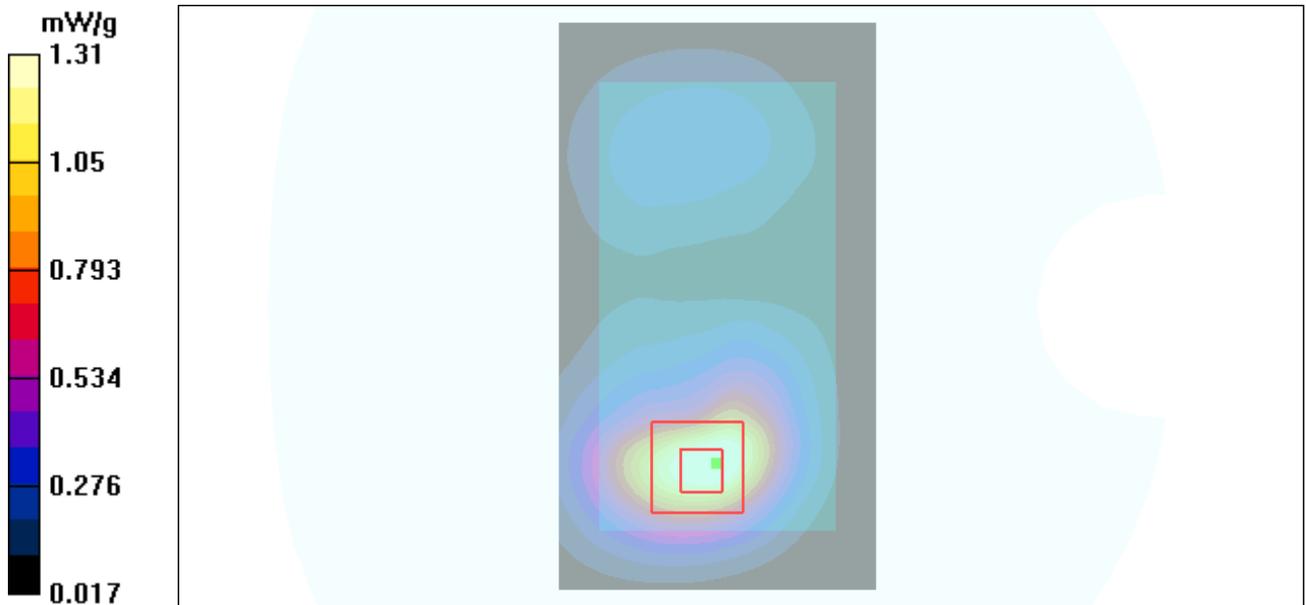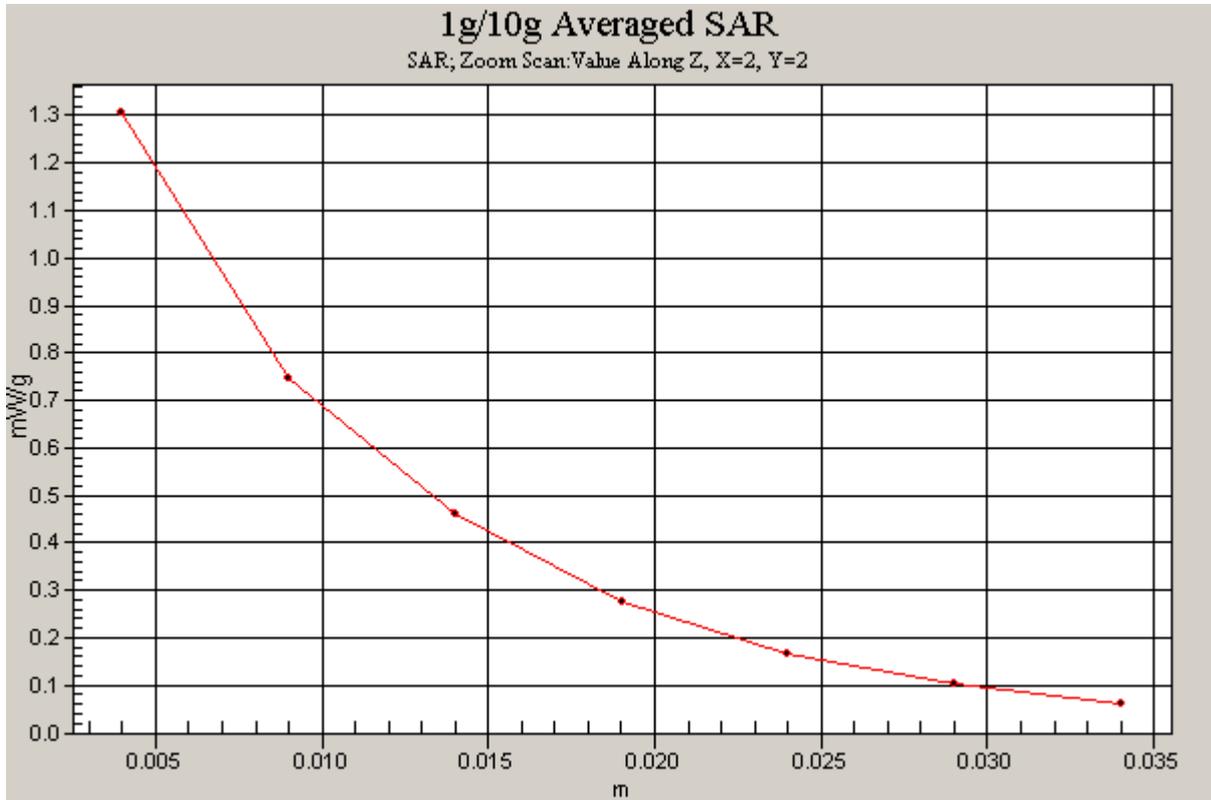
Figure 50 Body, Back Side, WCDMA Band II Channel 9538

WCDMA Band II Back Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 2:52:33 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.08 mW/g

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

Reference Value = 9.33 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 1.75 W/kg

SAR(1 g) = 0.928 mW/g; SAR(10 g) = 0.528 mW/g

Maximum value of SAR (measured) = 0.985 mW/g
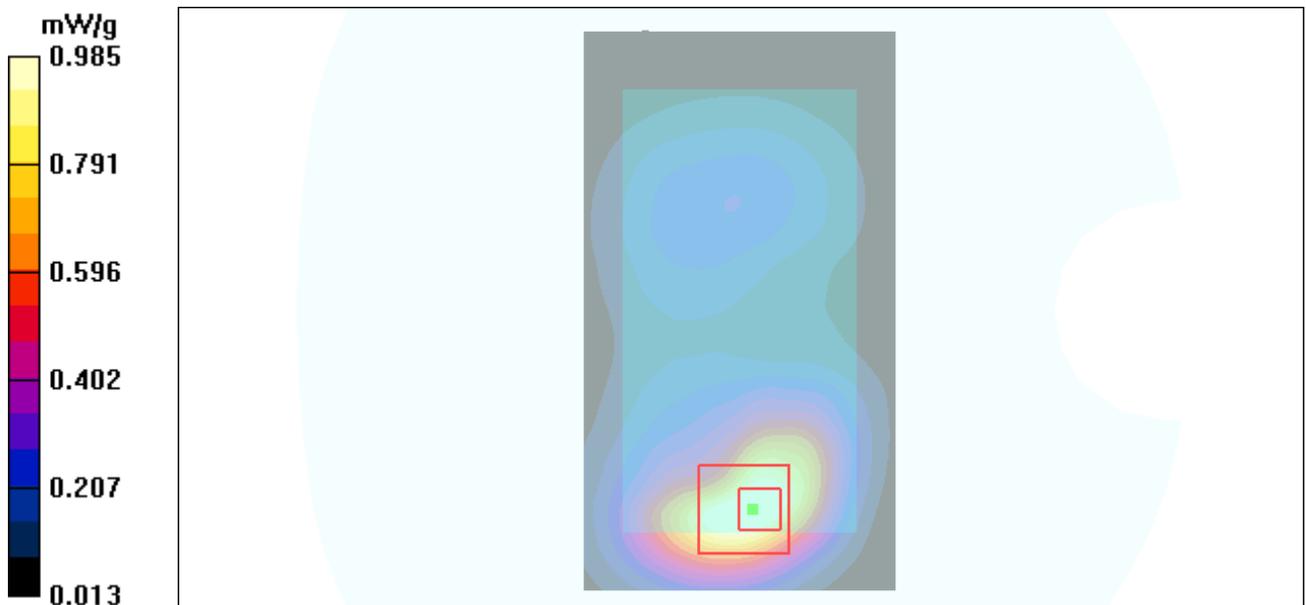
Figure 51 Body, Back Side, WCDMA Band II Channel 9400

WCDMA Band II Back Side Low(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 6:15:12 PM

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

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.915 mW/g

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

Reference Value = 8.92 V/m; Power Drift = 0.042 dB

Peak SAR (extrapolated) = 1.49 W/kg

SAR(1 g) = 0.787 mW/g; SAR(10 g) = 0.434 mW/g

Maximum value of SAR (measured) = 0.870 mW/g
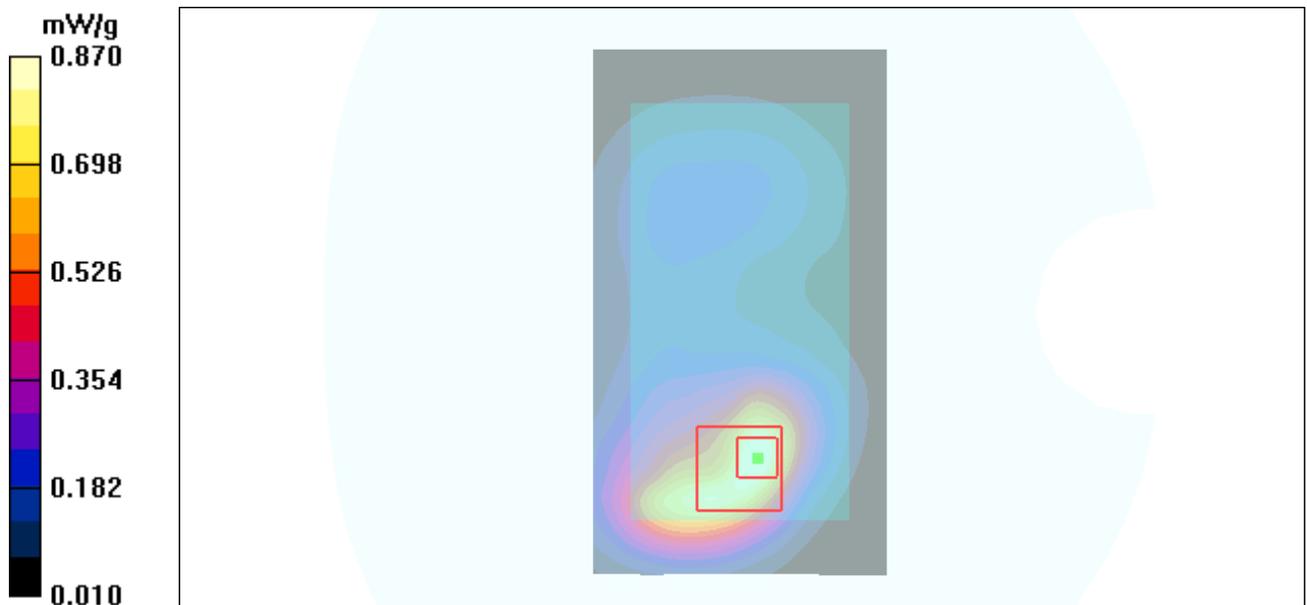
Figure 52 Body, Back Side, WCDMA Band II Channel 9262

WCDMA Band II Front Side Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 7:58:22 PM

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

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Front Side Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.04 V/m; Power Drift = -0.022 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.322 mW/g

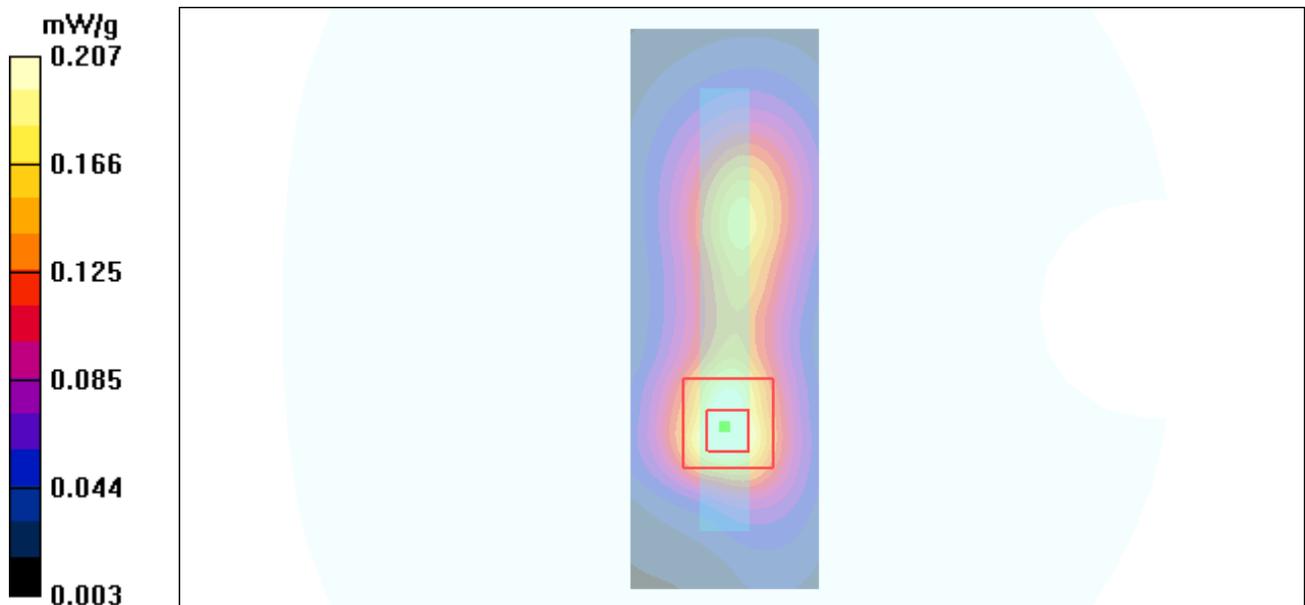Maximum value of SAR (measured) = 0.597 mW/g
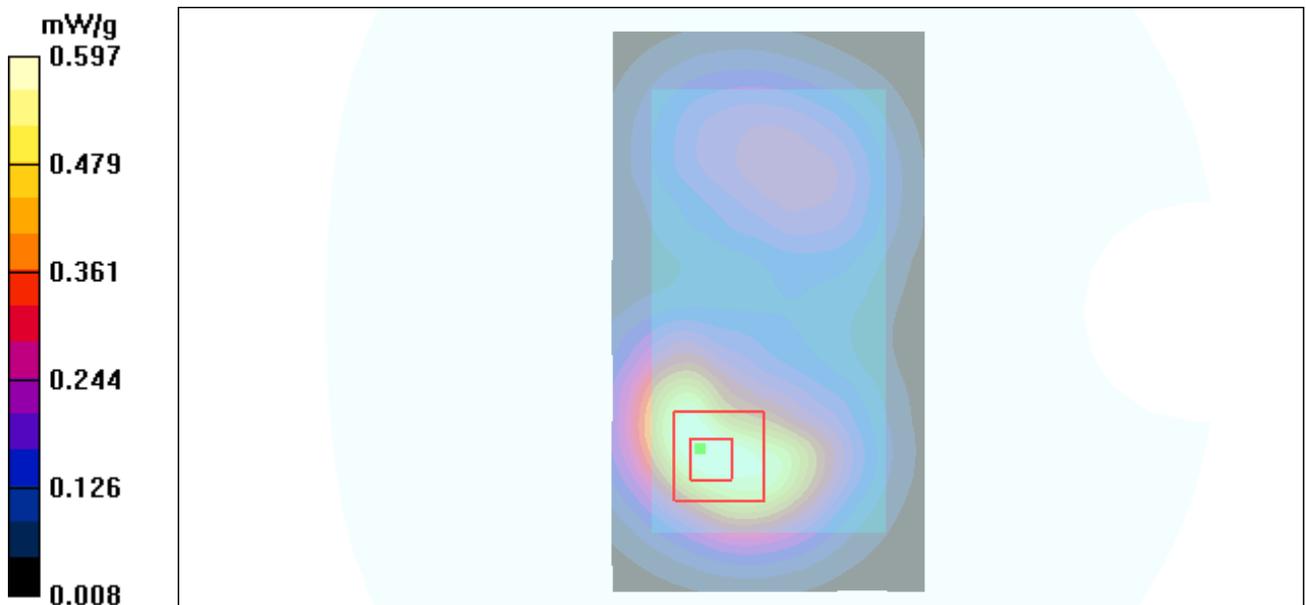
Figure 53 Body, Front Side, WCDMA Band II Channel 9400

WCDMA Band II Left Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 8:39:57 PM

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

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Left Edge Middle   2/Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.227 mW/g

Left Edge Middle   2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.31 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 0.354 W/kg

SAR(1 g) = 0.193 mW/g; SAR(10 g) = 0.109 mW/g

Maximum value of SAR (measured) = 0.207 mW/g

Figure 54 Body, Left Edge, WCDMA Band II Channel 9400

WCDMA Band II Right Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 8:52:50 PM

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

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Right Edge Middle /Area Scan (31x91x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 8.65 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 0.368 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.120 mW/g

Maximum value of SAR (measured) = 0.225 mW/g
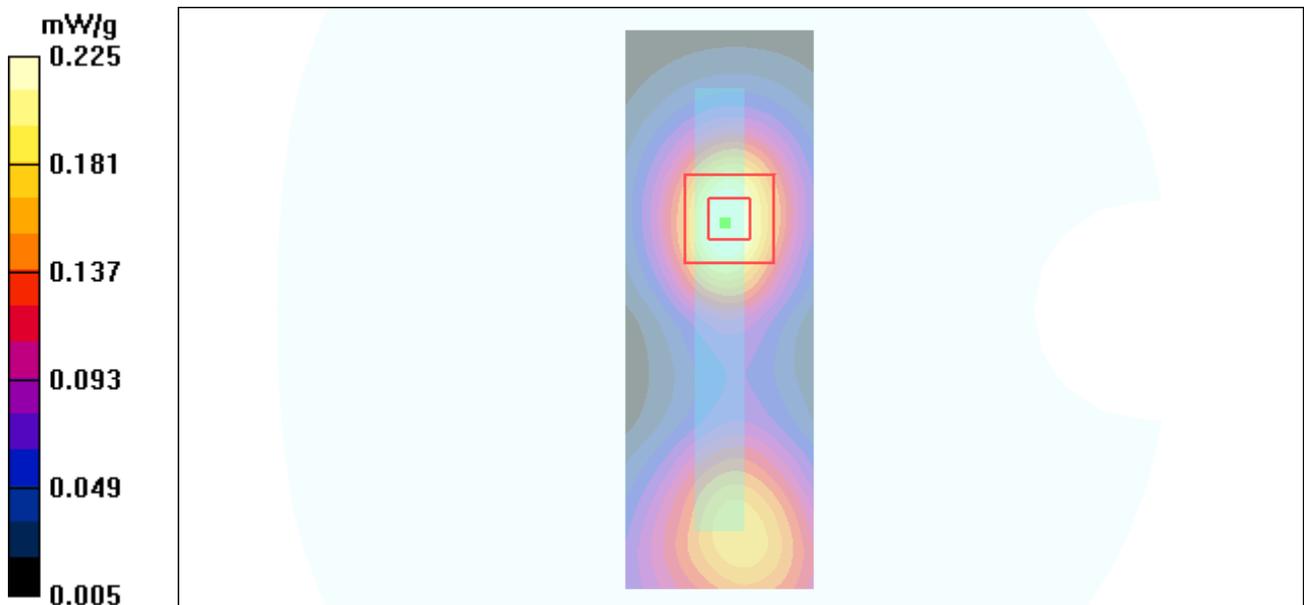
Figure 55 Body, Right Edge, WCDMA Band II Channel 9400

WCDMA Band II Bottom Edge High(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 2:24:30 AM

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

Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; $ε_r$ = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

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

Maximum value of SAR (interpolated) = 1.05 mW/g

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

Reference Value = 25.3 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 1.79 W/kg

SAR(1 g) = 0.942 mW/g; SAR(10 g) = 0.492 mW/g
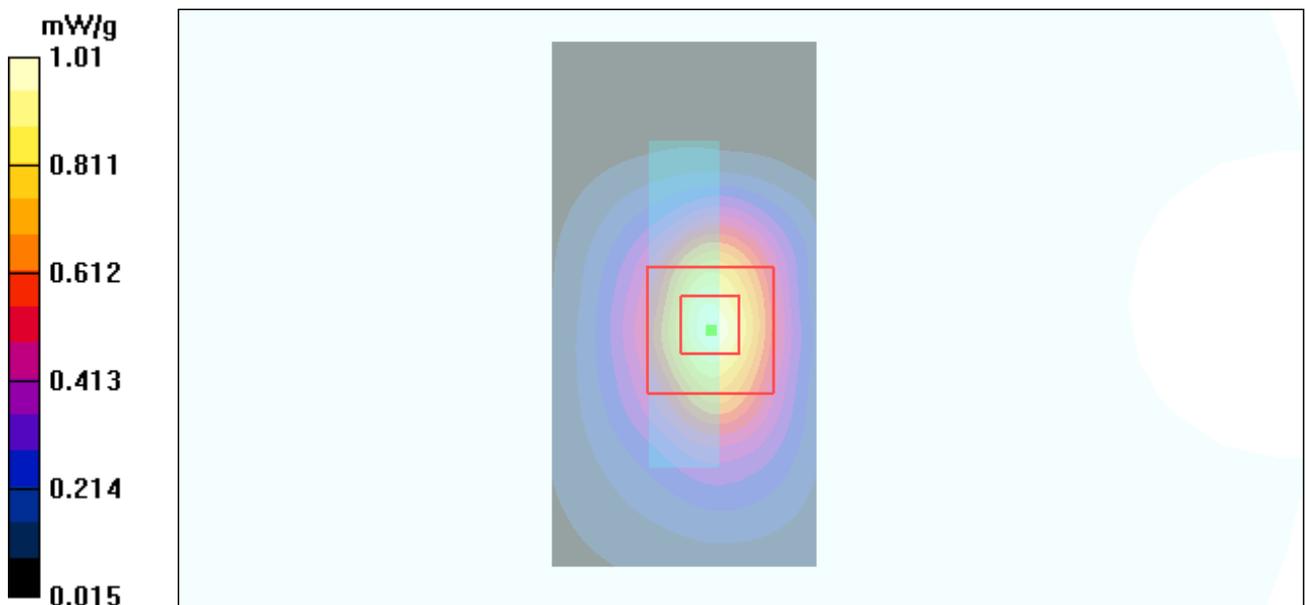
Maximum value of SAR (measured) = 1.06 mW/g
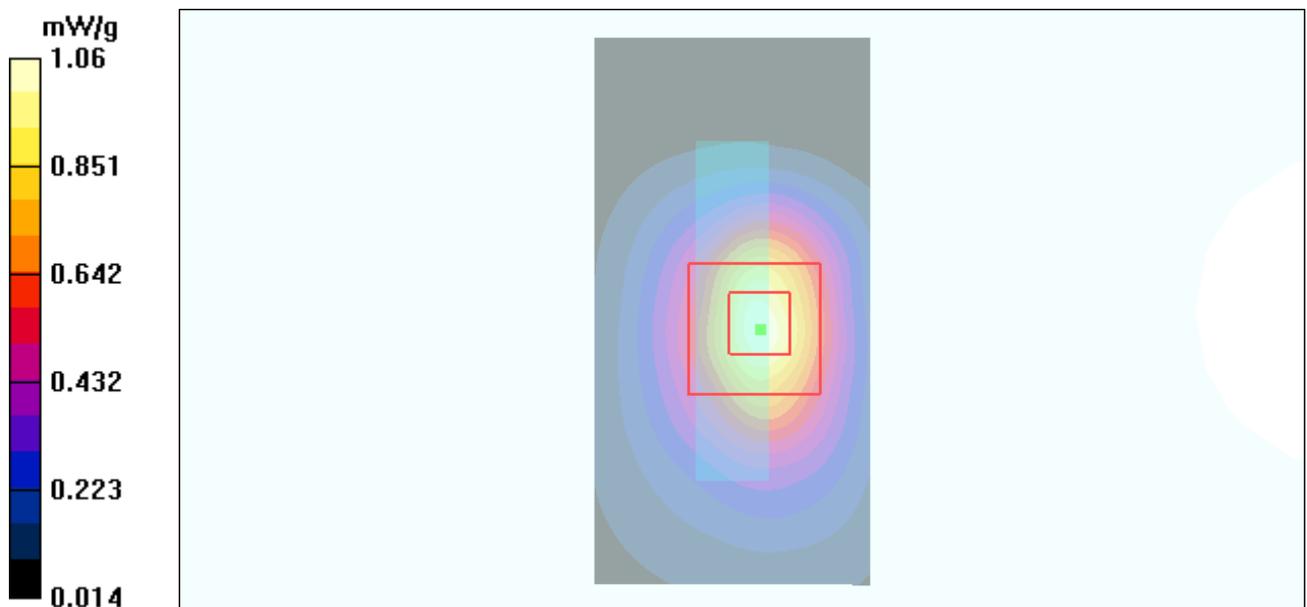
Figure 56 Body, Bottom Edge, WCDMA Band II Channel 9538

WCDMA Band II Bottom Edge Middle(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 2:15:04 AM

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

Medium parameters used: f = 1880 MHz; σ = 1.54 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Bottom Edge Middle   2/Area Scan (31x61x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.994 mW/g

Bottom Edge Middle   2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.5 V/m; Power Drift = 0.174 dB

Peak SAR (extrapolated) = 1.67 W/kg

SAR(1 g) = 0.900 mW/g; SAR(10 g) = 0.475 mW/g

Maximum value of SAR (measured) = 1.01 mW/g

Figure 57 Body, Bottom Edge, WCDMA Band II Channel 9400

WCDMA Band II Bottom Edge Low(SN:GAGBA16XC42K9359)

Date/Time: 3/1/2012 2:34:04 AM

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

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.51 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

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

Maximum value of SAR (interpolated) = 1.01 mW/g

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

Reference Value = 24.7 V/m; Power Drift = 0.004 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.898 mW/g; SAR(10 g) = 0.471 mW/g

Maximum value of SAR (measured) = 1.01 mW/g
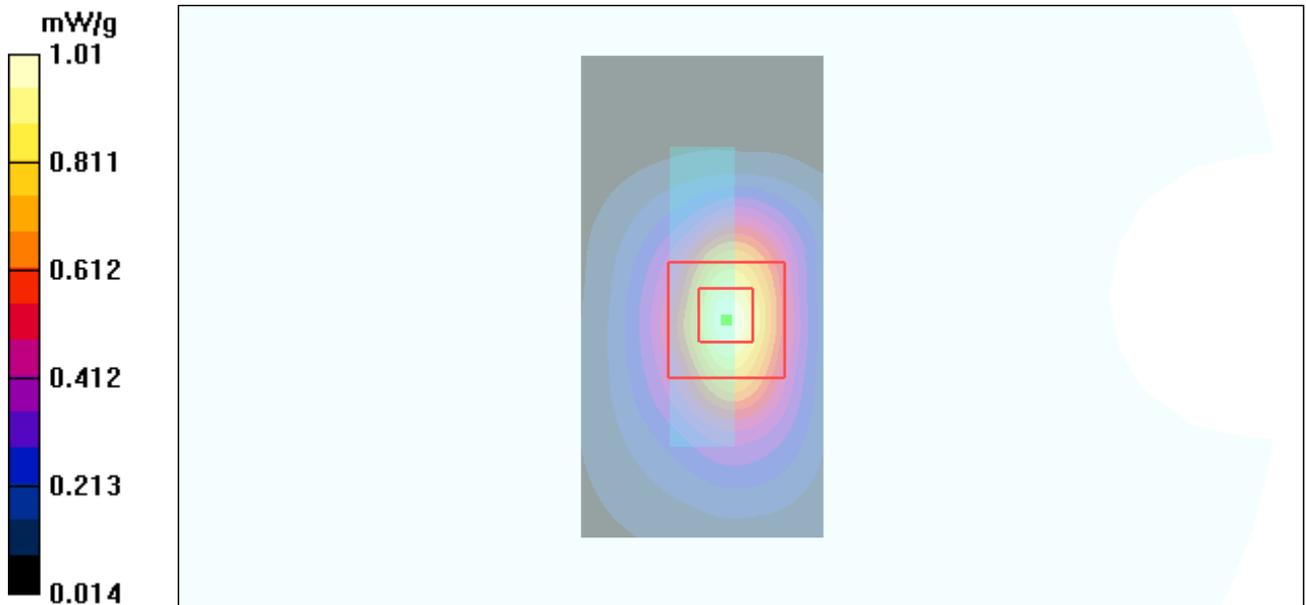
Figure 58 Body, Bottom Edge, WCDMA Band II Channel 9262

WCDMA Band II with Earphone Back Side High(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 6:29:40 PM

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

Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.17 mW/g

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

Reference Value = 9.17 V/m; Power Drift = -0.097 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.581 mW/g
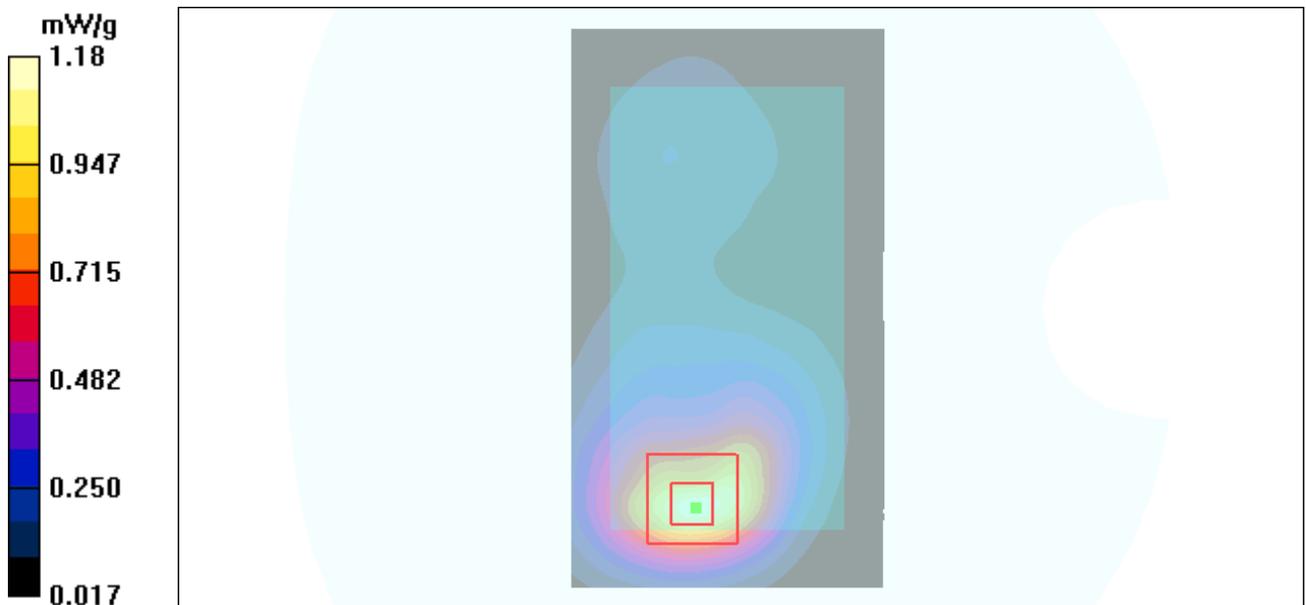
Maximum value of SAR (measured) = 1.18 mW/g

Figure 59 Body with Earphone, Back Side, WCDMA Band II Channel 9538

WCDMA Band II Back Side High(SN:BAABA18XC18B7190)

Date/Time: 2/29/2012 3:12:58 PM

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

Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; $ε_r$ = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.43 mW/g

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

Reference Value = 8.70 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 2.29 W/kg

SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.667 mW/g

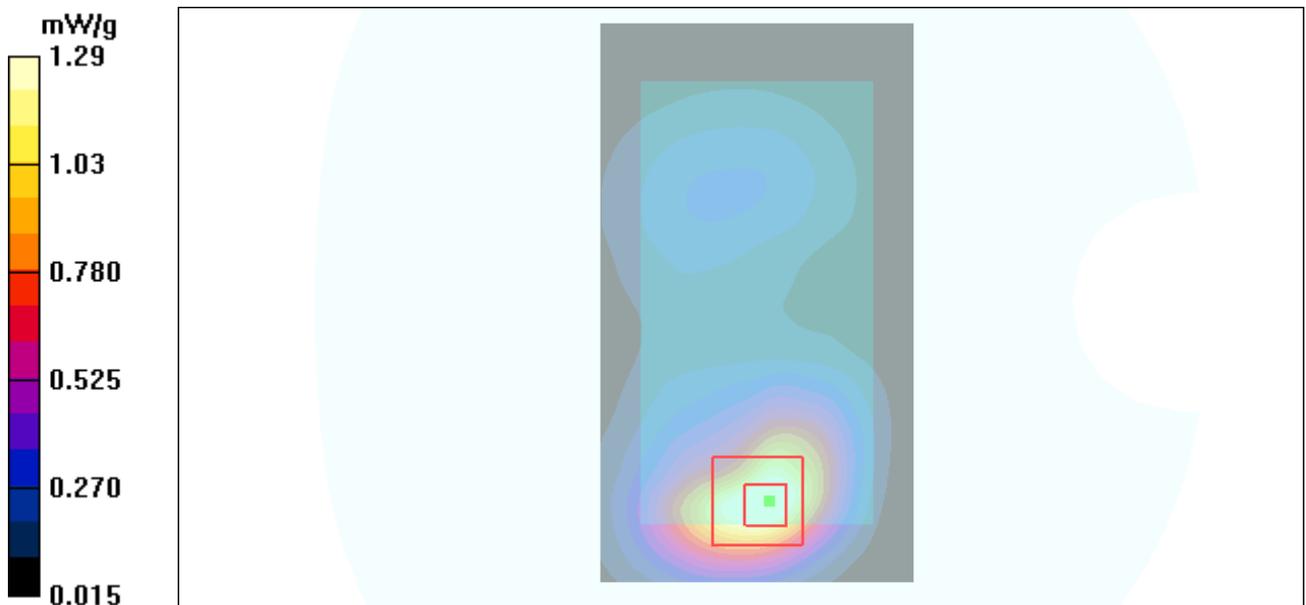Maximum value of SAR (measured) = 1.29 mW/g

Figure 60 Body, Back Side, WCDMA Band II Channel 9538

WCDMA Band II with HSDPA Back Side High(SN:GAGBA16XC42K9359)

Date/Time: 2/29/2012 5:36:25 PM

Communication System: WCDMA Band II+HSDPA; Frequency: 1907.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 1908 MHz; σ = 1.56 mho/m; $ε_r$ = 52.1; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Flat Section

DASY4 Configuration:

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

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

Phantom: SAM000 T01; Type: SAM V4.0; Serial: TP-1246

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

Back Side High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.22 mW/g

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

Reference Value = 8.07 V/m; Power Drift = -0.034 dB

Peak SAR (extrapolated) = 2.03 W/kg

SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.610 mW/g

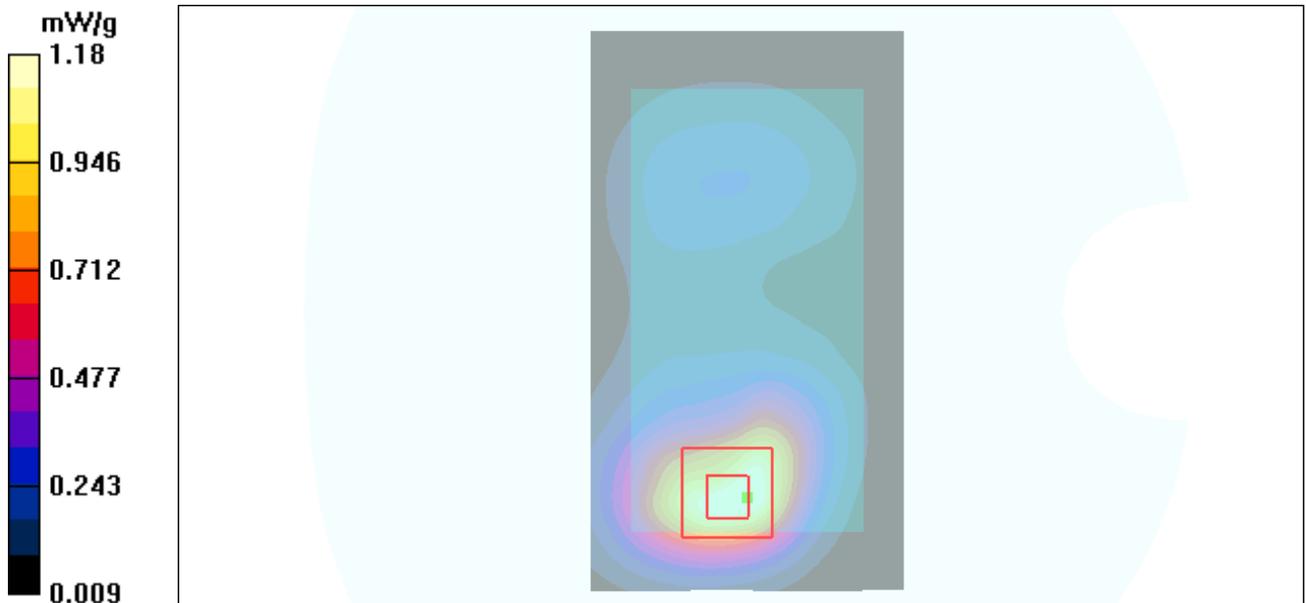Maximum value of SAR (measured) = 1.18 mW/g

Figure 61 Body with HSDPA, Back Side, WCDMA Band II Channel 9538

WCDMA Band V Left Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 4:24:56 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

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

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

Cheek Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.725 mW/g

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

Reference Value = 9.49 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.830 W/kg

SAR(1 g) = 0.688 mW/g; SAR(10 g) = 0.522 mW/g

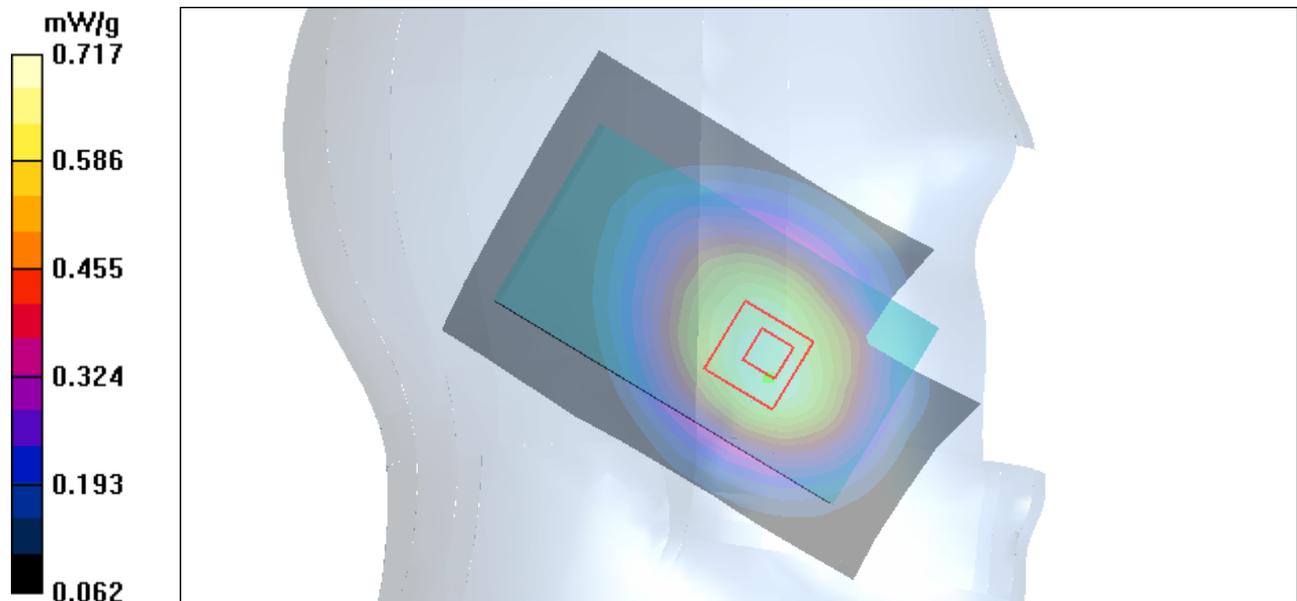Maximum value of SAR (measured) = 0.717 mW/g

Figure 62 Left Hand Touch Cheek WCDMA Band V Channel 4183

WCDMA Band V Left Tilt Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 4:39:45 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; $ε_r$ = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Left Section

DASY4 Configuration:

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

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

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

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

Tilt Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.388 mW/g

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

Reference Value = 13.5 V/m; Power Drift = -0.061 dB

Peak SAR (extrapolated) = 0.427 W/kg

SAR(1 g) = 0.366 mW/g; SAR(10 g) = 0.284 mW/g

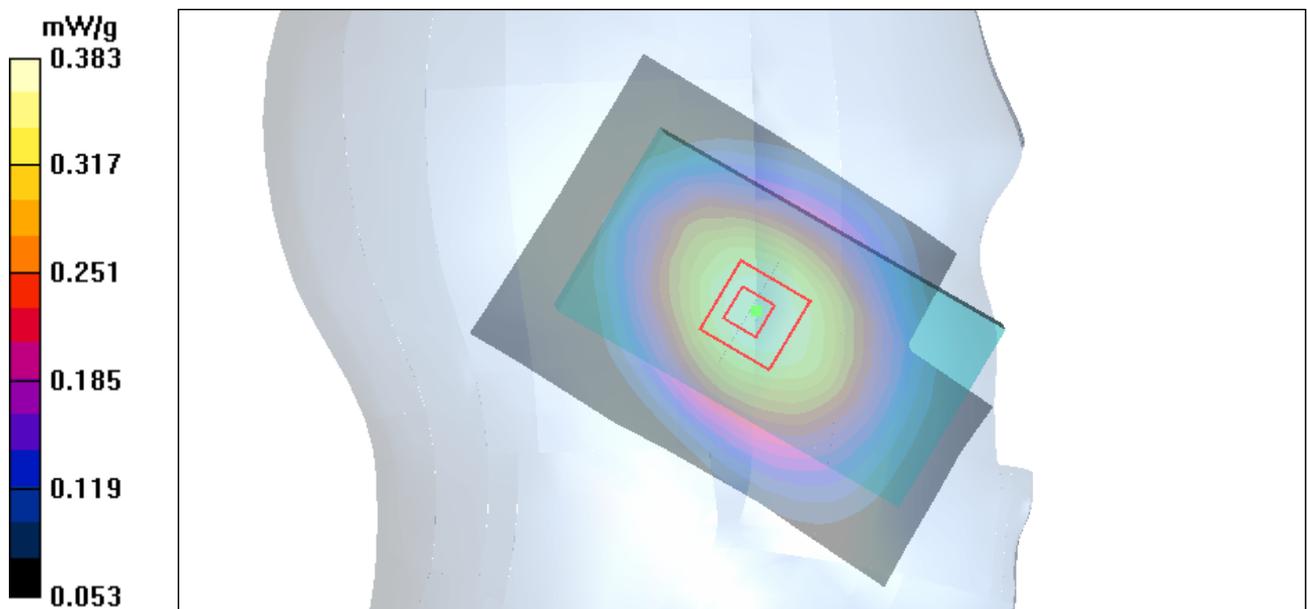Maximum value of SAR (measured) = 0.383 mW/g

Figure 63 Left Hand Tilt 15° WCDMA Band V Channel 4183

WCDMA Band V Right Cheek High(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 6:16:41 PM

Communication System: WCDMA Band V; Frequency: 846.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 847 MHz; σ = 0.923 mho/m; $ε_r$ = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek High/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

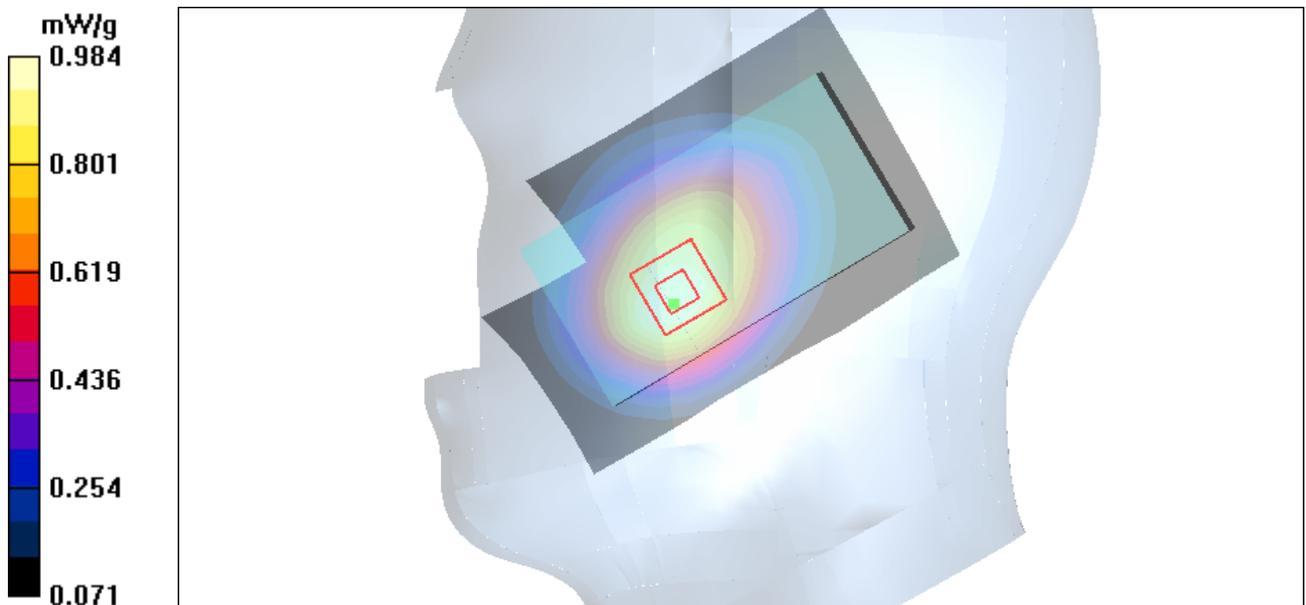Maximum value of SAR (interpolated) = 1.01 mW/g

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

Reference Value = 10.6 V/m; Power Drift = 0.034 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.933 mW/g; SAR(10 g) = 0.702 mW/g
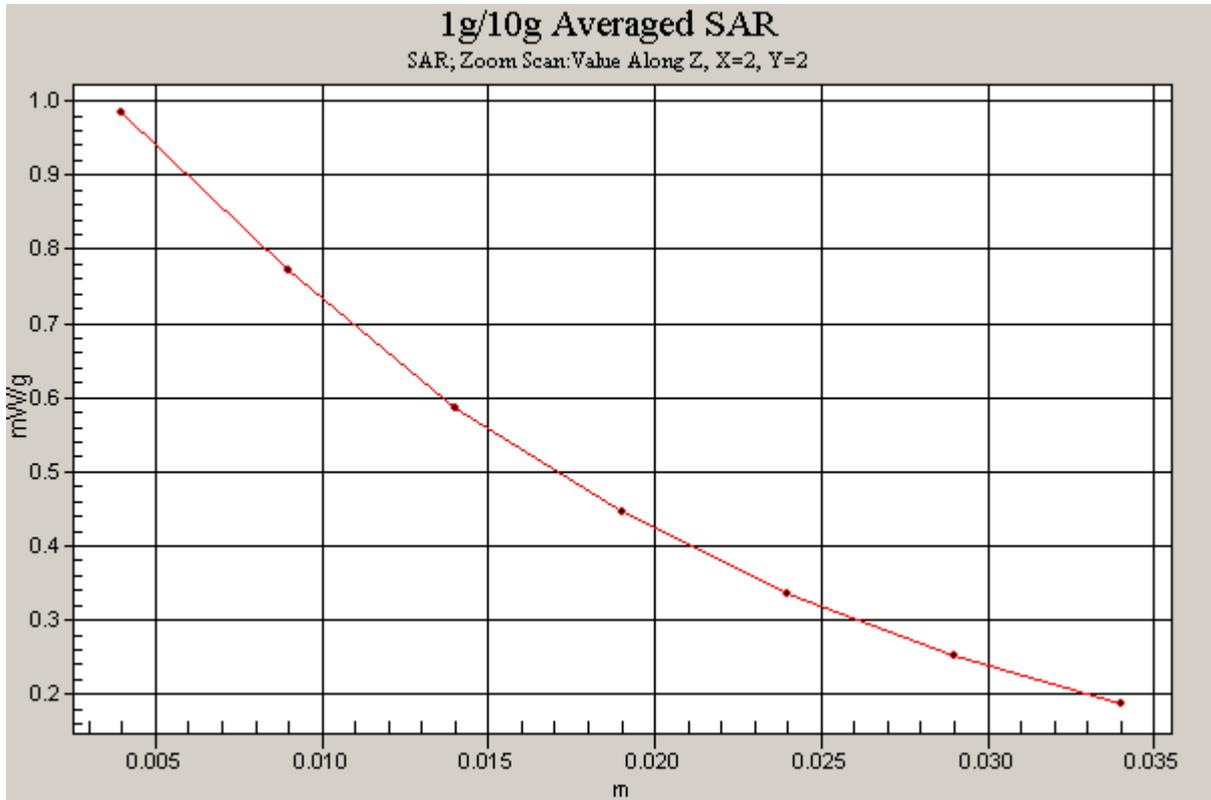
Maximum value of SAR (measured) = 0.984 mW/g

Figure 64 Right Hand Touch Cheek WCDMA Band V Channel 4233

WCDMA Band V Right Cheek Middle(SN:GAGBA16XC42K9359)

Date/Time: 2/22/2012 8:45:27 PM

Communication System: WCDMA Band V; Frequency: 836.6 MHz;Duty Cycle: 1:1

Medium parameters used: f = 837 MHz; σ = 0.911 mho/m; ε_r = 42; ρ = 1000 kg/m^3

Ambient Temperature:22.3 ℃   Liquid Temperature: 21.5℃

Phantom section: Right Section

DASY4 Configuration:

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

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

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

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

Cheek Middle 2/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.935 mW/g

Cheek Middle 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = -0.088 dB

Peak SAR (extrapolated) = 1.04 W/kg

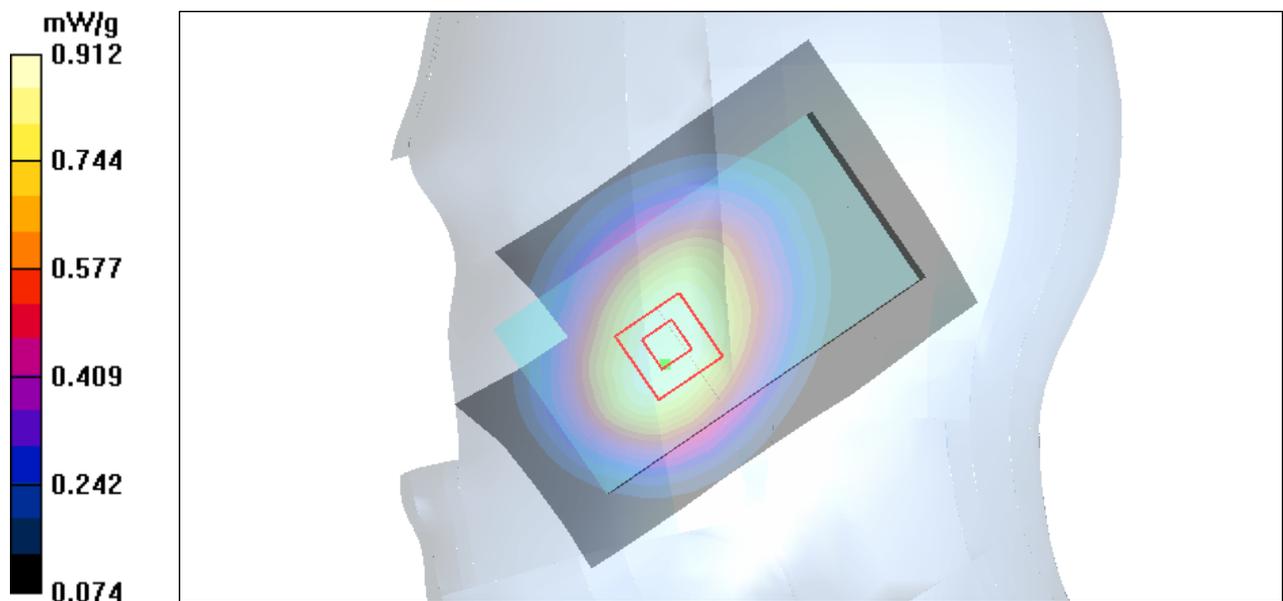**SAR(1 g) = 0.874 mW/g; SAR(10 g) = 0.664 mW/g**

Maximum value of SAR (measured) = 0.912 mW/g

Figure 65 Right Hand Touch Cheek WCDMA Band V Channel 4183