



# OET 65

# TEST REPORT

<b>Product Name</b>	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth
<b>Model</b>	HUAWEI U8820/Huawei U8820/U8820/Titan
<b>FCC ID</b>	QISU8820
<b>Client</b>	Huawei Technologies Co., Ltd.

**TA Technology (Shanghai) Co., Ltd.**



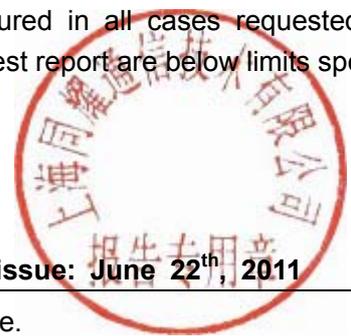
**TA Technology (Shanghai) Co., Ltd.  
Test Report**

Report No.: RZA1105-0769SAR01R1

Page 2 of 242

**GENERAL SUMMARY**

<b>Product Name</b>	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth	<b>Model</b>	HUAWEI U8820/Huawei U8820/U8820/Titan
<b>FCC ID</b>	QISU8820		
<b>Report No.</b>	RZA1105-0769SAR		
<b>Client</b>	Huawei Technologies Co., Ltd.		
<b>Manufacturer</b>	Huawei Technologies Co., Ltd.		
<b>Reference Standard(s)</b>	<p><b>IEEE Std C95.1, 1999:</b> IEEE Standard for Safety Levels with Respect to Human Exposure to Radiofrequency Electromagnetic Fields, 3 kHz to 300 GHz.</p> <p><b>IEEE Std 1528™-2003:</b> IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.</p> <p><b>SUPPLEMENT C Edition 01-01 to OET BULLETIN 65 Edition 97-01 June 2001 including DA 02-1438, published June 2002:</b> Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions.</p> <p><b>RSS-102 Issue 4 March 2010:</b> Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands).</p> <p><b>KDB 941225 D06 Hot Spot SAR v01</b> SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities</p>		
<b>Conclusion</b>	<p>This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 7 of this test report are below limits specified in the relevant standards.</p> <p>General Judgment: <b>Pass</b></p> <p align="right">(Stamp) Date of issue: June 22<sup>th</sup>, 2011</p>		
<b>Comment</b>	The test result only responds to the measured sample.		



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## TABLE OF CONTENT

- 1. General Information ..... 5
  - 1.1. Notes of the Test Report..... 5
  - 1.2. Testing Laboratory ..... 5
  - 1.3. Applicant Information ..... 6
  - 1.4. Manufacturer Information..... 6
  - 1.5. Information of EUT..... 7
  - 1.6. The Maximum SAR<sub>1g</sub> Values and Conducted Power of each tested band ..... 8
  - 1.7. Test Date ..... 9
- 2. Operational Conditions during Test ..... 10
  - 2.1. General Description of Test Procedures ..... 10
  - 2.2. GSM Test Configuration ..... 10
  - 2.3. WCDMA Test Configuration ..... 12
    - 2.3.1. Output Power Verification ..... 12
    - 2.3.2. Head SAR Measurements ..... 12
    - 2.3.3. Body SAR Measurements ..... 12
  - 2.4. HSDPA Test Configuration ..... 12
  - 2.5. HSUPA Test Configuration ..... 14
  - 2.6. WIFI Test Configuration ..... 16
  - 2.7. Test Positions..... 17
    - 2.7.1. Against Phantom Head ..... 17
    - 2.7.2. Body Worn Configuration..... 17
- 3. SAR Measurements System Configuration ..... 18
  - 3.1. SAR Measurement Set-up ..... 18
  - 3.2. DASY5 E-field Probe System ..... 19
    - 3.2.1. EX3DV4 Probe Specification ..... 19
    - 3.2.2. E-field Probe Calibration ..... 20
  - 3.3. Other Test Equipment ..... 20
    - 3.3.1. Device Holder for Transmitters ..... 20
    - 3.3.2. Phantom ..... 21
  - 3.4. Scanning Procedure ..... 21
  - 3.5. Data Storage and Evaluation ..... 23
    - 3.5.1. Data Storage..... 23
    - 3.5.2. Data Evaluation by SEMCAD ..... 23
  - 3.6. System Check..... 26
  - 3.7. Equivalent Tissues ..... 27
- 4. Laboratory Environment..... 28
- 5. Characteristics of the Test..... 29
  - 5.1. Applicable Limit Regulations ..... 29
  - 5.2. Applicable Measurement Standards ..... 29
- 6. Conducted Output Power Measurement ..... 30
  - 6.1. Summary ..... 30



# TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1105-0769SAR01R1

Page 4 of 242

---

6.2.	Conducted Power Results .....	30
7.	Test Results .....	32
7.1.	Dielectric Performance.....	32
7.2.	System Check Results.....	34
7.3.	Summary of Measurement Results.....	36
7.3.1.	GSM 850 (GPRS/EGPRS).....	36
7.3.2.	GSM 1900 (GPRS/EGPRS).....	38
7.3.3.	WCDMA Band II (WCDMA/HSDPA/HSUPA).....	40
7.3.4.	WCDMA Band IV (WCDMA/HSDPA/HSUPA) .....	43
7.3.5.	Bluetooth/WiFi Function.....	46
8.	Measurement Uncertainty .....	51
9.	Main Test Instruments .....	53
ANNEX A:	Test Layout .....	54
ANNEX B:	System Check Results .....	59
ANNEX C:	Graph Results .....	67
ANNEX D:	Probe Calibration Certificate .....	182
ANNEX E:	D835V2 Dipole Calibration Certificate .....	193
ANNEX F:	D1750V2 Dipole Calibration Certificate .....	202
ANNEX G:	D1900V2 Dipole Calibration Certificate.....	211
ANNEX H:	D2450V2 Dipole Calibration Certificate .....	220
ANNEX I:	DAE4 Calibration Certificate .....	229
ANNEX J:	The EUT Appearances and Test Configuration .....	234



## **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.

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

### **1.2. Testing Laboratory**

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### **1.3. Applicant Information**

Company: Huawei Technologies Co., Ltd.  
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City: Shenzhen  
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### **1.4. Manufacturer Information**

Company: Huawei Technologies Co., Ltd.  
Address: Bantian, Longgang District  
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Country: P.R. China  
Telephone: 0755-28780808  
Fax: 0755-28780808



**1.5. Information of EUT**

**General Information**

Device Type :	Portable Device		
Exposure Category:	Uncontrolled Environment / General Population		
Product Name:	HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth		
IMEI:	3552630400015831		
Hardware Version:	HD1U882M		
Software Version:	U8820 V100R001USAC189B625SP01		
Antenna Type:	Internal Antenna		
Device Operating Configurations :			
Supporting Mode(s):	GSM 850/GSM 1900/WCDMA Band II/ WCDMA Band IV; (tested) WiFi(802.11b/g/n HT20); (tested) GSM 900/GSM 1800/WCDMA Band I; Bluetooth;		
Test Modulation:	(GSM)GMSK; (WCDMA)QPSK		
Device Class:	B		
HSDPA UE Category:	10		
HSUPA UE Category:	6		
GPRS Multislot Class(10):	Max Number of Timeslots in Uplink	2	
	Max Number of Timeslots in Downlink	4	
	Max Total Timeslot	5	
EGPRS Multislot Class(10):	Max Number of Timeslots in Uplink	2	
	Max Number of Timeslots in Downlink	4	
	Max Total Timeslot	5	
Operating Frequency Range(s):	Mode	Tx (MHz)	Rx (MHz)
	GSM 850	824.2 ~ 848.8	869.2 ~ 893.8
	GSM 1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8
	WCDMA Band II	1852.4 ~ 1907.6	1932.4 ~ 1987.6
	WCDMA Band IV	1712.4 ~ 1752.6	2112.4 ~ 2152.6
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 IV: 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)
	1312 - 1413 - 1513	(WCDMA Band IV)	(tested)
	1 - 6 - 11	(WiFi)	(tested)



### Auxiliary Equipment Details

#### AE:Battery

Model: HB5K1H  
Manufacturer: Huawei Technologies Co., Ltd.  
S/N: WHCAC31HI5301262

Equipment Under Test (EUT) is a model of HSPA/UMTS/GPRS/GSM/EDGE Mobile Phone with Bluetooth. The device has an internal antenna for GSM/WCDMA Tx/Rx, and the other is BT/WiFi antenna that can be used for Tx/Rx. It has Personal Wireless Routers (hot spots) function. The detail about Mobile phone and Lithium Battery is in chapter 1.5 in this report. SAR is tested for GSM 850, GSM 1900, WCDMA Band II, WCDMA Band IV 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<sub>1g</sub> Values and Conducted Power of each tested band

#### Head Configuration

Mode	Channel	Position	SAR <sub>1g</sub> (W/kg)
GSM 850	Low/128	Right, Cheek	<b>0.162</b>
GSM 1900	Low/512	Left, Cheek	<b>0.364</b>
WCDMA Band II	Low/9262	Left, Cheek	<b>0.817</b>
WCDMA Band IV	High/1513	Left, Cheek	<b>0.847</b>
WiFi	Low/1	Left, Tilt 15 Degree	<b>0.300</b>

#### Body Worn Configuration

Mode	Channel	Separation distance	SAR <sub>1g</sub> (W/kg)
2-slots GPRS 850	Low/128	15mm	<b>0.612</b>
2-slots GPRS 1900	Low/512	15mm	<b>0.631</b>
WCDMA Band II	Low/9262	15mm	<b>0.694</b>
WCDMA Band IV	Middle/1413	15mm	<b>0.719</b>
WiFi	Low/1	15mm	<b>0.035</b>



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

Report No.: RZA1105-0769SAR01R1

Page 9 of 242

**Hot spot Mode**

Mode	Channel	Separation distance	SAR <sub>1g</sub> (W/kg)
2-slots GPRS 850	Low/128	10mm	<b>0.804</b>
2-slots GPRS 1900	Low/512	10mm	<b>1.090</b>
WCDMA Band II	Low/9262	10mm	<b>1.200</b>
WCDMA Band IV	Middle/1413	10mm	<b>1.330</b>
WiFi	Low/1	10mm	<b>0.064</b>

**Maximum Power**

Mode		Max Conducted Power (dBm)	Max Average Power (dBm)
GSM 850	GSM	<b>32.88</b>	<b>23.85</b>
	GPRS, 2-slots	<b>32.25</b>	<b>26.23</b>
	EGPRS(GMSK), 2-slots	<b>32.23</b>	<b>26.21</b>
GSM 1900	GSM	<b>29.85</b>	<b>20.82</b>
	GPRS, 2-slots	<b>29.77</b>	<b>23.75</b>
	EGPRS(GMSK), 2-slots	<b>29.78</b>	<b>23.76</b>
WCDMA Band II		<b>23.95</b>	/
WCDMA Band IV		<b>24.37</b>	/

Note: The detail Power refer to Table 10 (Power Measurement Results).

**1.7. Test Date**

The test is performed from June 3, 2011 to June 11, 2011.



## 2. Operational Conditions during Test

### 2.1. 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 1312, 1413 and 1513 in the case of WCDMA Band IV. 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.

### 2.2. 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” in SAR of GSM 850, set to “0” in SAR of 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	1

EGPRS(8PSK):

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



# TA Technology (Shanghai) Co., Ltd. Test Report

### EGPRS(GMSK):

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

### GSM 1900

#### GPRS (GMSK) :

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

#### EGPRS(8PSK):

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

#### EGPRS(GMSK):

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



## **2.3. WCDMA Test Configuration**

### **2.3.1. 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. Results for all applicable physical channel configuration (DPCCH, DPDCH<sub>n</sub> and spreading codes, HSDPA) 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.

### **2.3.2. 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.

### **2.3.3. 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<sub>n</sub>, when supported by the DUT, are not required when the maximum average output of each RF channel, for each spreading code and DPDCH<sub>n</sub> 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<sub>n</sub> using the exposure configuration that results in the highest SAR with 12.2 kbps RMC. When more than 2 DPDCH<sub>n</sub> are supported by the DUT, it may be necessary to configure additional DPDCH<sub>n</sub> 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.

## **2.4. HSDPA Test Configuration**

SAR for body exposure configurations is measured according to the "Body SAR Measurements" procedures of 3G device. In addition, body SAR is also measured for HSDPA when the maximum average output of each RF channel with HSDPA active is at least 1/4 dB higher than that measured without HSDPA using 12.2kbps RMC or the maximum SAR 12.2kbps RMC is above 75% of the SAR limit. Body SAR for HSDPA is measured using an FRC with H-Set 1 in Sub-test 1 and a 12.2kbps 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 HS-DSCH/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 condition, 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( $\beta_c, \beta_d$ ), and HS-DPCCH



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

**Table 1: Subtests for UMTS Release 5 HSDPA**

Sub-set	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{hs}$ (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:  $\Delta_{ACK}$ ,  $\Delta_{NACK}$  and  $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$   
 Note2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1.A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA,  $\Delta_{ACK}$  and  $\Delta_{NACK} = 8$  ( $A_{hs} = 30/15$ ) with  $\beta_{hs} = 30/15 * \beta_c$ , and  $\Delta_{CQI} = 7$  ( $A_{hs} = 24/15$ ) with  $\beta_{hs} = 24/15 * \beta_c$ .  
 Note3: CM=1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ . For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.  
 Note 4: For subtest 2 the  $\beta_c/\beta_d$  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  $\beta_c = 11/15$  and  $\beta_d = 15/15$ .

**Table 2: 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 3: 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

## 2.5. HSUPA Test Configuration

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

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

**Table 4: Sub-Test 5 Setup for Release 6 HSUPA**

Sub-	$\beta_c$	$\beta_d$	$\beta_d$	$\beta_c/\beta_d$	$\beta_{hs}^{(1)}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$	$\beta_{ed}$	CM	MPR	AG <sup>(4)</sup>	E-TFCI
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# TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1105-0769SAR01R1

Page 15 of 242

set			(SF)					(SF)	(codes)	<sup>(2)</sup> (dB)	(dB)	Index	
1	11/15 <sup>(3)</sup>	15/15 <sup>(3)</sup>	64	11/15 <sup>(3)</sup>	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}$ : 47/15 $\beta_{ed2}$ : 47/15	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 <sup>(4)</sup>	15/15 <sup>(4)</sup>	64	15/15 <sup>(4)</sup>	30/15	24/15	134/15	4	1	1.0	0.0	21	81

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

Note 2: CM = 1 for  $\beta_c/\beta_d = 12/15$ ,  $\beta_{hs}/\beta_c = 24/15$ . For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

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

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

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

Note 6:  $\beta_{ed}$  can not be set directly; it is set by Absolute Grant Value.

**Table 5: HSUPA UE category**

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

NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4.

UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)



## 2.6. WIFI Test Configuration

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 6.

**Table 6: “Default Test Channels”**

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

Note: <sup>#</sup>=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”



## **2.7. Test Positions**

### **2.7.1. 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".

### **2.7.2. 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. The distance between the device and the phantom was kept 15mm.

Based upon KDB941225 D06, 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.

### 3. SAR Measurements System Configuration

#### 3.1. SAR Measurement Set-up

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

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

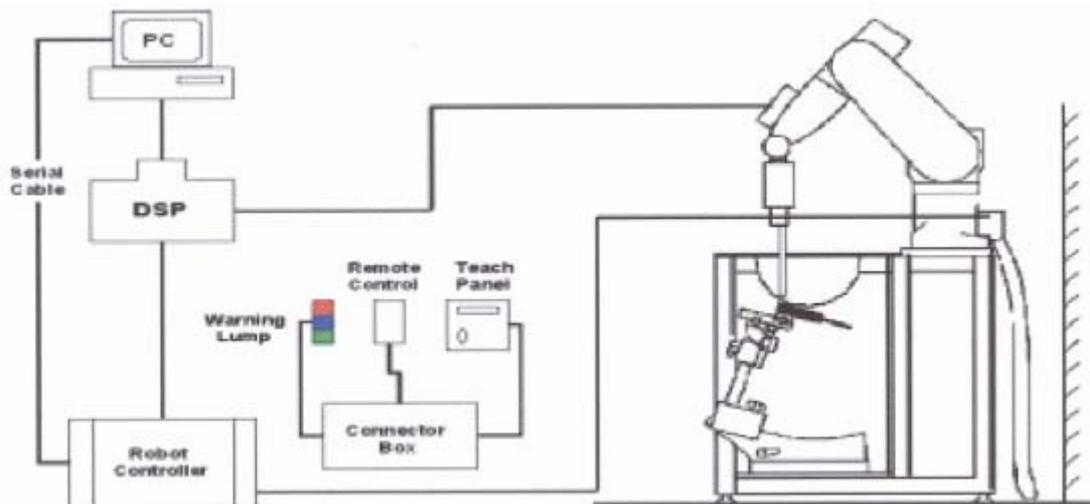


Figure 1 SAR Lab Test Measurement Set-up



### 3.2. DASY5 E-field Probe System

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

#### 3.2.1. EX3DV4 Probe Specification

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



Figure 2. EX3DV4 E-field Probe



Figure 3. EX3DV4 E-field probe



**3.2.2. 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).

**3.3. Other Test Equipment**

**3.3.1. Device Holder for Transmitters**

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



**Figure 4 Device Holder**



### 3.3.2. Phantom

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

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



Figure 5 Generic Twin Phantom

### 3.4. Scanning Procedure

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

- The “reference” and “drift” measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. ± 5 %.
- The “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)
- Area Scan  
The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid



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

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

- Zoom Scan

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

- Spatial Peak Detection

The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY5 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

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

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 7x7x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1g and 10g cubes.

- A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube 7x7x7 scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.



### 3.5. Data Storage and Evaluation

#### 3.5.1. Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension “.DA4”. The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device setup, the parameter can be corrected afterwards and the data can be re-evaluated.

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

#### 3.5.2. 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 <sub>i0</sub> , a <sub>i1</sub> , a <sub>i2</sub> |
|                    | - Conversion factor       | ConvF <sub>i</sub>   |
|                    | - Diode compression point | Dcp <sub>i</sub>   |
| Device parameters: | - Frequency               | f  |
|                    | - Crest factor            | cf   |
| Media parameters:  | - Conductivity            |  |
|                    | - Density                 |  |

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

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



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

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

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

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

$cf$  = crest factor of exciting field (DASY parameter)

$dcp_i$  = diode compression point (DASY parameter)

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

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

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

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

$Norm_i$  = sensor sensitivity of channel i (i = x, y, z)  
[mV/(V/m)<sup>2</sup>] 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.

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



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

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

**$\sigma$**  = conductivity in [mho/m] or [Siemens/m]

**$\rho$**  = equivalent tissue density in g/cm<sup>3</sup>

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

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

with  **$P_{pwe}$**  = equivalent power density of a plane wave in mW/cm<sup>2</sup>

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

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



### 3.6. 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 13 and table 14.

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

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

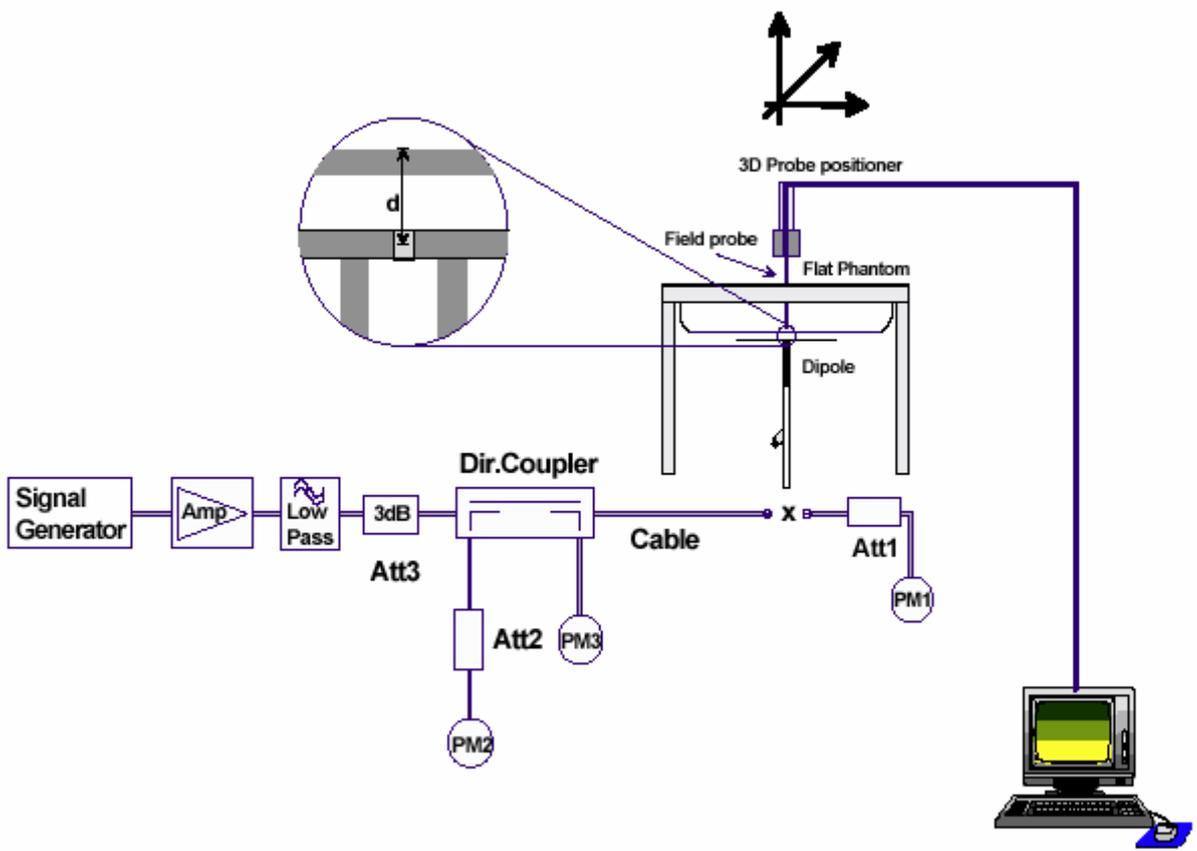


Figure 6 System Check Set-up



### 3.7. Equivalent Tissues

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 7 and table 8 show the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the OET 65.

**Table 7: Composition of the Head Tissue Equivalent Matter**

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

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

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

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



**Table 8: Composition of the Body Tissue Equivalent Matter**

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

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

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

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

#### 4. Laboratory Environment

**Table 9: The Ambient Conditions during Test**

Temperature	Min. = 20°C, Max. = 25 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 $\Omega$
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.	



## **5. Characteristics of the Test**

### **5.1. Applicable Limit Regulations**

**IEEE Std C95.1, 1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radiofrequency Electromagnetic Fields, 3 kHz to 300 GHz.

### **5.2. Applicable Measurement Standards**

**IEEE Std 1528™-2003:** IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

**SUPPLEMENT C Edition 01-01 to OET BULLETIN 65 Edition 97-01 June 2001 including DA 02-1438, published June 2002:** Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields Additional Information for Evaluation Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions.

**RSS-102 Issue 4 March 2010:** Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands).

**KDB 941225 D06 Hot Spot SAR v01** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities



## 6. Conducted Output Power Measurement

### 6.1. Summary

The DUT is tested using an E5515C communications tester as controller unit to set test channels and maximum output power to the DUT, as well as for measuring the conducted power. Conducted output power was measured using an integrated RF connector and attached RF cable. This result contains conducted output power for the EUT.

### 6.2. Conducted Power Results

**Table 10: Conducted Power Measurement Results**

GSM 850		Conducted Power(dBm)				Average power(dBm)		
		Channel 128	Channel 190	Channel 251		Channel 128	Channel 190	Channel 251
GSM	Results	32.88	32.83	32.79	-9.03dB	23.85	23.80	23.76
GPRS (GMSK)	1TXslot	32.89	32.79	32.82	-9.03dB	23.86	23.76	23.79
	2TXslots	31.99	32.15	32.25	-6.02dB	<b>25.97</b>	<b>26.13</b>	<b>26.23</b>
EGPRS (GMSK)	1TXslot	32.86	32.75	32.77	-9.03dB	23.83	23.72	23.74
	2TXslots	32.02	32.12	32.23	-6.02dB	<b>26.00</b>	<b>26.10</b>	<b>26.21</b>
EGPRS (8PSK)	1TXslot	25.13	25.01	24.92	-9.03dB	16.10	15.98	15.89
	2TXslots	25.06	24.95	24.97	-6.02dB	19.04	18.93	18.95
GSM 1900		Conducted Power(dBm)				Average power(dBm)		
		Channel 512	Channel 661	Channel 810		Channel 512	Channel 661	Channel 810
GSM	Results	29.85	28.86	29.25	-9.03dB	20.82	19.83	20.22
GPRS (GMSK)	1TXslot	29.88	28.92	29.35	-9.03dB	20.85	19.89	20.32
	2TXslots	29.77	28.86	29.28	-6.02dB	<b>23.75</b>	<b>22.84</b>	<b>23.26</b>
EGPRS (GMSK)	1TXslot	29.85	28.88	29.36	-9.03dB	20.82	19.85	20.33
	2TXslots	29.78	28.81	29.25	-6.02dB	<b>23.76</b>	<b>22.79</b>	<b>23.23</b>
EGPRS (8PSK)	1TXslot	23.74	23.21	23.51	-9.03dB	14.71	14.18	14.48
	2TXslots	23.59	23.12	23.37	-6.02dB	17.57	17.10	17.35

Note:

1) Division Factors

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

1 TX- slot = 1 transmit time slot out of 8 time slots

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

2) TX- slots = 2 transmit time slots out of 8 time slots

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

2) Average power numbers

The maximum power numbers are marks in bold.



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**Test Report**

WCDMA Band II	Conducted Power (dBm)		
	Channel 9262	Channel 9400	Channel 9538
12.2kbps RMC	23.92	23.85	23.92
64kbps RMC	23.86	23.88	23.94
144kbps RMC	23.91	23.86	23.93
384kbps RMC	23.94	23.92	23.95
WCDMA Band II HSDPA	Conducted Power (dBm)		
	Channel 9262	Channel 9400	Channel 9538
Sub - Test 1	23.56	23.62	23.75
Sub - Test 2	23.02	22.99	22.94
Sub - Test 3	22.52	22.29	22.48
Sub - Test 4	22.51	22.28	22.46
WCDMA Band II HSUPA	Conducted Power (dBm)		
	Channel 9262	Channel 9400	Channel 9538
Sub - Test 1	22.93	22.88	22.76
Sub - Test 2	21.63	21.66	21.94
Sub - Test 3	22.25	21.31	22.04
Sub - Test 4	22.23	22.05	22.46
Sub - Test 5	22.72	22.64	22.99
WCDMA Band IV	Conducted Power (dBm)		
	Channel 1312	Channel 1413	Channel 1513
12.2kbps RMC	24.31	23.85	23.96
64kbps RMC	24.36	23.88	23.94
144kbps RMC	24.33	23.93	24.01
384kbps RMC	24.37	23.87	23.92
WCDMA Band IV HSDPA	Conducted Power (dBm)		
	Channel 1312	Channel 1413	Channel 1513
Sub - Test 1	24.15	23.62	23.69
Sub - Test 2	23.35	23.22	23.01
Sub - Test 3	22.41	22.06	22.01
Sub - Test 4	22.28	21.94	21.92
WCDMA Band IV HSUPA	Conducted Power (dBm)		
	Channel 1312	Channel 1413	Channel 1513
Sub - Test 1	23.38	23.39	23.25
Sub - Test 2	22.18	21.62	21.98
Sub - Test 3	22.37	22.21	22.15
Sub - Test 4	22.53	22.48	22.16
Sub - Test 5	23.31	23.33	23.11



## 7. Test Results

### 7.1. Dielectric Performance

**Table 11: Dielectric Performance of Head Tissue Simulating Liquid**

Frequency	Description	Dielectric Parameters		Temp °C
		$\epsilon_r$	$\sigma$ (s/m)	
<b>835MHz (head)</b>	Target value ± 5% window	41.50 39.43 — 43.58	0.90 0.86 — 0.95	/
	Measurement value 2011-6-3	41.76	0.90	21.7
<b>1750MHz (head)</b>	Target value ±5% window	40.1 38.10 — 42.11	1.37 1.30 — 1.44	/
	Measurement value 2011-6-8	40.66	1.34	21.6
<b>1900MHz (head)</b>	Target value ±5% window	40.00 38.00 — 42.00	1.40 1.33 — 1.47	/
	Measurement value 2011-6-3	39.99	1.43	21.8
<b>2450MHz (head)</b>	Target value ±5% window	39.20 37.24 — 41.16	1.80 1.71 — 1.89	/
	Measurement value 2011-6-10	39.51	1.83	21.8



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**Table 12: Dielectric Performance of Body Tissue Simulating Liquid**

Frequency	Description	Dielectric Parameters		Temp °C
		$\epsilon_r$	$\sigma$ (s/m)	
<b>835MHz (body)</b>	Target value ±5% window	55.20 52.44 — 57.96	0.97 0.92 — 1.02	/
	Measurement value 2011-6-8	55.89	0.99	21.7
<b>1750MHz (body)</b>	Target value ±5% window	53.40 50.73 — 56.07	1.49 1.42 — 1.56	/
	Measurement value 2011-6-7	52.35	1.48	21.9
<b>1900MHz (body)</b>	Target value ±5% window	53.30 50.64 — 55.97	1.52 1.44 — 1.60	/
	Measurement value 2011-6-9	51.84	1.55	21.8
<b>2450MHz (body)</b>	Target value ±5% window	52.70 50.07 — 55.34	1.95 1.85 — 2.05	/
	Measurement value 2011-6-10	51.73	1.97	21.9



**7.2. System Check Results**

**Table 13: System Check for Head Tissue Simulating Liquid**

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	$\epsilon_r$	$\sigma$ (s/m)	°C
835MHz	Recommended result ±10% window	1.56 1.40 — 1.72	2.39 2.15 — 2.63	41.2	0.89	/
	Measurement value 2011-6-3	1.58	2.40	41.76	0.90	21.7
1750MHz	Recommended value ±10% window	4.74 4.27 — 5.21	8.86 7.97 — 9.75	39.8	1.33	/
	Measurement value 2011-6-8	4.58	8.79	40.66	1.34	21.6
1900MHz	Recommended result ±10% window	5.22 4.70 — 5.74	10 9.00 — 11.00	39.5	1.44	/
	Measurement value 2011-6-3	5.30	10.33	39.99	1.43	21.8
2450 MHz	Recommended result ±10% window	6.24 5.62 — 6.86	13.3 11.97—14.63	38.7	1.77	/
	Measurement value 2011-6-10	6.52	14.06	39.51	1.83	21.8

Note: 1. The graph results see ANNEX B.

2. Recommended Values used derive from the calibration certificate and 250 mW is used as feeding power to the calibrated dipole.



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**Table 14: System Check for Body Tissue Simulating Liquid**

Frequency	Description	SAR(W/kg)		Dielectric Parameters		Temp
		10g	1g	$\epsilon_r$	$\sigma$ (s/m)	°C
835MHz	Recommended result ±10% window	1.63 1.47 — 1.79	2.49 2.24 — 2.74	54.6	0.98	/
	Measurement value 2011-6-8	1.64	2.54	55.89	0.99	21.7
1750MHz	Recommended value ±10% window	5.11 4.60 — 5.62	9.37 8.43 — 10.31	54.1	1.43	/
	Measurement value 2011-6-7	4.90	9.24	52.35	1.48	21.9
1900 MHz	Recommended result ±10% window	5.52 4.97 — 6.07	10.3 9.27 — 11.33	53.5	1.54	/
	Measurement value 2011-6-9	5.36	10.20	51.84	1.55	21.8
2450 MHz	Recommended result ±10% window	5.97 5.37 — 6.57	13 11.7—14.3	51.8	2.01	/
	Measurement value 2011-6-10	6.48	14.01	51.73	1.97	21.9

Note: 1. The graph results see ANNEX B.

2. Target Values used derive from the calibration certificate and 250 mW is used as feeding power to the Calibrated dipole.



**7.3. Summary of Measurement Results**

**7.3.1. GSM 850 (GPRS/EGPRS)**

**Table 15: 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		
<b>Test Position of Head</b>					
Left hand, Touch Cheek	Middle/190	0.092	0.123	-0.178	Figure 15
Left hand, Tilt 15 Degree	Middle/190	0.071	0.095	-0.059	Figure 16
Right hand, Touch Cheek	High/251	0.085	0.114	0.088	Figure 17
	Middle/190	0.102	0.136	-0.090	Figure 18
	Low/128	0.122	0.162	0.071	Figure 19
Right hand, Tilt 15 Degree	Middle/190	0.072	0.094	0.077	Figure 20
<b>Test position of Body (Distance 15mm)</b>					
Towards Ground (GSM)	Middle/190	0.219	0.295	0.051	Figure 21
Towards Ground (2TXslots)	High/251	0.339	0.473	-0.128	Figure 22
	Middle/190	0.378	0.510	0.003	Figure 23
	Low/128	0.447	0.612	0.056	Figure 24
Towards Phantom(2TXslots)	Middle/190	0.194	0.256	-0.090	Figure 25
<b>Worst Case Position of Body with Earphone (Distance 15mm)</b>					
Towards Ground (GSM)	Low/128	0.170(max.cube)	0.229(max.cube)	0.045	Figure 26

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



**Table 16: SAR Values [GSM 850(wireless routers incorporated in device)]**

Limit of SAR		10 g Average	1 g Average	Power	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		
<b>Test position of Body (Distance 10mm)</b>					
Towards Ground(2TXslots)	High/251	0.460(max.cube)	0.644(max.cube)	-0.083	Figure 27
	Middle/190	0.522(max.cube)	0.702(max.cube)	-0.020	Figure 28
	Low/128	0.562(max.cube)	0.804(max.cube)	0.007	Figure 29
Towards Phantom (2TXslots)	Middle/190	0.234	0.308	-0.190	Figure 30
Left Edge(2TXslots)	Middle/190	0.195	0.285	0.025	Figure 31
Right Edge(2TXslots)	Middle/190	0.238(max.cube)	0.351(max.cube)	-0.005	Figure 32
Top Edge(2TXslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2TXslots)	Middle/190	0.055	0.092	0.088	Figure 33
<b>Worst Case Position of Body with EGPRS (GMSK, Distance 10mm)</b>					
Towards Ground(2TXslots)	Low/128	0.558(max.cube)	0.759(max.cube)	0.053	Figure 34

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
4. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm(see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. Top Edge is excluded from hotspot mode SAR evaluation.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).

**Table 17: Extrapolated SAR Values of highest measured SAR [GSM 850 (GPRS/EGPRS)]**

Different Test Position	Channel	Conducted Power(dBm)	1g Average (W/kg)	Tune-up procedures MAX Power(dBm)	1g Average Limit 1.6 W/kg
		Measurement Result			Extrapolated Result (W/kg)
<b>GSM(Distance 15mm)</b>					
Towards Ground	Middle/190	32.83	0.295	33.3	0.329
<b>GPRS(2 TXslots, Distance 10mm)</b>					
Towards Ground	Low/128	31.99	0.804	32.7	0.947
<b>EGPRS(GMSK,2 TXslots, Distance 10mm)</b>					
Towards Ground	Low/128	32.02	0.759	32.7	0.888



**7.3.2. GSM 1900 (GPRS/EGPRS)**

**Table 18: 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		
<b>Test Position of Head</b>					
Left hand, Touch cheek	High/810	0.165	0.283	0.178	Figure 35
	Middle/661	0.157	0.261	-0.058	Figure 36
	Low/512	0.219	0.364	0.124	Figure 37
Left hand, Tilt 15 Degree	Middle/661	0.069	0.110	-0.011	Figure 38
Right hand, Touch cheek	Middle/661	0.159	0.256	-0.042	Figure 39
Right hand, Tilt 15 Degree	Middle/661	0.066	0.116	-0.053	Figure 40
<b>Test position of Body (Distance 15mm)</b>					
Towards Ground (GSM)	Middle/661	0.162(max.cube)	0.258(max.cube)	0.064	Figure 41
Towards Ground (2TXslots)	High/810	0.294(max.cube)	0.477(max.cube)	0.010	Figure 42
	Middle/661	0.304(max.cube)	0.486(max.cube)	0.056	Figure 43
	Low/512	0.387	0.631	0.031	Figure 44
Towards Phantom (2TXslots)	Middle/661	0.276	0.443	0.084	Figure 45
<b>Worst Case Position of Body with Earphone (Distance 15mm)</b>					
Towards Ground (GSM)	Low/512	0.159(max.cube)	0.258(max.cube)	0.151	Figure 46

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



# TA Technology (Shanghai) Co., Ltd. Test Report

**Table 19: SAR Values [GSM 1900(wireless routers incorporated in device)]**

Limit of SAR		10 g Average	1 g Average	Power	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		
<b>Test position of Body (Distance 10mm)</b>					
Towards Ground (2TXslots)	High/810	0.479(max.cube)	0.864(max.cube)	-0.051	Figure 47
	Middle/661	0.530(max.cube)	0.871(max.cube)	-0.092	Figure 48
	Low/512	0.600(max.cube)	1.010(max.cube)	-0.071	Figure 49
Towards Phantom (2TXslots)	Middle/661	0.461	0.764	0.086	Figure 50
Left Edge(2TXslots)	Middle/661	0.108	0.183	0.030	Figure 51
Right Edge(2TXslots)	Middle/661	0.148(max.cube)	0.240(max.cube)	-0.029	Figure 52
Top Edge(2TXslots)	N/A	N/A	N/A	N/A	N/A
Bottom Edge(2TXslots)	Middle/661	0.353	0.609	0.057	Figure 53
<b>Worst Case Position of Body with EGPRS(GMSK, Distance 10mm)</b>					
Towards Ground (2TXslots)	Low/512	0.664(max.cube)	1.090(max.cube)	-0.110	Figure 54

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
4. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm(see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. Top Edge is excluded from hotspot mode SAR evaluation..
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).

**Table 20: Extrapolated SAR Values of highest measured SAR [GSM 1900 (GPRS/EGPRS)]**

Different Test Position	Channel	Conducted Power(dBm)	1g Average (W/kg)	Tune-up procedures	1g Average Limit 1.6 W/kg
		Measurement Result		MAX Power(dBm)	Extrapolated Result (W/kg)
<b>GSM(Distance 15mm)</b>					
Left hand, Touch cheek	Low/512	29.85	0.364	30.5	0.423
<b>GPRS(2 TXslots, Distance 10mm)</b>					
Towards Ground	Low/512	29.77	1.010	30.5	1.195
<b>EGPRS(GMSK, 2 TXslots, Distance 10mm)</b>					
Towards Ground	Low/512	29.78	1.090	30.5	1.287



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

**Table 21: SAR Values [WCDMA Band II (WCDMA/HSDPA/HSUPA)]**

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		
<b>Test Position of Head</b>					
Left Hand, Touch Cheek	High/9538	0.460	0.776	0.105	Figure 55
	Middle/9400	0.482	0.808	0.092	Figure 56
	Low/9262	0.495	0.817	0.103	Figure 57
Left Hand, Tilt 15 Degree	Middle/9400	0.176	0.281	0.151	Figure 58
Right Hand, Touch Cheek	Middle/9400	0.414	0.667	0.136	Figure 59
Right Hand, Tilt 15 Degree	Middle/9400	0.154	0.272	0.092	Figure 60
<b>Test Position of Body (Distance 15mm)</b>					
Towards Ground	High/9538	0.370(max.cube)	0.607(max.cube)	-0.013	Figure 61
	Middle/9400	0.370(max.cube)	0.596(max.cube)	0.025	Figure 62
	Low/9262	0.430(max.cube)	0.694(max.cube)	0.166	Figure 63
Towards Phantom	Middle/9400	0.319	0.512	0.078	Figure 64
<b>Worst Case Position of Body with Earphone (Distance 15mm)</b>					
Towards Ground	Low/9262	0.364(max.cube)	0.592(max.cube)	0.041	Figure 65

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

- Upper and lower frequencies were measured at the worst position.
- 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.
- 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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**Table 22: SAR Values [WCDMA Band II (wireless routers incorporated in device)]**

Limit of SAR		10 g Average	1 g Average	Power	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		
<b>Test position of Body (Distance 10mm)</b>					
Towards Ground	High/9538	0.646(max.cube)	1.080(max.cube)	0.049	Figure 66
	Middle/9400	0.639(max.cube)	1.040(max.cube)	0.062	Figure 67
	Low/9262	0.732	1.200	0.033	Figure 68
Towards Phantom	High/9538	0.521	0.855	-0.043	Figure 69
	Middle/9400	0.520	0.852	0.073	Figure 70
	Low/9262	0.607	0.997	-0.010	Figure 71
Left Edge	Middle/9400	0.140	0.238	0.053	Figure 72
Right Edge	Middle/9400	0.167(max.cube)	0.270(max.cube)	0.108	Figure 73
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Middle/9400	0.422	0.733	0.162	Figure 74
<b>Worst Case Position of Body with HSDPA (Distance 10mm)</b>					
Towards Ground	Low/9262	0.660(max.cube)	1.080(max.cube)	-0.014	Figure 75
<b>Worst Case Position of Body with HSUPA (Distance 10mm)</b>					
Towards Ground	Low/9262	0.608(max.cube)	0.997(max.cube)	-0.153	Figure 76

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

2. Upper and lower frequencies were measured at the worst position.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm(see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. Top Edge is excluded from hotspot mode SAR evaluation.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



**TA Technology (Shanghai) Co., Ltd.  
Test Report**

**Table 23: Extrapolated SAR Values of highest measured SAR [WCDMA Band II (WCDMA/HSDPA/ HSUPA)]**

Different Test Position	Channel	Conducted Power(dBm)	1g Average (W/kg)	Tune-up procedures MAX Power(dBm)	1g Average Limit 1.6 W/kg
		Measurement Result			Extrapolated Result (W/kg)
<b>WCDMA (Distance 10mm)</b>					
Towards Ground	Low/9262	23.92	1.200	24.5	1.371
<b>HSDPA (Distance 10mm)</b>					
Towards Ground	Low/9262	23.56	1.080	24.5	1.341
<b>HSUPA (Distance 10mm)</b>					
Towards Ground	Low/9262	22.72	0.997	24.0	1.339



**7.3.4. WCDMA Band IV (WCDMA/HSDPA/HSUPA)**

**Table 24: SAR Values [WCDMA Band IV (WCDMA/HSDPA/HSUPA)]**

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		
<b>Test Position of Head</b>					
Left Hand, Touch Cheek	High/1513	0.509	0.847	0.192	Figure 77
	Middle/1413	0.507	0.838	0.007	Figure 78
	Low/1312	0.482	0.792	0.030	Figure 79
Left Hand, Tilt 15 Degree	Middle/1413	0.150	0.238	0.040	Figure 80
Right Hand, Touch Cheek	Middle/1413	0.391	0.623	0.149	Figure 81
Right Hand, Tilt 15 Degree	Middle/1413	0.128	0.214	-0.015	Figure 82
<b>Test Position of Body (Distance 15mm)</b>					
Towards Ground	High/1513	0.438	0.704	0.000	Figure 83
	Middle/1413	0.447	0.719	0.100	Figure 84
	Low/1312	0.412	0.666	0.091	Figure 85
Towards Phantom	Middle/1413	0.356	0.572	-0.010	Figure 86
<b>Worst Case Position of Body with Earphone (Distance 15mm)</b>					
Towards Ground	Middle/1413	0.386(max.cube)	0.617(max.cube)	0.126	Figure 87

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



**TA Technology (Shanghai) Co., Ltd.**  
**Test Report**

**Table 25: SAR Values [WCDMA Band IV (wireless routers incorporated in device)]**

Limit of SAR		10 g Average	1 g Average	Power	Graph Results
		2.0 W/kg	1.6 W/kg	± 0.21	
Different Test Position	Channel	Measurement Result(W/kg)		Power Drift (dB)	
		10 g Average	1 g Average		
<b>Test position of Body (Distance 10mm)</b>					
Towards Ground	High/1513	0.781(max.cube)	1.300(max.cube)	0.007	Figure 88
	Middle/1413	0.797(max.cube)	<b>1.330(max.cube)</b>	0.058	Figure 89
	Low/1312	0.752(max.cube)	1.270(max.cube)	0.070	Figure 90
Towards Phantom	High/1513	0.614	1.01	-0.002	Figure 91
	Middle/1413	0.601	0.993	0.042	Figure 92
	Low/1312	0.569	0.945	0.072	Figure 93
Left Edge	Middle/1413	0.153	0.255	0.095	Figure 94
Right Edge	Middle/1413	0.111	0.182	0.079	Figure 95
Top Edge	N/A	N/A	N/A	N/A	N/A
Bottom Edge	Middle/1413	0.325	0.554	0.096	Figure 96
<b>Worst Case Position of Body with HSDPA (Distance 10mm)</b>					
Towards Ground	Middle/1413	0.718(max.cube)	1.190(max.cube)	-0.050	Figure 97
<b>Worst Case Position of Body with HSUPA (Distance 10mm)</b>					
Towards Ground	Middle/1413	0.672(max.cube)	1.120(max.cube)	0.077	Figure 98

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

2. Upper and lower frequencies were measured at the worst position.
3. WWAN antenna is located at bottom edge; antenna-to-top edge distance is more than 2.5 cm(see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. Top Edge is excluded from hotspot mode SAR evaluation.
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; the value from the second assessed cube is given in the SAR distribution plots (See ANNEX C).



**TA Technology (Shanghai) Co., Ltd.  
Test Report**

Report No.: RZA1105-0769SAR01R1

Page 45 of 242

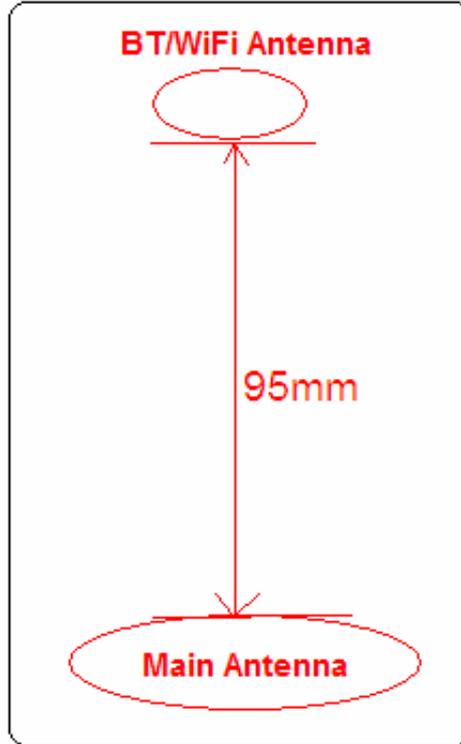
**Table 26: Extrapolated SAR Values of highest measured SAR [WCDMA Band IV (WCDMA/HSDPA/ HSUPA)]**

Different Test Position	Channel	Conducted Power(dBm)	1g Average (W/kg)	Tune-up procedures MAX Power(dBm)	1g Average Limit 1.6 W/kg
		Measurement Result			Extrapolated Result (W/kg)
<b>WCDMA (Distance 10mm)</b>					
Towards Ground	Middle/1413	23.85	1.330	24.5	1.545
<b>HSDPA (Distance 10mm)</b>					
Towards Ground	Middle/1413	23.62	1.190	24.5	1.457
<b>HSUPA (Distance 10mm)</b>					
Towards Ground	Middle/1413	23.33	1.120	24.0	1.307



**7.3.5. 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 J:



The output power of BT antenna is as following:

Channel	Ch 0 2402 MHz	Ch 39 2441 MHz	Ch 78 2480 MHz
Results(dBm)	6.47	7.31	6.59

The output power of WIFI antenna is as following:

Mode	Channel	Data rate (Mbps)	AV Power (dBm)
11b	1	1	15.37
		2	15.35
		5.5	15.34
		11	15.38
	6	1	15.33
		2	15.34
		5.5	15.36
		11	15.32
	11	1	15.29
		2	15.26
		5.5	15.27
		11	15.24



# TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1105-0769SAR01R1

Page 47 of 242

11g	1	6	10.63	
		9	10.61	
		12	10.59	
		18	10.57	
		24	10.62	
		36	10.63	
		48	10.55	
		54	10.58	
		6	6	10.48
	9		10.46	
	12		10.47	
	18		10.43	
	24		10.45	
	36		10.41	
	48		10.43	
	54		10.46	
	11	6	10.75	
		9	10.73	
		12	10.75	
		18	10.71	
		24	10.69	
		36	10.72	
		48	10.74	
		54	10.70	
	11n HT20	1	6.5	6.63
			13	6.61
			19.5	6.58
26			6.59	
39			6.61	
52			6.64	
58.5			6.65	
65			6.63	
6			6.5	6.58
		13	6.55	
		19.5	6.54	
		26	6.51	
		39	6.53	
		52	6.54	
		58.5	6.57	
		65	6.54	
		11	6.5	7.42
13			7.41	
19.5			7.39	



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**Test Report**

		26	7.37
		39	7.35
		52	7.34
		58.5	7.31
		65	7.29

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**

	<b>2.45</b>	<b>5.15 - 5.35</b>	<b>5.47 - 5.85</b>	<b>GHz</b>
<b>P<sub>Ref</sub></b>	12	6	5	<b>mW</b>
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 not required for BT, because the output power of BT transmitter is  $\leq 2P_{Ref}=13.8\text{dBm}$  and its antenna is  $>5\text{cm}$  from GSM/WCDMA antenna.

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

stand-alone SAR are not required for BT, because the wifi MAX.SAR $<1.2\text{ W/kg}$  and its antenna is  $<2.5\text{cm}$  from wifi antenna.



**Table 27: SAR Values (WIFI)**

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		
<b>Test position of Head(802.11b)</b>					
Left hand, Touch cheek	Middle/6	0.125	0.255	0.057	Figure 99
Left hand, Tilt 15 Degree	High/11	0.124	0.270	-0.043	Figure 100
	Middle/6	0.123	0.265	0.181	Figure 101
	Low/1	0.139	0.300	-0.022	Figure 102
Right hand, Touch cheek	Middle/6	0.071	0.145	-0.067	Figure 103
Right hand, Tilt 15 Degree	Middle/6	0.087	0.187	0.131	Figure 104
<b>Test position of Body (802.11b,Distance 15mm)</b>					
Towards Ground	Middle/6	0.016	0.030	0.014	Figure 105
Towards phantom	High/11	0.016	0.031	0.099	Figure 106
	Middle/6	0.018	0.034	0.097	Figure 107
	Low/1	0.018	0.035	-0.024	Figure 108
<b>Worst case position of Body with Earphone(802.11b,Distance 15mm)</b>					
Towards phantom	Low/1	0.011	0.021	0.067	Figure 109

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

2. Upper and lower frequencies were measured at the worst position.
3. 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.
4. KDB 248227-SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.



**Table 28: SAR Values [WIFI (wireless routers incorporated in device)]**

Limit of SAR		10 g Average	1 g Average	Power	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		
<b>Test position of Body (802.11b,Distance 10mm)</b>					
Towards Ground	Middle/6	0.028	0.054	0.010	Figure 110
Towards Phantom	High/11	0.024	0.046	0.103	Figure 111
	Middle/6	0.031	0.059	0.081	Figure 112
	Low/1	0.033	0.064	0.096	Figure 113
Left Edge	Middle/6	0.005	0.009	0.041	Figure 114
Right Edge	N/A	N/A	N/A	N/A	N/A
Top Edge	Middle/6	0.027	0.053	0.076	Figure 115
Bottom Edge	N/A	N/A	N/A	N/A	N/A

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

2. Upper and lower frequencies were measured at the worst position.
3. WLAN antenna is located at Top edge; antenna-to-bottom edge distance is more than 2.5 cm and antenna-to-right edge distance is also more than 2.5 cm (see ANNEX J). Based upon KDB941225 D06, when the antenna-to-edge distance is greater than 2.5cm, such position does not need to be tested. Bottom Edge and Right Edge are excluded from hotspot mode SAR evaluation.
4. KDB 248227-SAR is not required for 802.11g/n channels when the maximum average output power is less than ¼ dB higher than measured on the corresponding 802.11b channels.

**Simultaneous SAR**

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

About WIFI and GSM/WCDMA Antenna, because GSM/WCDMA antenna is >5cm from WIFI Antenna, Max (SAR<sub>GSM/WCDMA</sub>+ SAR<sub>WIFI</sub>)= 1.330W/kg +0.054 W/kg =1.384 W/kg <1.6 W/kg, so Simultaneous SAR are not required for GSM/WCDMA and WIFI Antenna.

About WiFi and BT Antenna, because WIFI antenna is <2.5cm from BT Antenna, the output power of BT transmitter is ≤P<sub>Ref</sub>=10.8dBm, so Simultaneous SAR are not required for WiFi and BT Antenna.



## 8. Measurement Uncertainty

No.	source	Type	Uncertainty Value (%)	Probability Distribution	k	$c_i$	Standard uncertainty $u_i$ (%)	Degree of freedom $V_{eff}$ or $V_i$
1	System repetivity	A	0.5	N	1	1	0.5	9
Measurement system								
2	-probe calibration	B	5.9	N	1	1	5.9	$\infty$
3	-axial isotropy of the probe	B	4.7	R	$\sqrt{3}$	$\sqrt{0.5}$	1.9	$\infty$
4	- Hemispherical isotropy of the probe	B	9.4	R	$\sqrt{3}$	$\sqrt{0.5}$	3.9	$\infty$
6	-boundary effect	B	1.9	R	$\sqrt{3}$	1	1.1	$\infty$
7	-probe linearity	B	4.7	R	$\sqrt{3}$	1	2.7	$\infty$
8	- System detection limits	B	1.0	R	$\sqrt{3}$	1	0.6	$\infty$
9	-readout Electronics	B	1.0	N	1	1	1.0	$\infty$
10	-response time	B	0	R	$\sqrt{3}$	1	0	$\infty$
11	-integration time	B	4.32	R	$\sqrt{3}$	1	2.5	$\infty$
12	-noise	B	0	R	$\sqrt{3}$	1	0	$\infty$
13	-RF Ambient Conditions	B	3	R	$\sqrt{3}$	1	1.73	$\infty$
14	-Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	$\infty$
15	-Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	$\infty$
16	-Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	$\infty$
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	$\infty$
Physical parameter								
20	-phantom	B	4.0	R	$\sqrt{3}$	1	2.3	$\infty$



# TA Technology (Shanghai) Co., Ltd. Test Report

Report No.: RZA1105-0769SAR01R1

Page 52 of 242

21	-liquid conductivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.64	1.8	$\infty$
22	-liquid conductivity (measurement uncertainty)	B	0.77	N	1	0.64	0.493	9
23	-liquid permittivity (deviation from target)	B	5.0	R	$\sqrt{3}$	0.6	1.7	$\infty$
24	-liquid permittivity (measurement uncertainty)	B	0.29	N	1	0.6	0.174	9
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$					11.36	
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$		N	k=2	22.72		



## 9. Main Test Instruments

Table 29: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US37390326	September 13, 2010	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 26, 2010	One year
05	Signal Generator	HP 8341B	2730A00804	September 13, 2010	One year
06	Amplifier	IXA-020	0401	No Calibration Requested	
07	BTS	E5515C	MY48360988	December 3, 2010	One year
08	E-field Probe	EX3DV4	3677	November 24, 2010	One year
09	DAE	DAE4	871	November 18, 2010	One year
10	Validation Kit 835MHz	D835V2	4d092	January 14, 2010	Two years
11	Validation Kit 1750MHz	D1750V2	1033	May 17, 2010	Two years
12	Validation Kit 1900MHz	D1900V2	5d018	June 15, 2010	Two years
13	Validation Kit 2450MHz	D2450V2	712	February 19, 2010	Two years

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



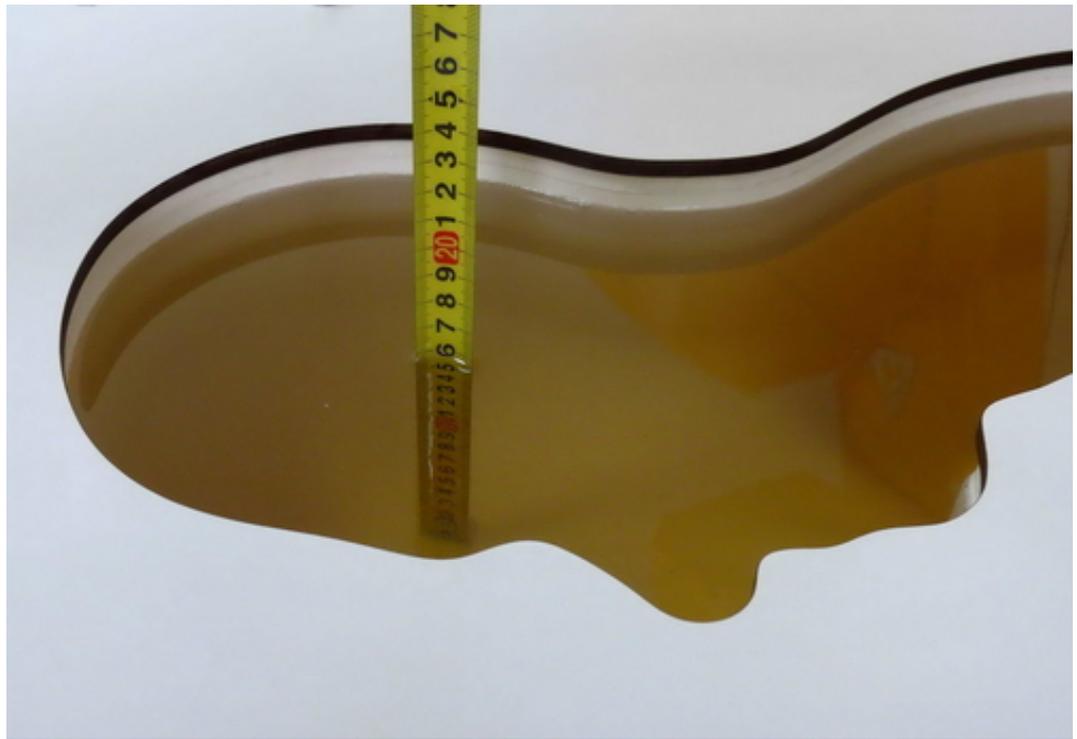
**ANNEX A: Test Layout**



Picture 1: Specific Absorption Rate Test Layout



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



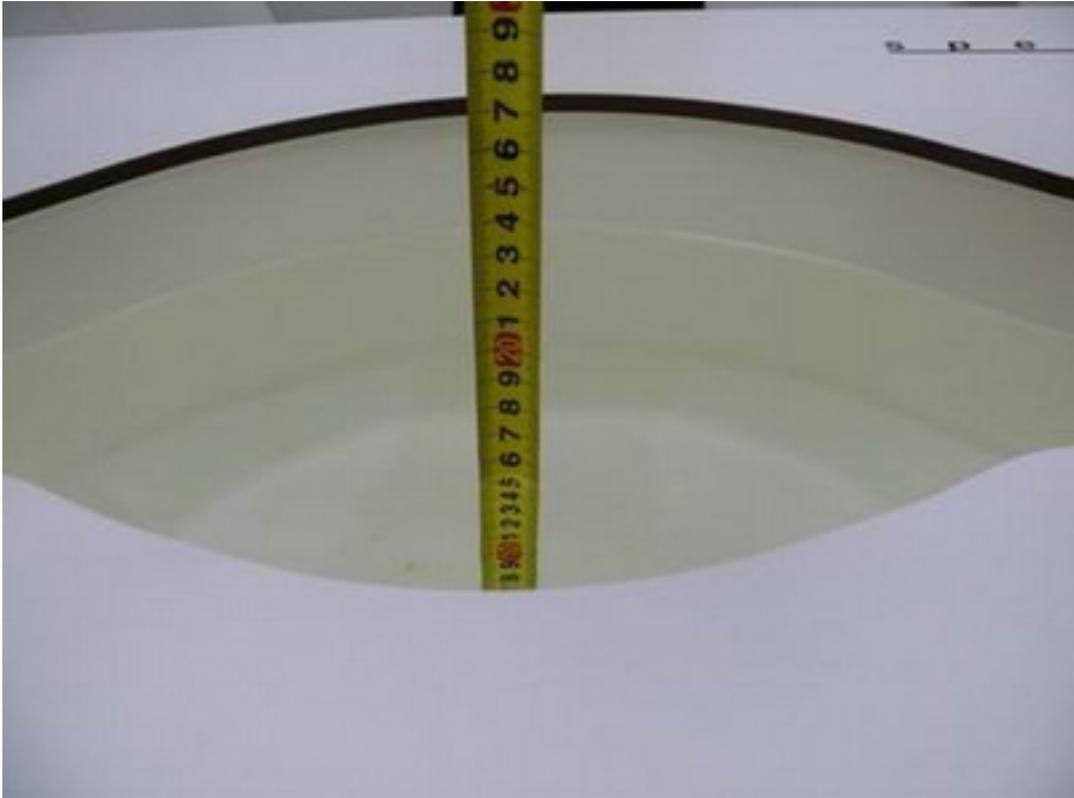
Picture 3: Liquid depth in the head Phantom (835MHz, 15.3cm depth)



Picture 4: liquid depth in the head Phantom (1750 MHz, 15.2cm depth)



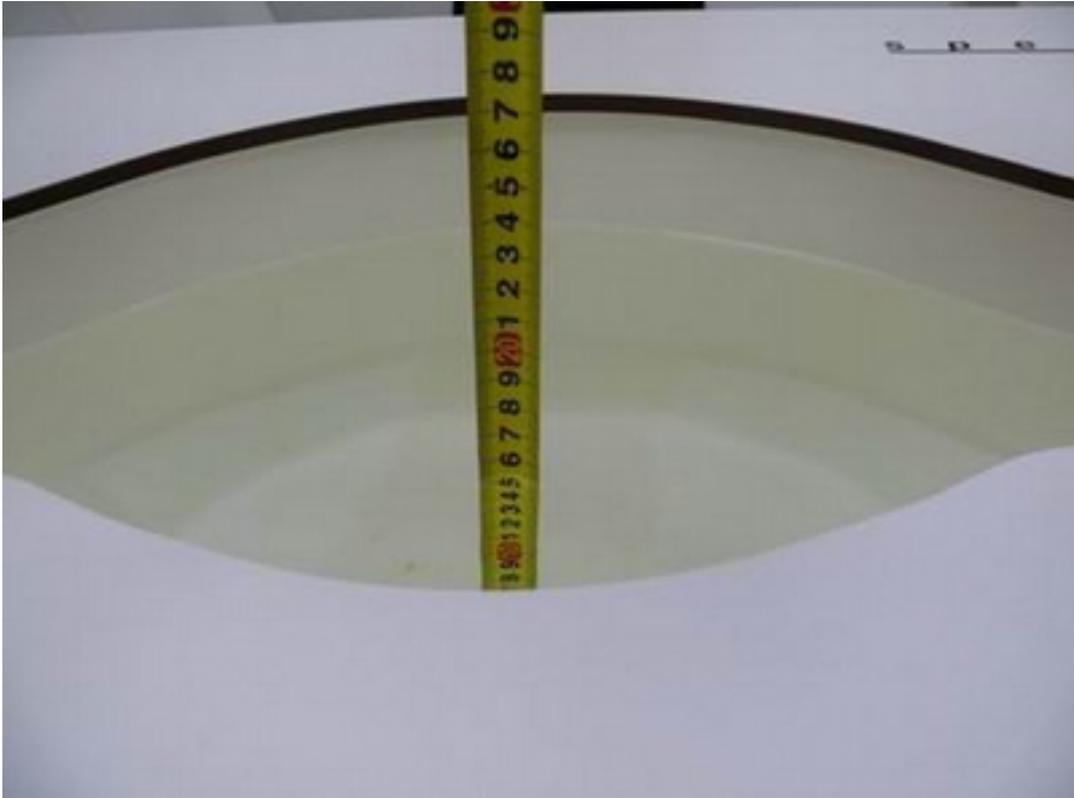
Picture 5: Liquid depth in the Flat Phantom (1750 MHz, 15.3cm depth)



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



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



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



Picture 9: Liquid depth in the head Phantom (2450 MHz, 15.4cm depth)



### ANNEX B: System Check Results

#### System Performance Check at 835 MHz Head TSL

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d092

Date/Time: 6/3/2011 2:02:13 PM

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

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.90 \text{ mho/m}$ ;  $\epsilon_r = 41.76$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**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

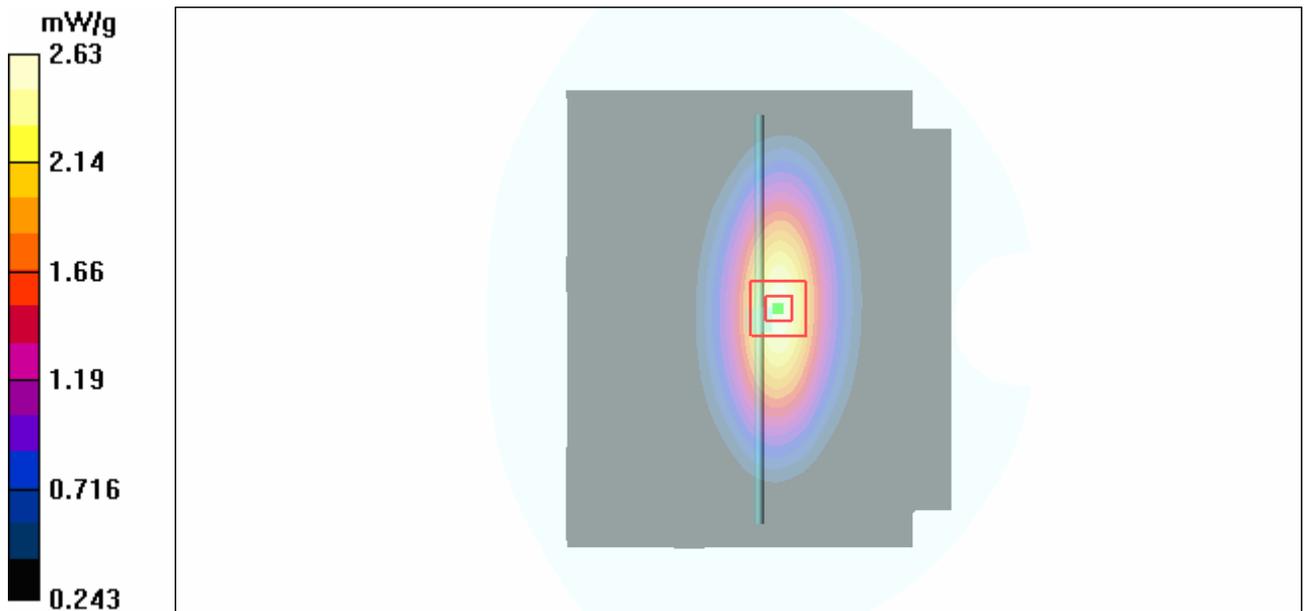


Figure 7 System Performance Check 835MHz 250mW



**System Performance Check at 835 MHz Body TSL**

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d092**

Date/Time: 6/8/2011 8:34:20 AM

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

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.99 \text{ mho/m}$ ;  $\epsilon_r = 55.89$ ;  $\rho = 1000 \text{ kg/m}^3$

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

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**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

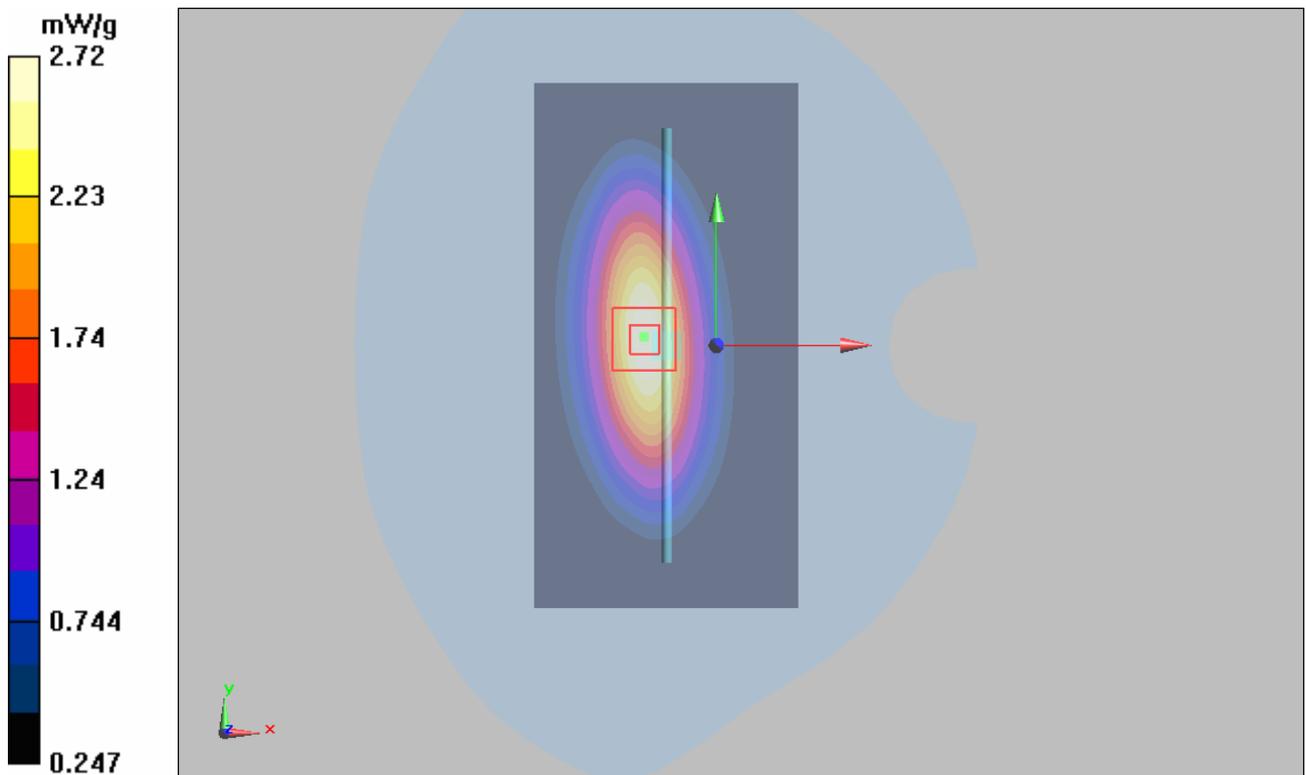


Figure 8 System Performance Check 835MHz 250mW



**System Performance Check at 1750 MHz Head TSL**

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033**

Date/Time: 6/8/2011 6:05:30 PM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.34$  mho/m;  $\epsilon_r = 40.66$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.6 °C

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=10mm, Pin=250mW/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 9.96 mW/g

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

Reference Value = 78.7 V/m; Power Drift = 0.084 dB

Peak SAR (extrapolated) = 16.6 W/kg

**SAR(1 g) = 8.79 mW/g; SAR(10 g) = 4.58 mW/g**

Maximum value of SAR (measured) = 9.83 mW/g

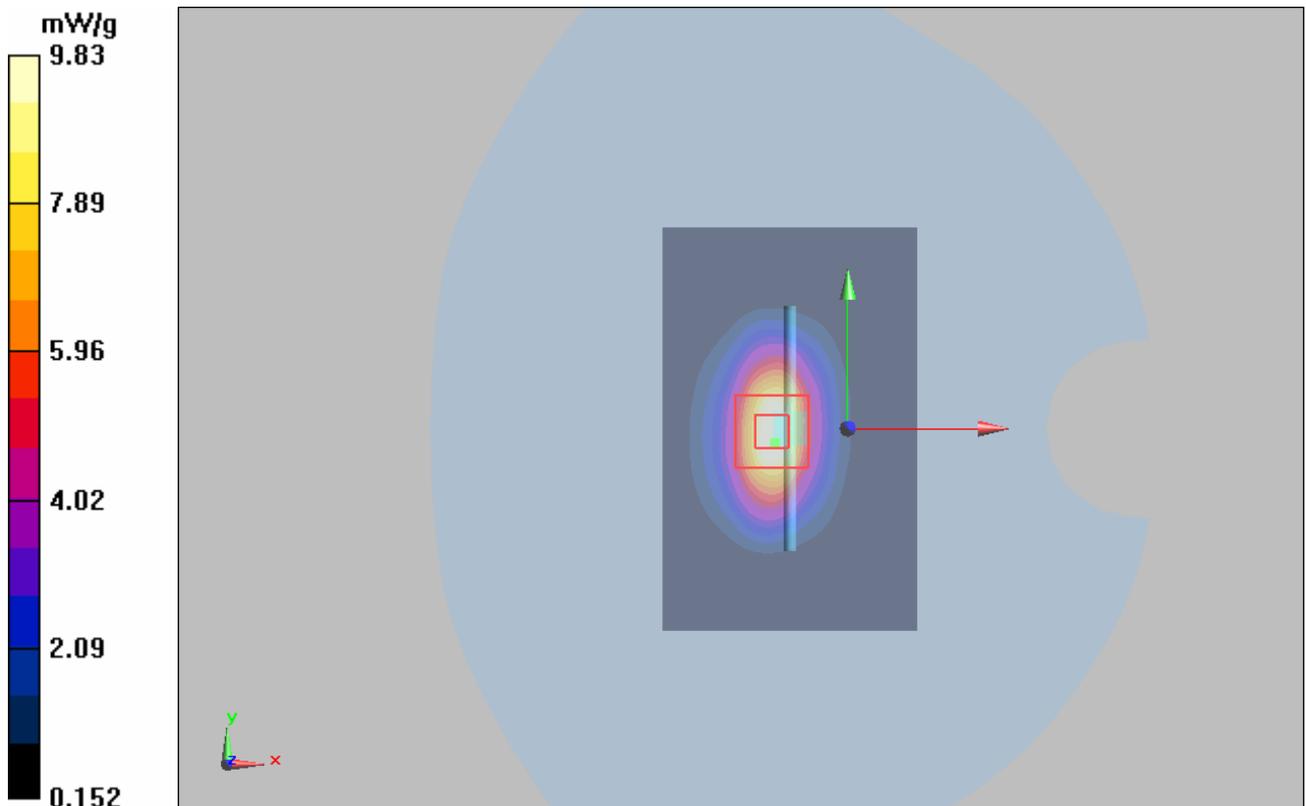


Figure 9 System Performance Check 1750MHz 250mW



**System Performance Check at 1750 MHz Body TSL**

**DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1033**

Date/Time: 6/7/2011 5:50:55 PM

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

Medium parameters used:  $f = 1750$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 52.35$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.9 °C

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=10mm, Pin=250mW/Area Scan (51x81x1):** Measurement grid: dx=15mm, dy=15mm

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

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

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

Peak SAR (extrapolated) = 16.8 W/kg

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

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

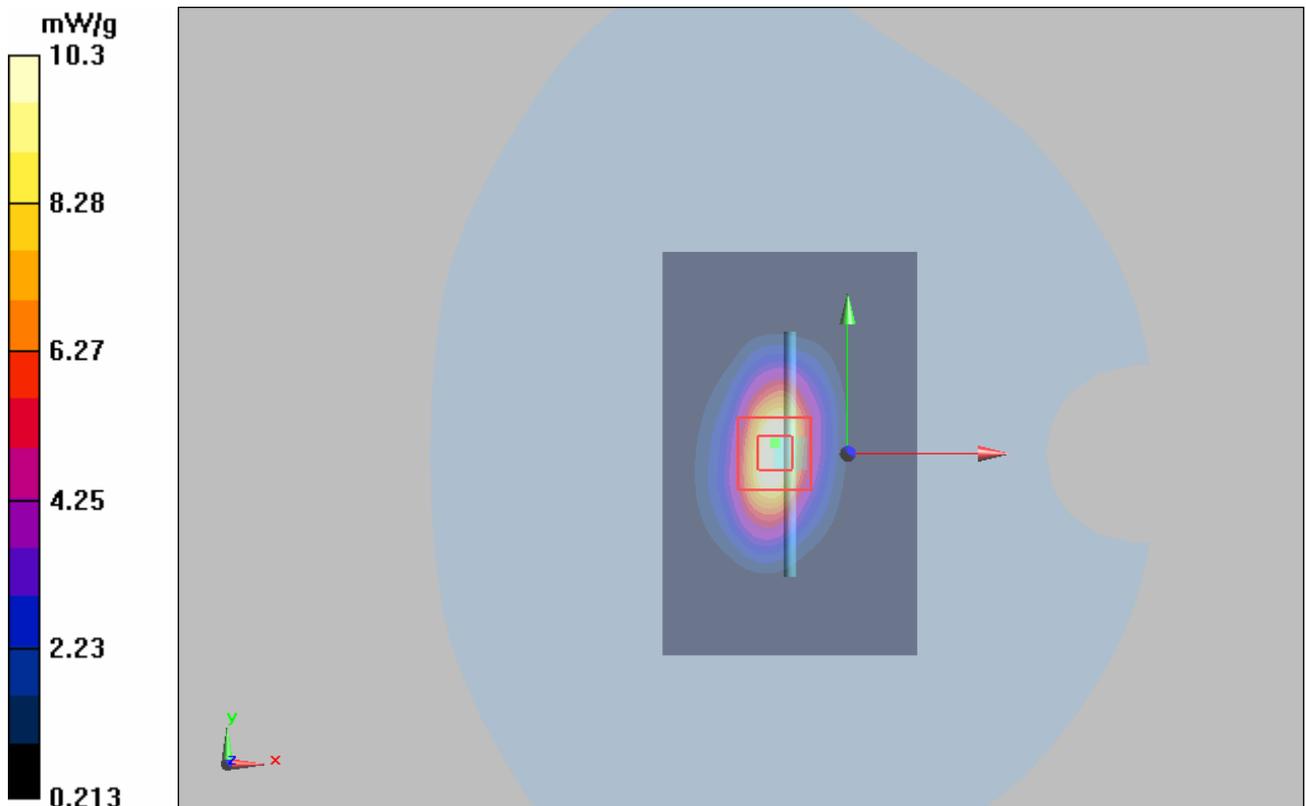


Figure 10 System Performance Check 1750MHz 250mW



**System Performance Check at 1900 MHz Head TSL**

**DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d018**

Date/Time: 6/3/2011 12:01:34 PM

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

Medium parameters used:  $f = 1900 \text{ MHz}$ ;  $\sigma = 1.43 \text{ mho/m}$ ;  $\epsilon_r = 39.99$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.8 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**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

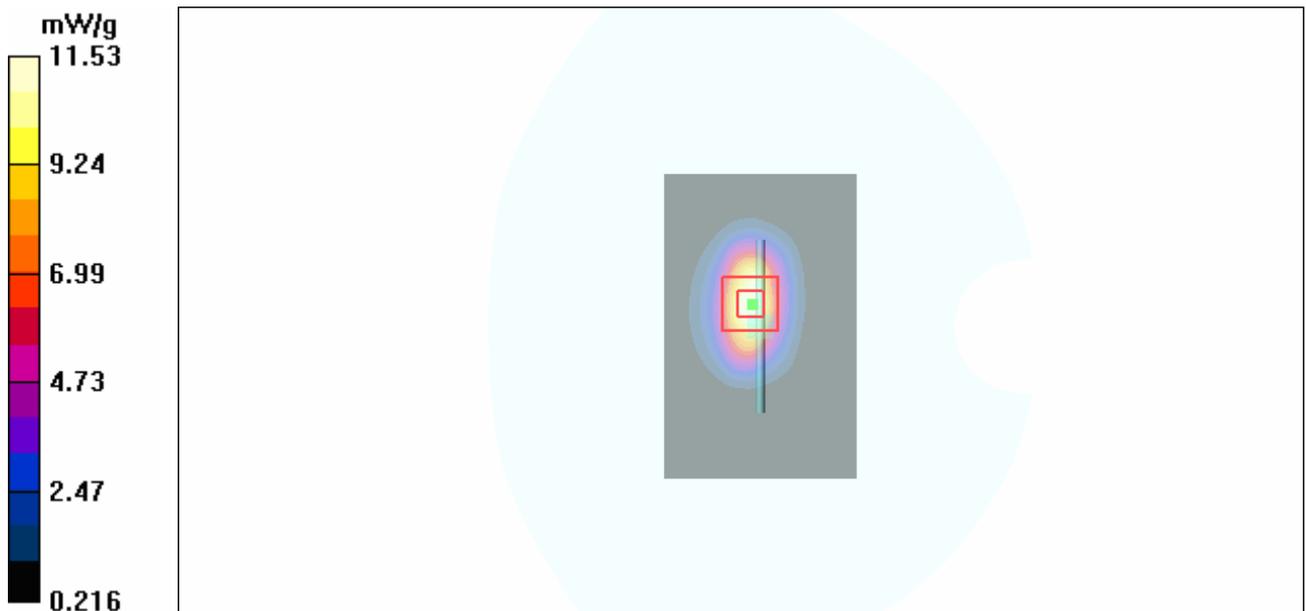


Figure 11 System Performance Check 1900MHz 250mW



### System Performance Check at 1900 MHz Body TSL

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d018

Date/Time: 6/9/2011 2:56:19 PM

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

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 51.84$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.8 °C

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**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

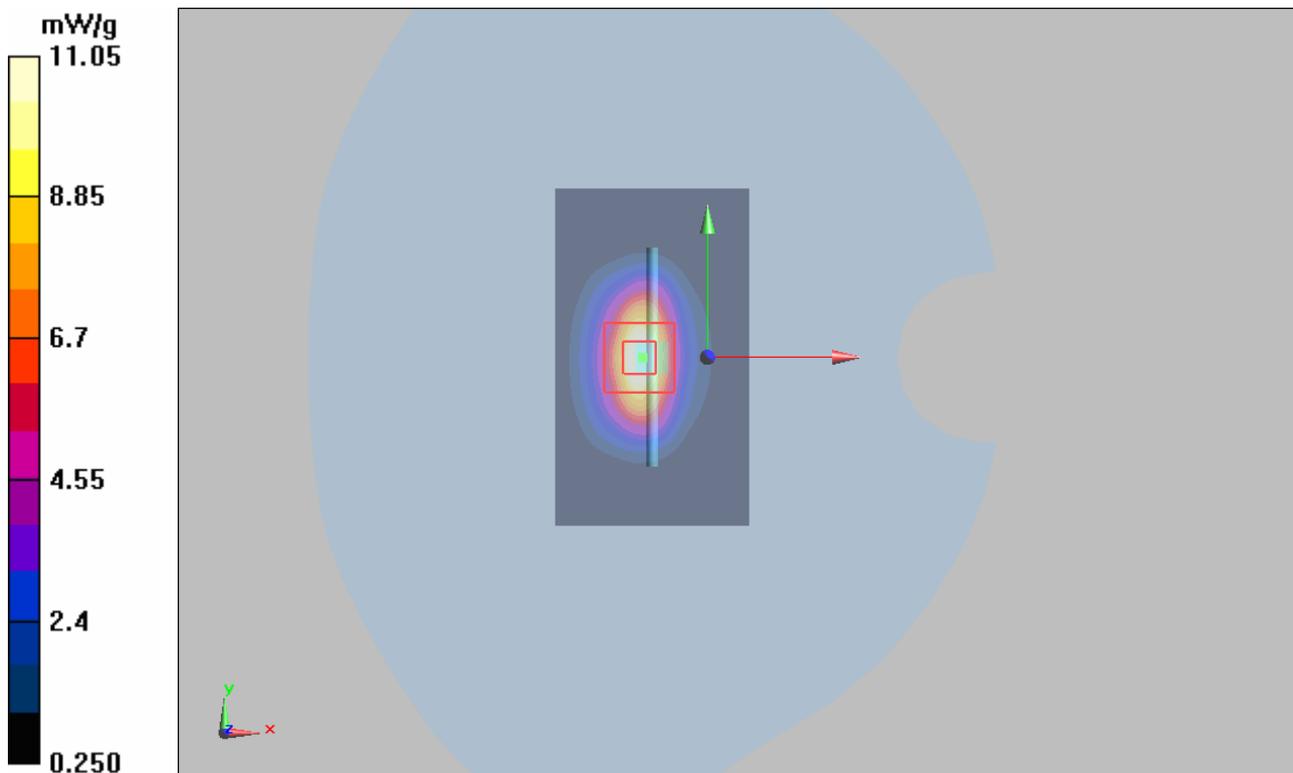


Figure 12 System Performance Check 1900MHz 250mW



**System Performance Check at 2450 MHz Head TSL**

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 712**

Date/Time: 6/10/2011 3:11:36 PM

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

Medium parameters used:  $f = 2450 \text{ MHz}$ ;  $\sigma = 1.83 \text{ mho/m}$ ;  $\epsilon_r = 39.51$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature:  $22.3 \text{ }^\circ\text{C}$       Liquid Temperature:  $21.8 \text{ }^\circ\text{C}$

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.32, 7.32, 7.32); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=10mm, Pin=250mW/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

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

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

Peak SAR (extrapolated) = 28.0 W/kg

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

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

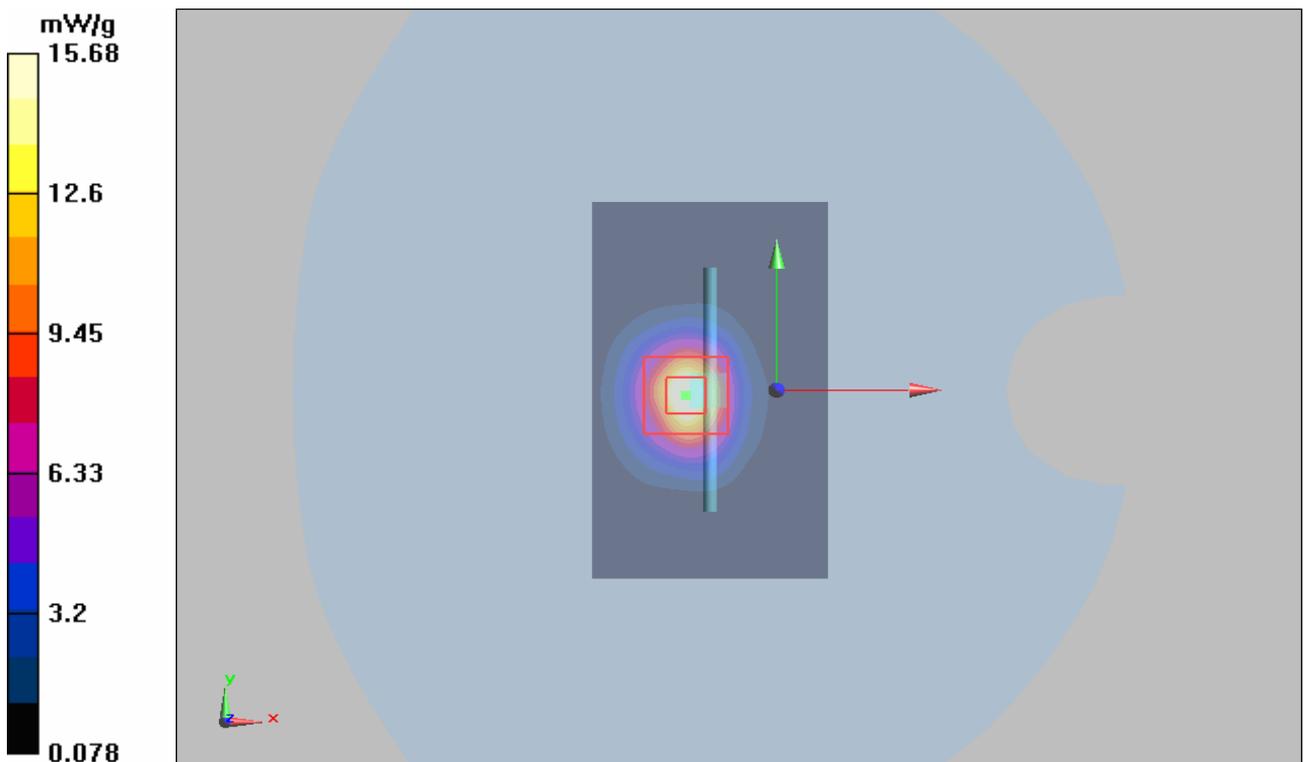


Figure 13 System Performance Check 2450MHz 250mW



**System Performance Check at 2450 MHz Body TSL**

**DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 712**

Date/Time: 6/10/2011 7:49:36 PM

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

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.97$  mho/m;  $\epsilon_r = 51.73$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 22.3 °C      Liquid Temperature: 21.9 °C

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.46, 7.46, 7.46); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**d=10mm, Pin=250mW/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

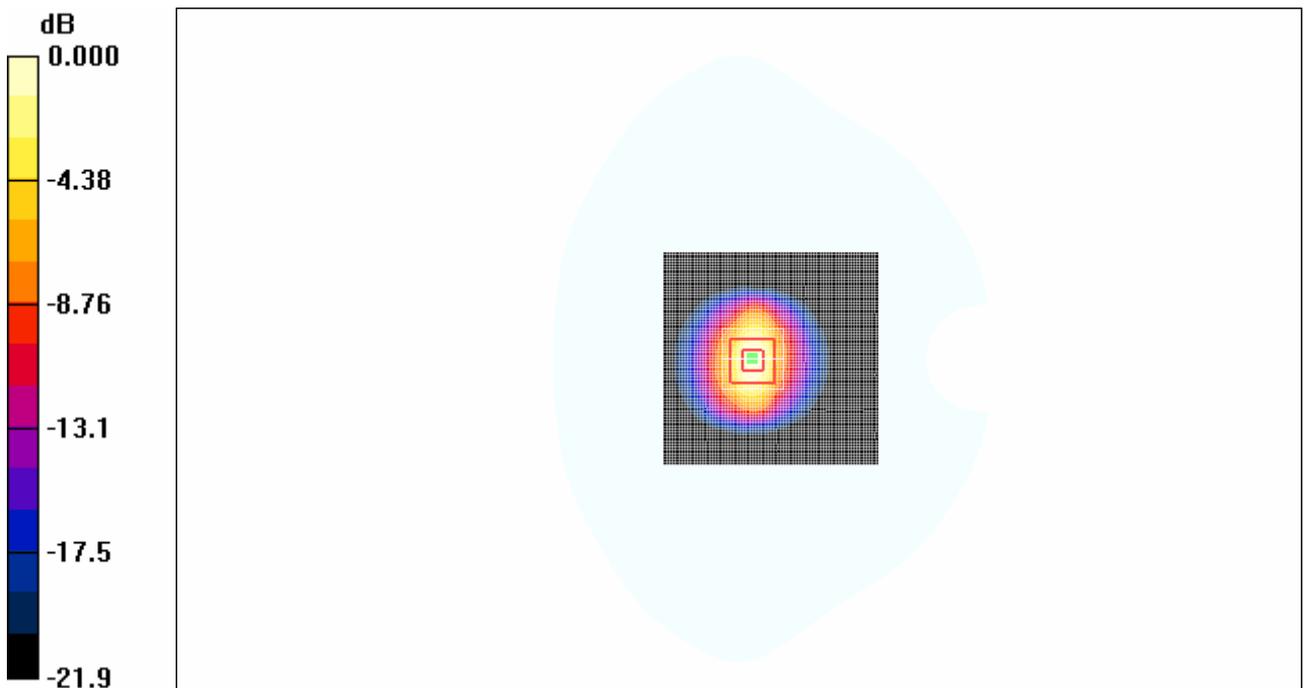
**d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 28.2 W/kg

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

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



0 dB = 19.82mW/g

Figure 14 System Performance Check 2450MHz 250mW



## ANNEX C: Graph Results

### GSM 850 Left Cheek Middle

Date/Time: 6/3/2011 4:18:51 PM  
 Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3  
 Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.905 \text{ mho/m}$ ;  $\epsilon_r = 41.7$ ;  $\rho = 1000 \text{ kg/m}^3$   
 Ambient Temperature:  $22.3 \text{ }^\circ\text{C}$       Liquid Temperature:  $21.5^\circ\text{C}$   
 Phantom section: Left Section  
 DASY5 Configuration:  
 Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010  
 Electronics: DAE4 Sn871; Calibrated: 11/18/2010  
 Phantom: SAM1; Type: SAM; Serial: TP-1534  
 Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Cheek Middle/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$   
 Maximum value of SAR (interpolated) =  $0.129 \text{ mW/g}$

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$   
 Reference Value =  $4.97 \text{ V/m}$ ; Power Drift =  $-0.178 \text{ dB}$   
 Peak SAR (extrapolated) =  $0.152 \text{ W/kg}$   
**SAR(1 g) =  $0.123 \text{ mW/g}$ ; SAR(10 g) =  $0.092 \text{ mW/g}$**   
 Maximum value of SAR (measured) =  $0.131 \text{ mW/g}$

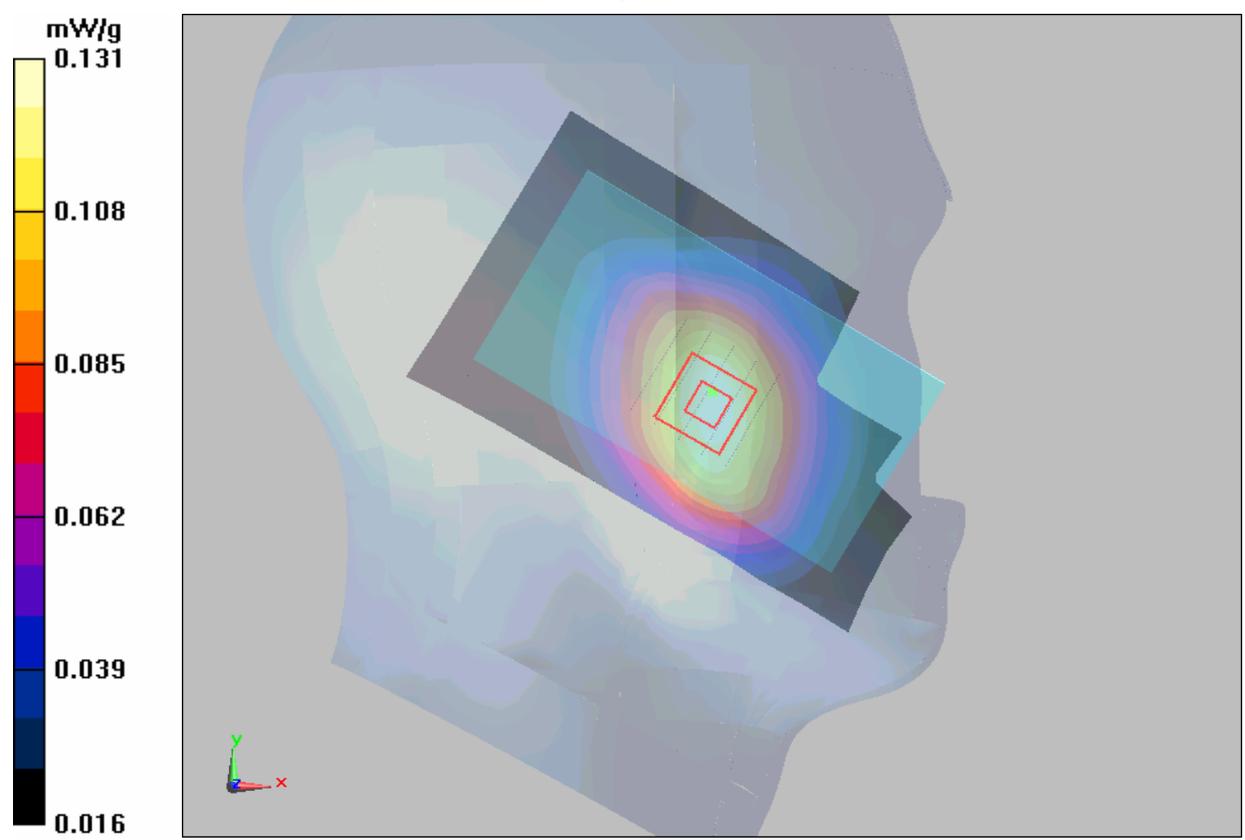


Figure 15 Left Hand Touch Cheek GSM 850 Channel 190



**GSM 850 Left Tilt Middle**

Date/Time: 6/3/2011 4:35:31 PM

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.905$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

Reference Value = 7.97 V/m; Power Drift = -0.059 dB

Peak SAR (extrapolated) = 0.117 W/kg

**SAR(1 g) = 0.095 mW/g; SAR(10 g) = 0.071 mW/g**

Maximum value of SAR (measured) = 0.100 mW/g

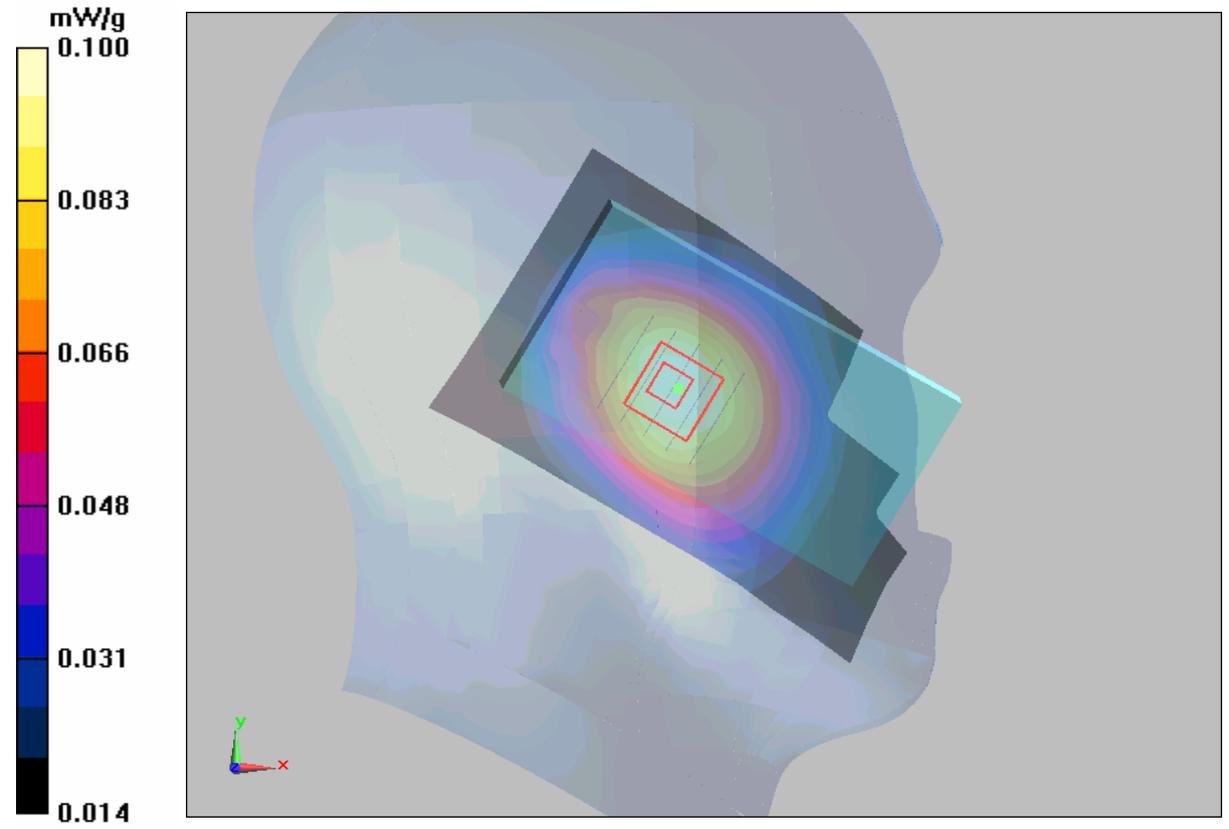


Figure 16 Left Hand Tilt 15° GSM 850 Channel 190



### GSM 850 Right Cheek High

Date/Time: 6/3/2011 5:12:34 PM

Communication System: GSM850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 849$  MHz;  $\sigma = 0.915$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.120 mW/g

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

Reference Value = 3.76 V/m; Power Drift = 0.088 dB

Peak SAR (extrapolated) = 0.140 W/kg

**SAR(1 g) = 0.114 mW/g; SAR(10 g) = 0.085 mW/g**

Maximum value of SAR (measured) = 0.121 mW/g

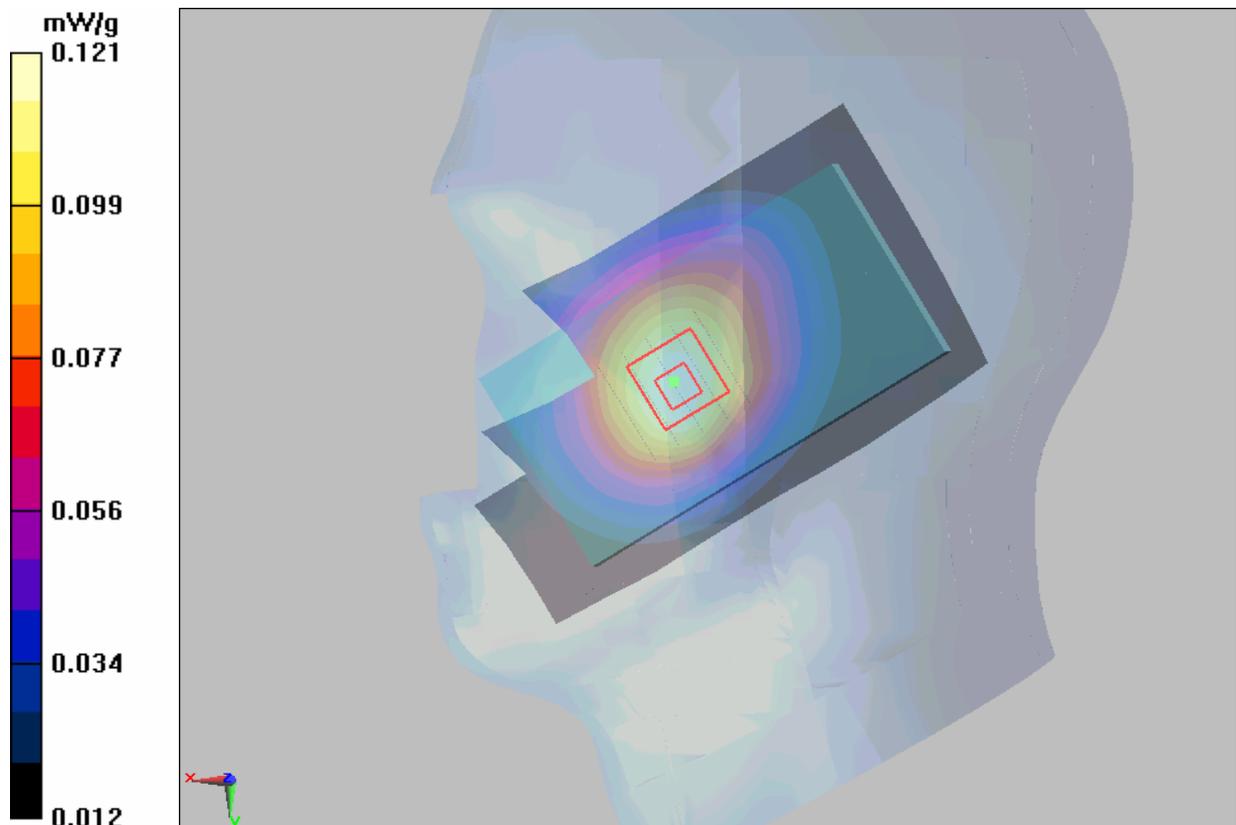


Figure 17 Right Hand Touch Cheek GSM 850 Channel 251



**GSM 850 Right Cheek Middle**

Date/Time: 6/3/2011 3:42:46 PM

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.905$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

Reference Value = 4.26 V/m; Power Drift = -0.090 dB

Peak SAR (extrapolated) = 0.167 W/kg

**SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.102 mW/g**

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

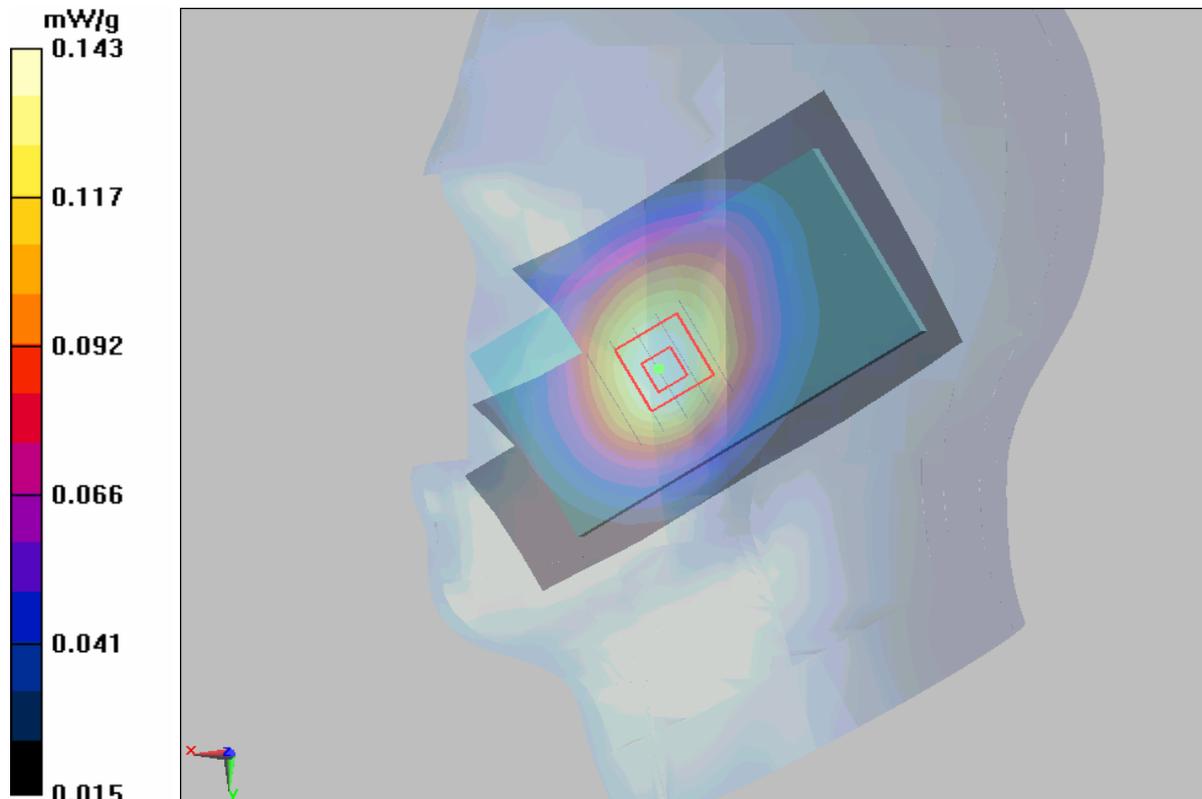


Figure 18 Right Hand Touch Cheek GSM 850 Channel 190



### GSM 850 Right Cheek Low

Date/Time: 6/3/2011 4:56:11 PM

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.894$  mho/m;  $\epsilon_r = 41.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.173 mW/g

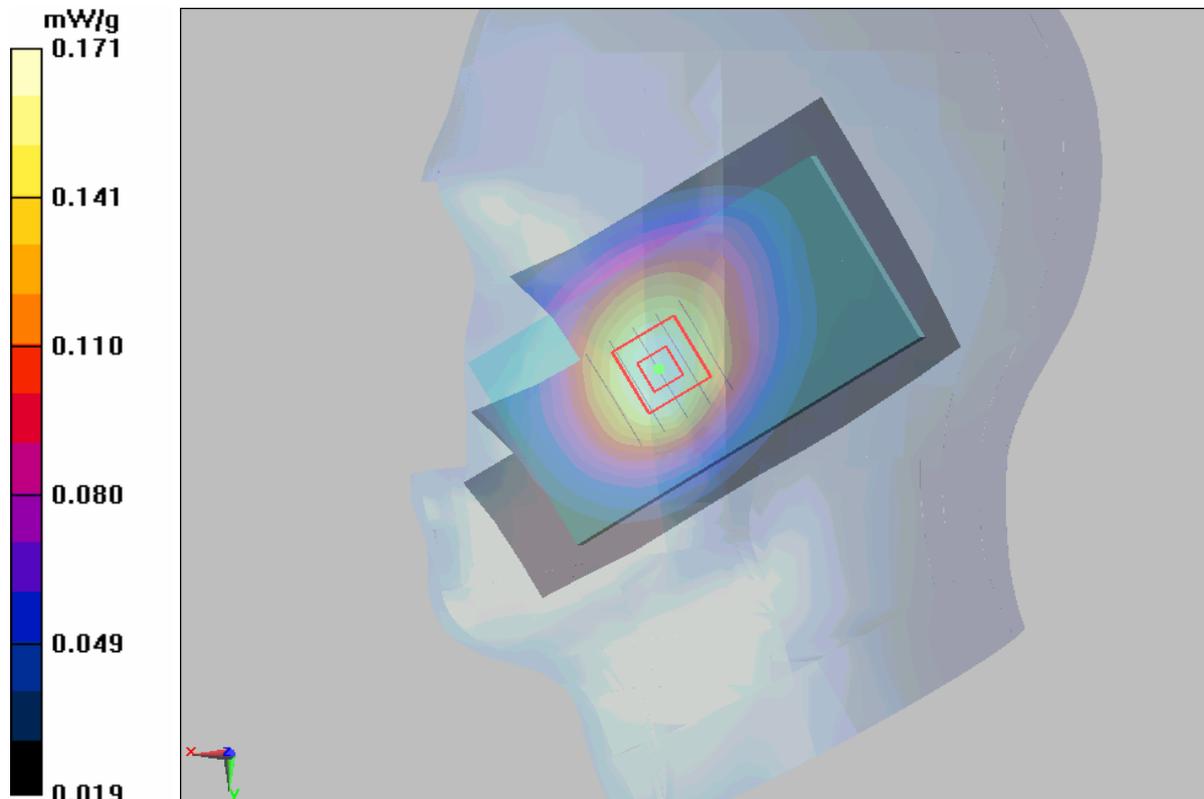
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.52 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.199 W/kg

**SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.122 mW/g**

Maximum value of SAR (measured) = 0.171 mW/g



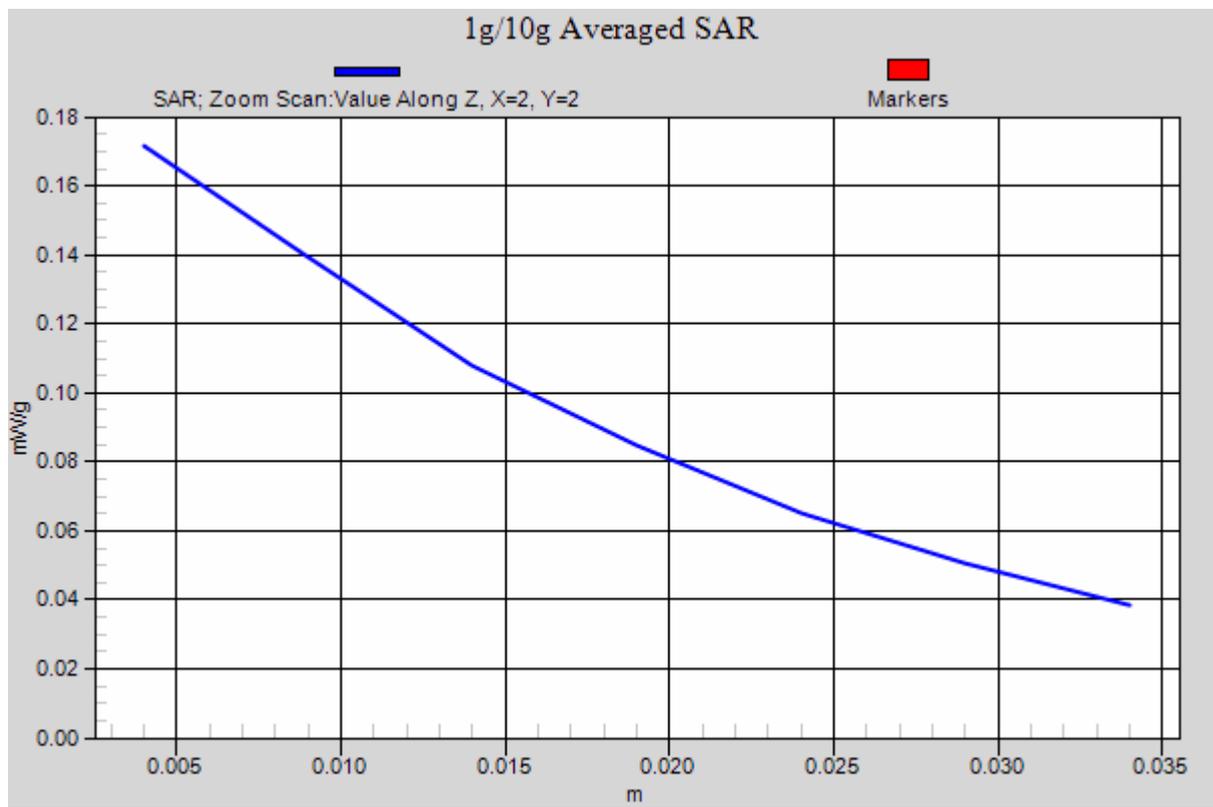


Figure 19 Right Hand Touch Cheek GSM 850 Channel 128



### GSM 850 Right Tilt Middle

Date/Time: 6/3/2011 3:59:54 PM

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.905$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(9.5, 9.5, 9.5); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

Reference Value = 7 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 0.116 W/kg

**SAR(1 g) = 0.094 mW/g; SAR(10 g) = 0.072 mW/g**

Maximum value of SAR (measured) = 0.102 mW/g

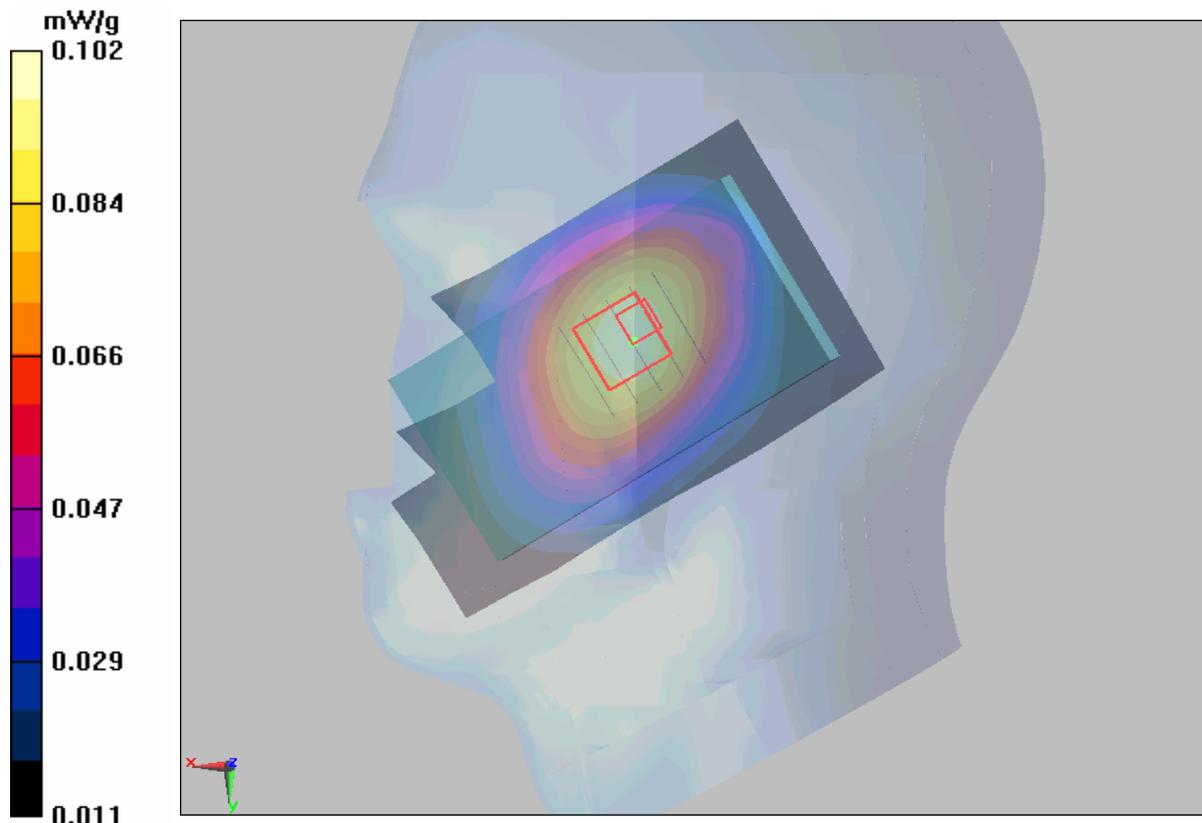


Figure 20 Right Hand Tilt 15° GSM 850 Channel 190



### GSM 850 Towards Ground Middle

Date/Time: 6/8/2011 10:02:15 AM

Communication System: GSM850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.311 mW/g

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

Reference Value = 5.78 V/m; Power Drift = 0.051 dB

Peak SAR (extrapolated) = 0.374 W/kg

**SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.219 mW/g**

Maximum value of SAR (measured) = 0.309 mW/g

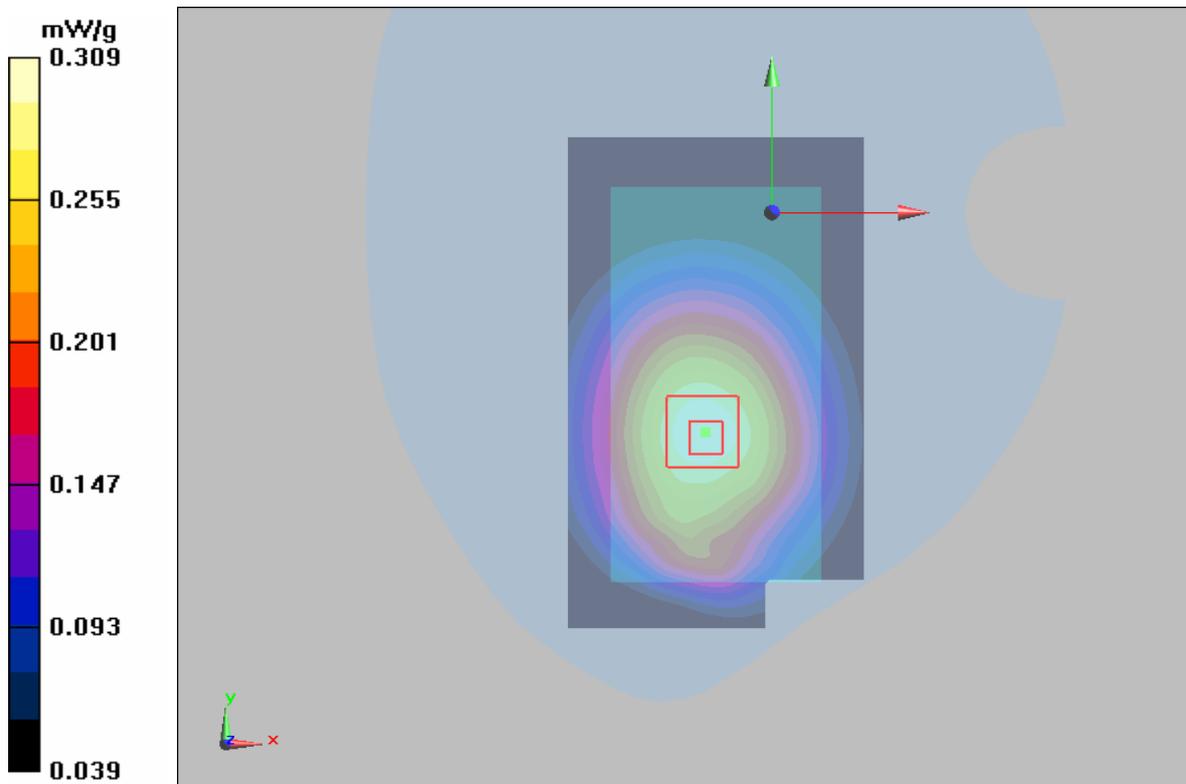


Figure 21 Body, Towards Ground, GSM 850 Channel 190



### GSM 850 GPRS (2TXslots) Towards Ground High

Date/Time: 6/8/2011 10:42:02 AM  
Communication System: GSM850 + GPRS(2Up); Frequency: 848.8 MHz; Duty Cycle: 1:4.15  
Medium parameters used:  $f = 849$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature: 22.3 °C      Liquid Temperature: 21.5°C  
Phantom section: Flat Section  
DASY5 Configuration:  
Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010  
Electronics: DAE4 Sn871; Calibrated: 11/18/2010  
Phantom: SAM1; Type: SAM; Serial: TP-1534  
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.511 mW/g

**Towards Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 7.26 V/m; Power Drift = -0.128 dB  
Peak SAR (extrapolated) = 0.618 W/kg  
**SAR(1 g) = 0.473 mW/g; SAR(10 g) = 0.339 mW/g**  
Maximum value of SAR (measured) = 0.483 mW/g

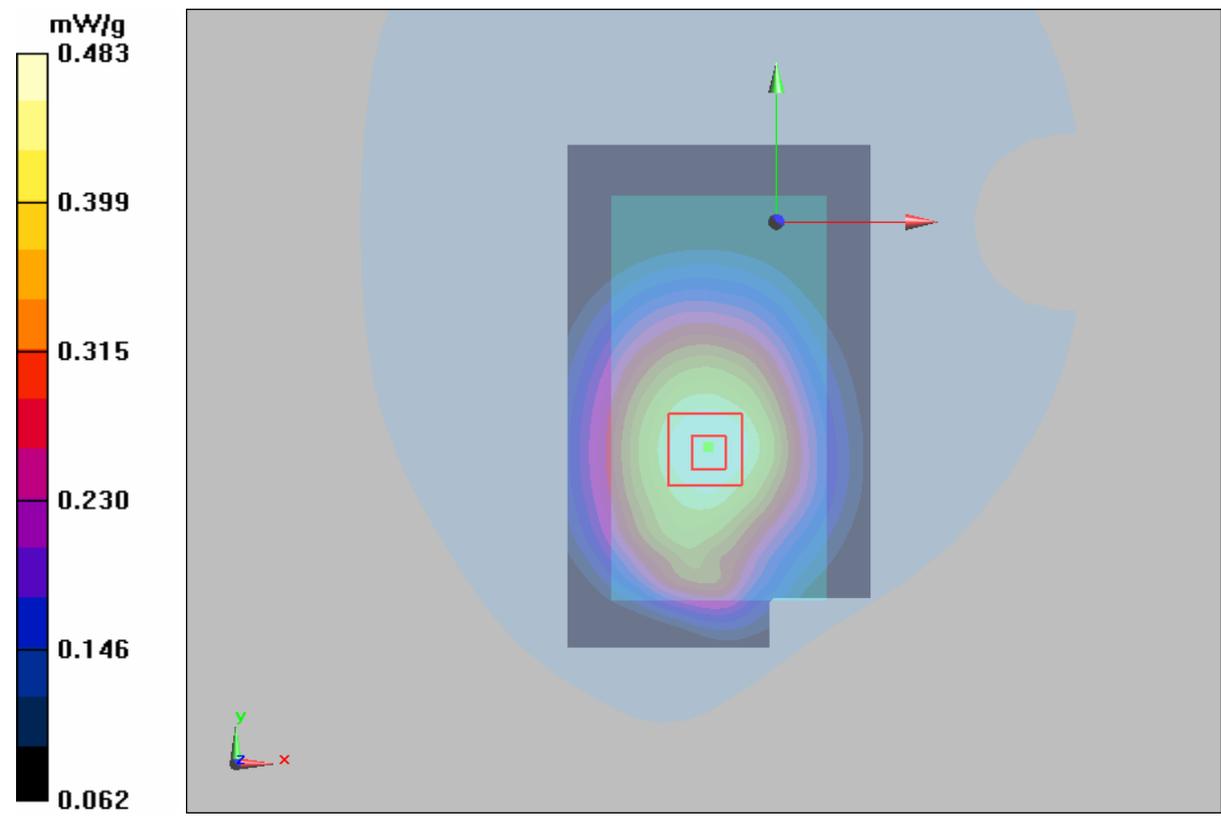


Figure 22 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 251



### GSM 850 GPRS (2TXslots) Towards Ground Middle

Date/Time: 6/8/2011 10:25:24 AM

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

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.552 mW/g

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

Reference Value = 7.42 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.657 W/kg

**SAR(1 g) = 0.510 mW/g; SAR(10 g) = 0.378 mW/g**

Maximum value of SAR (measured) = 0.536 mW/g

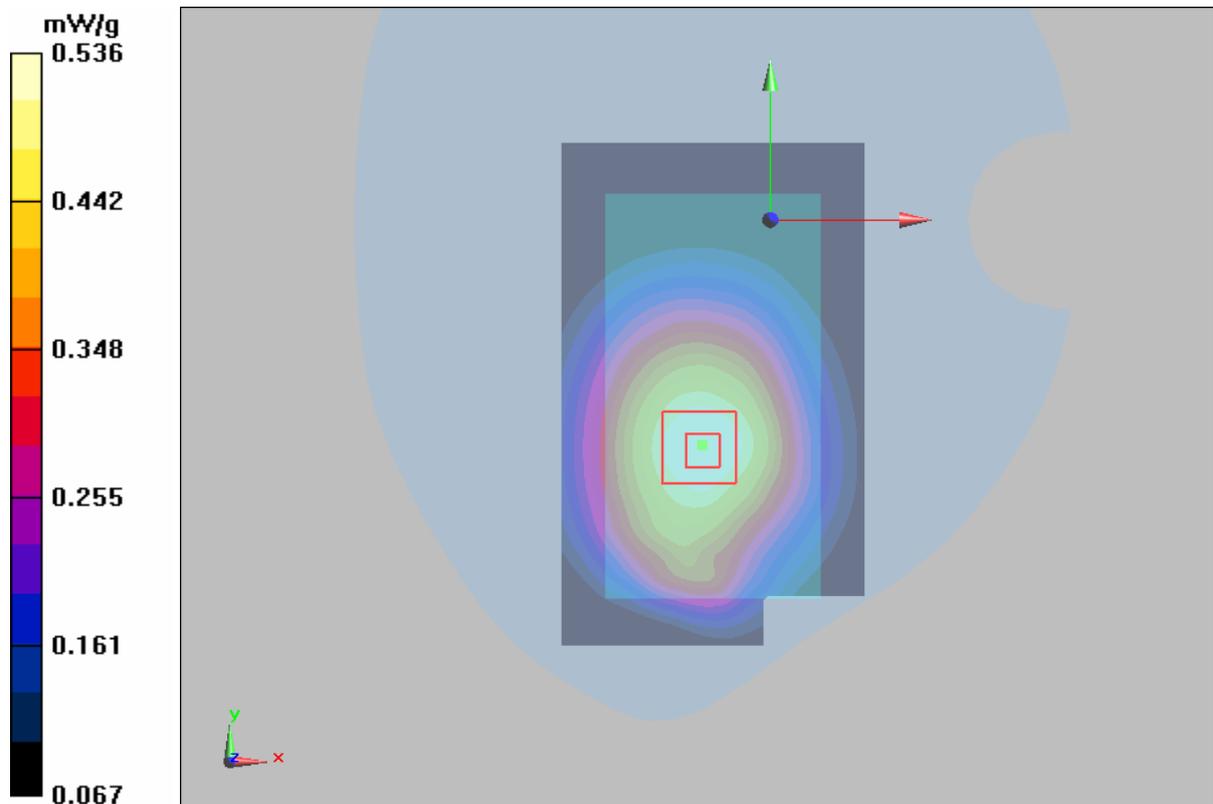


Figure 23 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 190



### GSM 850 GPRS (2TXslots) Towards Ground Low

Date/Time: 6/8/2011 10:58:41 AM

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

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.978$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.641 mW/g

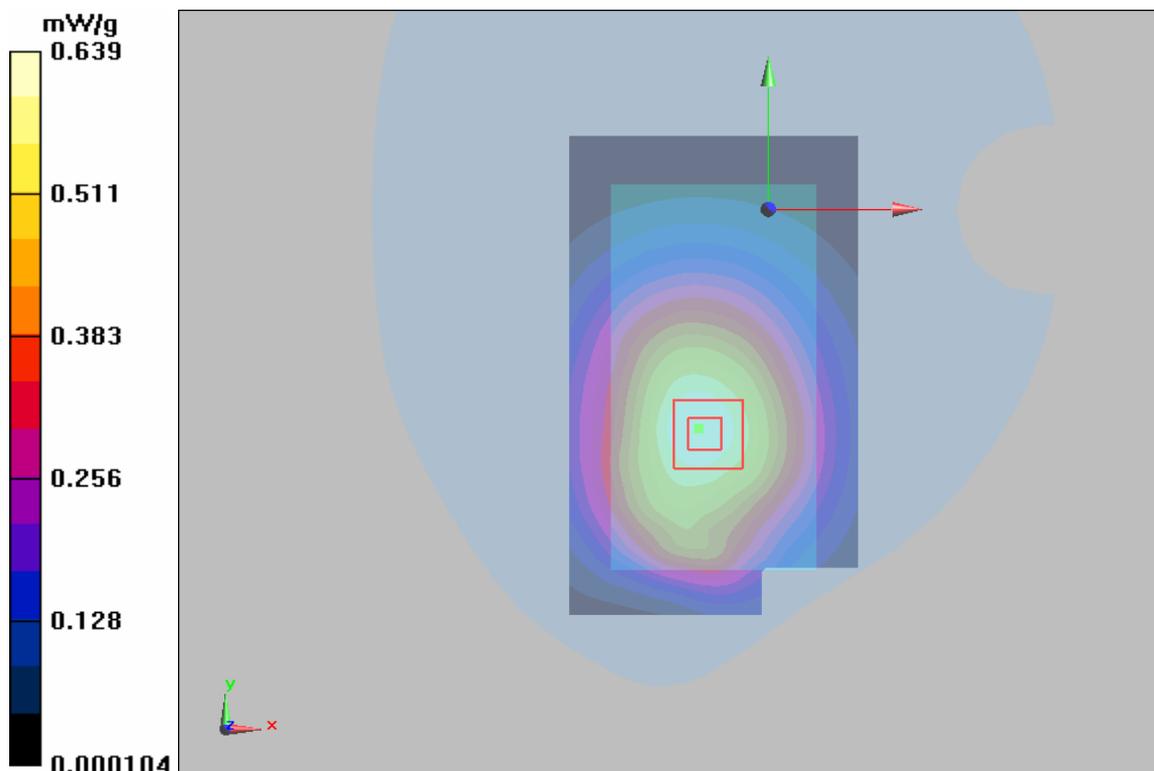
**Towards Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.04 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.792 W/kg

**SAR(1 g) = 0.612 mW/g; SAR(10 g) = 0.447 mW/g**

Maximum value of SAR (measured) = 0.639 mW/g



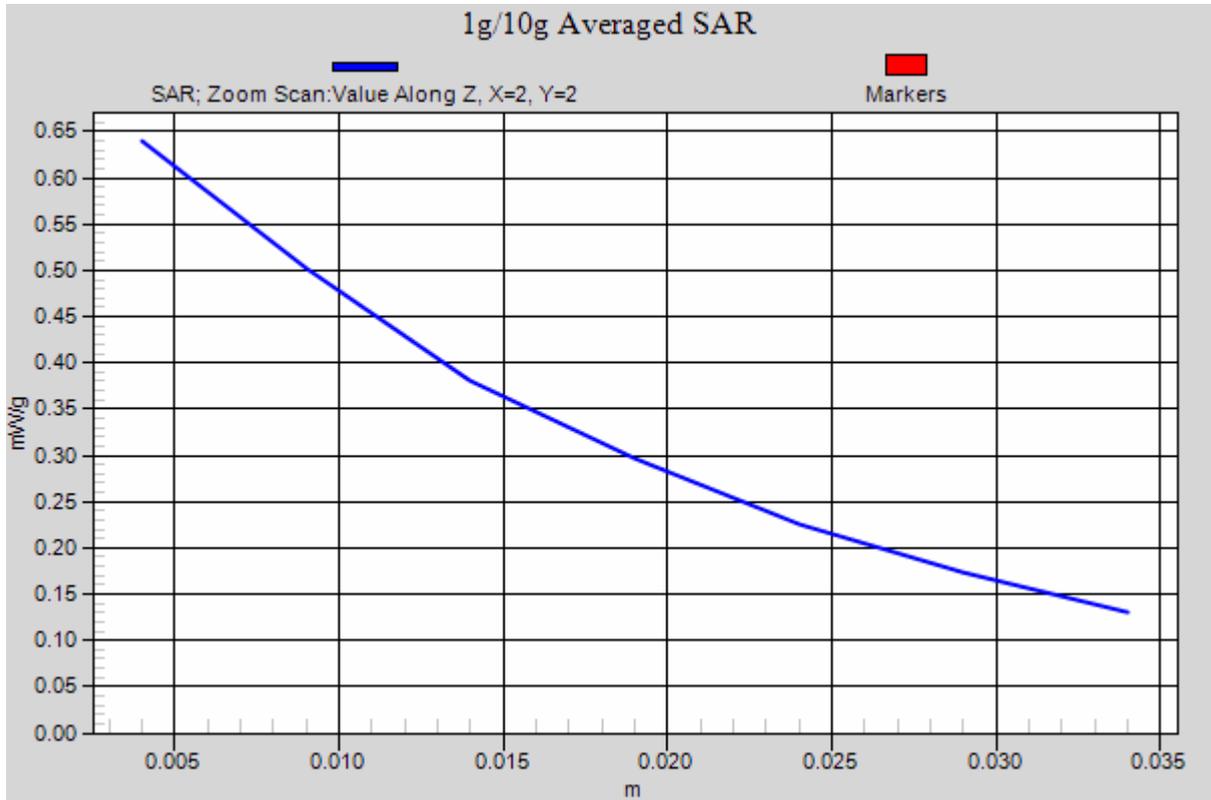


Figure 24 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 128



**GSM 850 GPRS (2TXslots) Towards Phantom Middle**

Date/Time: 6/8/2011 11:16:10 AM  
Communication System: GSM850 + GPRS(2Up); Frequency: 836.6 MHz;Duty Cycle: 1:4.15  
Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C  
Phantom section: Flat Section  
DASY5 Configuration:  
Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010  
Electronics: DAE4 Sn871; Calibrated: 11/18/2010  
Phantom: SAM1; Type: SAM; Serial: TP-1534  
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.270 mW/g

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

Reference Value = 5.11 V/m; Power Drift = -0.090 dB  
Peak SAR (extrapolated) = 0.325 W/kg  
**SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.194 mW/g**  
Maximum value of SAR (measured) = 0.267 mW/g

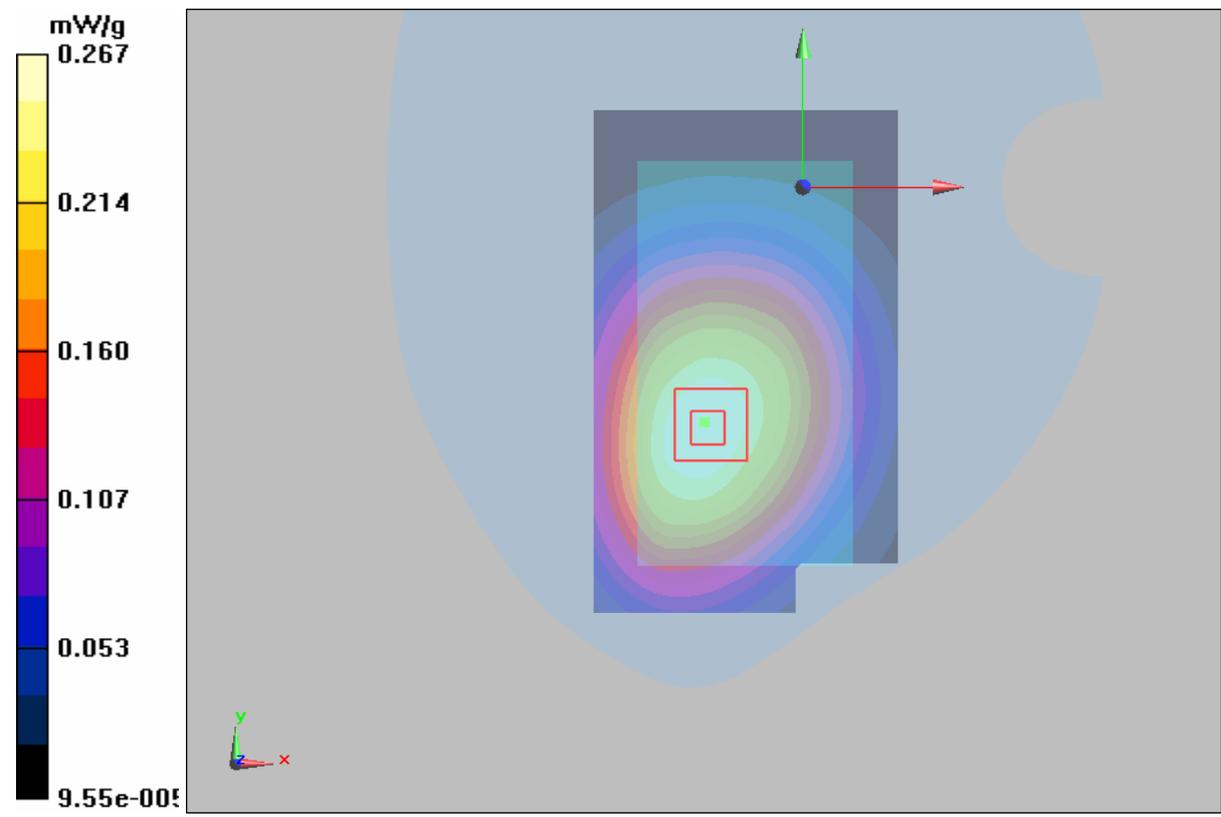


Figure 25 Body, Towards Phantom, GSM 850 GPRS (4TXslots) Channel 190



**GSM 850 with Earphone Towards Ground Low**

Date/Time: 6/8/2011 11:35:36 AM

Communication System: GSM850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.978$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.244 mW/g

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

Reference Value = 6.35 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.291 W/kg

**SAR(1 g) = 0.229 mW/g; SAR(10 g) = 0.170 mW/g**

Maximum value of SAR (measured) = 0.241 mW/g

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

Reference Value = 6.35 V/m; Power Drift = 0.045 dB

Peak SAR (extrapolated) = 0.269 W/kg

**SAR(1 g) = 0.194 mW/g; SAR(10 g) = 0.138 mW/g**

Maximum value of SAR (measured) = 0.213 mW/g

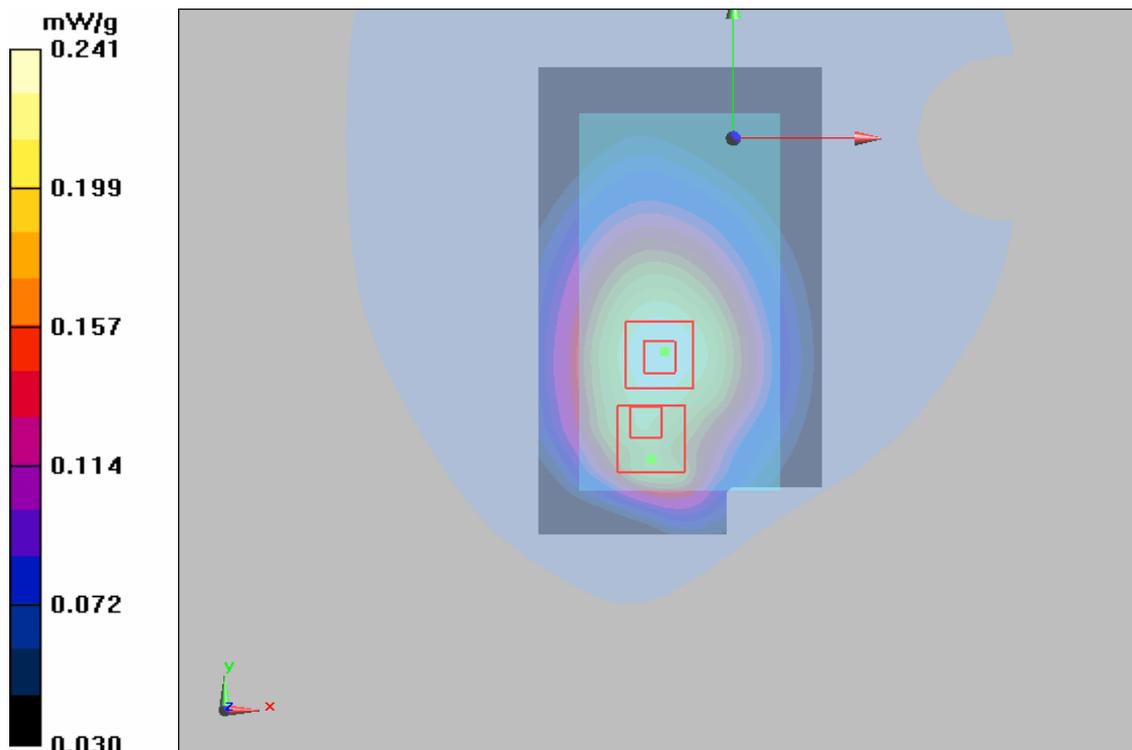


Figure 26 Body with Earphone, Towards Ground, GSM 850 Channel 128



**GSM 850 GPRS (2TXslots) (Hot spots) Towards Ground High**

Date/Time: 6/8/2011 11:39:24 PM

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

Medium parameters used:  $f = 849$  MHz;  $\sigma = 1.01$  mho/m;  $\epsilon_r = 55.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.651 mW/g

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

Reference Value = 24.5 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.870 W/kg

**SAR(1 g) = 0.644 mW/g; SAR(10 g) = 0.460 mW/g**

Maximum value of SAR (measured) = 0.652 mW/g

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

Reference Value = 24.5 V/m; Power Drift = -0.083 dB

Peak SAR (extrapolated) = 0.724 W/kg

**SAR(1 g) = 0.474 mW/g; SAR(10 g) = 0.324 mW/g**

Maximum value of SAR (measured) = 0.508 mW/g

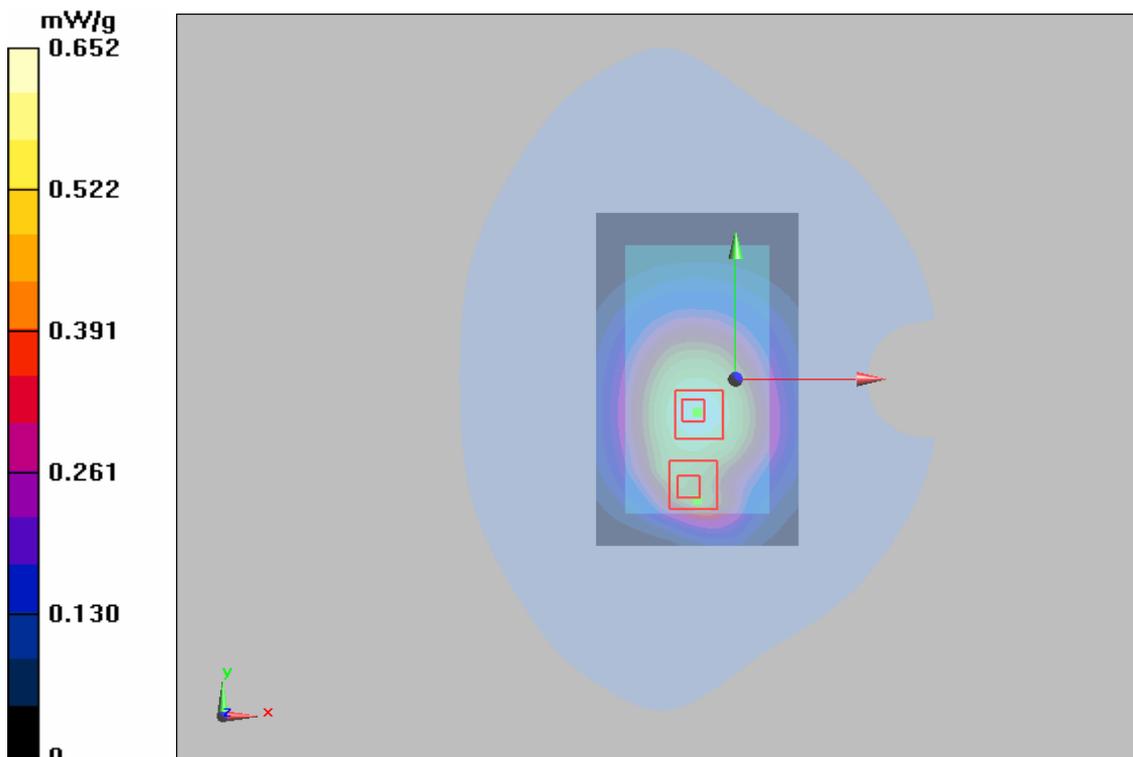


Figure 27 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 251



**GSM 850 GPRS (2TXslots) (Hot spots) Towards Ground Middle**

Date/Time: 6/8/2011 11:14:31 PM

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

Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.992 \text{ mho/m}$ ;  $\epsilon_r = 55.9$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Middle/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.748 \text{ mW/g}$

**Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $25.9 \text{ V/m}$ ; Power Drift =  $-0.020 \text{ dB}$

Peak SAR (extrapolated) =  $0.893 \text{ W/kg}$

**SAR(1 g) =  $0.702 \text{ mW/g}$ ; SAR(10 g) =  $0.522 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.734 \text{ mW/g}$

**Towards Ground Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $25.9 \text{ V/m}$ ; Power Drift =  $-0.020 \text{ dB}$

Peak SAR (extrapolated) =  $0.804 \text{ W/kg}$

**SAR(1 g) =  $0.546 \text{ mW/g}$ ; SAR(10 g) =  $0.363 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.585 \text{ mW/g}$

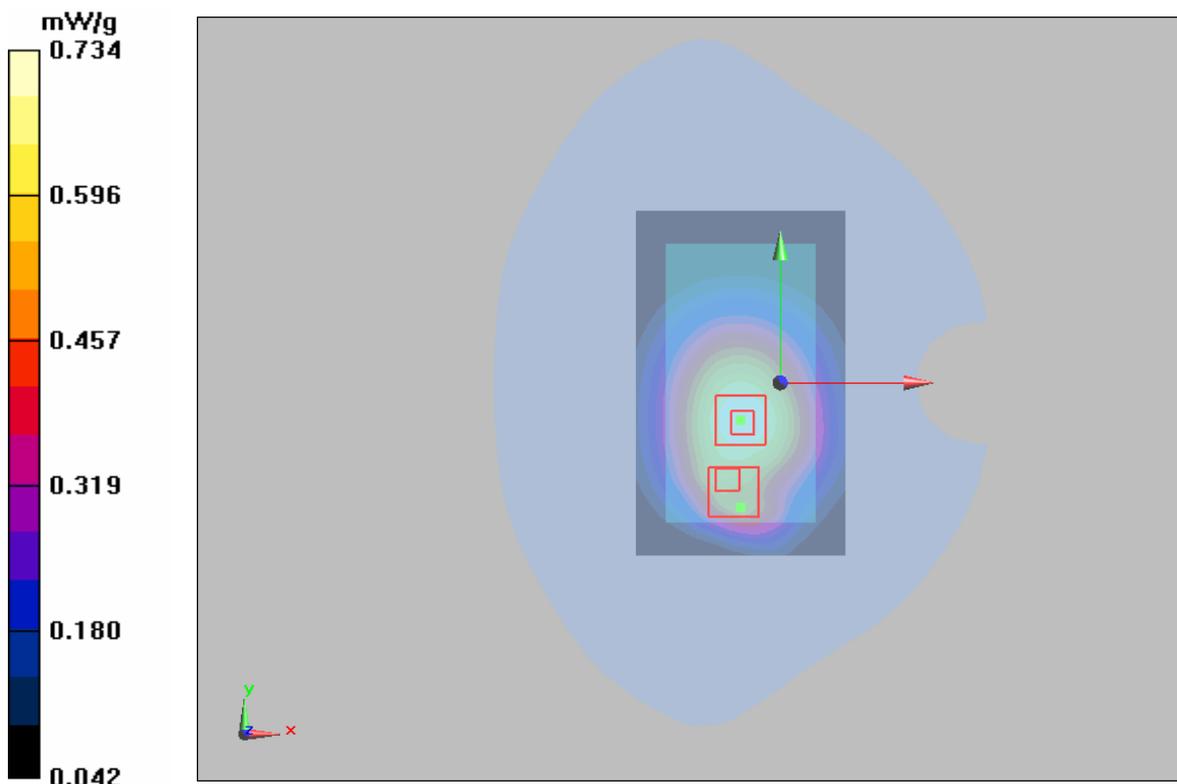


Figure 28 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 190



**GSM 850 GPRS (2TXslots) (Hot spots) Towards Ground Low**

Date/Time: 6/9/2011 12:37:45 AM

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

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.978$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.806 mW/g

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

Reference Value = 24.6 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.1 W/kg

**SAR(1 g) = 0.804 mW/g; SAR(10 g) = 0.562 mW/g**

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

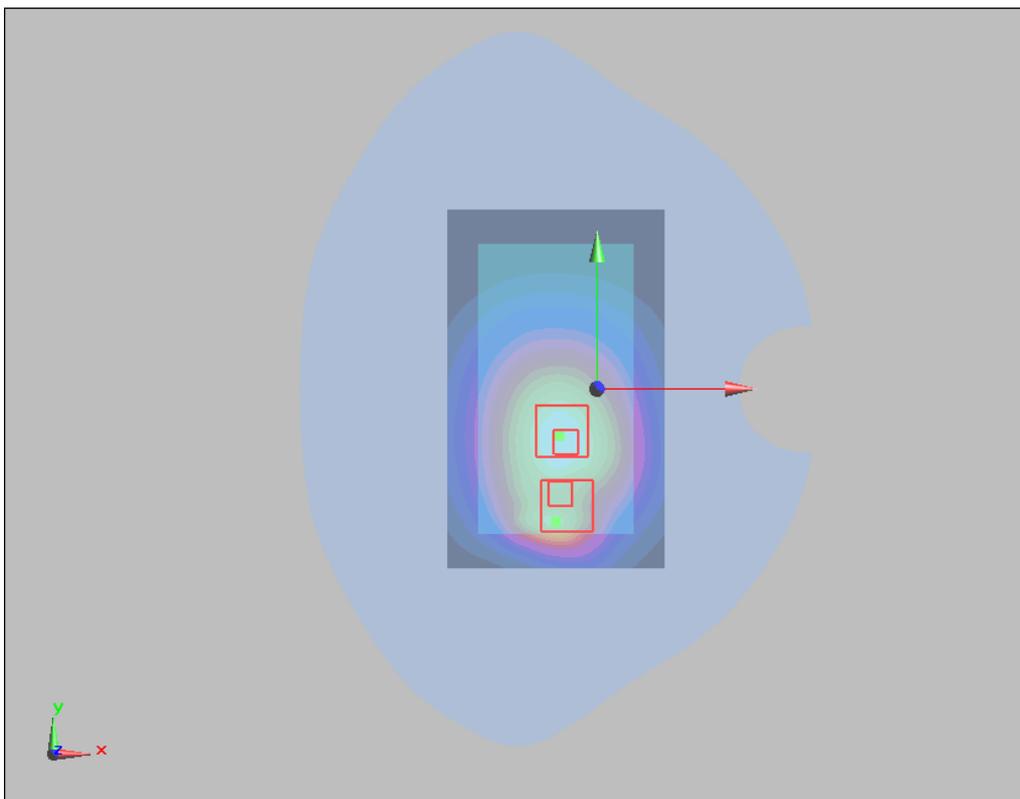
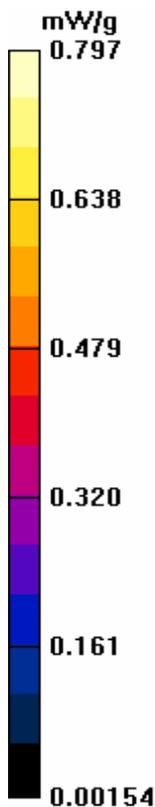
**Towards Ground Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.6 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 0.885 W/kg

**SAR(1 g) = 0.627 mW/g; SAR(10 g) = 0.404 mW/g**

Maximum value of SAR (measured) = 0.681 mW/g



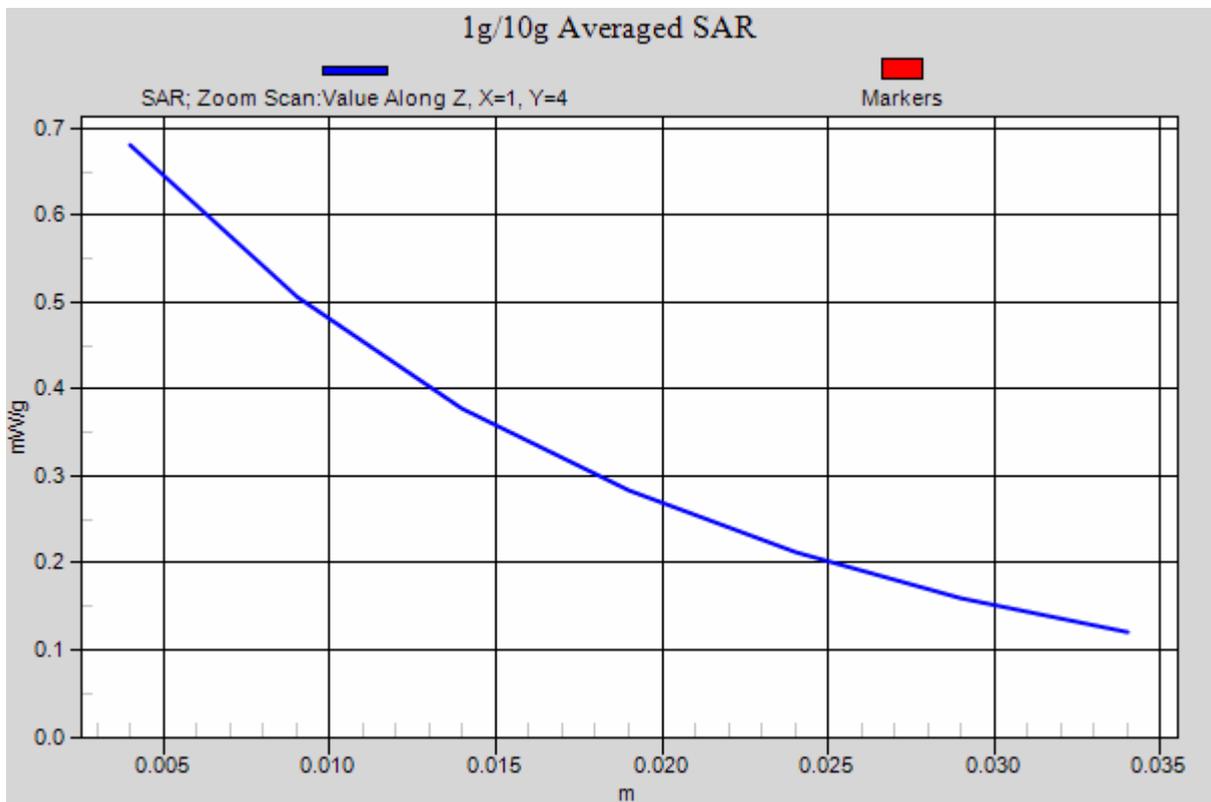
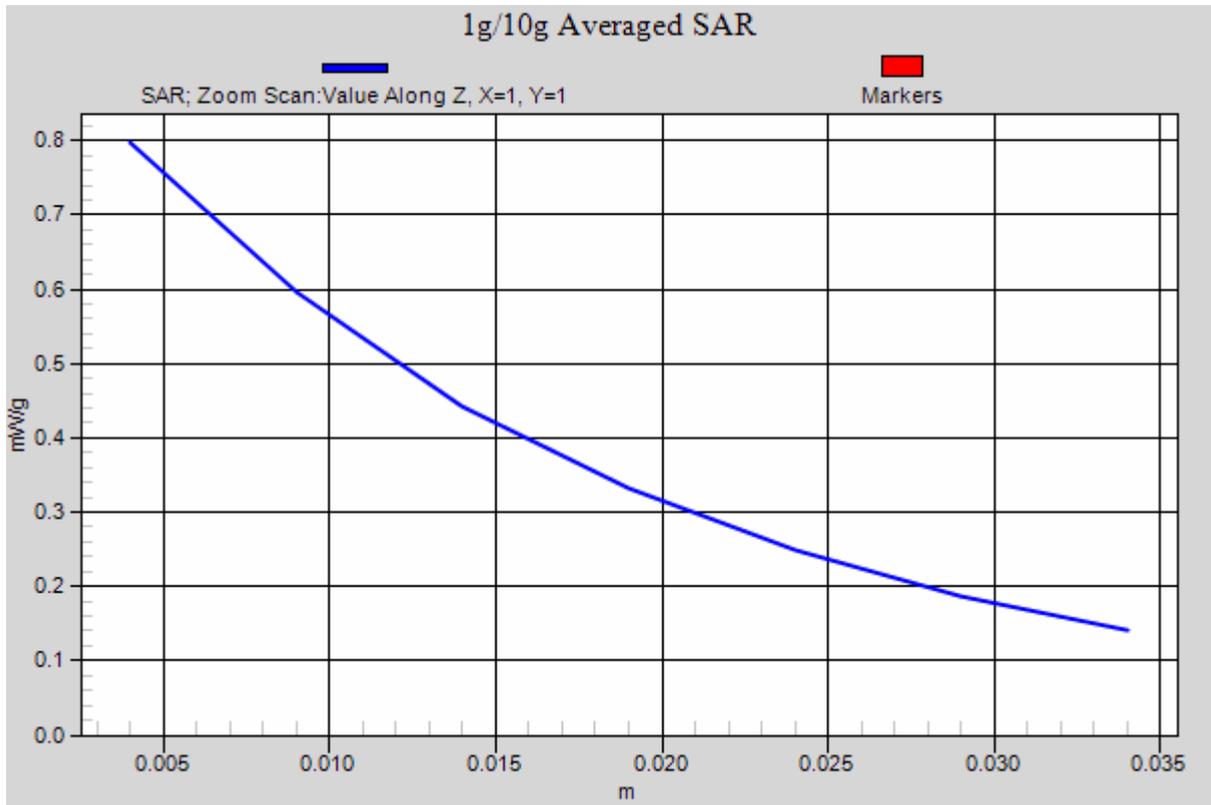


Figure 29 Body, Towards Ground, GSM 850 GPRS (2TXslots) Channel 128



### GSM 850 GPRS (2TXslots) (Hot spots) Towards Phantom Middle

Date/Time: 6/8/2011 10:55:15 PM

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

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.329 mW/g

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

Reference Value = 17 V/m; Power Drift = -0.190 dB

Peak SAR (extrapolated) = 0.391 W/kg

**SAR(1 g) = 0.308 mW/g; SAR(10 g) = 0.234 mW/g**

Maximum value of SAR (measured) = 0.324 mW/g

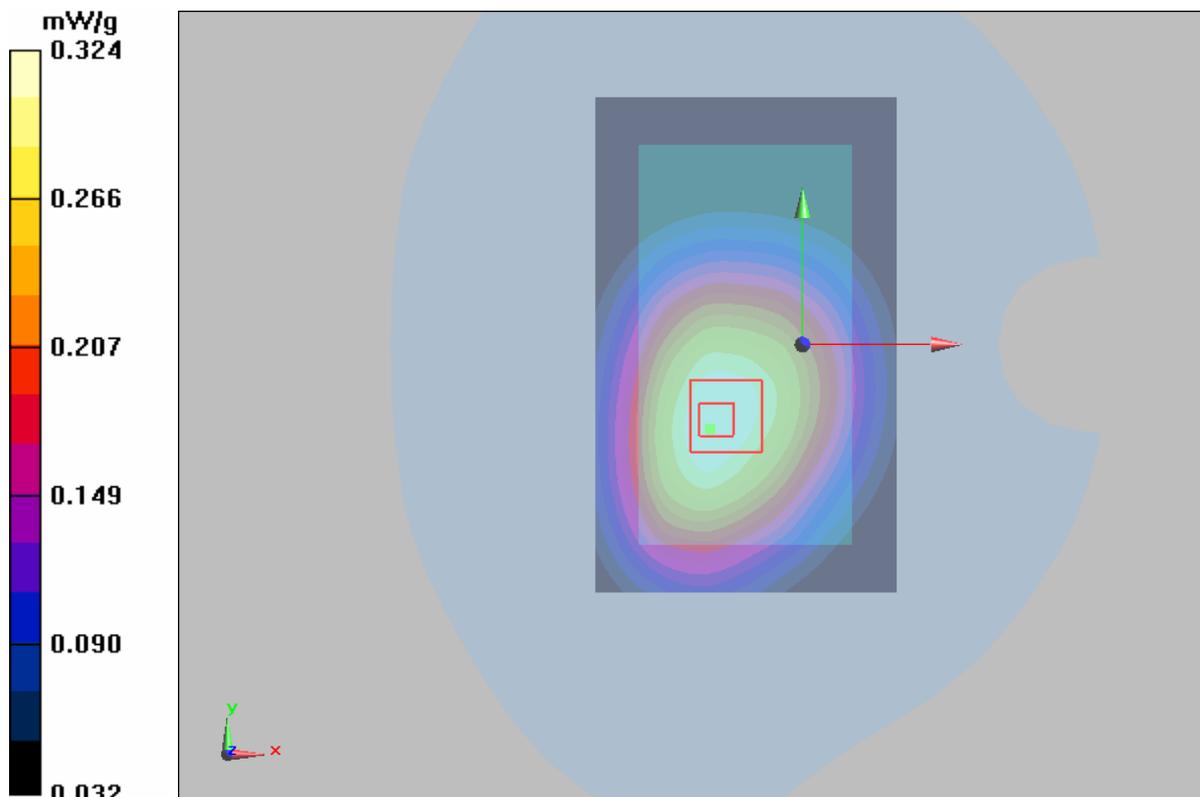


Figure 30 Body, Towards Phantom, GSM 850 GPRS (2TXslots) Channel 190



**GSM 850 GPRS (2TXslots) (Hot spots) Left Edge Middle**

Date/Time: 6/8/2011 9:31:26 PM

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

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Left Edge Middle/Area Scan (41x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.319 mW/g

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

Reference Value = 16.8 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 0.398 W/kg

**SAR(1 g) = 0.285 mW/g; SAR(10 g) = 0.195 mW/g**

Maximum value of SAR (measured) = 0.305 mW/g

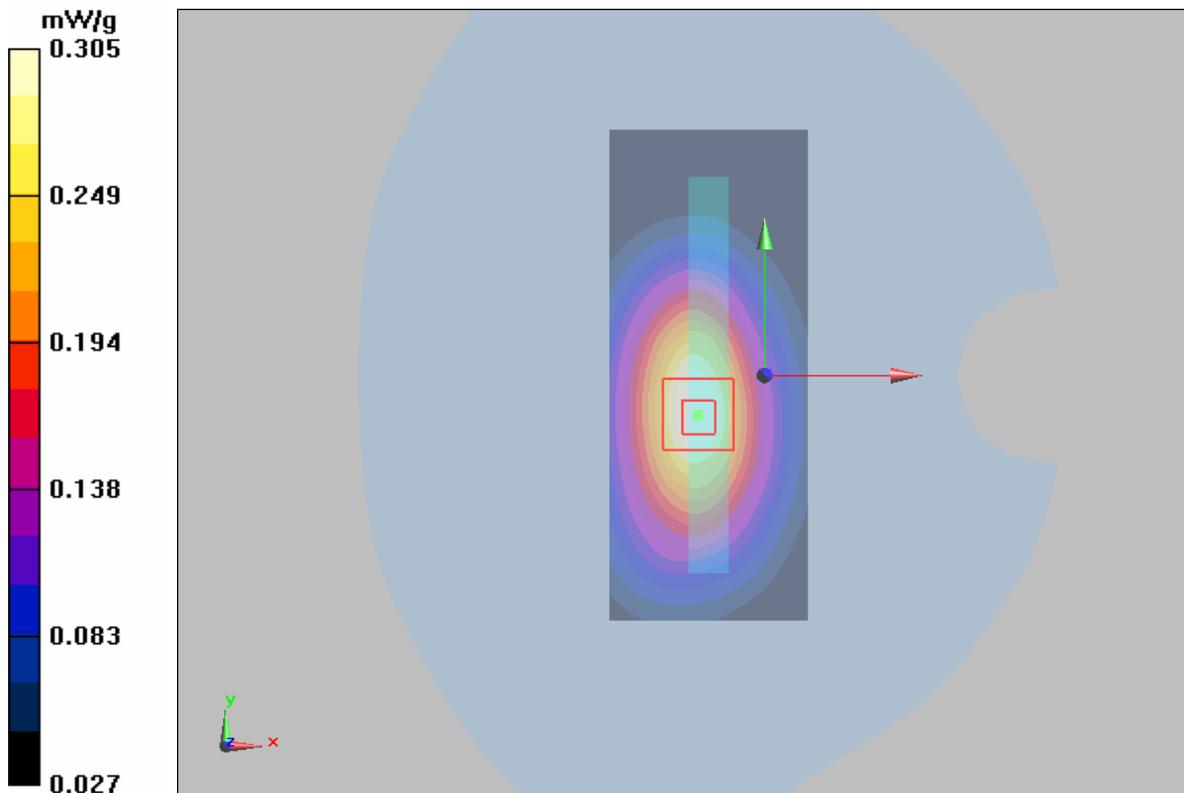


Figure 31 Body, Left Edge, GSM 850 GPRS (2TXslots) Channel 190



**GSM 850 GPRS (2TXslots) (Hot spots) Right Edge Middle**

Date/Time: 6/8/2011 9:53:05 PM

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

Medium parameters used:  $f = 837 \text{ MHz}$ ;  $\sigma = 0.992 \text{ mho/m}$ ;  $\epsilon_r = 55.9$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Right Edge Middle/Area Scan (41x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.347 \text{ mW/g}$

**Right Edge Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $19.5 \text{ V/m}$ ; Power Drift =  $-0.005 \text{ dB}$

Peak SAR (extrapolated) =  $0.486 \text{ W/kg}$

**SAR(1 g) =  $0.351 \text{ mW/g}$ ; SAR(10 g) =  $0.238 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.373 \text{ mW/g}$

**Right Edge Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $19.5 \text{ V/m}$ ; Power Drift =  $-0.005 \text{ dB}$

Peak SAR (extrapolated) =  $0.454 \text{ W/kg}$

**SAR(1 g) =  $0.313 \text{ mW/g}$ ; SAR(10 g) =  $0.204 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.350 \text{ mW/g}$

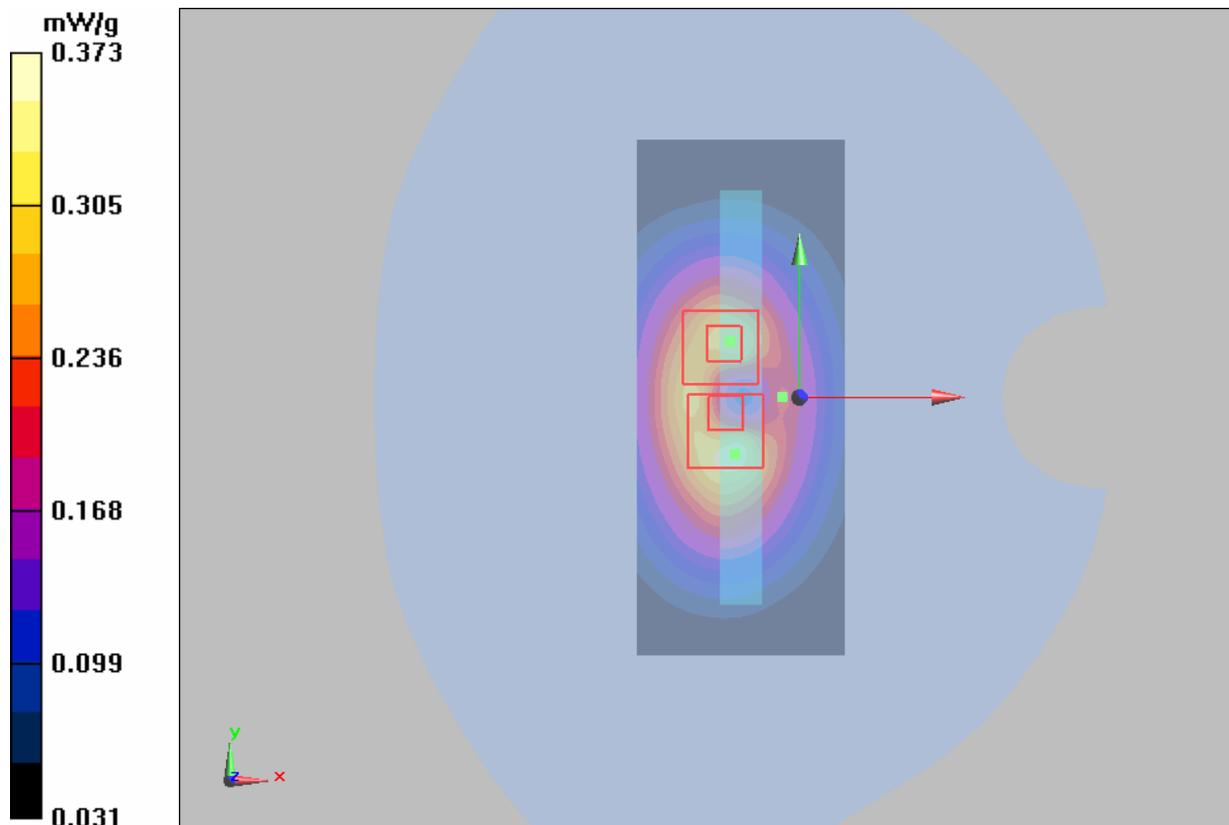


Figure 32 Body, Right Edge, GSM 850 GPRS (2TXslots) Channel 190



**GSM 850 GPRS (2TXslots) (Hot spots) Bottom Edge Middle**

Date/Time: 6/8/2011 10:35:07 PM

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

Medium parameters used:  $f = 837$  MHz;  $\sigma = 0.992$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Bottom Edge Middle/Area Scan (41x71x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.103 mW/g

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

Reference Value = 9.3 V/m; Power Drift = 0.088 dB

Peak SAR (extrapolated) = 0.147 W/kg

**SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.055 mW/g**

Maximum value of SAR (measured) = 0.101 mW/g

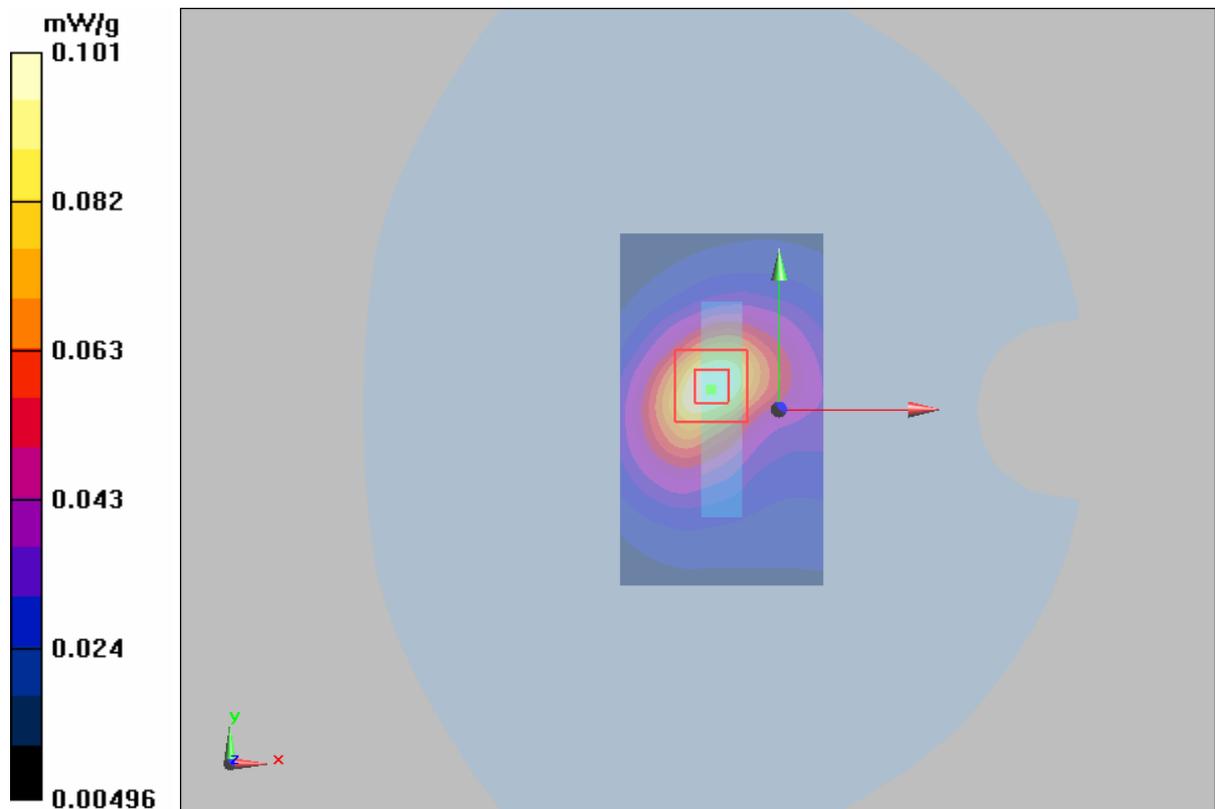


Figure 33 Body, Bottom Edge, GSM 850 GPRS (2TXslots) Channel 190



**GSM 850 EGPRS (2TXslots) (hot spots) Towards Ground Low**

Date/Time: 6/9/2011 1:10:45 AM

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

Medium parameters used (interpolated):  $f = 824.2$  MHz;  $\sigma = 0.978$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(10.33, 10.33, 10.33); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.795 mW/g

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

Reference Value = 25.4 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.993 W/kg

**SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.558 mW/g**

Maximum value of SAR (measured) = 0.799 mW/g

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

Reference Value = 25.4 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.887 W/kg

**SAR(1 g) = 0.598 mW/g; SAR(10 g) = 0.426 mW/g**

Maximum value of SAR (measured) = 0.656 mW/g

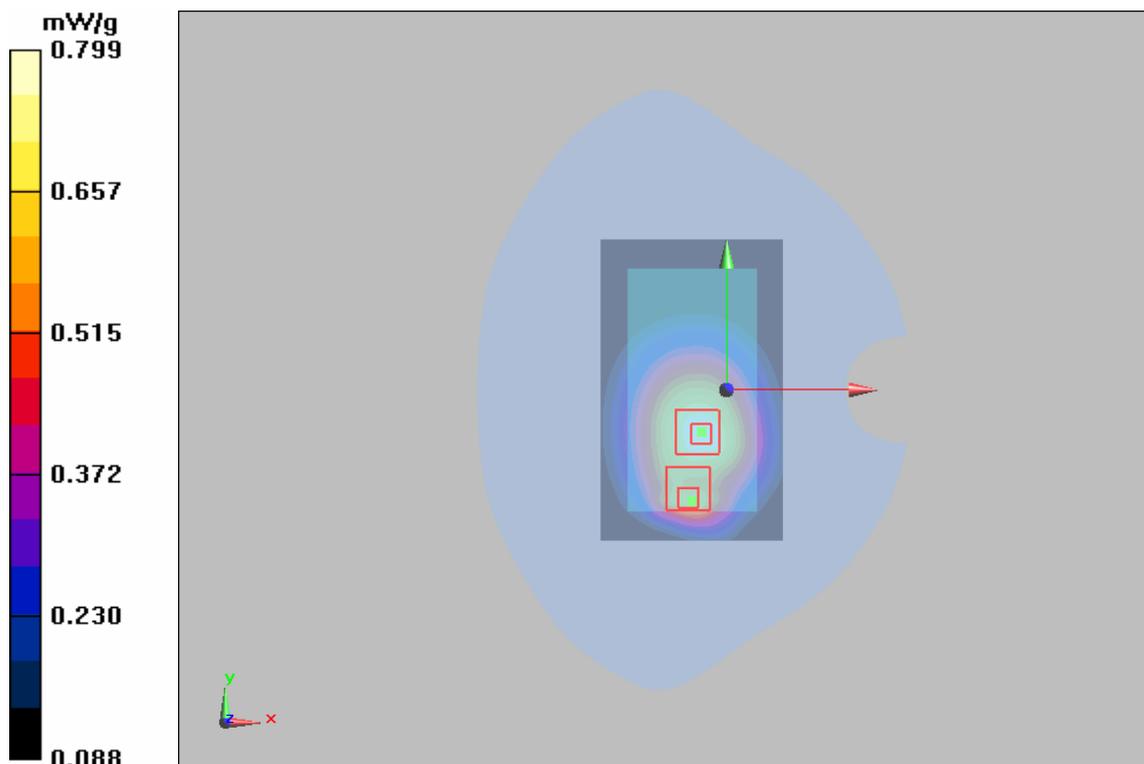


Figure 34 Body, Towards Ground, GSM 850 EGPRS (2TXslots) Channel 128



### GSM 1900 Left Cheek High

Date/Time: 6/3/2011 11:12:23 PM

Communication System: PCS 1900; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r = 39.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

Reference Value = 4.97 V/m; Power Drift = 0.178 dB

Peak SAR (extrapolated) = 0.444 W/kg

**SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.165 mW/g**

Maximum value of SAR (measured) = 0.310 mW/g

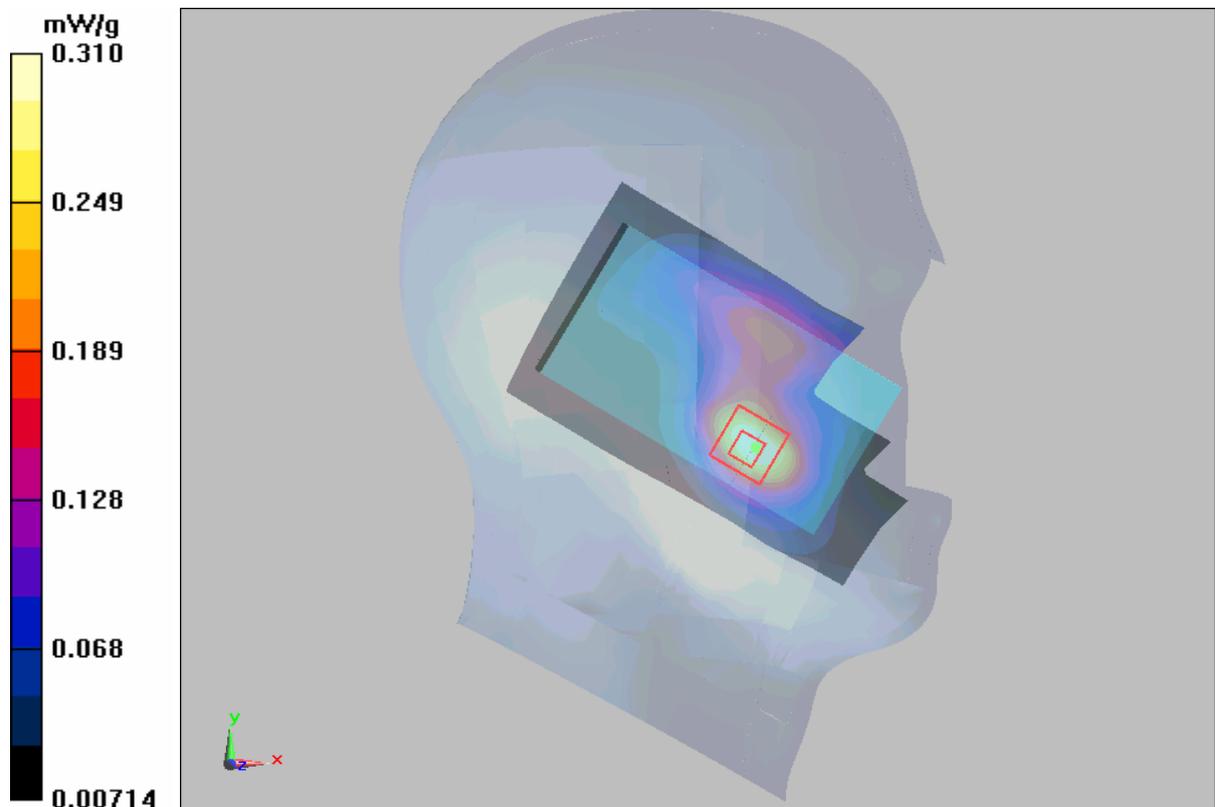


Figure 35 Left Hand Touch Cheek GSM 1900 Channel 810



**GSM 1900 Left Cheek Middle**

Date/Time: 6/3/2011 5:54:09 PM

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

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.4 \text{ mho/m}$ ;  $\epsilon_r = 40.1$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Cheek Middle/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.349 \text{ mW/g}$

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $5.82 \text{ V/m}$ ; Power Drift =  $-0.058 \text{ dB}$

Peak SAR (extrapolated) =  $0.395 \text{ W/kg}$

**SAR(1 g) =  $0.261 \text{ mW/g}$ ; SAR(10 g) =  $0.157 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.287 \text{ mW/g}$

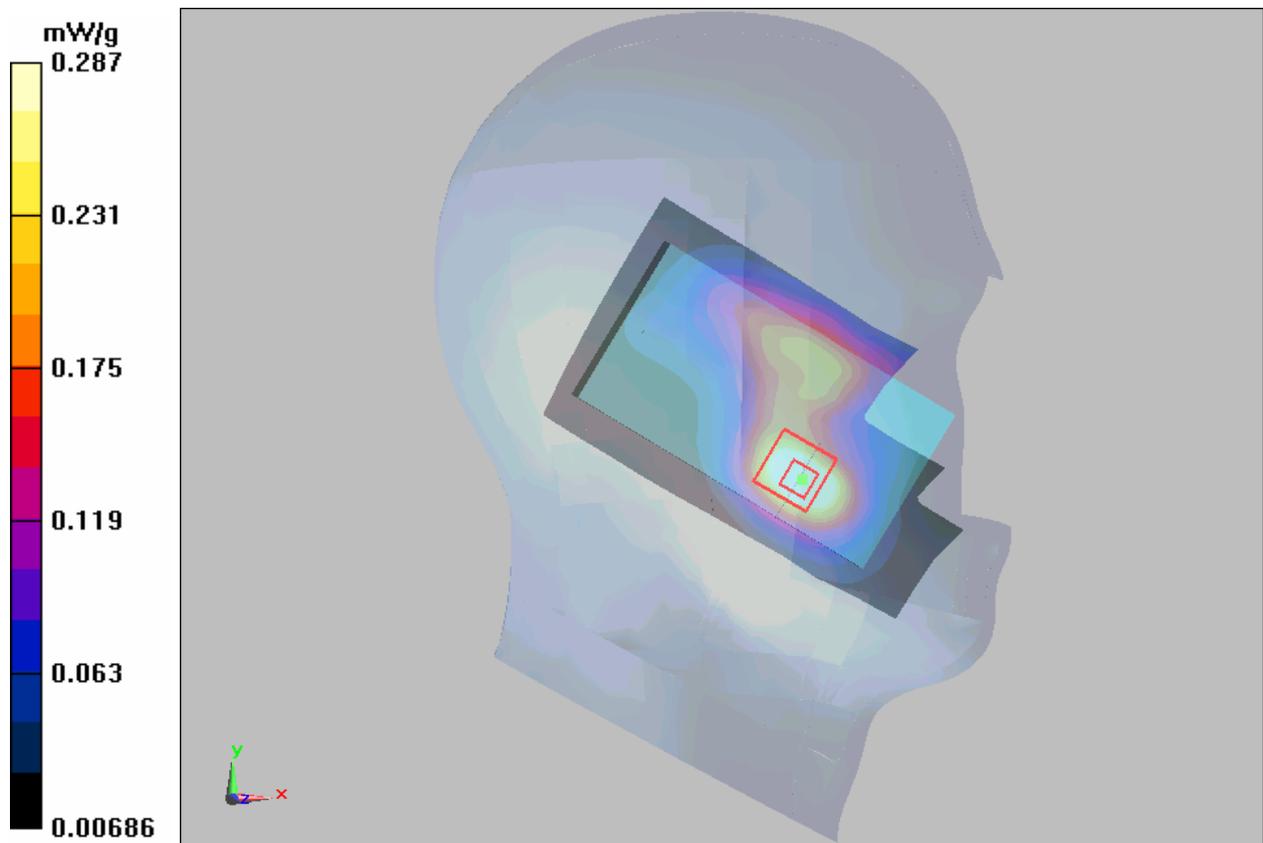


Figure 36 Left Hand Touch Cheek GSM 1900 Channel 661



**GSM 1900 Left Cheek Low**

Date/Time: 6/3/2011 11:29:12 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.409 mW/g

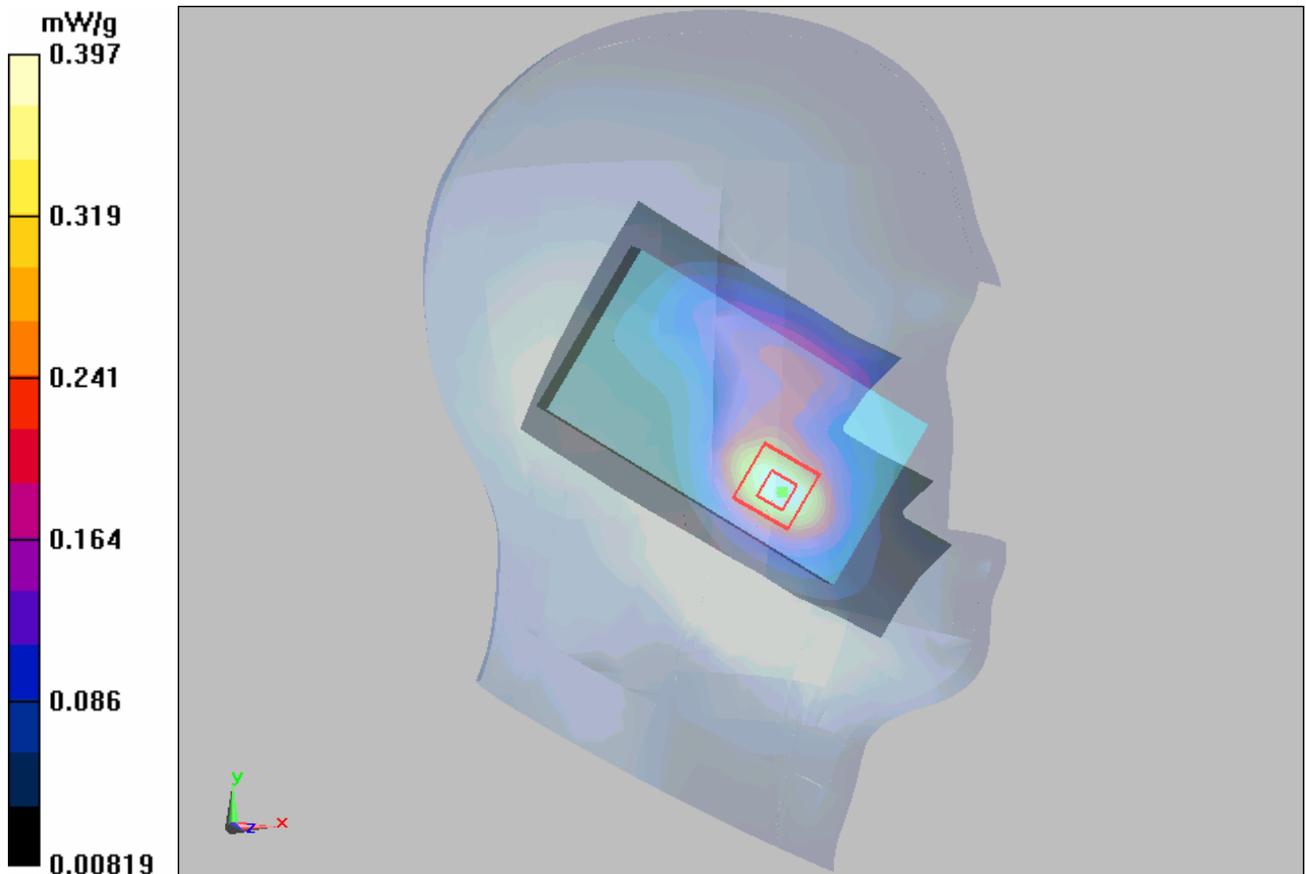
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.62 V/m; Power Drift = 0.124 dB

Peak SAR (extrapolated) = 0.555 W/kg

**SAR(1 g) = 0.364 mW/g; SAR(10 g) = 0.219 mW/g**

Maximum value of SAR (measured) = 0.397 mW/g



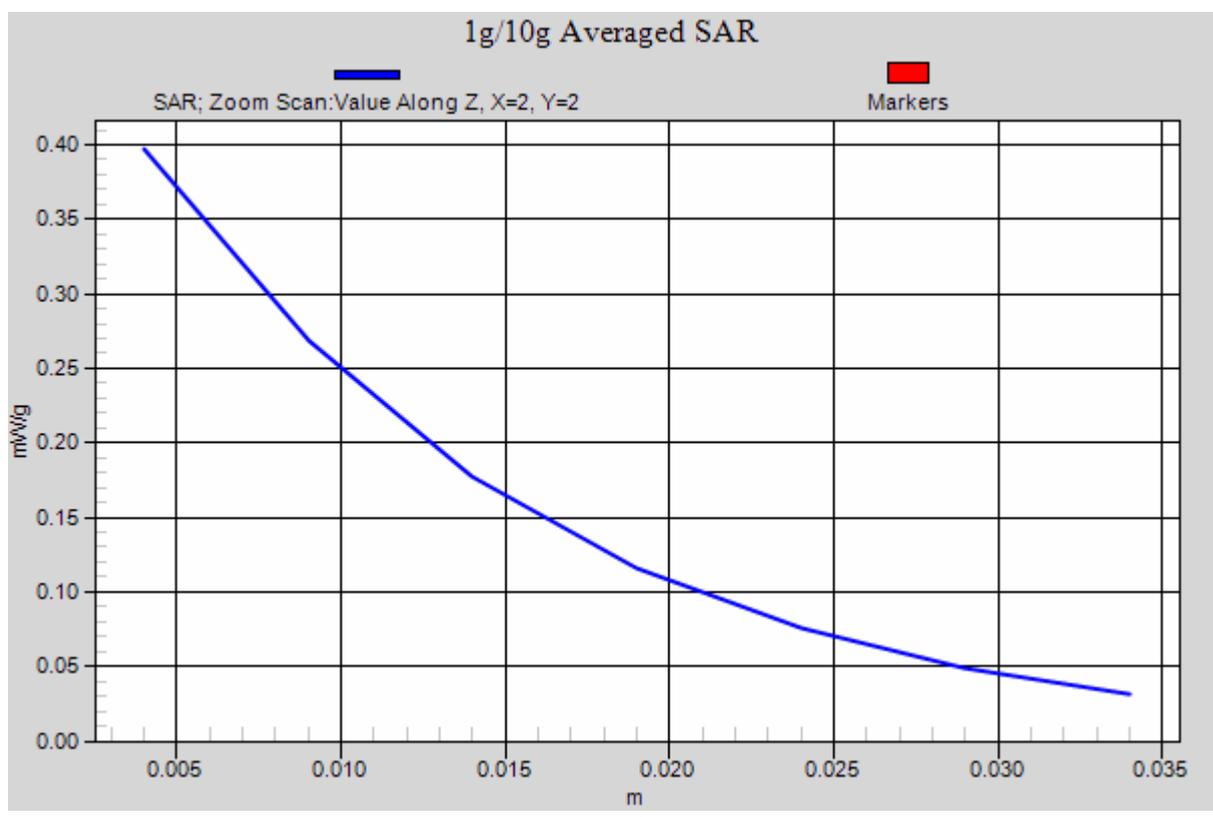


Figure 37 Left Hand Touch Cheek GSM 1900 Channel 512



**GSM 1900 Left Tilt Middle**

Date/Time: 6/3/2011 6:21:34 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.124 mW/g

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

Reference Value = 8.52 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 0.167 W/kg

**SAR(1 g) = 0.110 mW/g; SAR(10 g) = 0.069 mW/g**

Maximum value of SAR (measured) = 0.115 mW/g

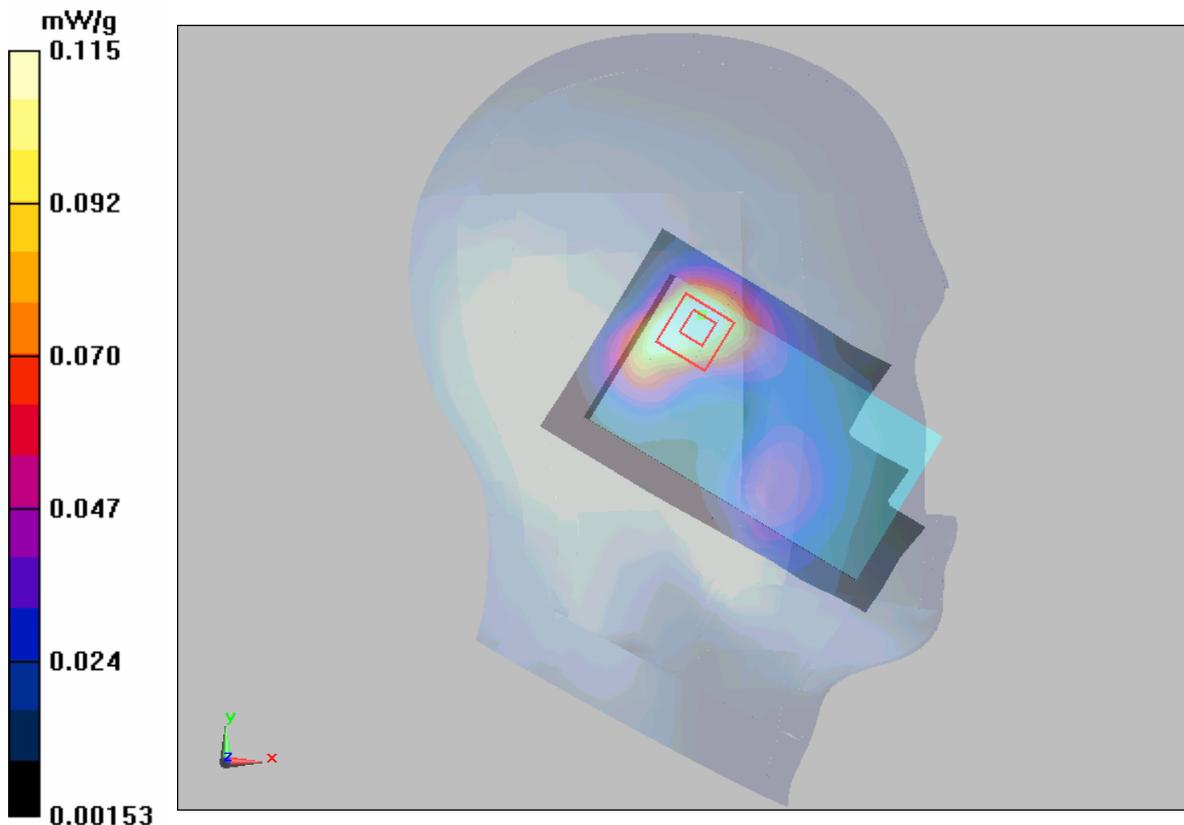


Figure 38 Left Hand Tilt 15° GSM 1900 Channel 661



### GSM 1900 Right Cheek Middle

Date/Time: 6/3/2011 1:46:42 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.284 mW/g

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

Reference Value = 5.3 V/m; Power Drift = -0.042 dB

Peak SAR (extrapolated) = 0.375 W/kg

**SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.159 mW/g**

Maximum value of SAR (measured) = 0.278 mW/g

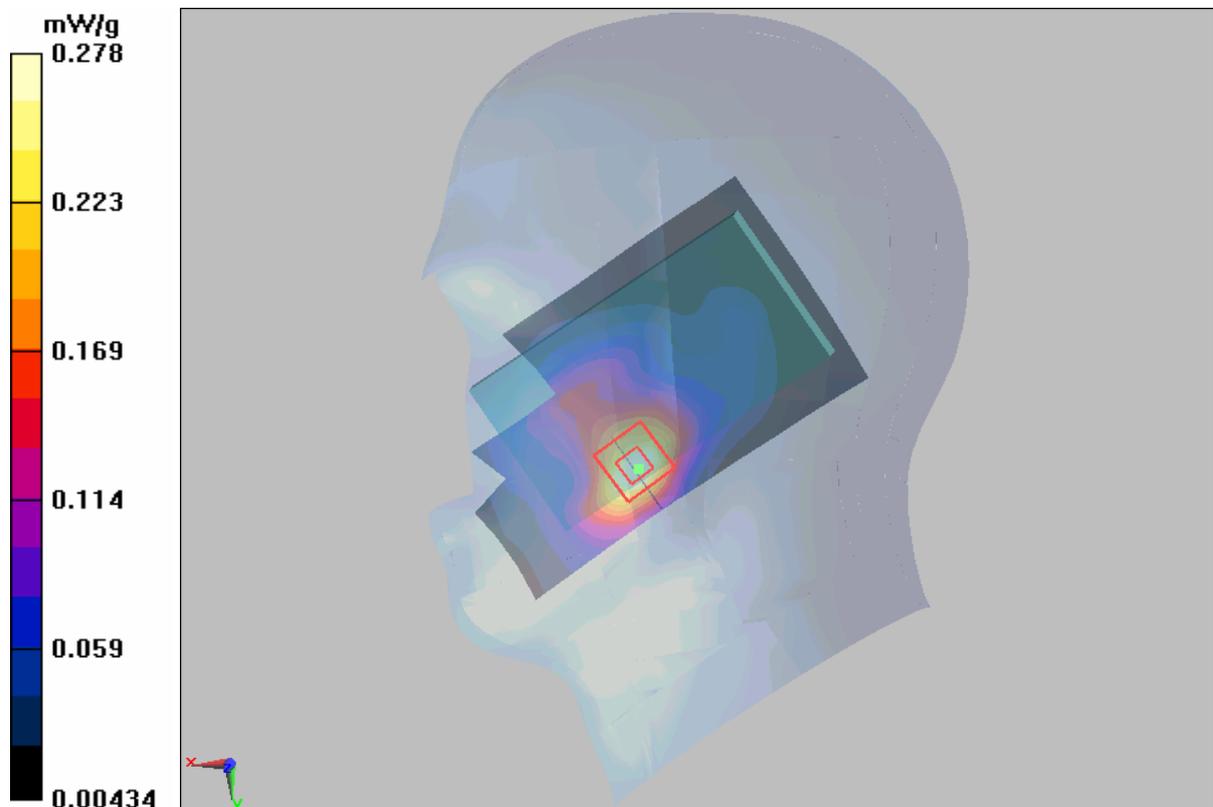


Figure 39 Right Hand Touch Cheek GSM 1900 Channel 661



**GSM 1900 Right Tilt Middle**

Date/Time: 6/3/2011 5:35:16 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.134 mW/g

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

Reference Value = 8.82 V/m; Power Drift = -0.053 dB

Peak SAR (extrapolated) = 0.187 W/kg

**SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.066 mW/g**

Maximum value of SAR (measured) = 0.123 mW/g

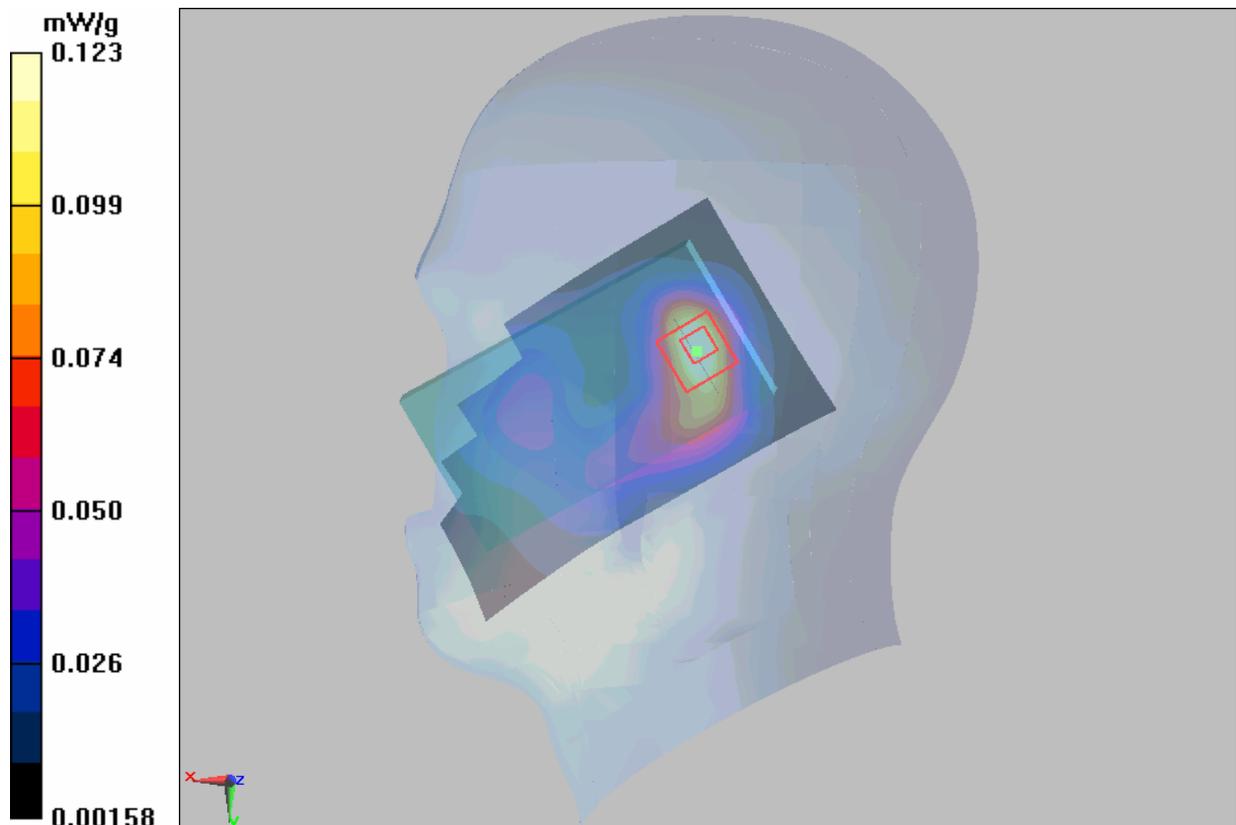


Figure 40 Right Hand Tilt 15° GSM 1900 Channel 661



**GSM 1900 Towards Ground Middle**

Date/Time: 6/9/2011 4:12:41 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.282 mW/g

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

Reference Value = 8.87 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.369 W/kg

**SAR(1 g) = 0.231 mW/g; SAR(10 g) = 0.142 mW/g**

Maximum value of SAR (measured) = 0.257 mW/g

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

Reference Value = 8.87 V/m; Power Drift = 0.064 dB

Peak SAR (extrapolated) = 0.405 W/kg

**SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.162 mW/g**

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

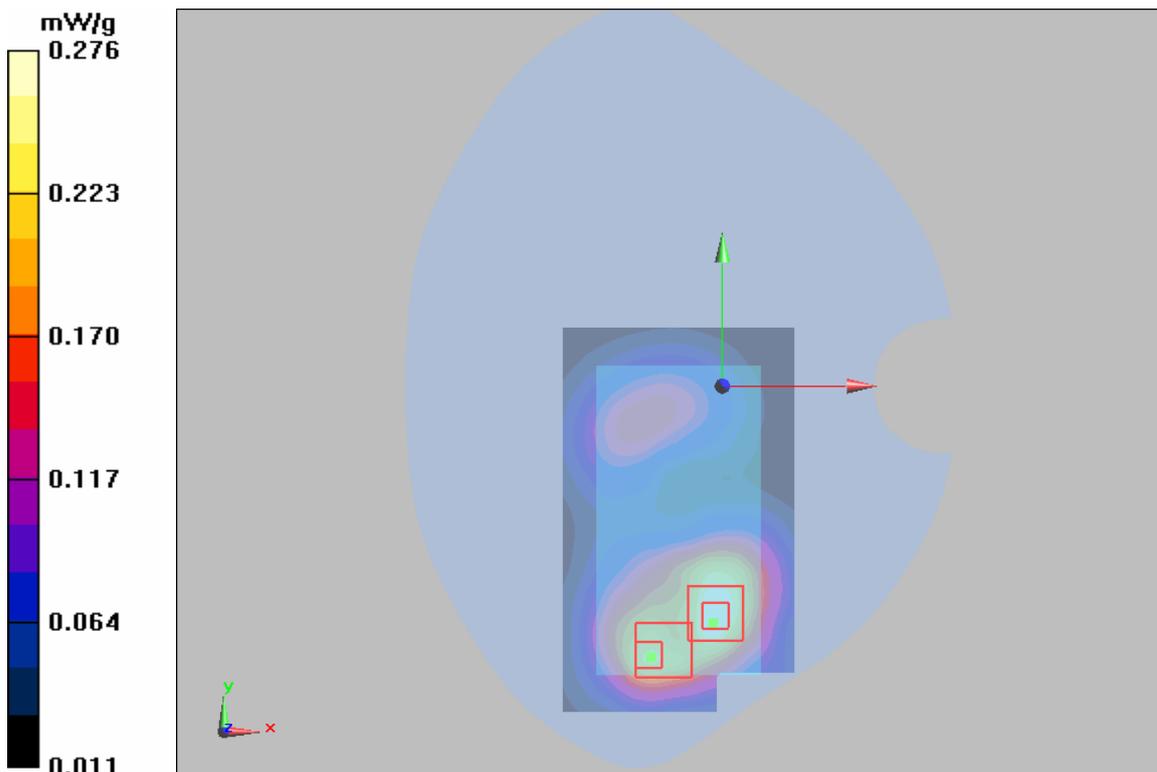


Figure 41 Body, Towards Ground, GSM 1900 Channel 661



**GSM 1900 GPRS (2TXslots) Towards Ground High**

Date/Time: 6/9/2011 6:24:12 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1909.8 MHz; Duty Cycle: 1:4.15

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.519 mW/g

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

Reference Value = 10.7 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.779 W/kg

**SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.294 mW/g**

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

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

Reference Value = 10.7 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 0.754 W/kg

**SAR(1 g) = 0.453 mW/g; SAR(10 g) = 0.265 mW/g**

Maximum value of SAR (measured) = 0.488 mW/g

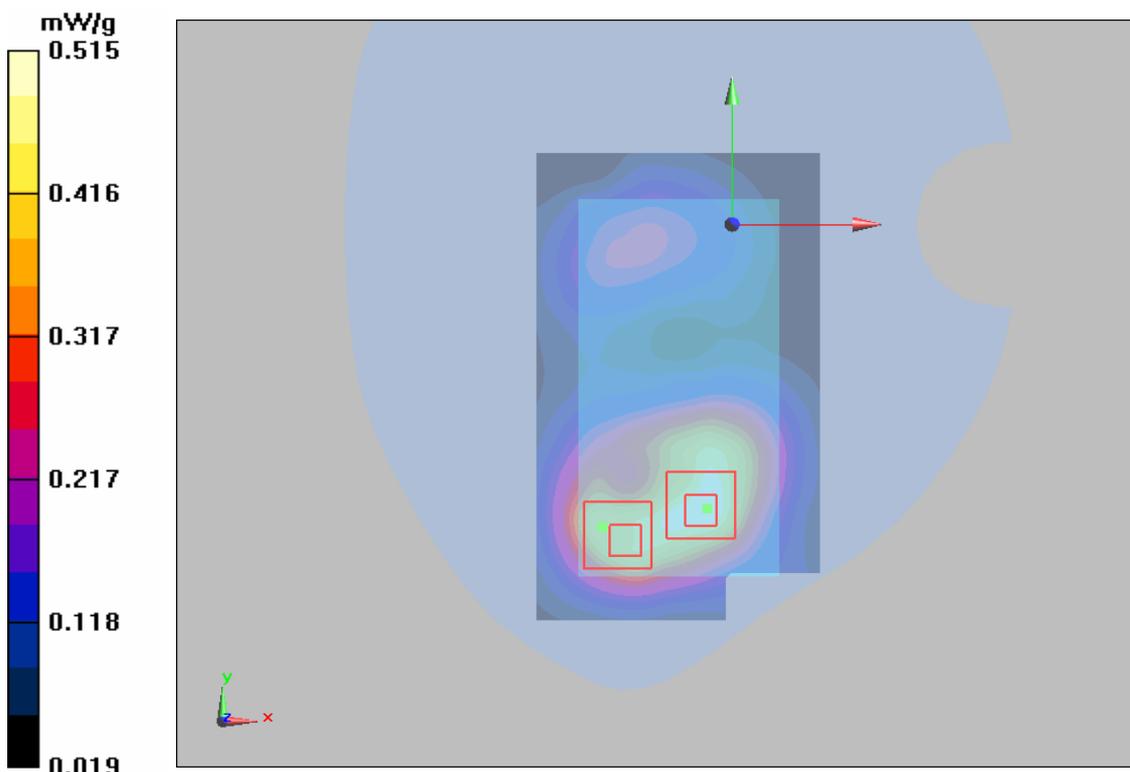


Figure 42 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 810



**SM 1900 GPRS (2TXslots) Towards Ground Middle**

Date/Time: 6/9/2011 4:38:02 PM

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

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.522 mW/g

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

Reference Value = 11.3 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.979 W/kg

**SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.304 mW/g**

Maximum value of SAR (measured) = 0.519 mW/g

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

Reference Value = 11.3 V/m; Power Drift = 0.056 dB

Peak SAR (extrapolated) = 0.605 W/kg

**SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.251 mW/g**

Maximum value of SAR (measured) = 0.479 mW/g

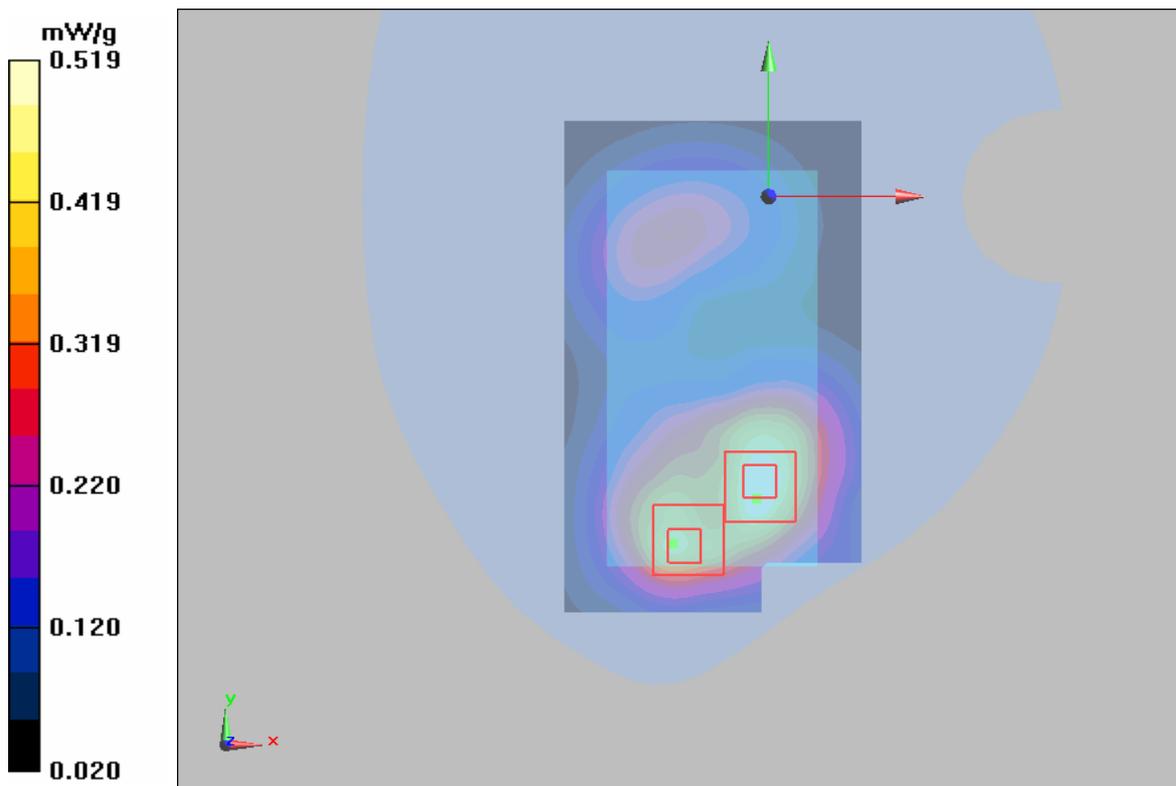


Figure 43 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 661



### SM 1900 GPRS (2TXslots) Towards Ground Low

Date/Time: 6/9/2011 6:48:26 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1850.2 MHz; Duty Cycle: 1:4.15

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.776 mW/g

**Towards Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,

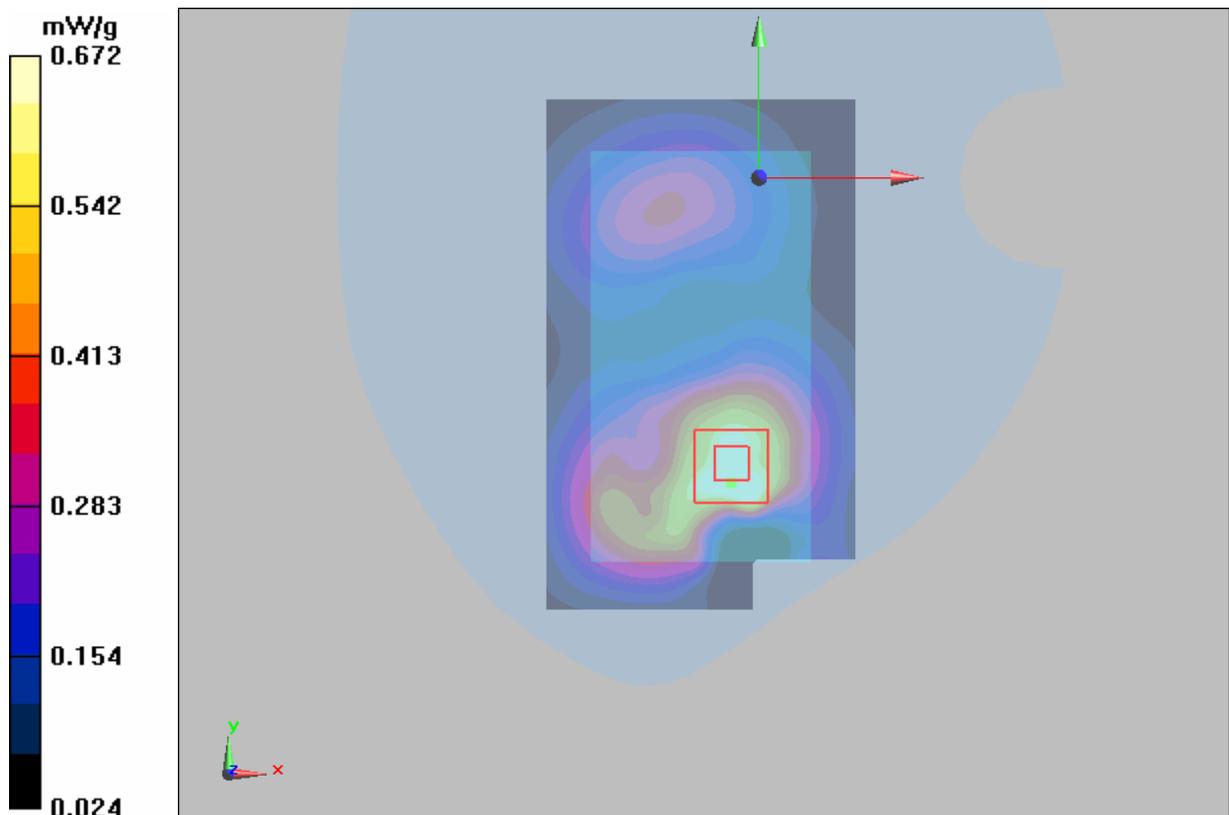
dz=5mm

Reference Value = 13.7 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.631 mW/g; SAR(10 g) = 0.387 mW/g**

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



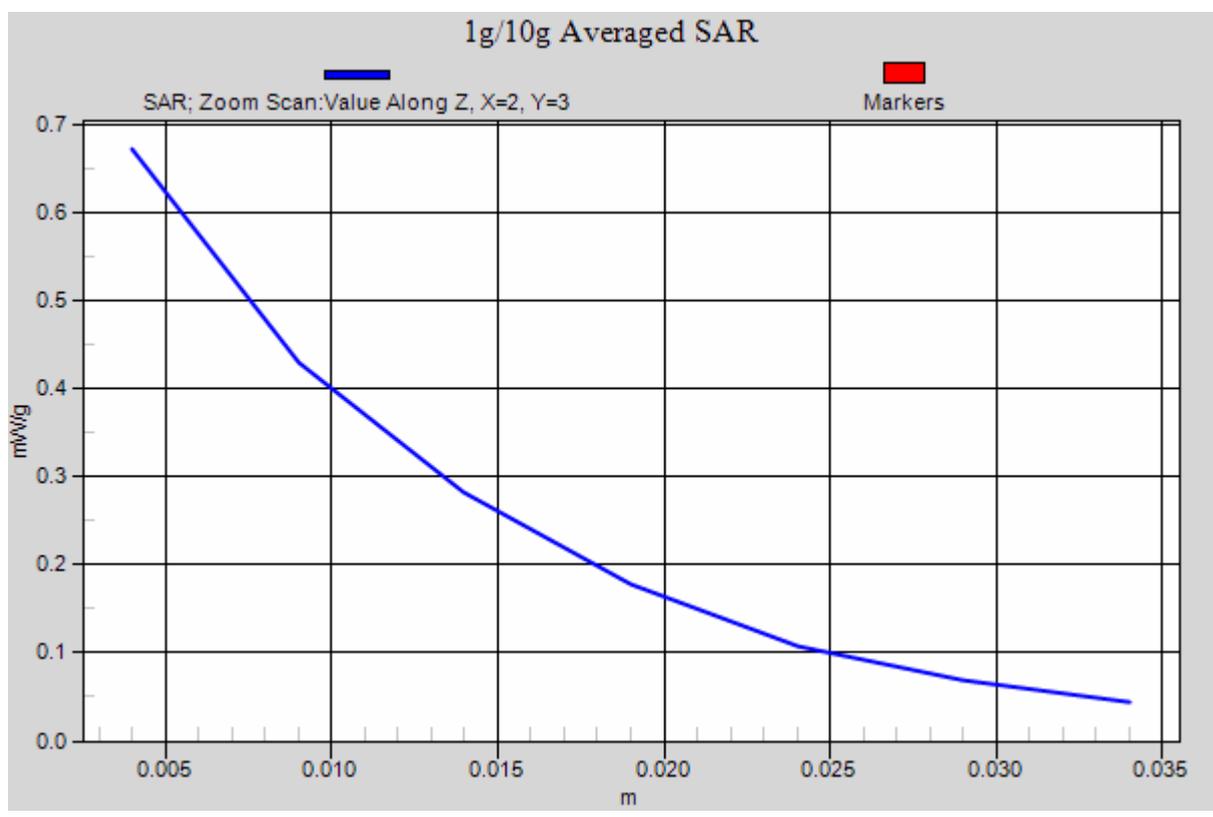


Figure 44 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 512



**GSM 1900 GPRS (2TXslots) Towards Phantom Middle**

Date/Time: 6/9/2011 5:40:29 PM  
Communication System: PCS 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4.15  
Medium parameters used: f = 1880 MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C  
Phantom section: Flat Section  
DASY5 Configuration:  
Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010  
Electronics: DAE4 Sn871; Calibrated: 11/18/2010  
Phantom: SAM2; Type: SAM; Serial: TP-1524  
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.401 mW/g

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

Reference Value = 8.99 V/m; Power Drift = 0.084 dB  
Peak SAR (extrapolated) = 0.696 W/kg  
**SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.276 mW/g**  
Maximum value of SAR (measured) = 0.470 mW/g

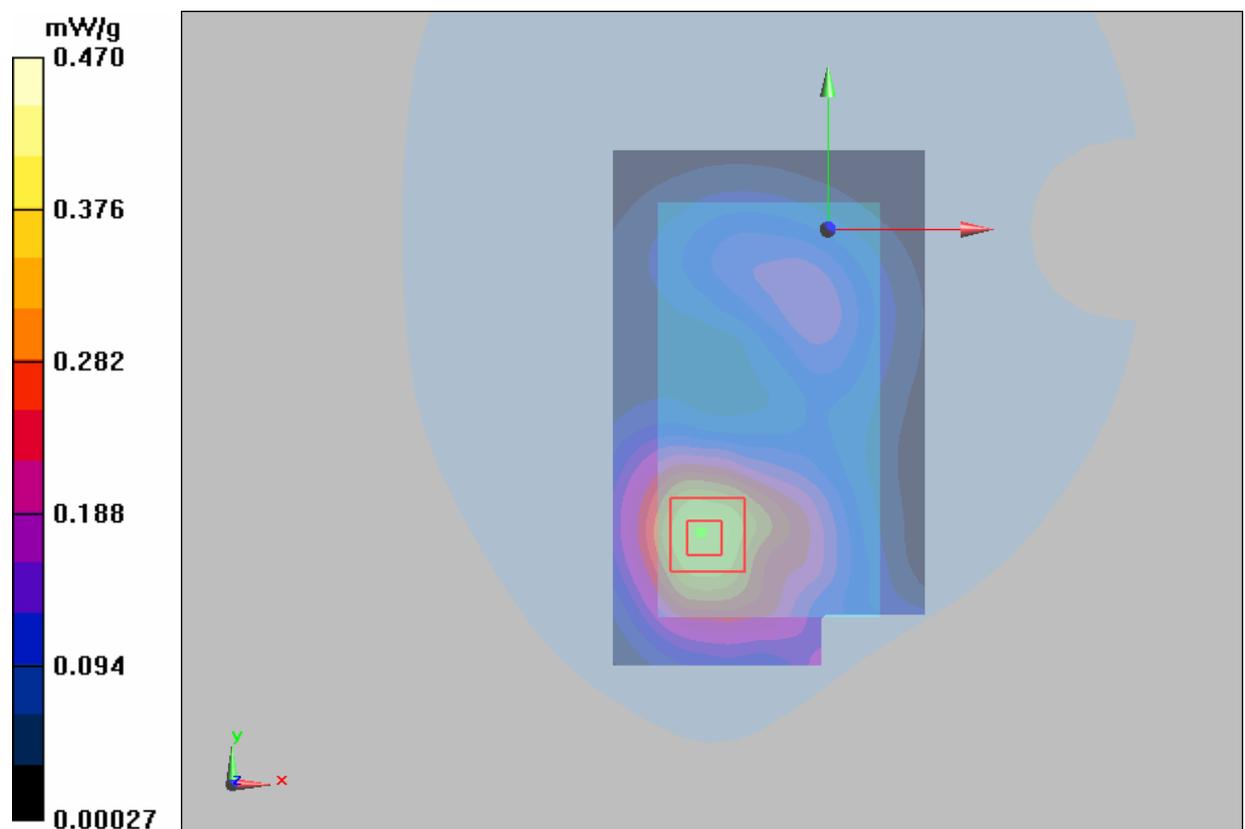


Figure 45 Body, Towards Phantom, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 with Earphone Towards Ground Low**

Date/Time: 6/9/2011 7:10:02 PM

Communication System: PCS 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 6.95 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 0.408 W/kg

**SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.159 mW/g**

Maximum value of SAR (measured) = 0.279 mW/g

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

Reference Value = 6.95 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 0.331 W/kg

**SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.117 mW/g**

Maximum value of SAR (measured) = 0.223 mW/g

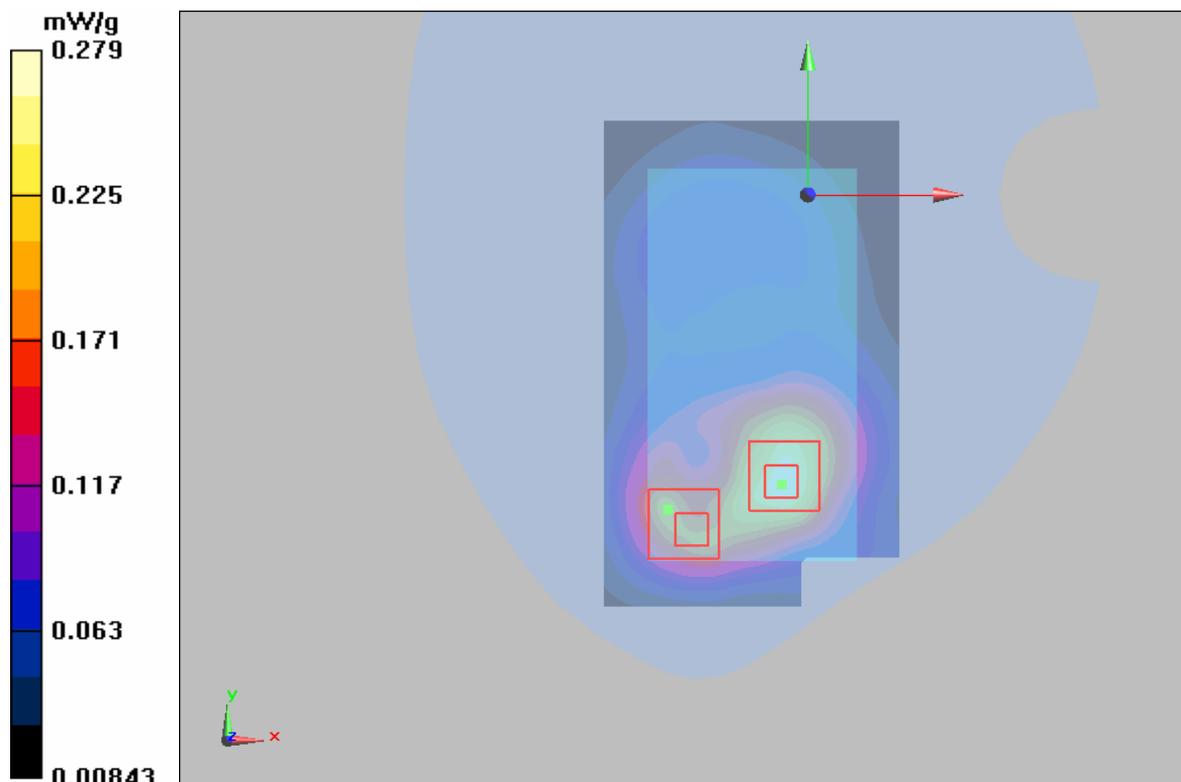


Figure 46 Body with Earphone, Towards Ground, GSM 1900 Channel 512



**GSM 1900 GPRS (2TXslots) (Hot spots) Towards Ground High**

Date/Time: 6/9/2011 11:02:43 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1909.8 MHz;Duty Cycle: 1:4.15

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.971 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.051 dB

Peak SAR (extrapolated) = 1.55 W/kg

**SAR(1 g) = 0.864 mW/g; SAR(10 g) = 0.479 mW/g**

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

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

Reference Value = 10.1 V/m; Power Drift = -0.051 dB

Peak SAR (extrapolated) = 1.46 W/kg

**SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.505 mW/g**

Maximum value of SAR (measured) = 0.928 mW/g

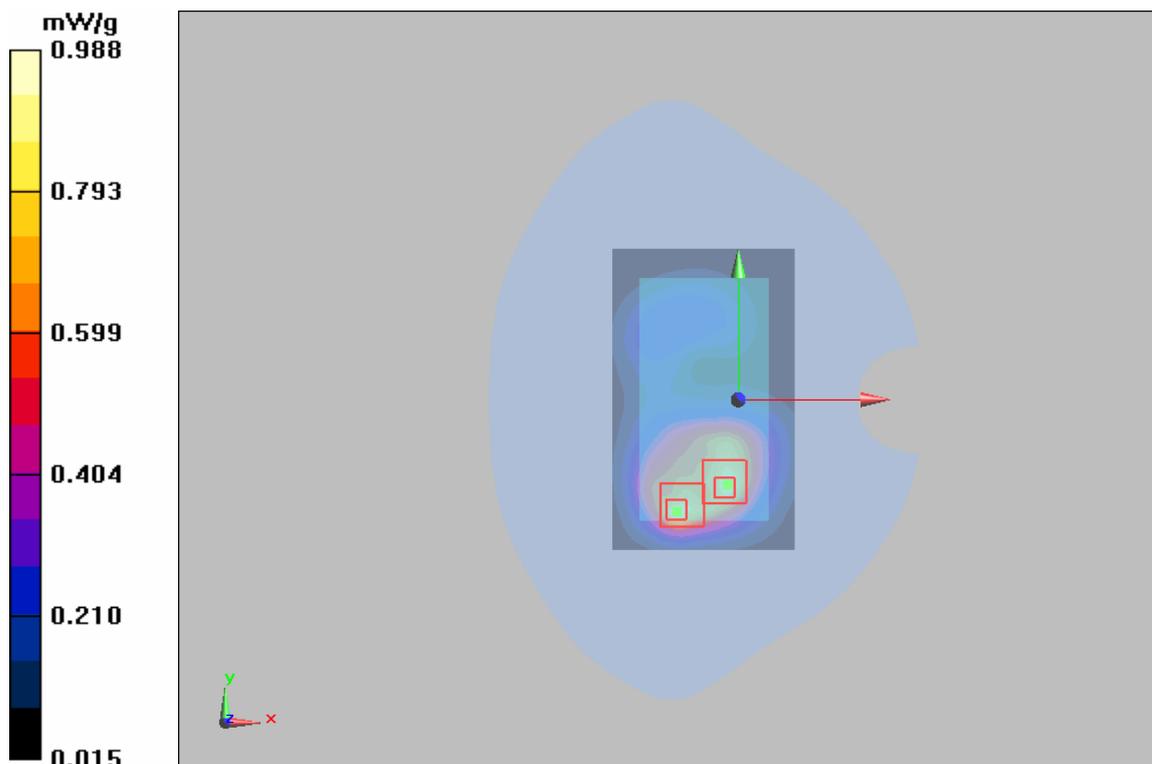


Figure 47 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 810



**GSM 1900 GPRS (2TXslots) (Hot spots) Towards Ground Middle**

Date/Time: 6/9/2011 10:38:44 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.968 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 1.38 W/kg

**SAR(1 g) = 0.871 mW/g; SAR(10 g) = 0.530 mW/g**

Maximum value of SAR (measured) = 0.943 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.092 dB

Peak SAR (extrapolated) = 1.38 W/kg

**SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.426 mW/g**

Maximum value of SAR (measured) = 0.892 mW/g

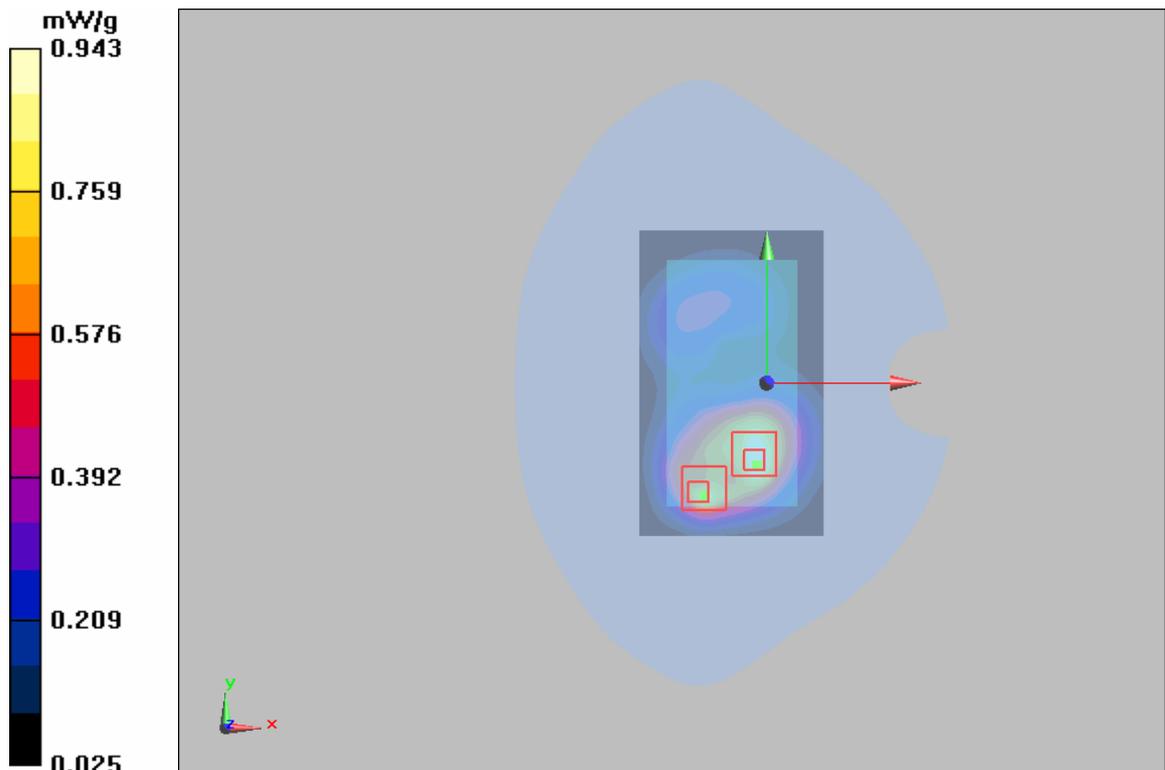


Figure 48 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 GPRS (2TXslots) (Hot spots) Towards Ground Low**

Date/Time: 6/9/2011 11:26:43 PM

Communication System: PCS 1900+GPRS(2Up); Frequency: 1850.2 MHz; Duty Cycle: 1:4.15

Medium parameters used (interpolated):  $f = 1850.2 \text{ MHz}$ ;  $\sigma = 1.5 \text{ mho/m}$ ;  $\epsilon_r = 52.1$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.18 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 1.34 W/kg

**SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.600 mW/g**

Maximum value of SAR (measured) = 1.14 mW/g

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

Reference Value = 10.9 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 1.49 W/kg

**SAR(1 g) = 0.845 mW/g; SAR(10 g) = 0.462 mW/g**

Maximum value of SAR (measured) = 0.965 mW/g

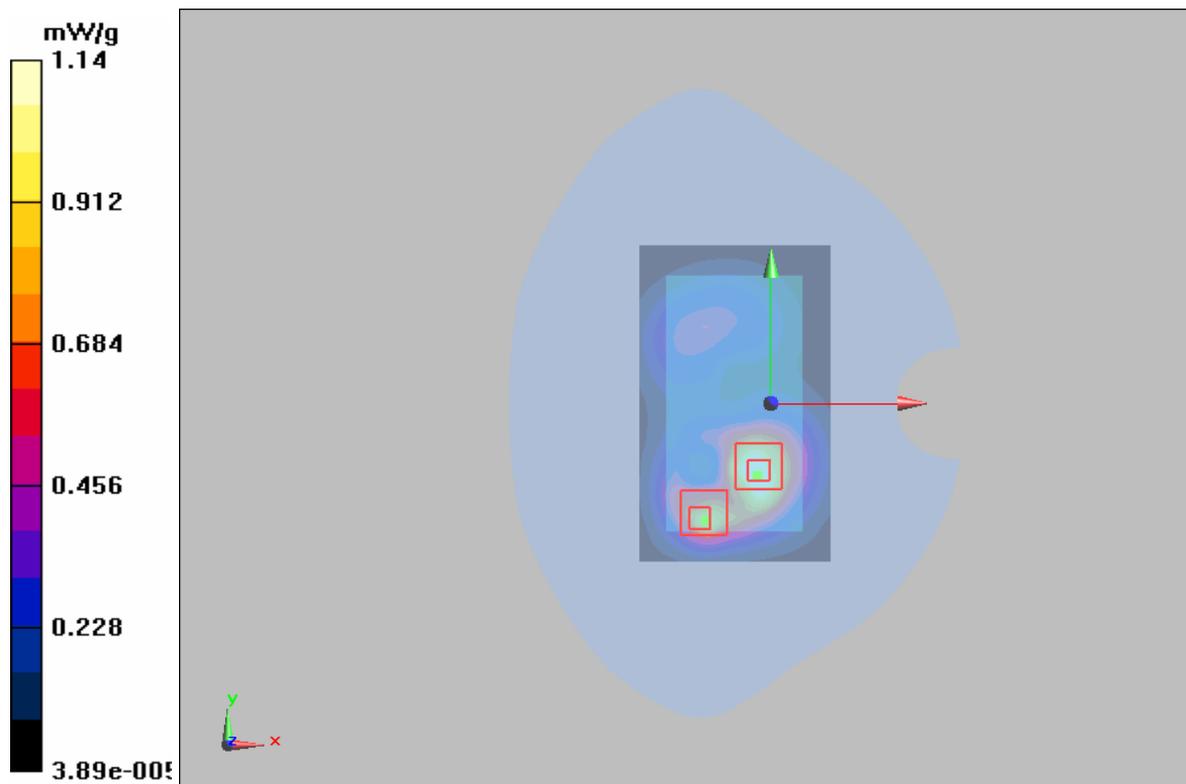


Figure 49 Body, Towards Ground, GSM 1900 GPRS (2TXslots) Channel 512



**GSM 1900 GPRS (2TXslots) (Hot spots) Towards Phantom Middle**

Date/Time: 6/10/2011 9:28:25 AM  
Communication System: PCS 1900+GPRS(2Up); Frequency: 1880 MHz;Duty Cycle: 1:4.15  
Medium parameters used: f = 1880 MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Ambient Temperature:22.3 °C      Liquid Temperature: 21.5°C  
Phantom section: Flat Section  
DASY5 Configuration:  
Probe: ES3DV3 - SN3189; ConvF(4.69, 4.69, 4.69); Calibrated: 10/11/2010  
Electronics: DAE4 Sn452; Calibrated: 10/18/2010  
Phantom: SAM2; Type: SAM; Serial: TP-1524  
Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 0.805 mW/g

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

Reference Value = 8.41 V/m; Power Drift = 0.086 dB  
Peak SAR (extrapolated) = 1.22 W/kg  
**SAR(1 g) = 0.764 mW/g; SAR(10 g) = 0.461 mW/g**  
Maximum value of SAR (measured) = 0.827 mW/g

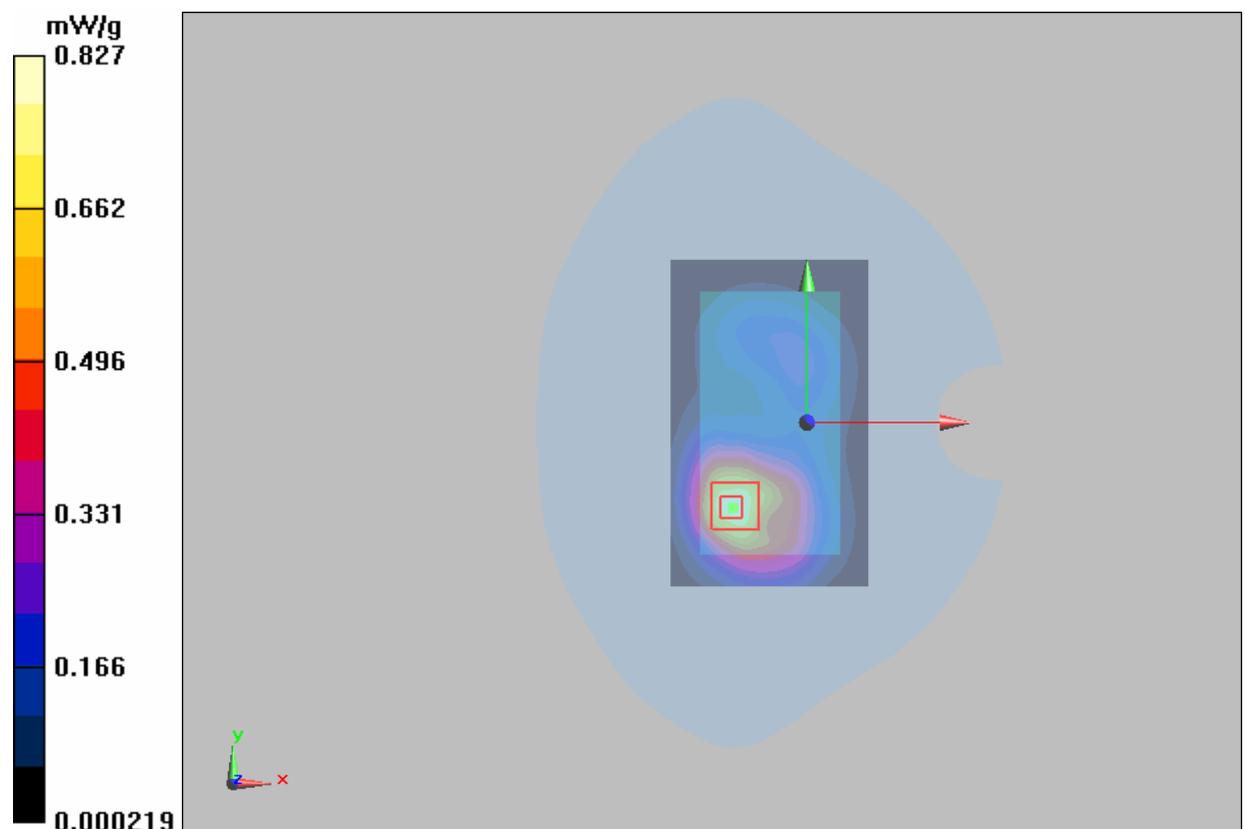


Figure 50 Body, Towards Phantom, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 GPRS (2TXslots) (Hot spots) Left Edge Middle**

Date/Time: 6/10/2011 10:15:10 AM

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

Medium parameters used: f = 1880 MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Left Edge Middle/Area Scan (41x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.210 mW/g

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

Reference Value = 9.13 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 0.290 W/kg

**SAR(1 g) = 0.183 mW/g; SAR(10 g) = 0.108 mW/g**

Maximum value of SAR (measured) = 0.202 mW/g

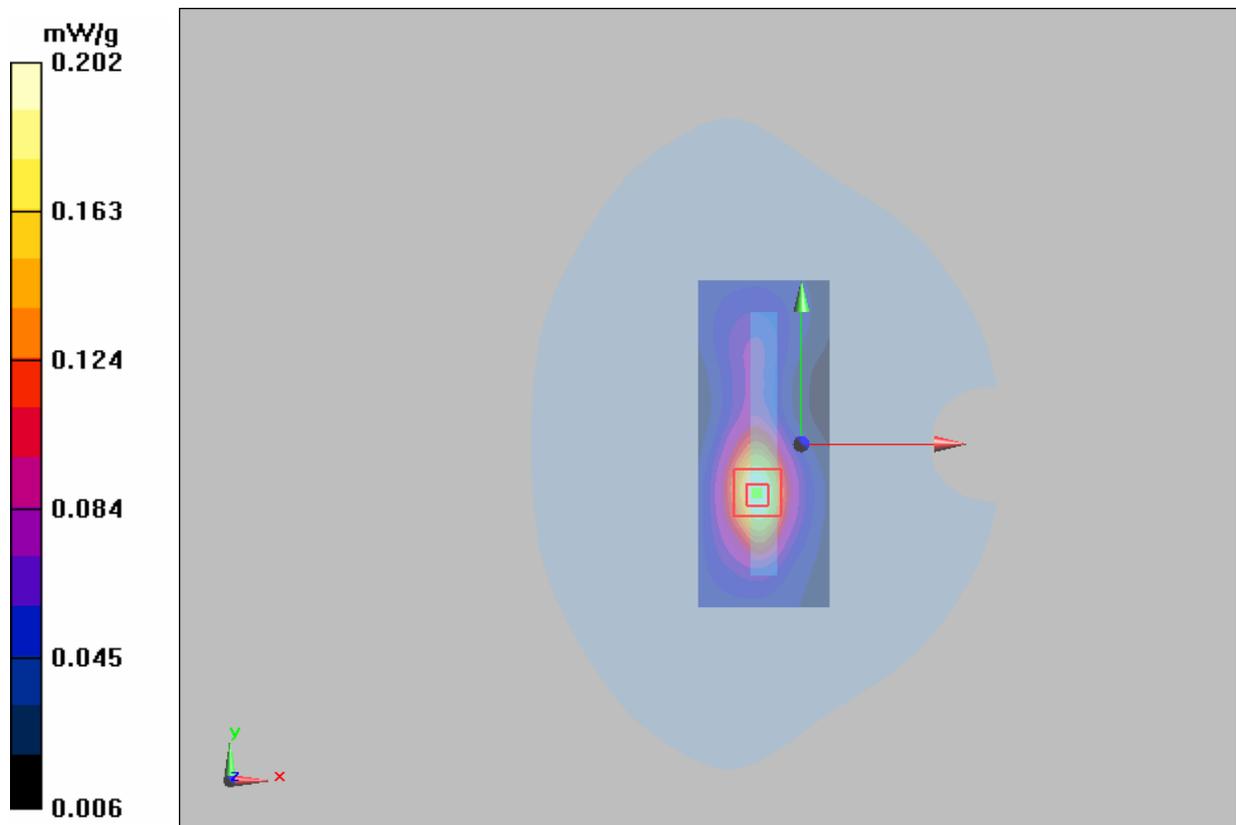


Figure 51 Body, Left Edge, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 GPRS (2TXslots) (Hot spots) Right Edge Middle**

Date/Time: 6/10/2011 9:51:46 AM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Right Edge Middle/Area Scan (41x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.256 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.518 W/kg

**SAR(1 g) = 0.240 mW/g; SAR(10 g) = 0.148 mW/g**

Maximum value of SAR (measured) = 0.258 mW/g

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

Reference Value = 10.1 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.344 W/kg

**SAR(1 g) = 0.215 mW/g; SAR(10 g) = 0.128 mW/g**

Maximum value of SAR (measured) = 0.233 mW/g

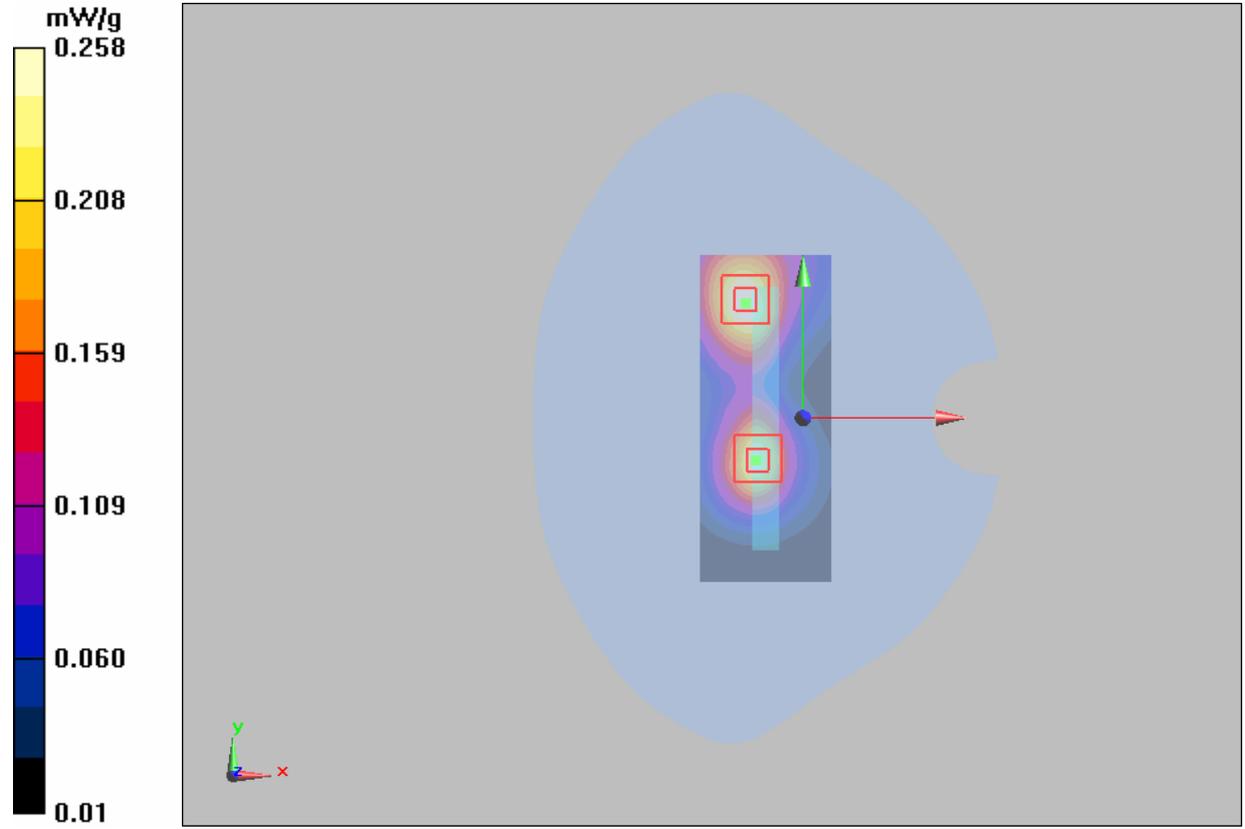


Figure 52 Body, Right Edge, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 GPRS (2TXslots) (Hot spots) Bottom Edge Middle**

Date/Time: 6/10/2011 10:43:03 AM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.650 mW/g

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

Reference Value = 19.9 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.994 W/kg

**SAR(1 g) = 0.609 mW/g; SAR(10 g) = 0.353 mW/g**

Maximum value of SAR (measured) = 0.662 mW/g

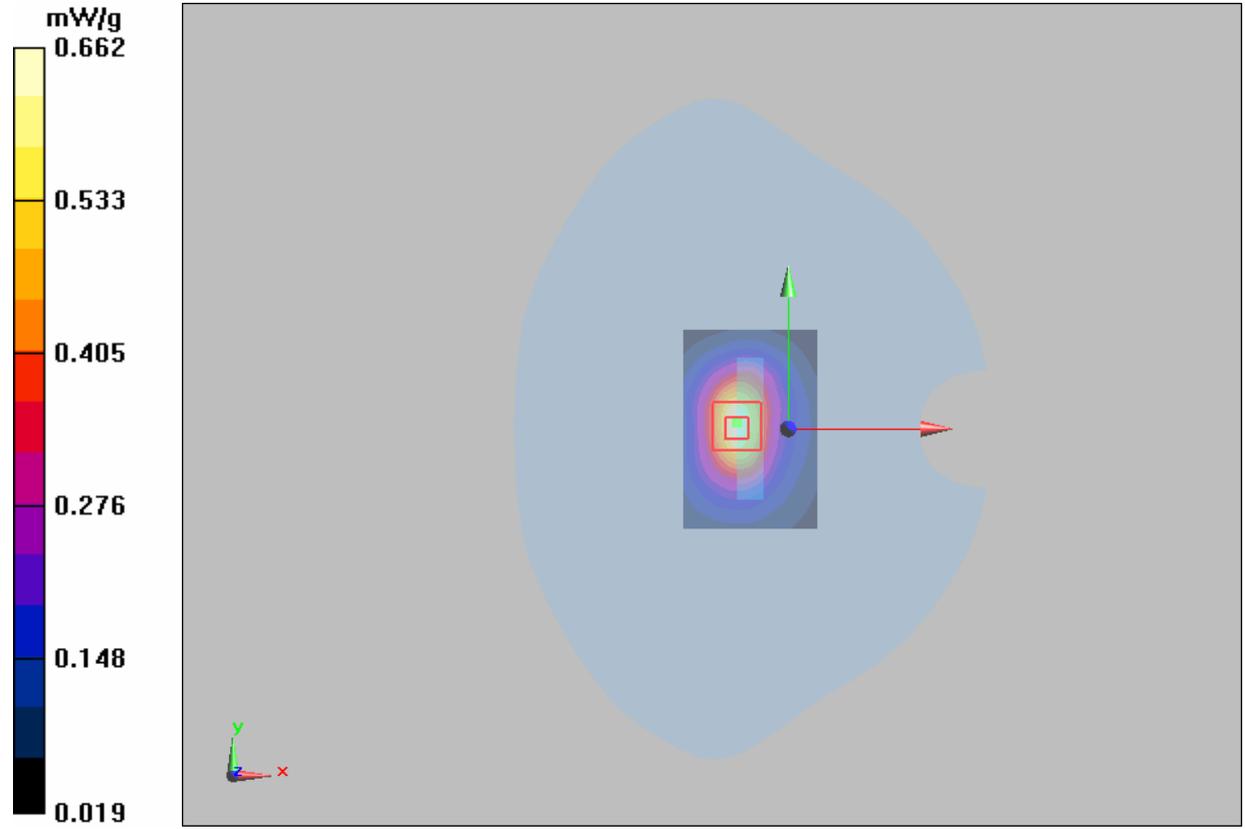


Figure 53 Body, Bottom Edge, GSM 1900 GPRS (2TXslots) Channel 661



**GSM 1900 EGPRS (2TXslots) (hot spots) Towards Ground Low**

Date/Time: 6/10/2011 11:17:42 AM

Communication System: PCS 1900+EGPRS(2Up); Frequency: 1850.2 MHz;Duty Cycle: 1:4.15

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.2 mW/g

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

Reference Value = 10.4 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 1.7 W/kg

**SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.664 mW/g**

Maximum value of SAR (measured) = 1.18 mW/g

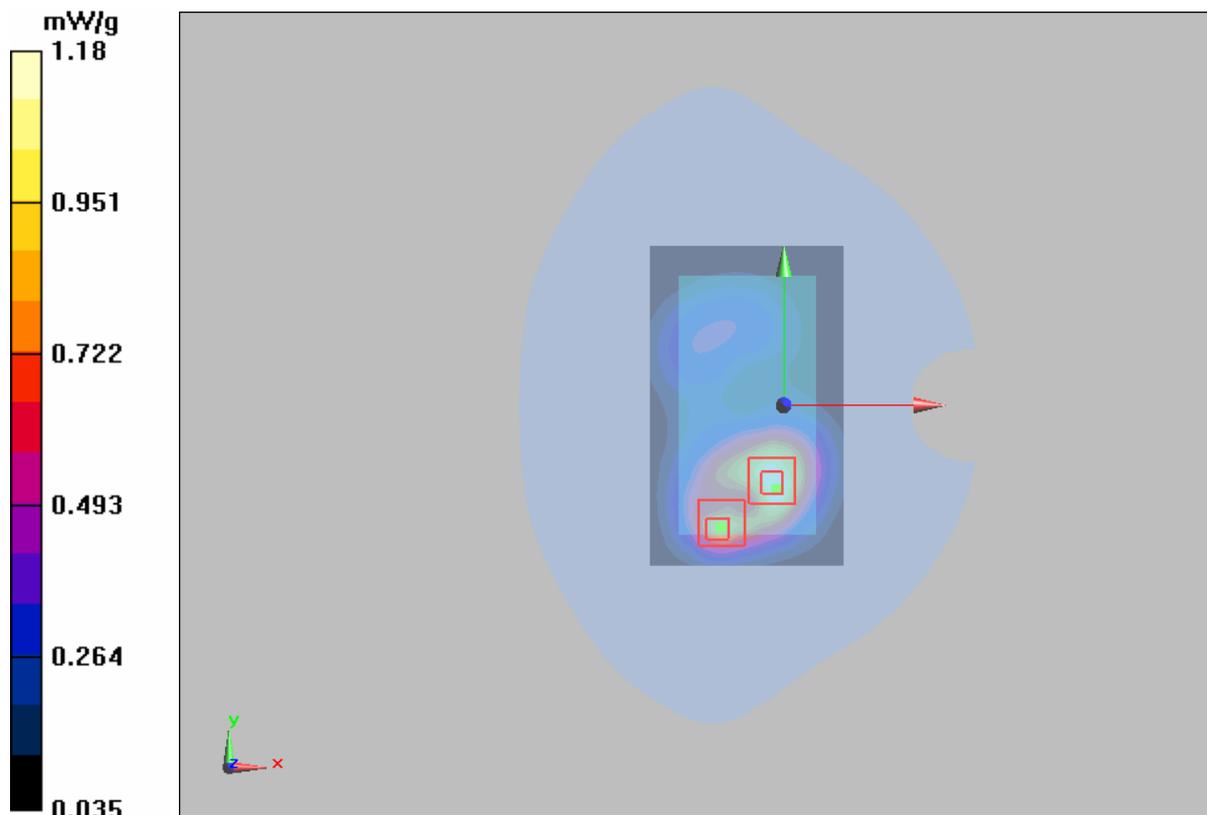
**Towards Ground Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 1.47 W/kg

**SAR(1 g) = 0.805 mW/g; SAR(10 g) = 0.454 mW/g**

Maximum value of SAR (measured) = 0.906 mW/g



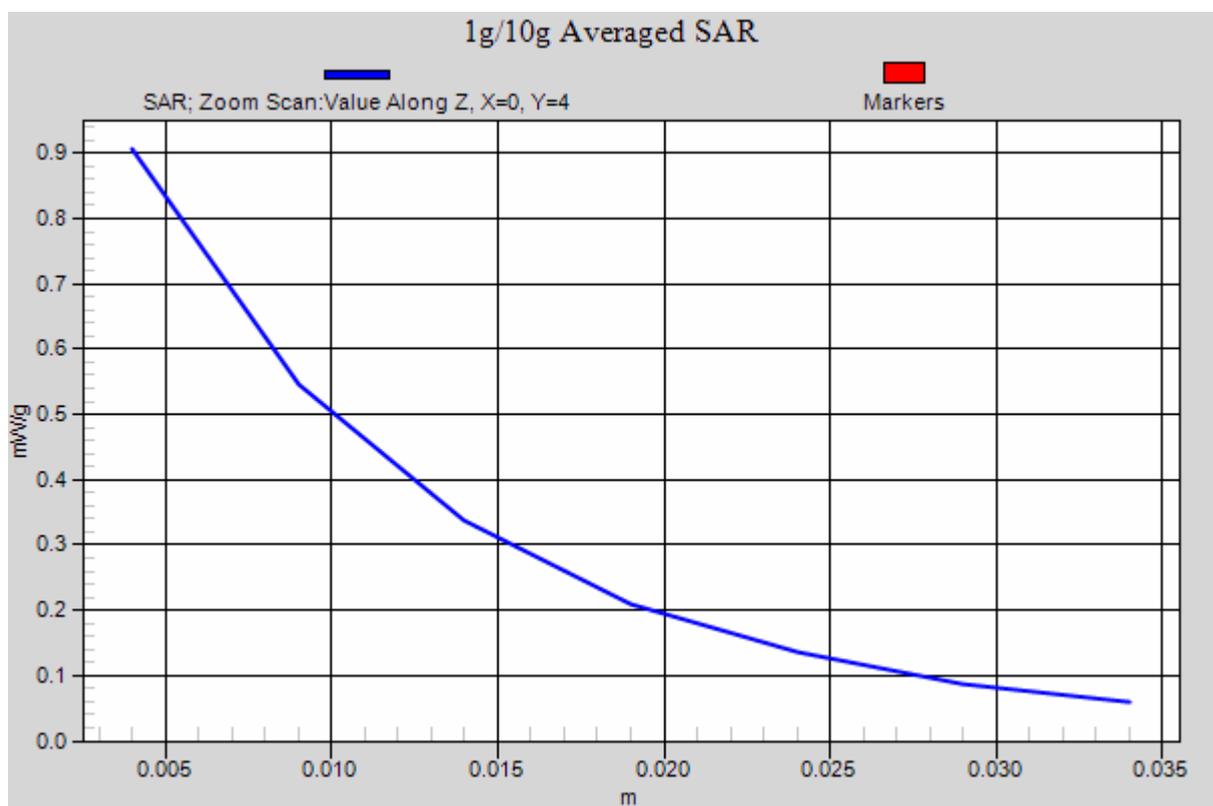
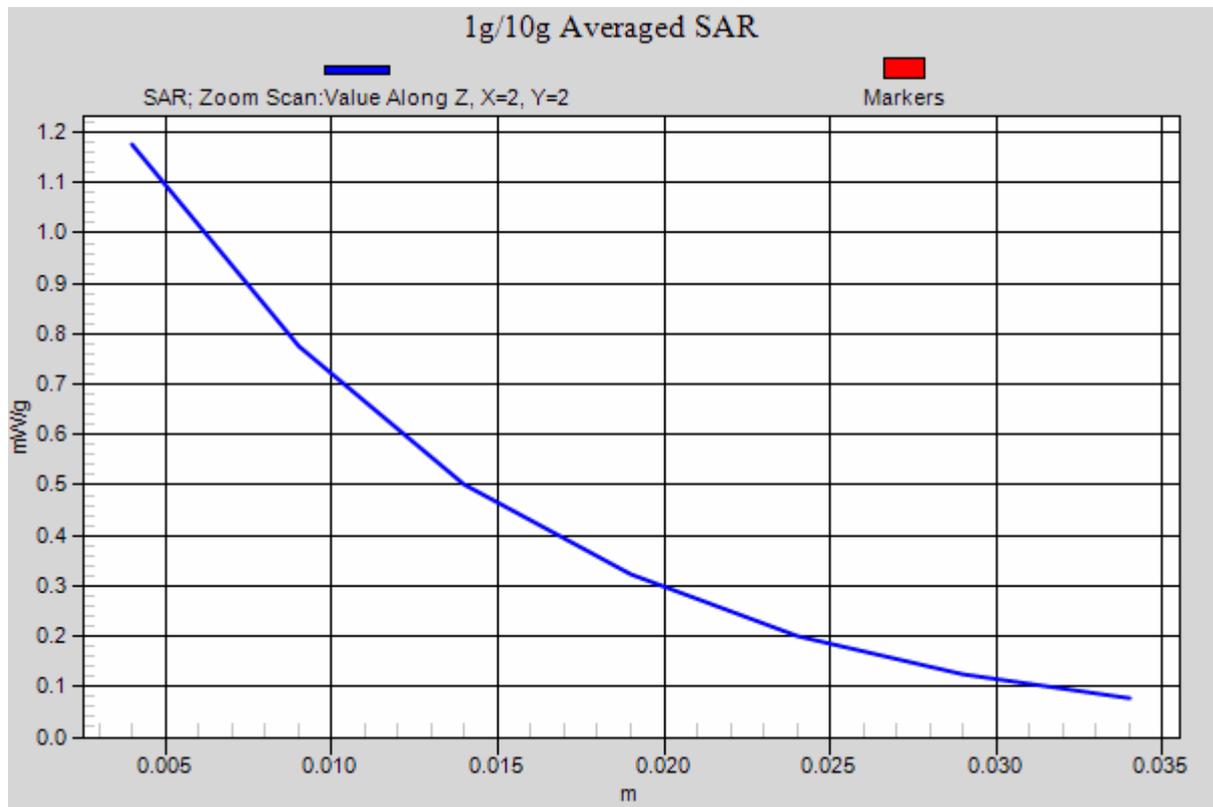


Figure 54 Body, Towards Ground, GSM 1900 EGPRS (2TXslots) Channel 512



### WCDMA Band II Left Cheek High

Date/Time: 6/3/2011 8:48:23 PM

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

Medium parameters used:  $f = 1908$  MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r = 40$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.858 mW/g

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

Reference Value = 8.78 V/m; Power Drift = 0.105 dB

Peak SAR (extrapolated) = 1.19 W/kg

**SAR(1 g) = 0.776 mW/g; SAR(10 g) = 0.460 mW/g**

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

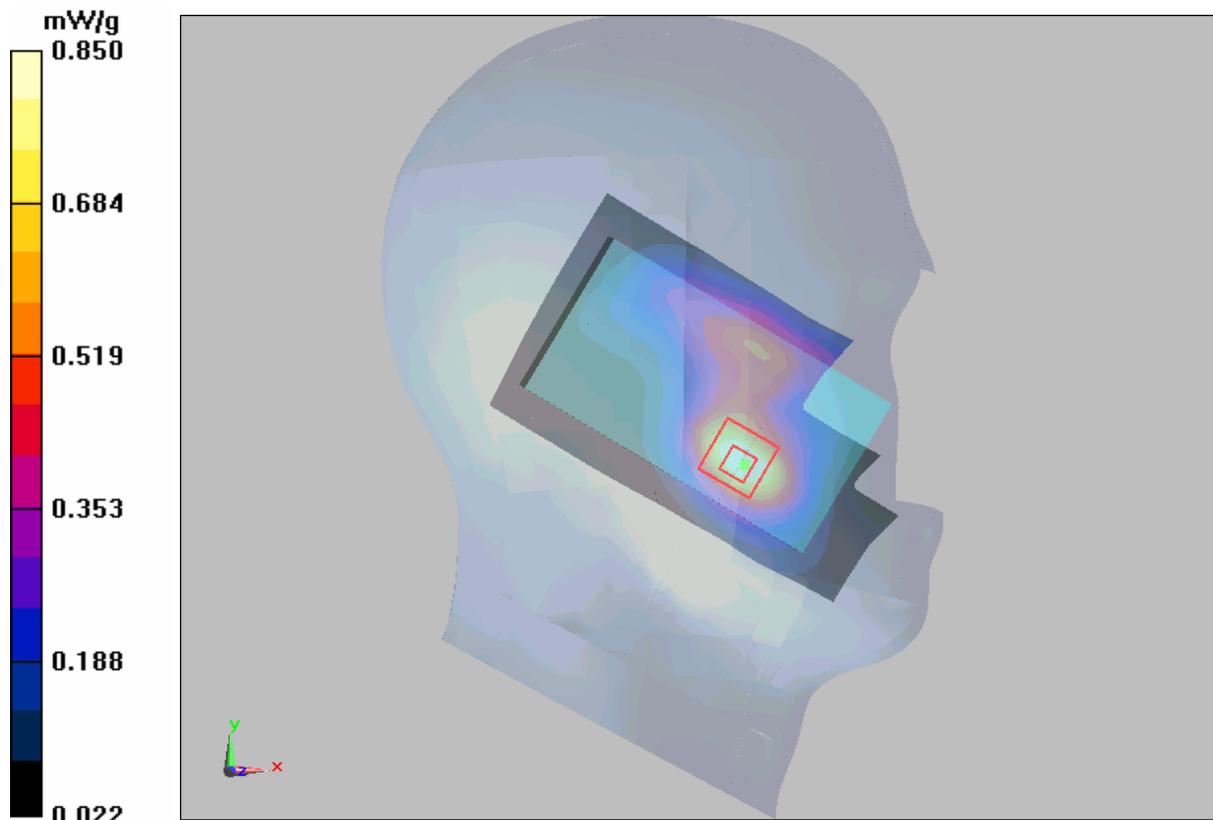


Figure 55 Left Hand Touch Cheek WCDMA Band II Channel 9538



**WCDMA Band II Left Cheek Middle**

Date/Time: 6/3/2011 8:07:42 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.871 mW/g

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

Reference Value = 8.52 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.808 mW/g; SAR(10 g) = 0.482 mW/g**

Maximum value of SAR (measured) = 0.888 mW/g

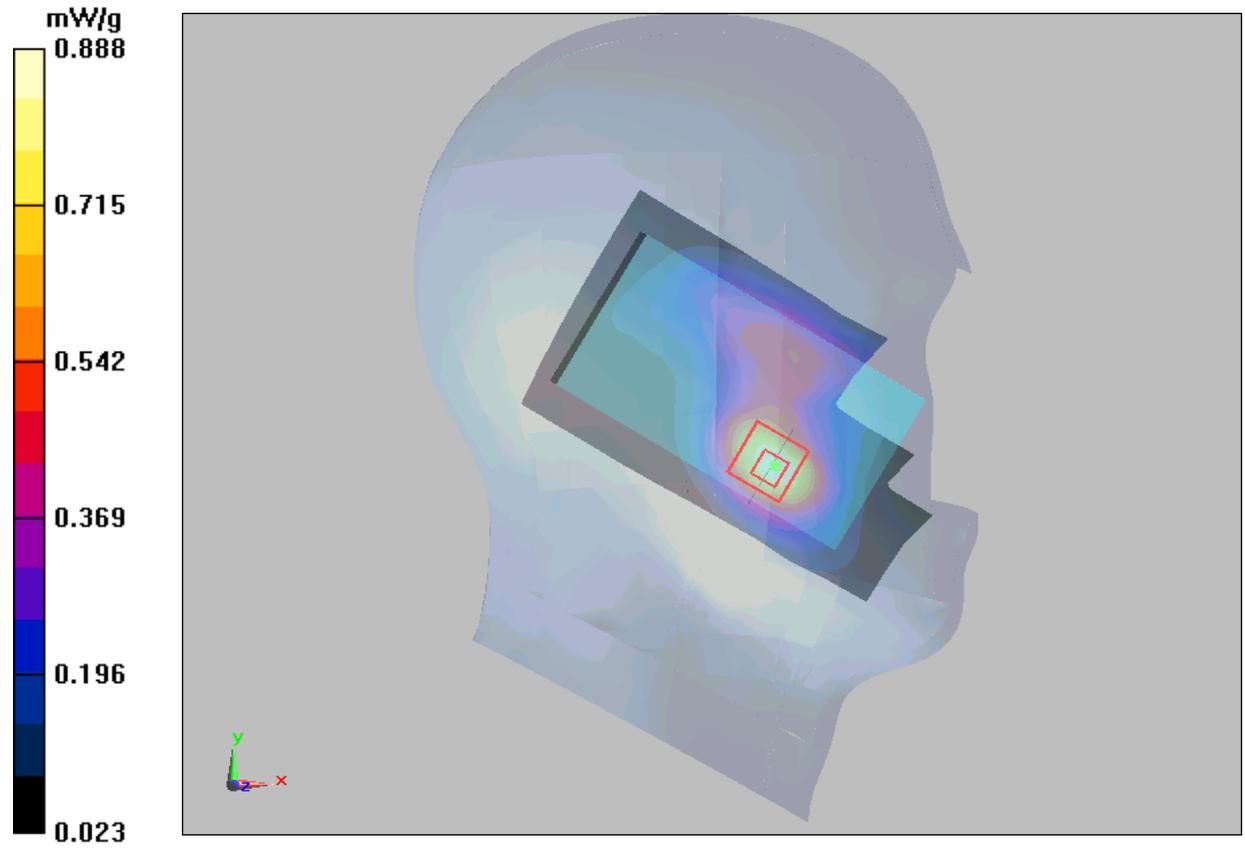


Figure 56 Left Hand Touch Cheek WCDMA Band II Channel 9400



### WCDMA Band II Left Cheek Low

Date/Time: 6/3/2011 9:05:36 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.918 mW/g

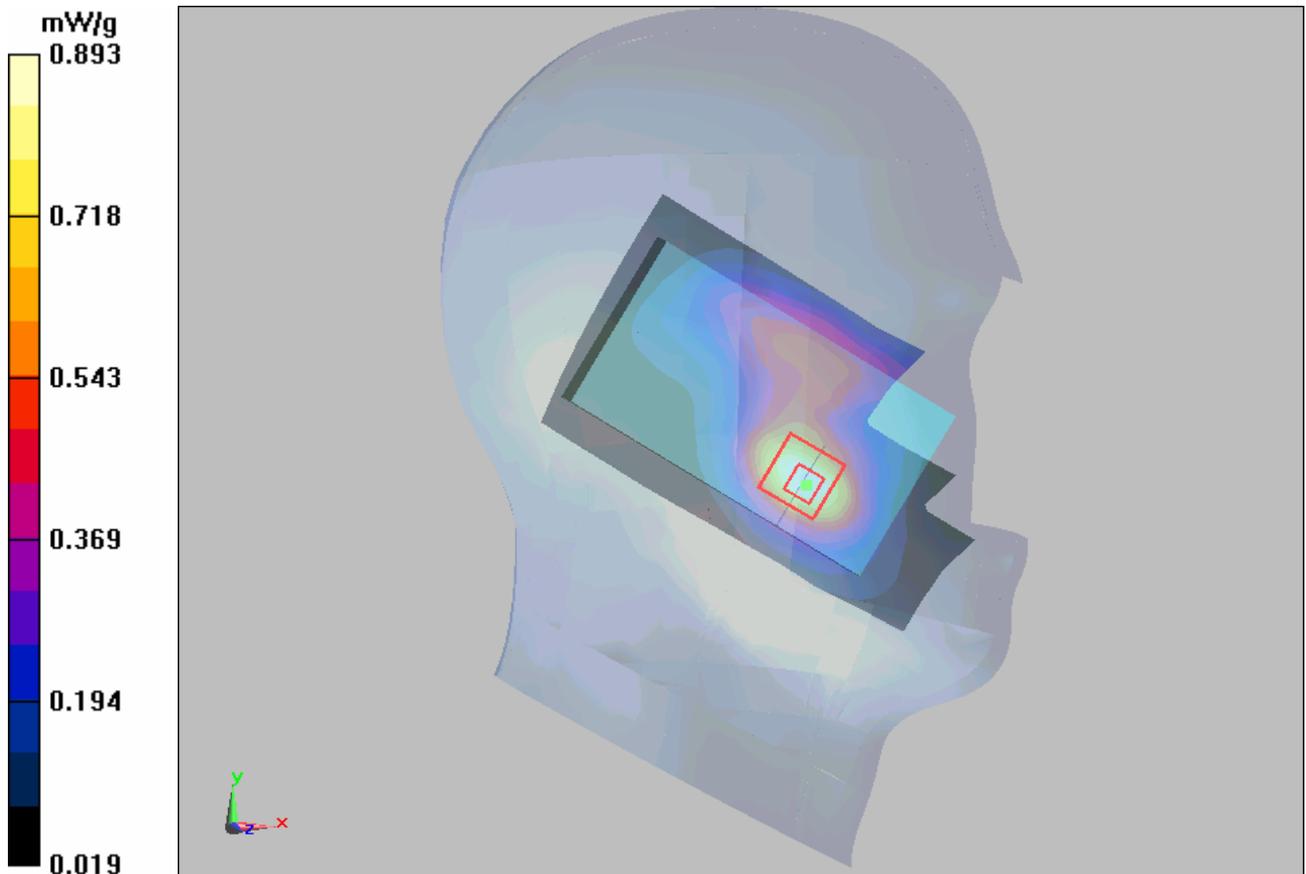
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.99 V/m; Power Drift = 0.103 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.817 mW/g; SAR(10 g) = 0.495 mW/g**

Maximum value of SAR (measured) = 0.893 mW/g



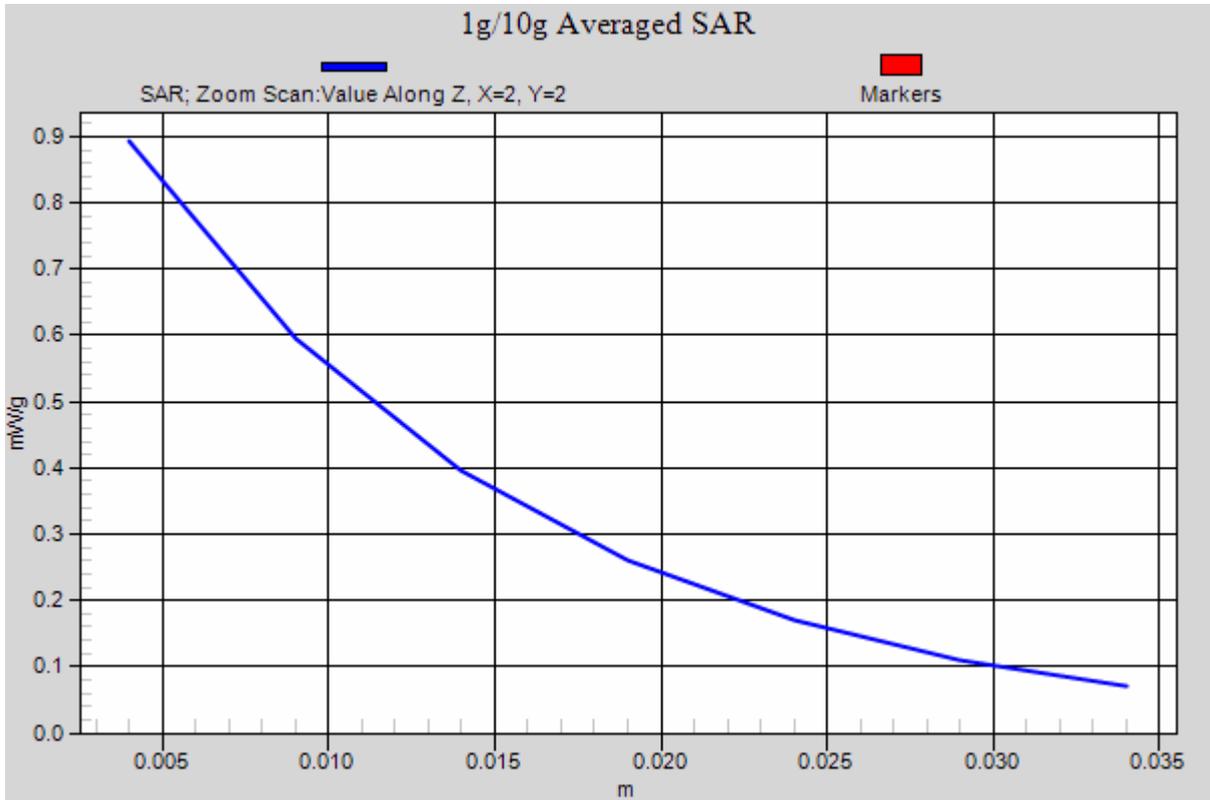


Figure 57 Left Hand Touch Cheek WCDMA Band II Channel 9262



### WCDMA Band II Left Tilt Middle

Date/Time: 6/3/2011 9:41:11 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.312 mW/g

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

Reference Value = 13.2 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 0.424 W/kg

**SAR(1 g) = 0.281 mW/g; SAR(10 g) = 0.176 mW/g**

Maximum value of SAR (measured) = 0.296 mW/g

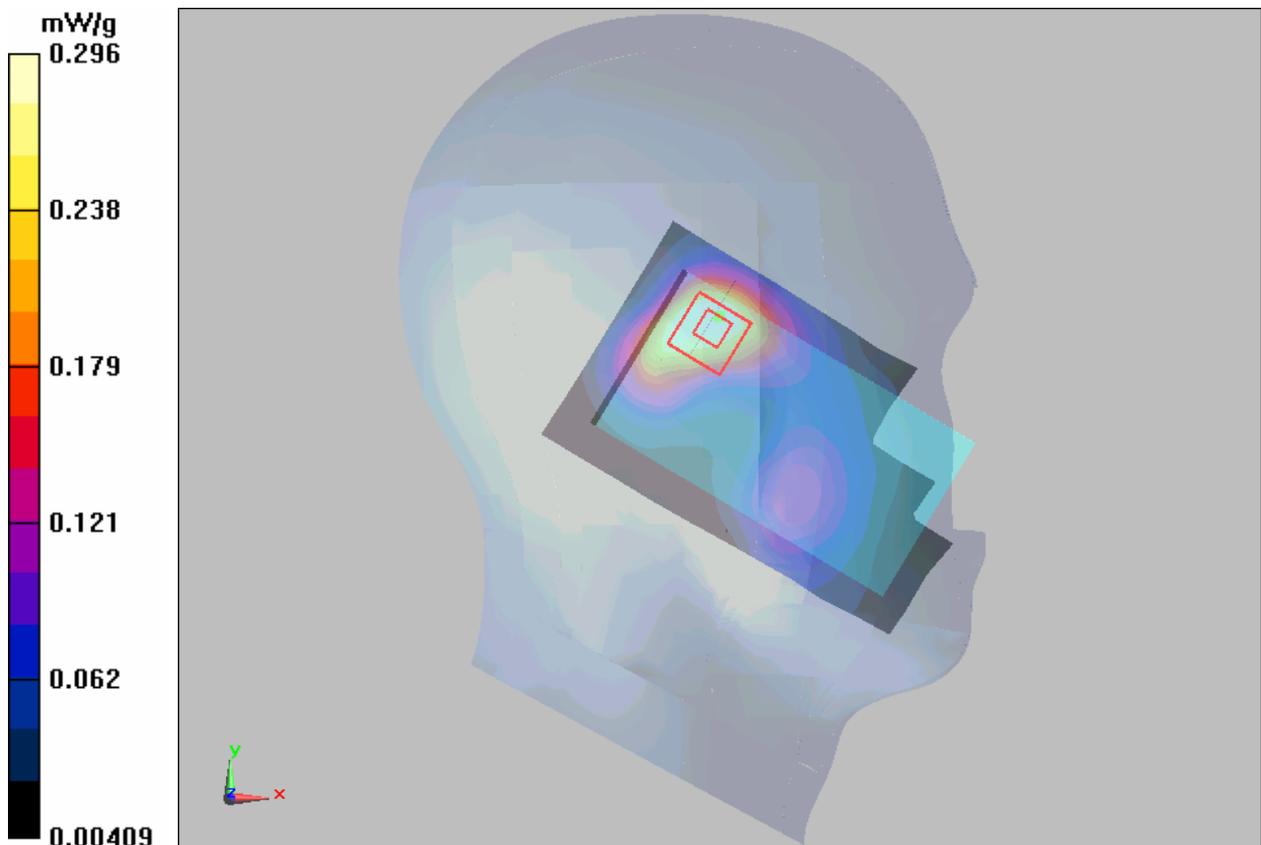


Figure 58 Left Hand Tilt 15° WCDMA Band II Channel 9400



### WCDMA Band II Right Cheek Middle

Date/Time: 6/3/2011 2:05:57 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.722 mW/g

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

Reference Value = 7.7 V/m; Power Drift = 0.136 dB

Peak SAR (extrapolated) = 0.982 W/kg

**SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.414 mW/g**

Maximum value of SAR (measured) = 0.726 mW/g

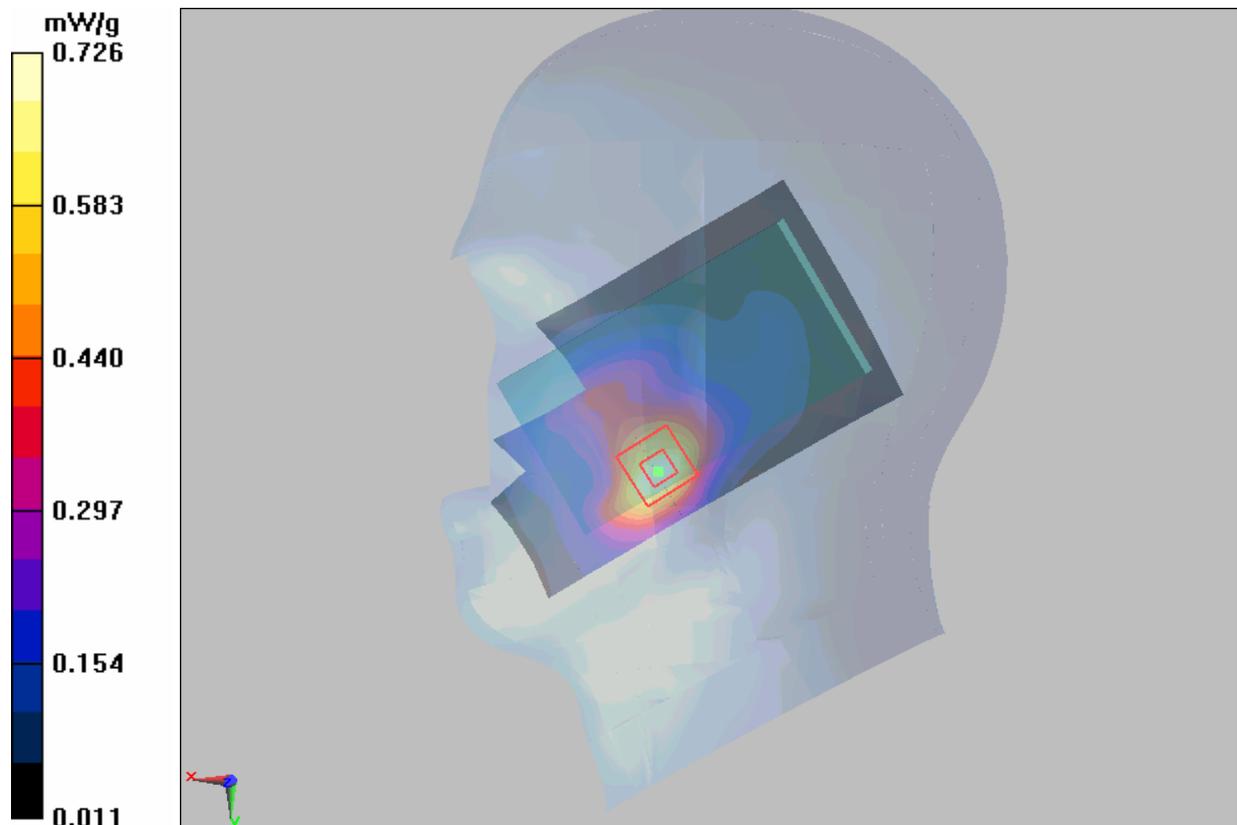


Figure 59 Right Hand Touch Cheek WCDMA Band II Channel 9400



### WCDMA Band II Right Tilt Middle

Date/Time: 6/3/2011 7:47:13 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.4$  mho/m;  $\epsilon_r = 40.1$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.94, 7.94, 7.94); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.303 mW/g

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

Reference Value = 13.2 V/m; Power Drift = 0.092 dB

Peak SAR (extrapolated) = 0.444 W/kg

**SAR(1 g) = 0.272 mW/g; SAR(10 g) = 0.154 mW/g**

Maximum value of SAR (measured) = 0.288 mW/g

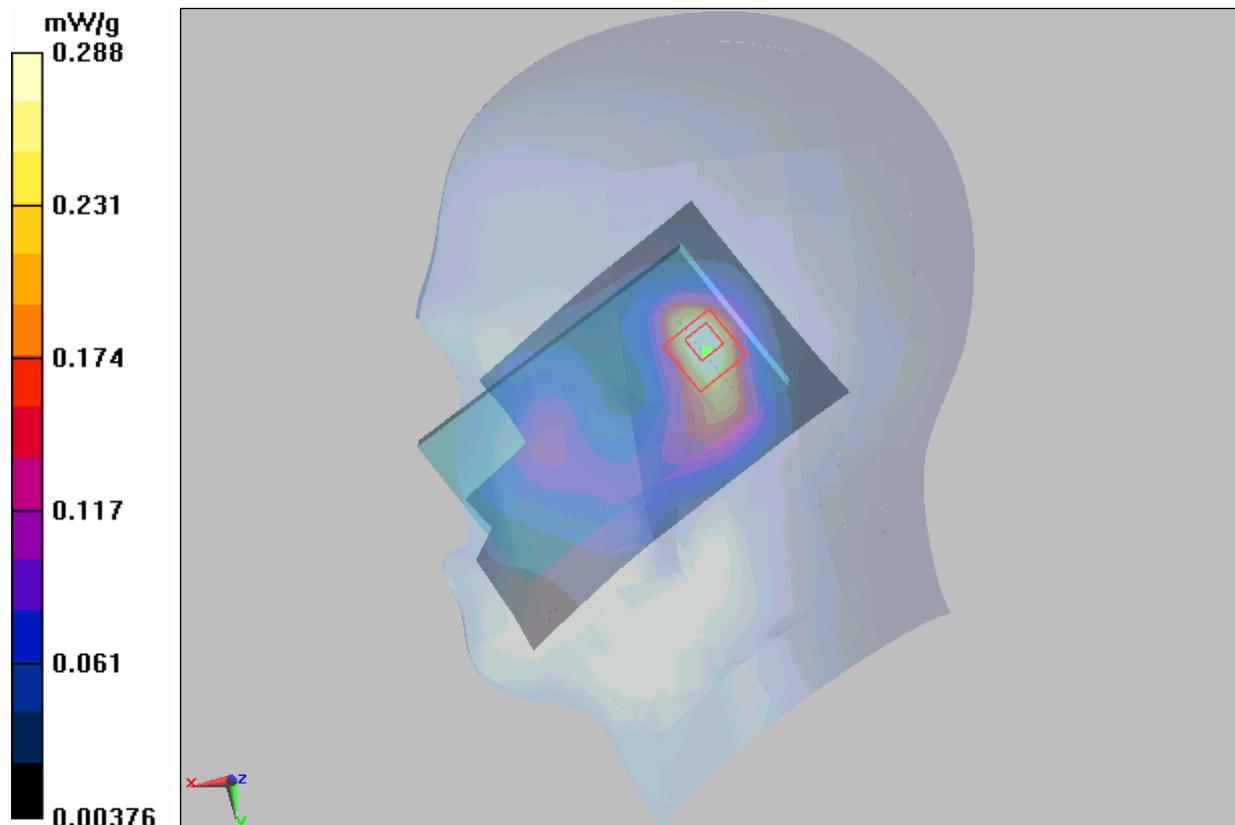


Figure 60 Right Hand Tilt 15° WCDMA Band II Channel 9400



**WCDMA Band II Towards Ground High**

Date/Time: 6/9/2011 8:40:47 PM

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

Medium parameters used:  $f = 1908$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.651 mW/g

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

Reference Value = 12.2 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.977 W/kg

**SAR(1 g) = 0.607 mW/g; SAR(10 g) = 0.370 mW/g**

Maximum value of SAR (measured) = 0.657 mW/g

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

Reference Value = 12.2 V/m; Power Drift = -0.013 dB

Peak SAR (extrapolated) = 0.983 W/kg

**SAR(1 g) = 0.586 mW/g; SAR(10 g) = 0.339 mW/g**

Maximum value of SAR (measured) = 0.644 mW/g

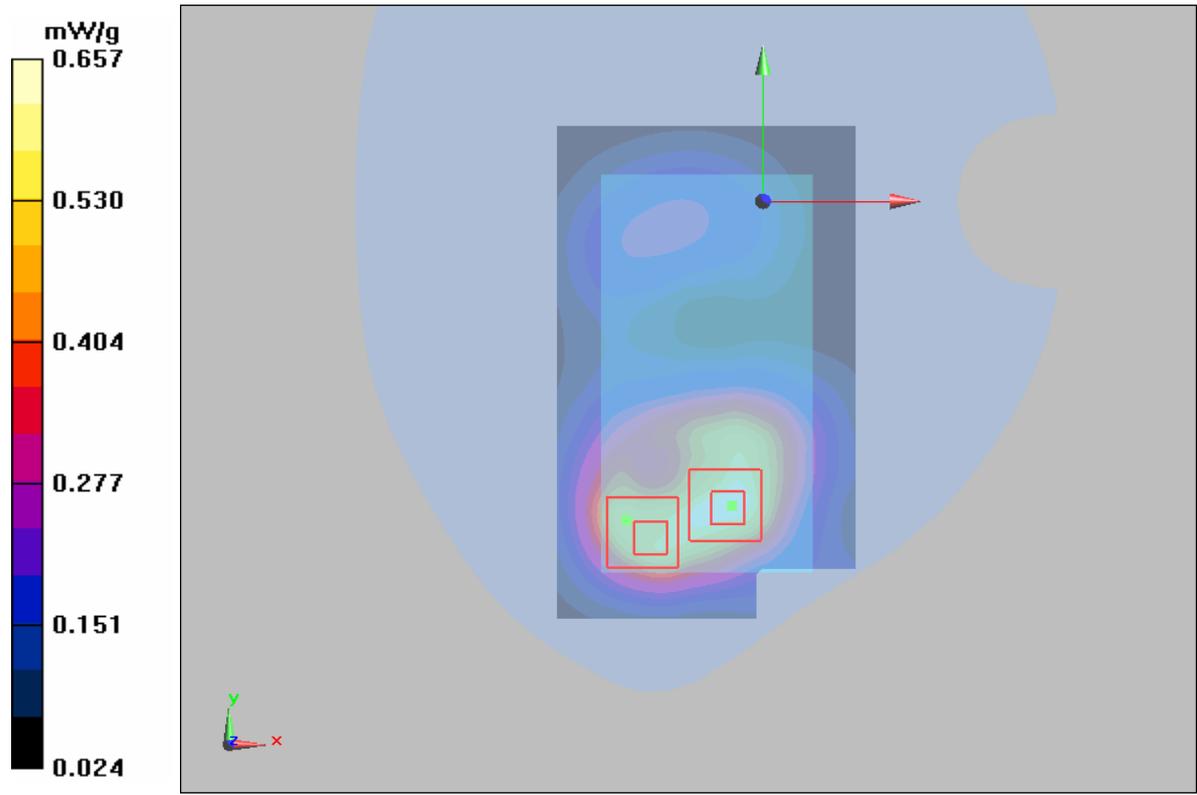


Figure 61 Body, Towards Ground, WCDMA Band II Channel 9538



**WCDMA Band II Towards Ground Middle**

Date/Time: 6/9/2011 8:09:11 PM

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

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Middle/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.637 \text{ mW/g}$

**Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $13.3 \text{ V/m}$ ; Power Drift =  $0.025 \text{ dB}$

Peak SAR (extrapolated) =  $0.941 \text{ W/kg}$

**SAR(1 g) =  $0.596 \text{ mW/g}$ ; SAR(10 g) =  $0.370 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.643 \text{ mW/g}$

**Towards Ground Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $13.3 \text{ V/m}$ ; Power Drift =  $0.025 \text{ dB}$

Peak SAR (extrapolated) =  $0.843 \text{ W/kg}$

**SAR(1 g) =  $0.507 \text{ mW/g}$ ; SAR(10 g) =  $0.293 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.558 \text{ mW/g}$

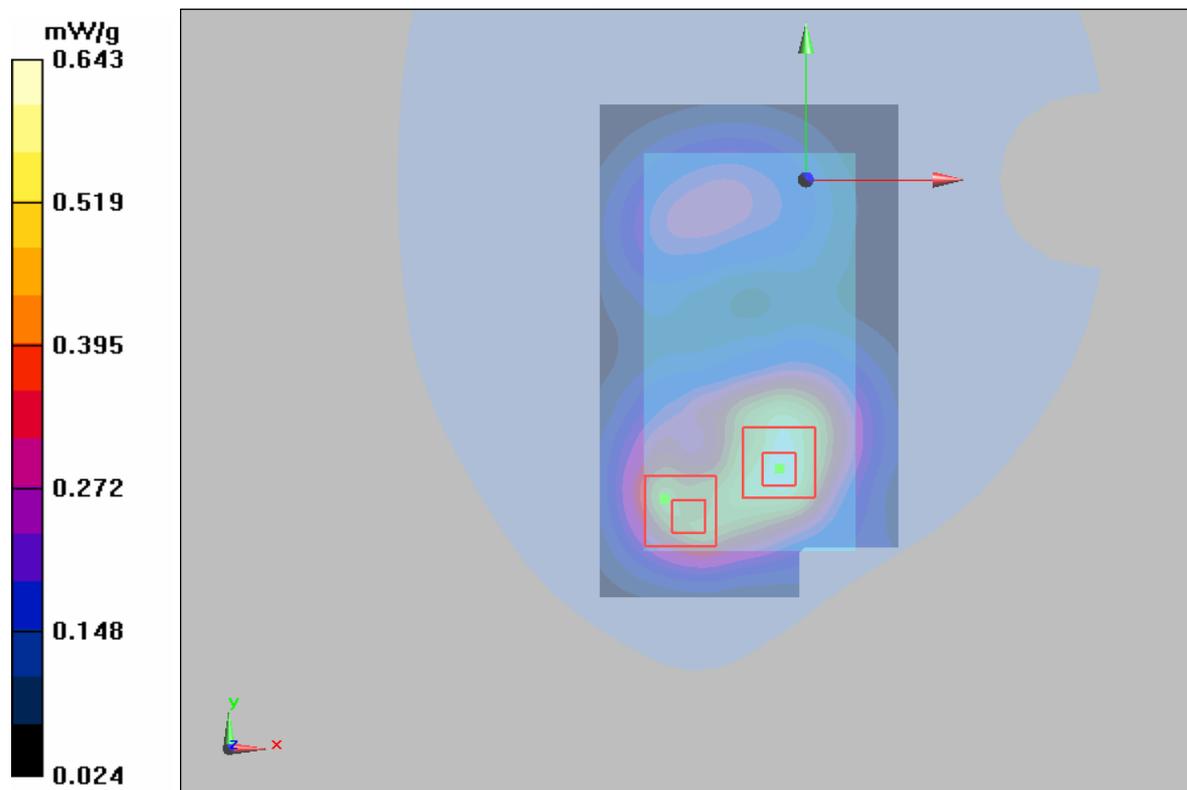


Figure 62 Body, Towards Ground, WCDMA Band II Channel 9400



**WCDMA Band II Towards Ground Low**

Date/Time: 6/9/2011 9:33:57 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.757 mW/g

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

Reference Value = 14.4 V/m; Power Drift = 0.166 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.694 mW/g; SAR(10 g) = 0.430 mW/g**

Maximum value of SAR (measured) = 0.753 mW/g

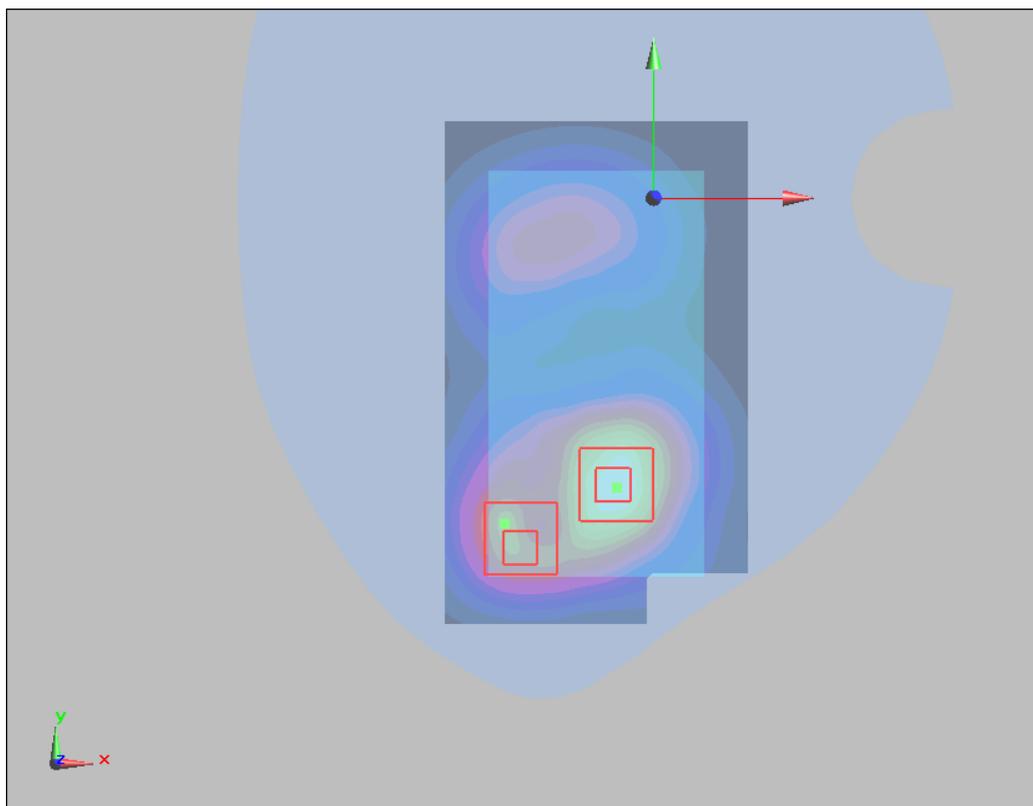
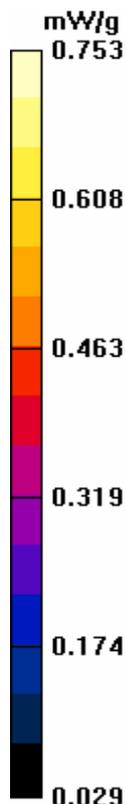
**Towards Ground Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = 0.166 dB

Peak SAR (extrapolated) = 0.803 W/kg

**SAR(1 g) = 0.497 mW/g; SAR(10 g) = 0.303 mW/g**

Maximum value of SAR (measured) = 0.544 mW/g



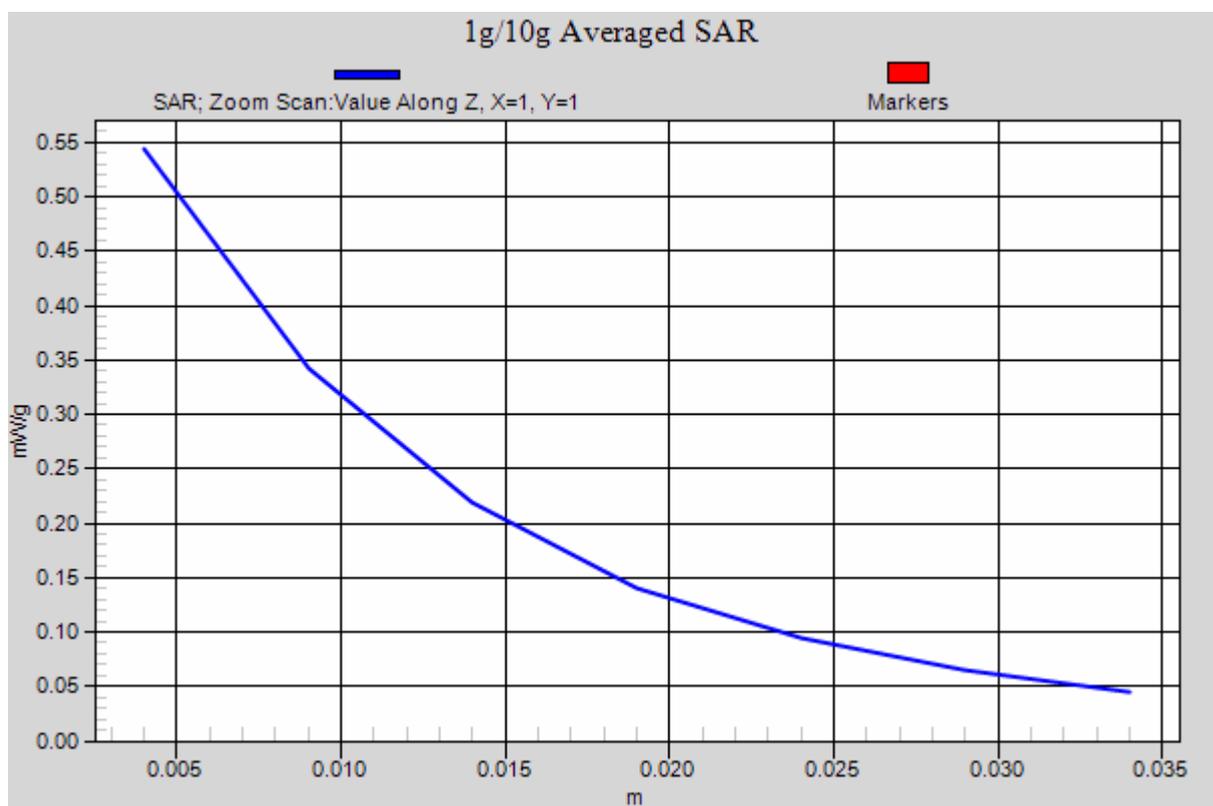
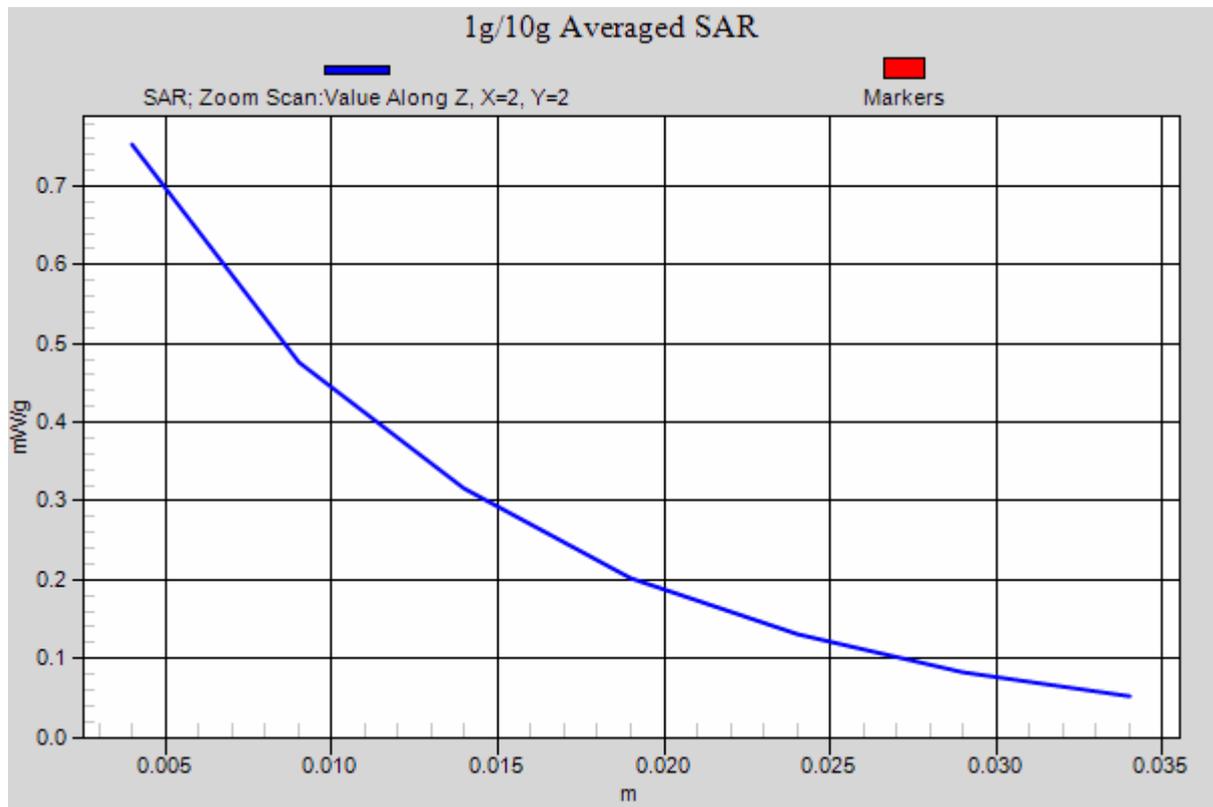


Figure 63 Body, Towards Ground, WCDMA Band II Channel 9262



### WCDMA Band II Towards Phantom Middle

Date/Time: 6/9/2011 8:28:23 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

dz=5mm

Reference Value = 10.6 V/m; Power Drift = 0.078 dB

Peak SAR (extrapolated) = 0.804 W/kg

**SAR(1 g) = 0.512 mW/g; SAR(10 g) = 0.319 mW/g**

Maximum value of SAR (measured) = 0.545 mW/g

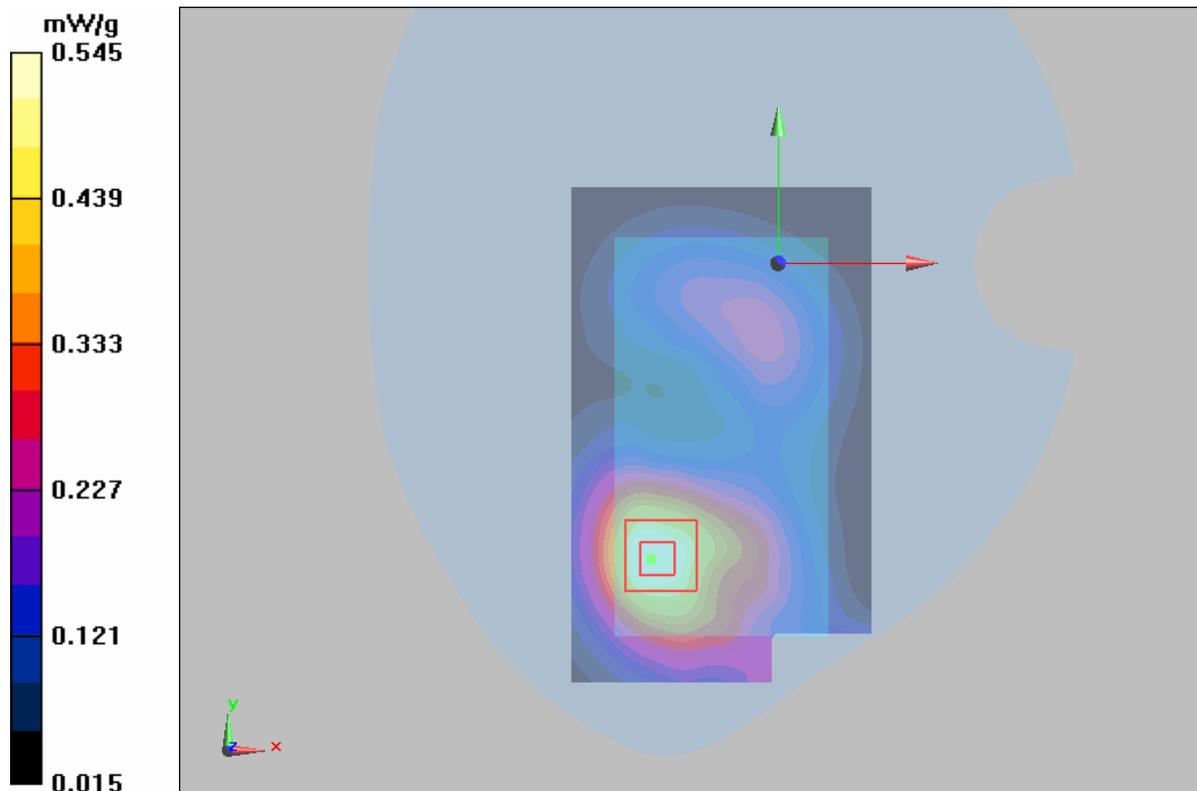


Figure 64 Body, Towards Phantom, WCDMA Band II Channel 9400



**WCDMA Band II with Earphone Towards Ground Low**

Date/Time: 6/9/2011 10:00:06 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.655 mW/g

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

Reference Value = 9.85 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 0.931 W/kg

**SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.364 mW/g**

Maximum value of SAR (measured) = 0.638 mW/g

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

Reference Value = 9.85 V/m; Power Drift = 0.041 dB

Peak SAR (extrapolated) = 0.731 W/kg

**SAR(1 g) = 0.453 mW/g; SAR(10 g) = 0.273 mW/g**

Maximum value of SAR (measured) = 0.502 mW/g

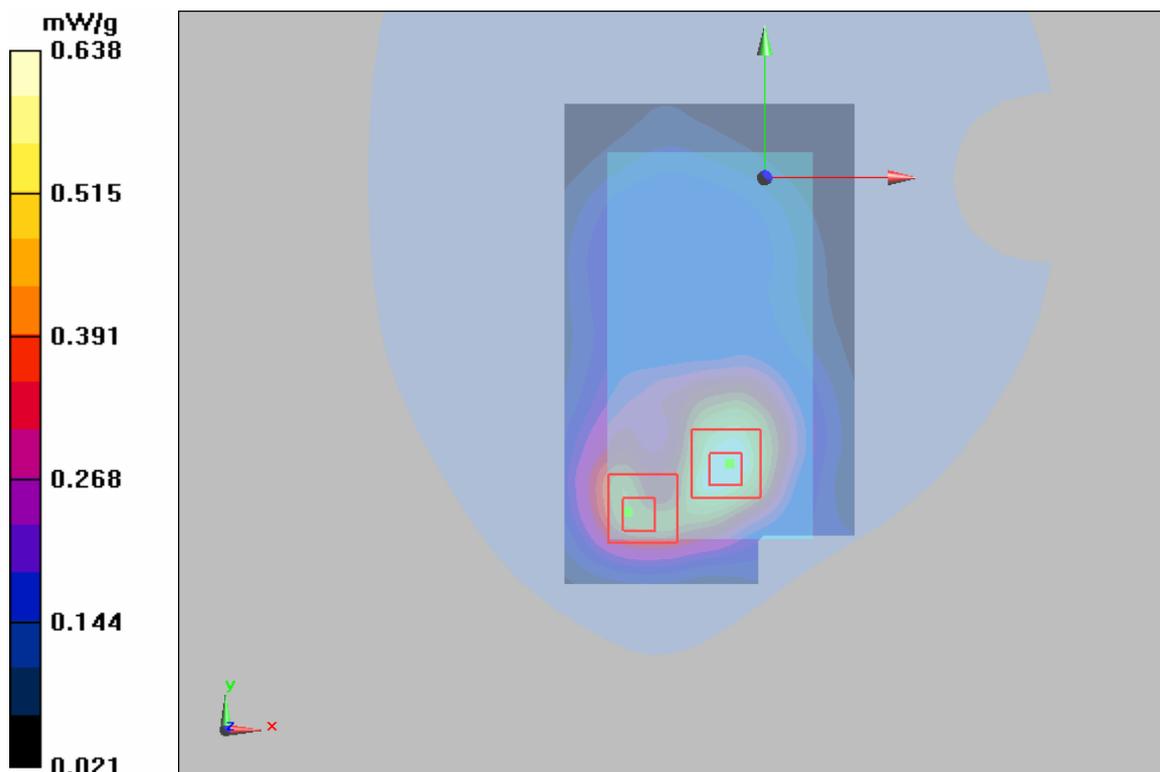


Figure 65 Body with Earphone, Towards Ground, WCDMA Band II Channel 9262



**WCDMA Band II (Hot spots) Towards Ground High**

Date/Time: 6/10/2011 12:11:15 PM

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

Medium parameters used:  $f = 1908 \text{ MHz}$ ;  $\sigma = 1.56 \text{ mho/m}$ ;  $\epsilon_r = 51.8$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $1.23 \text{ mW/g}$

**Towards Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $9.78 \text{ V/m}$ ; Power Drift =  $0.049 \text{ dB}$

Peak SAR (extrapolated) =  $1.76 \text{ W/kg}$

**SAR(1 g) =  $1.03 \text{ mW/g}$ ; SAR(10 g) =  $0.589 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.14 \text{ mW/g}$

**Towards Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $9.78 \text{ V/m}$ ; Power Drift =  $0.049 \text{ dB}$

Peak SAR (extrapolated) =  $1.77 \text{ W/kg}$

**SAR(1 g) =  $1.08 \text{ mW/g}$ ; SAR(10 g) =  $0.646 \text{ mW/g}$**

Maximum value of SAR (measured) =  $1.16 \text{ mW/g}$

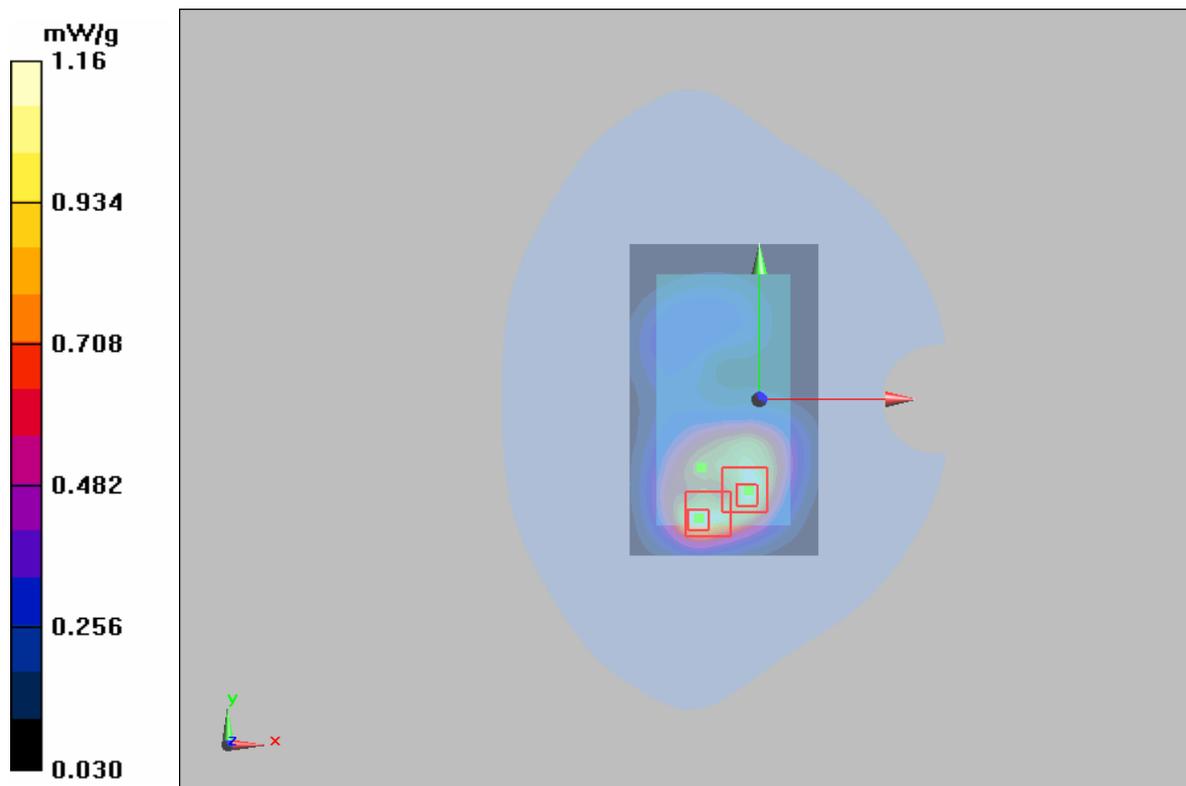


Figure 66 Body, Towards Ground, WCDMA Band II Channel 9538



**WCDMA Band II (Hot spots) Towards Ground Middle**

Date/Time: 6/10/2011 11:44:23 AM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 1.16 mW/g

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

Reference Value = 10 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 1.66 W/kg

**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.639 mW/g**

Maximum value of SAR (measured) = 1.13 mW/g

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

Reference Value = 10 V/m; Power Drift = 0.062 dB

Peak SAR (extrapolated) = 1.47 W/kg

**SAR(1 g) = 0.858 mW/g; SAR(10 g) = 0.489 mW/g**

Maximum value of SAR (measured) = 0.951 mW/g

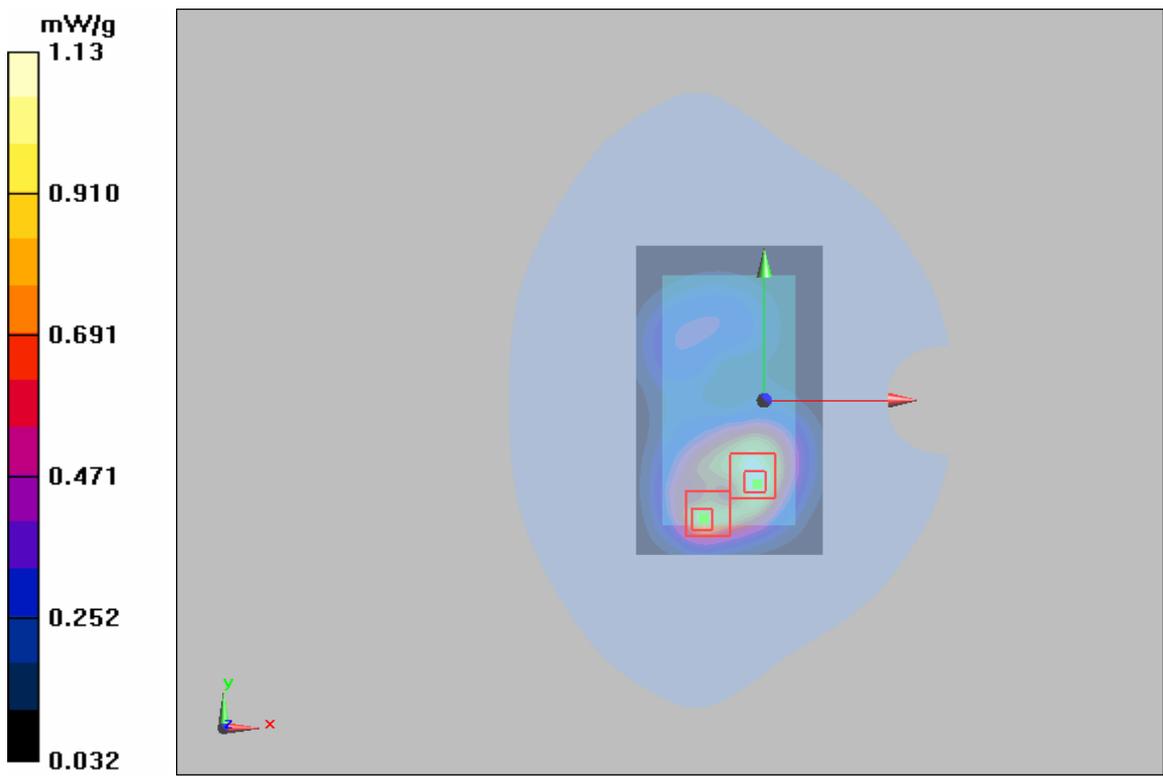


Figure 67 Body, Towards Ground, WCDMA Band II Channel 9400



### WCDMA Band II (Hot spots) Towards Ground Low

Date/Time: 6/10/2011 12:54:33 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

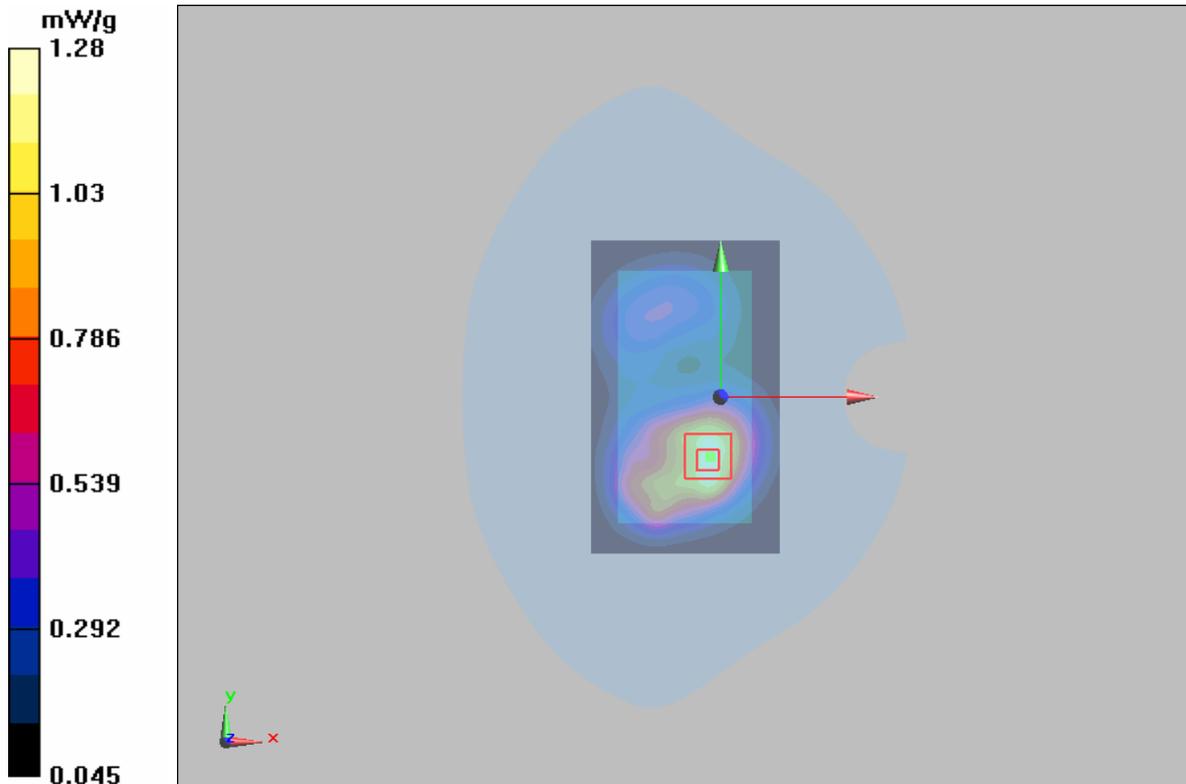
**Towards Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.6 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 1.87 W/kg

**SAR(1 g) = 1.2 mW/g; SAR(10 g) = 0.732 mW/g**

Maximum value of SAR (measured) = 1.28 mW/g



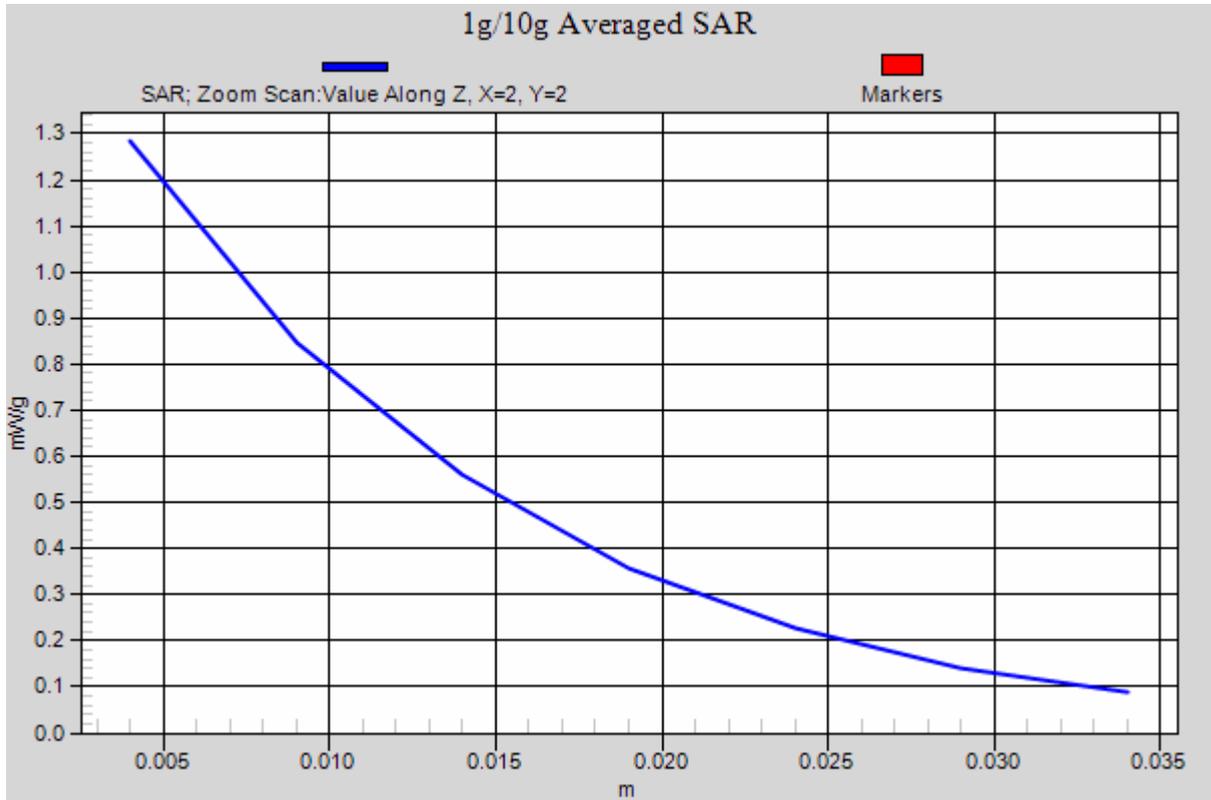


Figure 68 Body, Towards Ground, WCDMA Band II Channel 9262



### WCDMA Band II (Hot spots) Towards Phantom High

Date/Time: 6/10/2011 1:47:54 PM

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

Medium parameters used:  $f = 1908$  MHz;  $\sigma = 1.56$  mho/m;  $\epsilon_r = 51.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Phantom High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.928 mW/g

**Towards Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 11.6 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.855 mW/g; SAR(10 g) = 0.521 mW/g**

Maximum value of SAR (measured) = 0.918 mW/g

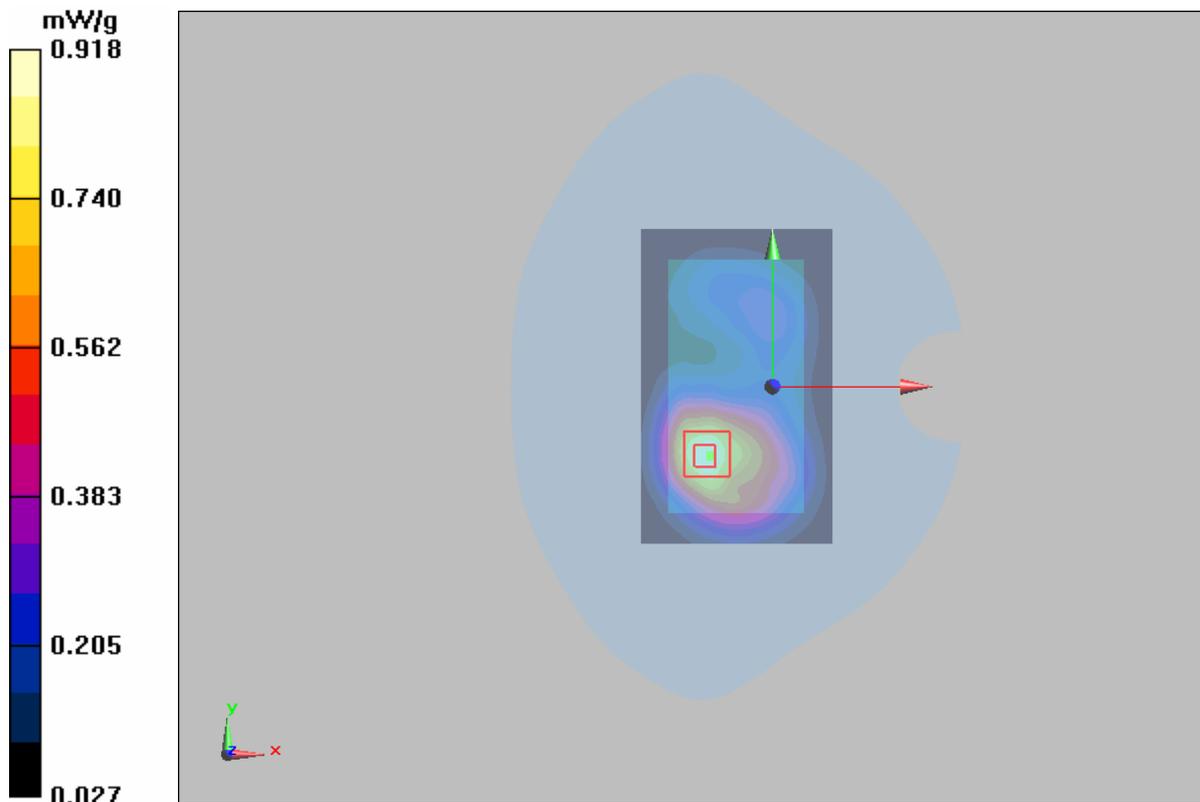


Figure 69 Body, Towards Phantom, WCDMA Band II Channel 9538



### WCDMA Band II (Hot spots) Towards Phantom Middle

Date/Time: 6/10/2011 1:14:06 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.938 mW/g

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

Reference Value = 11.1 V/m; Power Drift = 0.073 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.852 mW/g; SAR(10 g) = 0.520 mW/g**

Maximum value of SAR (measured) = 0.908 mW/g

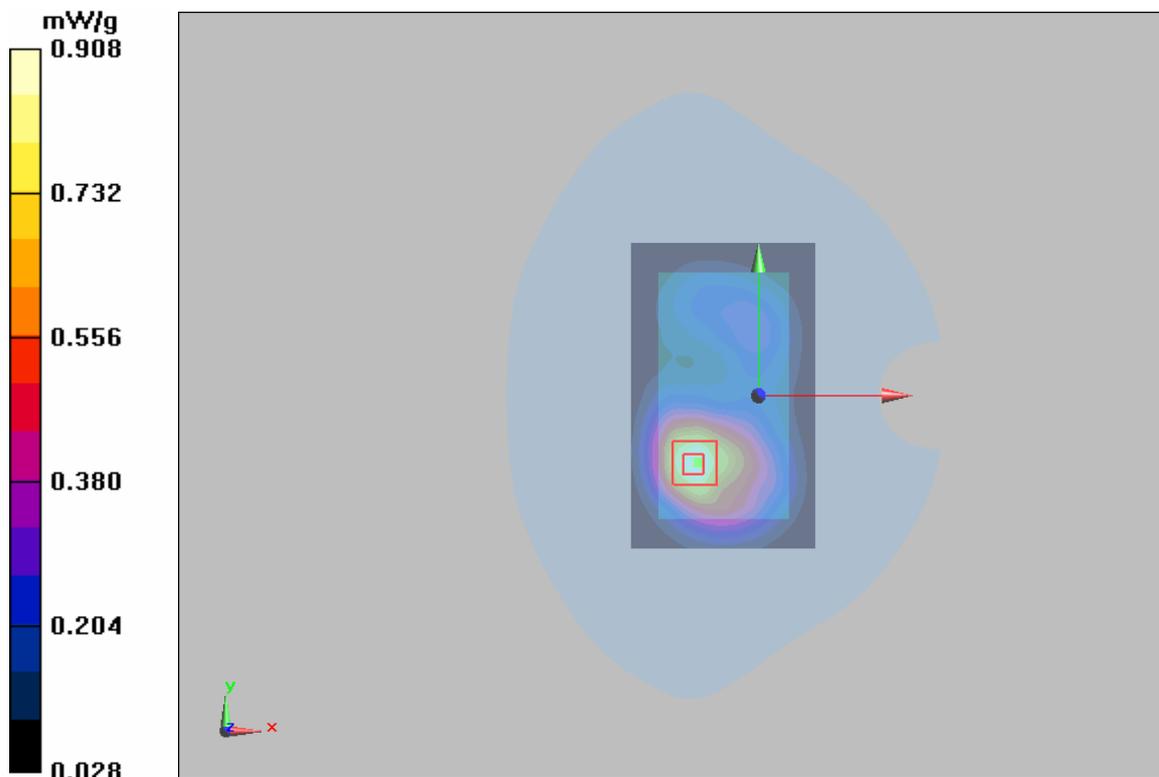


Figure 70 Body, Towards Phantom, WCDMA Band II Channel 9400



### WCDMA Band II (Hot spots) Towards Phantom Low

Date/Time: 6/10/2011 1:31:02 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Phantom Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.09 mW/g

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

Reference Value = 11.8 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 1.56 W/kg

**SAR(1 g) = 0.997 mW/g; SAR(10 g) = 0.607 mW/g**

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

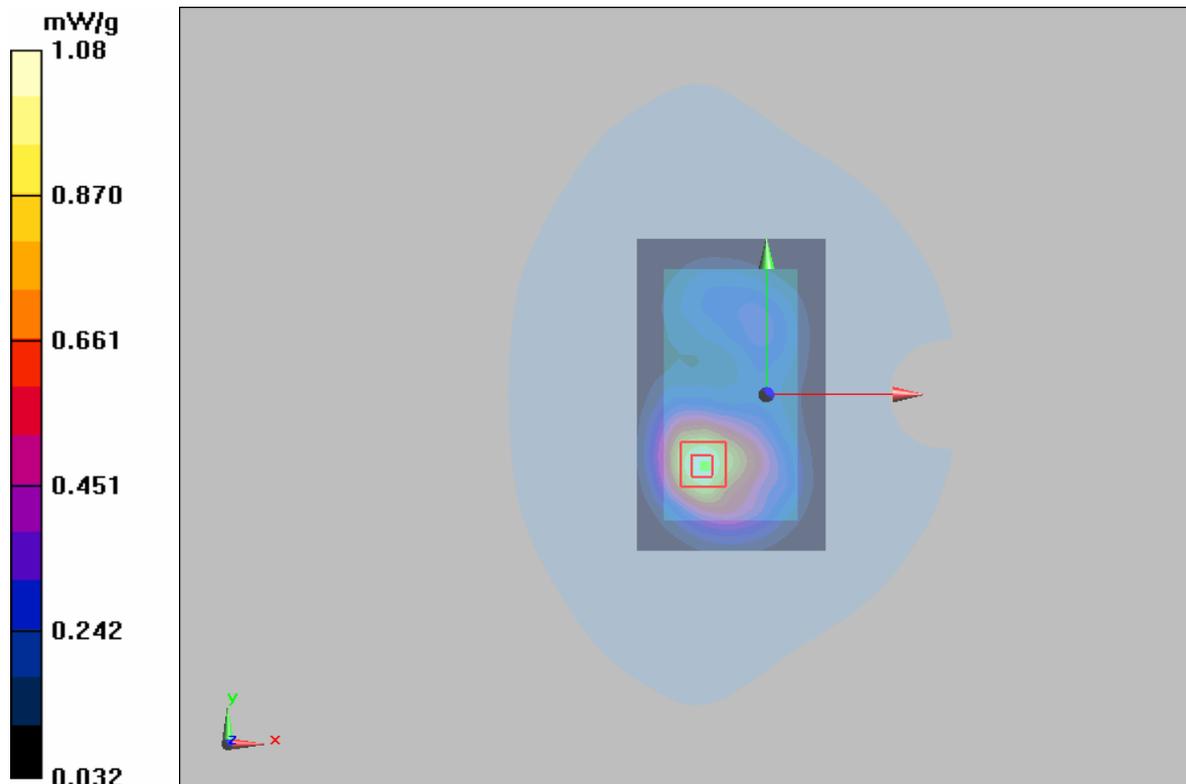


Figure 71 Body, Towards Phantom, WCDMA Band II Channel 9262



### WCDMA Band II (Hot spots) Left Edge Middle

Date/Time: 6/10/2011 2:11:11 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Left Edge Middle/Area Scan (41x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.271 mW/g

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

Reference Value = 10.3 V/m; Power Drift = 0.053 dB

Peak SAR (extrapolated) = 0.389 W/kg

**SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.140 mW/g**

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

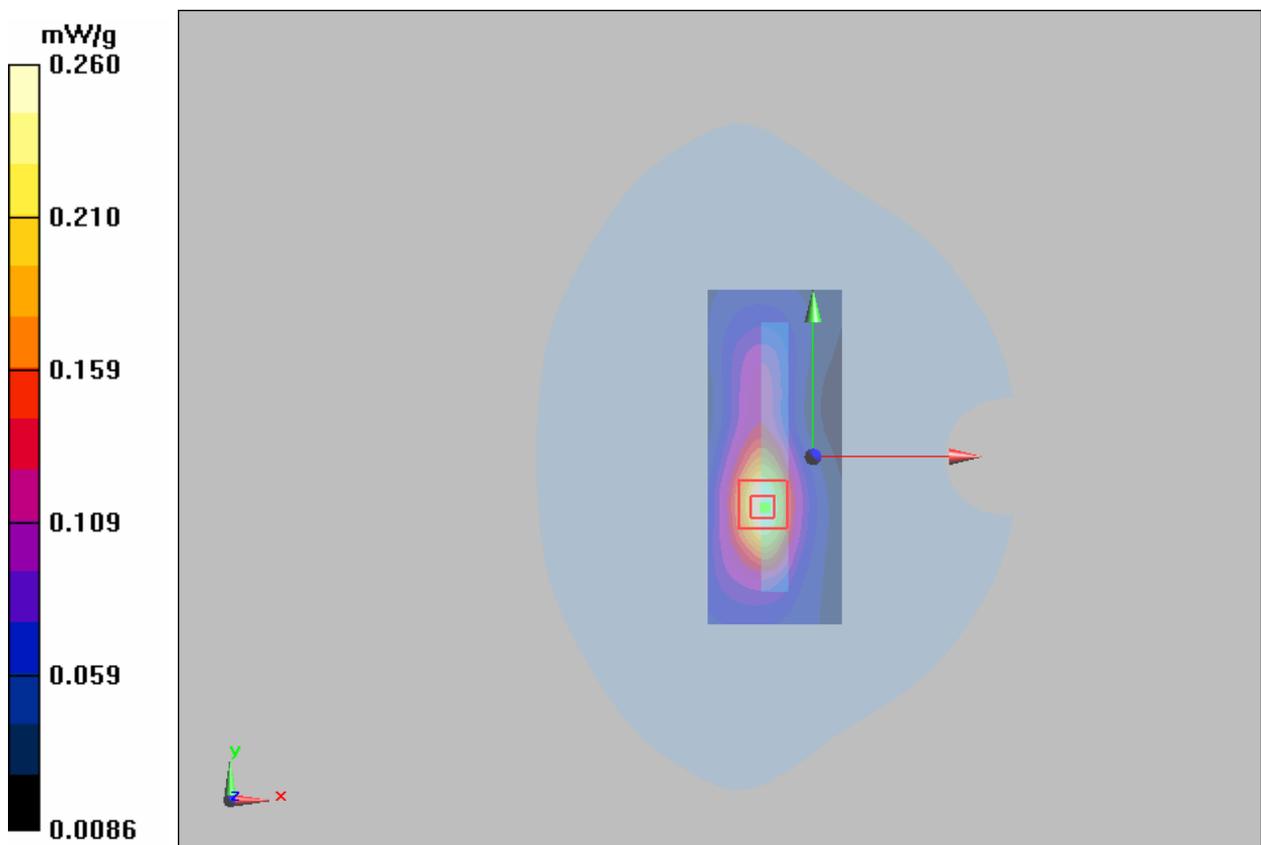


Figure 72 Body, Left Edge, WCDMA Band II Channel 9400



**WCDMA Band II (Hot spots) Right Edge Middle**

Date/Time: 6/10/2011 2:28:09 PM

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

Medium parameters used:  $f = 1880 \text{ MHz}$ ;  $\sigma = 1.52 \text{ mho/m}$ ;  $\epsilon_r = 52$ ;  $\rho = 1000 \text{ kg/m}^3$

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Right Edge Middle/Area Scan (41x101x1):** Measurement grid:  $dx=15\text{mm}$ ,  $dy=15\text{mm}$

Maximum value of SAR (interpolated) =  $0.292 \text{ mW/g}$

**Right Edge Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $11.3 \text{ V/m}$ ; Power Drift =  $0.108 \text{ dB}$

Peak SAR (extrapolated) =  $0.421 \text{ W/kg}$

**SAR(1 g) =  $0.261 \text{ mW/g}$ ; SAR(10 g) =  $0.156 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.285 \text{ mW/g}$

**Right Edge Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid:  $dx=5\text{mm}$ ,  $dy=5\text{mm}$ ,  $dz=5\text{mm}$

Reference Value =  $11.3 \text{ V/m}$ ; Power Drift =  $0.108 \text{ dB}$

Peak SAR (extrapolated) =  $0.429 \text{ W/kg}$

**SAR(1 g) =  $0.270 \text{ mW/g}$ ; SAR(10 g) =  $0.167 \text{ mW/g}$**

Maximum value of SAR (measured) =  $0.290 \text{ mW/g}$

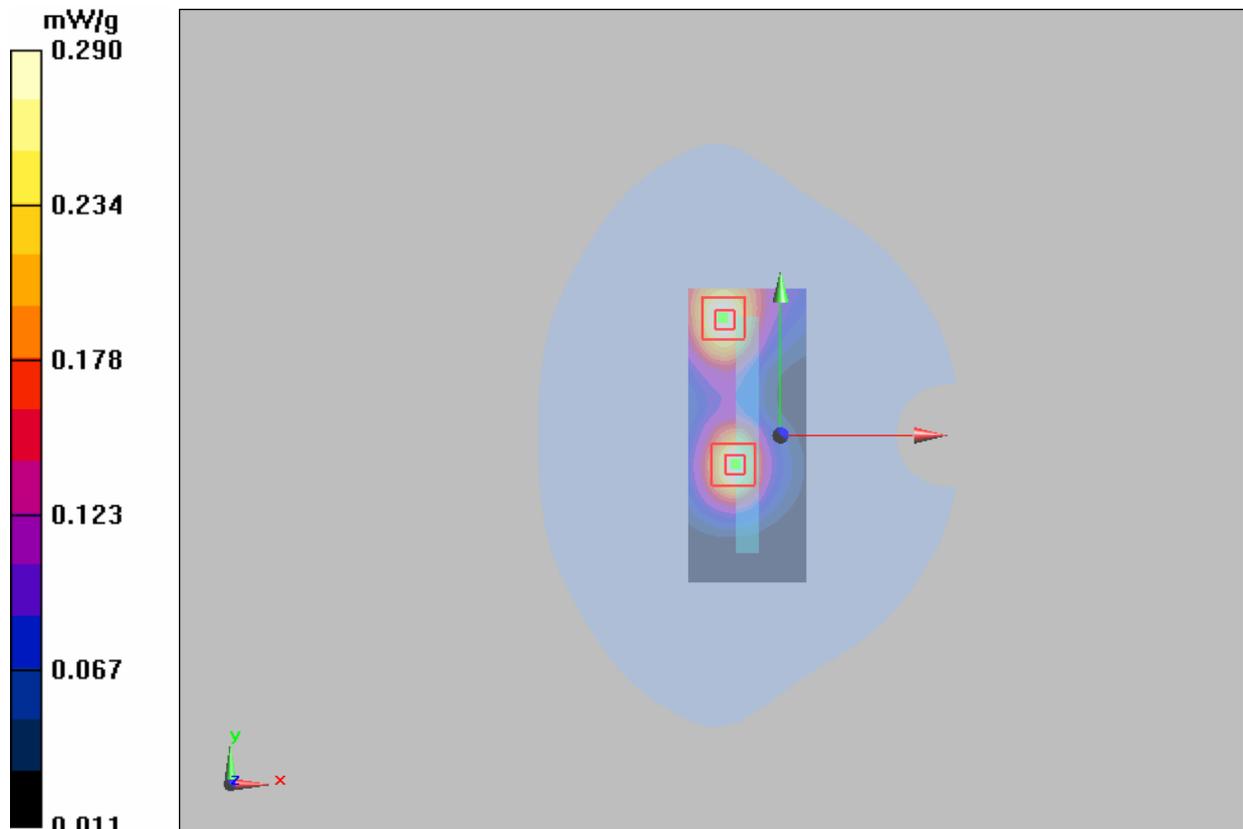


Figure 73 Body, Right Edge, WCDMA Band II Channel 9400



### WCDMA Band II (Hot spots) Bottom Edge Middle

Date/Time: 6/10/2011 3:19:59 PM

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

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.802 mW/g

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

Reference Value = 23 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.733 mW/g; SAR(10 g) = 0.422 mW/g**

Maximum value of SAR (measured) = 0.809 mW/g

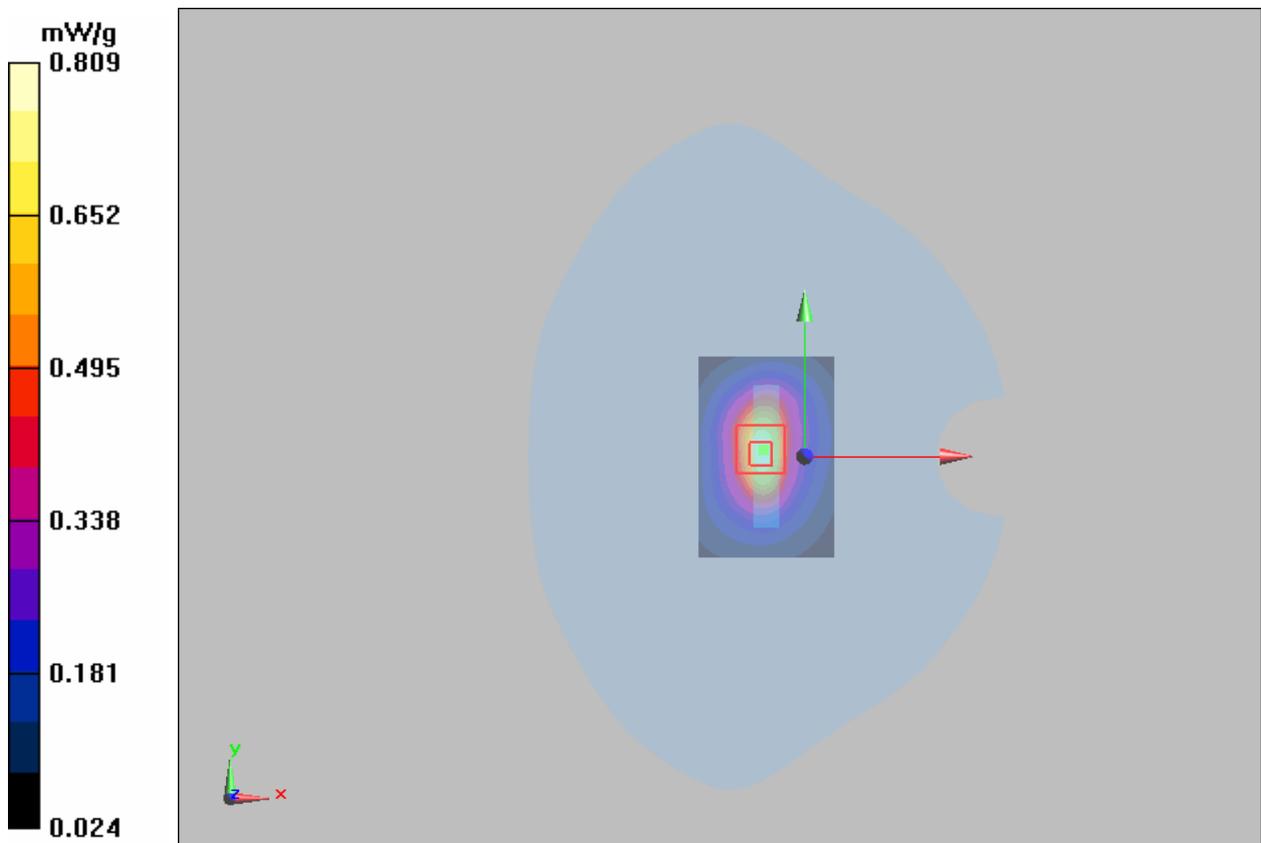


Figure 74 Body, Bottom Edge, WCDMA Band II Channel 9400



**WCDMA Band II HSDPA (Hot spots) Towards Ground Low**

Date/Time: 6/10/2011 3:38:28 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.16 mW/g

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

Reference Value = 15.4 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 1.69 W/kg

**SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.660 mW/g**

Maximum value of SAR (measured) = 1.15 mW/g

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

Reference Value = 15.4 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 1.67 W/kg

**SAR(1 g) = 0.798 mW/g; SAR(10 g) = 0.450 mW/g**

Maximum value of SAR (measured) = 1.04 mW/g

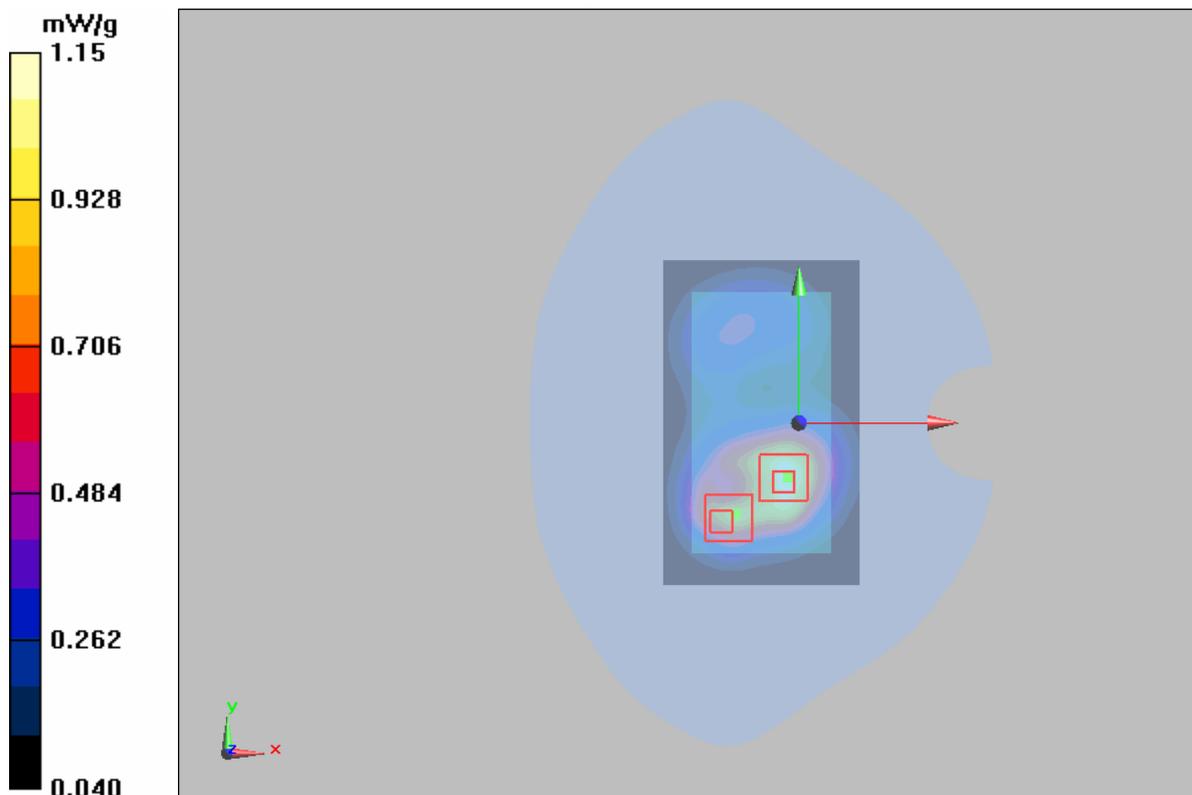


Figure 75 Body, Towards Ground, WCDMA Band II HSDPA ,Channel 9262



**WCDMA Band II HSUPA (Hot spots) Towards Ground Low**

Date/Time: 6/10/2011 4:04:54 PM

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

Medium parameters used (interpolated):  $f = 1852.4$  MHz;  $\sigma = 1.5$  mho/m;  $\epsilon_r = 52$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(7.77, 7.77, 7.77); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 14.9 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 1.56 W/kg

**SAR(1 g) = 0.997 mW/g; SAR(10 g) = 0.608 mW/g**

Maximum value of SAR (measured) = 1.06 mW/g

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

Reference Value = 14.9 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 1.57 W/kg

**SAR(1 g) = 0.727 mW/g; SAR(10 g) = 0.412 mW/g**

Maximum value of SAR (measured) = 0.967 mW/g

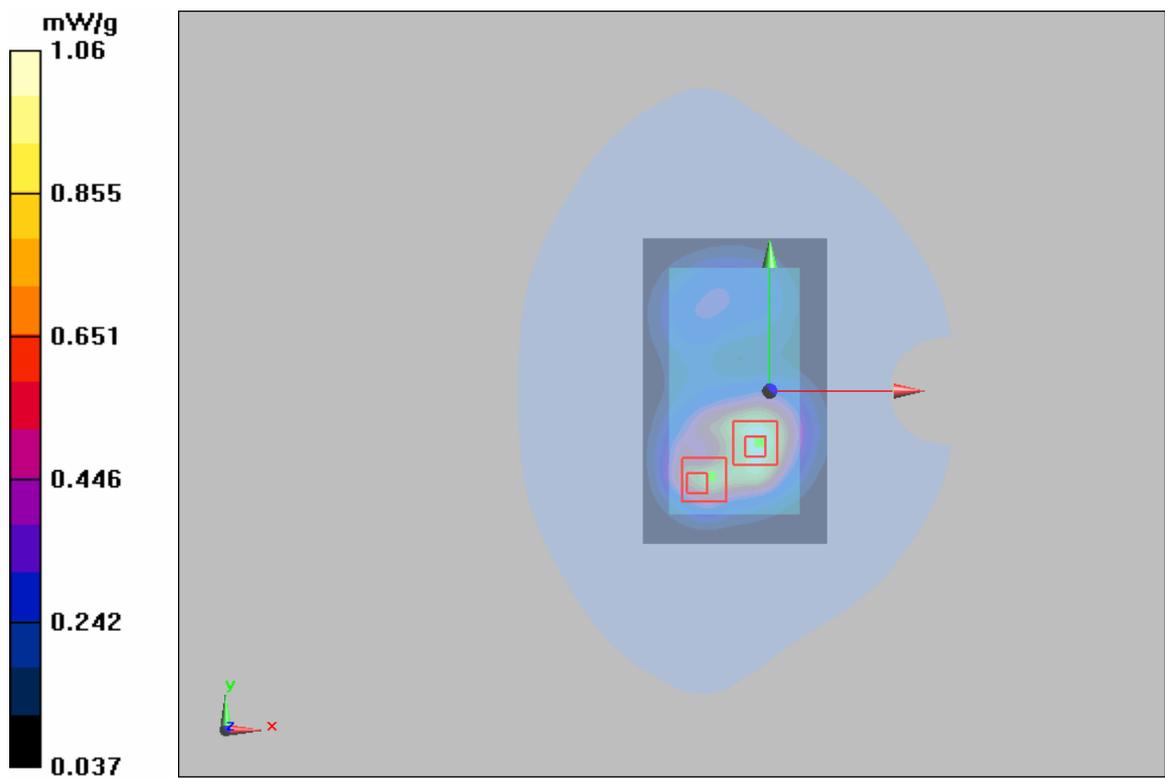


Figure 76 Body, Towards Ground, WCDMA Band II HSUPA ,Channel 9262



### WCDMA Band IV Left Cheek High

Date/Time: 6/8/2011 8:24:07 PM

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.35$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.939 mW/g

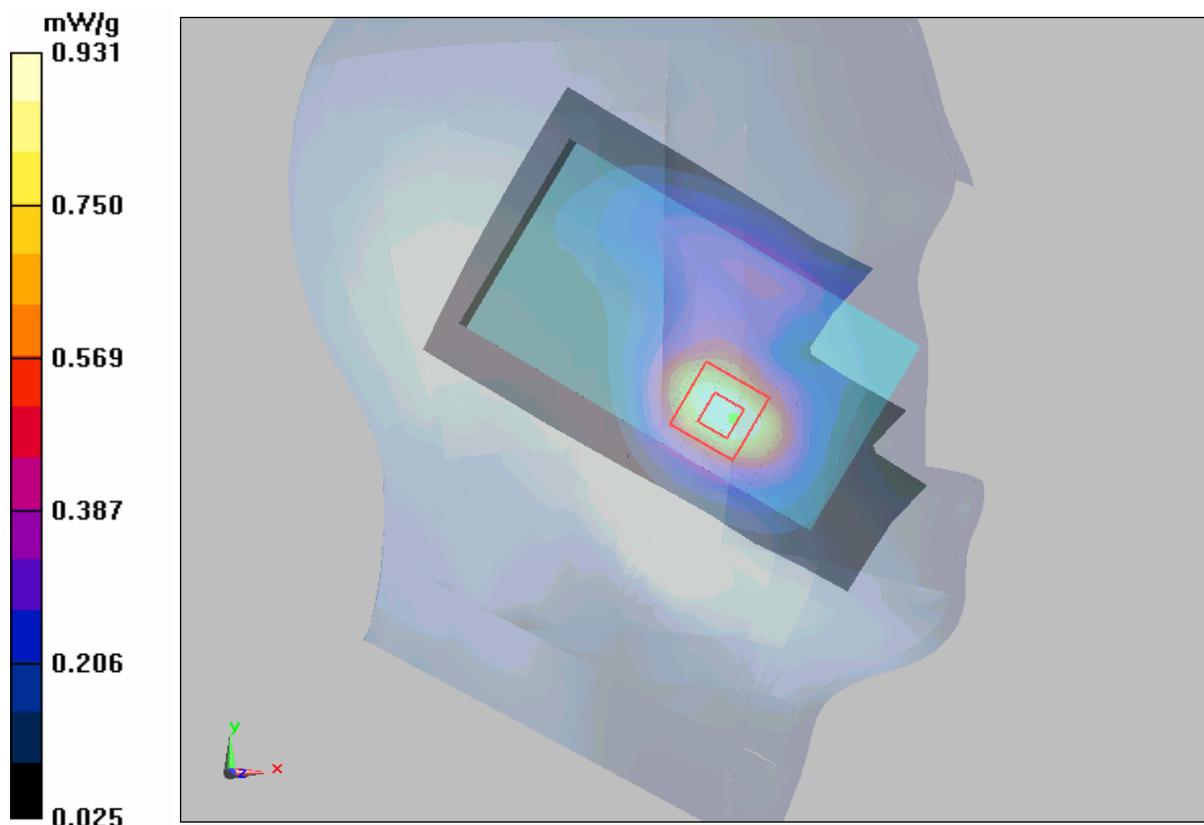
**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.95 V/m; Power Drift = 0.192 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.847 mW/g; SAR(10 g) = 0.509 mW/g**

Maximum value of SAR (measured) = 0.931 mW/g



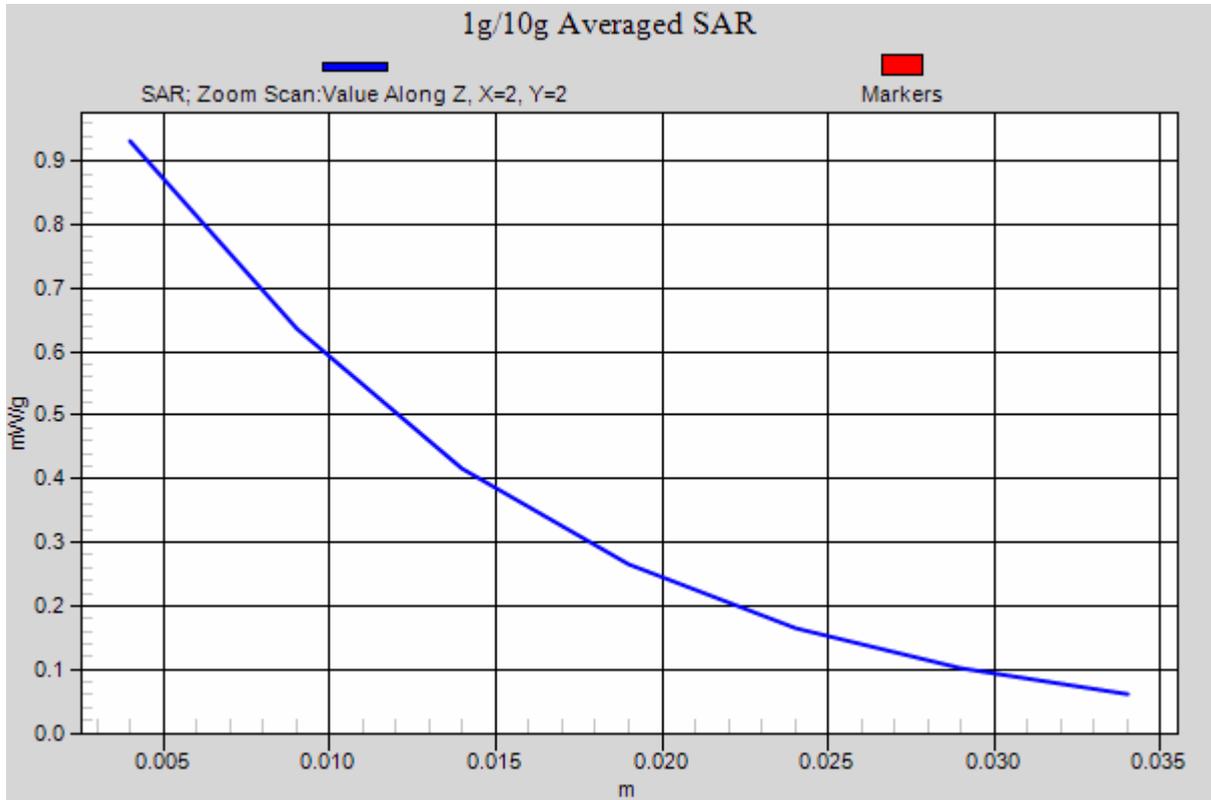


Figure 77 Left Hand Touch Cheek WCDMA Band IV Channel 1513



**WCDMA Band IV Left Cheek Middle**

Date/Time: 6/8/2011 8:07:20 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.33$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.933 mW/g

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

Reference Value = 8.04 V/m; Power Drift = 0.007 dB

Peak SAR (extrapolated) = 1.21 W/kg

**SAR(1 g) = 0.838 mW/g; SAR(10 g) = 0.507 mW/g**

Maximum value of SAR (measured) = 0.922 mW/g

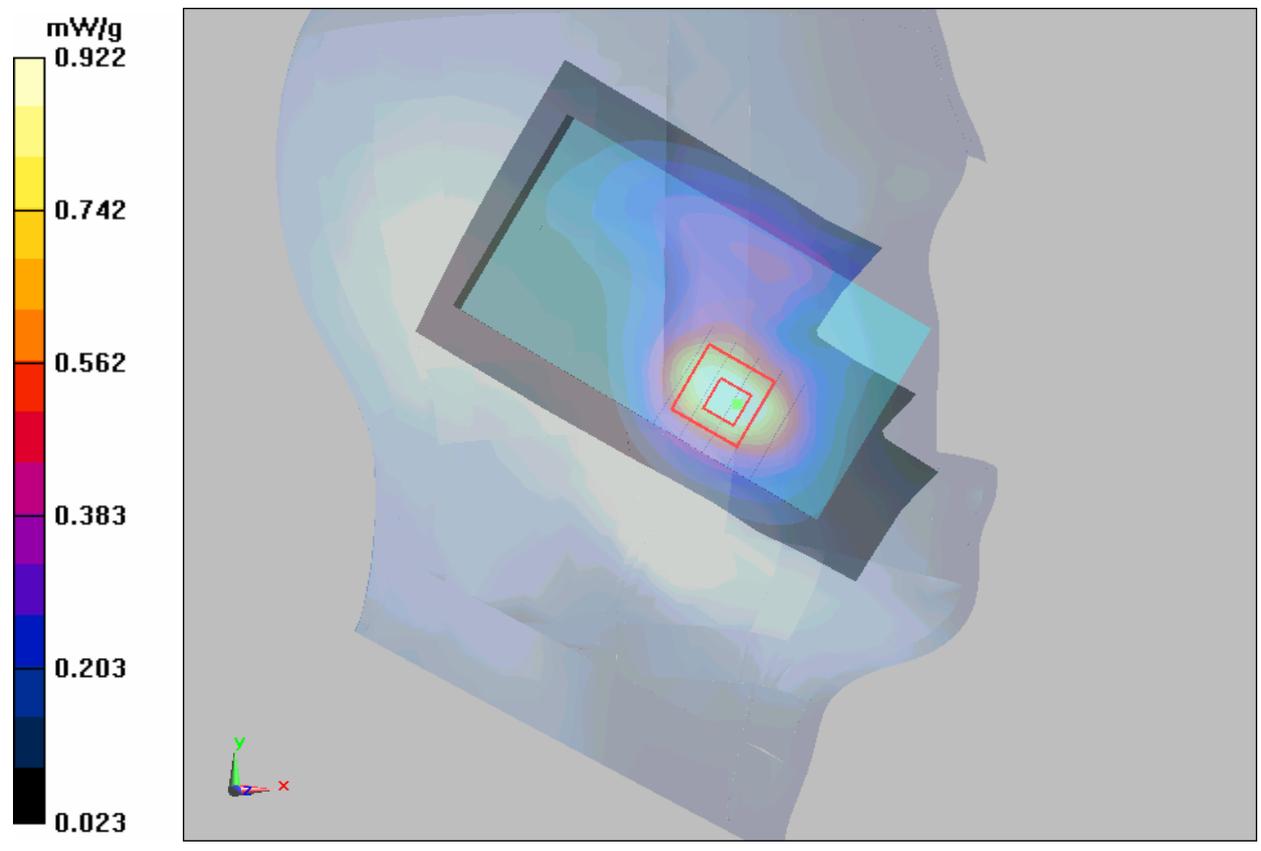


Figure 78 Left Hand Touch Cheek WCDMA Band IV Channel 1413



**WCDMA Band IV Left Cheek Low**

Date/Time: 6/8/2011 8:40:50 PM

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.32$  mho/m;  $\epsilon_r = 40.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

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

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

Reference Value = 8.56 V/m; Power Drift = 0.030 dB

Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.792 mW/g; SAR(10 g) = 0.482 mW/g**

Maximum value of SAR (measured) = 0.868 mW/g

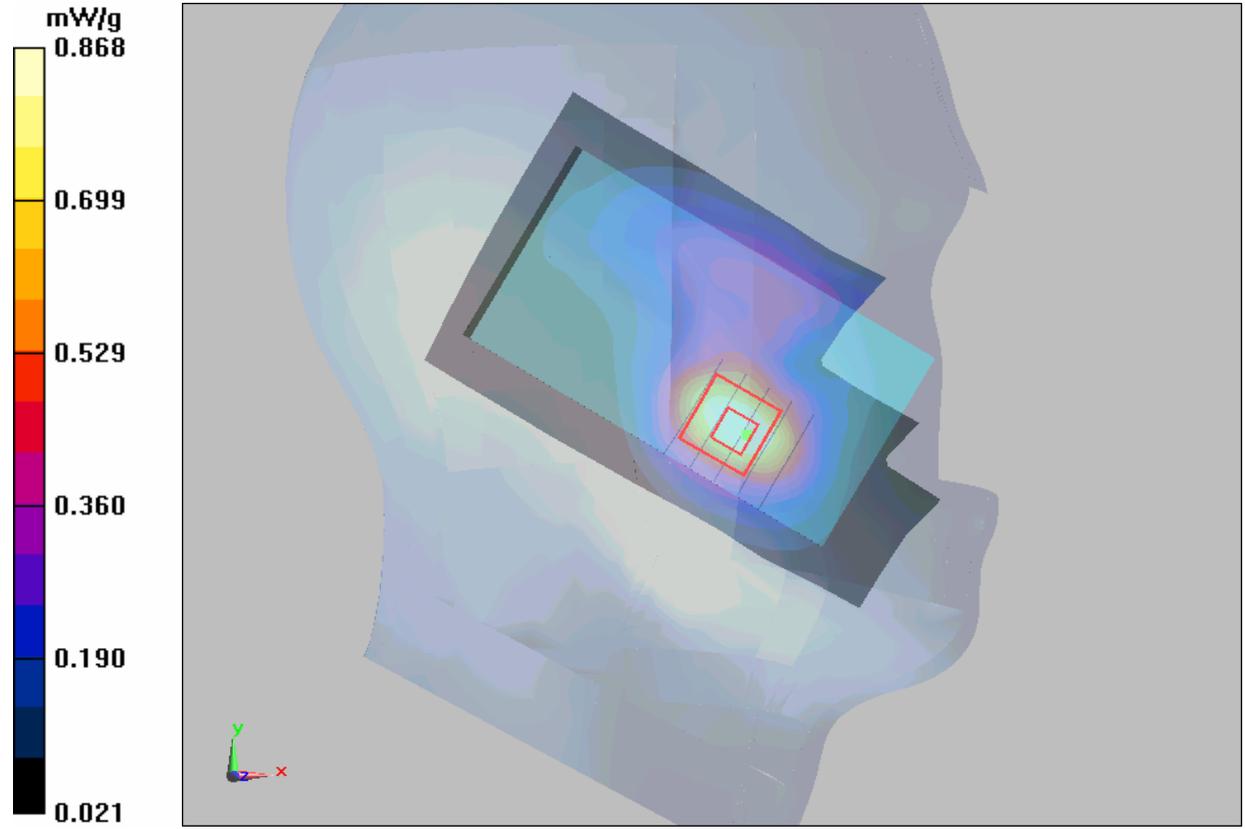


Figure 79 Left Hand Touch Cheek WCDMA Band IV Channel 1312



**WCDMA Band IV Left Tilt Middle**

Date/Time: 6/8/2011 8:58:12 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.33$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Left Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.266 mW/g

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

Reference Value = 12.8 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 0.339 W/kg

**SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.150 mW/g**

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

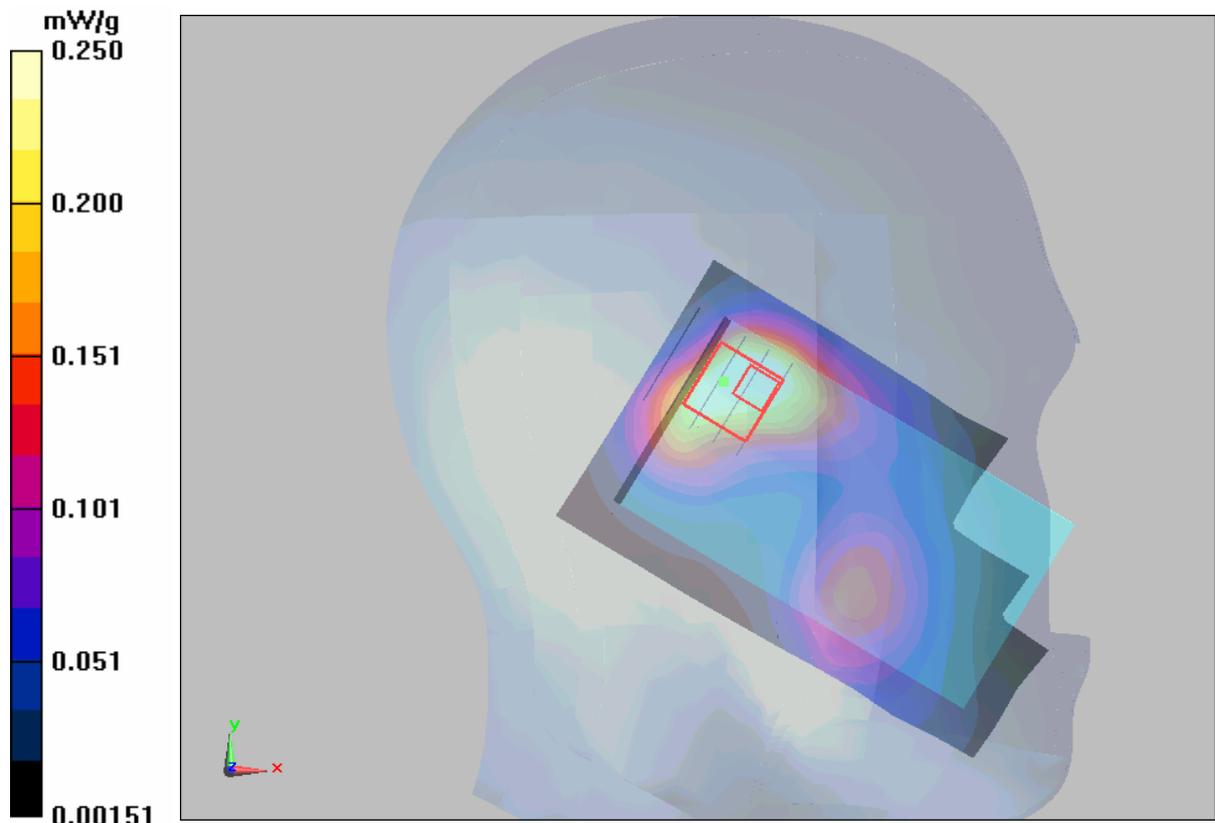


Figure 80 Left Hand Tilt 15° WCDMA Band IV Channel 1413



### WCDMA Band IV Right Cheek Middle

Date/Time: 6/8/2011 7:30:41 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.33$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.700 mW/g

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

Reference Value = 7.45 V/m; Power Drift = 0.149 dB

Peak SAR (extrapolated) = 0.877 W/kg

**SAR(1 g) = 0.623 mW/g; SAR(10 g) = 0.391 mW/g**

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

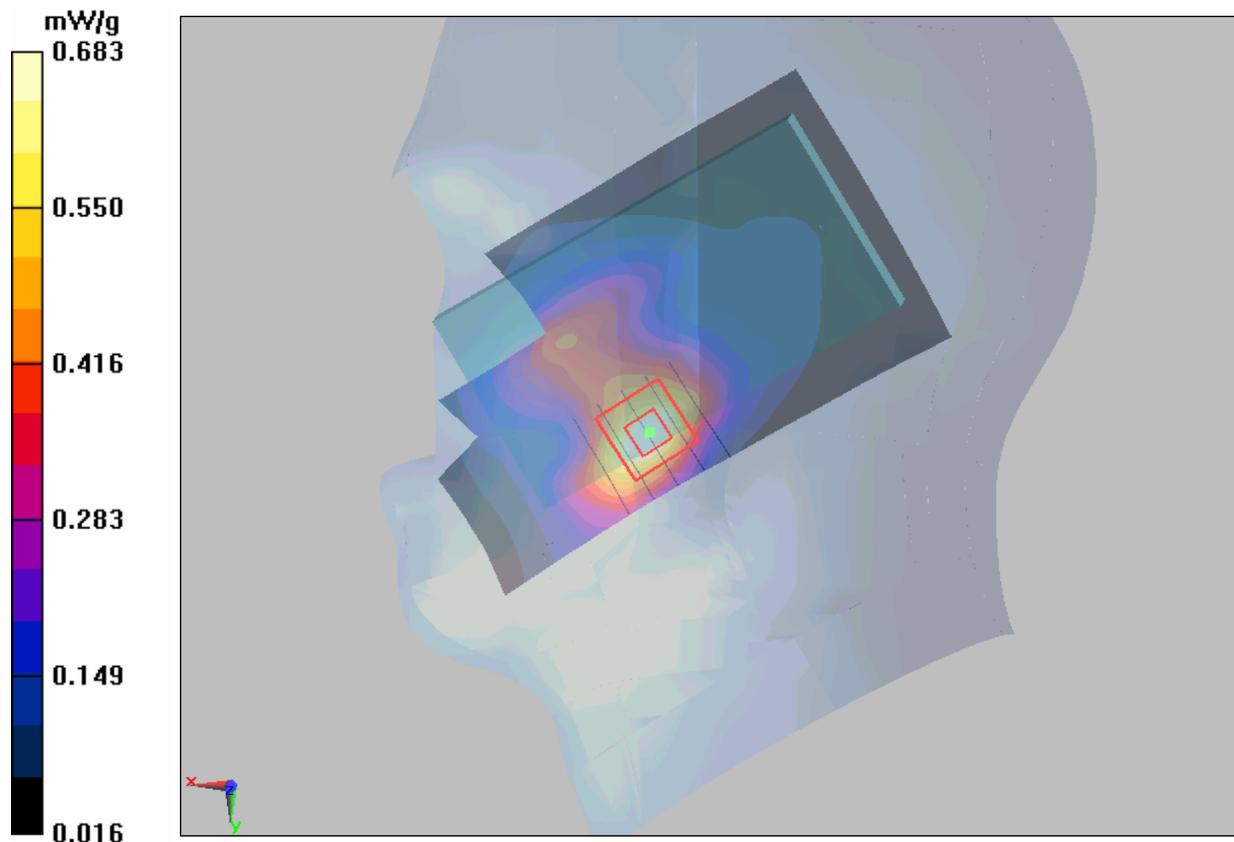


Figure 81 Right Hand Touch Cheek WCDMA Band IV Channel 1413



### WCDMA Band IV Right Tilt Middle

Date/Time: 6/8/2011 7:47:48 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.33$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Right Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.22, 8.22, 8.22); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.247 mW/g

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

Reference Value = 12.4 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.326 W/kg

**SAR(1 g) = 0.214 mW/g; SAR(10 g) = 0.128 mW/g**

Maximum value of SAR (measured) = 0.228 mW/g

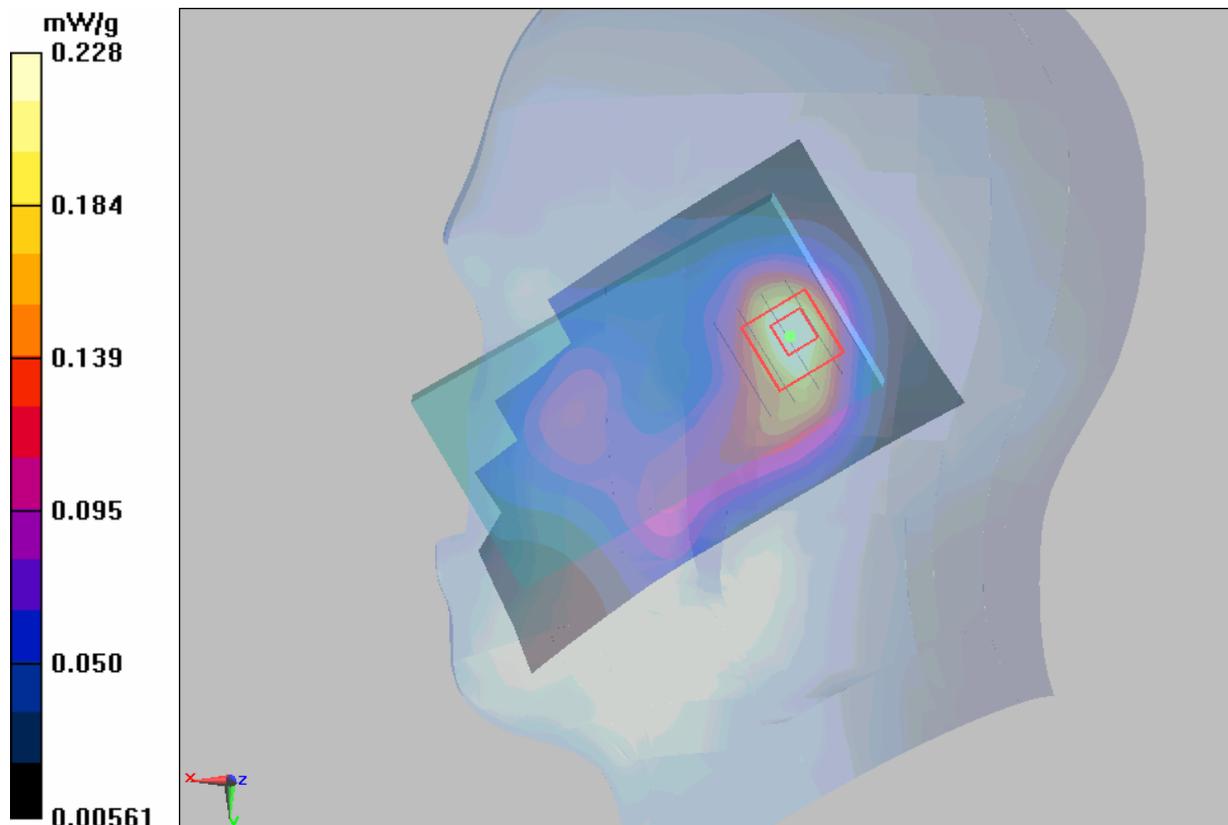


Figure 82 Right Hand Tilt 15° WCDMA Band IV Channel 1413



### WCDMA Band IV Towards Ground High

Date/Time: 6/7/2011 8:10:38 PM

Communication System: WCDMA Band IV; Frequency: 1752.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1752.6$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 52.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground High/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.780 mW/g

**Towards Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 13.3 V/m; Power Drift = 0.000 dB

Peak SAR (extrapolated) = 1.08 W/kg

**SAR(1 g) = 0.704 mW/g; SAR(10 g) = 0.438 mW/g**

Maximum value of SAR (measured) = 0.763 mW/g

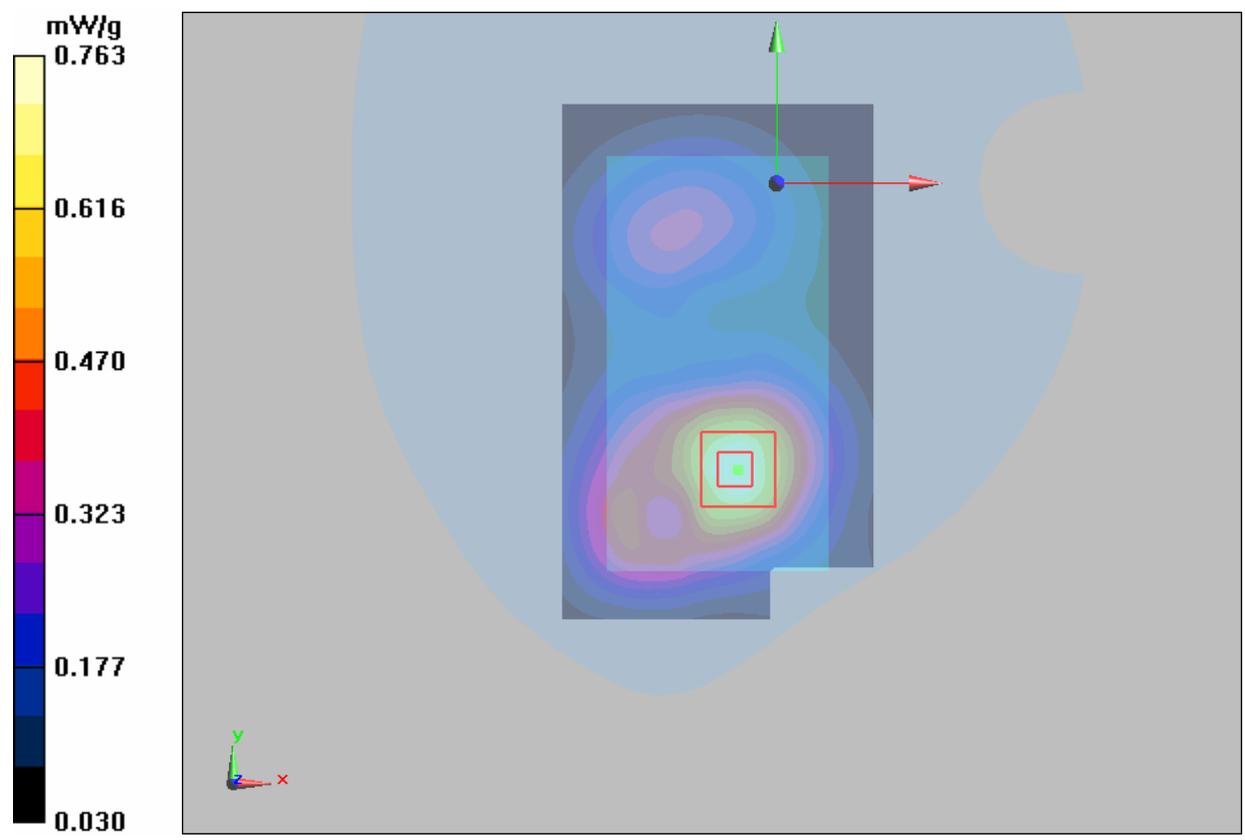


Figure 83 Body, Towards Ground, WCDMA Band IV Channel 1513



### WCDMA Band IV Towards Ground Middle

Date/Time: 6/7/2011 7:53:30 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 52.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.791 mW/g

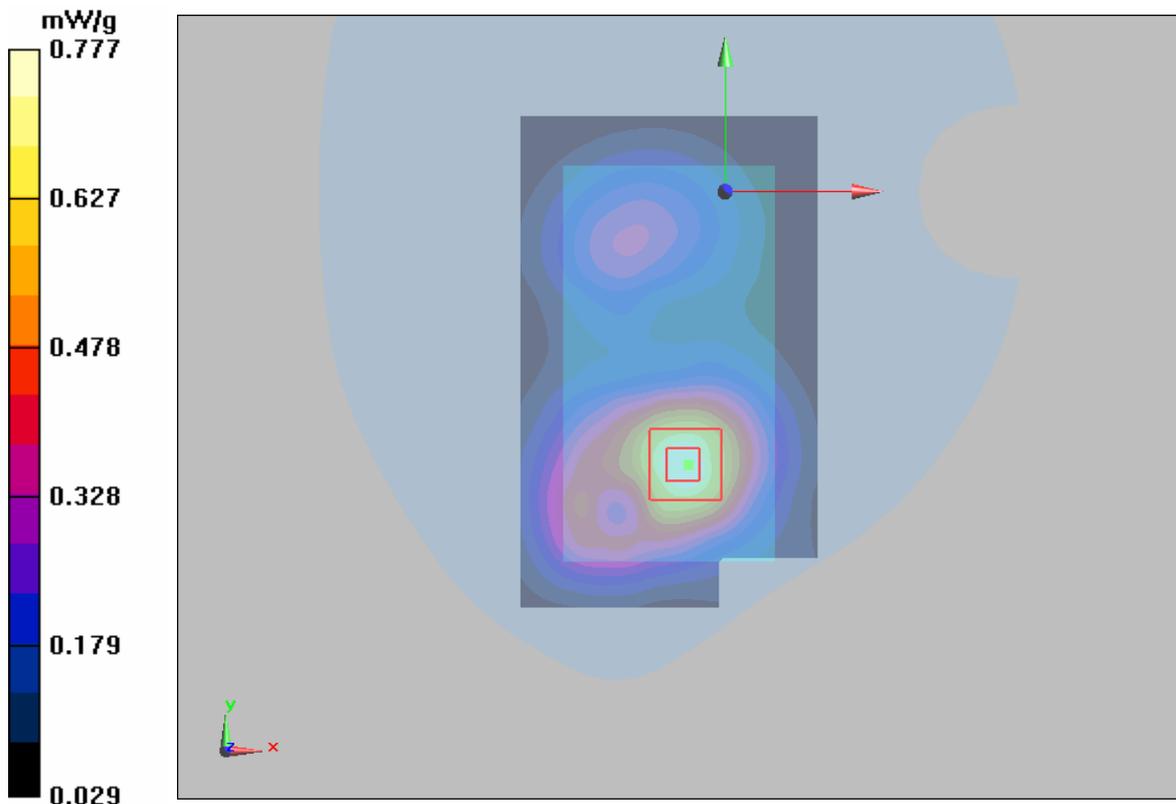
**Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.1 V/m; Power Drift = 0.100 dB

Peak SAR (extrapolated) = 1.1 W/kg

**SAR(1 g) = 0.719 mW/g; SAR(10 g) = 0.447 mW/g**

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



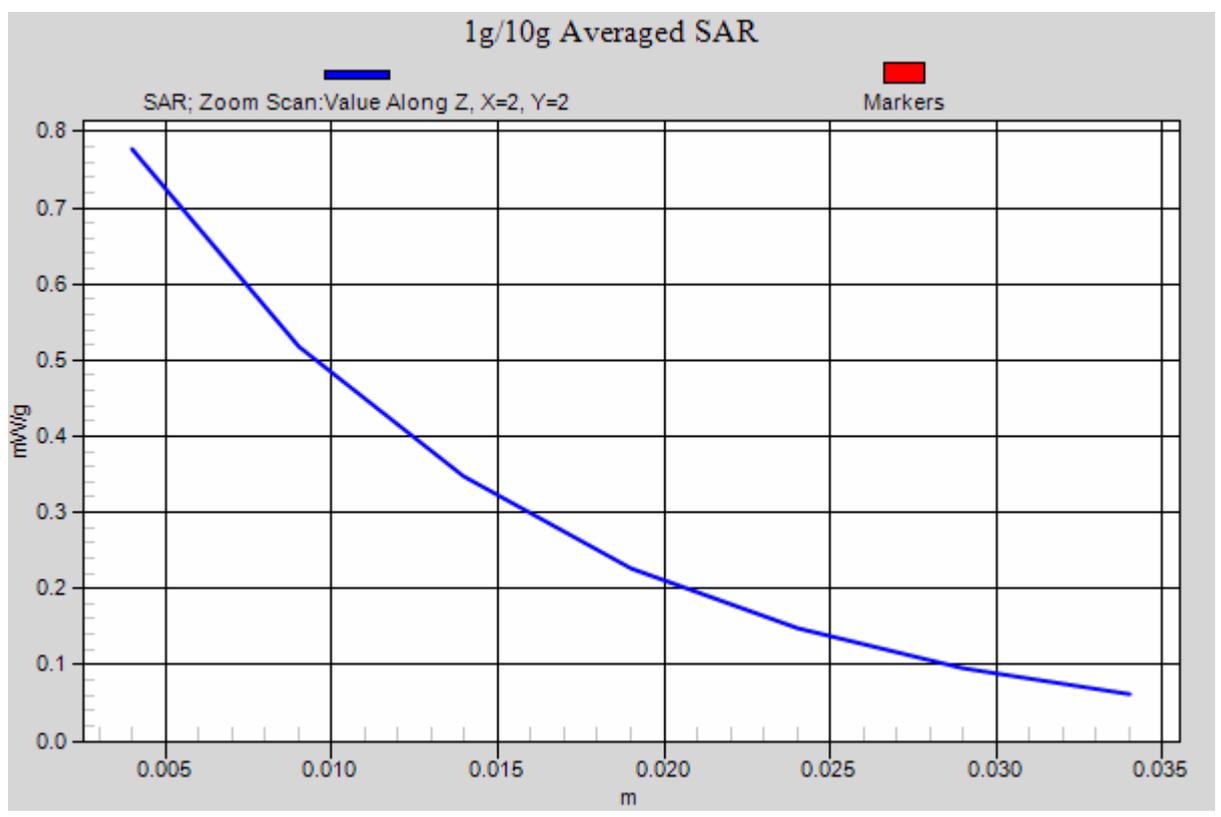


Figure 84 Body, Towards Ground, WCDMA Band IV Channel 1413



### WCDMA Band IV Towards Ground Low

Date/Time: 6/7/2011 8:27:16 PM

Communication System: WCDMA Band IV; Frequency: 1712.4 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1712.4$  MHz;  $\sigma = 1.44$  mho/m;  $\epsilon_r = 52.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

**Towards Ground Low/Area Scan (61x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.739 mW/g

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

Reference Value = 13.2 V/m; Power Drift = 0.091 dB

Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.666 mW/g; SAR(10 g) = 0.412 mW/g**

Maximum value of SAR (measured) = 0.720 mW/g

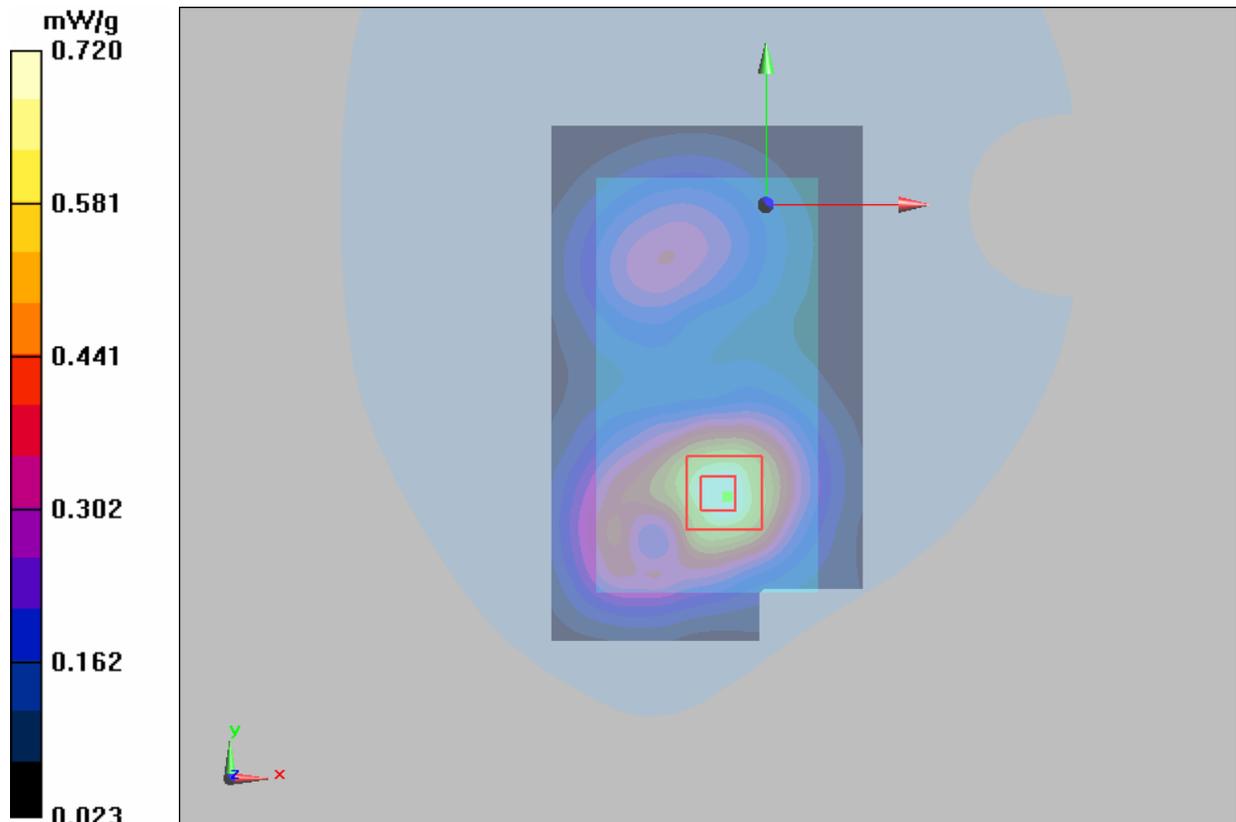


Figure 85 Body, Towards Ground, WCDMA Band IV Channel 1312



### WCDMA Band IV Towards Phantom Middle

Date/Time: 6/7/2011 7:34:58 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 52.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.627 mW/g

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

dz=5mm

Reference Value = 10.7 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.879 W/kg

**SAR(1 g) = 0.572 mW/g; SAR(10 g) = 0.356 mW/g**

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

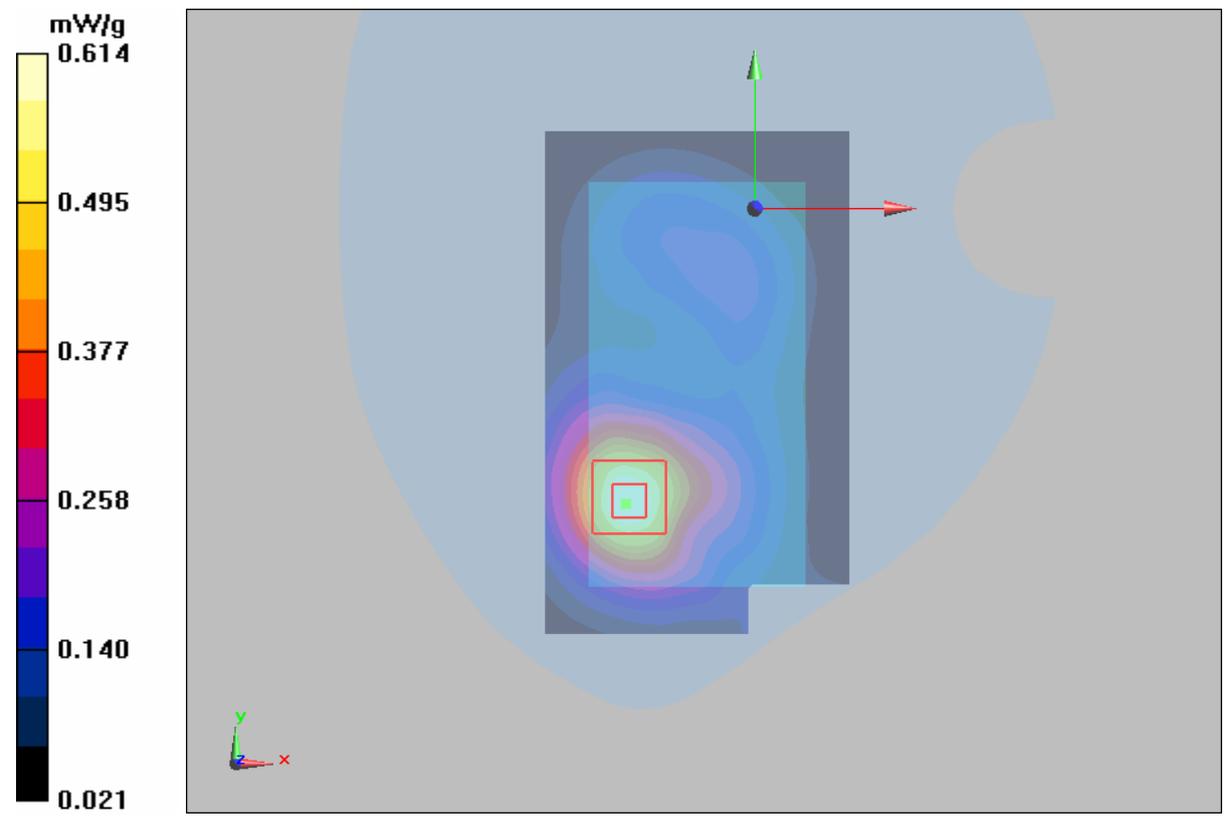


Figure 86 Body, Towards Phantom, WCDMA Band IV Channel 1413



**WCDMA Band IV with Earphone Towards Ground Middle**

Date/Time: 6/7/2011 8:46:00 PM

Communication System: WCDMA Band IV; Frequency: 1732.6 MHz; Duty Cycle: 1:1

Medium parameters used (interpolated):  $f = 1732.6$  MHz;  $\sigma = 1.46$  mho/m;  $\epsilon_r = 52.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

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

Phantom section: Flat Section

DASY5 Configuration:

Probe: EX3DV4 - SN3677; ConvF(8.02, 8.02, 8.02); Calibrated: 11/24/2010

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

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

Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

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

Maximum value of SAR (interpolated) = 0.670 mW/g

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

Reference Value = 11 V/m; Power Drift = 0.126 dB

Peak SAR (extrapolated) = 0.943 W/kg

**SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.386 mW/g**

Maximum value of SAR (measured) = 0.668 mW/g

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

Reference Value = 11 V/m; Power Drift = 0.126 dB

Peak SAR (extrapolated) = 0.778 W/kg

**SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.245 mW/g**

Maximum value of SAR (measured) = 0.480 mW/g

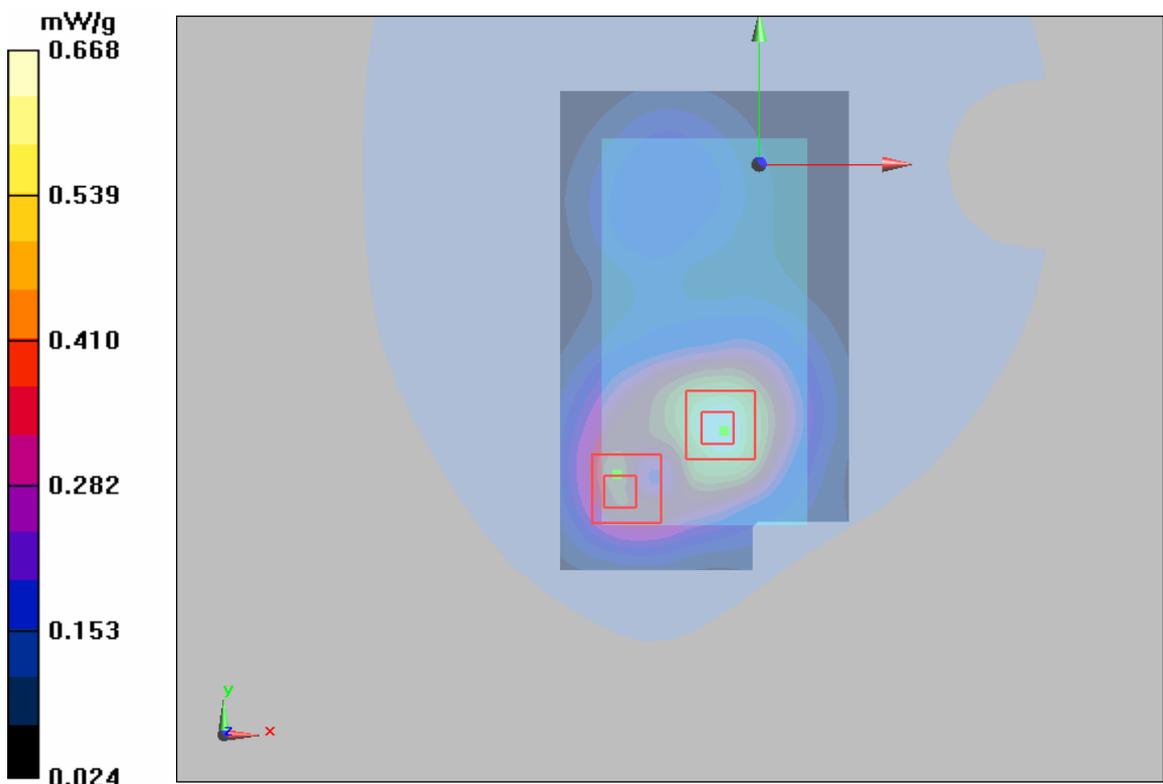


Figure 87 Body with Earphone, Towards Ground, WCDMA Band IV Channel 1413