



## SAR TEST REPORT

No. 2011SAR00074

For

**Sony Ericsson Mobile Communications(China) Co., Ltd.**

**GSM/GPRS/EDGE & UMTS/HSPA Phone**

**AAD-3880104-BV**

**SK17i**

With

**Hardware Version: AP**

**Software Version: 4.0.A.2.268**

**SEMC ID: AAD-3880104-BV**

**Industry Canada ID: 4170B-A3880104**

**FCCID: PY7A3880104**

**Issued Date: 2011-07-01**



**No. DGA-PL-114/01-02**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

**Test Laboratory:**

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## TABLE OF CONTENT

<b>1 Test Laboratory .....</b>	<b>3</b>
1.1 TESTING LOCATION .....	3
1.2 TESTING ENVIRONMENT .....	3
1.3 PROJECT DATA .....	3
1.4 SIGNATURE .....	3
<b>2 General Information.....</b>	<b>4</b>
2.1 STATEMENT OF COMPLIANCE .....	4
2.2 APPLICANT INFORMATION .....	4
2.3 MANUFACTURER INFORMATION .....	4
<b>3 Equipment Under Test (EUT) and Ancillary Equipment (AE) .....</b>	<b>5</b>
3.1 ABOUT EUT .....	5
3.2 INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....	5
3.3 INTERNAL IDENTIFICATION OF AE USED DURING THE TEST.....	5
3.4 ANTENNA DESCRIPTION .....	5
<b>4 CHARACTERISTICS OF THE TEST .....</b>	<b>6</b>
4.1 APPLICABLE LIMIT REGULATIONS .....	6
4.2 APPLICABLE MEASUREMENT STANDARDS.....	6
<b>5 OPERATIONAL CONDITIONS DURING TEST .....</b>	<b>7</b>
5.1 SCHEMATIC TEST CONFIGURATION.....	7
5.2 SAR MEASUREMENT SET-UP.....	7
5.3 DASY4 E-FIELD PROBE SYSTEM.....	8
5.4 E-FIELD PROBE CALIBRATION .....	9
5.5 OTHER TEST EQUIPMENT .....	10
5.6 EQUIVALENT TISSUES .....	11
5.7 SYSTEM SPECIFICATIONS .....	12
<b>6 CONDUCTED OUTPUT POWER MEASUREMENT.....</b>	<b>12</b>
6.1 SUMMARY .....	12
6.2 CONDUCTED POWER .....	12
<b>7 TEST RESULTS .....</b>	<b>15</b>
7.1 DIELECTRIC PERFORMANCE .....	15
7.2 SYSTEM VALIDATION.....	16
7.3 SUMMARY OF MEASUREMENT RESULTS .....	17
7.4 SUMMARY OF MEASUREMENT RESULTS (BLUETOOTH AND WiFi FUNCTION) .....	20
7.5 CONCLUSION .....	22
<b>8 Measurement Uncertainty .....</b>	<b>22</b>
<b>9 MAIN TEST INSTRUMENTS .....</b>	<b>23</b>
<b>ANNEX A MEASUREMENT PROCESS.....</b>	<b>24</b>
<b>ANNEX B TEST LAYOUT .....</b>	<b>25</b>
<b>ANNEX C GRAPH RESULTS.....</b>	<b>27</b>
<b>ANNEX D SYSTEM VALIDATION RESULTS .....</b>	<b>99</b>

## 1 Test Laboratory

### 1.1 Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT  
Address: No 52, Huayuan beilu, Haidian District, Beijing, P.R.China  
Postal Code: 100191  
Telephone: +86-10-62304633  
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### 1.2 Testing Environment

Temperature: 18°C~25 °C,

Relative humidity: 30%~ 70%

Ground system resistance: < 0.5 Ω

Ambient noise is checked and found very low and in compliance with requirement of standards.

Reflection of surrounding objects is minimized and in compliance with requirement of standards.

### 1.3 Project Data

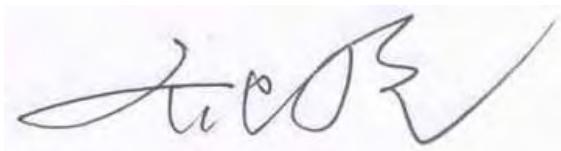
Project Leader: Qi Dianyuan  
Test Engineer: Lin Xiaojun  
Testing Start Date: June 15, 2011  
Testing End Date: June 17, 2011

### 1.4 Signature



Lin Xiaojun

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Xiao Li

Deputy Director of the laboratory

(Approved this test report)

## 2 General Information

### 2.1 Statement of Compliance

The SAR values found for the AAD-3880104-BV Mobile Phone are below the maximum recommended levels of 1.6 W/Kg as averaged over any 1g tissue according to the FCC rule, the ANSI C95.1-1999.

For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and that positions the handset a minimum of 10mm from the body. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.

The measurement together with the test system set-up is described in chapter 5 of this test report. A detailed description of the equipment under test can be found in chapter 3 of this test report.

### 2.2 Applicant Information

Company Name:	Sony Ericsson Mobile Communications(China) Co., Ltd.
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City:	Beijing
Postal Code:	/
Country:	China
Contact:	Ma, Gang
Email:	gang.ma@sonyericsson.com
Telephone:	+86-10-58656312
Fax:	+86-10-58656750

### 2.3 Manufacturer Information

Company Name:	Sony Ericsson Mobile Communications AB
Address /Post:	Nya Vattentornet 22188 Lund Sweden
City:	Lund
Postal Code:	22188
Country:	Sweden
Contact:	Nordløf, Anders
Email:	Anders.Nordløf@sonyericsson.com
Telephone:	+46 46 193919
Fax:	+46 46 193295

### 3 Equipment Under Test (EUT) and Ancillary Equipment (AE)

#### 3.1 About EUT

EUT Description:	GSM/GPRS/EDGE & UMTS/HSPA Phone
Type number:	AAD-3880104-BV
Marketing name:	SK17i
Operating mode(s):	GSM, PCS, Bluetooth, WiFi
GPRS Multislot Class:	12
GPRS capability Class:	B
EGPRS Multislot Class:	12
Test device Production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Accessories/Body-worn configurations:	Headset
Form factor:	9.1cm×5.3cm

#### 3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	BX902E1HUB / BX902E13GV	AP	4.0.A.2.268

\*EUT ID: is used to identify the test sample in the lab internally.

#### 3.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	CBA-0002019	/	Samsung
AE2	Headset	MH410	/	Sony Ericsson

\*AE ID: is used to identify the test sample in the lab internally.

#### 3.4 Antenna description

There are two antennae in the EUT, Main antenna and BT/WiFi antenna.

Antenna dimension:

Max length: 21mm

Max width: 48mm

## 4 CHARACTERISTICS OF THE TEST

### 4.1 Applicable Limit Regulations

**ANSI C95.1–1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

### 4.2 Applicable Measurement Standards

**IC RSS-102 ISSUE4:** Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

**IEEE 1528–2003:** Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques.

**OET Bulletin 65 (Edition 97-01) and Supplement C(Edition 01-01):** Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits.

**KDB648474 D01 SAR Handsets Multi Xmter and Ant, v01r05:** SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas.

**KDB248227:** SAR measurement procedures for 802.112abg transmitters.

**KDB941225 D06 Hot Spot SAR v01:** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities.

## 5 OPERATIONAL CONDITIONS DURING TEST

### 5.1 Schematic Test Configuration

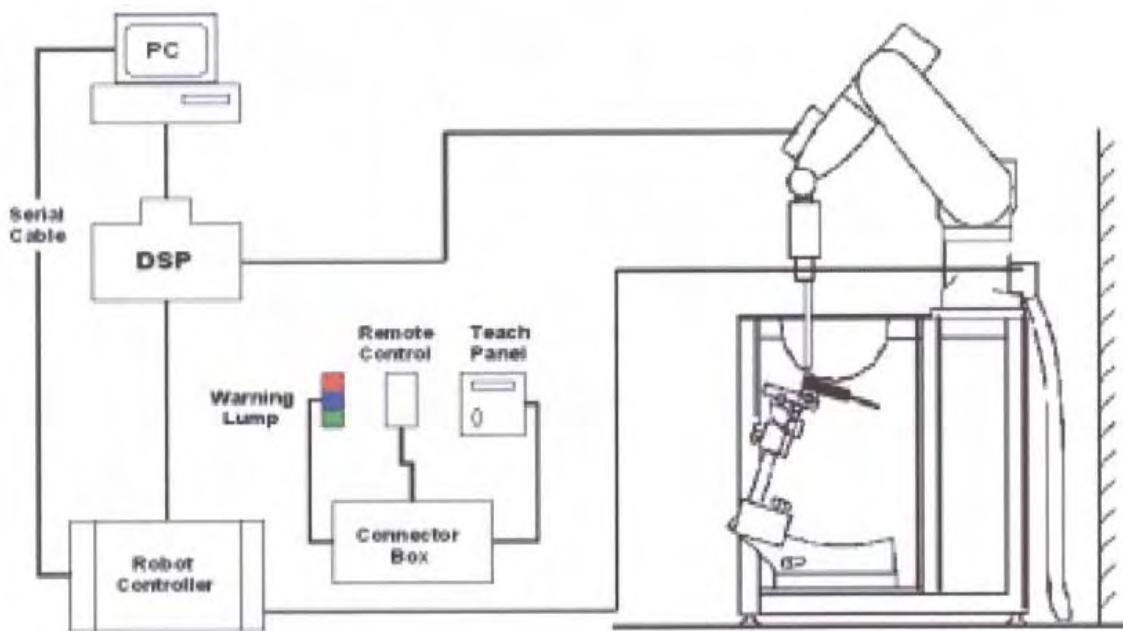
During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of GSM 850 MHz; 512, 661 and 810 respectively in the case of PCS 1900 MHz. The EUT is commanded to operate at maximum transmitting power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 30 dB.

### 5.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 Professional from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than  $\pm 0.02\text{mm}$ . Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium III 800 MHz computer with Windows 2000 system and SAR Measurement Software DASY4 Professional, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.



## Picture 1: SAR Lab Test Measurement Set-up

The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

### 5.3 Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ES3DV3 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure with an accuracy of better than  $\pm 10\%$ . The spherical isotropy was evaluated and found to be better than  $\pm 0.25\text{dB}$ .

## ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: $\pm 0.2$ dB (30 MHz to 4 GHz)



Picture 2: ES3DV3 E-field

Directivity	$\pm 0.2$ dB in HSL (rotation around probe axis) $\pm 0.3$ dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 $\mu$ W/g to > 100 mW/g; Linearity: $\pm 0.2$ dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

**Picture3:ES3DV3 E-field probe**

### **EX3DV4 Probe Specification**

Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
<b>Calibration</b>	ISO/IEC 17025 calibration service available.
<b>Frequency</b>	10 MHz to > 6 GHz Linearity: $\pm 0.2$ dB (30 MHz to 6 GHz)
<b>Directivity</b>	$\pm 0.3$ dB in HSL (rotation around probe axis) $\pm 0.5$ dB in tissue material (rotation normal to probe axis)
<b>Dynamic Range</b>	10 $\mu$ W/g to > 100 mW/g Linearity: $\pm 0.2$ dB (noise: typically < 1 $\mu$ W/g)
<b>Dimensions</b>	Overall length: 337 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
<b>Application</b>	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%.

### **5.4 E-field Probe Calibration**

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

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

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

thermistor-based temperature probe is used in conjunction with the E-field probe.

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

Where:  $\Delta t$  = Exposure time (30 seconds),  
C = Heat capacity of tissue (brain or muscle),  
 $\Delta T$  = Temperature increase due to RF exposure.

Or

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

Where:

$\sigma$  = Simulated tissue conductivity,  
 $\rho$  = Tissue density ( $\text{kg}/\text{m}^3$ ).



**Picture 4: Device Holder**

## 5.5 Other Test Equipment

### 5.5.1 Device Holder for Transmitters

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatable positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

### 5.5.2 Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden table. 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  $2 \pm 0.1 \text{ mm}$

Filling Volume Approx. 20 liters

Dimensions  $810 \times 1000 \times 500 \text{ mm (H x L x W)}$

Available Special



**Picture 5: Generic Twin Phantom**

## 5.6 Equivalent Tissues

The liquid used for the frequency range of 800-3000 MHz consisted of water, sugar, salt, preventol, glycol monobutyl and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table 1 and 2 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

**Table 1. Composition of the Head Tissue Equivalent Matter**

MIXTURE %	FREQUENCY 850MHz		
Water	41.45		
Sugar	56.0		
Salt	1.45		
Preventol	0.1		
Cellulose	1.0		
<b>Dielectric Parameters Target Value</b>	<b>f=850MHz</b>	<b><math>\epsilon=41.5</math></b>	<b><math>\sigma=0.90</math></b>
MIXTURE %	FREQUENCY 1900MHz		
Water	55.242		
Glycol monobutyl	44.452		
Salt	0.306		
<b>Dielectric Parameters Target Value</b>	<b>f=1900MHz</b>	<b><math>\epsilon=40.0</math></b>	<b><math>\sigma=1.40</math></b>
MIXTURE %	FREQUENCY 2450MHz		
Water	58.79		
Glycol monobutyl	41.15		
Salt	0.06		
<b>Dielectric Parameters Target Value</b>	<b>f=2450MHz</b>	<b><math>\epsilon=39.2</math></b>	<b><math>\sigma=1.80</math></b>

**Table 2. Composition of the Body Tissue Equivalent Matter**

MIXTURE %	FREQUENCY 850MHz		
Water	52.5		
Sugar	45.0		
Salt	1.4		
Preventol	0.1		
Cellulose	1.0		
<b>Dielectric Parameters Target Value</b>	<b>f=850MHz</b>	<b><math>\epsilon=55.2</math></b>	<b><math>\sigma=0.97</math></b>
MIXTURE %	FREQUENCY 1900MHz		
Water	69.91		
Glycol monobutyl	29.96		
Salt	0.13		
<b>Dielectric Parameters Target Value</b>	<b>f=1900MHz</b>	<b><math>\epsilon=53.3</math></b>	<b><math>\sigma=1.52</math></b>
MIXTURE %	FREQUENCY 2450MHz		
Water	72.60		
Glycol monobutyl	27.22		
Salt	0.18		
<b>Dielectric Parameters Target Value</b>	<b>f=2450MHz</b>	<b><math>\epsilon=52.7</math></b>	<b><math>\sigma=1.95</math></b>

## 5.7 System Specifications

### Specifications

**Positioner:** Stäubli Unimation Corp. Robot Model: RX90L

**Repeatability:** ±0.02 mm

**No. of Axis:** 6

### Data Acquisition Electronic (DAE) System

#### Cell Controller

**Processor:** Pentium III

**Clock Speed:** 800 MHz

**Operating System:** Windows 2000

#### Data Converter

**Features:** Signal Amplifier, multiplexer, A/D converter, and control logic

**Software:** DASY4 software

**Connecting Lines:** Optical downlink for data and status info.

Optical uplink for commands and clock

## 6 CONDUCTED OUTPUT POWER MEASUREMENT

### 6.1 Summary

During the process of testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication tester (CMU-200) to ensure the maximum power transmission and proper modulation. This result contains conducted output power for the EUT. In all cases, the measured output power should be greater and within 5% than EMI measurement.

### 6.2 Conducted Power

#### 6.2.1 Measurement Methods

The EUT was set up for the maximum output power. The channel power was measured with Agilent Spectrum Analyzer E4440A. These measurements were done at low, middle and high channels.

#### 6.2.2 Measurement result

Table 3: The conducted power for GSM 850/1900

GSM 850MHZ	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	33.8	33.8	33.8
GSM 1900MHZ	Conducted Power (dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	31.2	31.2	31.2

**Table 4: The conducted power for GPRS 850/1900 and EGPRS 850/1900**

GSM 850 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	190	128		251	190	128
1 Txslot	33.8	33.8	33.8	-9.03dB	24.77	24.77	24.77
2 Txslots	31.8	31.8	31.7	-6.02dB	25.78	25.78	25.68
3Txslots	30.4	30.7	30.5	-4.26dB	26.14	26.44	26.24
<b>4 Txslots</b>	29.7	29.6	29.8	-3.01dB	<b>26.69</b>	<b>26.59</b>	<b>26.79</b>
GSM 850 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	190	128		251	190	128
1 Txslot	33.8	33.8	33.8	-9.03dB	24.77	24.77	24.77
2 Txslots	31.8	31.8	31.8	-6.02dB	25.78	25.78	25.78
3Txslots	30.4	30.7	30.5	-4.26dB	26.14	26.44	26.24
<b>4 Txslots</b>	29.7	29.7	29.8	-3.01dB	<b>26.69</b>	<b>26.69</b>	<b>26.79</b>
PCS1900 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	661	512		810	661	512
1 Txslot	31.1	31.1	31.2	-9.03dB	22.07	22.07	22.17
2 Txslots	28.4	28.6	28.6	-6.02dB	22.38	22.58	22.58
3Txslots	27.6	27.5	27.7	-4.26dB	23.34	23.24	23.44
<b>4 Txslots</b>	26.4	26.4	26.5	-3.01dB	<b>23.39</b>	<b>23.39</b>	<b>23.49</b>
PCS1900 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	661	512		810	661	512
1 Txslot	31.1	31	31.2	-9.03dB	22.07	21.97	22.17
2 Txslots	28.4	28.5	28.6	-6.02dB	22.38	22.48	22.58
3Txslots	27.6	27.5	27.6	-4.26dB	23.34	23.24	23.34
<b>4 Txslots</b>	26.4	26.4	26.4	-3.01dB	<b>23.39</b>	<b>23.39</b>	<b>23.39</b>

NOTES:

1) Division Factors

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

1TX-slot = 1 transmit time slot out of 8 time slots=&gt; conducted power divided by (8/1) =&gt; -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=&gt; conducted power divided by (8/2) =&gt; -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=&gt; conducted power divided by (8/3) =&gt; -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=&gt; conducted power divided by (8/4) =&gt; -3.01dB

**Hotspot:**

There is power reduction enabled for this model (SK17i) for GSM850/1900. The power reduction is enabled when the user enables hotspot mode via the manufacturer software. The tables below show the measured powers with hotspot.

**Table 5: The conducted power for GPRS 850/1900 and EGPRS 850/1900**

GSM 850 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	190	128		251	190	128
<b>1 Txslot</b>	33.8	33.9	33.8	-9.03dB	<b>24.77</b>	<b>24.87</b>	<b>24.77</b>
2 Txslots	29.8	29.8	29.7	-6.02dB	23.78	23.78	23.68
3Txslots	27.6	27.6	27.8	-4.26dB	23.34	23.34	23.54
4 Txslots	26.6	26.5	26.5	-3.01dB	23.59	23.49	23.49
GSM 850 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	190	128		251	190	128
<b>1 Txslot</b>	33.8	33.8	33.9	-9.03dB	<b>24.77</b>	<b>24.77</b>	<b>24.87</b>
2 Txslots	29.8	29.8	29.7	-6.02dB	23.78	23.78	23.68
3Txslots	27.6	27.6	27.8	-4.26dB	23.34	23.34	23.54
4 Txslots	26.5	26.5	26.5	-3.01dB	23.49	23.49	23.49
PCS1900 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	661	512		810	661	512
1 Txslot	26.77	26.91	27.15	-9.03dB	17.74	17.88	18.12
2 Txslots	24.77	24.72	25.08	-6.02dB	18.75	18.70	19.06
3Txslots	23.45	23.68	23.91	-4.26dB	19.19	19.42	19.65
<b>4 Txslots</b>	22.51	22.81	22.67	-3.01dB	<b>19.50</b>	<b>19.80</b>	<b>19.66</b>
PCS1900 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	661	512		810	661	512
1 Txslot	26.70	26.84	27.07	-9.03dB	17.67	17.81	18.04
2 Txslots	24.68	24.64	25.01	-6.02dB	18.66	18.62	18.99
3Txslots	23.37	23.61	23.85	-4.26dB	19.11	19.35	19.59
<b>4 Txslots</b>	22.44	22.74	22.61	-3.01dB	<b>19.43</b>	<b>19.73</b>	<b>19.60</b>

NOTES:

1) Division Factors

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

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

### 6.2.3 Power Drift

To control the output power stability during the SAR test, DASY4 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in Table 10 to Table 18 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

## 7 TEST RESULTS

### 7.1 Dielectric Performance

**Table 6: Dielectric Performance of Head Tissue Simulating Liquid**

Measurement is made at temperature 23.0 °C and relative humidity 39%. Liquid temperature during the test: 22.5°C			
Measurement Date : 850 MHz <u>June 17, 2011</u> 1900 MHz <u>June 15, 2011</u> 2450 MHz <u>June 16, 2011</u>			
/	Frequency	Permittivity $\epsilon$	Conductivity $\sigma$ (S/m)
Target value	835 MHz	41.5	0.90
	1900 MHz	40.0	1.40
	2450 MHz	39.2	1.80
Measurement value (Average of 10 tests)	835 MHz	41.6	0.91
	848.8 MHz	41.7	0.90
	836.6 MHz	41.8	0.90
	825 MHz	42.0	0.88
	1900 MHz	40.7	1.41
	1910 MHz	40.5	1.43
	1880 MHz	40.9	1.39
	1850.2 MHz	41.3	1.36
	2450 MHz	39.6	1.82
	2437 MHz	39.7	1.81

**Table 7: Dielectric Performance of Body Tissue Simulating Liquid**

Measurement is made at temperature 23.0 °C and relative humidity 39%. Liquid temperature during the test: 22.5°C			
Measurement Date : 850 MHz <u>June 17, 2011</u> 1900 MHz <u>June 15, 2011</u> 2450 MHz <u>June 16, 2011</u>			
/	Frequency	Permittivity $\epsilon$	Conductivity $\sigma$ (S/m)
Target value	835 MHz	55.2	0.97
	1900 MHz	53.3	1.52
	2450 MHz	52.7	1.95
Measurement value (Average of 10 tests)	835 MHz	54.9	0.96
	848.8 MHz	54.6	0.95
	836.6 MHz	54.9	0.96
	825 MHz	55.9	0.94
	1900 MHz	53.6	1.53
	1910 MHz	53.4	1.55
	1880 MHz	53.9	1.50
	1850.2 MHz	54.3	1.48
	2450 MHz	52.4	1.97
	2437 MHz	52.3	1.96

## 7.2 System Validation

Table 8: System Validation of Head

		Measurement is made at temperature 23.0 °C and relative humidity 39%.					
		Liquid temperature during the test: 22.5°C					
Measurement Date : 850 MHz <u>June 17, 2011</u> 1900 MHz <u>June 15, 2011</u> 2450 MHz <u>June 16, 2011</u>							
Liquid parameters	Dipole calibration Target value	Frequency		Permittivity $\epsilon$			
		835 MHz		41.6			
		1900 MHz		39.6			
		2450 MHz		39.0			
Verification results	Frequency	Actual Measurement value		Conductivity $\sigma$ (S/m)			
		835 MHz		0.92			
		1900 MHz		1.40			
		2450 MHz		1.74			
Verification results	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
		835 MHz	6.12	9.41	5.96	9.20	-2.61%
		1900 MHz	20.1	39.4	19.44	38.76	-3.28%
		2450 MHz	24.6	52.4	24.04	51.2	-2.28%
							-2.29%

Table 9: System Validation of Body

		Measurement is made at temperature 23.0 °C and relative humidity 39%.					
		Liquid temperature during the test: 22.5°C					
Measurement Date : 850 MHz <u>June 17, 2011</u> 1900 MHz <u>June 15, 2011</u> 2450 MHz <u>June 16, 2011</u>							
Liquid parameters	Dipole calibration Target value	Frequency		Permittivity $\epsilon$			
		835 MHz		0.97			
		1900 MHz		1.51			
		2450 MHz		1.95			
Verification results	Frequency	Actual Measurement value		Conductivity $\sigma$ (S/m)			
		835 MHz		54.5			
		1900 MHz		52.5			
		2450 MHz		52.5			
Verification results	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
		835 MHz	6.24	9.57	6.32	10.04	1.28%
		1900 MHz	20.9	41.4	21.24	41.6	1.63%
		2450 MHz	23.9	51.6	24.4	52.4	0.48%
							4.91%
							1.55%

### 7.3 Summary of Measurement Results

	Duty Cycle
Speech	1 : 8.3
GPRS and EGPRS (AP off)	1 : 2
GPRS and EGPRS for 850 (AP on)	1 : 8.3
GPRS and EGPRS for 1900 (AP on)	1 : 2

Table 10: SAR Values (GSM 850MHz-Head)

Limit of SAR (W/kg)	Measurement Result (W/kg)		Power Drift (dB)
	10 g Average	1 g Average	
2.0	1.6		
Test Case			
Left hand, Touch cheek, Mid frequency (See Fig.1)	0.114	0.155	-0.052
Left hand, Tilt 15 Degree, Mid frequency (See Fig.2)	0.064	0.087	-0.074
Left hand, Touch cheek, High frequency (See Fig.3)	0.163	0.221	-0.063
Left hand, Touch cheek, Low frequency (See Fig.4)	0.079	0.107	0.026
Right hand, Touch cheek, Mid frequency (See Fig.5)	0.118	0.167	-0.062
Right hand, Tilt 15 Degree, Mid frequency (See Fig.6)	0.058	0.078	-0.010
Right hand, Touch cheek, High frequency (See Fig.7)	0.167	0.237	-0.138
Right hand, Touch cheek, Low frequency (See Fig.8)	0.083	0.116	0.083
Right hand, Touch cheek, High frequency, Slide up (See Fig.9)	0.077	0.102	0.096

Table 11: SAR Values (PCS 1900MHz-Head)

Limit of SAR (W/kg)	Measurement Result (W/kg)		Power Drift (dB)
	10 g Average	1 g Average	
2.0	1.6		
Test Case			
Left hand, Touch cheek, Mid frequency (See Fig.10)	0.183	0.309	-0.024
Left hand, Tilt 15 Degree, Mid frequency (See Fig.11)	0.163	0.268	-0.104
Left hand, Touch cheek, High frequency (See Fig.12)	0.151	0.254	-0.134
Left hand, Touch cheek, Low frequency (See Fig.13)	0.198	0.332	-0.126
Right hand, Touch cheek, Mid frequency (See Fig.14)	0.275	0.490	0.071
Right hand, Tilt 15 Degree, Mid frequency (See Fig.15)	0.145	0.234	-0.178
Right hand, Touch cheek, High frequency (See Fig.16)	0.212	0.367	-0.194
Right hand, Touch cheek, Low frequency (See Fig.17)	0.287	0.485	0.180
Right hand, Touch cheek, Mid frequency, Slide up (See Fig.18)	0.062	0.110	-0.119

Table 12: SAR Values (GSM 850MHz-Body) – AP off 10mm

Limit of SAR (W/kg)	10 g Average	1g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		10 g Average
	10 g Average	1 g Average	
Towards Ground, Low frequency with GPRS (See Fig.19)	0.557	0.803	0.121
Towards Phantom, Low frequency with GPRS (See Fig.20)	0.152	0.222	-0.194
Left Side, Low frequency with GPRS (See Fig.21)	0.232	0.354	-0.162
Right Side, Low frequency with GPRS (See Fig.22)	0.168	0.254	0.104
Bottom Side, Low frequency with GPRS (See Fig.23)	0.172	0.319	0.100
Towards Ground, High frequency with GPRS (See Fig.24)	0.772	1.08	0.095
Towards Ground, Mid frequency with GPRS (See Fig.25)	0.664	0.947	0.197
Towards Ground, High frequency with EGPRS (See Fig.26)	0.728	1.03	-0.101
Towards Ground, High frequency with Headset (See Fig.27)	0.449	0.681	0.036
Towards Ground, High frequency with Bluetooth (See Fig.28)	0.575	0.807	-0.105
Towards Ground, Slide up, High frequency with GPRS (See Fig.29)	0.583	0.920	0.162

Table 13: SAR Values (GSM 850MHz-Body) – AP off 15mm

Limit of SAR (W/kg)	10 g Average	1g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		10 g Average
	10 g Average	1 g Average	
Towards Ground, High frequency with Headset (See Fig.30)	0.231	0.332	-0.142
Towards Ground, High frequency with Bluetooth (See Fig.31)	0.353	0.491	-0.170

Table 14: SAR Values (GSM 850MHz-Body) – AP on 10mm

Limit of SAR (W/kg)	10 g Average	1g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		10 g Average
	10 g Average	1 g Average	
Towards Ground, Mid frequency with GPRS (See Fig.32)	0.542	0.791	-0.130
Towards Phantom, Mid frequency with GPRS (See Fig.33)	0.117	0.164	-0.014

Left Side, Mid frequency with GPRS (See Fig.34)	0.113	0.170	-0.040
Right Side, Mid frequency with GPRS (See Fig.35)	0.122	0.186	0.024
Bottom Side, Mid frequency with GPRS (See Fig.36)	0.090	0.165	-0.109
Towards Ground, High frequency with GPRS (See Fig.37)	<b>0.637</b>	<b>0.934</b>	-0.180
Towards Ground, Low frequency with GPRS (See Fig.38)	0.369	0.538	-0.120

Table 15: SAR Values (PCS 1900MHz-Body) – AP off 15mm

Limit of SAR (W/kg)	10 g Average	1g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Towards Ground, Low frequency with GPRS (See Fig.39)	0.359	0.654	-0.134
Towards Phantom, Low frequency with GPRS (See Fig.40)	0.054	0.091	-0.053
Towards Ground, High frequency with GPRS (See Fig.41)	<b>0.618</b>	<b>1.14</b>	-0.009
Towards Ground, Mid frequency with GPRS (See Fig.42)	0.500	0.935	0.151
Towards Ground, High frequency with Headset (See Fig.43)	0.379	0.709	-0.063
Towards Ground, High frequency with Bluetooth (See Fig.44)	0.409	0.749	0.112

Table 16: SAR Values (PCS 1900MHz-Body) – AP on 10mm

Limit of SAR (W/kg)	10 g Average	1g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Towards Ground, Mid frequency with GPRS (See Fig.45)	0.371	0.732	0.177
Towards Phantom, Mid frequency with GPRS (See Fig.46)	0.050	0.085	-0.187
Left Side, Mid frequency with GPRS (See Fig.47)	0.037	0.065	0.115
Right Side, Mid frequency with GPRS (See Fig.48)	0.093	0.156	-0.158
Bottom Side, Mid frequency with GPRS (See Fig.49)	0.25	0.504	-0.108
Towards Ground, High frequency with GPRS (See Fig.50)	<b>0.472</b>	<b>1.00</b>	0.013
Towards Ground, Low frequency with GPRS (See Fig.51)	0.295	0.571	0.060
Towards Ground, High frequency with EGPRS (See Fig.52)	0.405	0.818	0.189
Towards Ground, High frequency with Headset (See Fig.53)	0.302	0.602	0.100
Towards Ground, High frequency with Bluetooth (See Fig.54)	0.308	0.615	0.072
Towards Ground, Slide up, High frequency with GPRS (See Fig.55)	0.398	0.807	-0.187

## 7.4 Summary of Measurement Results (Bluetooth and WiFi function)

The distance between BT antenna and RF antenna is 5.769cm.

The output power of BT antenna is 4.5mW.

According to the output power measurement result and the distance between the two antennas, we can draw the conclusion that: stand-alone SAR and simultaneous transmission SAR are not required for BT transmitter, because the output power of BT transmitter is  $\leq 2P_{Ref}$  and its antenna is  $>5$ cm from other antenna

**Note:** Power thresholds ( $P_{Ref}$ ) is derived from multiples of  $0.5 \times 60/f_{(GHz)}$ , that is 12mW (10.79dBm) for BT frequency.

The average conducted power for WiFi is as following:

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	18.9	19.0	19.0	19.1
6	19.1	19.1	18.9	18.9
11	18.9	18.9	19.0	19.0

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	16.9	16.9	16.9	16.9	16.9	16.9	16.9	16.9
6	17.1	17.1	17.1	17.0	17.1	17.1	17.1	17.1
11	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1

802.11n (dBm)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	16.9	16.9	16.9	16.9	16.9	16.9	16.9	15.1
6	17.1	17.1	17.1	17.1	17.1	17.1	17.1	15.1
11	17.1	17.1	17.1	17.1	17.1	17.1	17.1	14.9

The peak conducted power for WiFi is as following:

802.11b (dBm)

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	21.7	22.0	21.8	21.4
6	21.5	21.7	21.7	21.3
11	21.5	21.0	21.4	24.0

802.11g (dBm)

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	24.7	24.4	24.8	24.1	24.1	24.3	24.7	24.7
6	24.8	24.8	24.6	24.7	24.6	24.7	24.2	24.7
11	24.1	24.0	24.5	24.1	24.1	23.5	23.9	23.8

802.11n (dBm)

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	24.7	24.4	24.8	24.1	24.7	24.4	24.8	22.5
6	24.8	24.8	24.6	24.7	24.8	24.8	24.6	22.4
11	24.1	24.0	24.5	24.1	24.1	24.0	24.5	22.2

According to the conducted power measurement result, we can draw the conclusion that: stand-alone SAR for WiFi should be performed. Then, simultaneous transmission SAR for WiFi is considered with measurement results of GSM and WiFi.

SAR is not required for 802.11g/n channels if the output power is less than 0.25dB higher than that measured on the corresponding 802.11b channels, and for each frequency band, testing at higher data rates and higher order modulations is not required when the maximum average output power for each of these configurations is less than 0.25dB higher than those measured at the lowest data rate. According to the above conducted power, the EUT should be tested for “802.11b, 1Mbps, channel 6”.

**Table 17: SAR Values (WIFI 802.b -Head)**

Limit of SAR (W/kg)	10 g Average		Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Left hand, Touch cheek, 1Mbps,channel 6 (See Fig.56)	0.117	0.239	-0.105
Left hand, Tilt 15 Degree, 1Mbps,channel 6 (See Fig.57)	0.097	0.190	-0.021
Right hand, Touch cheek, 1Mbps,channel 6 (See Fig.58)	0.176	0.368	-0.139
Right hand, Tilt 15 Degree, 1Mbps,channel 6 (See Fig.59)	0.135	0.261	0.109
Right hand, Touch cheek, 1Mbps,channel 6, Slide up (See Fig.60)	0.112	0.227	0.094

**Table 18: SAR Values (WIFI 802.b -Body)**

Limit of SAR (W/kg)	10 g Average		Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Toward Phantom, 1Mbps,channel 6 (See Fig.61)	0.094	0.175	-0.159
Toward Ground, 1Mbps,channel 6 (See Fig.62)	0.225	0.392	-0.167
Left Side, 1Mbps,channel 6 (See Fig.63)	0.128	0.238	-0.040
Right Side, 1Mbps,channel 6 (See Fig.64)	0.060	0.106	0.150
Top Side, 1Mbps,channel 6 (See Fig.65)	0.282	0.592	-0.010
Top Side, 1Mbps,channel 6, Slide up (See Fig.66)	0.215	0.469	0.132

**Table 19: The sum of SAR values for GSM and WiFi**

	Position	GSM/WCDMA	WiFi	Sum
<b>Maximum SAR value for Head</b>	Right hand, Touch cheek	0.490	0.368	<b>0.858</b>
<b>Maximum SAR value for Body</b>	Toward Ground	1.08	0.392	<b>1.472</b>
	Top Side	/	0.592	/

According to the above tables, the sum of SAR values for GSM/WCDMA and WiFi  $< 1.6\text{W/kg}$ . So simultaneous transmission SAR are not required for WiFi transmitter.

## 7.5 Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 4.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 4.1 of this test report.

The maximum SAR values are obtained at the case of **WCDMA 1900 MHz Band, Body, AP off 15mm, Towards Ground, High frequency with GPRS (Table 15)**, and the value are: **1.14(1g)**.

## 8 Measurement Uncertainty

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	5.5	N	1	1	1	5.5	5.5	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RF ambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	$\infty$
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$

Test sample related										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	$\infty$
Phantom and set-up										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	$\infty$
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						9.25	9.12	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						18.5	18.2	

## 9 MAIN TEST INSTRUMENTS

Table 20: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 4,2010	One year
02	Power meter	NRVD	102083	September 11, 2010	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4433C	MY49070393	November 13, 2010	One Year
05	Amplifier	VTL5400	0505	No Calibration Requested	
06	BTS	8960	MY48365192	November 18, 2010	One year
07	E-field Probe	SPEAG ES3DV3	3149	September 25, 2010	One year
08	E-field Probe	SPEAG EX3DV4	3617	July 9, 2010	One year
09	DAE	SPEAG DAE4	771	November 21, 2010	One year
10	Dipole Validation Kit	SPEAG D835V2	443	February 26, 2010	Two years
11	Dipole Validation Kit	SPEAG D1900V2	541	February 26, 2010	Two years
12	Dipole Validation Kit	SPEAG D2450V2	853	September 27, 2010	Two years

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

## ANNEX A MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the reference point was measured and was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of the phantom was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the flat phantom and the horizontal grid spacing was 10 mm x 10 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

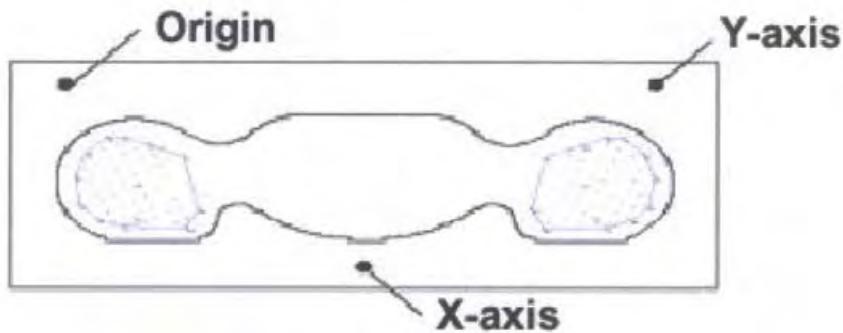
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7 x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

b. The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot"-condition (in x ~ y and z-directions). The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

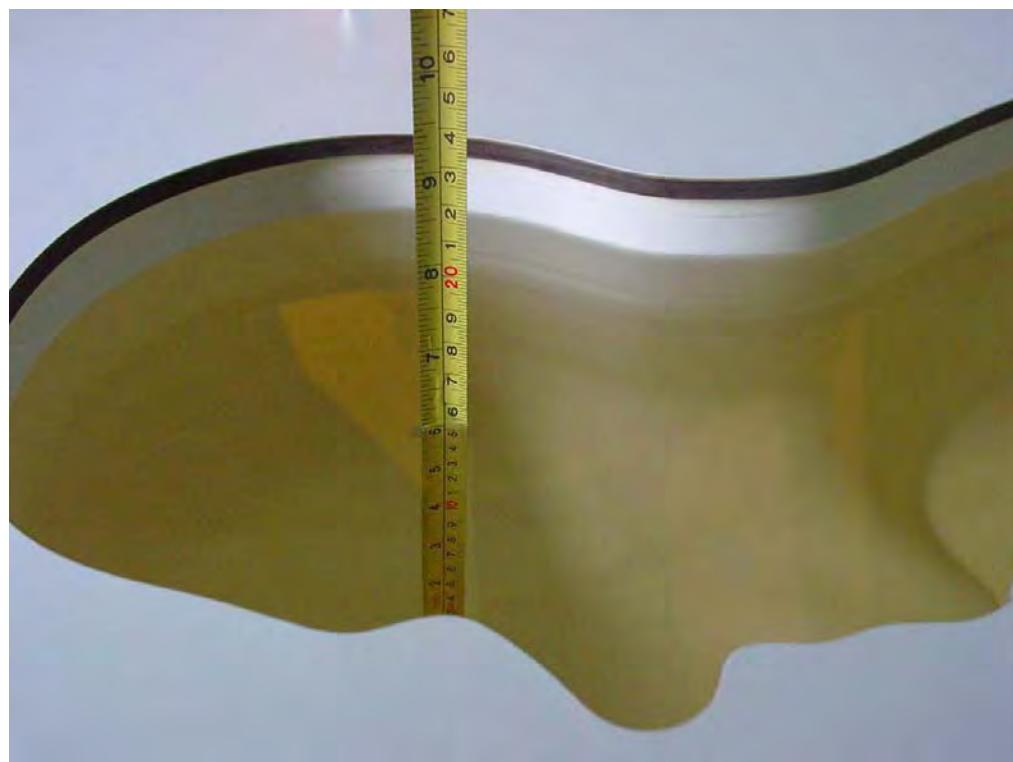
Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation is repeated.



Picture A: SAR Measurement Points in Area Scan

**ANNEX B TEST LAYOUT**

**Picture B1: Specific Absorption Rate Test Layout**



**Picture B2: Liquid depth in the Head Phantom (850 MHz)**



**Picture B3 Liquid depth in the Flat Phantom (1900MHz)**



**Picture B4 Liquid depth in the Flat Phantom (2450MHz)**

## ANNEX C GRAPH RESULTS

### 850 Left Cheek Middle

Date/Time: 2011-6-17 8:23:20

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.167 mW/g

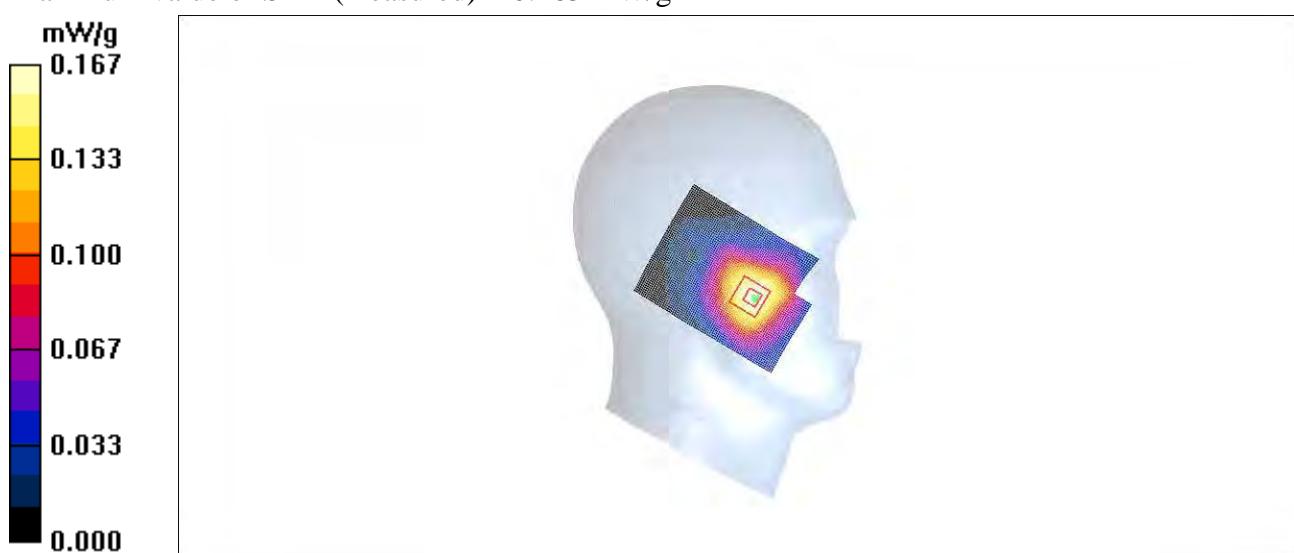
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.16 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 0.193 W/kg

**SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.114 mW/g**

Maximum value of SAR (measured) = 0.165 mW/g



**Fig. 1 850 MHz CH190**

**850 Left Tilt Middle**

Date/Time: 2011-6-17 9:06:32

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.093 mW/g

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

Reference Value = 7.74 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.110 W/kg

**SAR(1 g) = 0.087 mW/g; SAR(10 g) = 0.064 mW/g**

Maximum value of SAR (measured) = 0.092 mW/g

**Fig. 2 850 MHz CH190**

**850 Left Cheek High**

Date/Time: 2011-6-17 8:37:38

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.242 mW/g

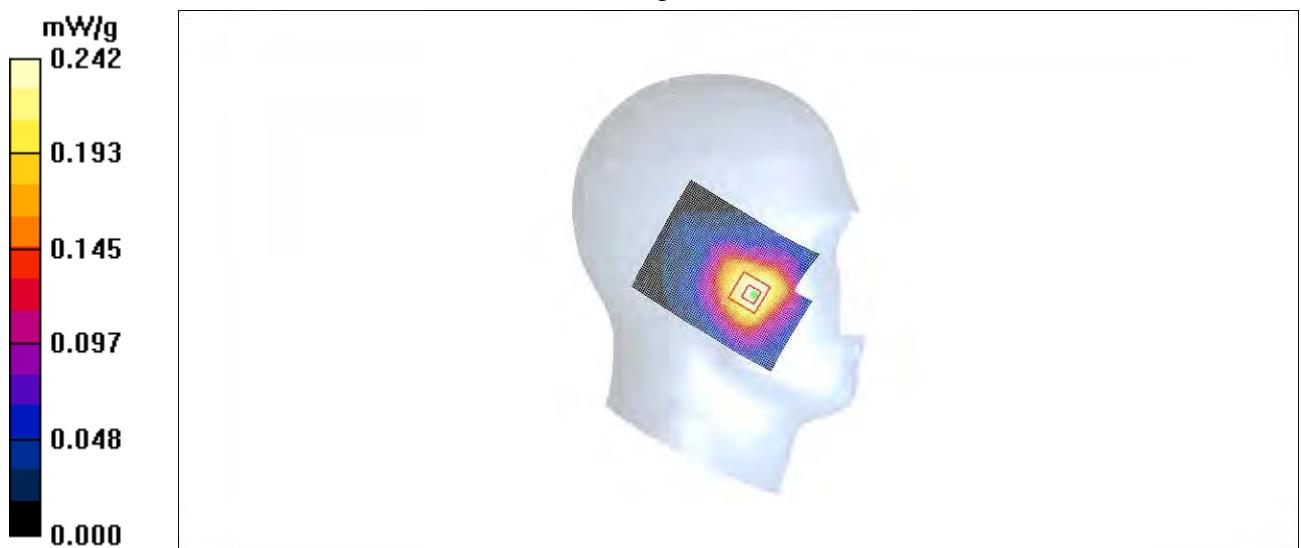
**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.16 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 0.273 W/kg

**SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.163 mW/g**

Maximum value of SAR (measured) = 0.235 mW/g

**Fig. 3 850MHz CH251**

**850 Left Cheek Low**

Date/Time: 2011-6-17 8:51:55

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 42.0$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.113 mW/g

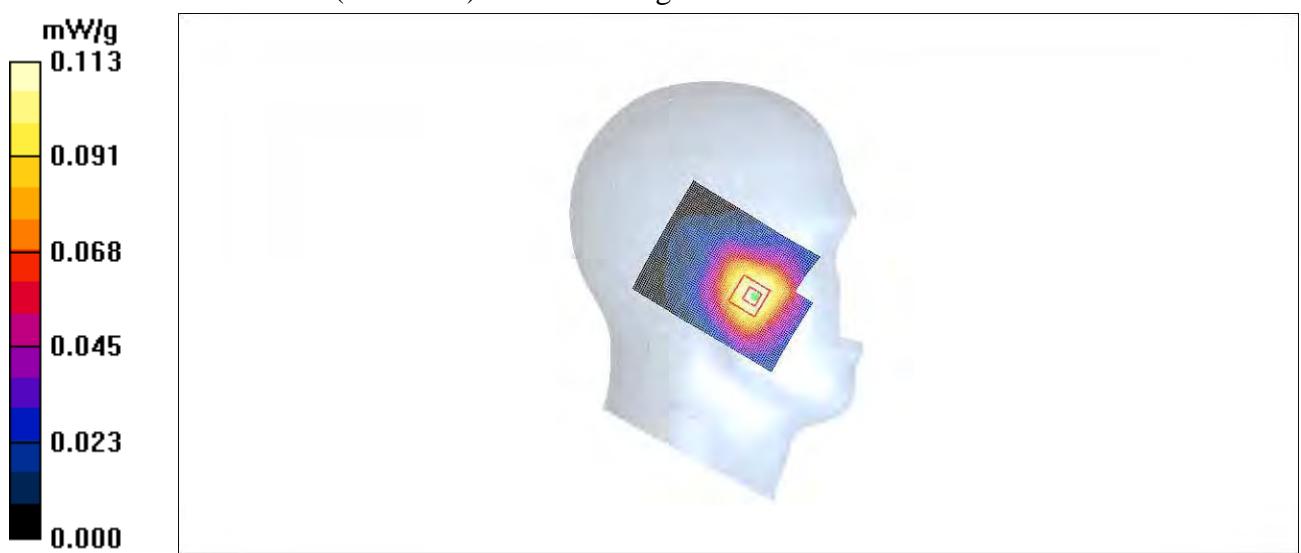
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.29 V/m; Power Drift = 0.026 dB

Peak SAR (extrapolated) = 0.133 W/kg

**SAR(1 g) = 0.107 mW/g; SAR(10 g) = 0.079 mW/g**

Maximum value of SAR (measured) = 0.114 mW/g

**Fig. 4 850 MHz CH128**

**850 Right Cheek Middle**

Date/Time: 2011-6-17 9:21:05

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.186 mW/g

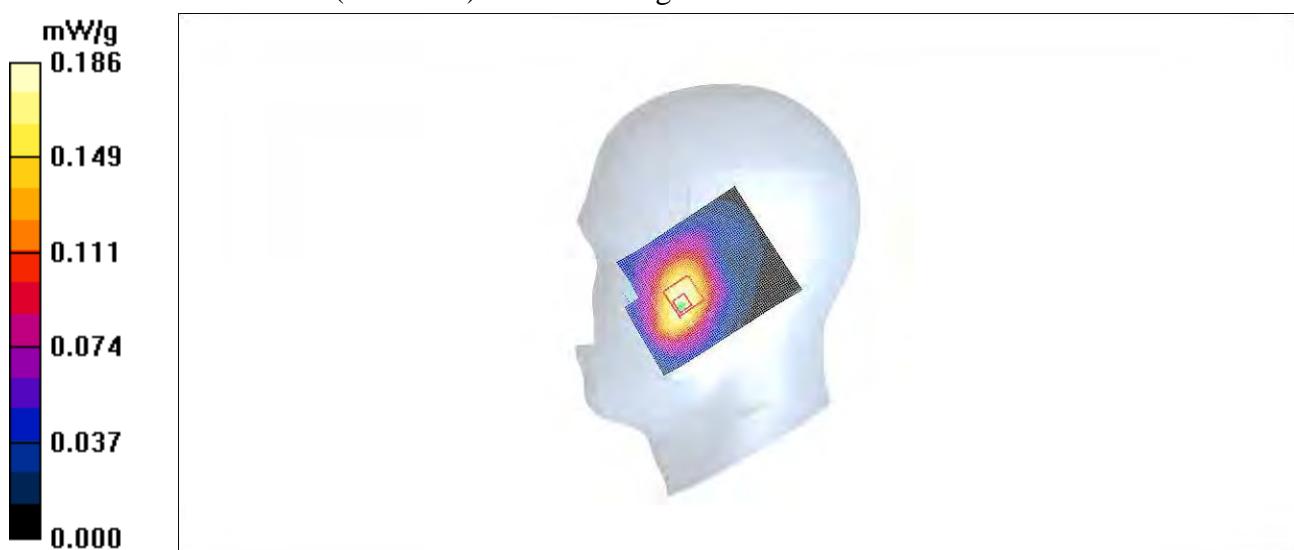
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.72 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.237 W/kg

**SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.118 mW/g**

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

**Fig. 5 850 MHz CH190**

**850 Right Tilt Middle**

Date/Time: 2011-6-17 10:04:22

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.086 mW/g

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

Reference Value = 6.80 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 0.096 W/kg

**SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.058 mW/g**

Maximum value of SAR (measured) = 0.081 mW/g

**Fig. 6    850 MHz CH190**

**850 Right Cheek High**

Date/Time: 2011-6-17 9:35:27

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

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

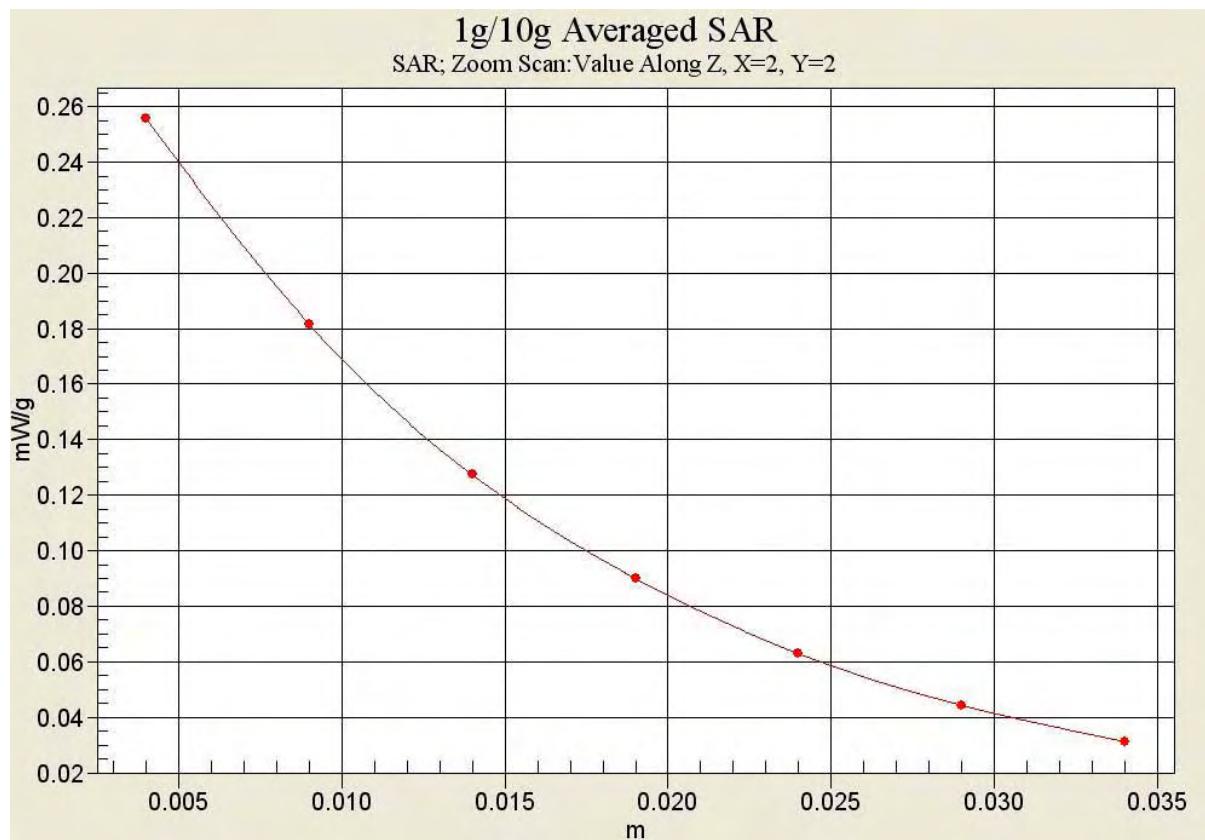
Reference Value = 5.68 V/m; Power Drift = -0.138 dB

Peak SAR (extrapolated) = 0.340 W/kg

**SAR(1 g) = 0.237 mW/g; SAR(10 g) = 0.167 mW/g**

Maximum value of SAR (measured) = 0.255 mW/g

**Fig. 7 850 MHz CH251**



**Fig. 7-1 Z-Scan at power reference point (850 MHz CH251)**

**850 Right Cheek Low**

Date/Time: 2011-6-17 9:49:56

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.88$  mho/m;  $\epsilon_r = 42.0$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.126 mW/g

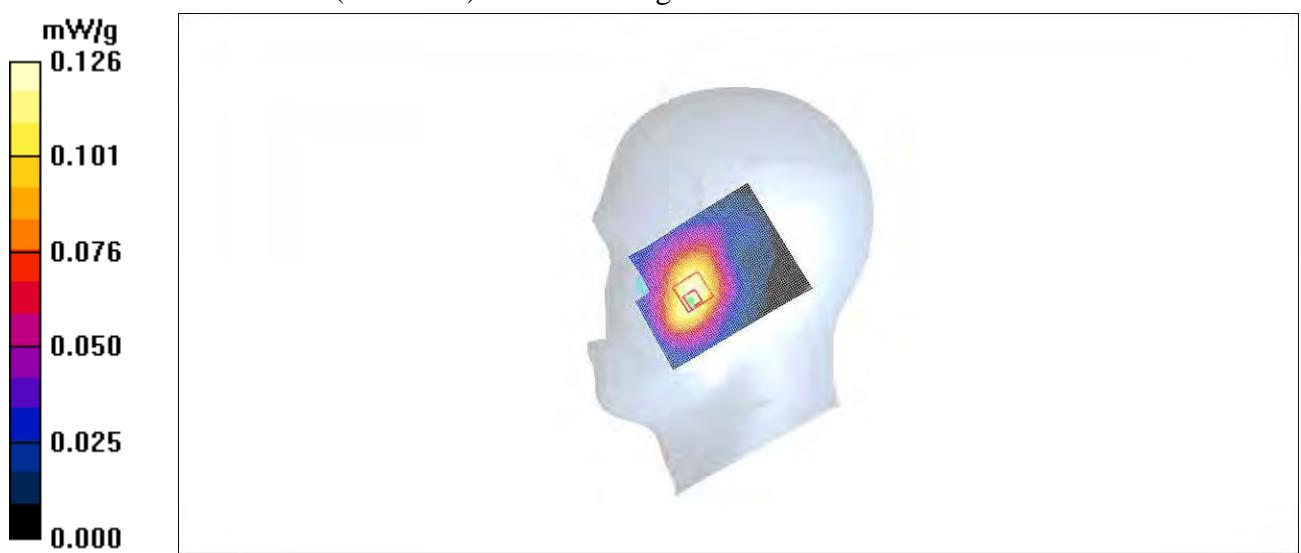
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.05 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 0.165 W/kg

**SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.083 mW/g**

Maximum value of SAR (measured) = 0.125 mW/g

**Fig. 8 850 MHz CH128**

**850 Right Cheek High Slide up**

Date/Time: 2011-6-17 9:35:30

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.90$  mho/m;  $\epsilon_r = 41.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek High/Area Scan (71x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.110 mW/g

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

Reference Value = 5.94 V/m; Power Drift = 0.096 dB

Peak SAR (extrapolated) = 0.148 W/kg

**SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.077 mW/g**

Maximum value of SAR (measured) = 0.107 mW/g

**Fig. 9 850 MHz CH251**

**1900 Left Cheek Middle**

Date/Time: 2011-6-15 13:23:12

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.346 mW/g

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

Reference Value = 10.8 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.480 W/kg

**SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.183 mW/g**

Maximum value of SAR (measured) = 0.340 mW/g

**Fig. 10 1900 MHz CH661**

**1900 Left Tilt Middle**

Date/Time: 2011-6-15 14:06:20

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m $^3$ 

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

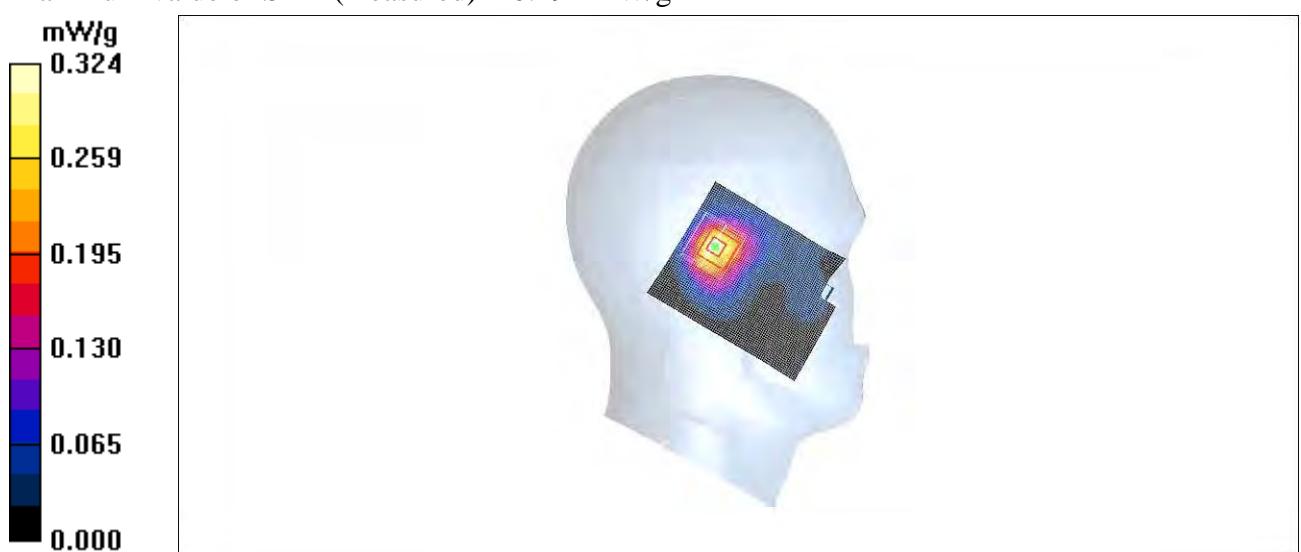
**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.3 V/m; Power Drift = -0.104 dB

Peak SAR (extrapolated) = 0.408 W/kg

**SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.163 mW/g**

Maximum value of SAR (measured) = 0.294 mW/g

**Fig. 11 1900 MHz CH661**

**1900 Left Cheek High**

Date/Time: 2011-6-15 13:37:33

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 40.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

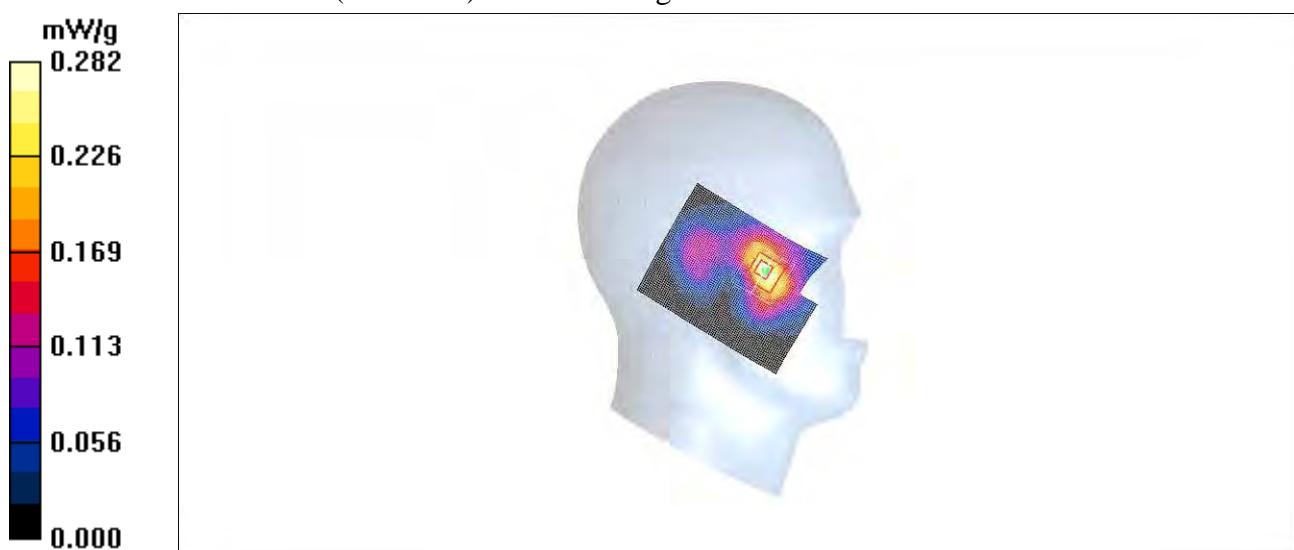
**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.24 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 0.395 W/kg

**SAR(1 g) = 0.254 mW/g; SAR(10 g) = 0.151 mW/g**

Maximum value of SAR (measured) = 0.281 mW/g

**Fig. 12 1900 MHz CH810**

**1900 Left Cheek Low**

Date/Time: 2011-6-15 13:51:54

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.36$  mho/m;  $\epsilon_r = 41.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.367 mW/g

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

Reference Value = 11.6 V/m; Power Drift = -0.126 dB

Peak SAR (extrapolated) = 0.515 W/kg

**SAR(1 g) = 0.332 mW/g; SAR(10 g) = 0.198 mW/g**

Maximum value of SAR (measured) = 0.361 mW/g

**Fig. 13 1900 MHz CH512**

**1900 Right Cheek Middle**

Date/Time: 2011-6-15 14:20:58

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

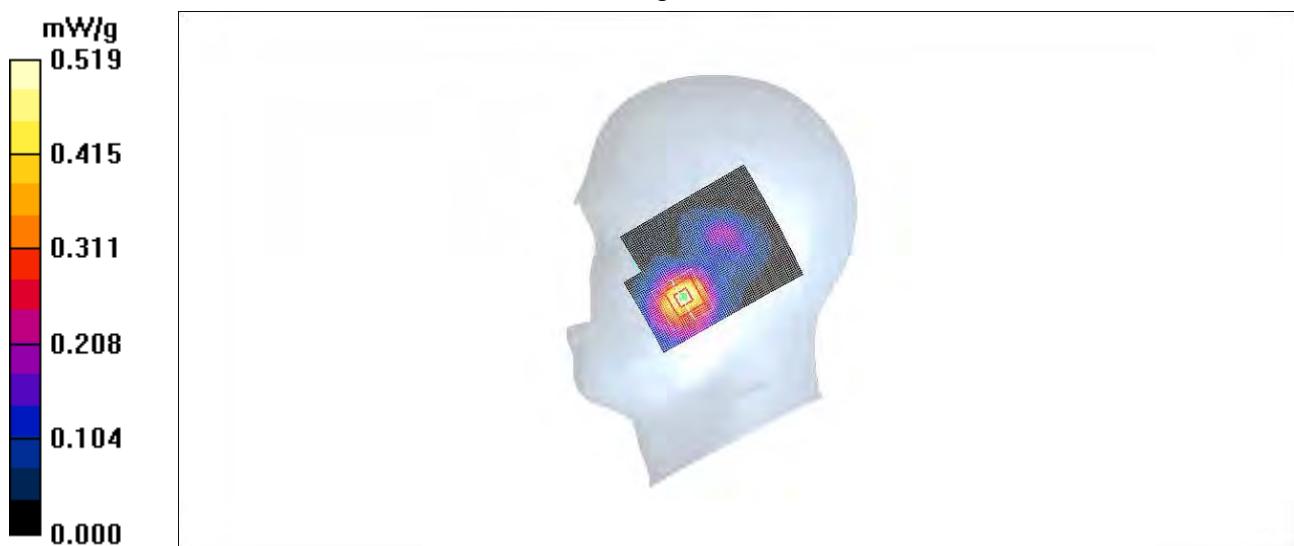
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

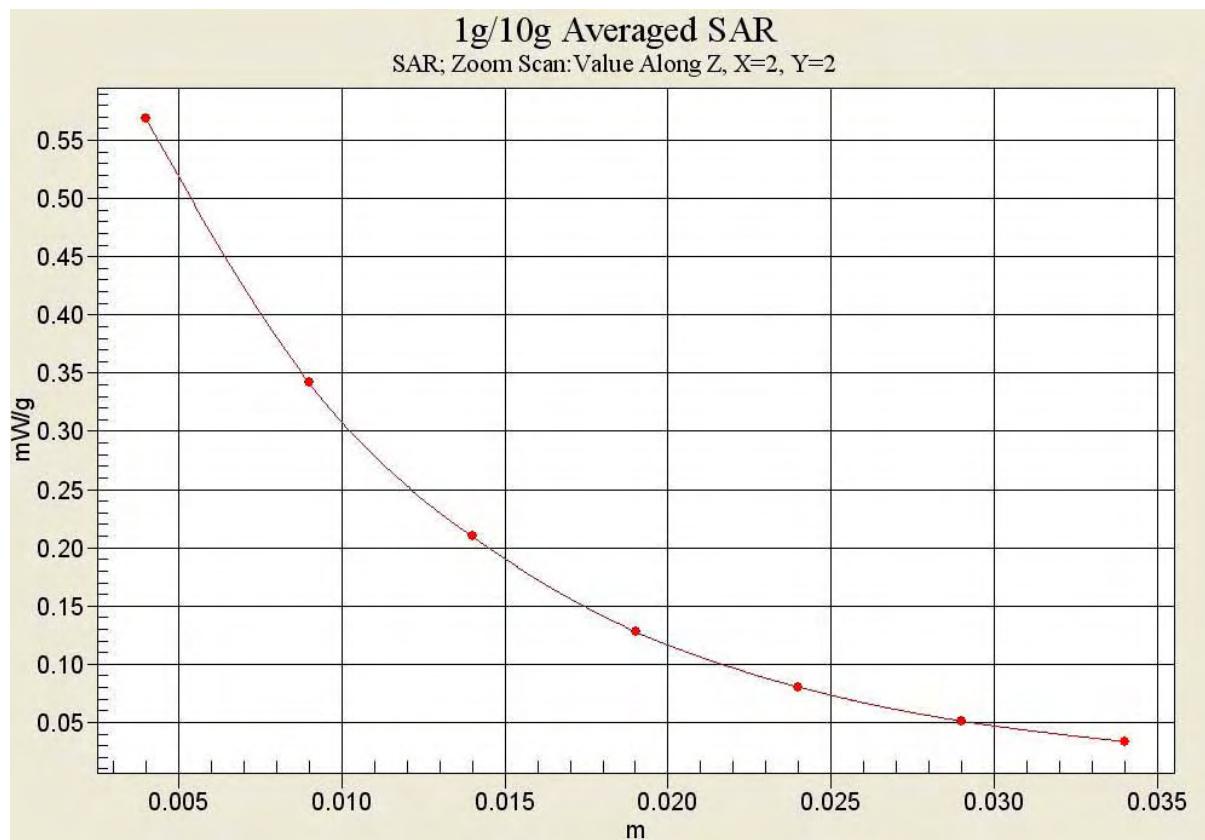
Reference Value = 9.94 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.825 W/kg

**SAR(1 g) = 0.490 mW/g; SAR(10 g) = 0.275 mW/g**

Maximum value of SAR (measured) = 0.569 mW/g

**Fig. 14 1900 MHz CH661**



**Fig. 14-1 Z-Scan at power reference point (1900 MHz CH661)**

**1900 Right Tilt Middle**

Date/Time: 2011-6-15 15:04:24

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m $^3$ 

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.272 mW/g

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

Reference Value = 13.6 V/m; Power Drift = -0.178 dB

Peak SAR (extrapolated) = 0.353 W/kg

**SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.145 mW/g**

Maximum value of SAR (measured) = 0.251 mW/g

**Fig. 15 1900 MHz CH661**

**1900 Right Cheek High**

Date/Time: 2011-6-15 14:35:26

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.43$  mho/m;  $\epsilon_r = 40.5$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.425 mW/g

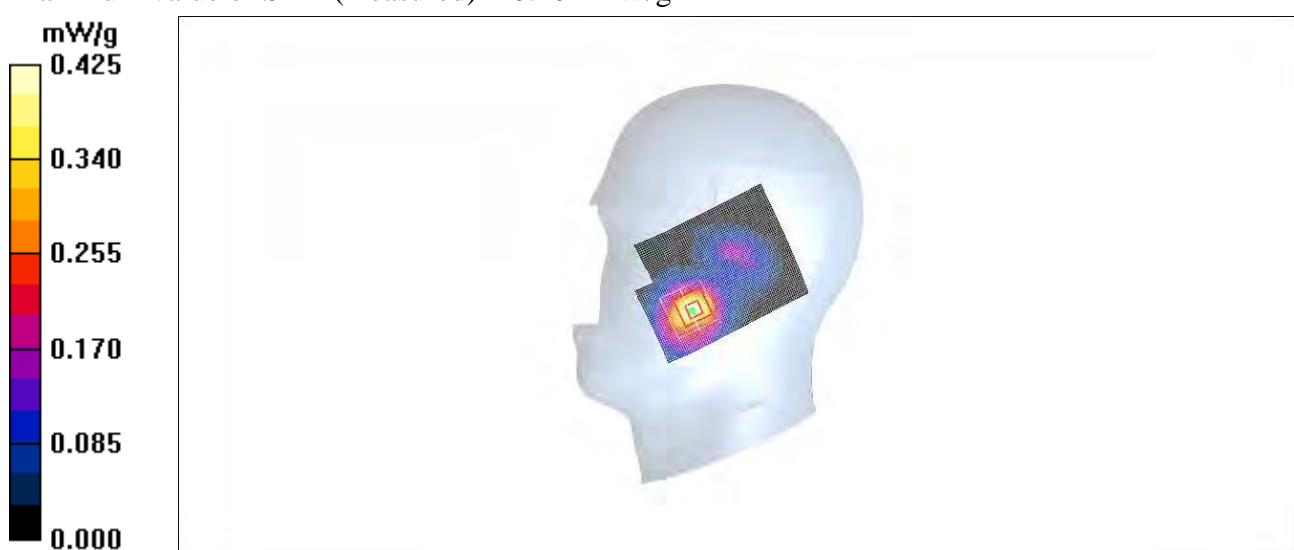
**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.94 V/m; Power Drift = -0.194 dB

Peak SAR (extrapolated) = 0.594 W/kg

**SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.212 mW/g**

Maximum value of SAR (measured) = 0.404 mW/g

**Fig. 16 1900 MHz CH810**

**1900 Right Cheek Low**

Date/Time: 2011-6-15 14:49:50

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.36$  mho/m;  $\epsilon_r = 41.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.593 mW/g

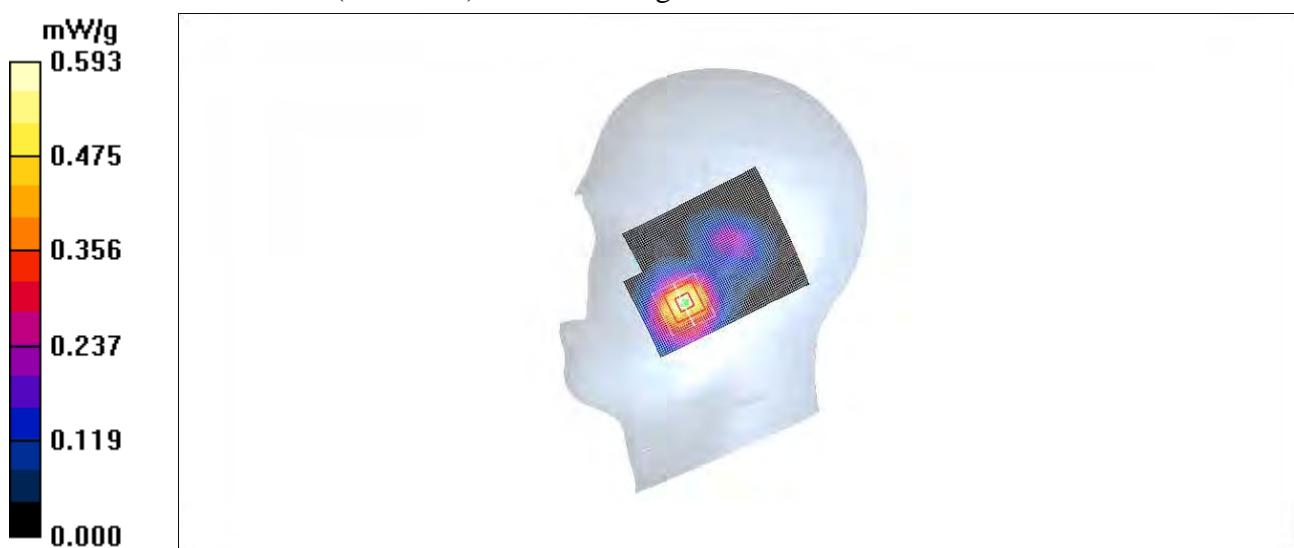
**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m; Power Drift = 0.180 dB

Peak SAR (extrapolated) = 0.795 W/kg

**SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.287 mW/g**

Maximum value of SAR (measured) = 0.540 mW/g

**Fig. 17 1900 MHz CH512**

**1900 Right Cheek Middle Slide up**

Date/Time: 2011-6-15 15:21:10

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.39$  mho/m;  $\epsilon_r = 40.9$ ;  $\rho = 1000$  kg/m $^3$ 

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (71x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.125 mW/g

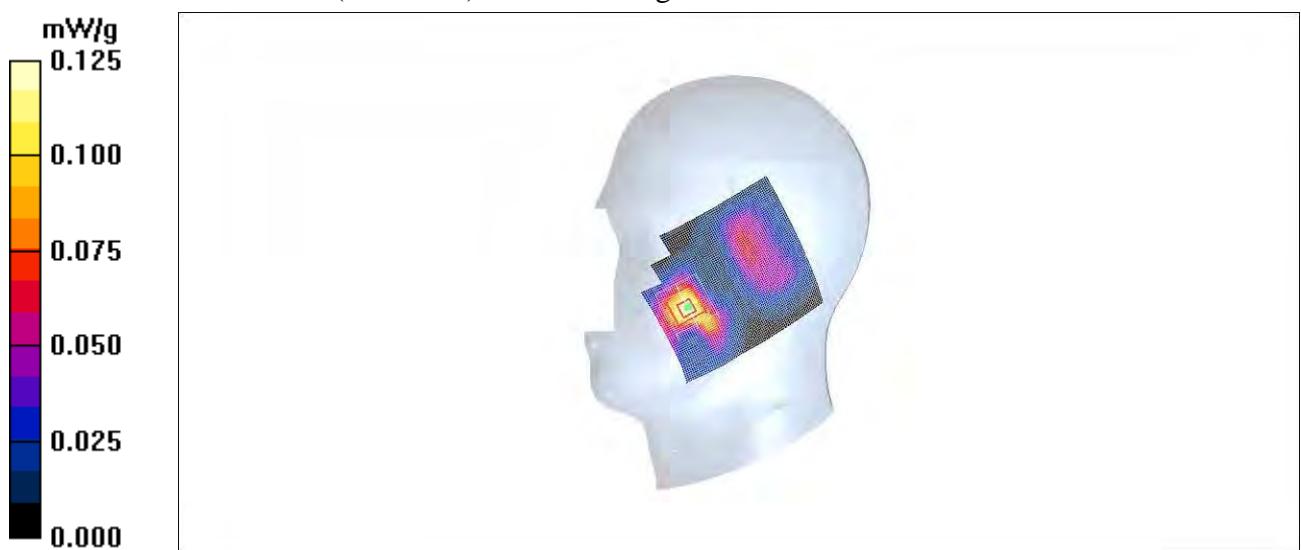
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.47 V/m; Power Drift = -0.119 dB

Peak SAR (extrapolated) = 0.186 W/kg

**SAR(1 g) = 0.110 mW/g; SAR(10 g) = 0.062 mW/g**

Maximum value of SAR (measured) = 0.122 mW/g

**Fig. 18 1900 MHz CH661**

**850 Body Towards Ground Low with GPRS**

Date/Time: 2011-6-17 10:01:43

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

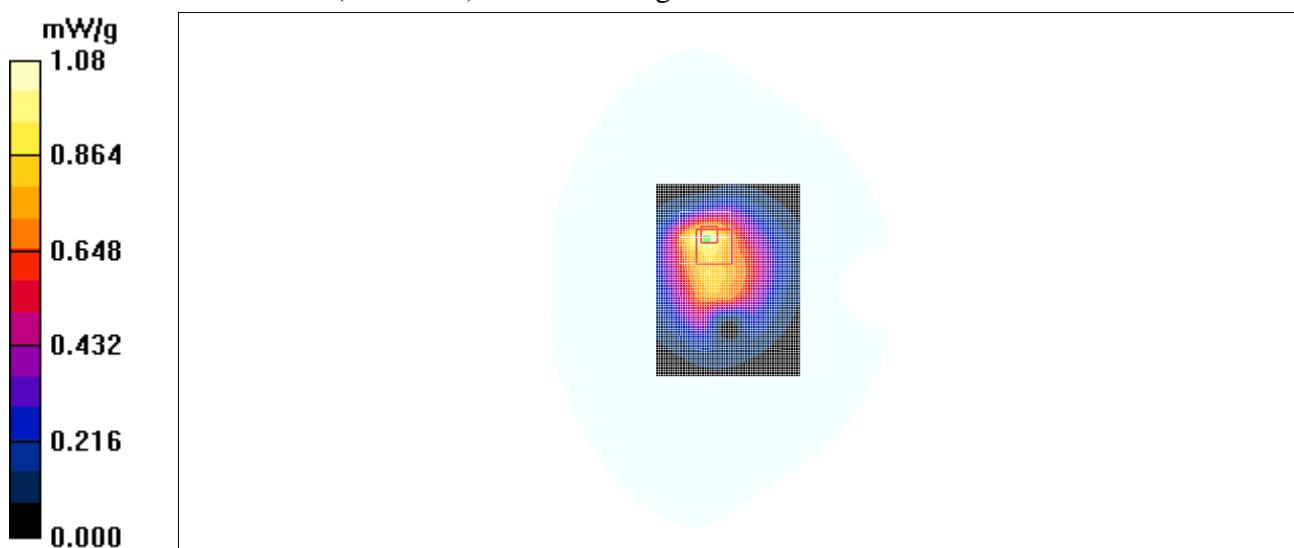
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.8 V/m; Power Drift = 0.121 dB

Peak SAR (extrapolated) = 1.25 W/kg

**SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.557 mW/g**

Maximum value of SAR (measured) = 0.839 mW/g

**Fig. 19 850 MHz CH128**

**850 Body Towards Phantom Low with GPRS**

Date/Time: 2011-6-17 10:17:25

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Phantom Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.243 mW/g

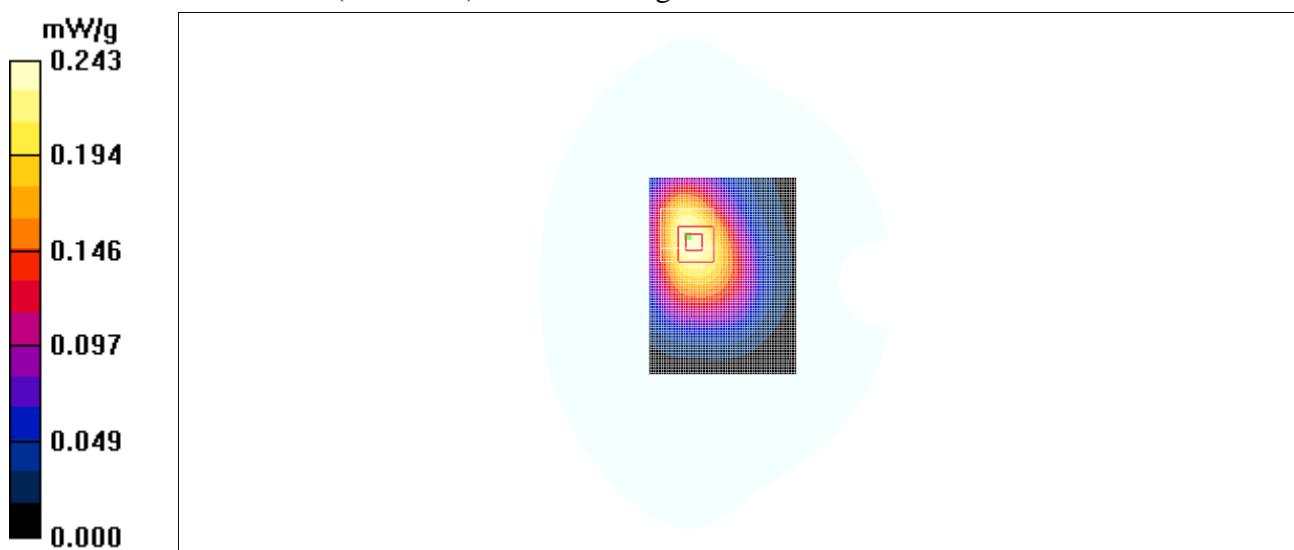
**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.8 V/m; Power Drift = -0.194 dB

Peak SAR (extrapolated) = 0.304 W/kg

**SAR(1 g) = 0.222 mW/g; SAR(10 g) = 0.152 mW/g**

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

**Fig. 20 850 MHz CH128**

**850 Body Left Side Low with GPRS**

Date/Time: 2011-6-17 10:33:49

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Left Side Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.337 mW/g

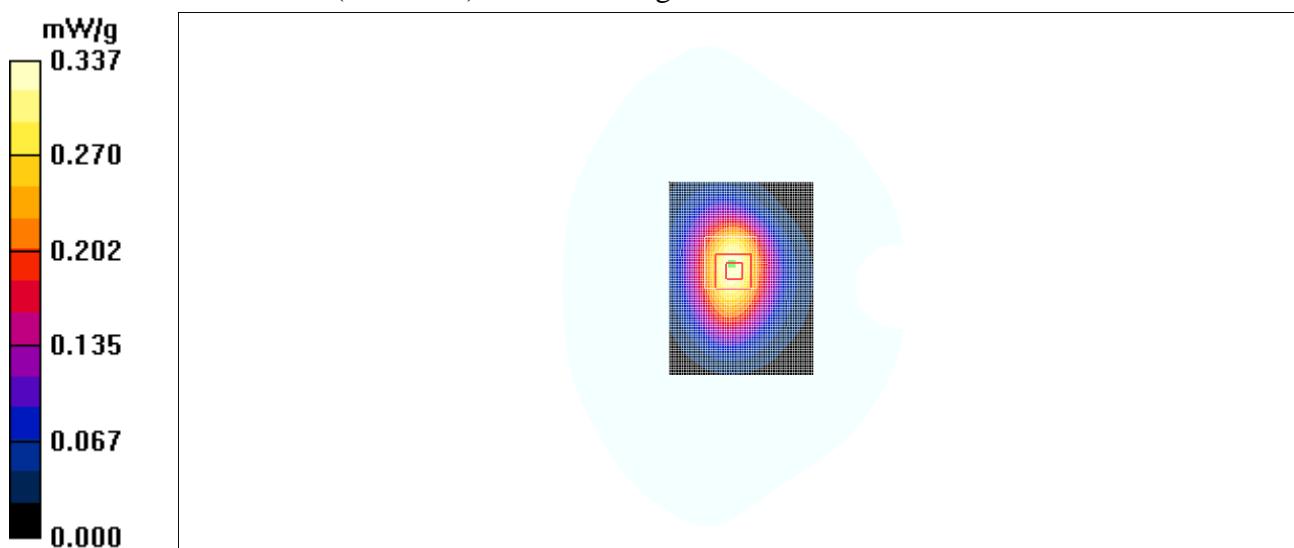
**Left Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = -0.162 dB

Peak SAR (extrapolated) = 0.509 W/kg

**SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.232 mW/g**

Maximum value of SAR (measured) = 0.358 mW/g

**Fig. 21 850 MHz CH128**

**850 Body Right Side Low with GPRS**

Date/Time: 2011-6-17 10:50:21

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Right Side Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

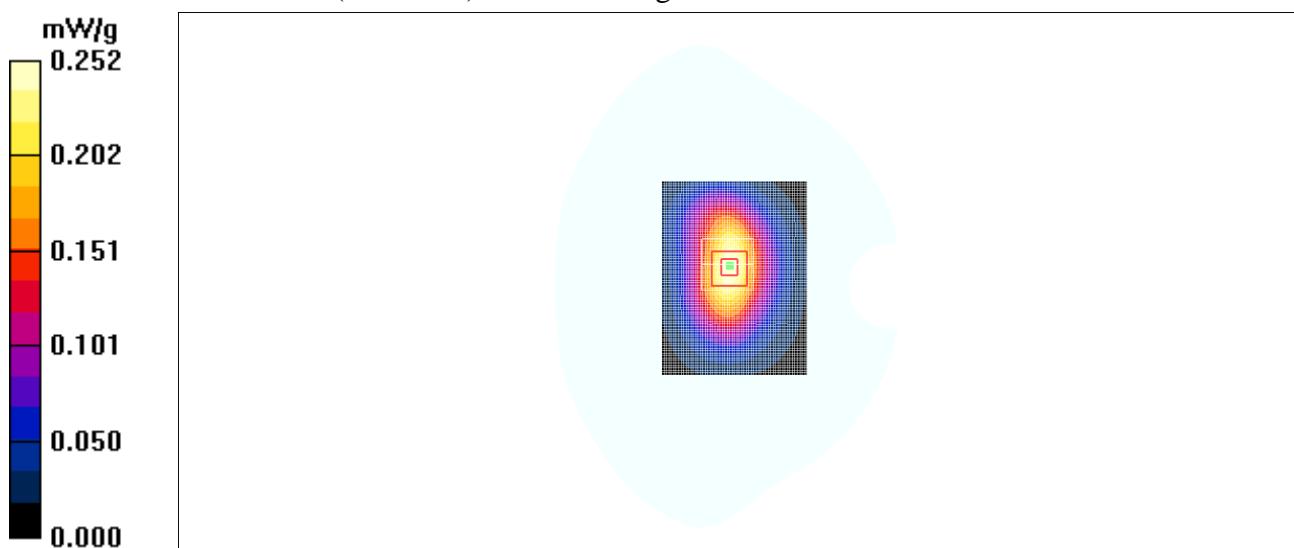
**Right Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.9 V/m; Power Drift = 0.104 dB

Peak SAR (extrapolated) = 0.376 W/kg

**SAR(1 g) = 0.254 mW/g; SAR(10 g) = 0.168 mW/g**

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

**Fig. 22 850 MHz CH128**

**850 Body Bottom Side Low with GPRS**

Date/Time: 2011-6-17 11:06:52

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Bottom Side Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.361 mW/g

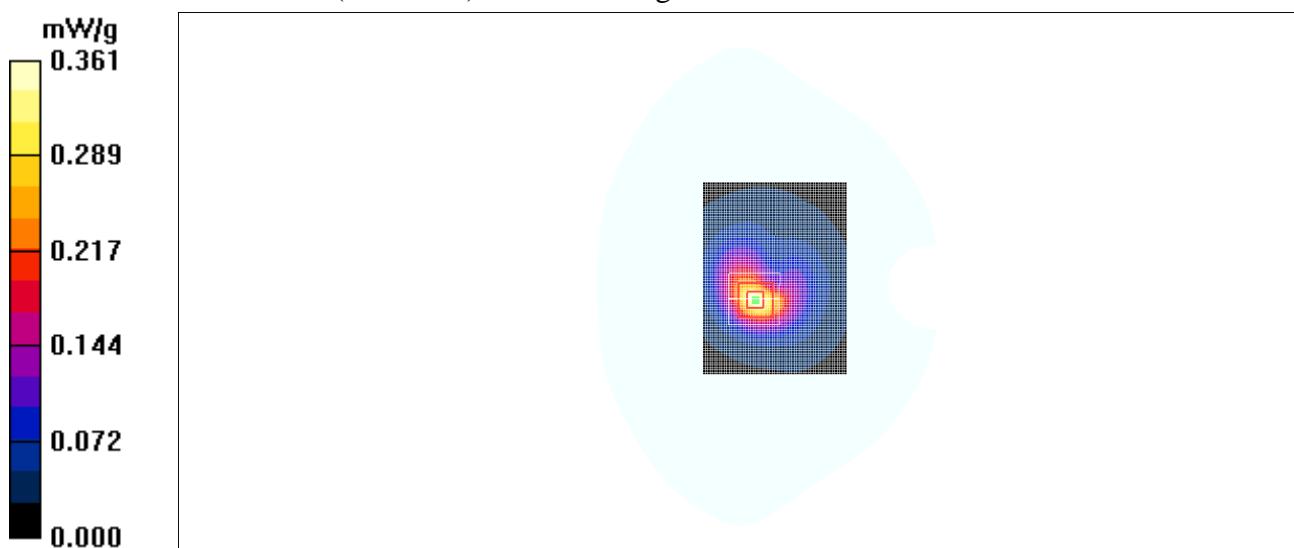
**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = 0.100 dB

Peak SAR (extrapolated) = 0.604 W/kg

**SAR(1 g) = 0.319 mW/g; SAR(10 g) = 0.172 mW/g**

Maximum value of SAR (measured) = 0.359 mW/g

**Fig. 23 850 MHz CH128**

**850 Body Towards Ground High with GPRS**

Date/Time: 2011-6-17 11:23:19

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.20 mW/g

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

Reference Value = 32.2 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 1.55 W/kg

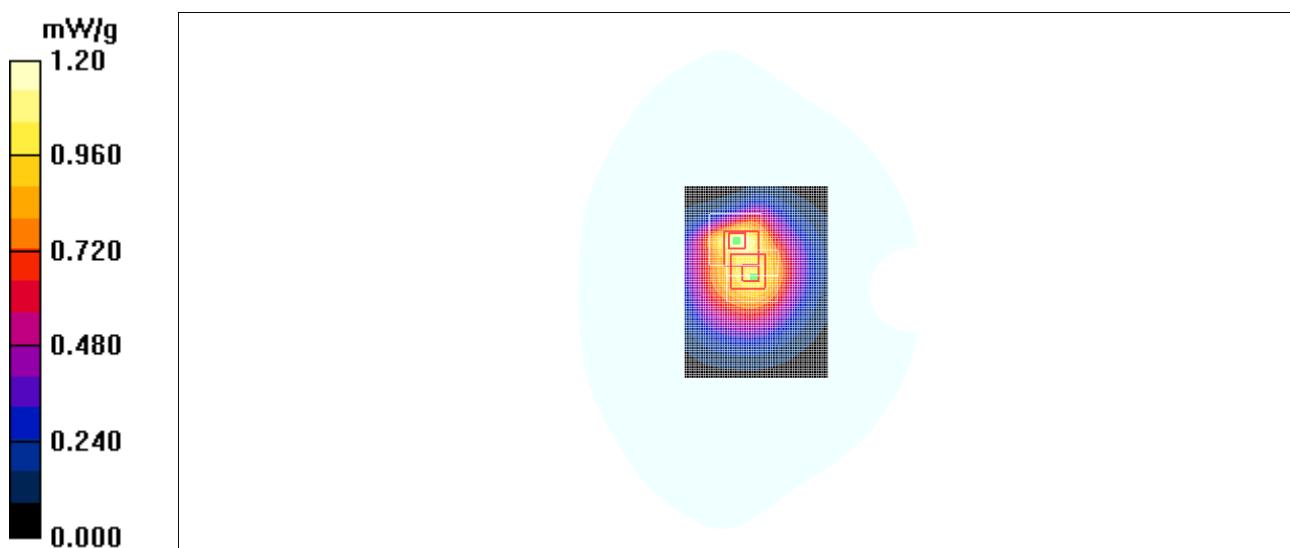
**SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.757 mW/g**

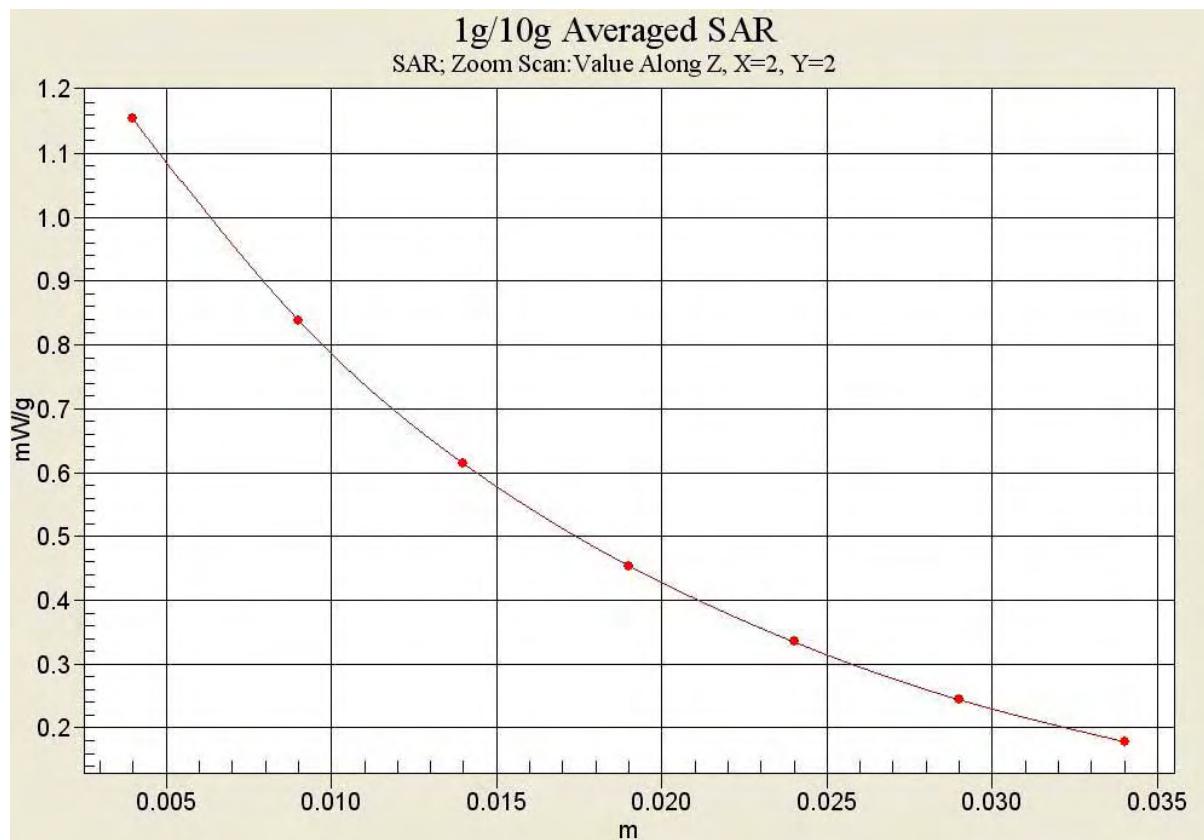
Maximum value of SAR (measured) = 1.15 mW/g

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

Reference Value = 32.2 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 1.48 W/kg

**SAR(1 g) = 1.08 mW/g; SAR(10 g) = 0.772 mW/g****Fig. 24 850 MHz CH251**



**Fig. 24-1 Z-Scan at power reference point (850 MHz CH251)**

**850 Body Towards Ground Middle with GPRS**

Date/Time: 2011-6-17 11:38:40

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.19 mW/g

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

Reference Value = 29.7 V/m; Power Drift = 0.197 dB

Peak SAR (extrapolated) = 1.42 W/kg

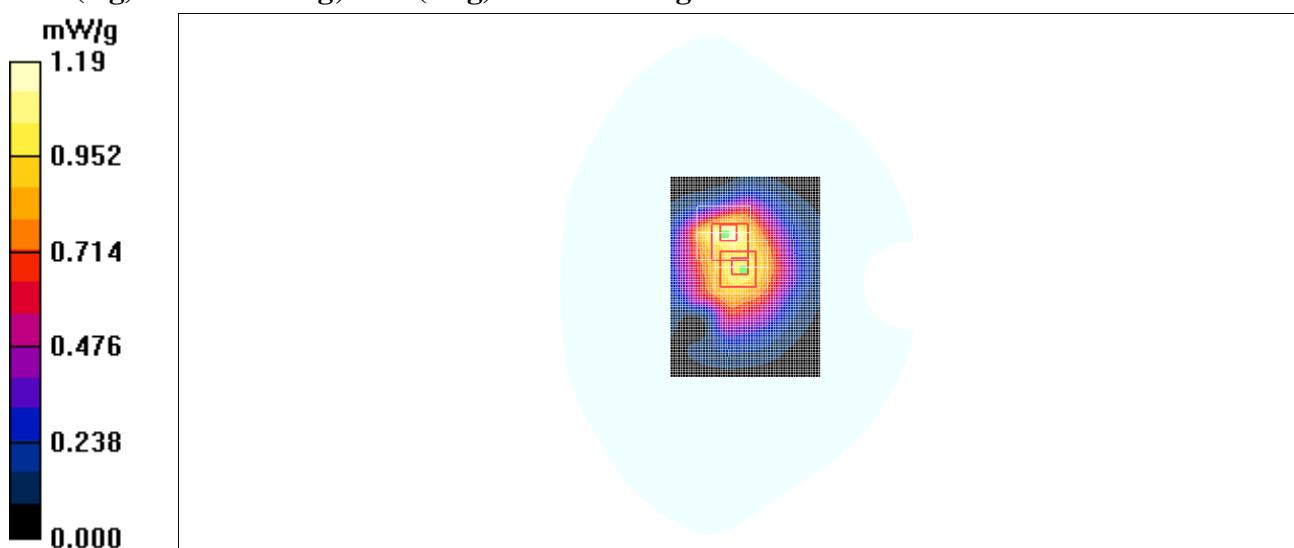
**SAR(1 g) = 0.947 mW/g; SAR(10 g) = 0.664 mW/g**

Maximum value of SAR (measured) = 1.00 mW/g

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

Reference Value = 29.7 V/m; Power Drift = 0.197 dB

Peak SAR (extrapolated) = 1.29 W/kg

**SAR(1 g) = 0.945 mW/g; SAR(10 g) = 0.666 mW/g****Fig. 25 850 MHz CH190**

**850 Body Towards Ground High with EGPRS**

Date/Time: 2011-6-17 11:55:14

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.30 mW/g

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

Reference Value = 32.7 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 1.53 W/kg

**SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.728 mW/g**

Maximum value of SAR (measured) = 1.11 mW/g

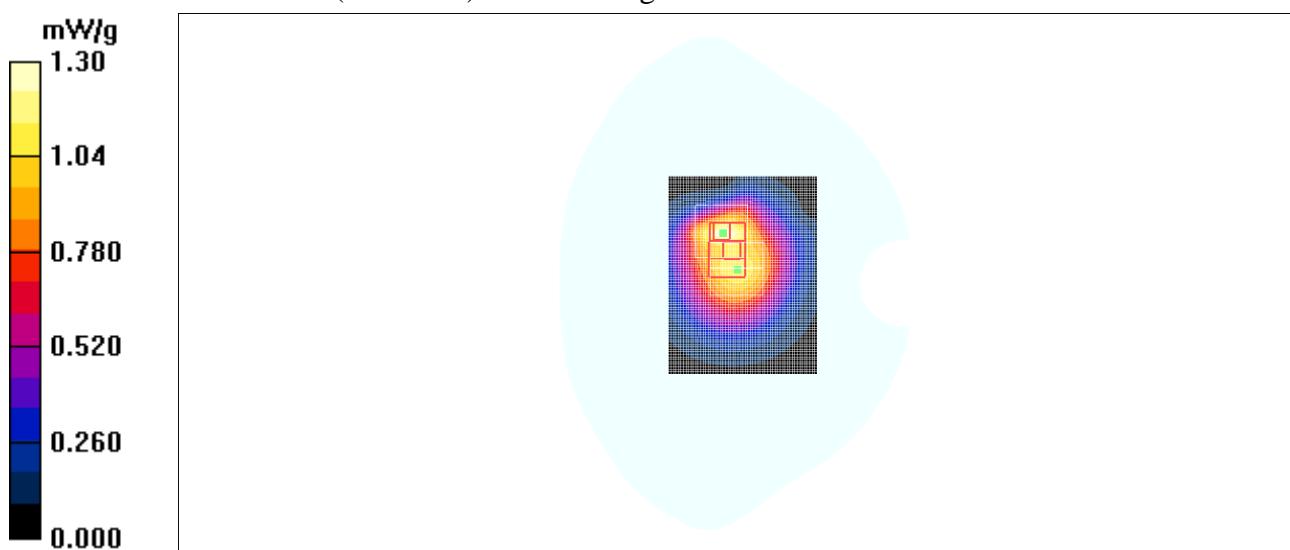
**Toward Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 32.7 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 1.31 W/kg

**SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.690 mW/g**

Maximum value of SAR (measured) = 1.12 mW/g

**Fig. 26 850 MHz CH251**

**850 Body Towards Ground High with Headset**

Date/Time: 2011-6-17 12:11:53

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.842 mW/g

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

Reference Value = 24.7 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.681 mW/g; SAR(10 g) = 0.449 mW/g**

Maximum value of SAR (measured) = 0.712 mW/g

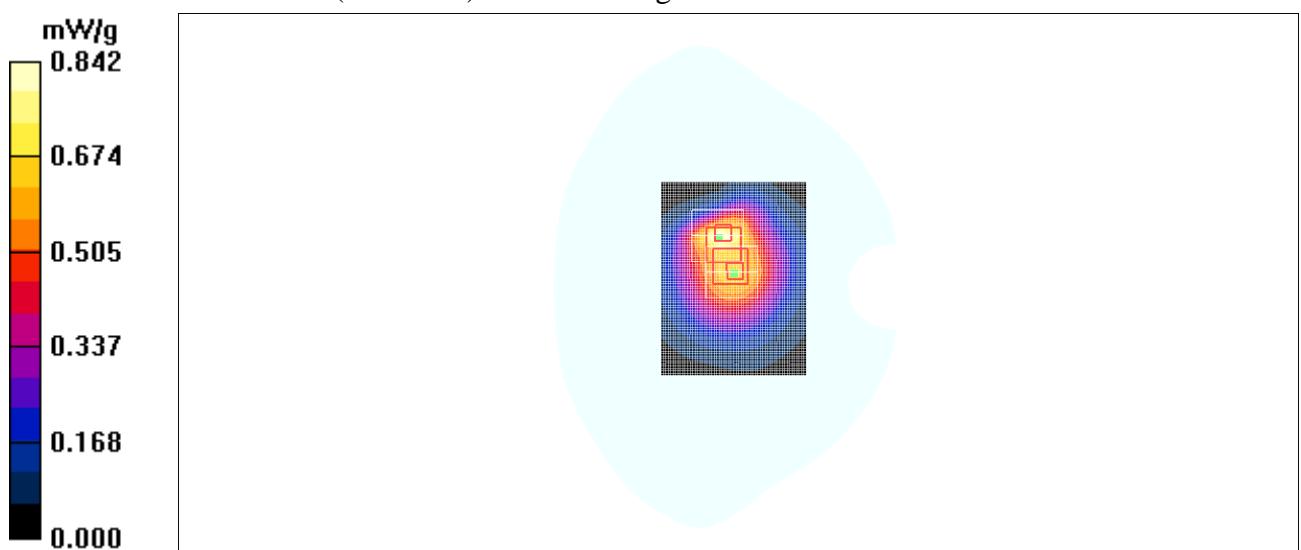
**Toward Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.7 V/m; Power Drift = 0.036 dB

Peak SAR (extrapolated) = 0.861 W/kg

**SAR(1 g) = 0.632 mW/g; SAR(10 g) = 0.450 mW/g**

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

**Fig. 27 850 MHz CH251**

**850 Body Towards Ground High with Bluetooth**

Date/Time: 2011-6-17 12:28:26

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.998 mW/g

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

Reference Value = 28.5 V/m; Power Drift = -0.105 dB

Peak SAR (extrapolated) = 1.24 W/kg

**SAR(1 g) = 0.801 mW/g; SAR(10 g) = 0.551 mW/g**

Maximum value of SAR (measured) = 0.857 mW/g

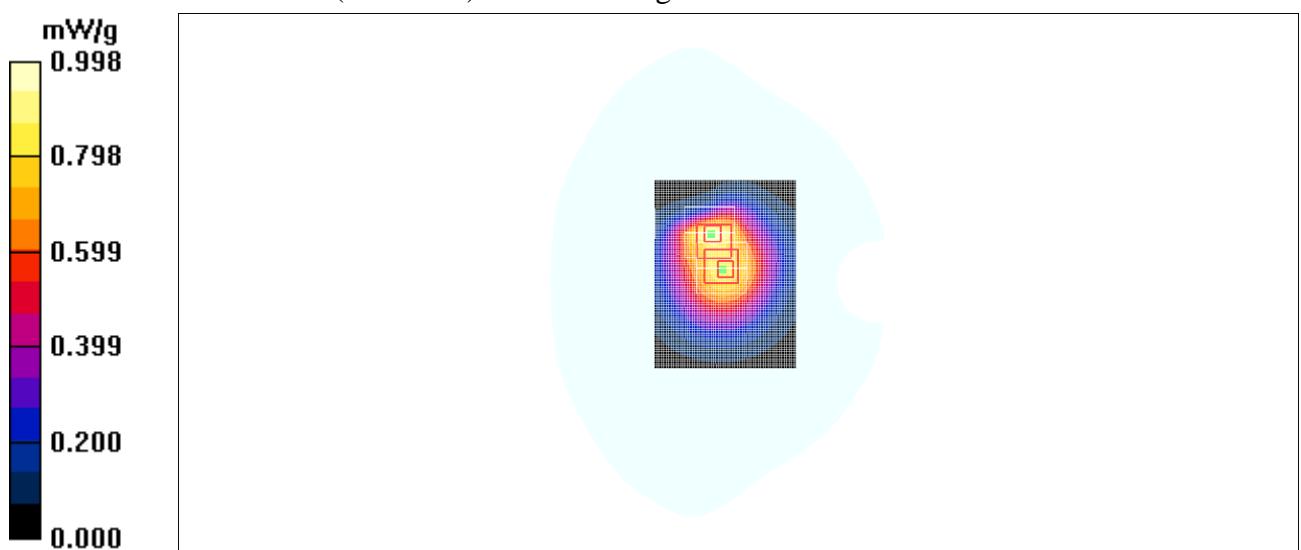
**Toward Ground High BT/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.5 V/m; Power Drift = -0.105 dB

Peak SAR (extrapolated) = 1.09 W/kg

**SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.575 mW/g**

Maximum value of SAR (measured) = 0.852 mW/g

**Fig. 28 850 MHz CH251**

**850 Body Slide up Towards Ground High with GPRS**

Date/Time: 2011-6-17 12:45:13

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (81x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.02 mW/g

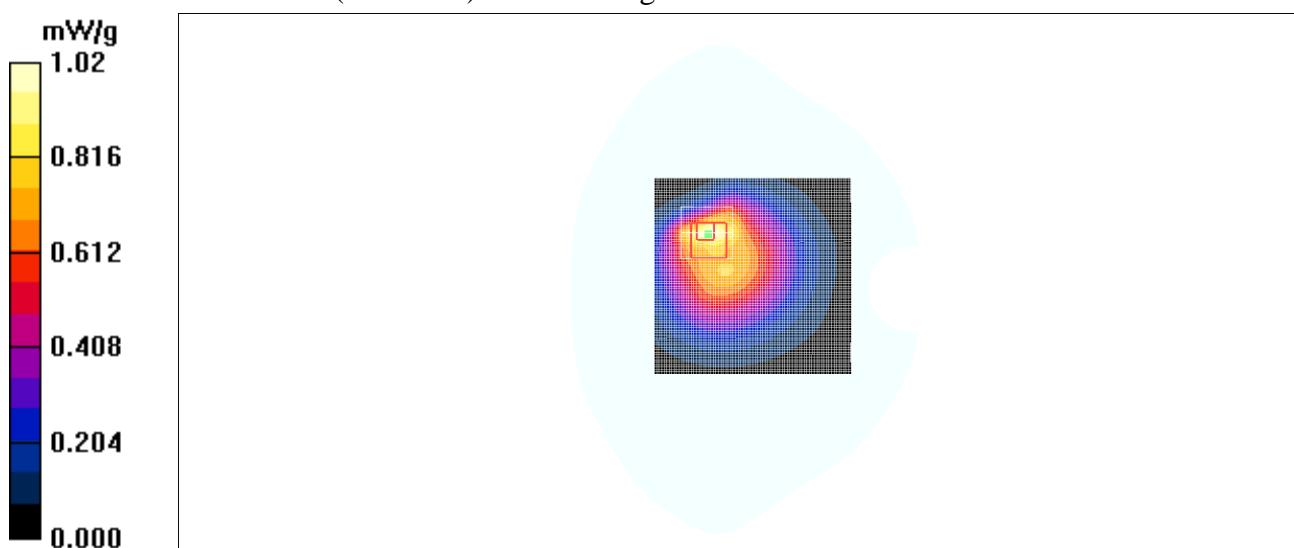
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.6 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 1.50 W/kg

**SAR(1 g) = 0.920 mW/g; SAR(10 g) = 0.583 mW/g**

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

**Fig. 29 850 MHz CH251**

**850 Body Towards Ground High with Headset**

Date/Time: 2011-6-17 13:02:05

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.395 mW/g

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

Reference Value = 18.1 V/m; Power Drift = -0.142 dB

Peak SAR (extrapolated) = 0.488 W/kg

**SAR(1 g) = 0.332 mW/g; SAR(10 g) = 0.231 mW/g**

Maximum value of SAR (measured) = 0.356 mW/g

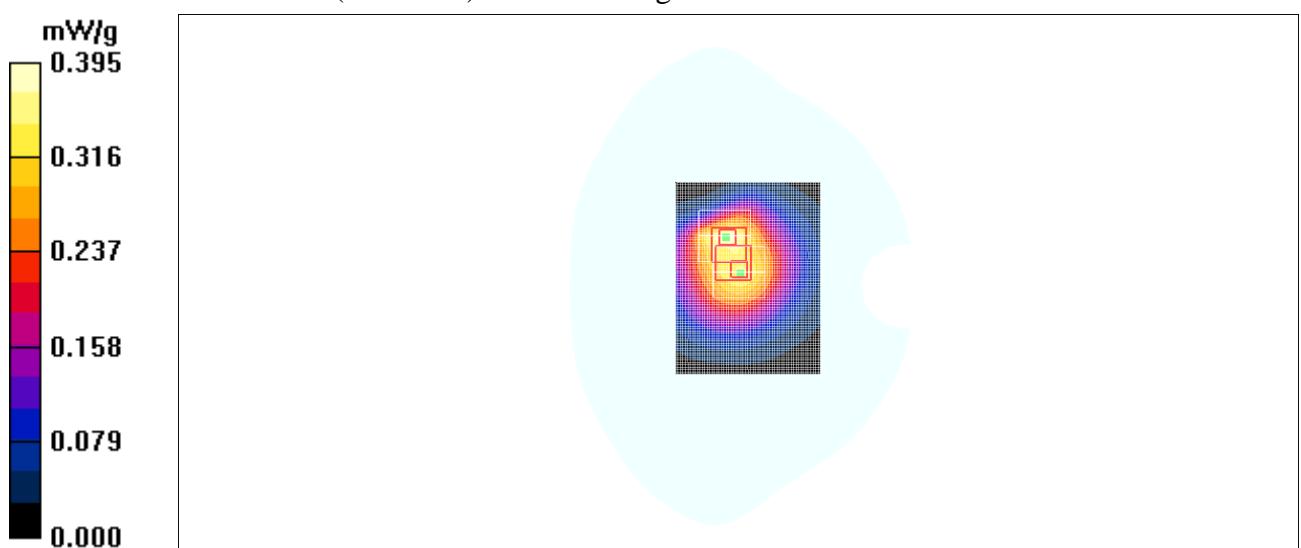
**Toward Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.1 V/m; Power Drift = -0.142 dB

Peak SAR (extrapolated) = 0.436 W/kg

**SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.233 mW/g**

Maximum value of SAR (measured) = 0.345 mW/g

**Fig. 30 850 MHz CH251**

**850 Body Towards Ground High with Bluetooth**

Date/Time: 2011-6-17 13:18:44

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.548 mW/g

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

Reference Value = 22.3 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 0.661 W/kg

**SAR(1 g) = 0.480 mW/g; SAR(10 g) = 0.341 mW/g**

Maximum value of SAR (measured) = 0.523 mW/g

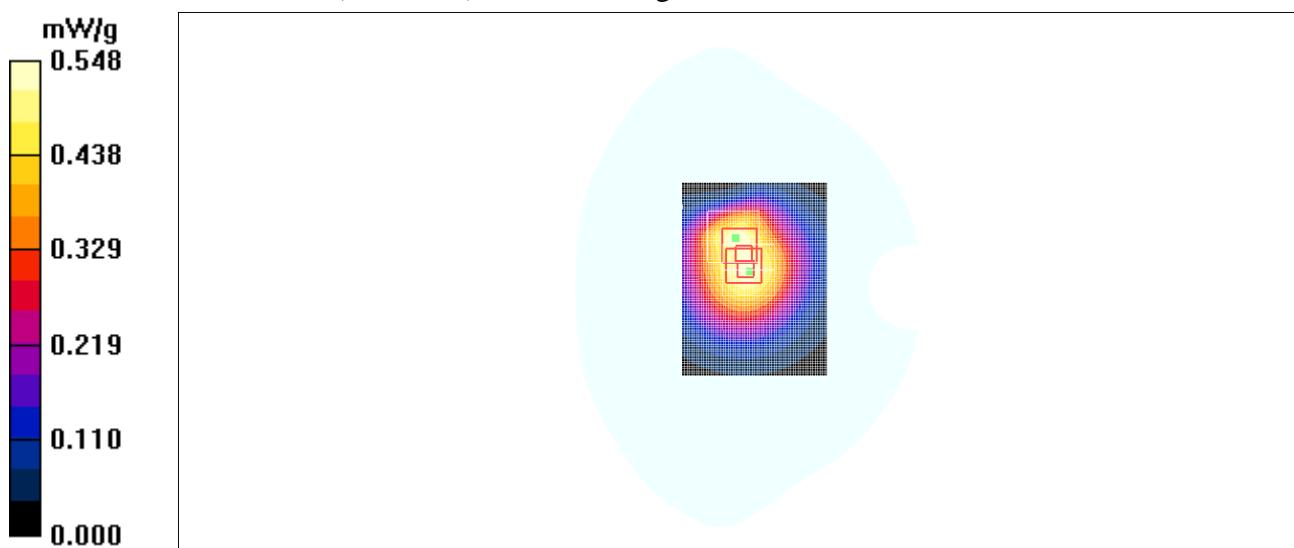
**Toward Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.3 V/m; Power Drift = -0.170 dB

Peak SAR (extrapolated) = 0.654 W/kg

**SAR(1 g) = 0.491 mW/g; SAR(10 g) = 0.353 mW/g**

Maximum value of SAR (measured) = 0.521 mW/g

**Fig. 31 850 MHz CH251**

**850 Body Towards Ground Middle with GPRS**

Date/Time: 2011-6-17 13:39:25

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.00 mW/g

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

Reference Value = 28.3 V/m; Power Drift = -0.130 dB

Peak SAR (extrapolated) = 1.23 W/kg

**SAR(1 g) = 0.791 mW/g; SAR(10 g) = 0.542 mW/g**

Maximum value of SAR (measured) = 0.839 mW/g

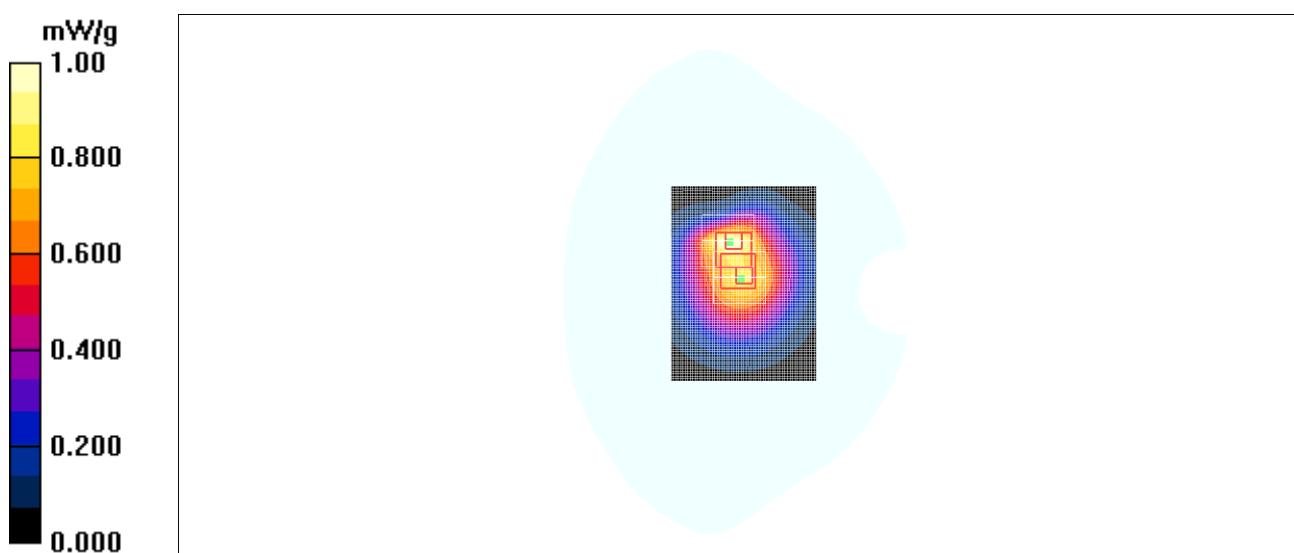
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.3 V/m; Power Drift = -0.130 dB

Peak SAR (extrapolated) = 1.02 W/kg

**SAR(1 g) = 0.750 mW/g; SAR(10 g) = 0.540 mW/g**

Maximum value of SAR (measured) = 0.791 mW/g

**Fig. 32 850 MHz CH190**

**850 Body Towards Phantom Middle with GPRS**

Date/Time: 2011-6-17 13:55:58

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Phantom Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.175 mW/g

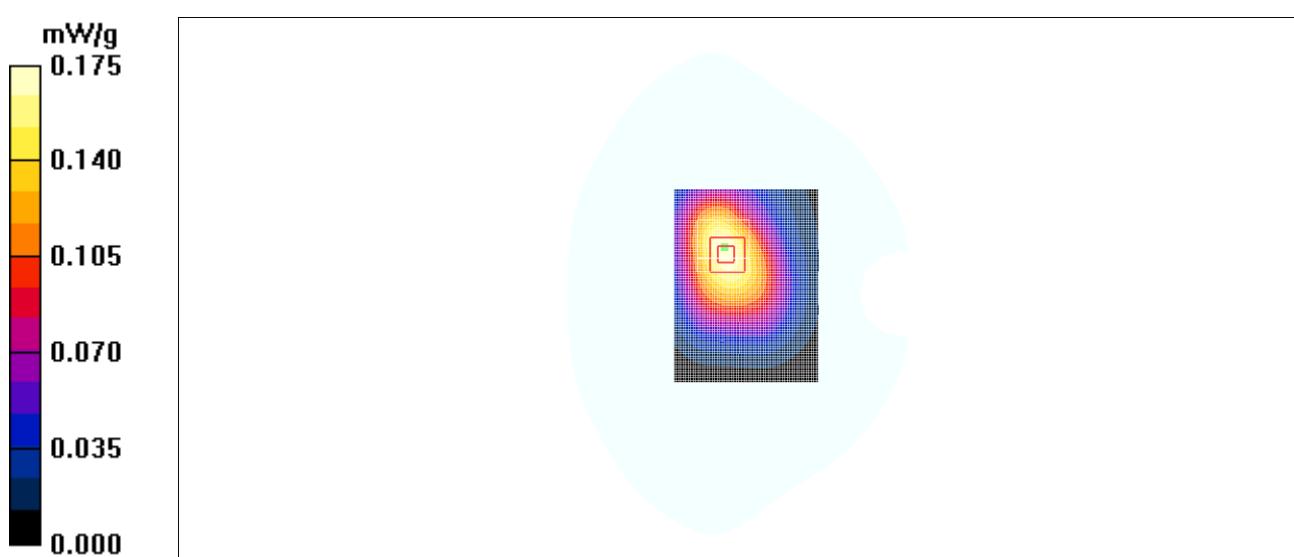
**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 11.5 V/m; Power Drift = -0.014 dB

Peak SAR (extrapolated) = 0.222 W/kg

**SAR(1 g) = 0.164 mW/g; SAR(10 g) = 0.117 mW/g**

Maximum value of SAR (measured) = 0.172 mW/g

**Fig. 33 850 MHz CH190**

**850 Body Left Side Middle with GPRS**

Date/Time: 2011-6-17 14:12:23

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Left Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.183 mW/g

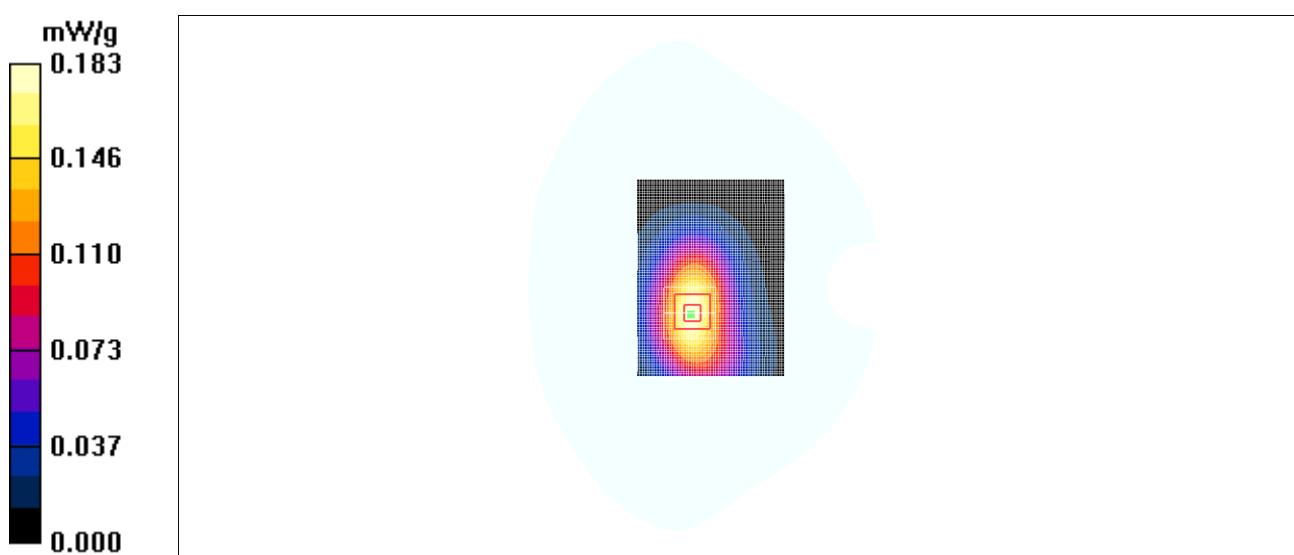
**Left Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.3 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 0.247 W/kg

**SAR(1 g) = 0.170 mW/g; SAR(10 g) = 0.113 mW/g**

Maximum value of SAR (measured) = 0.181 mW/g

**Fig. 34 850 MHz CH190**

**850 Body Right Side Middle with GPRS**

Date/Time: 2011-6-17 14:28:55

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Right Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.196 mW/g

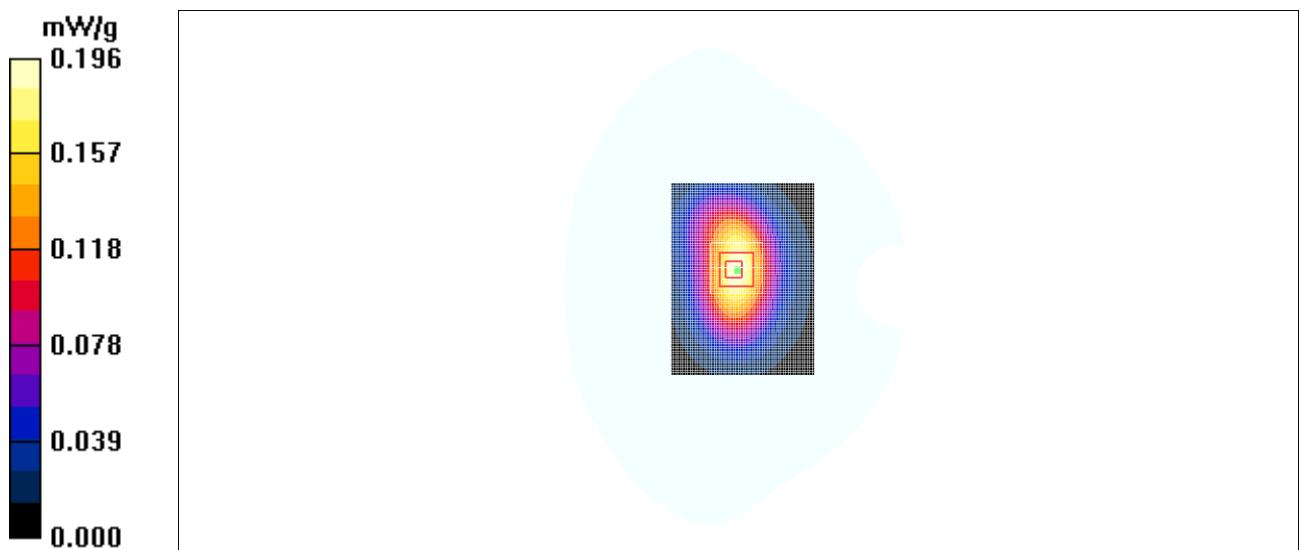
**Right Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.6 V/m; Power Drift = 0.024 dB

Peak SAR (extrapolated) = 0.270 W/kg

**SAR(1 g) = 0.186 mW/g; SAR(10 g) = 0.122 mW/g**

Maximum value of SAR (measured) = 0.197 mW/g

**Fig. 35 850 MHz CH190**

**850 Body Bottom Side Middle with GPRS**

Date/Time: 2011-6-17 14:45:33

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 836.6$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Bottom Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.184 mW/g

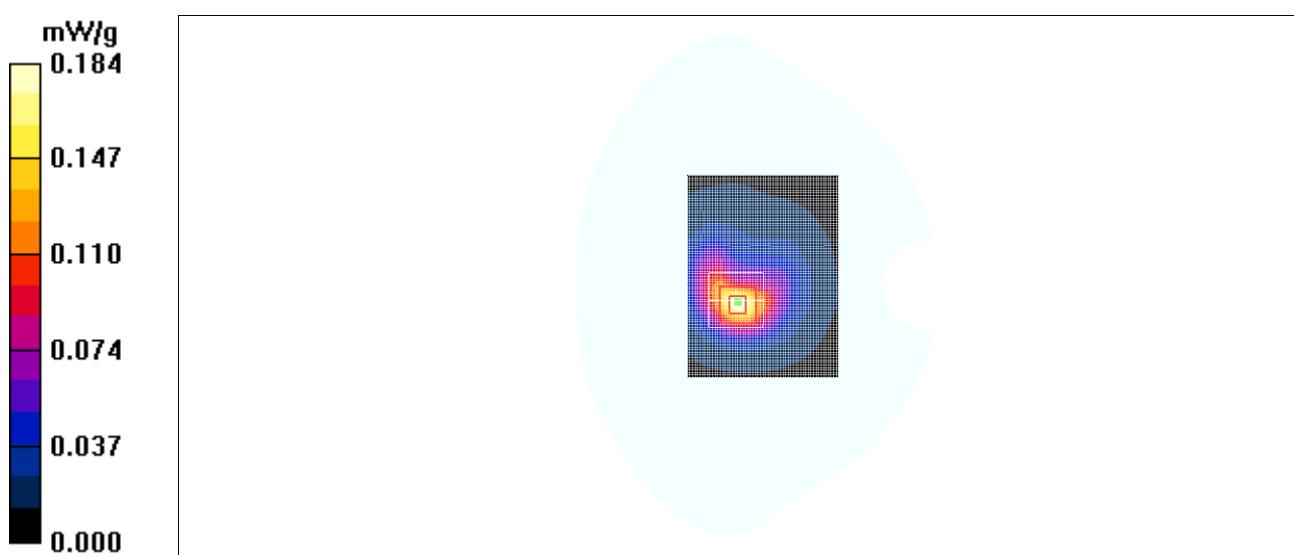
**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.09 V/m; Power Drift = -0.109 dB

Peak SAR (extrapolated) = 0.306 W/kg

**SAR(1 g) = 0.165 mW/g; SAR(10 g) = 0.090 mW/g**

Maximum value of SAR (measured) = 0.180 mW/g

**Fig. 36 850 MHz CH190**

**850 Body Towards Ground High with GPRS**

Date/Time: 2011-6-17 15:02:20

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated):  $f = 848.8$  MHz;  $\sigma = 0.95$  mho/m;  $\epsilon_r = 54.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 30.4 V/m; Power Drift = -0.180 dB

Peak SAR (extrapolated) = 1.45 W/kg

**SAR(1 g) = 0.934 mW/g; SAR(10 g) = 0.637 mW/g**

Maximum value of SAR (measured) = 0.996 mW/g

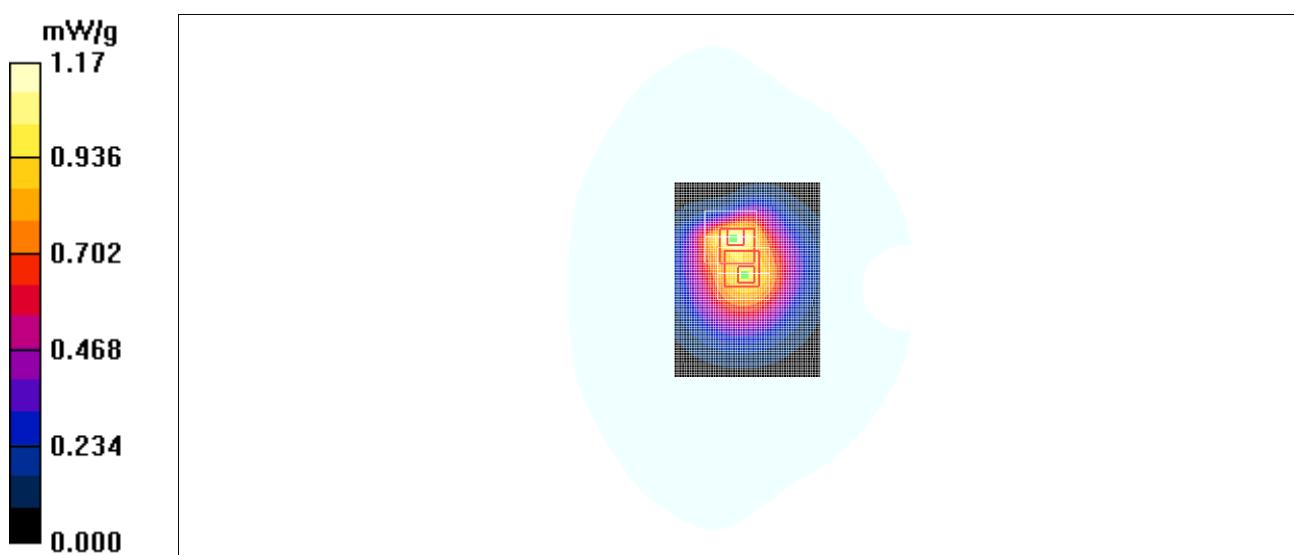
**Toward Ground High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.4 V/m; Power Drift = -0.180 dB

Peak SAR (extrapolated) = 1.22 W/kg

**SAR(1 g) = 0.898 mW/g; SAR(10 g) = 0.641 mW/g**

Maximum value of SAR (measured) = 0.952 mW/g

**Fig. 37 850 MHz CH251**

**850 Body Towards Ground Low with GPRS**

Date/Time: 2011-6-17 15:17:48

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 825$  MHz;  $\sigma = 0.94$  mho/m;  $\epsilon_r = 55.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.680 mW/g

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

Reference Value = 22.9 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 0.837 W/kg

**SAR(1 g) = 0.538 mW/g; SAR(10 g) = 0.369 mW/g**

Maximum value of SAR (measured) = 0.575 mW/g

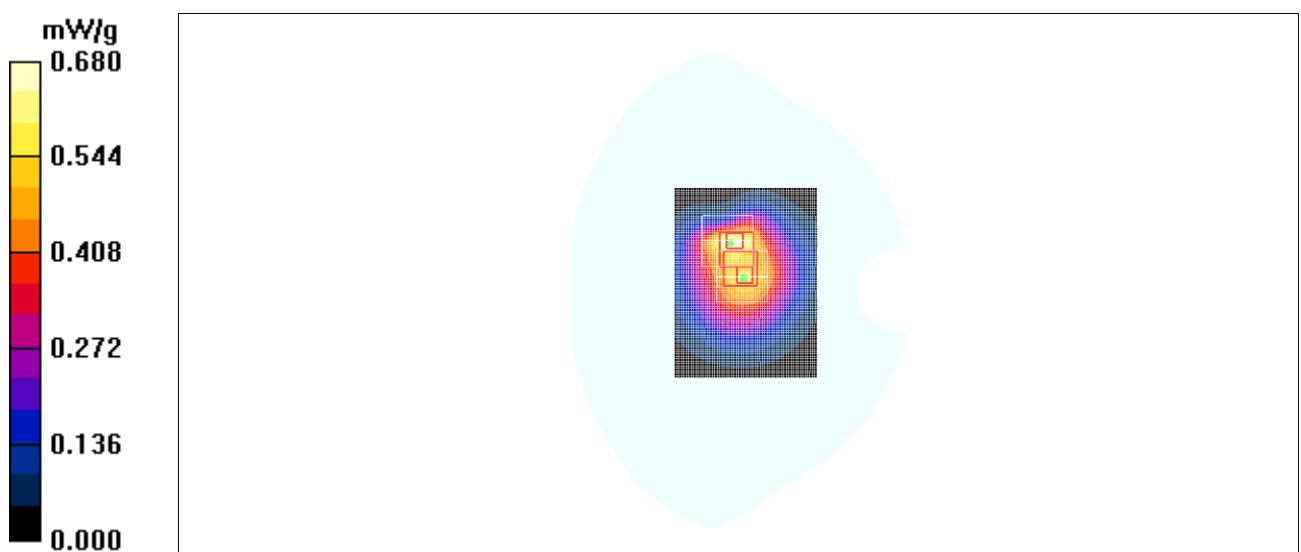
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 22.9 V/m; Power Drift = -0.120 dB

Peak SAR (extrapolated) = 0.691 W/kg

**SAR(1 g) = 0.516 mW/g; SAR(10 g) = 0.371 mW/g**

Maximum value of SAR (measured) = 0.548 mW/g

**Fig. 38 850 MHz CH128**

**1900 Body Towards Ground Low with GPRS**

Date/Time: 2011-6-15 16:05:02

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.756 mW/g

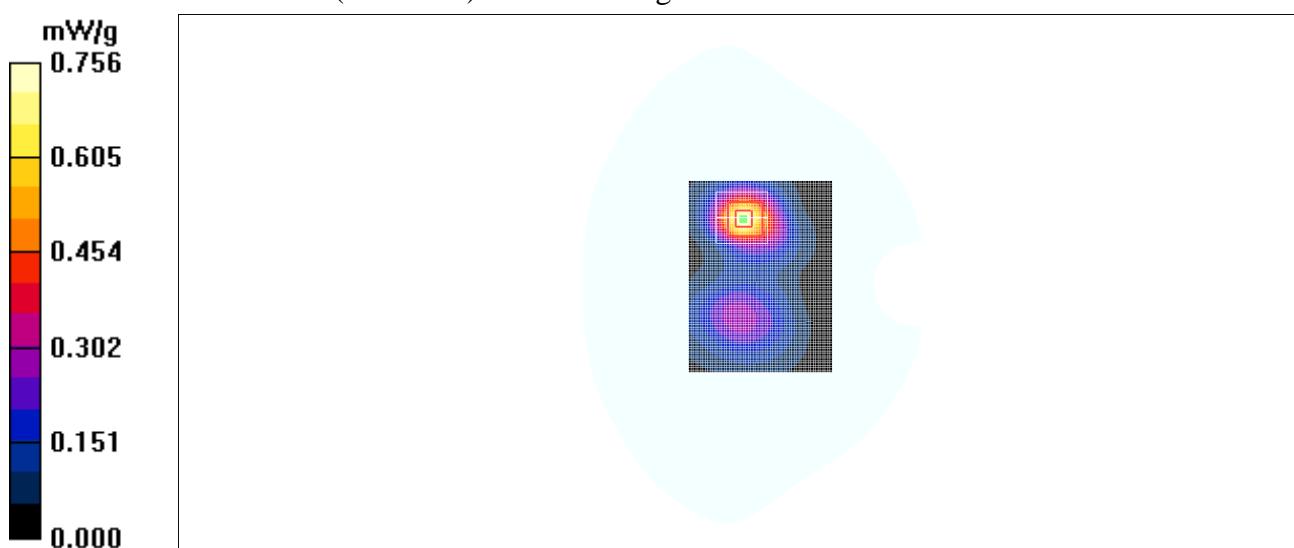
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.2 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 1.14 W/kg

**SAR(1 g) = 0.654 mW/g; SAR(10 g) = 0.359 mW/g**

Maximum value of SAR (measured) = 0.737 mW/g

**Fig. 39 1900 MHz CH512**

**1900 Body Towards Phantom Low with GPRS**

Date/Time: 2011-6-15 16:21:44

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Phantom Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 5.03 V/m; Power Drift = -0.053 dB

Peak SAR (extrapolated) = 0.145 W/kg

**SAR(1 g) = 0.091 mW/g; SAR(10 g) = 0.054 mW/g**

Maximum value of SAR (measured) = 0.098 mW/g

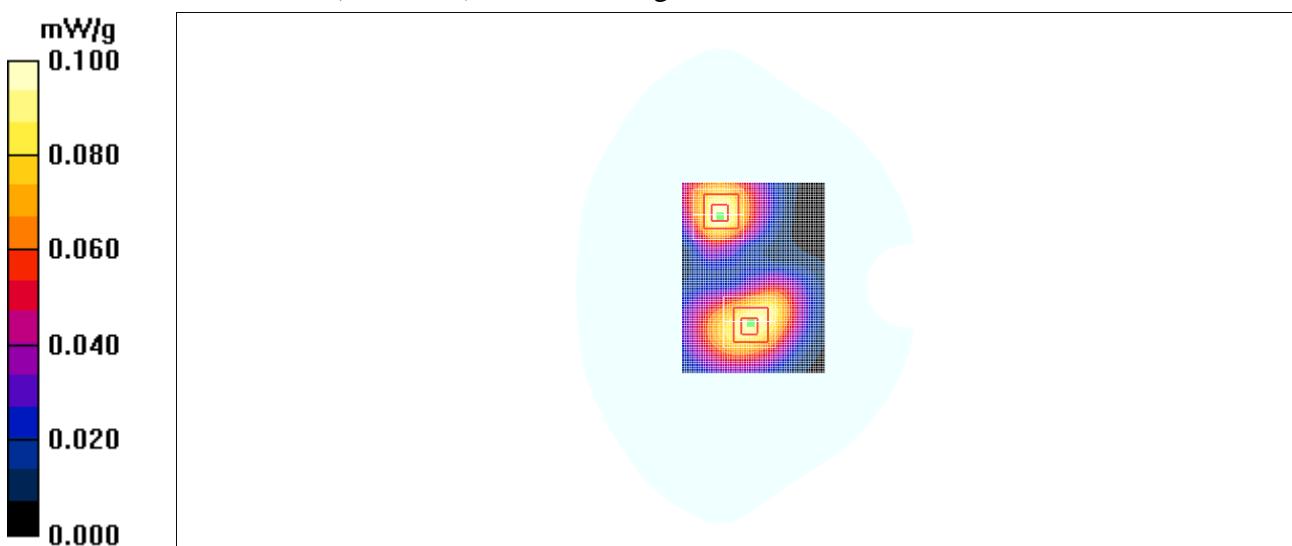
**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.03 V/m; Power Drift = -0.053 dB

Peak SAR (extrapolated) = 0.130 W/kg

**SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.056 mW/g**

Maximum value of SAR (measured) = 0.091 mW/g

**Fig. 40 1900 MHz CH512**

**1900 Body Towards Ground High with GPRS**

Date/Time: 2011-6-15 16:38:01

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.30 mW/g

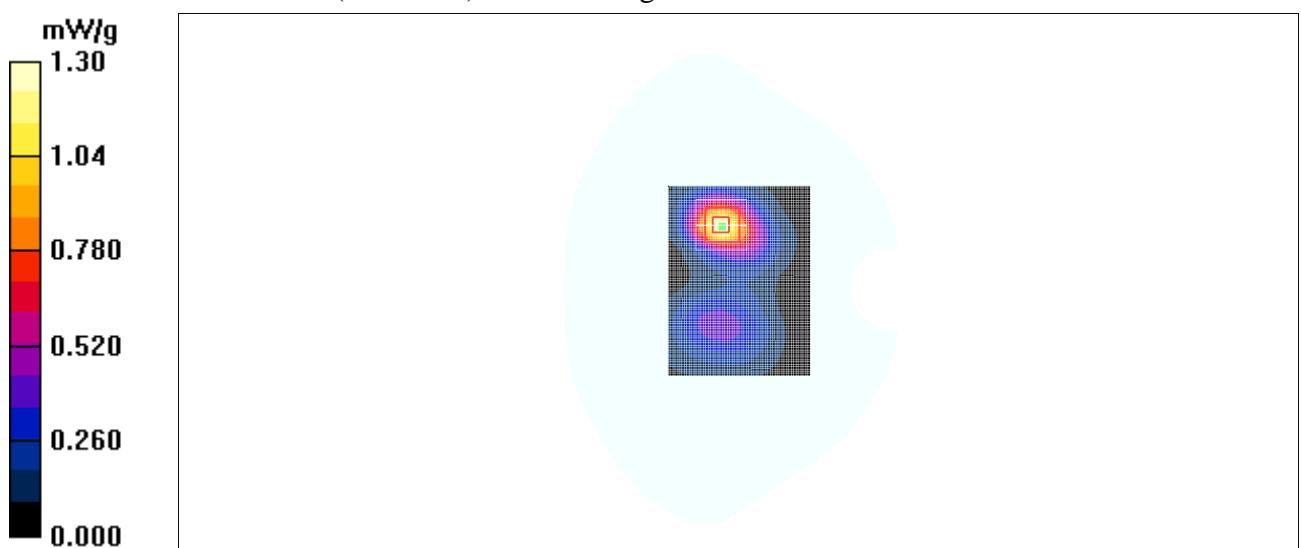
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

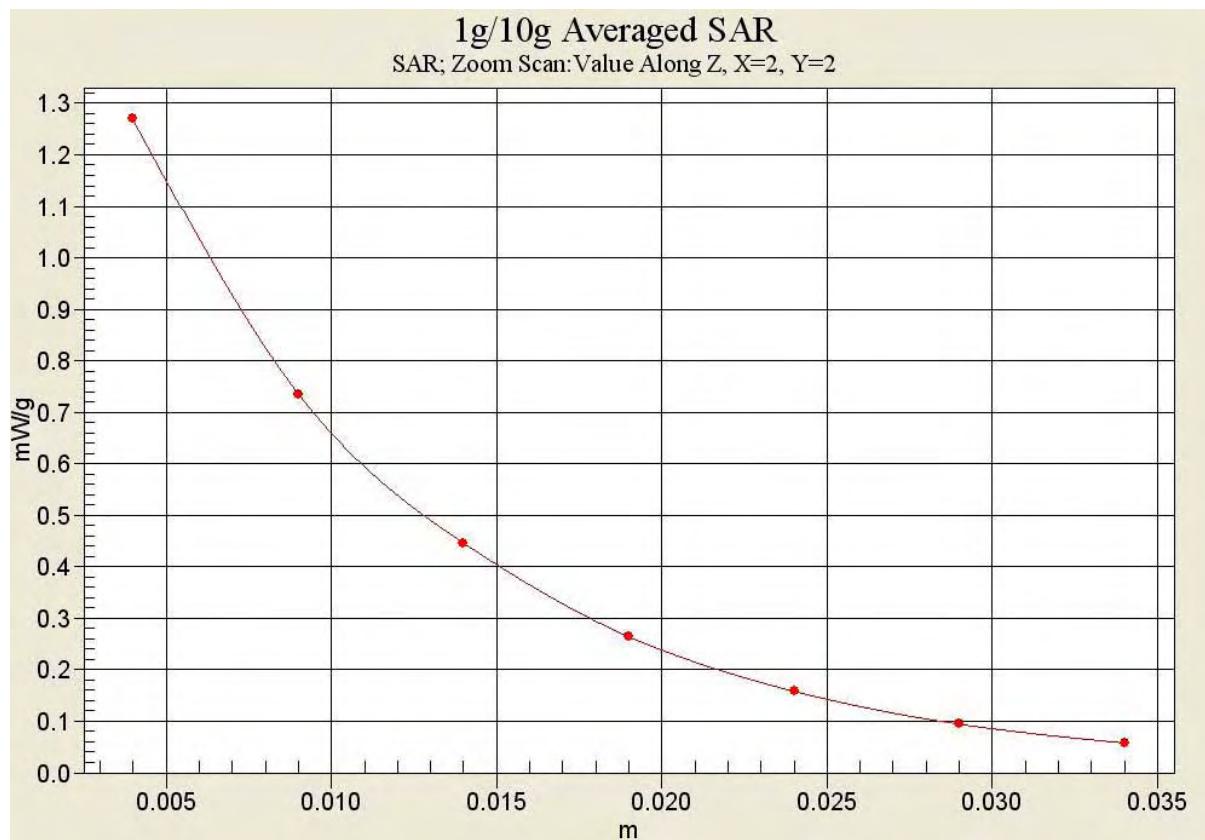
Reference Value = 11.5 V/m; Power Drift = -0.009 dB

Peak SAR (extrapolated) = 2.04 W/kg

**SAR(1 g) = 1.14 mW/g; SAR(10 g) = 0.618 mW/g**

Maximum value of SAR (measured) = 1.27 mW/g

**Fig. 41 1900 MHz CH810**



**Fig. 41-1 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Body Towards Ground Middle with GPRS**

Date/Time: 2011-6-15 16:53:37

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.07 mW/g

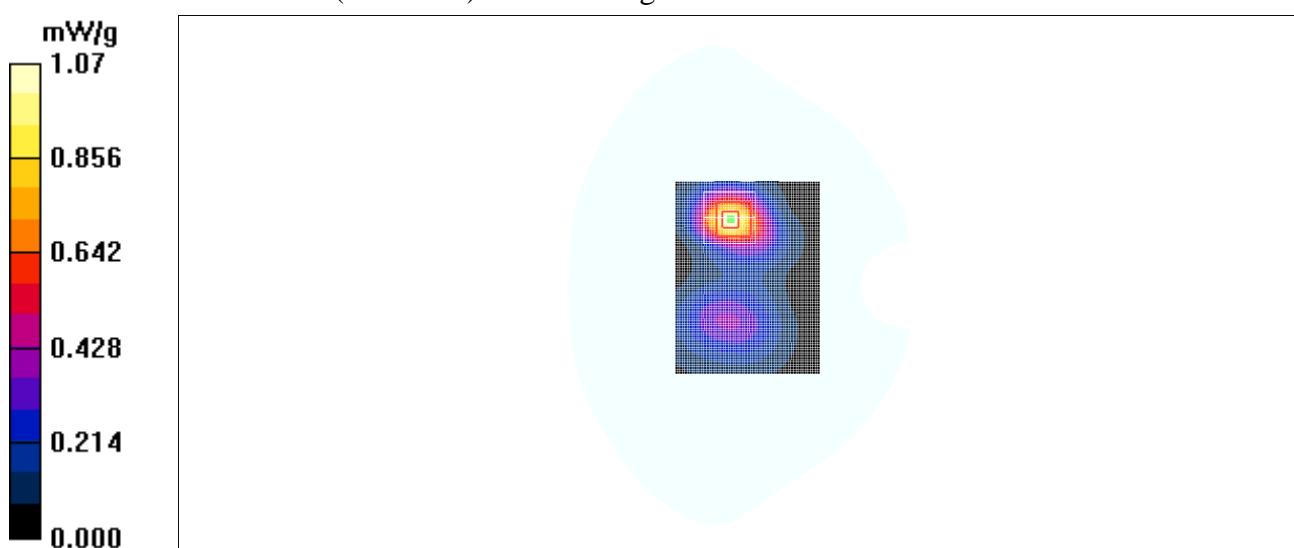
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.25 V/m; Power Drift = 0.151 dB

Peak SAR (extrapolated) = 1.47 W/kg

**SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.500 mW/g**

Maximum value of SAR (measured) = 1.06 mW/g

**Fig. 42 1900 MHz CH661**

**1900 Body Towards Ground High with Headset**

Date/Time: 2011-6-15 17:10:13

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.784 mW/g

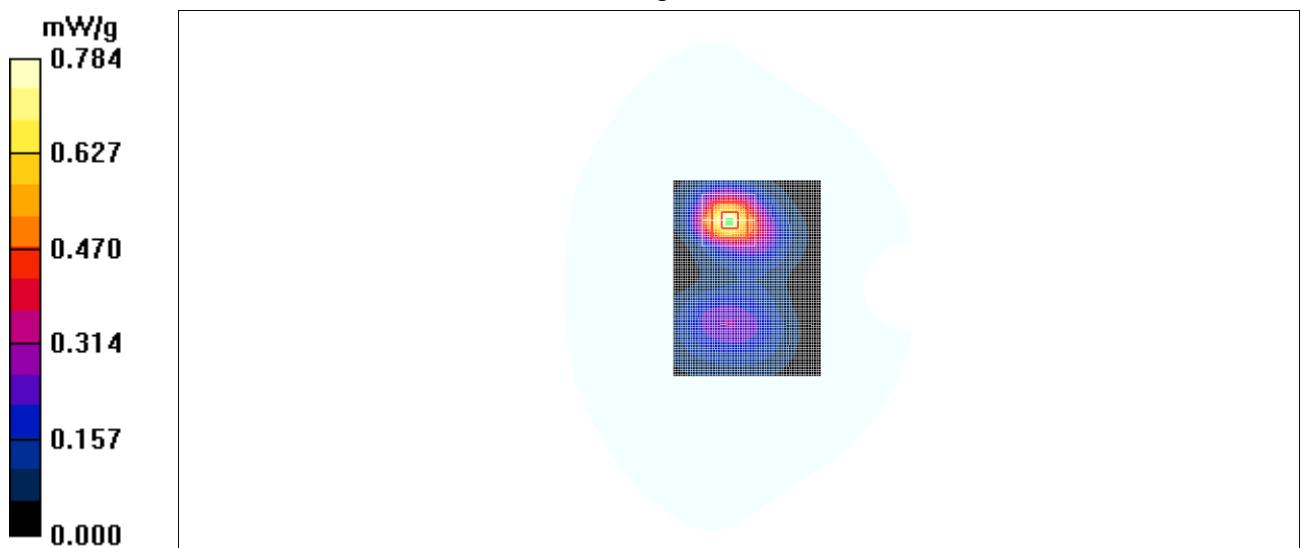
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.05 V/m; Power Drift = -0.063 dB

Peak SAR (extrapolated) = 1.28 W/kg

**SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.379 mW/g**

Maximum value of SAR (measured) = 0.796 mW/g

**Fig. 43 1900 MHz CH810**

**1900 Body Towards Ground High with Bluetooth**

Date/Time: 2011-6-15 17:26:45

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.863 mW/g

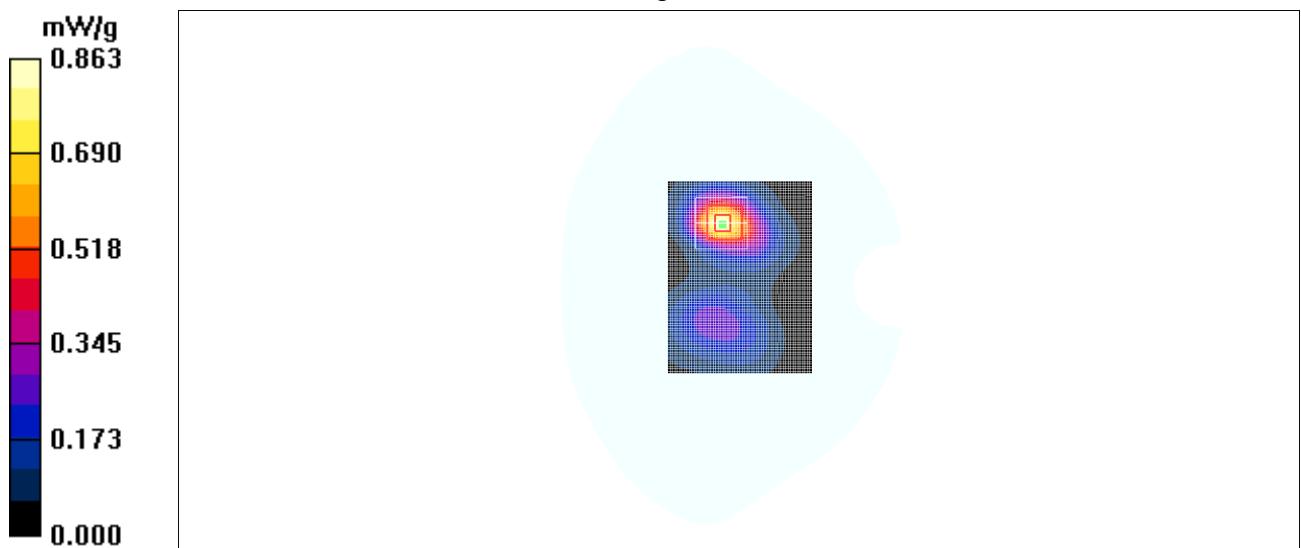
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.68 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 1.33 W/kg

**SAR(1 g) = 0.749 mW/g; SAR(10 g) = 0.409 mW/g**

Maximum value of SAR (measured) = 0.838 mW/g

**Fig. 44 1900 MHz CH810**

**1900 Body Towards Ground Middle with GPRS**

Date/Time: 2011-6-15 17:44:11

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.821 mW/g

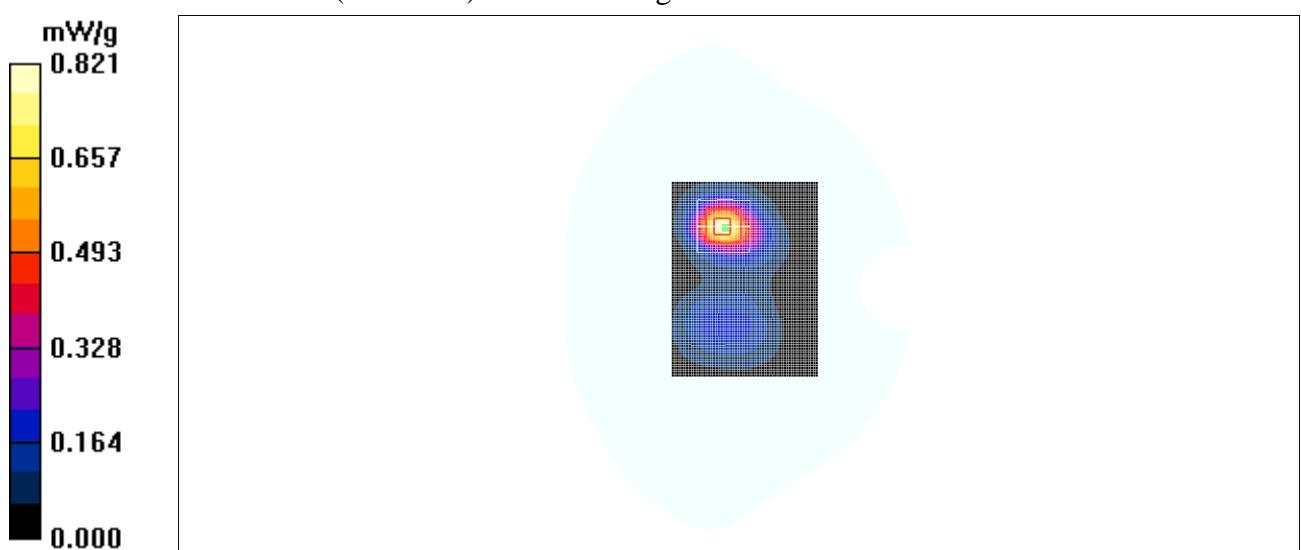
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.56 V/m; Power Drift = 0.177 dB

Peak SAR (extrapolated) = 1.35 W/kg

**SAR(1 g) = 0.732 mW/g; SAR(10 g) = 0.371 mW/g**

Maximum value of SAR (measured) = 0.838 mW/g

**Fig. 45 1900 MHz CH661**

**1900 Body Towards Phantom Middle with GPRS**

Date/Time: 2011-6-15 18:00:42

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Phantom Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.094 mW/g

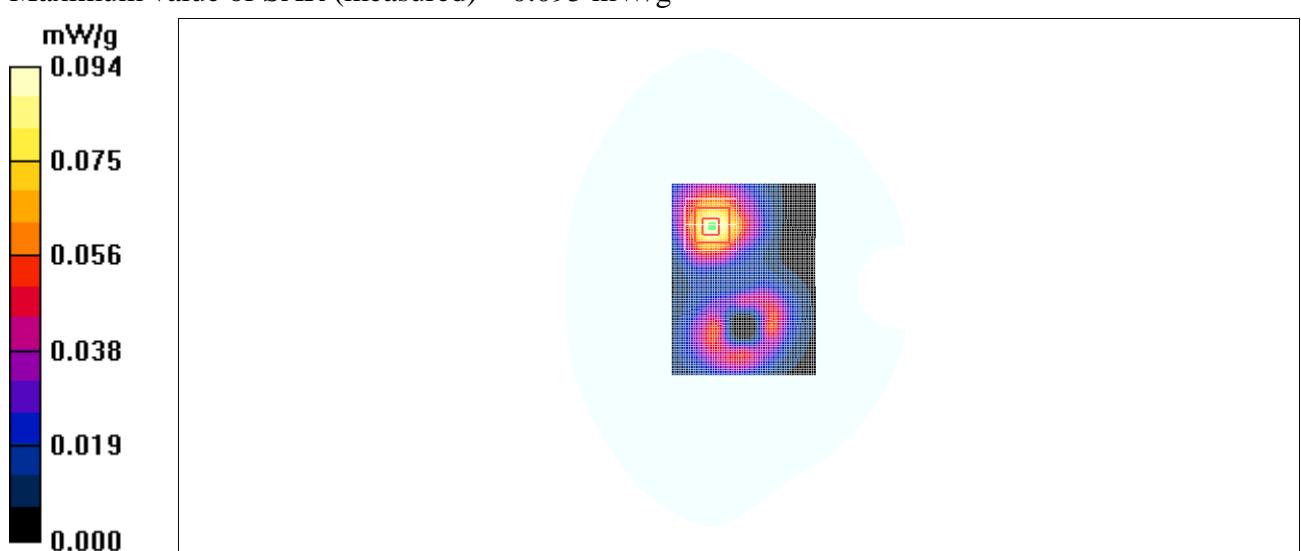
**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.45 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 0.134 W/kg

**SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.050 mW/g**

Maximum value of SAR (measured) = 0.095 mW/g

**Fig. 46 1900 MHz CH661**

**1900 Body Left Side Middle with GPRS**

Date/Time: 2011-6-15 18:17:20

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Left Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.068 mW/g

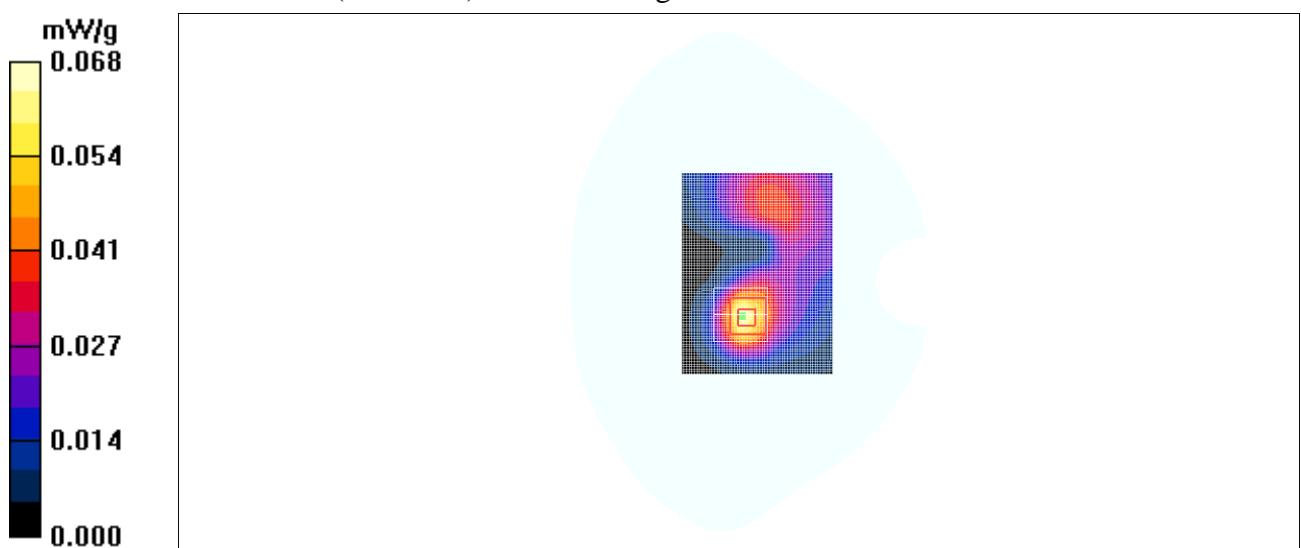
**Left Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.52 V/m; Power Drift = 0.115 dB

Peak SAR (extrapolated) = 0.109 W/kg

**SAR(1 g) = 0.065 mW/g; SAR(10 g) = 0.037 mW/g**

Maximum value of SAR (measured) = 0.069 mW/g

**Fig. 47 1900 MHz CH661**

**1900 Body Right Side Middle with GPRS**

Date/Time: 2011-6-15 18:33:53

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Right Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.177 mW/g

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

Reference Value = 10.4 V/m; Power Drift = -0.158 dB

Peak SAR (extrapolated) = 0.218 W/kg

**SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.078 mW/g**

Maximum value of SAR (measured) = 0.146 mW/g

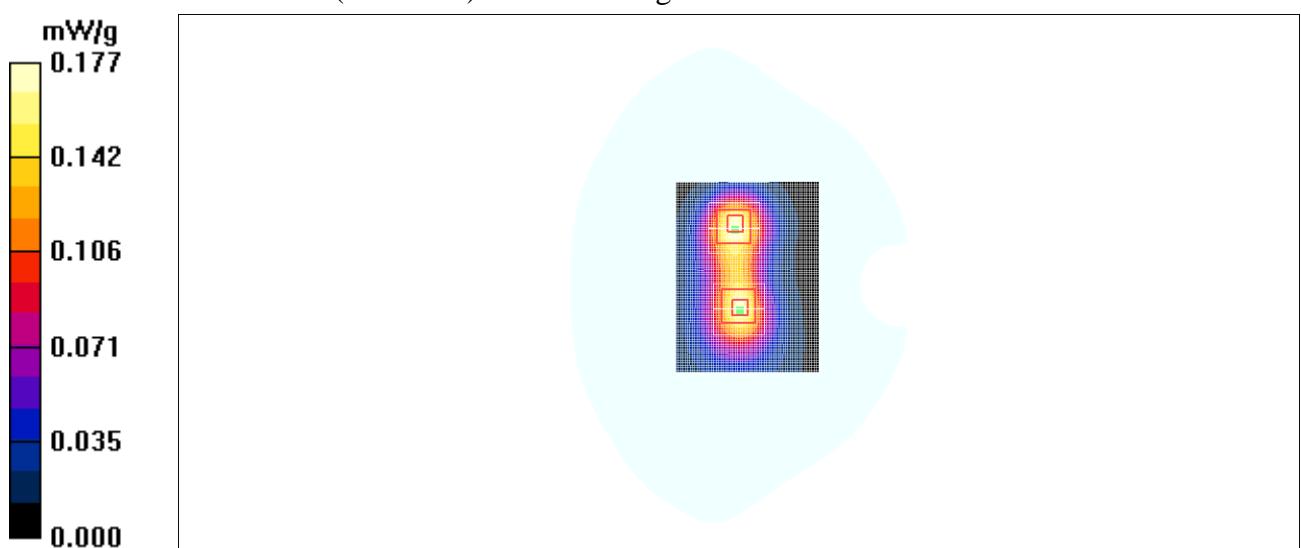
**Right Side Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.4 V/m; Power Drift = -0.158 dB

Peak SAR (extrapolated) = 0.247 W/kg

**SAR(1 g) = 0.156 mW/g; SAR(10 g) = 0.093 mW/g**

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

**Fig. 48 1900 MHz CH661**

**1900 Body Bottom Side Middle with GPRS**

Date/Time: 2011-6-15 18:50:22

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.50$  mho/m;  $\epsilon_r = 53.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

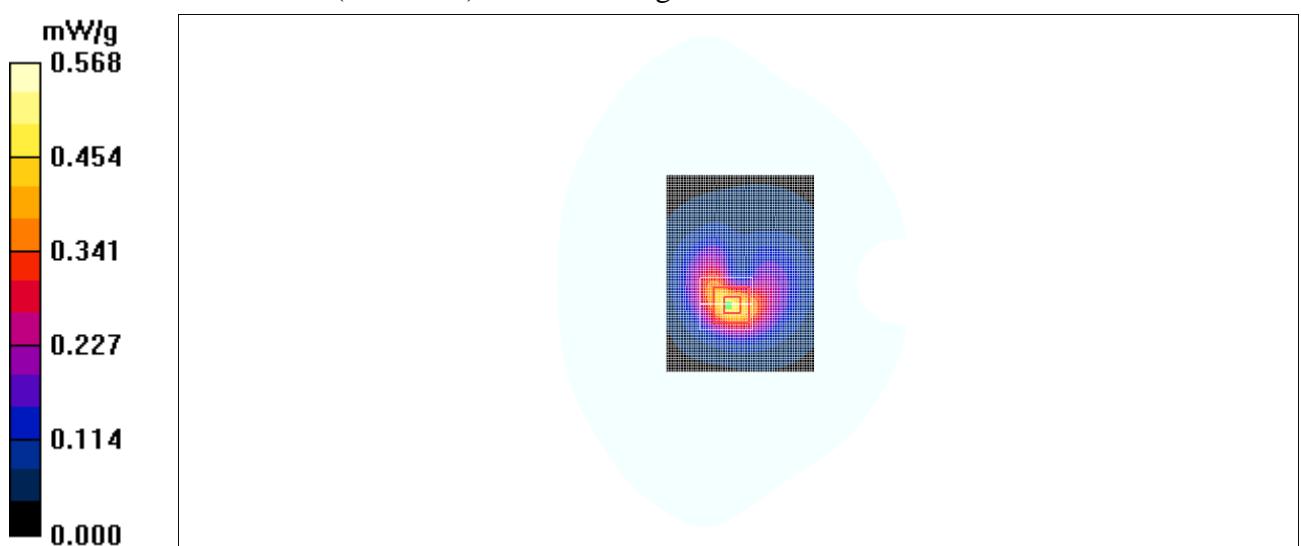
**Bottom Side Middle/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 15.7 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.819 W/kg

**SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.25 mW/g**

Maximum value of SAR (measured) = 0.564 mW/g

**Fig. 49 1900 MHz CH661**

**1900 Body Towards Ground High with GPRS**

Date/Time: 2011-6-15 19:07:00

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

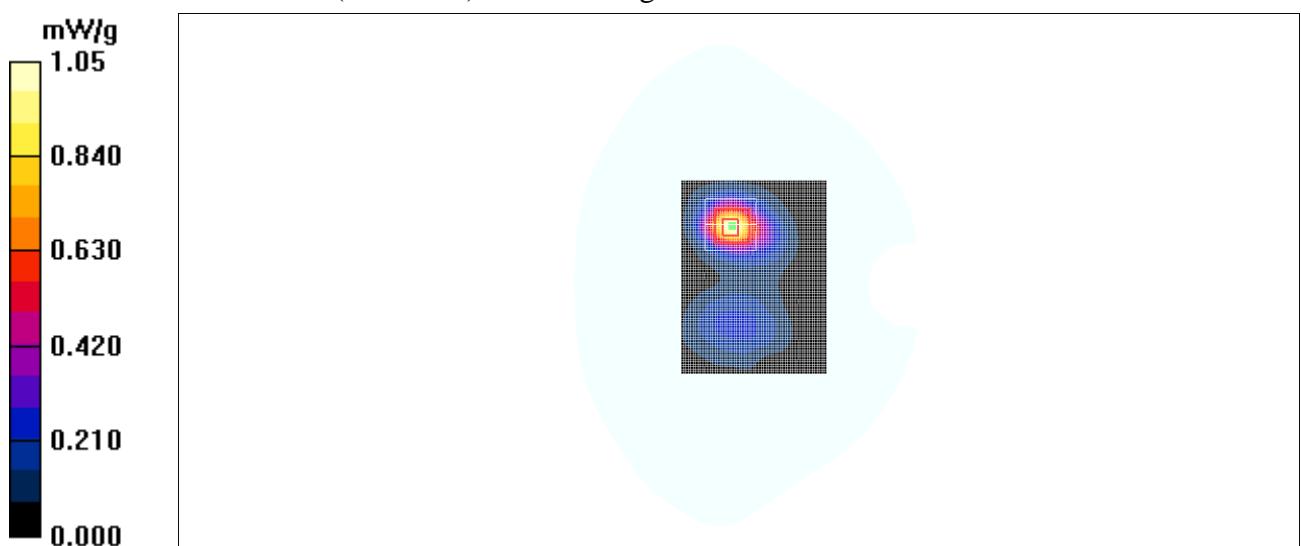
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.35 V/m; Power Drift = 0.013 dB

Peak SAR (extrapolated) = 4.46 W/kg

**SAR(1 g) = 1.00 mW/g; SAR(10 g) = 0.472 mW/g**

Maximum value of SAR (measured) = 1.03 mW/g

**Fig. 50 1900 MHz CH810**

**1900 Body Towards Ground Low with GPRS**

Date/Time: 2011-6-15 19:22:34

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used (interpolated):  $f = 1850.2$  MHz;  $\sigma = 1.48$  mho/m;  $\epsilon_r = 54.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Low/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

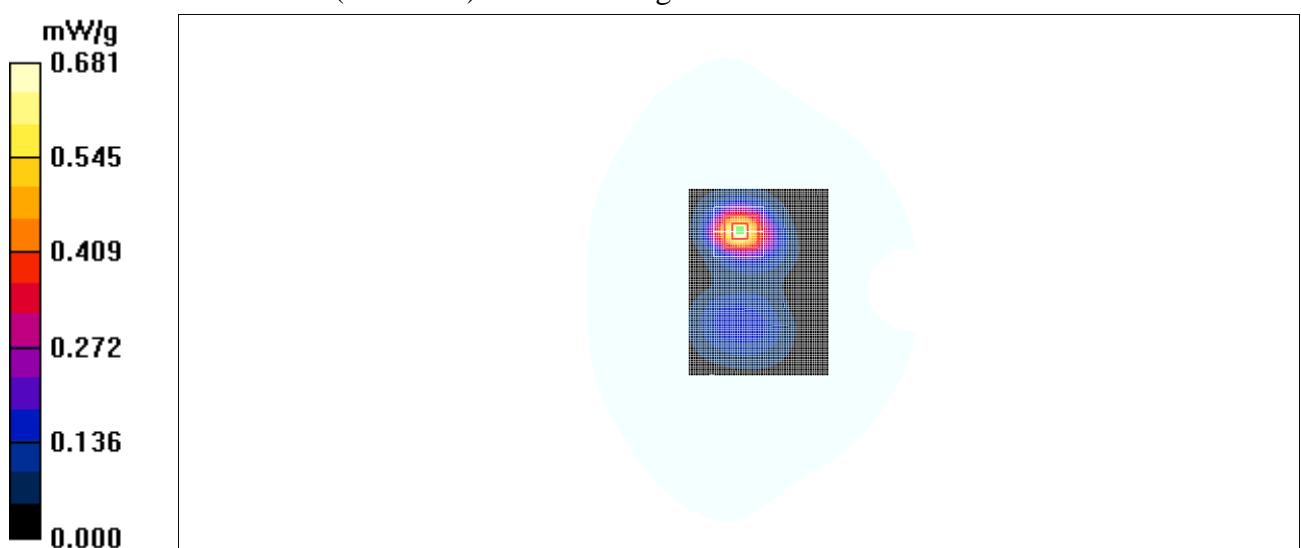
**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.64 V/m; Power Drift = 0.060 dB

Peak SAR (extrapolated) = 1.01 W/kg

**SAR(1 g) = 0.571 mW/g; SAR(10 g) = 0.295 mW/g**

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

**Fig. 51 1900 MHz CH512**

**1900 Body Towards Ground High with EGPRS**

Date/Time: 2011-6-15 19:39:28

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.896 mW/g

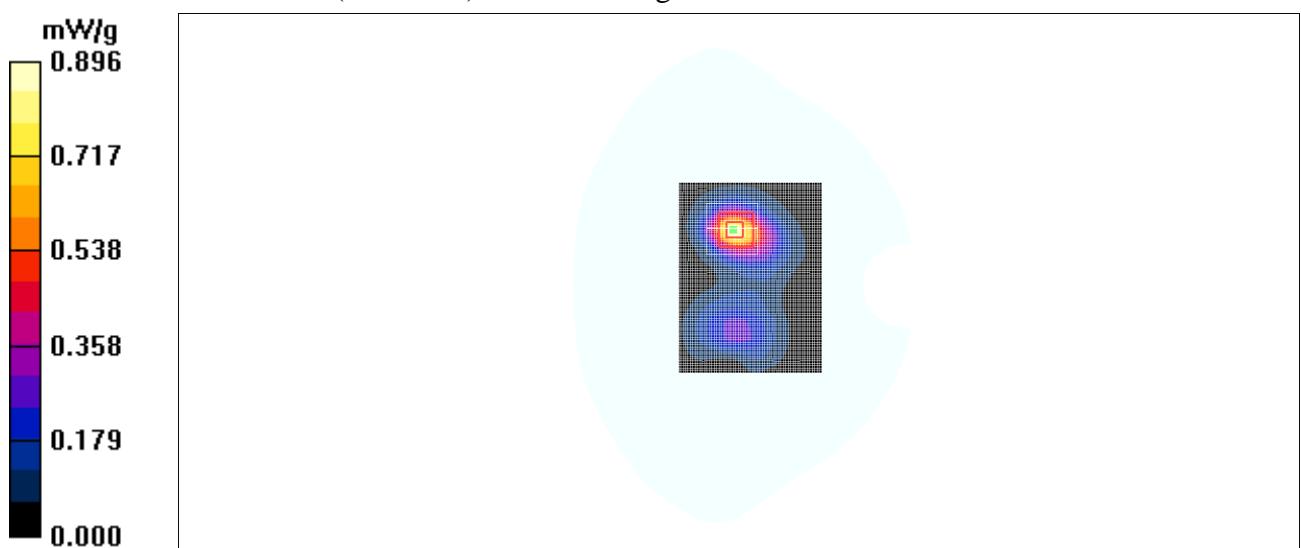
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.98 V/m; Power Drift = 0.189 dB

Peak SAR (extrapolated) = 1.54 W/kg

**SAR(1 g) = 0.818 mW/g; SAR(10 g) = 0.405 mW/g**

Maximum value of SAR (measured) = 0.925 mW/g

**Fig. 52 1900 MHz CH810**

**1900 Body Towards Ground High with Headset**

Date/Time: 2011-6-15 19:56:10

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.691 mW/g

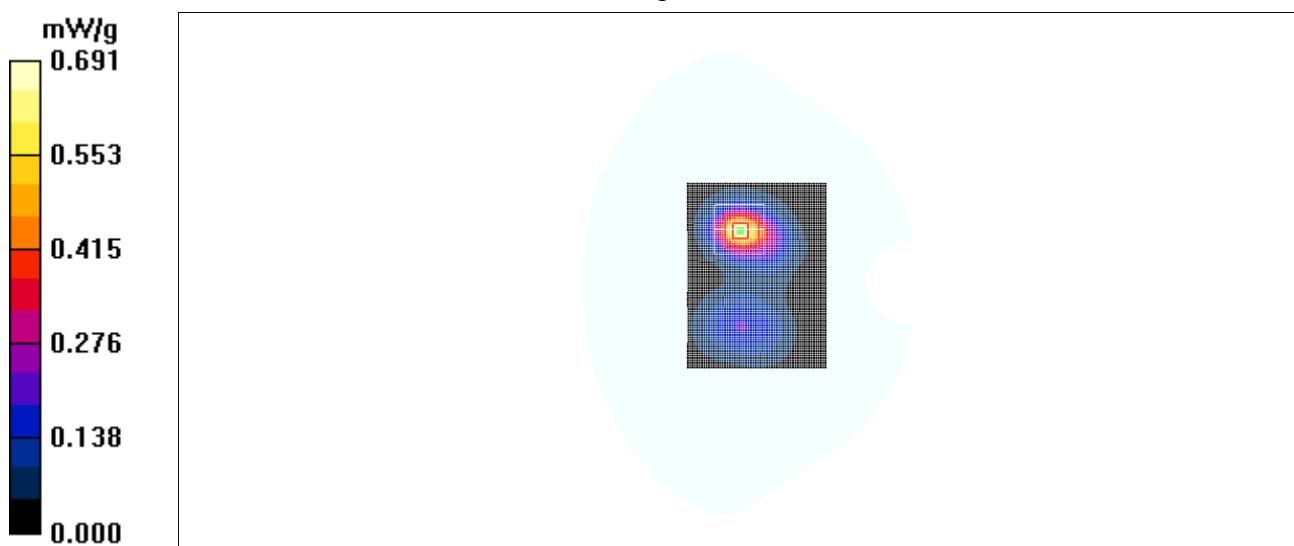
**Toward Ground High/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.01 V/m; Power Drift = 0.100 dB

Peak SAR (extrapolated) = 1.16 W/kg

**SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.302 mW/g**

Maximum value of SAR (measured) = 0.686 mW/g

**Fig. 53 1900 MHz CH810**

**1900 Body Towards Ground High with Bluetooth**

Date/Time: 2011-6-15 20:12:39

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.707 mW/g

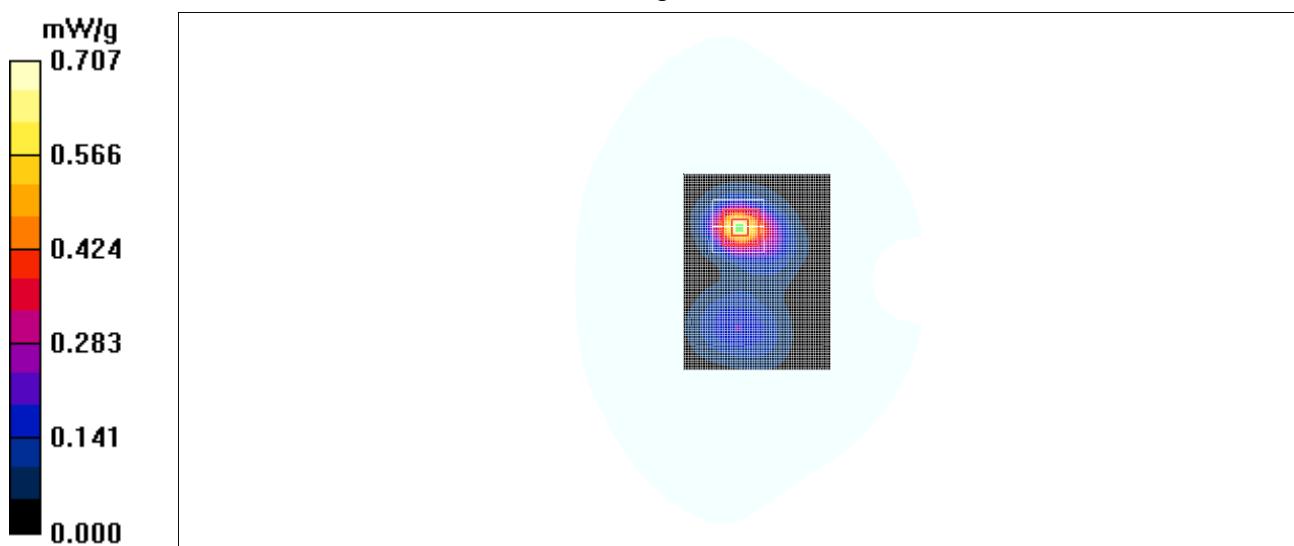
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.39 V/m; Power Drift = 0.072 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.615 mW/g; SAR(10 g) = 0.308 mW/g**

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

**Fig. 54 1900 MHz CH810**

**1900 Body Slide up Towards Ground High with GPRS**

Date/Time: 2011-6-15 20:29:50

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.55$  mho/m;  $\epsilon_r = 53.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (71x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.921 mW/g

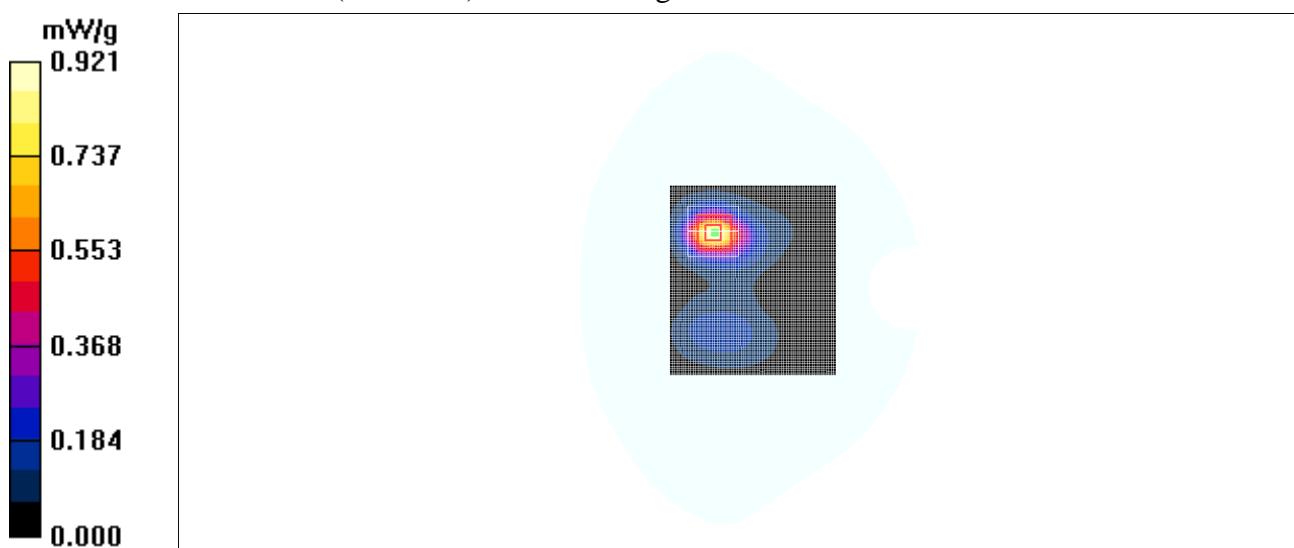
**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.88 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 1.48 W/kg

**SAR(1 g) = 0.807 mW/g; SAR(10 g) = 0.398 mW/g**

Maximum value of SAR (measured) = 0.921 mW/g

**Fig. 55 1900 MHz CH810**

**WiFi 802.11b 1Mbps Left Cheek Channel 6**

Date/Time: 2011-6-16 11:26:42

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.280 mW/g

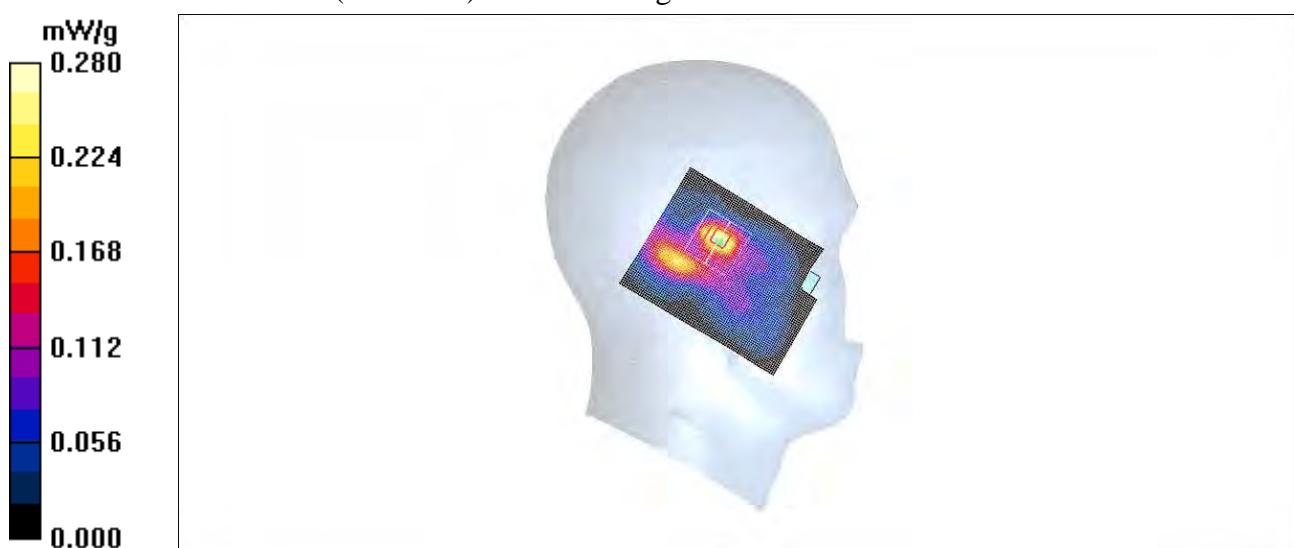
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.39 V/m; Power Drift = -0.105 dB

Peak SAR (extrapolated) = 0.454 W/kg

**SAR(1 g) = 0.239 mW/g; SAR(10 g) = 0.117 mW/g**

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

**Fig.56 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Left Tilt Channel 6**

Date/Time: 2011-6-16 11:41:05

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Tilt Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.215 mW/g

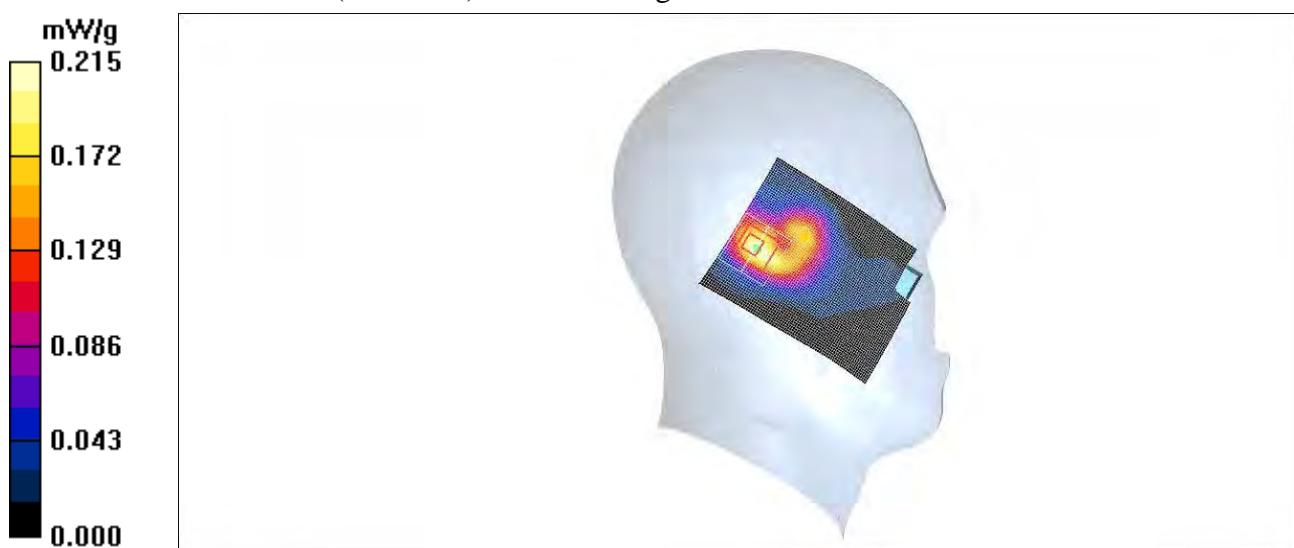
**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.18 V/m; Power Drift = -0.021 dB

Peak SAR (extrapolated) = 0.367 W/kg

**SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.097 mW/g**

Maximum value of SAR (measured) = 0.210 mW/g

**Fig.57 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Right Cheek Channel 6**

Date/Time: 2011-6-16 11:55:36

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Cheek Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.447 mW/g

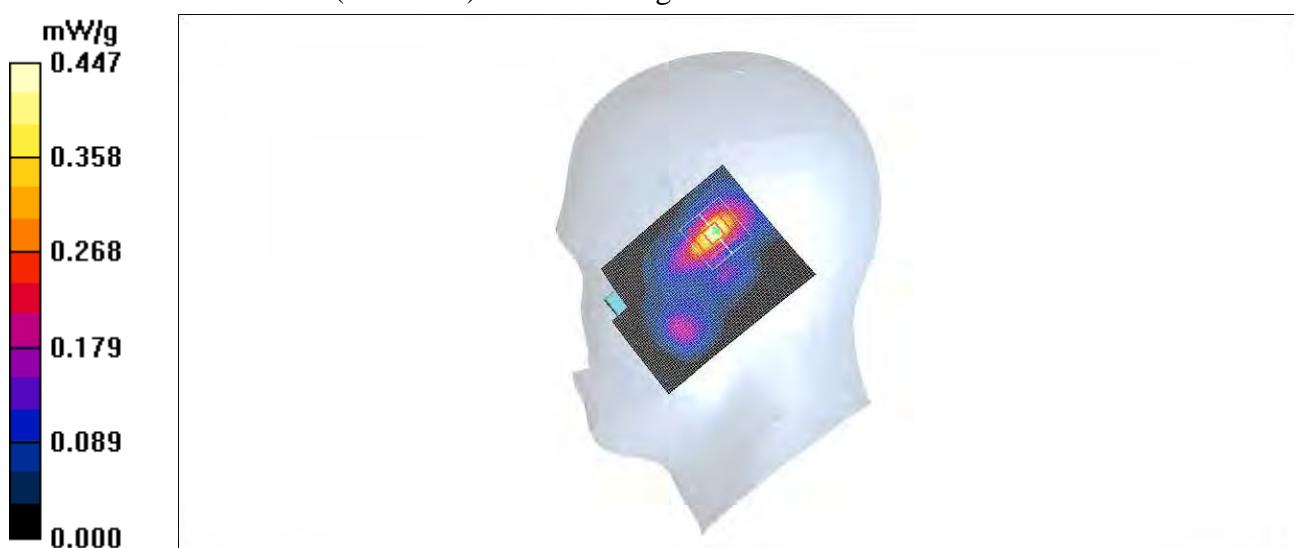
**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

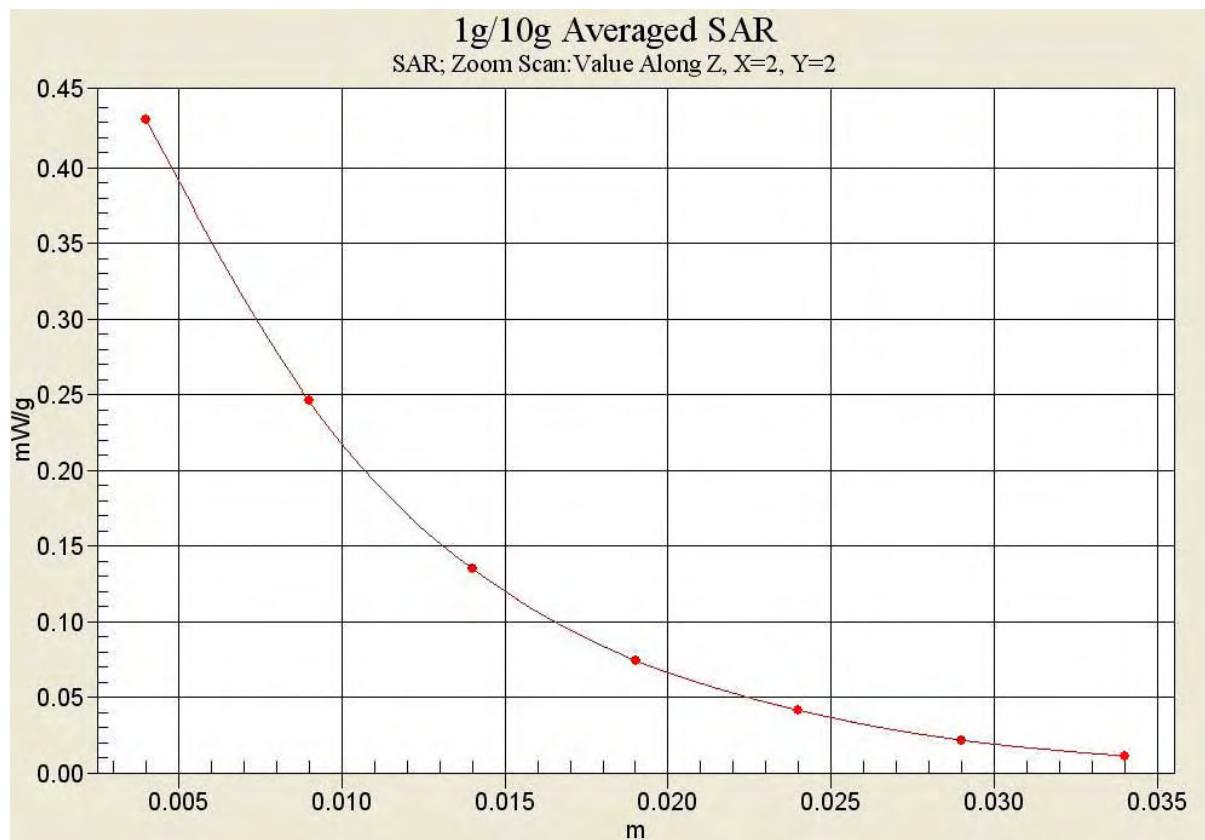
Reference Value = 6.77 V/m; Power Drift = -0.139 dB

Peak SAR (extrapolated) = 0.690 W/kg

**SAR(1 g) = 0.368 mW/g; SAR(10 g) = 0.176 mW/g**

Maximum value of SAR (measured) = 0.432 mW/g

**Fig.58 802.11b 1Mbps CH6**



**Fig. 58-1 Z-Scan at power reference point (802.11b 1Mbps CH6)**

**WiFi 802.11b 1Mbps Right Tilt Channel 6**

Date/Time: 2011-6-16 12:09:57

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Tilt Middle/Area Scan (71x91x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.312 mW/g

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

Reference Value = 7.20 V/m; Power Drift = 0.109 dB

Peak SAR (extrapolated) = 0.499 W/kg

**SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.135 mW/g**

Maximum value of SAR (measured) = 0.294 mW/g

**Fig.59 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Right Cheek Channel 6 Slide up**

Date/Time: 2011-6-16 12:26:40

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.81$  mho/m;  $\epsilon_r = 39.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Cheek Middle/Area Scan (71x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.255 mW/g

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

Reference Value = 6.26 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.433 W/kg

**SAR(1 g) = 0.227 mW/g; SAR(10 g) = 0.112 mW/g**

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

**Fig.60 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Toward Phantom Channel 6**

Date/Time: 2011-6-16 13:17:49

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Toward Phantom Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.189 mW/g

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

Reference Value = 3.54 V/m; Power Drift = -0.159 dB

Peak SAR (extrapolated) = 0.306 W/kg

**SAR(1 g) = 0.175 mW/g; SAR(10 g) = 0.094 mW/g**

Maximum value of SAR (measured) = 0.188 mW/g

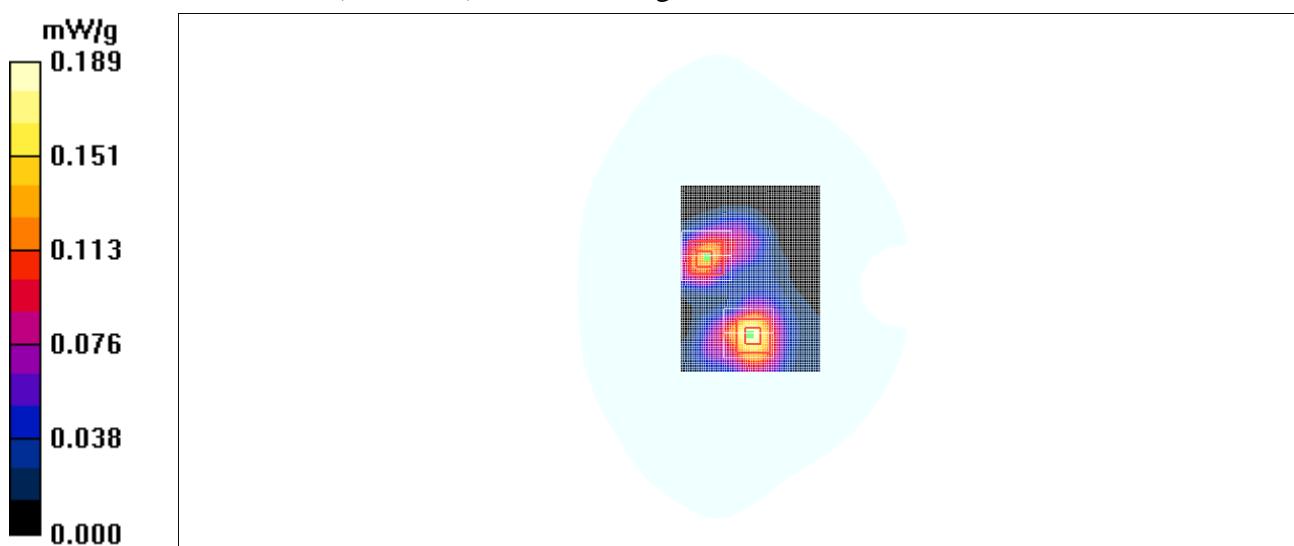
**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.54 V/m; Power Drift = -0.159 dB

Peak SAR (extrapolated) = 0.211 W/kg

**SAR(1 g) = 0.123 mW/g; SAR(10 g) = 0.068 mW/g**

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

**Fig.61 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Toward Ground Channel 6**

Date/Time: 2011-6-16 13:34:25

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Toward Ground Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.442 mW/g

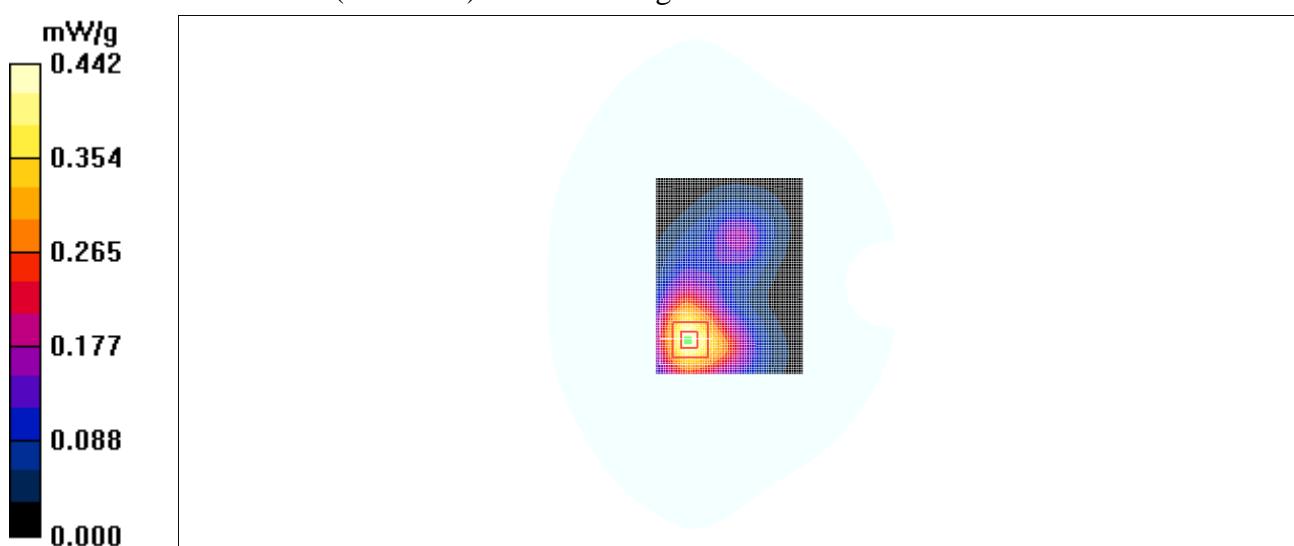
**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.30 V/m; Power Drift = -0.167 dB

Peak SAR (extrapolated) = 0.681 W/kg

**SAR(1 g) = 0.392 mW/g; SAR(10 g) = 0.225 mW/g**

Maximum value of SAR (measured) = 0.425 mW/g

**Fig.62 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Left Side Channel 6**

Date/Time: 2011-6-16 13:51:18

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Left Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.270 mW/g

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

Reference Value = 9.38 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 0.429 W/kg

**SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.128 mW/g**

Maximum value of SAR (measured) = 0.265 mW/g

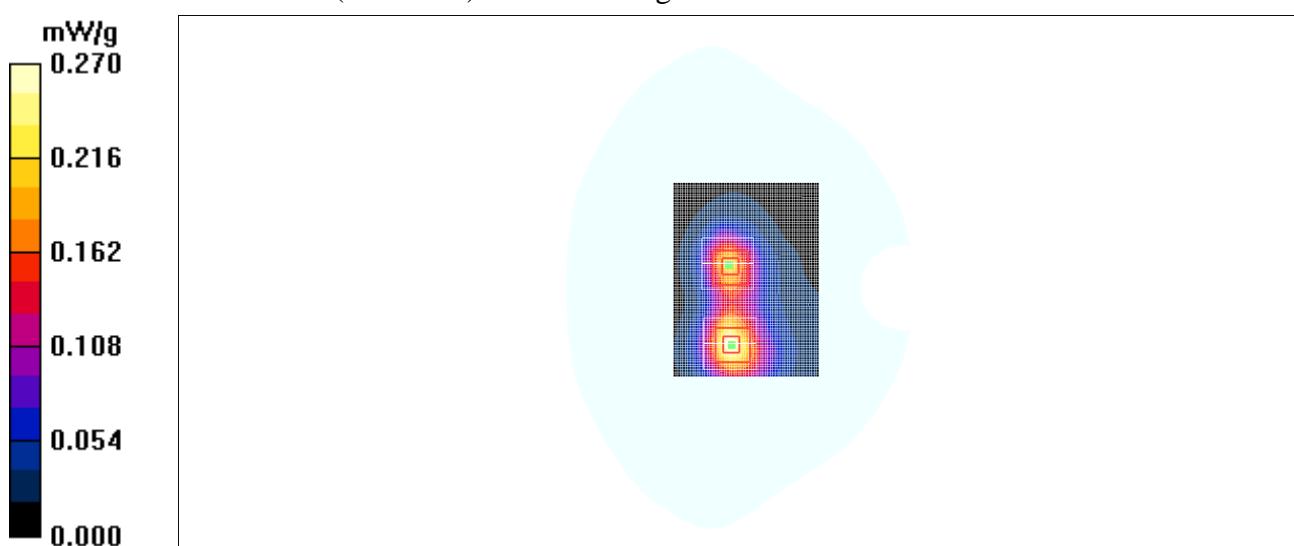
**Left Side Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.38 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 0.330 W/kg

**SAR(1 g) = 0.191 mW/g; SAR(10 g) = 0.104 mW/g**

Maximum value of SAR (measured) = 0.212 mW/g

**Fig.63 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Right Side Channel 6**

Date/Time: 2011-6-16 14:07:48

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Right Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.114 mW/g

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

Reference Value = 4.93 V/m; Power Drift = 0.150 dB

Peak SAR (extrapolated) = 0.184 W/kg

**SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.060 mW/g**

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

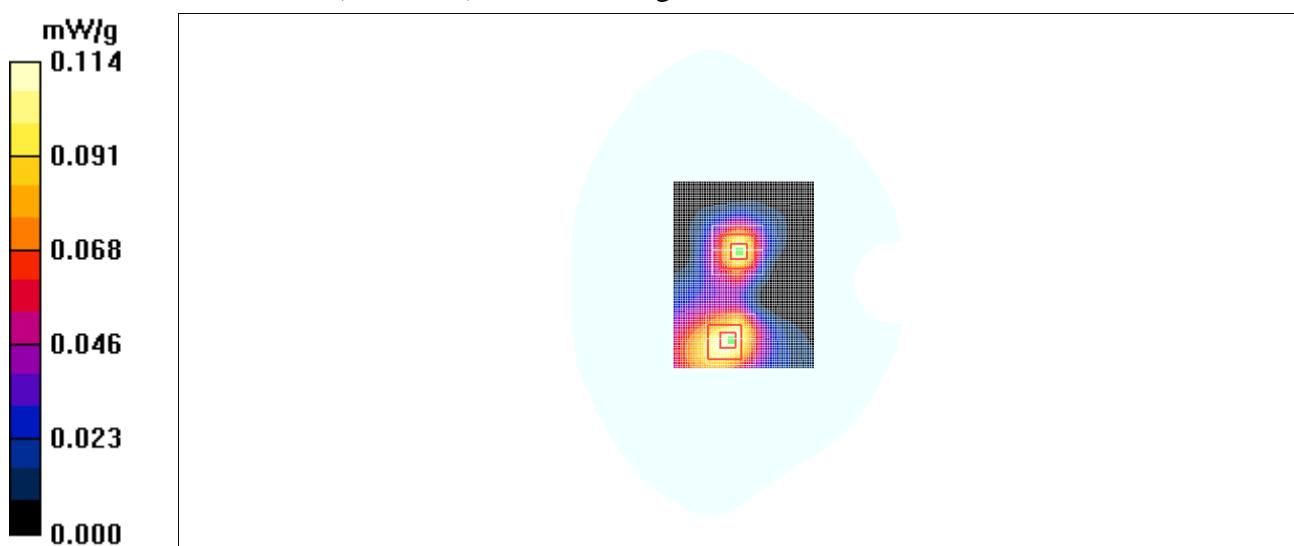
**Right Side Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.93 V/m; Power Drift = 0.250 dB

Peak SAR (extrapolated) = 0.184 W/kg

**SAR(1 g) = 0.100 mW/g; SAR(10 g) = 0.052 mW/g**

Maximum value of SAR (measured) = 0.113 mW/g

**Fig.64 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Top Side Channel 6**

Date/Time: 2011-6-16 14:24:22

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Top Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

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

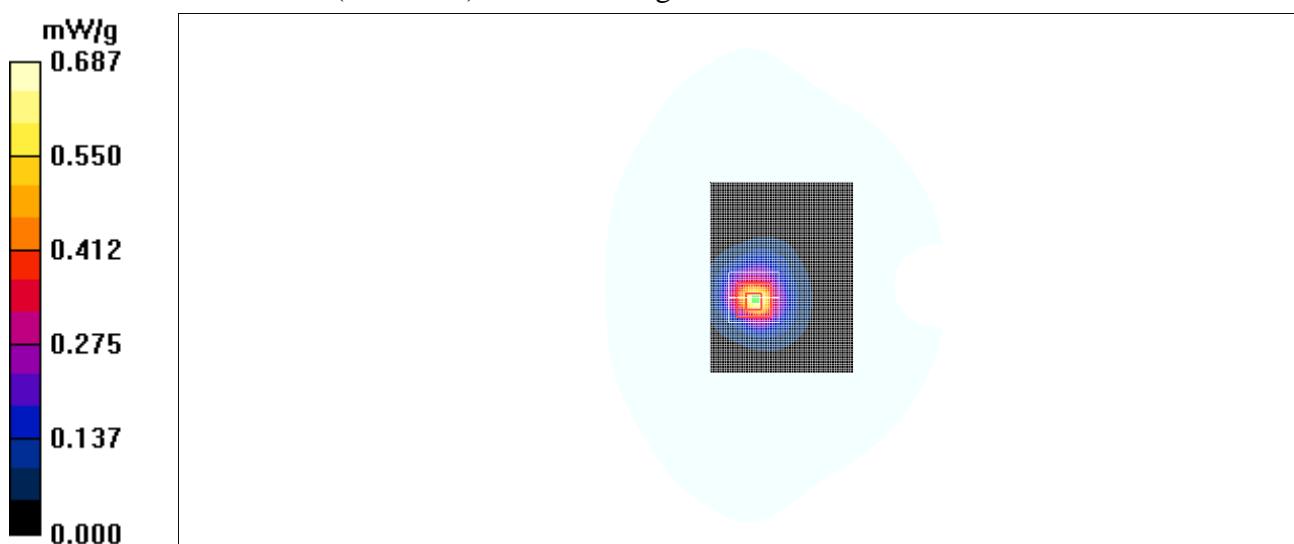
**Top Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

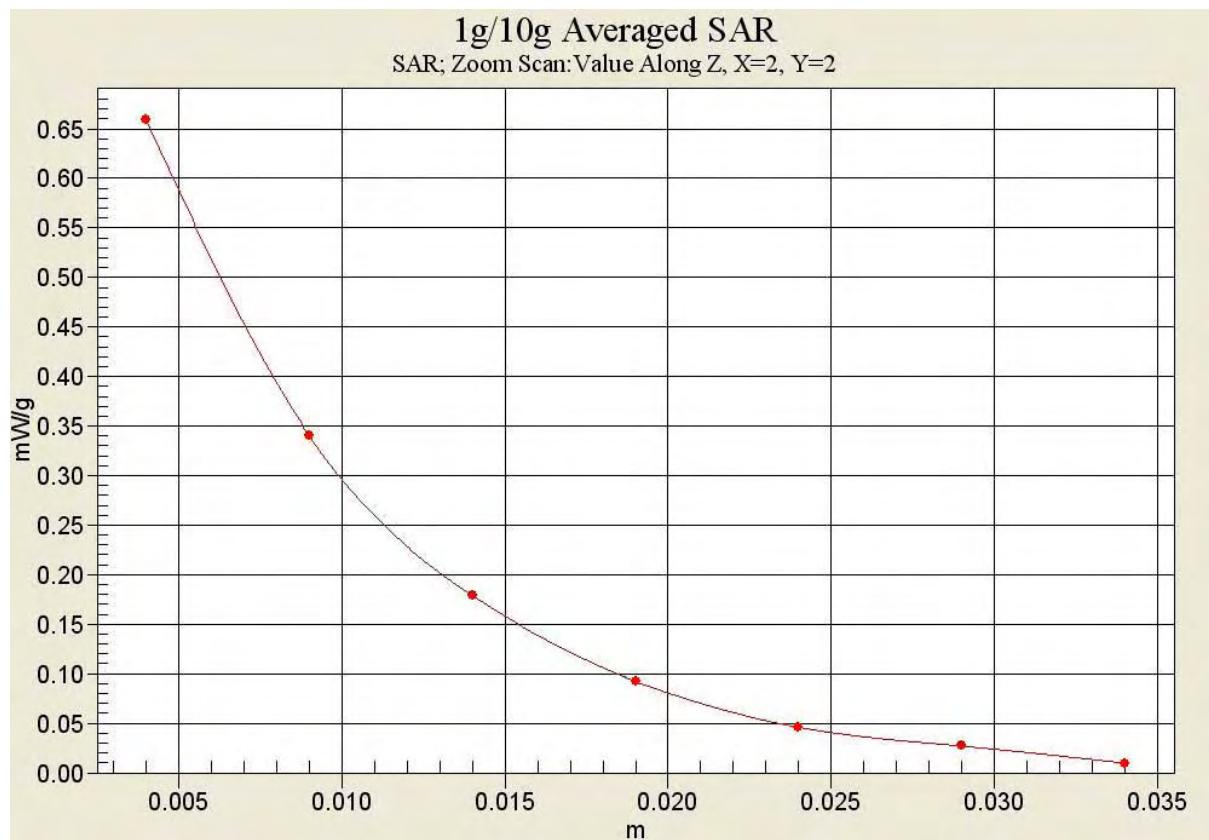
Reference Value = 11.9 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 1.17 W/kg

**SAR(1 g) = 0.592 mW/g; SAR(10 g) = 0.282 mW/g**

Maximum value of SAR (measured) = 0.659 mW/g

**Fig.65 802.11b 1Mbps CH6**



**Fig. 65-1 Z-Scan at power reference point (802.11b 1Mbps CH6)**

**WiFi 802.11b 1Mbps Top Side Channel 6 Slide up**

Date/Time: 2011-6-16 14:41:36

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.96$  mho/m;  $\epsilon_r = 52.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0 °C      Liquid Temperature: 22.5 °C

Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

**Top Side Middle/Area Scan (61x81x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.528 mW/g

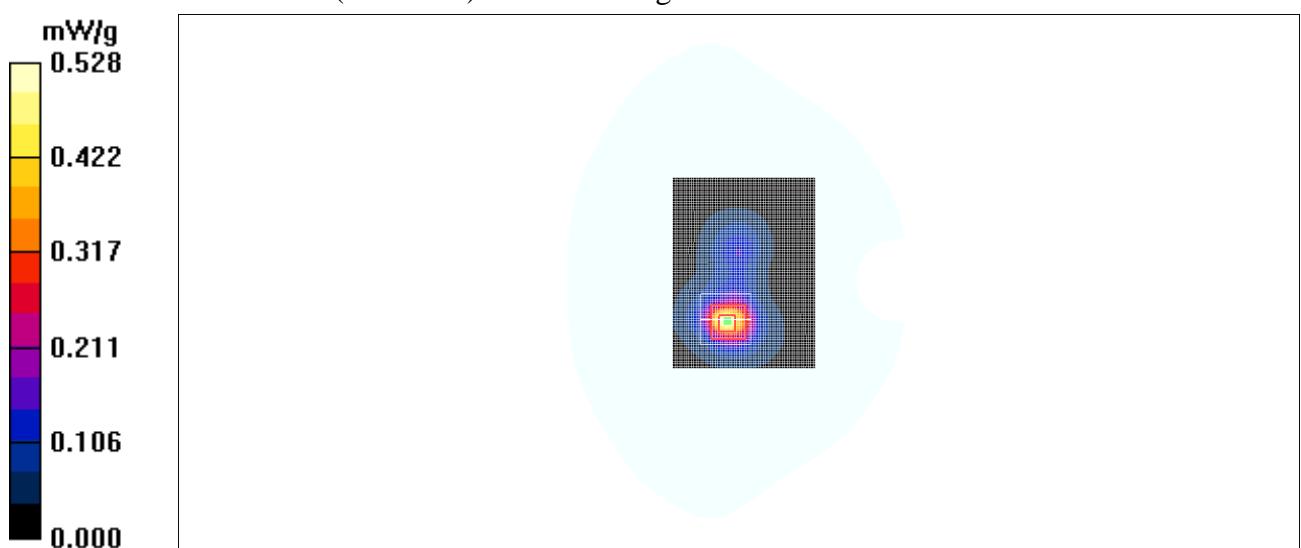
**Top Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.66 V/m; Power Drift = 0.132 dB

Peak SAR (extrapolated) = 0.965 W/kg

**SAR(1 g) = 0.469 mW/g; SAR(10 g) = 0.215 mW/g**

Maximum value of SAR (measured) = 0.524 mW/g

**Fig.66 802.11b 1Mbps CH6**

## ANNEX D SYSTEM VALIDATION RESULTS

### 835MHz

Date/Time: 2011-6-17 7:26:31

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.91$  mho/m;  $\epsilon_r = 41.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**System Validation /Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 2.52 mW/g

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

Reference Value = 54.9 V/m; Power Drift = -0.088dB

Peak SAR (extrapolated) = 3.34 W/kg

**SAR(1 g) = 2.30 mW/g; SAR(10 g) = 1.49 mW/g**

Maximum value of SAR (measured) = 2.45 mW/g

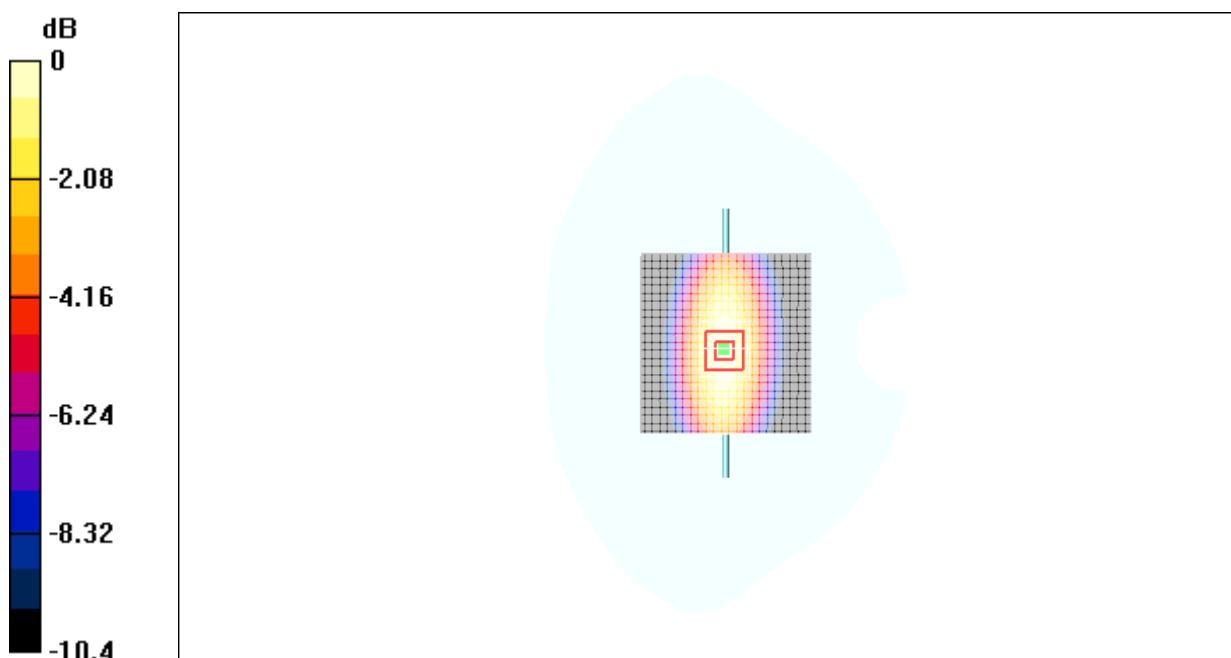


Fig.67 validation 835MHz 250mW

## 835MHz

Date/Time: 2011-6-17 8:00:35

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used:  $f = 835$  MHz;  $\sigma = 0.96$  mho/m;  $\epsilon_r = 54.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**System Validation /Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 2.64 mW/g

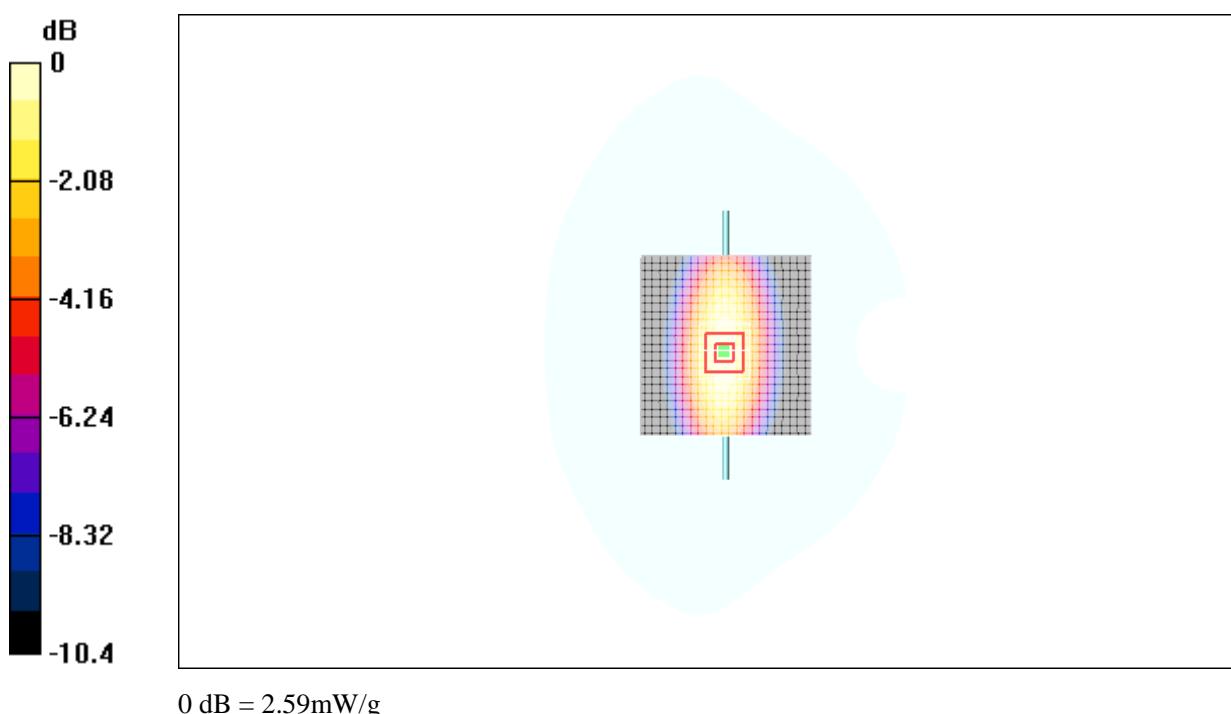
**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.2 V/m; Power Drift = 0.095 dB

Peak SAR (extrapolated) = 3.43 W/kg

**SAR(1 g) = 2.51 mW/g; SAR(10 g) = 1.58 mW/g**

Maximum value of SAR (measured) = 2.59 mW/g



**Fig.68 validation 835MHz 250mW**

**1900MHz**

Date/Time: 2011-6-15 7:27:35

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.41$  mho/m;  $\epsilon_r = 40.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

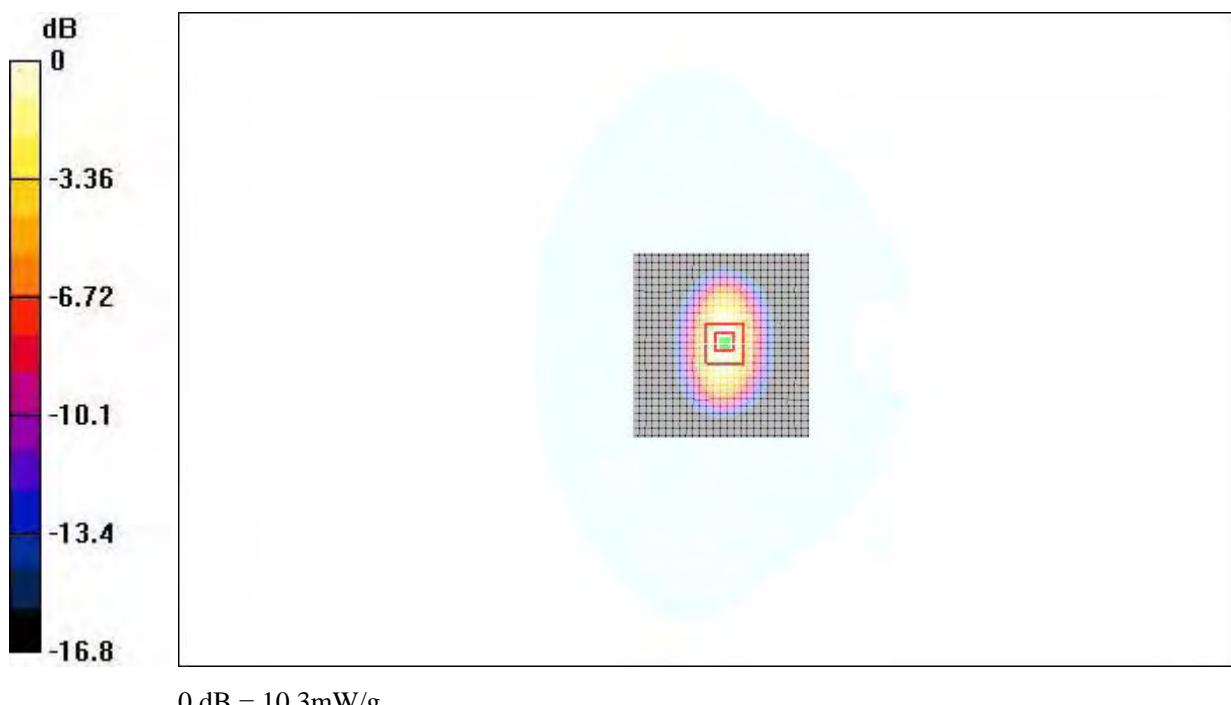
**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 11.4 mW/g**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.3 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 14.7 W/kg

**SAR(1 g) = 9.69 mW/g; SAR(10 g) = 4.86 mW/g**

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



0 dB = 10.3mW/g

**Fig.69 validation 1900MHz 250mW**

## 1900MHz

Date/Time: 2011-6-15 15:43:26

Electronics: DAE4 Sn771

Medium: Body 1900 MHz

Medium parameters used:  $f = 1900$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 53.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 11.6 mW/g

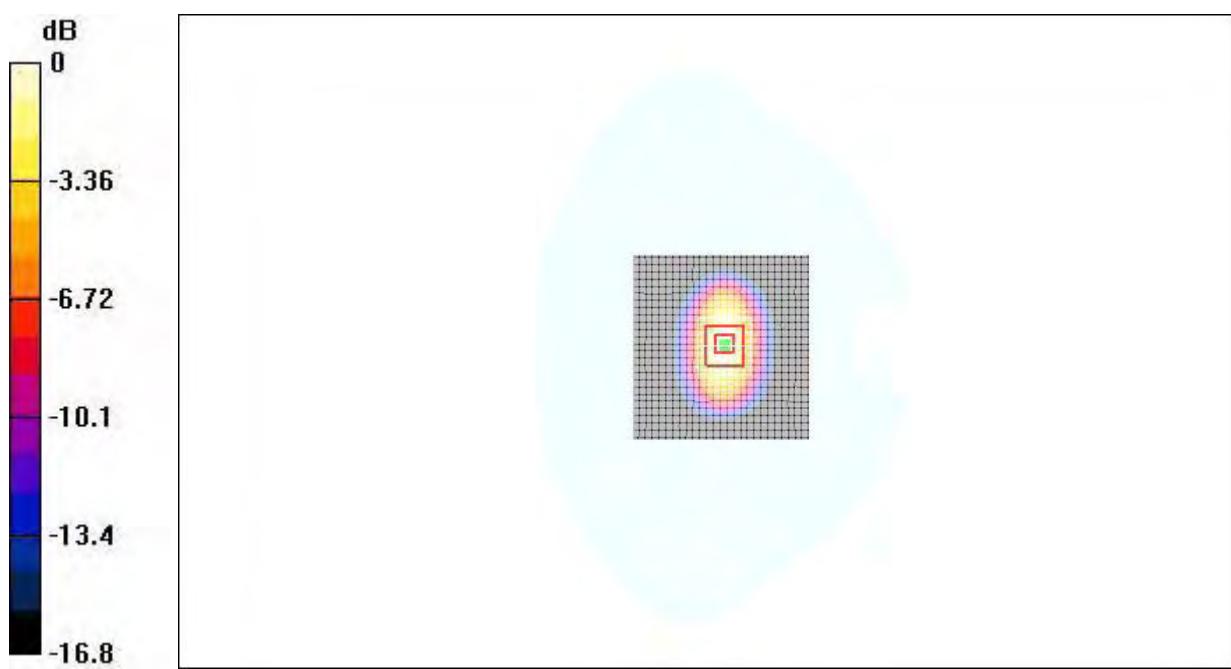
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.9 V/m; Power Drift = -0.073 dB

Peak SAR (extrapolated) = 15.8 W/kg

**SAR(1 g) = 10.4 mW/g; SAR(10 g) = 5.31 mW/g**

Maximum value of SAR (measured) = 11.1 mW/g



**Fig.70 validation 1900MHz 250mW**

**2450MHz**

Date/Time: 2011-6-16 7:28:43

Electronics: DAE4 Sn771

Medium: Head 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.82$  mho/m;  $\epsilon_r = 39.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: EX3DV4 - SN3617 ConvF(7.19, 7.19, 7.19)

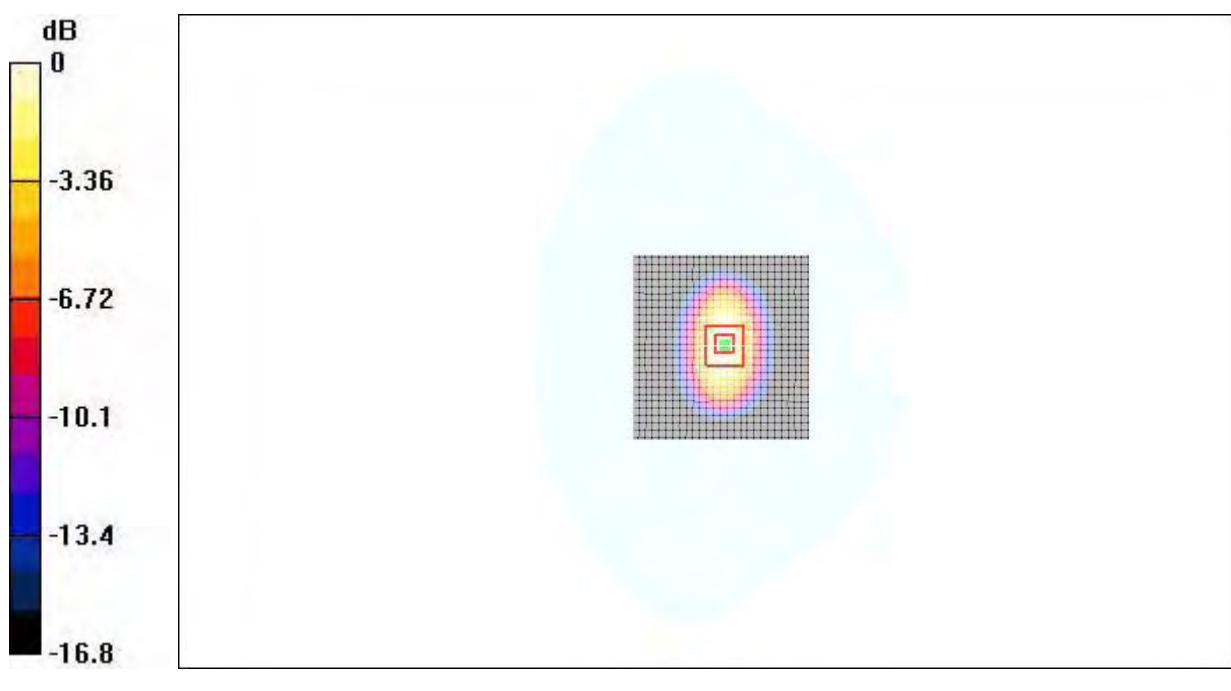
**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 14.8 mW/g**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 86.4 V/m; Power Drift = 0.066 dB

Peak SAR (extrapolated) = 18.0 W/kg

**SAR(1 g) = 12.8 mW/g; SAR(10 g) = 6.01 mW/g**

Maximum value of SAR (measured) = 13.8 mW/g



0 dB = 13.8mW/g

**Fig.71 validation 2450MHz 250mW**

## 2450MHz

Date/Time: 2011-6-16 12:49:24

Electronics: DAE4 Sn771

Medium: Body 2450 MHz

Medium parameters used:  $f = 2450$  MHz;  $\sigma = 1.97$  mho/m;  $\epsilon_r = 52.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature: 23.0°C      Liquid Temperature: 22.5°C

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

Probe: EX3DV4 - SN3617 ConvF(6.88, 6.88, 6.88)

**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm  
Maximum value of SAR (interpolated) = 15.2 mW/g

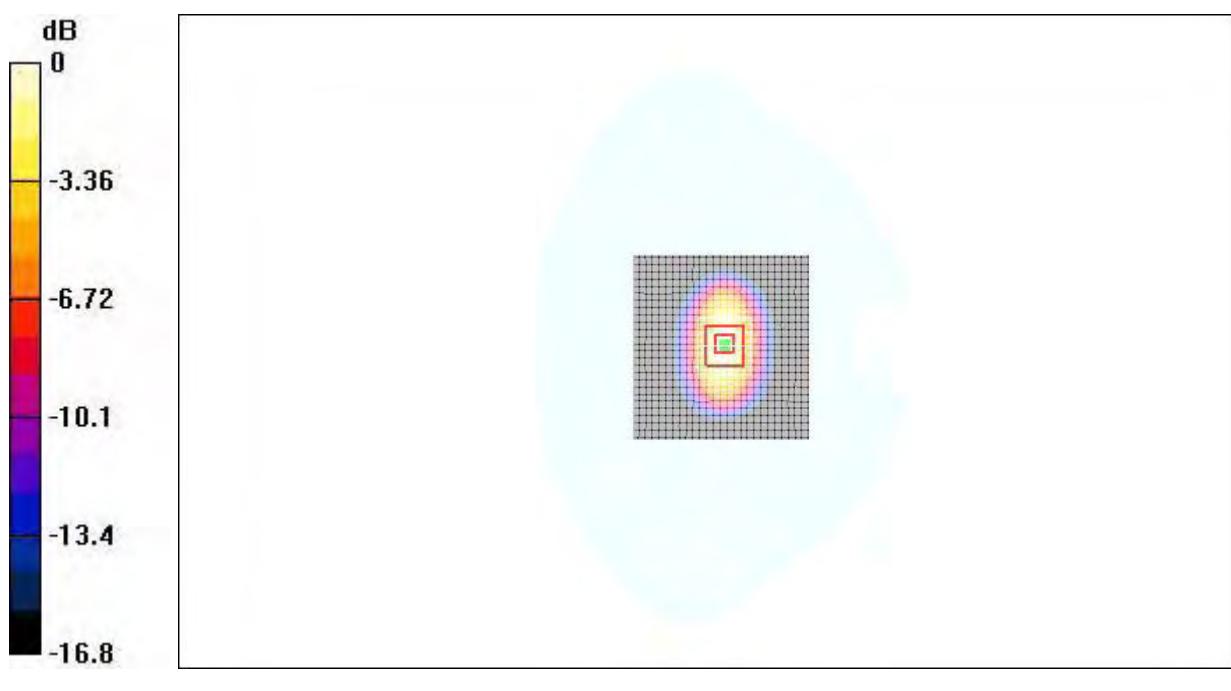
**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.0 V/m; Power Drift = -0.069 dB

Peak SAR (extrapolated) = 22.9 W/kg

**SAR(1 g) = 13.1 mW/g; SAR(10 g) = 6.10 mW/g**

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



**Fig.72 validation 2450MHz 250mW**

**Calibration certificate and Test positions are described in the additional document:**

Appendix to test report no. 2011SAR00074

Calibration certificate and Test positions