# SAR TEST REPORT

## No. 2011SAR00140

**For**

**TCT Mobile Limited**

**HSUPA/HSDPA/UMTS dual band / GSM quad bands mobile phone**

**GIN A**

**one touch 918 A**

**With**

**Hardware Version: PIO**

**Software Version: SW317_US**

**FCCID: RAD218**

**Issued Date: 2012-01-12**

Deutscher Akkreditierungs Rat

***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:**

TMC Beijing, Telecommunication Metrology Center of MIIT

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# TABLE OF CONTENT

# 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 |
| Fax: | +86-10-62304793 |

## 1.2 Testing Environment

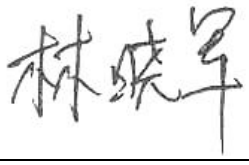
| | |
|---|---|
| Temperature: | 18°C~25 °C, |
| Relative humidity: | 30%~ 70% |
| Ground system resistance: | < 0.5 Ω |

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

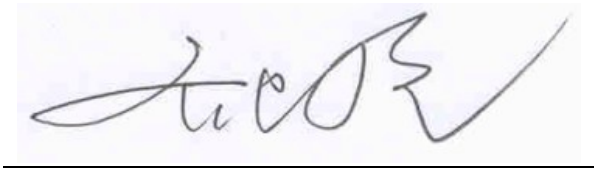
| | |
|---|---|
| Project Leader: | Qi Dianyuan |
| Test Engineer: | Lin Xiaojun |
| Testing Start Date: | December 14, 2011 |
| Testing End Date: | December 16, 2011 |

## 1.4 Signature



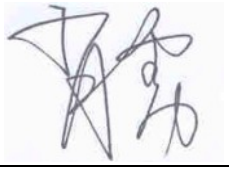
**Lin Xiaojun**

**(Prepared this test report)**



**Qi Dianyuan**

**(Reviewed this test report)**



**Xiao Li**

**Deputy Director of the laboratory**

**(Approved this test report)**

# 2 Client Information

## 2.1 Applicant Information

| | |
|---|---|
| Company Name: | TCT Mobile Limited |
| Address /Post: | 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203 |
| City: | Shanghai |
| Postal Code: | 201203 |
| Country: | P. R. China |
| Contact Person: | Gong Zhizhou |
| Contact Email | zhizhou.gong@jrdcom.com |
| Telephone: | 0086-21-61460890 |
| Fax: | 0086-21-61460602 |

## 2.2 Manufacturer Information

| | |
|---|---|
| Company Name: | TCT Mobile Limited |
| Address /Post: | 5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203 |
| City: | Shanghai |
| Postal Code: | 201203 |
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| Fax: | 0086-21-61460602 |

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

## 3.1 About EUT

| | |
|---|---|
| EUT Description: | HSUPA/HSDPA/UMTS dual band / GSM quad bands mobile phone |
| Model Name: | GIN A |
| Marketing Name: | one touch 918 A |
| Frequency Band: | GSM850 / PCS1900 / WCDMA850 / WCDMA1900 / WiFi |
| GPRS Multislot Class: | 12 |
| GPRS capability Class: | B |
| EGPRS Multislot Class: | 12 |
| Hotspot mode: | Support simultaneous transmission of hotspot and voice(or data) |
| Form factor: | 11.1cm×5.8cm |

## 3.2 Internal Identification of EUT used during the test

| EUT ID* | SN or IMEI | HW Version | SW Version |
|---|---|---|---|
| EUT1 | 012917000010208 | PIO | SW317_US |

*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 | CAB31P0000C1 | / | BYD |
| AE2 | Battery | CAB31P0000C2 | / | BAK |
| AE3 | Headset | CCB3160A11C1 | / | Juwei |
| AE4 | Headset | CCB3160A11C4 | / | Meihao |
| AE5 | Headset | CCB3160A15C1 | / | Juwei |
| AE6 | Headset | CCB3160A15C4 | / | Meihao |

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

## 4 CHARACTERISTICS OF THE TEST

### 4.1 Applicable Limit Regulations

**EN 50360–2001:** Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.
It specifies the maximum exposure limit of **2.0 W/kg** as averaged over any 10 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.
**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

**EN 62209-1–2006:** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz).
**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.
**IEC 62209-1-2005:** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1:Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)
**KDB648474 D01 SAR Handsets Multi Xmiter 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

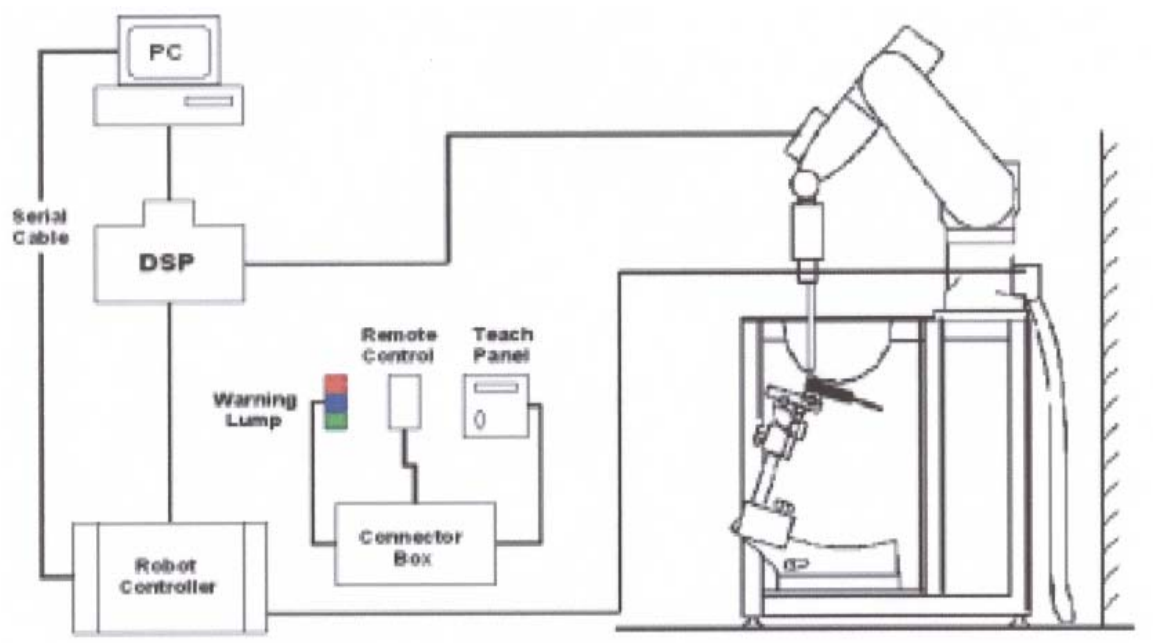
During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of GSM 850 MHz; 512, 661 and 810 respectively in the case of PCS 1900 MHz; 4132, 4182 and 4233 respectively in the case of WCDMA 850 MHz; 9262, 9400 and 9538 respectively in the case of WCDMA 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 ± 0.02mm. 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 2: 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 ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB.

### ES3DV3 Probe Specification

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

**Picture 3: ES3DV3 E-field**

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

**Picture4:ES3DV3 E-field probe**

## 5.4 E-field Probe Calibration

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

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

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

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

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

Or

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

Where:
σ = Simulated tissue conductivity,
ρ = Tissue density (kg/m$^3$).

**Picture 5: 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±0. l mm |
| Filling Volume | Approx. 20 liters |
| Dimensions | 810 x l000 x 500 mm (H x L x W) |
| Available | Special |

**Picture 6: Generic Twin Phantom**

## 5.6 Equivalent Tissues

The liquid used for the frequency range of 800-2000 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 |
| Dielectric Parameters Target Value | f=850MHz ε=41.5 σ=0.90 |
| MIXTURE % | FREQUENCY 1900MHz |
| Water | 55.242 |
| Glycol monobutyl | 44.452 |
| Salt | 0.306 |
| Dielectric Parameters Target Value | f=1900MHz ε=40.0 σ=1.40 |

| MIXTURE % | FREQUENCY 2450MHz |
|---|---|
| Water | 58.79 |
| Glycol monobutyl | 41.15 |
| Salt | 0.06 |
| Dielectric Parameters Target Value | f=2450MHz ε=39.2 σ=1.80 |

**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 |
| Dielectric Parameters Target Value | f=850MHz ε=55.2 σ=0.97 |
| MIXTURE % | FREQUENCY 1900MHz |
| Water | 69.91 |
| Glycol monobutyl | 29.96 |
| Salt | 0.13 |
| Dielectric Parameters Target Value | f=1900MHz ε=53.3 σ=1.52 |
| MIXTURE % | FREQUENCY 2450MHz |
| Water | 72.60 |
| Glycol monobutyl | 27.22 |
| Salt | 0.18 |
| Dielectric Parameters Target Value | f=2450MHz ε=52.7 σ=1.95 |

## 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 CMU200. 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)** |
| | 33.02 | 33.03 | 33.04 |
| **GSM 1900MHZ** | **Conducted Power (dBm)** | | |
| | **Channel 810(1909.8MHz)** | **Channel 661(1880MHz)** | **Channel 512(1850.2MHz)** |
| | 29.32 | 29.30 | 29.27 |

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

| GSM 850 | Measured Power (dBm) | | | calculation | Averaged Power (dBm) | | |
|---|---|---|---|---|---|---|---|
| GPRS | **251** | **190** | **128** | | **251** | **190** | **128** |
| 1 Txslot | 33.01 | 33.02 | 33.04 | -9.03dB | 23.98 | 23.99 | 24.01 |
| 2 Txslots | 31.92 | 31.93 | 31.95 | -6.02dB | 25.90 | 25.91 | 25.93 |
| 3Txslots | 29.93 | 29.94 | 29.96 | -4.26dB | 25.67 | 25.68 | 25.70 |
| **4 Txslots** | 29.11 | 29.13 | 29.15 | -3.01dB | **26.10** | **26.12** | **26.14** |
| GSM 850 | Measured Power (dBm) | | | calculation | Averaged Power (dBm) | | |
| EGPRS | **251** | **190** | **128** | | **251** | **190** | **128** |
| 1 Txslot | 30.02 | 30.02 | 30.04 | -9.03dB | 20.99 | 20.99 | 21.01 |
| 2 Txslots | 31.92 | 31.93 | 31.95 | -6.02dB | 25.90 | 25.91 | 25.93 |
| 3Txslots | 29.92 | 29.93 | 29.96 | -4.26dB | 25.66 | 25.67 | 25.70 |
| **4 Txslots** | 29.11 | 29.12 | 29.15 | -3.01dB | **26.10** | **26.11** | **26.14** |
| PCS1900 | Measured Power (dBm) | | | calculation | Averaged Power (dBm) | | |
| GPRS | **810** | **661** | **512** | | **810** | **661** | **512** |
| 1 Txslot | 29.32 | 29.30 | 29.27 | -9.03dB | 20.29 | 20.27 | 20.24 |
| 2 Txslots | 28.42 | 28.40 | 28.38 | -6.02dB | 22.40 | 22.38 | 22.36 |
| 3Txslots | 26.75 | 26.72 | 26.70 | -4.26dB | 22.49 | 22.46 | 22.44 |
| **4 Txslots** | 25.95 | 25.92 | 25.90 | -3.01dB | **22.94** | **22.91** | **22.89** |
| PCS1900 | Measured Power (dBm) | | | calculation | Averaged Power (dBm) | | |
| EGPRS | **810** | **661** | **512** | | **810** | **661** | **512** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 Txslot | 29.28 | 29.27 | 29.26 | -9.03dB | 20.25 | 20.24 | 20.23 |
| 2 Txslots | 28.41 | 28.39 | 28.37 | -6.02dB | 22.39 | 22.37 | 22.35 |
| 3Txslots | 26.74 | 26.71 | 26.69 | -4.26dB | 22.48 | 22.45 | 22.43 |
| **4 Txslots** | 25.94 | 25.92 | 25.90 | -3.01dB | **22.93** | **22.91** | **22.89** |

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

**According to the conducted power as above, the body measurements are performed with 4 Txslots for GPRS and EGPRS.**

**Table 5: The conducted Power for WCDMA850/1900**

| **Item** | **band** | **FDDV result** | | |
|---|---|---|---|---|
| | **ARFCN** | **4233 (846.6MHz)** | **4182 (836.4MHz)** | **4132 (826.4MHz)** |
| **WCDMA** | **** | 23.74 | 23.98 | 23.73 |
| **HSUPA** | **1** | 20.26 | 20.39 | 20.38 |
| | **2** | 19.31 | 19.44 | 19.37 |
| | **3** | 19.77 | 19.89 | 19.85 |
| | **4** | 20.30 | 20.43 | 20.37 |
| | **5** | 22.29 | 22.37 | 22.32 |
| **Item** | **band** | **FDDII result** | | |
| | **ARFCN** | **9538 (1907.6MHz)** | **9400 (1880MHz)** | **9262 (1852.4MHz)** |
| **WCDMA** | **** | 22.88 | 22.83 | 22.71 |
| **HSUPA** | **1** | 20.54 | 20.35 | 20.18 |
| | **2** | 19.54 | 19.36 | 19.18 |
| | **3** | 20.04 | 19.87 | 19.66 |
| | **4** | 20.57 | 20.36 | 20.15 |
| | **5** | 22.59 | 22.34 | 22.11 |

**Note:** HSUPA body SAR are not required, because maximum average output power of each RF channel with HSDPA active is not 1/4 dB higher than that measured without HSUPA and the maximum SAR for WCDMA850 and WCDMA1900 are not above 75% of the SAR limit (see table 19 and 20 for the SAR measurement results).

### 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 12 to Table 21 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 32%.<br>Liquid temperature during the test: 22.5°C<br>Measurement Date : 850 MHz **Dec 14, 2011** 1900 MHz **Dec 15, 2011** 2450 MHz **Dec 16, 2011** | | | |
|---|---|---|---|
| / | **Frequency** | **Permittivity ε** | **Conductivity σ (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 | 42.0 | 0.91 |
| | 1900 MHz | 40.3 | 1.39 |
| | 2450 MHz | 39.4 | 1.81 |

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

| Measurement is made at temperature 23.0 °C and relative humidity 32%.<br>Liquid temperature during the test: 22.5°C<br>Measurement Date : 850 MHz **Dec 14, 2011** 1900 MHz **Dec 15, 2011** 2450 MHz **Dec 16, 2011** | | | |
|---|---|---|---|
| / | **Frequency** | **Permittivity ε** | **Conductivity σ (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 | 54.4 | 0.96 |
| | 1900 MHz | 52.2 | 1.53 |
| | 2450 MHz | 53.0 | 1.94 |

## 7.2 System Validation

**Table 8: System Validation of Head**

| Measurement is made at temperature 23.0 °C and relative humidity 32%.<br>Liquid temperature during the test: 22.5°C<br>Measurement Date : 850 MHz **Dec 14, 2011** 1900 MHz **Dec 15, 2011** 2450 MHz **Dec 16, 2011** | | | | |
|---|---|---|---|---|
| **Liquid parameters** | Dipole calibration Target value | **Frequency** | **Permittivity ε** | **Conductivity σ (S/m)** |
| | | 835 MHz | 41.6 | 0.92 |
| | | 1900 MHz | 39.6 | 1.40 |
| | | 2450 MHz | 39.0 | 1.74 |
| | Actural Measurement value | 835 MHz | 42.0 | 0.91 |
| | | 1900 MHz | 40.3 | 1.39 |
| | | 2450 MHz | 39.4 | 1.81 |

| | 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 |
| **Verification results** | 835 MHz | 6.12 | 9.41 | 5.96 | 9.28 | -2.61% | -1.38% |
| | 1900 MHz | 20.1 | 39.4 | 19.76 | 38.32 | -1.69% | -2.74% |
| | 2450 MHz | 24.6 | 52.4 | 23.88 | 51.6 | -2.93% | -1.53% |

Note：Target values are the data of the dipole validation results, please check Annex F for the Dipole Calibration Certificate.

**Table 9: System Validation of Body**

| Measurement is made at temperature 23.0 °C and relative humidity 32%.<br>Liquid temperature during the test: 22.5°C<br>Measurement Date : 850 MHz **Dec 14, 2011** 1900 MHz **Dec 15, 2011** 2450 MHz **Dec 16, 2011** | | | | |
|---|---|---|---|---|
| **Liquid parameters** | Dipole calibration Target value | **Frequency** | **Permittivity ε** | **Conductivity σ (S/m)** |
| | | 835 MHz | 54.5 | 0.97 |
| | | 1900 MHz | 52.5 | 1.51 |
| | | 2450 MHz | 52.5 | 1.95 |
| | Actural Measurement value | 835 MHz | 54.4 | 0.96 |
| | | 1900 MHz | 52.2 | 1.53 |
| | | 2450 MHz | 53.0 | 1.94 |

| | 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 |
| **Verification results** | 835 MHz | 6.24 | 9.57 | 6.12 | 9.52 | -1.92% | -0.52% |
| | 1900 MHz | 20.9 | 41.4 | 20.4 | 40.8 | -2.39% | -1.45% |
| | 2450 MHz | 23.9 | 51.6 | 23.56 | 51.2 | -1.42% | -0.78% |

Note：Target values are the data of the dipole validation results, please check Annex F for the Dipole Calibration Certificate.

## 7.3 Evaluation of Multi-Batteries

**Table 10: Pretest SAR Values (GSM 850 MHz Band)**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 g Average** |
|---|---|---|
| | 2.0 | 1.6 |
| **Test Case** | **Measurement Result (W/kg)** | |
| | **10 g Average** | **1 g Average** |
| Right hand, Touch cheek, Low frequency (CAB31P0000C1) | 0.315 | 0.412 |
| Right hand, Touch cheek, Low frequency (CAB31P0000C2) | 0.307 | 0.402 |

**Note: According to the values in the above table, the battery, CAB31P0000C1, is the normal battery. We'll perform the head measurement with this battery and retest on highest value point with others.**

**Table 11: Pretest SAR Values (GSM 850 MHz Band-Body)**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 g Average** |
|---|---|---|
| | 2.0 | 1.6 |
| **Test Case** | **Measurement Result (W/kg)** | |
| | **10 g Average** | **1 g Average** |
| Body, Towards Ground, Low frequency (CAB31P0000C1) | 0.781 | 1.1 |
| Body, Towards Ground, Low frequency (CAB31P0000C2) | 0.737 | 1.04 |

**Note: According to the values in the above table, the battery, CAB31P0000C1, is the normal battery. We'll perform the body measurement with this battery and retest on highest value point with others.**

## 7.4 Summary of Measurement Results

**Table 12: SAR Values (GSM 850MHz-Head) - with battery CAB31P0000C1**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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, High frequency (See Fig.1) | 0.246 | 0.341 | 0.162 |
| Left hand, Touch cheek, Middle frequency (See Fig.2) | 0.268 | 0.369 | 0.116 |
| Left hand, Touch cheek, Low frequency (See Fig.3) | 0.277 | 0.379 | -0.020 |
| Left hand, Tilt 15 Degree, High frequency (See Fig.4) | 0.158 | 0.210 | 0.083 |
| Left hand, Tilt 15 Degree, Middle frequency (See Fig.5) | 0.167 | 0.219 | -0.000521 |
| Left hand, Tilt 15 Degree, Low frequency (See Fig.6) | 0.177 | 0.234 | 0.141 |
| Right hand, Touch cheek, High frequency (See Fig.7) | 0.273 | 0.357 | 0.030 |
| Right hand, Touch cheek, Middle frequency (See Fig.8) | 0.296 | 0.390 | 0.097 |

| | | | |
|---|---|---|---|
| Right hand, Touch cheek, Low frequency (See Fig.9) | 0.315 | 0.412 | 0.014 |
| Right hand, Tilt 15 Degree, High frequency (See Fig.10) | 0.185 | 0.246 | 0.027 |
| Right hand, Tilt 15 Degree, Middle frequency (See Fig.11) | 0.205 | 0.272 | -0.034 |
| Right hand, Tilt 15 Degree, Low frequency (See Fig.12) | 0.216 | 0.284 | 0.019 |

**Table 13: SAR Values (PCS 1900MHz-Head) - with battery CAB31P0000C1**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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, High frequency (See Fig.13) | 0.384 | 0.685 | 0.060 |
| Left hand, Touch cheek, Middle frequency (See Fig.14) | 0.405 | 0.731 | 0.014 |
| Left hand, Touch cheek, Low frequency (See Fig.15) | 0.455 | 0.816 | -0.063 |
| Left hand, Tilt 15 Degree, High frequency (See Fig.16) | 0.131 | 0.208 | -0.017 |
| Left hand, Tilt 15 Degree, Middle frequency (See Fig.17) | 0.135 | 0.209 | -0.043 |
| Left hand, Tilt 15 Degree, Low frequency (See Fig.18) | 0.144 | 0.217 | 0.050 |
| Right hand, Touch cheek, High frequency (See Fig.19) | 0.251 | 0.412 | -0.057 |
| Right hand, Touch cheek, Middle frequency (See Fig.20) | 0.263 | 0.433 | -0.077 |
| Right hand, Touch cheek, Low frequency (See Fig.21) | 0.317 | 0.517 | -0.067 |
| Right hand, Tilt 15 Degree, High frequency (See Fig.22) | 0.116 | 0.197 | -0.017 |
| Right hand, Tilt 15 Degree, Middle frequency (See Fig.23) | 0.113 | 0.190 | -0.015 |
| Right hand, Tilt 15 Degree, Low frequency(See Fig.24) | 0.133 | 0.219 | 0.078 |

**Table 14: SAR Values (WCDMA 850MHz-Head) - with battery CAB31P0000C1**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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, High frequency (See Fig.25) | 0.329 | 0.461 | -0.161 |
| Left hand, Touch cheek, Middle frequency (See Fig.26) | 0.315 | 0.439 | -0.029 |
| Left hand, Touch cheek, Low frequency (See Fig.27) | 0.399 | 0.556 | 0.00182 |
| Left hand, Tilt 15 Degree, High frequency (See Fig.28) | 0.196 | 0.258 | -0.00803 |
| Left hand, Tilt 15 Degree, Middle frequency (See Fig.29) | 0.194 | 0.261 | 0.057 |
| Left hand, Tilt 15 Degree, Low frequency (See Fig.30) | 0.240 | 0.317 | 0.039 |
| Right hand, Touch cheek, High frequency (See Fig.31) | 0.360 | 0.474 | 0.00369 |
| Right hand, Touch cheek, Middle frequency (See Fig.32) | 0.348 | 0.457 | 0.073 |
| Right hand, Touch cheek, Low frequency (See Fig.33) | 0.448 | 0.587 | 0.077 |
| Right hand, Tilt 15 Degree, High frequency (See Fig.34) | 0.224 | 0.300 | -0.026 |

| | | | |
|---|---|---|---|
| Right hand, Tilt 15 Degree, Middle frequency (See Fig.35) | 0.224 | 0.298 | -0.031 |
| Right hand, Tilt 15 Degree, Low frequency(See Fig.36) | 0.278 | 0.367 | -0.020 |

**Table 15: SAR Values (WCDMA 1900MHz-Head) - with battery CAB31P0000C1**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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, High frequency (See Fig.37) | 0.503 | 0.910 | -0.156 |
| Left hand, Touch cheek, Middle frequency (See Fig.38) | 0.550 | 0.991 | -0.009 |
| Left hand, Touch cheek, Low frequency (See Fig.39) | 0.487 | 0.870 | -0.045 |
| Left hand, Tilt 15 Degree, High frequency (See Fig.40) | 0.192 | 0.304 | 0.021 |
| Left hand, Tilt 15 Degree, Middle frequency (See Fig.41) | 0.196 | 0.303 | -0.016 |
| Left hand, Tilt 15 Degree, Low frequency (See Fig.42) | 0.168 | 0.255 | -0.020 |
| Right hand, Touch cheek, High frequency (See Fig.43) | 0.465 | 0.768 | -0.111 |
| Right hand, Touch cheek, Middle frequency (See Fig.44) | 0.500 | 0.823 | 0.014 |
| Right hand, Touch cheek, Low frequency (See Fig.45) | 0.447 | 0.734 | -0.012 |
| Right hand, Tilt 15 Degree, High frequency (See Fig.46) | 0.219 | 0.370 | 0.019 |
| Right hand, Tilt 15 Degree, Middle frequency (See Fig.47) | 0.231 | 0.385 | -0.002 |
| Right hand, Tilt 15 Degree, Low frequency(See Fig.48) | 0.191 | 0.311 | 0.039 |

**Table 16: SAR Values (WCDMA 1900MHz-Head) - with battery CAB31P0000C2**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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, Middle frequency (See Fig.49) | 0.541 | 0.975 | -0.017 |

**Table 17: SAR Values (GSM 850MHz-Body) - with battery CAB31P0000C1**

| **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 Phantom, High frequency with GPRS (See Fig.50) | 0.582 | 0.802 | 0.025 |
| Towards Phantom, Middle frequency with GPRS (See Fig.51) | 0.601 | 0.817 | 0.002 |
| Towards Phantom, Low frequency with GPRS (See Fig.52) | 0.662 | 0.893 | -0.120 |

| | | | |
|---|---|---|---|
| Towards Ground, High frequency with GPRS (See Fig.53) | 0.633 | 0.890 | -0.187 |
| Towards Ground, Middle frequency with GPRS (See Fig.54) | 0.670 | 0.943 | 0.042 |
| Towards Ground, Low frequency with GPRS (See Fig.55) | 0.781 | 1.1 | -0.006 |
| Left Side, Low frequency with GPRS (See Fig.56) | 0.421 | 0.617 | 0.106 |
| Right Side, Low frequency with GPRS (See Fig.57) | 0.417 | 0.602 | -0.014 |
| Bottom Side, Low frequency with GPRS (See Fig.58) | 0.094 | 0.160 | -0.164 |
| Towards Ground, Low frequency with EGPRS (See Fig.59) | 0.734 | 1.03 | 0.046 |
| Towards Ground, Low frequency with Headset_CCB3160A11C1 (See Fig.60) | 0.483 | 0.680 | 0.030 |
| Towards Ground, Low frequency with Headset_CCB3160A11C4 (See Fig.61) | 0.536 | 0.739 | 0.003 |
| Towards Ground, Low frequency with Headset_CCB3160A15C1 (See Fig.62) | 0.464 | 0.659 | 0.029 |
| Towards Ground, Low frequency with Headset_CCB3160A15C4 (See Fig.63) | 0.531 | 0.738 | -0.001 |

**Table 18: SAR Values (PCS 1900MHz-Body) - with battery CAB31P0000C1**

| **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 Phantom, High frequency with GPRS (See Fig.64) | 0.447 | 0.762 | 0.038 |
| Towards Ground, High frequency with GPRS (See Fig.65) | 0.517 | 0.905 | -0.164 |
| Towards Ground, Middle frequency with GPRS (See Fig.66) | 0.536 | 0.917 | -0.156 |
| Towards Ground, Low frequency with GPRS (See Fig.67) | 0.448 | 0.753 | -0.001 |
| Left Side, High frequency with GPRS (See Fig.68) | 0.127 | 0.221 | 0.191 |
| Right Side, High frequency with GPRS (See Fig.69) | 0.136 | 0.233 | -0.010 |
| Bottom Side, High frequency with GPRS (See Fig.70) | 0.542 | 0.964 | 0.148 |
| Bottom Side, Middle frequency with GPRS (See Fig.71) | 0.537 | 0.935 | -0.005 |
| Bottom Side, Low frequency with GPRS (See Fig.72) | 0.503 | 0.894 | 0.053 |
| Bottom Side, High frequency with EGPRS (See Fig.73) | 0.517 | 0.911 | -0.197 |
| Bottom Side, High frequency with Headset_CCB3160A11C1 (See Fig.74) | 0.282 | 0.501 | -0.051 |
| Bottom Side, High frequency with Headset_CCB3160A11C4 (See Fig.75) | 0.333 | 0.601 | -0.030 |
| Bottom Side, High frequency with Headset_CCB3160A15C1 (See Fig.76) | 0.310 | 0.553 | -0.153 |
| Bottom Side, High frequency with Headset_CCB3160A15C4 (See Fig.77) | 0.333 | 0.603 | 0.005 |

**Table 19: SAR Values (WCDMA 850MHz-Body) - with battery CAB31P0000C1**

| 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 Phantom, Middle frequency (See Fig.78) | 0.509 | 0.687 | -0.010 |
| Towards Ground, High frequency (See Fig.79) | 0.601 | 0.844 | -0.019 |
| Towards Ground, Middle frequency (See Fig.80) | 0.572 | 0.802 | -0.008 |
| Towards Ground, Low frequency (See Fig.81) | 0.743 | 1.04 | 0.013 |
| Left Side, Middle frequency (See Fig.82) | 0.329 | 0.481 | 0.017 |
| Right Side, Middle frequency (See Fig.83) | 0.336 | 0.486 | -0.012 |
| Bottom Side, Middle frequency (See Fig.84) | 0.064 | 0.112 | 0.017 |
| Towards Ground, High frequency with Headset_CCB3160A11C1 (See Fig.85) | 0.516 | 0.726 | -0.072 |
| Towards Ground,Middle frequency with Headset_CCB3160A11C1 (See Fig.86) | 0.509 | 0.717 | -0.003 |
| Towards Ground, Low frequency with Headset_CCB3160A11C1 (See Fig.87) | 0.649 | 0.918 | -0.042 |
| Towards Ground, High frequency with Headset_CCB3160A11C4 (See Fig.88) | 0.557 | 0.768 | -0.008 |
| Towards Ground,Middle frequency with Headset_CCB3160A11C4 (See Fig.89) | 0.549 | 0.758 | 0.018 |
| Towards Ground, Low frequency with Headset_CCB3160A11C4 (See Fig.90) | 0.675 | 0.936 | -0.004 |
| Towards Ground, High frequency with Headset_CCB3160A15C1 (See Fig.91) | 0.529 | 0.741 | -0.023 |
| Towards Ground,Middle frequency with Headset_CCB3160A15C1 (See Fig.92) | 0.495 | 0.696 | 0.022 |
| Towards Ground, Low frequency with Headset_CCB3160A15C1 (See Fig.93) | 0.653 | 0.926 | 0.007 |
| Towards Ground, High frequency with Headset_CCB3160A15C4 (See Fig.94) | 0.558 | 0.769 | 0.001 |
| Towards Ground,Middle frequency with Headset_CCB3160A15C4 (See Fig.95) | 0.549 | 0.761 | -0.005 |
| Towards Ground, Low frequency with Headset_CCB3160A15C4 (See Fig.96) | 0.700 | 0.967 | 0.001 |

**Table 20: SAR Values (WCDMA 1900MHz-Body) - with battery CAB31P0000C1**

| 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 Phantom, High frequency (See Fig.97) | 0.451 | 0.771 | 0.047 |
| Towards Ground, High frequency (See Fig.98) | 0.520 | 0.896 | 0.027 |
| Towards Ground, Middle frequency (See Fig.99) | 0.551 | 0.954 | 0.042 |
| Towards Ground, Low frequency (See Fig.100) | 0.475 | 0.822 | -0.036 |
| Left Side, High frequency (See Fig.101) | 0.126 | 0.219 | 0.053 |
| Right Side, High frequency (See Fig.102) | 0.118 | 0.200 | 0.042 |
| Bottom Side, High frequency (See Fig.103) | 0.556 | 1 | -0.015 |
| Bottom Side, Middle frequency (See Fig.104) | 0.590 | 1.06 | -0.008 |
| Bottom Side, Low frequency (See Fig.105) | 0.464 | 0.828 | 0.032 |
| Bottom Side, High frequency with Headset_CCB3160A11C1 (See Fig.106) | 0.512 | 0.927 | 0.022 |
| Bottom Side, Middle frequency with Headset_CCB3160A11C1 (See Fig.107) | 0.548 | 0.986 | -0.001 |
| Bottom Side, Low frequency with Headset_CCB3160A11C1 (See Fig.108) | 0.451 | 0.811 | 0.041 |
| Bottom Side, High frequency with Headset_CCB3160A11C4 (See Fig.109) | 0.518 | 0.927 | -0.117 |
| Bottom Side, Middle frequency with Headset_CCB3160A11C4 (See Fig.110) | 0.525 | 0.937 | -0.161 |
| Bottom Side, Low frequency with Headset_CCB3160A11C4 (See Fig.111) | 0.403 | 0.726 | -0.132 |
| Bottom Side, High frequency with Headset_CCB3160A15C1 (See Fig.112) | 0.506 | 0.909 | 0.071 |
| Bottom Side, Middle frequency with Headset_CCB3160A15C1 (See Fig.113) | 0.511 | 0.923 | -0.014 |
| Bottom Side, Low frequency with Headset_CCB3160A15C1 (See Fig.114) | 0.444 | 0.796 | 0.019 |
| Bottom Side, High frequency with Headset_CCB3160A15C4 (See Fig.115) | 0.517 | 0.931 | -0.071 |
| Bottom Side, Middle frequency with Headset_CCB3160A15C4 (See Fig.116) | 0.524 | 0.933 | 0.020 |
| Bottom Side, Low frequency with Headset_CCB3160A15C4 (See Fig.117) | 0.429 | 0.765 | 0.015 |

**Table 21: SAR Values (GSM850MHz-Body) - with battery CAB31P0000C2**

| 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.118) | 0.737 | 1.04 | 0.137 |

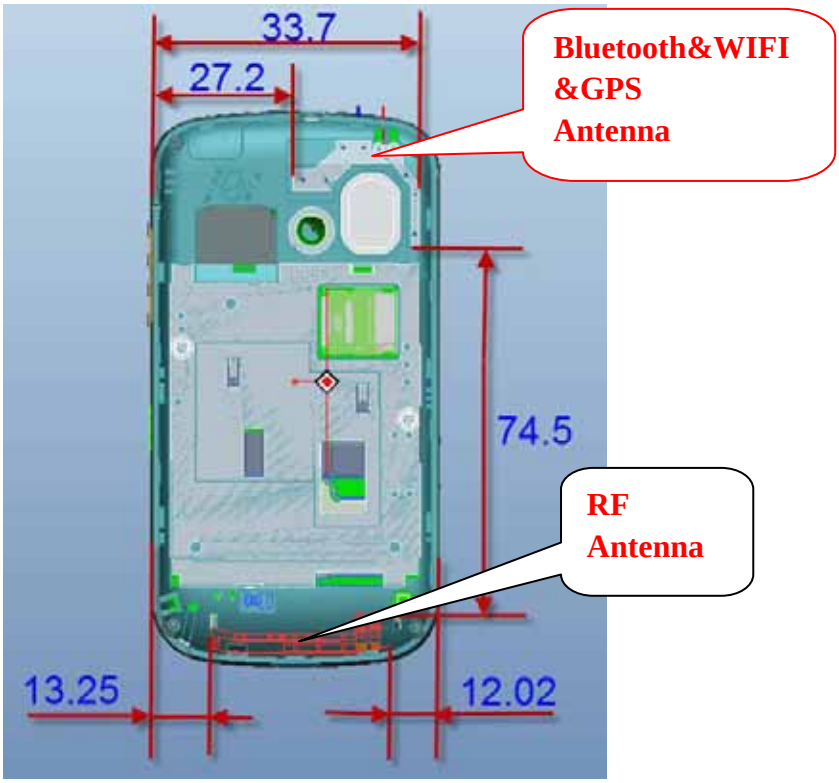
## 7.5 Simultaneous TX SAR Considerations

For this device, BT/WiFi transmitter can transmit simultaneously with the main transmitter (data and voice). See below for simultaneous transmission logic table:

| / | GSM | WCDMA | WiFi | BT |
|---|---|---|---|---|
| **GSM** | / | / | Yes | Yes |
| **WCDMA** | / | / | Yes | Yes |
| **WiFi** | Yes | Yes | / | Yes |
| **BT** | Yes | Yes | Yes | / |

The BT and WiFi will be evaluated separately to determine simultaneous transmission SAR test exclusion with GSM/WCDMA results according to the procedures in KDB 648474.

The distance between BT/WiFi antenna and RF antenna is ＞5cm. The distance between BT and WiFi is ＜2.5cm. The location of the antennas inside mobile phone is shown below:



The output power of BT antenna is as following:

| **Channel** | **Ch 0 (2402 MHz)** | **Ch 39 (2441 MHz)** | **Ch 78 (2480 MHz)** |
|---|---|---|---|
| Peak Conducted Output Power(dBm) | 1.56 | 4.69 | 2.56 |

Because the output power of BT transmitter is ＜$2P_{Ref}$ and the distance between BT antenna and RF antenna is ＞5cm, 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 ＜$P_{Ref}$, the distance between BT antenna and WiFi is ＜2.5cm and the 1g SAR of WiFi is ＜1.2W/kg, we can draw the conclusion that: stand-alone SAR and simultaneous transmission SAR are not required for BT transmitter.

**Note:** Power thresholds ($P_{Ref}$) is derived from multiples of 0.5×60/$f_{(GHz)}$, 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 | 15.30 | 15.25 | 15.14 | 15.06 |
| 6 | 15.92 | 15.89 | 14.93 | 14.89 |
| 11 | 15.53 | 15.52 | 14.62 | 14.52 |

802.11g（dBm）

| Channel\data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
|---|---|---|---|---|---|---|---|---|
| 1 | 13.39 | 13.34 | 13.11 | 12.94 | 12.87 | 12.60 | 12.39 | 12.27 |
| 6 | 13.16 | 13.03 | 12.97 | 12.78 | 12.58 | 12.32 | 12.10 | 11.93 |
| 11 | 13.55 | 13.49 | 13.38 | 13.25 | 13.06 | 12.73 | 12.12 | 12.03 |

802.11n（dBm）

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| 1 | 13.44 | 13.23 | 13.03 | 12.85 | 12.56 | 12.30 | 12.21 | 12.05 |
| 6 | 13.19 | 13.00 | 12.88 | 12.67 | 12.37 | 12.10 | 12.02 | 11.87 |
| 11 | 13.40 | 13.47 | 13.10 | 12.79 | 12.45 | 12.62 | 12.16 | 12.02 |

The peak conducted power for WiFi is as following:

802.11b（dBm）

| Channel\data rate | 1Mbps | 2Mbps | 5.5Mbps | 11Mbps |
|---|---|---|---|---|
| 1 | 20.41 | 20.61 | 22.66 | 23.49 |
| 6 | / | / | / | 23.24 |
| 11 | / | / | / | 23.53 |

802.11g（dBm）

| Channel\data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
|---|---|---|---|---|---|---|---|---|
| 1 | 22.04 | 22.04 | 21.72 | 21.68 | 22.42 | 22.23 | 22.21 | 22.32 |
| 6 | / | / | / | / | 22.35 | / | / | / |
| 11 | / | / | / | / | 22.32 | / | / | / |

802.11n（dBm）

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| 1 | 21.96 | 22.06 | 22.03 | 22.59 | 22.58 | 22.71 | 22.68 | 22.68 |
| 6 | / | / | / | / | / | 22.72 | / | / |
| 11 | / | / | / | / | / | 22.34 | / | / |

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/WCDMA 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 22: SAR Values (WIFI 802.b -Head)**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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.119) | 0.067 | 0.133 | 0.129 |
| Left hand, Tilt 15 Degree, 1Mbps,channel 6 (See Fig.120) | 0.082 | 0.162 | 0.082 |
| Right hand, Touch cheek, 1Mbps,channel 6 (See Fig.121) | 0.115 | 0.235 | 0.162 |
| Right hand, Tilt 15 Degree, 1Mbps,channel 6 (See Fig.122) | 0.127 | 0.263 | 0.168 |

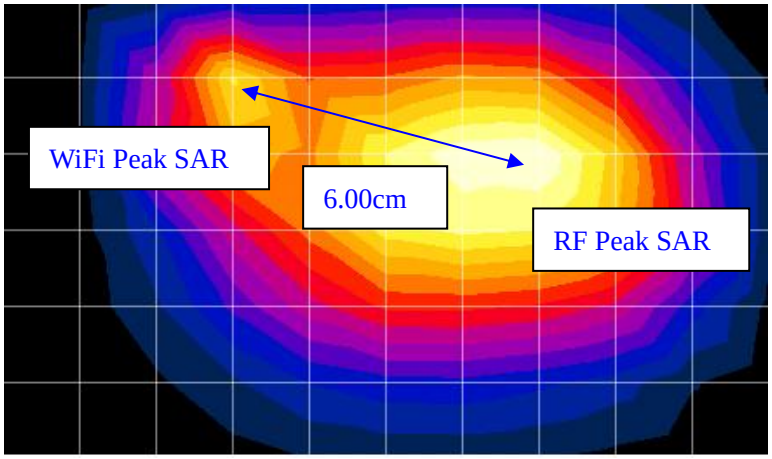
**Table 23: SAR Values (WIFI 802.b -Body)**

| **Limit of SAR (W/kg)** | **10 g Average** | **1 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.123) | 0.026 | 0.050 | -0.151 |
| Toward Ground, 1Mbps,channel 6 (See Fig.124) | 0.307 | 0.665 | -0.004 |
| Left Side, 1Mbps,channel 6 (See Fig.125) | 0.090 | 0.173 | 0.088 |
| Top Side, 1Mbps,channel 6 (See Fig.126) | 0.108 | 0.212 | 0.034 |

According to the above tables of SAR results, the sum of SAR values for GSM/WCDMA and WiFi in some positions is ＞1.6W/kg. So it should be evaluated for SAR to peak location separation ratio of simultaneous transmitting antenna pair by KDB648474 D01.

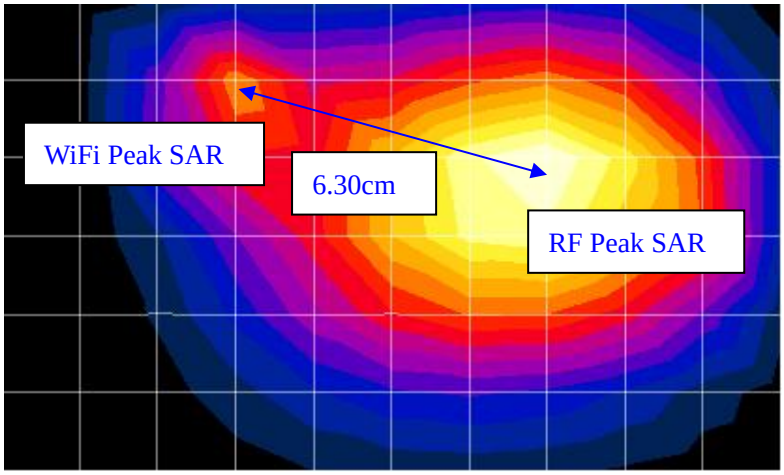
**Table 24: The sum of SAR values for GSM/WCDMA and WiFi**

| No. | Position | RF | WiFi | Sum |
|---|---|---|---|---|
| Picture7.1 | GSM850, Towards Ground, Middle frequency with GPRS | 0.943 | 0.665 | **1.608** |
| Picture7.2 | GSM850, Towards Ground, Low frequency with GPRS | 1.1 | | **1.765** |
| Picture7.3 | GSM850, Towards Ground, Low frequency with EGPRS | 1.03 | | **1.695** |
| Picture7.4 | GSM850, Towards Ground, Low frequency with GPRS_battery CAB31P0000C2 | 1.04 | | **1.705** |
| Picture7.5 | WCDMA850, Towards Ground, Low frequency | 1.04 | | **1.705** |
| Picture7.6 | WCDMA850, Towards Ground, Low frequency with Headset_CCB3160A11C4 | 0.936 | | **1.601** |
| Picture7.7 | WCDMA850, Towards Ground, Low frequency with Headset_CCB3160A15C4 | 0.967 | | **1.632** |
| Picture7.8 | WCDMA1900, Towards Ground, Middle frequency | 0.954 | | **1.619** |



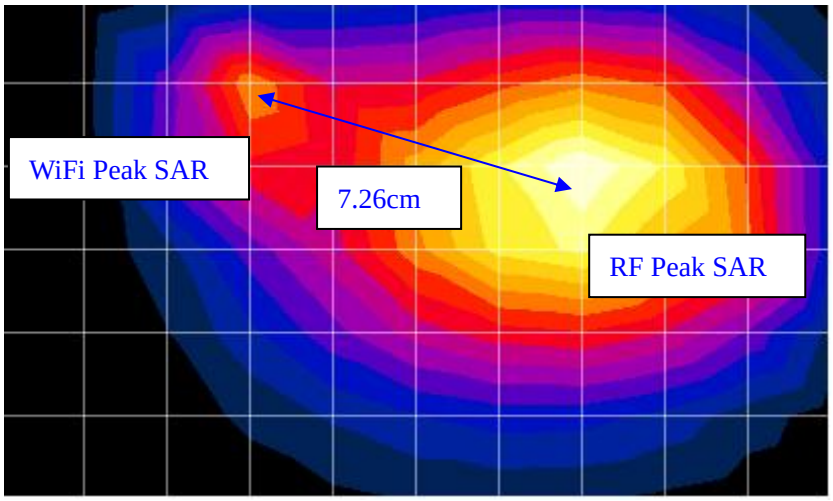

**Picture 7.1 Combined for GSM850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.608/6.00=0.27＜0.3



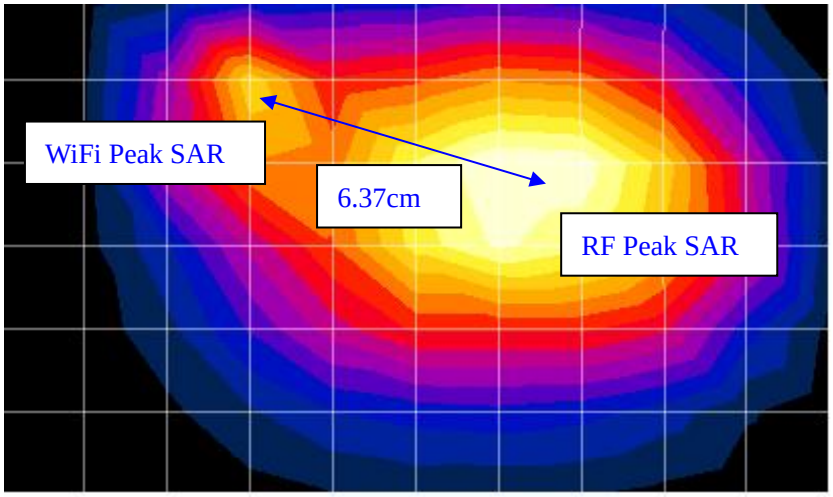

**Picture 7.2 Combined for GSM850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.765/6.30=0.28＜0.3



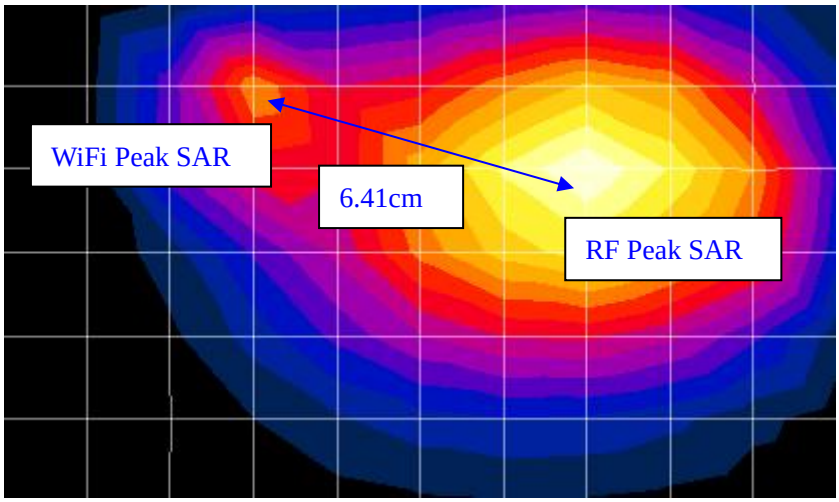

**Picture 7.3 Combined for GSM850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.695/7.26=0.23＜0.3



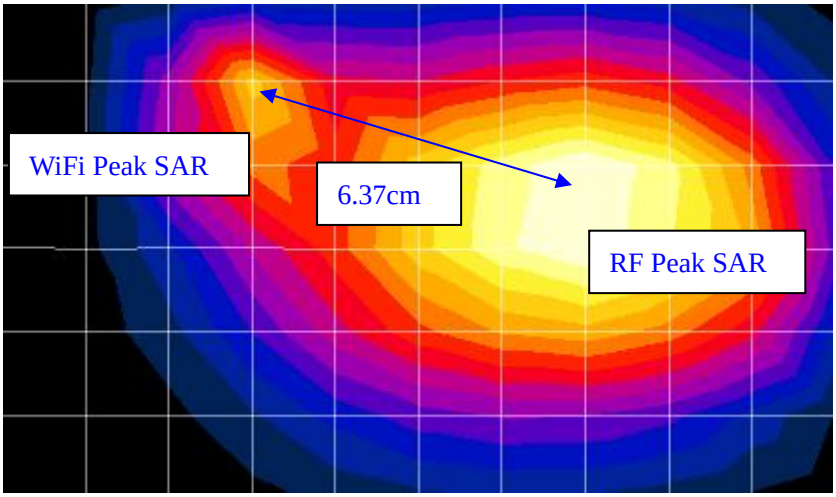

**Picture 7.4 Combined for GSM850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.705/6.37=0.27＜0.3



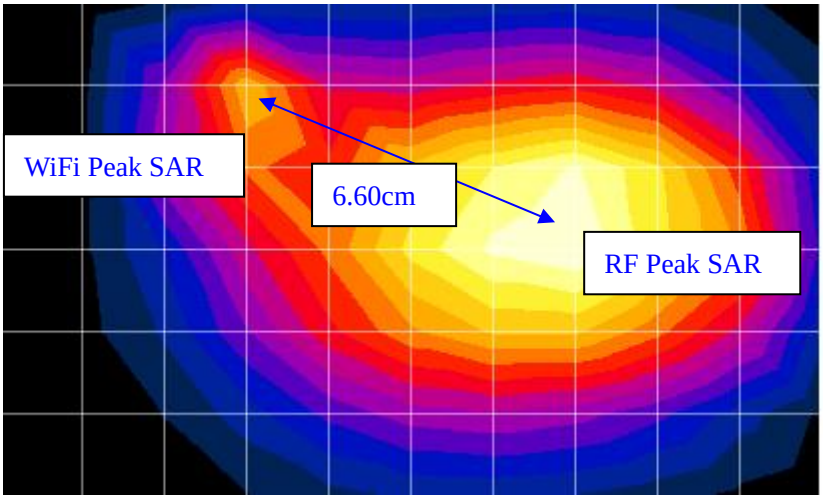

**Picture 7.5 Combined for WCDMA850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.705/6.41=0.27＜0.3



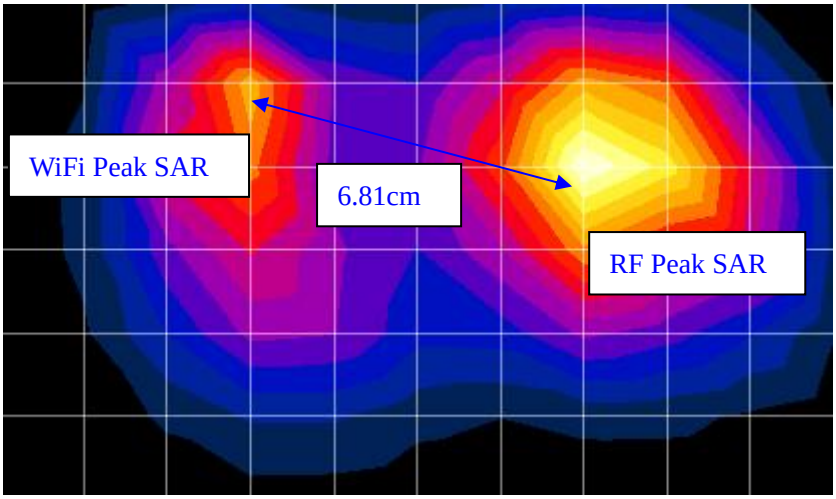

**Picture 7.6 Combined for WCDMA850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.601/6.37=0.25＜0.3




**Picture 7.7 Combined for WCDMA850 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.632/6.60=0.25＜0.3




**Picture 7.8 Combined for WCDMA1900 and WiFi**

Antenna pair SAR to peak SAR location separation ratio is 1.619/6.81=0.24＜0.3

According to the above table and pictures, the antenna pair SAR to peak SAR location separation ratio is ＜0.3, so simultaneous transmission SAR are not required for WiFi transmitter.

Because the sum of the 1g SAR for WiFi and BT is ＜1.6W/kg, simultaneous transmission SAR are not required for WiFi transmitter.

### 7.6 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 **GSM 850 MHz Band, Body Towards Ground, Low frequency (Table 17)**, and the value are: **1.1 (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 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Measurement system** | | | | | | | | | | |
| 1 | Probe calibration | B | 5.5 | N | 1 | 1 | 1 | 5.5 | 5.5 | ∞ |
| 2 | Isotropy | B | 4.7 | R | $\sqrt{3}$ | 0.7 | 0.7 | 1.9 | 1.9 | ∞ |
| 3 | Boundary effect | B | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.6 | 0.6 | ∞ |
| 4 | Linearity | B | 4.7 | R | $\sqrt{3}$ | 1 | 1 | 2.7 | 2.7 | ∞ |
| 5 | Detection limit | B | 1.0 | N | 1 | 1 | 1 | 0.6 | 0.6 | ∞ |
| 6 | Readout electronics | B | 0.3 | R | $\sqrt{3}$ | 1 | 1 | 0.3 | 0.3 | ∞ |
| 7 | Response time | B | 0.8 | R | $\sqrt{3}$ | 1 | 1 | 0.5 | 0.5 | ∞ |
| 8 | Integration time | B | 2.6 | R | $\sqrt{3}$ | 1 | 1 | 1.5 | 1.5 | ∞ |
| 9 | RF ambient conditions-noise | B | 0 | R | $\sqrt{3}$ | 1 | 1 | 0 | 0 | ∞ |
| 10 | RF ambient conditions-reflection | B | 0 | R | $\sqrt{3}$ | 1 | 1 | 0 | 0 | ∞ |
| 11 | Probe positioned mech. restrictions | B | 0.4 | R | $\sqrt{3}$ | 1 | 1 | 0.2 | 0.2 | ∞ |
| 12 | Probe positioning with respect to phantom shell | B | 2.9 | R | $\sqrt{3}$ | 1 | 1 | 1.7 | 1.7 | ∞ |
| 13 | Post-processing | B | 1.0 | R | $\sqrt{3}$ | 1 | 1 | 0.6 | 0.6 | ∞ |
| **Test sample related** | | | | | | | | | | |
| 14 | Test sample positioning | A | 3.3 | N | 1 | 1 | 1 | 3.3 | 3.3 | 71 |
| 15 | Device holder | A | 3.4 | N | 1 | 1 | 1 | 3.4 | 3.4 | 5 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | uncertainty | | | | | | | | | |
| 16 | Drift of output power | B | 5.0 | R | $\sqrt{3}$ | 1 | 1 | 2.9 | 2.9 | ∞ |
| **Phantom and set-up** | | | | | | | | | | |
| 17 | Phantom uncertainty | B | 4.0 | R | $\sqrt{3}$ | 1 | 1 | 2.3 | 2.3 | ∞ |
| 18 | Liquid conductivity (target) | B | 5.0 | R | $\sqrt{3}$ | 0.64 | 0.43 | 1.8 | 1.2 | ∞ |
| 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 | ∞ |
| 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 25: List of Main Instruments**

| No. | Name | Type | Serial Number | Calibration Date | Valid Period |
|---|---|---|---|---|---|
| 01 | Network analyzer | E5071C | MY46110673 | February 15, 2011 | One year |
| 02 | Power meter | NRVD | 102083 | September 11, 2011 | One year |
| 03 | Power sensor | NRV-Z5 | 100595 | | |
| 04 | Signal Generator | E4438C | MY49070393 | November 12, 2011 | One Year |
| 05 | Amplifier | VTL5400 | 0505 | No Calibration Requested | |
| 06 | BTS | 8960 | MY48365192 | November 17, 2011 | One year |
| 07 | E-field Probe | SPEAG ES3DV3 | 3149 | September 24, 2011 | One year |
| 08 | DAE | SPEAG DAE4 | 771 | November 20, 2011 | One year |
| 09 | Dipole Validation Kit | SPEAG D835V2 | 443 | February 26, 2010 | Two years |
| 10 | Dipole Validation Kit | SPEAG D1900V2 | 541 | February 26, 2010 | Two years |
| 11 | 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.

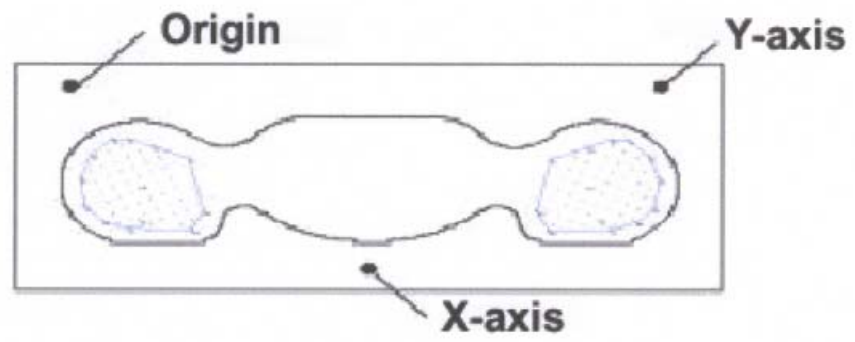
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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.

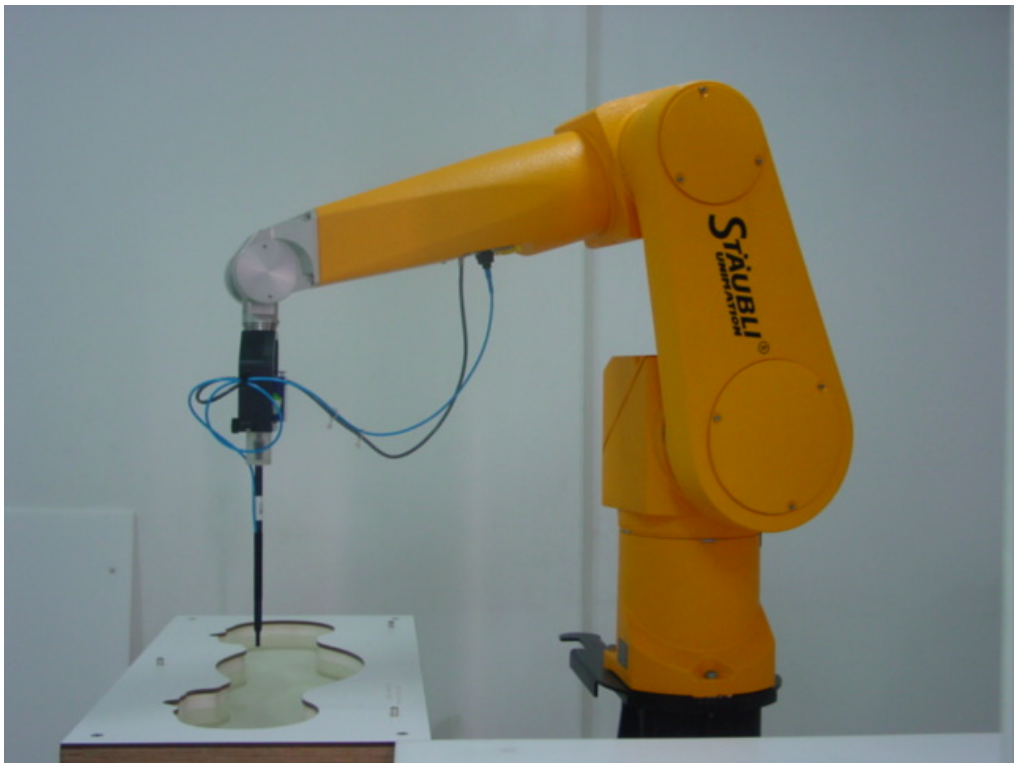
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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.

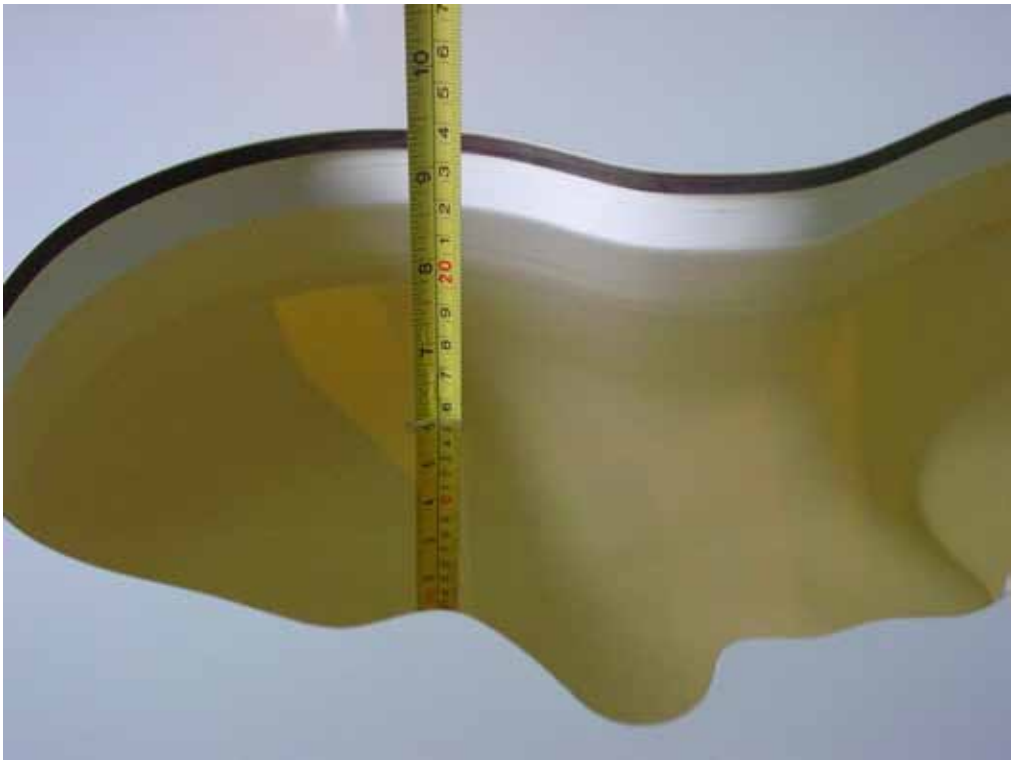



**Picture A: SAR Measurement Points in Area Scan**

# ANNEX B TEST LAYOUT




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

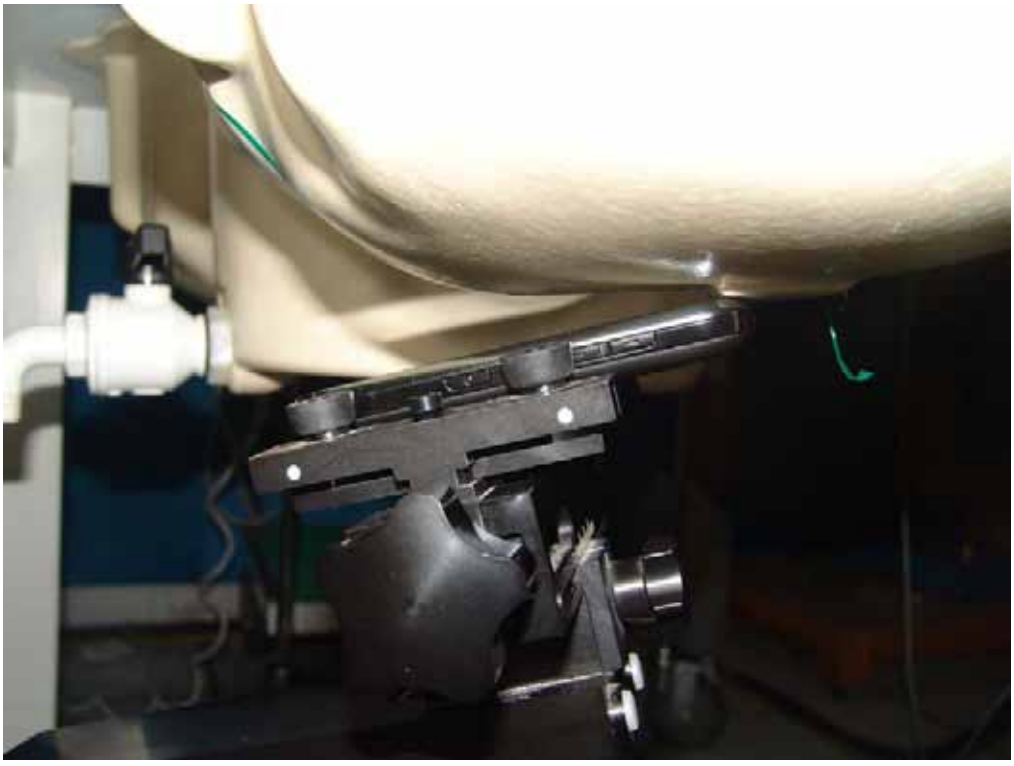


**Picture B2: Liquid depth in the Head Phantom (850 MHz)**

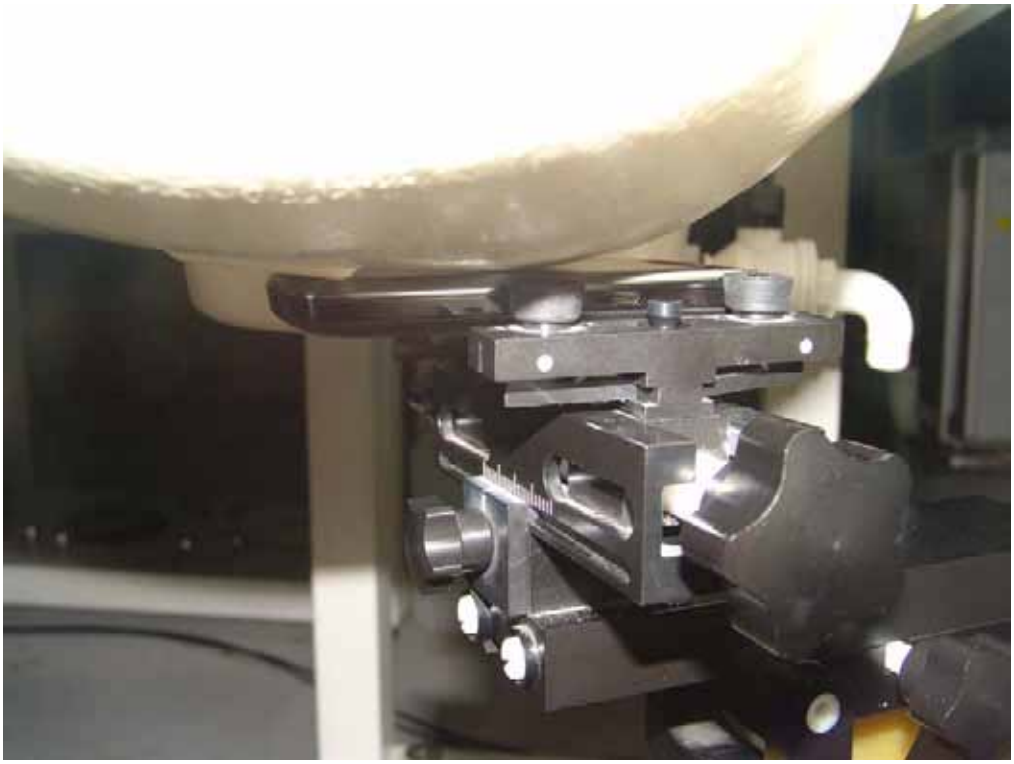
**Picture B3 Liquid depth in the Flat Phantom (1900MHz)**

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

**Picture B5: Left Hand Touch Cheek Position**



**Picture B6: Left Hand Tilt 15° Position**

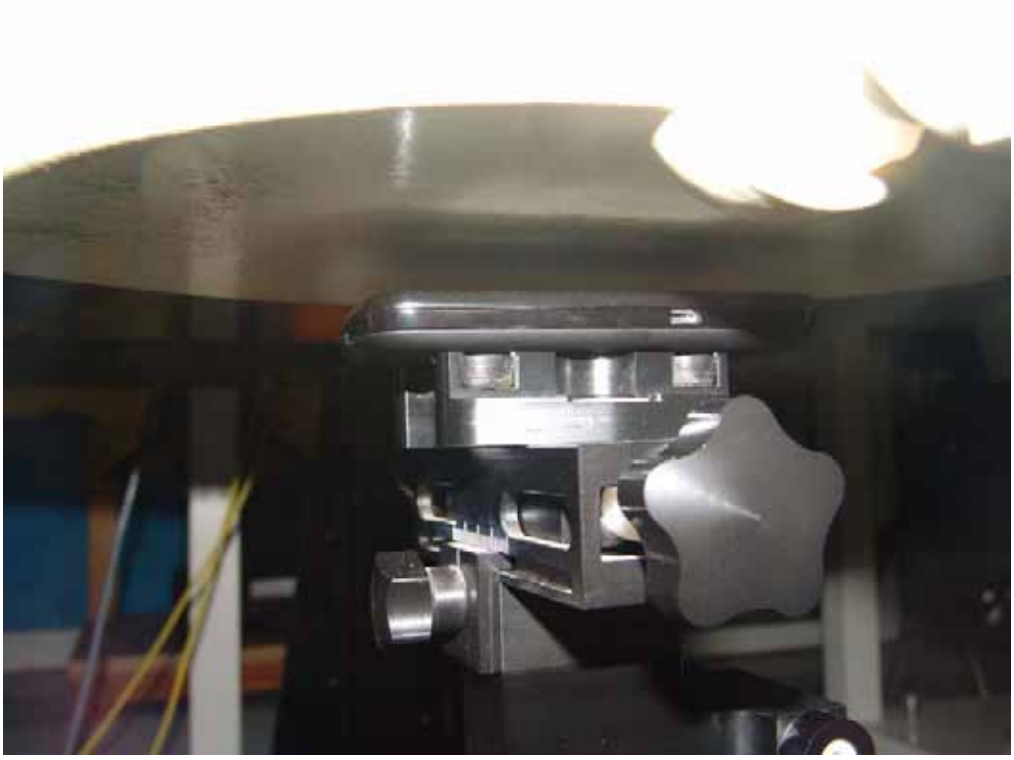


**Picture B7: Right Hand Touch Cheek Position**

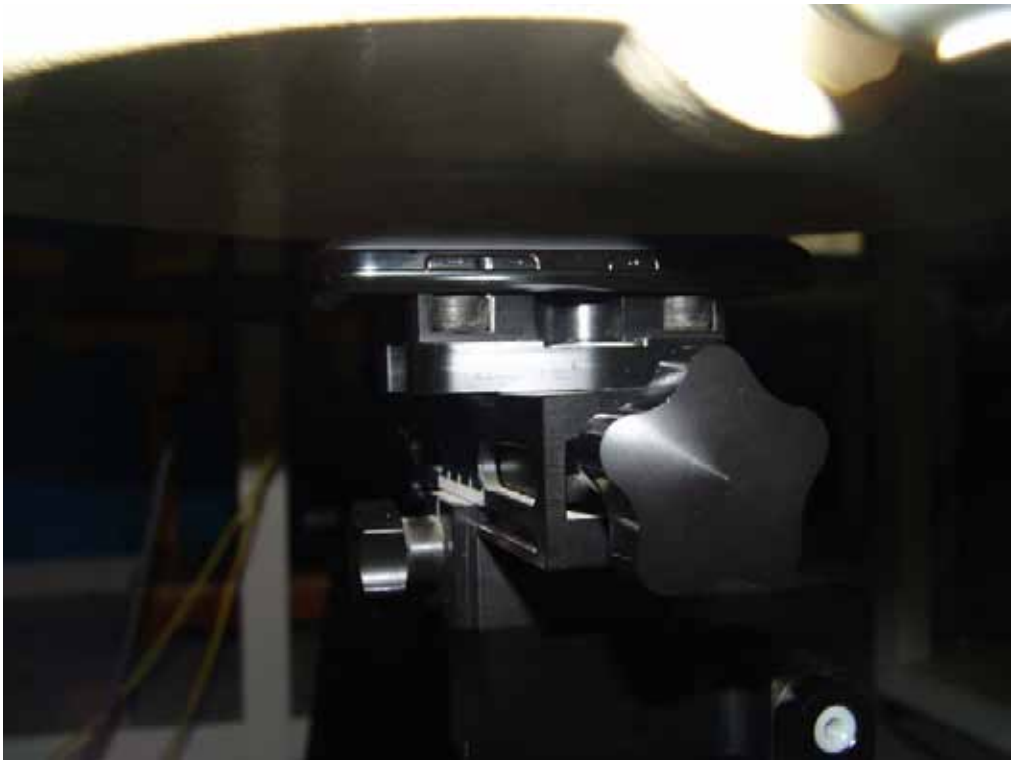
**Picture B8: Right Hand Tilt 15° Position**

**Test positions for body:**

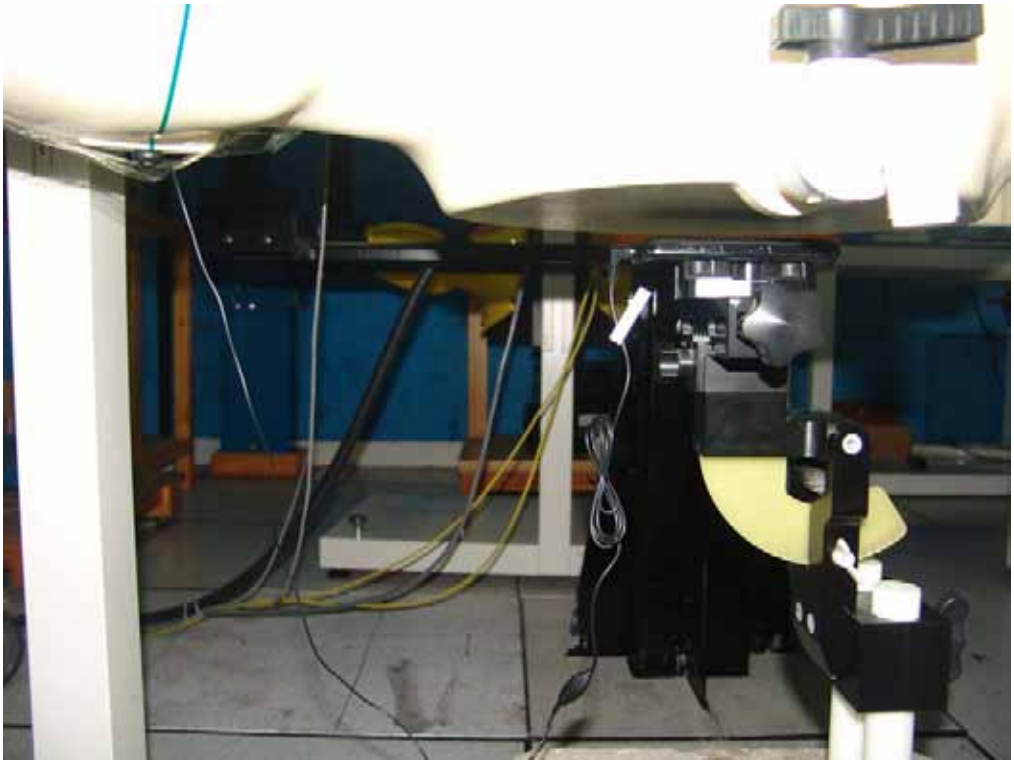
The Body SAR is tested at the following 6 test positions all with the distance =10mm between the EUT and the phantom bottom :



**Picture B9: Forward Surface**

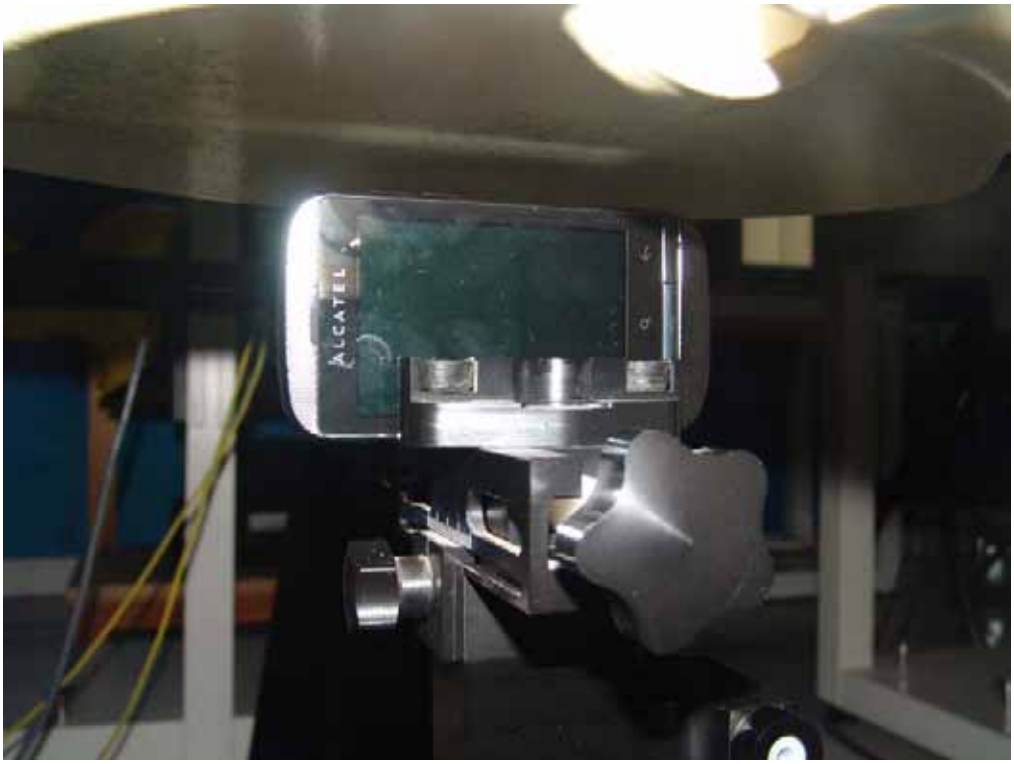


**Picture B10: Back Surface**

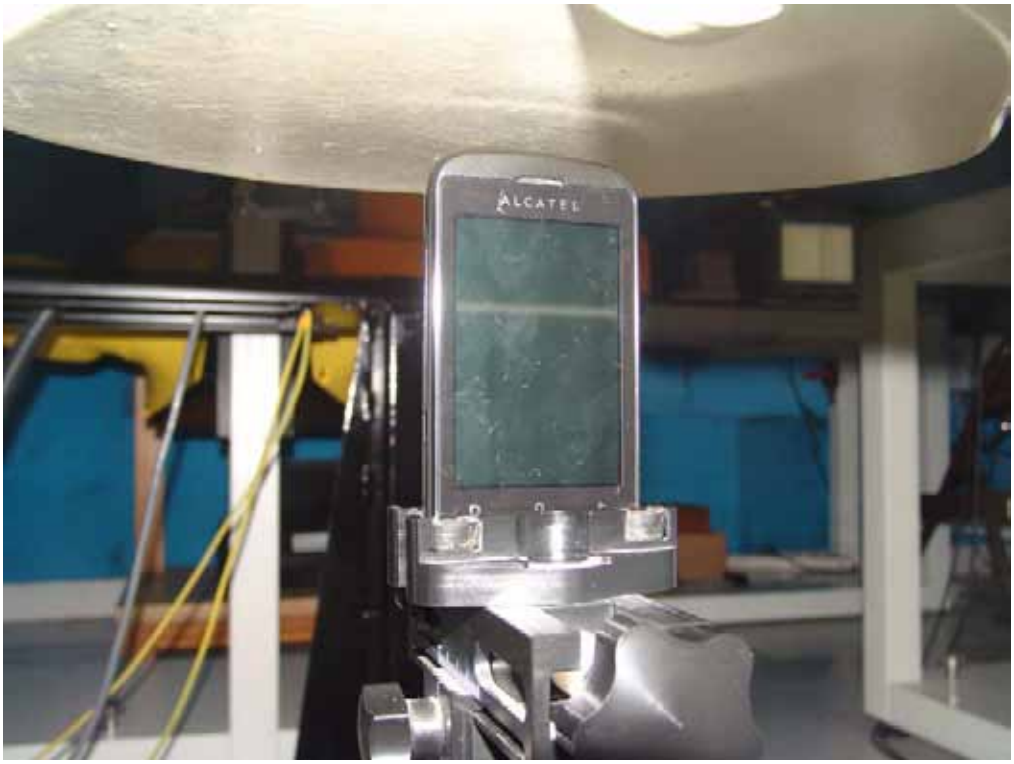


**Picture B10-1: Back Surface with Headset**

**Picture B11: Left Side**




**Picture B12: Right Side**




**Picture B13: Top Side**

**Picture B14: Bottom Side**

**Picture B14-1: Bottom Side with Headset**

# ANNEX C GRAPH RESULTS

## 850 Left Cheek High

Date/Time: 2011-12-14 8:04:11
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.360 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.55 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 0.461 W/kg
**SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.246 mW/g**
Maximum value of SAR (measured) = 0.360 mW/g

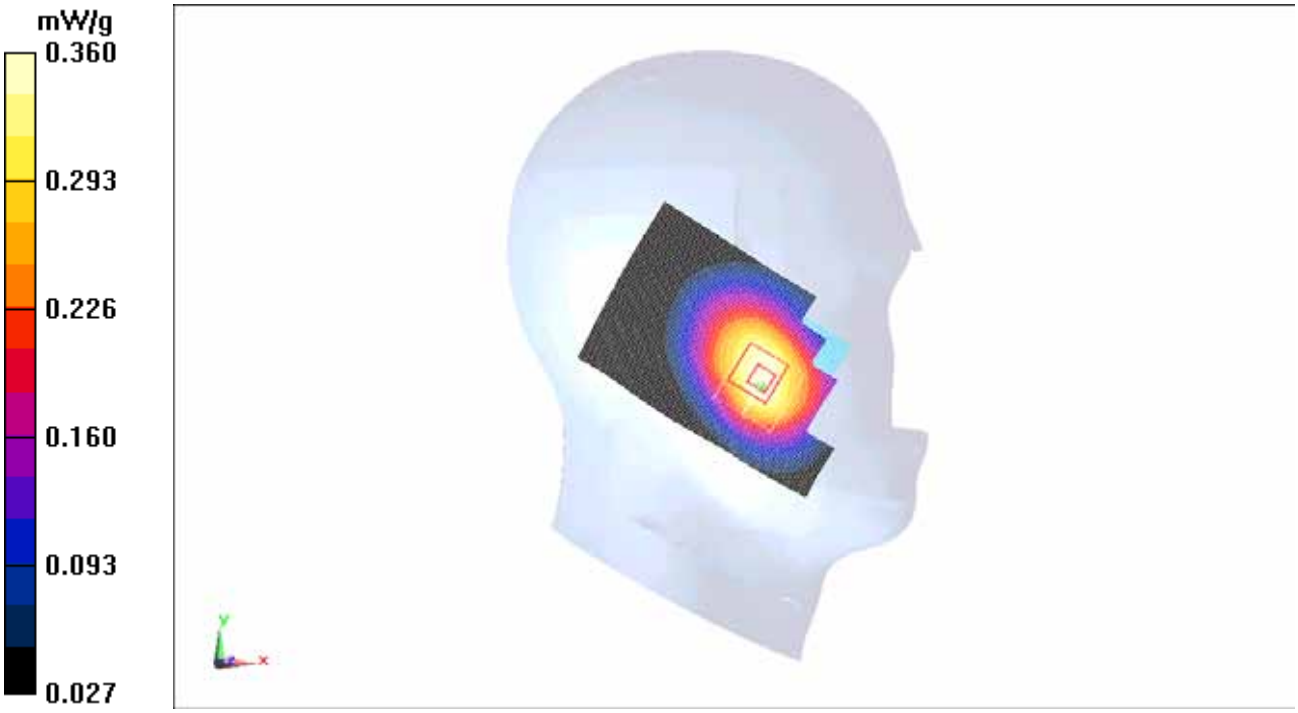



**Fig. 1 850MHz CH251**

**850 Left Cheek Middle**

Date/Time: 2011-12-14 8:18:28
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.387 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.97 V/m; Power Drift = 0.116 dB
Peak SAR (extrapolated) = 0.488 W/kg
**SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.268 mW/g**
Maximum value of SAR (measured) = 0.402 mW/g

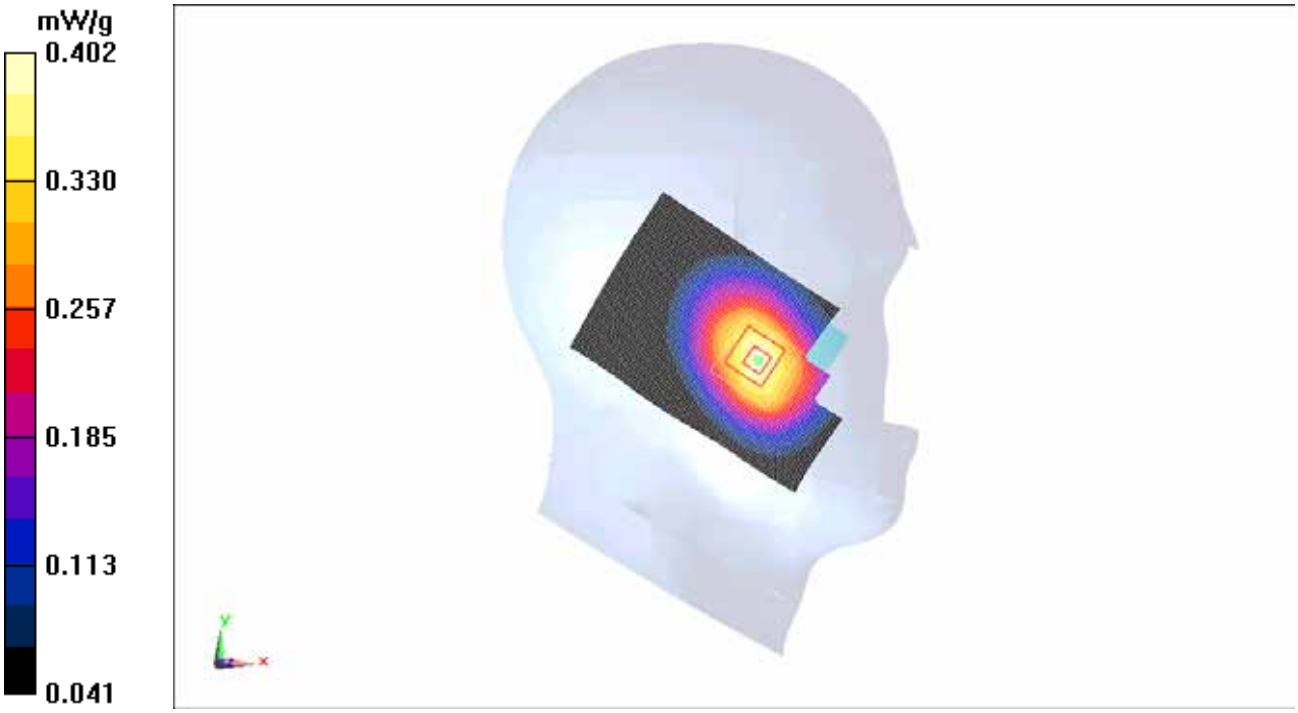



**Fig. 2 850 MHz CH190**

## 850 Left Cheek Low

Date/Time: 2011-12-14 8:32:49
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.400 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.43 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 0.500 W/kg
**SAR(1 g) = 0.379 mW/g; SAR(10 g) = 0.277 mW/g**
Maximum value of SAR (measured) = 0.414 mW/g

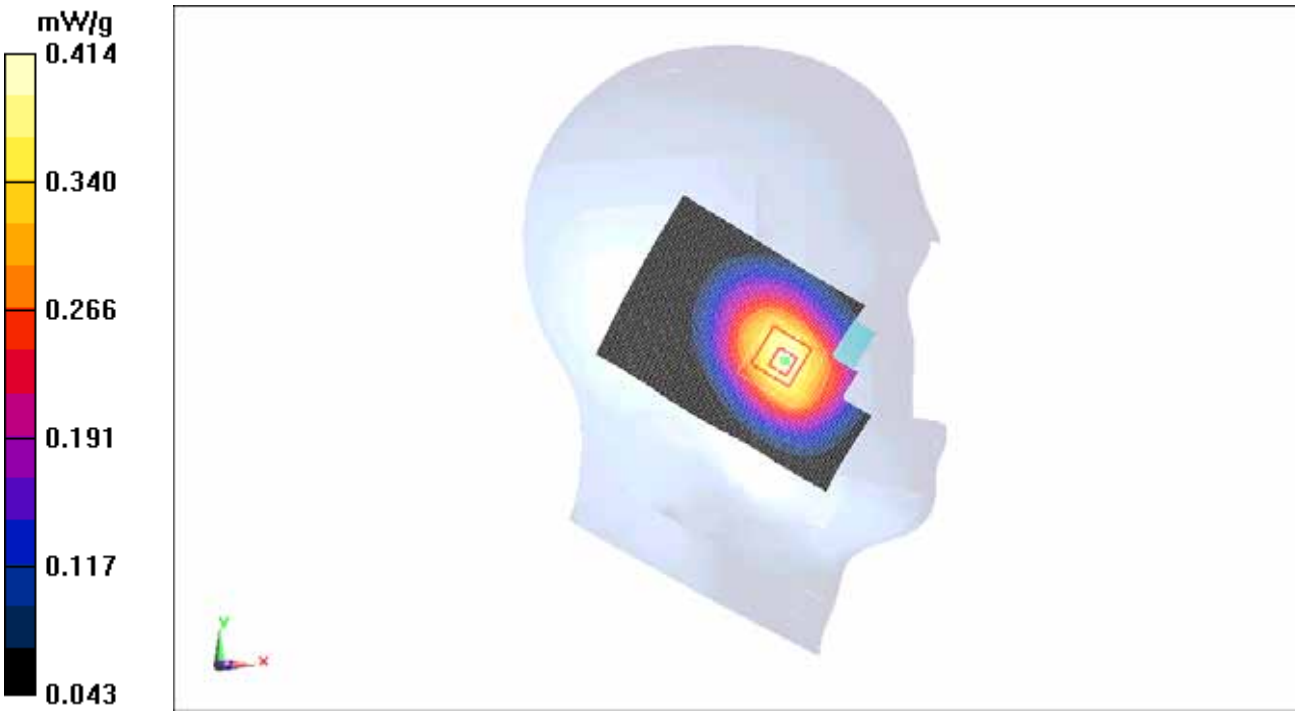



**Fig. 3 850 MHz CH128**

**850 Left Tilt High**

Date/Time: 2011-12-14 8:47:15
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
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)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.228 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.083 dB
Peak SAR (extrapolated) = 0.261 W/kg
**SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.158 mW/g**
Maximum value of SAR (measured) = 0.220 mW/g

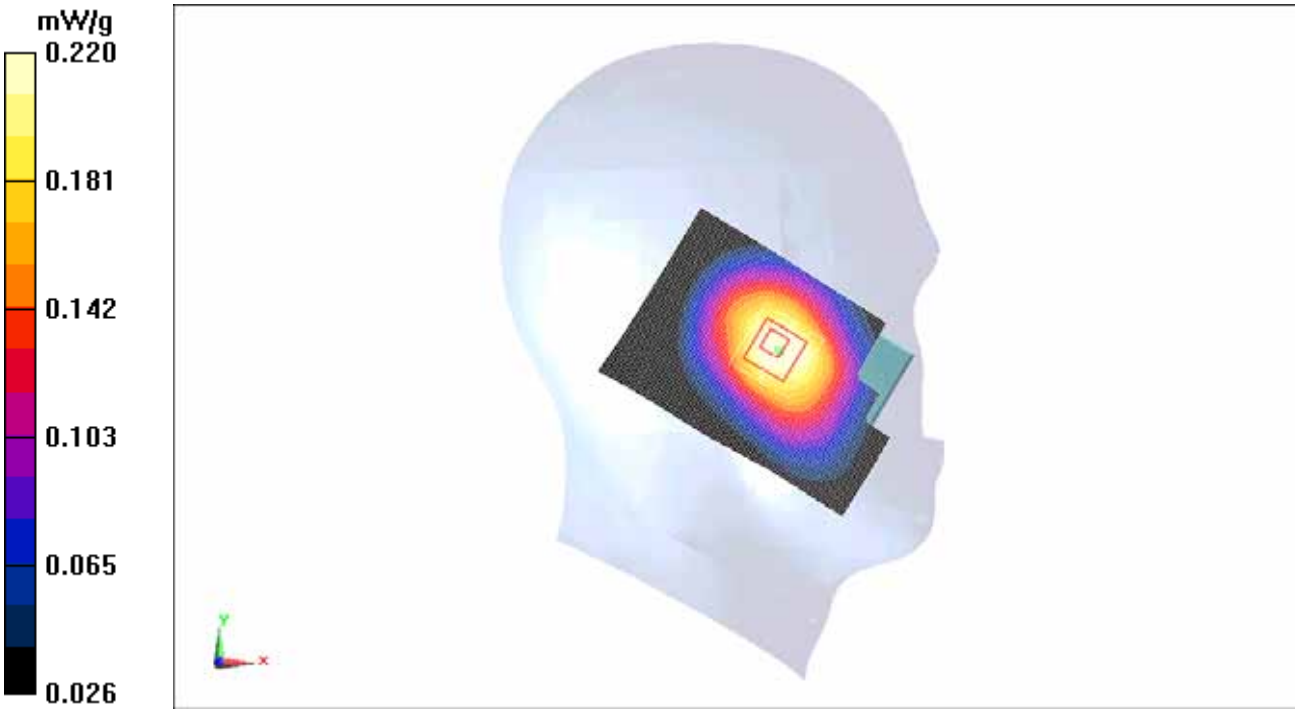



**Fig.4 850 MHz CH251**

**850 Left Tilt Middle**

Date/Time: 2011-12-14 9:01:33
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.243 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.000521 dB
Peak SAR (extrapolated) = 0.273 W/kg
**SAR(1 g) = 0.219 mW/g; SAR(10 g) = 0.167 mW/g**
Maximum value of SAR (measured) = 0.232 mW/g

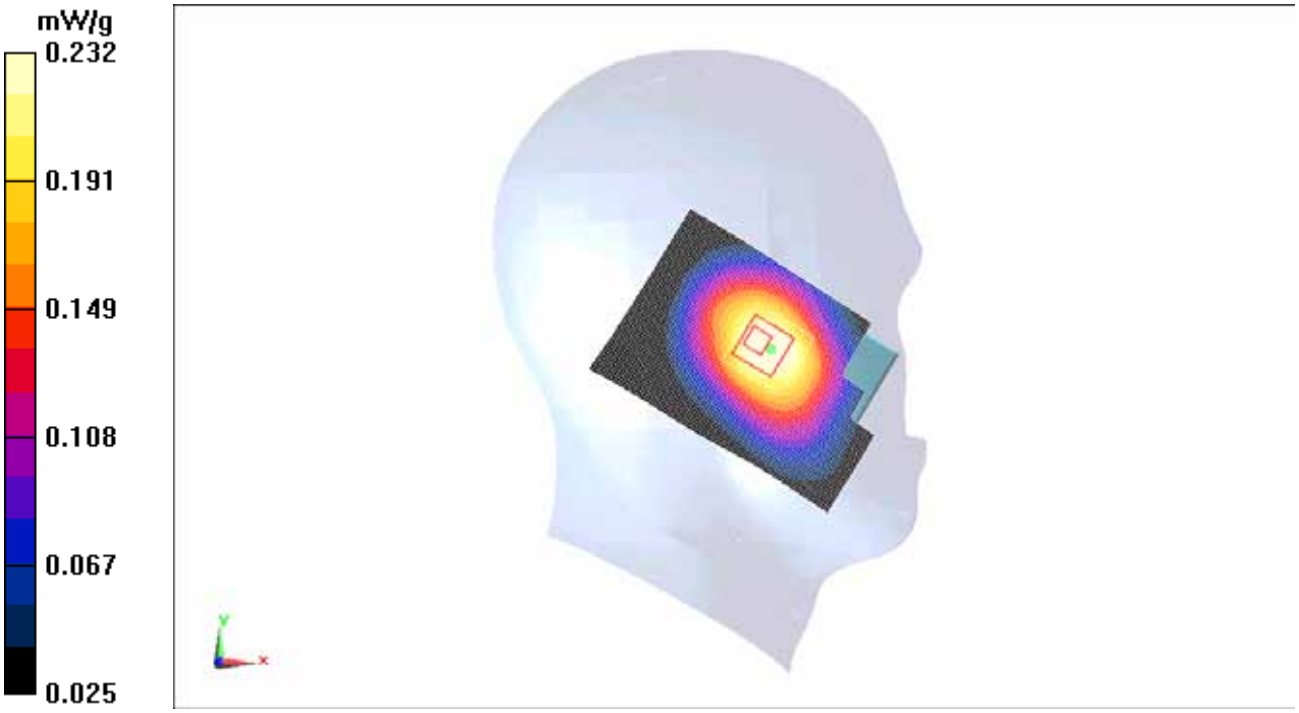



**Fig.5 850 MHz CH190**

**850 Left Tilt Low**

Date/Time: 2011-12-14 9:15:52
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
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)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.251 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = 0.141 dB
Peak SAR (extrapolated) = 0.293 W/kg
**SAR(1 g) = 0.234 mW/g; SAR(10 g) = 0.177 mW/g**
Maximum value of SAR (measured) = 0.243 mW/g

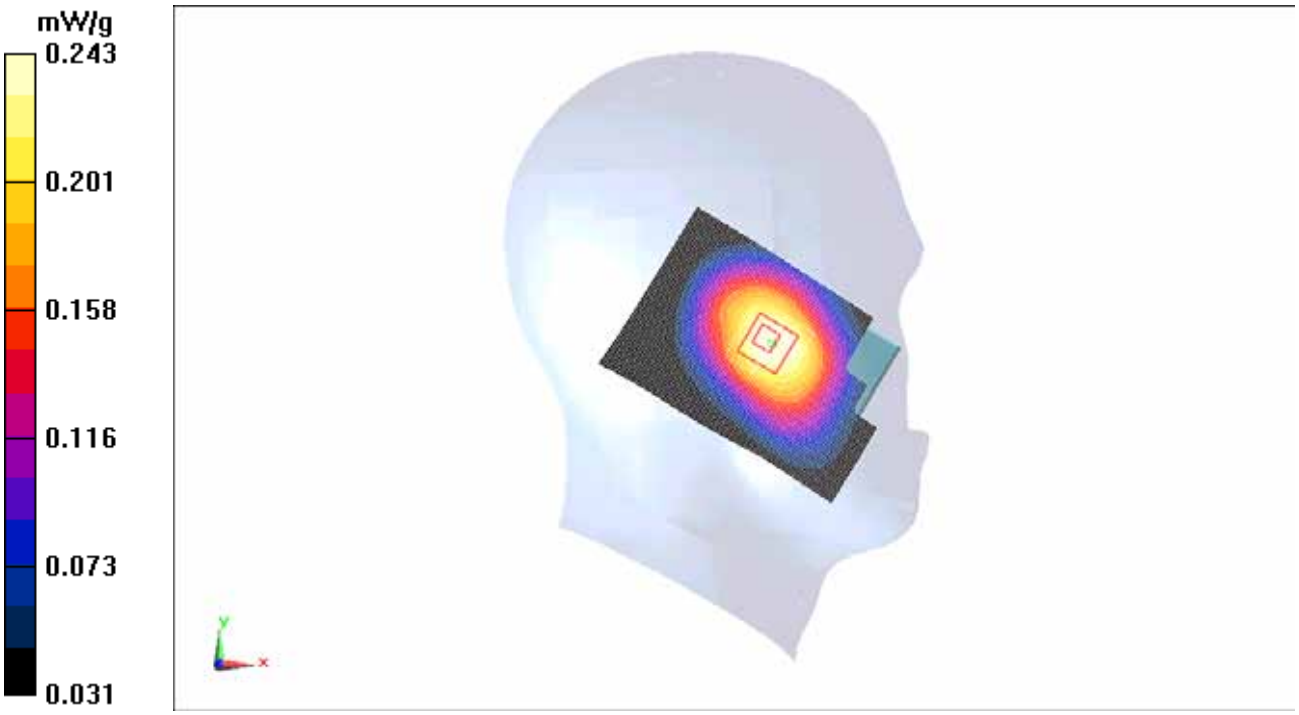



**Fig. 6 850 MHz CH128**

**850 Right Cheek High**

Date/Time: 2011-12-14 9:30:34
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
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 (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.382 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.44 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.433 W/kg
**SAR(1 g) = 0.357 mW/g; SAR(10 g) = 0.273 mW/g**
Maximum value of SAR (measured) = 0.376 mW/g

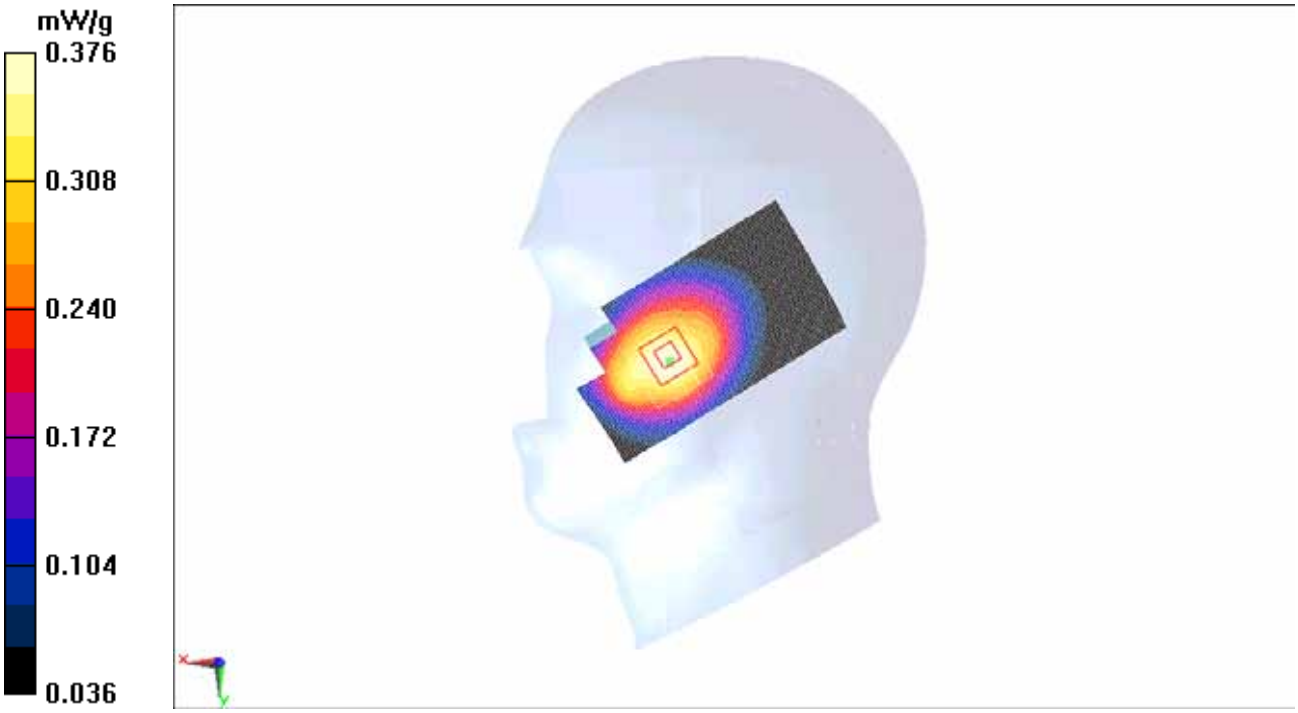



**Fig. 7 850 MHz CH251**

**850 Right Cheek Middle**

Date/Time: 2011-12-14 9:44:56
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
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 (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.405 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.95 V/m; Power Drift = 0.097 dB
Peak SAR (extrapolated) = 0.481 W/kg
**SAR(1 g) = 0.390 mW/g; SAR(10 g) = 0.296 mW/g**
Maximum value of SAR (measured) = 0.407 mW/g

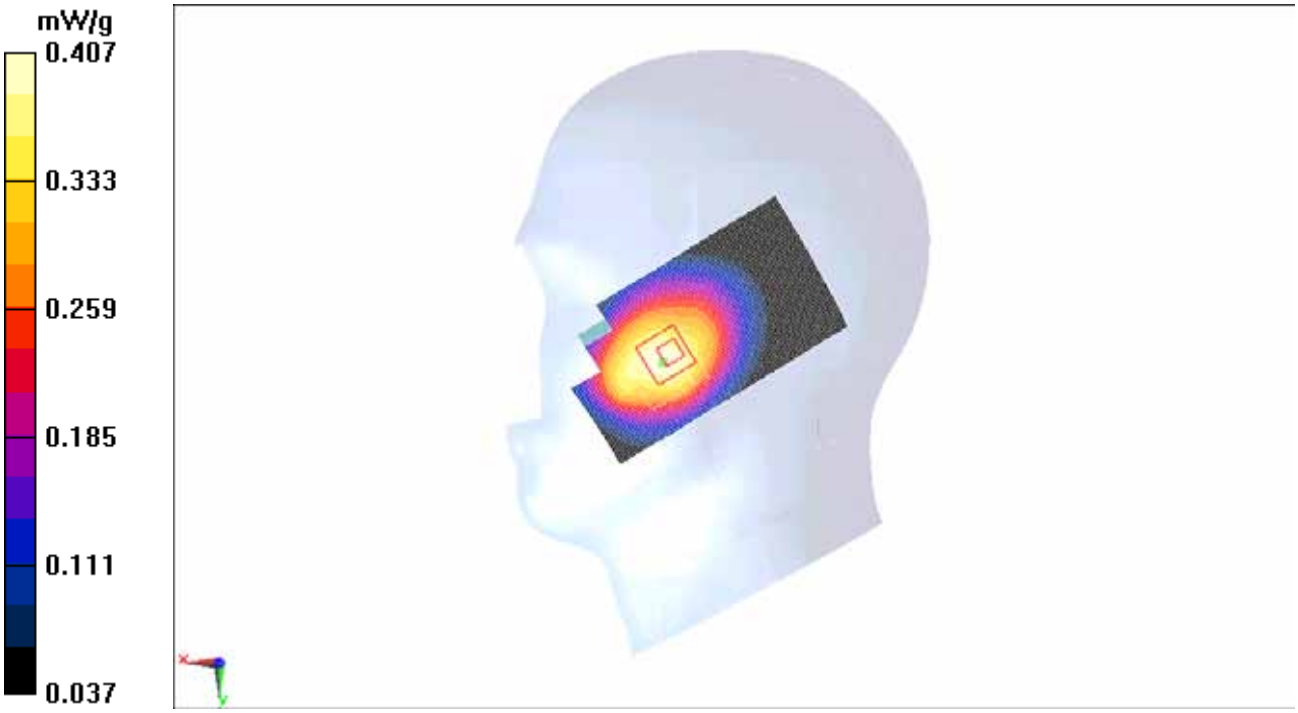



**Fig. 8 850 MHz CH190**

**850 Right Cheek Low**

Date/Time: 2011-12-14 9:59:20
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
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 (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.431 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.48 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 0.497 W/kg
**SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.315 mW/g**
Maximum value of SAR (measured) = 0.431 mW/g

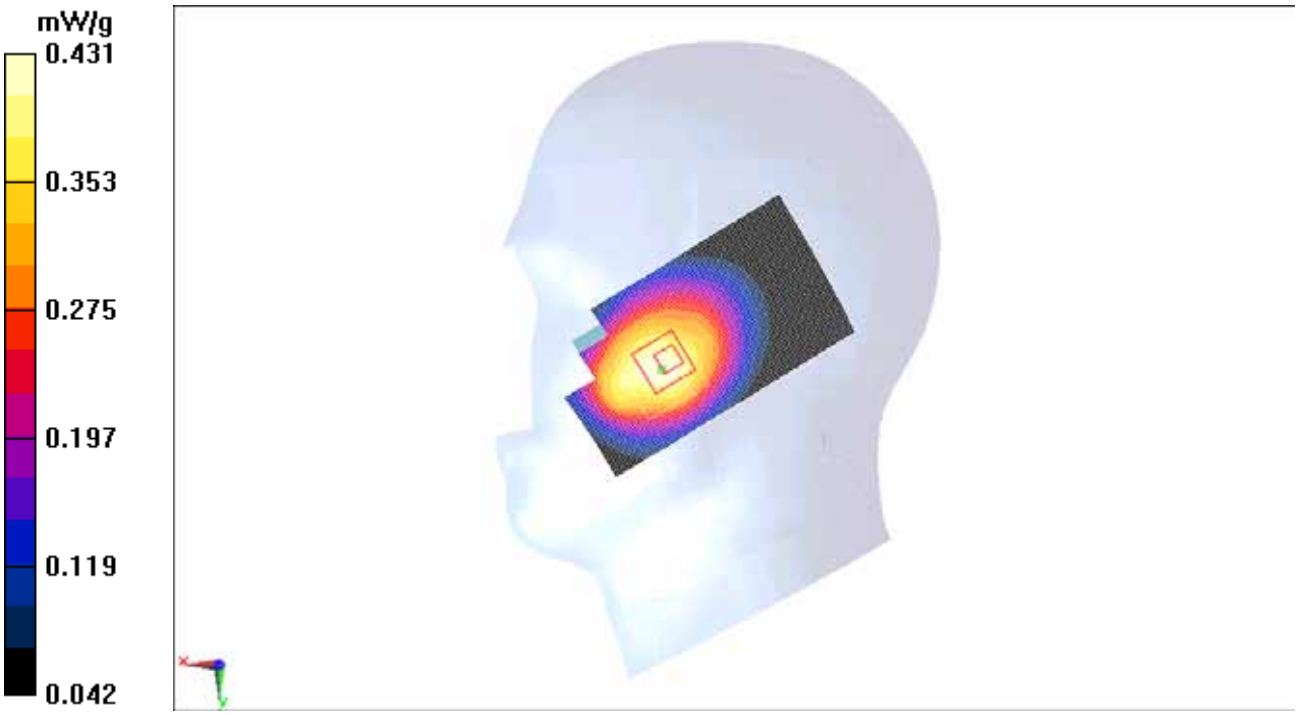



**Fig. 9 850 MHz CH128**

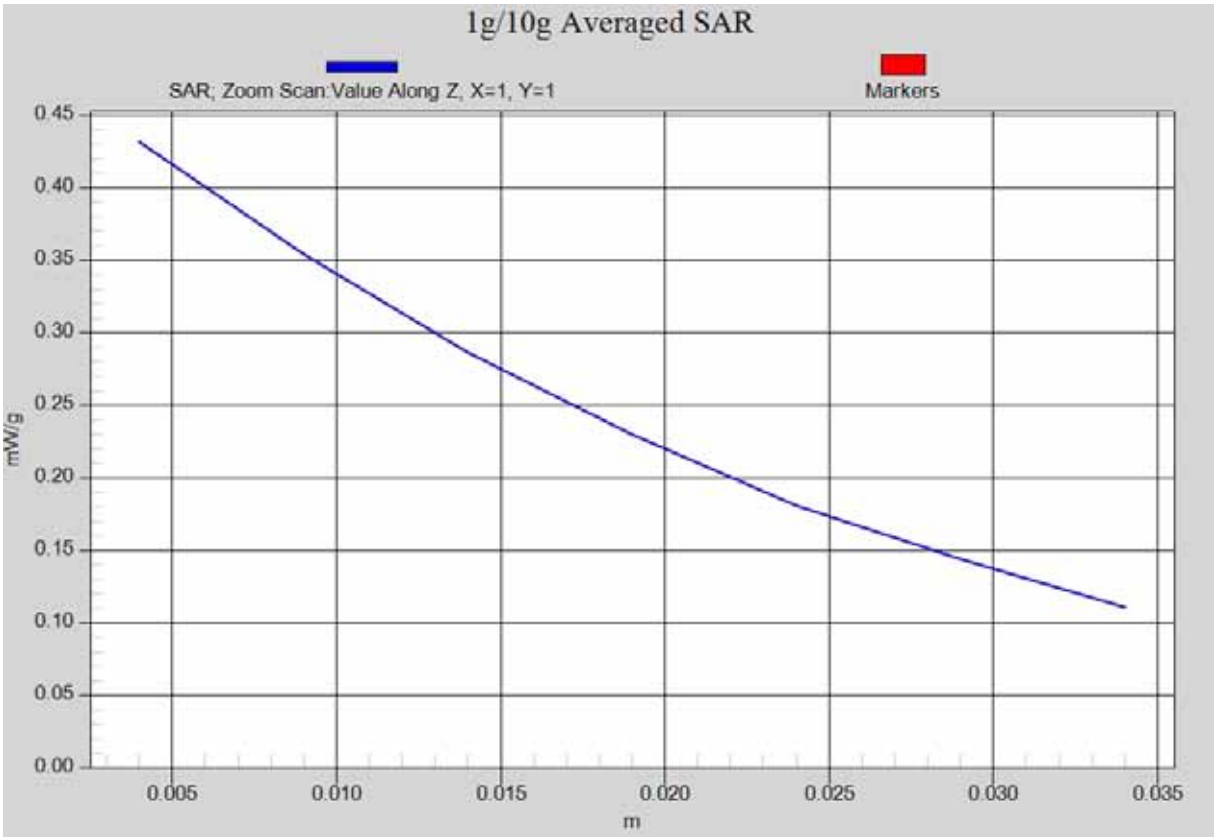



**Fig. 9-1 Z-Scan at power reference point (850 MHz CH128)**

**850 Right Tilt High**

Date/Time: 2011-12-14 10:13:51
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
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)

**Tilt High/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.266 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 0.305 W/kg
**SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.185 mW/g**
Maximum value of SAR (measured) = 0.257 mW/g

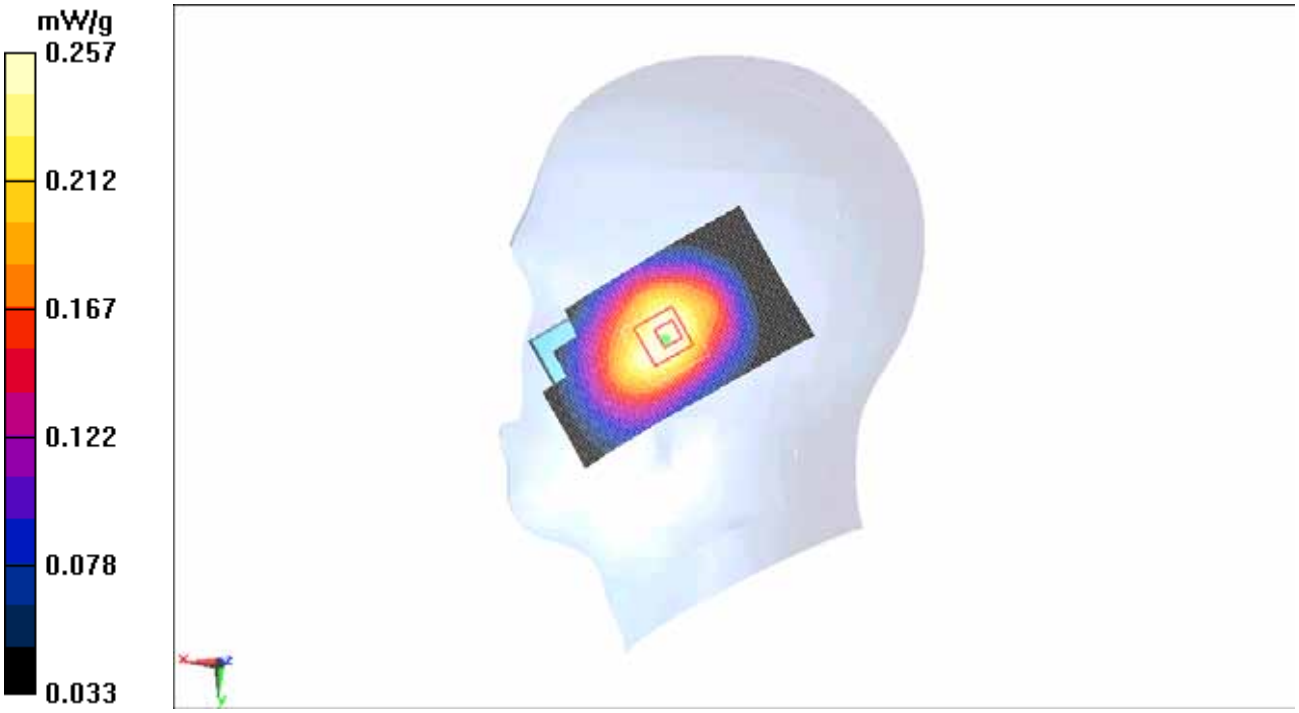



**Fig.10 850 MHz CH251**

**850 Right Tilt Middle**

Date/Time: 2011-12-14 10:28:12
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
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 (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.294 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = -0.034 dB
Peak SAR (extrapolated) = 0.342 W/kg
**SAR(1 g) = 0.272 mW/g; SAR(10 g) = 0.205 mW/g**
Maximum value of SAR (measured) = 0.285 mW/g

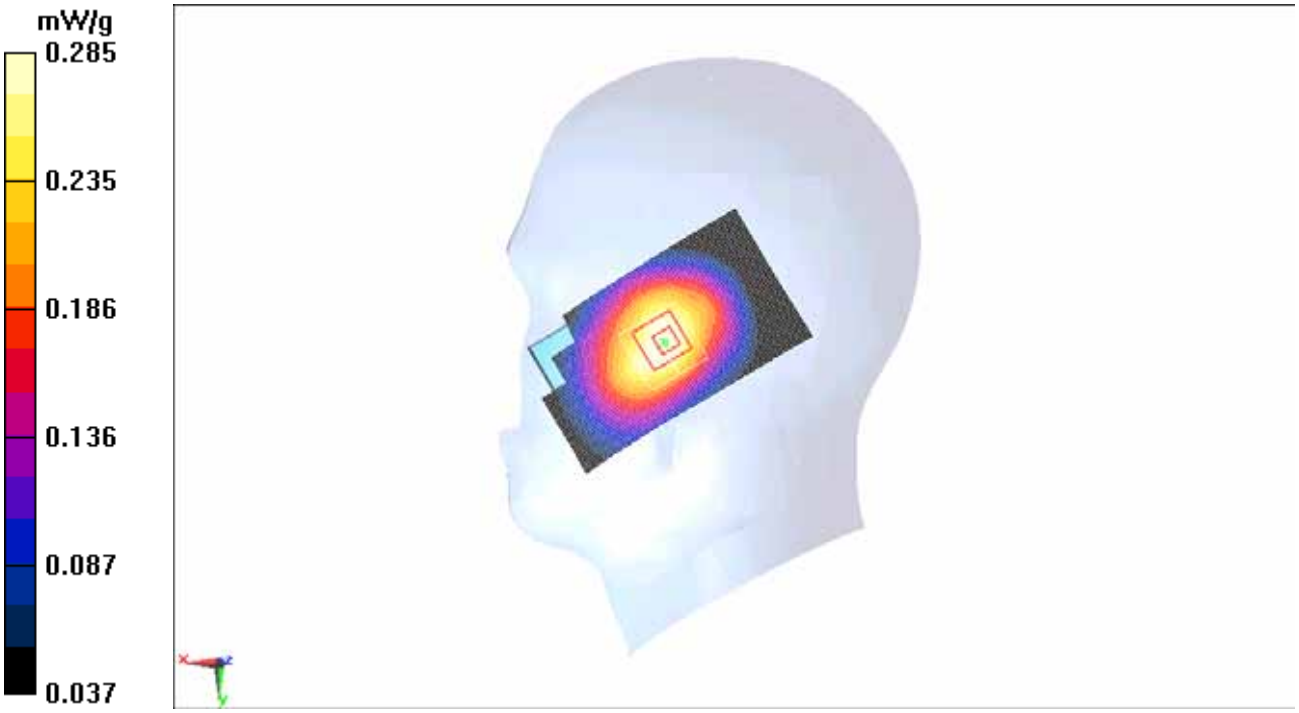



**Fig.11 850 MHz CH190**

**850 Right Tilt Low**

Date/Time: 2011-12-14 10:42:35
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
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)

**Tilt Low/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.308 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.355 W/kg
**SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.216 mW/g**
Maximum value of SAR (measured) = 0.298 mW/g

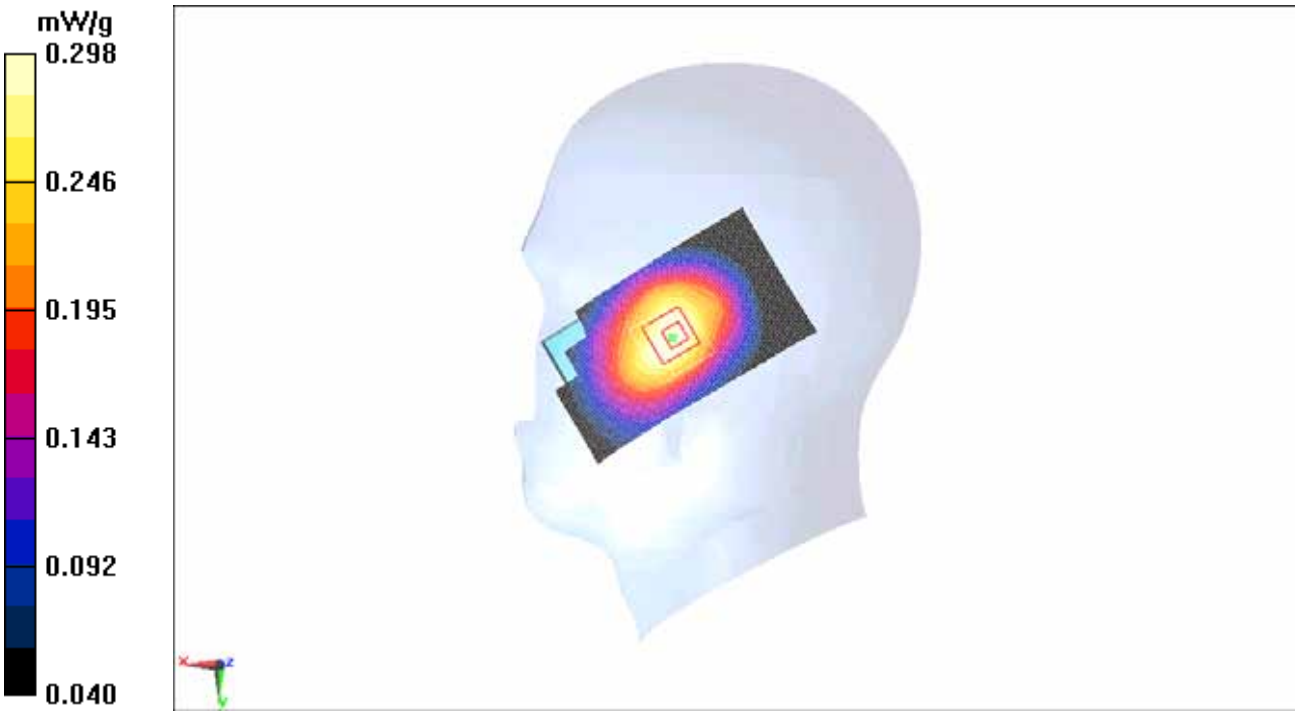



**Fig. 12 850 MHz CH128**

**1900 Left Cheek High**
Date/Time: 2011-12-15 8:05:04
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.42 mho/m; $\varepsilon r$ = 40.0; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.722 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.97 V/m; Power Drift = 0.060 dB
Peak SAR (extrapolated) = 1.15 W/kg
**SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.384 mW/g**
Maximum value of SAR (measured) = 0.743 mW/g

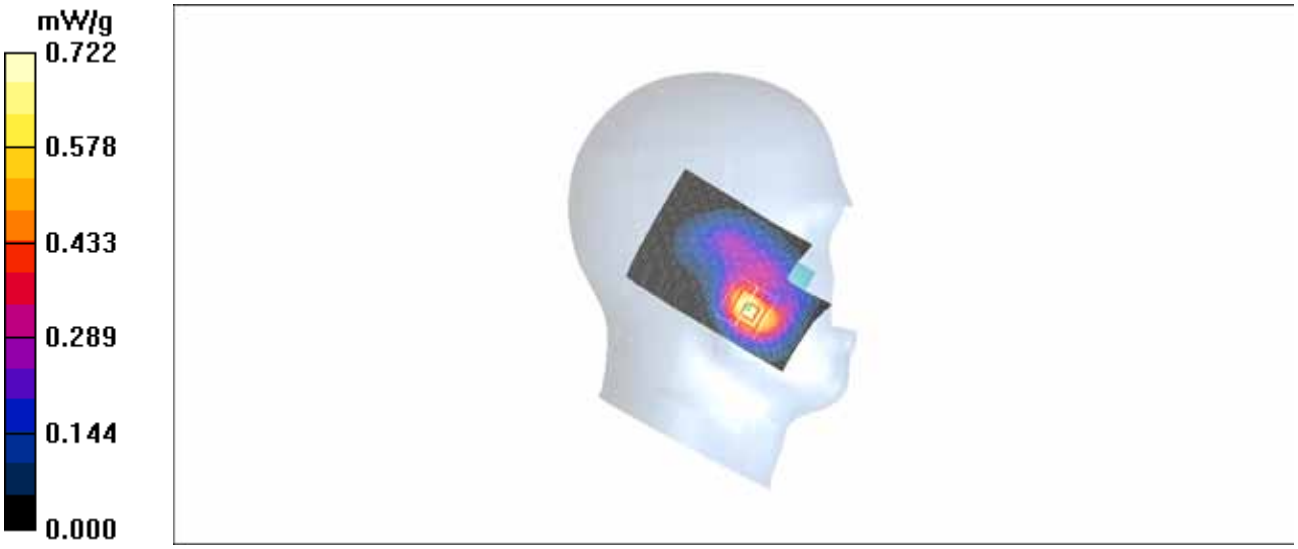



**Fig. 13 1900 MHz CH810**

## 1900 Left Cheek Middle

Date/Time: 2011-12-15 8:19:23
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.752 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.79 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 1.23 W/kg
**SAR(1 g) = 0.731 mW/g; SAR(10 g) = 0.405 mW/g**
Maximum value of SAR (measured) = 0.792 mW/g

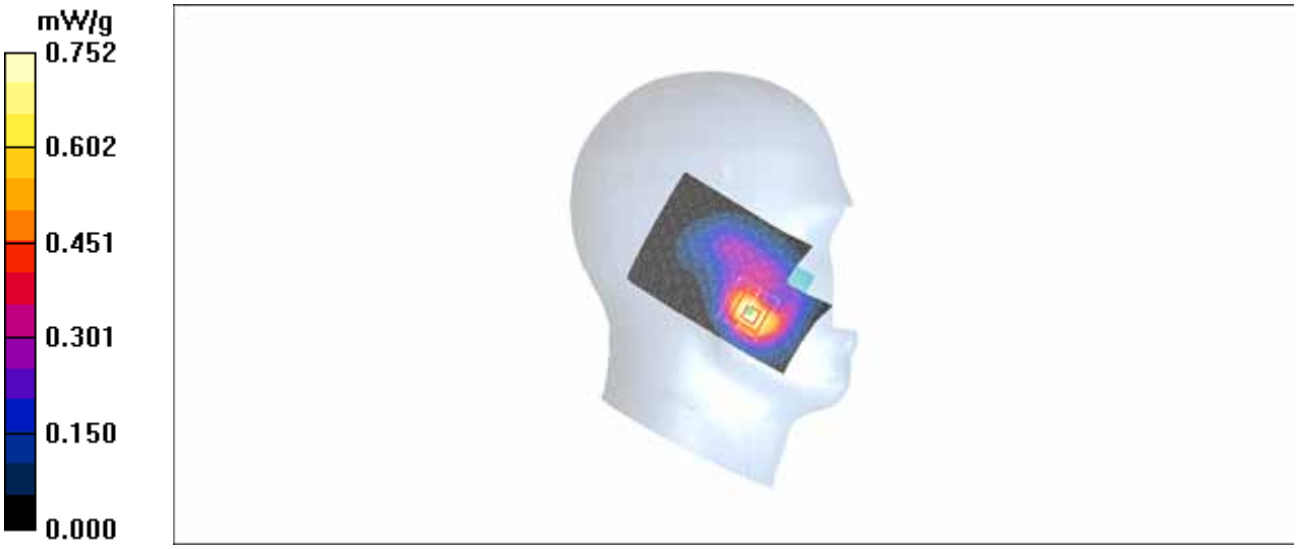



**Fig. 14 1900 MHz CH661**

**1900 Left Cheek Low**

Date/Time: 2011-12-15 8:33:41
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.837 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.83 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 1.38 W/kg
**SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.455 mW/g**
Maximum value of SAR (measured) = 0.890 mW/g

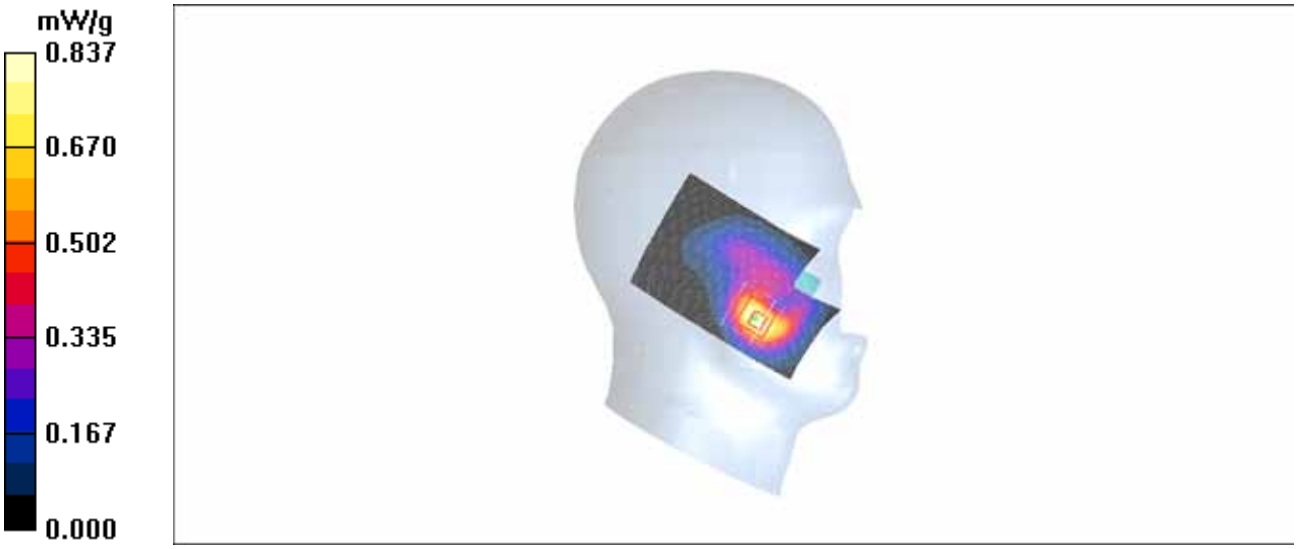



**Fig. 15 1900 MHz CH512**

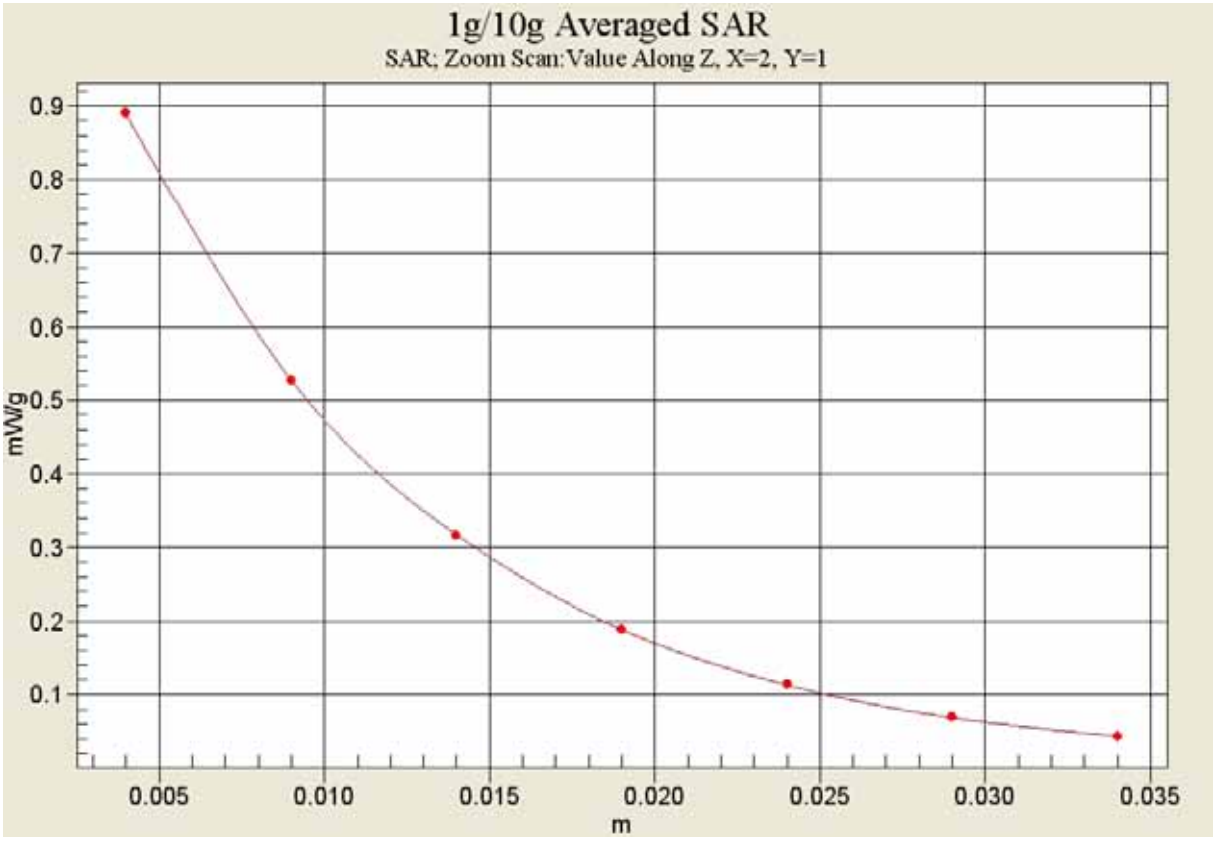



**Fig. 15-1 Z-Scan at power reference point (1900 MHz CH512)**

**1900 Left Tilt High**
Date/Time: 2011-12-15 8:48:06
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.42 mho/m; $\varepsilon r$ = 40.0; $\rho$ = 1000 kg/m$^3$
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)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.251 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 0.311 W/kg
**SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.131 mW/g**
Maximum value of SAR (measured) = 0.220 mW/g

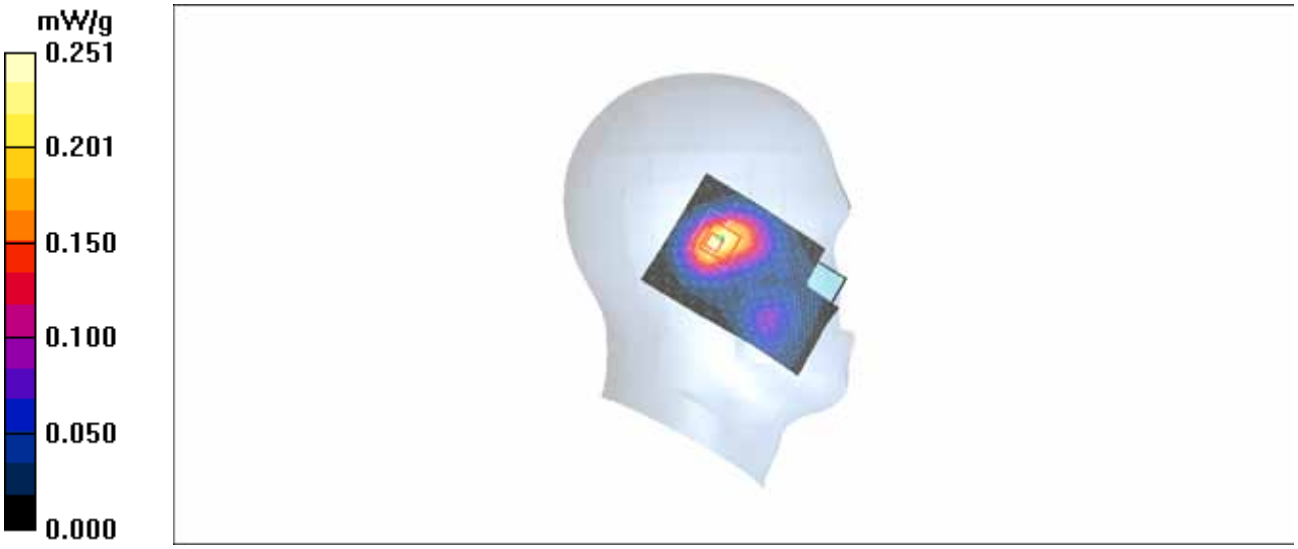



**Fig.16 1900 MHz CH810**

**1900 Left Tilt Middle**
Date/Time: 2011-12-15 9:02:23
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.254 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = -0.043 dB
Peak SAR (extrapolated) = 0.312 W/kg
**SAR(1 g) = 0.209 mW/g; SAR(10 g) = 0.135 mW/g**
Maximum value of SAR (measured) = 0.221 mW/g

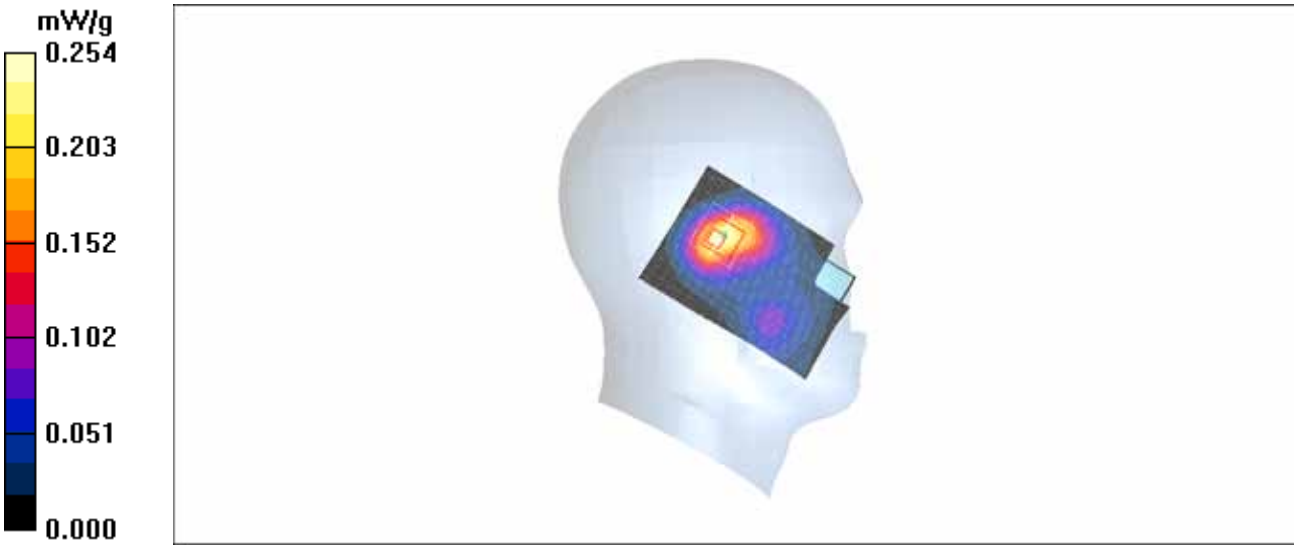



**Fig. 17 1900 MHz CH661**

**1900 Left Tilt Low**

Date/Time: 2011-12-15 9:16:44
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
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)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.268 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.5 V/m; Power Drift = 0.050 dB
Peak SAR (extrapolated) = 0.317 W/kg
**SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.144 mW/g**
Maximum value of SAR (measured) = 0.230 mW/g

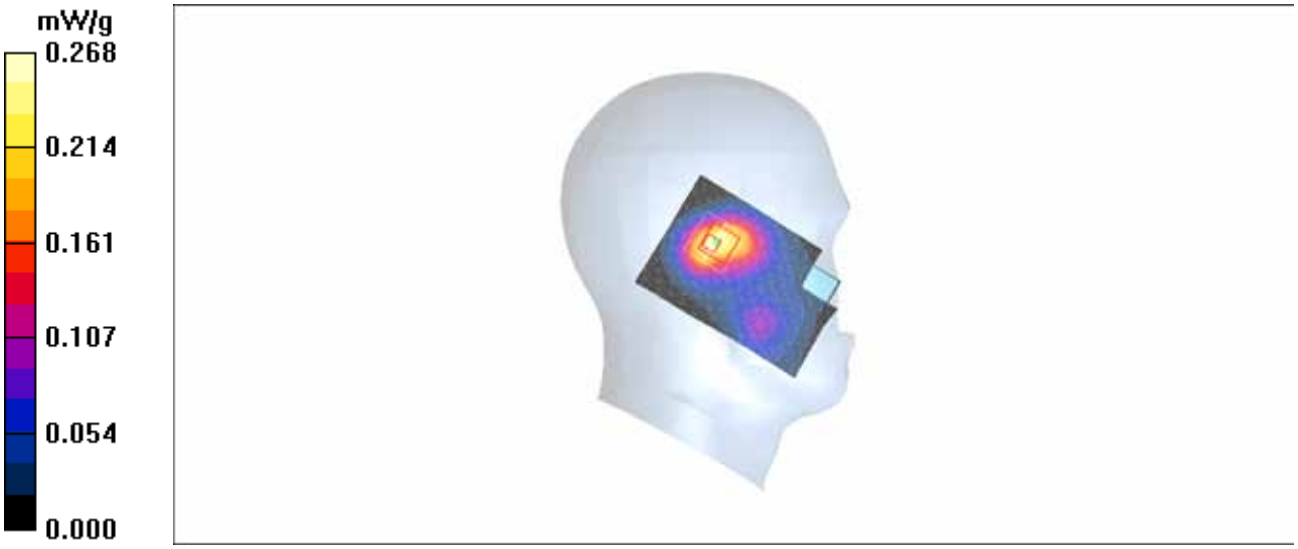



**Fig. 18 1900 MHz CH512**

## 1900 Right Cheek High

Date/Time: 2011-12-15 9:31:09
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.42 mho/m; $\varepsilon r$ = 40.0; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:23.0$^o$C Liquid Temperature: 22.5$^o$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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.463 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.84 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.611 W/kg
**SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.251 mW/g**
Maximum value of SAR (measured) = 0.453 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.84 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.554 W/kg
**SAR(1 g) = 0.341 mW/g; SAR(10 g) = 0.204 mW/g**
Maximum value of SAR (measured) = 0.426 mW/g

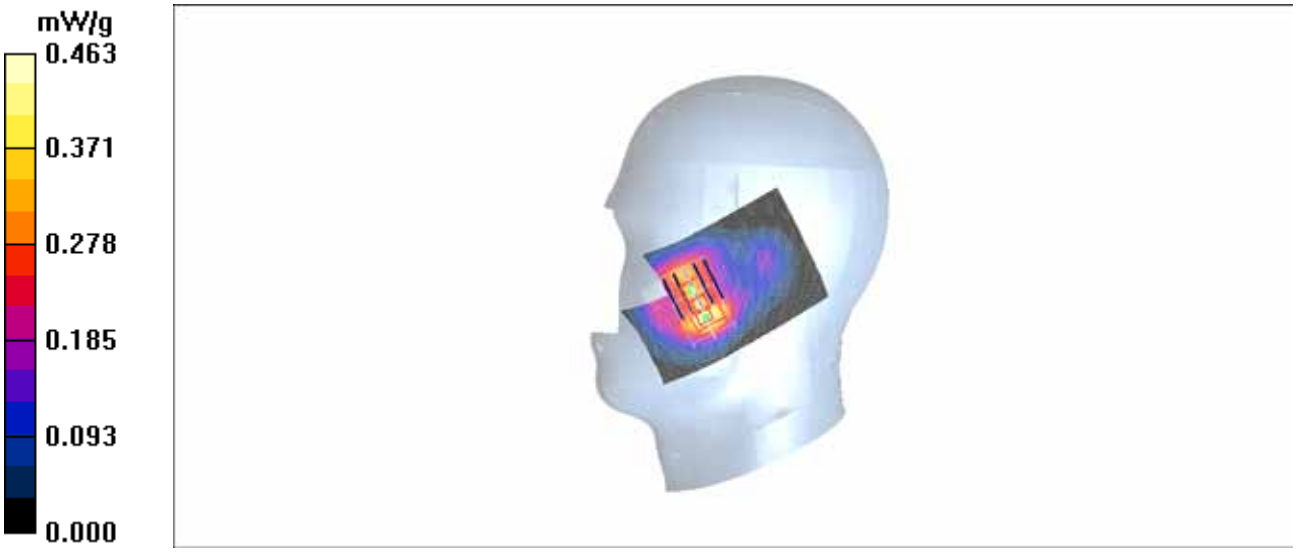



**Fig. 19 1900 MHz CH810**

**1900 Right Cheek Middle**
Date/Time: 2011-12-15 9:45:26
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.482 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = -0.077 dB
Peak SAR (extrapolated) = 0.646 W/kg
**SAR(1 g) = 0.433 mW/g; SAR(10 g) = 0.263 mW/g**
Maximum value of SAR (measured) = 0.477 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = -0.077 dB
Peak SAR (extrapolated) = 0.470 W/kg
**SAR(1 g) = 0.306 mW/g; SAR(10 g) = 0.195 mW/g**
Maximum value of SAR (measured) = 0.329 mW/g

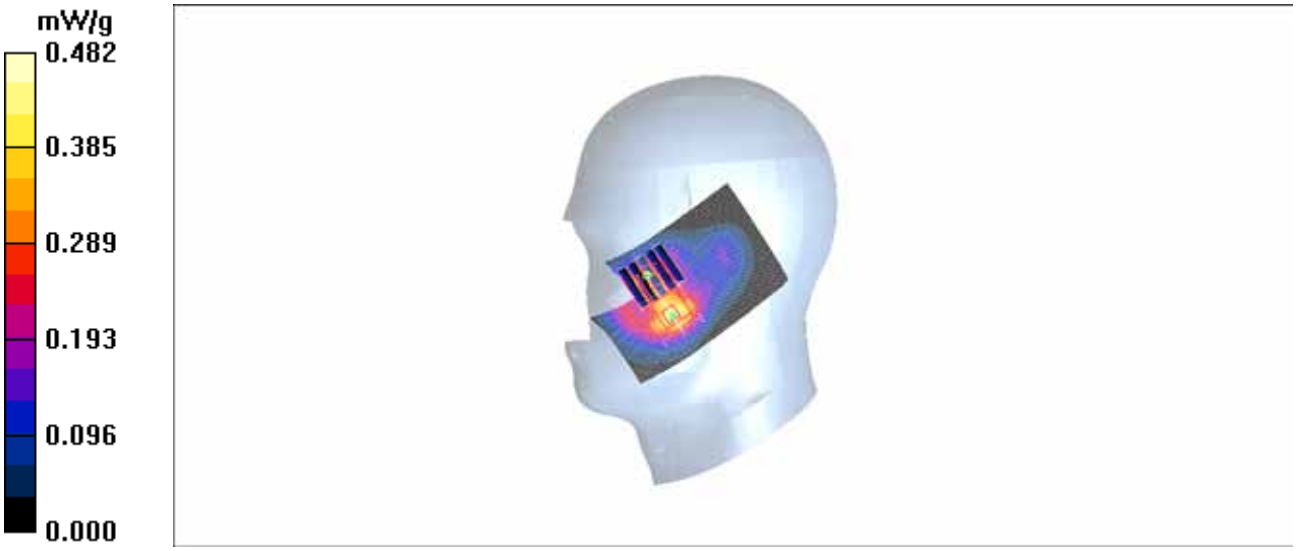



**Fig. 20 1900 MHz CH661**

**1900 Right Cheek Low**
Date/Time: 2011-12-15 9:59:54
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.577 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.05 V/m; Power Drift = -0.067 dB
Peak SAR (extrapolated) = 0.765 W/kg
**SAR(1 g) = 0.517 mW/g; SAR(10 g) = 0.317 mW/g**
Maximum value of SAR (measured) = 0.565 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.05 V/m; Power Drift = -0.067 dB
Peak SAR (extrapolated) = 0.571 W/kg
**SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.235 mW/g**
Maximum value of SAR (measured) = 0.398 mW/g

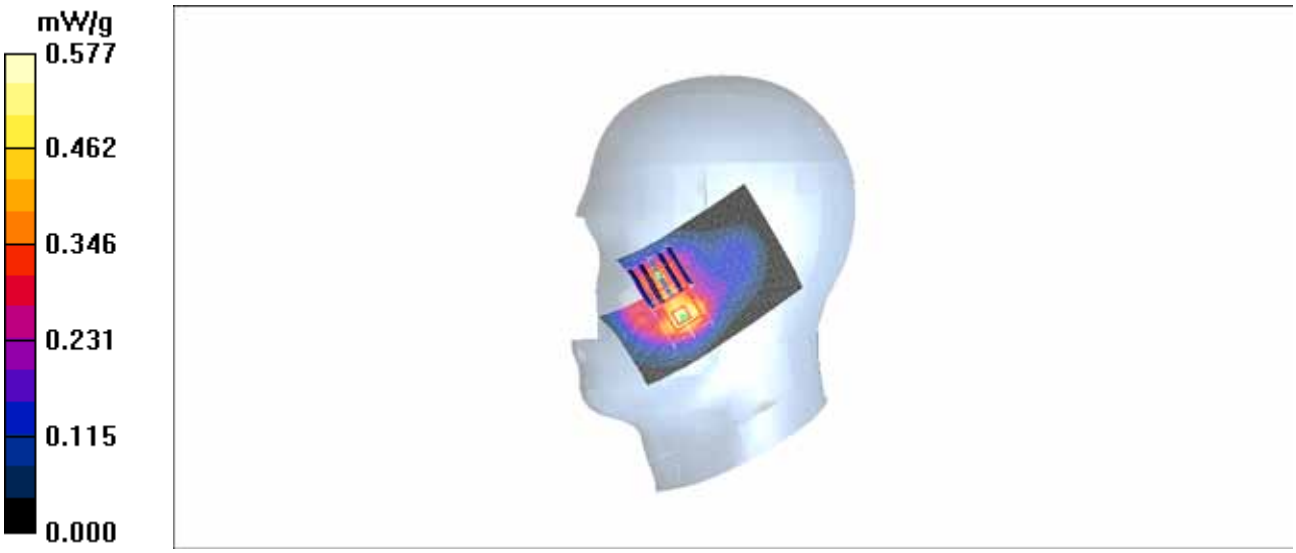



**Fig. 21 1900 MHz CH512**

**1900 Right Tilt High**
Date/Time: 2011-12-15 10:14:30
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.42 mho/m; $\varepsilon r$ = 40.0; $\rho$ = 1000 kg/$m^3$
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)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.226 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 0.306 W/kg
**SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.116 mW/g**
Maximum value of SAR (measured) = 0.219 mW/g


**Fig. 22 1900 MHz CH810**

**1900 Right Tilt Middle**
Date/Time: 2011-12-15 10:28:51
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 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 (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.212 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 0.289 W/kg
**SAR(1 g) = 0.190 mW/g; SAR(10 g) = 0.113 mW/g**
Maximum value of SAR (measured) = 0.209 mW/g

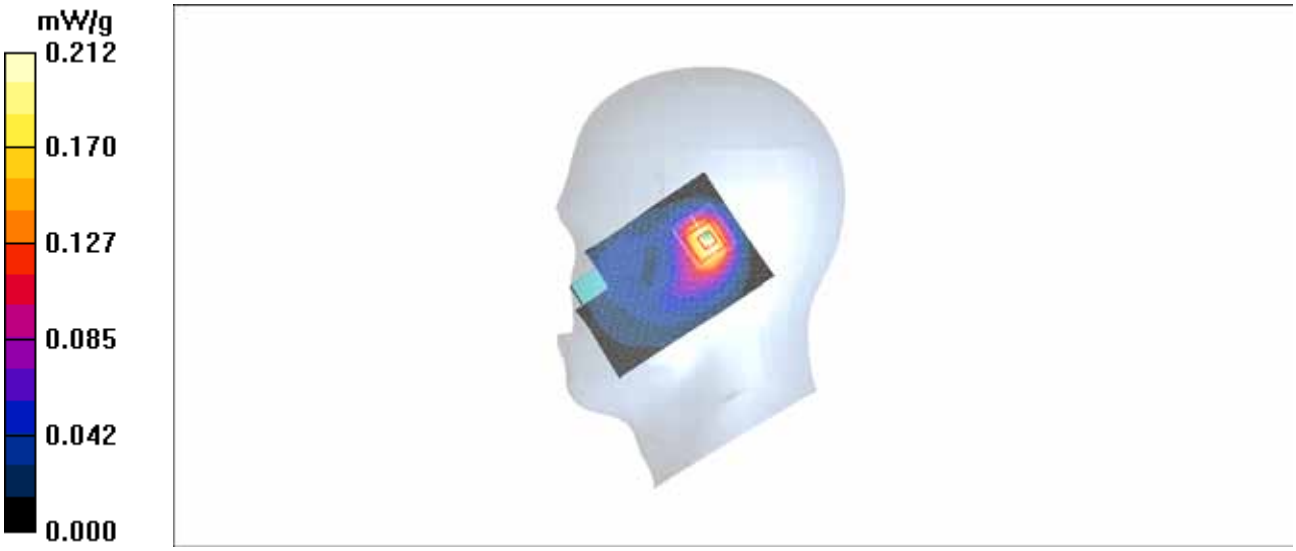



**Fig.23 1900 MHz CH661**

**1900 Right Tilt Low**

Date/Time: 2011-12-15 10:43:17
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
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)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.244 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.9 V/m; Power Drift = 0.078 dB
Peak SAR (extrapolated) = 0.329 W/kg
**SAR(1 g) = 0.219 mW/g; SAR(10 g) = 0.133 mW/g**
Maximum value of SAR (measured) = 0.239 mW/g


**Fig.24 1900 MHz CH512**

**WCDMA 850 Left Cheek High**

Date/Time: 2011-12-14 11:19:26
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.911 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.497 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.02 V/m; Power Drift = -0.161 dB
Peak SAR (extrapolated) = 0.640 W/kg
**SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.329 mW/g**
Maximum value of SAR (measured) = 0.483 mW/g

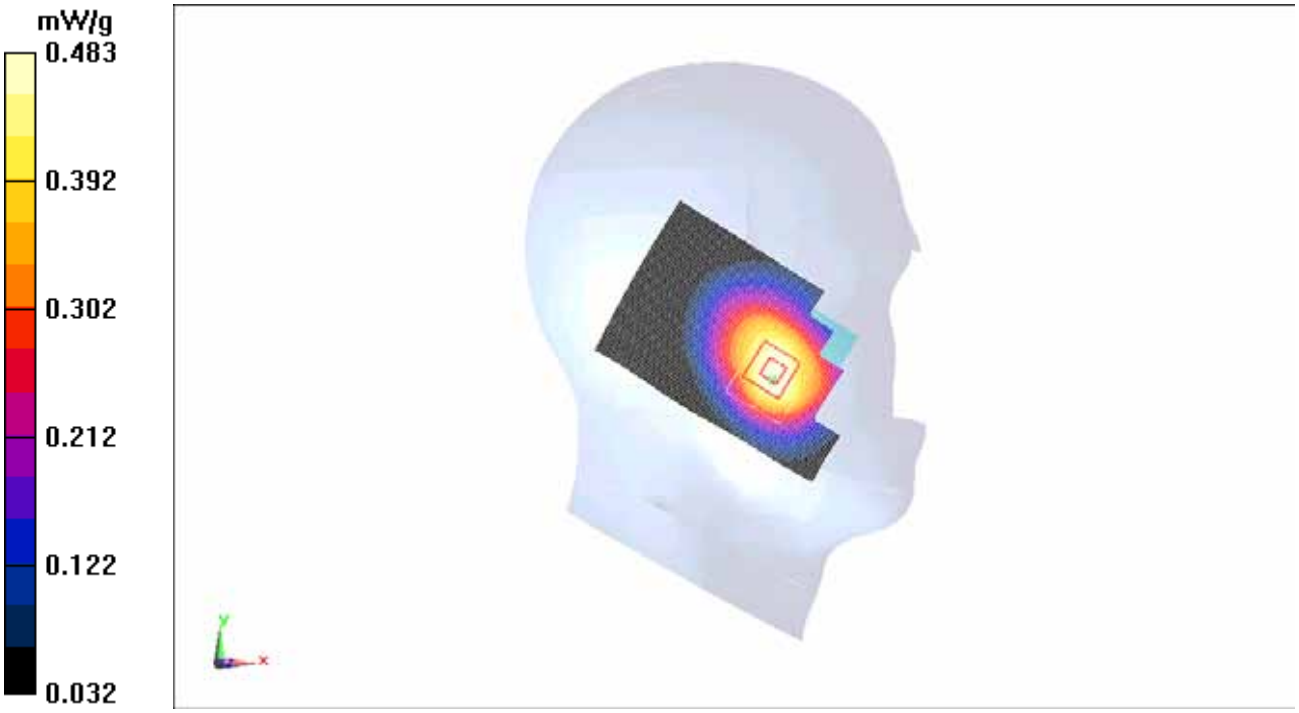



**Fig. 25 850MHz CH4233**

**WCDMA 850 Left Cheek Middle**
Date/Time: 2011-12-14 11:33:45
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23°C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.470 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.73 V/m; Power Drift = -0.029 dB
Peak SAR (extrapolated) = 0.601 W/kg
**SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.315 mW/g**
Maximum value of SAR (measured) = 0.473 mW/g

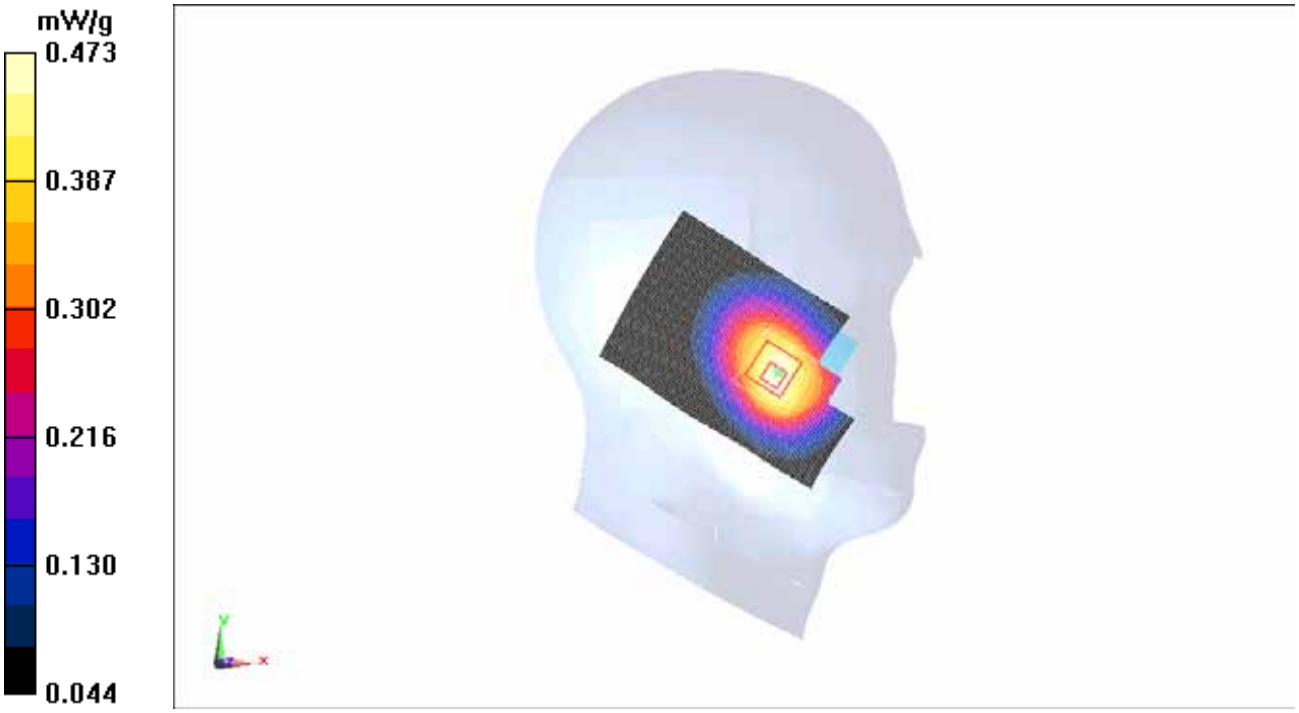



**Fig. 26 850 MHz CH4182**

**WCDMA 850 Left Cheek Low**
Date/Time: 2011-12-14 11:48:03
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23°C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.596 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.85 V/m; Power Drift = 0.00182 dB
Peak SAR (extrapolated) = 0.759 W/kg
**SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.399 mW/g**
Maximum value of SAR (measured) = 0.602 mW/g

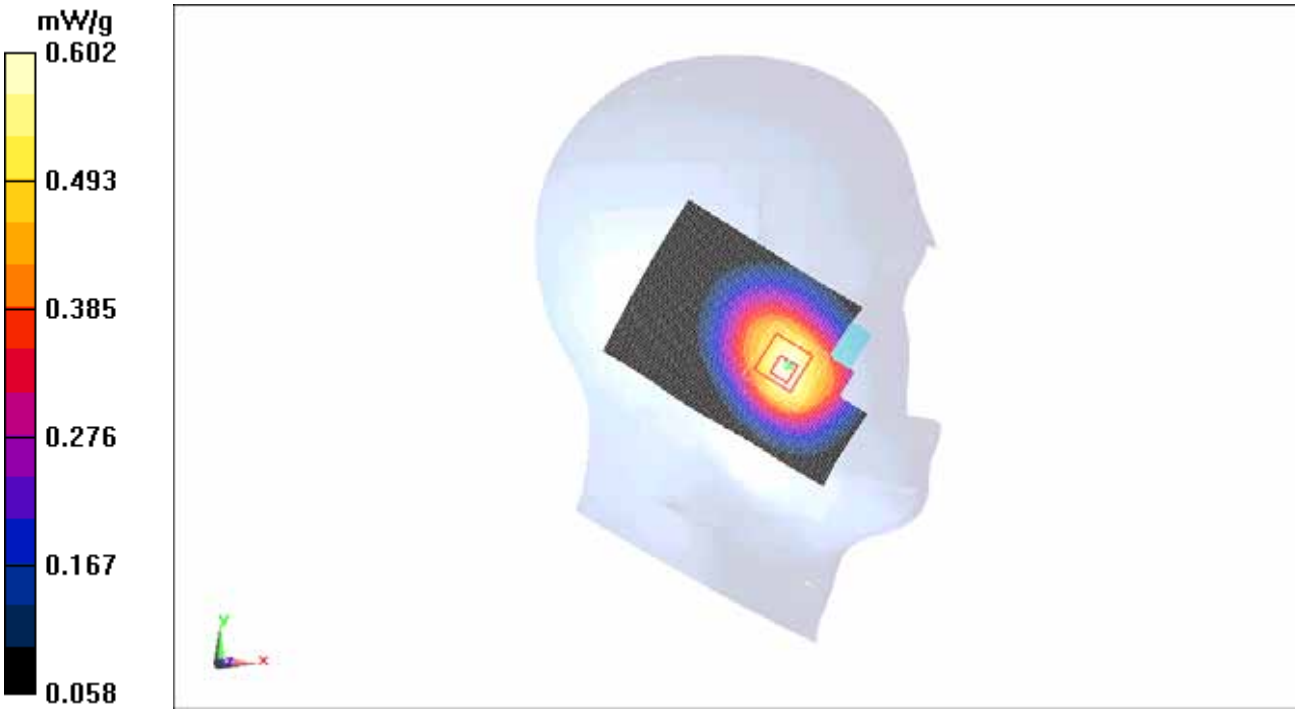



**Fig. 27 850 MHz CH4132**

**WCDMA 850 Left Tilt High**

Date/Time: 2011-12-14 12:02:36
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.911 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23$^o$C Liquid Temperature: 22.5$^o$C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.285 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = -0.00803 dB
Peak SAR (extrapolated) = 0.322 W/kg
**SAR(1 g) = 0.258 mW/g; SAR(10 g) = 0.196 mW/g**
Maximum value of SAR (measured) = 0.271 mW/g

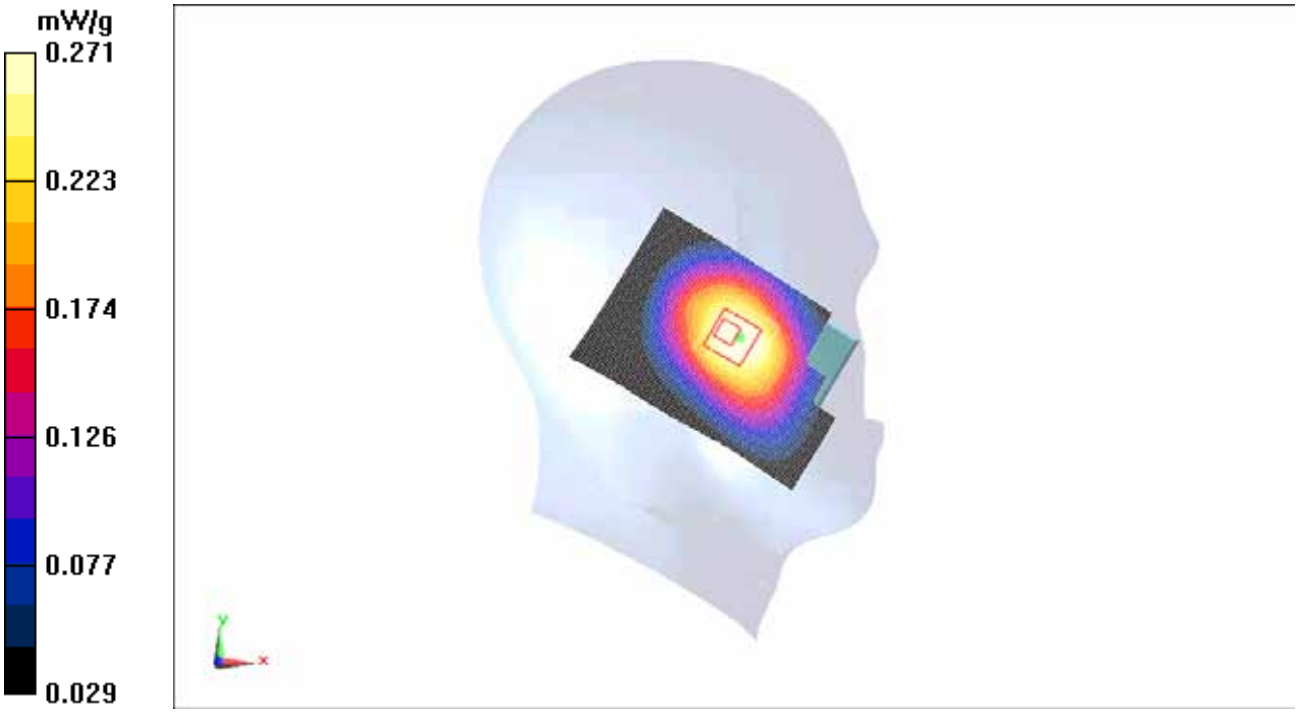



**Fig.28 850 MHz CH4233**

**WCDMA 850 Left Tilt Middle**
Date/Time: 2011-12-14 12:16:55
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.91 mho/m; εr = 42.0; ρ = 1000 kg/$m^3$
Ambient Temperature:23°C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.277 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 0.327 W/kg
**SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.194 mW/g**
Maximum value of SAR (measured) = 0.282 mW/g

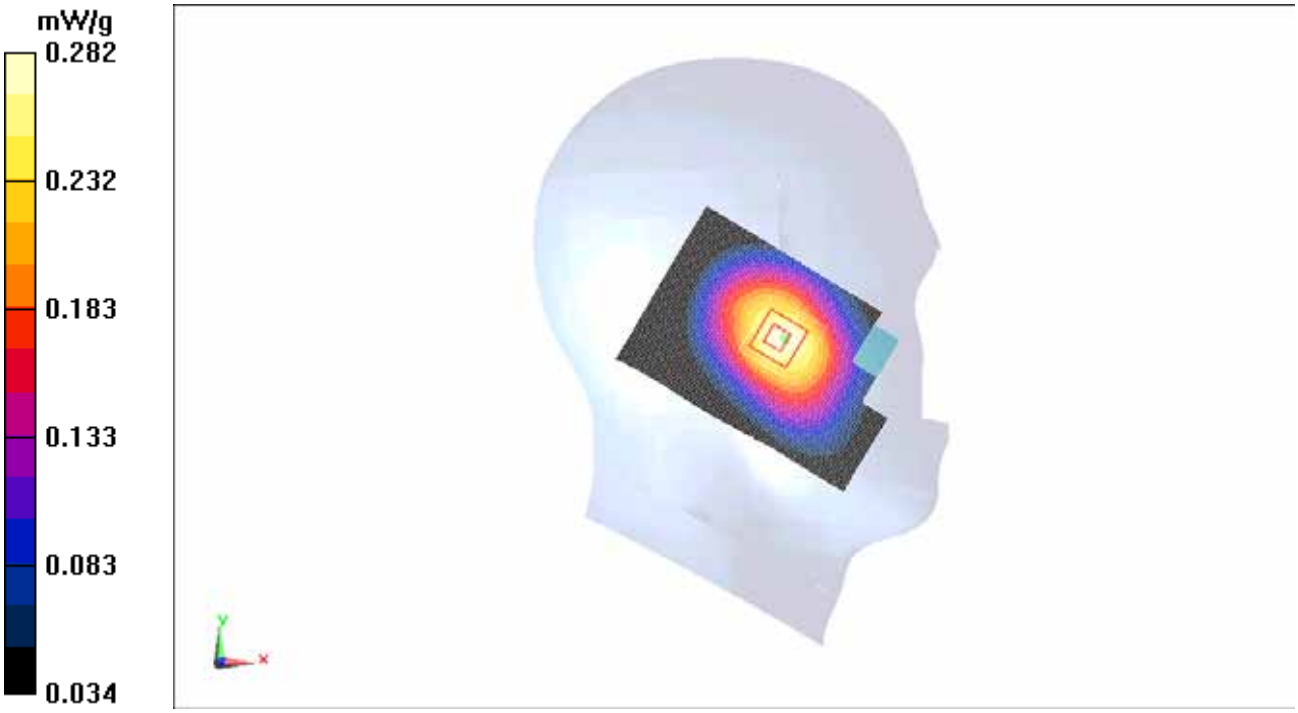



**Fig.29 850 MHz CH4182**

**WCDMA 850 Left Tilt Low**
Date/Time: 2011-12-14 12:31:14
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23°C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.345 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.2 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 0.392 W/kg
**SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.240 mW/g**
Maximum value of SAR (measured) = 0.329 mW/g


**Fig. 30 850 MHz CH4132**

**WCDMA 850 Right Cheek High**
Date/Time: 2011-12-14 12:45:40
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.911 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek High/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.501 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.5 V/m; Power Drift = 0.00369 dB
Peak SAR (extrapolated) = 0.575 W/kg
**SAR(1 g) = 0.474 mW/g; SAR(10 g) = 0.360 mW/g**
Maximum value of SAR (measured) = 0.491 mW/g

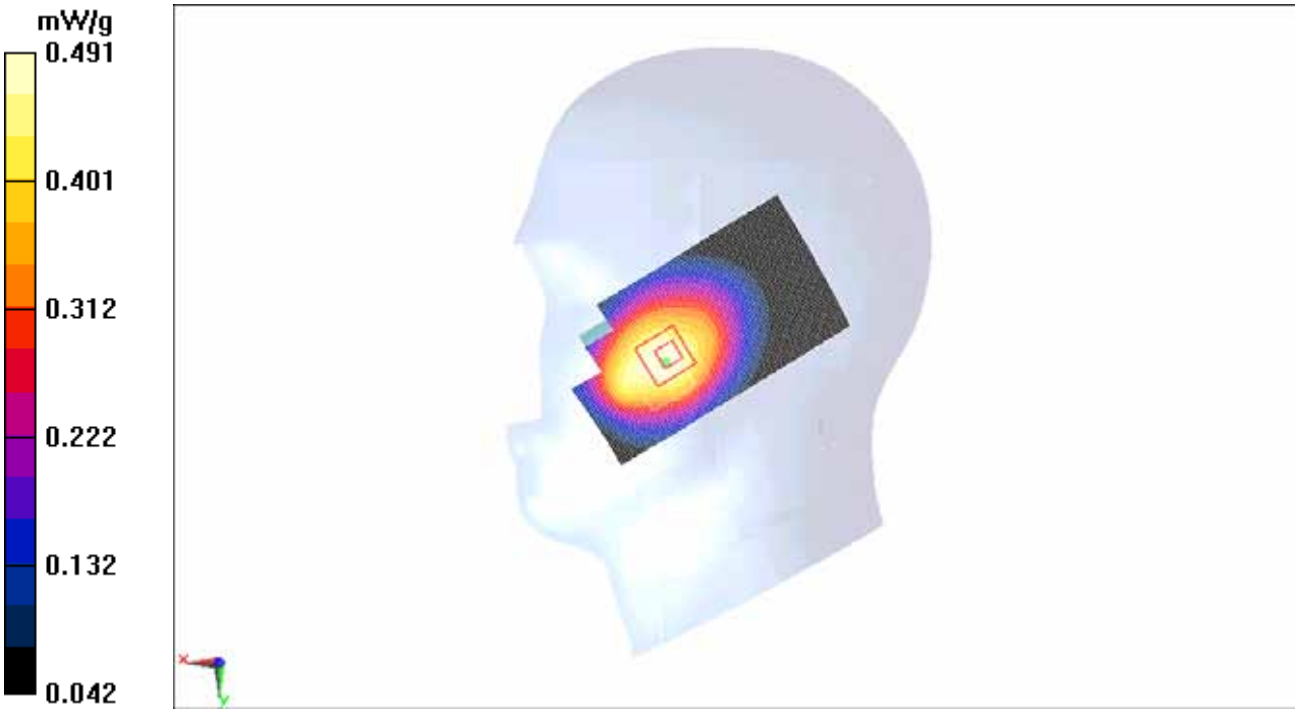



**Fig. 31 850 MHz CH4233**

**WCDMA 850 Right Cheek Middle**

Date/Time: 2011-12-14 13:00:01
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.91 mho/m; εr = 42.0; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Middle/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.481 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.51 V/m; Power Drift = 0.073 dB
Peak SAR (extrapolated) = 0.555 W/kg
**SAR(1 g) = 0.457 mW/g; SAR(10 g) = 0.348 mW/g**
Maximum value of SAR (measured) = 0.475 mW/g

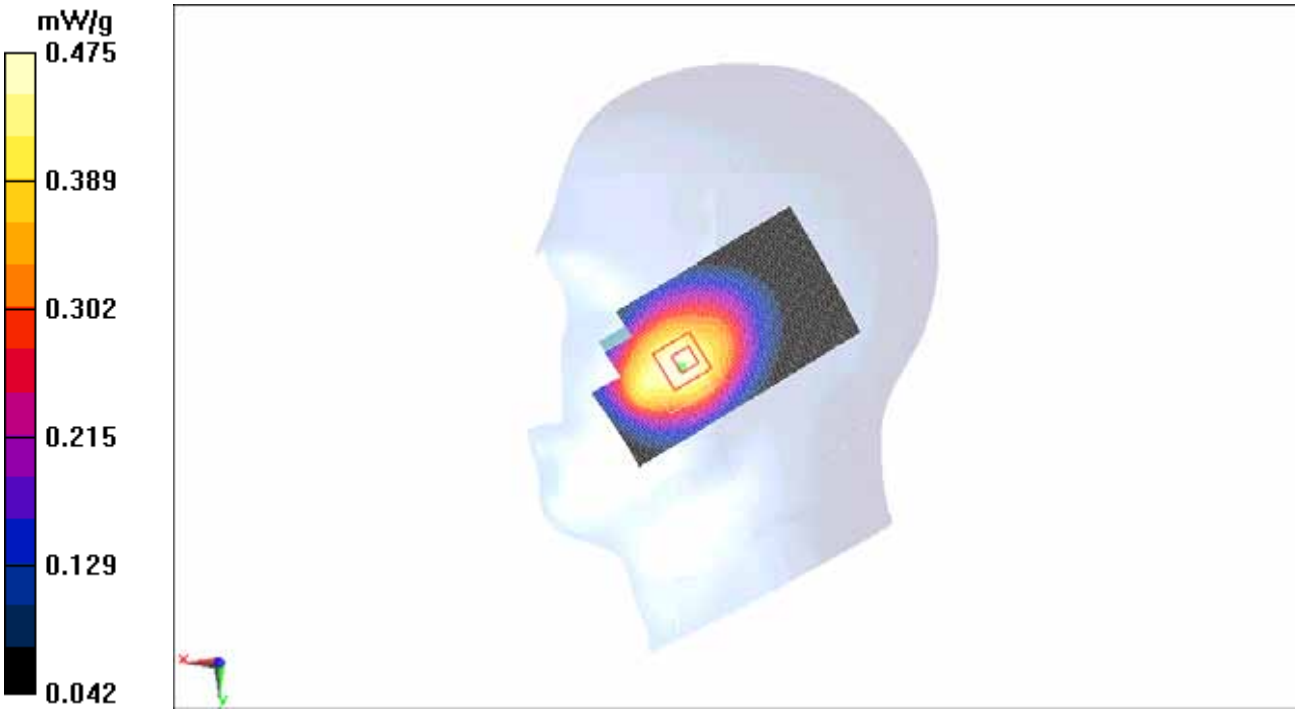



**Fig. 32 850 MHz CH4182**

**WCDMA 850 Right Cheek Low**
Date/Time: 2011-12-14 13:14:22
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Cheek Low/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.618 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.92 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.706 W/kg
**SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.448 mW/g**
Maximum value of SAR (measured) = 0.607 mW/g

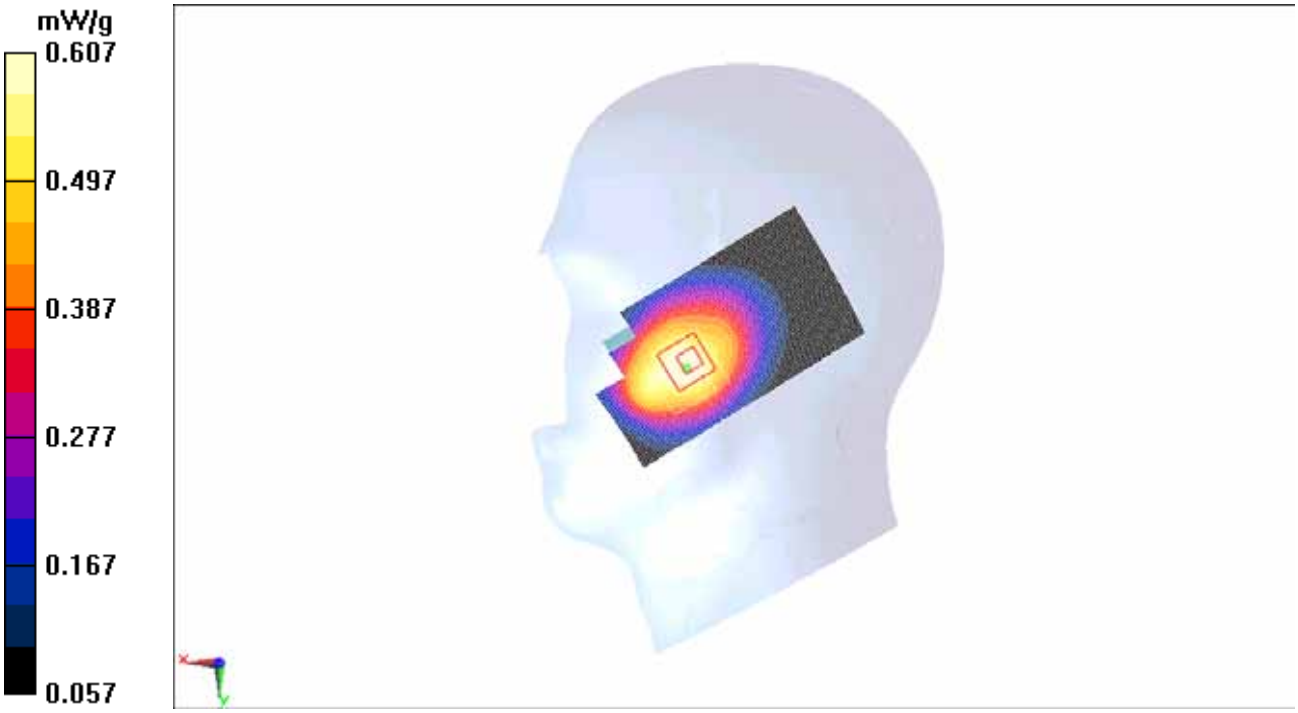



**Fig. 33 850 MHz CH4132**

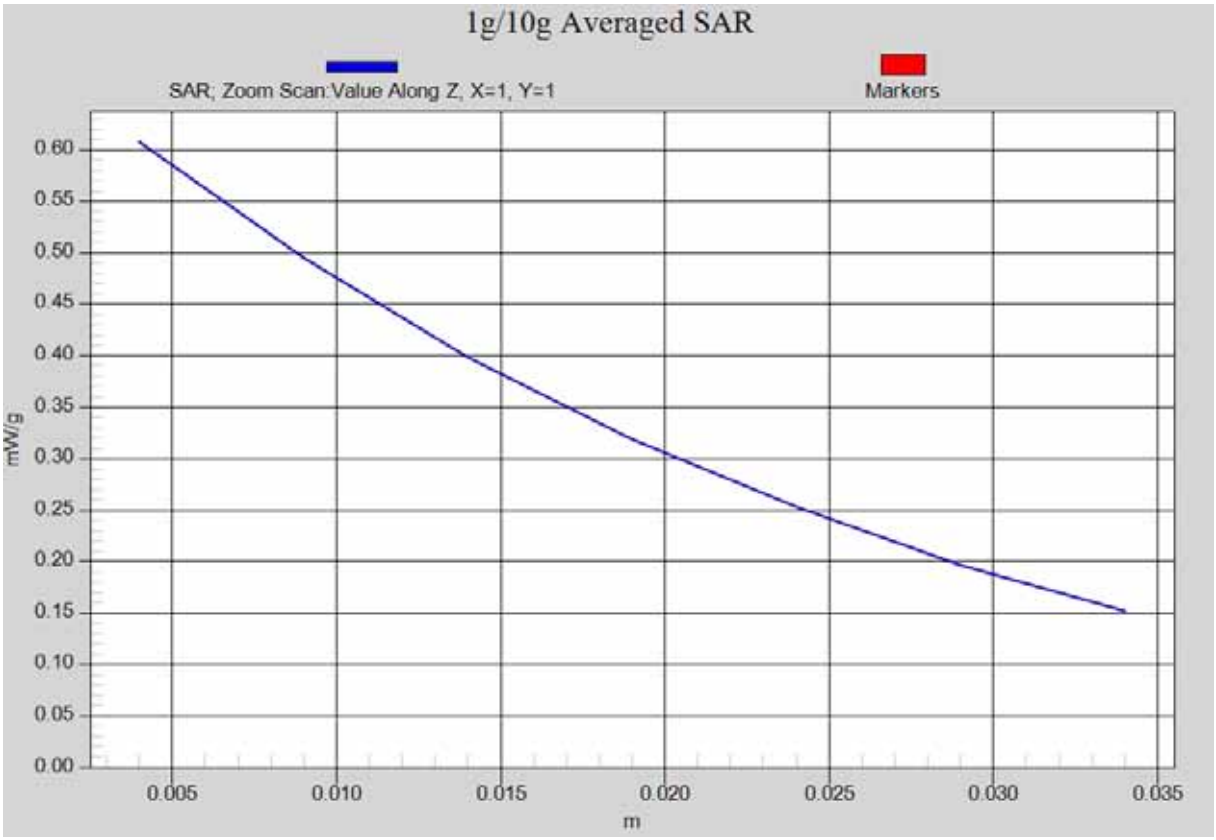



**Fig. 33-1 Z-Scan at power reference point (850 MHz CH4132)**

**WCDMA 850 Right Tilt High**
Date/Time: 2011-12-14 13:28:49
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.911 mho/m; $\varepsilon r$ = 41.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt High/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.323 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.7 V/m; Power Drift = -0.026 dB
Peak SAR (extrapolated) = 0.378 W/kg
**SAR(1 g) = 0.300 mW/g; SAR(10 g) = 0.224 mW/g**
Maximum value of SAR (measured) = 0.317 mW/g


**Fig.34 850 MHz CH4233**

**WCDMA 850 Right Tilt Middle**
Date/Time: 2011-12-14 13:43:10
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon r$ = 42.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Middle/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.321 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 0.374 W/kg
**SAR(1 g) = 0.298 mW/g; SAR(10 g) = 0.224 mW/g**
Maximum value of SAR (measured) = 0.316 mW/g

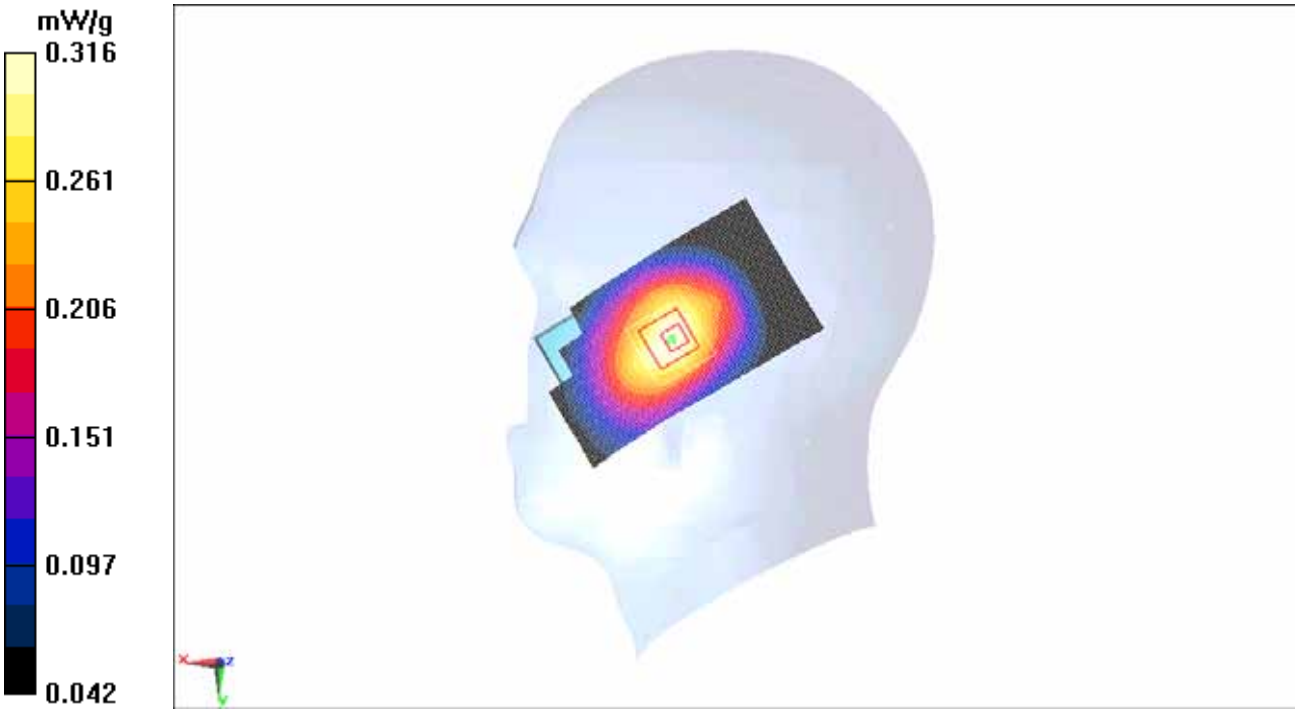



**Fig.35 850 MHz CH4182**

**WCDMA 850 Right Tilt Low**
Date/Time: 2011-12-14 13:57:32
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.89 mho/m; $\varepsilon r$ = 42.2; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

**Tilt Low/Area Scan (51x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.398 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.6 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 0.457 W/kg
**SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.278 mW/g**
Maximum value of SAR (measured) = 0.388 mW/g


**Fig. 36 850 MHz CH4132**

**WCDMA 1900 Left Cheek High**

Date/Time: 2011-12-15 11:18:38
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.41 mho/m; $\varepsilon r$ = 40.1; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.916 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.11 V/m; Power Drift = -0.156 dB
Peak SAR (extrapolated) = 1.53 W/kg
**SAR(1 g) = 0.910 mW/g; SAR(10 g) = 0.503 mW/g**
Maximum value of SAR (measured) = 0.974 mW/g

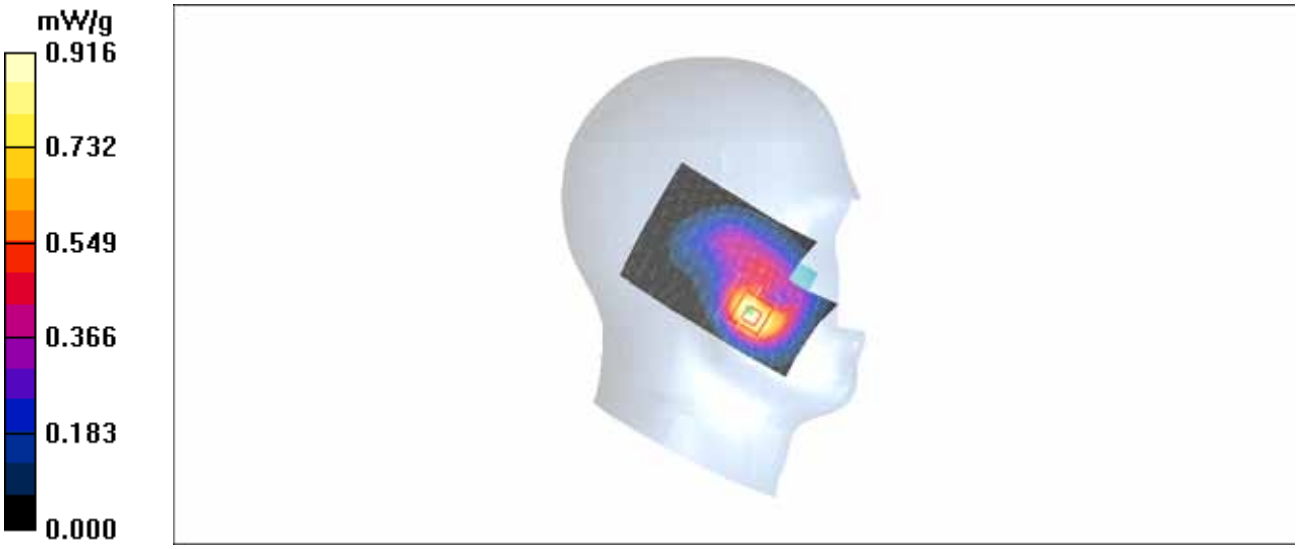



**Fig. 37 1900 MHz CH9538**

## WCDMA 1900 Left Cheek Middle

Date/Time: 2011-12-15 11:32:56
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:23.0 $^o$C Liquid Temperature: 22.5$^o$C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.986 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.48 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 1.67 W/kg
**SAR(1 g) = 0.991 mW/g; SAR(10 g) = 0.550 mW/g**
Maximum value of SAR (measured) = 1.08 mW/g

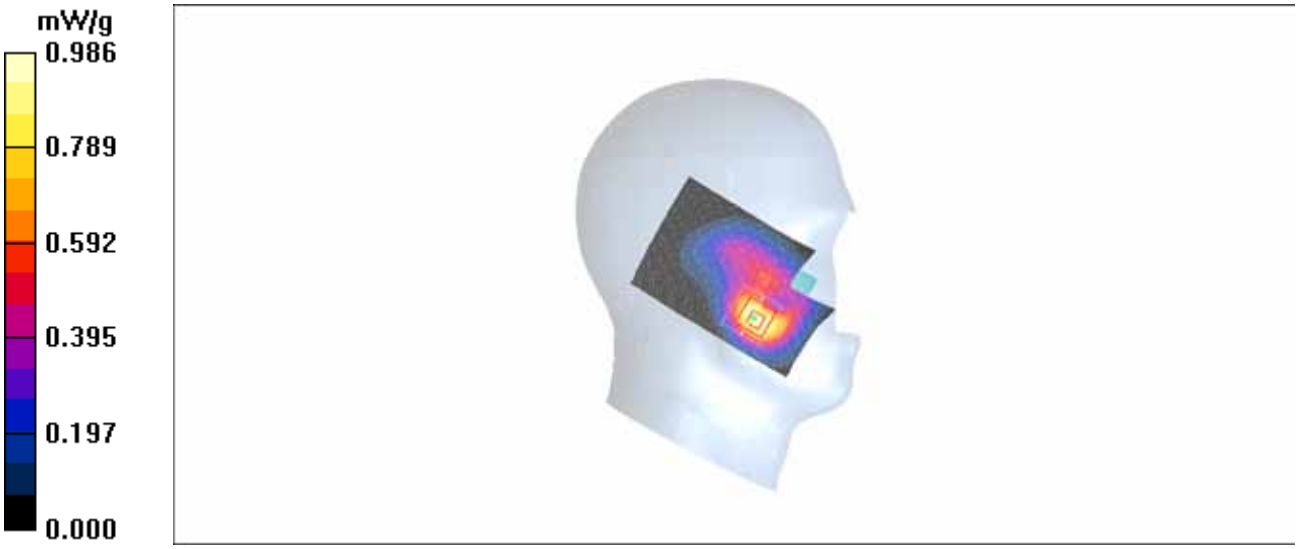



**Fig. 38 1900 MHz CH9400**

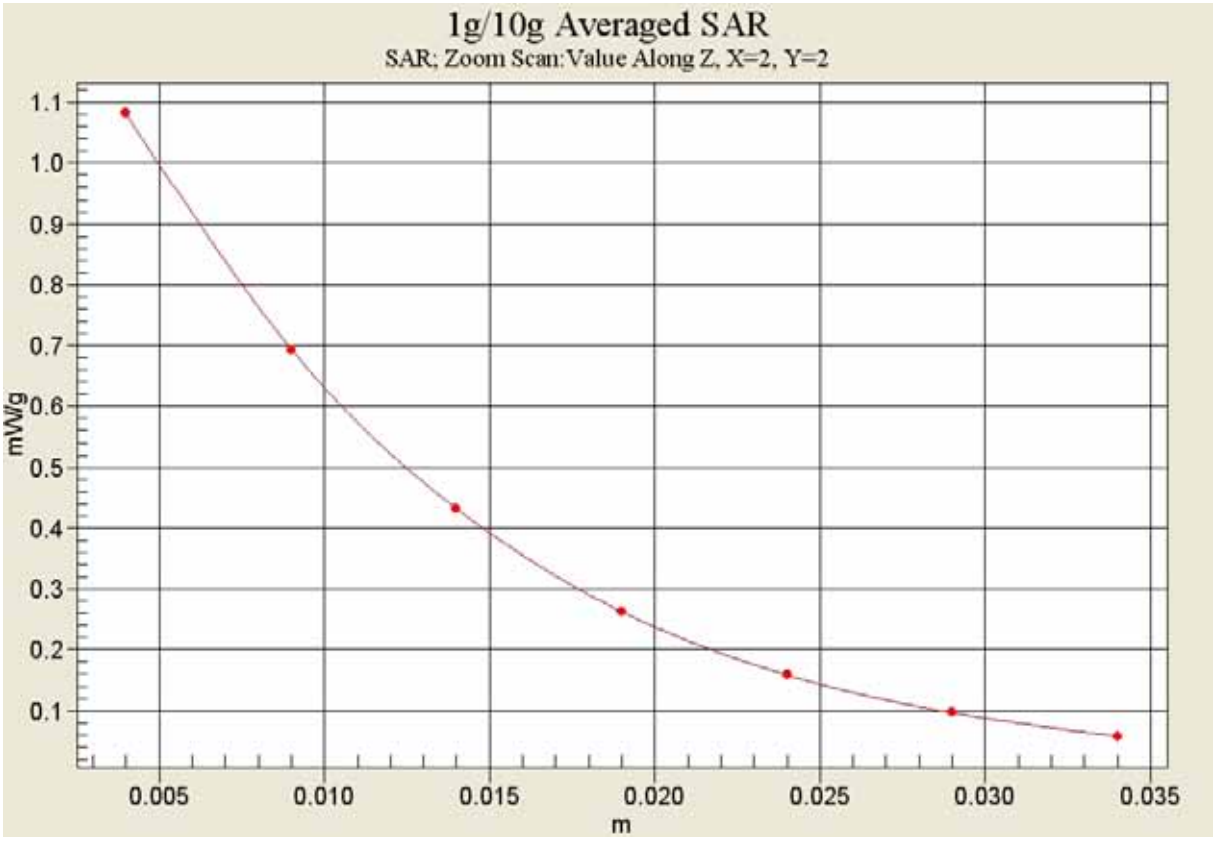



**Fig. 38-1 Z-Scan at power reference point (1900 MHz CH9400)**

## WCDMA 1900 Left Cheek Low

Date/Time: 2011-12-15 11:47:20
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 40.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.865 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.89 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 1.45 W/kg
**SAR(1 g) = 0.870 mW/g; SAR(10 g) = 0.487 mW/g**
Maximum value of SAR (measured) = 0.946 mW/g

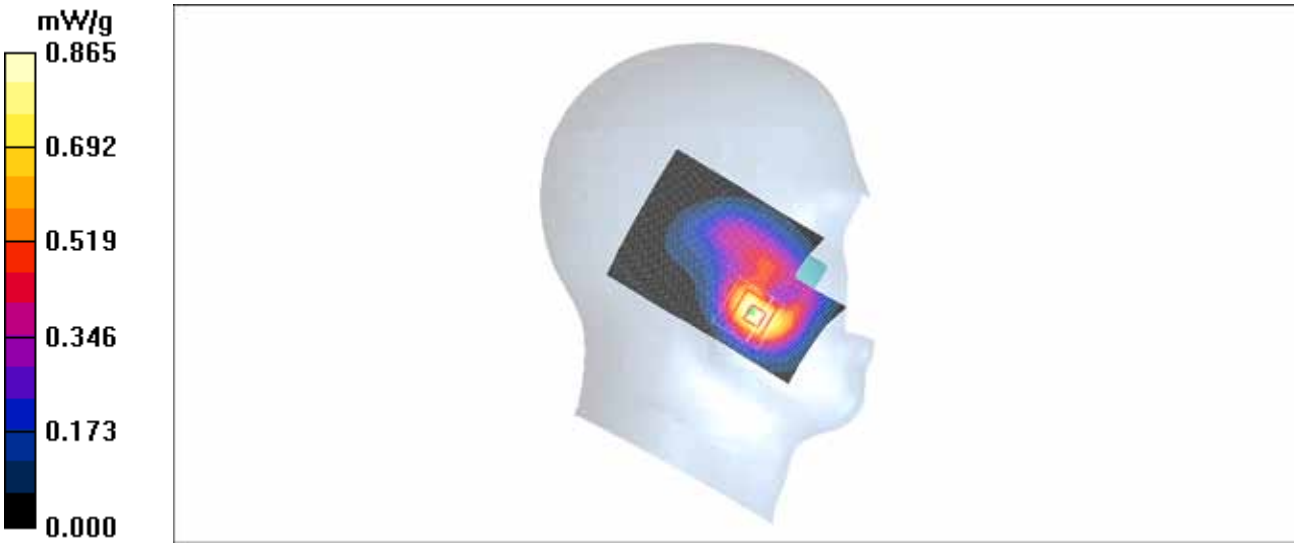



**Fig. 39 1900 MHz CH9262**

**WCDMA 1900 Left Tilt High**

Date/Time: 2011-12-15 12:01:57
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.41 mho/m; $\varepsilon r$ = 40.1; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.366 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = 0.021 dB
Peak SAR (extrapolated) = 0.460 W/kg
**SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.192 mW/g**
Maximum value of SAR (measured) = 0.323 mW/g

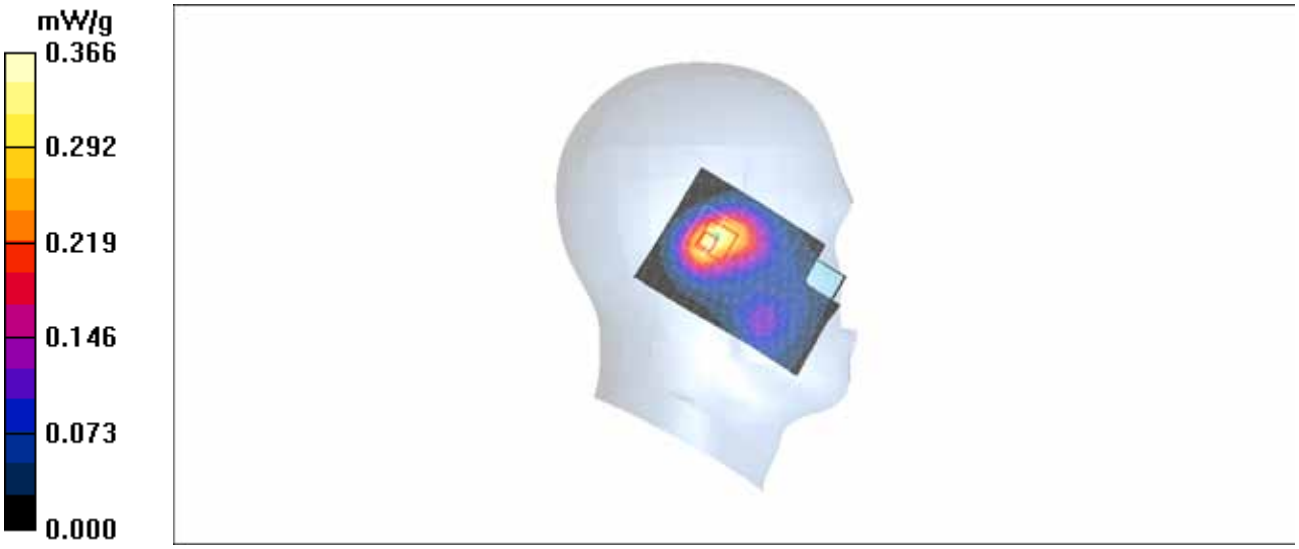



**Fig.40 1900 MHz CH9538**

**WCDMA 1900 Left Tilt Middle**

Date/Time: 2011-12-15 12:16:19
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:23.0 $^o$C Liquid Temperature: 22.5$^o$C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.370 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.3 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 0.452 W/kg
**SAR(1 g) = 0.303 mW/g; SAR(10 g) = 0.196 mW/g**
Maximum value of SAR (measured) = 0.319 mW/g

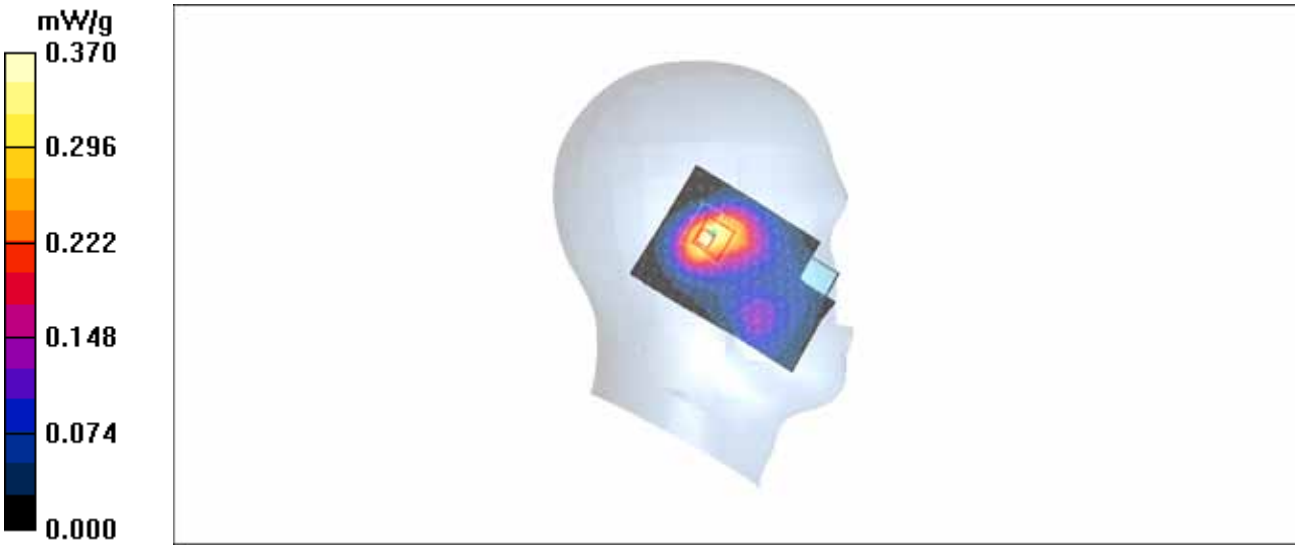



**Fig. 41 1900 MHz CH9400**

**WCDMA 1900 Left Tilt Low**
Date/Time: 2011-12-15 12:30:35
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 40.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.314 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = -0.020 dB
Peak SAR (extrapolated) = 0.378 W/kg
**SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.168 mW/g**
Maximum value of SAR (measured) = 0.268 mW/g

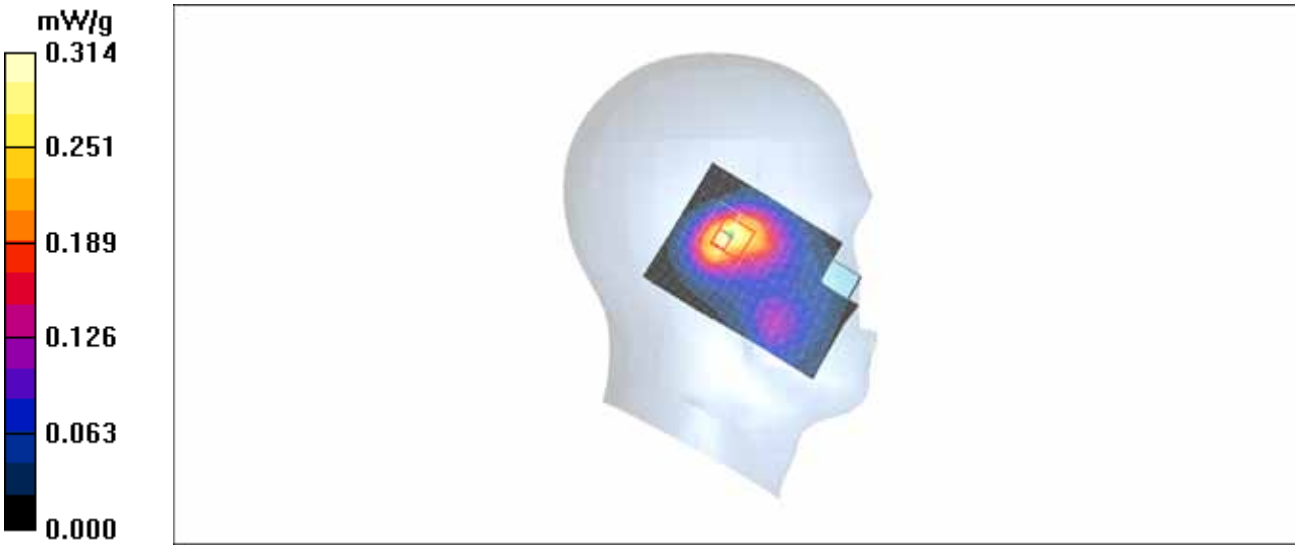



**Fig. 42 1900 MHz CH9262**

## WCDMA 1900 Right Cheek High

Date/Time: 2011-12-15 12:45:03
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.41 mho/m; $\varepsilon r$ = 40.1; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C  Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.879 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.8 V/m; Power Drift = -0.111 dB
Peak SAR (extrapolated) = 1.15 W/kg
**SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.465 mW/g**
Maximum value of SAR (measured) = 0.853 mW/g

**Cheek High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.8 V/m; Power Drift = -0.111 dB
Peak SAR (extrapolated) = 0.966 W/kg
**SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.384 mW/g**
Maximum value of SAR (measured) = 0.737 mW/g

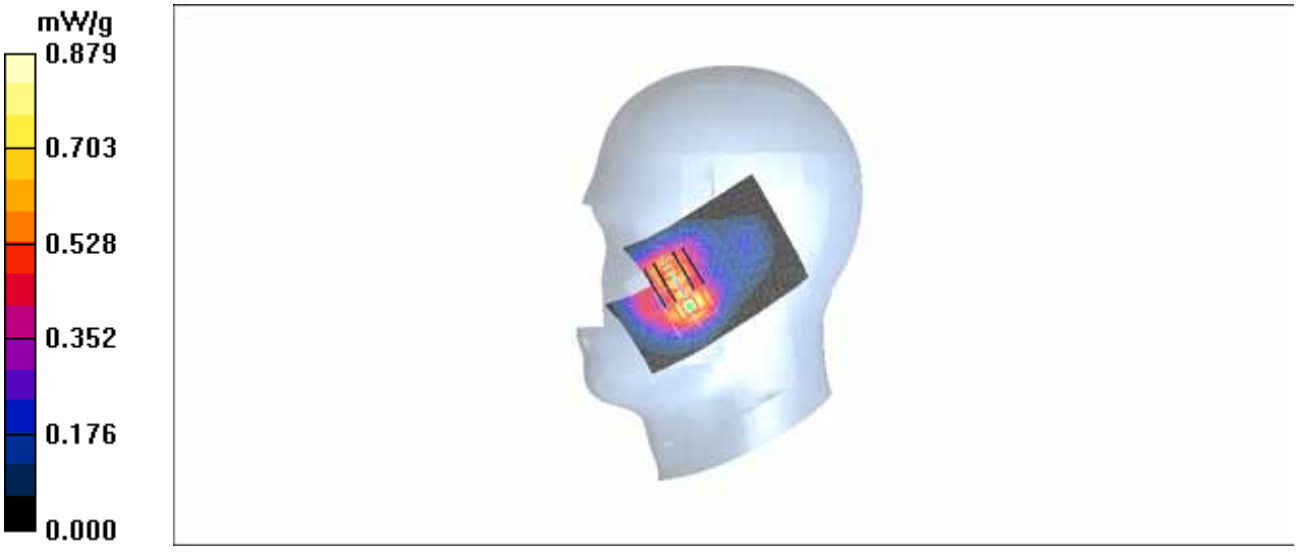



**Fig. 43 1900 MHz CH9538**

## WCDMA 1900 Right Cheek Middle

Date/Time: 2011-12-15 12:59:25
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.936 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 1.22 W/kg
**SAR(1 g) = 0.823 mW/g; SAR(10 g) = 0.500 mW/g**
Maximum value of SAR (measured) = 0.914 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 1.06 W/kg
**SAR(1 g) = 0.646 mW/g; SAR(10 g) = 0.409 mW/g**
Maximum value of SAR (measured) = 0.801 mW/g

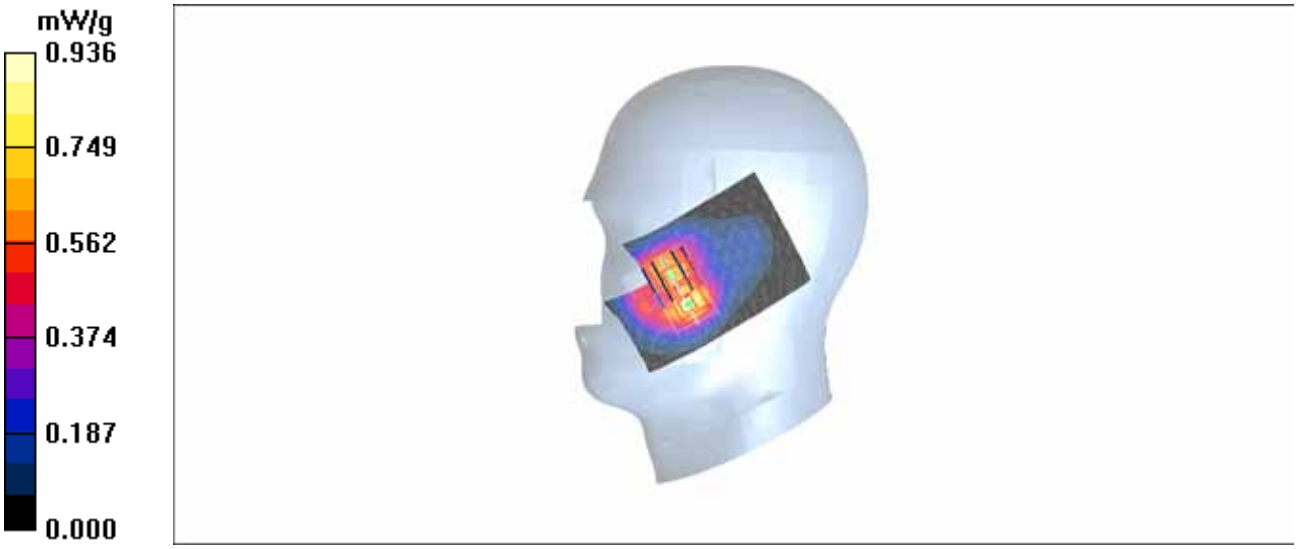



**Fig. 44 1900 MHz CH9400**

## WCDMA 1900 Right Cheek Low

Date/Time: 2011-12-15 13:13:47
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 40.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.826 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.70 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 1.09 W/kg
**SAR(1 g) = 0.734 mW/g; SAR(10 g) = 0.447 mW/g**
Maximum value of SAR (measured) = 0.815 mW/g

**Cheek Low/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.70 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.942 W/kg
**SAR(1 g) = 0.572 mW/g; SAR(10 g) = 0.366 mW/g**
Maximum value of SAR (measured) = 0.710 mW/g

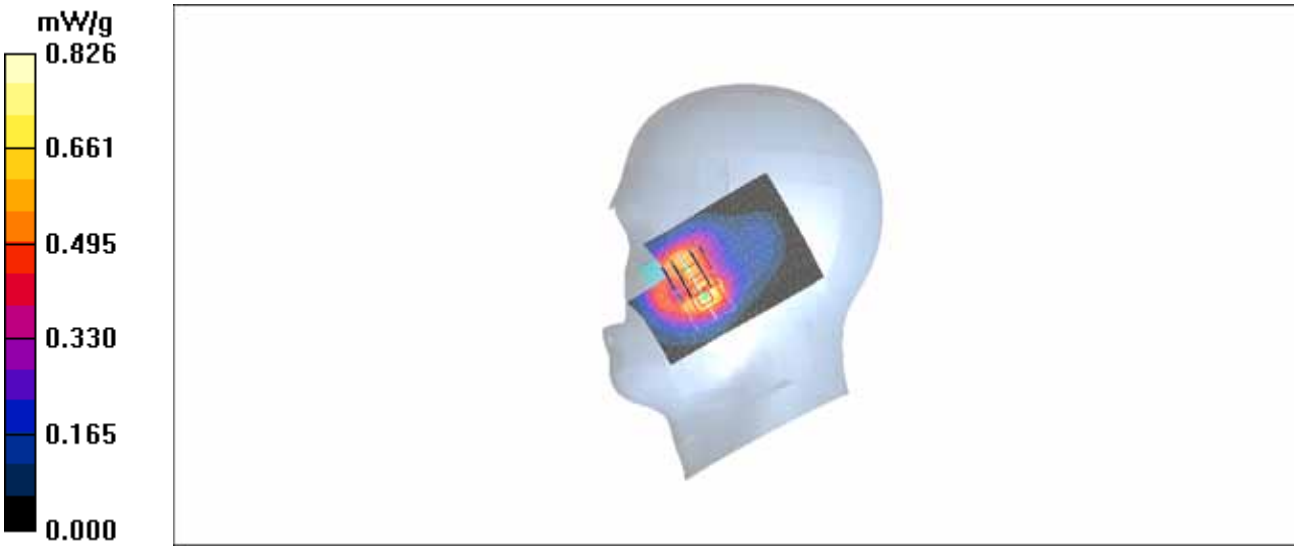



**Fig. 45 1900 MHz CH9262**

**WCDMA 1900 Right Tilt High**

Date/Time: 2011-12-15 13:28:12
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.41 mho/m; $\varepsilon r$ = 40.1; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt High/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.420 mW/g

**Tilt High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.0 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 0.574 W/kg
**SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.219 mW/g**
Maximum value of SAR (measured) = 0.410 mW/g

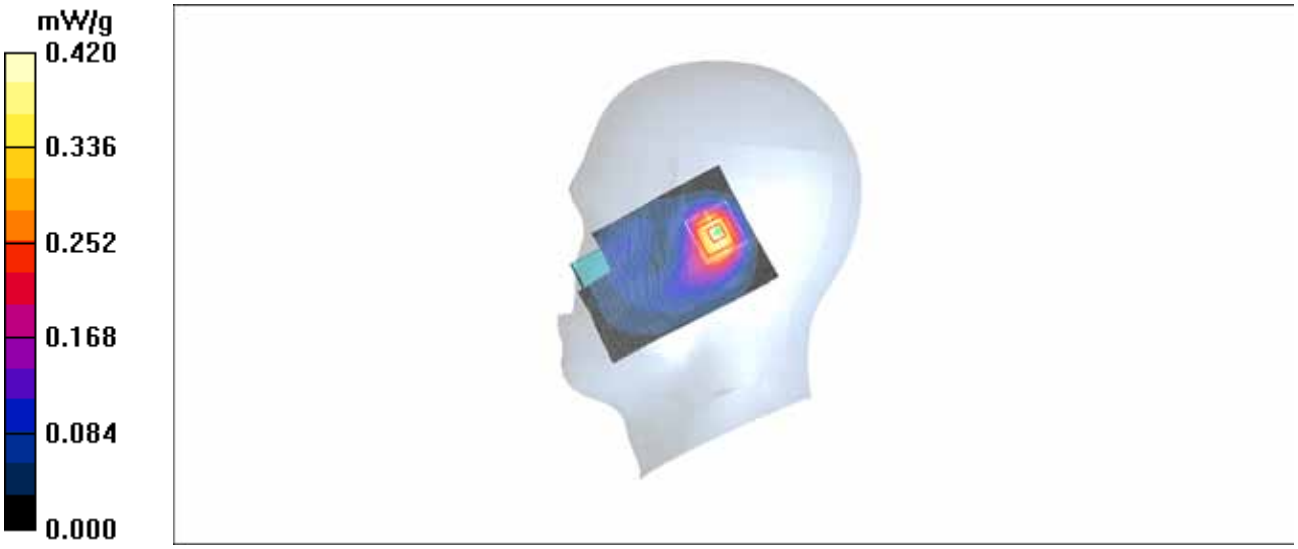



**Fig. 46 1900 MHz CH9538**

**WCDMA 1900 Right Tilt Middle**
Date/Time: 2011-12-15 13:42:30
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.430 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.5 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.581 W/kg
**SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.231 mW/g**
Maximum value of SAR (measured) = 0.427 mW/g

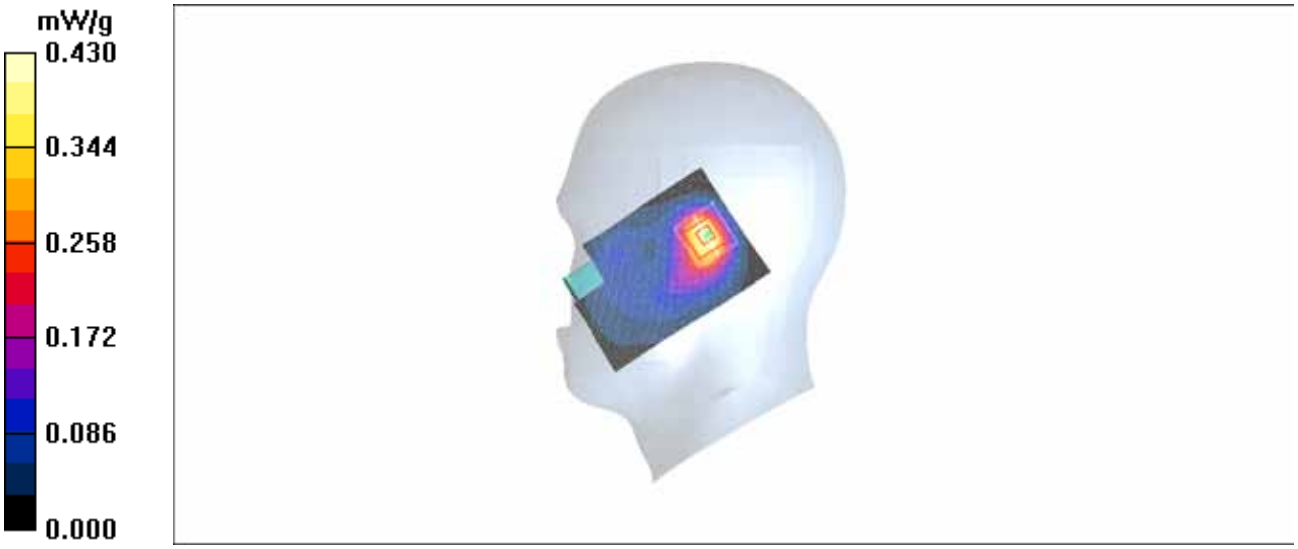



**Fig.47 1900 MHz CH9400**

**WCDMA 1900 Right Tilt Low**
Date/Time: 2011-12-15 13:56:49
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.35 mho/m; $\varepsilon r$ = 40.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Tilt Low/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.349 mW/g

**Tilt Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.8 V/m; Power Drift = 0.039 dB
Peak SAR (extrapolated) = 0.463 W/kg
**SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.191 mW/g**
Maximum value of SAR (measured) = 0.342 mW/g


**Fig.48 1900 MHz CH9262**

**WCDMA 1900 Left Cheek Middle with battery CAB31P0000C2**

Date/Time: 2011-12-15 14:13:27
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.38 mho/m; $\varepsilon r$ = 40.4; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.969 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.08 V/m; Power Drift = -0.017 dB
Peak SAR (extrapolated) = 1.65 W/kg
**SAR(1 g) = 0.975 mW/g; SAR(10 g) = 0.541 mW/g**
Maximum value of SAR (measured) = 1.05 mW/g

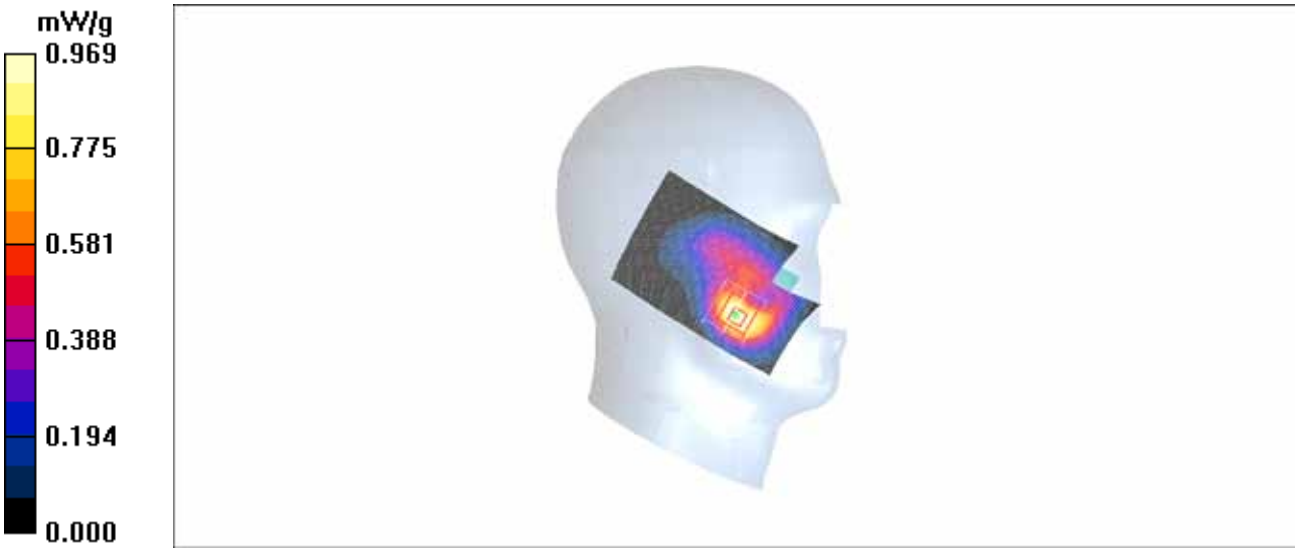



**Fig. 49 1900 MHz CH9400**

**850 Body Towards Phantom High with GPRS**

Date/Time: 2011-12-14 15:33:59
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 54.7; $\rho$ = 1000 kg/$m^3$
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 Phantom High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.844 mW/g

**Toward Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.7 V/m; Power Drift = 0.025 dB
Peak SAR (extrapolated) = 1.12 W/kg
**SAR(1 g) = 0.802 mW/g; SAR(10 g) = 0.582 mW/g**
Maximum value of SAR (measured) = 0.844 mW/g

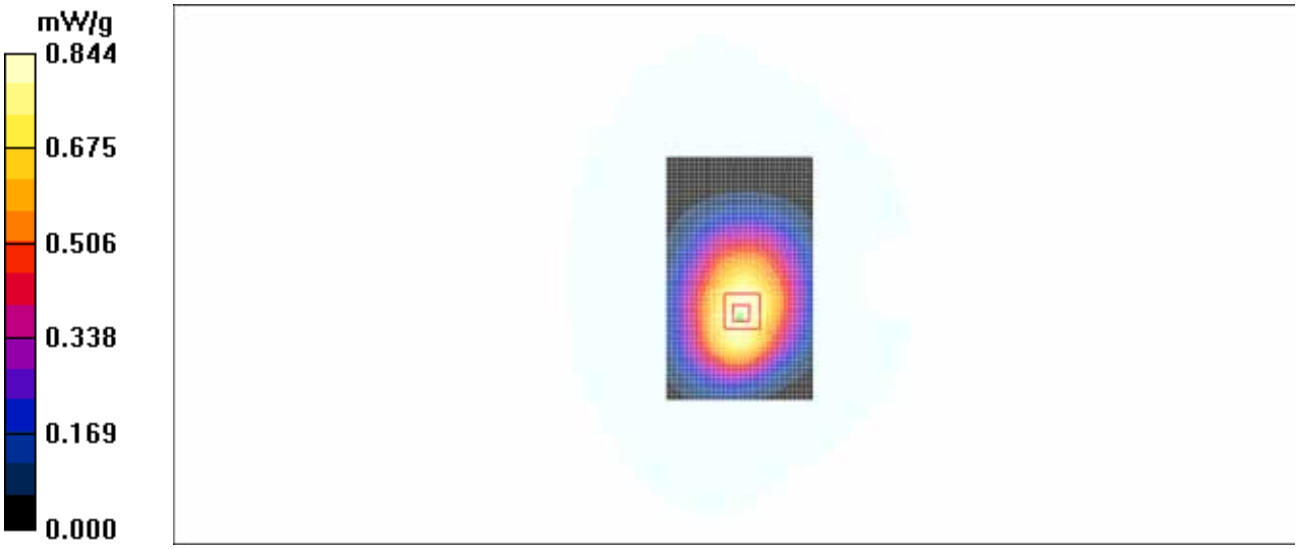



**Fig. 50 850 MHz CH251**

**850 Body Towards Phantom Middle with GPRS**

Date/Time: 2011-12-14 15:18:35
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
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 Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.877 mW/g

**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.3 V/m; Power Drift = 0.002 dB
Peak SAR (extrapolated) = 1.08 W/kg
**SAR(1 g) = 0.817 mW/g; SAR(10 g) = 0.601 mW/g**
Maximum value of SAR (measured) = 0.880 mW/g

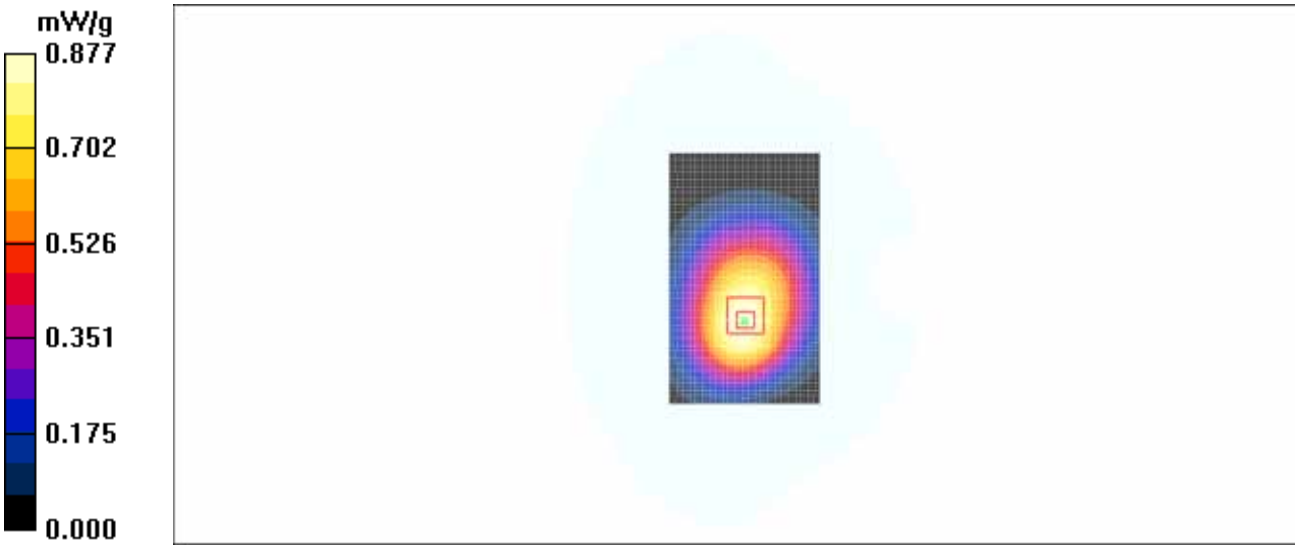



**Fig. 51 850 MHz CH190**

**850 Body Towards Phantom Low with GPRS**

Date/Time: 2011-12-14 15:03:12
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.968 mW/g

**Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.2 V/m; Power Drift = -0.120 dB
Peak SAR (extrapolated) = 1.17 W/kg
**SAR(1 g) = 0.893 mW/g; SAR(10 g) = 0.662 mW/g**
Maximum value of SAR (measured) = 0.946 mW/g

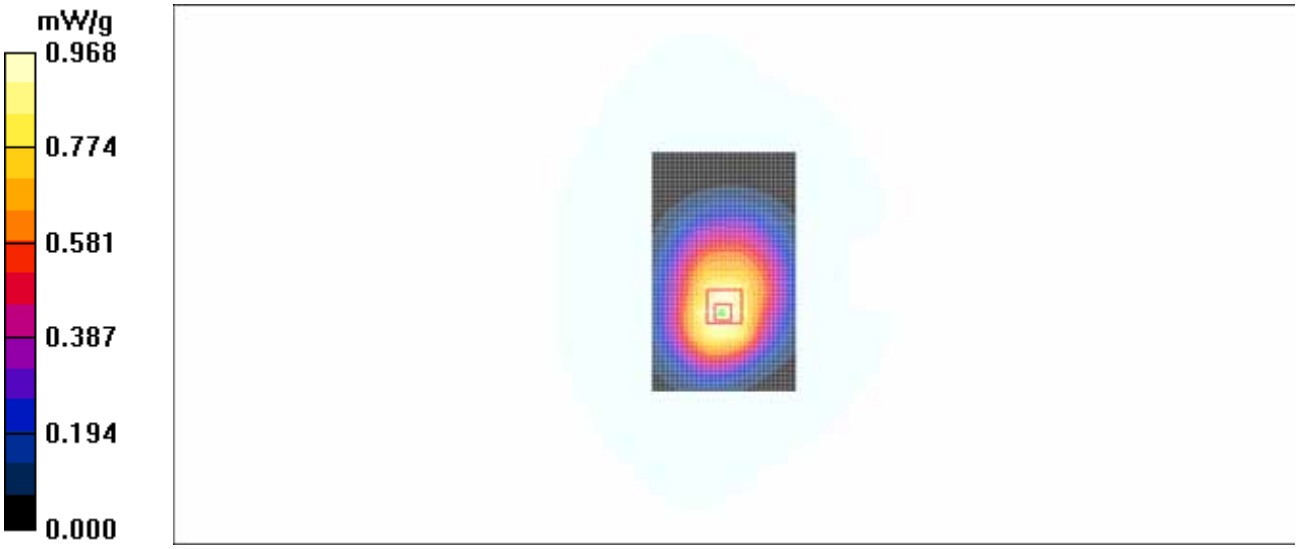



**Fig. 52 850 MHz CH128**

**850 Body Towards Ground High with GPRS**

Date/Time: 2011-12-14 16:20:13
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 54.7; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.979 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.9 V/m; Power Drift = -0.187 dB
Peak SAR (extrapolated) = 1.21 W/kg
**SAR(1 g) = 0.890 mW/g; SAR(10 g) = 0.633 mW/g**
Maximum value of SAR (measured) = 0.970 mW/g

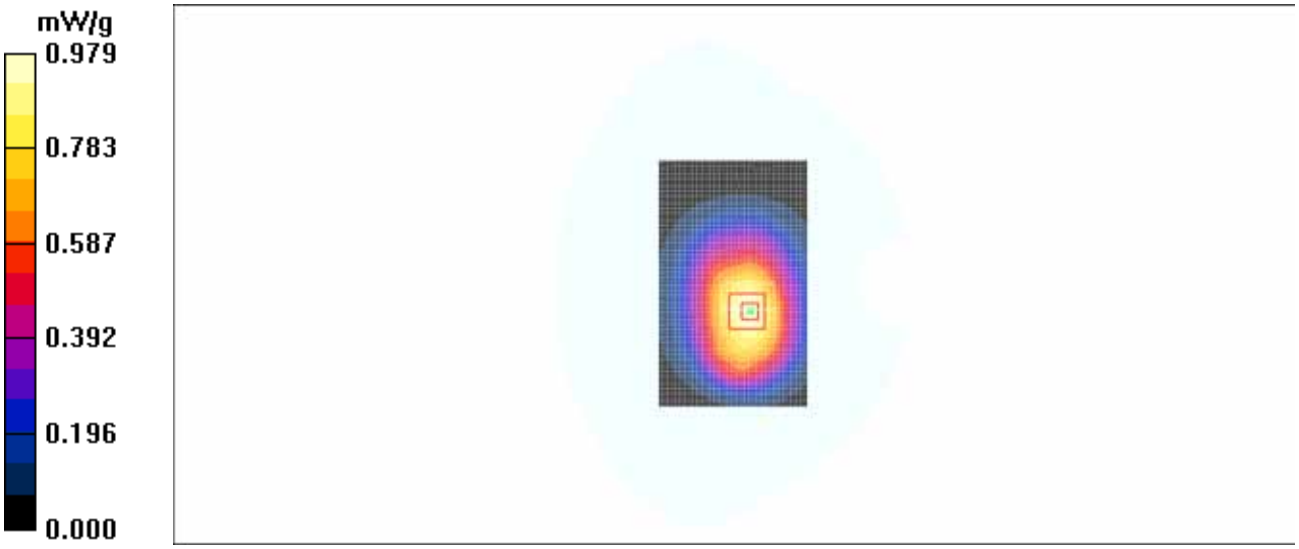



**Fig. 53 850 MHz CH251**

**850 Body Towards Ground Middle with GPRS**

Date/Time: 2011-12-14 16:04:48
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.998 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 = 0.042 dB
Peak SAR (extrapolated) = 1.29 W/kg
**SAR(1 g) = 0.943 mW/g; SAR(10 g) = 0.670 mW/g**
Maximum value of SAR (measured) = 1.000 mW/g

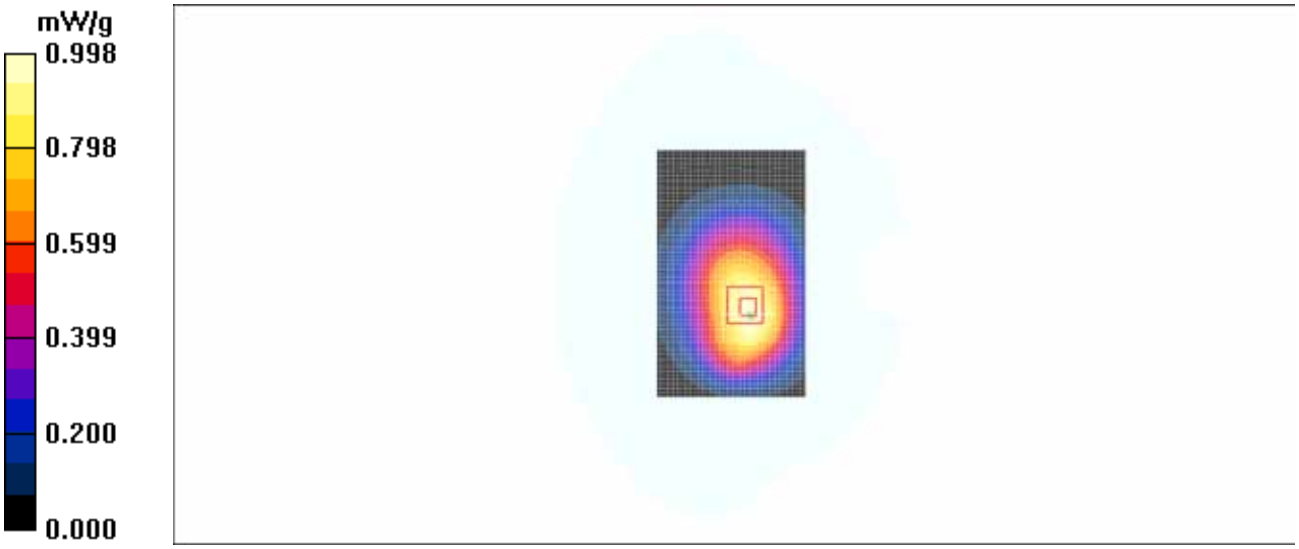



**Fig. 54 850 MHz CH190**

**850 Body Towards Ground Low with GPRS**

Date/Time: 2011-12-14 15:49:21
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.16 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.0 V/m; Power Drift = -0.006 dB
Peak SAR (extrapolated) = 1.49 W/kg
**SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.781 mW/g**
Maximum value of SAR (measured) = 1.17 mW/g

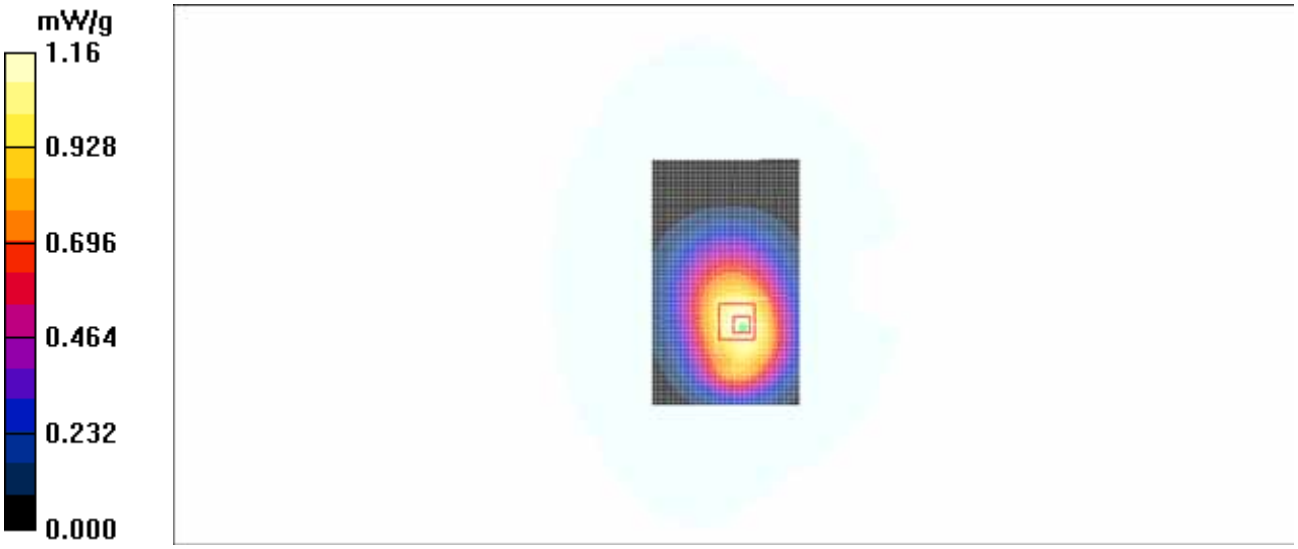



**Fig. 55 850 MHz CH128**


**Fig. 55-1 Z-Scan at power reference point (850 MHz CH128)**

**850 Body Left Side Low with GPRS**

Date/Time: 2011-12-14 16:35:46
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.662 mW/g

**Left Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.3 V/m; Power Drift = 0.106 dB
Peak SAR (extrapolated) = 0.889 W/kg
**SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.421 mW/g**
Maximum value of SAR (measured) = 0.659 mW/g

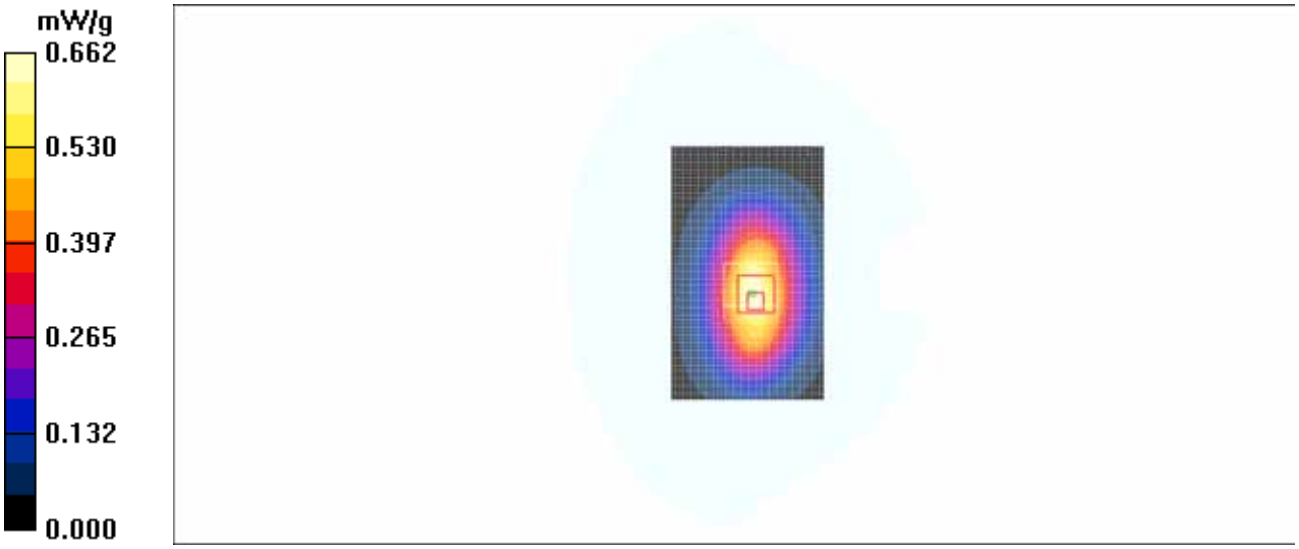



**Fig. 56 850 MHz CH128**

**850 Body Right Side Low with GPRS**

Date/Time: 2011-12-14 16:51:29
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.640 mW/g

**Right Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.4 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 0.855 W/kg
**SAR(1 g) = 0.602 mW/g; SAR(10 g) = 0.417 mW/g**
Maximum value of SAR (measured) = 0.651 mW/g

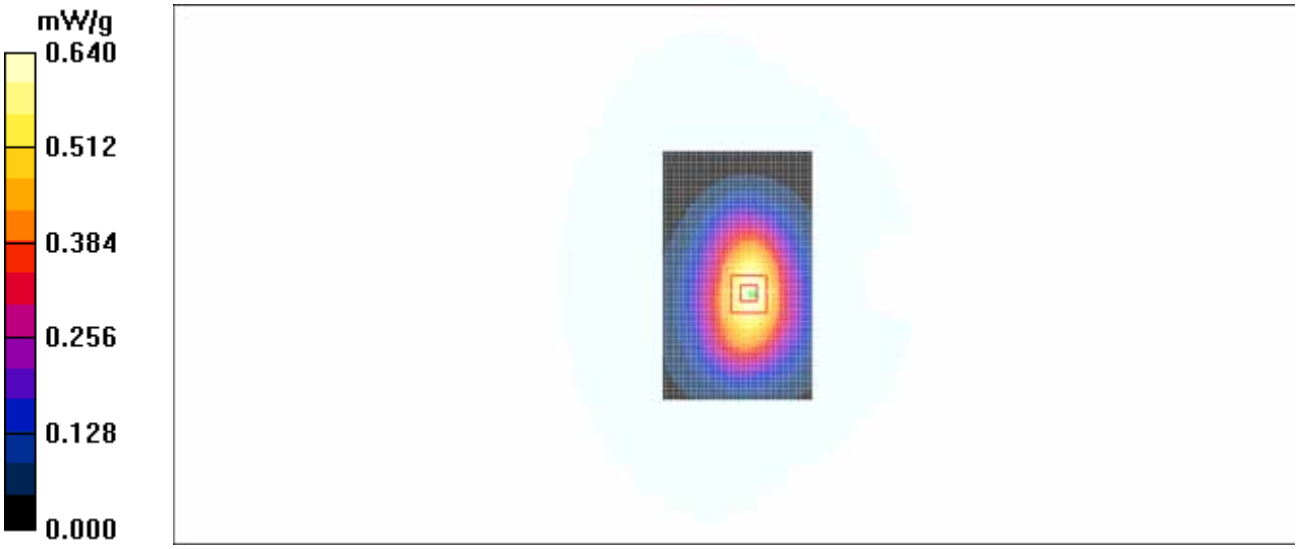



**Fig. 57 850 MHz CH128**

**850 Body Bottom Side Low with GPRS**

Date/Time: 2011-12-14 17:07:05
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.174 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = -0.164 dB
Peak SAR (extrapolated) = 0.287 W/kg
**SAR(1 g) = 0.160 mW/g; SAR(10 g) = 0.094 mW/g**
Maximum value of SAR (measured) = 0.173 mW/g

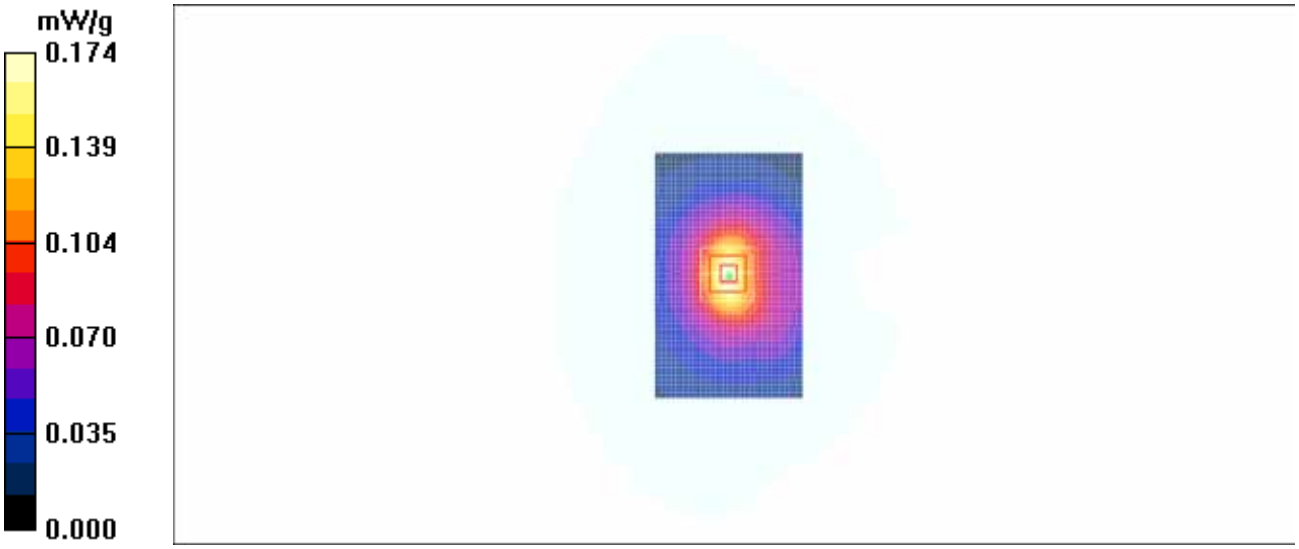



**Fig. 58 850 MHz CH128**

**850 Body Towards Ground Low with EGPRS**

Date/Time: 2011-12-14 17:23:18
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.14 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.3 V/m; Power Drift = 0.046 dB
Peak SAR (extrapolated) = 1.43 W/kg
**SAR(1 g) = 1.03 mW/g; SAR(10 g) = 0.734 mW/g**
Maximum value of SAR (measured) = 1.10 mW/g

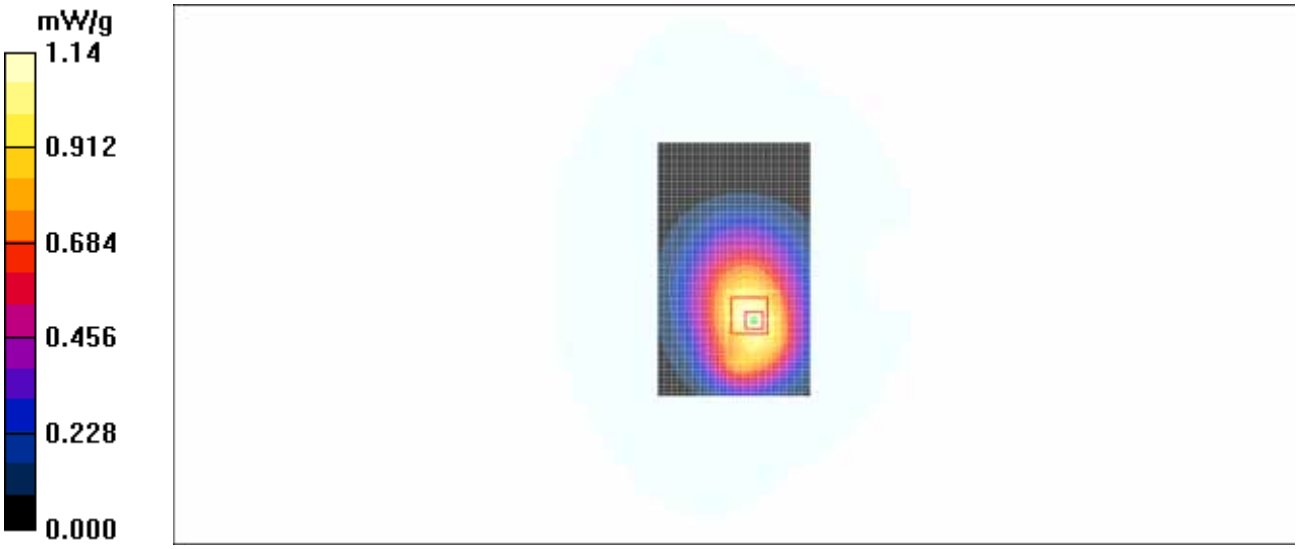



**Fig. 59 850 MHz CH128**

**850 Body Towards Ground Low with Headset_CCB3160A11C1**

Date/Time: 2011-12-14 17:40:02
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.726 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.5 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.929 W/kg
**SAR(1 g) = 0.680 mW/g; SAR(10 g) = 0.483 mW/g**
Maximum value of SAR (measured) = 0.722 mW/g

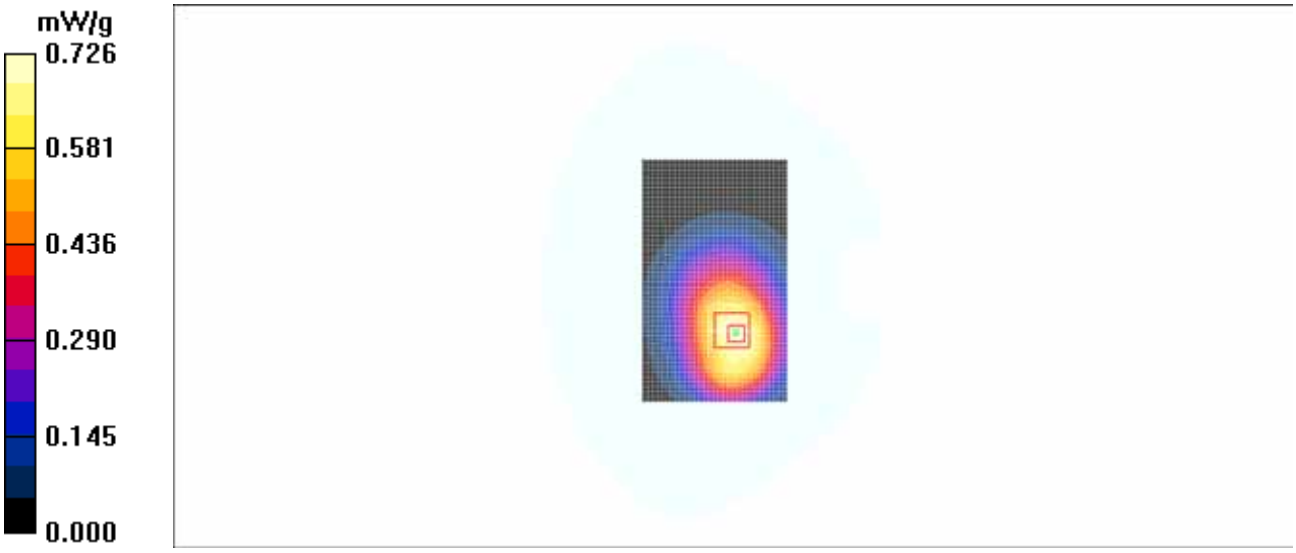



**Fig. 60 850 MHz CH128**

**850 Body Towards Ground Low with Headset_CCB3160A11C4**

Date/Time: 2011-12-14 17:56:31
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.794 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.0 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 0.976 W/kg
**SAR(1 g) = 0.739 mW/g; SAR(10 g) = 0.536 mW/g**
Maximum value of SAR (measured) = 0.777 mW/g

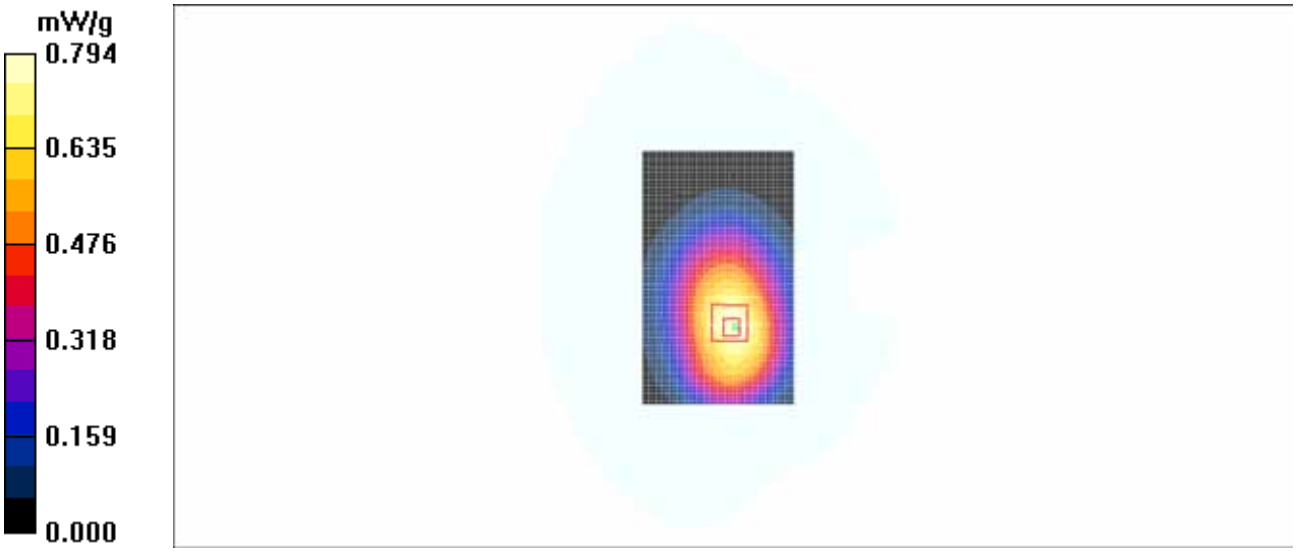



**Fig. 61 850 MHz CH128**

**850 Body Towards Ground Low with Headset_CCB3160A15C1**

Date/Time: 2011-12-14 18:12:44
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.691 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.5 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.916 W/kg
**SAR(1 g) = 0.659 mW/g; SAR(10 g) = 0.464 mW/g**
Maximum value of SAR (measured) = 0.700 mW/g

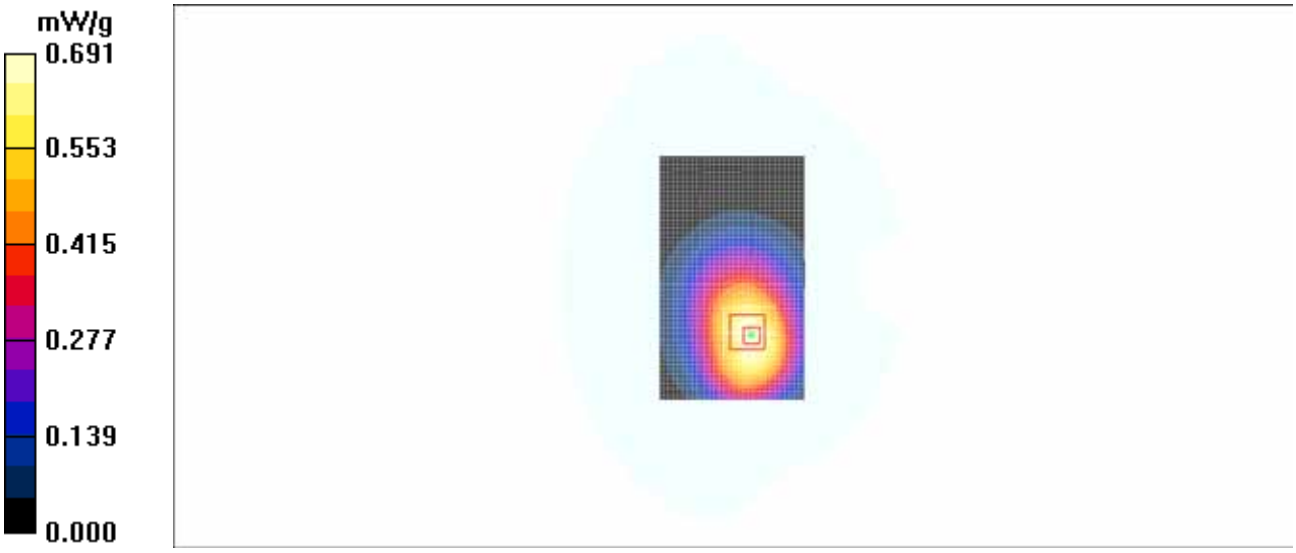



**Fig. 62 850 MHz CH128**

**850 Body Towards Ground Low with Headset_CCB3160A15C4**

Date/Time: 2011-12-14 18:28:53
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.783 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.2 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 0.994 W/kg
**SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.531 mW/g**
Maximum value of SAR (measured) = 0.781 mW/g

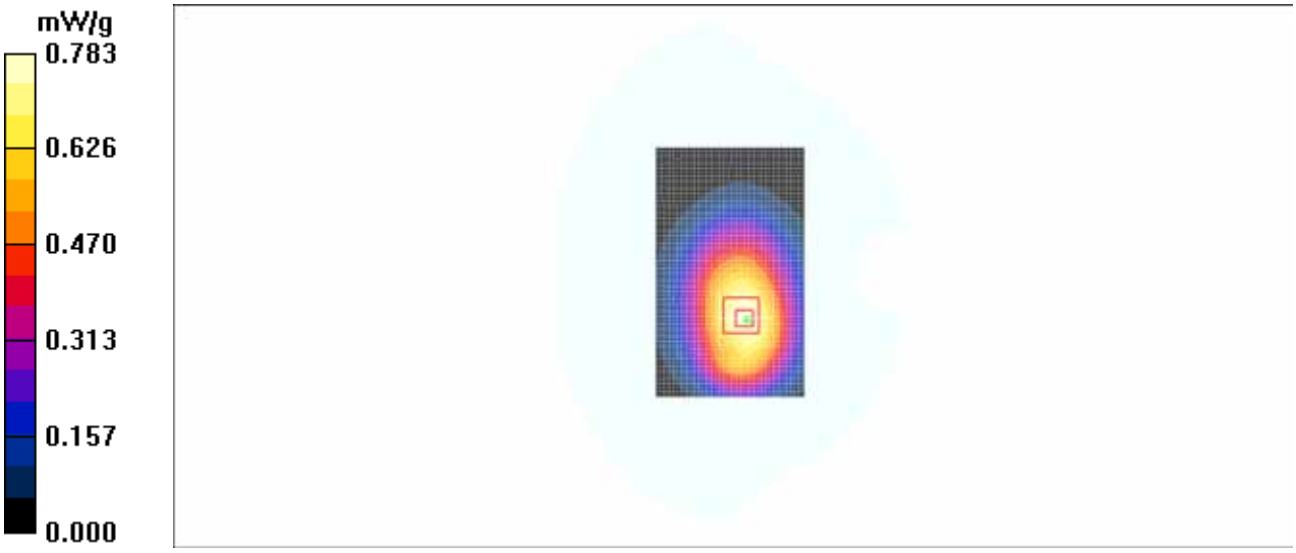



**Fig. 63 850 MHz CH128**

**1900 Body Towards Phantom High with GPRS**

Date/Time: 2011-12-15 15:04:11
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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 Phantom High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.850 mW/g

**Toward Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.038 dB
Peak SAR (extrapolated) = 1.29 W/kg
**SAR(1 g) = 0.762 mW/g; SAR(10 g) = 0.447 mW/g**
Maximum value of SAR (measured) = 0.808 mW/g

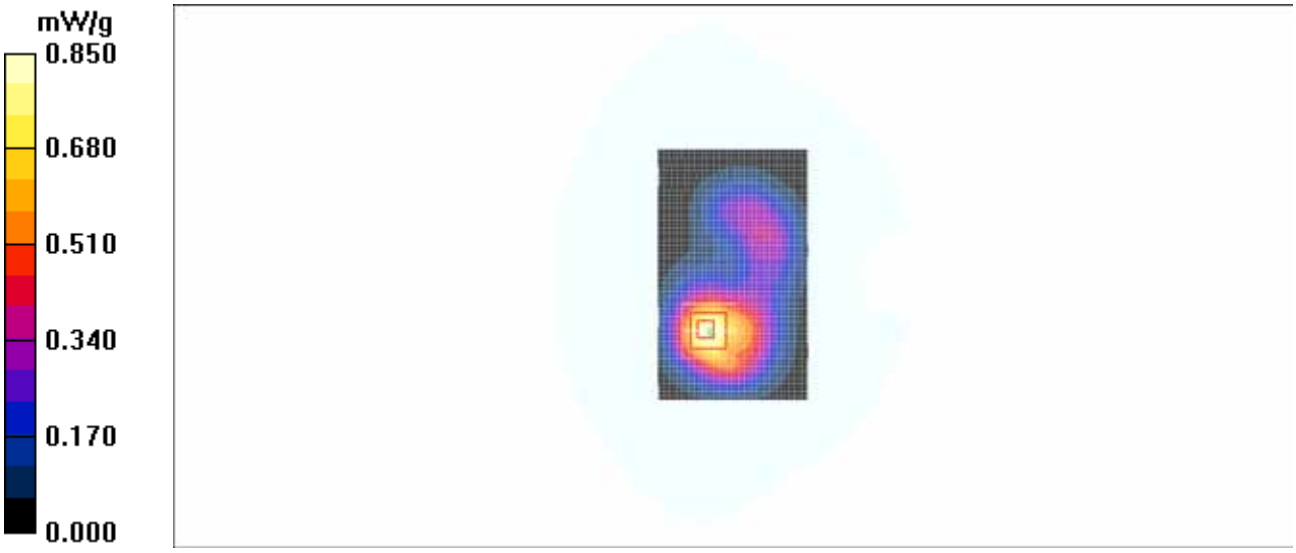



**Fig. 64 1900 MHz CH810**

**1900 Body Towards Ground High with GPRS**

Date/Time: 2011-12-15 15:19:34
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.956 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.0 V/m; Power Drift = -0.164 dB
Peak SAR (extrapolated) = 1.62 W/kg
**SAR(1 g) = 0.905 mW/g; SAR(10 g) = 0.517 mW/g**
Maximum value of SAR (measured) = 0.956 mW/g

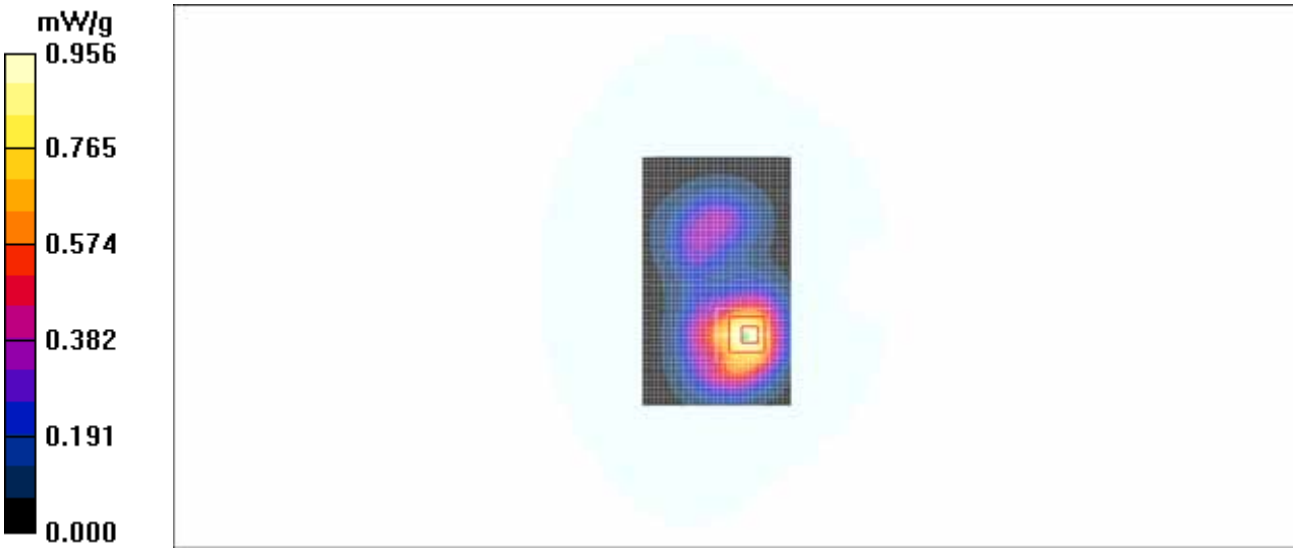



**Fig. 65 1900 MHz CH810**

**1900 Body Towards Ground Middle with GPRS**

Date/Time: 2011-12-15 15:34:55
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.998 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.4 V/m; Power Drift = -0.156 dB
Peak SAR (extrapolated) = 1.58 W/kg
**SAR(1 g) = 0.917 mW/g; SAR(10 g) = 0.536 mW/g**
Maximum value of SAR (measured) = 0.977 mW/g

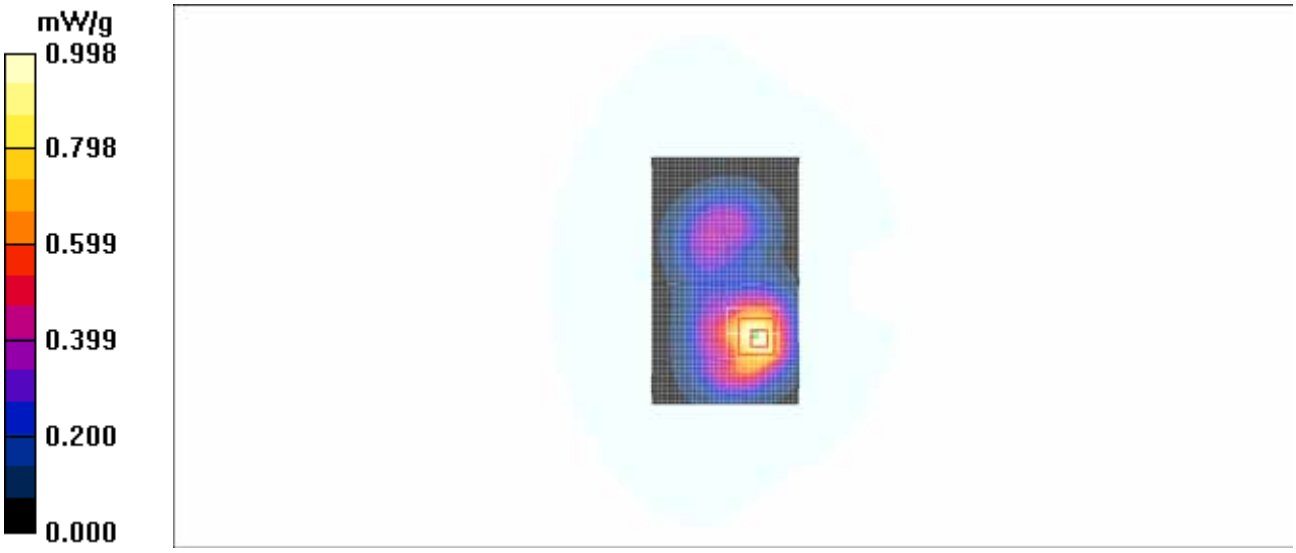



**Fig. 66 1900 MHz CH661**

**1900 Body Towards Ground Low with GPRS**

Date/Time: 2011-12-15 15:50:21
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.785 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 1.26 W/kg
**SAR(1 g) = 0.753 mW/g; SAR(10 g) = 0.448 mW/g**
Maximum value of SAR (measured) = 0.798 mW/g

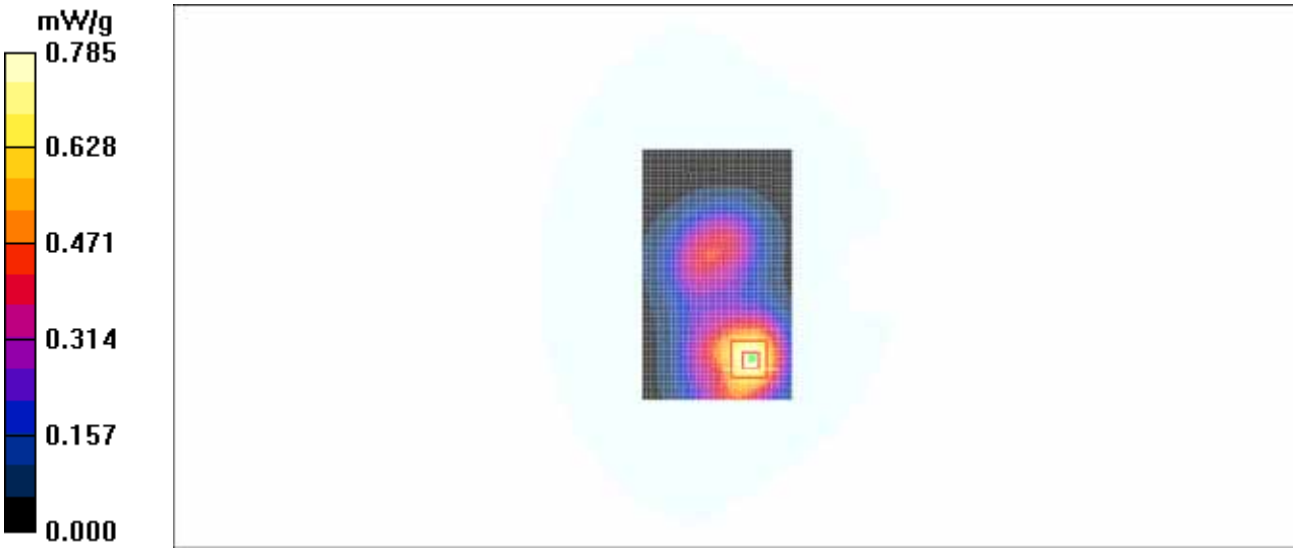



**Fig. 67 1900 MHz CH512**

**1900 Body Left Side High with GPRS**

Date/Time: 2011-12-15 16:05:46
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Left Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.258 mW/g

**Left Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = 0.191 dB
Peak SAR (extrapolated) = 0.375 W/kg
**SAR(1 g) = 0.221 mW/g; SAR(10 g) = 0.127 mW/g**
Maximum value of SAR (measured) = 0.246 mW/g

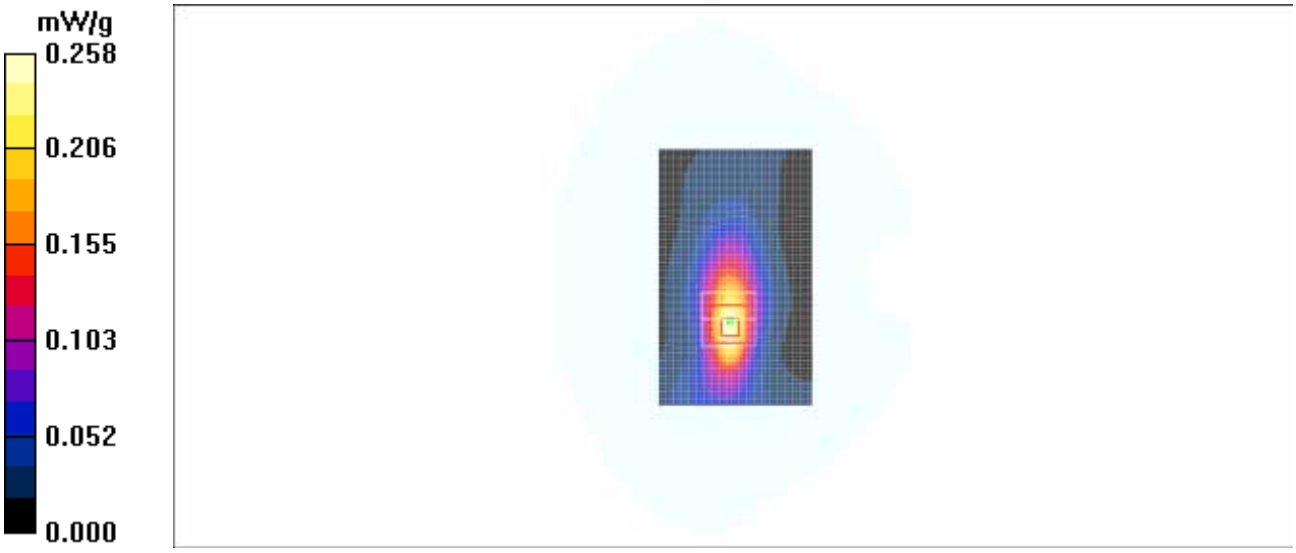



**Fig. 68 1900 MHz CH810**

**1900 Body Right Side High with GPRS**
Date/Time: 2011-12-15 16:21:14
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Right Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.259 mW/g

**Right Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.93 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.370 W/kg
**SAR(1 g) = 0.233 mW/g; SAR(10 g) = 0.136 mW/g**
Maximum value of SAR (measured) = 0.260 mW/g

**Right Side High/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.93 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.248 W/kg
**SAR(1 g) = 0.151 mW/g; SAR(10 g) = 0.094 mW/g**
Maximum value of SAR (measured) = 0.162 mW/g

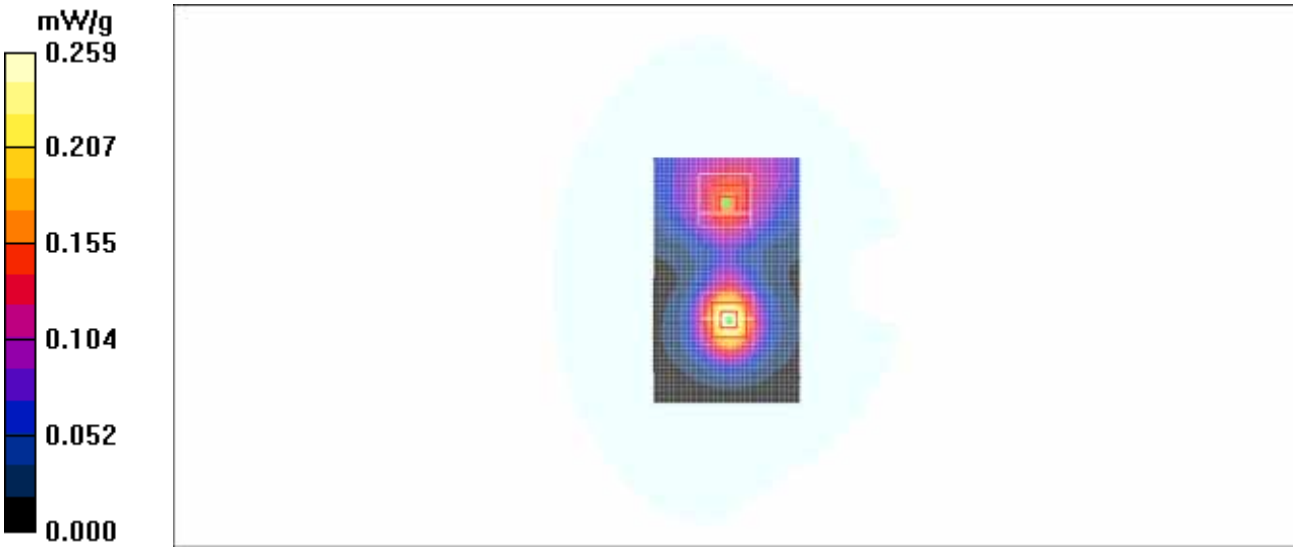



**Fig. 69 1900 MHz CH810**

**1900 Body Bottom Side High with GPRS**

Date/Time: 2011-12-15 16:36:45
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.12 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.9 V/m; Power Drift = 0.148 dB
Peak SAR (extrapolated) = 1.51 W/kg
**SAR(1 g) = 0.964 mW/g; SAR(10 g) = 0.542 mW/g**
Maximum value of SAR (measured) = 1.06 mW/g

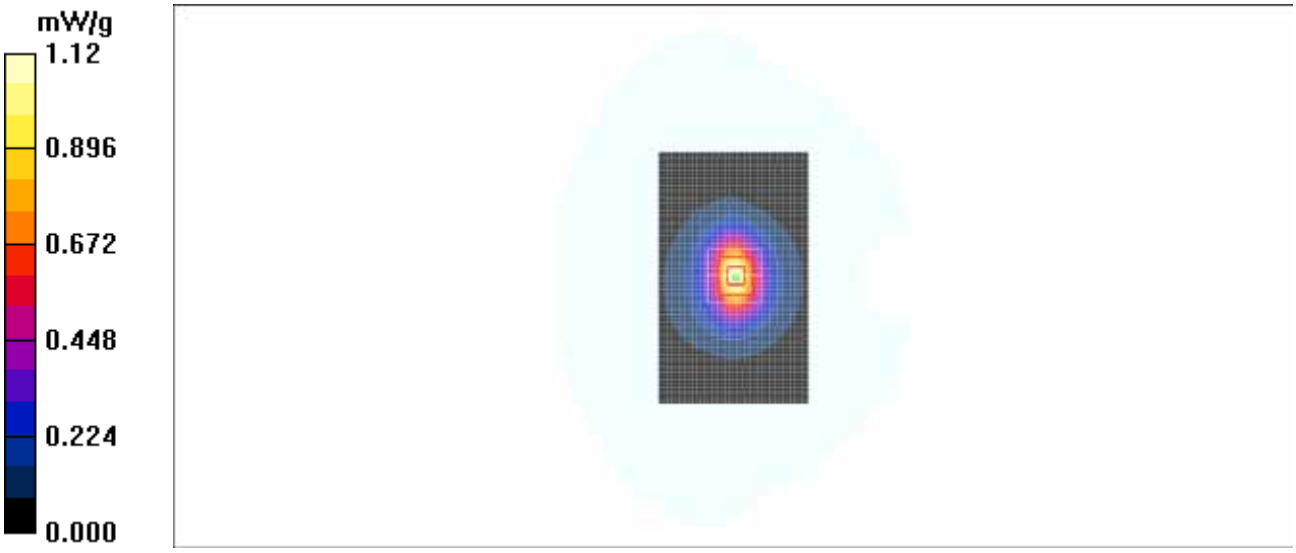



**Fig. 70 1900 MHz CH810**


**Fig. 70-1 Z-Scan at power reference point (1900 MHz CH810)**

**1900 Body Bottom Side Middle with GPRS**

Date/Time: 2011-12-15 16:52:17
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.05 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.5 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 1.50 W/kg
**SAR(1 g) = 0.935 mW/g; SAR(10 g) = 0.537 mW/g**
Maximum value of SAR (measured) = 1.02 mW/g

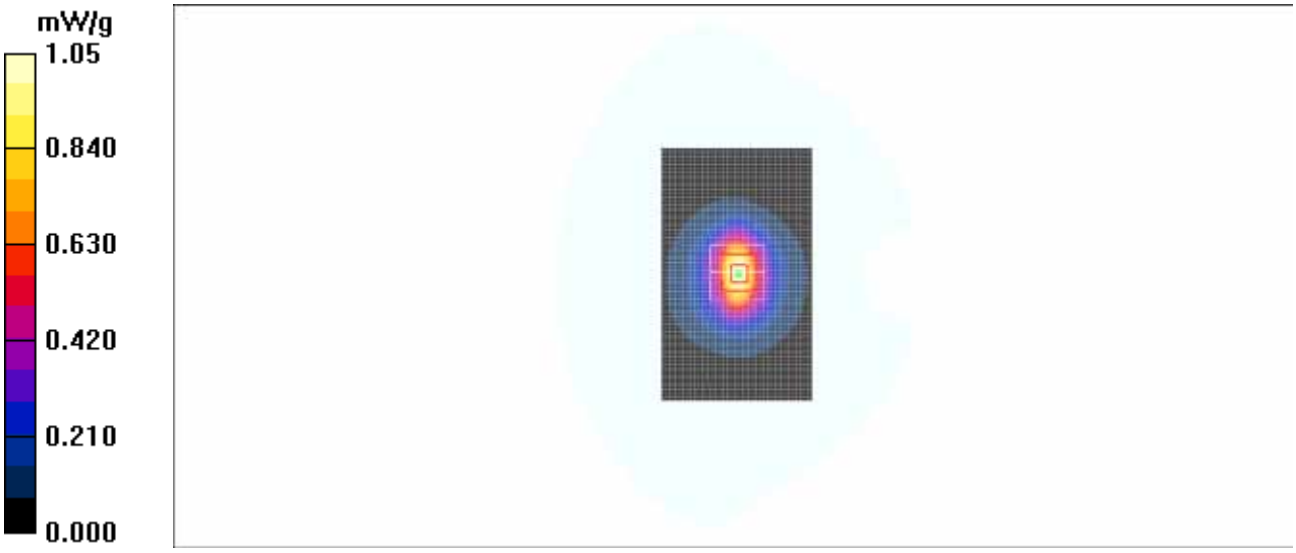



**Fig. 71 1900 MHz CH661**

**1900 Body Bottom Side Low with GPRS**

Date/Time: 2011-12-15 17:07:34
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.983 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.4 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 1.44 W/kg
**SAR(1 g) = 0.894 mW/g; SAR(10 g) = 0.503 mW/g**
Maximum value of SAR (measured) = 1.00 mW/g

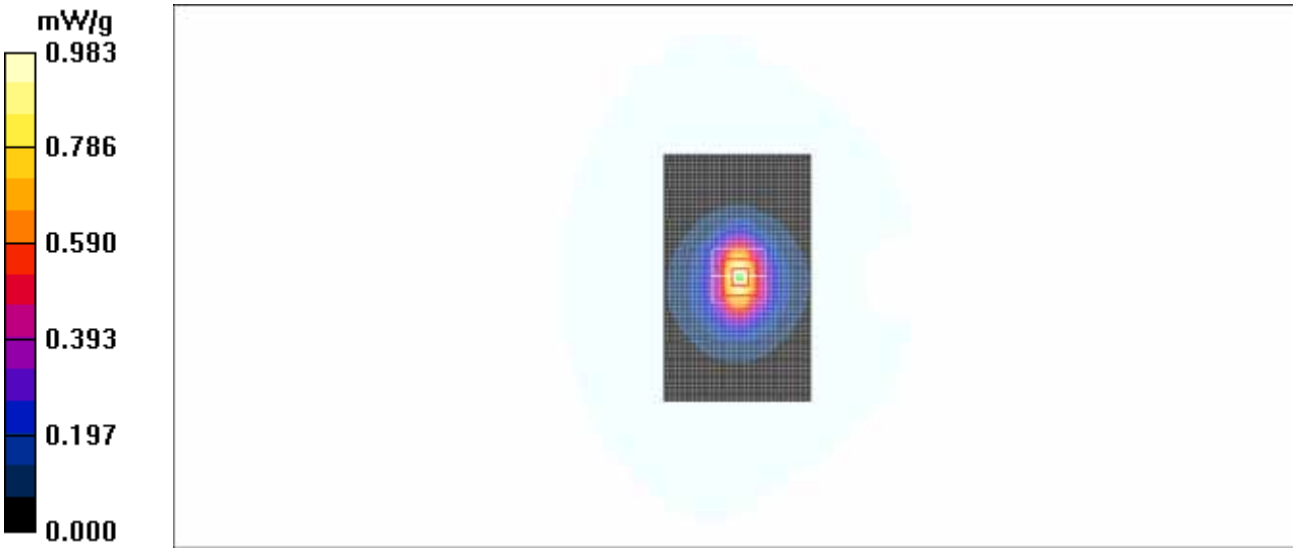



**Fig. 72 1900 MHz CH512**

**1900 Body Bottom Side High with EGPRS**

Date/Time: 2011-12-15 17:24:15
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.04 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.4 V/m; Power Drift = -0.197 dB
Peak SAR (extrapolated) = 1.47 W/kg
**SAR(1 g) = 0.911 mW/g; SAR(10 g) = 0.517 mW/g**
Maximum value of SAR (measured) = 1.02 mW/g

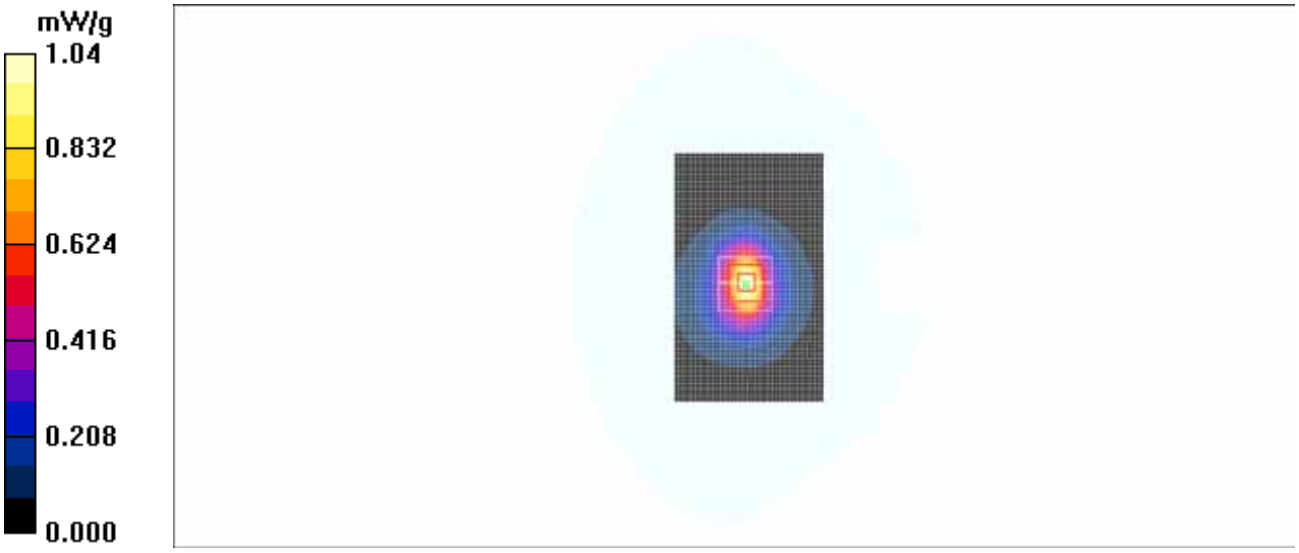



**Fig. 73 1900 MHz CH810**

**1900 Body Bottom Side High with Headset_CCB3160A11C1**

Date/Time: 2011-12-15 17:40:46
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.541 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.8 V/m; Power Drift = -0.051 dB
Peak SAR (extrapolated) = 0.833 W/kg
**SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.282 mW/g**
Maximum value of SAR (measured) = 0.563 mW/g

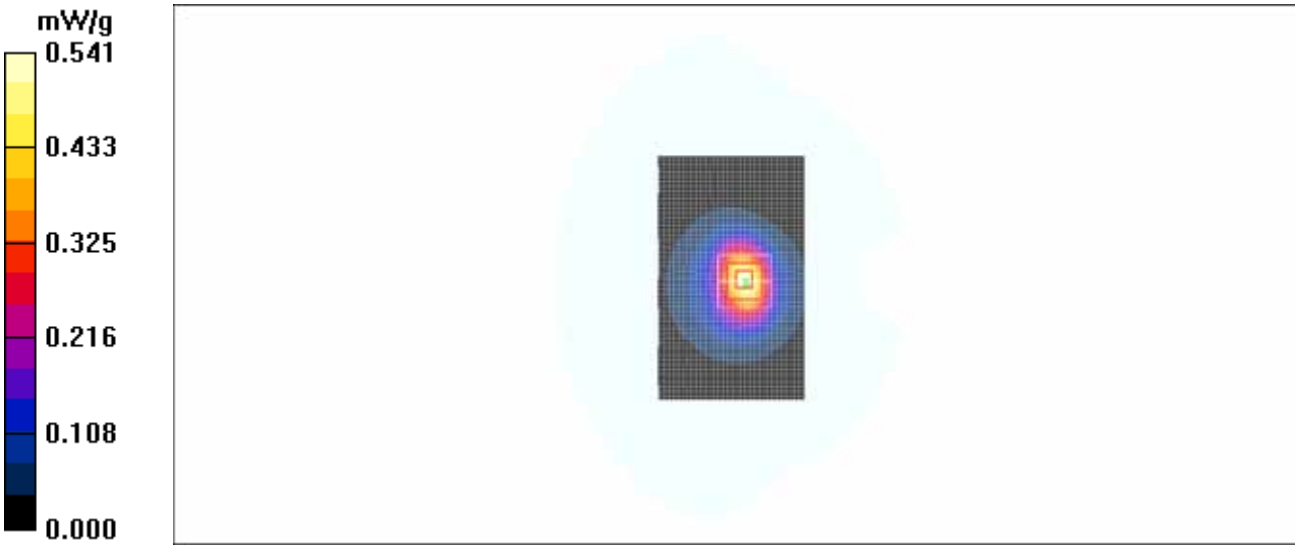



**Fig. 74 1900 MHz CH810**

**1900 Body Bottom Side High with Headset_CCB3160A11C4**

Date/Time: 2011-12-15 17:57:30
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.681 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.4 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 1.02 W/kg
**SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.333 mW/g**
Maximum value of SAR (measured) = 0.667 mW/g

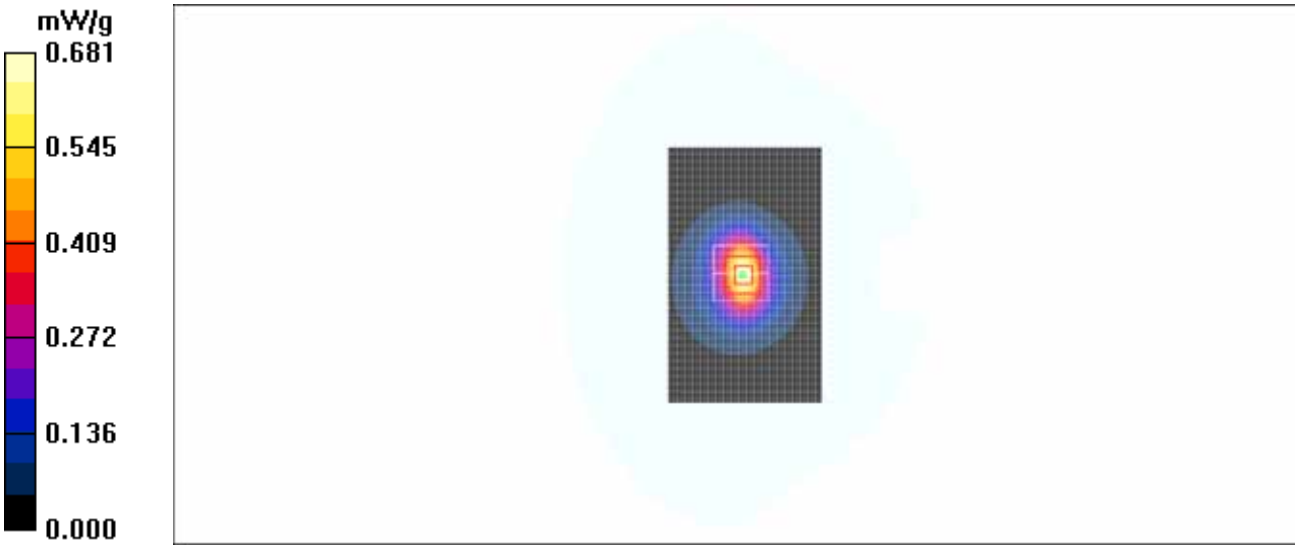



**Fig. 75 1900 MHz CH810**

**1900 Body Bottom Side High with Headset_CCB3160A15C1**

Date/Time: 2011-12-15 18:14:19
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.592 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.3 V/m; Power Drift = -0.153 dB
Peak SAR (extrapolated) = 0.929 W/kg
**SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.310 mW/g**
Maximum value of SAR (measured) = 0.616 mW/g

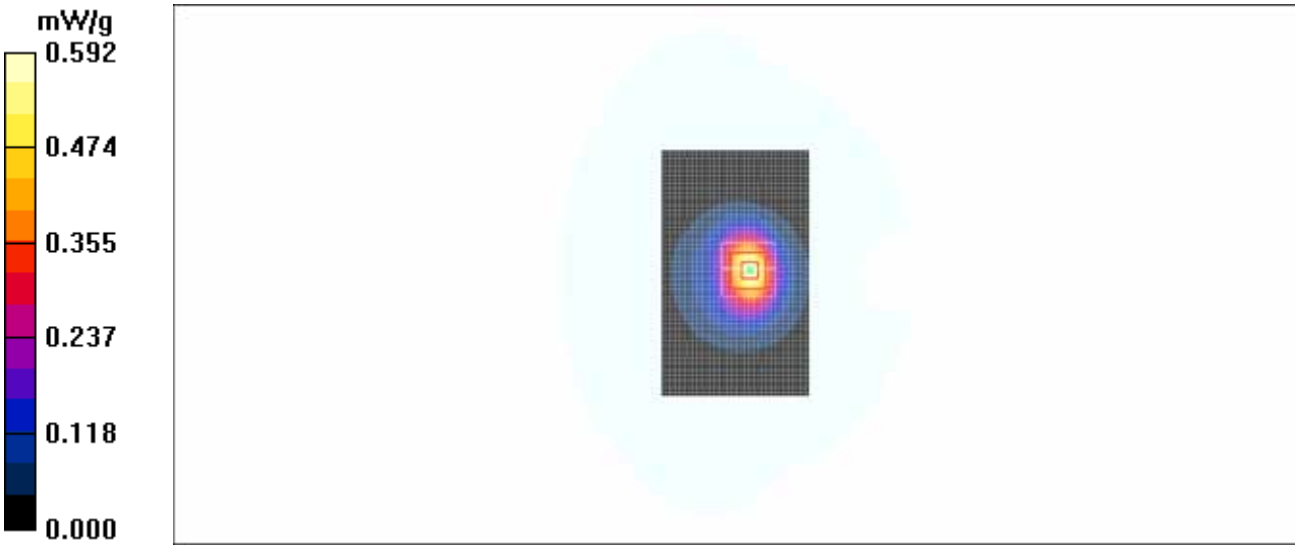



**Fig. 76 1900 MHz CH810**

**1900 Body Bottom Side High with Headset_CCB3160A15C4**

Date/Time: 2011-12-15 18:30:35
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; $\sigma$ = 1.54 mho/m; $\varepsilon r$ = 52.8; $\rho$ = 1000 kg/$m^3$
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)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.678 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.3 V/m; Power Drift = 0.005 dB
Peak SAR (extrapolated) = 1.02 W/kg
**SAR(1 g) = 0.603 mW/g; SAR(10 g) = 0.333 mW/g**
Maximum value of SAR (measured) = 0.672 mW/g

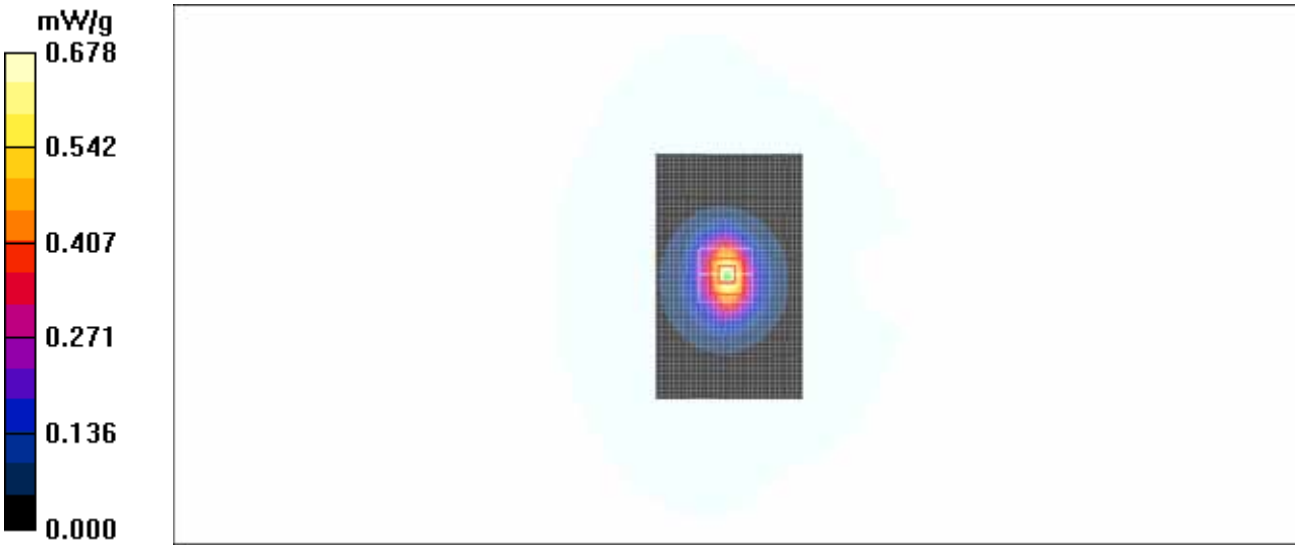



**Fig. 77 1900 MHz CH810**

**WCDMA 850 Body Towards Phantom Middle**

Date/Time: 2011-12-14 19:11:24
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.722 mW/g

**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.869 W/kg
**SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.509 mW/g**
Maximum value of SAR (measured) = 0.722 mW/g

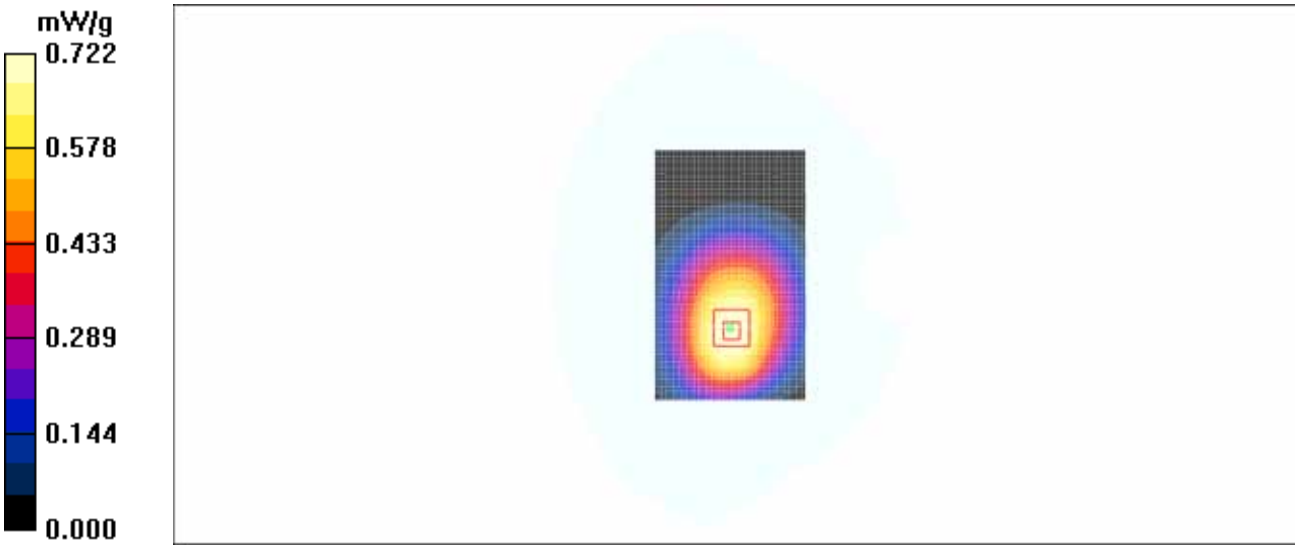



**Fig. 78 850 MHz CH4182**

**WCDMA 850 Body Towards Ground High**
Date/Time: 2011-12-14 19:42:03
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.95 mho/m; εr = 54.8; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.899 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = -0.019 dB
Peak SAR (extrapolated) = 1.13 W/kg
**SAR(1 g) = 0.844 mW/g; SAR(10 g) = 0.601 mW/g**
Maximum value of SAR (measured) = 0.895 mW/g

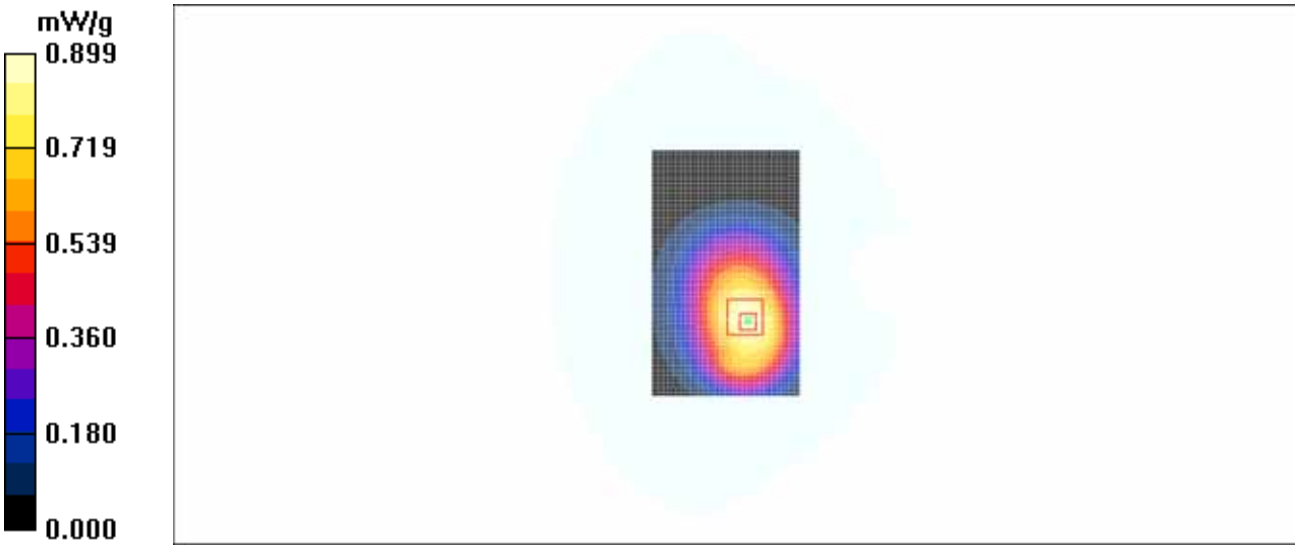



**Fig. 79 850 MHz CH4233**

**WCDMA 850 Body Towards Ground Middle**
Date/Time: 2011-12-14 19:26:42
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.855 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.3 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 1.10 W/kg
**SAR(1 g) = 0.802 mW/g; SAR(10 g) = 0.572 mW/g**
Maximum value of SAR (measured) = 0.848 mW/g

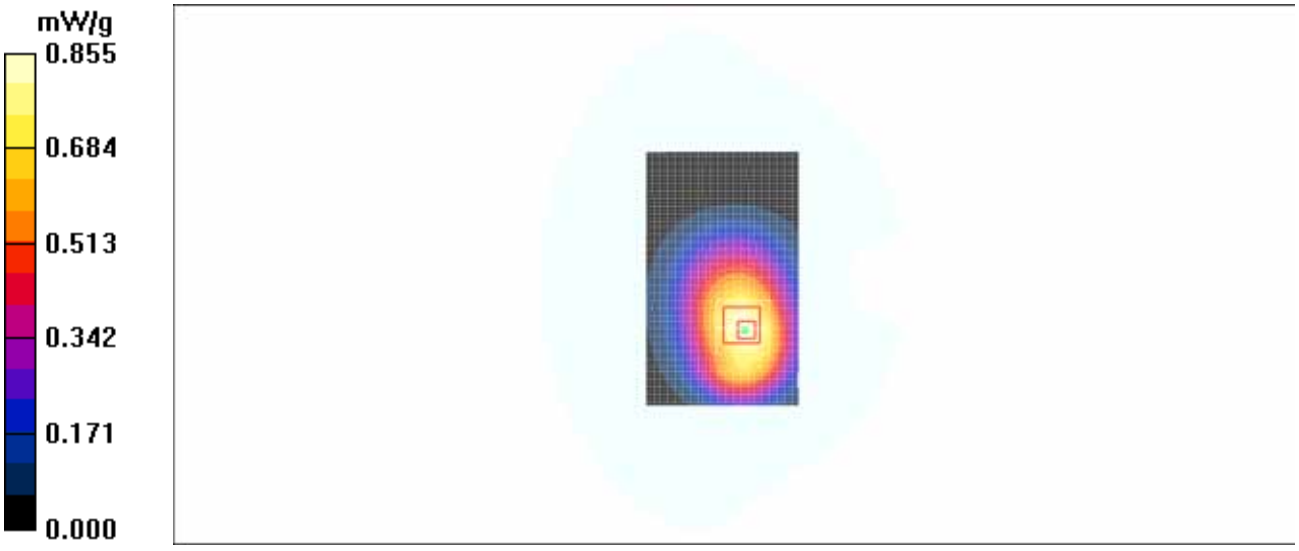



**Fig. 80 850 MHz CH4182**

**WCDMA 850 Body Towards Ground Low**
Date/Time: 2011-12-14 19:57:28
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 55.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.12 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.4 V/m; Power Drift = 0.013 dB
Peak SAR (extrapolated) = 1.41 W/kg
**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.743 mW/g**
Maximum value of SAR (measured) = 1.10 mW/g

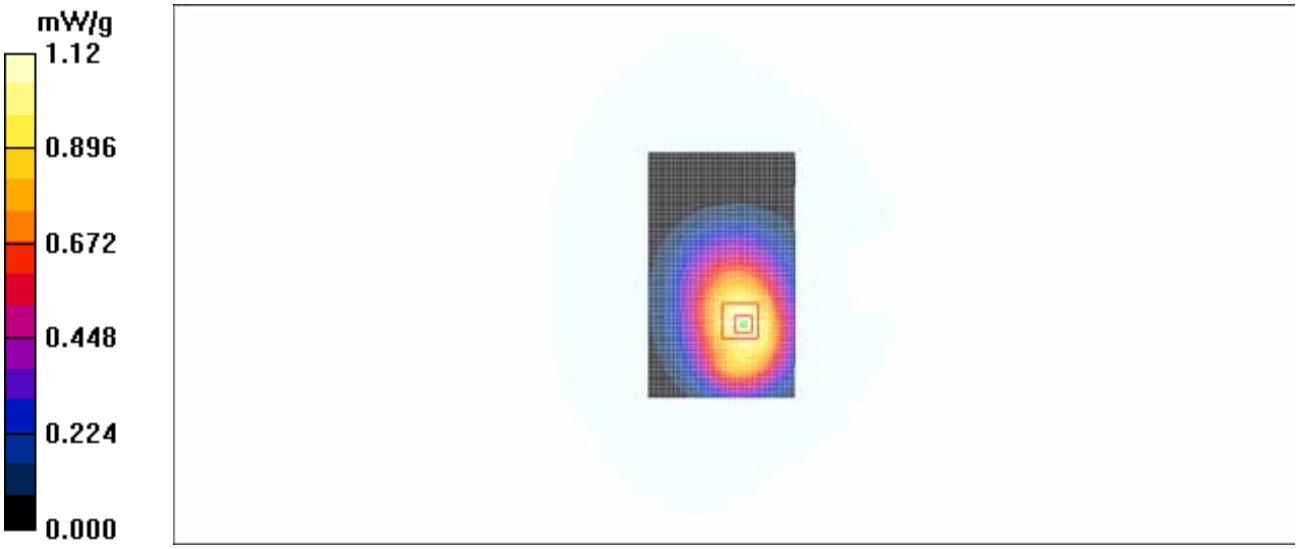



**Fig. 81 850 MHz CH4132**

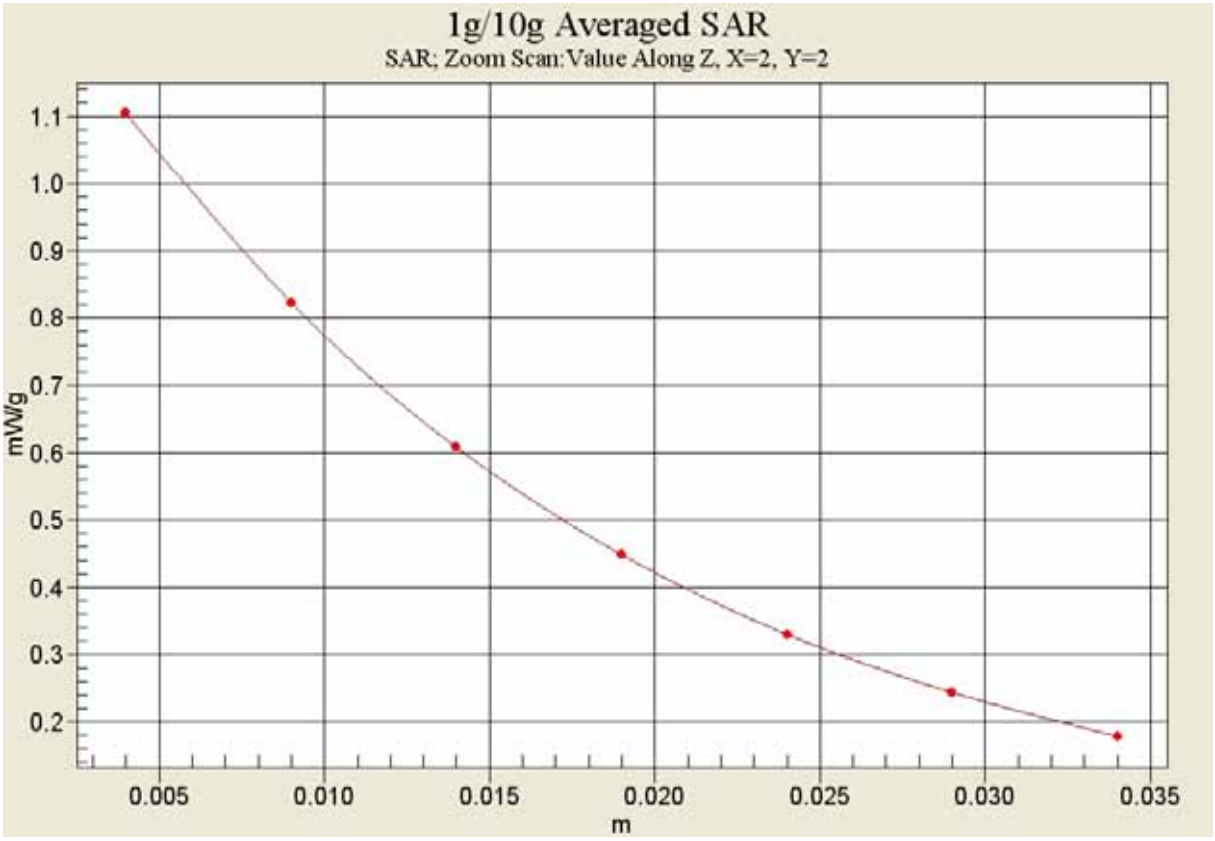



**Fig. 81-1 Z-Scan at power reference point (850 MHz CH4132)**

**WCDMA 850 Body Left Side Middle**
Date/Time: 2011-12-14 20:13:50
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Left Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.518 mW/g

**Left Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.9 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.670 W/kg
**SAR(1 g) = 0.481 mW/g; SAR(10 g) = 0.329 mW/g**
Maximum value of SAR (measured) = 0.516 mW/g

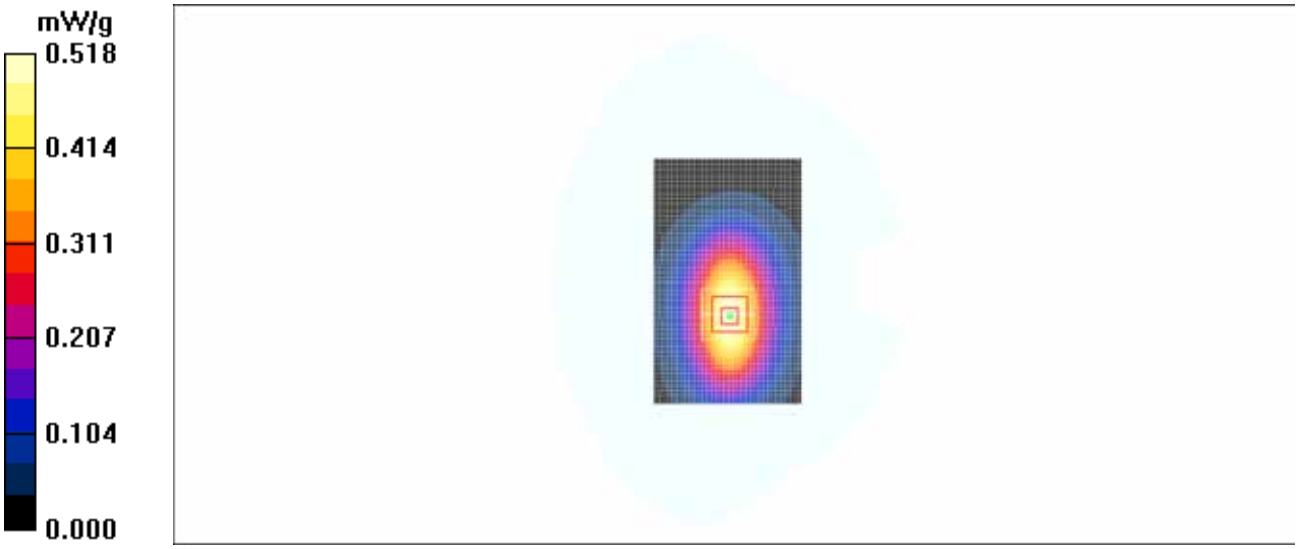



**Fig. 82 850 MHz CH4182**

**WCDMA 850 Body Right Side Middle**
Date/Time: 2011-12-14 20:29:33
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Right Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.521 mW/g

**Right Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.0 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.670 W/kg
**SAR(1 g) = 0.486 mW/g; SAR(10 g) = 0.336 mW/g**
Maximum value of SAR (measured) = 0.520 mW/g

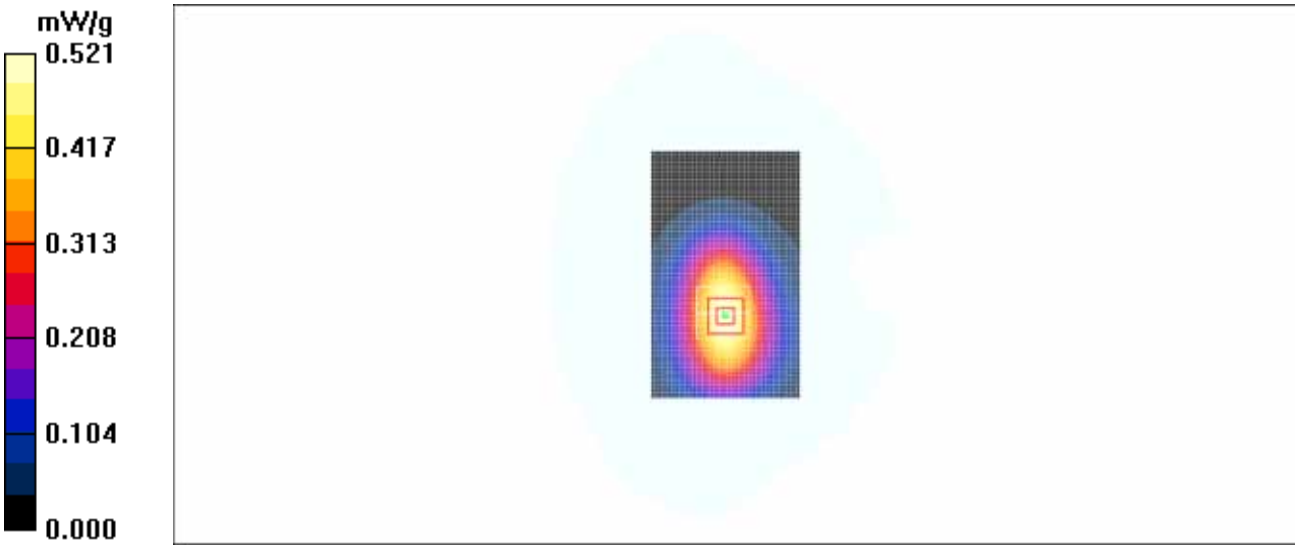



**Fig. 83 850 MHz CH4182**

**WCDMA 850 Body Bottom Side Middle**
Date/Time: 2011-12-14 20:45:53
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Bottom Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.119 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.205 W/kg
**SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.064 mW/g**
Maximum value of SAR (measured) = 0.122 mW/g

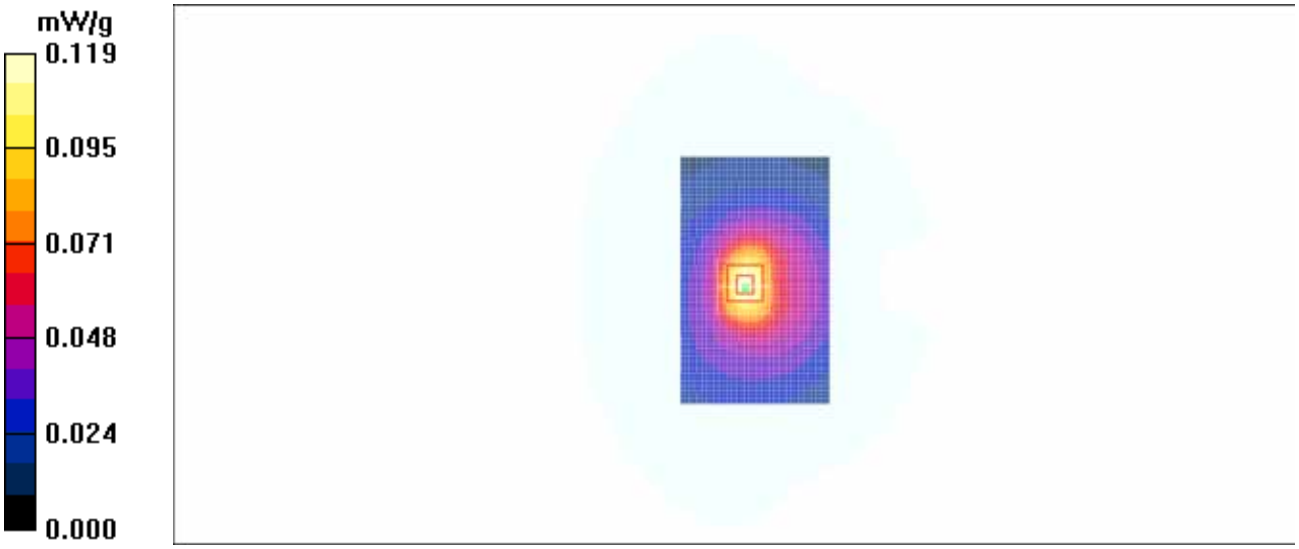



**Fig. 84 850 MHz CH4182**

**WCDMA 850 Body Towards Ground High with Headset_CCB3160A11C1**
Date/Time: 2011-12-14 21:18:04
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 54.8; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.776 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.2 V/m; Power Drift = -0.072 dB
Peak SAR (extrapolated) = 0.991 W/kg
**SAR(1 g) = 0.726 mW/g; SAR(10 g) = 0.516 mW/g**
Maximum value of SAR (measured) = 0.771 mW/g

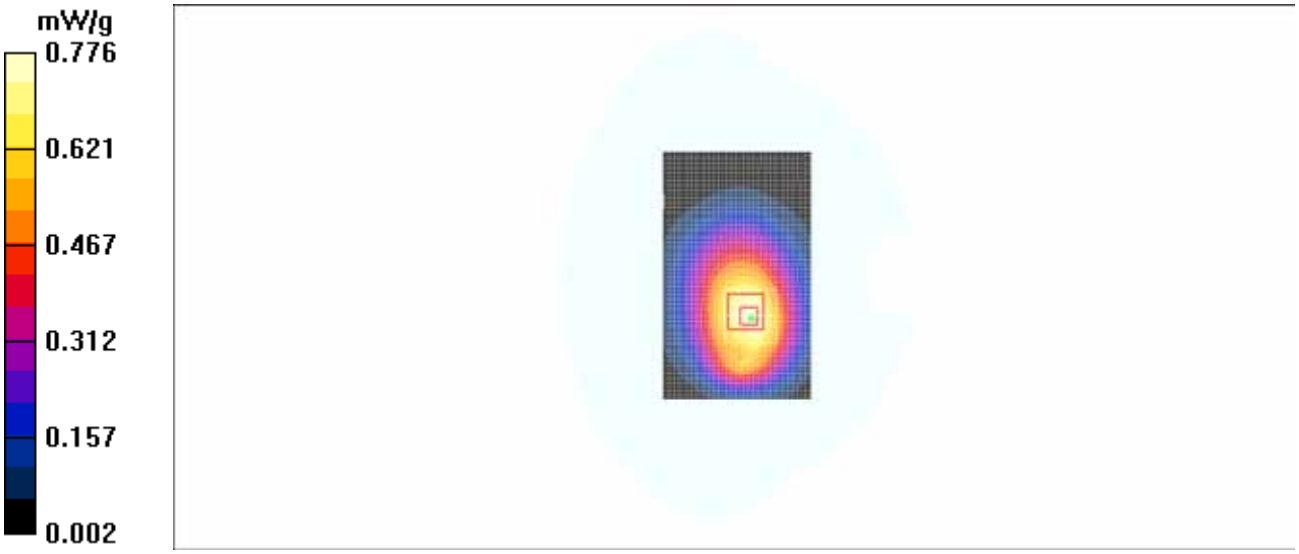



**Fig. 85 850 MHz CH4233**

**WCDMA 850 Body Towards Ground Middle with Headset_CCB3160A11C1**
Date/Time: 2011-12-14 21:02:41
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.762 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.7 V/m; Power Drift = -0.003 dB
Peak SAR (extrapolated) = 0.982 W/kg
**SAR(1 g) = 0.717 mW/g; SAR(10 g) = 0.509 mW/g**
Maximum value of SAR (measured) = 0.762 mW/g

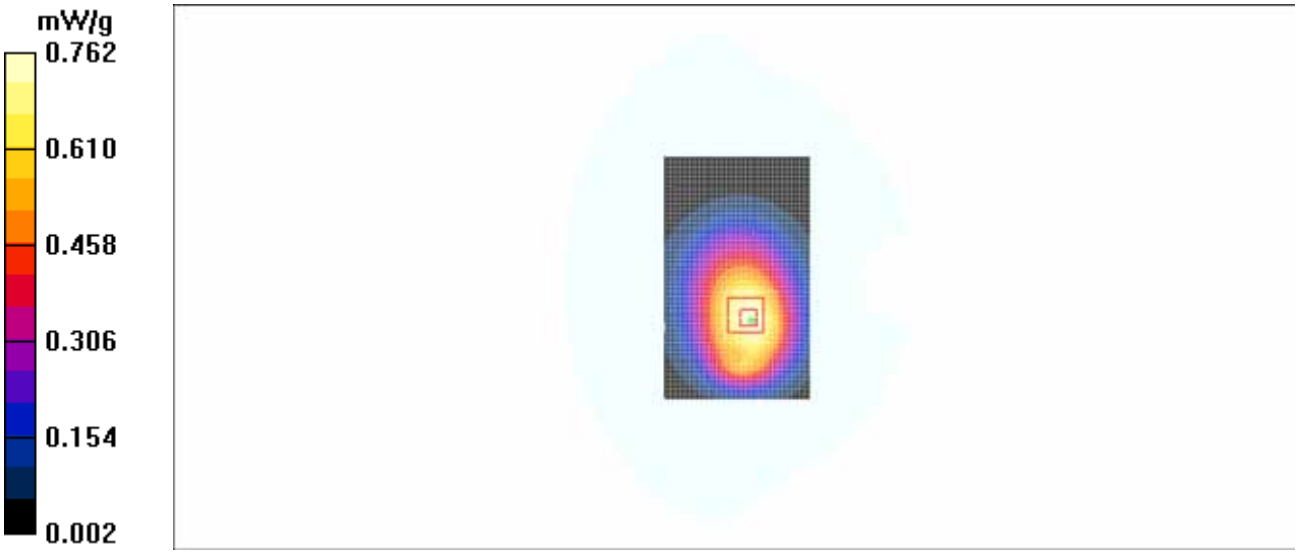



**Fig. 86 850 MHz CH4182**

**WCDMA 850 Body Towards Ground Low with Headset_CCB3160A11C1**
Date/Time: 2011-12-14 21:33:26
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 55.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.974 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.0 V/m; Power Drift = -0.042 dB
Peak SAR (extrapolated) = 1.27 W/kg
**SAR(1 g) = 0.918 mW/g; SAR(10 g) = 0.649 mW/g**
Maximum value of SAR (measured) = 0.974 mW/g

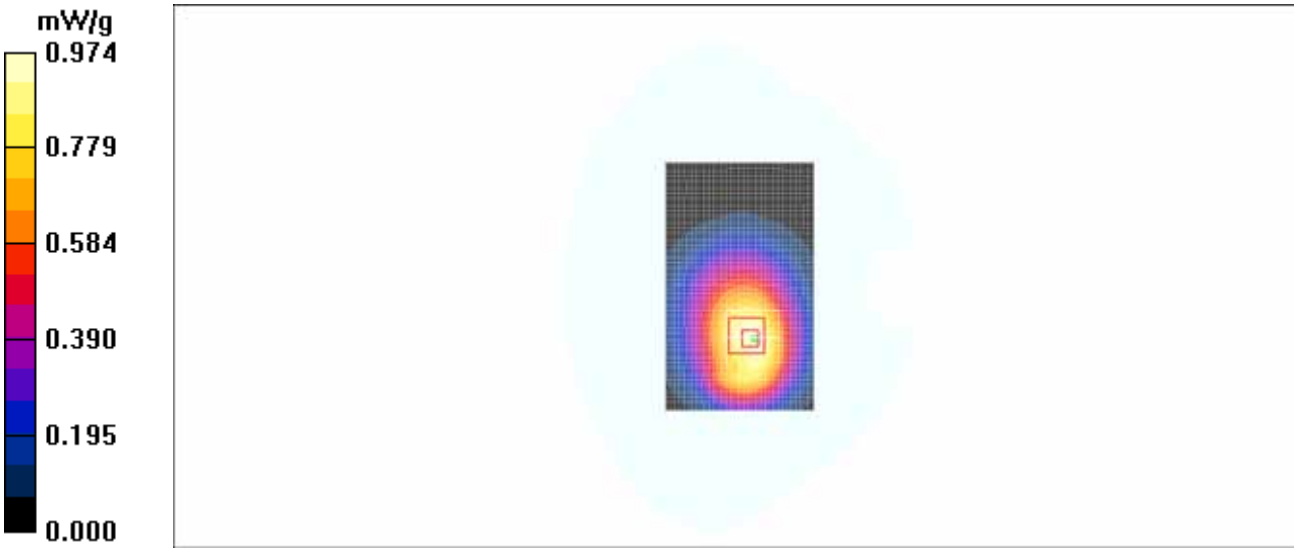



**Fig. 87 850 MHz CH4132**

**WCDMA 850 Body Towards Ground High with Headset_CCB3160A11C4**
Date/Time: 2011-12-14 22:05:06
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.95 mho/m; εr = 54.8; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.809 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.7 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 1.01 W/kg
**SAR(1 g) = 0.768 mW/g; SAR(10 g) = 0.557 mW/g**
Maximum value of SAR (measured) = 0.813 mW/g

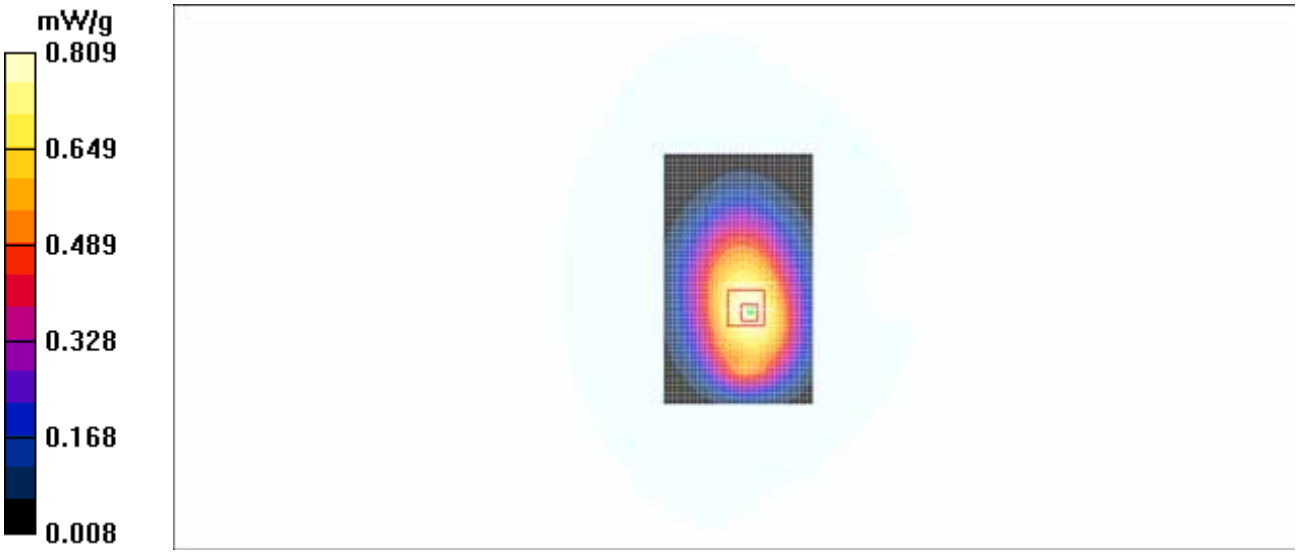



**Fig. 88 850 MHz CH4233**

**WCDMA 850 Body Towards Ground Middle with Headset_CCB3160A11C4**
Date/Time: 2011-12-14 21:49:40
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.805 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.9 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 1.00 W/kg
**SAR(1 g) = 0.758 mW/g; SAR(10 g) = 0.549 mW/g**
Maximum value of SAR (measured) = 0.799 mW/g

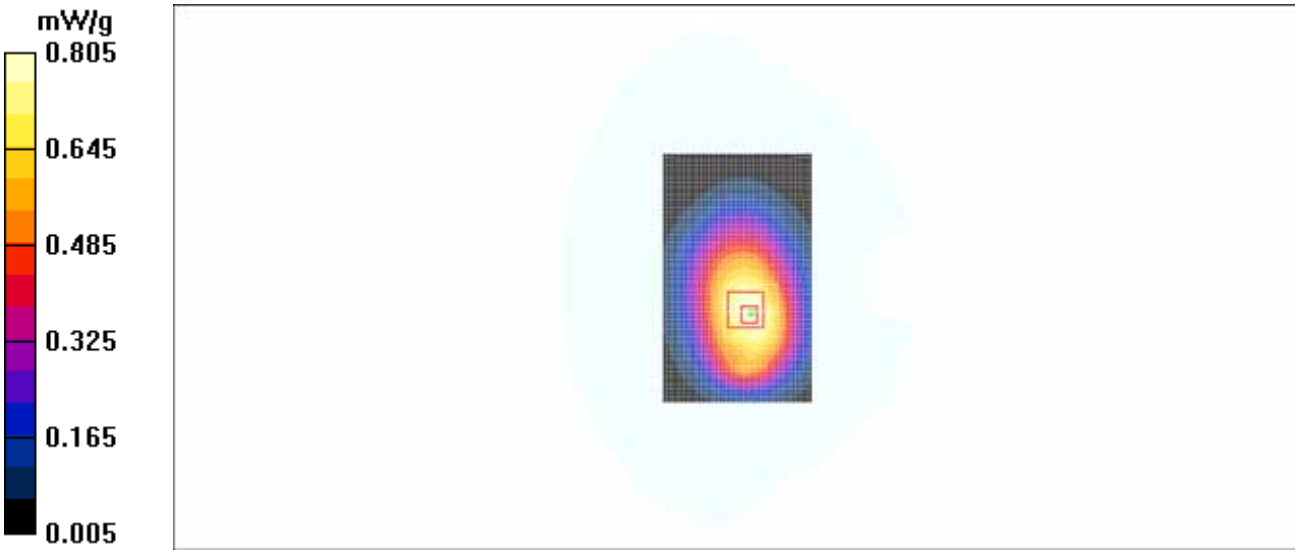



**Fig. 89 850 MHz CH4182**

**WCDMA 850 Body Towards Ground Low with Headset_CCB3160A11C4**
Date/Time: 2011-12-14 22:20:23
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 55.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.997 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.2 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 1.25 W/kg
**SAR(1 g) = 0.936 mW/g; SAR(10 g) = 0.675 mW/g**
Maximum value of SAR (measured) = 0.987 mW/g

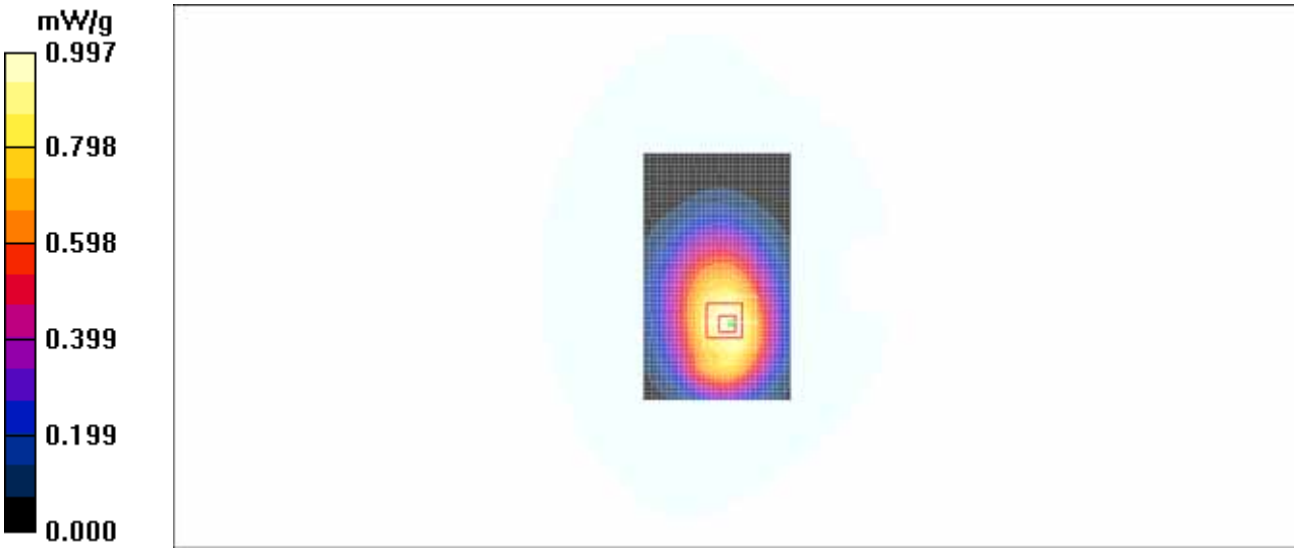



**Fig. 90 850 MHz CH4132**

**WCDMA 850 Body Towards Ground High with Headset_CCB3160A15C1**
Date/Time: 2011-12-14 22:51:22
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 54.8; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.786 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.0 V/m; Power Drift = -0.023 dB
Peak SAR (extrapolated) = 1.01 W/kg
**SAR(1 g) = 0.741 mW/g; SAR(10 g) = 0.529 mW/g**
Maximum value of SAR (measured) = 0.786 mW/g

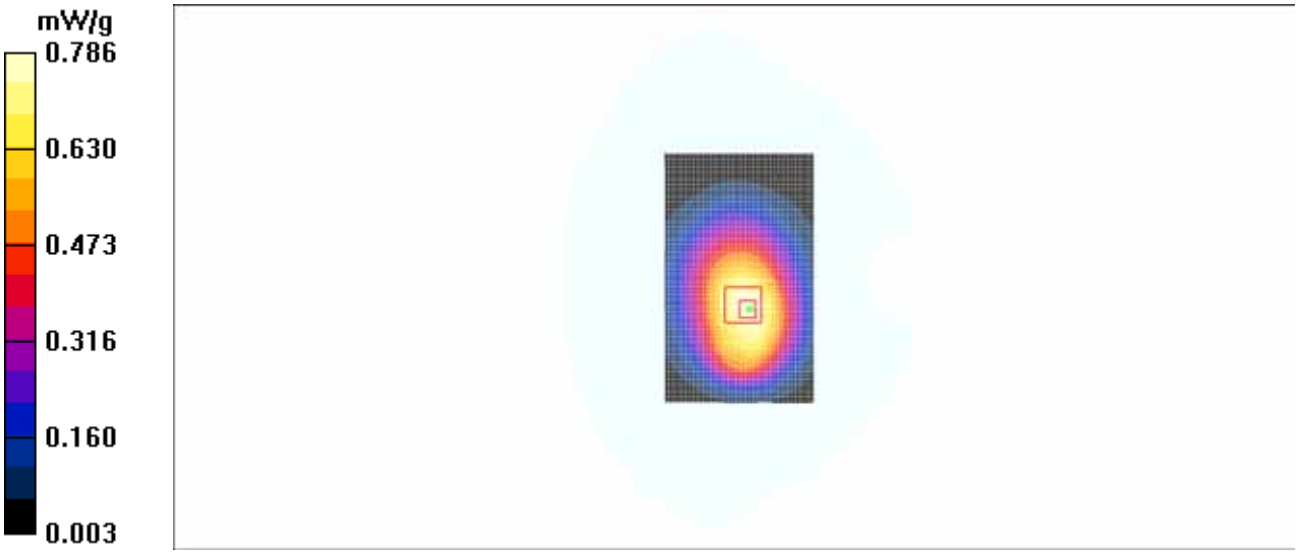



**Fig. 91 850 MHz CH4233**

**WCDMA 850 Body Towards Ground Middle with Headset_CCB3160A15C1**
Date/Time: 2011-12-14 22:36:00
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.734 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.6 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 0.956 W/kg
**SAR(1 g) = 0.696 mW/g; SAR(10 g) = 0.495 mW/g**
Maximum value of SAR (measured) = 0.740 mW/g

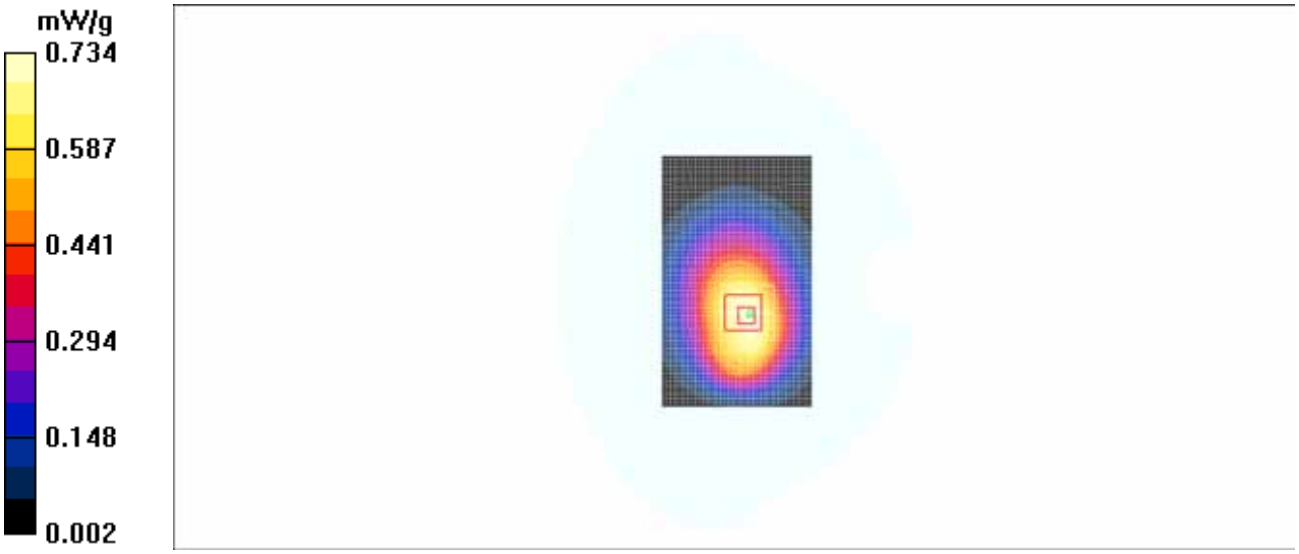



**Fig. 92 850 MHz CH4182**

**WCDMA 850 Body Towards Ground Low with Headset_CCB3160A15C1**
Date/Time: 2011-12-14 23:04:45
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 55.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.993 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.4 V/m; Power Drift = 0.007 dB
Peak SAR (extrapolated) = 1.28 W/kg
**SAR(1 g) = 0.926 mW/g; SAR(10 g) = 0.653 mW/g**
Maximum value of SAR (measured) = 0.980 mW/g

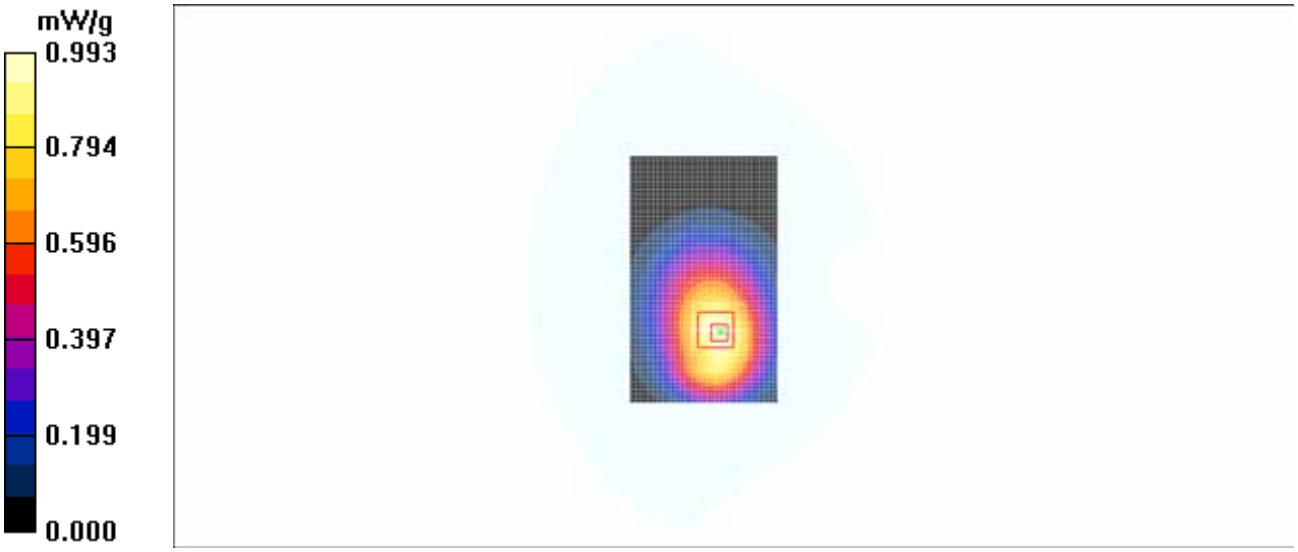



**Fig. 93 850 MHz CH4132**

**WCDMA 850 Body Towards Ground High with Headset_CCB3160A15C4**
Date/Time: 2011-12-14 23:36:29
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.95 mho/m; εr = 54.8; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 846.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.808 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.6 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 1.01 W/kg
**SAR(1 g) = 0.769 mW/g; SAR(10 g) = 0.558 mW/g**
Maximum value of SAR (measured) = 0.811 mW/g

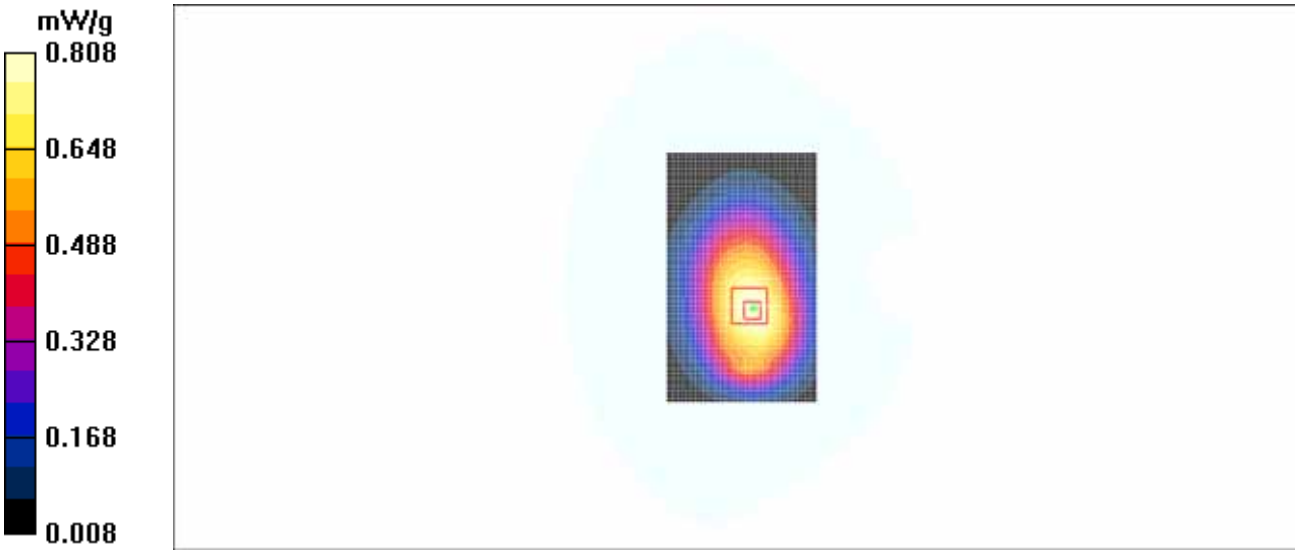



**Fig. 94 850 MHz CH4233**

**WCDMA 850 Body Towards Ground Middle with Headset_CCB3160A15C4**
Date/Time: 2011-12-14 23:20:58
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.4 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon r$ = 55.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 836.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.802 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.0 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 1.01 W/kg
**SAR(1 g) = 0.761 mW/g; SAR(10 g) = 0.549 mW/g**
Maximum value of SAR (measured) = 0.807 mW/g

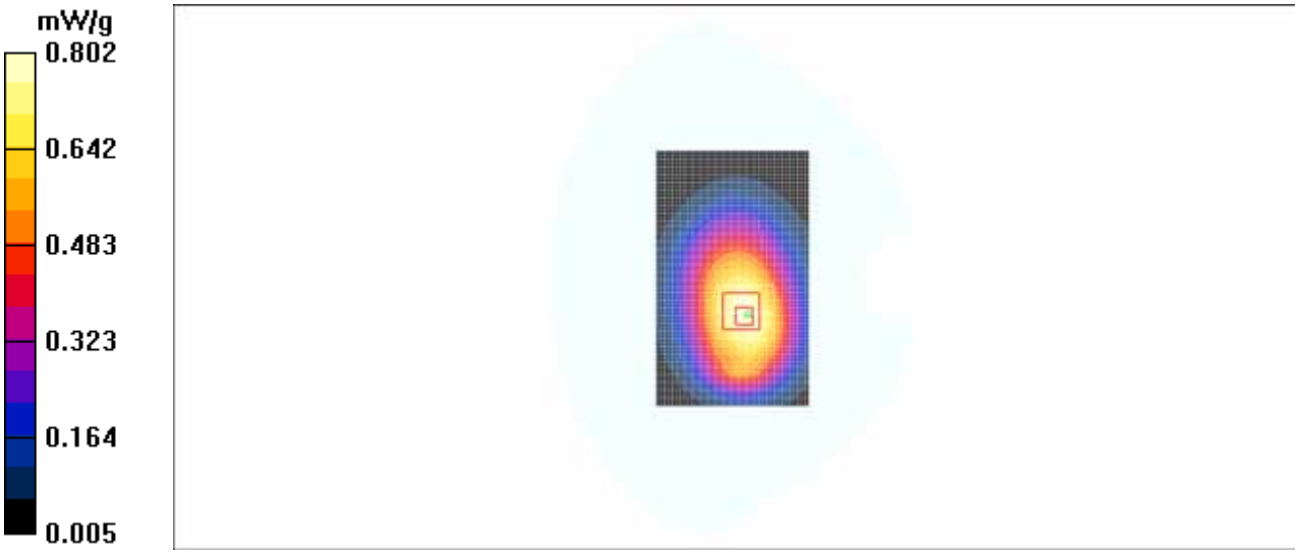



**Fig. 95 850 MHz CH4182**

**WCDMA 850 Body Towards Ground Low with Headset_CCB3160A15C4**
Date/Time: 2011-12-14 23:51:50
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 826.4 MHz; $\sigma$ = 0.95 mho/m; $\varepsilon r$ = 55.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 850 Frequency: 826.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.02 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.8 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 1.28 W/kg
**SAR(1 g) = 0.967 mW/g; SAR(10 g) = 0.700 mW/g**
Maximum value of SAR (measured) = 1.02 mW/g

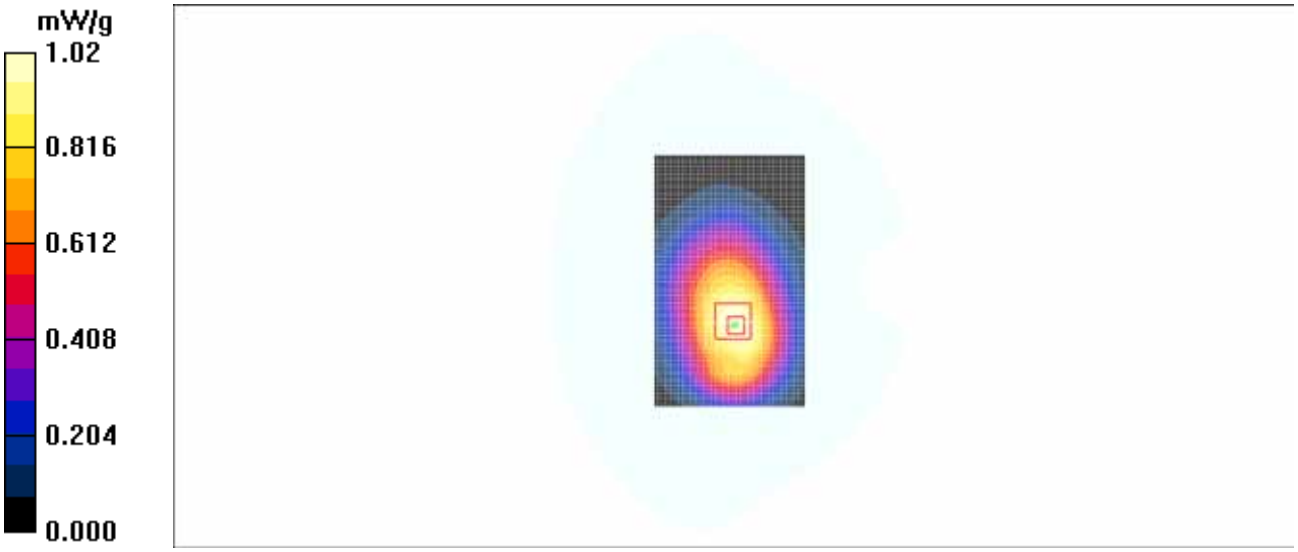



**Fig. 96 850 MHz CH4132**

**WCDMA 1900 Body Towards Phantom High**
Date/Time: 2011-12-15 18:44:01
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Phantom High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.861 mW/g

**Toward Phantom High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.3 V/m; Power Drift = 0.047 dB
Peak SAR (extrapolated) = 1.32 W/kg
**SAR(1 g) = 0.771 mW/g; SAR(10 g) = 0.451 mW/g**
Maximum value of SAR (measured) = 0.844 mW/g

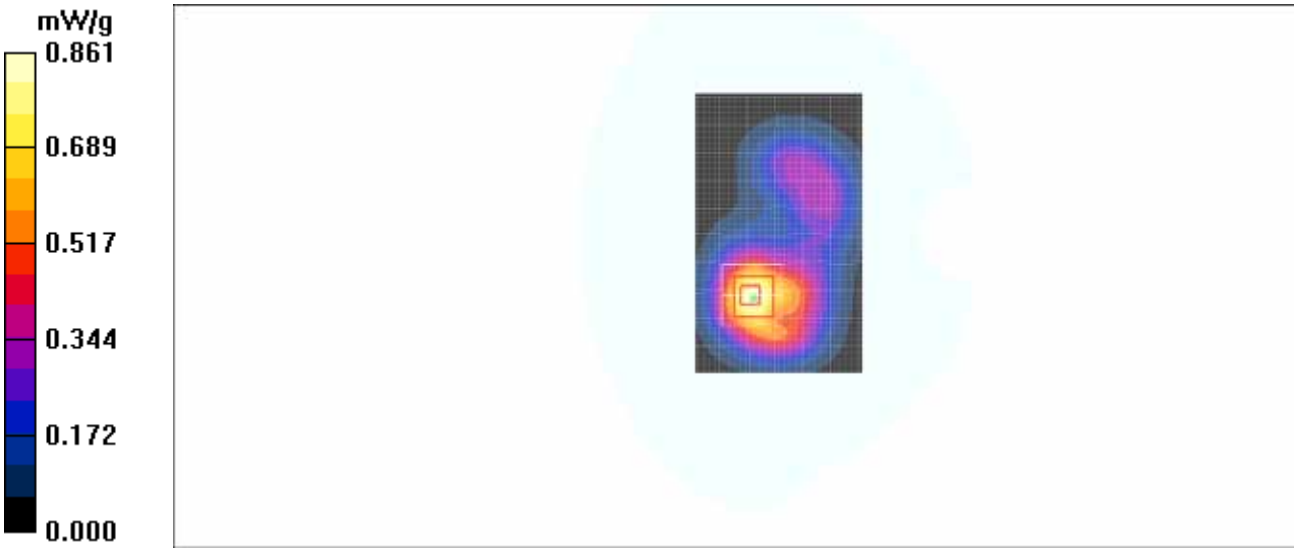



**Fig. 97 1900 MHz CH9538**

**WCDMA 1900 Body Towards Ground High**

Date/Time: 2011-12-15 18:59:41
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.971 mW/g

**Toward Ground High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.1 V/m; Power Drift = 0.027 dB
Peak SAR (extrapolated) = 1.51 W/kg
**SAR(1 g) = 0.896 mW/g; SAR(10 g) = 0.520 mW/g**
Maximum value of SAR (measured) = 0.961 mW/g

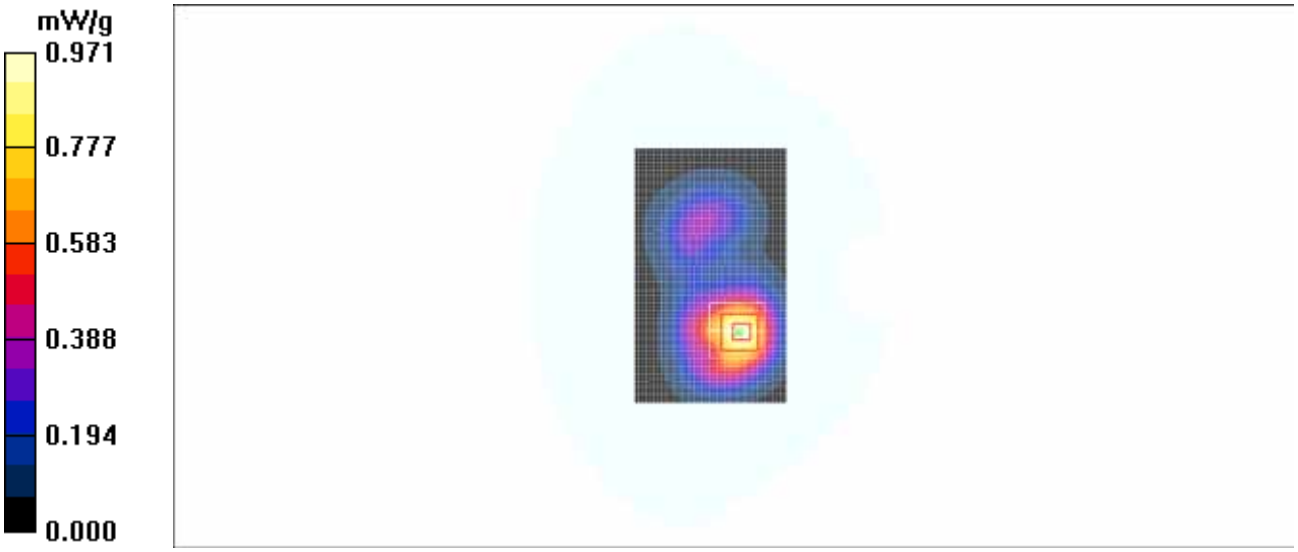



**Fig. 98 1900 MHz CH9538**

**WCDMA 1900 Body Towards Ground Middle**
Date/Time: 2011-12-15 19:15:02
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.03 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 1.61 W/kg
**SAR(1 g) = 0.954 mW/g; SAR(10 g) = 0.551 mW/g**
Maximum value of SAR (measured) = 1.04 mW/g

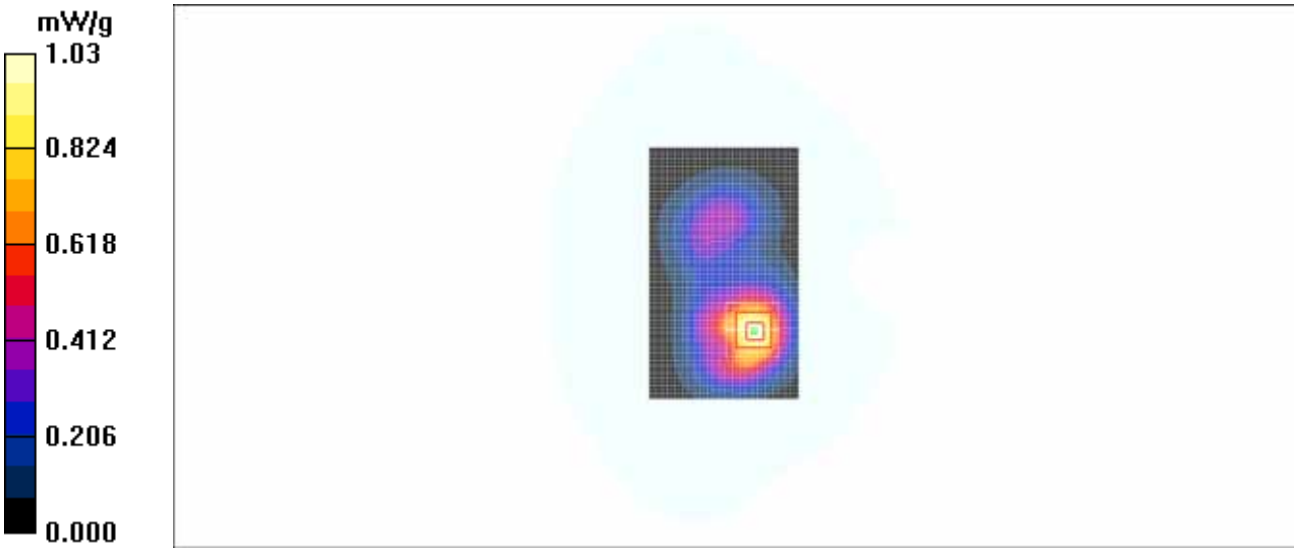



**Fig. 99 1900 MHz CH9400**

**WCDMA 1900 Body Towards Ground Low**
Date/Time: 2011-12-15 19:30:23
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Toward Ground Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.873 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.3 V/m; Power Drift = -0.036 dB
Peak SAR (extrapolated) = 1.38 W/kg
**SAR(1 g) = 0.822 mW/g; SAR(10 g) = 0.475 mW/g**
Maximum value of SAR (measured) = 0.902 mW/g

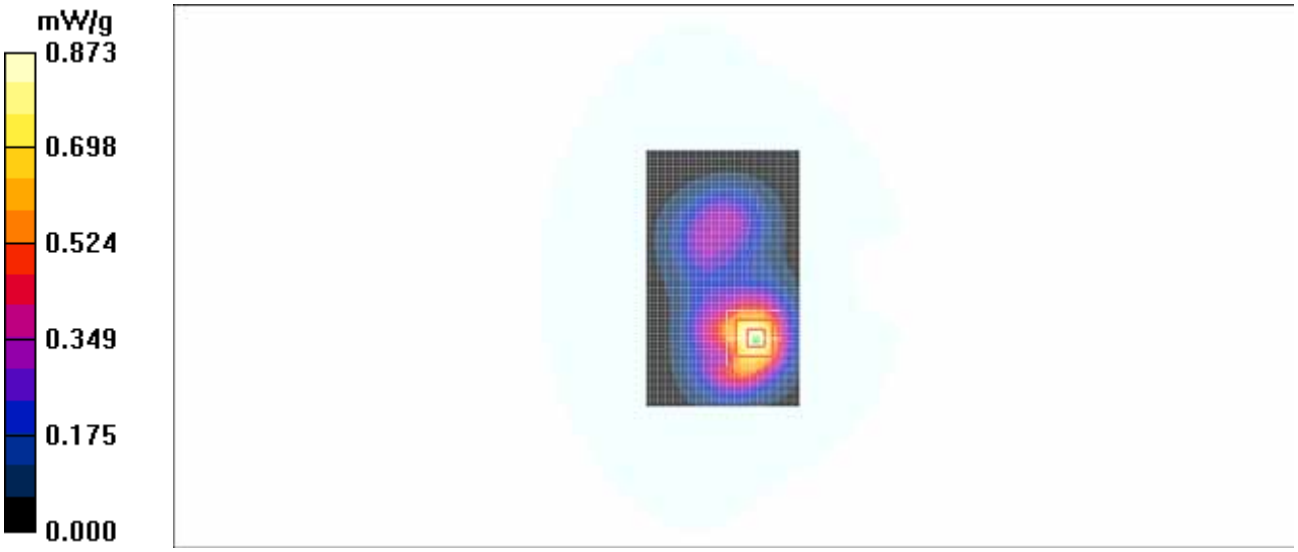



**Fig. 100 1900 MHz CH9262**

**WCDMA 1900 Body Left Side High**
Date/Time: 2011-12-15 19:45:58
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Left Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.248 mW/g

**Left Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.371 W/kg
**SAR(1 g) = 0.219 mW/g; SAR(10 g) = 0.126 mW/g**
Maximum value of SAR (measured) = 0.240 mW/g

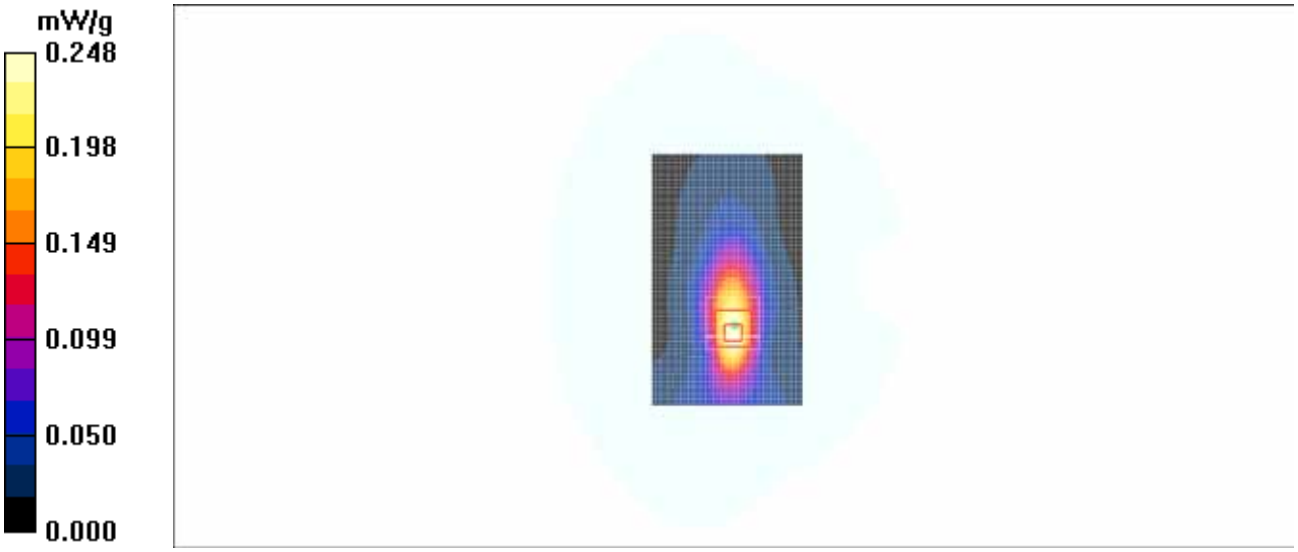



**Fig. 101 1900 MHz CH9538**

**WCDMA 1900 Body Right Side High**
Date/Time: 2011-12-15 20:01:26
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Right Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.222 mW/g

**Right Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.96 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.327 W/kg
**SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.118 mW/g**
Maximum value of SAR (measured) = 0.218 mW/g

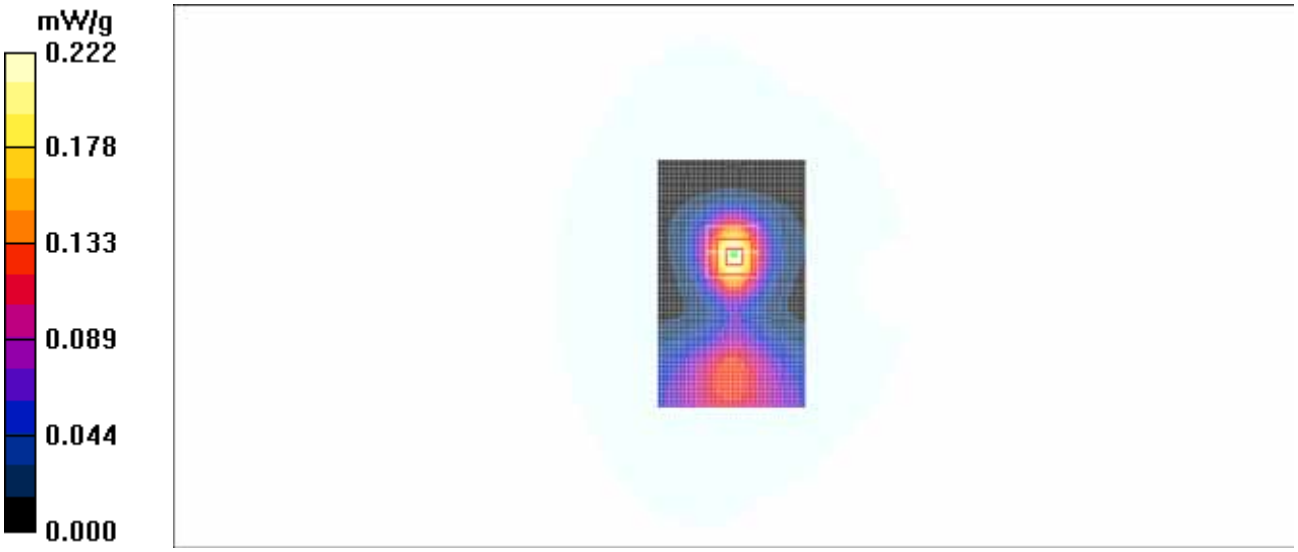



**Fig. 102 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side High**

Date/Time: 2011-12-15 20:17:03
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.12 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.5 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 1.70 W/kg
**SAR(1 g) = 1 mW/g; SAR(10 g) = 0.556 mW/g**
Maximum value of SAR (measured) = 1.11 mW/g

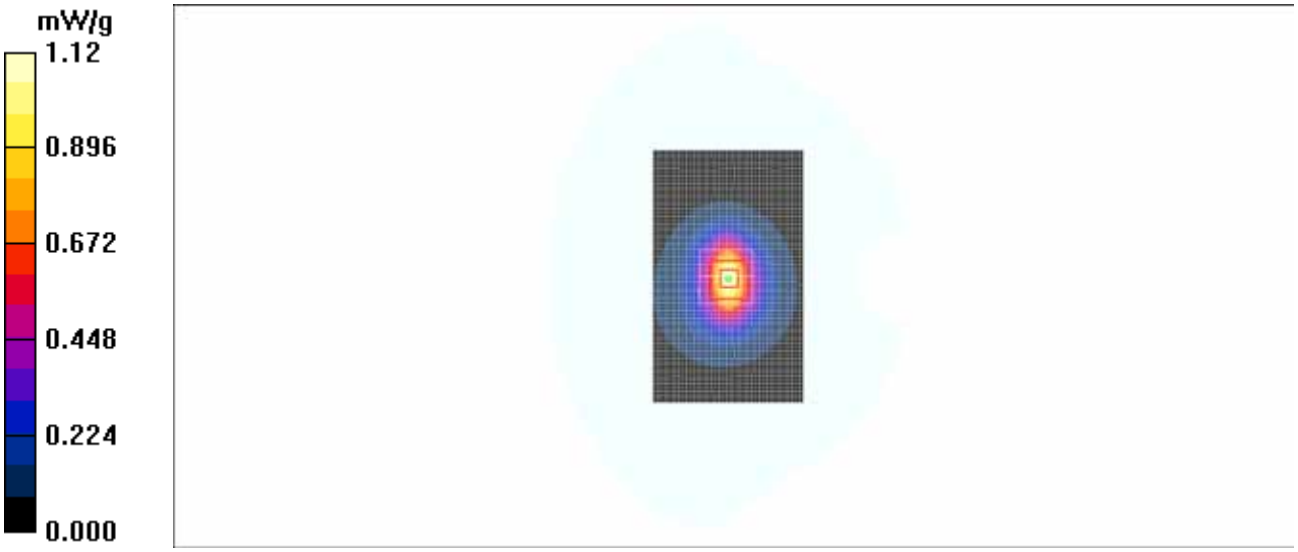



**Fig. 103 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side Middle**
Date/Time: 2011-12-15 20:32:25
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.19 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 28.3 V/m; Power Drift = -0.008 dB
Peak SAR (extrapolated) = 1.77 W/kg
**SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.590 mW/g**
Maximum value of SAR (measured) = 1.18 mW/g

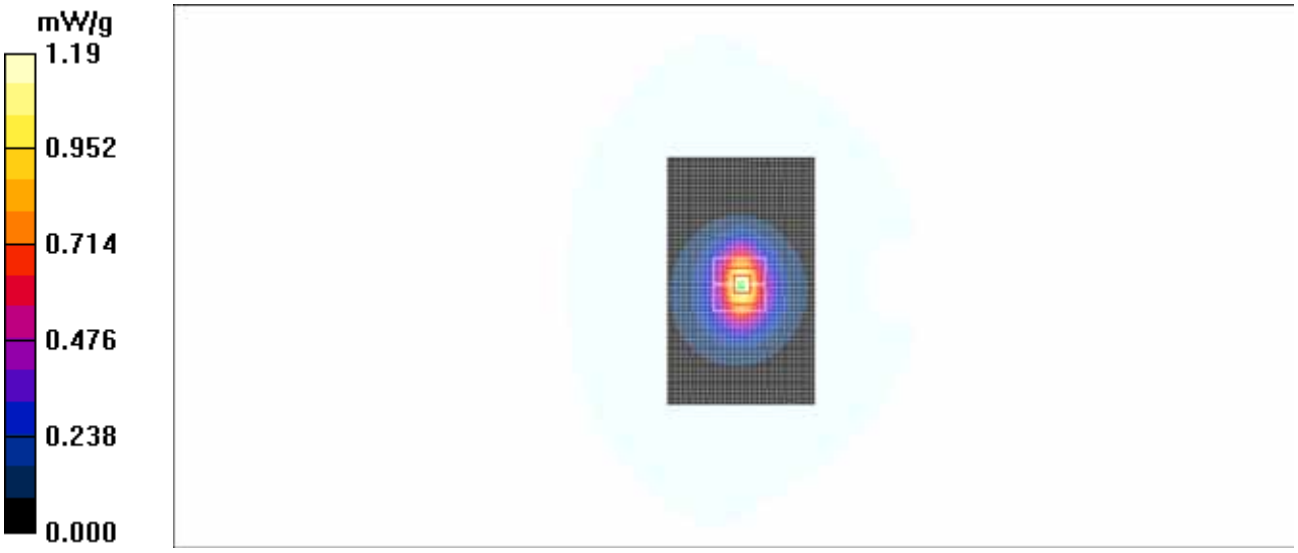



**Fig. 104 1900 MHz CH9400**


**Fig. 104-1 Z-Scan at power reference point (1900 MHz CH9400)**

**WCDMA 1900 Body Bottom Side Low**

Date/Time: 2011-12-15 20:47:56
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.927 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 1.37 W/kg
**SAR(1 g) = 0.828 mW/g; SAR(10 g) = 0.464 mW/g**
Maximum value of SAR (measured) = 0.912 mW/g

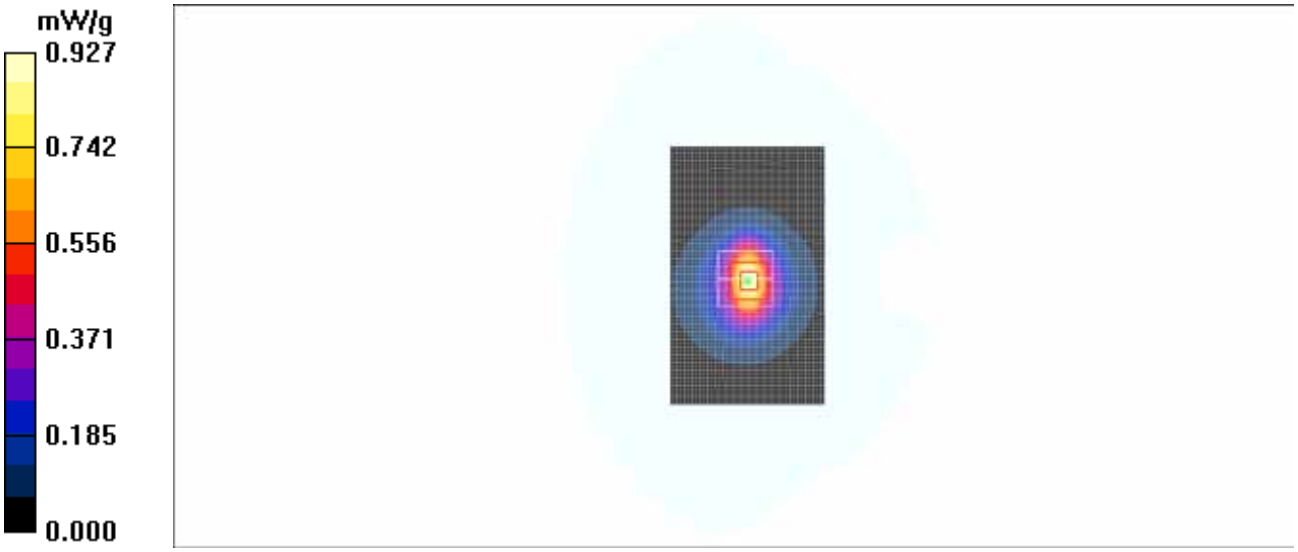



**Fig. 105 1900 MHz CH9262**

**WCDMA 1900 Body Bottom Side High with Headset_CCB3160A11C1**
Date/Time: 2011-12-15 21:04:25
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.01 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.2 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.57 W/kg
**SAR(1 g) = 0.927 mW/g; SAR(10 g) = 0.512 mW/g**
Maximum value of SAR (measured) = 1.04 mW/g

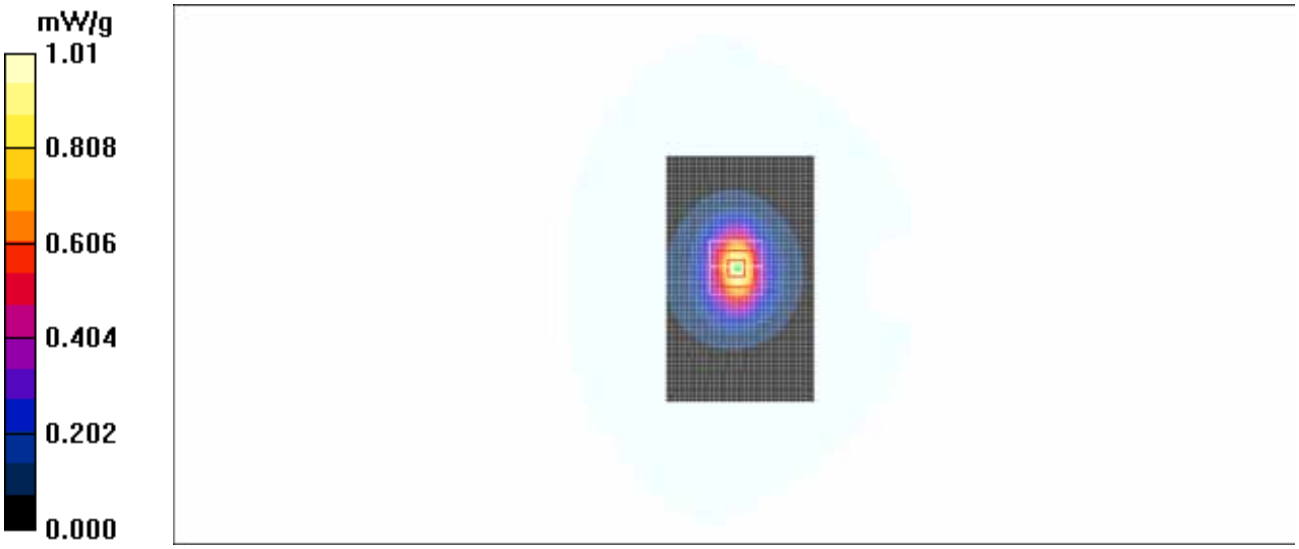



**Fig. 106 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side Middle with Headset_CCB3160A11C1**
Date/Time: 2011-12-15 21:19:48
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.09 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.001 dB
Peak SAR (extrapolated) = 1.65 W/kg
**SAR(1 g) = 0.986 mW/g; SAR(10 g) = 0.548 mW/g**
Maximum value of SAR (measured) = 1.11 mW/g

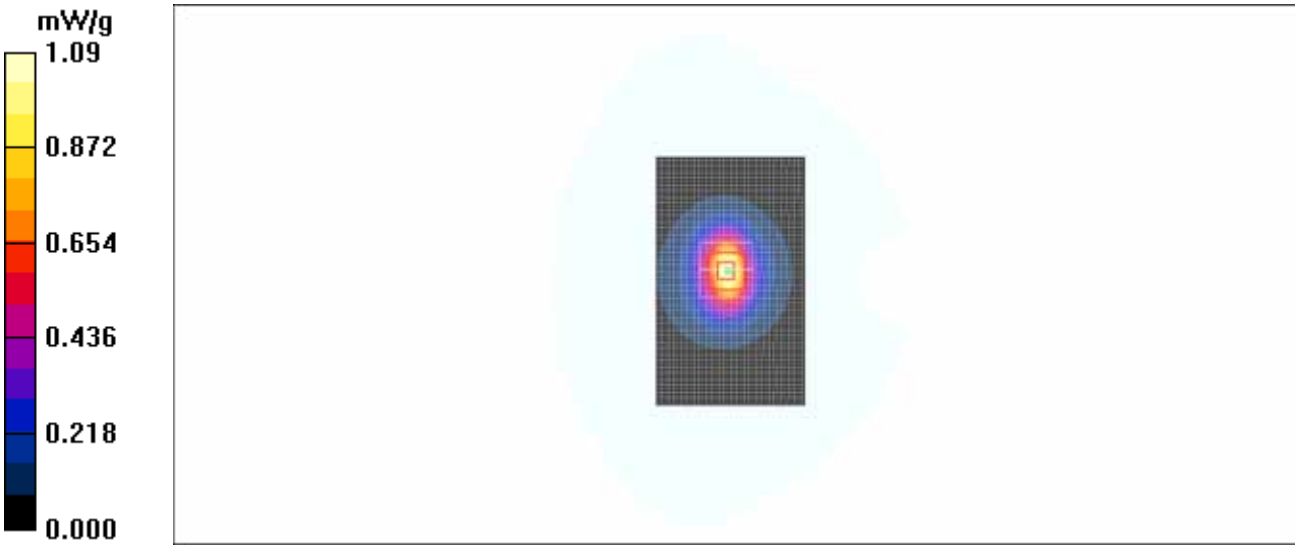



**Fig. 107 1900 MHz CH9400**

**WCDMA 1900 Body Bottom Side Low with Headset_CCB3160A11C1**

Date/Time: 2011-12-15 21:35:10
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.895 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.0 V/m; Power Drift = 0.041 dB
Peak SAR (extrapolated) = 1.34 W/kg
**SAR(1 g) = 0.811 mW/g; SAR(10 g) = 0.451 mW/g**
Maximum value of SAR (measured) = 0.907 mW/g

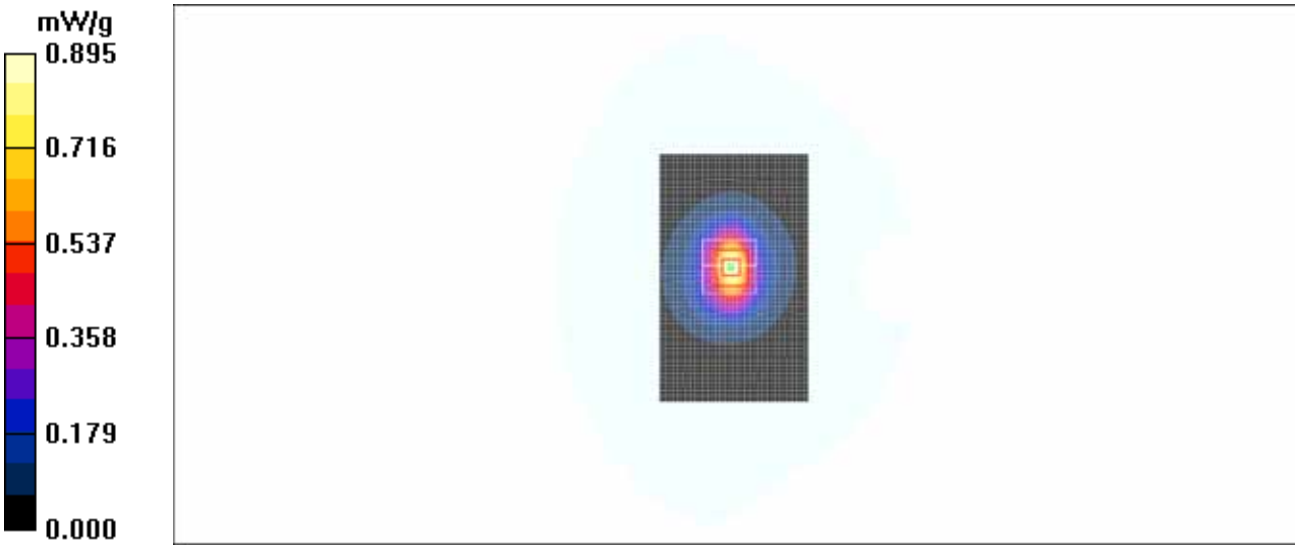



**Fig. 108 1900 MHz CH9262**

**WCDMA 1900 Body Bottom Side High with Headset_CCB3160A11C4**

Date/Time: 2011-12-15 21:50:55
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.000 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.9 V/m; Power Drift = -0.117 dB
Peak SAR (extrapolated) = 1.56 W/kg
**SAR(1 g) = 0.927 mW/g; SAR(10 g) = 0.518 mW/g**
Maximum value of SAR (measured) = 1.04 mW/g

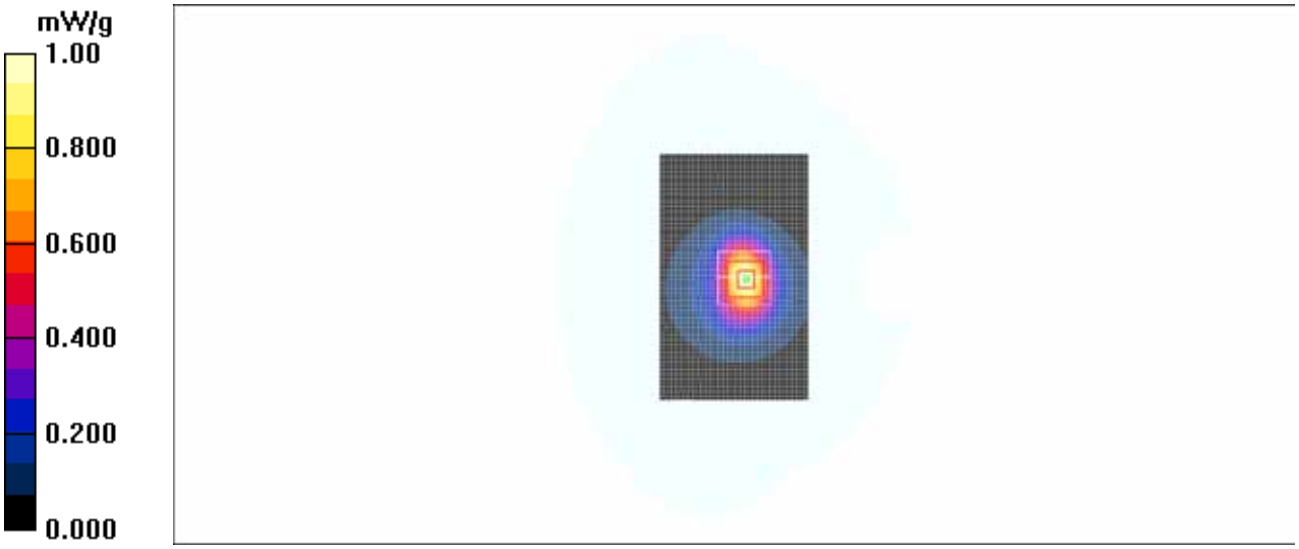



**Fig. 109 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side Middle with Headset_CCB3160A11C4**
Date/Time: 2011-12-15 22:06:17
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.05 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 27.0 V/m; Power Drift = -0.161 dB
Peak SAR (extrapolated) = 1.56 W/kg
**SAR(1 g) = 0.937 mW/g; SAR(10 g) = 0.525 mW/g**
Maximum value of SAR (measured) = 1.05 mW/g

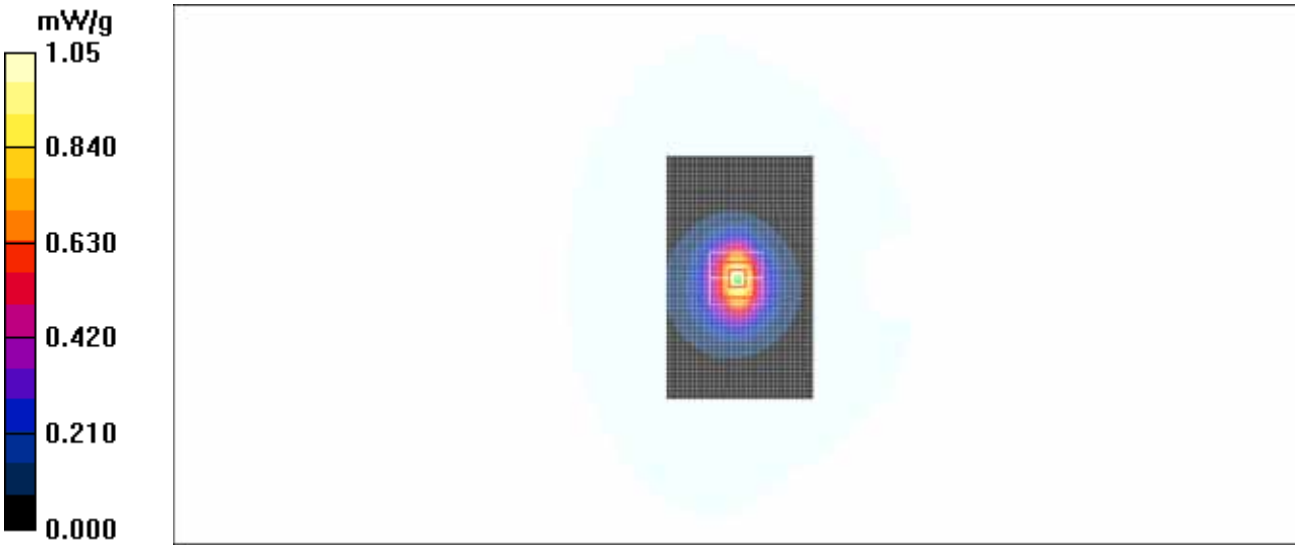



**Fig. 110 1900 MHz CH9400**

**WCDMA 1900 Body Bottom Side Low with Headset_CCB3160A11C4**

Date/Time: 2011-12-15 22:21:39
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.755 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.6 V/m; Power Drift = -0.132 dB
Peak SAR (extrapolated) = 1.20 W/kg
**SAR(1 g) = 0.726 mW/g; SAR(10 g) = 0.403 mW/g**
Maximum value of SAR (measured) = 0.799 mW/g

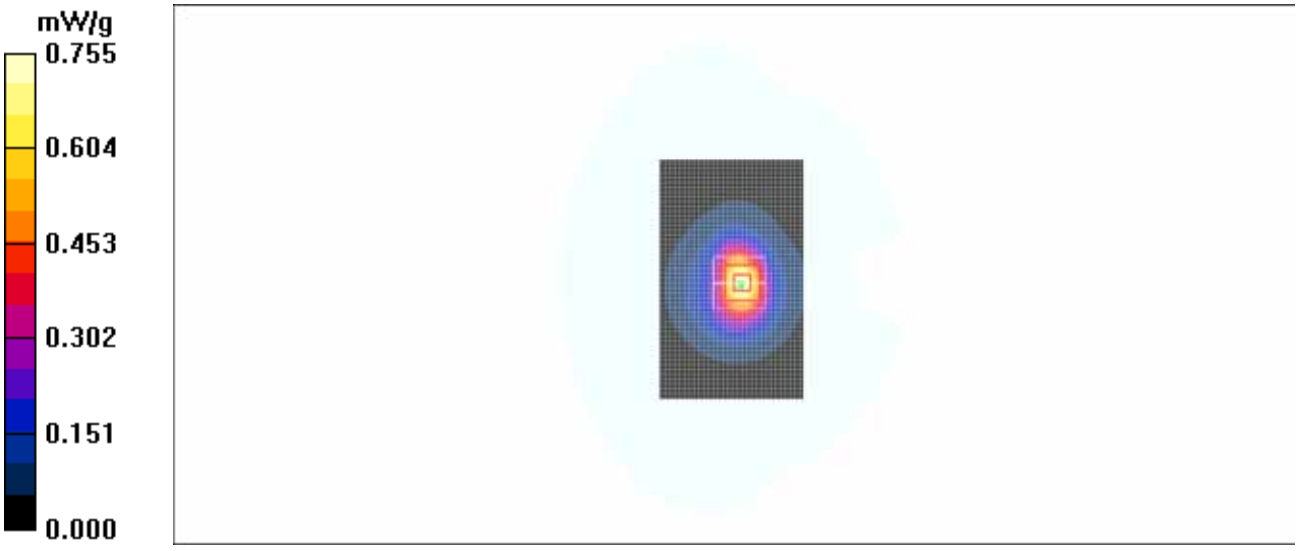



**Fig. 111 1900 MHz CH9262**

**WCDMA 1900 Body Bottom Side High with Headset_CCB3160A15C1**
Date/Time: 2011-12-15 22:37:00
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.973 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.0 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 1.54 W/kg
**SAR(1 g) = 0.909 mW/g; SAR(10 g) = 0.506 mW/g**
Maximum value of SAR (measured) = 1.02 mW/g

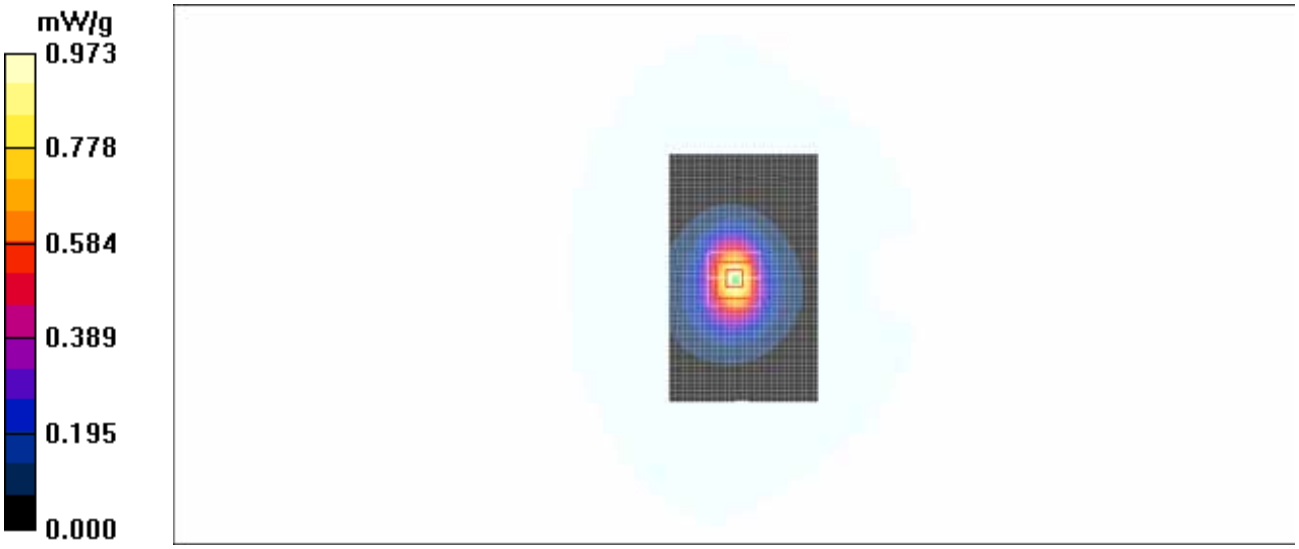



**Fig. 112 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side Middle with Headset_CCB3160A15C1**
Date/Time: 2011-12-15 22:52:20
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.01 mW/g

**Bottom Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.0 V/m; Power Drift = -0.014 dB
Peak SAR (extrapolated) = 1.54 W/kg
**SAR(1 g) = 0.923 mW/g; SAR(10 g) = 0.511 mW/g**
Maximum value of SAR (measured) = 1.04 mW/g

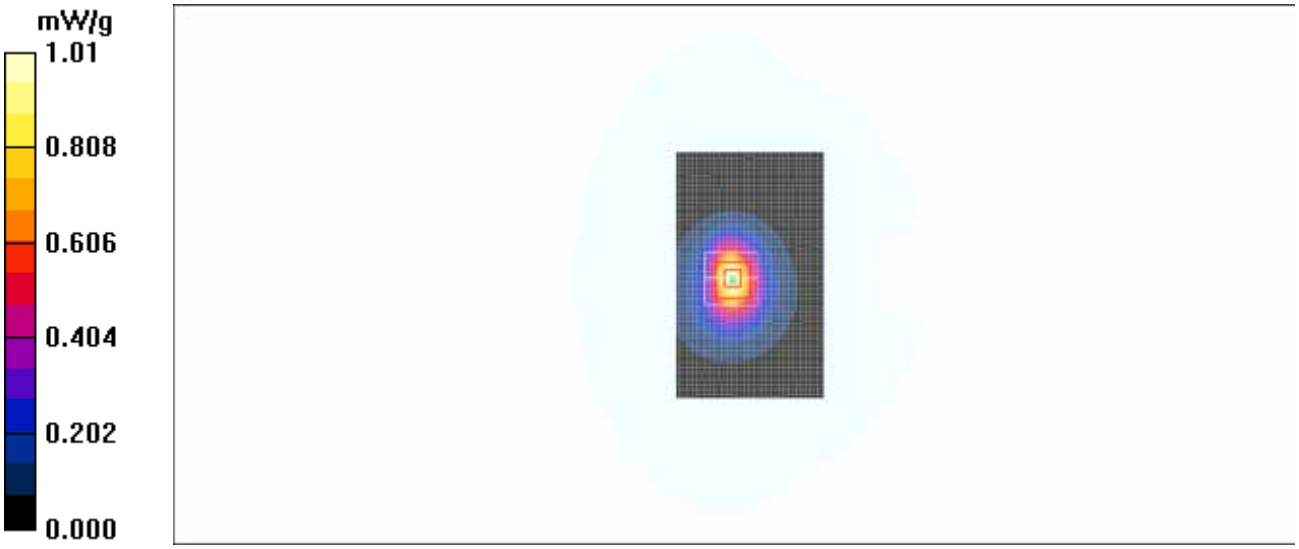



**Fig. 113 1900 MHz CH9400**

**WCDMA 1900 Body Bottom Side Low with Headset_CCB3160A15C1**
Date/Time: 2011-12-15 23:07:42
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.844 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.0 V/m; Power Drift = 0.019 dB
Peak SAR (extrapolated) = 1.33 W/kg
**SAR(1 g) = 0.796 mW/g; SAR(10 g) = 0.444 mW/g**
Maximum value of SAR (measured) = 0.898 mW/g

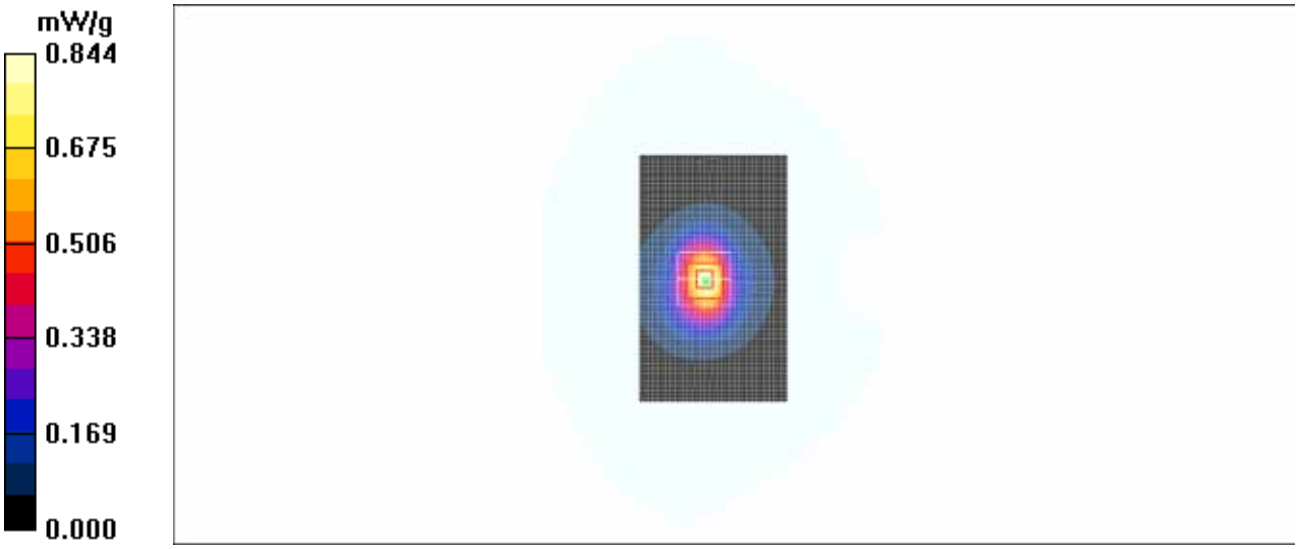



**Fig. 114 1900 MHz CH9262**

**WCDMA 1900 Body Bottom Side High with Headset_CCB3160A15C4**

Date/Time: 2011-12-15 23:23:21
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon r$ = 52.9; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1907.6 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side High/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.03 mW/g

**Bottom Side High/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.2 V/m; Power Drift = -0.071 dB
Peak SAR (extrapolated) = 1.57 W/kg
**SAR(1 g) = 0.931 mW/g; SAR(10 g) = 0.517 mW/g**
Maximum value of SAR (measured) = 1.05 mW/g

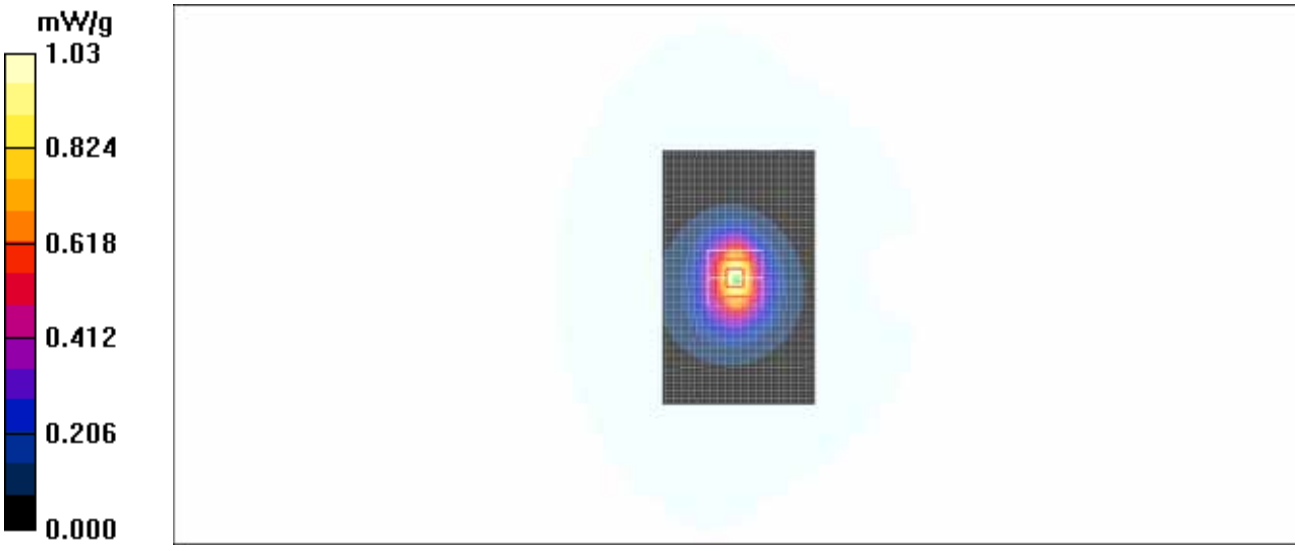



**Fig. 115 1900 MHz CH9538**

**WCDMA 1900 Body Bottom Side Middle with Headset_CCB3160A15C4**
Date/Time: 2011-12-15 23:38:50
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; $\sigma$ = 1.49 mho/m; $\varepsilon r$ = 53.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1880 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Middle CCB3160A15C4/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.05 mW/g

**Bottom Side Middle CCB3160A15C4/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.5 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 1.54 W/kg
**SAR(1 g) = 0.933 mW/g; SAR(10 g) = 0.524 mW/g**
Maximum value of SAR (measured) = 1.04 mW/g

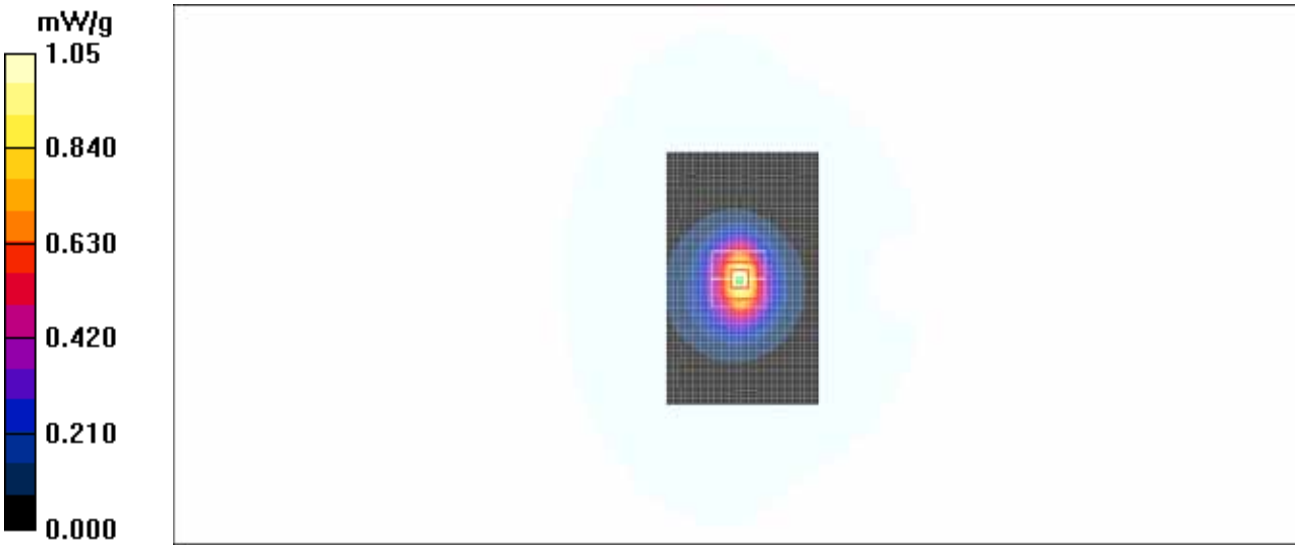



**Fig. 116 1900 MHz CH9400**

**WCDMA 1900 Body Bottom Side Low with Headset_CCB3160A15C4**

Date/Time: 2011-12-15 23:54:22
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; $\sigma$ = 1.47 mho/m; $\varepsilon r$ = 53.7; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WCDMA 1900 Frequency: 1852.4 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

**Bottom Side Low/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.854 mW/g

**Bottom Side Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 1.26 W/kg
**SAR(1 g) = 0.765 mW/g; SAR(10 g) = 0.429 mW/g**
Maximum value of SAR (measured) = 0.857 mW/g

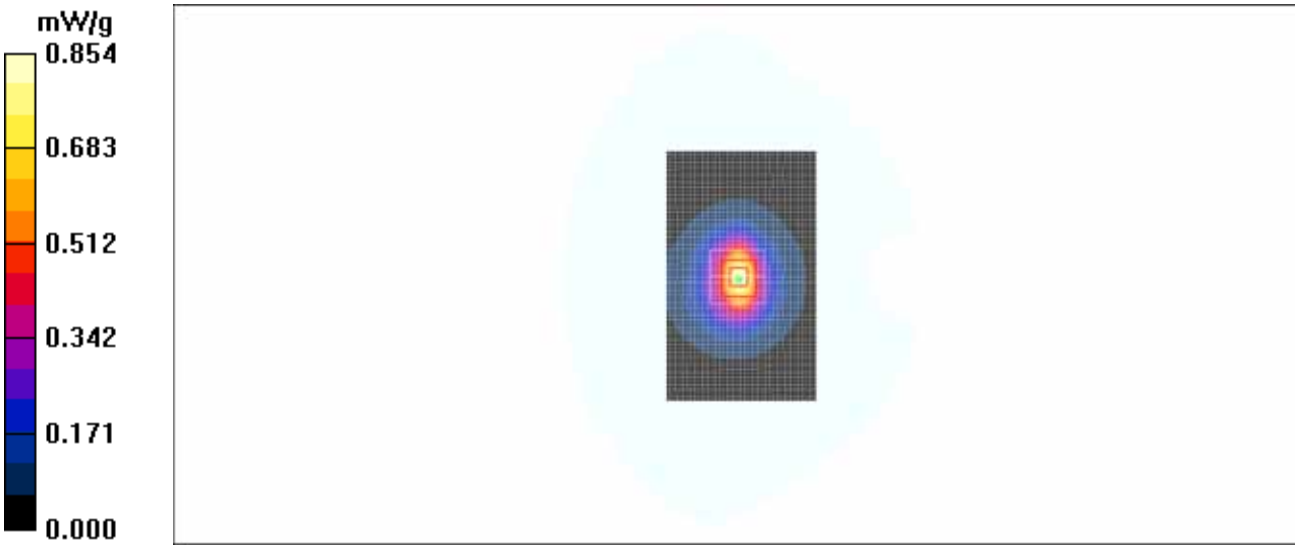



**Fig. 117 1900 MHz CH9262**

**850 Body Towards Ground Low with GPRS with battery CAB31P0000C2**
Date/Time: 2011-12-14 18:45:20
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; $\sigma$ = 0.94 mho/m; $\varepsilon r$ = 56.0; $\rho$ = 1000 kg/$m^3$
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 (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.09 mW/g

**Toward Ground Low/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 29.0 V/m; Power Drift = 0.137 dB
Peak SAR (extrapolated) = 1.53 W/kg
**SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.737 mW/g**
Maximum value of SAR (measured) = 1.09 mW/g

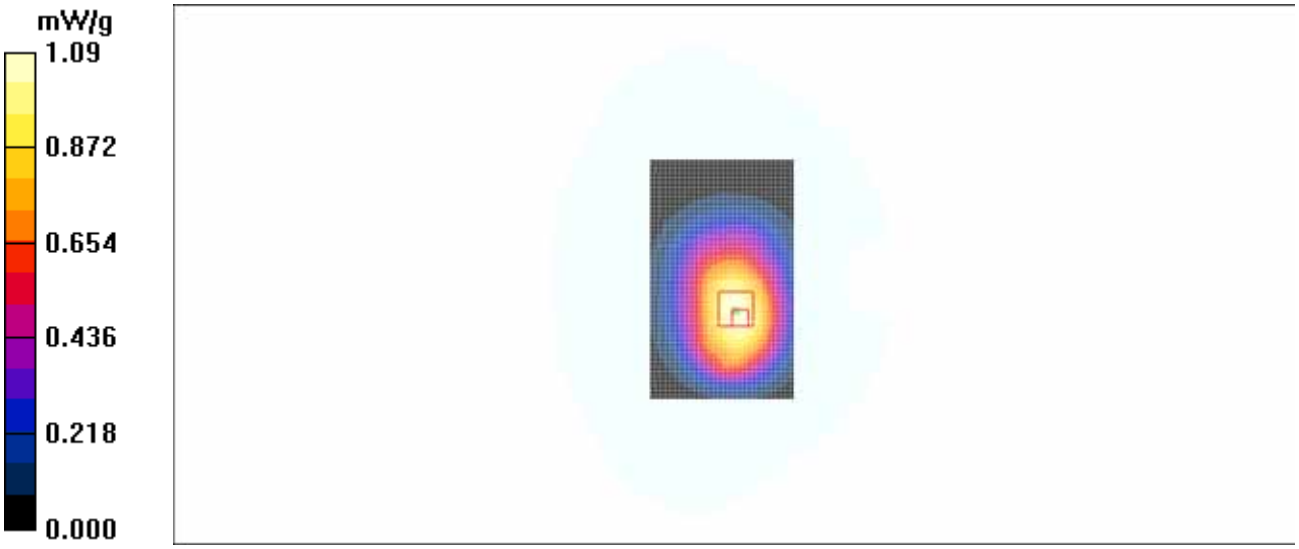



**Fig. 118 850 MHz CH128**

**WiFi 802.11b 1Mbps Left Cheek Channel 6**
Date/Time: 2011-12-16 8:08:16
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; $\sigma$ = 1.82 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.35, 4.35, 4.35)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.137 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.38 V/m; Power Drift = 0.129 dB
Peak SAR (extrapolated) = 0.267 W/kg
**SAR(1 g) = 0.133 mW/g; SAR(10 g) = 0.067 mW/g**
Maximum value of SAR (measured) = 0.144 mW/g

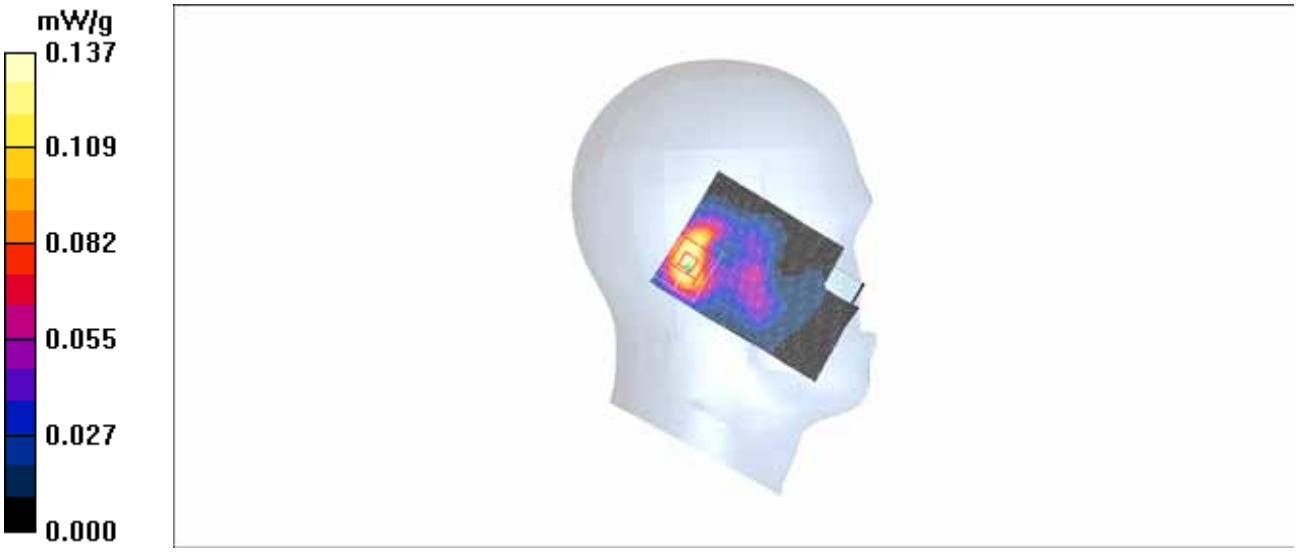



**Fig.119 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Left Tilt Channel 6**
Date/Time: 2011-12-16 8:22:39
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.82 mho/m; εr = 39.3; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.35, 4.35, 4.35)

**Tilt Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.190 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.03 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 0.322 W/kg
**SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.082 mW/g**
Maximum value of SAR (measured) = 0.169 mW/g

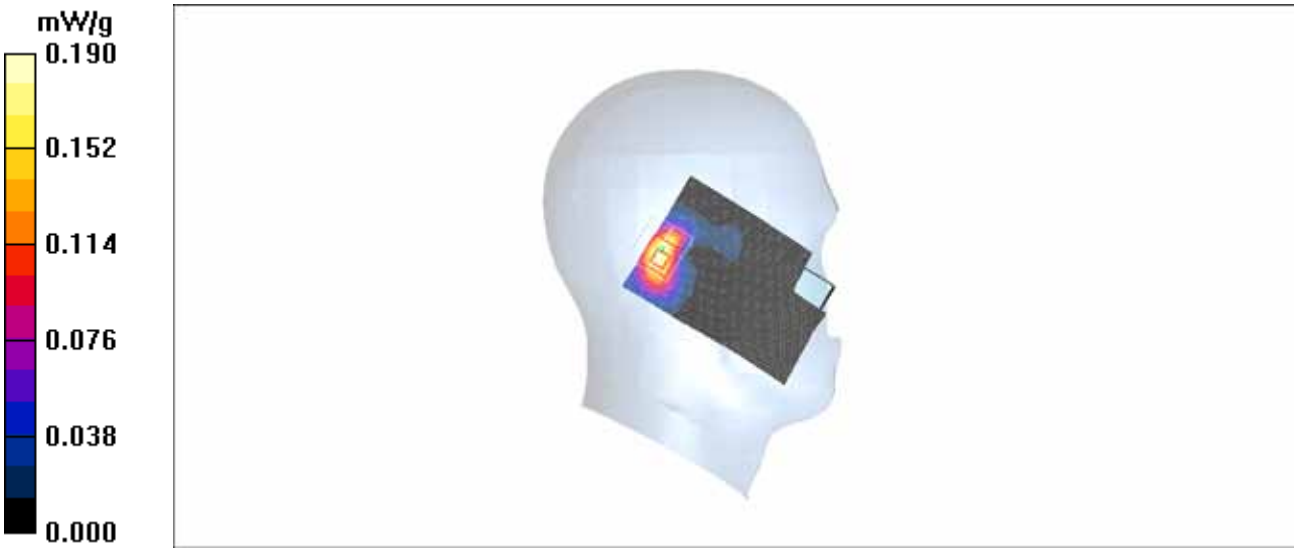



**Fig.120 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Right Cheek Channel 6**
Date/Time: 2011-12-16 8:37:06
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; $\sigma$ = 1.82 mho/m; $\varepsilon r$ = 39.3; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.35, 4.35, 4.35)

**Cheek Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.272 mW/g

**Cheek Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.96 V/m; Power Drift = 0.162 dB
Peak SAR (extrapolated) = 0.485 W/kg
**SAR(1 g) = 0.235 mW/g; SAR(10 g) = 0.115 mW/g**
Maximum value of SAR (measured) = 0.260 mW/g

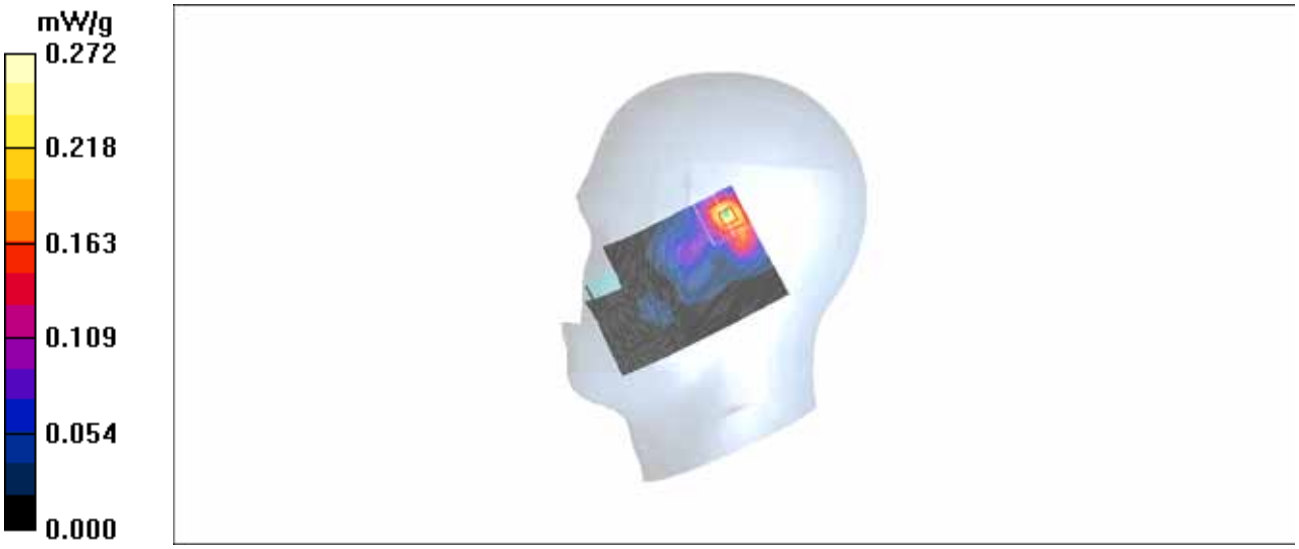



**Fig.121 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Right Tilt Channel 6**
Date/Time: 2011-12-16 8:51:24
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.82 mho/m; εr = 39.3; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.35, 4.35, 4.35)

**Tilt Middle/Area Scan (61x91x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.285 mW/g

**Tilt Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.61 V/m; Power Drift = 0.168 dB
Peak SAR (extrapolated) = 0.553 W/kg
**SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.127 mW/g**
Maximum value of SAR (measured) = 0.301 mW/g

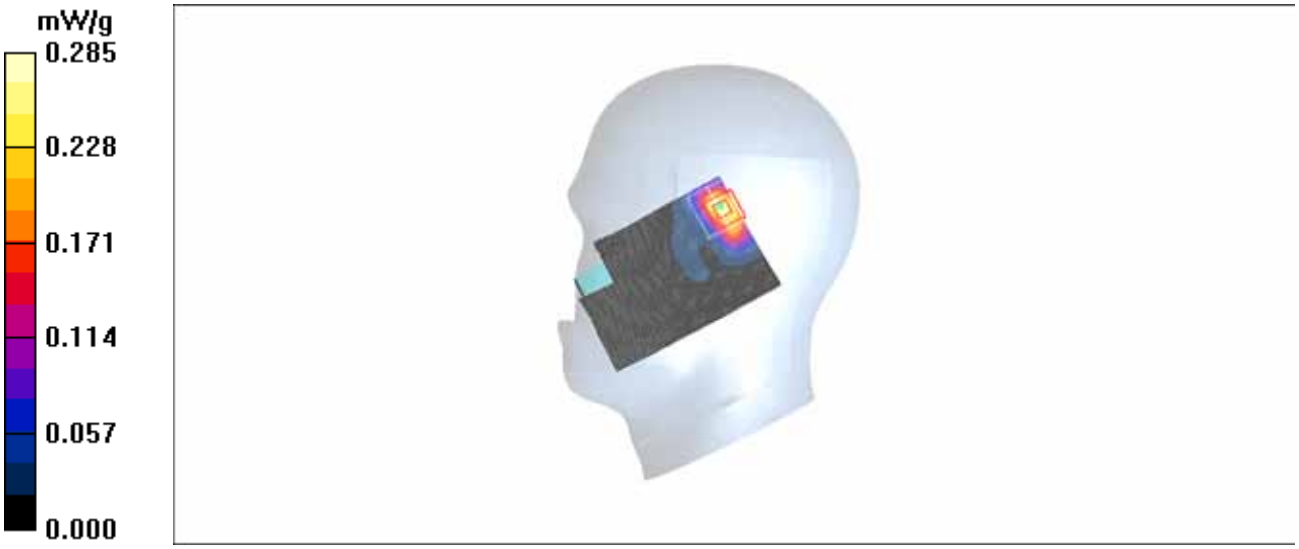



**Fig.122 802.11b 1Mbps CH6**

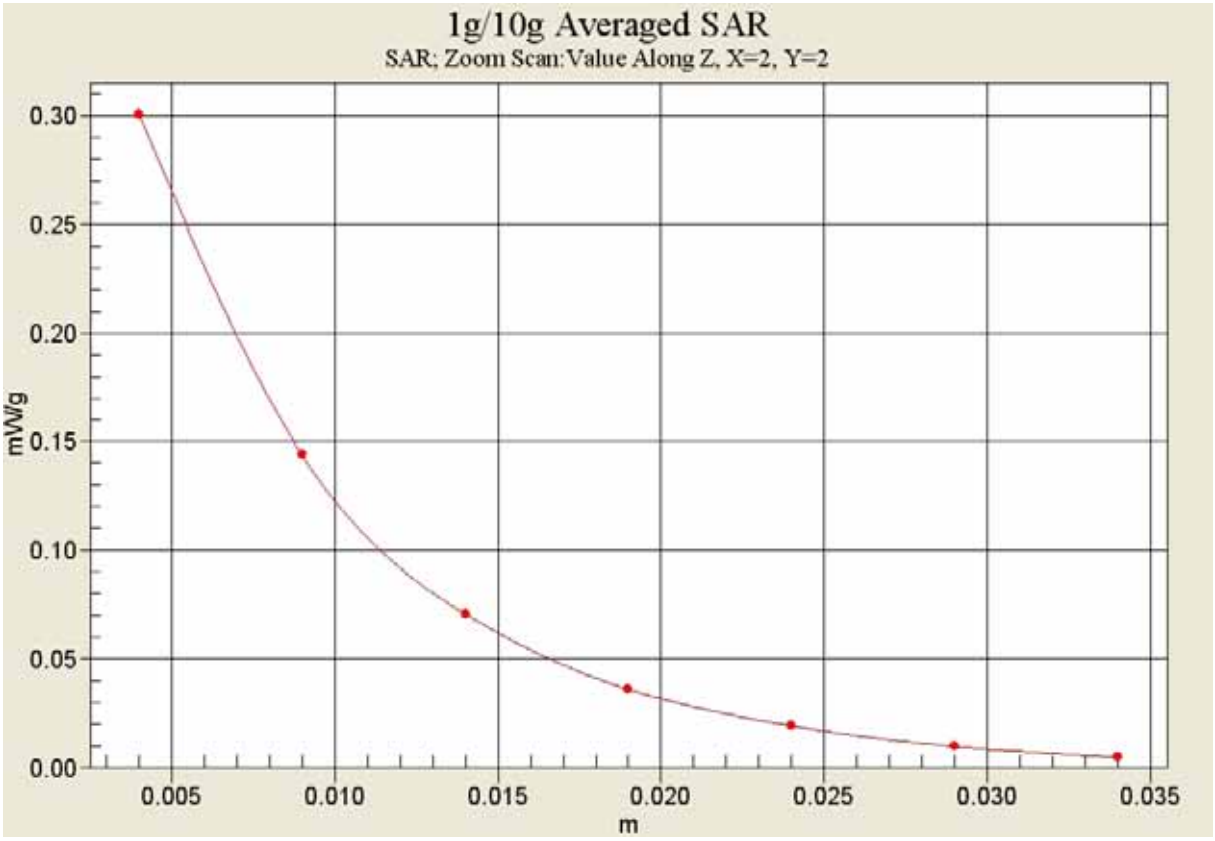



**Fig. 122-1 Z-Scan at power reference point (802.11b 1Mbps CH6)**

**WiFi 802.11b 1Mbps Toward Phantom Channel 6**
Date/Time: 2011-12-16 16:09:17
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; $\sigma$ = 2.00 mho/m; $\varepsilon r$ = 53.0; $\rho$ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.13, 4.13, 4.13)

**Toward Phantom Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.049 mW/g

**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.60 V/m; Power Drift = -0.151 dB
Peak SAR (extrapolated) = 0.092 W/kg
**SAR(1 g) = 0.050 mW/g; SAR(10 g) = 0.026 mW/g**
Maximum value of SAR (measured) = 0.052 mW/g

**Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.60 V/m; Power Drift = -0.151 dB
Peak SAR (extrapolated) = 0.067 W/kg
**SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.022 mW/g**
Maximum value of SAR (measured) = 0.042 mW/g

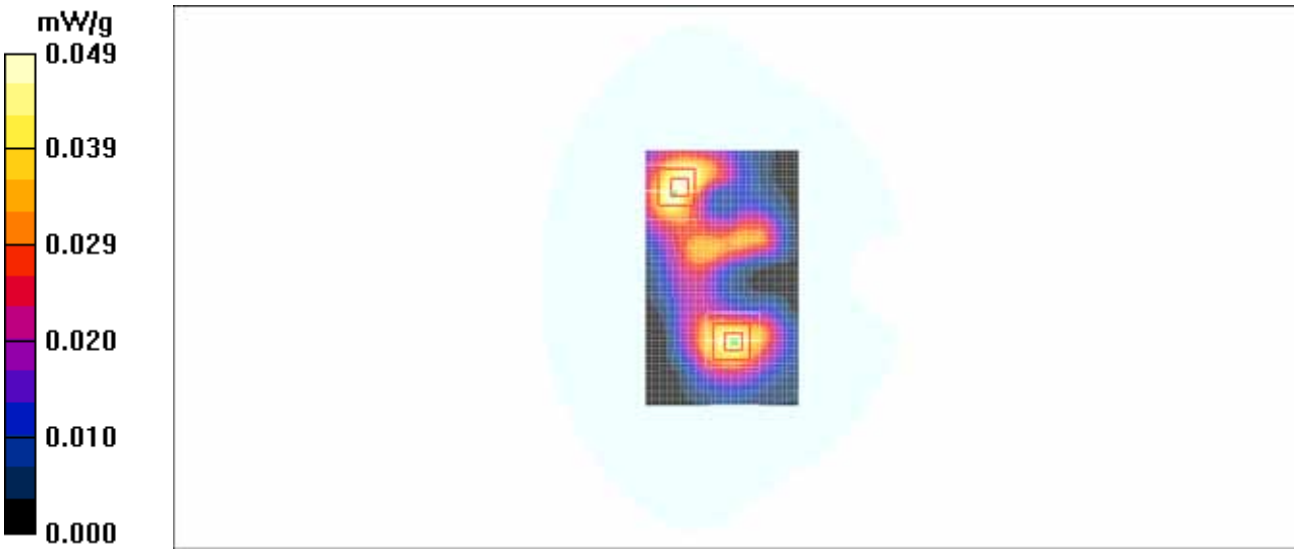



**Fig.123 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Toward Ground Channel 6**
Date/Time: 2011-12-16 16:25:27
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.00 mho/m; εr = 53.0; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.13, 4.13, 4.13)

**Toward Ground Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.743 mW/g

**Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.36 V/m; Power Drift = -0.004 dB
Peak SAR (extrapolated) = 1.34 W/kg
**SAR(1 g) = 0.665 mW/g; SAR(10 g) = 0.307 mW/g**
Maximum value of SAR (measured) = 0.761 mW/g

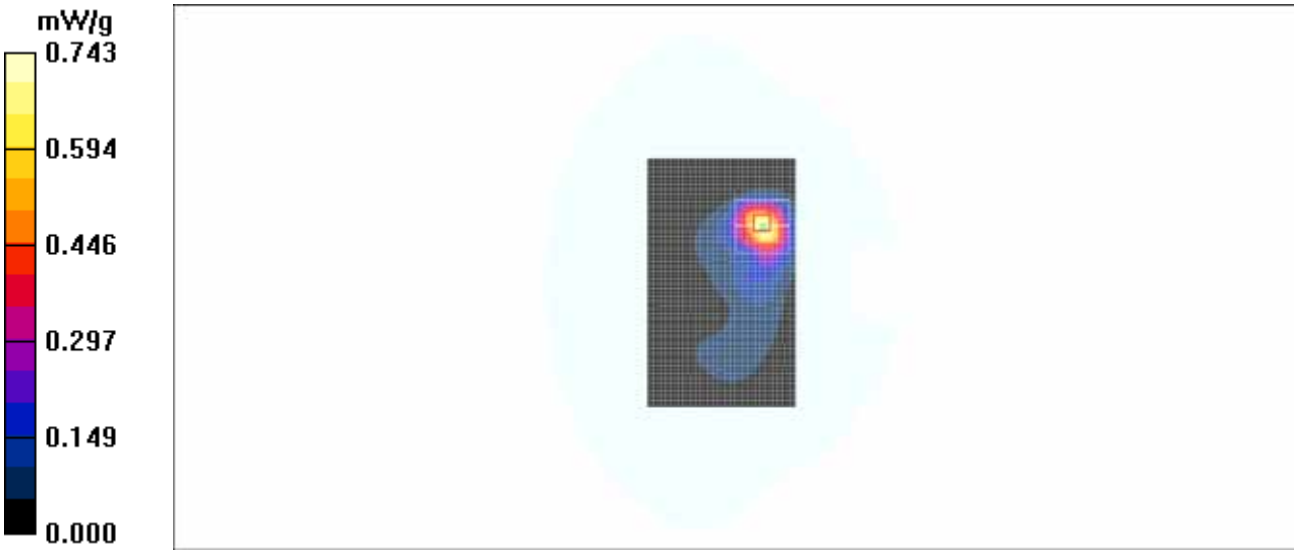



**Fig.124 802.11b 1Mbps CH6**


**Fig. 124-1 Z-Scan at power reference point (802.11b 1Mbps CH6)**

**WiFi 802.11b 1Mbps Left Side Channel 6**
Date/Time: 2011-12-16 16:41:40
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.00 mho/m; εr = 53.0; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.13, 4.13, 4.13)

**Left Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.185 mW/g

**Left Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.16 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.315 W/kg
**SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.090 mW/g**
Maximum value of SAR (measured) = 0.195 mW/g

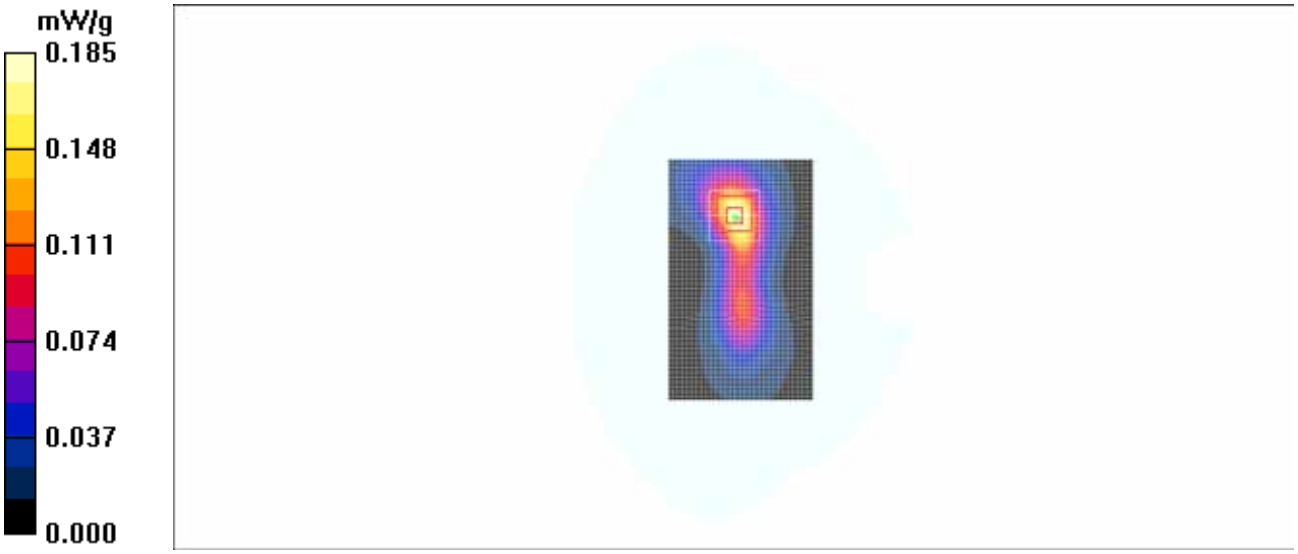



**Fig.125 802.11b 1Mbps CH6**

**WiFi 802.11b 1Mbps Top Side Channel 6**
Date/Time: 2011-12-16 16:57:55
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used (interpolated): f = 2437 MHz; σ = 2.00 mho/m; εr = 53.0; ρ = 1000 kg/$m^3$
Ambient Temperature:23.0 °C Liquid Temperature: 22.5°C
Communication System: WLan 2450 Frequency: 2437 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.13, 4.13, 4.13)

**Top Side Middle/Area Scan (61x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.234 mW/g

**Top Side Middle/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.27 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.400 W/kg
**SAR(1 g) = 0.212 mW/g; SAR(10 g) = 0.108 mW/g**
Maximum value of SAR (measured) = 0.236 mW/g

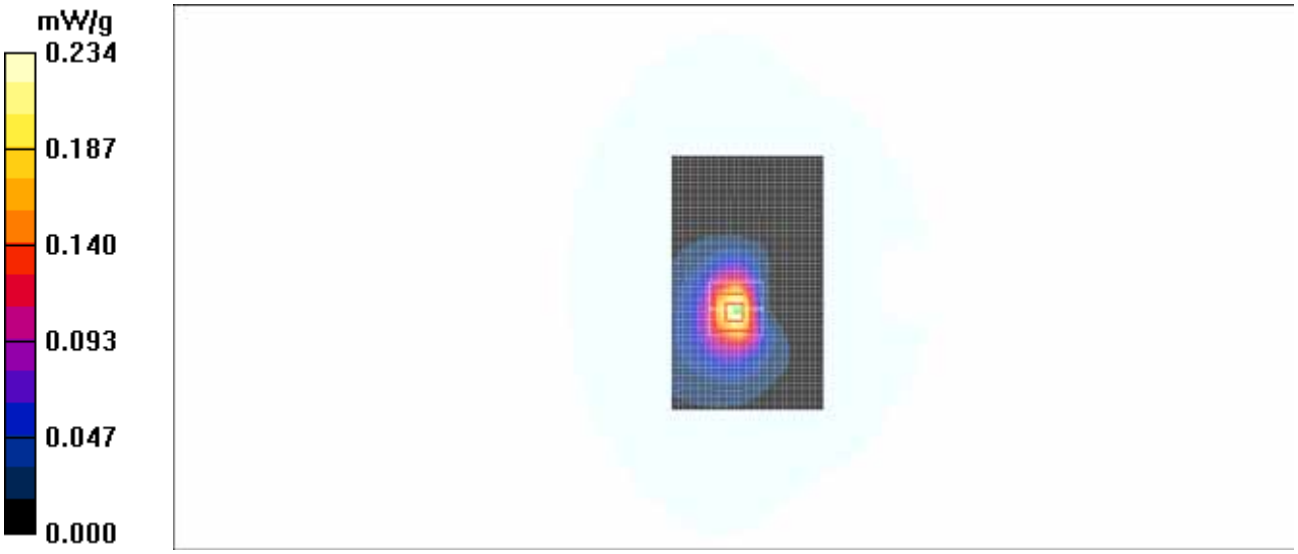



**Fig.126 802.11b 1Mbps CH6**

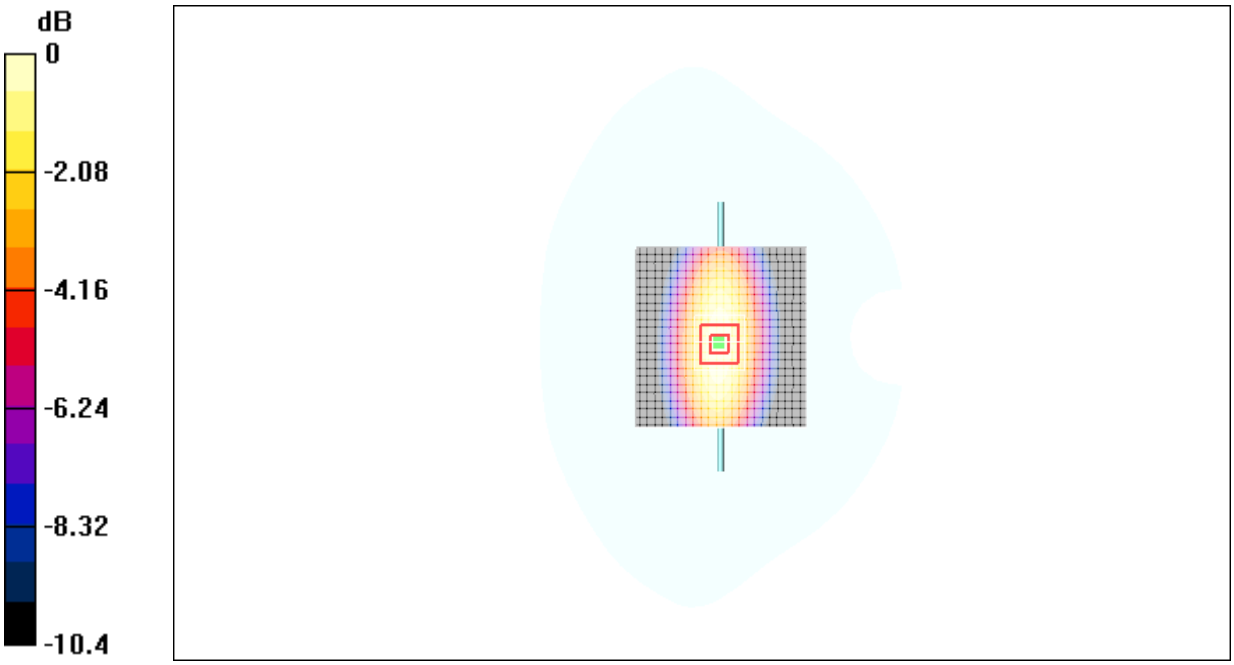
# ANNEX D SYSTEM VALIDATION RESULTS

## 835MHz

Date/Time: 2011-12-14 7:23:16
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; $\sigma$ = 0.91 mho/m; $\varepsilon_r$ = 42.0; $\rho$ = 1000 kg/m$^3$
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) = 2.54 mW/g

**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.2 V/m; Power Drift = 0.103 dB
Peak SAR (extrapolated) = 3.37 W/kg
**SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.49 mW/g**
Maximum value of SAR (measured) = 2.48 mW/g




0 dB = 2.48mW/g

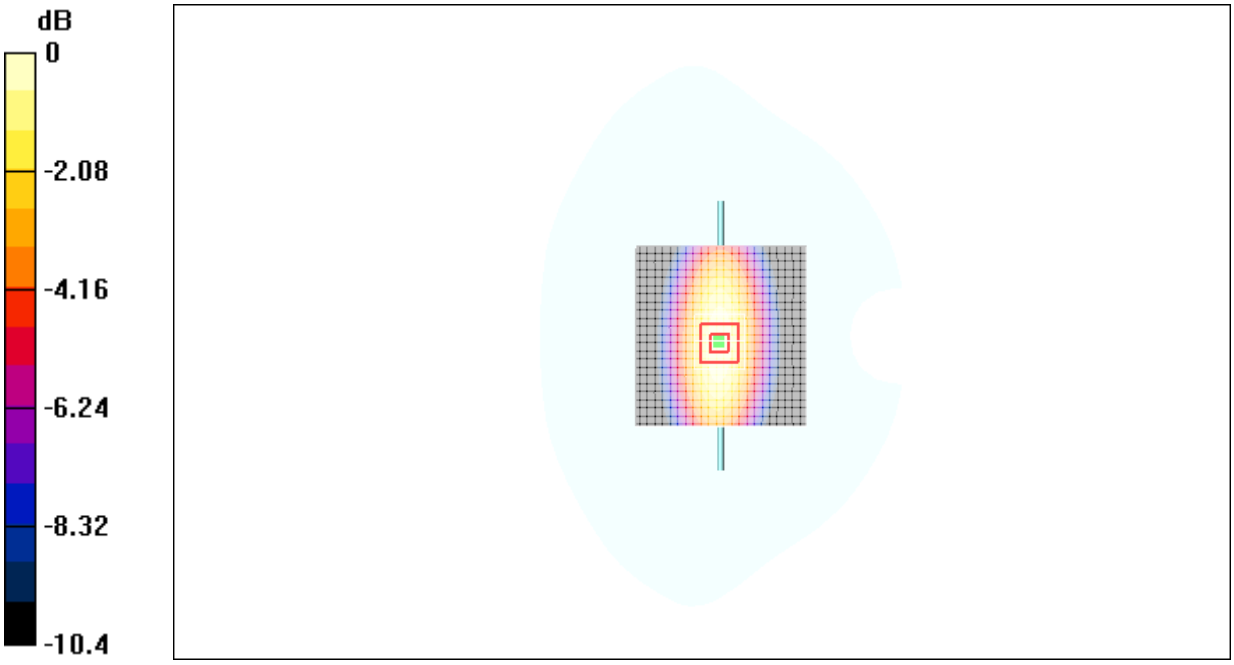
**Fig.127 validation 835MHz 250mW**

## 835MHz

Date/Time: 2011-12-14 14:32:46
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; $\sigma$ = 0.96 mho/m; $\varepsilon_r$ = 54.4; $\rho$ = 1000 kg/$m^3$
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) = 2.50 mW/g

**System Validation /Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.9 V/m; Power Drift = 0.098 dB
Peak SAR (extrapolated) = 3.33 W/kg
**SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.53 mW/g**
Maximum value of SAR (measured) = 2.45 mW/g




0 dB = 2.45mW/g

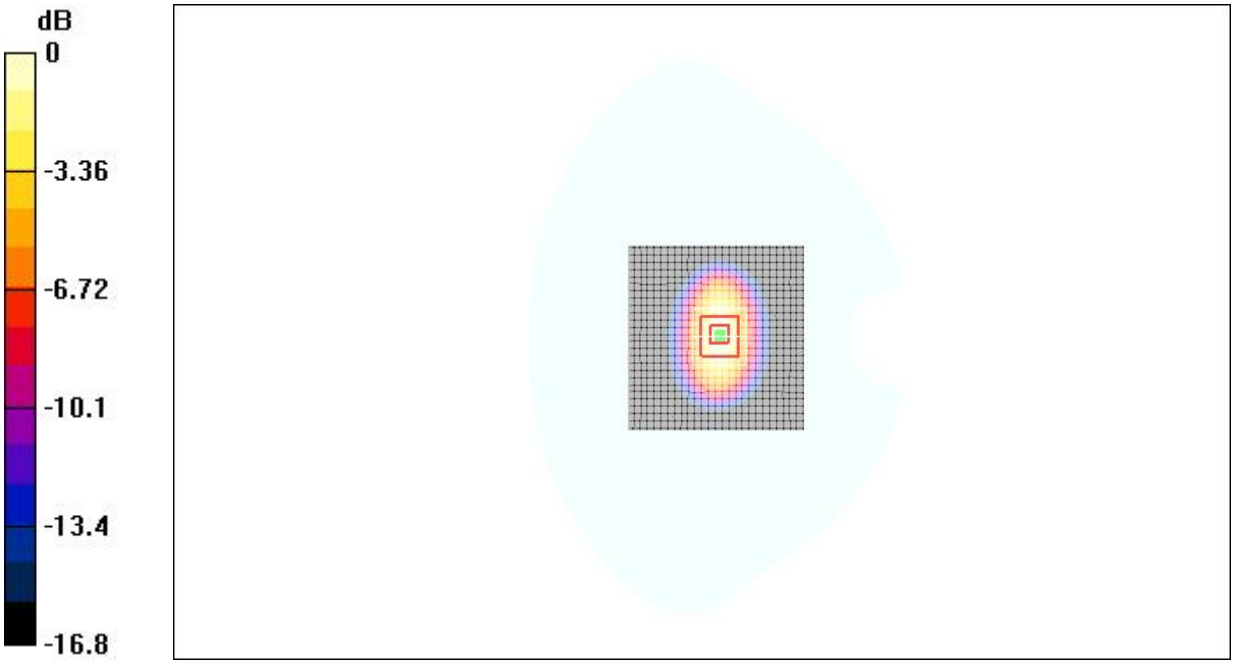
**Fig.128 validation 835MHz 250mW**

## 1900MHz

Date/Time: 2011-12-15 7:19:28
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.39 mho/m; $\varepsilon_r$ = 40.3; $\rho$ = 1000 kg/m$^3$
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) = 11.1 mW/g

**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.7 V/m; Power Drift = -0.085 dB
Peak SAR (extrapolated) = 14.3 W/kg
**SAR(1 g) = 9.58 mW/g; SAR(10 g) = 4.94 mW/g**
Maximum value of SAR (measured) = 10.0 mW/g




0 dB = 10.0mW/g

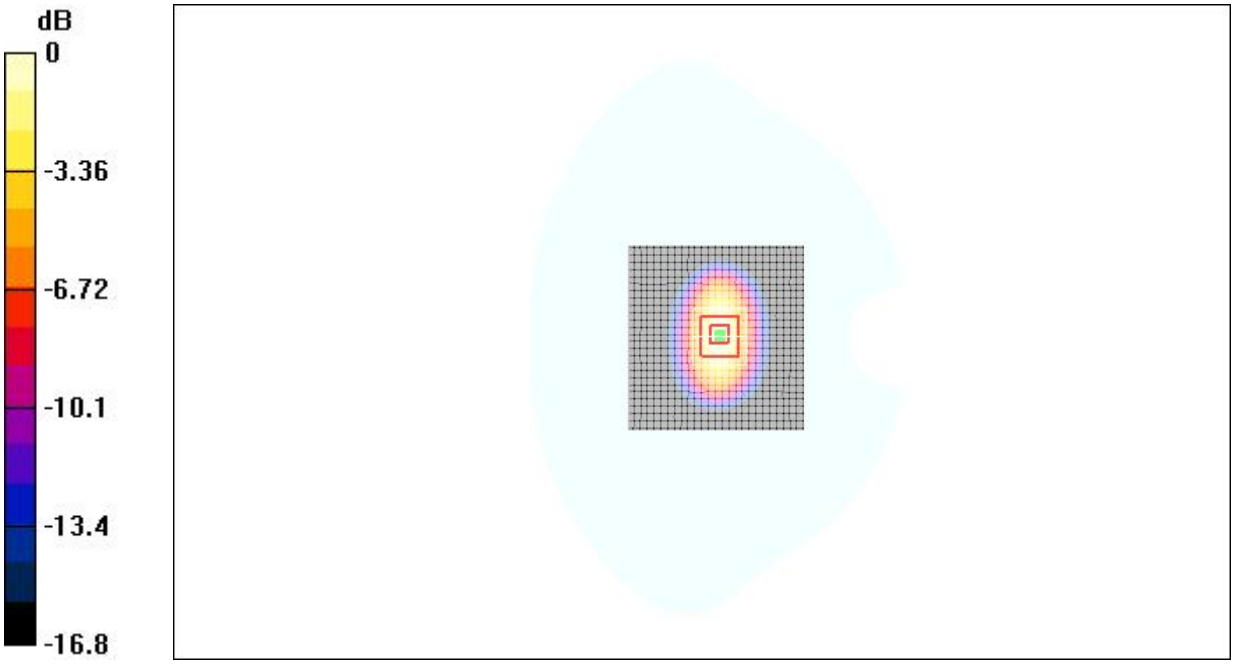
**Fig.129 validation 1900MHz 250mW**

## 1900MHz

Date/Time: 2011-12-15 14:39:04
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; $\sigma$ = 1.53 mho/m; $\varepsilon_r$ = 52.2; $\rho$ = 1000 kg/$m^3$
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) = 11.3 mW/g

**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 91.5 V/m; Power Drift = -0.069 dB
Peak SAR (extrapolated) = 15.3 W/kg
**SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.10 mW/g**
Maximum value of SAR (measured) = 10.8 mW/g




0 dB = 10.8mW/g

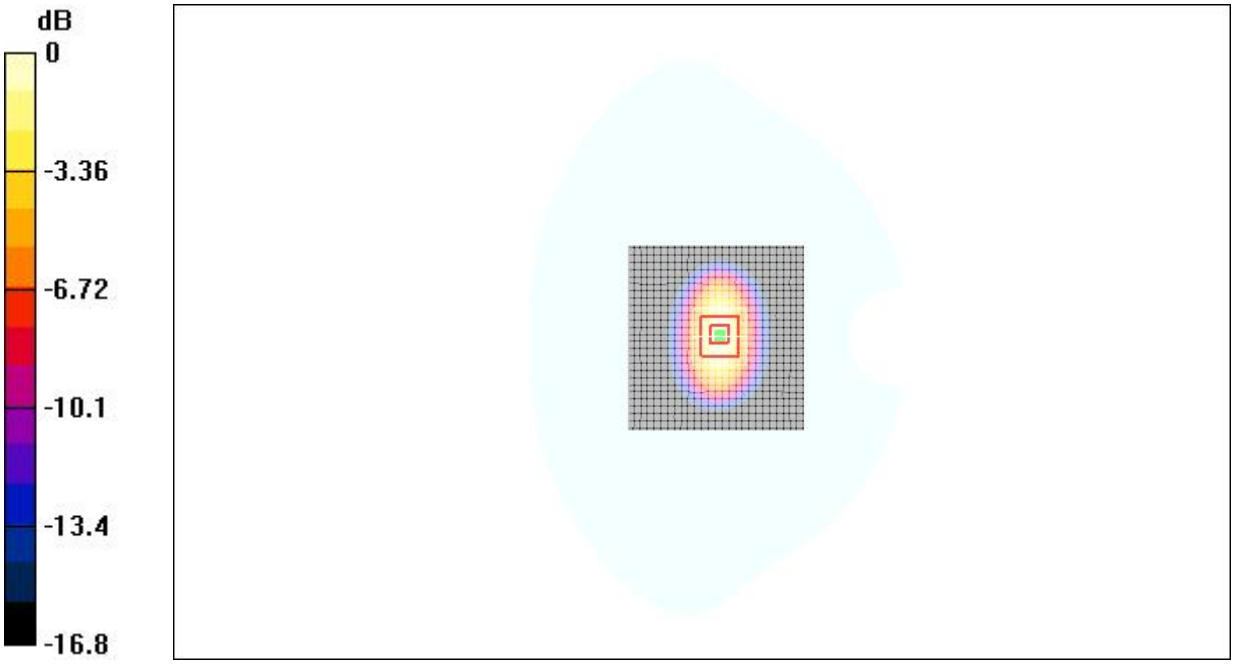
**Fig.130 validation 1900MHz 250mW**

## 2450MHz

Date/Time: 2011-12-16 7:22:47
Electronics: DAE4 Sn771
Medium: Head 2450 MHz
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.81 mho/m; $\varepsilon_r$ = 39.4; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.35, 4.35, 4.35)

**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 14.3 mW/g

**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.4 V/m; Power Drift = 0.066 dB
Peak SAR (extrapolated) = 18.8 W/kg
**SAR(1 g) = 12.9 mW/g; SAR(10 g) = 5.97 mW/g**
Maximum value of SAR (measured) = 14.0 mW/g




0 dB = 14.0mW/g

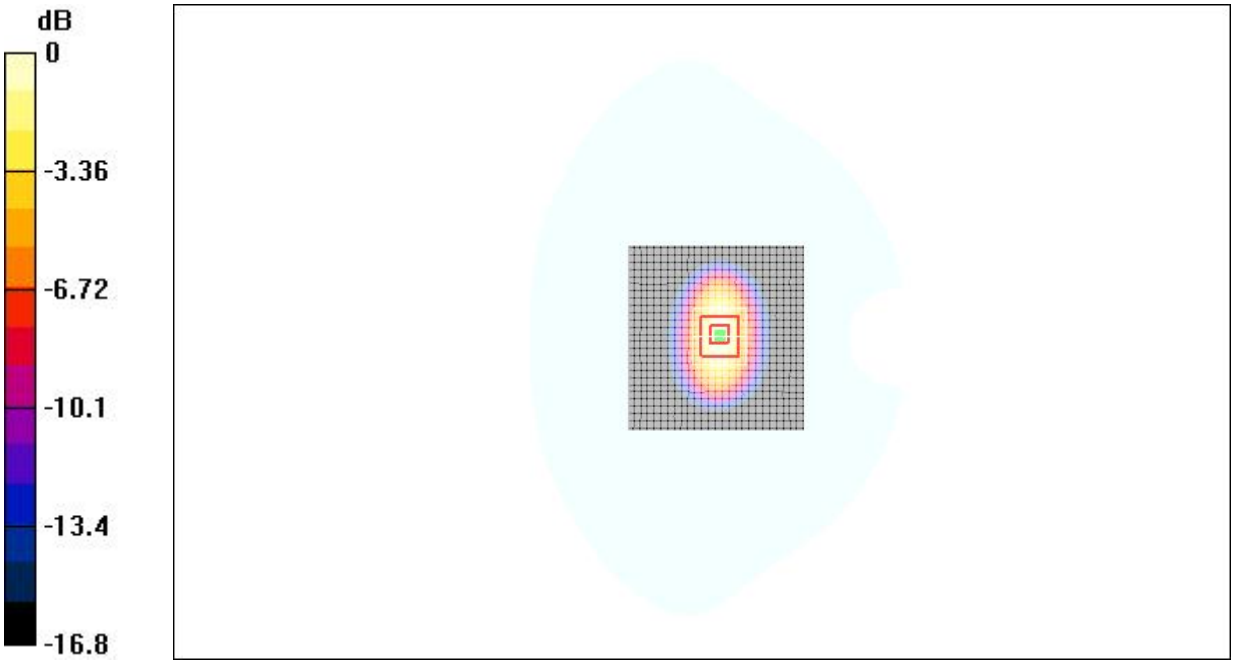
**Fig.131 validation 2450MHz 250mW**

## 2450MHz

Date/Time: 2011-12-16 15:22:09
Electronics: DAE4 Sn771
Medium: Body 2450 MHz
Medium parameters used: f = 2450 MHz; $\sigma$ = 1.94 mho/m; $\varepsilon_r$ = 53.0; $\rho$ = 1000 kg/m$^3$
Ambient Temperature:23.0oC Liquid Temperature: 22.5$^o$C
Communication System: CW Frequency: 2450 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.13, 4.13, 4.13)

**System Validation/Area Scan (101x101x1):** Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 14.7 mW/g

**System Validation/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 86.0 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 22.4 W/kg
**SAR(1 g) = 12.8 mW/g; SAR(10 g) = 5.89 mW/g**
Maximum value of SAR (measured) = 14.1 mW/g




0 dB = 14.1mW/g

**Fig.132 validation 2450MHz 250mW**

# ANNEX E PROBE CALIBRATION CERTIFICATE

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client TMC China Certificate No: ES3DV3-3149_Sep10

## CALIBRATION CERTIFICATE

| | |
|---|---|
| Object | ES3DV3-SN: 3149 |
| Calibration procedure(s) | QA CAL-01.v6<br>Calibration procedure for dosimetric E-field probes |
| Calibration date: | September 25, 2010 |
| Condition of the calibrated item | In Tolerance |

This calibration certify documents the traceability to national standards, which realize the physical units of measurements(SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted at an environment temperature (22±3)°C and humidity<70%

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID# | Cal Data (Calibrated by, Certification NO.) | Scheduled Calibration |
|---|---|---|---|
| Power meter E4419B | GB41293874 | 5-May-10 (METAS, NO. 251-00388) | May-11 |
| Power sensor E4412A | MY41495277 | 5-May-10 (METAS, NO. 251-00388) | May-11 |
| Reference 3 dB Attenuator | SN:S5054 (3c) | 10-Aug-10 (METAS, NO. 251-00403) | Aug-11 |
| Reference 20 dB Attenuator | SN:S5086 (20b) | 3-May-10 (METAS, NO. 251-00389) | May-11 |
| Reference 30 dB Attenuator | SN:S5129 (30b) | 10-Aug-10 (METAS, NO. 251-00404) | Aug-11 |
| DAE4 | SN:617 | 10-Jun-10 (SPEAG, NO.DAE4-907_Jun10) | Jun-11 |
| Reference Probe ES3DV2 | SN: 3013 | 12-Jan-10 (SPEAG, NO. ES3-3013_Jan10) | Jan-11 |

| Secondary Standards | ID# | Check Data (in house) | Scheduled Calibration |
|---|---|---|---|
| RF generator HP8648C | US3642U01700 | 4-Aug-99(SPEAG, in house check Oct-09) | In house check: Oct-10 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01(SPEAG, in house check Nov-09) | In house check: Nov-10 |

| | Name | Function | Signature |
|---|---|---|---|
| Calibrated by: | Katja Pokovic | Technical Manager | |
| Approved by: | Niels Kuster | Quality Manager | |

Issued: September 25, 2010

This calibration certificate shall not be reported except in full without written approval of the laboratory.

**Calibration Laboratory of**
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
**The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates**

Accreditation No.: **SCS 108**

**Glossary:**

| | |
|---|---|
| TSL | tissue simulating liquid |
| NORMx,y,z | sensitivity in free space |
| ConF | sensitivity in TSL / NORMx,y,z |
| DCP | diode compression point |
| Polarization φ | φ rotation around probe axis |
| Polarization ϑ | ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis |

**Calibration is Performed According to the Following Standards:**

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

**Methods Applied and Interpretation of Parameters:**

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the $E^2$-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

# Probe ES3DV3

## SN: 3149

Manufactured: June 12, 2007

Calibrated: September 25, 2010

Calibrated for DASY4 System

**ES3DV3 SN: 3149** **September 25, 2010**

## DASY – Parameters of Probe: ES3DV3 SN:3149

Sensitivity in Free Space[A] Diode Compression[B]

| | | | | |
|---|---|---|---|---|
| NormX | 1.14±10.1% | $\mu V/(V/m)^2$ | DCP X | 94mV |
| NormY | 1.23±10.1% | $\mu V/(V/m)^2$ | DCP Y | 95mV |
| NormZ | 1.29±10.1% | $\mu V/(V/m)^2$ | DCP Z | 91mV |

Sensitivity in Tissue Simulating Liquid (Conversion Factors)
Please see Page 8

Boundary Effect

TSL 900MHz Typical SAR gradient: 5% per mm

| Sensor Center to Phantom Surface Distance | | 3.0 mm | 4.0 mm |
|---|---|---|---|
| SARbe[%] | Without Correction Algorithm | 3.8 | 1.6 |
| SARbe[%] | With Correction Algorithm | 0.8 | 0.7 |

TSL 1810MHz Typical SAR gradient: 10% per mm

| Sensor Center to Phantom Surface Distance | | 3.0 mm | 4.0 mm |
|---|---|---|---|
| SARbe[%] | Without Correction Algorithm | 6.8 | 3.6 |
| SARbe[%] | With Correction Algorithm | 0.4 | 0.2 |

Sensor Offset

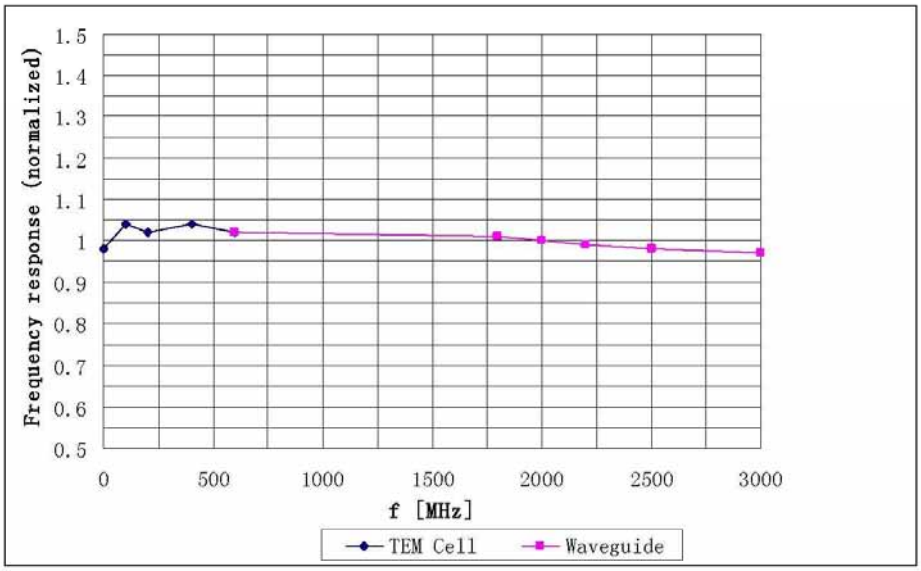
| | |
|---|---|
| Probe Tip to Sensor Center | 2.0 mm |

The reported uncertainty of measurement is stated as the standard uncertainty of Measurement multiplied by the coverage factor k=2,which for a normal distributio Corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the $E^2$-field uncertainty inside TSL (see Page 8).
[B] Numerical linearization parameter: uncertainty not required.

**ES3DV3 SN: 3149** **September 25, 2010**

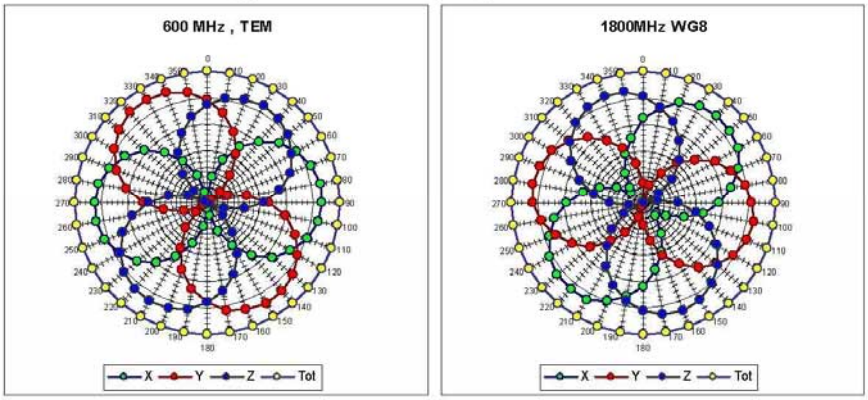
# Frequency Response of E-Field

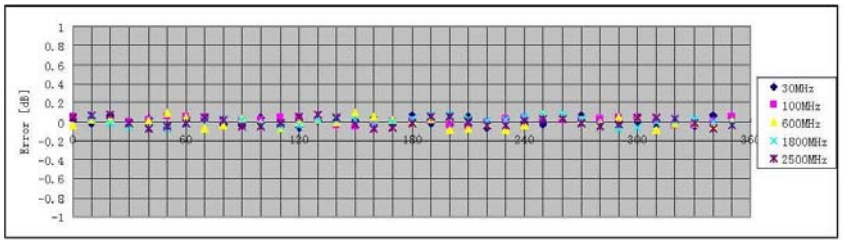



**Uncertainty of Frequency Response of E-field: ±5.0% (k=2)**

**ES3DV3 SN: 3149** **September 25, 2010**

## Receiving Pattern ( $\phi$ ), $\theta$ =0°

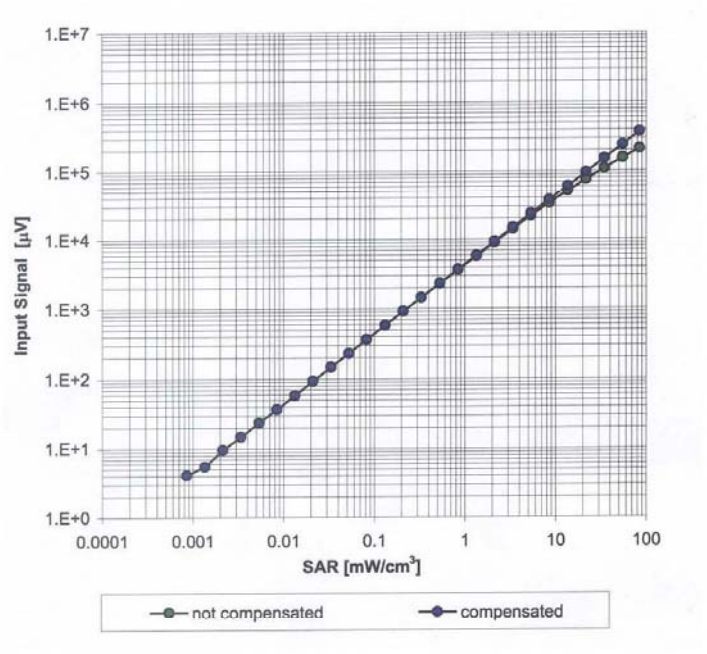


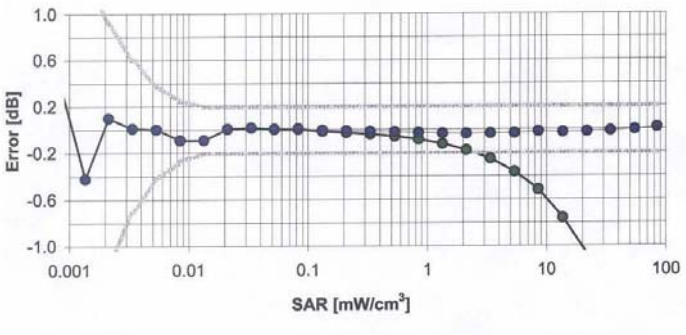




**Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)**

# Dynamic Range f($SAR_{head}$)

(Waveguide: WG8, f = 1800 MHz)

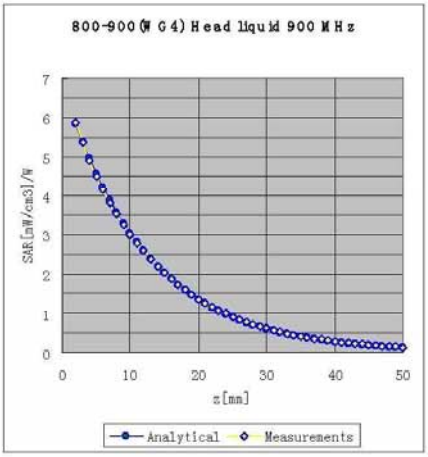


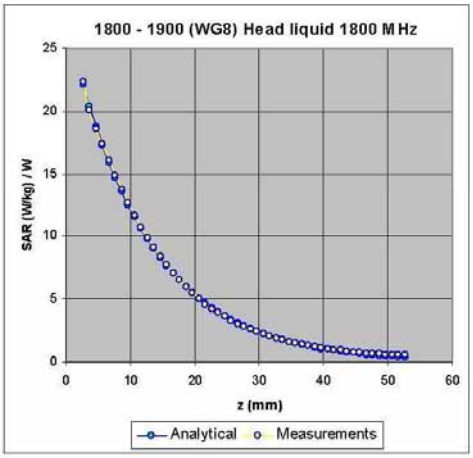




**Uncertainty of Linearity Assessment: ±0.5% (k=2)**

**ES3DV3 SN: 3149** **September 25, 2010**

# Conversion Factor Assessment



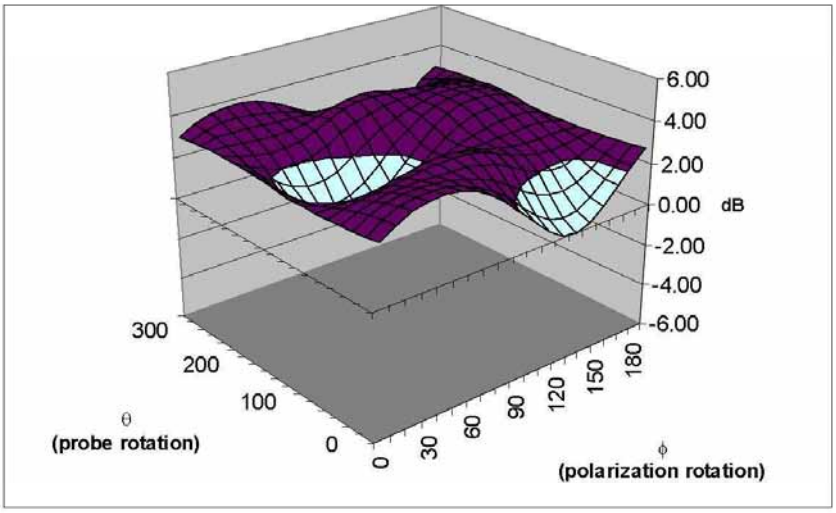

| f[MHz] | Validity[MHz][C] | TSL | Permittivity | Conductivity | Alpha | Depth | ConvF | Uncertainty |
|---|---|---|---|---|---|---|---|---|
| 850 | ±50 /±100 | Head | 41.5±5% | 0.90±5% | 0.91 | 1.13 | 6.56 | ±11.0% (k=2) |
| 900 | ±50 /±100 | Head | 41.5±5% | 0.97±5% | 0.83 | 1.26 | 6.34 | ±11.0% (k=2) |
| 1800 | ±50 /±100 | Head | 40.0±5% | 1.40±5% | 0.69 | 1.47 | 5.18 | ±11.0% (k=2) |
| 1900 | ±50 /±100 | Head | 40.0±5% | 1.40±5% | 0.72 | 1.38 | 5.03 | ±11.0% (k=2) |
| 2100 | ±50 /±100 | Head | 39.8±5% | 1.49±5% | 0.66 | 1.34 | 4.58 | ±11.0% (k=2) |
| 850 | ±50 /±100 | Body | 55.2±5% | 0.97±5% | 0.76 | 1.26 | 6.22 | ±11.0% (k=2) |
| 900 | ±50 /±100 | Body | 55.0±5% | 1.05±5% | 0.99 | 1.06 | 6.02 | ±11.0% (k=2) |
| 1800 | ±50 /±100 | Body | 53.3±5% | 1.52±5% | 0.75 | 1.34 | 4.97 | ±11.0% (k=2) |
| 1900 | ±50 /±100 | Body | 53.3±5% | 1.52±5% | 0.62 | 1.33 | 4.68 | ±11.0% (k=2) |
| 2100 | ±50 /±100 | Body | 53.5±5% | 1.57±5% | 0.68 | 1.34 | 4.35 | ±11.0% (k=2) |

[C] The validity of ±100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

**ES3DV3 SN: 3149** **September 25, 2010**

# Deviation from Isotropy

**Error ( Φ , θ ), f = 900 MHz**




**Uncertainty of Spherical Isotropy Assessment: ±2.5% (k=2)**

Calibration Laboratory of
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Accreditation No.: SCS 108

Client TMC China

Certificate No: EX3DV4-3617_Jul11

# CALIBRATION CERTIFICATE

| | |
|---|---|
| Object | **EX3DV4-SN: 3617** |
| Calibration procedure(s) | **QA CAL-01.v6**<br>**Calibration procedure for dosimetric E-field probes** |
| Calibration date: | **July 8, 2011** |
| Condition of the calibrated item | **In Tolerance** |

This calibration certify documents the traceability to national standards, which realize the physical units of measurements(SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted at an environment temperature (22±3)°C and humidity<70%

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID# | Cal Data (Calibrated by, Certification NO.) | Scheduled Calibration |
|---|---|---|---|
| Power meter E4419B | GB41293874 | 5-May-11 (METAS, NO. 251-00388) | May-12 |
| Power sensor E4412A | MY41495277 | 5-May-11 (METAS, NO. 251-00388) | May-12 |
| Reference 3 dB Attenuator | SN:S5054 (3c) | 11-Aug-10 (METAS, NO. 251-00403) | Aug-11 |
| Reference 20 dB Attenuator | SN:S5086 (20b) | 3-May-11 (METAS, NO. 251-00389) | May-12 |
| Reference 30 dB Attenuator | SN:S5129 (30b) | 11-Aug-10 (METAS, NO. 251-00404) | Aug-11 |
| DAE4 | SN:617 | 10-Jun-11 (SPEAG, NO.DAE4-907_Jun11) | Jun-12 |
| Reference Probe ES3DV2 | SN: 3013 | 12-Jan-11 (SPEAG, NO. ES3-3013_Jan11) | Jan-12 |

| Secondary Standards | ID# | Check Data (in house) | Scheduled Calibration |
|---|---|---|---|
| RF generator HP8648C | US3642U01700 | 4-Aug-99(SPEAG, in house check Oct-10) | In house check: Oct-11 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01(SPEAG, in house check Nov-10) | In house check: Nov-11 |

| | Name | Function | Signature |
|---|---|---|---|
| Calibrated by: | Katja Pokovic | Technical Manager | |
| Approved by: | Niels Kuster | Quality Manager | |

Issued: July 8, 2011

This calibration certificate shall not be reported except in full without written approval of the laboratory.

**Calibration Laboratory of**
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Zeughausstrasse 43, 8004 Zurich, Switzerland

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**Accreditation No.: SCS 108**

**Glossary:**

| | |
|---|---|
| TSL | tissue simulating liquid |
| NORMx,y,z | sensitivity in free space |
| ConF | sensitivity in TSL / NORMx,y,z |
| DCP | diode compression point |
| Polarization φ | φ rotation around probe axis |
| Polarization ϑ | ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis |

**Calibration is Performed According to the Following Standards:**

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

**Methods Applied and Interpretation of Parameters:**

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the $E^2$-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

# Probe EX3DV4

## SN: 3617

Manufactured: May 3, 2007

Calibrated: July 8, 2011

Calibrated for DASY/EASY System

(Note: non-compatible with DASY2 system!)

# DASY/EASY – Parameters of Probe: EX3DV4 - SN:3617

## Basic Calibration Parameters

| | Sensor X | Sensor Y | Sensor Z | Unc (k=2) |
|---|---|---|---|---|
| Norm ( μ V/(V/m)$^2$)$^A$ | 0.42 | 0.44 | 0.31 | ±10.1% |
| DCP (mV)$^B$ | 89 | 88 | 91 | |

## Modulation Calibration Parameters

| UID | Communication System Name | PAR | | A dB | B dBuV | C | VR mV | Unc$^E$ (k=2) |
|---|---|---|---|---|---|---|---|---|
| 10000 | CW | 0.00 | X | 0.00 | 0.00 | 1.00 | 300.0 | ±1.5% |
| | | | Y | 0.00 | 0.00 | 1.00 | 300.0 | |
| | | | Z | 0.00 | 0.00 | 1.00 | 300.0 | |

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2,which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the $E^2$-field uncertainty inside TSL (see Page 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

# DASY/EASY – Parameters of Probe: EX3DV4 - SN:3617

## Calibration Parameter Determined in Head Tissue Simulating Media

| f[MHz] [C] | Relative Permittivity [F] | Conductivity (S/m) [F] | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|---|---|---|---|---|---|---|---|---|
| 2300 | 39.5 | 1.67 | 7.23 | 7.23 | 7.23 | 0.33 | 1.02 | ±12.0% |
| 2450 | 39.2 | 1.80 | 7.19 | 7.19 | 7.19 | 0.33 | 1.00 | ±12.0% |
| 2600 | 39.0 | 1.96 | 7.16 | 7.16 | 7.16 | 0.36 | 1.21 | ±12.0% |
| 3500 | 37.9 | 2.91 | 6.48 | 6.48 | 6.48 | 0.34 | 1.35 | ±12.0% |
| 5200 | 36.0 | 4.66 | 5.33 | 5.33 | 5.33 | 0.35 | 1.60 | ±12.0% |
| 5800 | 35.3 | 5.27 | 4.69 | 4.69 | 4.69 | 0.35 | 1.60 | ±12.0% |

[C] Frequency validity of ±100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters ( ε and σ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( ε and σ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

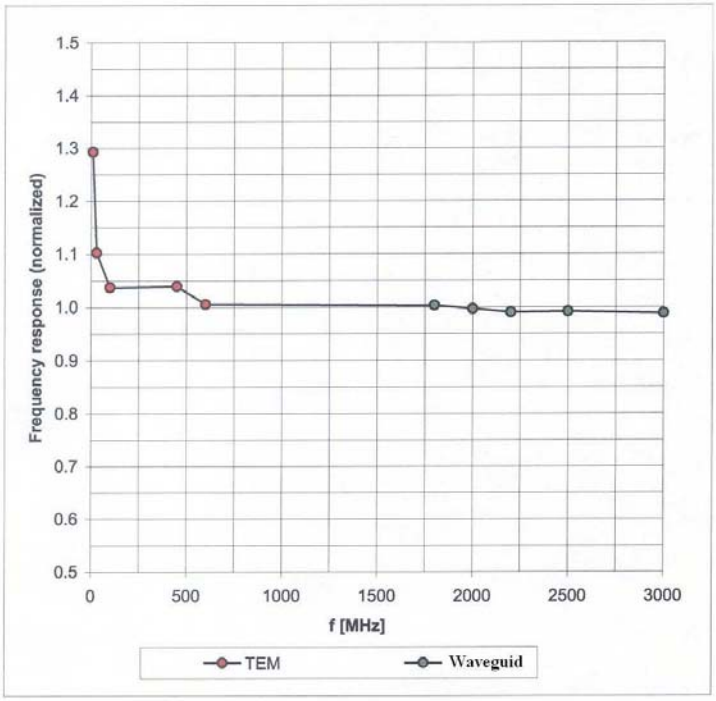
# DASY/EASY – Parameters of Probe: EX3DV4 - SN:3617

## Calibration Parameter Determined in Body Tissue Simulating Media

| f[MHz] [C] | Relative Permittivity [F] | Conductivity (S/m) [F] | ConvF X | ConvF Y | ConvF Z | Alpha | Depth (mm) | Unct. (k=2) |
|---|---|---|---|---|---|---|---|---|
| 2300 | 52.8 | 1.85 | 6.95 | 6.95 | 6.95 | 0.30 | 1.01 | ±12.0% |
| 2450 | 52.7 | 1.95 | 6.88 | 6.88 | 6.88 | 0.36 | 1.00 | ±12.0% |
| 2600 | 52.5 | 2.16 | 6.84 | 6.84 | 6.84 | 0.36 | 1.05 | ±12.0% |
| 3500 | 51.3 | 3.30 | 5.02 | 5.02 | 5.02 | 0.33 | 1.40 | ±12.0% |
| 5200 | 49.0 | 5.30 | 4.64 | 4.64 | 4.64 | 0.35 | 1.70 | ±12.0% |
| 5800 | 48.2 | 6.00 | 4.53 | 4.53 | 4.53 | 0.30 | 1.70 | ±12.0% |

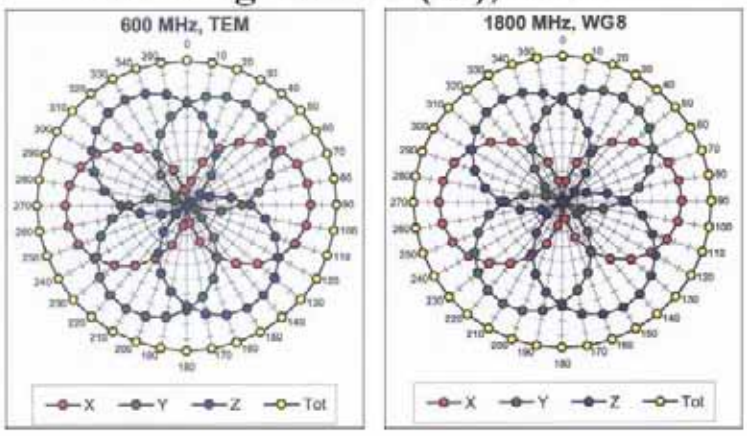
[C] Frequency validity of ±100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies below 3 GHz, the validity of tissue parameters ( ε and σ ) can be relaxed to ±10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters ( ε and σ ) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

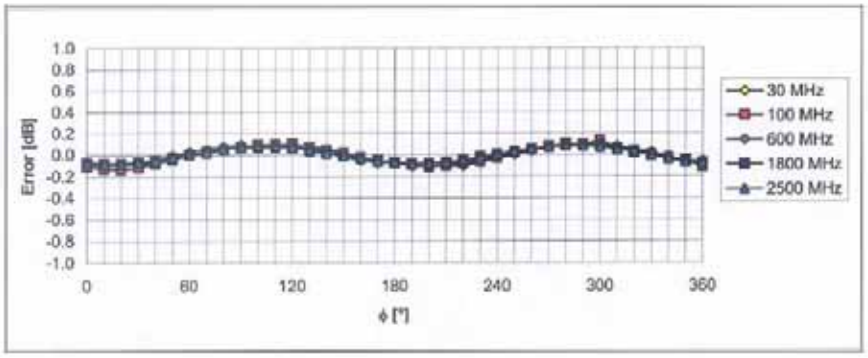
# Frequency Response of E-Field
(TEM-Cell: ifi110 EXX, Waveguide: R22)




**Uncertainty of Frequency Response of E-field: ±6.3% (k=2)**

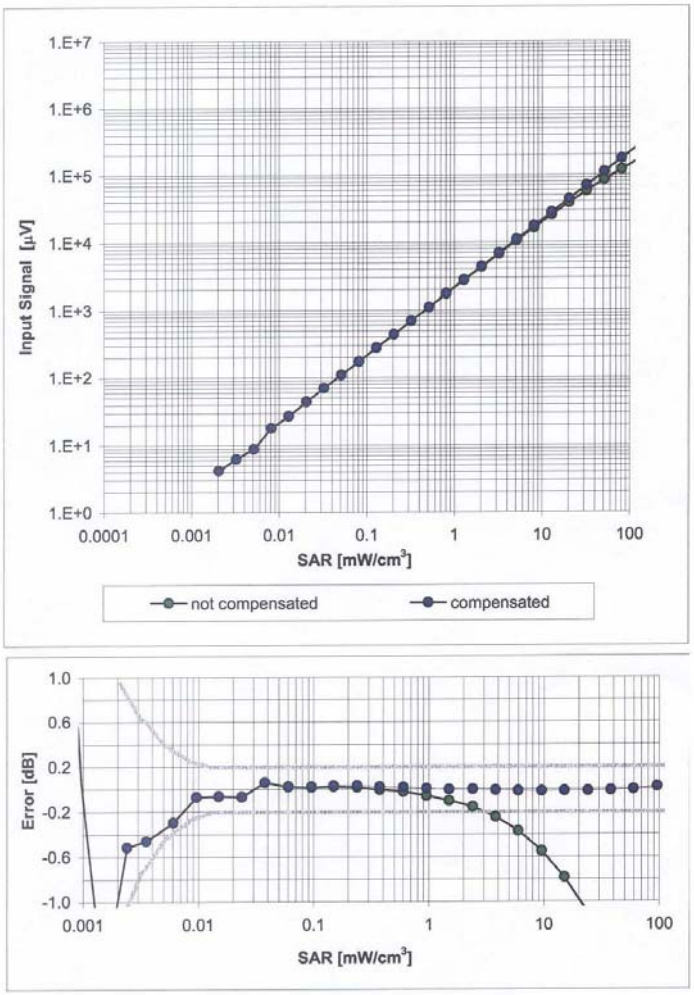
## Receiving Pattern ( $\phi$ ), $\theta = 0°$




**Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)**

# Dynamic Range f($SAR_{head}$)
(Waveguide: WG8, f = 1800 MHz)







**Uncertainty of Linearity Assessment: ±0.6% (k=2)**

# ANNEX E PROBE CALIBRATION CERTIFICATE

Calibration Laboratory of
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Zeughausstrasse 43, 8004 Zurich, Switzerland

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The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client TMC China Certificate No: ES3DV3-3149_Sep11

## CALIBRATION CERTIFICATE

| | |
|---|---|
| Object | ES3DV3-SN: 3149 |
| Calibration procedure(s) | QA CAL-01.v6<br>Calibration procedure for dosimetric E-field probes |
| Calibration date: | September 24, 2011 |
| Condition of the calibrated item | In Tolerance |

This calibration certify documents the traceability to national standards, which realize the physical units of measurements(SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted at an environment temperature (22±3)°C and humidity<70%

Calibration Equipment used (M&TE critical for calibration)

| Primary Standards | ID# | Cal Data (Calibrated by, Certification NO.) | Scheduled Calibration |
|---|---|---|---|
| Power meter E4419B | GB41293874 | 5-May-11 (METAS, NO. 251-00388) | May-12 |
| Power sensor E4412A | MY41495277 | 5-May-11 (METAS, NO. 251-00388) | May-12 |
| Reference 3 dB Attenuator | SN:S5054 (3c) | 11-Aug-11 (METAS, NO. 251-00403) | Aug-12 |
| Reference 20 dB Attenuator | SN:S5086 (20b) | 3-May-11 (METAS, NO. 251-00389) | May-12 |
| Reference 30 dB Attenuator | SN:S5129 (30b) | 11-Aug-11 (METAS, NO. 251-00404) | Aug-12 |
| DAE4 | SN:617 | 10-Jun-11 (SPEAG, NO.DAE4-907_Jun11) | Jun-12 |
| Reference Probe ES3DV2 | SN: 3013 | 12-Jan-11 (SPEAG, NO. ES3-3013_Jan11) | Jan-12 |

| Secondary Standards | ID# | Check Data (in house) | Scheduled Calibration |
|---|---|---|---|
| RF generator HP8648C | US3642U01700 | 4-Aug-99(SPEAG, in house check Oct-10) | In house check: Oct-11 |
| Network Analyzer HP 8753E | US37390585 | 18-Oct-01(SPEAG, in house check Nov-10) | In house check: Nov-11 |

| | Name | Function | Signature |
|---|---|---|---|
| Calibrated by: | Katja Pokovic | Technical Manager | |
| Approved by: | Niels Kuster | Quality Manager | |

Issued: September 24, 2011

This calibration certificate shall not be reported except in full without written approval of the laboratory.

**Calibration Laboratory of**
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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**Accreditation No.: SCS 108**

**Glossary:**

| | |
|---|---|
| TSL | tissue simulating liquid |
| NORMx,y,z | sensitivity in free space |
| ConF | sensitivity in TSL / NORMx,y,z |
| DCP | diode compression point |
| Polarization φ | φ rotation around probe axis |
| Polarization ϑ | ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis |

**Calibration is Performed According to the Following Standards:**

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

**Methods Applied and Interpretation of Parameters:**

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the $E^2$-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

# Probe ES3DV3

## SN: 3149

Manufactured: June 12, 2007

Calibrated: September 24, 2011

Calibrated for DASY/EASY System

(Note: non-compatible with DASY2 system!)