SAR TEST REPORT

No. 2011SAR00092

For

TCT Mobile Limited

GSM dual band mobile phone

U11 B/W US

one touch 117A

With

Hardware Version: PIO

Software Version: V112

FCCID: RAD199

Issued Date: 2011-07-28

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
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Postal Code:	100191
Telephone:	+86-10-62304633
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1.2 Testing Environment

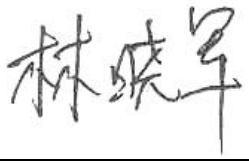
Temperature:	18°C~25 °C,
Relative humidity:	30%~ 70%
Ground system resistance:	< 0.5 Ω

Ambient noise is checked and found very low and in compliance with requirement of standards.
Reflection of surrounding objects is minimized and in compliance with requirement of standards.

1.3 Project Data

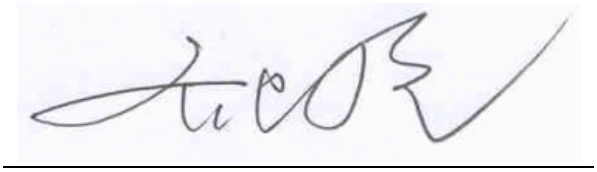
Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	July 17, 2011
Testing End Date:	July 18, 2011

1.4 Signature



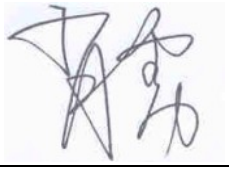
Lin Xiaojun

(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
Telephone:	0086-21-61460890
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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
Country:	P. R. China
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

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

3.1 About EUT

EUT Description:	GSM dual band mobile phone
Model Name:	U11 B/W US
Marketing Name:	one touch 117A
Frequency Band:	GSM 850 / PCS 1900

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	012807000000384 / 012807000000467	PIO	V112

*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	CAB2170000C1	/	BYD
AE2	Battery	CAB229A000C1	/	BAK
AE3	Battery	CAB30M0000C1	/	BYD
AE4	Battery	CAB30M0000C2	/	BAK
AE5	Battery	CAB30B4000C1	/	BYD
AE6	Headset	CCA23L0A10C1	/	LianYun
AE6	Headset	CCA23L0A10C2	/	JuWei
AE6	Headset	CCA23L0A15C1	/	LianYun
AE6	Headset	CCA23L0A15C2	/	JuWei

*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: 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)

5 OPERATIONAL CONDITIONS DURING TEST

5.1 Schematic Test Configuration

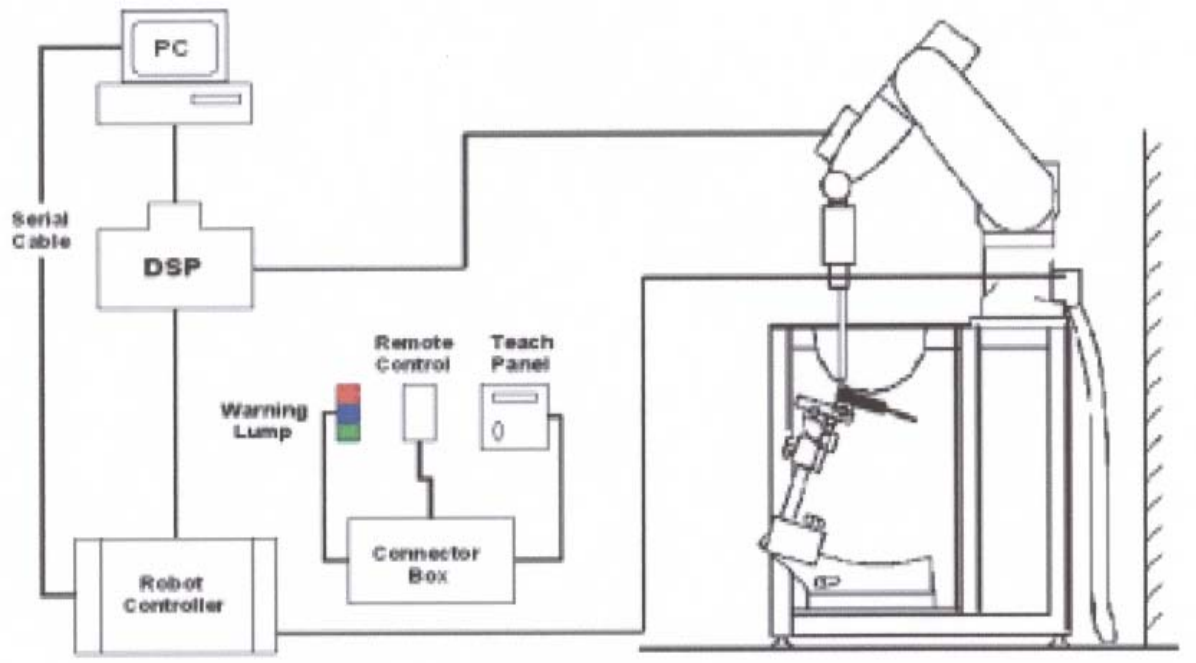
During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of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

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

5.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 Professional from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 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 Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request

Picture 3: ES3DV3 E-field

Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 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) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

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

Or

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

Where:

Picture 5: Device Holder

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

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=0.92

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

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=0.99
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

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

The conducted power for GSM 850/1900 is as following:

GSM 850MHZ	**Conducted Power (dBm)**		
	Channel 251(848.8MHz)	**Channel 190(836.6MHz)**	**Channel 128(824.2MHz)**
	33.01	33.01	32.97
GSM 1900MHZ	**Conducted Power (dBm)**		
	Channel 810(1909.8MHz)	**Channel 661(1880MHz)**	**Channel 512(1850.2MHz)**
	30.64	30.65	30.68

6.2.3 Power Drift

To control the output power stability during the SAR test, DASY4 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in Table 10 to Table 15 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 4: Dielectric Performance of Head Tissue Simulating Liquid

Measurement is made at temperature 23.0 °C and relative humidity 40%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **July 17, 2011** 1900 MHz **July 18, 2011**			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	41.5	0.90
	1900 MHz	40.0	1.40
Measurement value (Average of 10 tests)	835 MHz	42.1	0.91
	1900 MHz	39.6	1.38

Table 5: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.0 °C and relative humidity 40%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **July 17, 2011** 1900 MHz **July 18, 2011**			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	55.2	0.97
	1900 MHz	53.3	1.52
Measurement value (Average of 10 tests)	835 MHz	54.0	0.95
	1900 MHz	52.6	1.50

7.2 System Validation

Table 6: System Validation of Head

Measurement is made at temperature 23.0 °C and relative humidity 40%.
Liquid temperature during the test: 22.5°C
Measurement Date : 850 MHz **July 17, 2011** 1900 MHz **July 18, 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	
	Actural Measurement value	835 MHz		42.1		0.91	
		1900 MHz		39.6		1.38	
Verification results	**Frequency**	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz	6.12	9.41	6.08	9.52	-0.65%	1.17%
	1900 MHz	20.1	39.4	19.64	39.0	-2.29%	-1.02%

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

Table 7: System Validation of Body

Measurement is made at temperature 23.0 °C and relative humidity 40%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **July 17, 2011** 1900 MHz **July 18, 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	
	Actural Measurement value	835 MHz		54.0		0.95	
		1900 MHz		52.6		1.50	
Verification results	**Frequency**	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz	6.24	9.57	6.04	9.36	-3.21%	-2.19%
	1900 MHz	20.9	41.4	20.44	40.8	-2.20%	-1.45%

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 8: Pretest SAR Values (GSM 850 MHz Band-Head)

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, High frequency (CAB229A000C1)	0.784	1.15
Right hand, Touch cheek, High frequency (CAB2170000C1)	0.725	1.06
Right hand, Touch cheek, High frequency (CAB30M0000C1)	0.746	1.09
Right hand, Touch cheek, High frequency (CAB30M0000C2)	0.754	1.1
Right hand, Touch cheek, High frequency (CAB30B4000C1)	0.756	1.1

Note: According to the values in the above table, the battery, CAB229A000C1, is the normal battery. We'll perform the head measurement with this battery and retest on highest value point with others.

Table 9: 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, Mid frequency (CAB229A000C1)	0.510	0.739

Body, Towards Ground, Mid frequency (CAB2170000C1)	0.497	0.720
Body, Towards Ground, Mid frequency (CAB30M0000C1)	0.499	0.721
Body, Towards Ground, Mid frequency (CAB30M0000C2)	0.484	0.700
Body, Towards Ground, Mid frequency (CAB30B4000C1)	0.486	0.704

Note: According to the values in the above table, the battery, CAB229A000C1, 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 10: SAR Values (850MHz-Head) - with battery CAB229A000C1

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)	0.714	1.01	-0.035
Left hand, Touch cheek, Mid frequency (See Fig.2)	0.680	0.964	-0.098
Left hand, Touch cheek, Low frequency (See Fig.3)	0.665	0.939	-0.021
Left hand, Tilt 15 Degree, High frequency (See Fig.4)	0.272	0.375	-0.00841
Left hand, Tilt 15 Degree, Mid frequency (See Fig.5)	0.279	0.383	-0.050
Left hand, Tilt 15 Degree, Low frequency (See Fig.6)	0.288	0.396	0.084
Right hand, Touch cheek, High frequency (See Fig.7)	0.784	1.15	-0.076
Right hand, Touch cheek, Mid frequency (See Fig.8)	0.748	1.1	-0.078
Right hand, Touch cheek, Low frequency (See Fig.9)	0.724	1.06	-0.019
Right hand, Tilt 15 Degree, High frequency (See Fig.10)	0.352	0.496	-0.083
Right hand, Tilt 15 Degree, Mid frequency (See Fig.11)	0.349	0.488	-0.032
Right hand, Tilt 15 Degree, Low frequency (See Fig.12)	0.344	0.479	0.015

Table 11: SAR Values (1900MHz-Head) - with battery CAB229A000C1

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)	0.468	0.774	0.051
Left hand, Touch cheek, Mid frequency (See Fig.14)	0.454	0.746	0.082

Left hand, Touch cheek, Low frequency (See Fig.15)	0.446	0.722	0.000
Left hand, Tilt 15 Degree, High frequency (See Fig.16)	0.280	0.461	0.046
Left hand, Tilt 15 Degree, Mid frequency (See Fig.17)	0.276	0.451	-0.064
Left hand, Tilt 15 Degree, Low frequency (See Fig.18)	0.253	0.411	0.018
Right hand, Touch cheek, High frequency (See Fig.19)	0.563	0.973	0.022
Right hand, Touch cheek, Mid frequency (See Fig.20)	0.541	0.922	0.008
Right hand, Touch cheek, Low frequency (See Fig.21)	0.506	0.817	-0.055
Right hand, Tilt 15 Degree, High frequency (See Fig.22)	0.294	0.484	0.073
Right hand, Tilt 15 Degree, Mid frequency (See Fig.23)	0.290	0.475	-0.134
Right hand, Tilt 15 Degree, Low frequency(See Fig.24)	0.282	0.456	-0.131

Table 12: SAR Values (850MHz-Head) - with other batteries

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**	
Right hand, Touch cheek, High frequency with battery CAB2170000C1 (See Fig.25)	0.725	1.06	0.092
Right hand, Touch cheek, High frequency with battery CAB30M0000C1 (See Fig.26)	0.746	1.09	-0.089
Right hand, Touch cheek, High frequency with battery CAB30M0000C2 (See Fig.27)	0.754	1.1	-0.187
Right hand, Touch cheek, High frequency with battery CAB30B4000C1 (See Fig.28)	0.756	1.1	0.102

Table 13: SAR Values (850MHz-Body) - with battery CAB229A000C1

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**	
Body, Towards Ground, High frequency (See Fig.29)	0.510	0.739	-0.016
Body, Towards Ground, Mid frequency (See Fig.30)	0.505	0.731	-0.025
Body, Towards Ground, Low frequency (See Fig.31)	0.495	0.713	0.148
Body, Towards Phantom, High frequency (See Fig.32)	0.435	0.623	0.146
Body, Towards Phantom, Mid frequency (See Fig.33)	0.416	0.596	0.023
Body, Towards Phantom, Low frequency (See Fig.34)	0.292	0.556	-0.131
Body, Towards Ground, High frequency with Headset CCA23L0A15C1(See Fig.35)	0.390	0.564	-0.171
Body, Towards Ground, High frequency with Headset CCA23L0A15C2(See Fig.36)	0.489	0.703	-0.140

Table 14: SAR Values (1900MHz-Body) - with battery CAB229A000C1

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	
Body, Towards Ground, High frequency (See Fig.37)	0.391	0.667	0.010
Body, Towards Ground, Mid frequency (See Fig.38)	0.355	0.606	-0.031
Body, Towards Ground, Low frequency (See Fig.39)	0.321	0.550	-0.022
Body, Towards Phantom, High frequency (See Fig.40)	0.172	0.293	-0.012
Body, Towards Phantom, Mid frequency (See Fig.41)	0.177	0.287	-0.039
Body, Towards Phantom, Low frequency (See Fig.42)	0.172	0.277	-0.030
Body, Towards Ground, High frequency with Headset CCA23L0A15C1(See Fig.43)	0.377	0.641	0.020
Body, Towards Ground, High frequency with Headset CCA23L0A15C2(See Fig.44)	0.388	0.658	0.123

Table 15: SAR Values (850MHz- Body) - with other batteries

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	
Body, Towards Ground, High frequency with battery CAB2170000C1 (See Fig.45)	0.497	0.720	-0.004
Body, Towards Ground, High frequency with battery CAB30M0000C1 (See Fig.46)	0.499	0.721	-0.084
Body, Towards Ground, High frequency with battery CAB30M0000C2 (See Fig.47)	0.484	0.700	-0.007
Body, Towards Ground, High frequency with battery CAB30B4000C1 (See Fig.48)	0.486	0.704	-0.031

7.5 Conclusion

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

The maximum SAR values are obtained at the case of **GSM 850 Head, Right hand, Touch cheek, High frequency (See Table 10)**, and the value are: **0.784(10g), 1.15(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 uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	∞
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 16: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 4,2010	One year
02	Power meter	NRVD	102083	September 11, 2010	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4438C	MY49070393	November 13, 2010	One Year
05	Amplifier	VTL5400	0505	No Calibration Requested	
06	BTS	8960	MY48365192	November 18, 2010	One year
07	E-field Probe	SPEAG ES3DV3	3149	September 25, 2010	One year
08	DAE	SPEAG DAE4	771	November 21, 2010	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

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.

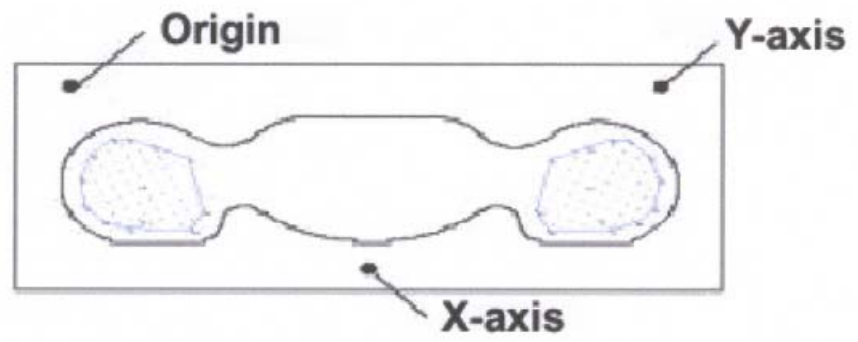
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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.

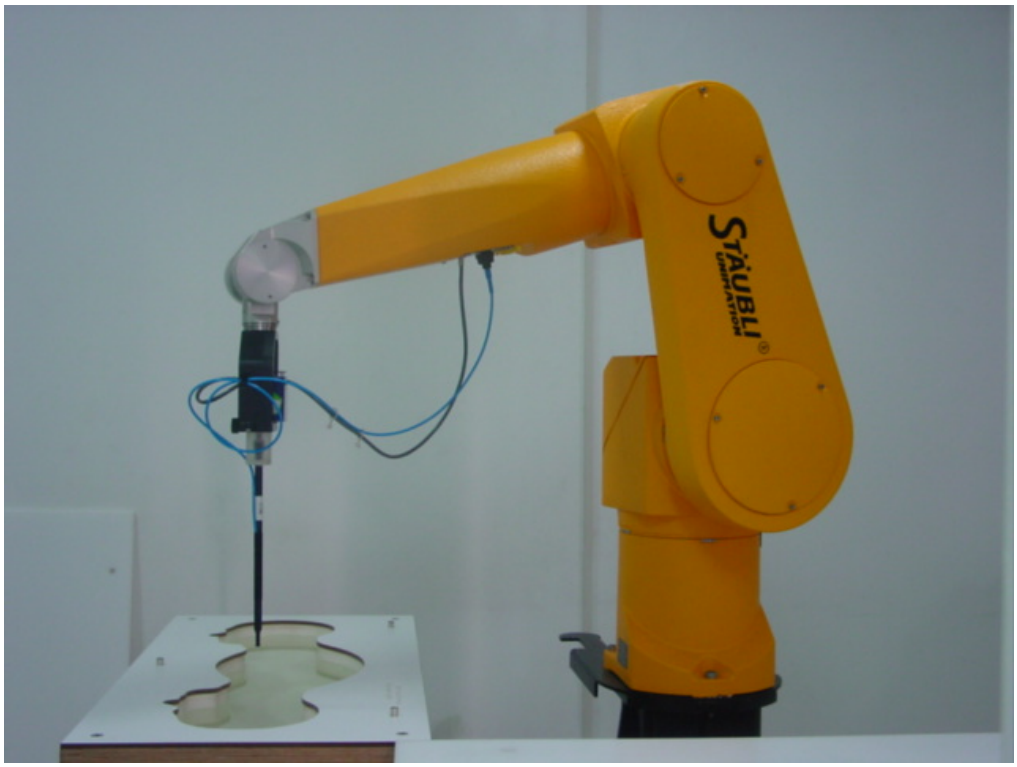
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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.

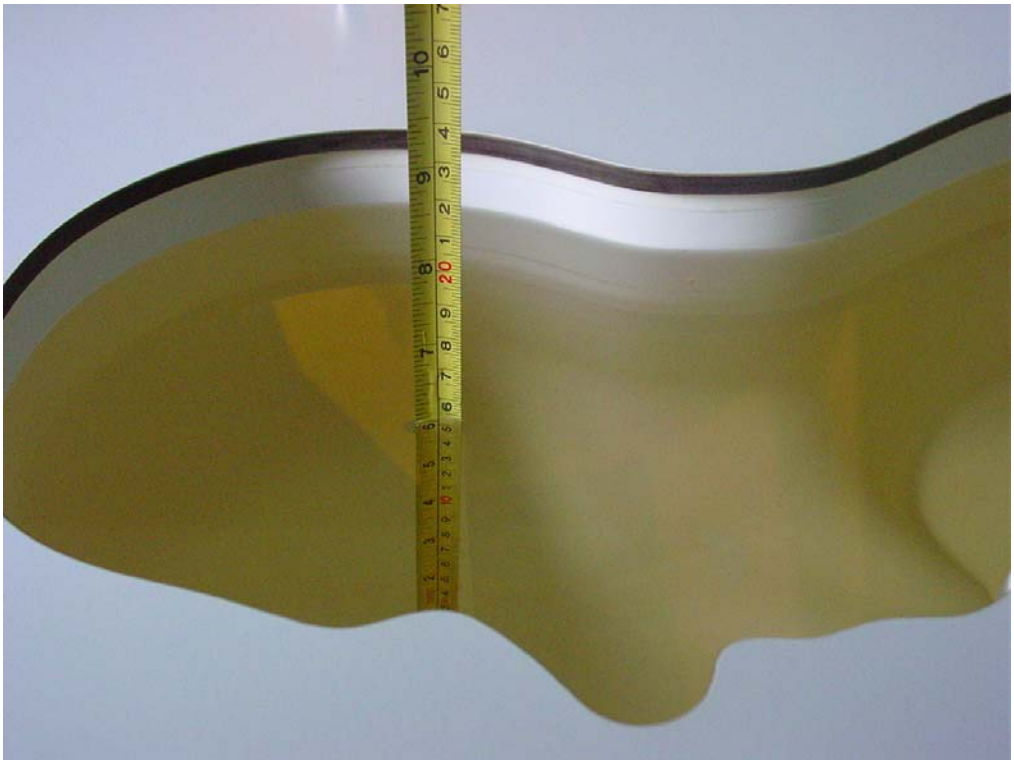


Picture A: SAR Measurement Points in Area Scan

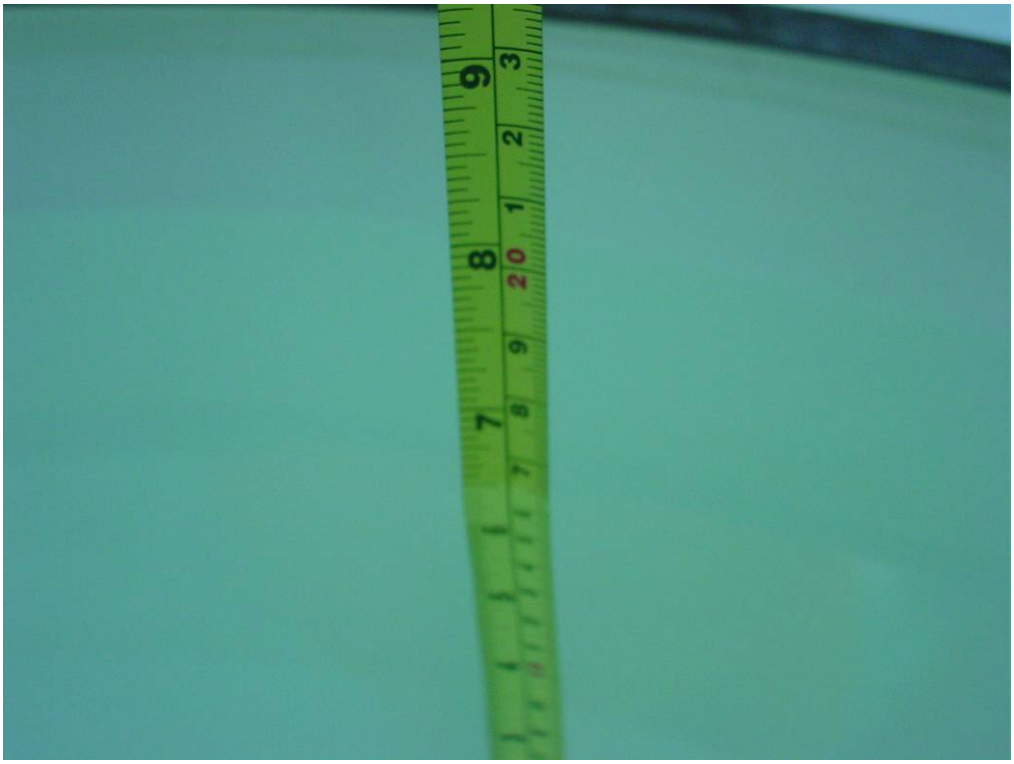
ANNEX B TEST LAYOUT



Picture B1: Specific Absorption Rate Test Layout



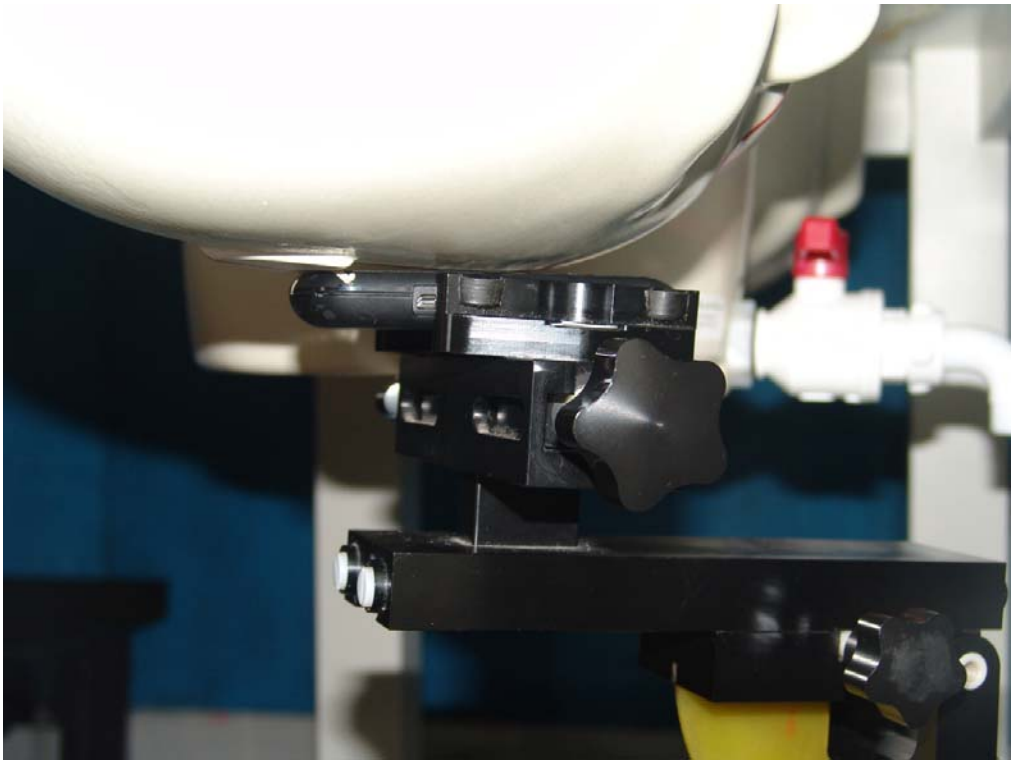
Picture B2: Liquid depth in the Flat Phantom (850 MHz)



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

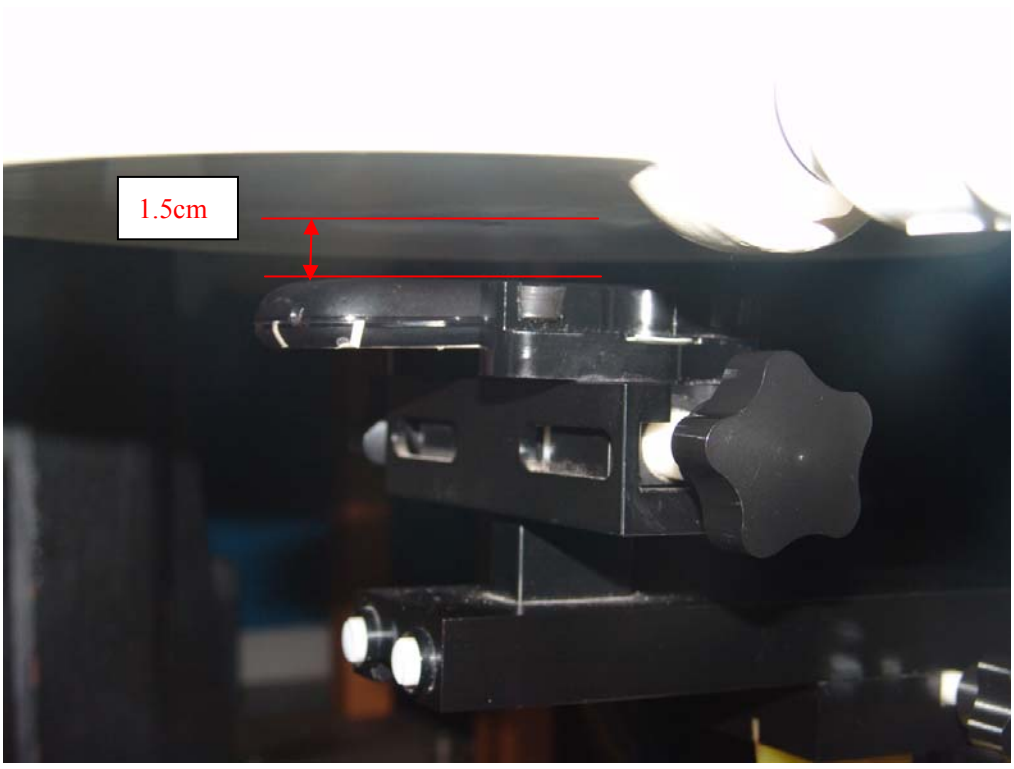
Picture B4: Left Hand Touch Cheek Position

Picture B5: Left Hand Tilt 15° Position

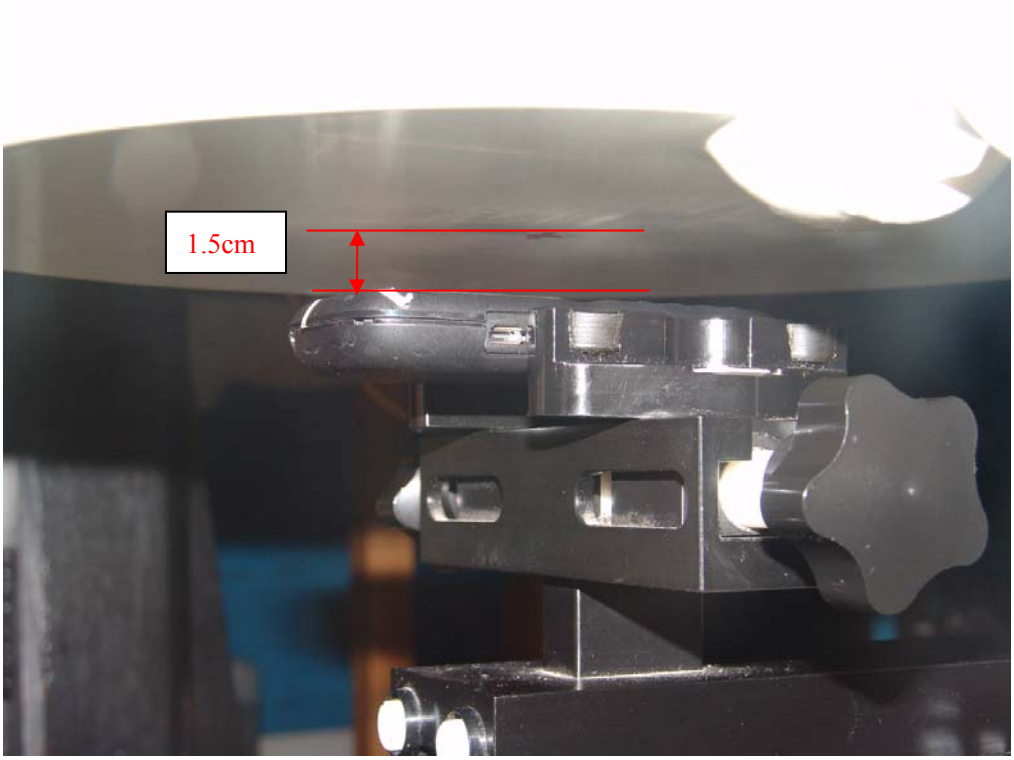


Picture B6: Right Hand Touch Cheek Position

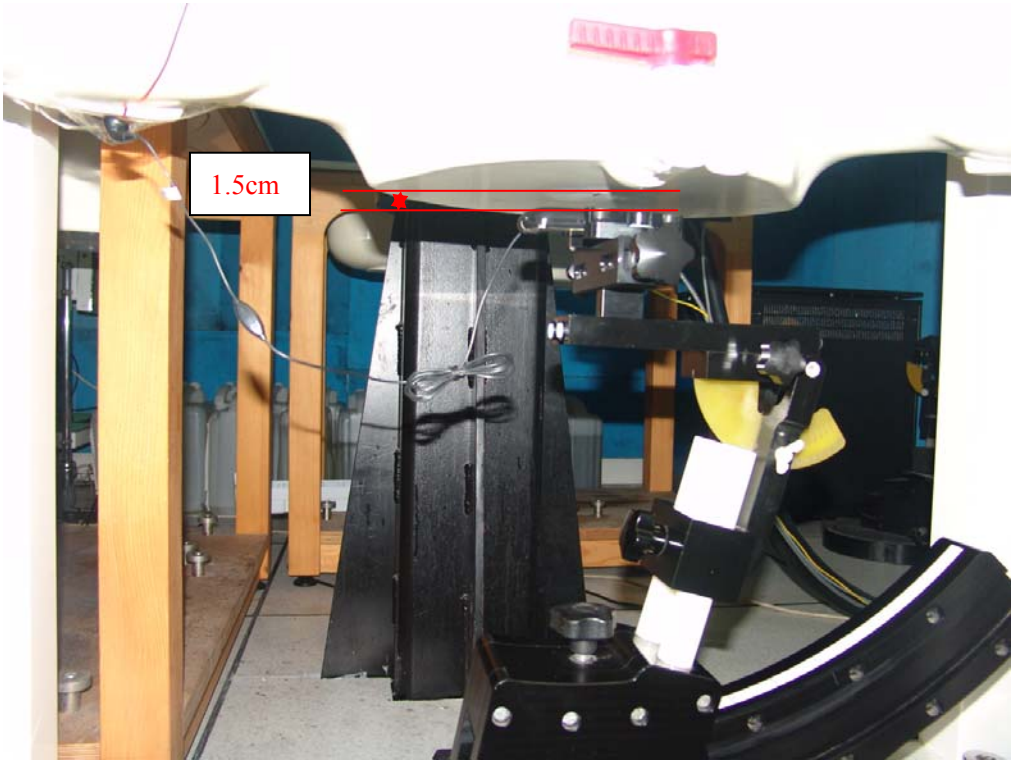
Picture B7: Right Hand Tilt 15° Position



Picture B8: Body-worn Position (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm)



Picture B9: Body-worn Position (towards phantom, the distance from handset to the bottom of the Phantom is 1.5cm)



Picture B10: Body-worn Position with Headset (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm)

ANNEX C GRAPH RESULTS

850 Left Cheek High

Date/Time: 2011-7-17 8:35:11
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.11 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.1 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 1.34 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.714 mW/g
Maximum value of SAR (measured) = 1.07 mW/g

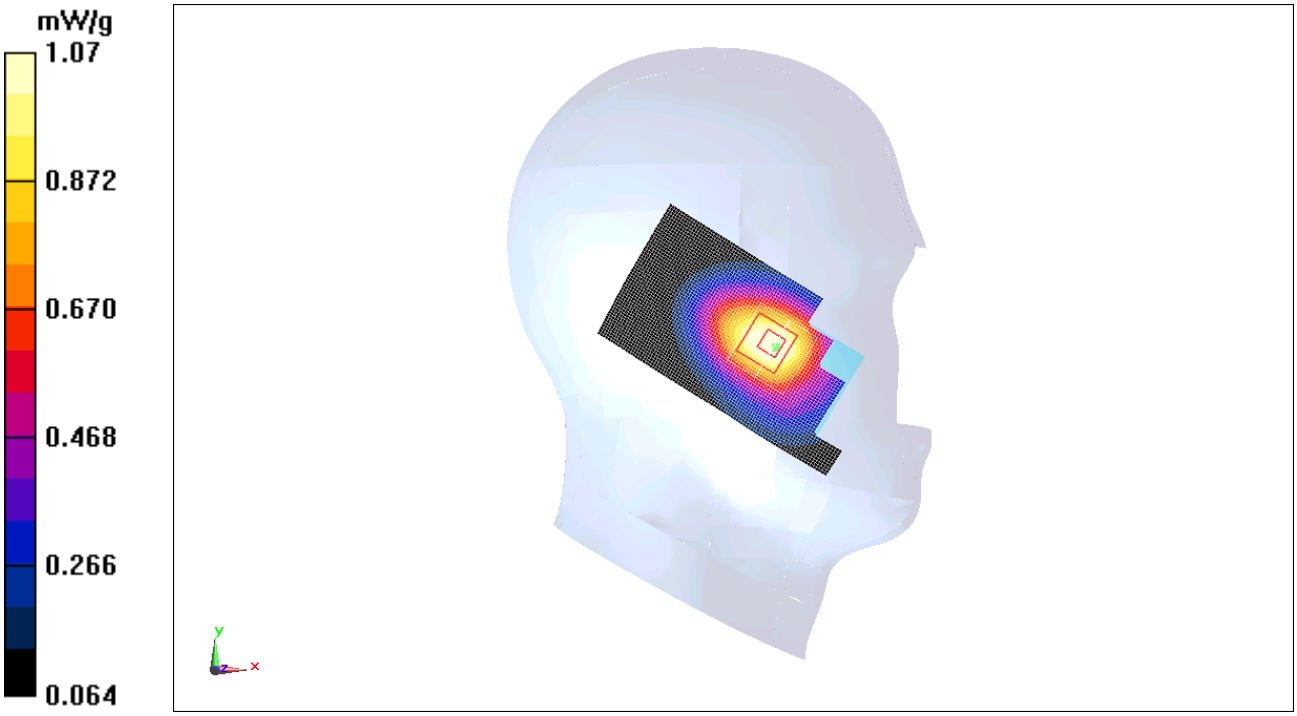


Fig. 1 850MHz CH251

850 Left Cheek Middle
Date/Time: 2011-7-17 8:49:34
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.91 mho/m; εr = 41.1; ρ = 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) = 1.03 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.098 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.964 mW/g; SAR(10 g) = 0.680 mW/g
Maximum value of SAR (measured) = 1.02 mW/g

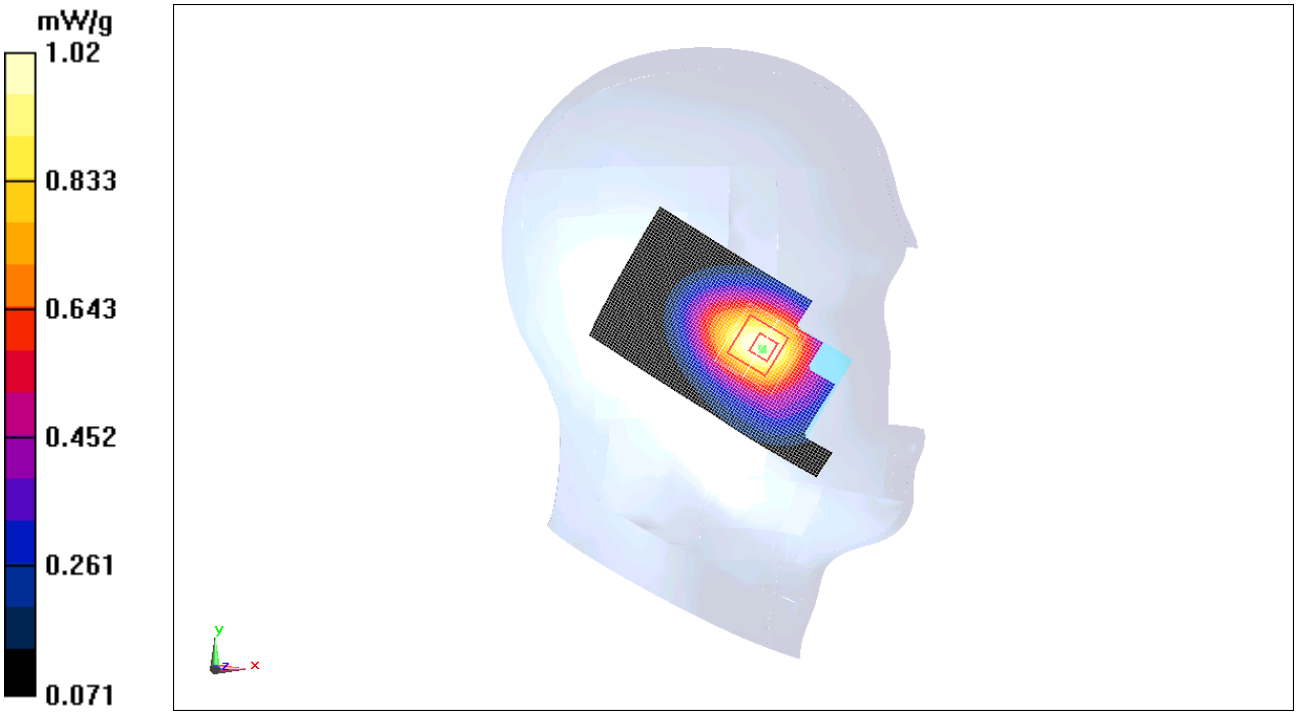


Fig. 2 850 MHz CH190

850 Left Cheek Low

Date/Time: 2011-7-17 9:03:57
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.898 mho/m; εr = 41.2; ρ = 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) = 1 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 1.25 W/kg
SAR(1 g) = 0.939 mW/g; SAR(10 g) = 0.665 mW/g
Maximum value of SAR (measured) = 0.990 mW/g

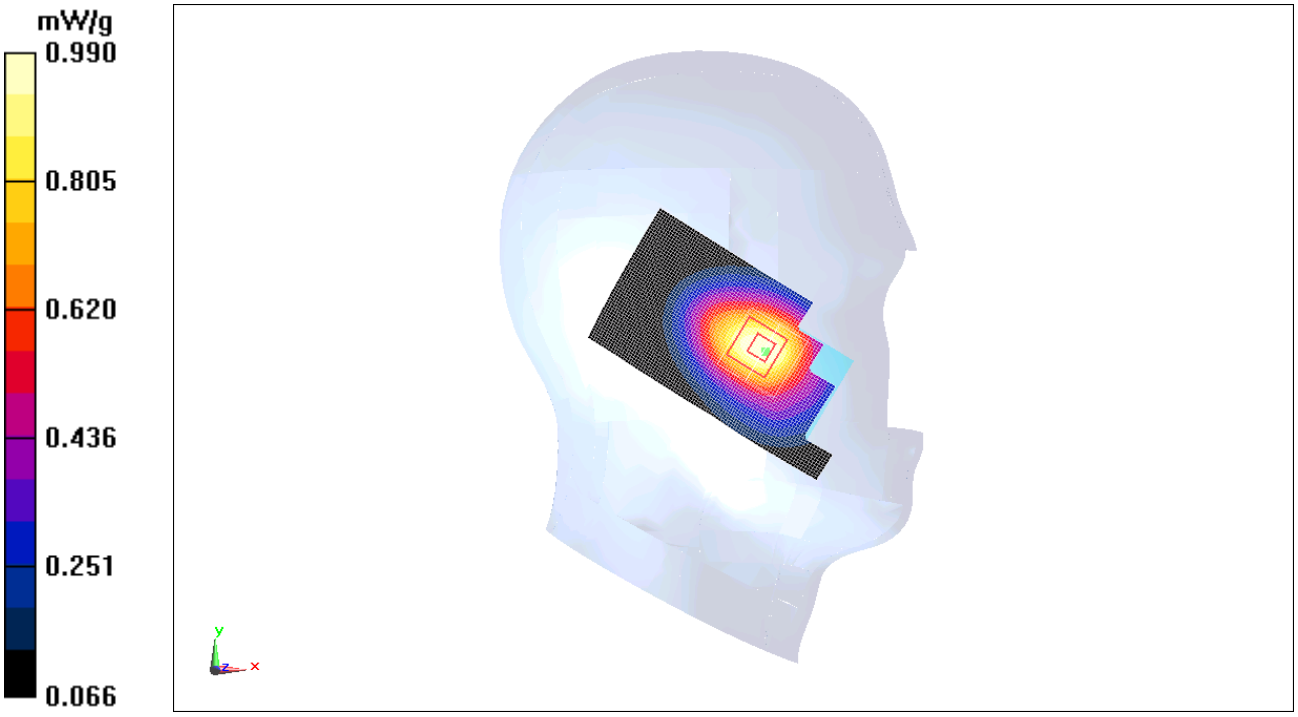


Fig. 3 850 MHz CH128

850 Left Tilt High

Date/Time: 2011-7-17 9:18:29
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 0.399 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 = -0.00841 dB
Peak SAR (extrapolated) = 0.487 W/kg
SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.272 mW/g
Maximum value of SAR (measured) = 0.397 mW/g

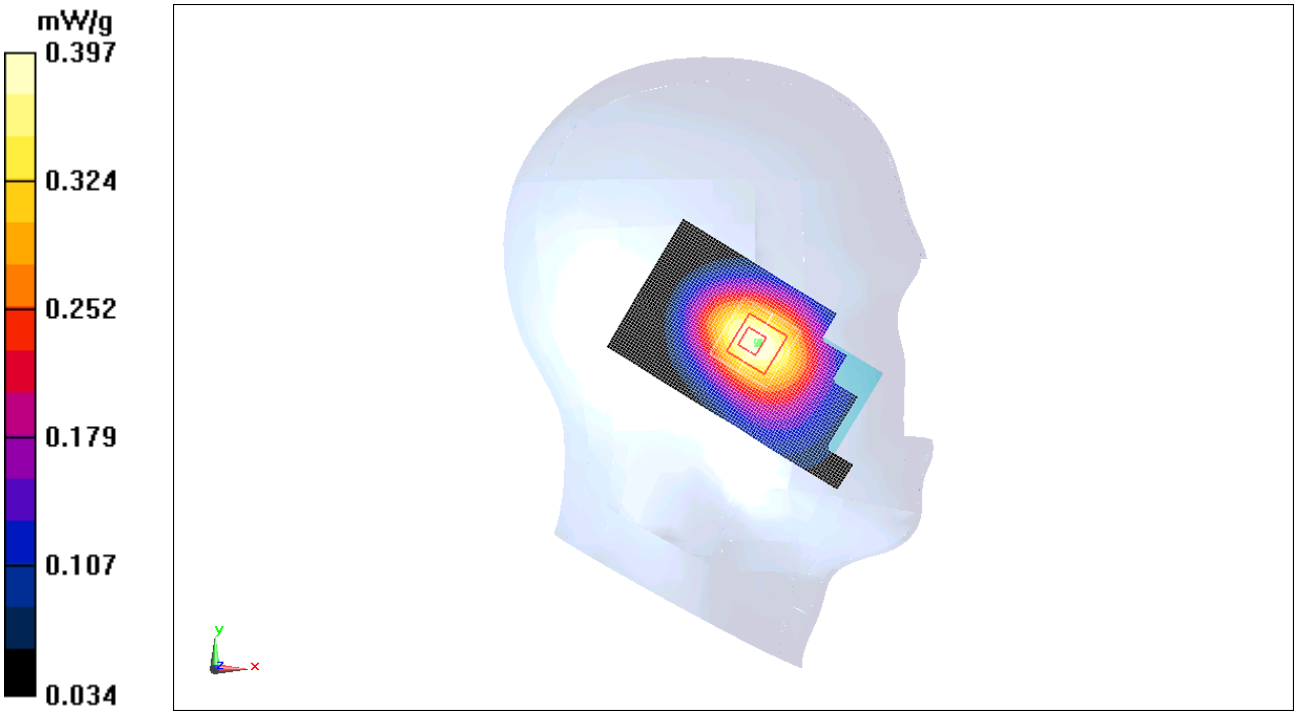


Fig.4 850 MHz CH251

850 Left Tilt Middle

Date/Time: 2011-7-17 9:32:53
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.91 mho/m; εr = 41.1; ρ = 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) = 0.405 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.5 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 0.499 W/kg
SAR(1 g) = 0.383 mW/g; SAR(10 g) = 0.279 mW/g
Maximum value of SAR (measured) = 0.405 mW/g

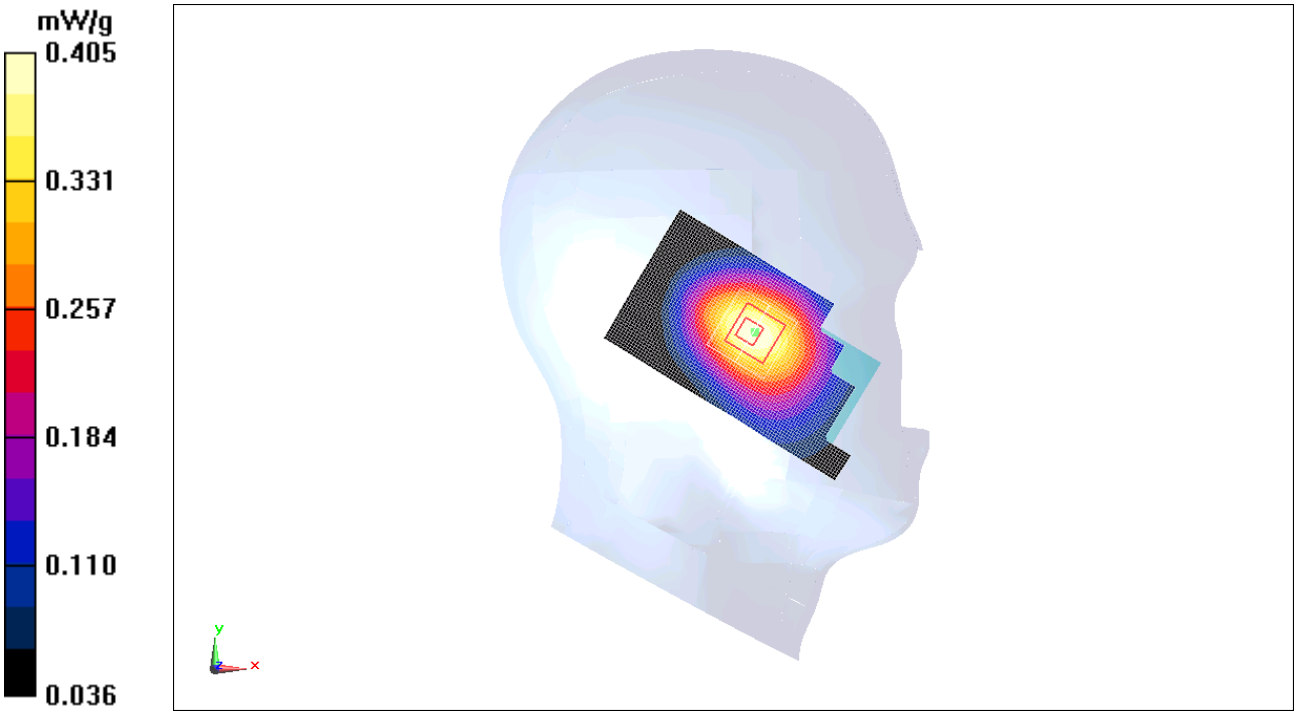


Fig.5 850 MHz CH190

850 Left Tilt Low
Date/Time: 2011-7-17 9:47:20
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.898 mho/m; εr = 41.2; ρ = 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) = 0.416 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 = 0.084 dB
Peak SAR (extrapolated) = 0.516 W/kg
SAR(1 g) = 0.396 mW/g; SAR(10 g) = 0.288 mW/g
Maximum value of SAR (measured) = 0.420 mW/g

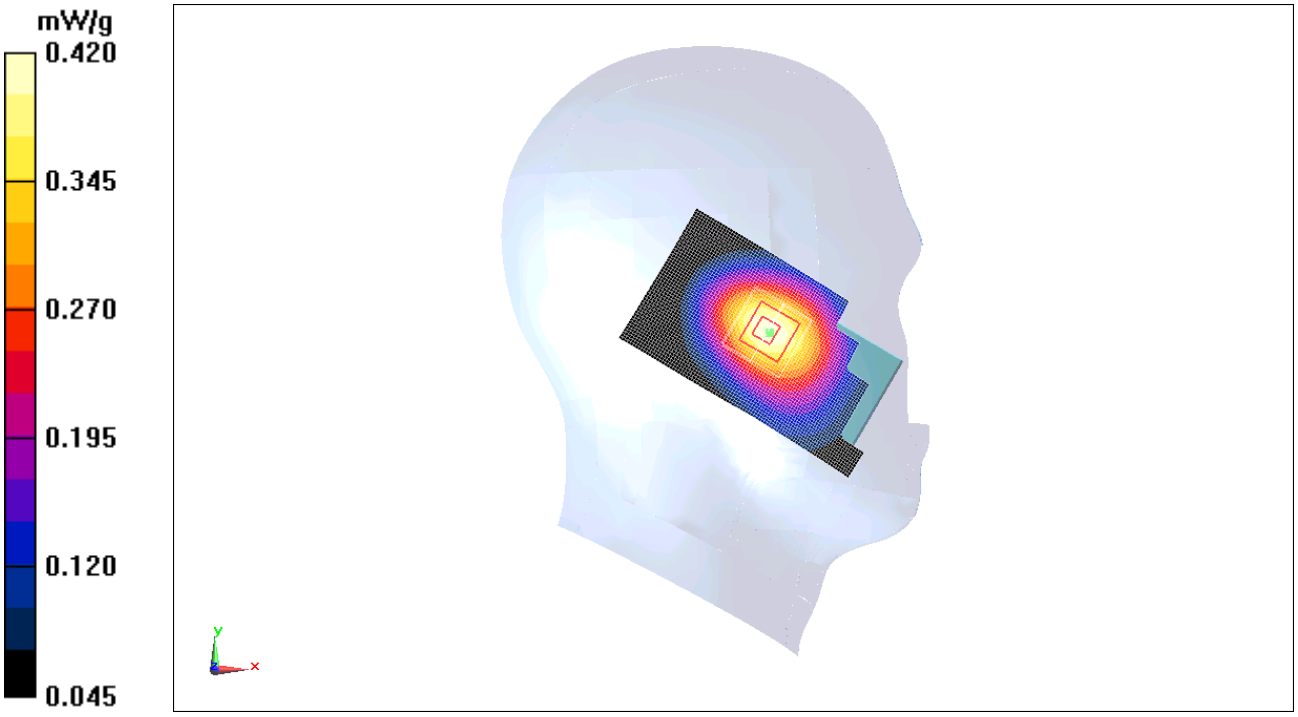


Fig. 6 850 MHz CH128

850 Right Cheek High

Date/Time: 2011-7-17 10:02:05
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.27 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.076 dB
Peak SAR (extrapolated) = 1.65 W/kg
SAR(1 g) = 1.15 mW/g; SAR(10 g) = 0.784 mW/g
Maximum value of SAR (measured) = 1.22 mW/g

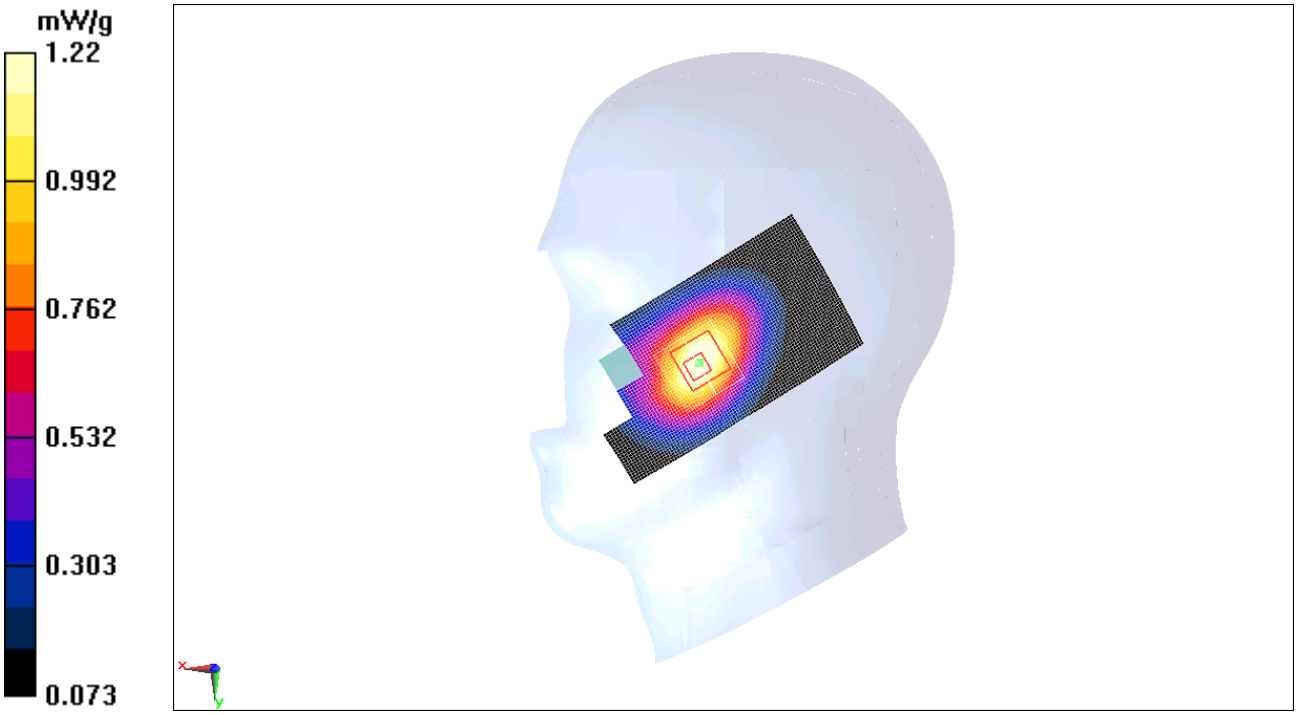


Fig. 7 850 MHz CH251

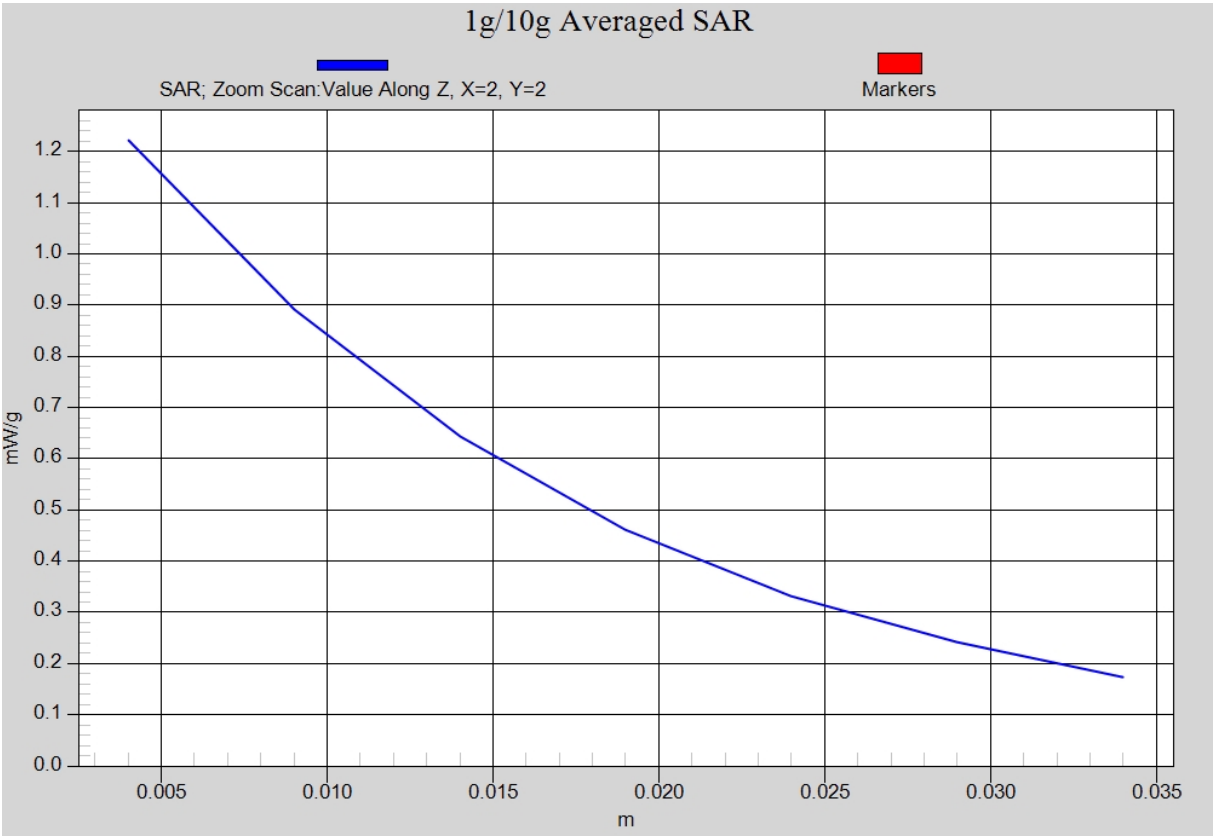


Fig. 7-1 Z-Scan at power reference point (850 MHz CH251)

850 Right Cheek Middle
Date/Time: 2011-7-17 10:16:24
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.91 mho/m; εr = 41.1; ρ = 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) = 1.18 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 = -0.078 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.748 mW/g
Maximum value of SAR (measured) = 1.17 mW/g

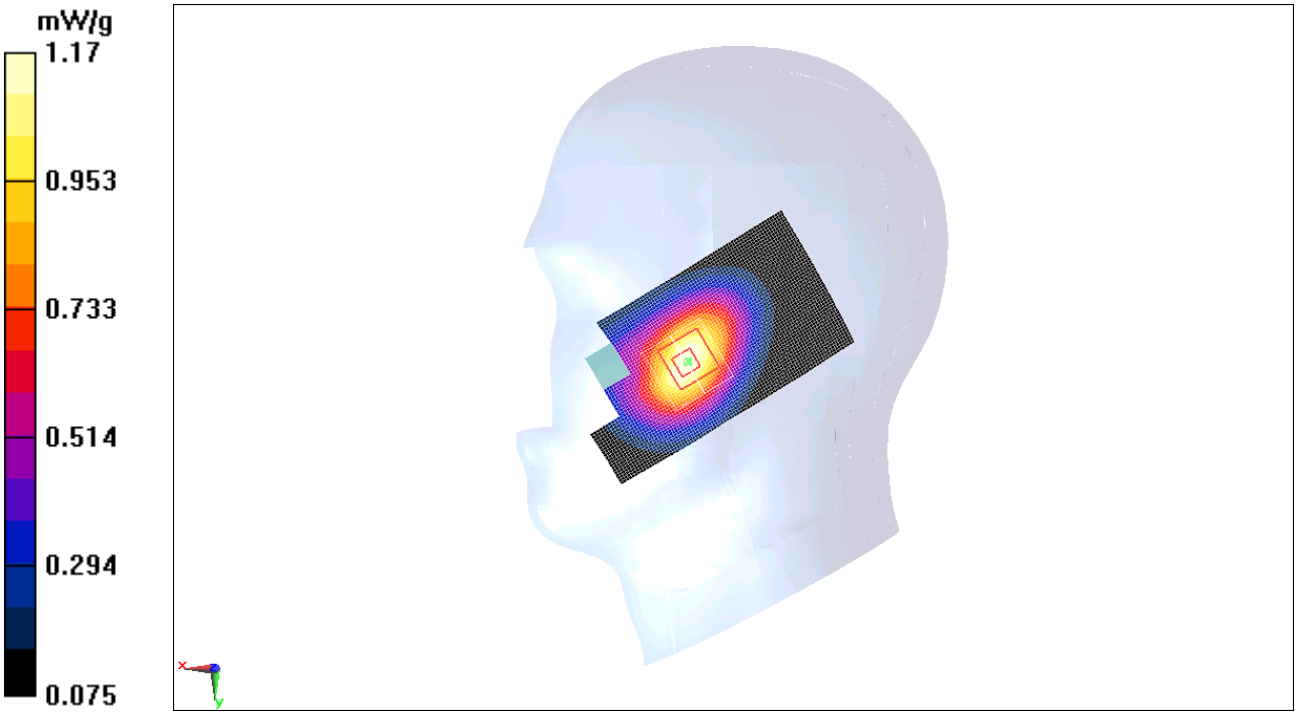


Fig. 8 850 MHz CH190

850 Right Cheek Low
Date/Time: 2011-7-17 10:30:46
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.898 mho/m; εr = 41.2; ρ = 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) = 1.13 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = -0.019 dB
Peak SAR (extrapolated) = 1.5 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.724 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

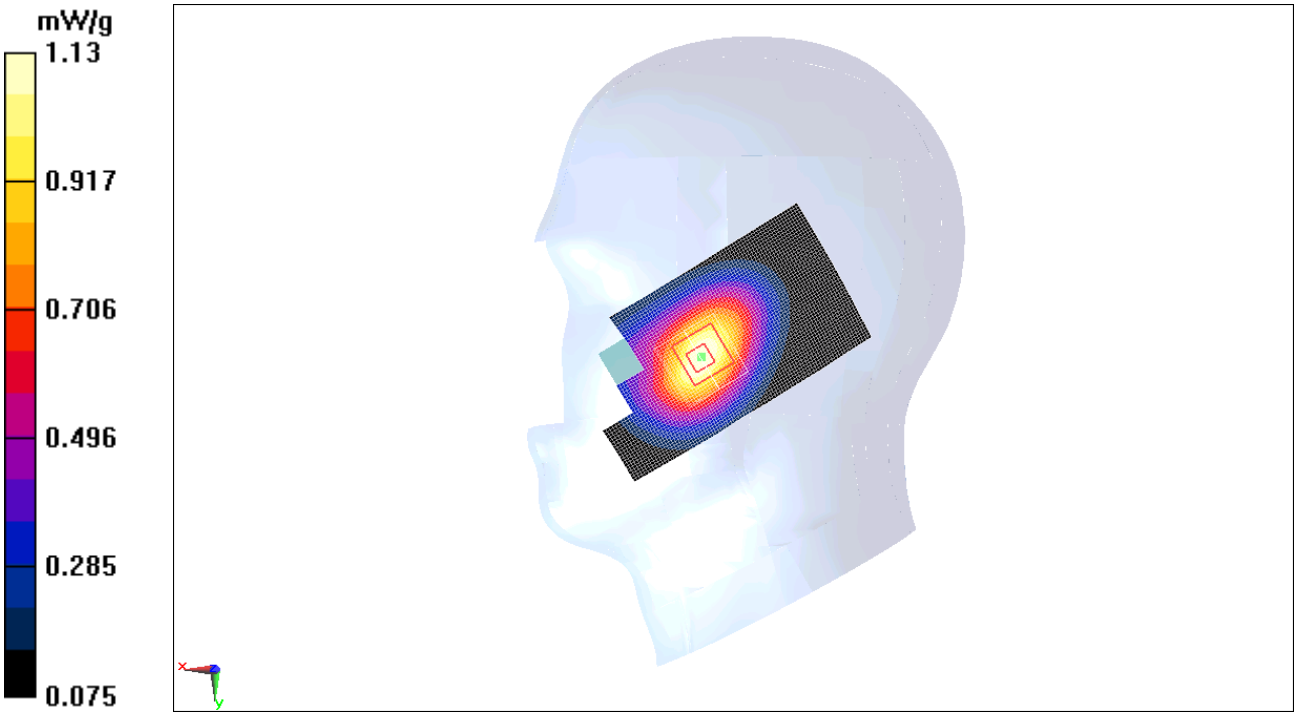


Fig. 9 850 MHz CH128

850 Right Tilt High

Date/Time: 2011-7-17 10:45:13
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 0.529 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = -0.083 dB
Peak SAR (extrapolated) = 0.650 W/kg
SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.352 mW/g
Maximum value of SAR (measured) = 0.526 mW/g

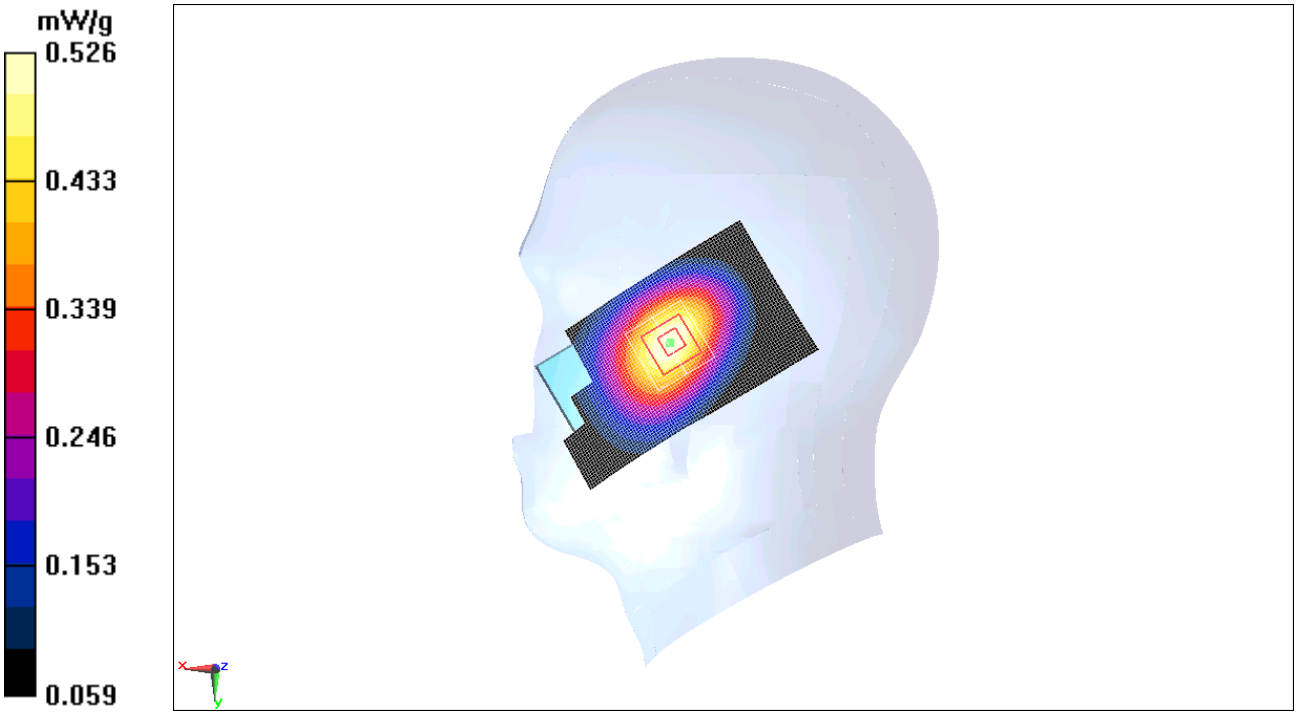


Fig.10 850 MHz CH251

850 Right Tilt Middle
Date/Time: 2011-7-17 10:59:37
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.91 mho/m; εr = 41.1; ρ = 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) = 0.521 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.8 V/m; Power Drift = -0.0032 dB
Peak SAR (extrapolated) = 0.639 W/kg
SAR(1 g) = 0.488 mW/g; SAR(10 g) = 0.349 mW/g
Maximum value of SAR (measured) = 0.518 mW/g

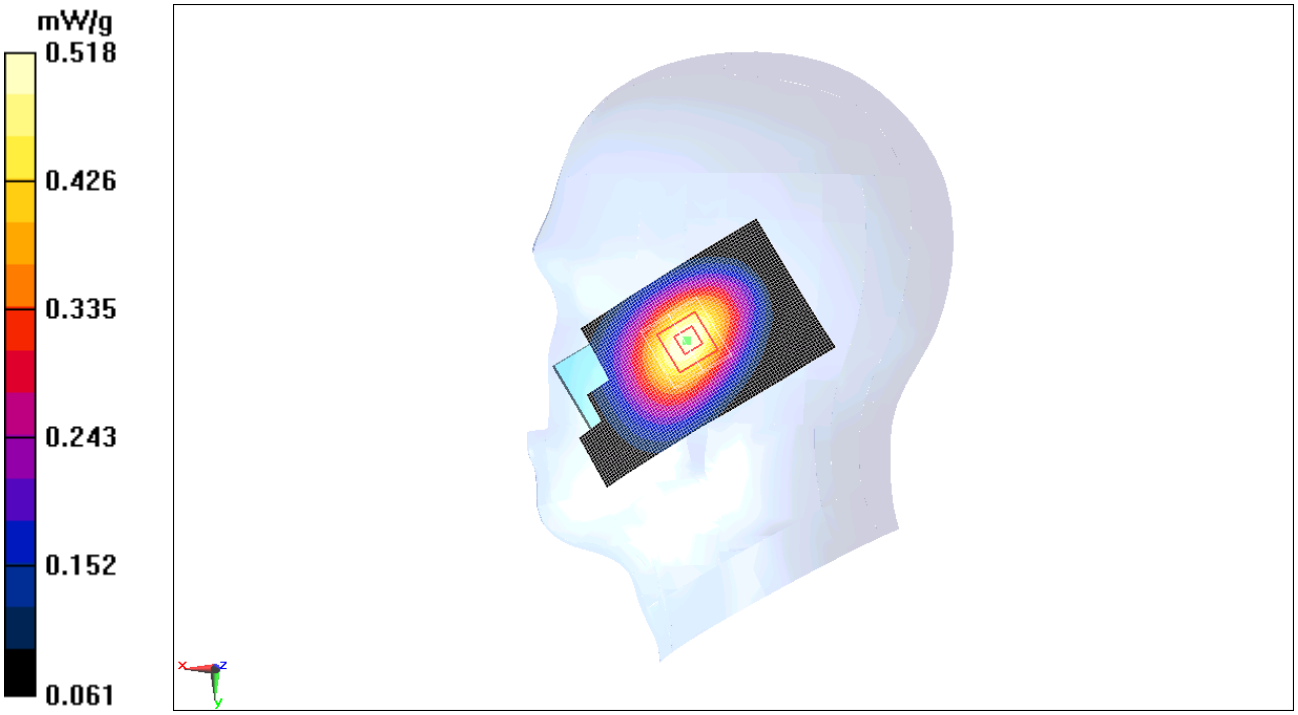


Fig.11 850 MHz CH190

850 Right Tilt Low
Date/Time: 2011-7-17 11:13:58
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.898 mho/m; εr = 41.2; ρ = 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) = 0.511 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.9 V/m; Power Drift = 0.015 dB
Peak SAR (extrapolated) = 0.623 W/kg
SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.344 mW/g
Maximum value of SAR (measured) = 0.507 mW/g

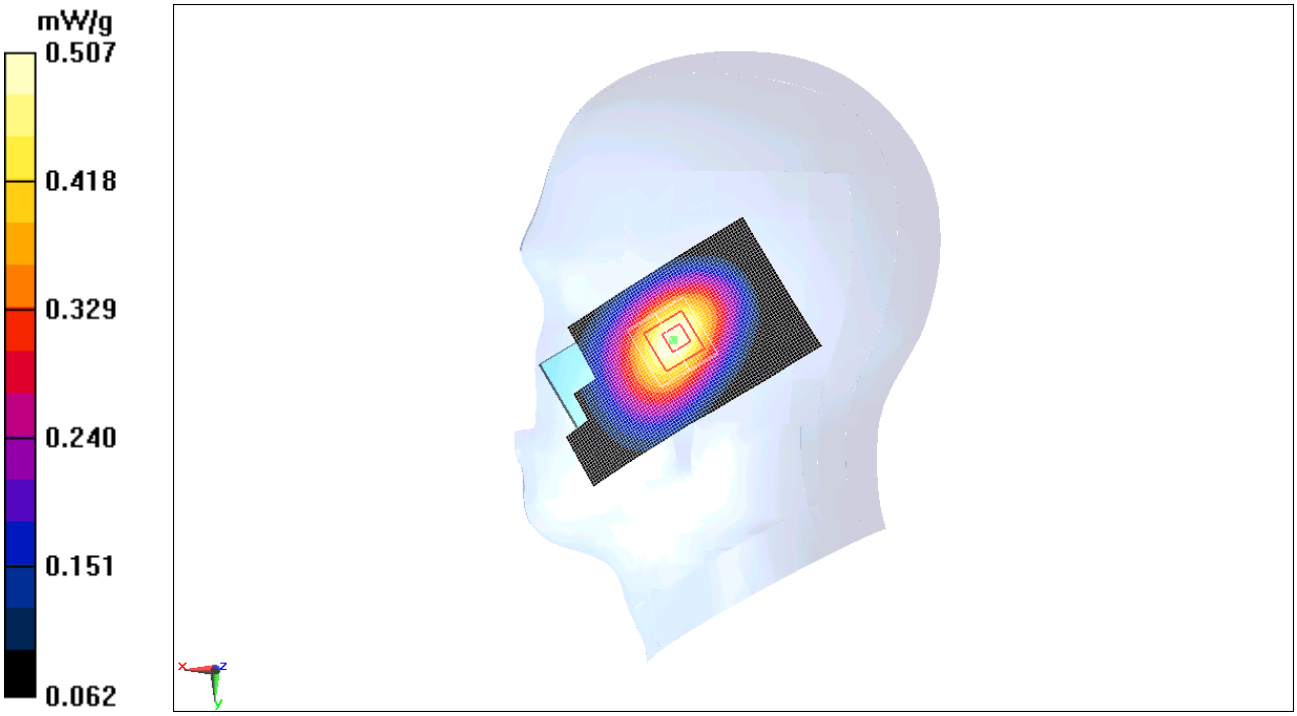


Fig. 12 850 MHz CH128

1900 Left Cheek High
Date/Time: 2011-7-18 8:24:15
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.40 mho/m; εr = 39.5; ρ = 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) = 0.855 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.87 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.468 mW/g
Maximum value of SAR (measured) = 0.815 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.87 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.732 mW/g; SAR(10 g) = 0.450 mW/g
Maximum value of SAR (measured) = 0.779 mW/g

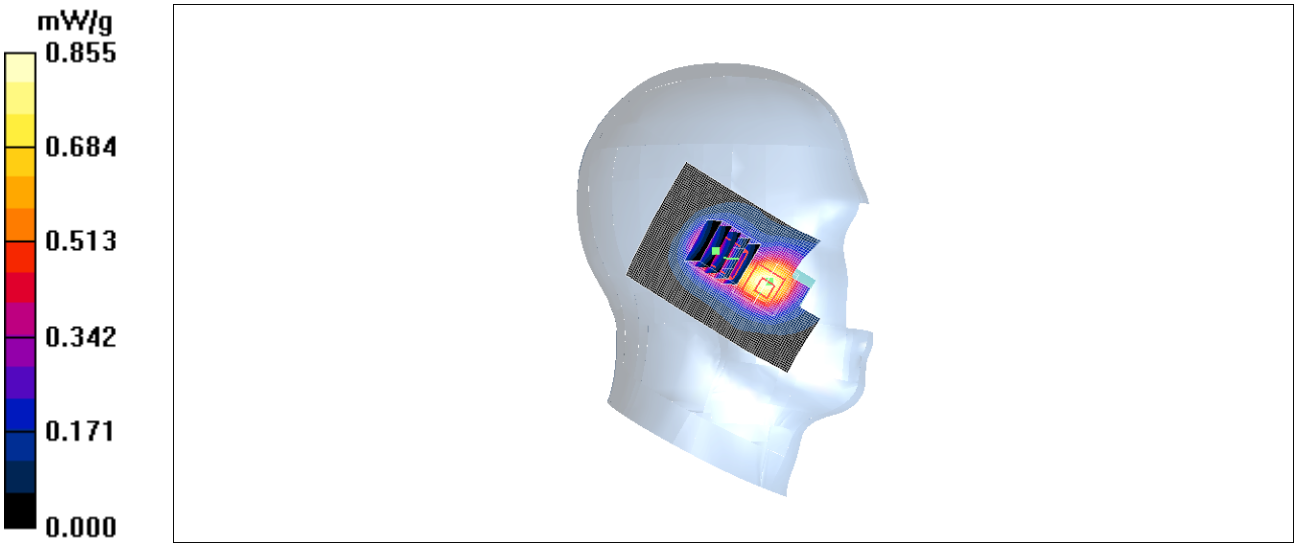


Fig. 13 1900 MHz CH810

1900 Left Cheek Middle
Date/Time: 2011-7-18 8:38:36
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; εr = 39.6; ρ = 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) = 0.822 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.746 mW/g; SAR(10 g) = 0.454 mW/g
Maximum value of SAR (measured) = 0.783 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.082 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.726 mW/g; SAR(10 g) = 0.454 mW/g
Maximum value of SAR (measured) = 0.764 mW/g

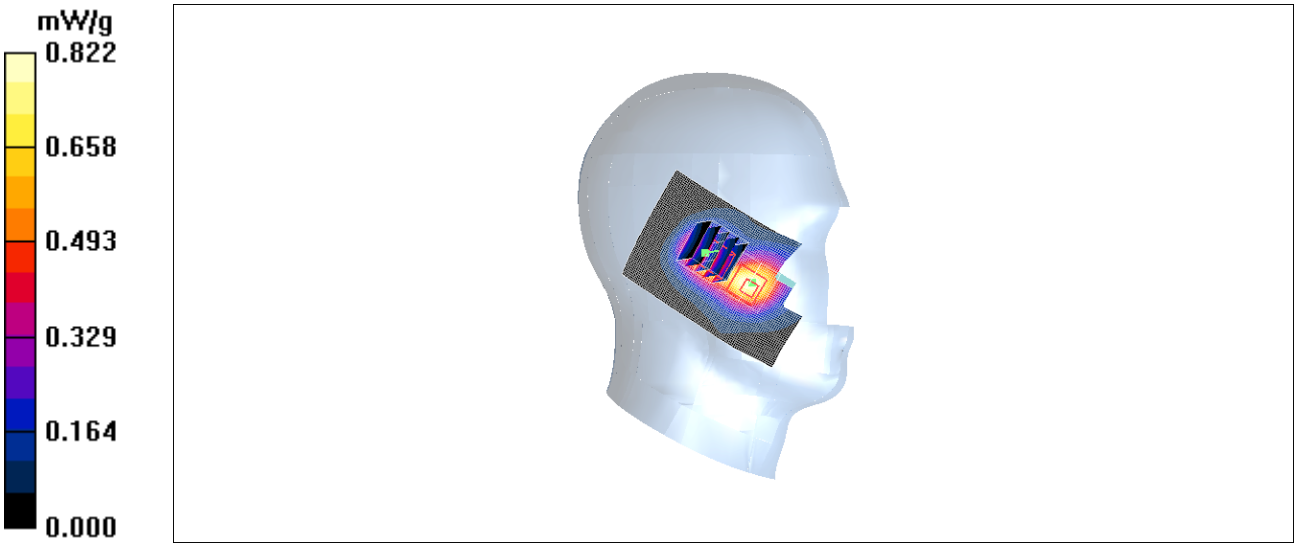


Fig. 14 1900 MHz CH661

1900 Left Cheek Low
Date/Time: 2011-7-18 8:52:58
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.37 mho/m; εr = 39.7; ρ = 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) = 0.790 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.706 mW/g; SAR(10 g) = 0.443 mW/g
Maximum value of SAR (measured) = 0.744 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.722 mW/g; SAR(10 g) = 0.446 mW/g
Maximum value of SAR (measured) = 0.758 mW/g

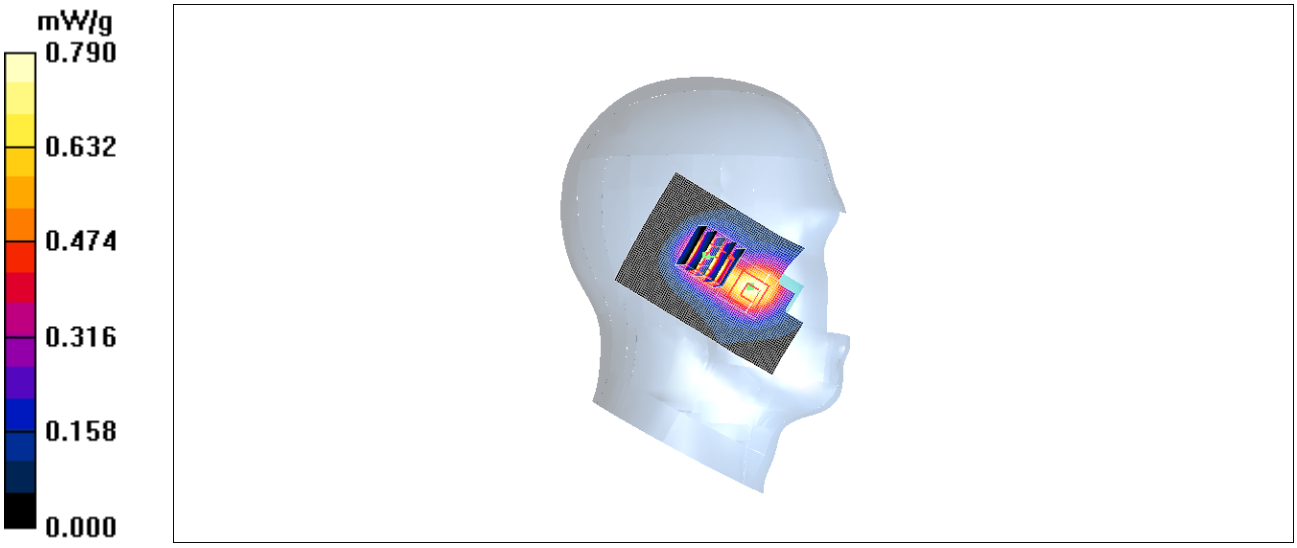


Fig. 15 1900 MHz CH512

1900 Left Tilt High

Date/Time: 2011-7-18 9:07:25
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.40 mho/m; εr = 39.5; ρ = 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) = 0.510 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 = 0.046 dB
Peak SAR (extrapolated) = 0.699 W/kg
SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.280 mW/g
Maximum value of SAR (measured) = 0.486 mW/g

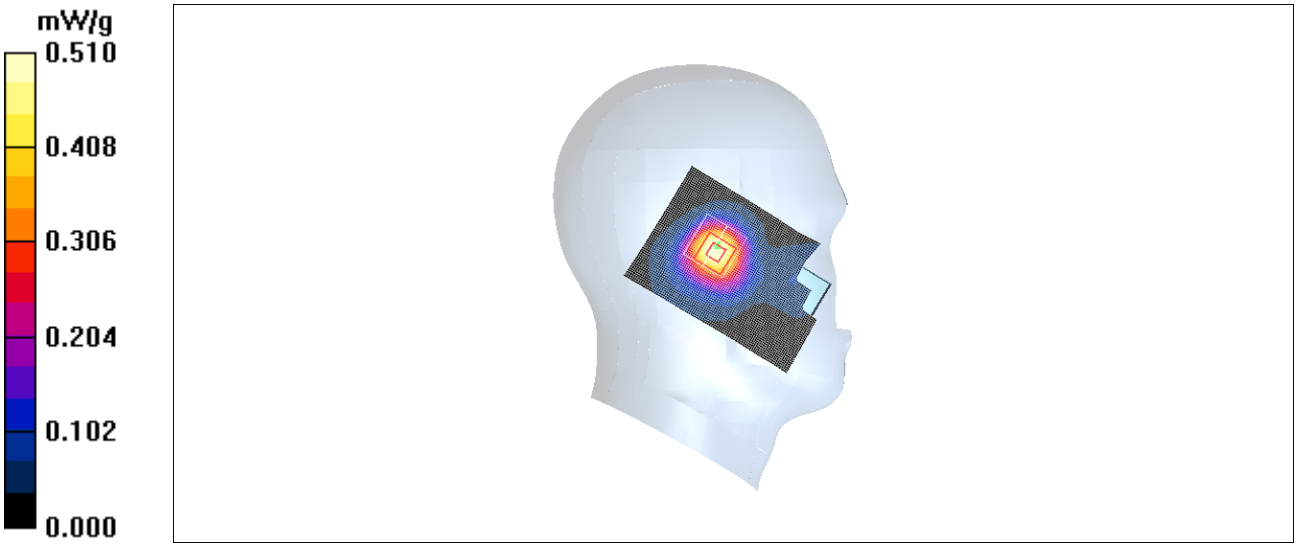


Fig.16 1900 MHz CH810

1900 Left Tilt Middle
Date/Time: 2011-7-18 9:21:44
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; εr = 39.6; ρ = 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) = 0.501 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.6 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 0.683 W/kg
SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.276 mW/g
Maximum value of SAR (measured) = 0.470 mW/g

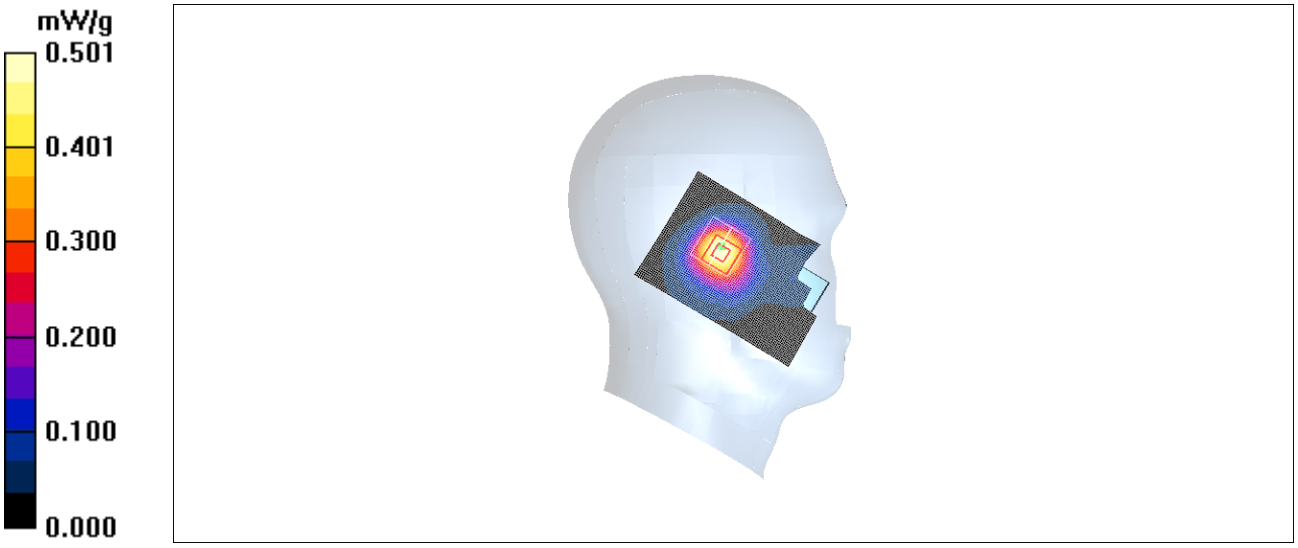


Fig. 17 1900 MHz CH661

1900 Left Tilt Low
Date/Time: 2011-7-18 9:36:03
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.37 mho/m; εr = 39.7; ρ = 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) = 0.457 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.9 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 0.614 W/kg
SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.253 mW/g
Maximum value of SAR (measured) = 0.435 mW/g

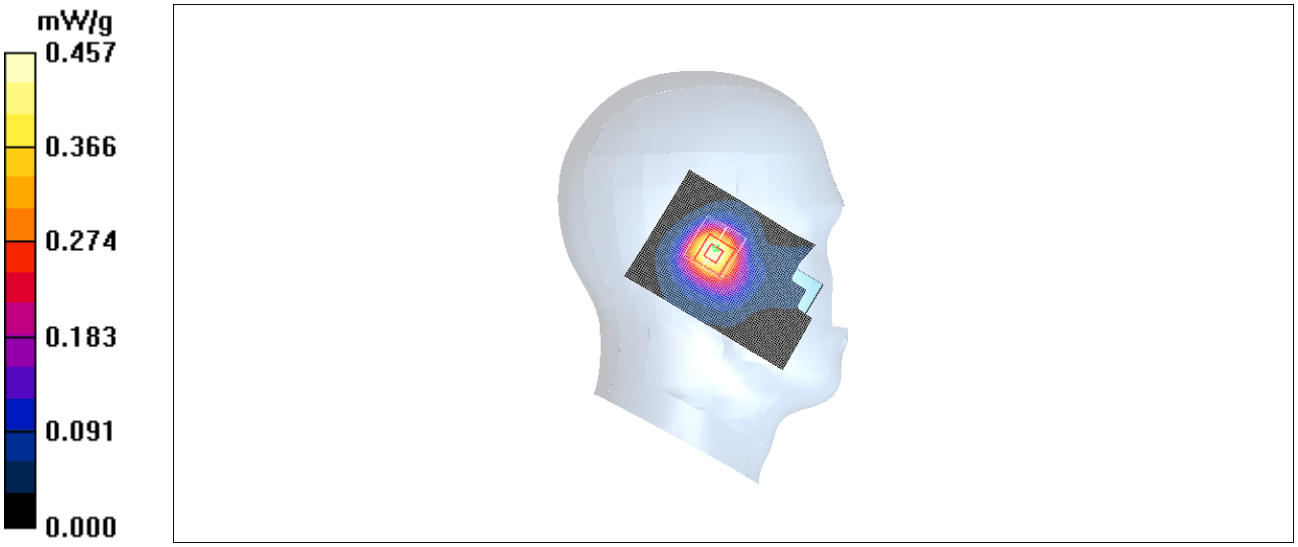


Fig. 18 1900 MHz CH512

1900 Right Cheek High
Date/Time: 2011-7-18 9:51:49
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.40 mho/m; εr = 39.5; ρ = 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) = 1.10 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.59 W/kg
SAR(1 g) = 0.973 mW/g; SAR(10 g) = 0.563 mW/g
Maximum value of SAR (measured) = 1.07 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.022 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.841 mW/g; SAR(10 g) = 0.509 mW/g
Maximum value of SAR (measured) = 0.921 mW/g

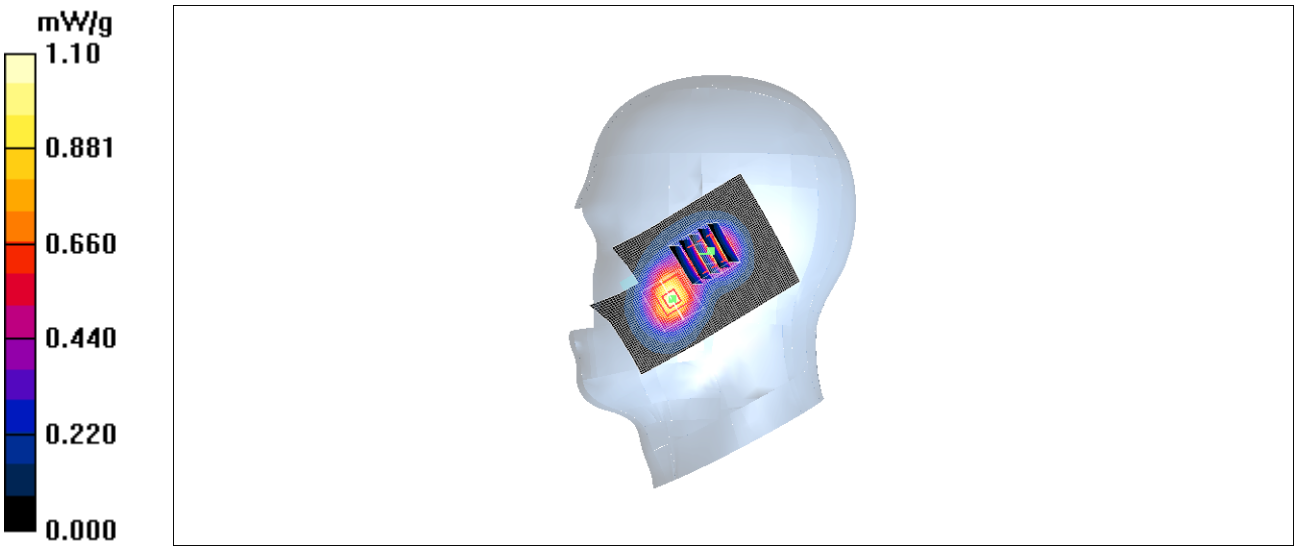


Fig. 19 1900 MHz CH810

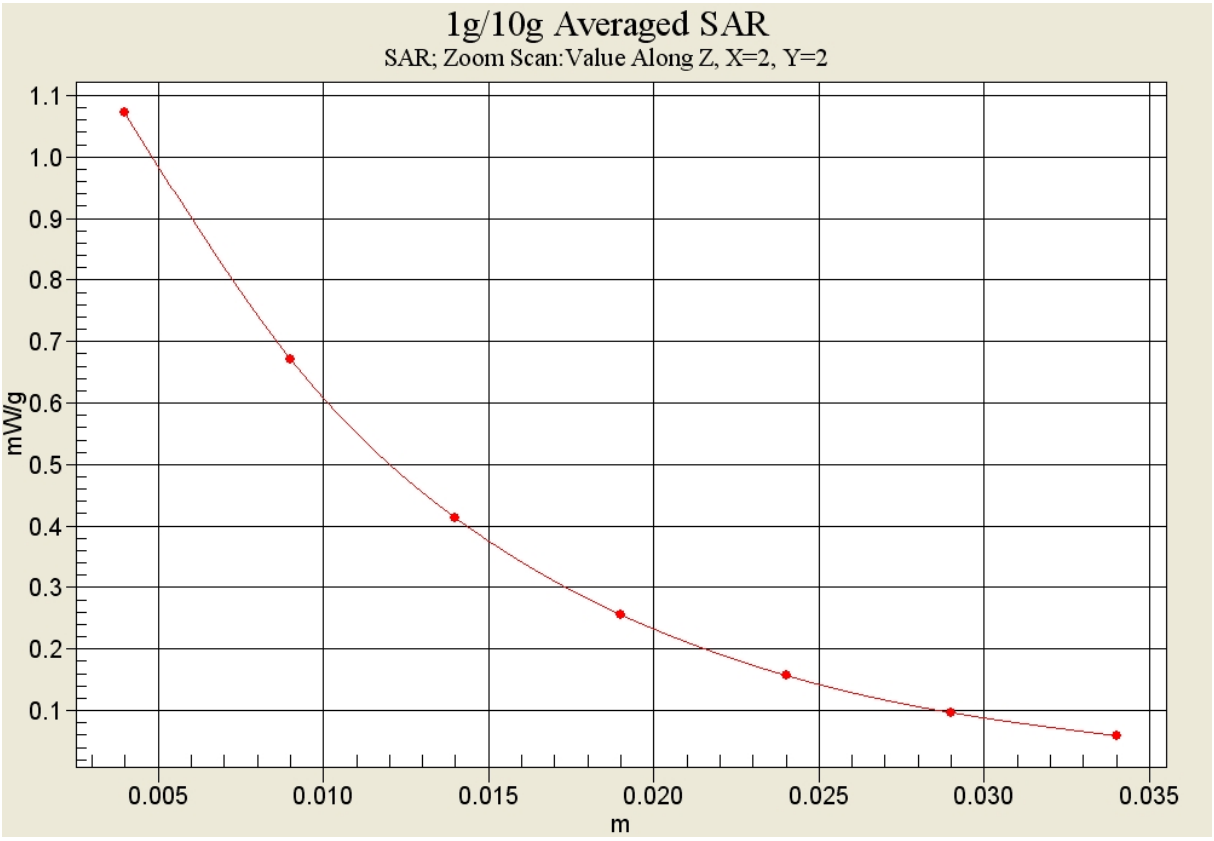


Fig. 19-1 Z-Scan at power reference point (1900 MHz CH810)

1900 Right Cheek Middle
Date/Time: 2011-7-18 10:06:07
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; εr = 39.6; ρ = 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) = 1.04 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.922 mW/g; SAR(10 g) = 0.541 mW/g
Maximum value of SAR (measured) = 1.01 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = 0.008 dB
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.833 mW/g; SAR(10 g) = 0.512 mW/g
Maximum value of SAR (measured) = 0.909 mW/g

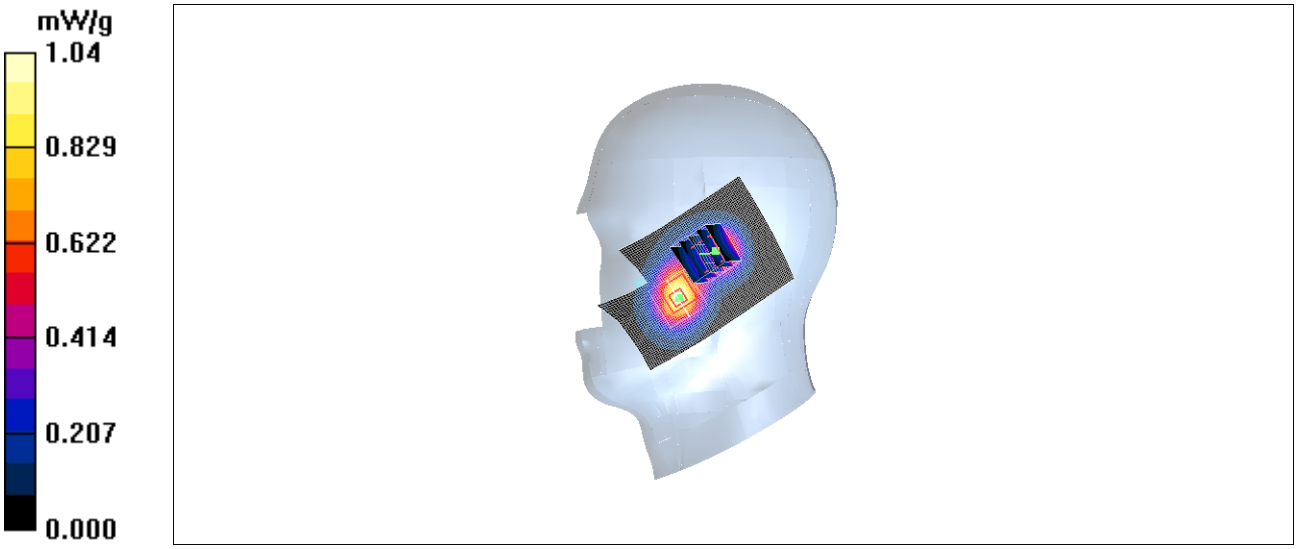


Fig. 20 1900 MHz CH661

1900 Right Cheek Low
Date/Time: 2011-7-18 10:20:26
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.37 mho/m; εr = 39.7; ρ = 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) = 0.953 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.55 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.817 mW/g; SAR(10 g) = 0.506 mW/g
Maximum value of SAR (measured) = 0.891 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.55 V/m; Power Drift = -0.055 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.774 mW/g; SAR(10 g) = 0.455 mW/g
Maximum value of SAR (measured) = 0.850 mW/g

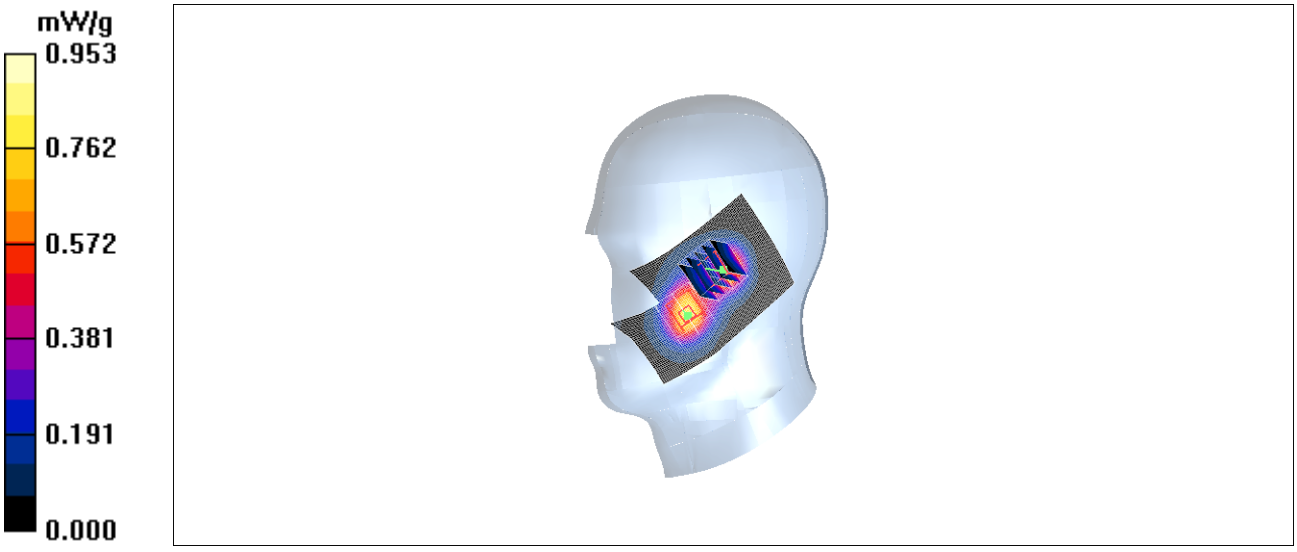


Fig. 21 1900 MHz CH512

1900 Right Tilt High
Date/Time: 2011-7-18 10:34:58
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.40 mho/m; εr = 39.5; ρ = 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) = 0.569 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.06 V/m; Power Drift = 0.073 dB
Peak SAR (extrapolated) = 0.724 W/kg
SAR(1 g) = 0.484 mW/g; SAR(10 g) = 0.294 mW/g
Maximum value of SAR (measured) = 0.520 mW/g

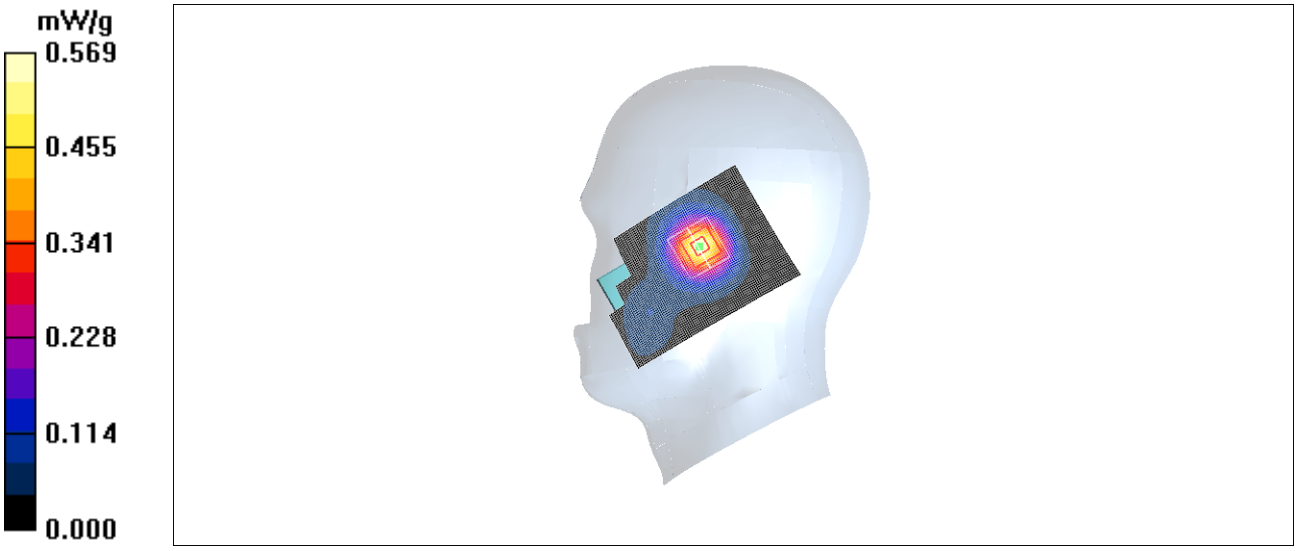


Fig. 22 1900 MHz CH810

1900 Right Tilt Middle
Date/Time: 2011-7-18 10:49:20
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.38 mho/m; εr = 39.6; ρ = 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) = 0.567 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.23 V/m; Power Drift = -0.134 dB
Peak SAR (extrapolated) = 0.703 W/kg
SAR(1 g) = 0.475 mW/g; SAR(10 g) = 0.290 mW/g
Maximum value of SAR (measured) = 0.517 mW/g

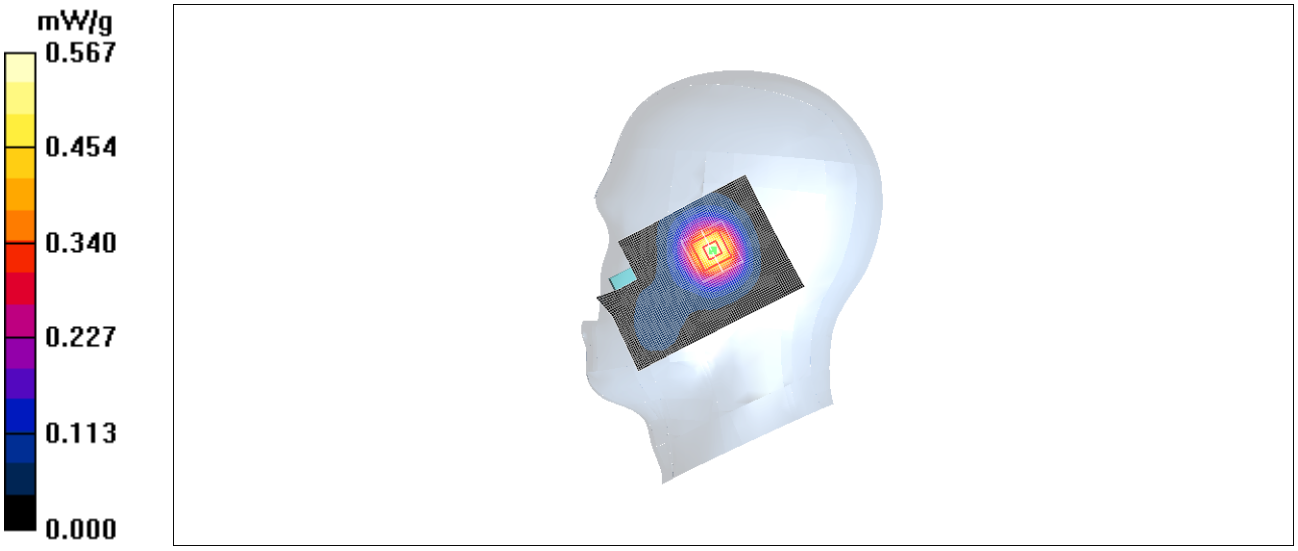


Fig.23 1900 MHz CH661

1900 Right Tilt Low
Date/Time: 2011-7-18 11:03:42
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.37 mho/m; εr = 39.7; ρ = 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) = 0.511 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.74 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 0.666 W/kg
SAR(1 g) = 0.456 mW/g; SAR(10 g) = 0.282 mW/g
Maximum value of SAR (measured) = 0.495 mW/g

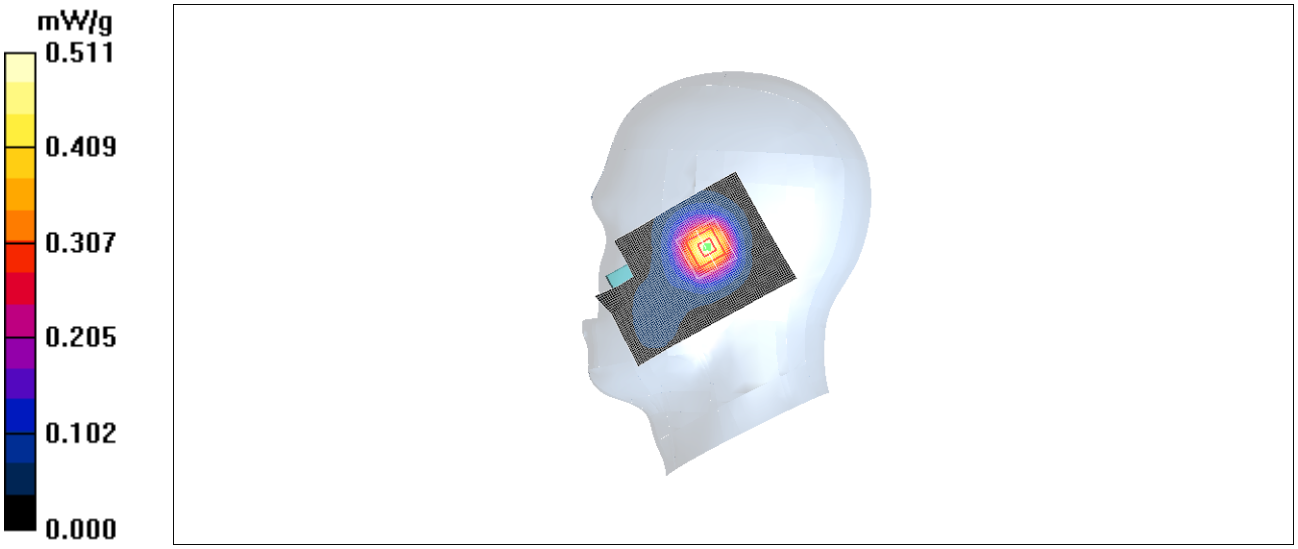


Fig.24 1900 MHz CH512

850 Right Cheek High with battery CAB2170000C1

Date/Time: 2011-7-17 11:30:42
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.13 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.73 V/m; Power Drift = 0.092 dB
Peak SAR (extrapolated) = 1.5 W/kg
SAR(1 g) = 1.06 mW/g; SAR(10 g) = 0.725 mW/g
Maximum value of SAR (measured) = 1.13 mW/g

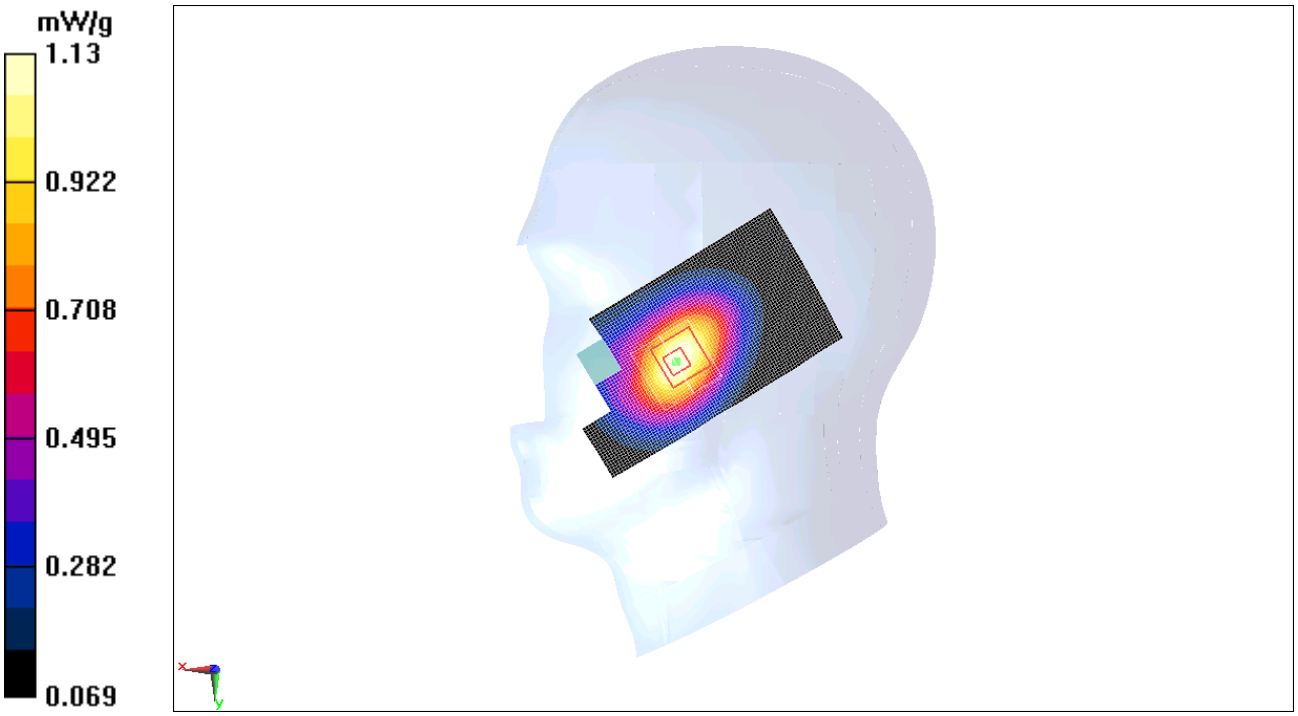


Fig. 25 850 MHz CH251

850 Right Cheek High with battery CAB30M0000C1

Date/Time: 2011-7-17 11:47:28
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.18 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.68 V/m; Power Drift = -0.089 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 1.09 mW/g; SAR(10 g) = 0.746 mW/g
Maximum value of SAR (measured) = 1.16 mW/g

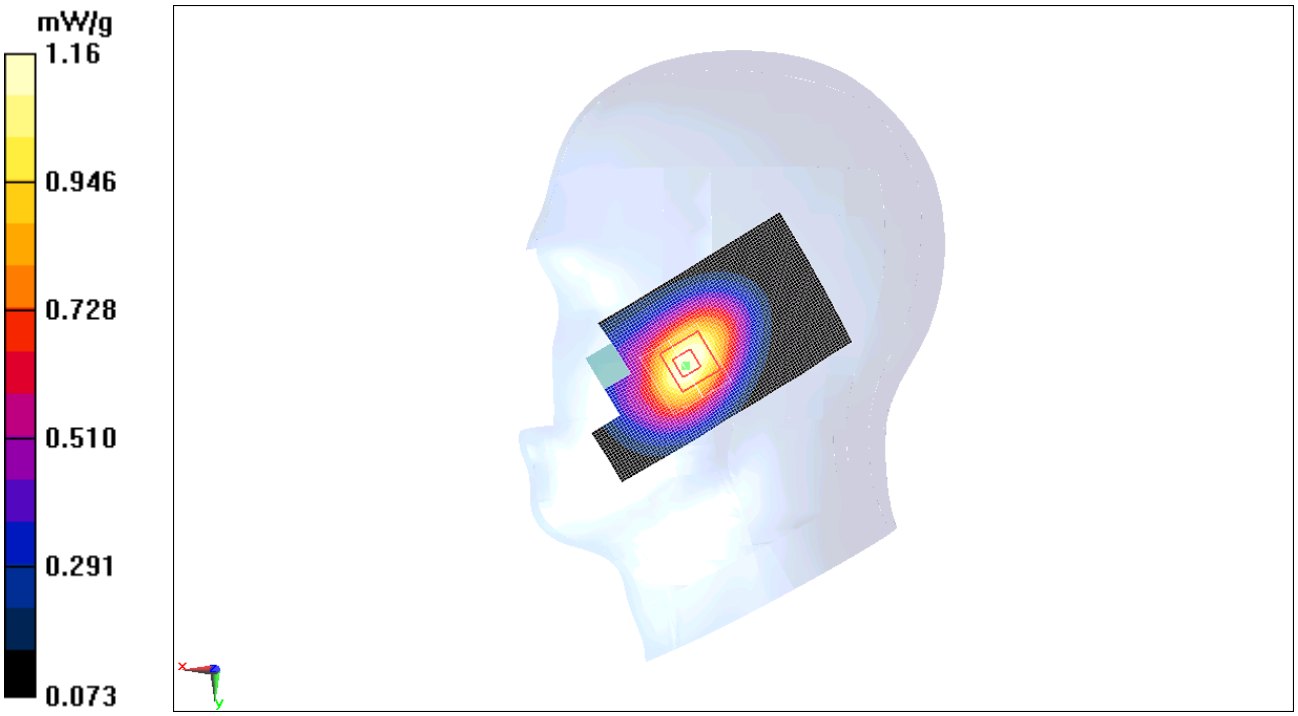


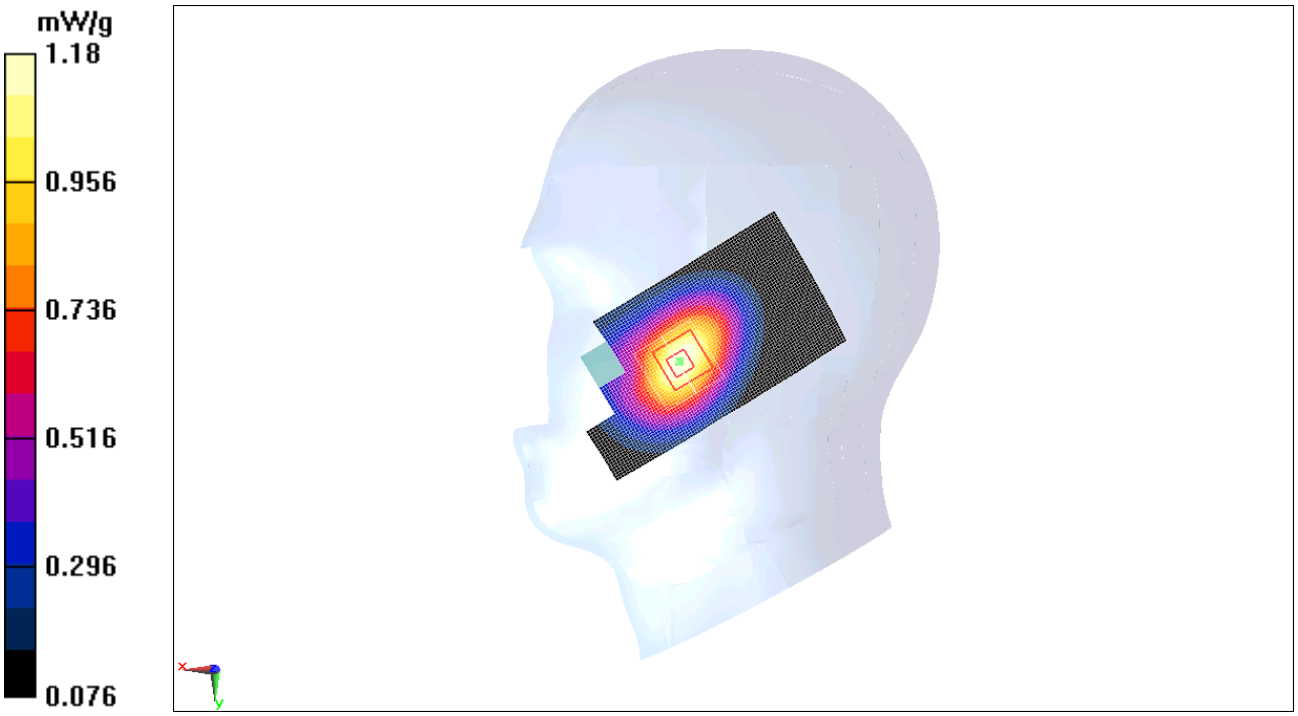
Fig. 26 850 MHz CH251

850 Right Cheek High with battery CAB30M0000C2

Date/Time: 2011-7-17 12:03:55
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.18 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.04 V/m; Power Drift = -0.187 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.754 mW/g
Maximum value of SAR (measured) = 1.18 mW/g



Fi. 27 850 MHz CH251

850 Right Cheek High with battery CAB30B4000C1

Date/Time: 2011-7-17 12:20:36
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.924 mho/m; εr = 41.0; ρ = 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) = 1.1 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.54 V/m; Power Drift = 0.102 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 1.1 mW/g; SAR(10 g) = 0.756 mW/g
Maximum value of SAR (measured) = 1.18 mW/g

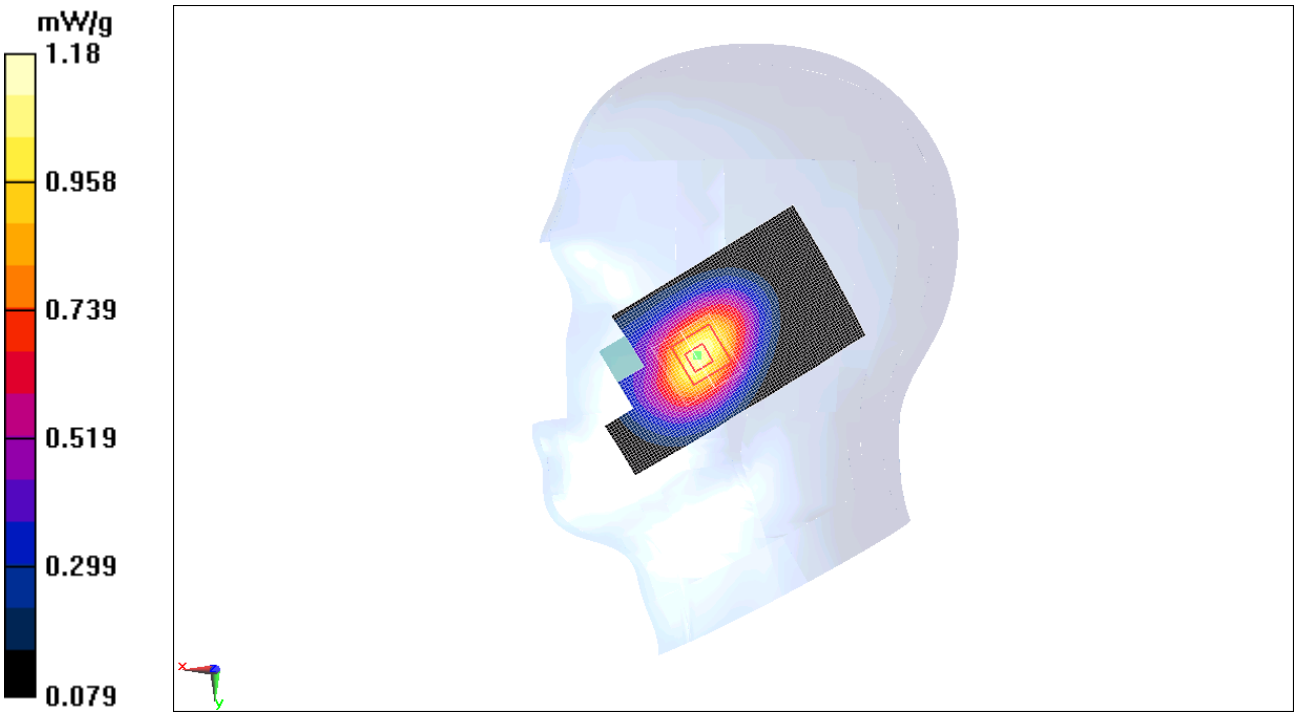


Fig. 28 850 MHz CH251

850 Body Towards Ground High

Date/Time: 2011-7-17 12:54:20
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.958 mho/m; εr = 53.9; ρ = 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(6.22, 6.22, 6.22)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.796 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 1.01 W/kg
SAR(1 g) = 0.739 mW/g; SAR(10 g) = 0.510 mW/g
Maximum value of SAR (measured) = 0.791 mW/g

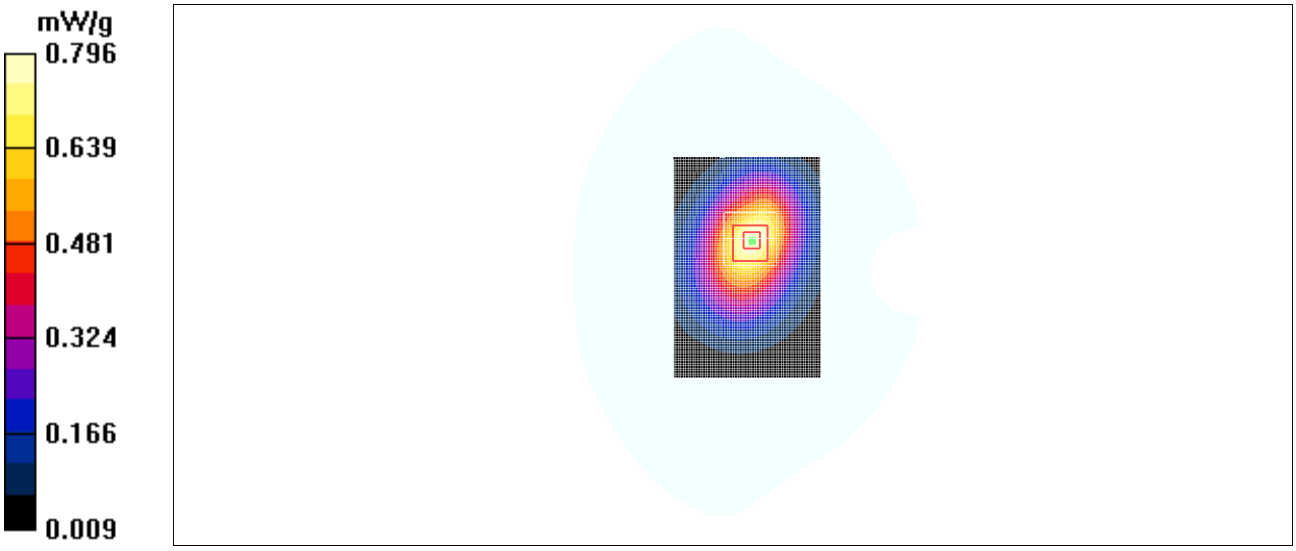


Fig. 29 850 MHz CH251

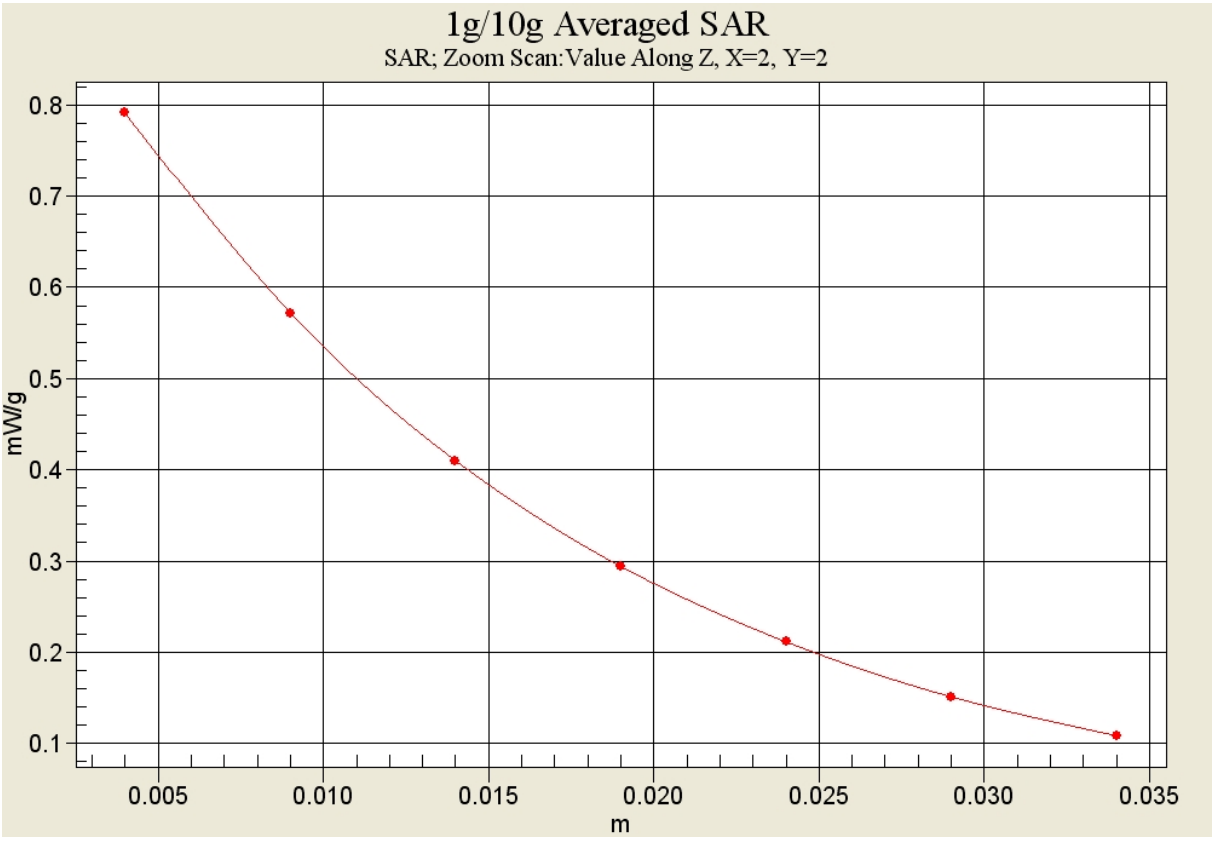


Fig. 29-1 Z-Scan at power reference point (850 MHz CH251)

850 Body Towards Ground Middle

Date/Time: 2011-7-17 13:09:53
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.95 mho/m; εr = 54.0; ρ = 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(6.22, 6.22, 6.22)

Toward Ground Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.784 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.6 V/m; Power Drift = -0.025 dB
Peak SAR (extrapolated) = 0.999 W/kg
SAR(1 g) = 0.731 mW/g; SAR(10 g) = 0.505 mW/g
Maximum value of SAR (measured) = 0.780 mW/g

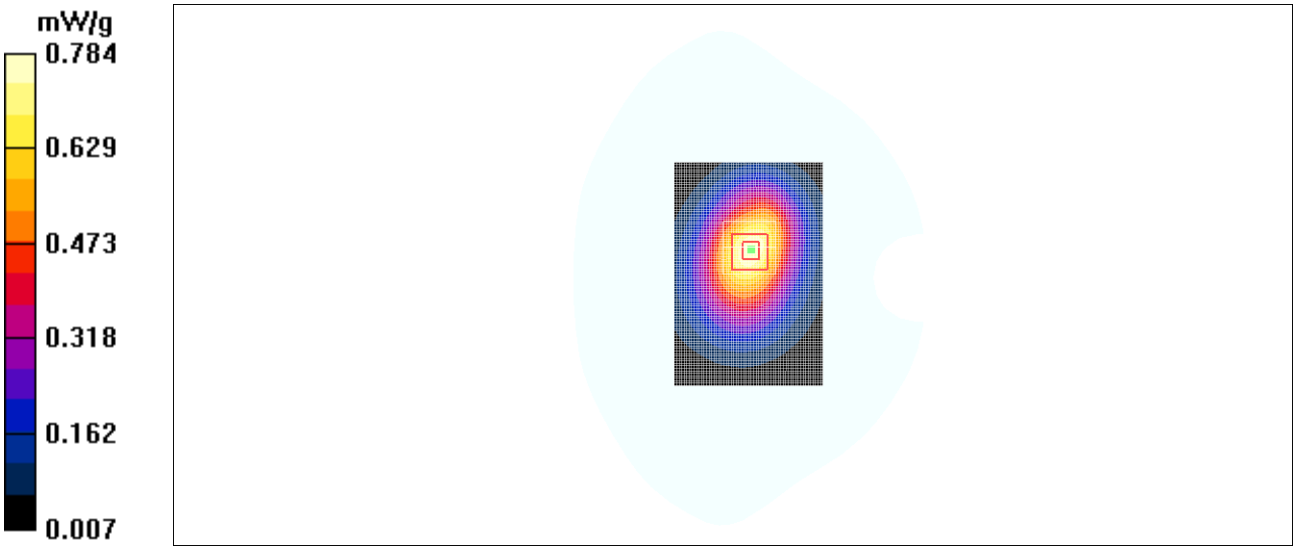


Fig. 30 850 MHz CH190

850 Body Towards Ground Low
Date/Time: 2011-7-17 13:25:27
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.942 mho/m; εr = 54.1; ρ = 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 (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.757 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.2 V/m; Power Drift = 0.148 dB
Peak SAR (extrapolated) = 0.968 W/kg
SAR(1 g) = 0.713 mW/g; SAR(10 g) = 0.495 mW/g
Maximum value of SAR (measured) = 0.758 mW/g

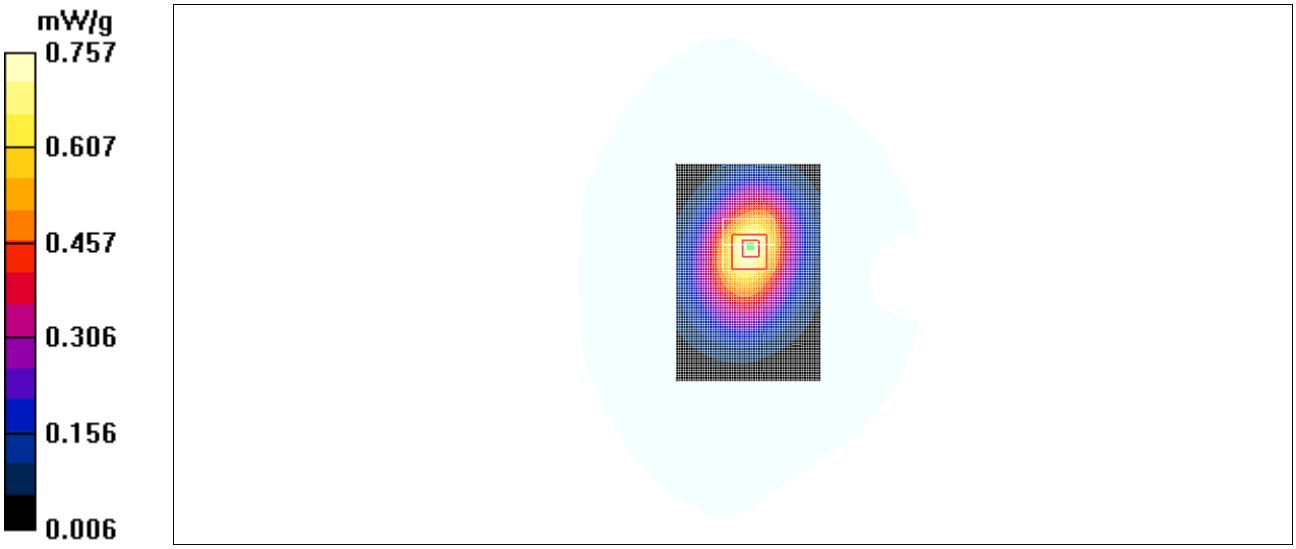


Fig. 31 850 MHz CH128

850 Body Towards Phantom High

Date/Time: 2011-7-17 13:41:00
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.958 mho/m; εr = 53.9; ρ = 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(6.22, 6.22, 6.22)

Toward Phantom High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.672 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.6 V/m; Power Drift = 0.146 dB
Peak SAR (extrapolated) = 0.845 W/kg
SAR(1 g) = 0.623 mW/g; SAR(10 g) = 0.435 mW/g
Maximum value of SAR (measured) = 0.663 mW/g

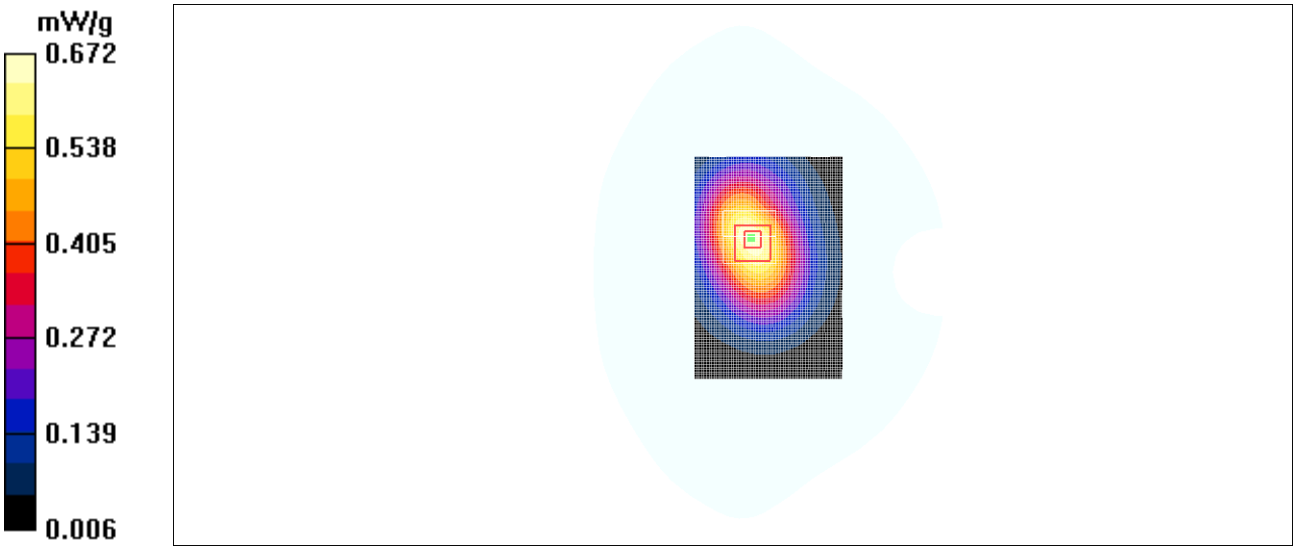


Fig. 32 850 MHz CH251

850 Body Towards Phantom Middle

Date/Time: 2011-7-17 13:56:31
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.95 mho/m; εr = 54.0; ρ = 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(6.22, 6.22, 6.22)

Toward Phantom Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.644 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.4 V/m; Power Drift = 0.023 dB
Peak SAR (extrapolated) = 0.821 W/kg
SAR(1 g) = 0.596 mW/g; SAR(10 g) = 0.416 mW/g
Maximum value of SAR (measured) = 0.637 mW/g

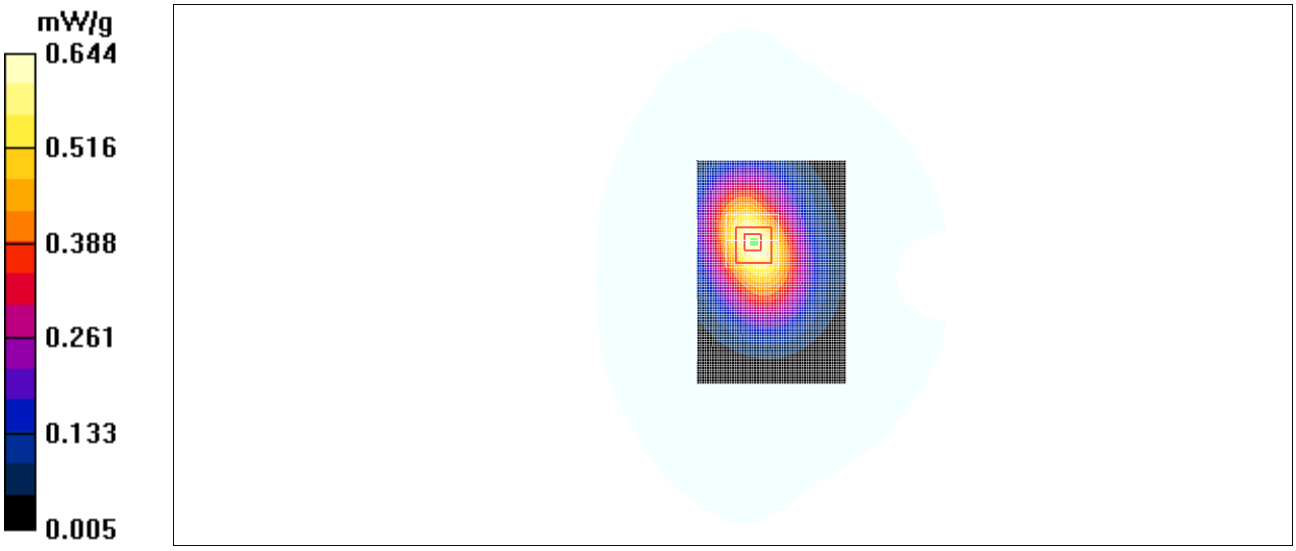


Fig. 33 850 MHz CH190

850 Body Towards Phantom Low

Date/Time: 2011-7-17 14:11:56
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.942 mho/m; εr = 54.1; ρ = 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 Phantom Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.615 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.1 V/m; Power Drift = -0.131 dB
Peak SAR (extrapolated) = 0.752 W/kg
SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.393 mW/g
Maximum value of SAR (measured) = 0.589 mW/g

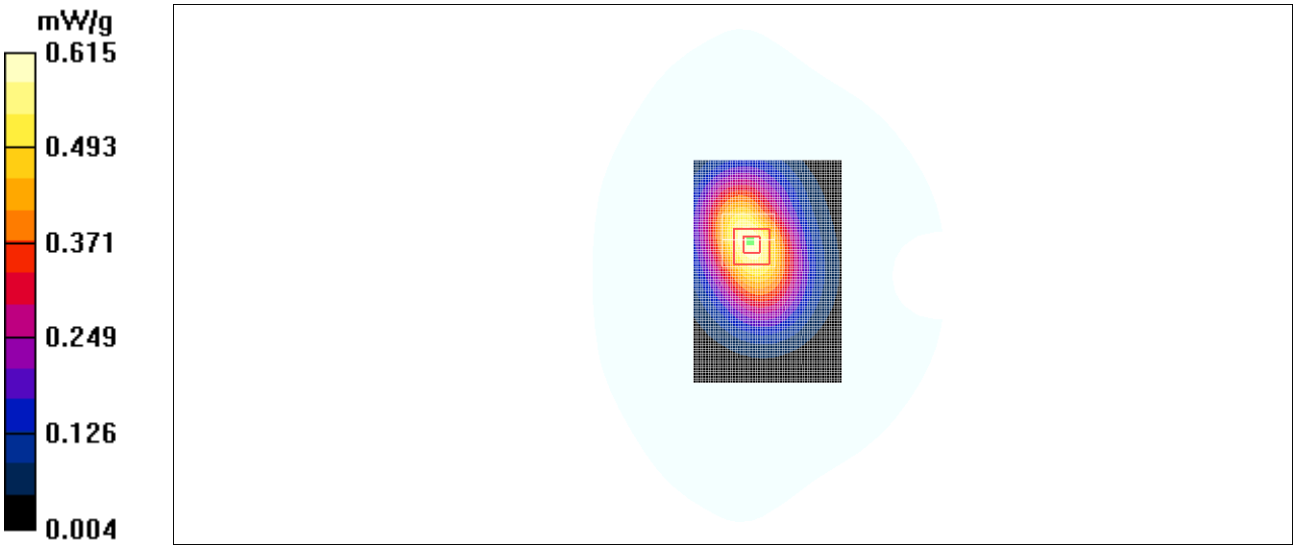


Fig. 34 850 MHz CH128

850 Body Towards Ground High with Headset CCA23L0A15C1

Date/Time: 2011-7-17 14:28:22
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.958 mho/m; εr = 53.9; ρ = 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(6.22, 6.22, 6.22)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.609 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.0 V/m; Power Drift = -0.171 dB
Peak SAR (extrapolated) = 0.779 W/kg
SAR(1 g) = 0.564 mW/g; SAR(10 g) = 0.390 mW/g
Maximum value of SAR (measured) = 0.599 mW/g

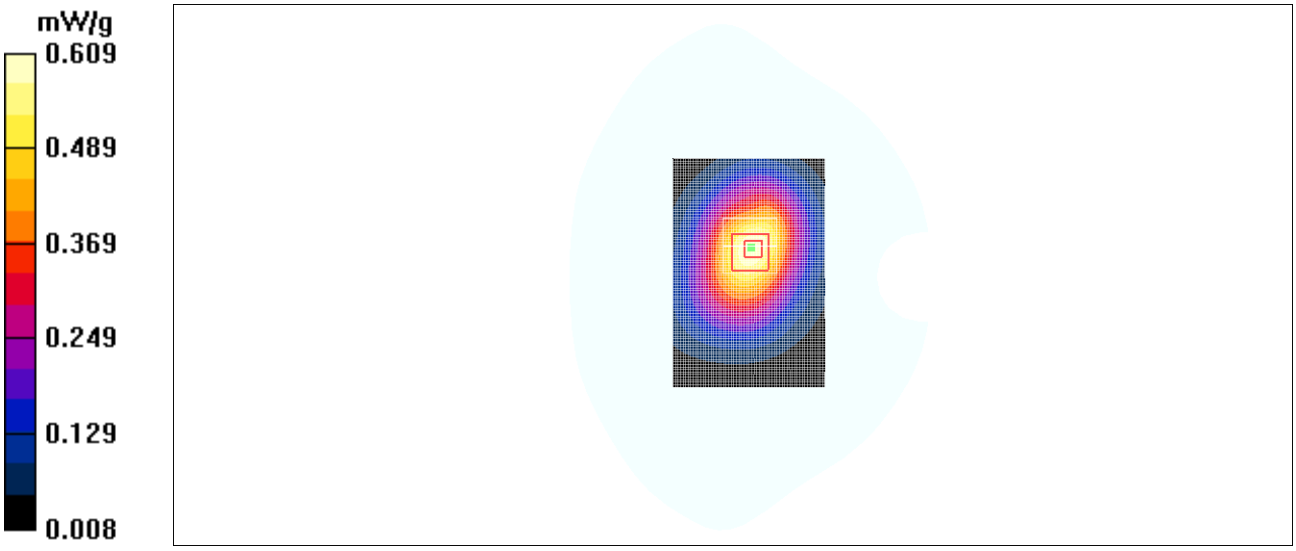


Fig. 35 850 MHz CH251

850 Body Towards Ground High with Headset CCA23L0A15C2

Date/Time: 2011-7-17 14:44:50
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.958 mho/m; εr = 53.9; ρ = 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(6.22, 6.22, 6.22)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.755 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.8 V/m; Power Drift = -0.140 dB
Peak SAR (extrapolated) = 0.960 W/kg
SAR(1 g) = 0.703 mW/g; SAR(10 g) = 0.489 mW/g
Maximum value of SAR (measured) = 0.744 mW/g

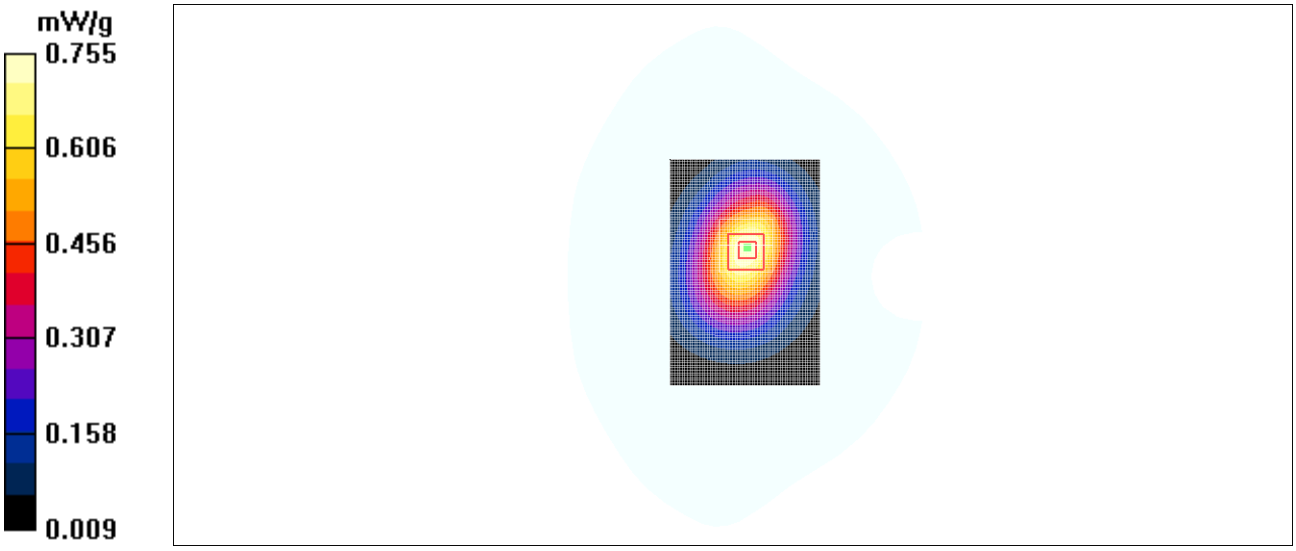


Fig. 36 850 MHz CH251

1900 Body Towards Ground High

Date/Time: 2011-7-18 11:43:02
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; εr = 52.8; ρ = 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)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.797 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.010 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.667 mW/g; SAR(10 g) = 0.391 mW/g
Maximum value of SAR (measured) = 0.715 mW/g

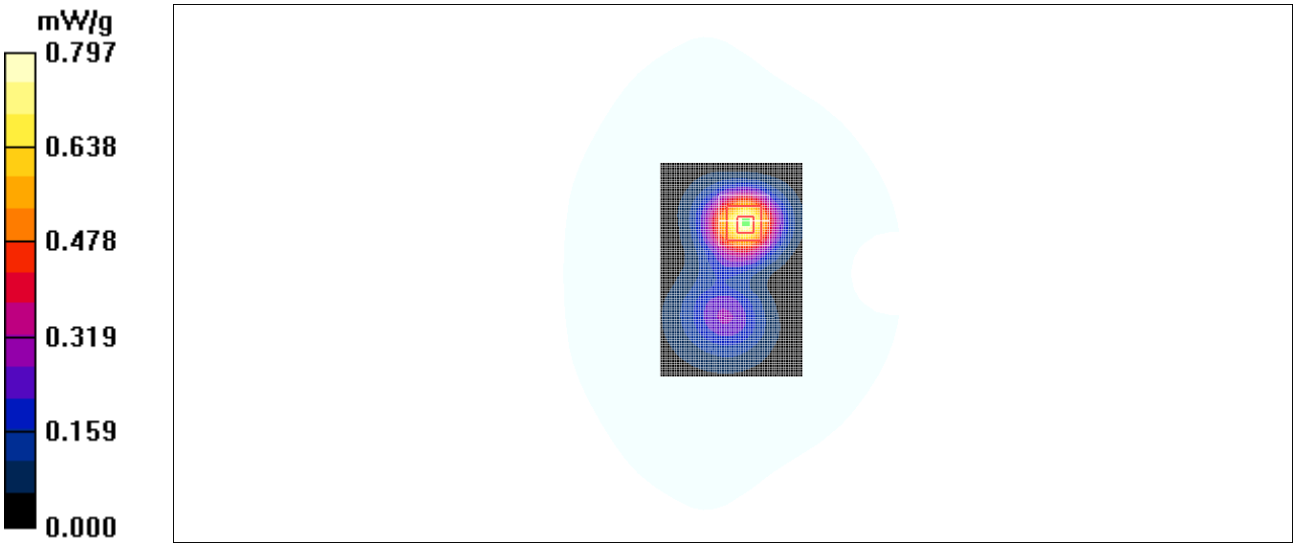


Fig. 37 1900 MHz CH810

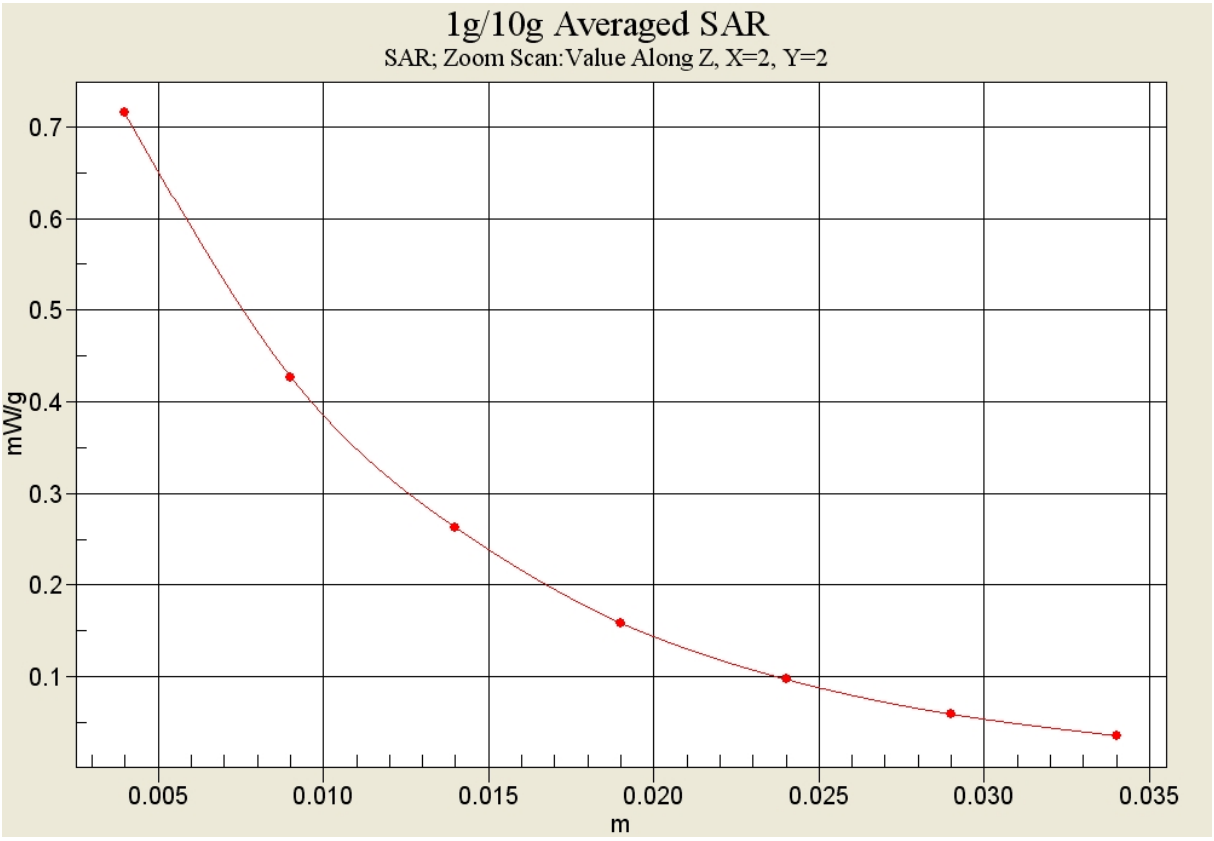


Fig. 37-1 Z-Scan at power reference point (1900 MHz CH810)

1900 Body Towards Ground Middle

Date/Time: 2011-7-18 11:58:30
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; εr = 52.6; ρ = 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(4.68, 4.68, 4.68)

Toward Ground Middle/Area Scan (61x91x1): 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 = 9.95 V/m; Power Drift = -0.031 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.606 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.642 mW/g

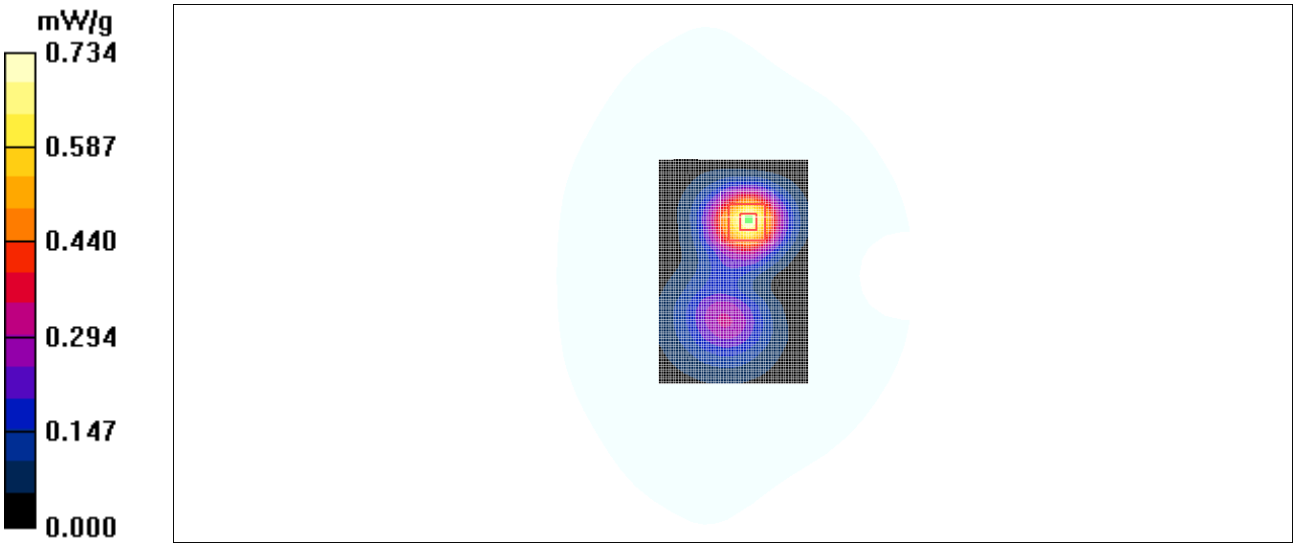


Fig. 38 1900 MHz CH661

1900 Body Towards Ground Low
Date/Time: 2011-7-18 12:13:57
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.48 mho/m; εr = 52.8; ρ = 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(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.668 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.70 V/m; Power Drift = -0.022 dB
Peak SAR (extrapolated) = 0.930 W/kg
SAR(1 g) = 0.550 mW/g; SAR(10 g) = 0.321 mW/g
Maximum value of SAR (measured) = 0.588 mW/g

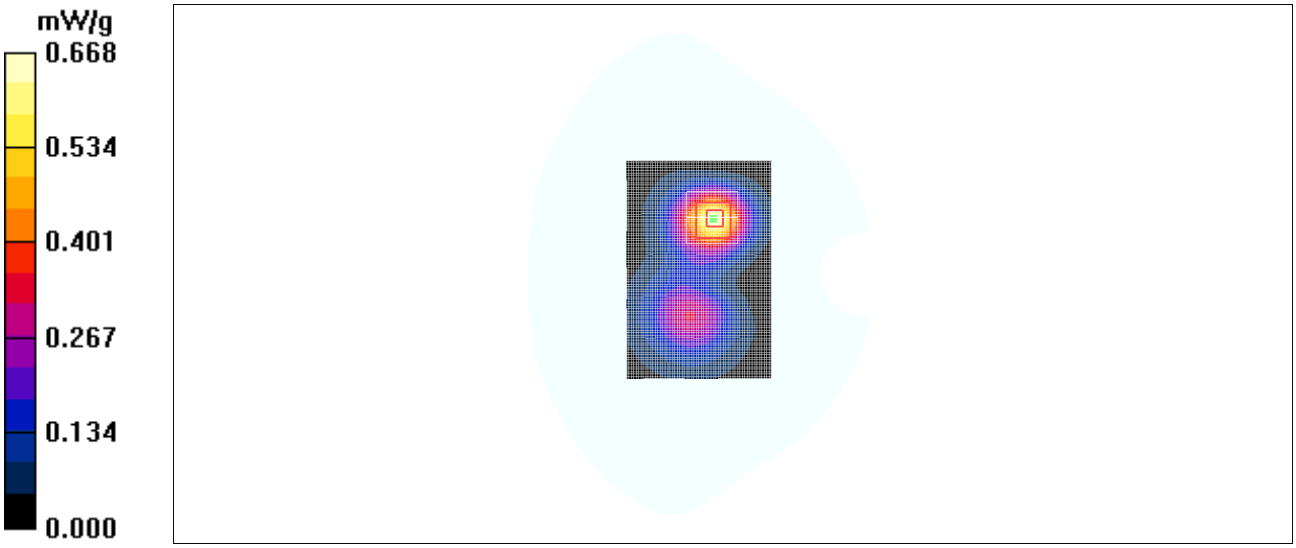


Fig. 39 1900 MHz CH512

1900 Body Towards Phantom High
Date/Time: 2011-7-18 12:29:37
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; εr = 52.8; ρ = 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)

Toward Phantom High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.330 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.490 W/kg
SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.172 mW/g
Maximum value of SAR (measured) = 0.317 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.457 W/kg
SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.177 mW/g
Maximum value of SAR (measured) = 0.312 mW/g

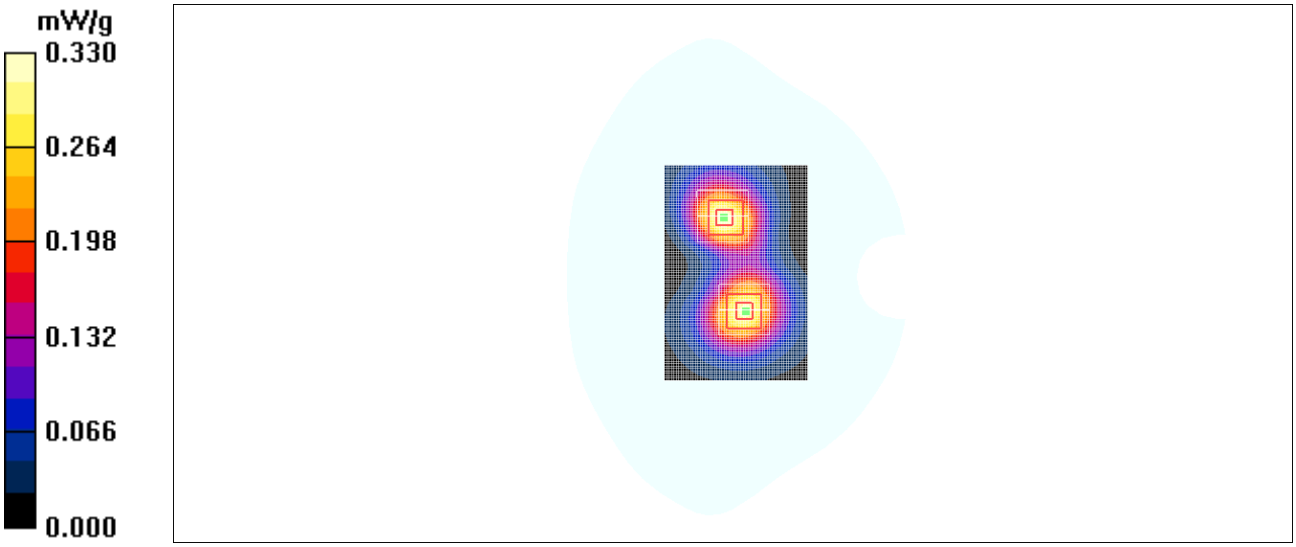


Fig. 40 1900 MHz CH810

1900 Body Towards Phantom Middle
Date/Time: 2011-7-18 12:45:01
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.50 mho/m; εr = 52.6; ρ = 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(4.68, 4.68, 4.68)

Toward Phantom Middle/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.316 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.94 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.450 W/kg
SAR(1 g) = 0.287 mW/g; SAR(10 g) = 0.177 mW/g
Maximum value of SAR (measured) = 0.311 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.94 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.446 W/kg
SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.155 mW/g
Maximum value of SAR (measured) = 0.289 mW/g

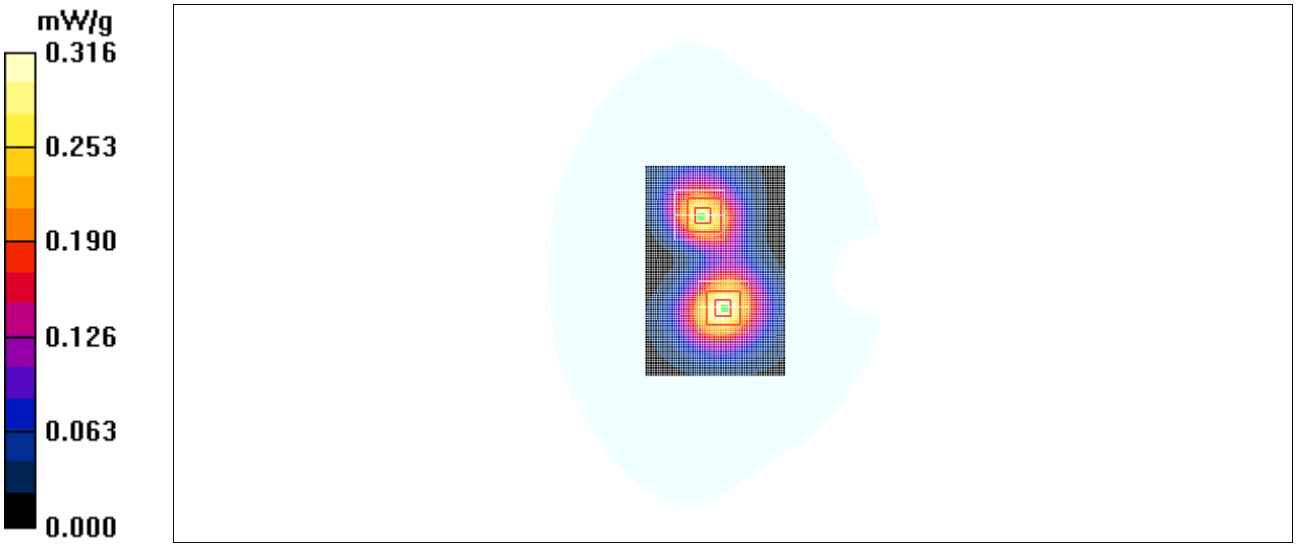


Fig. 41 1900 MHz CH661

1900 Body Towards Phantom Low
Date/Time: 2011-7-18 13:00:34
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.48 mho/m; εr = 52.8; ρ = 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(4.68, 4.68, 4.68)

Toward Phantom Low/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.302 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.88 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.435 W/kg
SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.172 mW/g
Maximum value of SAR (measured) = 0.299 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.88 V/m; Power Drift = -0.030 dB
Peak SAR (extrapolated) = 0.367 W/kg
SAR(1 g) = 0.219 mW/g; SAR(10 g) = 0.128 mW/g
Maximum value of SAR (measured) = 0.238 mW/g

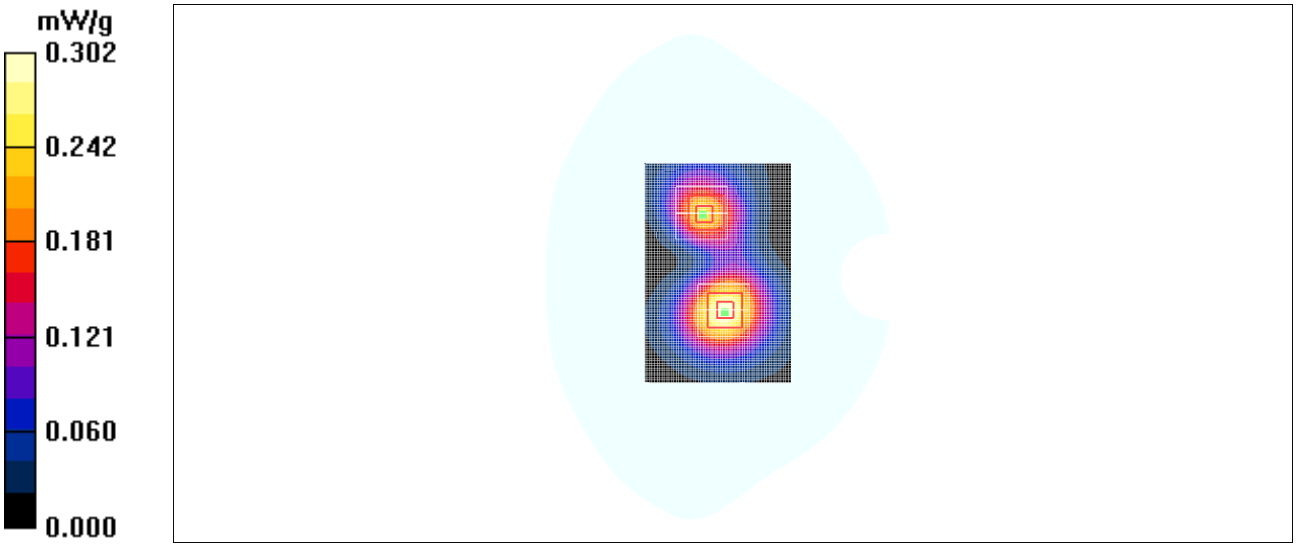


Fig. 42 1900 MHz CH512

1900 Body Towards Ground High with Headset CCA23L0A15C1

Date/Time: 2011-7-18 13:17:22
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; εr = 52.8; ρ = 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)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.765 mW/g

Toward Ground HighC1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.2 V/m; Power Drift = 0.020 dB
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.641 mW/g; SAR(10 g) = 0.377 mW/g
Maximum value of SAR (measured) = 0.676 mW/g

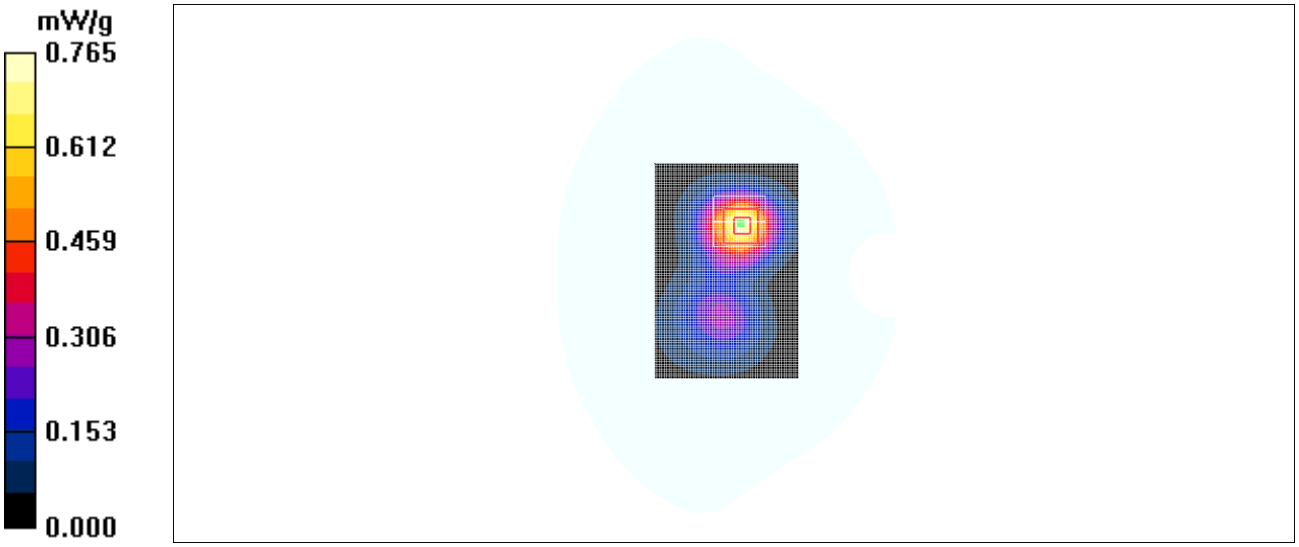


Fig. 43 1900 MHz CH810

1900 Body Towards Ground High with Headset CCA23L0A15C2

Date/Time: 2011-7-18 13:33:56
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.51 mho/m; εr = 52.8; ρ = 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)

Toward Ground High/Area Scan (61x91x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.788 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.8 V/m; Power Drift = 0.123 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.658 mW/g; SAR(10 g) = 0.388 mW/g
Maximum value of SAR (measured) = 0.709 mW/g

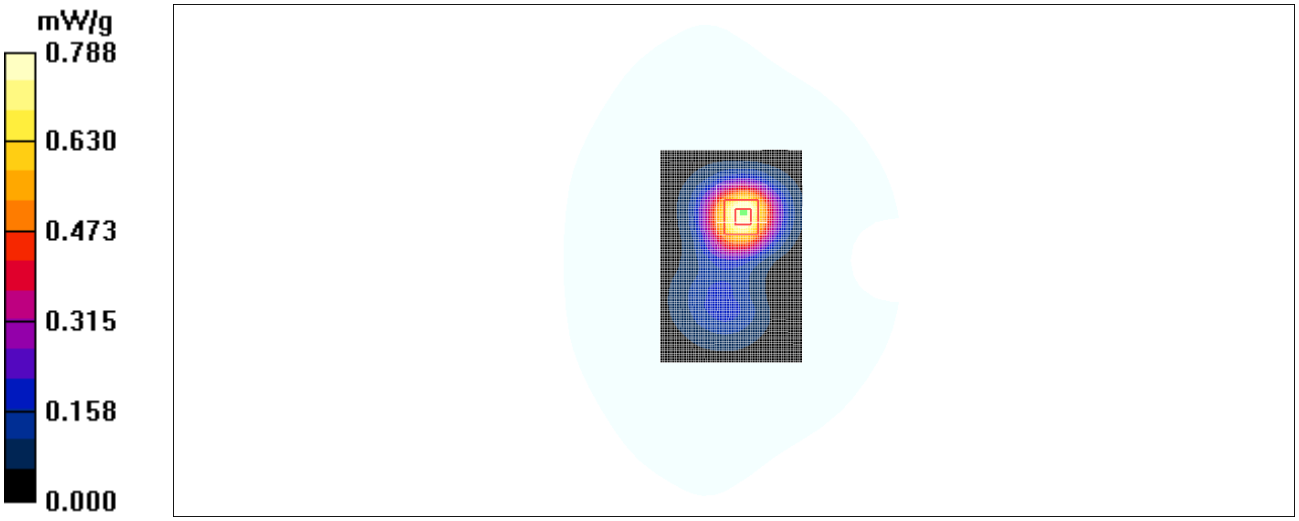


Fig. 44 1900 MHz CH810