SAR TEST REPORT

No. 2011SAR00026

For

ZTE CORPORATION

WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone

Z990

With

Hardware Version: p5pB

Software Version: Z990V1.0.0B01

FCCID: Q78-Z990

Issued Date: 2011-06-02

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

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2079, Fax:+86(0)10-62304793 Email:welcome@emcite.com. www.emcite.com

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:	March 24, 2011
Testing End Date:	May 11, 2011

1.4 Signature

Lin Xiaojun
(Prepared this test report)
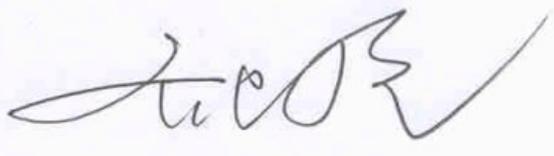
Qi Dianyuan
(Reviewed this test report)

Xiao Li
Deputy Director of the laboratory
(Approved this test report)

2 Client Information

2.1 Applicant Information

Company Name:	ZTE CORPORATION
Address /Post:	#68 Zijin Hua Road, Nanjing,Jiangsu Province，China
City:	Nanjing
Postal Code:	/
Country:	P. R. China
Telephone:	+8613813893560
Fax:	/

2.2 Manufacturer Information

Company Name:	ZTE CORPORATION
Address /Post:	#68 Zijin Hua Road, Nanjing,Jiangsu Province，China
City:	Nanjing
Postal Code:	/
Country:	P. R. China
Telephone:	+8613813893560
Fax:	/

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

3.1 About EUT

EUT Description:	WCDMA/GSM（GPRS） Dual-Mode Digital Mobile Phone
Model Name:	Z990
Frequency Band:	GSM850 / PCS1900 / WCDMA850 / WCDMA1900
GPRS Multislot Class:	10
GPRS capability Class:	B
EGPRS Multislot Class:	10
Hotspot mode:	Be supported
Form factor:	11.5cm×6.2cm

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	000039485642710	p5pB	Z990V1.0.0B01

*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	Li3715T42P3h415266	/	ZTE
AE2	Headset	HMZ8-C4-OMTP	/	ZTE

*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.

There is AP function for EUT, so test SAR at 10mm from the top & bottom surfaces and also from side edges with a transmitting antenna $\leqslant$ 2.5 cm from an edge.

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.
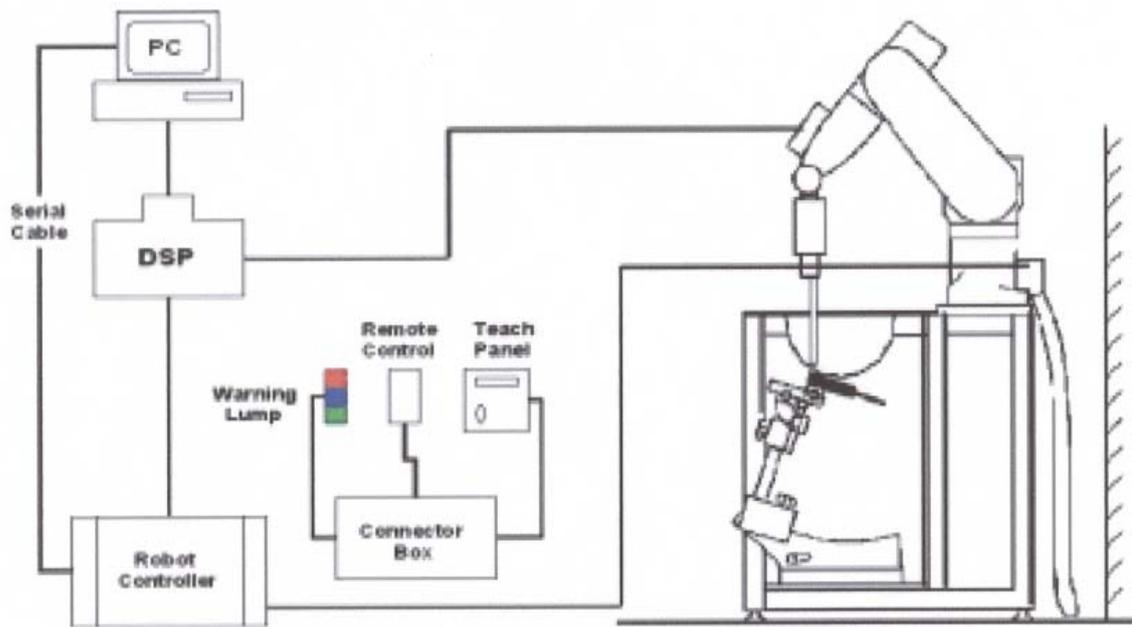
Picture 2: SAR Lab Test Measurement Set-up

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
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)
	± 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:

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.

Picture 6: Generic Twin Phantom

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

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 Agilent Spectrum Analyzer E4440A. These measurements were done at low, middle and high channels.

6.2.2 Measurement result

Table 3: The conducted power for GSM 850/1900

GSM 850MHZ	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	32.45	32.46	32.39
GSM 1900MHZ	Conducted Power (dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	29.99	30.22	30.44

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

GSM 850 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	**190**	**128**		**251**	**190**	**128**
1 Txslot	32.46	32.47	32.40	-9.03dB	23.43	23.44	23.37
2 Txslots	29.98	30.02	29.98	-6.02dB	**23.96**	**24.00**	**23.96**
GSM 850 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	**190**	**128**		**251**	**190**	**128**
1 Txslot	32.44	32.46	32.39	-9.03dB	23.41	23.43	23.36
2 Txslots	29.98	30.01	29.98	-6.02dB	**23.96**	**23.99**	**23.96**
PCS1900 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	**661**	**512**		**810**	**661**	**512**
1 Txslot	29.99	30.23	30.44	-9.03dB	20.96	21.20	21.41
2 Txslots	27.51	27.75	27.97	-6.02dB	**21.49**	**21.73**	**21.95**
PCS1900 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	**661**	**512**		**810**	**661**	**512**
1 Txslot	29.99	30.23	30.44	-9.03dB	20.96	21.20	21.41
2 Txslots	27.51	27.74	27.96	-6.02dB	**21.49**	**21.72**	**21.94**

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

According to the conducted power as above, the body measurements are performed with 2 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	\	24.07	24.30	24.29
HSDPA	1	22.5	22.6	22.3
	2	22.5	22.5	22.3
	3	22.5	22.5	22.2
	4	22.4	22.5	22.3
Item	band	FDDII result		
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)
WCDMA	\	24.12	24.27	24.17
HSDPA	1	22.0	22.0	22.0
	2	22.0	22.0	22.0
	3	22.0	22.0	21.9
	4	22.0	22.0	22.0

Note: HSDPA 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 HSDPA and the maximum SAR for WCDMA850 and WCDMA1900 are not above 75% of the SAR limit (see table 16 and table 17 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 10 to Table 17 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 38%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **Mar 24, 2011** 1900 MHz **Mar 25, 2011** 2450 MHz **Mar 26, 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	41.7	0.91
	1900 MHz	40.4	1.41
	2450 MHz	39.5	1.82

Table 7: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.0 °C and relative humidity 38%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **May 11, 2011** 1900 MHz **May 11, 2011** 2450 MHz **Mar 26, 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	56.3	0.96
	1900 MHz	52.0	1.50
	2450 MHz	52.5	1.97

7.2 System Validation

Table 8: System Validation of Head

Measurement is made at temperature 23.0 °C and relative humidity 38%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **Mar 24, 2011** 1900 MHz **Mar 25, 2011** 2450 MHz **Mar 26, 2011**				
		Frequency	Permittivity ε	Conductivity σ (S/m)
Liquid parameters	Dipole calibration Target value	835 MHz	41.6	0.92
		1900 MHz	39.6	1.40
		2450 MHz	39.0	1.74
	Actural Measurement value	835 MHz	41.9	0.90
		1900 MHz	40.4	1.41
		2450 MHz	39.5	1.82

Verification results	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
	835 MHz	6.12	9.41	5.92	9.16	-3.27%	-2.66%
	1900 MHz	20.1	39.4	19.88	38.44	-1.09%	-2.44%
	2450 MHz	24.6	52.4	23.6	51.2	-4.07%	-2.29%

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 ℃ and relative humidity 38%.
Liquid temperature during the test: 22.5℃
Measurement Date : 850 MHz **May 11, 2011**   1900 MHz **May 11, 2011**   2450 MHz **Mar 26, 2011**

Liquid parameters		Frequency	Permittivity ε	Conductivity σ (S/m)
	Dipole calibration Target value	835 MHz	54.5	0.97
		1900 MHz	52.5	1.51
		2450 MHz	52.5	1.95
	Actural Measurement value	835 MHz	56.3	0.96
		1900 MHz	52.0	1.50
		2450 MHz	52.5	1.97

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	6.16	9.88	-1.28%	3.24%
	1900 MHz	20.9	41.4	20.84	41.2	-0.29%	-0.48%
	2450 MHz	23.9	51.6	23.6	51.6	-1.26%	0.00%

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

7.3 Summary of Measurement Results

Table 10: SAR Values (GSM 850MHz-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, High frequency (See Fig.1)	0.575	0.850	-0.154
Left hand, Touch cheek, Middle frequency (See Fig.2)	0.506	0.742	-0.129
Left hand, Touch cheek, Low frequency (See Fig.3)	0.402	0.585	-0.108
Left hand, Tilt 15 Degree, High frequency (See Fig.4)	0.353	0.464	-0.027
Left hand, Tilt 15 Degree, Middle frequency (See Fig.5)	0.327	0.429	-0.116
Left hand, Tilt 15 Degree, Low frequency (See Fig.6)	0.284	0.372	-0.039
Right hand, Touch cheek, High frequency (See Fig.7)	0.622	0.843	-0.037
Right hand, Touch cheek, Middle frequency (See Fig.8)	0.561	0.755	-0.112
Right hand, Touch cheek, Low frequency (See Fig.9)	0.448	0.601	0.00927
Right hand, Tilt 15 Degree, High frequency (See Fig.10)	0.361	0.477	0.057
Right hand, Tilt 15 Degree, Middle frequency (See Fig.11)	0.342	0.449	-0.039
Right hand, Tilt 15 Degree, Low frequency (See Fig.12)	0.304	0.395	0.00856

Table 11: SAR Values (PCS 1900MHz-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, High frequency (See Fig.13)	0.362	0.650	0.040
Left hand, Touch cheek, Middle frequency (See Fig.14)	0.355	0.633	0.084
Left hand, Touch cheek, Low frequency (See Fig.15)	0.395	0.710	0.130
Left hand, Tilt 15 Degree, High frequency (See Fig.16)	0.147	0.256	-0.041
Left hand, Tilt 15 Degree, Middle frequency (See Fig.17)	0.149	0.255	-0.017
Left hand, Tilt 15 Degree, Low frequency (See Fig.18)	0.155	0.264	-0.048
Right hand, Touch cheek, High frequency (See Fig.19)	0.241	0.402	0.022
Right hand, Touch cheek, Middle frequency (See Fig.20)	0.232	0.386	-0.048
Right hand, Touch cheek, Low frequency (See Fig.21)	0.246	0.406	-0.038
Right hand, Tilt 15 Degree, High frequency (See Fig.22)	0.137	0.246	0.036
Right hand, Tilt 15 Degree, Middle frequency (See Fig.23)	0.144	0.257	0.029
Right hand, Tilt 15 Degree, Low frequency(See Fig.24)	0.154	0.268	0.023

Table 12: SAR Values (WCDMA 850MHz-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, High frequency (See Fig.25)	0.517	0.741	-0.182
Left hand, Touch cheek, Middle frequency (See Fig.26)	0.454	0.649	0.011
Left hand, Touch cheek, Low frequency (See Fig.27)	0.468	0.670	0.129
Left hand, Tilt 15 Degree, High frequency (See Fig.28)	0.331	0.438	-0.114
Left hand, Tilt 15 Degree, Middle frequency (See Fig.29)	0.324	0.429	0.118
Left hand, Tilt 15 Degree, Low frequency (See Fig.30)	0.304	0.400	0.083
Right hand, Touch cheek, High frequency (See Fig.31)	0.617	0.829	-0.185
Right hand, Touch cheek, Middle frequency (See Fig.32)	0.514	0.688	-0.123
Right hand, Touch cheek, Low frequency (See Fig.33)	0.516	0.688	0.117
Right hand, Tilt 15 Degree, High frequency (See Fig.34)	0.367	0.485	-0.038
Right hand, Tilt 15 Degree, Middle frequency (See Fig.35)	0.352	0.463	0.033
Right hand, Tilt 15 Degree, Low frequency(See Fig.36)	0.340	0.446	0.132

Table 13: SAR Values (WCDMA 1900MHz-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, High frequency (See Fig.37)	0.543	0.975	0.010
Left hand, Touch cheek, Middle frequency (See Fig.38)	0.562	1.01	0.106
Left hand, Touch cheek, Low frequency (See Fig.39)	0.584	1.04	0.127
Left hand, Tilt 15 Degree, High frequency (See Fig.40)	0.219	0.380	-0.005
Left hand, Tilt 15 Degree, Middle frequency (See Fig.41)	0.248	0.426	0.014
Left hand, Tilt 15 Degree, Low frequency (See Fig.42)	0.239	0.405	0.008
Right hand, Touch cheek, High frequency (See Fig.43)	0.351	0.573	0.162
Right hand, Touch cheek, Middle frequency (See Fig.44)	0.372	0.601	-0.002
Right hand, Touch cheek, Low frequency (See Fig.45)	0.386	0.624	0.112
Right hand, Tilt 15 Degree, High frequency (See Fig.46)	0.242	0.425	0.100
Right hand, Tilt 15 Degree, Middle frequency (See Fig.47)	0.243	0.422	-0.032
Right hand, Tilt 15 Degree, Low frequency(See Fig.48)	0.243	0.418	0.035

Table 14: SAR Values (GSM 850MHz-Body)

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.49)	0.735	1.02	0.027
Towards Phantom, Middle frequency with GPRS (See Fig.50)	0.761	1.05	-0.068
Towards Phantom, Low frequency with GPRS (See Fig.51)	0.657	0.911	-0.010
Towards Ground, High frequency with GPRS (See Fig.52)	0.767	1.06	0.046
Towards Ground, Middle frequency with GPRS (See Fig.53)	0.906	1.24	-0.013
Towards Ground, Low frequency with GPRS (See Fig.54)	0.987	1.37	-0.008
Left Side, High frequency with GPRS (See Fig.55)	0.575	0.853	0.000
Left Side, Middle frequency with GPRS (See Fig.56)	0.661	0.976	-0.031
Left Side, Low frequency with GPRS (See Fig.57)	0.507	0.751	0.057
Right Side, Middle frequency with GPRS (See Fig.58)	0.539	0.783	-0.023
Bottom Side, Middle frequency with GPRS (See Fig.59)	0.054	0.093	-0.060
Towards Ground, Low frequency with EGPRS (See Fig.60)	0.975	1.34	0.016
Towards Ground, Low frequency with Headset (See Fig.61)	0.901	1.28	-0.087

Table 15: SAR Values (PCS 1900MHz-Body)

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, Low frequency with GPRS (See Fig.62)	0.349	0.611	-0.024
Towards Ground, High frequency with GPRS (See Fig.63)	0.398	0.684	-0.101
Towards Ground, Middle frequency with GPRS (See Fig.64)	0.389	0.673	0.089
Towards Ground, Low frequency with GPRS (See Fig.65)	0.382	0.667	0.031
Left Side, Low frequency with GPRS (See Fig.66)	0.102	0.179	-0.040
Right Side, Low frequency with GPRS (See Fig.67)	0.077	0.131	0.006
Bottom Side, Low frequency with GPRS (See Fig.68)	0.330	0.579	-0.026
Towards Ground, High frequency with EGPRS (See Fig.69)	0.351	0.602	-0.024
Towards Ground, High frequency with Headset (See Fig.70)	0.387	0.654	0.035

Table 16: SAR Values (WCDMA 850MHz-Body)

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.71)	0.676	0.929	0.081
Towards Phantom, Middle frequency (See Fig.72)	0.701	0.964	-0.063
Towards Phantom, Low frequency (See Fig.73)	0.706	0.971	0.097
Towards Ground, High frequency (See Fig.74)	0.718	0.989	-0.004
Towards Ground, Middle frequency (See Fig.75)	0.780	1.07	-0.054
Towards Ground, Low frequency (See Fig.76)	0.803	1.1	-0.032
Left Side, Middle frequency (See Fig.77)	0.515	0.763	-0.018
Right Side, Middle frequency (See Fig.78)	0.478	0.694	0.045
Bottom Side, Middle frequency (See Fig.79)	0.060	0.103	0.049
Towards Ground, Low frequency with Headset (See Fig.80)	0.715	1.01	0.116

Table 17: SAR Values (WCDMA 1900MHz-Body)

| 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.81)	0.517	0.889	0.029
Towards Phantom, Middle frequency (See Fig.82)	0.514	0.889	0.038
Towards Phantom, Low frequency (See Fig.83)	0.559	0.977	0.013
Towards Ground, High frequency (See Fig.84)	0.564	0.968	-0.093
Towards Ground, Middle frequency (See Fig.85)	0.597	1.03	0.020
Towards Ground, Low frequency (See Fig.86)	0.591	1.03	0.041
Left Side, Middle frequency (See Fig.87)	0.165	0.294	-0.060
Right Side, Middle frequency (See Fig.88)	0.125	0.215	0.077
Bottom Side, High frequency (See Fig.89)	0.452	0.802	0.014
Bottom Side, Middle frequency (See Fig.90)	0.495	0.870	-0.036
Bottom Side, Low frequency (See Fig.91)	0.486	0.854	-0.035
Towards Ground, Middle frequency with Headset (See Fig.92)	0.587	0.993	0.074

7.4 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	/	/
BT	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 antenna and GSM antenna is >5cm. The location of the antennas inside mobile phone is shown below:
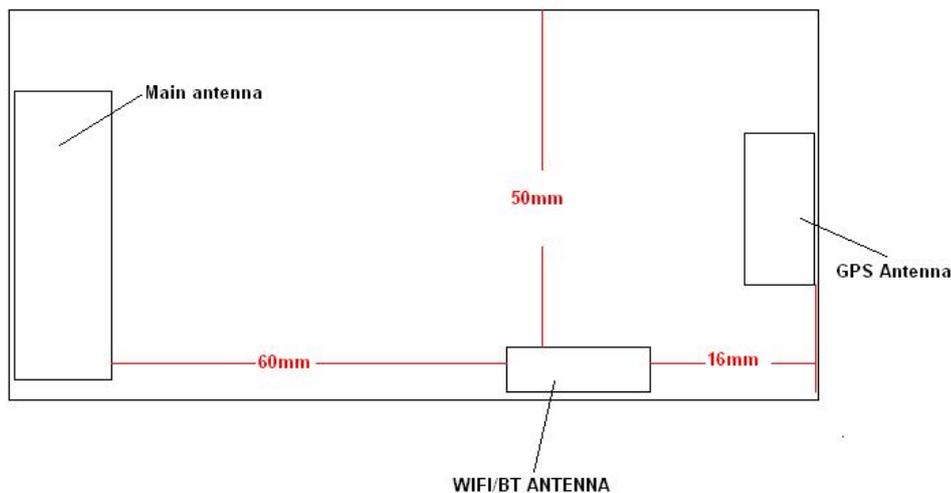
The output power of BT antenna is as following:

Channel	Ch 0 (2402 MHz)	Ch 39 (2441 MHz)	Ch 78 (2480 MHz)
Peak Conducted Output Power(dBm)	3.42	0.67	2.52

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

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

The average conducted power for WiFi is as following:

802.11b（dBm）

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	15.65	15.50	15.40	15.02
6	15.27	15.05	14.57	14.61
11	15.22	14.63	14.35	14.19

802.11g（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	14.10	13.92	14.01	13.78	13.53	13.42	13.09	13.01
6	13.83	13.55	13.67	13.43	13.10	12.93	12.37	12.33
11	14.02	13.66	13.52	13.62	13.50	13.13	12.79	12.52

802.11n（dBm）

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	14.23	13.85	13.65	13.71	13.45	12.99	12.83	12.79
6	13.79	13.59	13.38	13.10	13.78	13.56	13.42	13.38
11	13.69	13.55	13.50	13.33	12.81	12.70	12.53	12.51

The peak conducted power for WiFi is as following:

802.11b（dBm）

Channel\data rate	1Mbps	2Mbps	5.5Mbps	11Mbps
1	19.30	19.12	19.99	21.39
6	/	/	/	21.00
11	/	/	/	20.60

802.11g（dBm）

Channel\data rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
1	22.72	22.86	22.60	22.52	22.80	22.90	22.79	22.92
6	/	/	/	/	/	/	/	22.64
11	/	/	/	/	/	/	/	22.29

802.11n（dBm）

Channel\data rate	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
1	22.61	22.38	22.43	22.75	22.66	22.77	22.86	22.52
6	/	/	/	/	/	/	22.30	/
11	/	/	/	/	/	/	22.16	/

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

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

Table 18: 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 1 (See Fig.93)	0.018	0.031	0.097
Left hand, Tilt 15 Degree, 1Mbps, channel 1 (See Fig.94)	0.013	0.022	0.144
Right hand, Touch cheek, 1Mbps, channel 1 (See Fig.95)	0.011	0.021	0.126
Right hand, Tilt 15 Degree, 1Mbps, channel 1 (See Fig.96)	0.000706	0.00271	-0.151

Table 19: 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 1 (See Fig.97)	0.011	0.019	0.034
Toward Ground, 1Mbps, channel 1 (See Fig.98)	0.110	0.266	0.150
Left Side, 1Mbps, channel 1 (See Fig.99)	0.085	0.177	0.121
Top Side, 1Mbps, channel 1 (See Fig.100)	0.00562	0.012	-0.134

Table 20: The sum of SAR values for GSM and WiFi

|	Maximum SAR value for Head	Maximum SAR value for Body
GSM	1.04	1.37
WiFi	0.031	0.266
Sum	**1.071**	**1.636**

Since the much difference between the SAR values of GSM and WiFi, it is not clear for WiFI peak SAR point in the combined picture made by SEMCAD software. So the GSM and WiFi plots are presented respectively to show clearly peak SAR point.

RF Peak SAR

6.36cm

WiFi Peak SAR
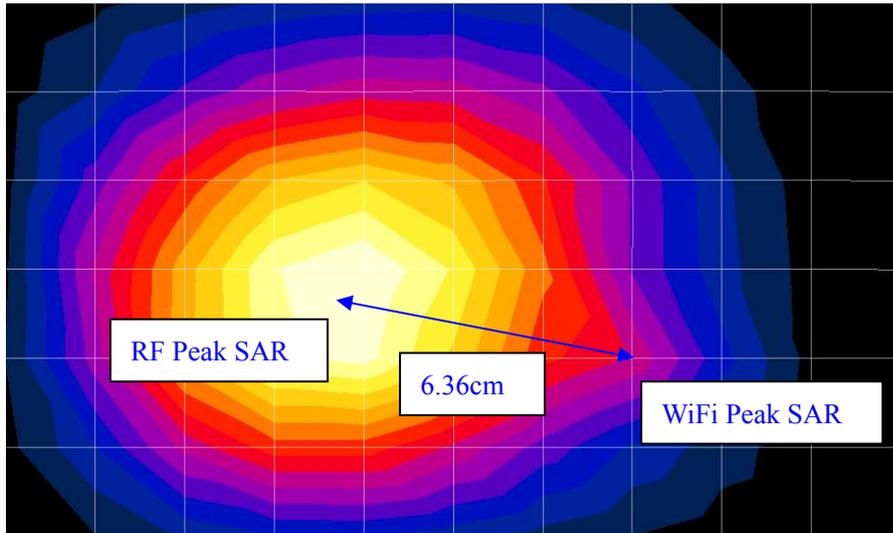
Combined picture for GSM850 and WiFi

RF Peak SAR
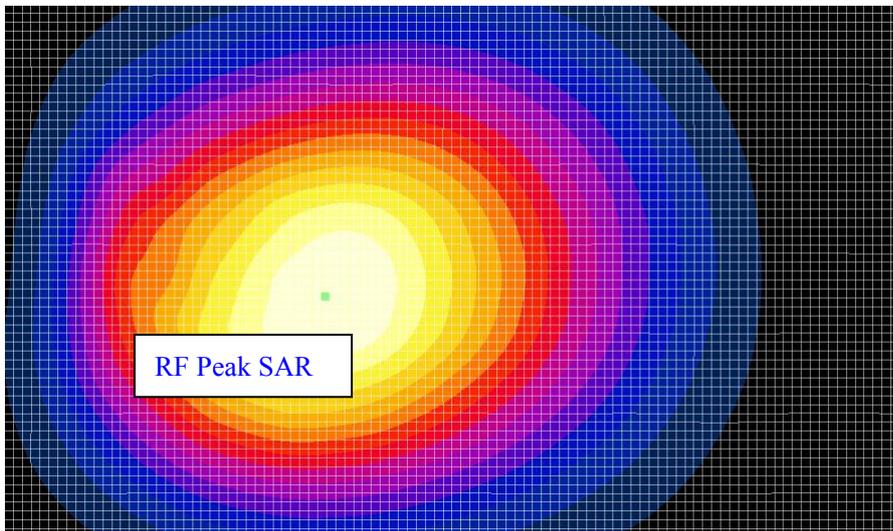
GSM 850MHz Towards Ground, Low frequency with GPRS
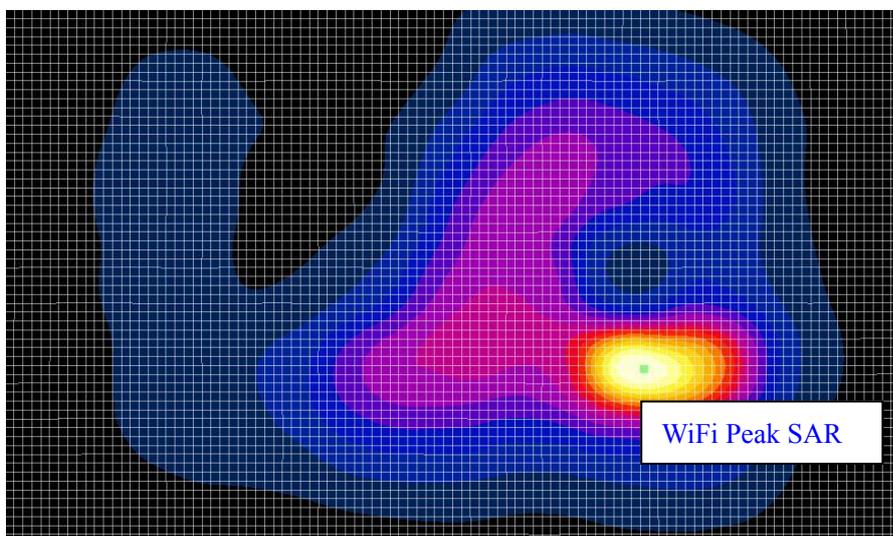
WiFi Peak SAR

WiFi Toward Ground, 1Mbps, channel 1

According to the above table and pictures, the sum of SAR values for GSM and WiFi is 1.636W/kg and peak location separation is 6.36cm. So antenna pair SAR to peak SAR location separation ratio is 1.636/6.36=0.26＜0.3, simultaneous transmission SAR are not required for WiFi transmitter.

7.5 Conclusion

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

The maximum SAR values are obtained at the case of **GSM 850 MHz Band, Body, Towards Ground, Low frequency with GPRS (Table 14)**, and the value are: **1.37(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 18: List of Main Instruments

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

END OF REPORT BODY

ANNEX A   MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

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

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

Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 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.
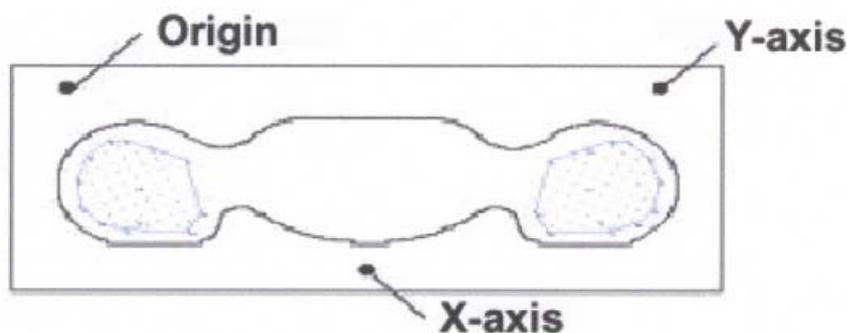
Picture A: SAR Measurement Points in Area Scan

ANNEX B   TEST LAYOUT

Picture B1: Specific Absorption Rate Test Layout
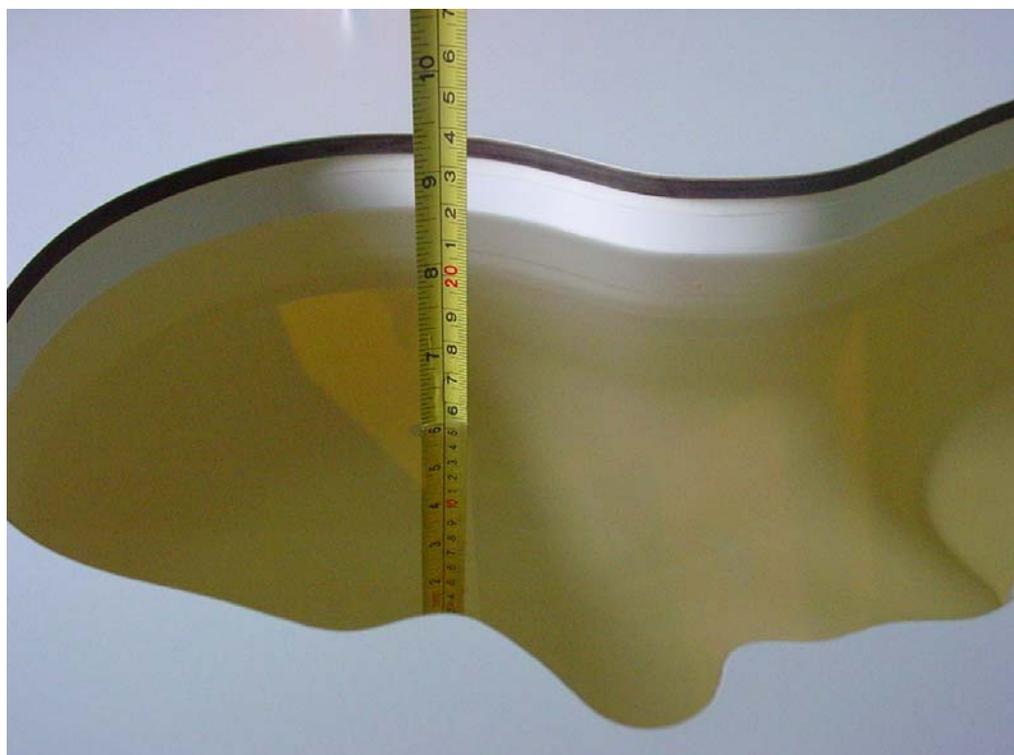
Picture B2: Liquid depth in the Head Phantom (850 MHz)

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

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

ANNEX C   GRAPH RESULTS

850 Left Cheek High

Date/Time: 2011-3-24 8:10:41

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.90 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 10.2 V/m; Power Drift = -0.154 dB

Peak SAR (extrapolated) = 1.31 W/kg

SAR(1 g) = 0.850 mW/g; SAR(10 g) = 0.575 mW/g

Maximum value of SAR (measured) = 0.908 mW/g
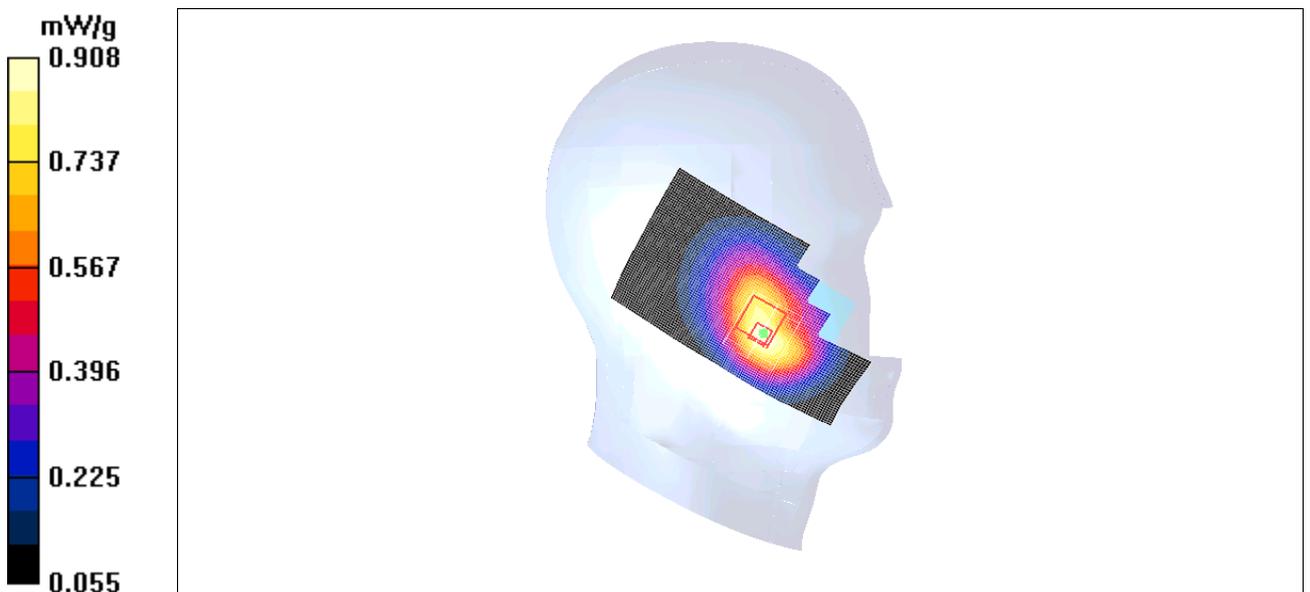
Fig. 1   850MHz CH251
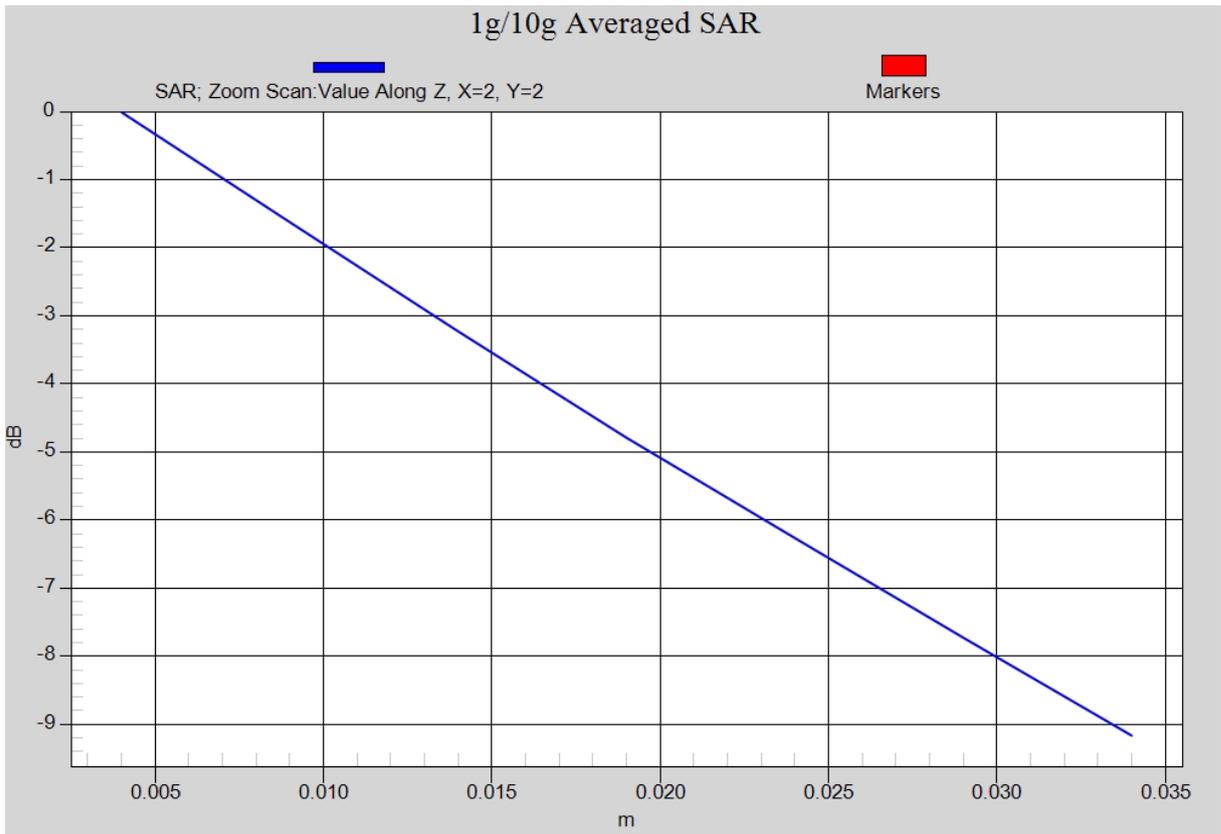
Fig. 1-1   Z-Scan at power reference point (850 MHz CH251)

850 Left Cheek Middle

Date/Time: 2011-3-24 8:24:57

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 9.62 V/m; Power Drift = -0.129 dB

Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.742 mW/g; SAR(10 g) = 0.506 mW/g

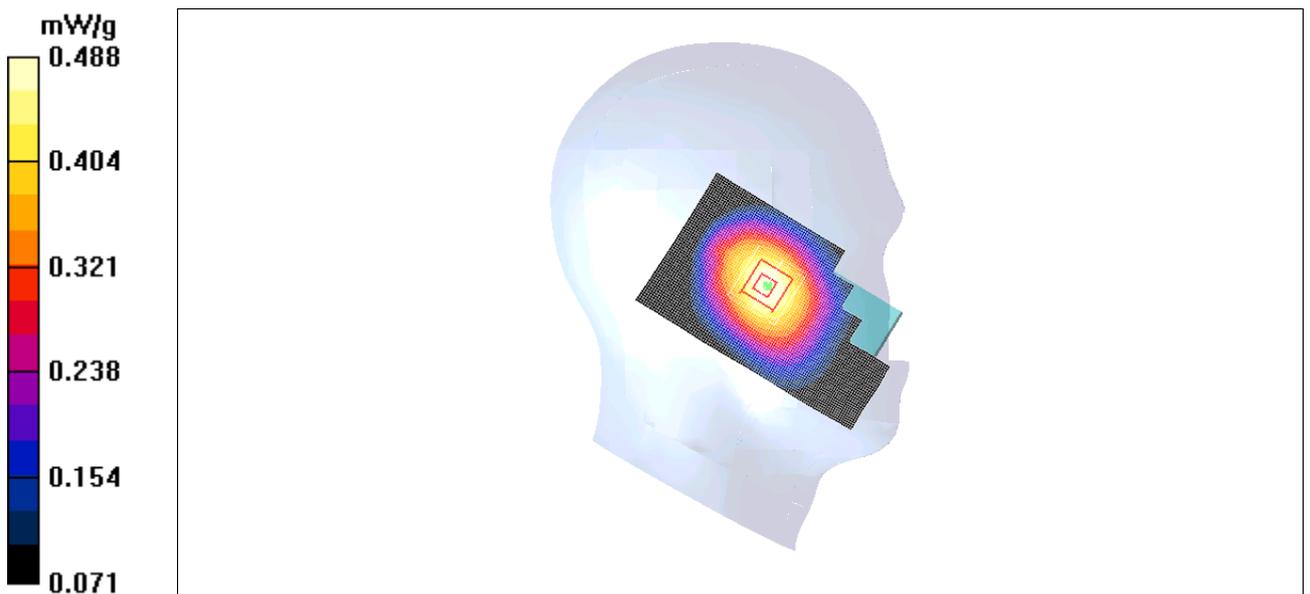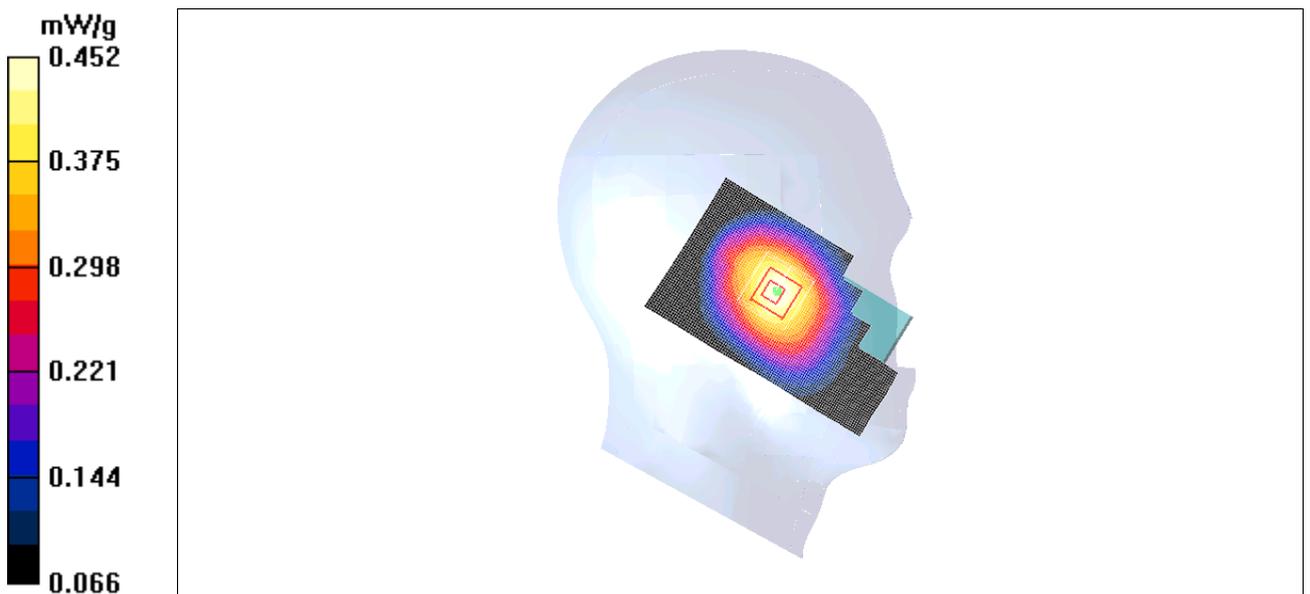Maximum value of SAR (measured) = 0.794 mW/g
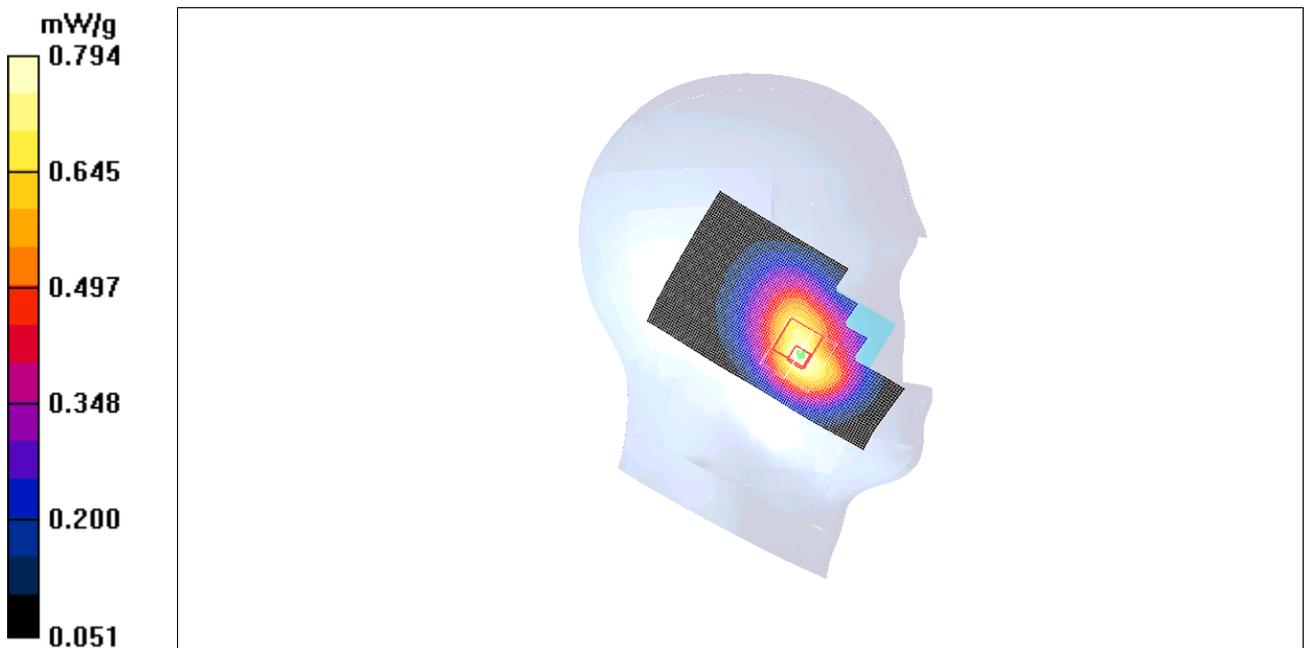
Fig. 2   850 MHz CH190

850 Left Cheek Low

Date/Time: 2011-3-24 8:39:14

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used: f = 825 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m³

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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.628 mW/g

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

Reference Value = 8.78 V/m; Power Drift = -0.108 dB

Peak SAR (extrapolated) = 0.878 W/kg

SAR(1 g) = 0.585 mW/g; SAR(10 g) = 0.402 mW/g

Maximum value of SAR (measured) = 0.624 mW/g
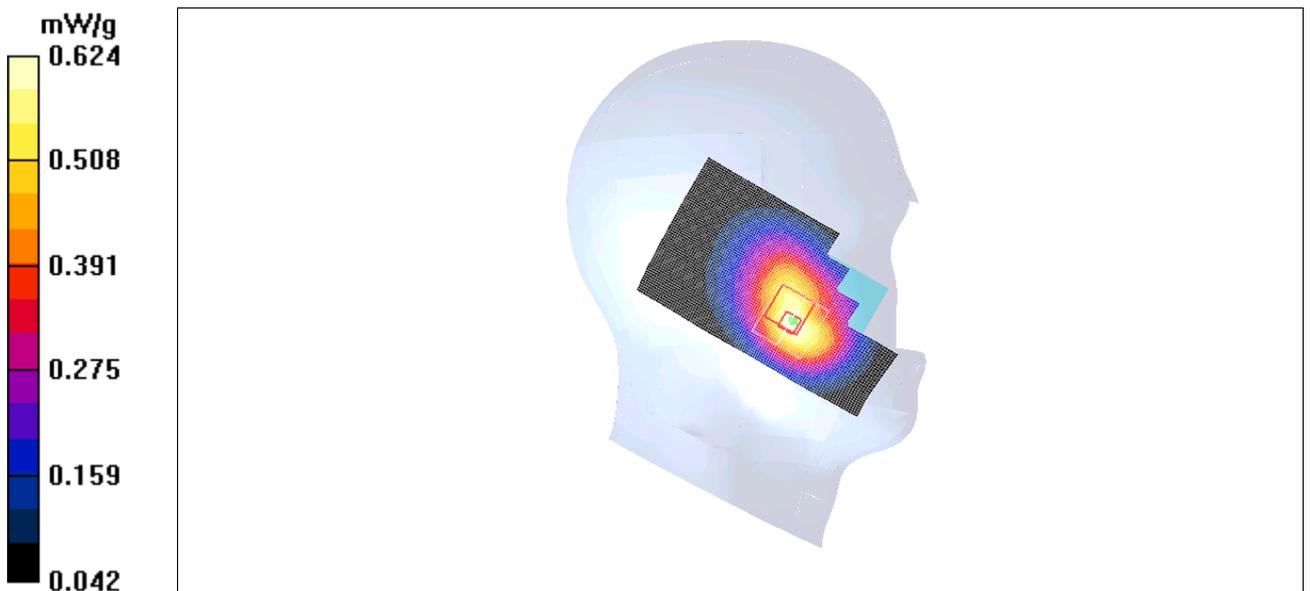
Fig. 3   850 MHz CH128

850 Left Tilt High

Date/Time: 2011-3-24 8:53:38

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.90 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.491 mW/g

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

Reference Value = 17.3 V/m; Power Drift = -0.027 dB

Peak SAR (extrapolated) = 0.570 W/kg

SAR(1 g) = 0.464 mW/g; SAR(10 g) = 0.353 mW/g
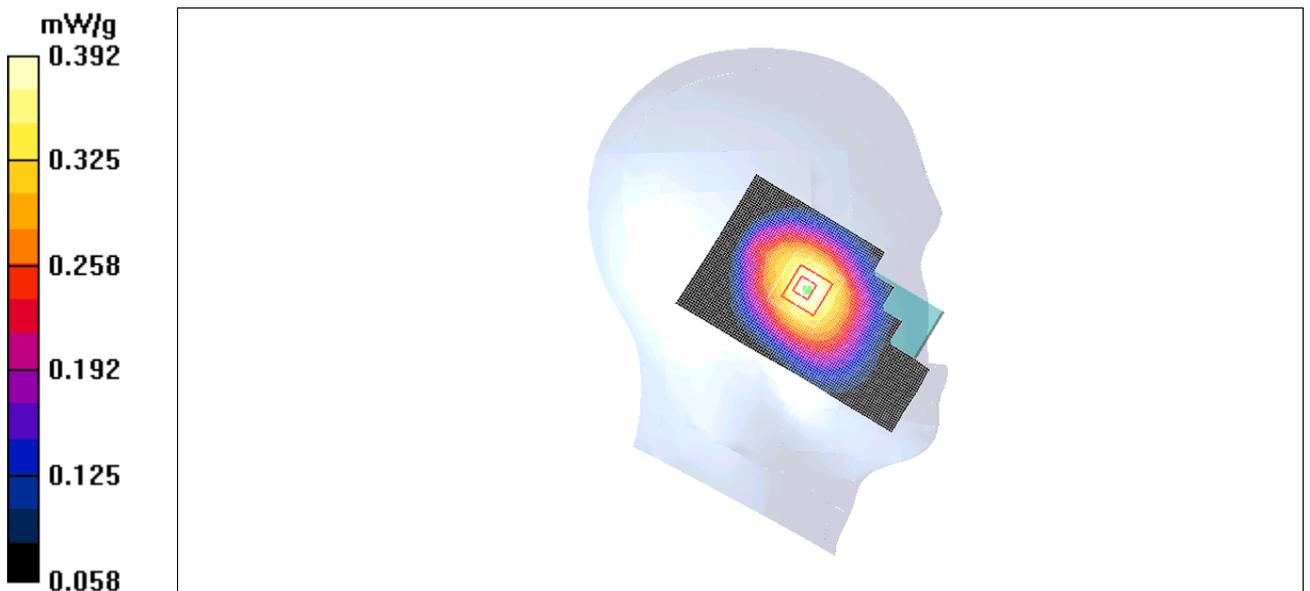
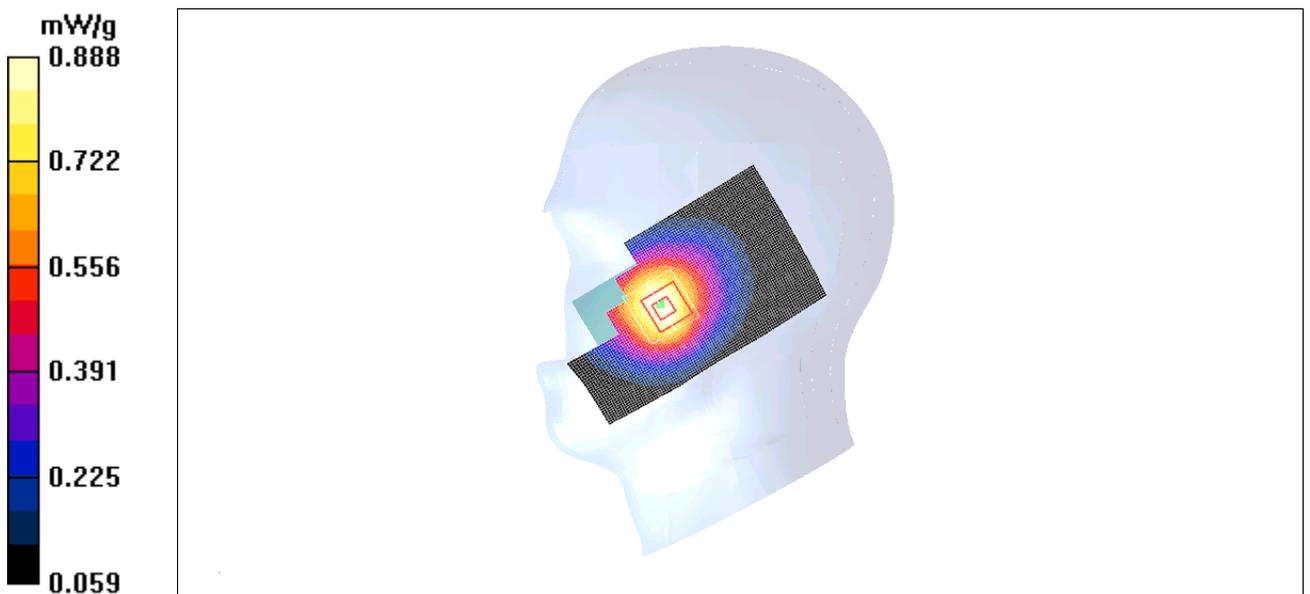Maximum value of SAR (measured) = 0.488 mW/g

Fig.4 850 MHz CH251

850 Left Tilt Middle

Date/Time: 2011-3-24 9:07:52

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.450 mW/g

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

Reference Value = 16.8 V/m; Power Drift = -0.116 dB

Peak SAR (extrapolated) = 0.533 W/kg

SAR(1 g) = 0.429 mW/g; SAR(10 g) = 0.327 mW/g

Maximum value of SAR (measured) = 0.452 mW/g

Fig.5   850 MHz CH190

850 Left Tilt Low

Date/Time: 2011-3-24 9:22:14

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used: f = 825 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.393 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) = 0.460 W/kg

SAR(1 g) = 0.372 mW/g; SAR(10 g) = 0.284 mW/g

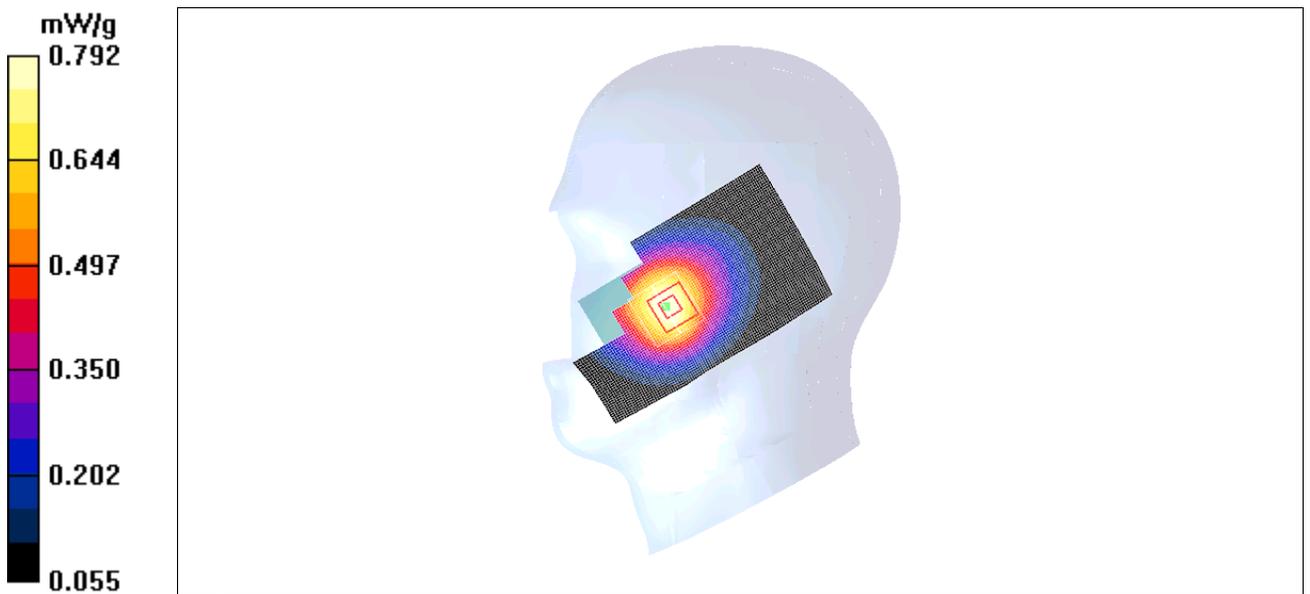Maximum value of SAR (measured) = 0.392 mW/g

Fig. 6   850 MHz CH128

850 Right Cheek High

Date/Time: 2011-3-24 9:37:01

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.90 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.903 mW/g

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

Reference Value = 10.3 V/m; Power Drift = -0.037 dB

Peak SAR (extrapolated) = 1.07 W/kg

SAR(1 g) = 0.843 mW/g; SAR(10 g) = 0.622 mW/g

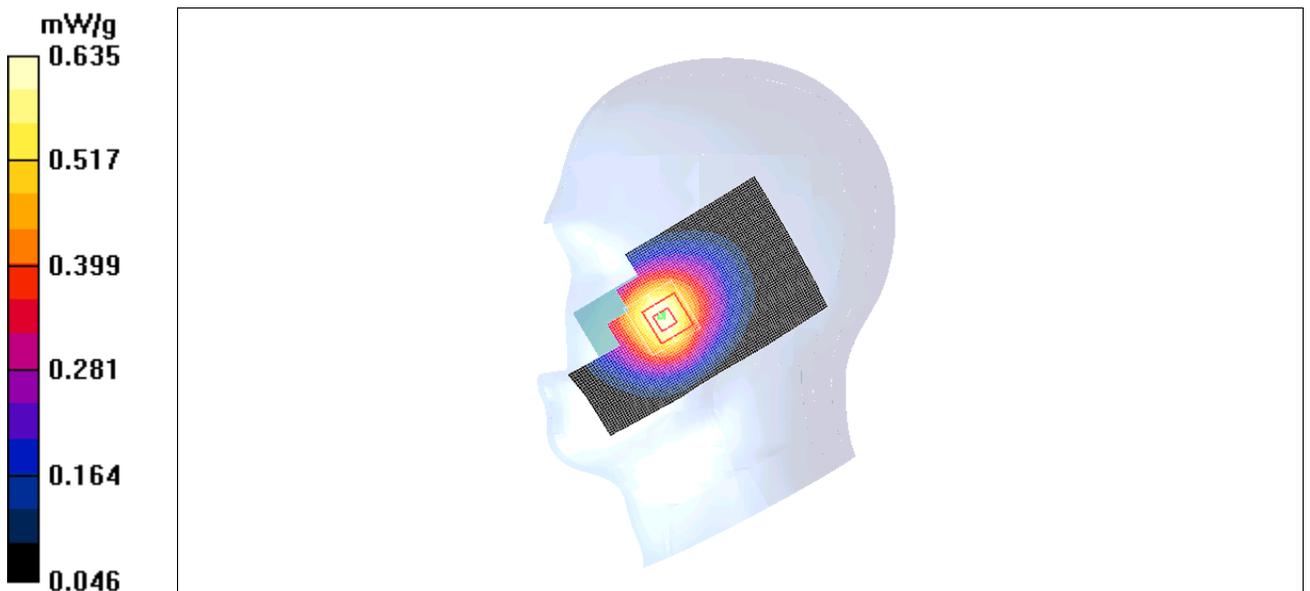Maximum value of SAR (measured) = 0.888 mW/g

Fig. 7   850 MHz CH251

850 Right Cheek Middle

Date/Time: 2011-3-24 9:51:20

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.798 mW/g

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

Reference Value = 9.96 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.951 W/kg

SAR(1 g) = 0.755 mW/g; SAR(10 g) = 0.561 mW/g
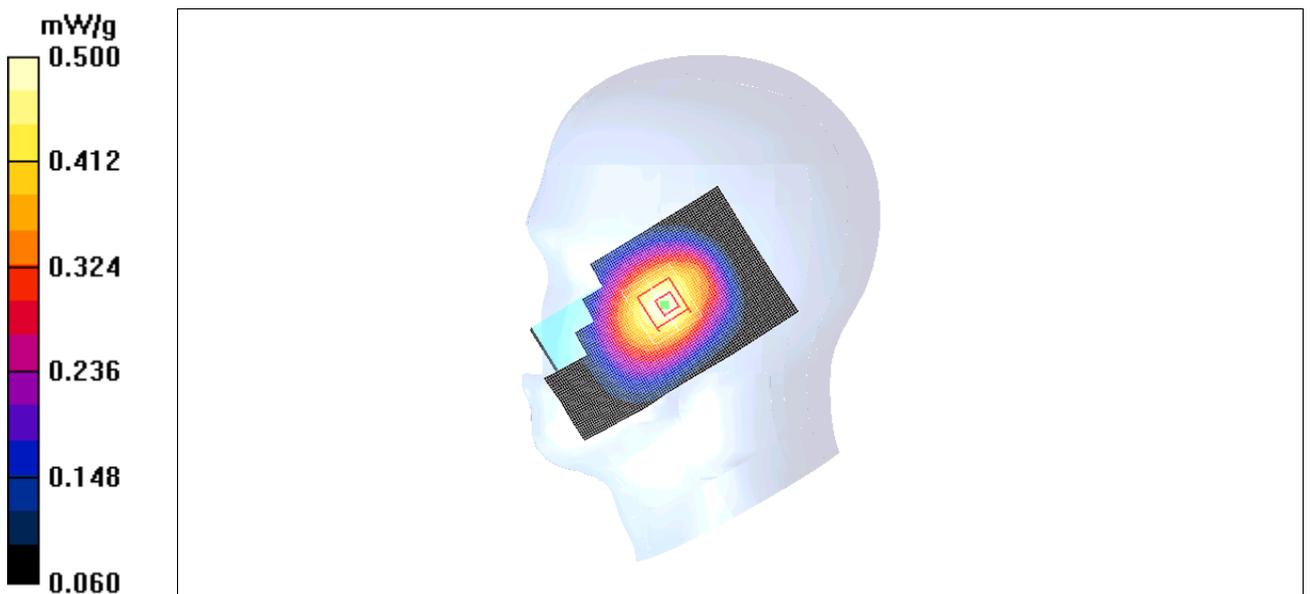
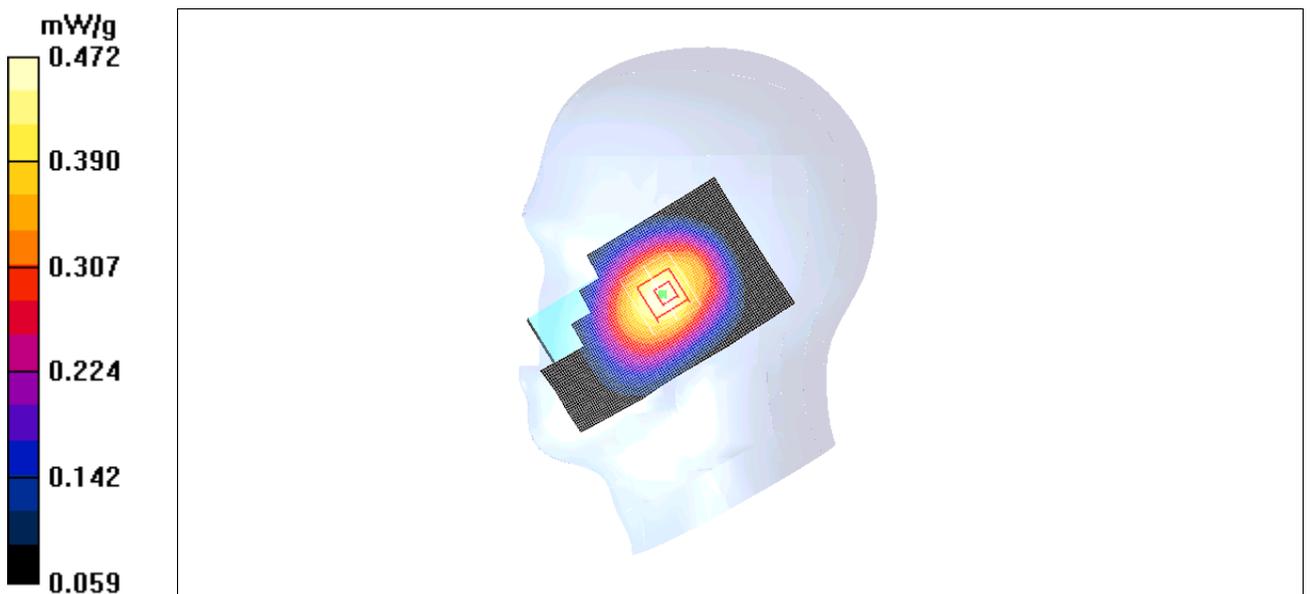Maximum value of SAR (measured) = 0.792 mW/g

Fig. 8   850 MHz CH190

850 Right Cheek Low

Date/Time: 2011-3-24 10:05:41
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.635 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.98 V/m; Power Drift = 0.000927 dB
Peak SAR (extrapolated) = 0.750 W/kg
SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.448 mW/g
Maximum value of SAR (measured) = 0.635 mW/g

Fig. 9   850 MHz CH128

850 Right Tilt High

Date/Time: 2011-3-24 10:20:06

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.90 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.504 mW/g

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

Reference Value = 15.9 V/m; Power Drift = 0.057 dB

Peak SAR (extrapolated) = 0.597 W/kg

SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.361 mW/g

Maximum value of SAR (measured) = 0.500 mW/g

Fig.10   850 MHz CH251

850 Right Tilt Middle

Date/Time: 2011-3-24 10:34:21

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 16.9 V/m; Power Drift = -0.039 dB

Peak SAR (extrapolated) = 0.559 W/kg

SAR(1 g) = 0.449 mW/g; SAR(10 g) = 0.342 mW/g

Maximum value of SAR (measured) = 0.472 mW/g

Fig.11   850 MHz CH190

850 Right Tilt Low

Date/Time: 2011-3-24 10:48:39

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used: f = 825 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.417 mW/g

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

Reference Value = 16 V/m; Power Drift = 0.00856 dB

Peak SAR (extrapolated) = 0.488 W/kg

SAR(1 g) = 0.395 mW/g; SAR(10 g) = 0.304 mW/g
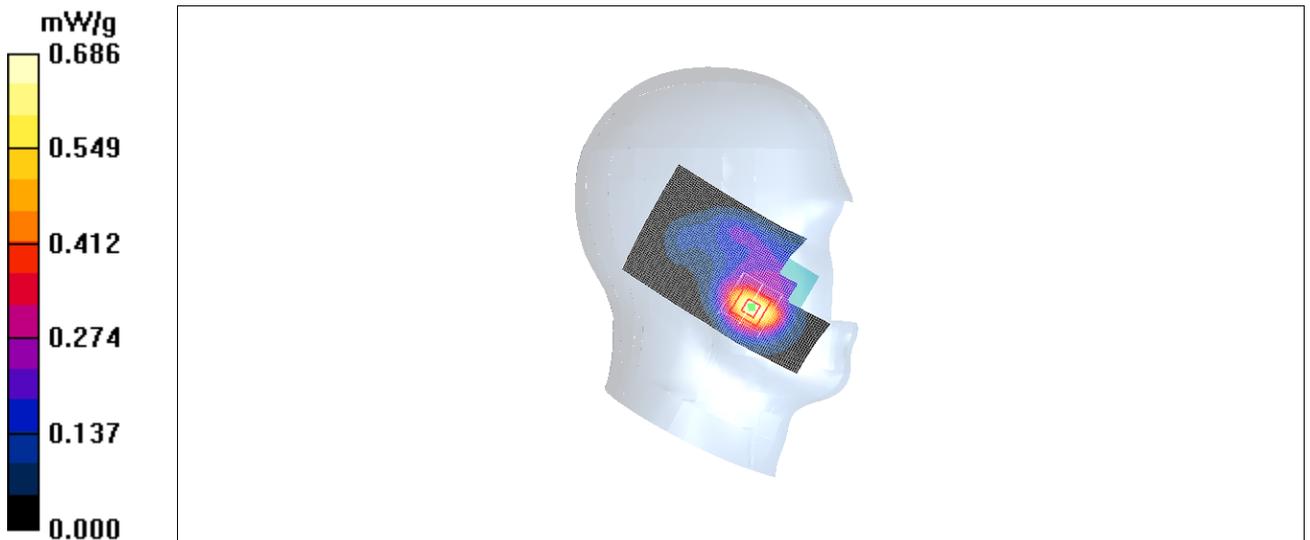
Maximum value of SAR (measured) = 0.415 mW/g
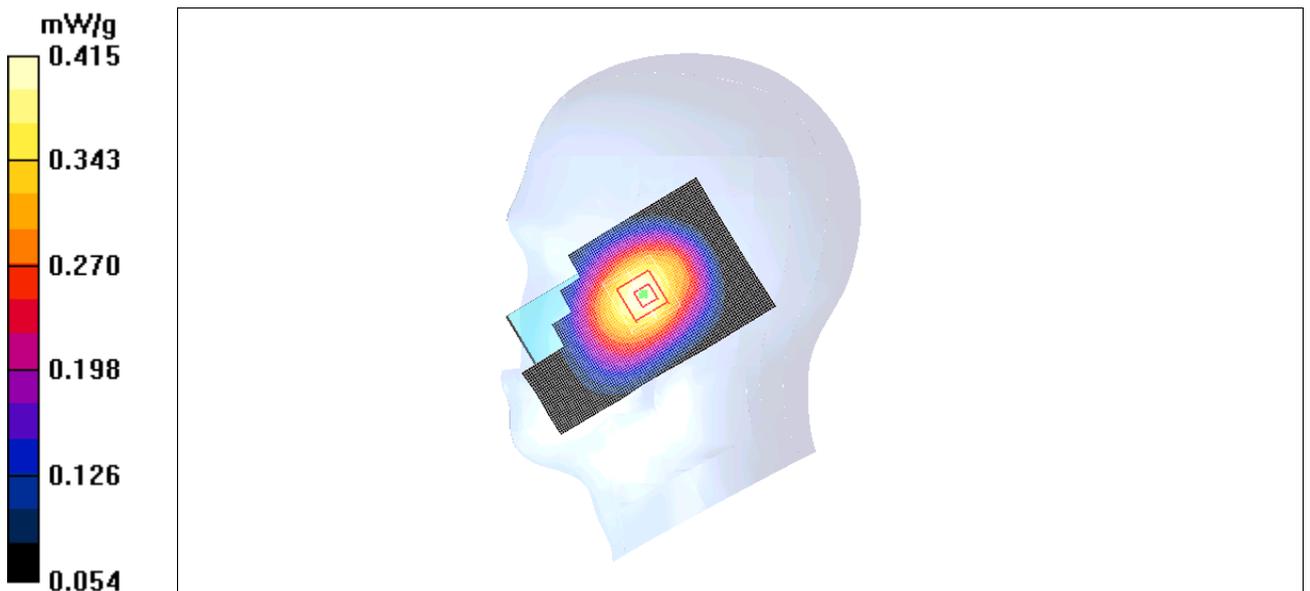
Fig. 12   850 MHz CH128

1900 Left Cheek High

Date/Time: 2011-3-25 8:09:36

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.2; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.700 mW/g

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

Reference Value = 8.48 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.650 mW/g; SAR(10 g) = 0.362 mW/g
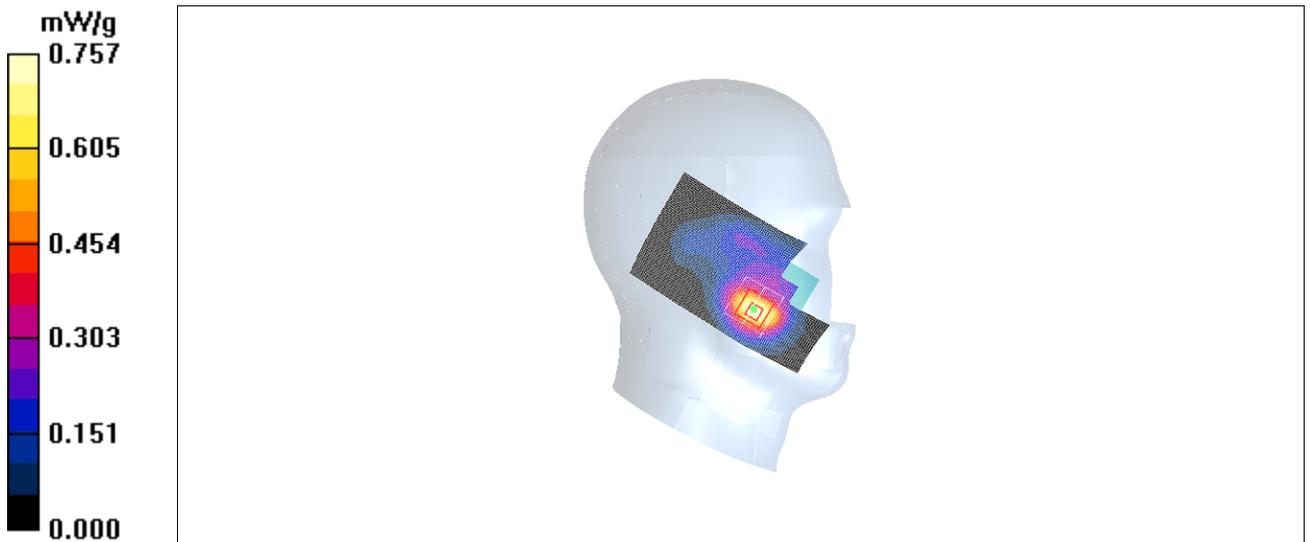
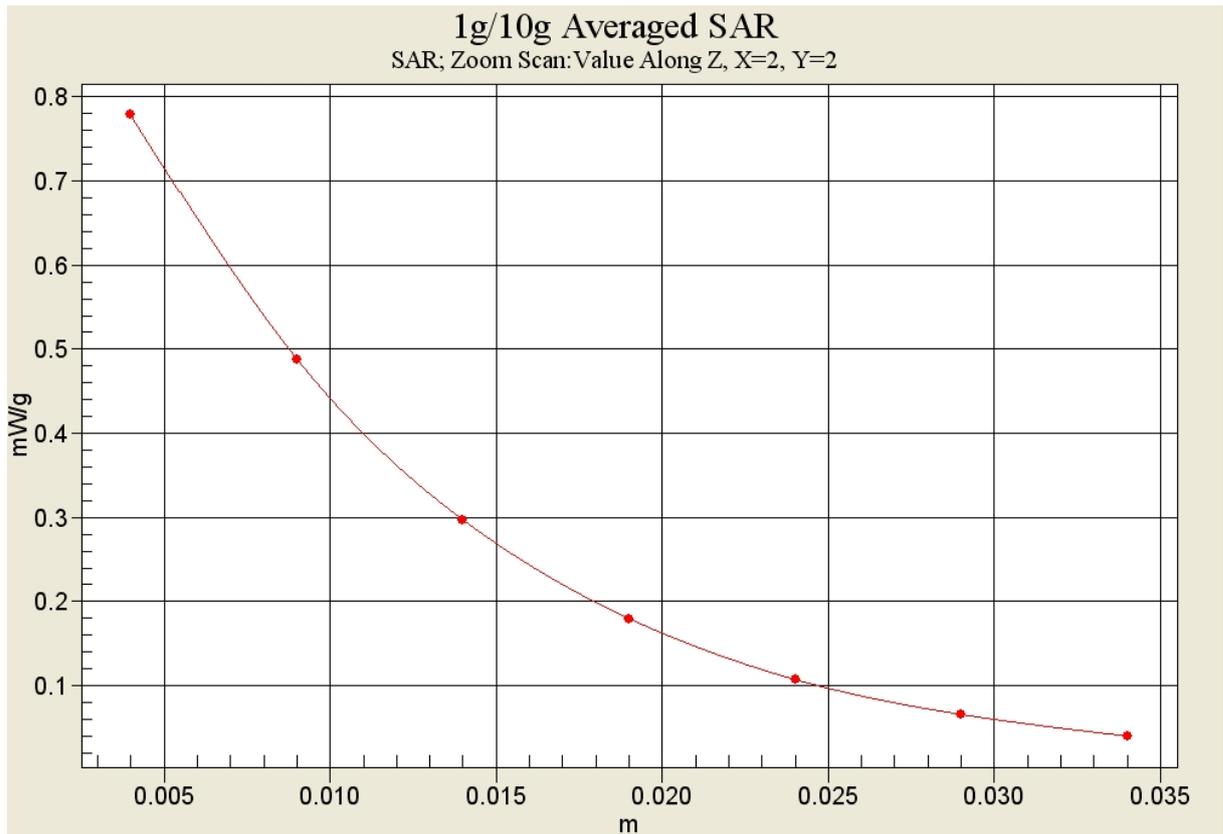Maximum value of SAR (measured) = 0.725 mW/g
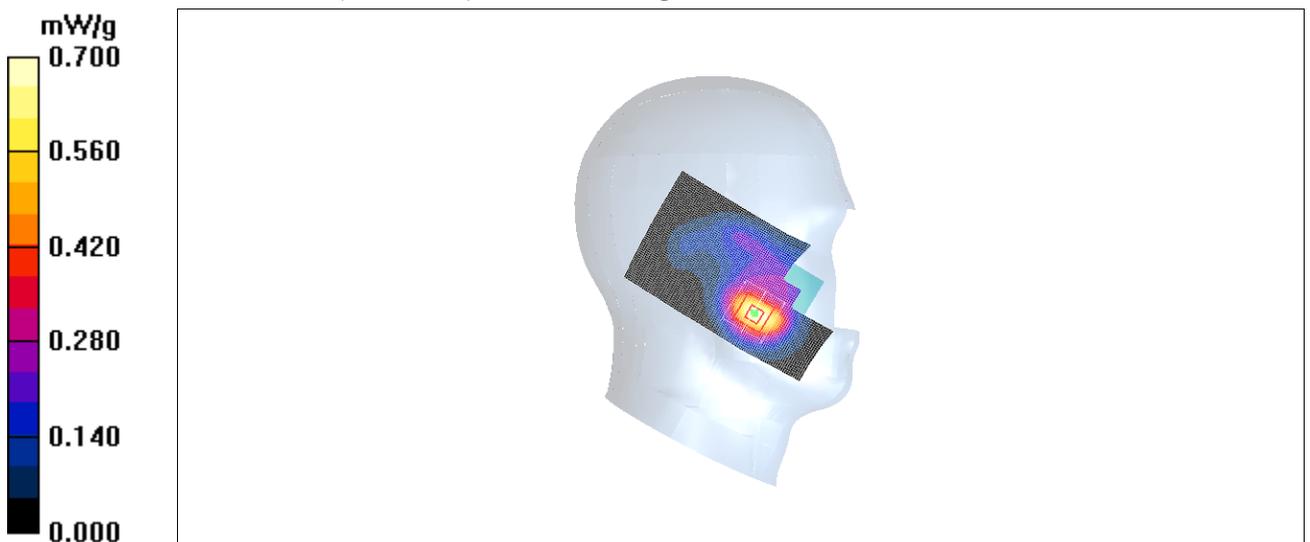
Fig. 13   1900 MHz CH810

1900 Left Cheek Middle

Date/Time: 2011-3-25 8:23:50

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 8.38 V/m; Power Drift = 0.084 dB

Peak SAR (extrapolated) = 1.06 W/kg

SAR(1 g) = 0.633 mW/g; SAR(10 g) = 0.355 mW/g

Maximum value of SAR (measured) = 0.703 mW/g

Fig. 14 1900 MHz CH661

1900 Left Cheek Low

Date/Time: 2011-3-25 8:38:11

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.36 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: 1850.2 MHz Duty Cycle: 1:8.3

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

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.757 mW/g

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

Reference Value = 8.76 V/m; Power Drift = 0.130 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.710 mW/g; SAR(10 g) = 0.395 mW/g

Maximum value of SAR (measured) = 0.779 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: 2011-3-25 8:52:46

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.2; ρ = 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)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 13.8 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 0.415 W/kg

SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.147 mW/g
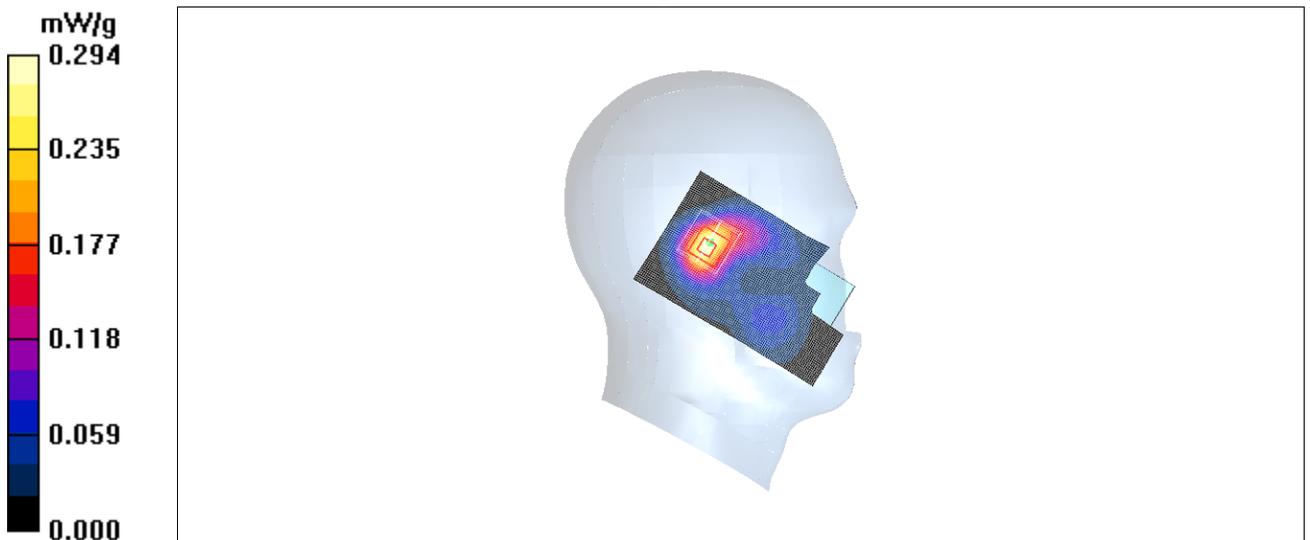
Maximum value of SAR (measured) = 0.278 mW/g
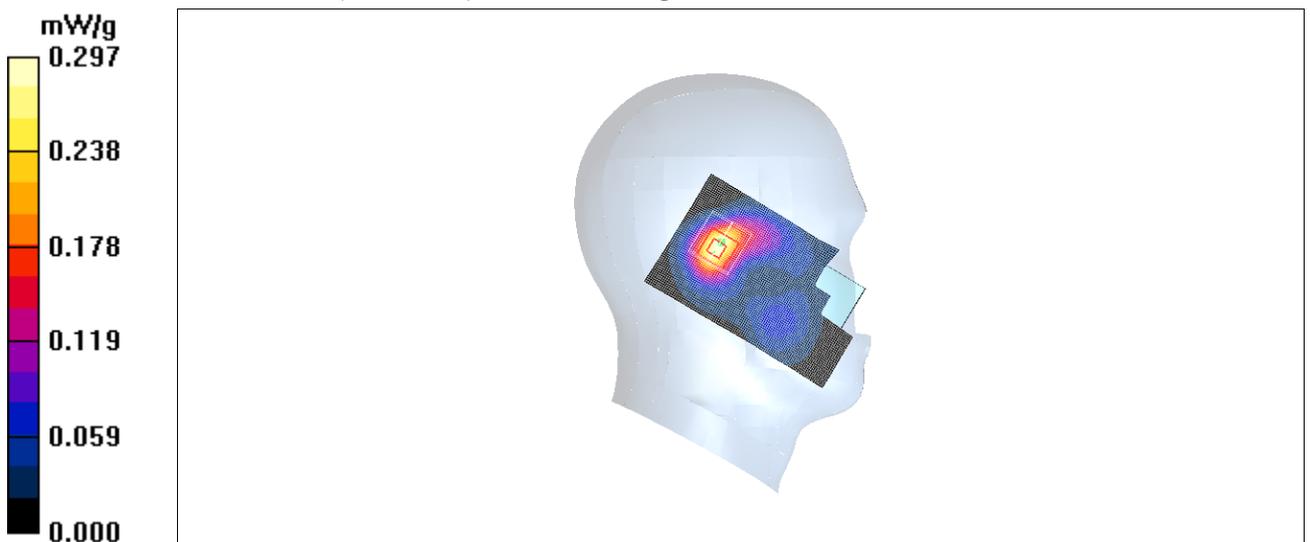
Fig.16 1900 MHz CH810

1900 Left Tilt Middle

Date/Time: 2011-3-25 9:08:09

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): 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 = 13.7 V/m; Power Drift = -0.017 dB

Peak SAR (extrapolated) = 0.406 W/kg

SAR(1 g) = 0.255 mW/g; SAR(10 g) = 0.149 mW/g
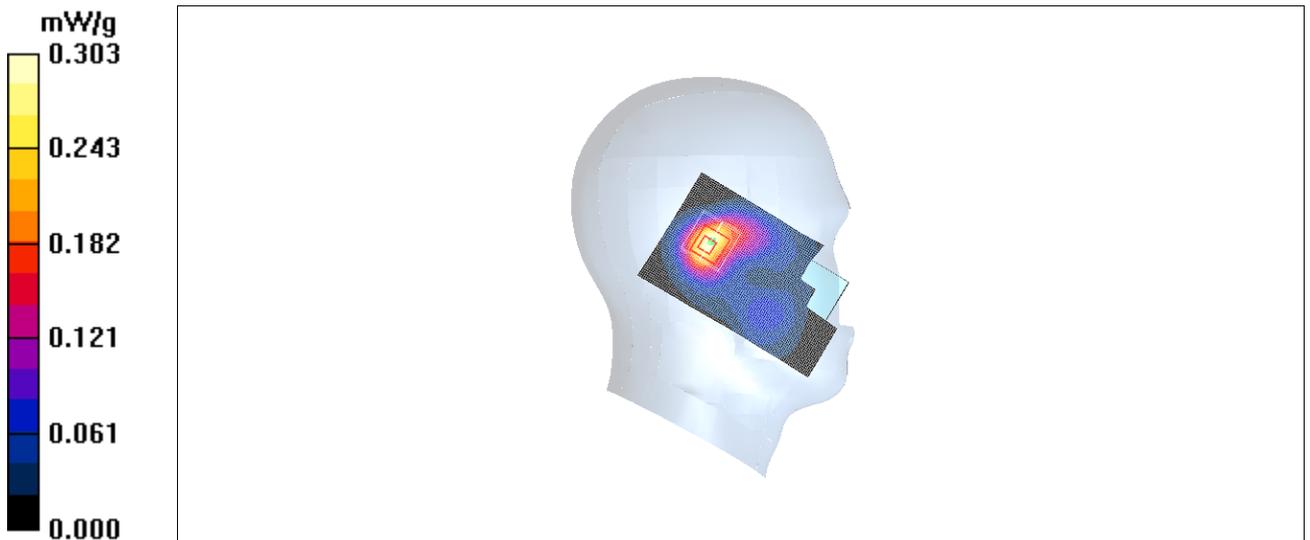
Maximum value of SAR (measured) = 0.275 mW/g

Fig. 17 1900 MHz CH661

1900 Left Tilt Low

Date/Time: 2011-3-25 9:22:25

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.36 mho/m; εr = 39.5; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.303 mW/g

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

Reference Value = 14.1 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.418 W/kg

SAR(1 g) = 0.264 mW/g; SAR(10 g) = 0.155 mW/g
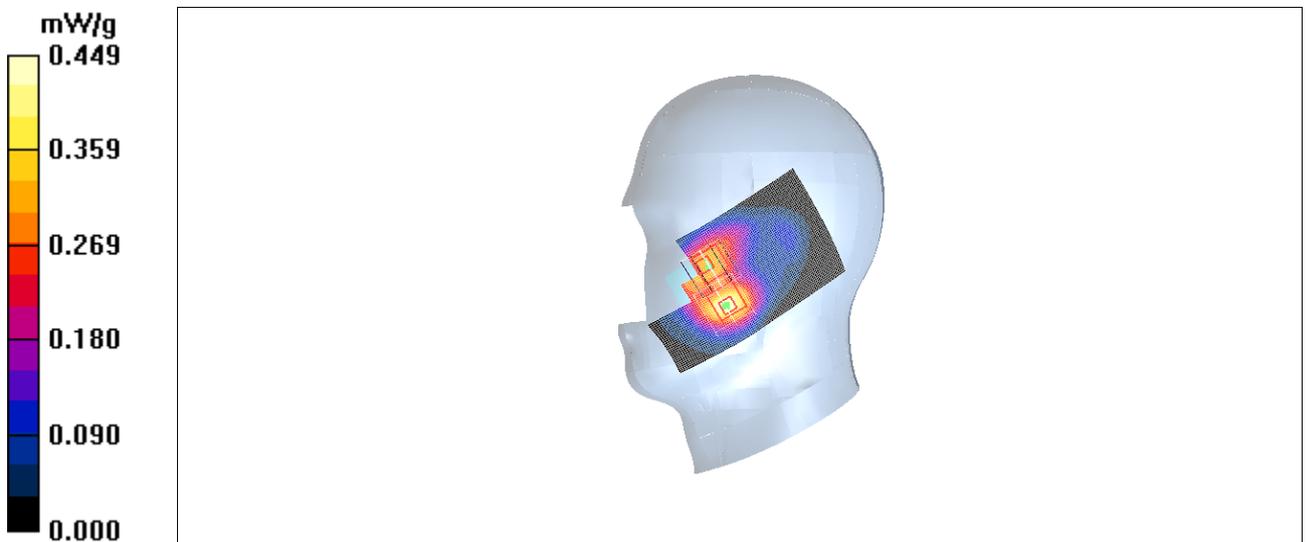
Maximum value of SAR (measured) = 0.286 mW/g

Fig. 18 1900 MHz CH512

1900 Right Cheek High

Date/Time: 2011-3-25 9:37:04

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.2; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.449 mW/g

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

Reference Value = 8.32 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.607 W/kg

SAR(1 g) = 0.402 mW/g; SAR(10 g) = 0.241 mW/g

Maximum value of SAR (measured) = 0.440 mW/g

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

Reference Value = 8.32 V/m; Power Drift = 0.022 dB

Peak SAR (extrapolated) = 0.514 W/kg

SAR(1 g) = 0.313 mW/g; SAR(10 g) = 0.189 mW/g

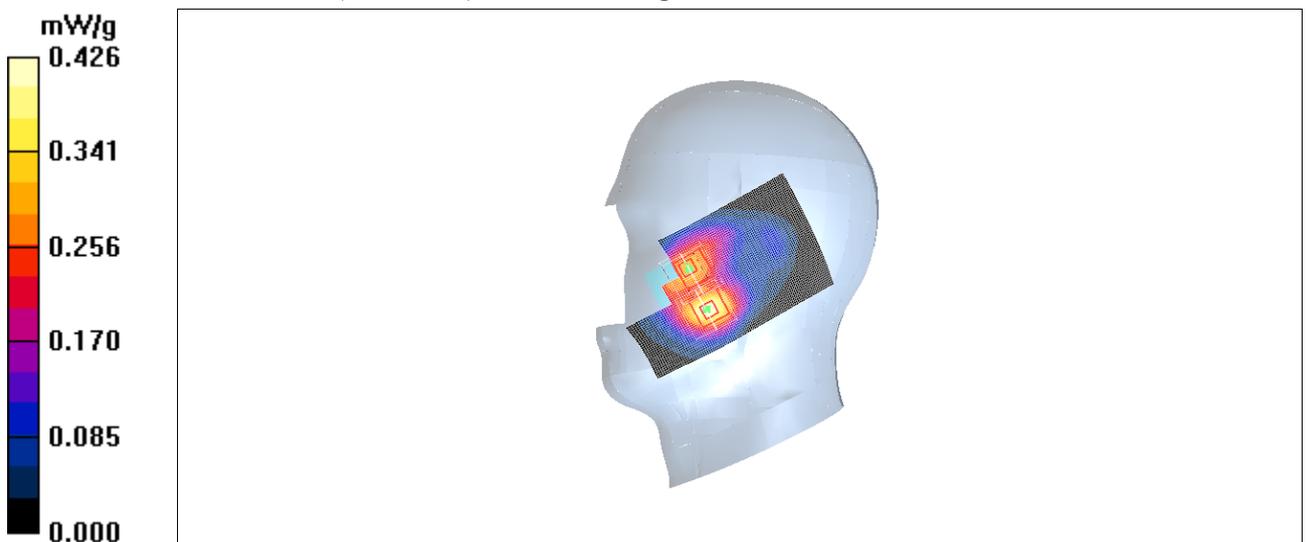Maximum value of SAR (measured) = 0.328 mW/g

Fig. 19 1900 MHz CH810

1900 Right Cheek Middle

Date/Time: 2011-3-25 9:51:22

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.426 mW/g

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

Reference Value = 8.19 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.583 W/kg

SAR(1 g) = 0.386 mW/g; SAR(10 g) = 0.232 mW/g

Maximum value of SAR (measured) = 0.424 mW/g

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

Reference Value = 8.19 V/m; Power Drift = -0.048 dB

Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.181 mW/g
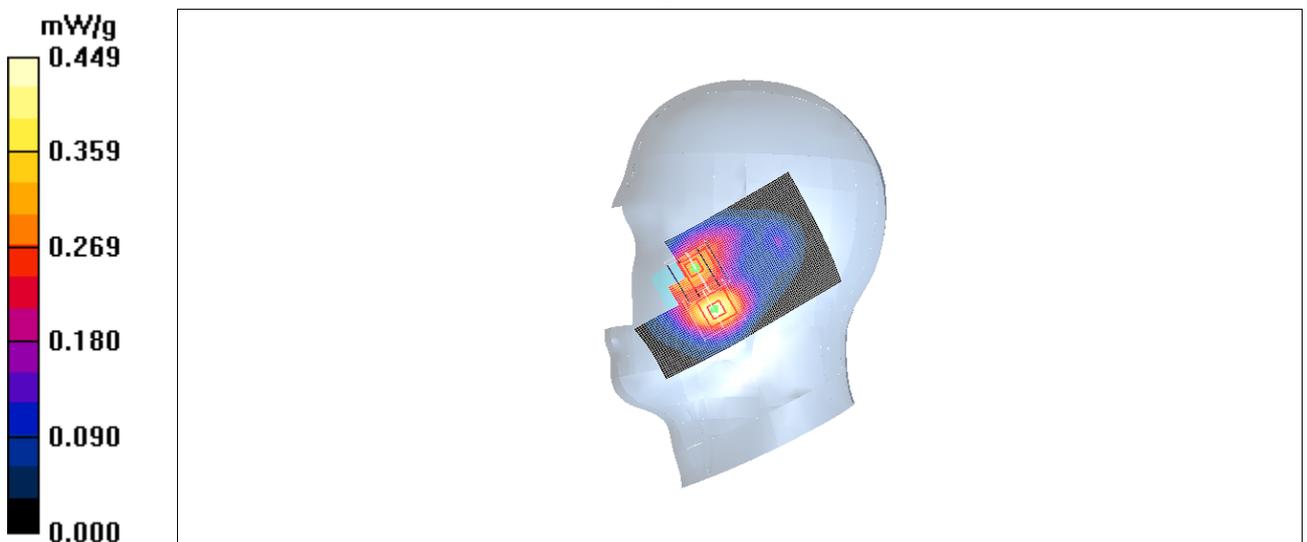
Maximum value of SAR (measured) = 0.314 mW/g

Fig. 20 1900 MHz CH661

1900 Right Cheek Low

Date/Time: 2011-3-25 10:05:42

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.36 mho/m; εr = 39.5; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.449 mW/g

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

Reference Value = 8.70 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 0.610 W/kg

SAR(1 g) = 0.406 mW/g; SAR(10 g) = 0.246 mW/g

Maximum value of SAR (measured) = 0.445 mW/g

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

Reference Value = 8.70 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 0.507 W/kg

SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.191 mW/g

Maximum value of SAR (measured) = 0.336 mW/g

Fig. 21 1900 MHz CH512

1900 Right Tilt High

Date/Time: 2011-3-25 10:20:06

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.2; ρ = 1000 kg/m³

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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.281 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 = 0.036 dB

Peak SAR (extrapolated) = 0.402 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.137 mW/g
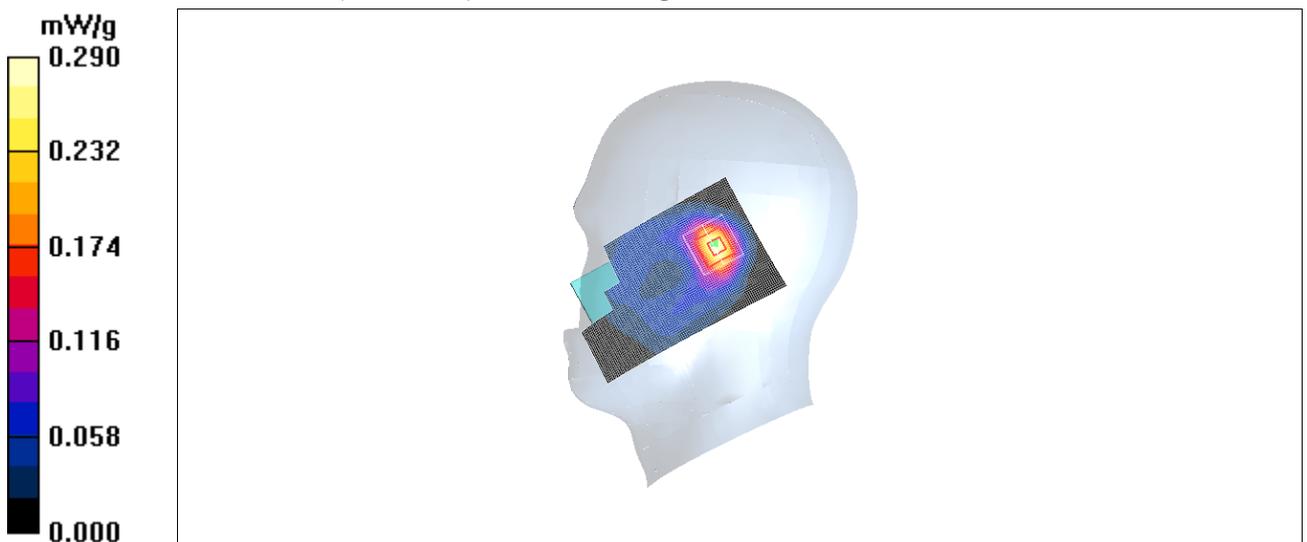
Maximum value of SAR (measured) = 0.270 mW/g
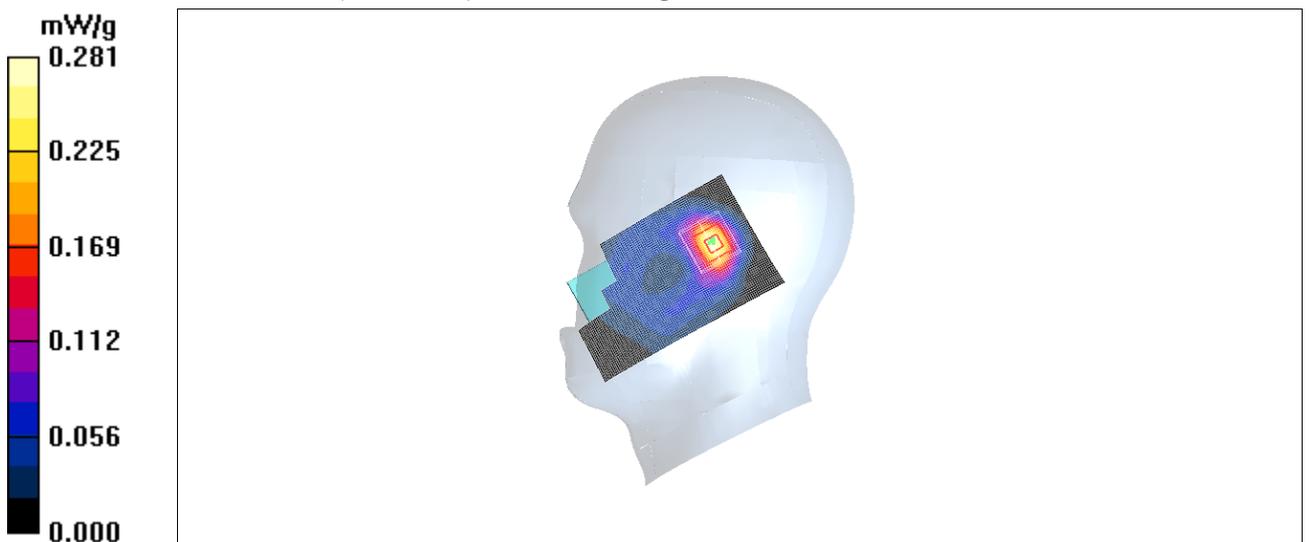
Fig. 22 1900 MHz CH810

1900 Right Tilt Middle

Date/Time: 2011-3-25 10:34:21

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; ε_r = 40.6; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.290 mW/g

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

Reference Value = 13.9 V/m; Power Drift = 0.029 dB

Peak SAR (extrapolated) = 0.417 W/kg

SAR(1 g) = 0.257 mW/g; SAR(10 g) = 0.144 mW/g

Maximum value of SAR (measured) = 0.283 mW/g

Fig.23 1900 MHz CH661

1900 Right Tilt Low

Date/Time: 2011-3-25 10:48:37

Electronics: DAE4 Sn771

Medium: Head 1900 MHz

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.36 mho/m; εr = 39.5; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): 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 = 14.3 V/m; Power Drift = 0.023 dB

Peak SAR (extrapolated) = 0.427 W/kg

SAR(1 g) = 0.268 mW/g; SAR(10 g) = 0.154 mW/g

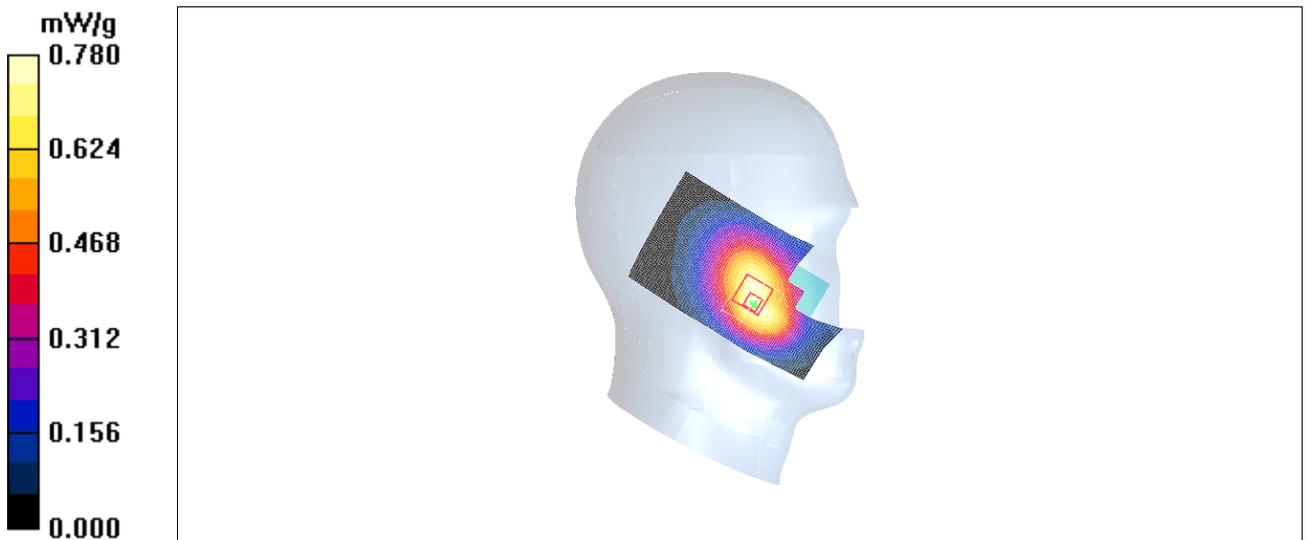Maximum value of SAR (measured) = 0.294 mW/g
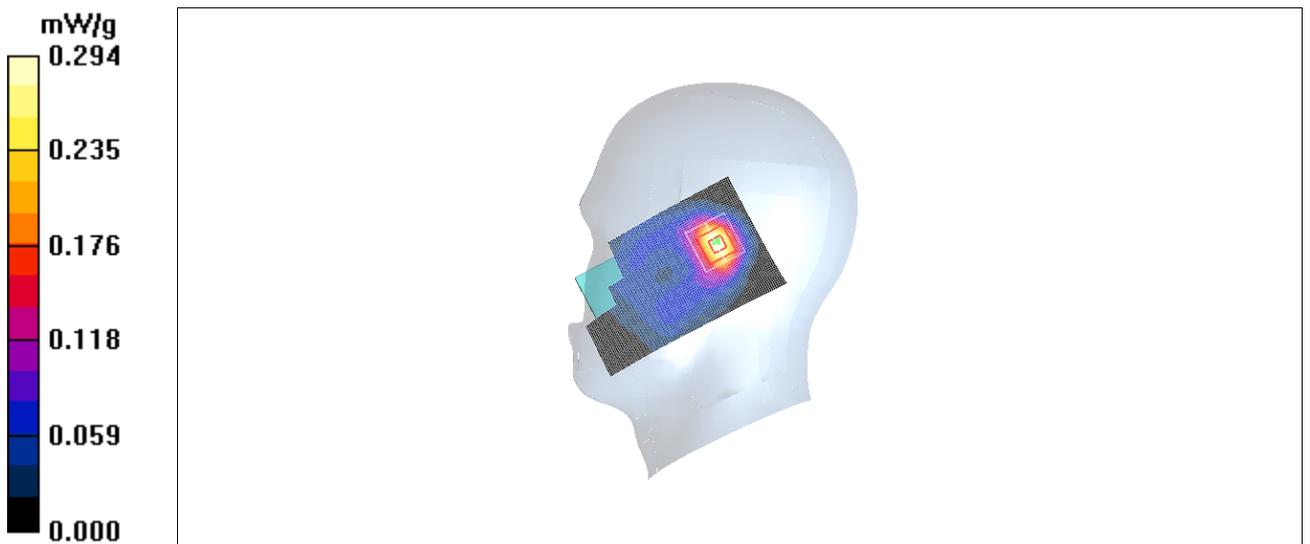
Fig.24 1900 MHz CH512

WCDMA850 Left Cheek High

Date/Time: 2011-3-24 11:30:07

Electronics: DAE4 Sn771

Medium: Head 850 MHz

Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.901 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{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)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.780 mW/g

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

Reference Value = 10.4 V/m; Power Drift = -0.182 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.741 mW/g; SAR(10 g) = 0.517 mW/g

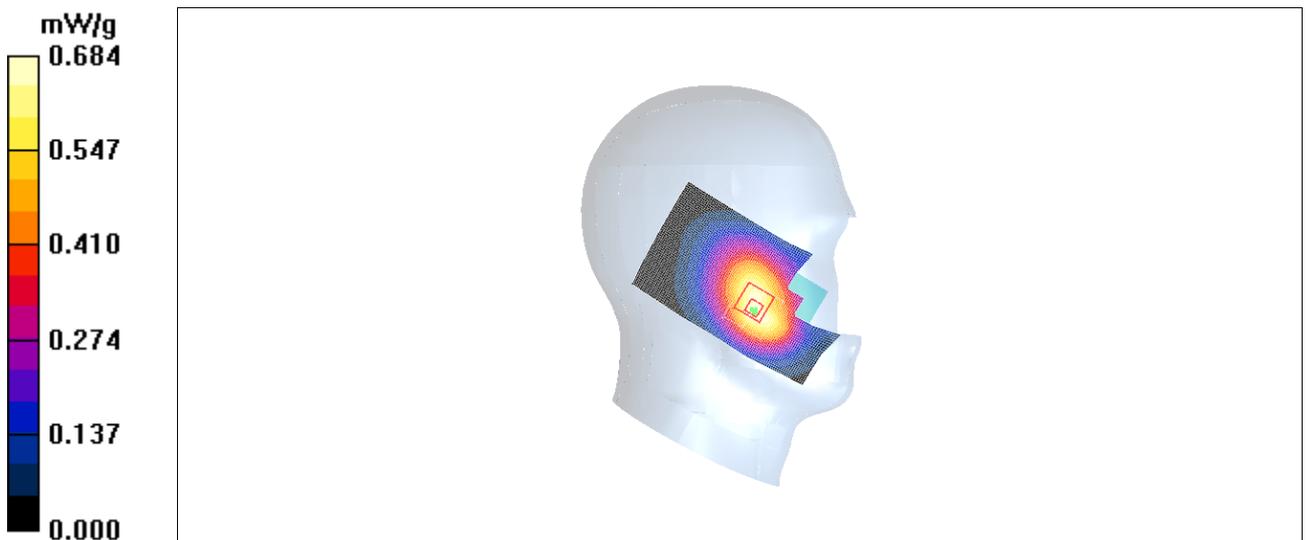Maximum value of SAR (measured) = 0.793 mW/g

Fig. 25　850MHz CH4233

WCDMA 850 Left Cheek Middle

Date/Time: 2011-3-24 11:47:34

Electronics: DAE4 Sn771

Medium: Head 850

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23°C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.684 mW/g

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

Reference Value = 9.61 V/m; Power Drift = 0.011 dB

Peak SAR (extrapolated) = 0.948 W/kg

SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.454 mW/g
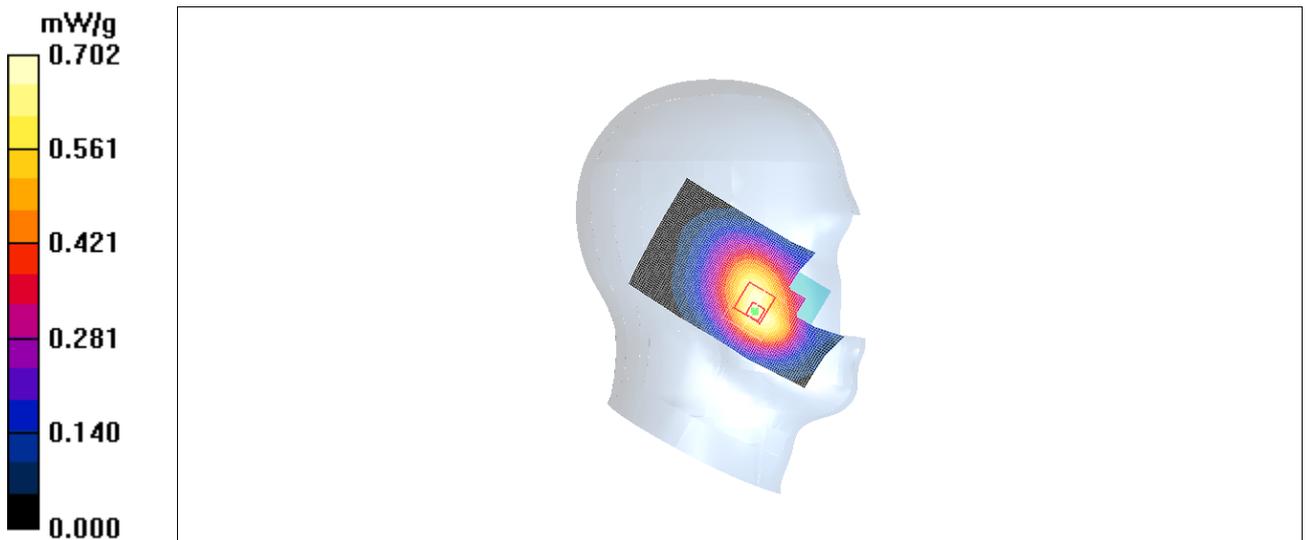
Maximum value of SAR (measured) = 0.689 mW/g

Fig. 26   850 MHz CH4182

WCDMA 850 Left Cheek Low

Date/Time: 2011-3-24 12:04:12

Electronics: DAE4 Sn771

Medium: Head 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3

Ambient Temperature:23°C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 9.66 V/m; Power Drift = 0.129 dB

Peak SAR (extrapolated) = 0.981 W/kg

SAR(1 g) = 0.670 mW/g; SAR(10 g) = 0.468 mW/g

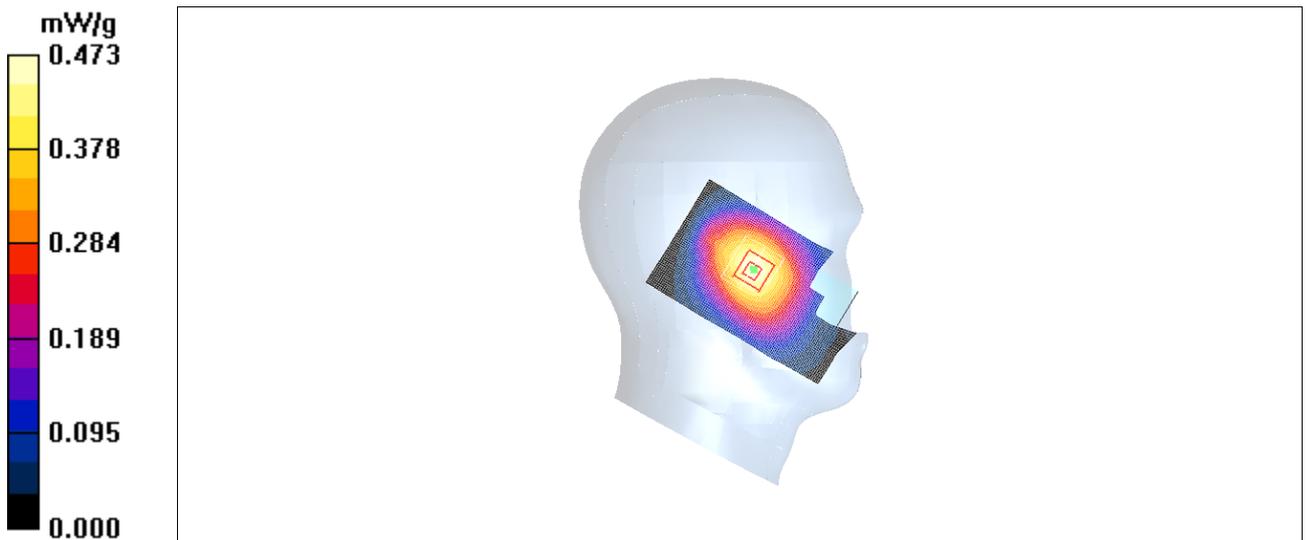Maximum value of SAR (measured) = 0.720 mW/g

Fig. 27   850 MHz CH4132

WCDMA 850 Left Tilt High

Date/Time: 2011-3-24 12:21:46

Electronics: DAE4 Sn771

Medium: Head 850

Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.901 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23°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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.473 mW/g

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

Reference Value = 16.9 V/m; Power Drift = -0.114 dB

Peak SAR (extrapolated) = 0.550 W/kg

SAR(1 g) = 0.438 mW/g; SAR(10 g) = 0.331 mW/g
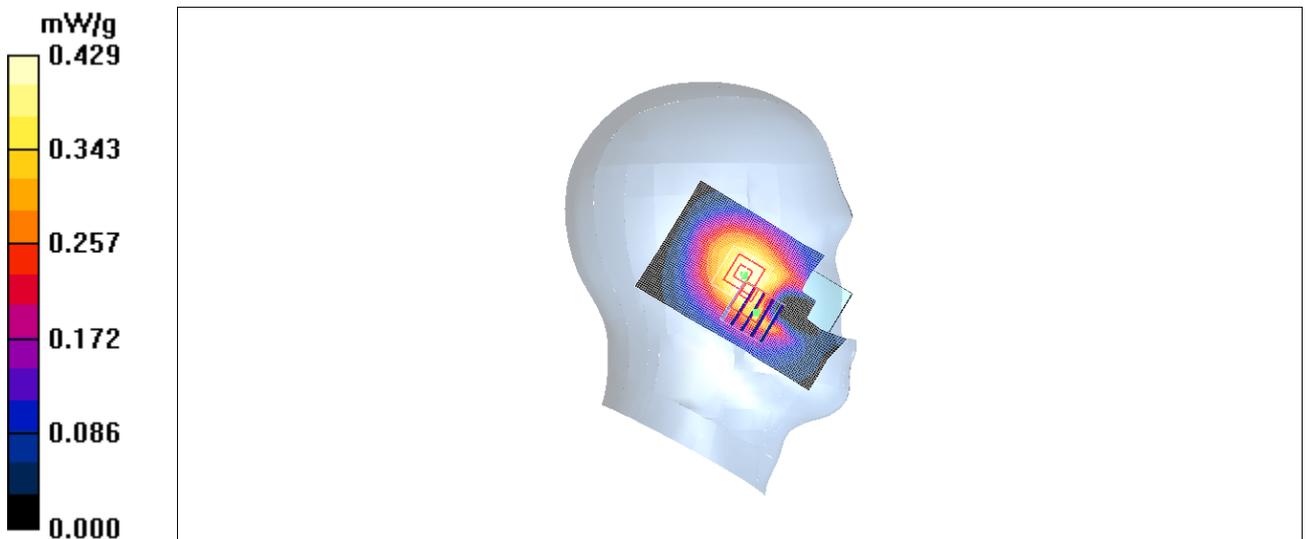
Maximum value of SAR (measured) = 0.465 mW/g

Fig.28 850 MHz CH4233

WCDMA 850 Left Tilt Middle

Date/Time: 2011-3-24 12:38:47

Electronics: DAE4 Sn771

Medium: Head 850

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23°C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.429 mW/g

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

Reference Value = 15.9 V/m; Power Drift = 0.118 dB

Peak SAR (extrapolated) = 0.531 W/kg

SAR(1 g) = 0.429 mW/g; SAR(10 g) = 0.324 mW/g

Maximum value of SAR (measured) = 0.453 mW/g

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

Reference Value = 15.9 V/m; Power Drift = 0.118 dB

Peak SAR (extrapolated) = 0.517 W/kg

SAR(1 g) = 0.393 mW/g; SAR(10 g) = 0.262 mW/g

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

Fig.29   850 MHz CH4182

WCDMA 850 Left Tilt Low

Date/Time: 2011-3-24 12:55:21

Electronics: DAE4 Sn771

Medium: Head 850

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3

Ambient Temperature:23°C   Liquid Temperature: 22.5^{o}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 (61x101x1): 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 = 15.7 V/m; Power Drift = 0.083 dB

Peak SAR (extrapolated) = 0.492 W/kg

SAR(1 g) = 0.400 mW/g; SAR(10 g) = 0.304 mW/g
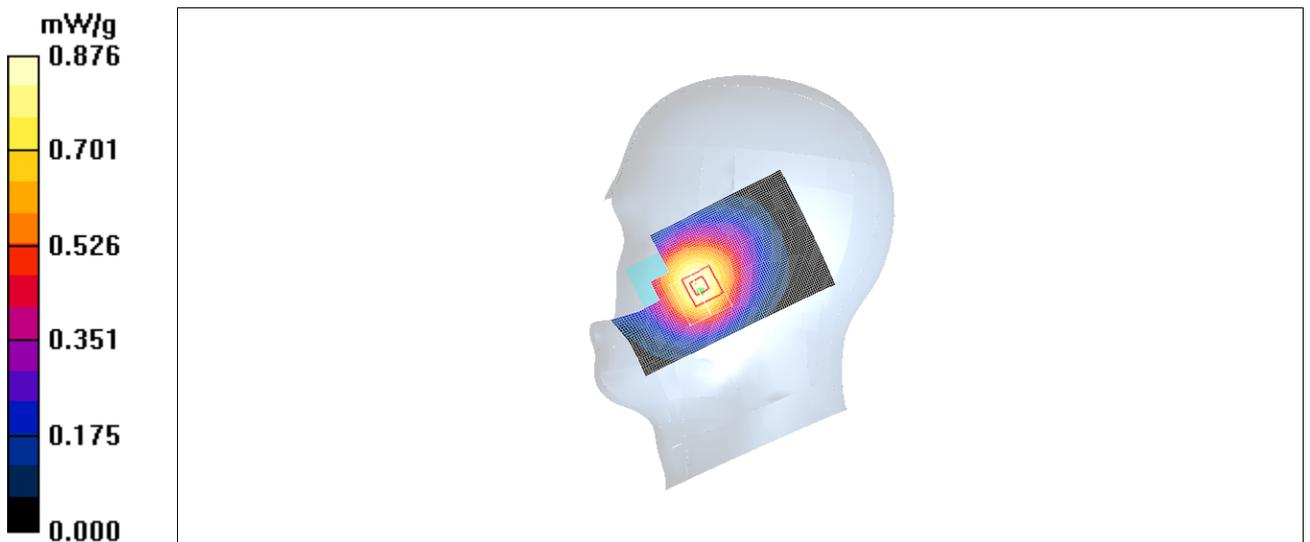
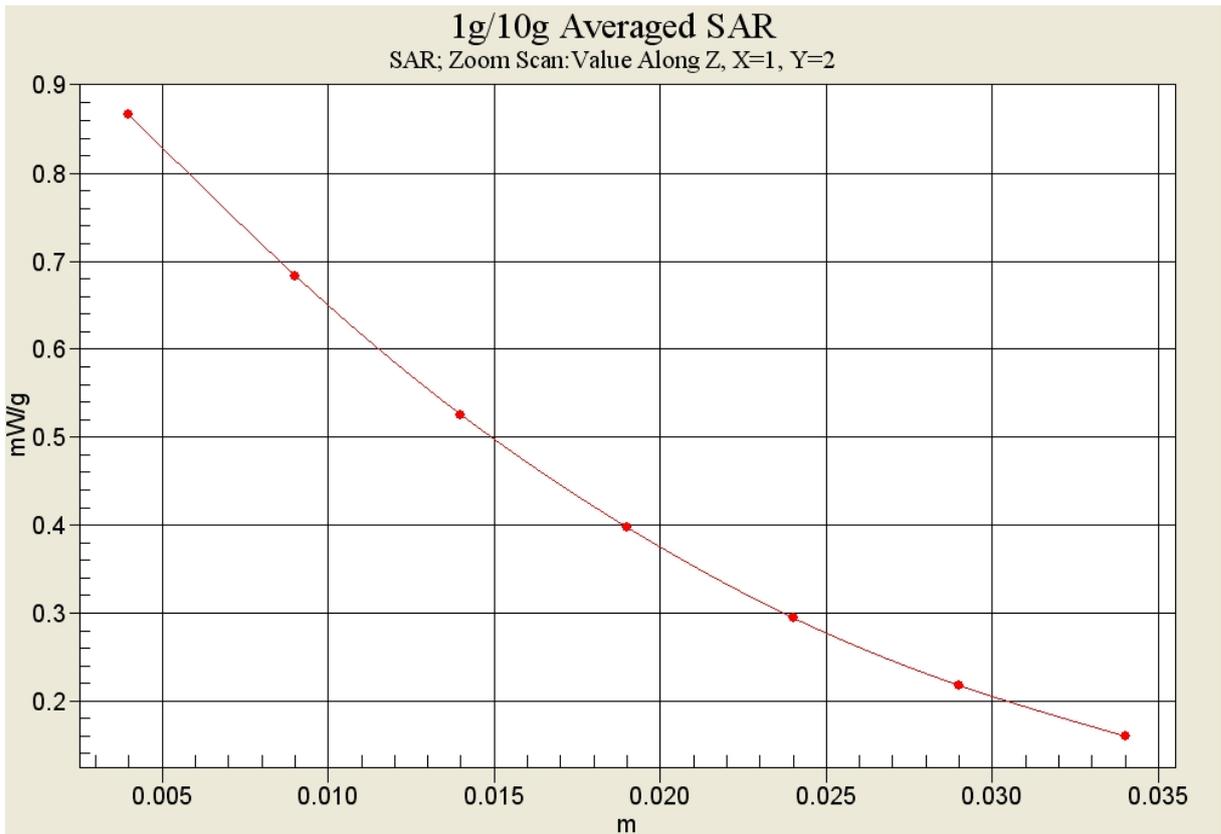Maximum value of SAR (measured) = 0.421 mW/g
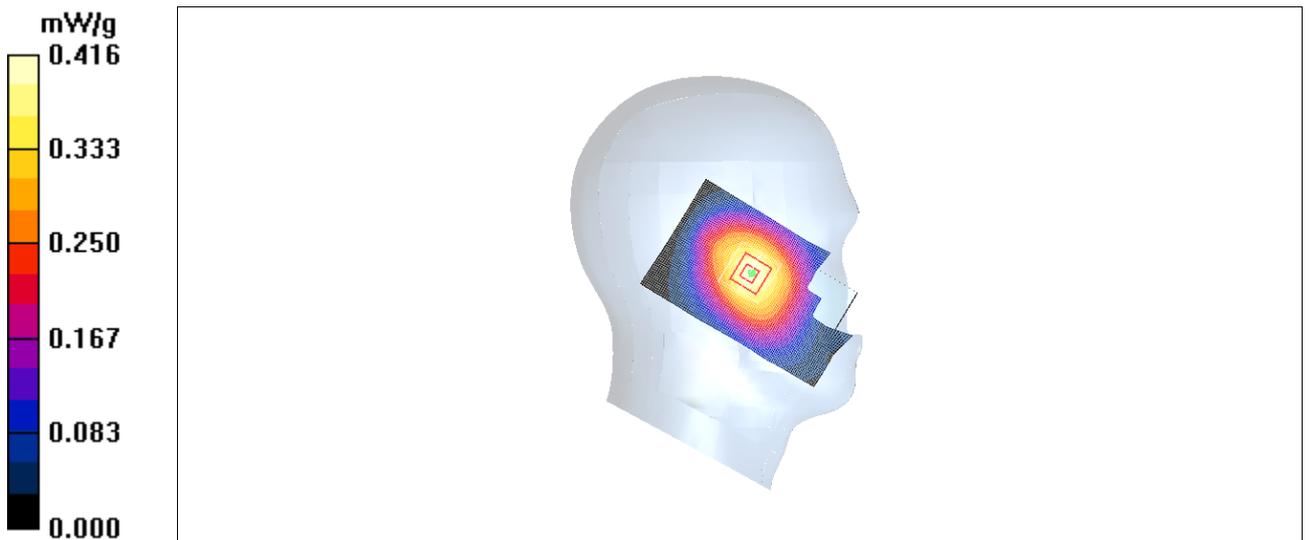
Fig. 30   850 MHz CH4132

WCDMA 850 Right Cheek High

Date/Time: 2011-3-24 13:12:49

Electronics: DAE4 Sn771

Medium: Head 900

Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.901 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{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)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.876 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 = -0.185 dB

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.617 mW/g

Maximum value of SAR (measured) = 0.867 mW/g

Fig. 31   850 MHz CH4233

Fig. 31-1　Z-Scan at power reference point (850 MHz CH4233)

WCDMA 850 Right Cheek Middle

Date/Time: 2011-3-24 13:29:07

Electronics: DAE4 Sn771

Medium: Head 900

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.760 mW/g

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

Reference Value = 10.3 V/m; Power Drift = -0.123 dB

Peak SAR (extrapolated) = 0.837 W/kg

SAR(1 g) = 0.688 mW/g; SAR(10 g) = 0.514 mW/g
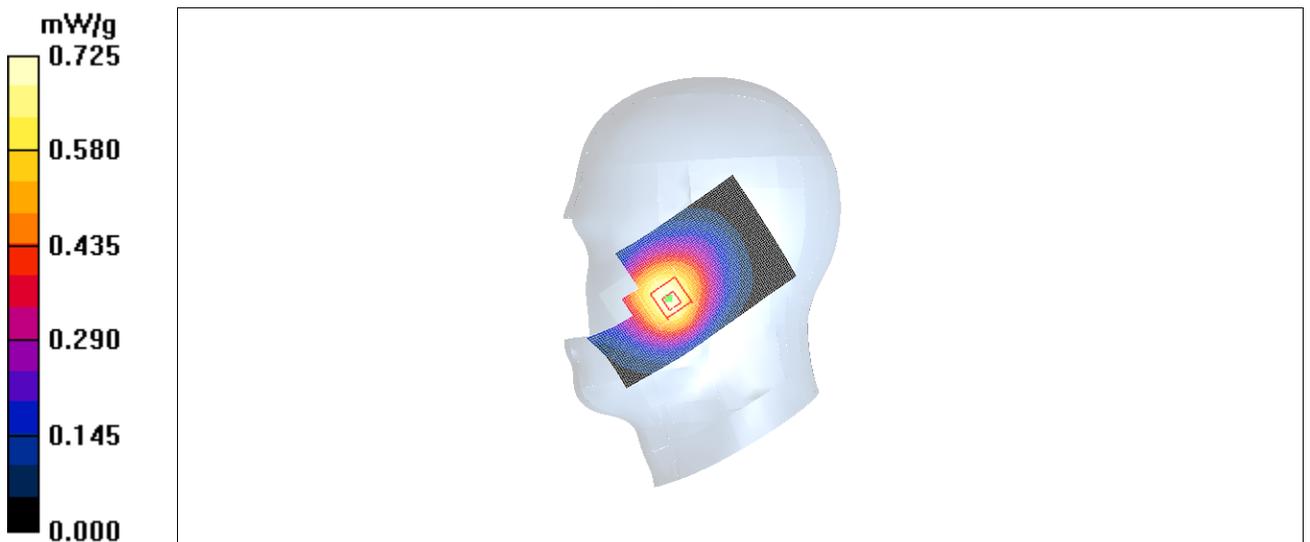
Maximum value of SAR (measured) = 0.721 mW/g
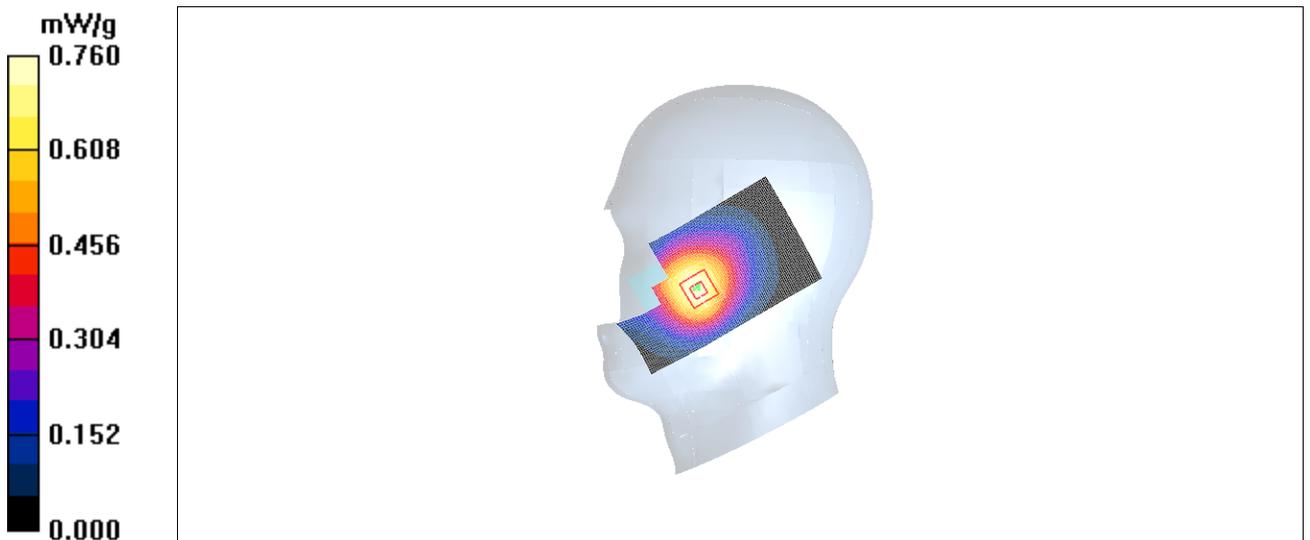
Fig. 32   850 MHz CH4182

WCDMA 850 Right Cheek Low

Date/Time: 2011-3-24 13:46:14

Electronics: DAE4 Sn771

Medium: Head 900

Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.725 mW/g

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

Reference Value = 9.95 V/m; Power Drift = 0.117 dB

Peak SAR (extrapolated) = 0.835 W/kg

SAR(1 g) = 0.688 mW/g; SAR(10 g) = 0.516 mW/g

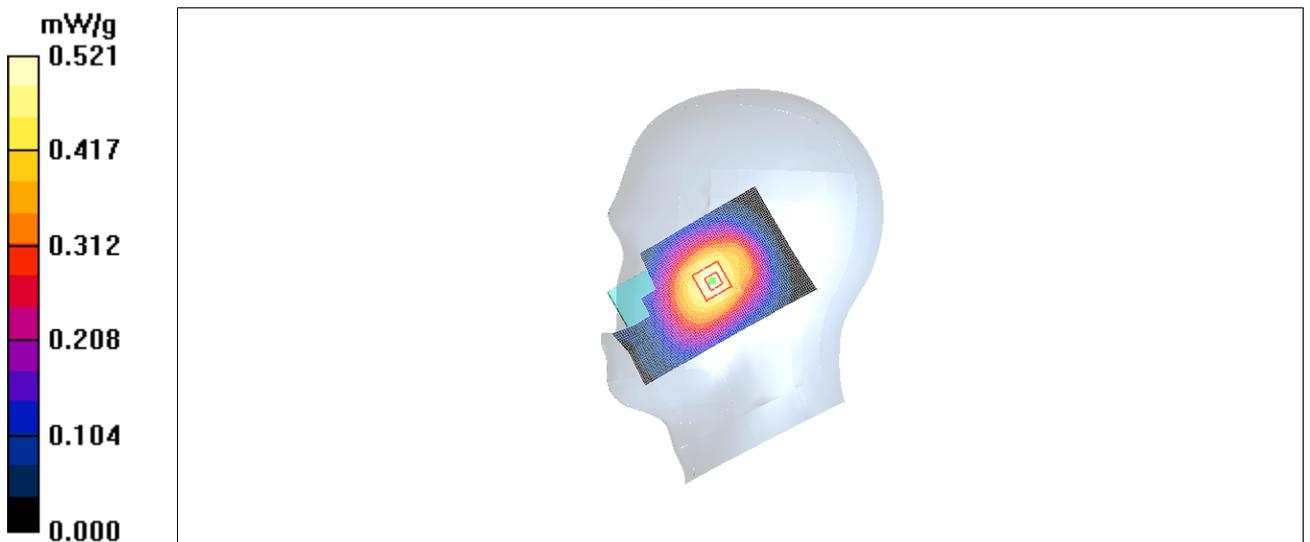Maximum value of SAR (measured) = 0.718 mW/g

Fig. 33   850 MHz CH4132

WCDMA 850 Right Tilt High

Date/Time: 2011-3-24 14:05:17

Electronics: DAE4 Sn771

Medium: Head 900

Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.901 mho/m; εr = 41.8; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 18.0 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 0.602 W/kg

SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.367 mW/g

Maximum value of SAR (measured) = 0.510 mW/g

Fig.34   850 MHz CH4233

WCDMA 850 Right Tilt Middle

Date/Time: 2011-3-24 14:22:07

Electronics: DAE4 Sn771

Medium: Head 900

Medium parameters used (interpolated): f = 836.4 MHz; σ = 0.90 mho/m; εr = 41.9; ρ = 1000 kg/m^3

Ambient Temperature:23.0^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.494 mW/g

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

Reference Value = 17.8 V/m; Power Drift = 0.033 dB

Peak SAR (extrapolated) = 0.572 W/kg

SAR(1 g) = 0.463 mW/g; SAR(10 g) = 0.352 mW/g
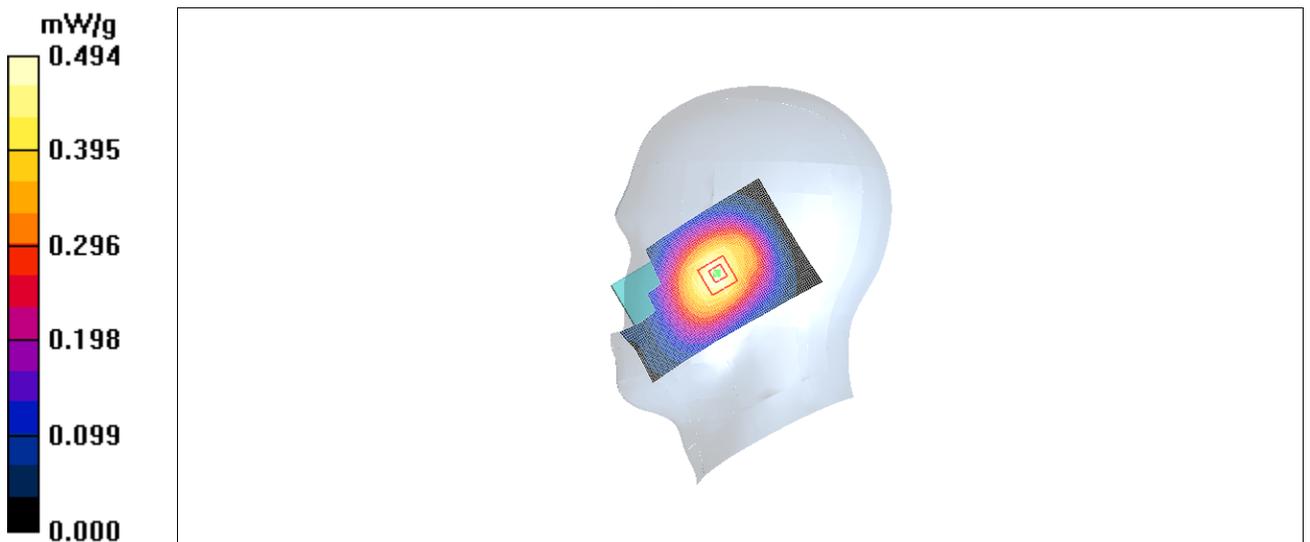
Maximum value of SAR (measured) = 0.487 mW/g

Fig.35   850 MHz CH4182

WCDMA 850 Right Tilt Low

Date/Time: 2011-3-24 14:39:29
Electronics: DAE4 Sn771
Medium: Head 900
Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.88 mho/m; εr = 42.1; ρ = 1000 kg/m³
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 (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.450 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.2 V/m; Power Drift = 0.132 dB
Peak SAR (extrapolated) = 0.550 W/kg
SAR(1 g) = 0.446 mW/g; SAR(10 g) = 0.340 mW/g
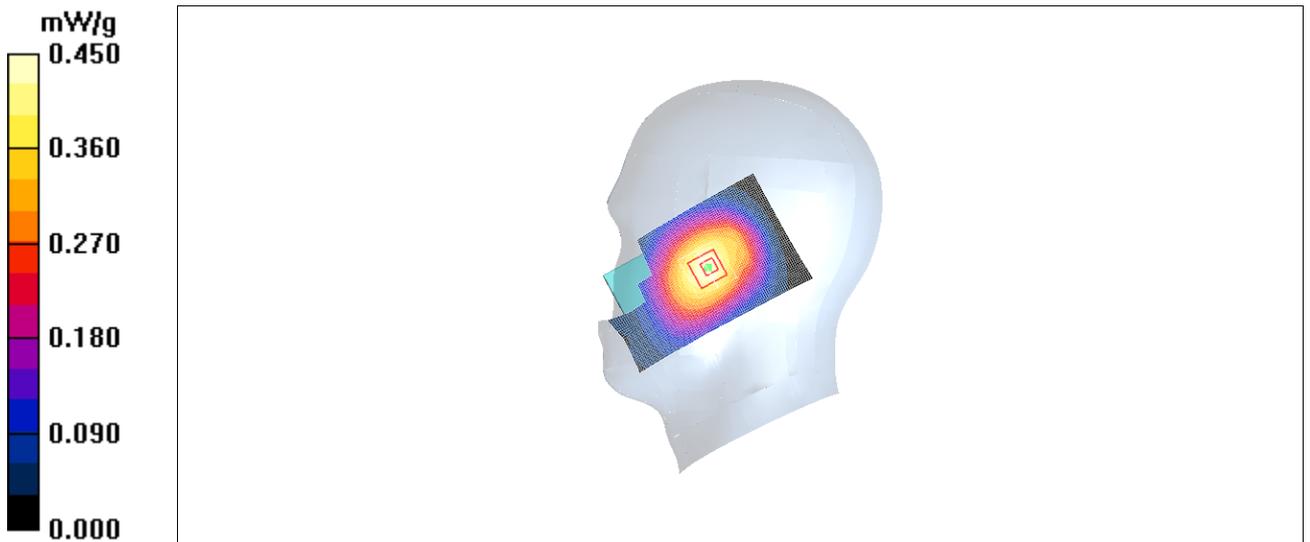Maximum value of SAR (measured) = 0.467 mW/g

Fig. 36   850 MHz CH4132

WCDMA 1900 Left Cheek High

Date/Time: 2011-3-25 11:32:04

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.42 mho/m; εr = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.04 mW/g

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

Reference Value = 10.5 V/m; Power Drift = 0.010 dB

Peak SAR (extrapolated) = 1.65 W/kg

SAR(1 g) = 0.975 mW/g; SAR(10 g) = 0.543 mW/g
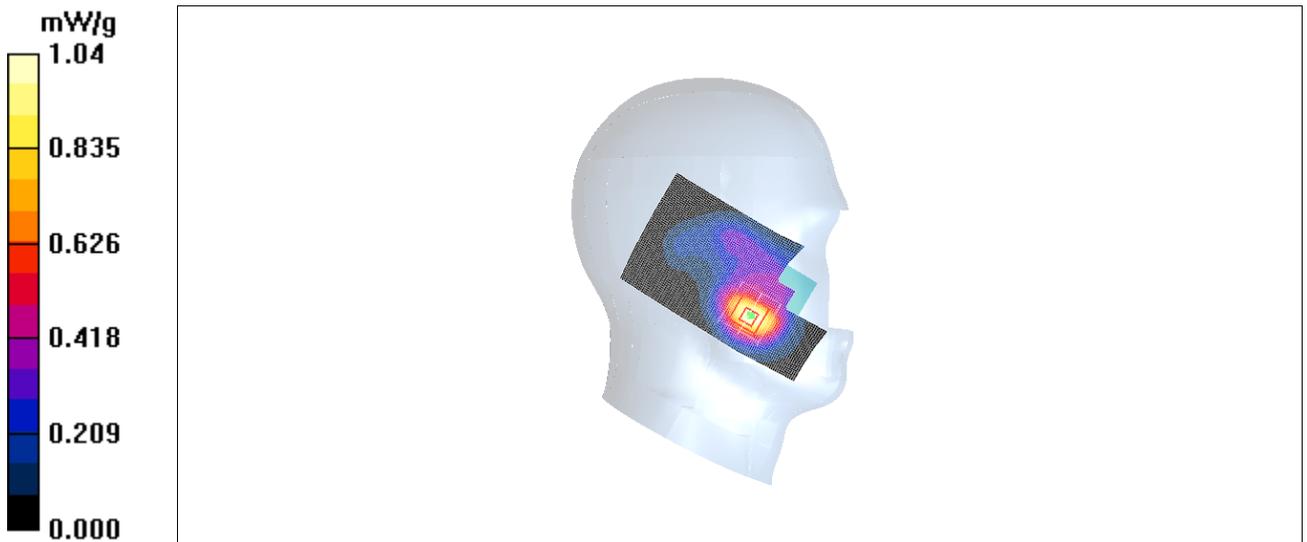
Maximum value of SAR (measured) = 1.08 mW/g

Fig. 37   1900 MHz CH9538

WCDMA 1900 Left Cheek Middle

Date/Time: 2011-3-25 11:49:23
Electronics: DAE4 Sn771
Medium: Head GSM1900
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 1.10 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.0 V/m; Power Drift = 0.106 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.562 mW/g
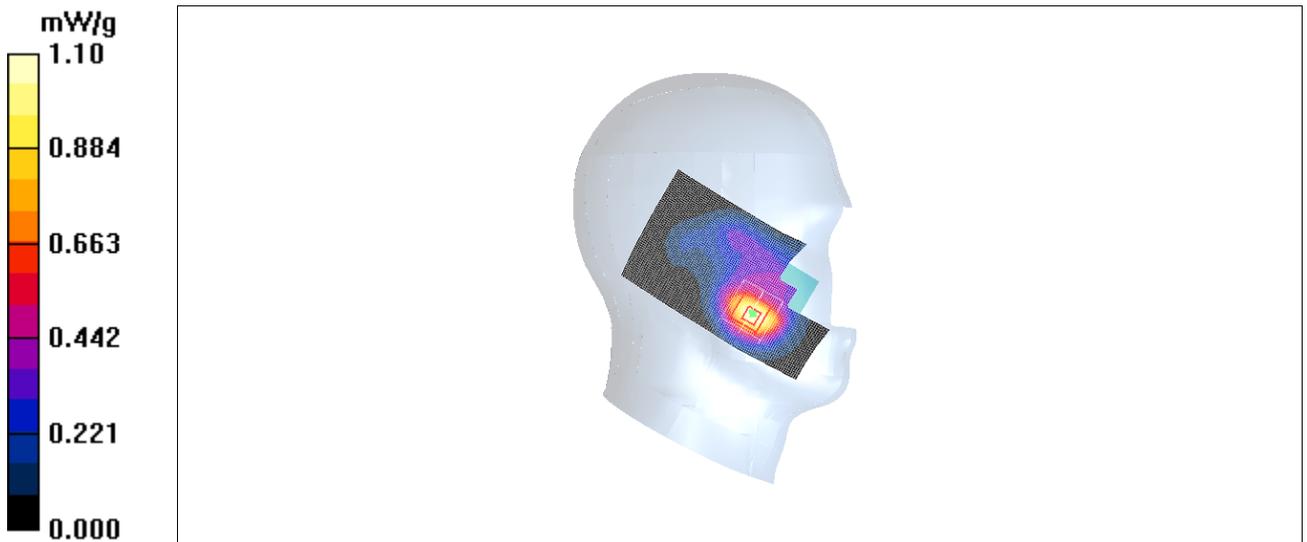Maximum value of SAR (measured) = 1.11 mW/g

Fig. 38 1900 MHz CH9400

WCDMA 1900 Left Cheek Low

Date/Time: 2011-3-25 12:06:44
Electronics: DAE4 Sn771
Medium: Head GSM1900
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; εr = 41.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): 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 = 10.0 V/m; Power Drift = 0.127 dB
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 1.04 mW/g; SAR(10 g) = 0.584 mW/g
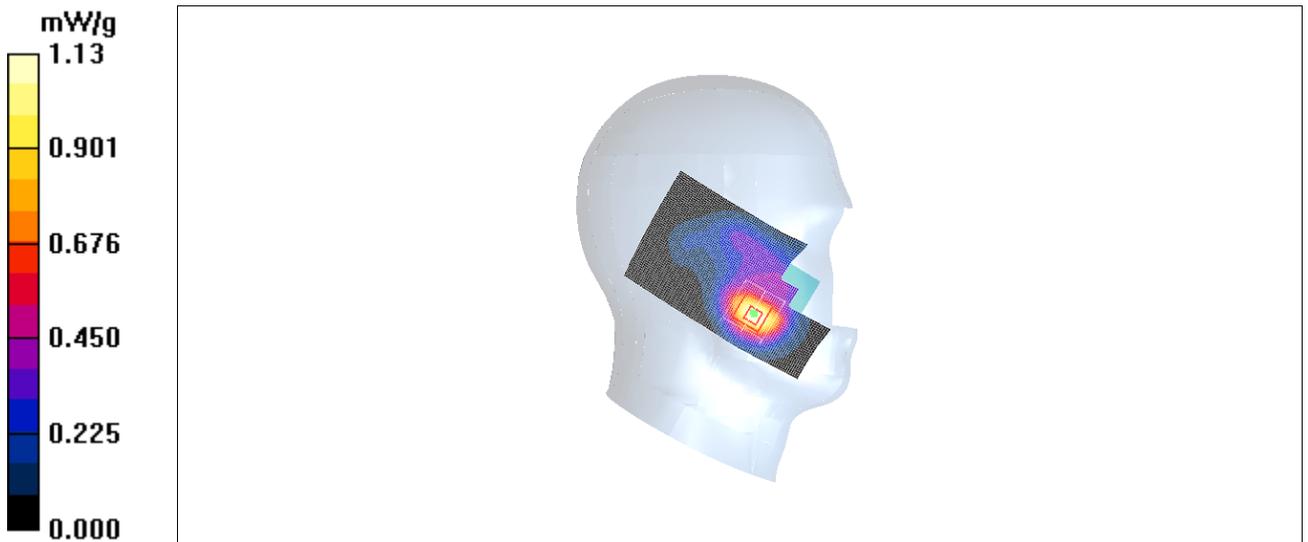Maximum value of SAR (measured) = 1.15 mW/g
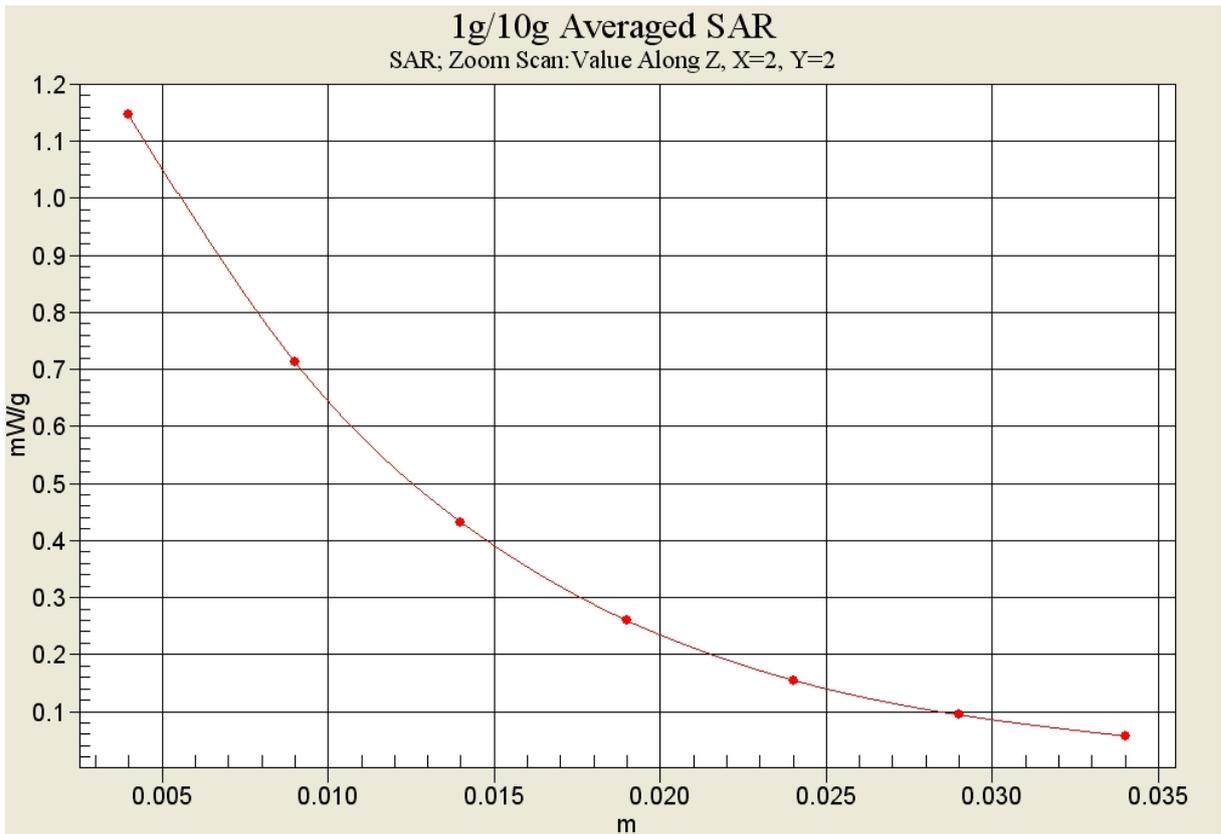

Fig. 39 1900 MHz CH9262

Fig. 39-1   Z-Scan at power reference point (1900 MHz CH9262)

WCDMA 1900 Left Tilt High

Date/Time: 2011-3-25 12:33:00

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.42 mho/m; εr = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.0 $^{\circ}$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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.455 mW/g

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

Reference Value = 16.8 V/m; Power Drift = -0.005 dB

Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.380 mW/g; SAR(10 g) = 0.219 mW/g
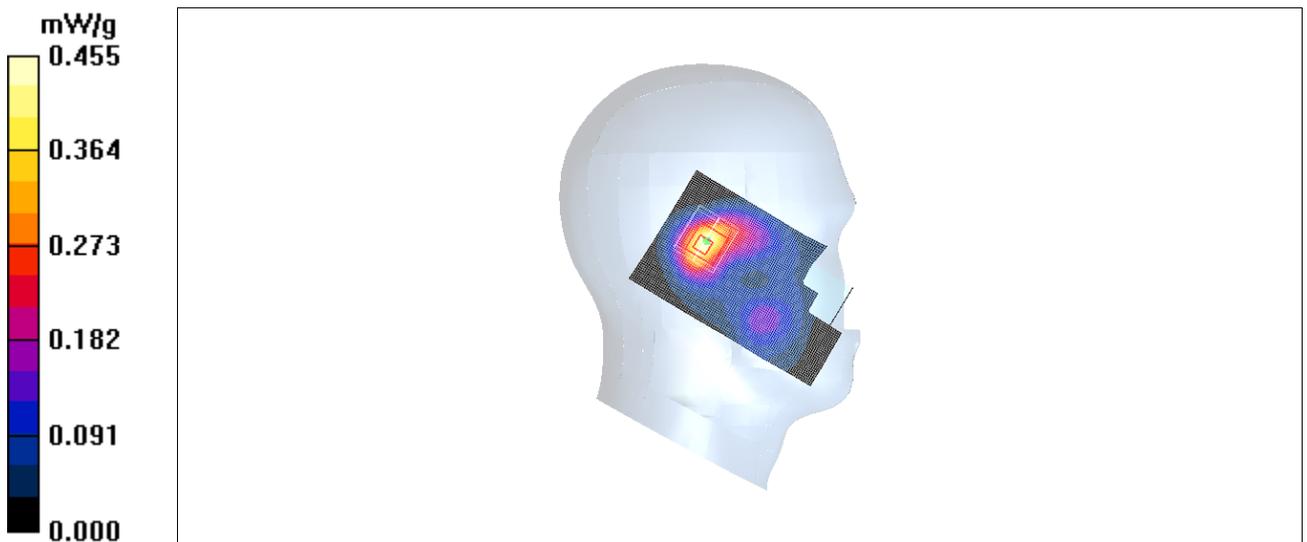
Maximum value of SAR (measured) = 0.405 mW/g

Fig.40 1900 MHz CH9538

WCDMA 1900 Left Tilt Middle

Date/Time: 2011-3-25 12:50:05
Electronics: DAE4 Sn771
Medium: Head GSM1900
Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.503 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.8 V/m; Power Drift = 0.014 dB
Peak SAR (extrapolated) = 0.678 W/kg
SAR(1 g) = 0.426 mW/g; SAR(10 g) = 0.248 mW/g
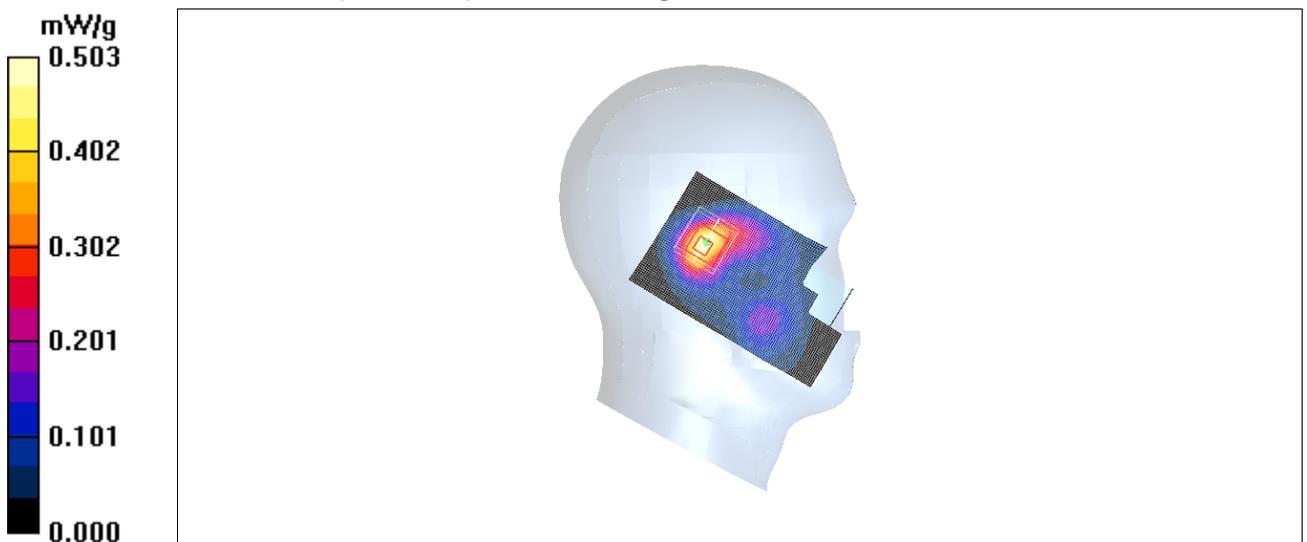Maximum value of SAR (measured) = 0.461 mW/g

Fig. 41 1900 MHz CH9400

WCDMA 1900 Left Tilt Low

Date/Time: 2011-3-25 13:07:39

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; εr = 41.1; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5 ^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.474 mW/g

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

Reference Value = 17.4 V/m; Power Drift = 0.008 dB

Peak SAR (extrapolated) = 0.643 W/kg

SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.239 mW/g
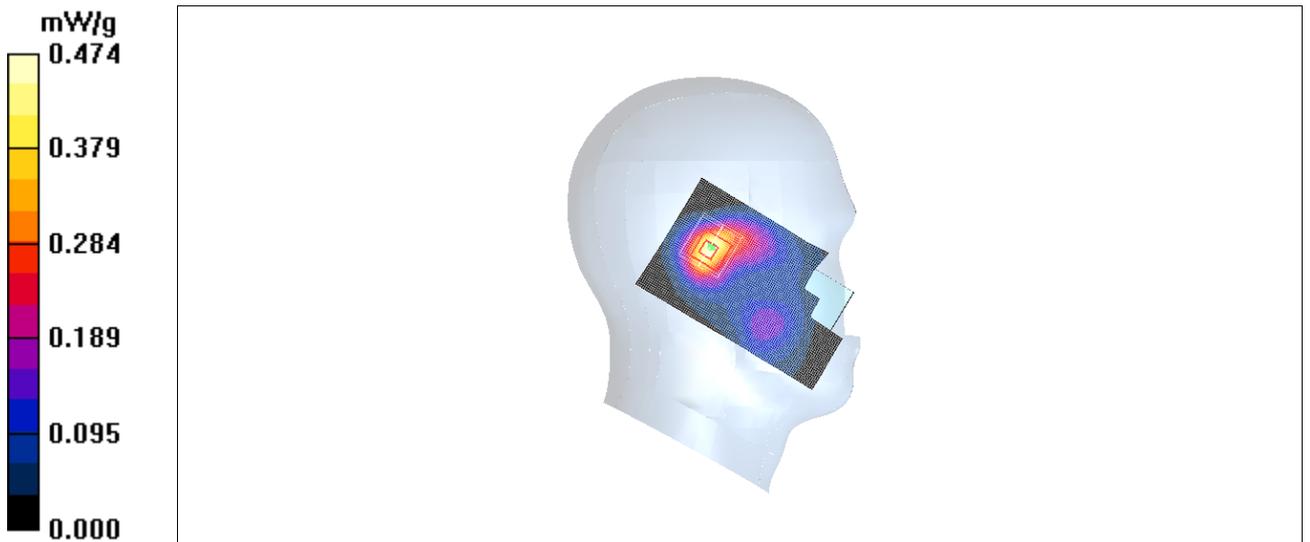
Maximum value of SAR (measured) = 0.439 mW/g

Fig. 42 1900 MHz CH9262

WCDMA 1900 Right Cheek High

Date/Time: 2011-3-25 13:24:01

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.42 mho/m; εr = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5 ^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.616 mW/g

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

Reference Value = 11.6 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 0.846 W/kg

SAR(1 g) = 0.573 mW/g; SAR(10 g) = 0.351 mW/g

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

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

Reference Value = 11.6 V/m; Power Drift = 0.162 dB

Peak SAR (extrapolated) = 0.856 W/kg

SAR(1 g) = 0.547 mW/g; SAR(10 g) = 0.337 mW/g
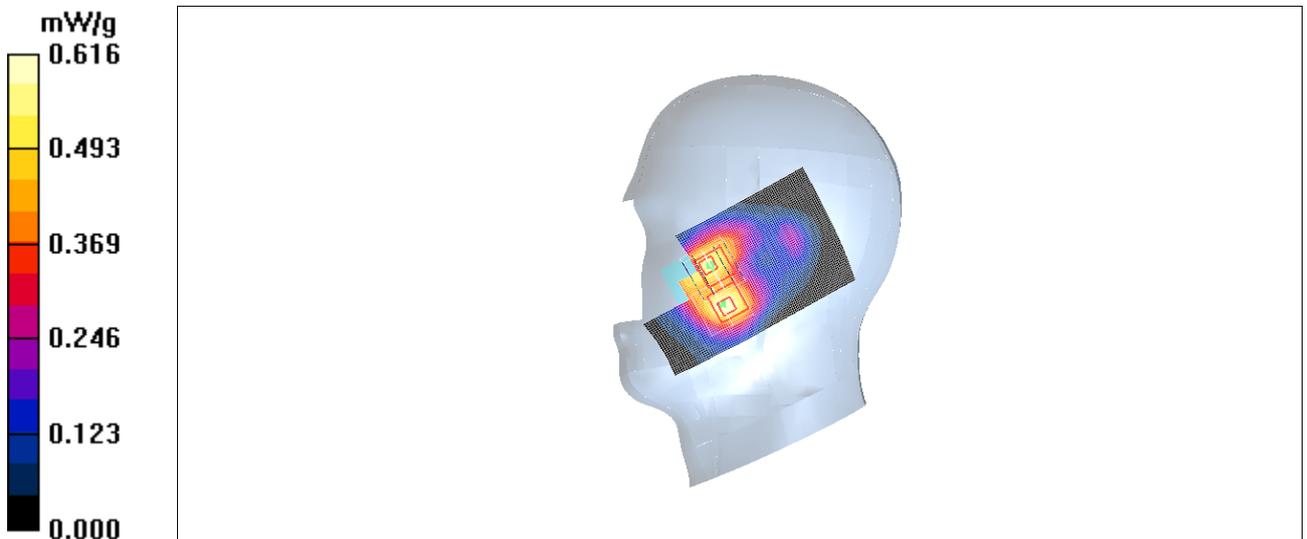
Maximum value of SAR (measured) = 0.576 mW/g

Fig. 43 1900 MHz CH9538

WCDMA 1900 Right Cheek Middle

Date/Time: 2011-3-25 13:41:06

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.659 mW/g

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

Reference Value = 11.7 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.885 W/kg

SAR(1 g) = 0.601 mW/g; SAR(10 g) = 0.372 mW/g

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

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

Reference Value = 11.7 V/m; Power Drift = -0.002 dB

Peak SAR (extrapolated) = 0.869 W/kg

SAR(1 g) = 0.553 mW/g; SAR(10 g) = 0.340 mW/g

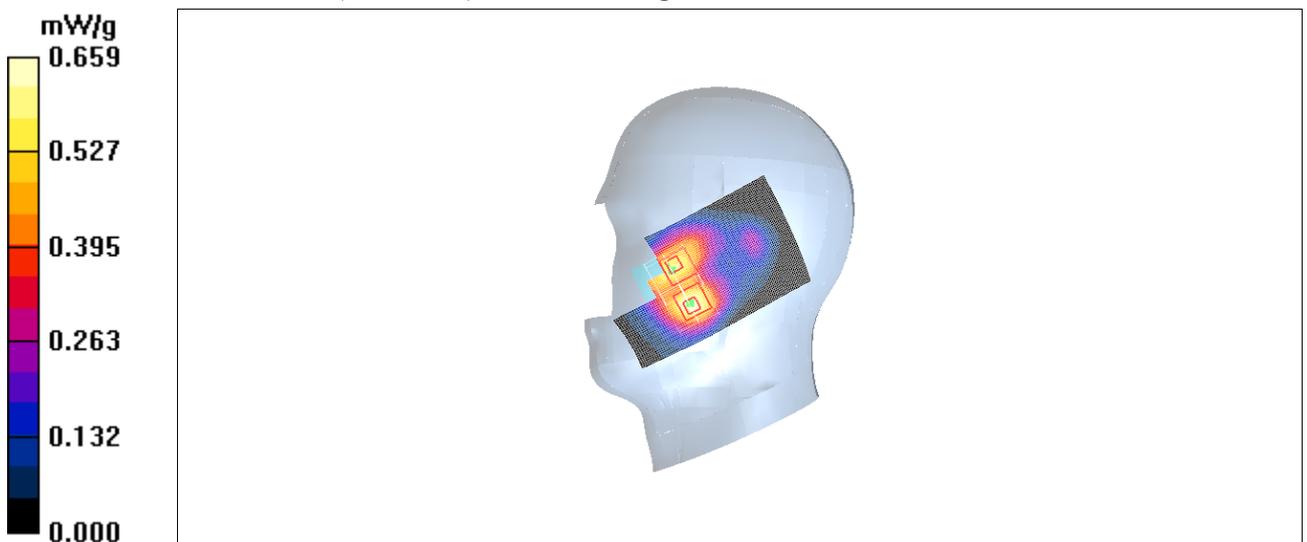Maximum value of SAR (measured) = 0.590 mW/g

Fig. 44 1900 MHz CH9400

WCDMA 1900 Right Cheek Low

Date/Time: 2011-3-25 13:58:21

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; εr = 41.1; ρ = 1000 kg/m³

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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 11.5 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 0.919 W/kg

SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.386 mW/g

Maximum value of SAR (measured) = 0.679 mW/g

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

Reference Value = 11.5 V/m; Power Drift = 0.112 dB

Peak SAR (extrapolated) = 0.878 W/kg

SAR(1 g) = 0.562 mW/g; SAR(10 g) = 0.347 mW/g

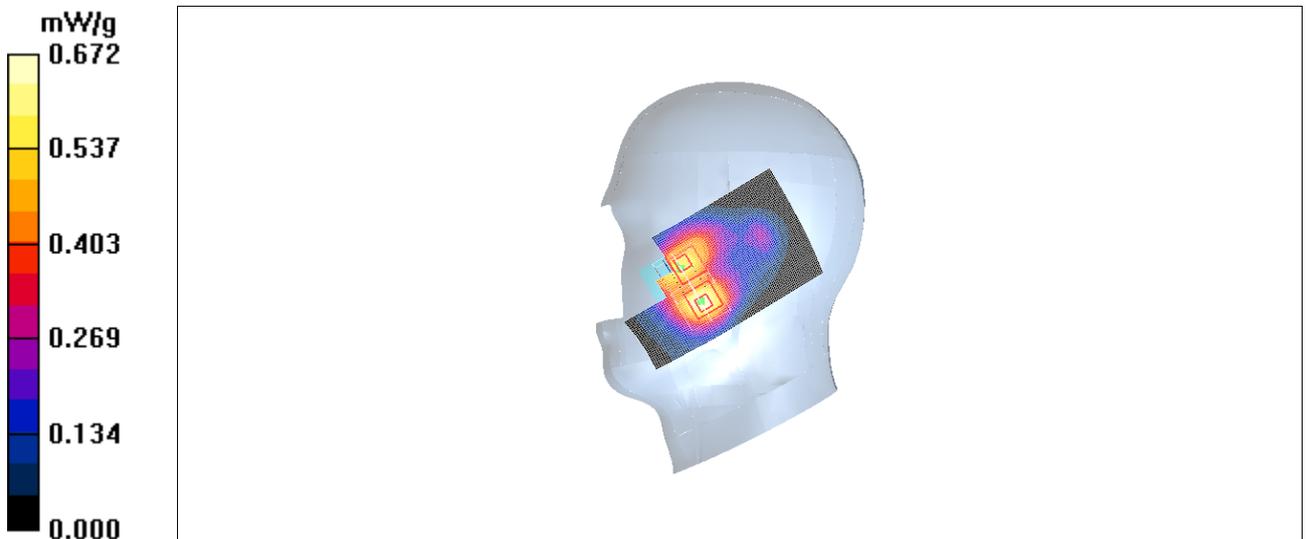Maximum value of SAR (measured) = 0.601 mW/g

Fig. 45 1900 MHz CH9262

WCDMA 1900 Right Tilt High

Date/Time: 2011-3-25 14:15:25

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.42 mho/m; εr = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.501 mW/g

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

Reference Value = 16.6 V/m; Power Drift = 0.100 dB

Peak SAR (extrapolated) = 0.681 W/kg

SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.242 mW/g
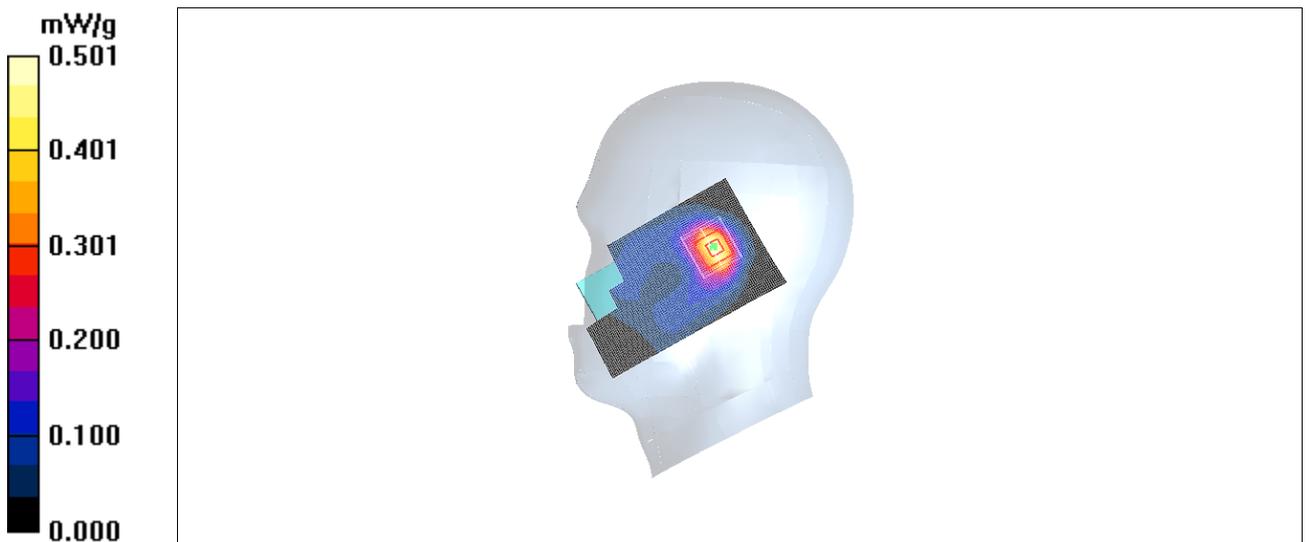
Maximum value of SAR (measured) = 0.465 mW/g

Fig. 46 1900 MHz CH9538

WCDMA 1900 Right Tilt Middle

Date/Time: 2011-3-25 14:32:50

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used: f = 1880 MHz; σ = 1.39 mho/m; εr = 40.6; ρ = 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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.493 mW/g

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

Reference Value = 16.8 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.672 W/kg

SAR(1 g) = 0.422 mW/g; SAR(10 g) = 0.243 mW/g

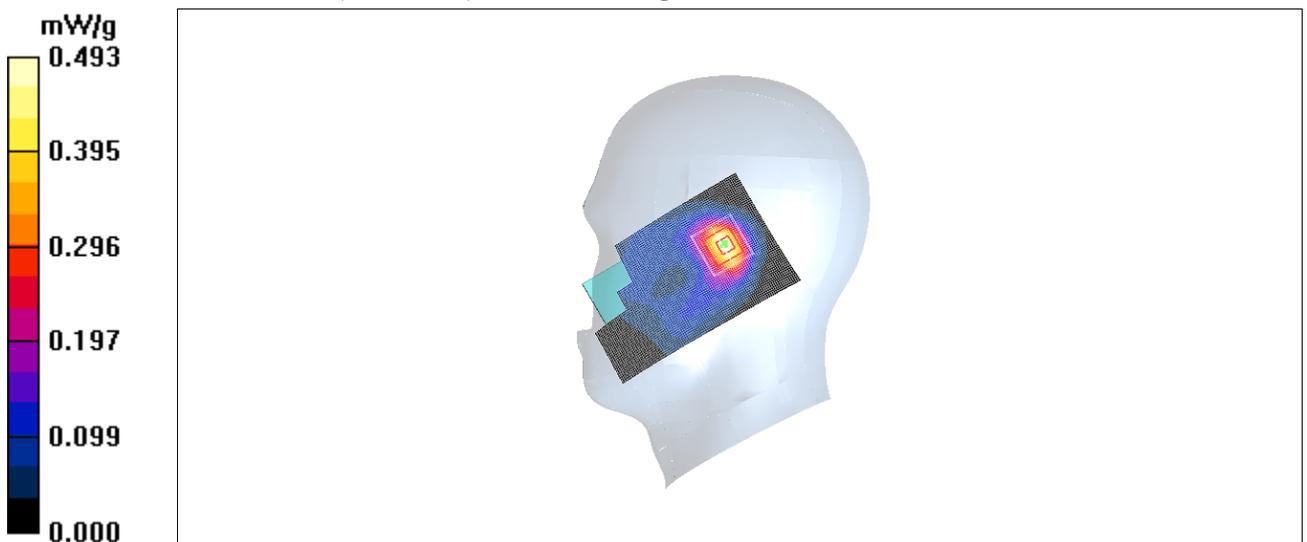Maximum value of SAR (measured) = 0.461 mW/g

Fig.47 1900 MHz CH9400

WCDMA 1900 Right Tilt Low

Date/Time: 2011-3-25 14:49:05

Electronics: DAE4 Sn771

Medium: Head GSM1900

Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.36 mho/m; εr = 41.1; ρ = 1000 kg/m^3

Ambient Temperature:23.0 ^{o}C   Liquid Temperature: 22.5^{o}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 (61x101x1): Measurement grid: dx=10mm, dy=10mm

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

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

Reference Value = 16.8 V/m; Power Drift = 0.035 dB

Peak SAR (extrapolated) = 0.658 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.243 mW/g

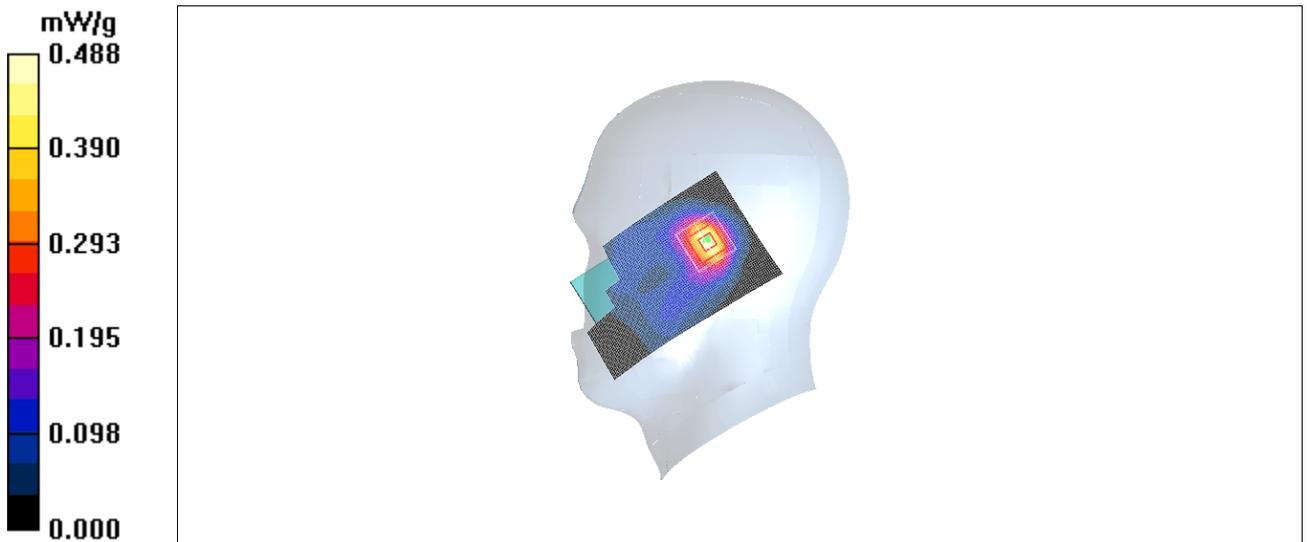Maximum value of SAR (measured) = 0.460 mW/g

Fig.48 1900 MHz CH9262

850 Body Towards Phantom High with GPRS

Date/Time: 2011-5-11 08:26:55

Electronics: DAE4 Sn771

Medium: Body 850 MHz

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.95 mho/m; εr = 56.0; ρ = 1000 kg/m³

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

Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4

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) = 1.07 mW/g

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

Reference Value = 29.5 V/m; Power Drift = 0.027 dB

Peak SAR (extrapolated) = 1.38 W/kg

SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.735 mW/g

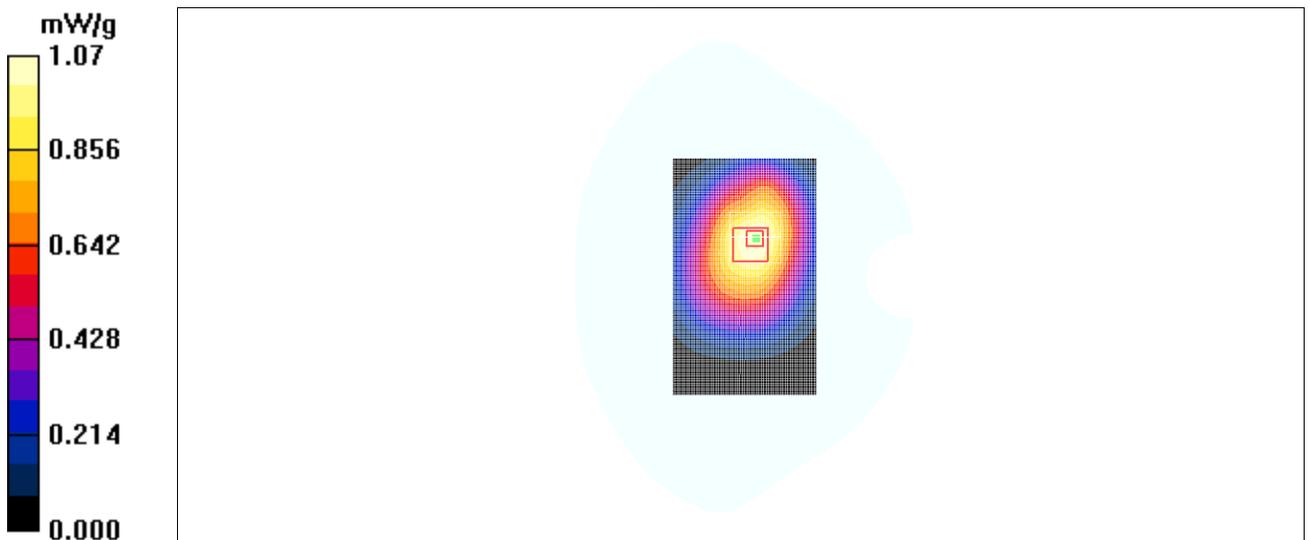Maximum value of SAR (measured) = 1.07 mW/g

Fig. 49   850 MHz CH251