SAR TEST REPORT

No. 2011SAR00110

For

TCT Mobile Limited

GSM/GPRS/EDGE Quad bands mobile phone

Diamond_US

one touch 810A

With

Hardware Version: PIO

Software Version: swC17

FCCID: RAD201

Issued Date: 2011-09-09

Deutscher Akkreditierungs Rat

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

Note:

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

Test Laboratory:

TMC Beijing, Telecommunication Metrology Center of MIIT

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

©Copyright. All rights reserved by TMC Beijing.

TABLE OF CONTENT

1 TEST LABORATORY 3

1.1 TESTING LOCATION 3
1.2 TESTING ENVIRONMENT 3
1.3 PROJECT DATA 3
1.4 SIGNATURE 3

2 CLIENT INFORMATION 4

2.1 APPLICANT INFORMATION 4
2.2 MANUFACTURER INFORMATION 4

3 EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) 5

3.1 ABOUT EUT 5
3.2 INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST 5
3.3 INTERNAL IDENTIFICATION OF AE USED DURING THE TEST 5

4 CHARACTERISTICS OF THE TEST 5

4.1 APPLICABLE LIMIT REGULATIONS 5
4.2 APPLICABLE MEASUREMENT STANDARDS 6

5 OPERATIONAL CONDITIONS DURING TEST 6

5.1 SCHEMATIC TEST CONFIGURATION 6
5.2 SAR MEASUREMENT SET-UP 6
5.3 DASY4 E-FIELD PROBE SYSTEM 7
5.4 E-FIELD PROBE CALIBRATION 8
5.5 OTHER TEST EQUIPMENT 9
5.6 EQUIVALENT TISSUES 10
5.7 SYSTEM SPECIFICATIONS 10

6 CONDUCTED OUTPUT POWER MEASUREMENT 11

6.1 SUMMARY 11
6.2 CONDUCTED POWER 11

7 TEST RESULTS 12

7.1 DIELECTRIC PERFORMANCE 12
7.2 SYSTEM VALIDATION 13
7.3 SUMMARY OF MEASUREMENT RESULTS 14
7.4 SUMMARY OF MEASUREMENT RESULTS (BLUETOOTH FUNCTION) 16
7.5 CONCLUSION 17

8 MEASUREMENT UNCERTAINTY 17

9 MAIN TEST INSTRUMENTS 18

ANNEX A MEASUREMENT PROCESS 19

ANNEX B TEST LAYOUT 20

ANNEX C GRAPH RESULTS 26

ANNEX D SYSTEM VALIDATION RESULTS 78

ANNEX E PROBE CALIBRATION CERTIFICATE 82

ANNEX F DIPOLE CALIBRATION CERTIFICATE 91

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

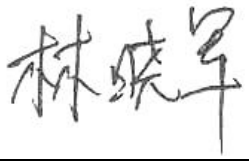
Temperature:	18°C~25 °C,
Relative humidity:	30%~ 70%
Ground system resistance:	< 0.5 Ω

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

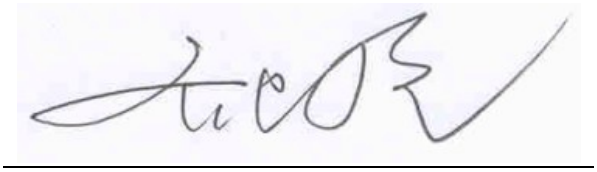
Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	August 24, 2011
Testing End Date:	August 25, 2011

1.4 Signature



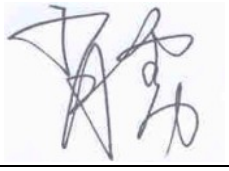
Lin Xiaojun

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Xiao Li

Deputy Director of the laboratory

(Approved this test report)

2 Client Information

2.1 Applicant Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
City:	Shanghai
Postal Code:	201203
Country:	P. R. China
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

2.2 Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, E building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
City:	Shanghai
Postal Code:	201203
Country:	P. R. China
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

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

3.1 About EUT

EUT Description:	GSM/GPRS/EDGE Quad bands mobile phone
Model Name:	Diamond_US
Marketing Name:	one touch 810A
Tested Frequency Band:	GSM 850 / PCS 1900
GPRS Multislot Class:	12
GPRS capability Class:	B
EGPRS Multislot Class:	12

Note: EDGE only supports GMSK modulation.

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	012818000020678	PIO	swC17

*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	CAB3120000C1	/	BYD
AE2	Headset	CCB3160A10C0	/	Junwei
AE3	Headset	CCB3160A10C4	/	Meihao
AE4	Headset	CCB3160A14C1	/	Junwei
AE5	Headset	CCB3160A14C4	/	Meihao

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

Note: AE2 and AE4 are the same, so they can use the same results. AE3 and AE5 are also the same, so they can use the same results.

4 CHARACTERISTICS OF THE TEST

4.1 Applicable Limit Regulations

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

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

4.2 Applicable Measurement Standards

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

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

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

IEC 62209-1: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1:Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)

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

5 OPERATIONAL CONDITIONS DURING TEST

5.1 Schematic Test Configuration

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

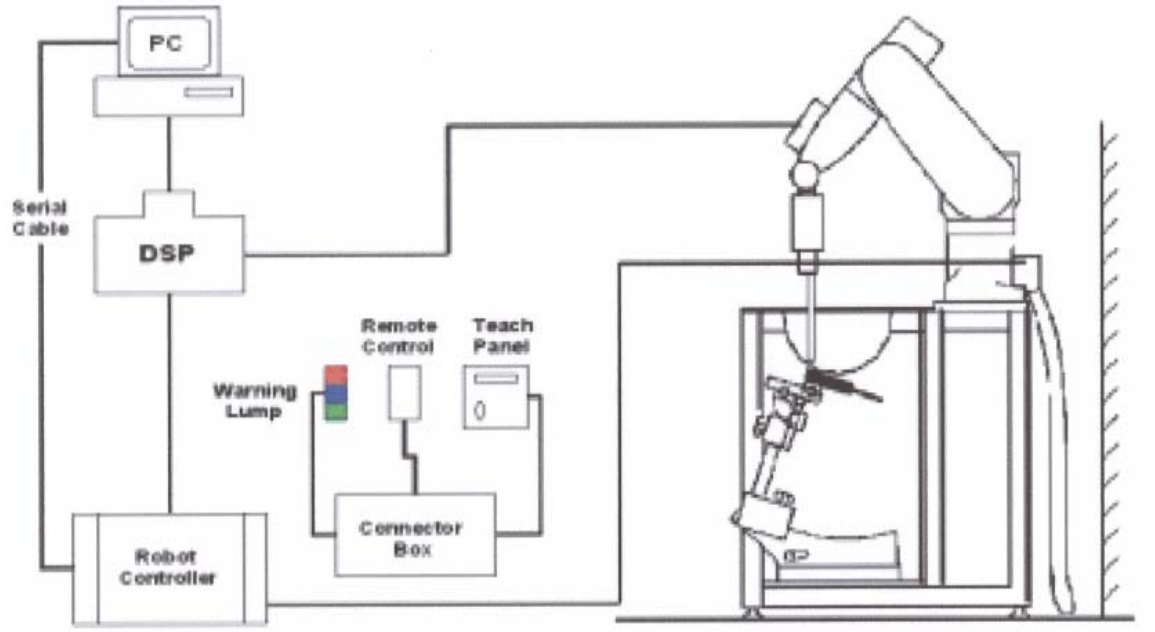
The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the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

5.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 Professional from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for

measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

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



Picture 1: SAR Lab Test Measurement Set-up

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

5.3 Dasy4 E-field Probe System

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

ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request

Picture 2: ES3DV3 E-field

Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.3 dB in tissue material (rotation normal to probe axis)
Dynamic Range	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 3.9 mm (Body: 12 mm) Distance from probe tip to dipole centers: 2.0 mm
Application	General dosimetry up to 4 GHz Dosimetry in strong gradient fields Compliance tests of mobile phones

Picture3: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 4: Device Holder

5.5 Other Test Equipment

5.5.1 Device Holder for Transmitters

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

5.5.2 Phantom

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

Shell Thickness	2±0. l mm
Filling Volume	Approx. 20 liters
Dimensions	810 x l000 x 500 mm (H x L x W)
Available	Special

Picture 5: Generic Twin Phantom

5.6 Equivalent Tissues

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

Table 1. Composition of the Head Tissue Equivalent Matter

MIXTURE %	FREQUENCY 850MHz
Water	41.45
Sugar	56.0
Salt	1.45
Preventol	0.1
Cellulose	1.0
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

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

5.7 System Specifications

Specifications

Positioner: Stäubli Unimation Corp. Robot Model: RX90L
Repeatability: ±0.02 mm
No. of Axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor: Pentium III
Clock Speed: 800 MHz

Operating System: Windows 2000
Data Converter
Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY4 software
Connecting Lines: Optical downlink for data and status info.
Optical uplink for commands and clock

6 CONDUCTED OUTPUT POWER MEASUREMENT

6.1 Summary

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

6.2 Conducted Power

6.2.1 Measurement Methods

The EUT was set up for the maximum output power. The channel power was measured with CMU200. These measurements were done at low, middle and high channels.

6.2.2 Measurement result

Table 3: The conducted power for GSM 850/1900

GSM 850MHZ	**Conducted Power (dBm)**		
	Channel 251(848.8MHz)	**Channel 190(836.6MHz)**	**Channel 128(824.2MHz)**
	33.72	33.73	34.07
GSM 1900MHZ	**Conducted Power (dBm)**		
	Channel 810(1909.8MHz)	**Channel 661(1880MHz)**	**Channel 512(1850.2MHz)**
	29.63	29.52	29.46

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

GSM 850 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	**190**	**128**		**251**	**190**	**128**
1 Txslot	33.68	33.70	34.05	-9.03dB	24.65	24.67	25.02
2 Txslots	31.02	31.05	32.16	-6.02dB	**25.00**	**25.03**	**26.14**
3Txslots	29.11	29.13	30.27	-4.26dB	24.85	24.87	26.01
4 Txslots	27.93	27.96	29.14	-3.01dB	24.92	24.95	26.13
GSM 850 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	251	**190**	**128**		**251**	**190**	**128**
1 Txslot	33.63	33.65	33.99	-9.03dB	24.60	24.62	24.96
2 Txslots	31.01	31.04	32.15	-6.02dB	**24.99**	**25.02**	**26.13**
3Txslots	29.10	29.12	30.26	-4.26dB	24.84	24.86	26.00
4 Txslots	27.93	27.95	29.13	-3.01dB	24.92	24.94	26.12

PCS1900 GPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	**661**	**512**		**810**	**661**	**512**
1 Txslot	29.61	29.50	29.42	-9.03dB	20.58	20.47	20.39
2 Txslots	27.08	26.97	26.90	-6.02dB	21.06	20.95	20.88
3Txslots	25.68	25.57	25.50	-4.26dB	**21.42**	**21.31**	**21.24**
4 Txslots	24.10	23.97	23.90	-3.01dB	21.09	20.96	20.89
PCS1900 EGPRS	Measured Power (dBm)			calculation	Averaged Power (dBm)		
	810	**661**	**512**		**810**	**661**	**512**
1 Txslot	29.59	29.48	29.41	-9.03dB	20.56	20.45	20.38
2 Txslots	27.07	26.96	26.89	-6.02dB	21.05	20.94	20.87
3Txslots	25.67	25.55	25.48	-4.26dB	**21.41**	**21.29**	**21.22**
4 Txslots	24.08	23.95	23.87	-3.01dB	21.07	20.94	20.86

NOTES:

1) Division Factors

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

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

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

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

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

According to the conducted power as above, the body measurements are performed with 2 Txslots for GSM850 and 3 Txslots for PCS1900.

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 9 to Table 12 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 5: Dielectric Performance of Head Tissue Simulating Liquid

Measurement is made at temperature 23.0 °C and relative humidity 41%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **August 24, 2011** 1900 MHz **August 25, 2011**			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	41.5	0.90
	1900 MHz	40.0	1.40
Measurement value (Average of 10 tests)	835 MHz	40.8	0.89
	1900 MHz	40.8	1.41

Table 6: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.0 °C and relative humidity 41%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **August 24, 2011** 1900 MHz **August 25, 2011**			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	55.2	0.97
	1900 MHz	53.3	1.52
Measurement value (Average of 10 tests)	835 MHz	54.3	0.95
	1900 MHz	52.1	1.51

7.2 System Validation

Table 7: System Validation of Head

Measurement is made at temperature 23.0 °C and relative humidity 41%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **August 24, 2011** 1900 MHz **August 25, 2011**							
Liquid parameters	Dipole calibration Target value	**Frequency**		**Permittivity ε**		**Conductivity σ (S/m)**	
		835 MHz		41.6		0.92	
		1900 MHz		39.6		1.40	
	Actural Measurement value	835 MHz		40.8		0.89	
		1900 MHz		40.8		1.41	
Verification results	**Frequency**	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz	6.12	9.41	6.00	9.12	-1.96%	-3.08%
	1900 MHz	20.1	39.4	19.48	38.48	-3.08%	-2.34%

Note： The forward power is 250mW. Target values are the data of the dipole validation results, please check Annex F for the Dipole Calibration Certificate.

Table 8: System Validation of Body

Measurement is made at temperature 23.0 °C and relative humidity 41%. Liquid temperature during the test: 22.5°C Measurement Date : 850 MHz **August 24, 2011** 1900 MHz **August 25, 2011**				
Liquid parameters	Dipole calibration Target value	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
		835 MHz	54.5	0.97
		1900 MHz	52.5	1.51
	Actural Measurement value	835 MHz	54.3	0.95
		1900 MHz	52.1	1.51

Verification results	Frequency	Target value (W/kg)		Measured value (W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
	835 MHz	6.24	9.57	6.04	9.28	-3.21%	-3.03%
	1900 MHz	20.9	41.4	20.28	40.4	-2.97%	-2.42%

Note： The forward power is 250mW. 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 9: SAR Values (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)	0.568	0.865	-0.075
Left hand, Touch cheek, Mid frequency (See Fig.2)	0.487	0.745	-0.139
Left hand, Touch cheek, Low frequency (See Fig.3)	0.393	0.599	-0.00991
Left hand, Tilt 15 Degree, High frequency (See Fig.4)	0.260	0.347	-0.144
Left hand, Tilt 15 Degree, Mid frequency (See Fig.5)	0.208	0.275	-0.125
Left hand, Tilt 15 Degree, Low frequency (See Fig.6)	0.172	0.226	-0.035
Right hand, Touch cheek, High frequency (See Fig.7)	0.473	0.635	-0.050
Right hand, Touch cheek, Mid frequency (See Fig.8)	0.399	0.537	-0.074
Right hand, Touch cheek, Low frequency (See Fig.9)	0.325	0.436	0.067
Right hand, Tilt 15 Degree, High frequency (See Fig.10)	0.260	0.343	-0.045
Right hand, Tilt 15 Degree, Mid frequency (See Fig.11)	0.223	0.293	-0.087
Right hand, Tilt 15 Degree, Low frequency (See Fig.12)	0.192	0.251	-0.050

Table 10: SAR Values (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)	0.309	0.524	0.194
Left hand, Touch cheek, Mid frequency (See Fig.14)	0.370	0.619	0.113

Left hand, Touch cheek, Low frequency (See Fig.15)	0.448	0.745	0.171
Left hand, Tilt 15 Degree, High frequency (See Fig.16)	0.058	0.090	0.077
Left hand, Tilt 15 Degree, Mid frequency (See Fig.17)	0.073	0.116	0.139
Left hand, Tilt 15 Degree, Low frequency (See Fig.18)	0.075	0.117	0.193
Right hand, Touch cheek, High frequency (See Fig.19)	0.223	0.405	0.123
Right hand, Touch cheek, Mid frequency (See Fig.20)	0.236	0.420	0.192
Right hand, Touch cheek, Low frequency (See Fig.21)	0.350	0.588	0.131
Right hand, Tilt 15 Degree, High frequency (See Fig.22)	0.049	0.077	-0.018
Right hand, Tilt 15 Degree, Mid frequency (See Fig.23)	0.055	0.085	-0.088
Right hand, Tilt 15 Degree, Low frequency(See Fig.24)	0.064	0.101	0.121

Table 11: SAR Values (850MHz-Body)

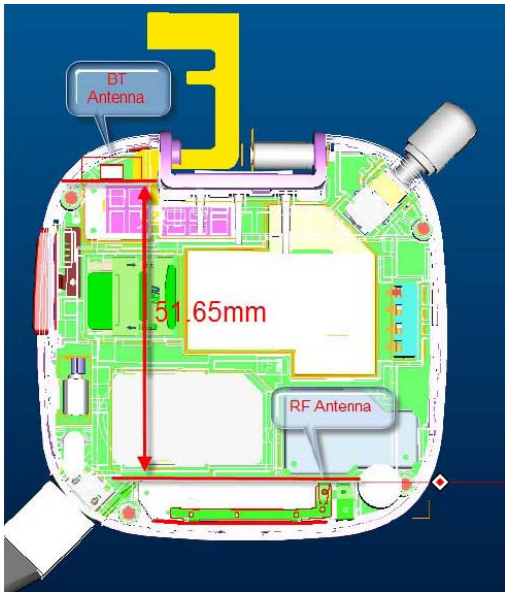
Limit of SAR (W/kg)	**10 g Average**	**1g Average**	**Power Drift (dB)**
	2.0	1.6	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
Body folded, Towards Ground, High frequency with GPRS (See Fig.25)	0.227	0.343	-0.002
Body folded, Towards Ground, Mid frequency with GPRS (See Fig.26)	0.240	0.360	-0.071
Body folded, Towards Ground, Low frequency with GPRS (See Fig.27)	0.316	0.477	0.062
Body folded, Towards Phantom, High frequency with GPRS (See Fig.28)	0.095	0.136	-0.005
Body folded, Towards Phantom, Mid frequency with GPRS (See Fig.29)	0.100	0.142	0.026
Body folded, Towards Phantom, Low frequency with GPRS (See Fig.30)	0.135	0.191	0.054
Body unfolded, Towards Ground, High frequency with GPRS (See Fig.31)	0.431	0.599	-0.013
Body unfolded, Towards Ground, Mid frequency with GPRS (See Fig.32)	0.414	0.574	0.030
Body unfolded, Towards Ground, Low frequency with GPRS (See Fig.33)	0.490	0.677	0.017
Body unfolded, Towards Ground, Low frequency with EGPRS (See Fig.34)	0.469	0.649	0.024
Body unfolded, Towards Ground, Low frequency with Headset_ CCB3160A10C0 (See Fig.35)	0.323	0.446	-0.018
Body unfolded, Towards Ground, Low frequency with Headset_ CCB3160A10C4 (See Fig.36)	0.261	0.359	-0.007

Table 12: SAR Values (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**	
Body folded, Towards Ground, High frequency with GPRS (See Fig.37)	0.097	0.153	0.190
Body folded, Towards Ground, Mid frequency with GPRS (See Fig.38)	0.118	0.184	0.057
Body folded, Towards Ground, Low frequency with GPRS (See Fig.39)	0.136	0.211	0.042
Body folded, Towards Phantom, High frequency with GPRS (See Fig.40)	0.067	0.106	-0.146
Body folded, Towards Phantom, Mid frequency with GPRS (See Fig.41)	0.081	0.127	0.029
Body folded, Towards Phantom, Low frequency with GPRS (See Fig.42)	0.094	0.147	-0.099
Body unfolded, Towards Ground, High frequency with GPRS (See Fig.43)	0.068	0.107	-0.154
Body unfolded, Towards Ground, Mid frequency with GPRS (See Fig.44)	0.069	0.112	0.129
Body unfolded, Towards Ground, Low frequency with GPRS (See Fig.45)	0.089	0.141	0.161
Body folded, Towards Ground, Low frequency with EGPRS (See Fig.46)	0.119	0.185	0.030
Body folded, Towards Ground, Low frequency with Headset_ CCB3160A10C0 (See Fig.47)	0.127	0.196	-0.033
Body folded, Towards Ground, Low frequency with Headset_ CCB3160A10C4 (See Fig.48)	0.122	0.191	0.134

7.4 Summary of Measurement Results (Bluetooth function)

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)	8.03	7.24	8.36

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 $\leqslant 2P_{Ref}$ 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. So $2P_{Ref}$ = 24mW (13.8dBm).

7.5 Conclusion

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

The maximum SAR values are obtained at the case of **GSM 850 Head, Left hand, Touch cheek, High frequency (Table 9)**, and the value are: **0.568(10g), 0.865(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	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	∞

	phantom shell									
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 13: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 3,2011	One year
02	Power meter	NRVD	102083	September 11, 2010	One year
03	Power sensor	NRV-Z5	100542		
04	Signal Generator	E4438C	MY49070393	November 13, 2010	One Year
05	Amplifier	VTL5400	0505	No Calibration Requested	
06	BTS	8960	MY48365192	November 18, 2010	One year
07	E-field Probe	SPEAG ES3DV3	3149	September 25, 2010	One year
08	DAE	SPEAG DAE4	771	November 21, 2010	One year
09	Dipole Validation Kit	SPEAG D835V2	443	February 26, 2010	Two years
10	Dipole Validation Kit	SPEAG D1900V2	541	February 26, 2010	Two years

END OF REPORT BODY

ANNEX A MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

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

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

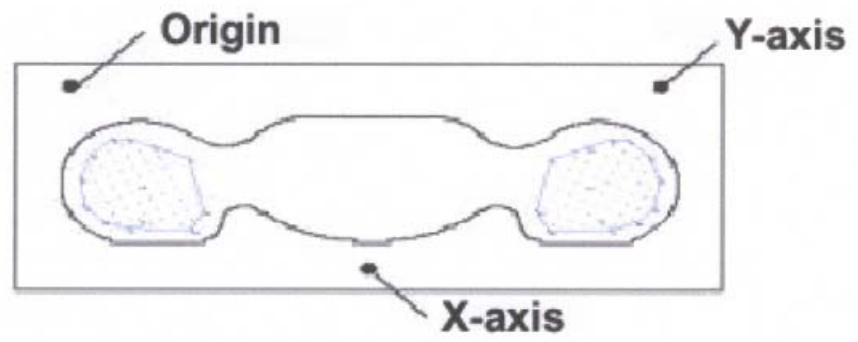
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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

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

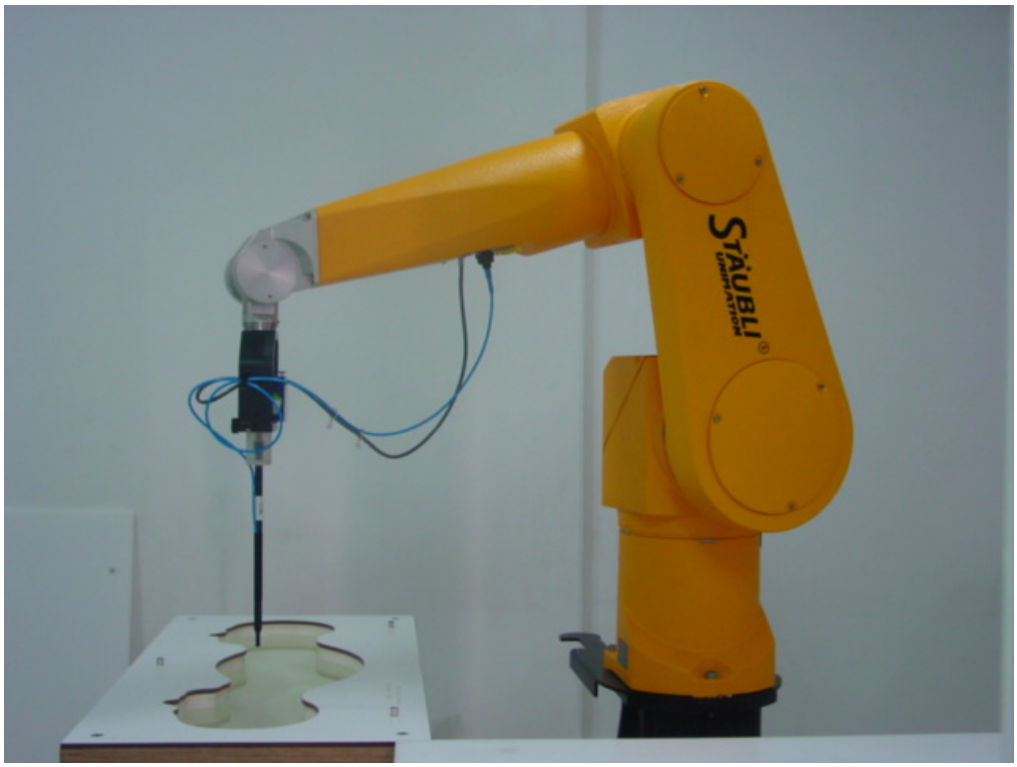
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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

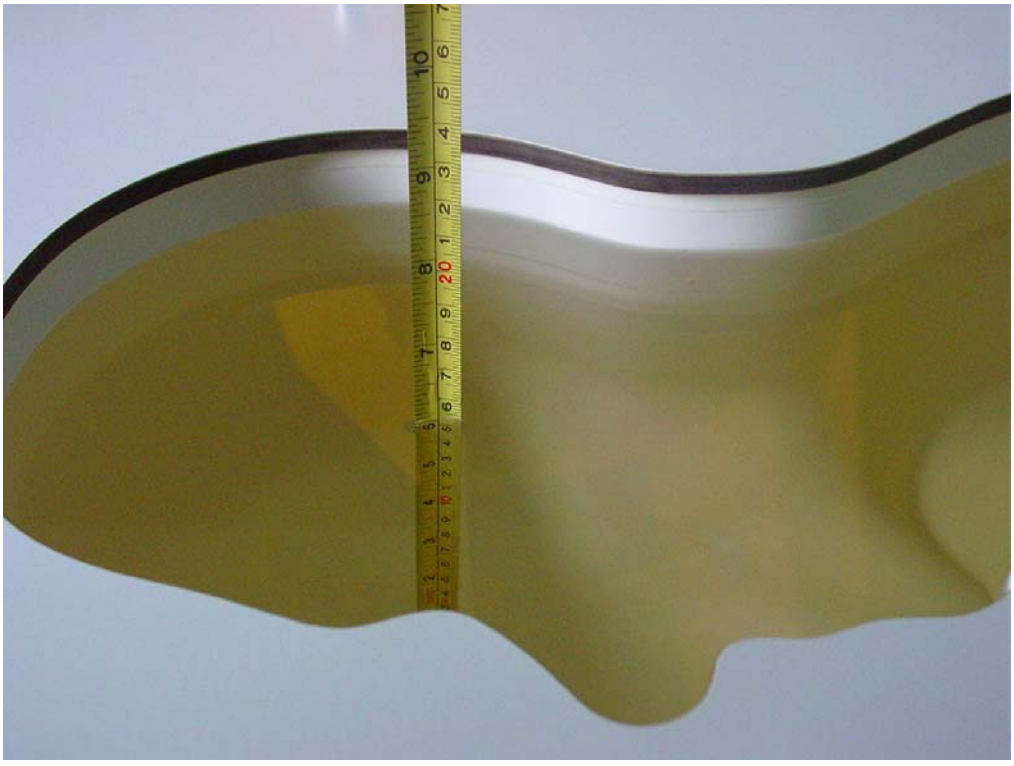


Picture A: SAR Measurement Points in Area Scan

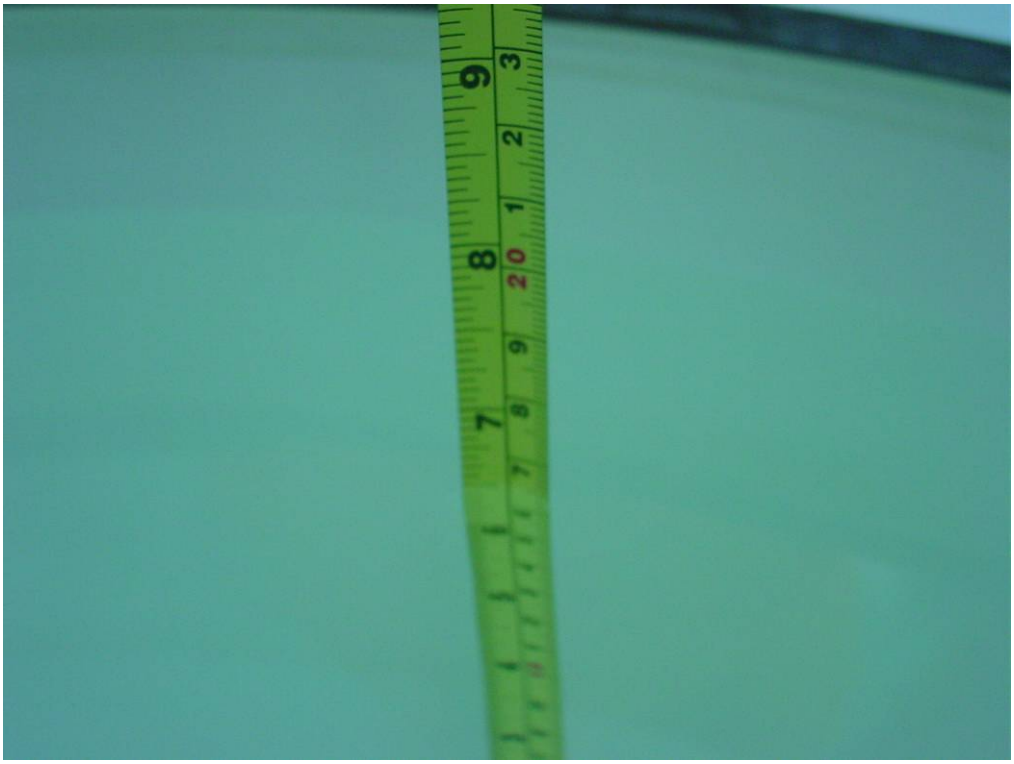
ANNEX B TEST LAYOUT



Picture B1: Specific Absorption Rate Test Layout



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



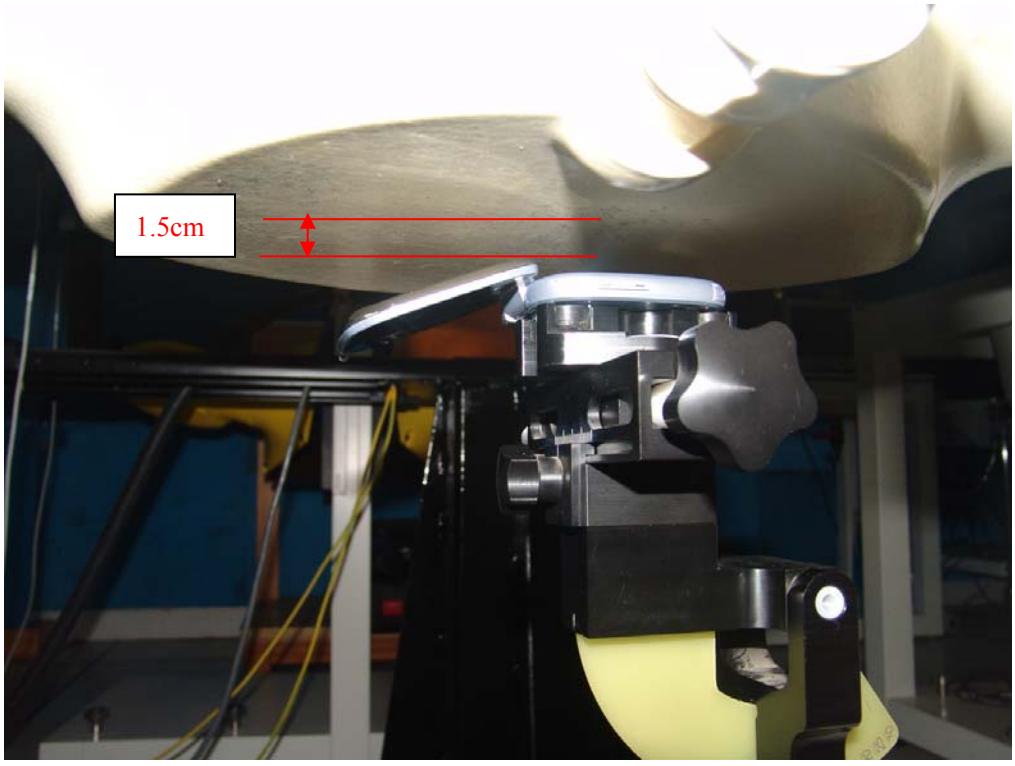
Picture B3 Liquid depth in the Flat Phantom (1900MHz)

Picture B4: Left Hand Touch Cheek Position

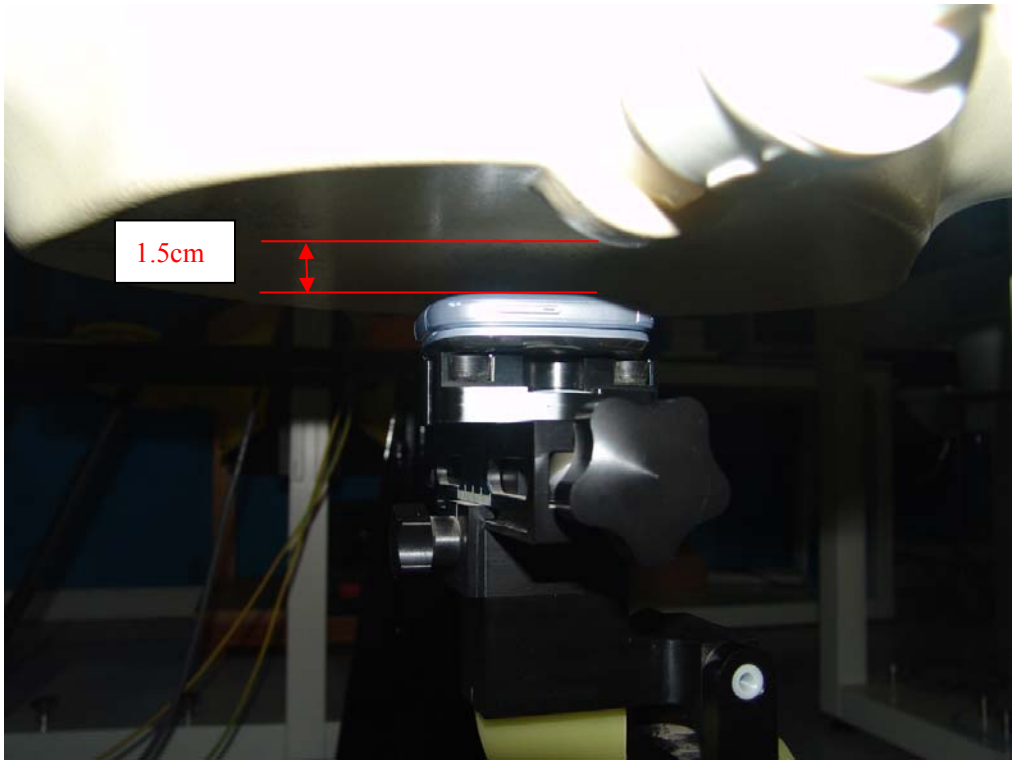
Picture B5: Left Hand Tilt 15° Position

Picture B6: Right Hand Touch Cheek Position

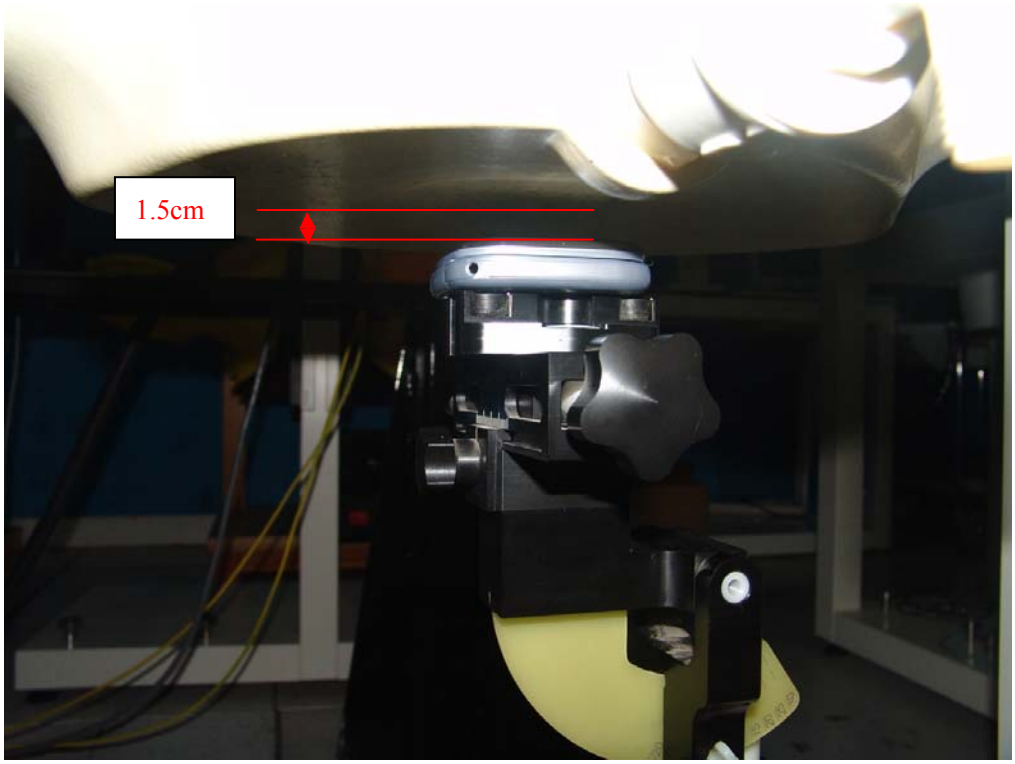
Picture B7: Right Hand Tilt 15° Position



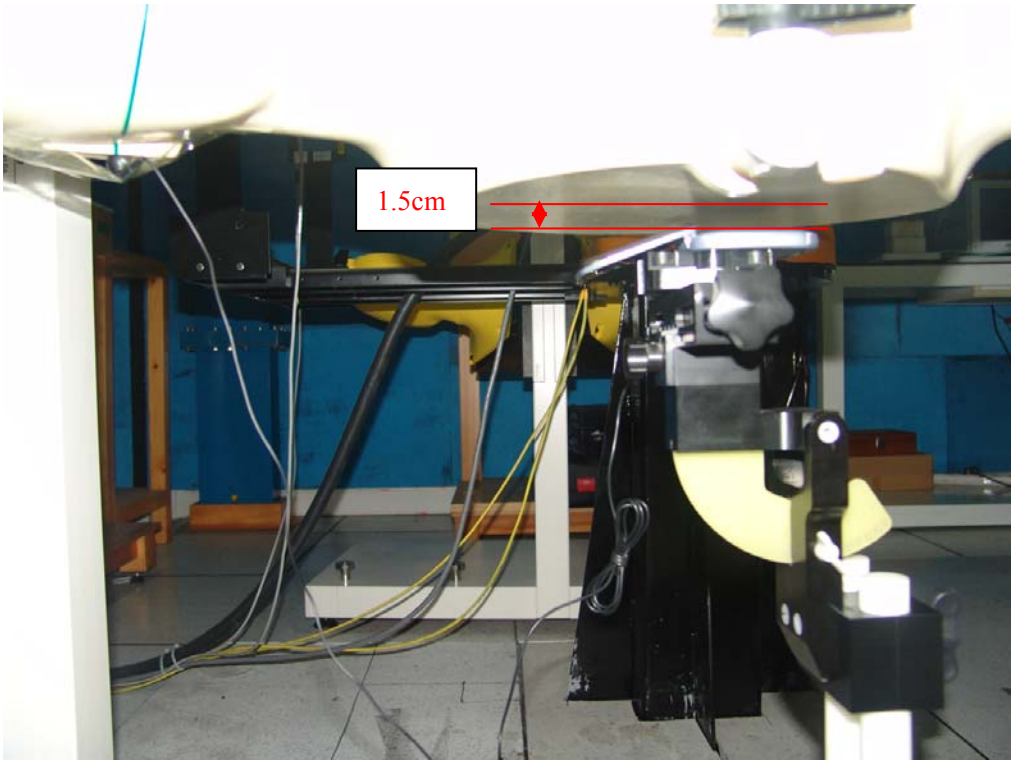
Picture B8: Body-worn Position (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm) - unfolded



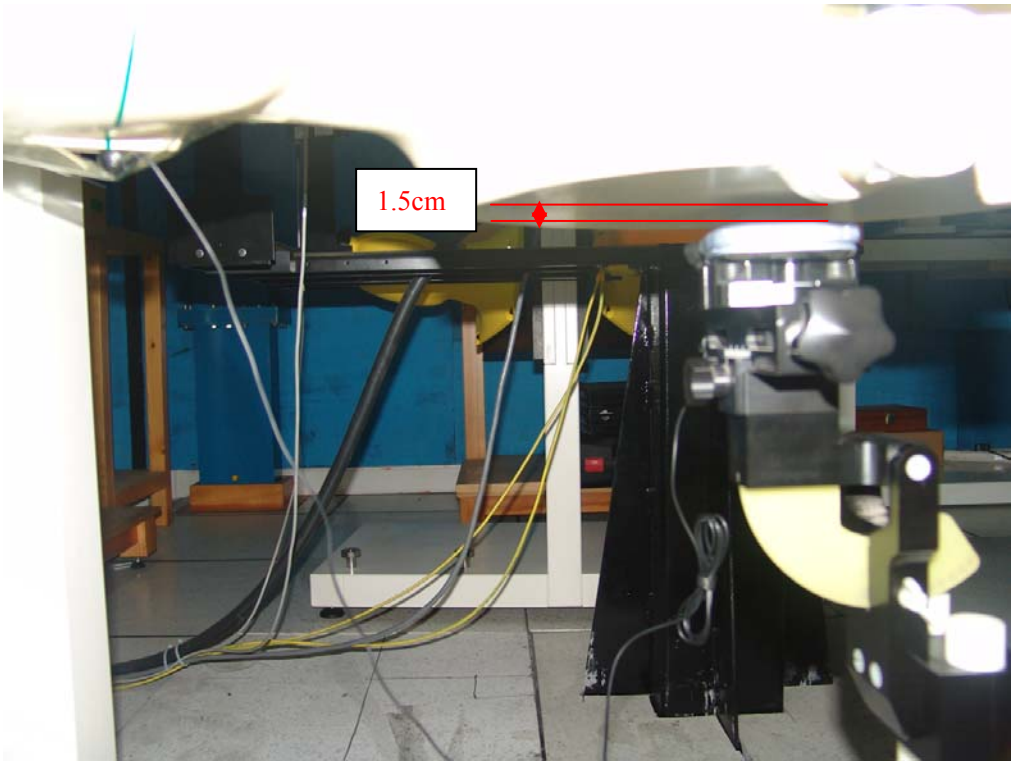
Picture B9: Body-worn Position (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm) - folded



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



Picture B11: Body-worn Position with Headset (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm) - unfolded



Picture B12: Body-worn Position with Headset (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm) - folded

ANNEX C GRAPH RESULTS

850 Left Cheek High

Date/Time: 2011-8-24 8:31:09
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.91 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek High/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.902 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.6 V/m; Power Drift = -0.075 dB
Peak SAR (extrapolated) = 1.42 W/kg
SAR(1 g) = 0.865 mW/g; SAR(10 g) = 0.568 mW/g
Maximum value of SAR (measured) = 0.919 mW/g

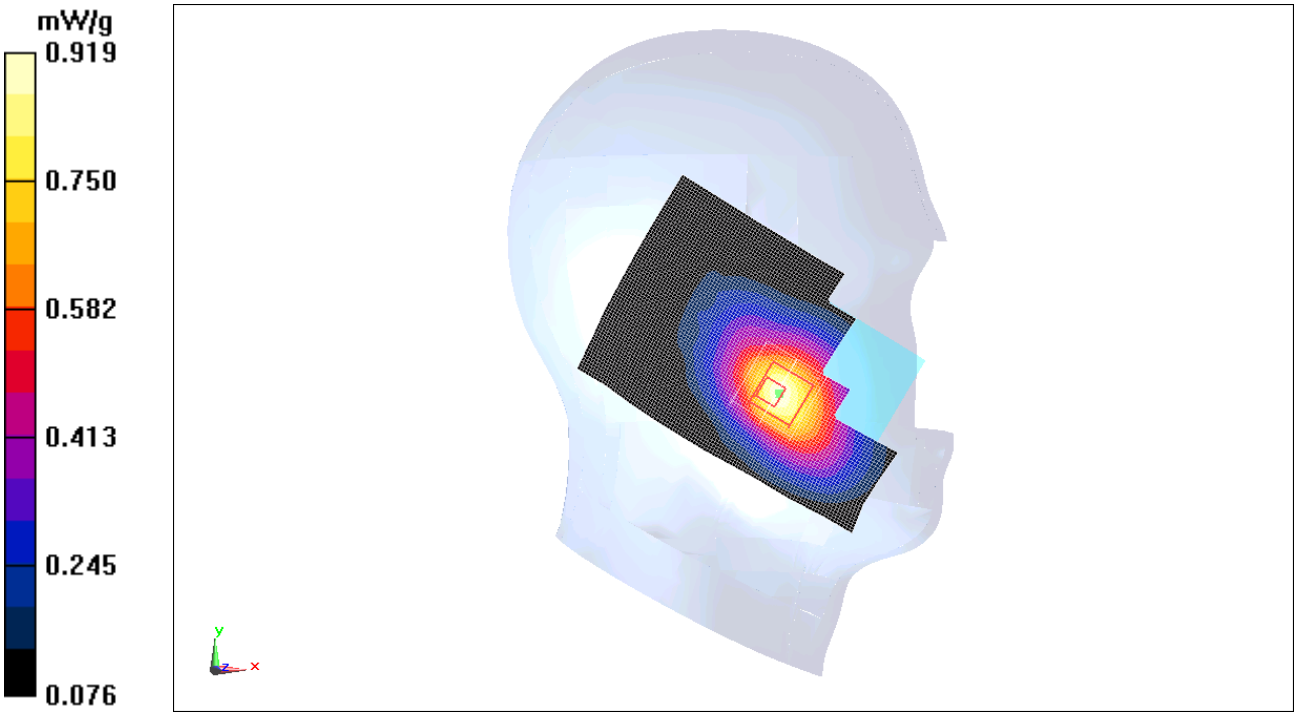


Fig. 1 850MHz CH251

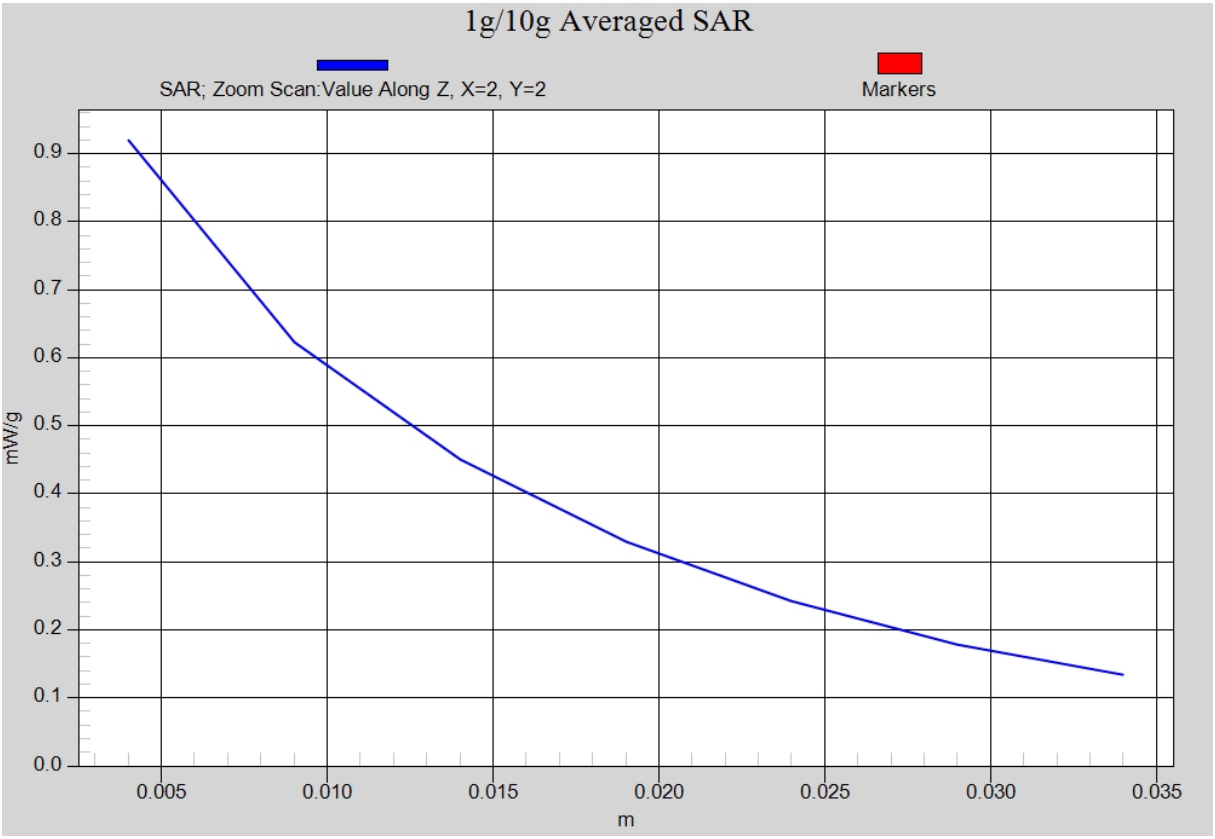


Fig. 1-1 Z-Scan at power reference point (850 MHz CH251)

850 Left Cheek Middle

Date/Time: 2011-8-24 8:45:30
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.898 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek Middle/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.776 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.76 V/m; Power Drift = -0.139 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.487 mW/g
Maximum value of SAR (measured) = 0.804 mW/g

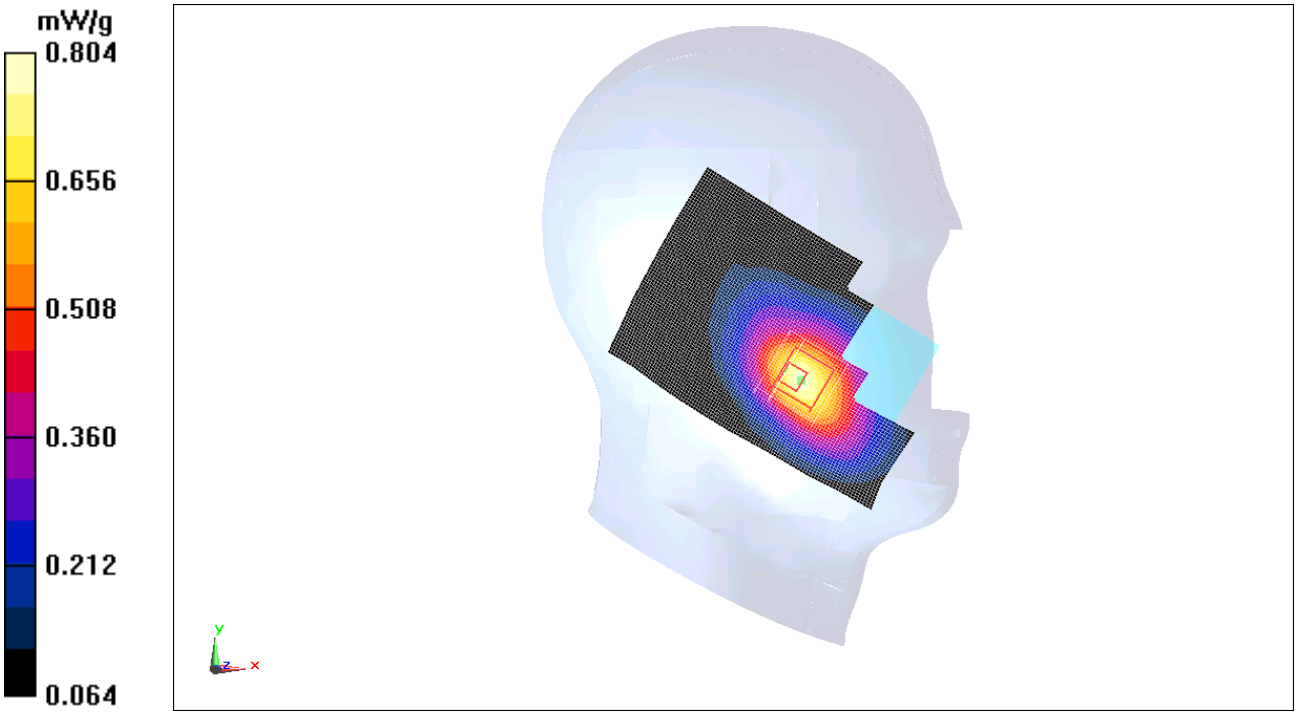


Fig. 2 850 MHz CH190

850 Left Cheek Low

Date/Time: 2011-8-24 8:59:52
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.886 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek Low/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.618 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.7 V/m; Power Drift = -0.00991 dB
Peak SAR (extrapolated) = 0.988 W/kg
SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.393 mW/g
Maximum value of SAR (measured) = 0.642 mW/g

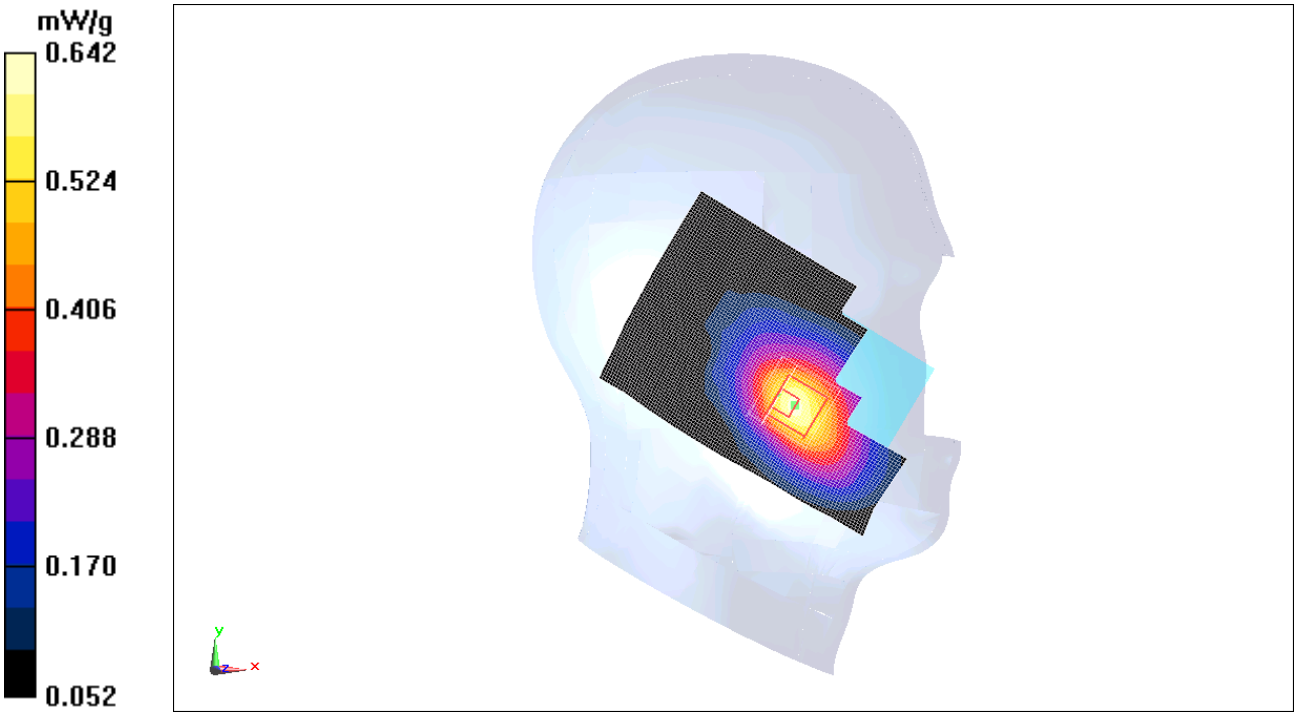


Fig. 3 850 MHz CH128

850 Left Tilt High

Date/Time: 2011-8-24 9:14:27
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.91 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt High/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.367 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = -0.144 dB
Peak SAR (extrapolated) = 0.446 W/kg
SAR(1 g) = 0.347 mW/g; SAR(10 g) = 0.260 mW/g
Maximum value of SAR (measured) = 0.365 mW/g

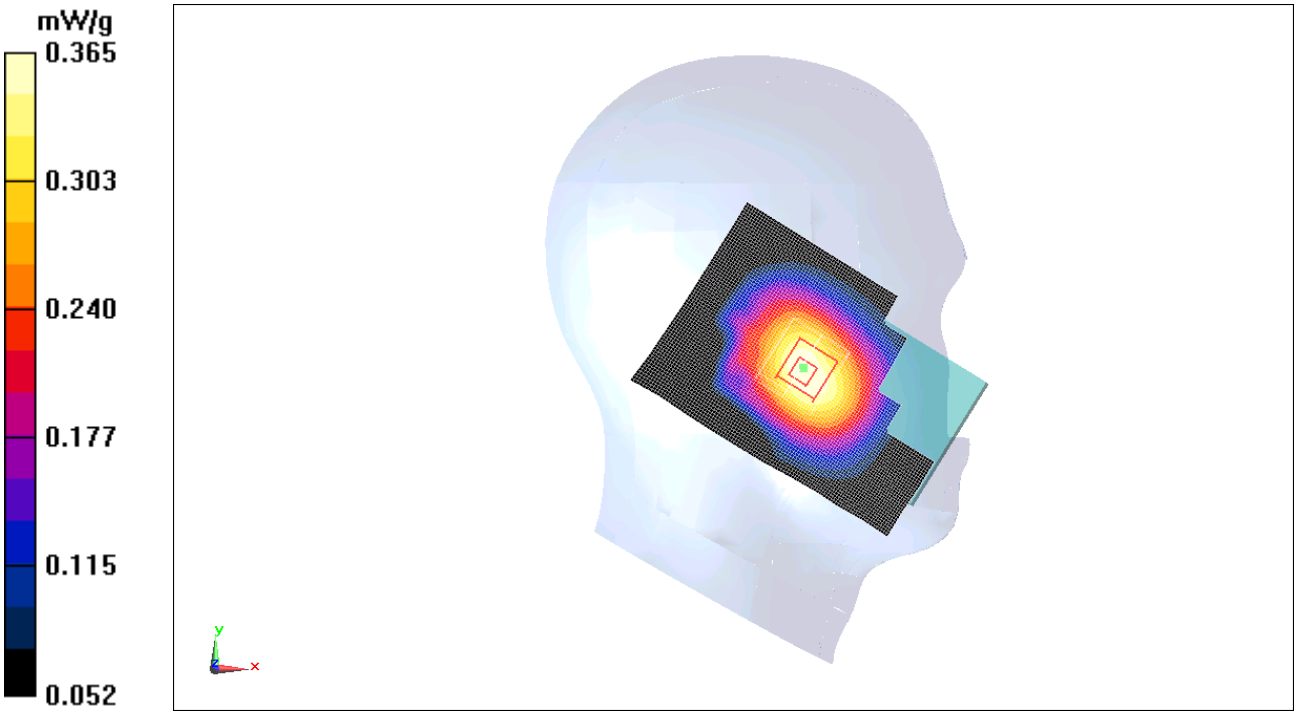


Fig.4 850 MHz CH251

850 Left Tilt Middle

Date/Time: 2011-8-24 9:28:45
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.898 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt Middle/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.292 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.125 dB
Peak SAR (extrapolated) = 0.354 W/kg
SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.208 mW/g
Maximum value of SAR (measured) = 0.288 mW/g

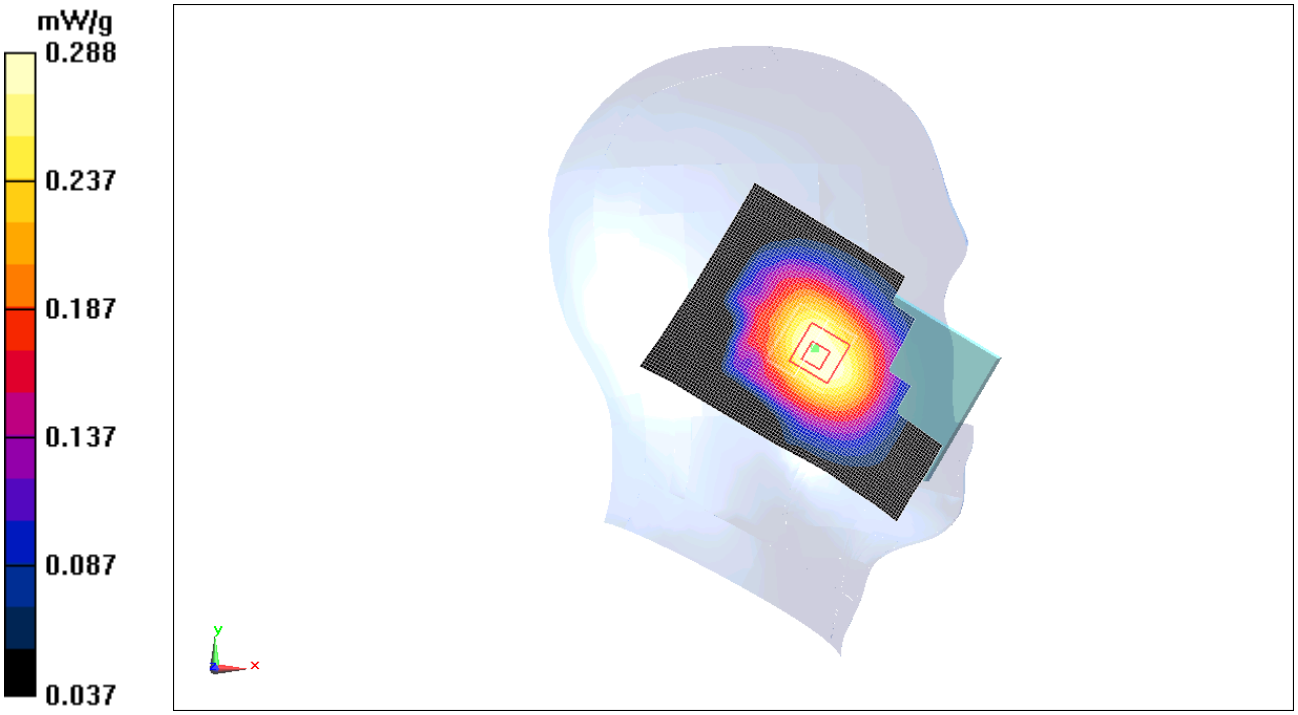


Fig.5 850 MHz CH190

850 Left Tilt Low

Date/Time: 2011-8-24 9:43:04
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.886 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt Low/Area Scan (71x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.241 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.86 V/m; Power Drift = -0.035 dB
Peak SAR (extrapolated) = 0.291 W/kg
SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.172 mW/g
Maximum value of SAR (measured) = 0.237 mW/g

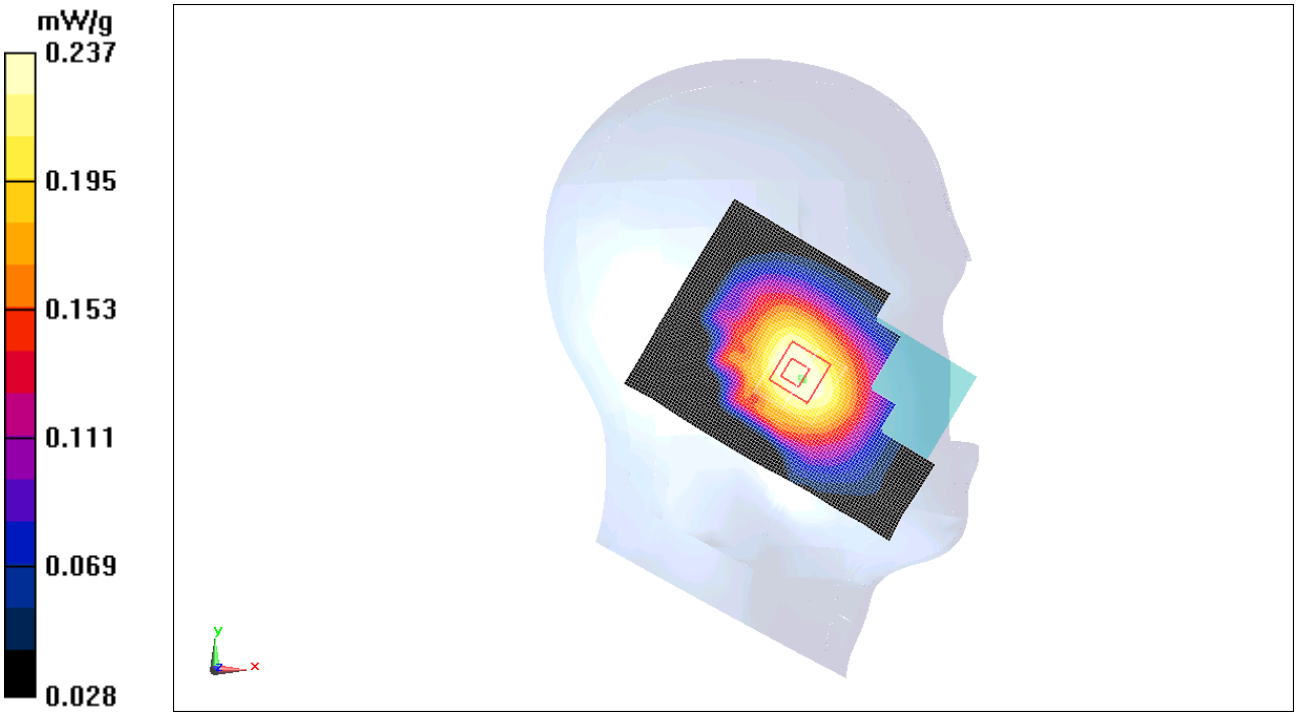


Fig. 6 850 MHz CH128

850 Right Cheek High

Date/Time: 2011-8-24 9:57:55
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.91 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.685 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.03 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.635 mW/g; SAR(10 g) = 0.473 mW/g
Maximum value of SAR (measured) = 0.669 mW/g

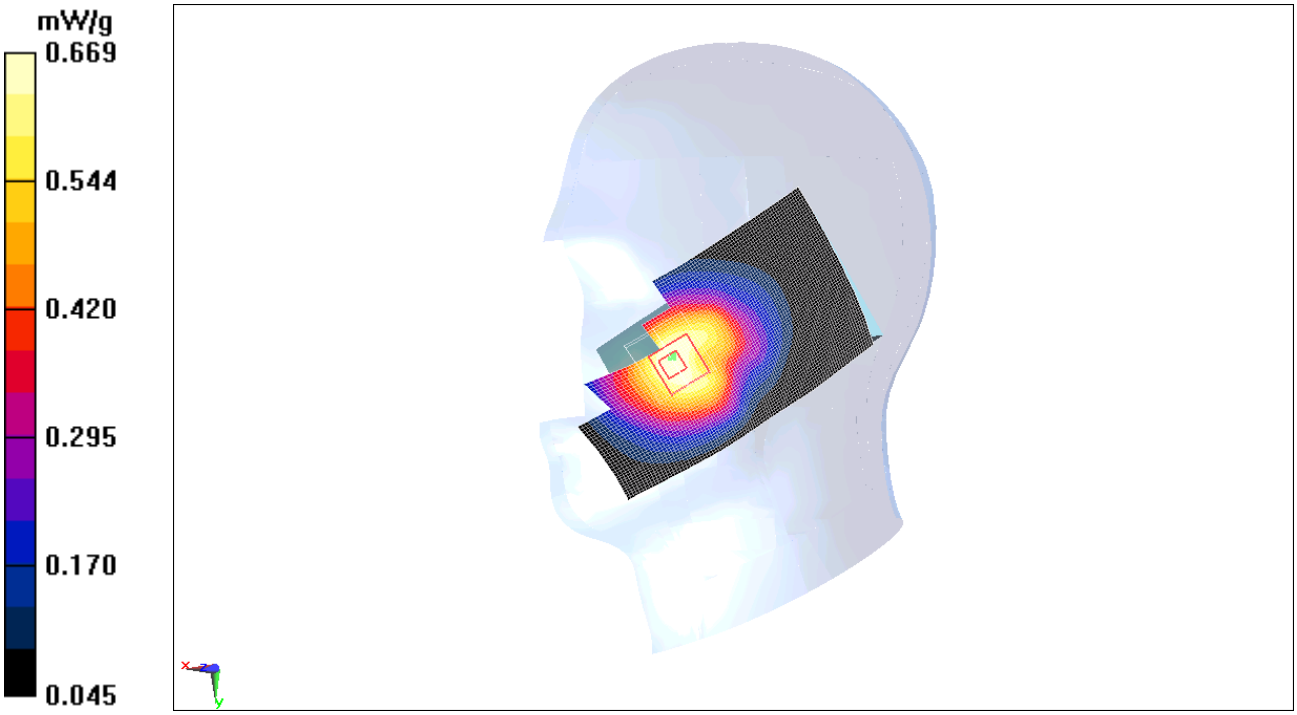


Fig. 7 850 MHz CH251

850 Right Cheek Middle

Date/Time: 2011-8-24 10:12:14
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.898 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.581 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.59 V/m; Power Drift = -0.074 dB
Peak SAR (extrapolated) = 0.695 W/kg
SAR(1 g) = 0.537 mW/g; SAR(10 g) = 0.399 mW/g
Maximum value of SAR (measured) = 0.566 mW/g

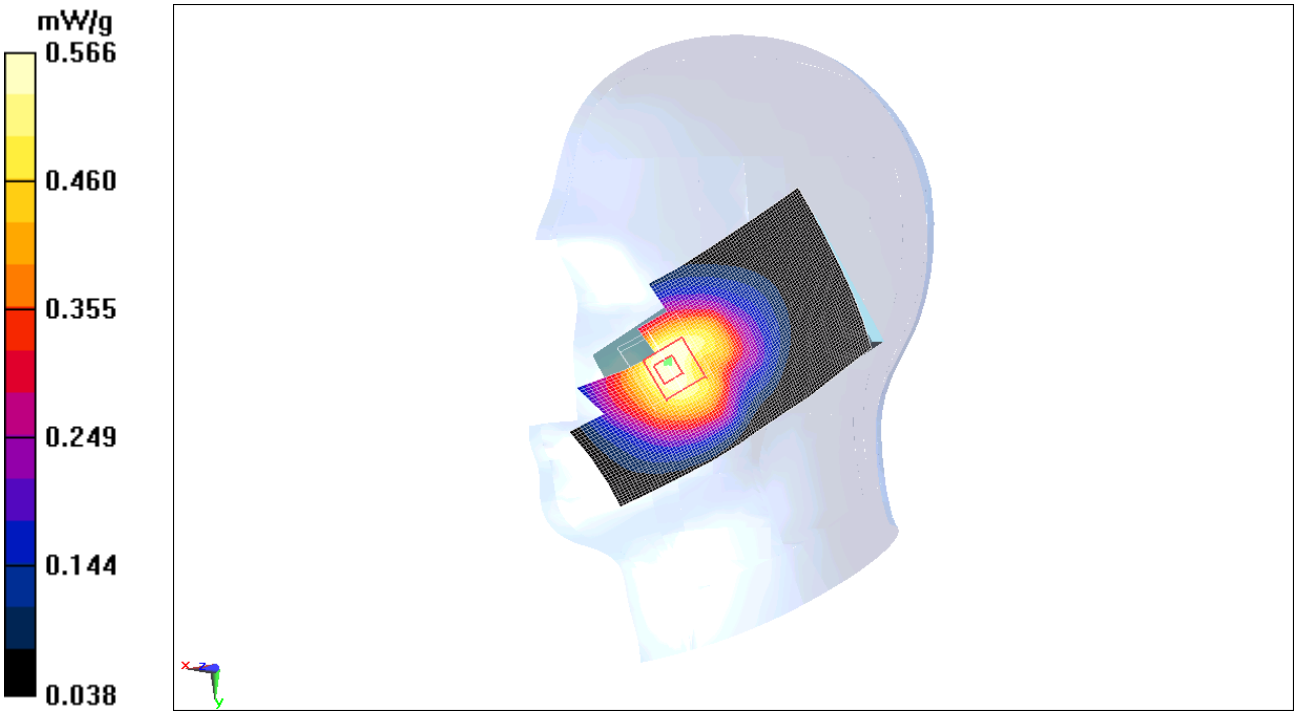


Fig. 8 850 MHz CH190

850 Right Cheek Low

Date/Time: 2011-8-24 10:26:39
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.886 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.471 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.03 V/m; Power Drift = 0.067 dB
Peak SAR (extrapolated) = 0.571 W/kg
SAR(1 g) = 0.436 mW/g; SAR(10 g) = 0.325 mW/g
Maximum value of SAR (measured) = 0.462 mW/g

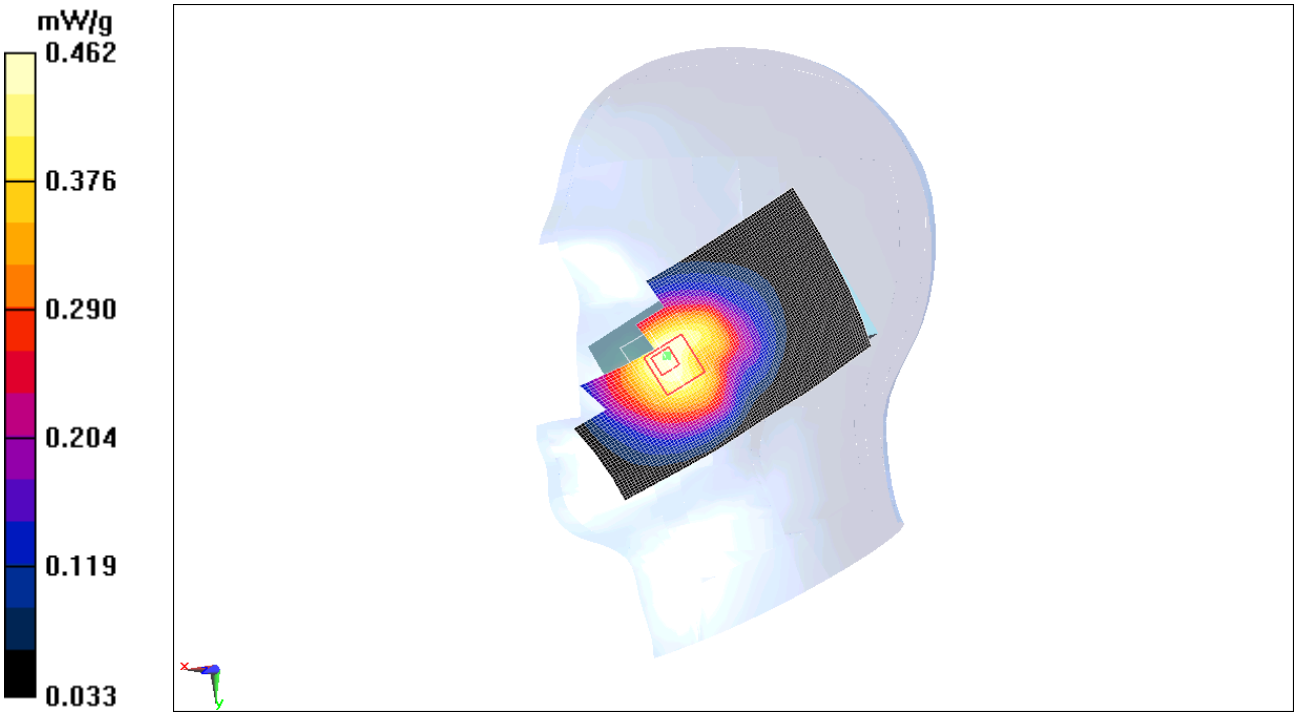


Fig. 9 850 MHz CH128

850 Right Tilt High

Date/Time: 2011-8-24 10:41:02
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.91 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.363 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = -0.045 dB
Peak SAR (extrapolated) = 0.444 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.260 mW/g
Maximum value of SAR (measured) = 0.360 mW/g

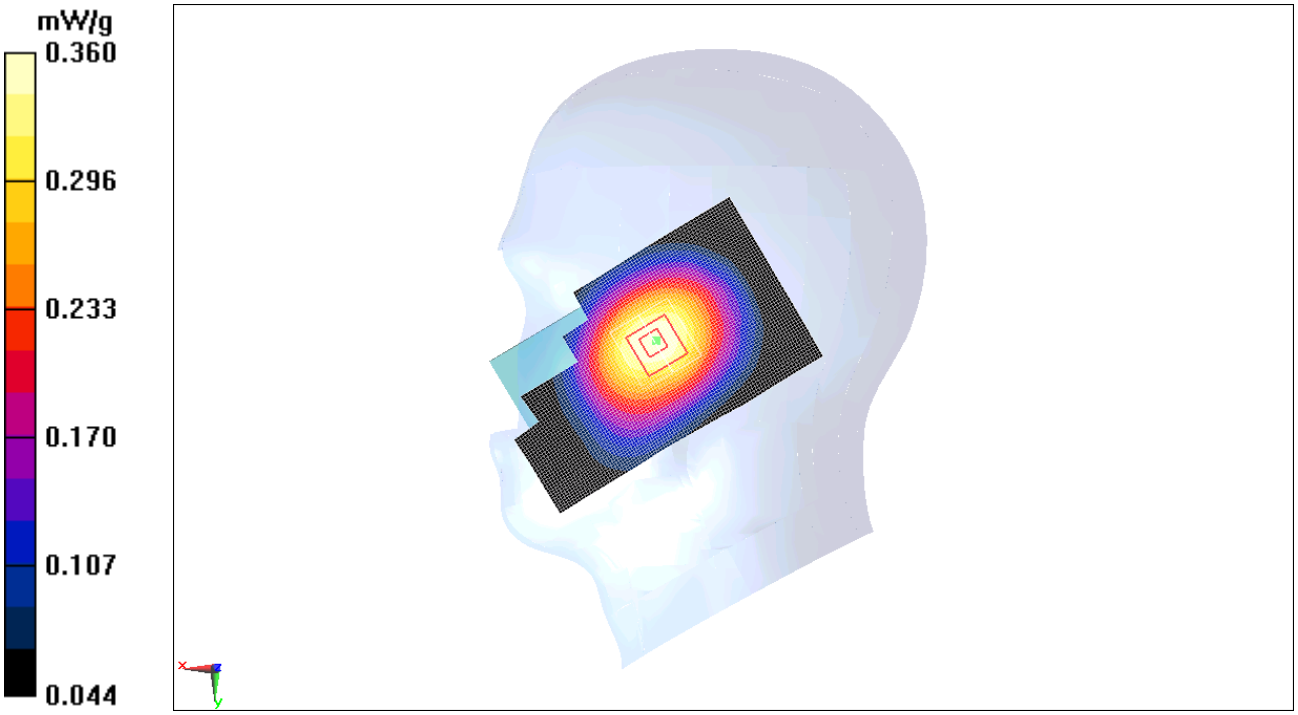


Fig.10 850 MHz CH251

850 Right Tilt Middle

Date/Time: 2011-8-24 10:55:23
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.898 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.310 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = -0.087 dB
Peak SAR (extrapolated) = 0.377 W/kg
SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.223 mW/g
Maximum value of SAR (measured) = 0.308 mW/g

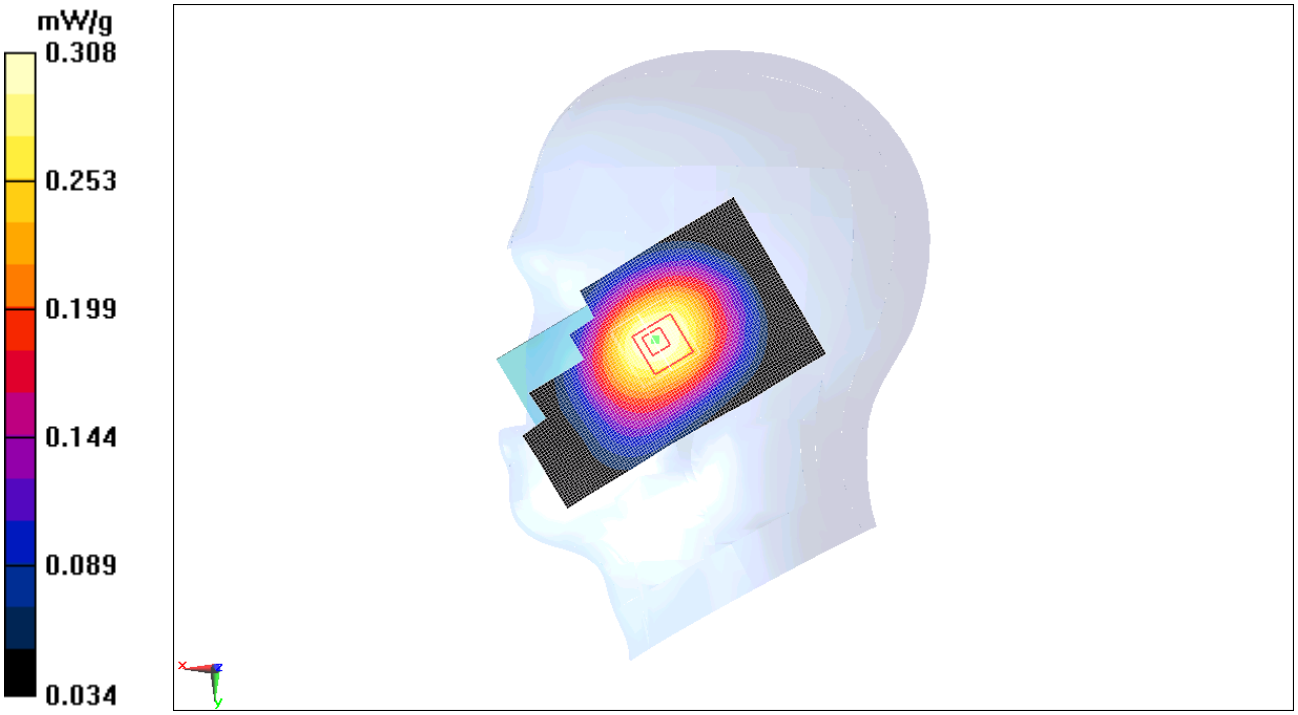


Fig.11 850 MHz CH190

850 Right Tilt Low
Date/Time: 2011-8-24 11:09:40
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.886 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Tilt Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.267 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.76 V/m; Power Drift = -0.050 dB
Peak SAR (extrapolated) = 0.325 W/kg
SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.192 mW/g
Maximum value of SAR (measured) = 0.265 mW/g

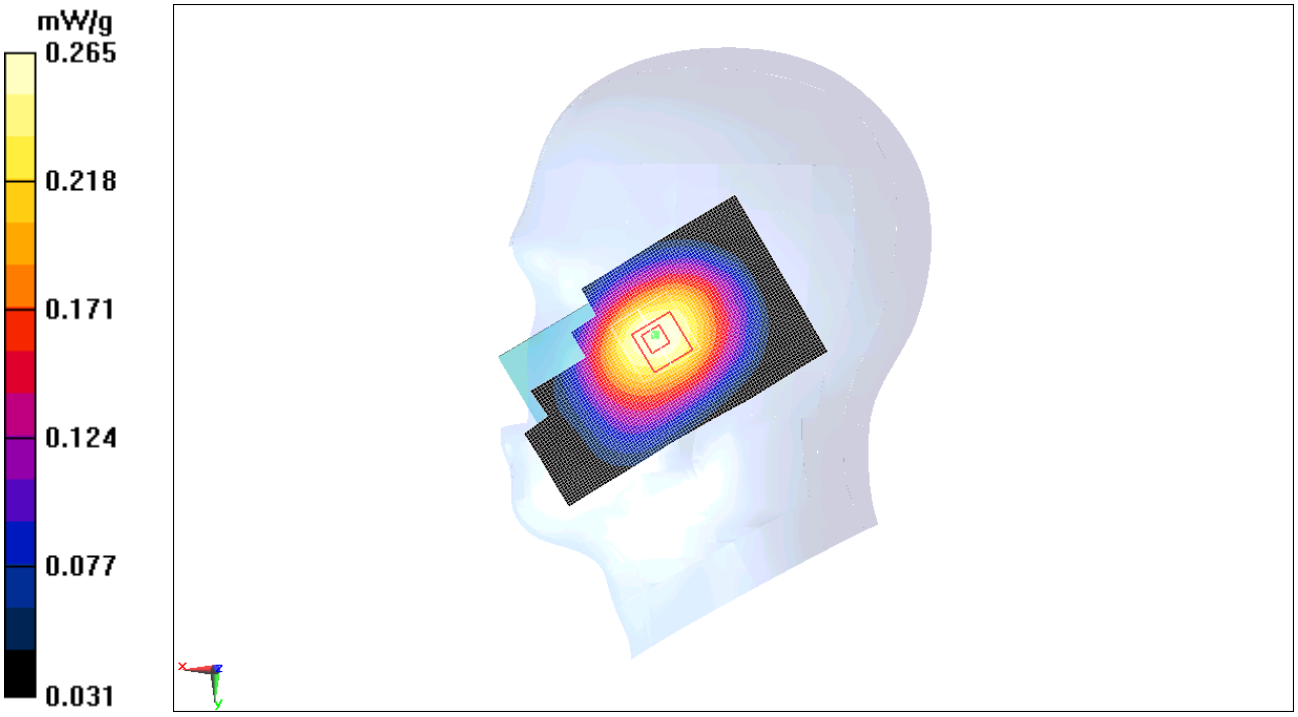


Fig. 12 850 MHz CH128

1900 Left Cheek High

Date/Time: 2011-8-25 8:48:01
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

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

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.05 V/m; Power Drift = 0.194 dB
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.524 mW/g; SAR(10 g) = 0.309 mW/g
Maximum value of SAR (measured) = 0.548 mW/g

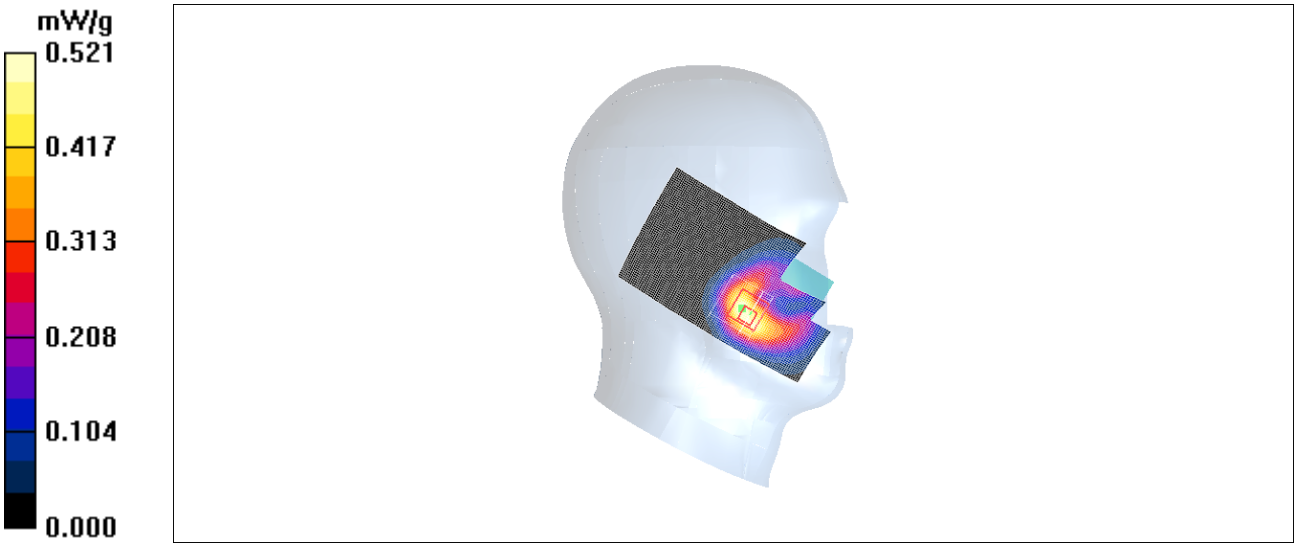


Fig. 13 1900 MHz CH810

1900 Left Cheek Middle

Date/Time: 2011-8-25 9:02:23
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.602 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.06 V/m; Power Drift = 0.113 dB
Peak SAR (extrapolated) = 0.901 W/kg
SAR(1 g) = 0.619 mW/g; SAR(10 g) = 0.370 mW/g
Maximum value of SAR (measured) = 0.648 mW/g

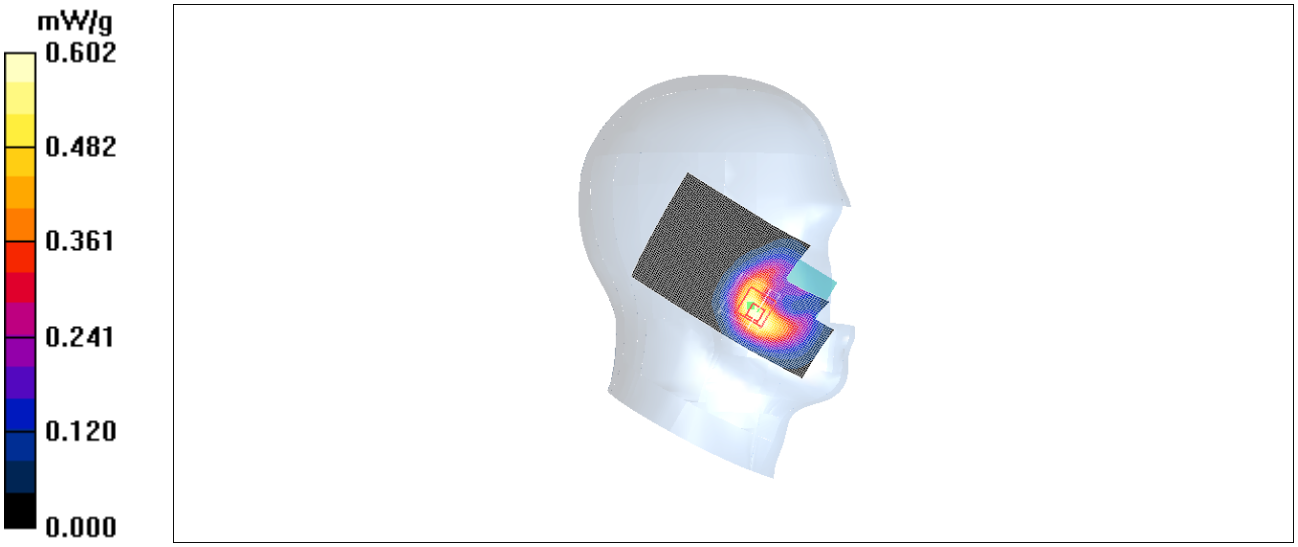


Fig. 14 1900 MHz CH661

1900 Left Cheek Low
Date/Time: 2011-8-25 9:16:45
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; εr = 40.9; 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) = 0.748 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.76 V/m; Power Drift = 0.171 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.448 mW/g
Maximum value of SAR (measured) = 0.782 mW/g

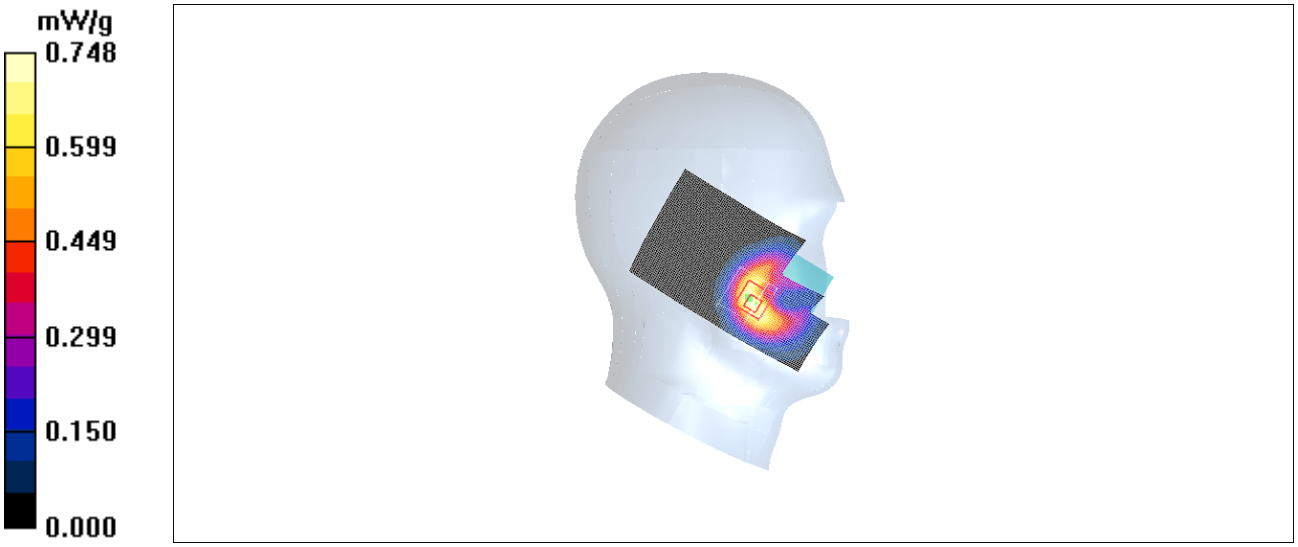


Fig. 15 1900 MHz CH512

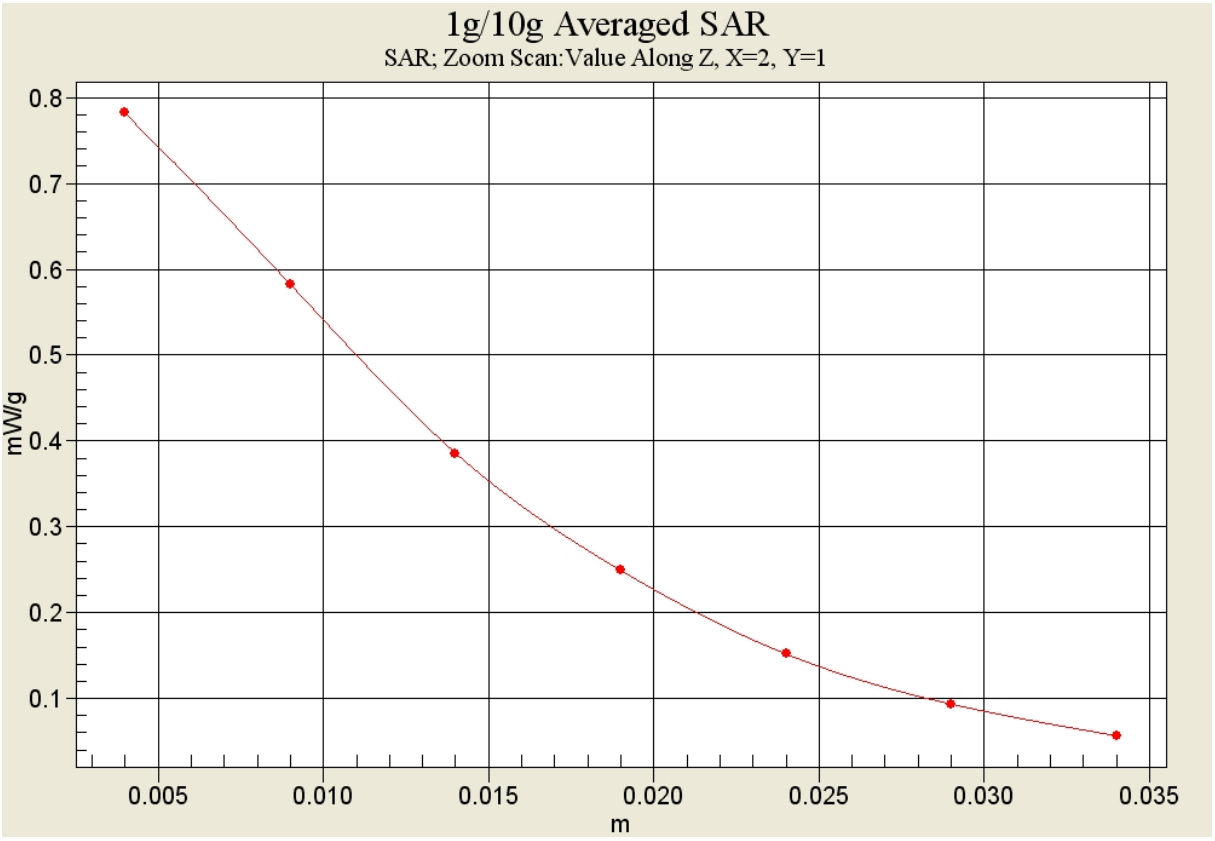


Fig. 15-1 Z-Scan at power reference point (1900 MHz CH512)

1900 Left Tilt High

Date/Time: 2011-8-25 9:31:07
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.095 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.55 V/m; Power Drift = 0.077 dB
Peak SAR (extrapolated) = 0.130 W/kg
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.058 mW/g
Maximum value of SAR (measured) = 0.096 mW/g

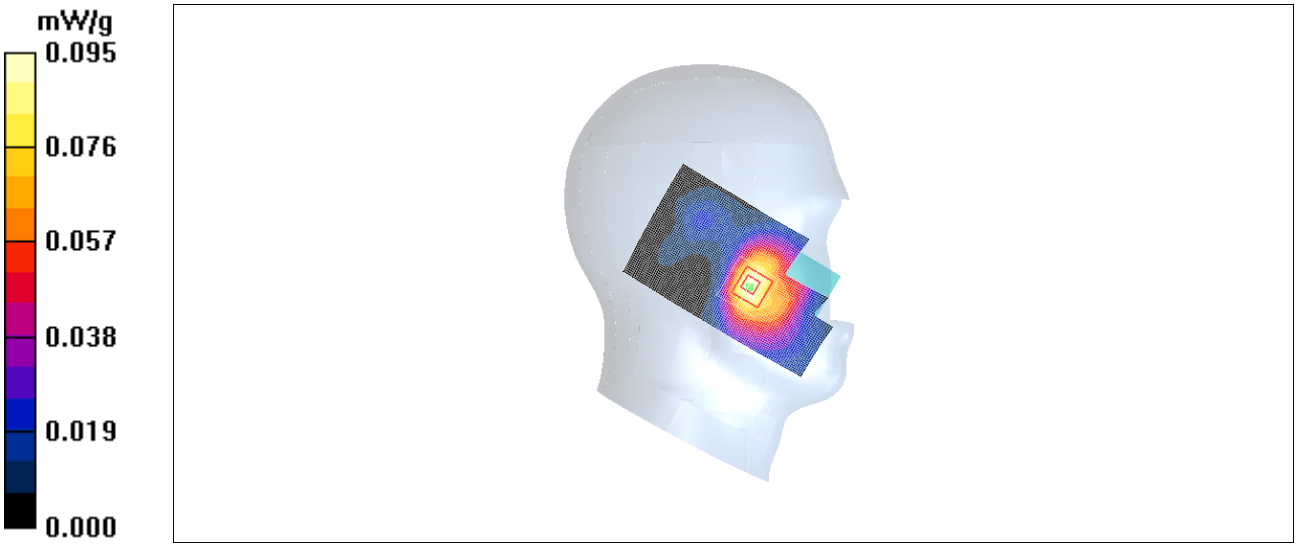


Fig.16 1900 MHz CH810

1900 Left Tilt Middle

Date/Time: 2011-8-25 9:45:30
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.124 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.34 V/m; Power Drift = 0.139 dB
Peak SAR (extrapolated) = 0.168 W/kg
SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.073 mW/g
Maximum value of SAR (measured) = 0.124 mW/g

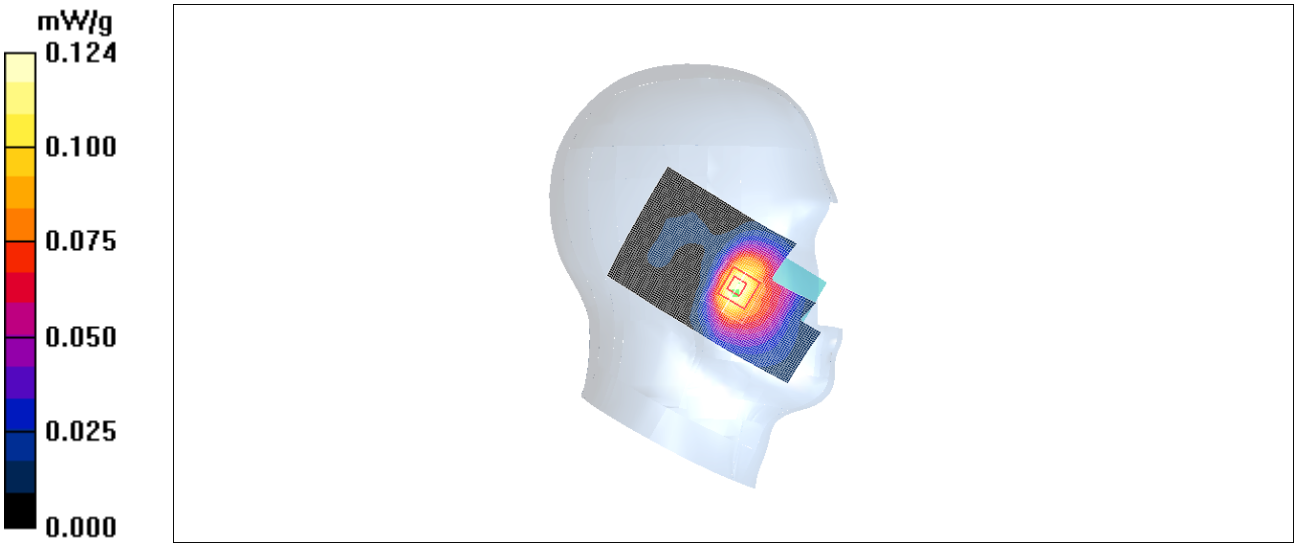


Fig. 17 1900 MHz CH661

1900 Left Tilt Low
Date/Time: 2011-8-25 9:59:53
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; εr = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.127 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.01 V/m; Power Drift = 0.193 dB
Peak SAR (extrapolated) = 0.171 W/kg
SAR(1 g) = 0.117 mW/g; SAR(10 g) = 0.075 mW/g
Maximum value of SAR (measured) = 0.125 mW/g

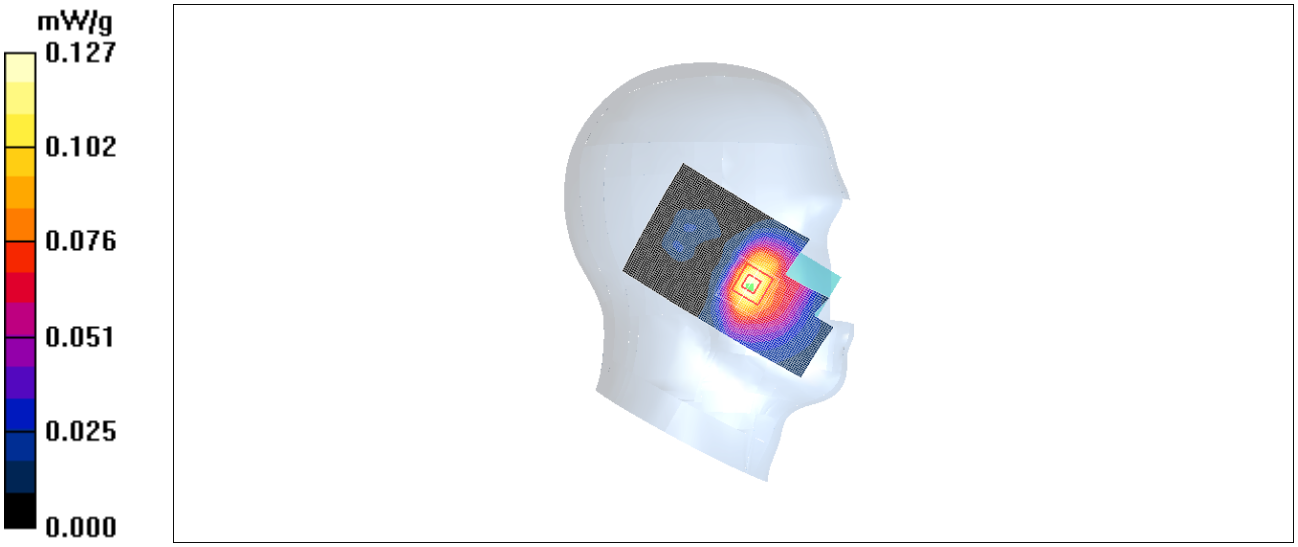


Fig. 18 1900 MHz CH512

1900 Right Cheek High

Date/Time: 2011-8-25 10:14:35
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Cheek High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.481 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.11 V/m; Power Drift = 0.123 dB
Peak SAR (extrapolated) = 0.668 W/kg
SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.223 mW/g
Maximum value of SAR (measured) = 0.468 mW/g

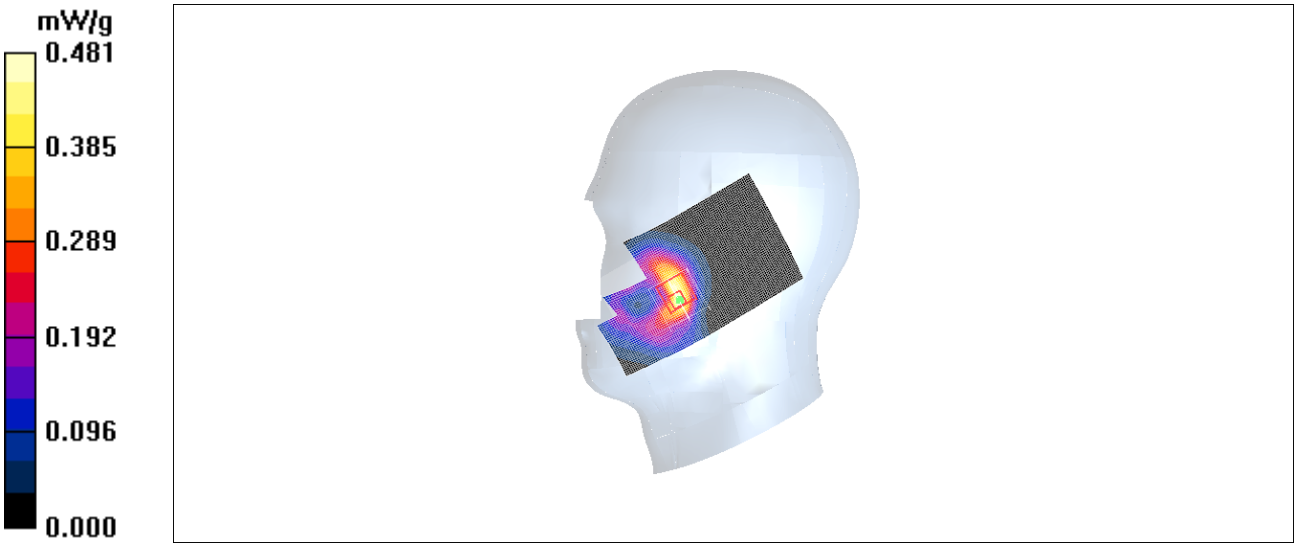


Fig. 19 1900 MHz CH810

1900 Right Cheek Middle
Date/Time: 2011-8-25 10:28:56
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Cheek Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.472 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.13 V/m; Power Drift = 0.192 dB
Peak SAR (extrapolated) = 0.666 W/kg
SAR(1 g) = 0.420 mW/g; SAR(10 g) = 0.236 mW/g
Maximum value of SAR (measured) = 0.479 mW/g

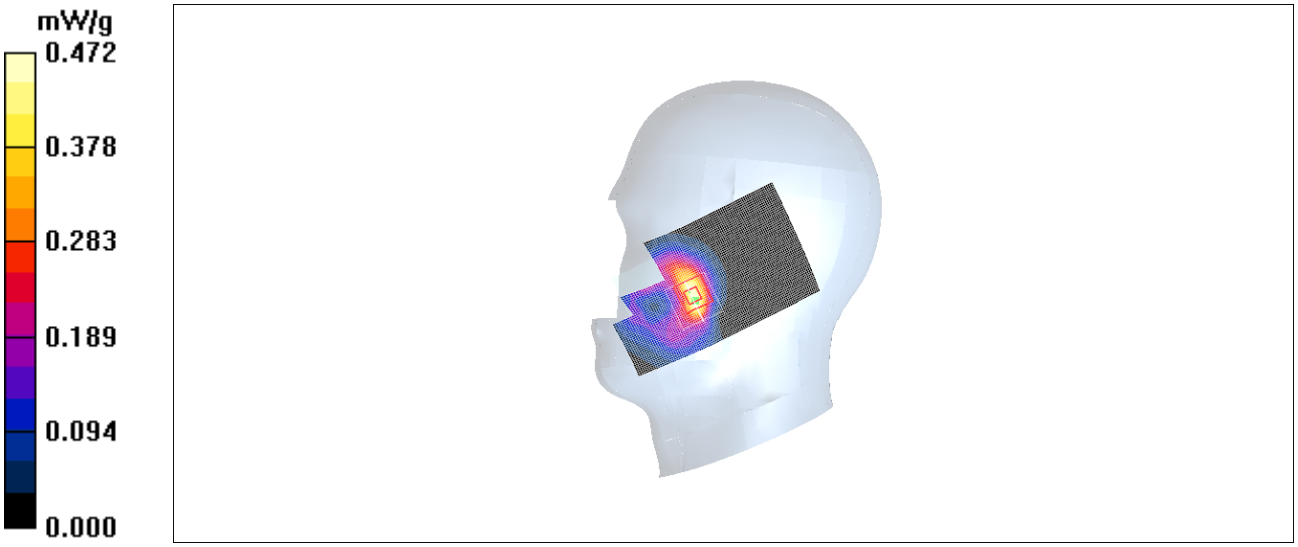


Fig. 20 1900 MHz CH661

1900 Right Cheek Low

Date/Time: 2011-8-25 10:43:22
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; εr = 40.9; 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) = 0.694 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.37 V/m; Power Drift = 0.131 dB
Peak SAR (extrapolated) = 0.863 W/kg
SAR(1 g) = 0.588 mW/g; SAR(10 g) = 0.350 mW/g
Maximum value of SAR (measured) = 0.658 mW/g

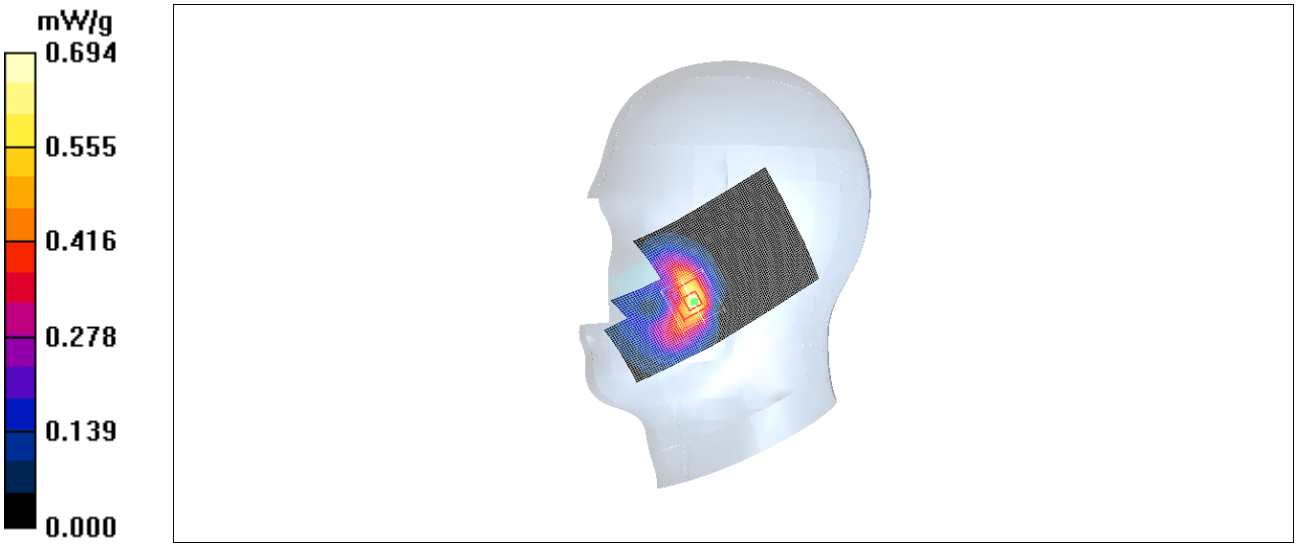


Fig. 21 1900 MHz CH512

1900 Right Tilt High

Date/Time: 2011-8-25 10:57:58
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.43 mho/m; εr = 40.7; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt High/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.081 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.72 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.077 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.081 mW/g

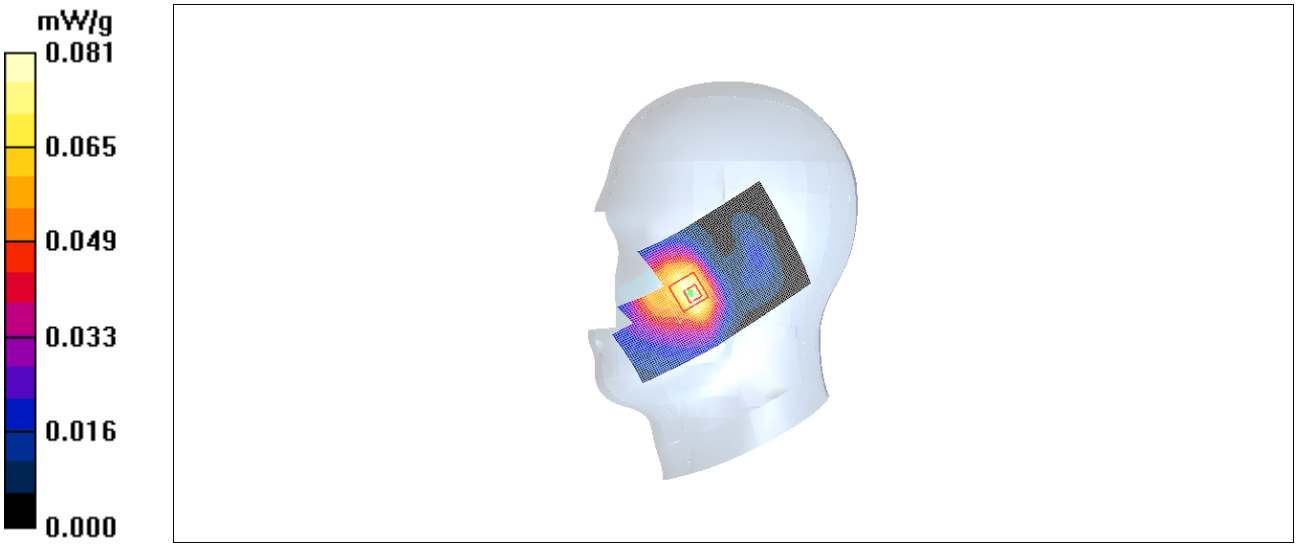


Fig. 22 1900 MHz CH810

1900 Right Tilt Middle
Date/Time: 2011-8-25 11:12:20
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.41 mho/m; εr = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt Middle/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.089 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.63 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.055 mW/g
Maximum value of SAR (measured) = 0.090 mW/g

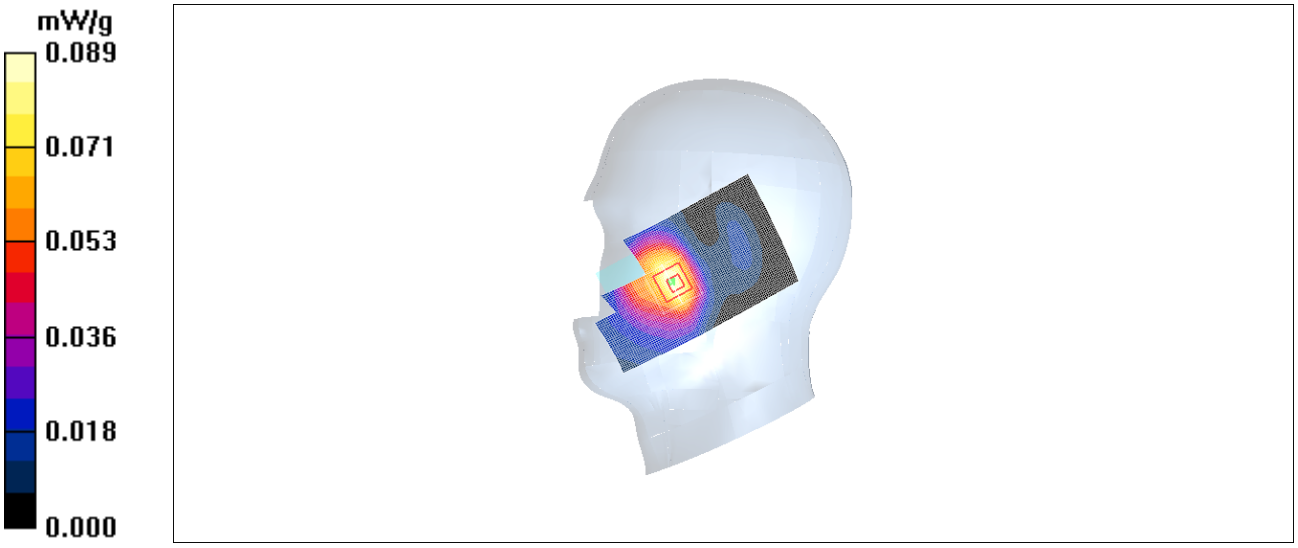


Fig.23 1900 MHz CH661

1900 Right Tilt Low

Date/Time: 2011-8-25 11:26:41
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.38 mho/m; εr = 40.9; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

Tilt Low/Area Scan (61x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.109 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.59 V/m; Power Drift = 0.121 dB
Peak SAR (extrapolated) = 0.145 W/kg
SAR(1 g) = 0.101 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.106 mW/g

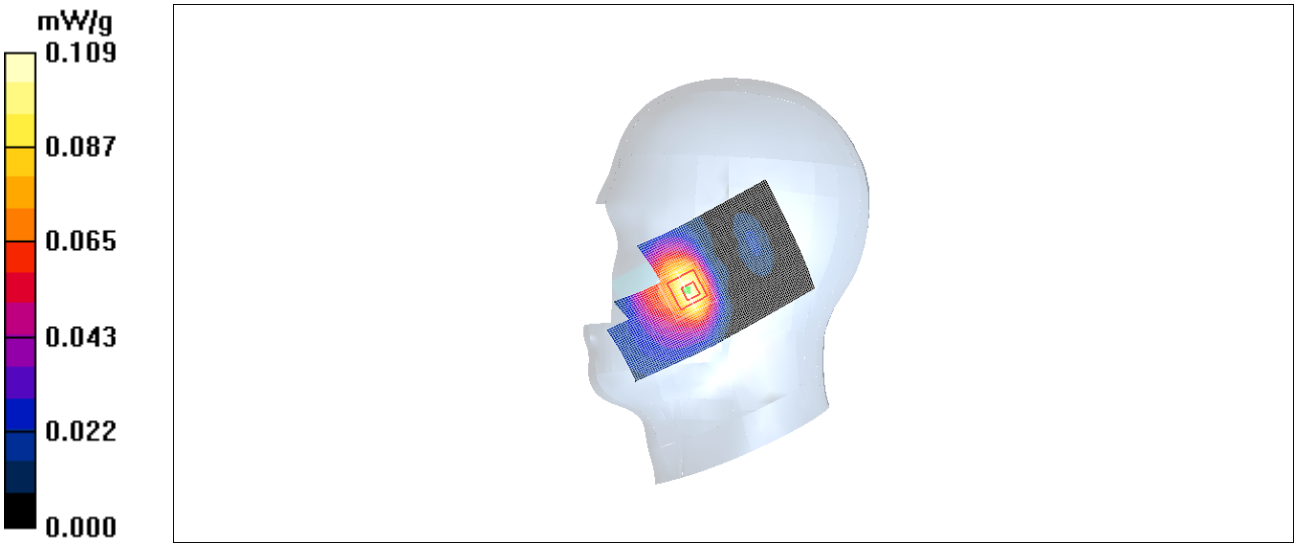


Fig.24 1900 MHz CH512

850 Body Folded Towards Ground High with GPRS

Date/Time: 2011-8-24 11:42:25
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.97 mho/m; εr = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground High/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.370 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.3 V/m; Power Drift = -0.002 dB
Peak SAR (extrapolated) = 0.498 W/kg
SAR(1 g) = 0.343 mW/g; SAR(10 g) = 0.227 mW/g
Maximum value of SAR (measured) = 0.368 mW/g

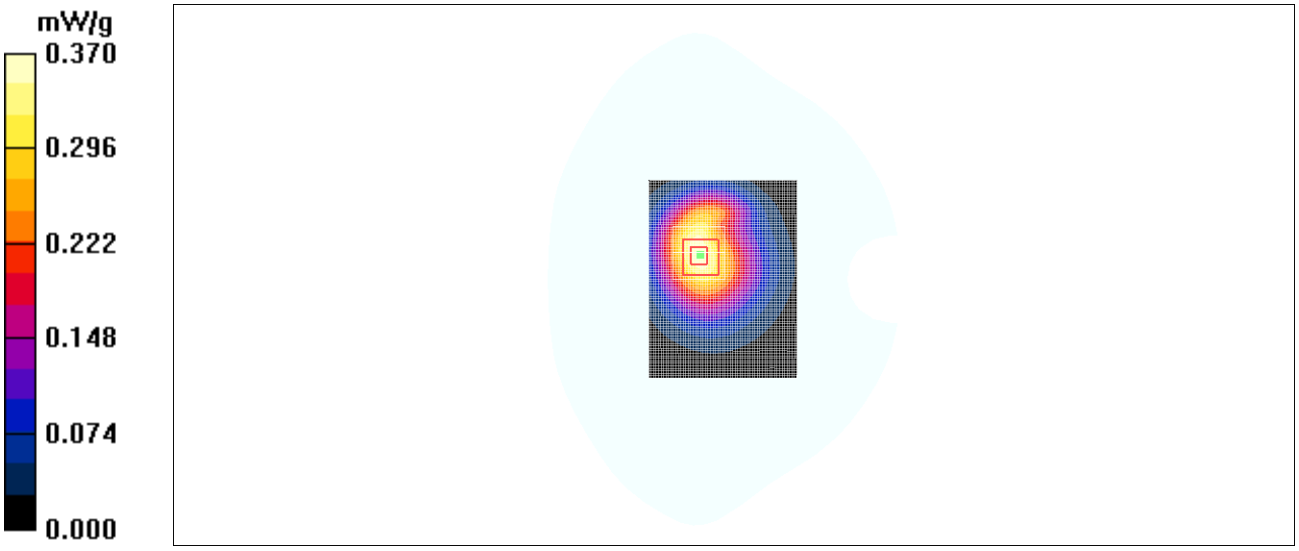


Fig. 25 850 MHz CH251

850 Body Folded Towards Ground Middle with GPRS

Date/Time: 2011-8-24 11:57:48
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; εr = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Middle/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.390 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.9 V/m; Power Drift = -0.071 dB
Peak SAR (extrapolated) = 0.518 W/kg
SAR(1 g) = 0.360 mW/g; SAR(10 g) = 0.240 mW/g
Maximum value of SAR (measured) = 0.387 mW/g

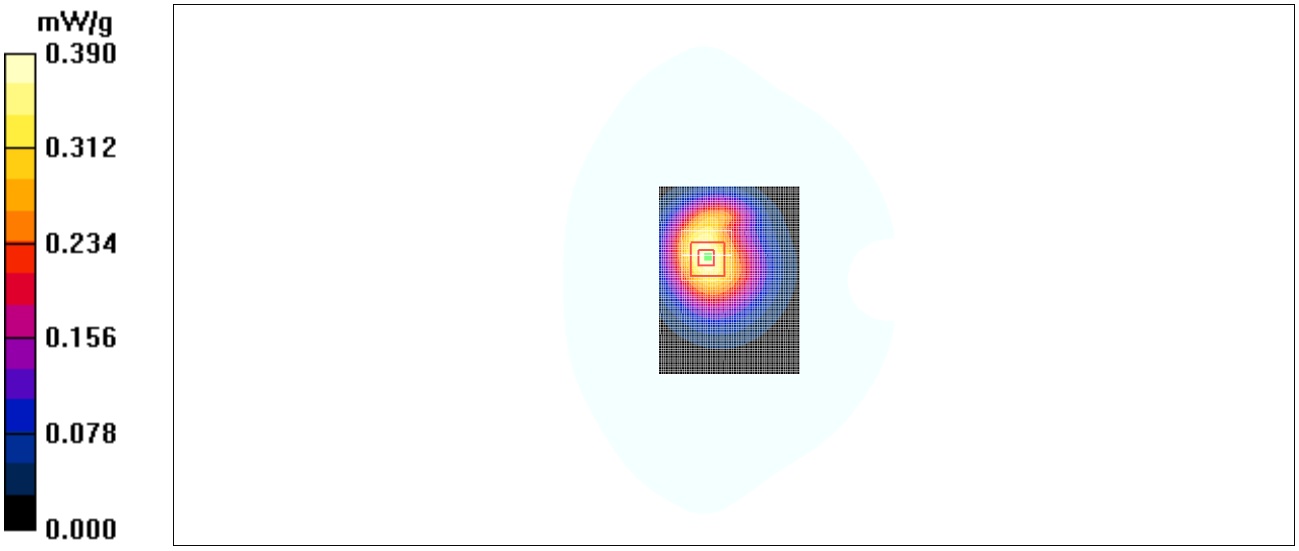


Fig. 26 850 MHz CH190

850 Body Folded Towards Ground Low with GPRS

Date/Time: 2011-8-24 12:13:15
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.512 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.1 V/m; Power Drift = 0.062 dB
Peak SAR (extrapolated) = 0.687 W/kg
SAR(1 g) = 0.477 mW/g; SAR(10 g) = 0.316 mW/g
Maximum value of SAR (measured) = 0.510 mW/g

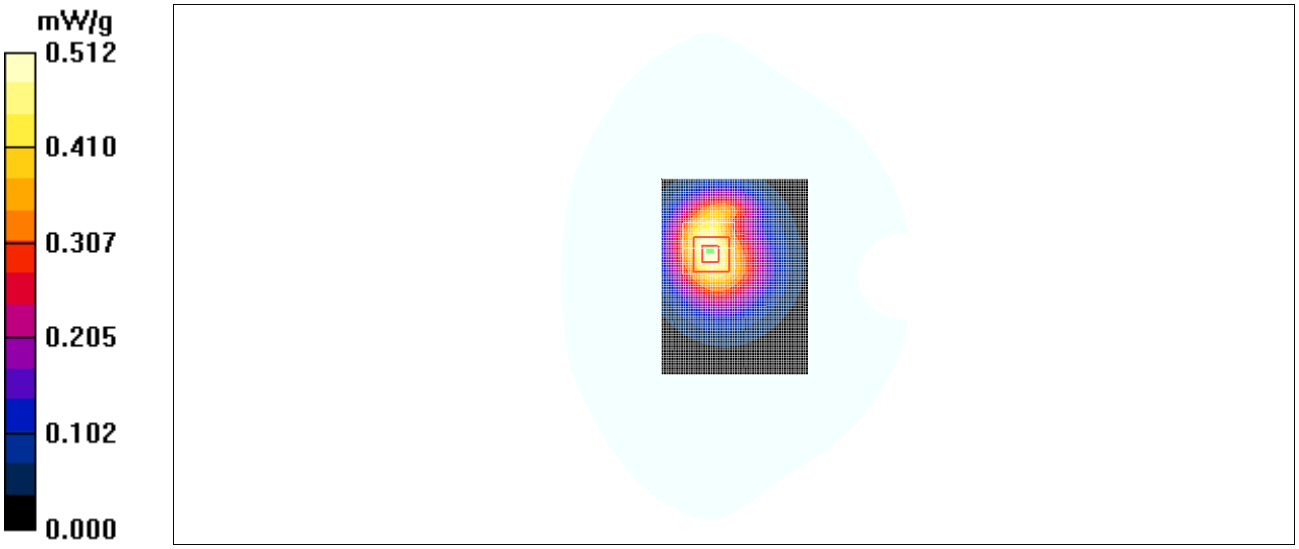


Fig. 27 850 MHz CH128

850 Body Folded Towards Phantom High with GPRS

Date/Time: 2011-8-24 12:28:46
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.97 mho/m; εr = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Phantom High/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.143 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.3 V/m; Power Drift = -0.005 dB
Peak SAR (extrapolated) = 0.184 W/kg
SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.143 mW/g

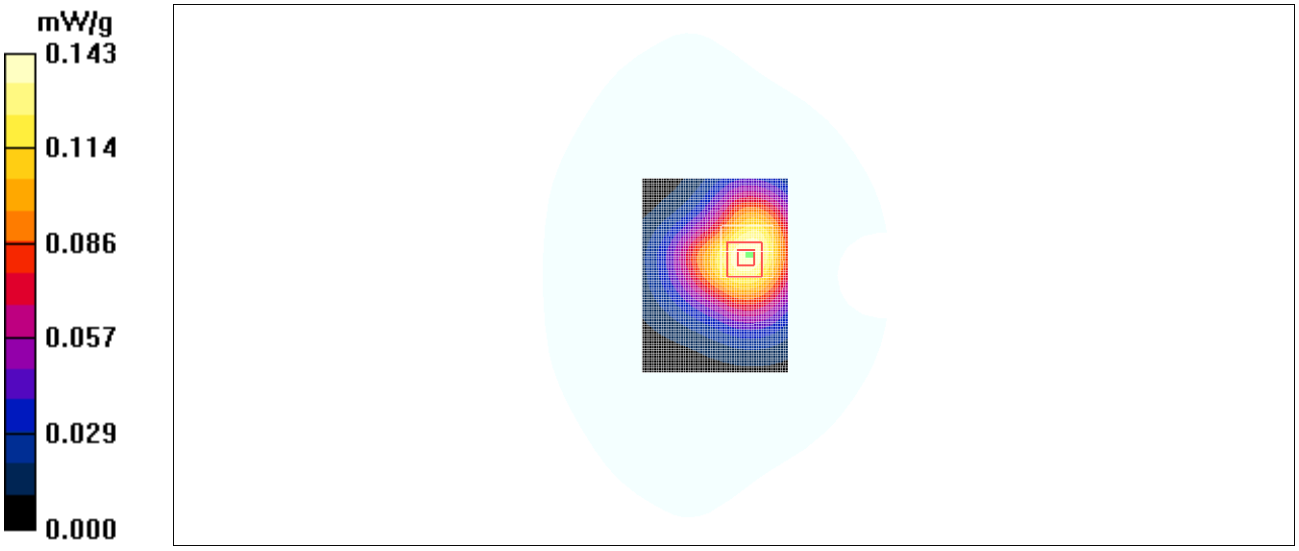


Fig. 28 850 MHz CH251

850 Body Folded Towards Phantom Middle with GPRS

Date/Time: 2011-8-24 12:44:07
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; εr = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Phantom Middle/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.151 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.100 mW/g
Maximum value of SAR (measured) = 0.151 mW/g

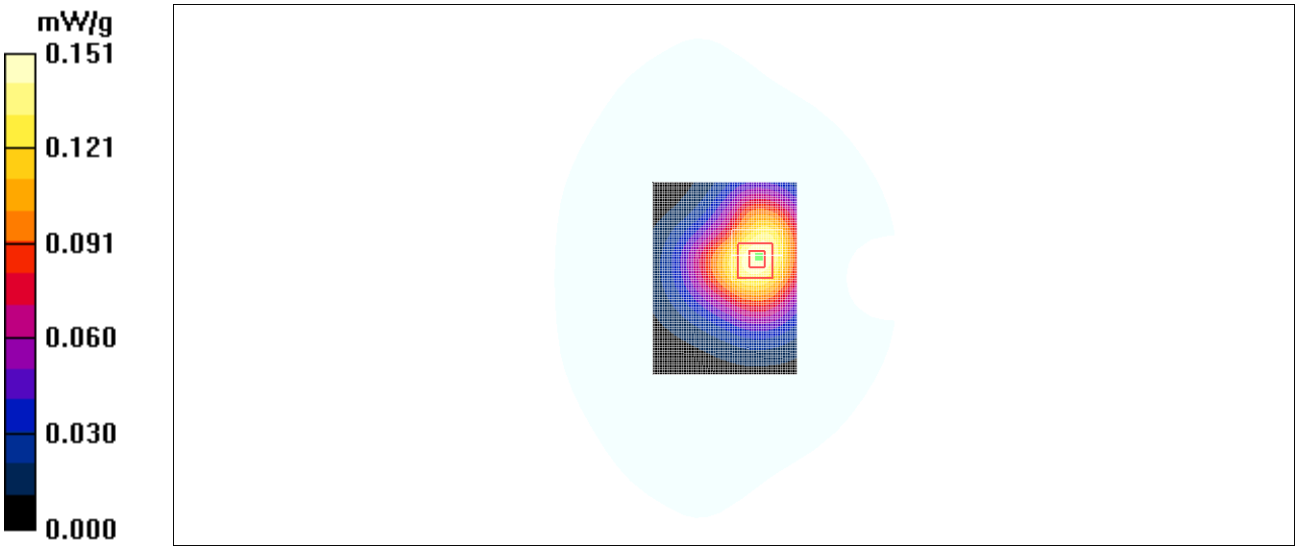


Fig. 29 850 MHz CH190

850 Body Folded Towards Phantom Low with GPRS

Date/Time: 2011-8-24 12:59:32
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Phantom Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.202 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.0 V/m; Power Drift = 0.054 dB
Peak SAR (extrapolated) = 0.257 W/kg
SAR(1 g) = 0.191 mW/g; SAR(10 g) = 0.135 mW/g
Maximum value of SAR (measured) = 0.203 mW/g

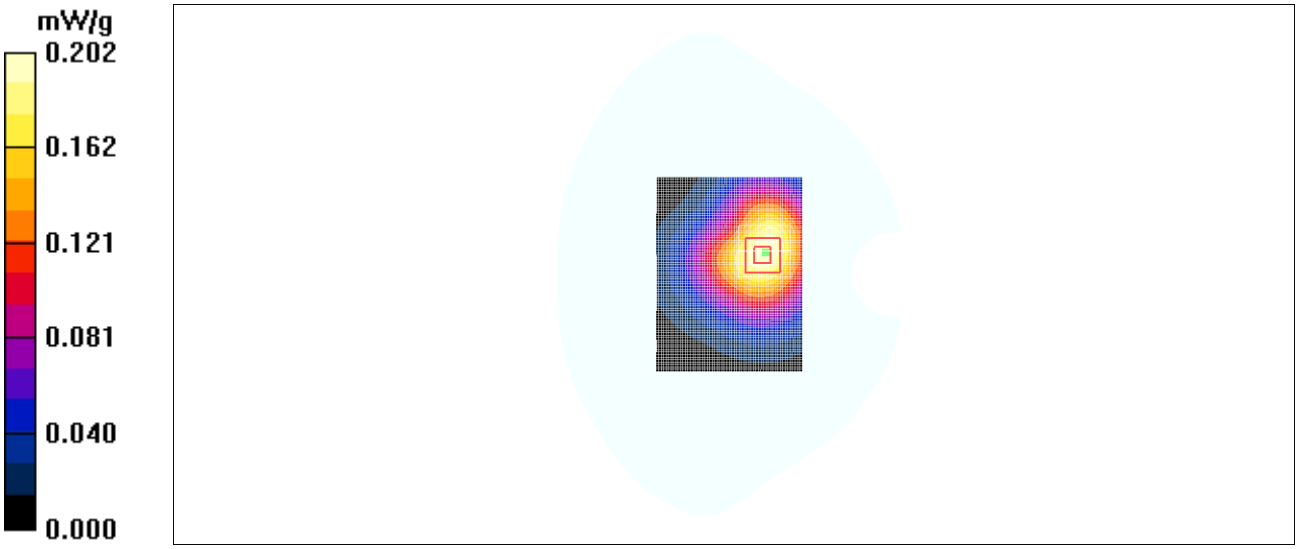


Fig. 30 850 MHz CH128

850 Body Unfolded Towards Ground High with GPRS

Date/Time: 2011-8-24 13:15:04
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.97 mho/m; εr = 54.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 848.8 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground High/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.632 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.8 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.800 W/kg
SAR(1 g) = 0.599 mW/g; SAR(10 g) = 0.431 mW/g
Maximum value of SAR (measured) = 0.633 mW/g

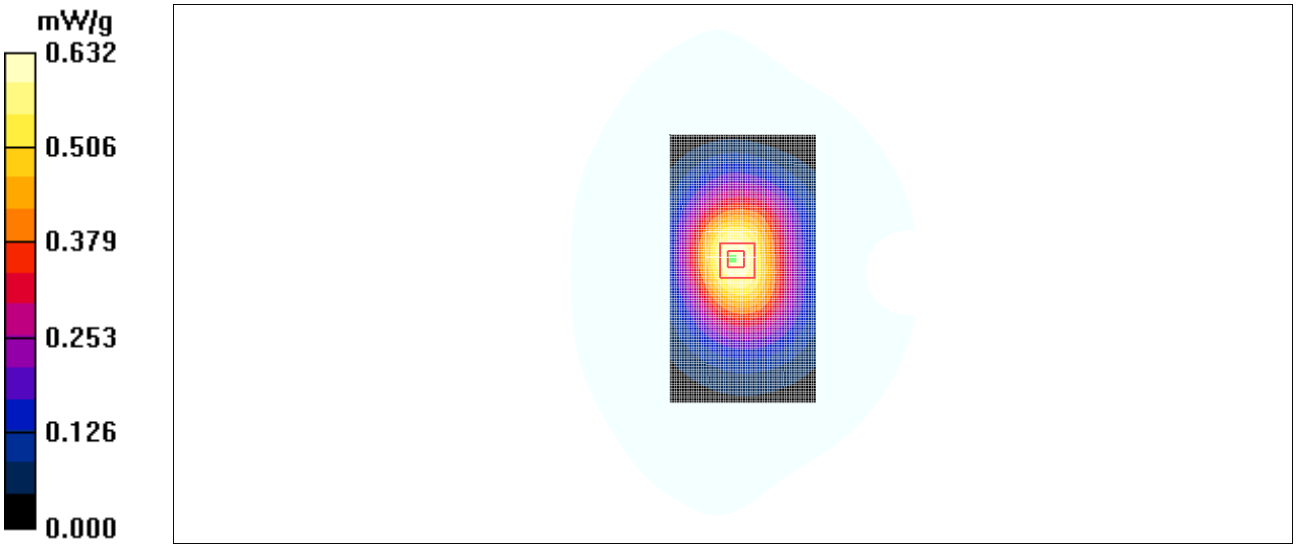


Fig. 31 850 MHz CH251

850 Body Unfolded Towards Ground Middle with GPRS

Date/Time: 2011-8-24 13:30:29
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.96 mho/m; εr = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 836.6 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Middle/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.612 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.754 W/kg
SAR(1 g) = 0.574 mW/g; SAR(10 g) = 0.414 mW/g
Maximum value of SAR (measured) = 0.608 mW/g

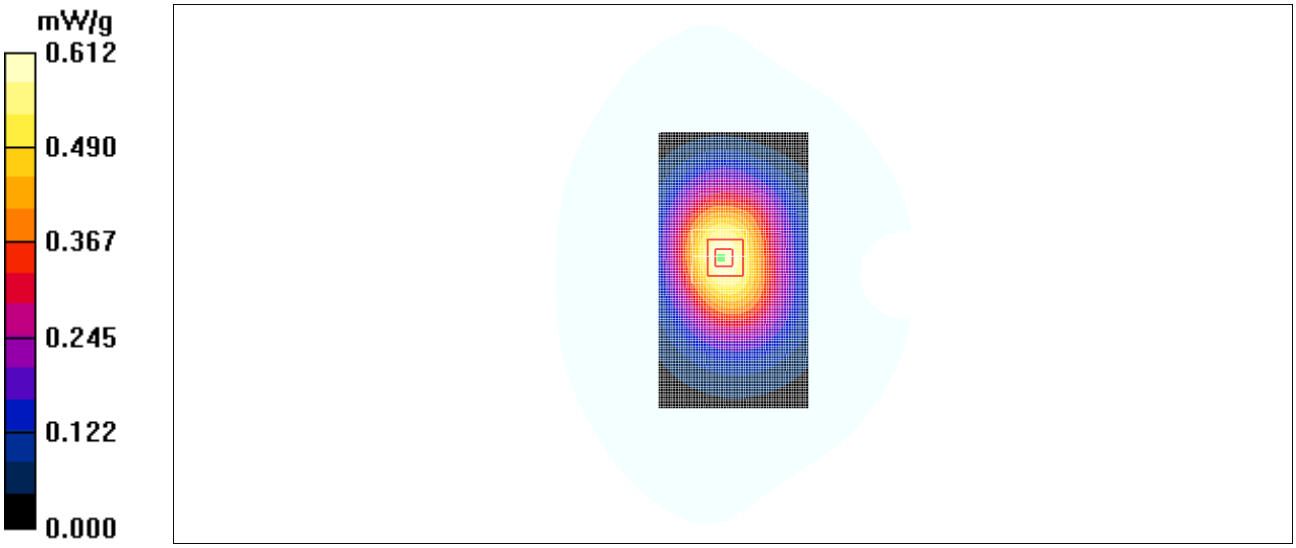


Fig. 32 850 MHz CH190

850 Body Unfolded Towards Ground Low with GPRS

Date/Time: 2011-8-24 13:45:53
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Low/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.719 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 26.0 V/m; Power Drift = 0.017 dB
Peak SAR (extrapolated) = 0.884 W/kg
SAR(1 g) = 0.677 mW/g; SAR(10 g) = 0.490 mW/g
Maximum value of SAR (measured) = 0.708 mW/g

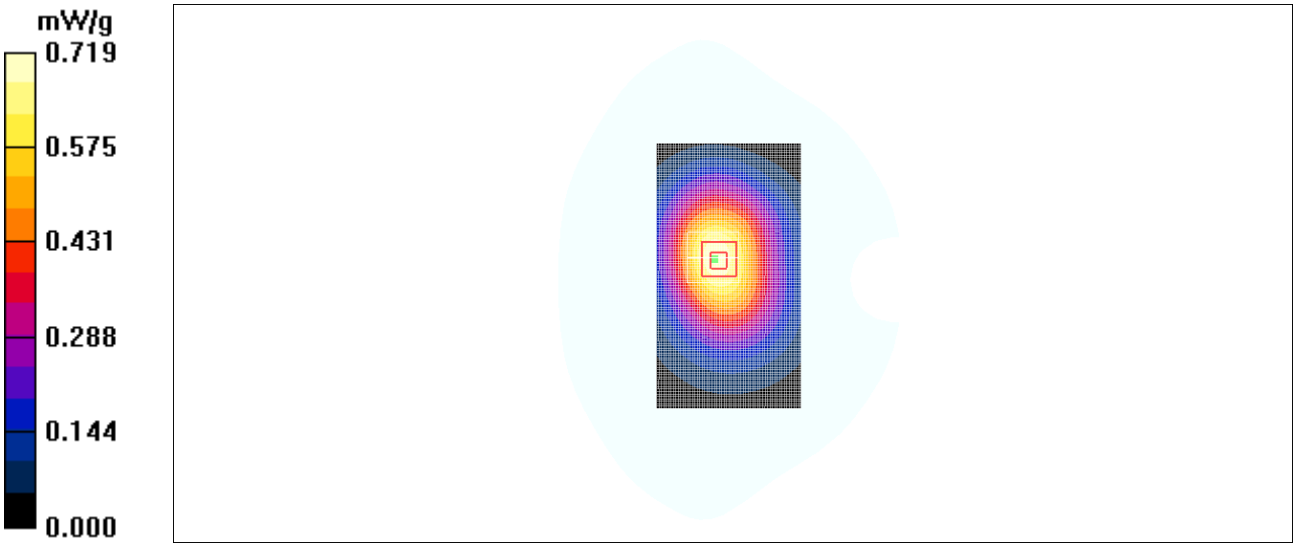


Fig. 33 850 MHz CH128

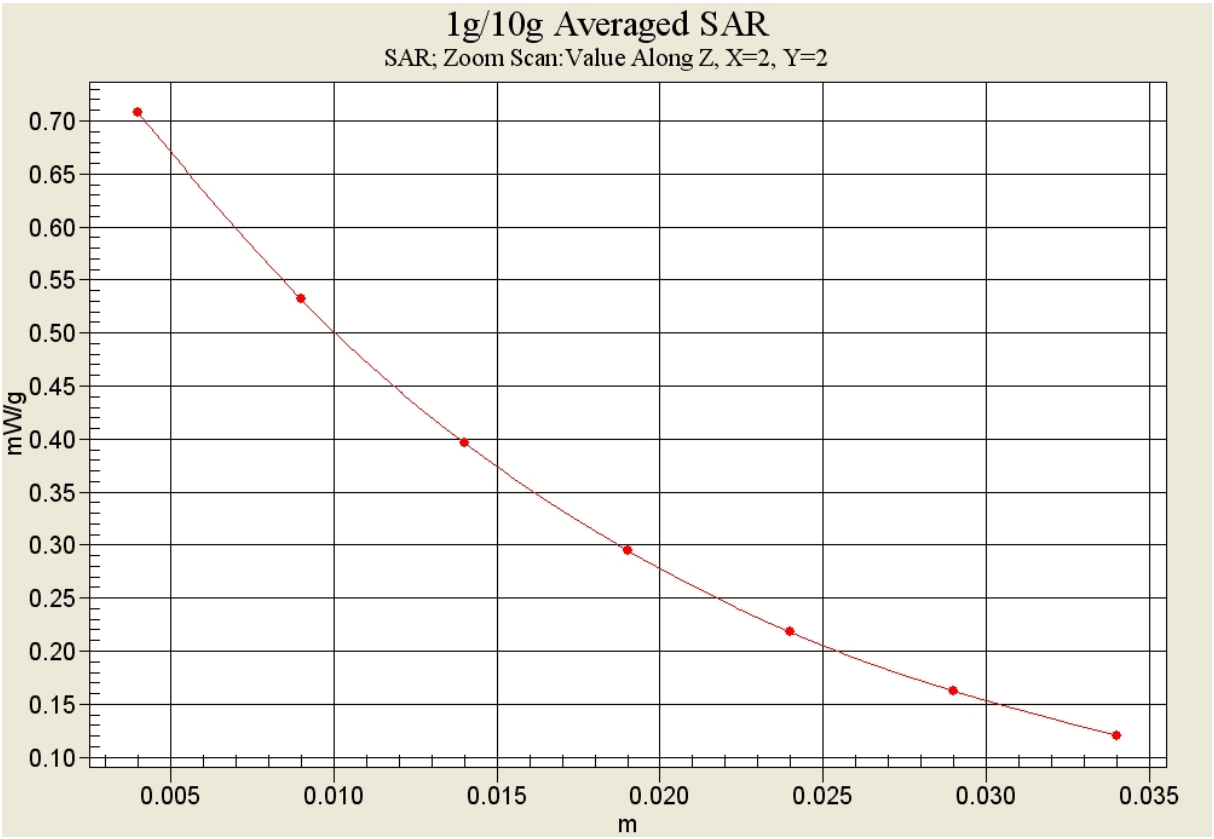


Fig. 33-1 Z-Scan at power reference point (850 MHz CH128)

850 Body Unfolded Towards Ground Low with EGPRS

Date/Time: 2011-8-24 14:02:26
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 GPRS Frequency: 824.2 MHz Duty Cycle: 1:4
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Low/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.687 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.6 V/m; Power Drift = 0.024 dB
Peak SAR (extrapolated) = 0.860 W/kg
SAR(1 g) = 0.649 mW/g; SAR(10 g) = 0.469 mW/g
Maximum value of SAR (measured) = 0.686 mW/g

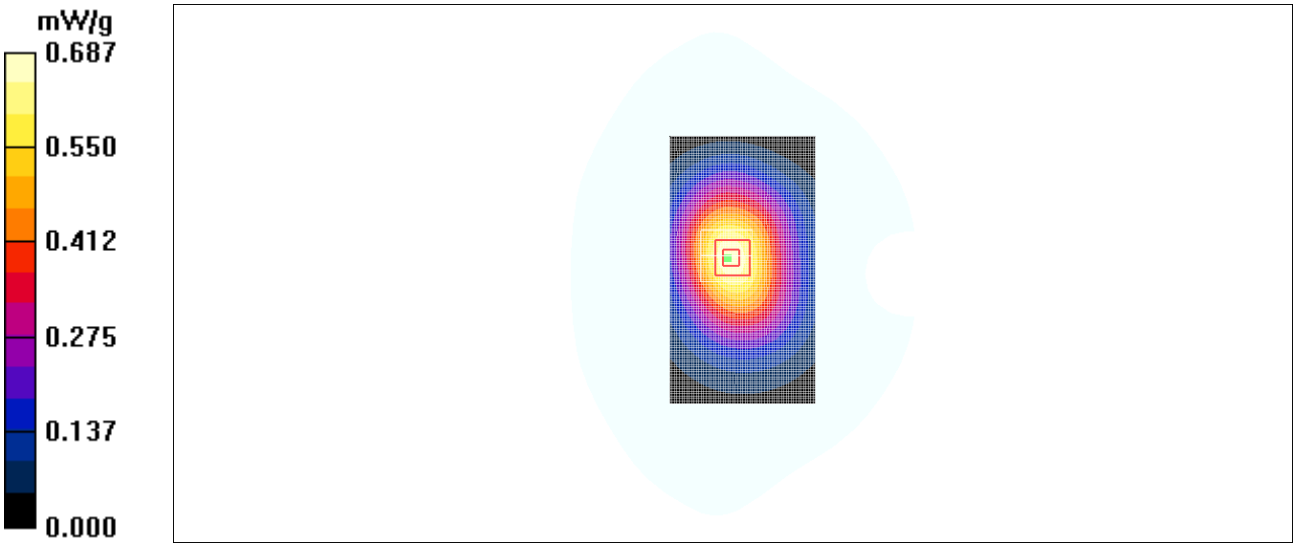


Fig. 34 850 MHz CH128

850 Body Unfolded Towards Ground Low with Headset_CCB3160A10C0
Date/Time: 2011-8-24 14:19:11
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Low/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.479 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = -0.018 dB
Peak SAR (extrapolated) = 0.587 W/kg
SAR(1 g) = 0.446 mW/g; SAR(10 g) = 0.323 mW/g
Maximum value of SAR (measured) = 0.471 mW/g

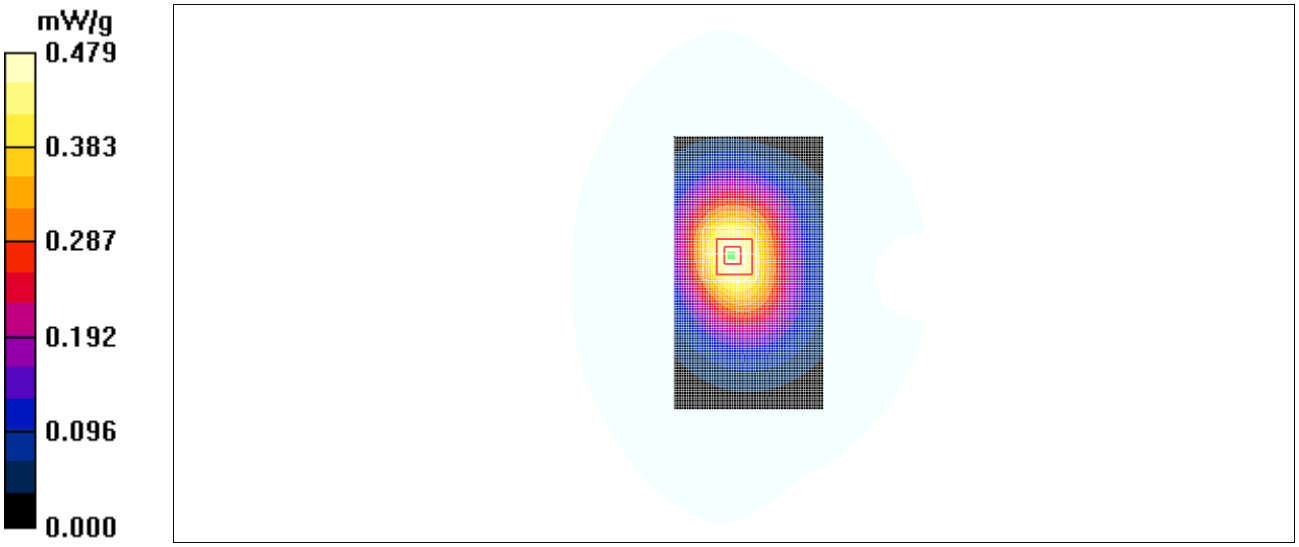


Fig. 35 850 MHz CH128

850 Body Unfolded Towards Ground Low with Headset_CCB3160A10C4
Date/Time: 2011-8-24 14:36:20
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 825 MHz; σ = 0.943 mho/m; εr = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

Toward Ground Low/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.387 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.1 V/m; Power Drift = -0.007 dB
Peak SAR (extrapolated) = 0.467 W/kg
SAR(1 g) = 0.359 mW/g; SAR(10 g) = 0.261 mW/g
Maximum value of SAR (measured) = 0.380 mW/g

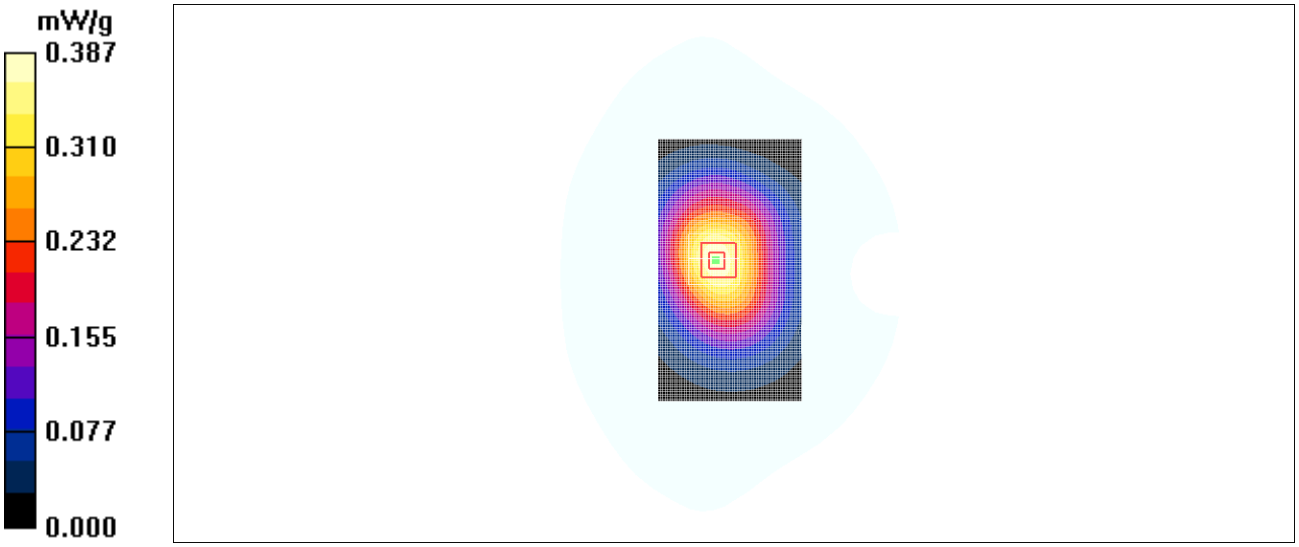


Fig. 36 850 MHz CH128

1900 Body Folded Towards Ground High with GPRS

Date/Time: 2011-8-25 12:08:32
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.165 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = 0.190 dB
Peak SAR (extrapolated) = 0.235 W/kg
SAR(1 g) = 0.153 mW/g; SAR(10 g) = 0.097 mW/g
Maximum value of SAR (measured) = 0.162 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.65 V/m; Power Drift = 0.190 dB
Peak SAR (extrapolated) = 0.242 W/kg
SAR(1 g) = 0.143 mW/g; SAR(10 g) = 0.081 mW/g
Maximum value of SAR (measured) = 0.154 mW/g

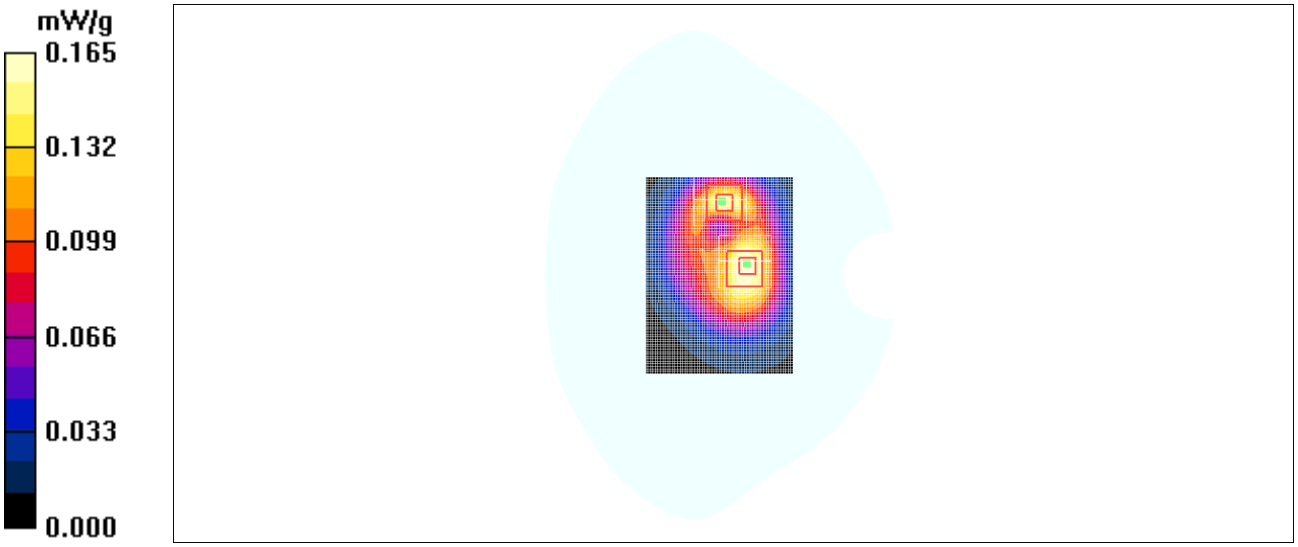


Fig. 37 1900 MHz CH810

1900 Body Folded Towards Ground Middle with GPRS

Date/Time: 2011-8-25 12:23:59
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Middle/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.195 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 0.283 W/kg
SAR(1 g) = 0.184 mW/g; SAR(10 g) = 0.118 mW/g
Maximum value of SAR (measured) = 0.198 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = 0.057 dB
Peak SAR (extrapolated) = 0.249 W/kg
SAR(1 g) = 0.148 mW/g; SAR(10 g) = 0.088 mW/g
Maximum value of SAR (measured) = 0.160 mW/g

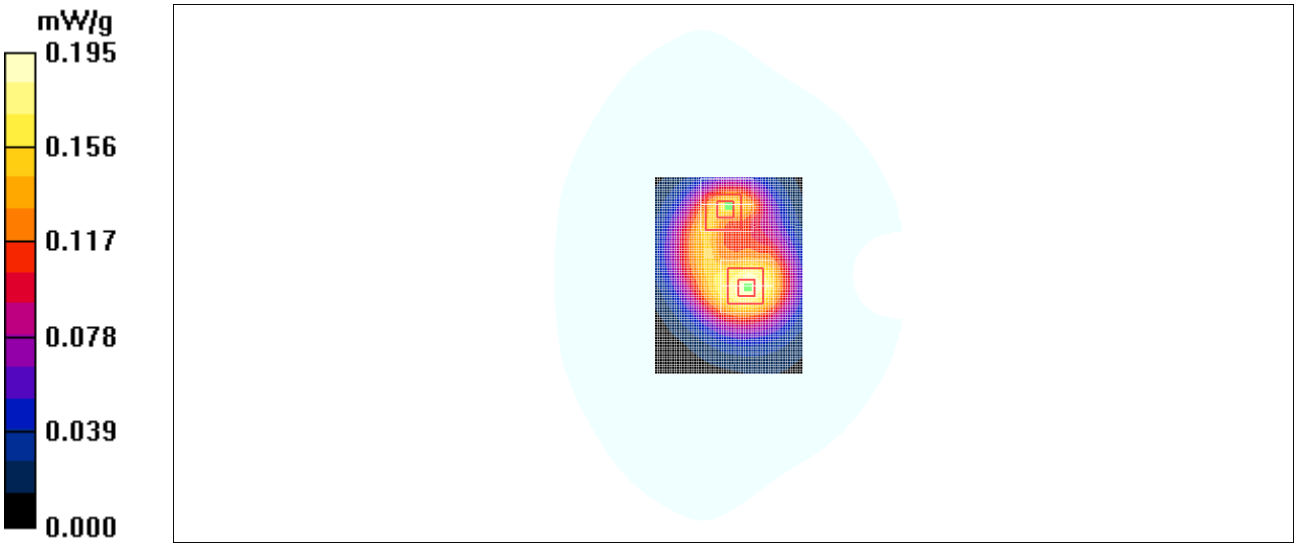


Fig. 38 1900 MHz CH661

1900 Body Folded Towards Ground Low with GPRS
Date/Time: 2011-8-25 12:39:30
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.229 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.316 W/kg
SAR(1 g) = 0.211 mW/g; SAR(10 g) = 0.136 mW/g
Maximum value of SAR (measured) = 0.227 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = 0.042 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.169 mW/g; SAR(10 g) = 0.103 mW/g
Maximum value of SAR (measured) = 0.182 mW/g

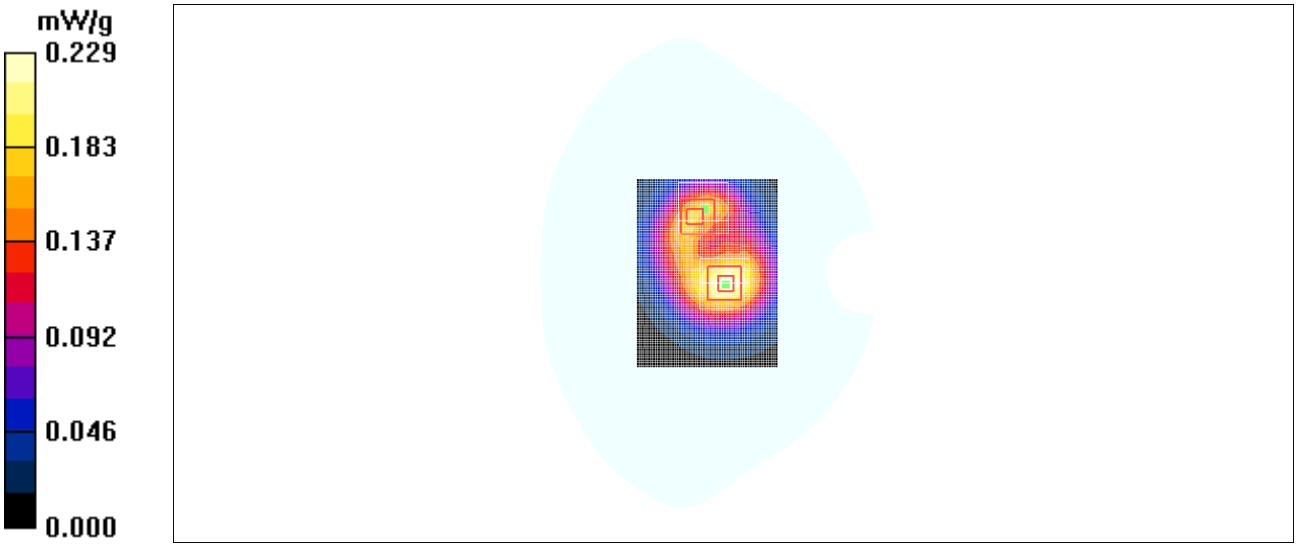


Fig. 39 1900 MHz CH512

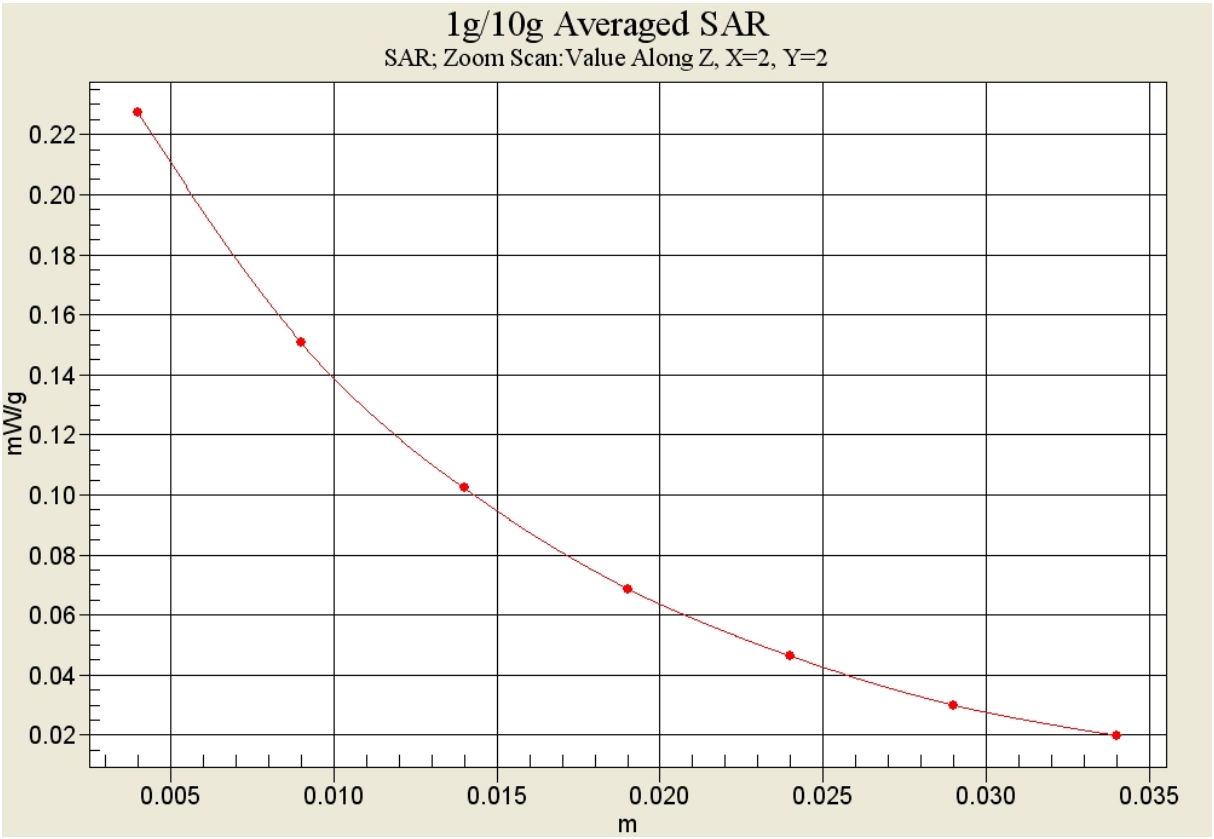


Fig. 39-1 Z-Scan at power reference point (1900 MHz CH512)

1900 Body Folded Towards Phantom High with GPRS

Date/Time: 2011-8-25 12:55:04
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom High/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.116 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.31 V/m; Power Drift = -0.146 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.114 mW/g

Toward Phantom High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.31 V/m; Power Drift = -0.146 dB
Peak SAR (extrapolated) = 0.172 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.064 mW/g
Maximum value of SAR (measured) = 0.115 mW/g

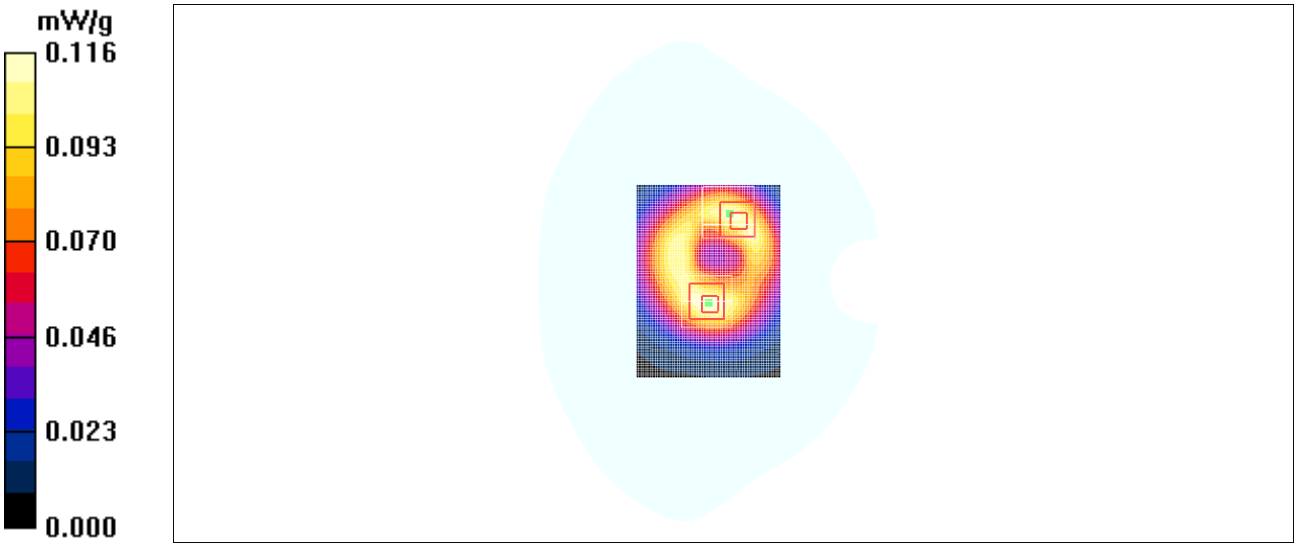


Fig. 40 1900 MHz CH810

1900 Body Folded Towards Phantom Middle with GPRS

Date/Time: 2011-8-25 13:10:29
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom Middle/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.134 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.11 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.172 W/kg
SAR(1 g) = 0.109 mW/g; SAR(10 g) = 0.069 mW/g
Maximum value of SAR (measured) = 0.119 mW/g

Toward Phantom Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.11 V/m; Power Drift = 0.029 dB
Peak SAR (extrapolated) = 0.196 W/kg
SAR(1 g) = 0.127 mW/g; SAR(10 g) = 0.081 mW/g
Maximum value of SAR (measured) = 0.136 mW/g

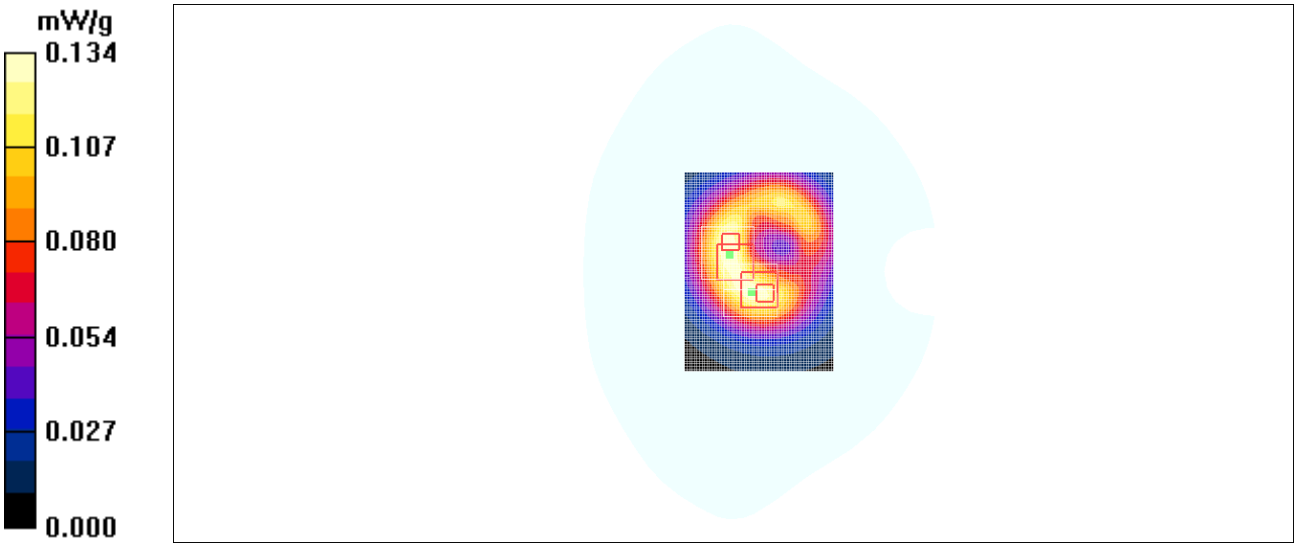


Fig. 41 1900 MHz CH661

1900 Body Folded Towards Phantom Low with GPRS
Date/Time: 2011-8-25 13:25:55
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Phantom Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.156 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.96 V/m; Power Drift = -0.099 dB
Peak SAR (extrapolated) = 0.225 W/kg
SAR(1 g) = 0.147 mW/g; SAR(10 g) = 0.094 mW/g
Maximum value of SAR (measured) = 0.158 mW/g

Toward Phantom Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.96 V/m; Power Drift = -0.099 dB
Peak SAR (extrapolated) = 0.178 W/kg
SAR(1 g) = 0.113 mW/g; SAR(10 g) = 0.069 mW/g
Maximum value of SAR (measured) = 0.123 mW/g

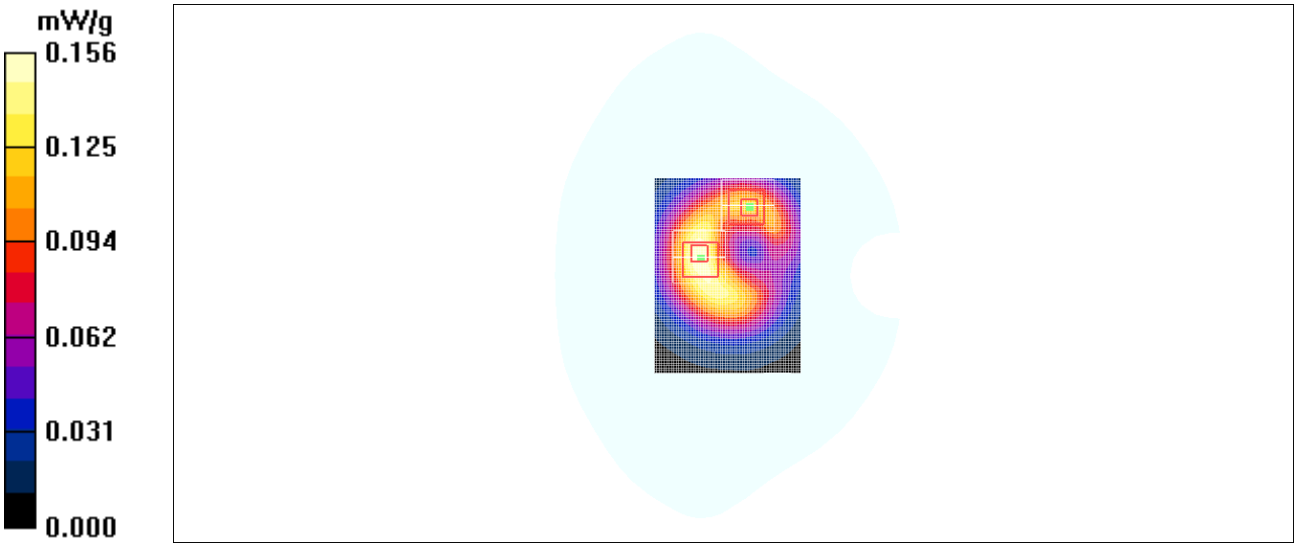


Fig. 42 1900 MHz CH512

1900 Body Unfolded Towards Ground High with GPRS

Date/Time: 2011-8-25 13:41:31
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1910 MHz; σ = 1.52 mho/m; εr = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground High/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.117 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.88 V/m; Power Drift = -0.154 dB
Peak SAR (extrapolated) = 0.165 W/kg
SAR(1 g) = 0.107 mW/g; SAR(10 g) = 0.068 mW/g
Maximum value of SAR (measured) = 0.114 mW/g

Toward Ground High/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.88 V/m; Power Drift = -0.154 dB
Peak SAR (extrapolated) = 0.167 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.065 mW/g

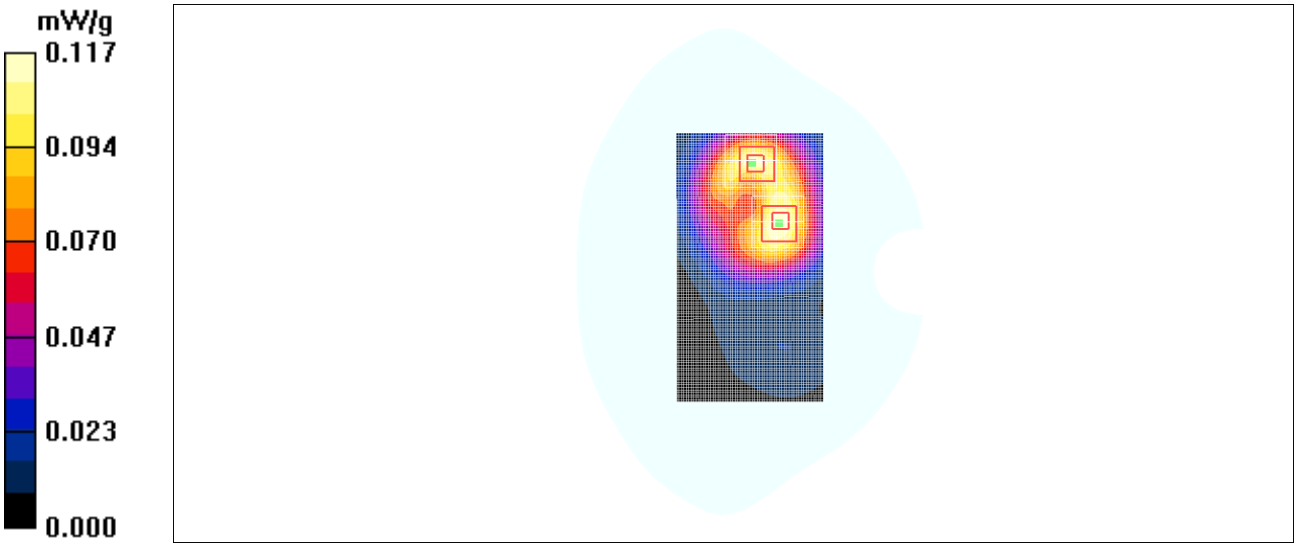


Fig. 43 1900 MHz CH810

1900 Body Unfolded Towards Ground Middle with GPRS
Date/Time: 2011-8-25 13:56:54
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1880 MHz; σ = 1.49 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Middle/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.116 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.72 V/m; Power Drift = 0.129 dB
Peak SAR (extrapolated) = 0.180 W/kg
SAR(1 g) = 0.112 mW/g; SAR(10 g) = 0.069 mW/g
Maximum value of SAR (measured) = 0.120 mW/g

Toward Ground Middle/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.72 V/m; Power Drift = 0.129 dB
Peak SAR (extrapolated) = 0.136 W/kg
SAR(1 g) = 0.092 mW/g; SAR(10 g) = 0.062 mW/g
Maximum value of SAR (measured) = 0.099 mW/g

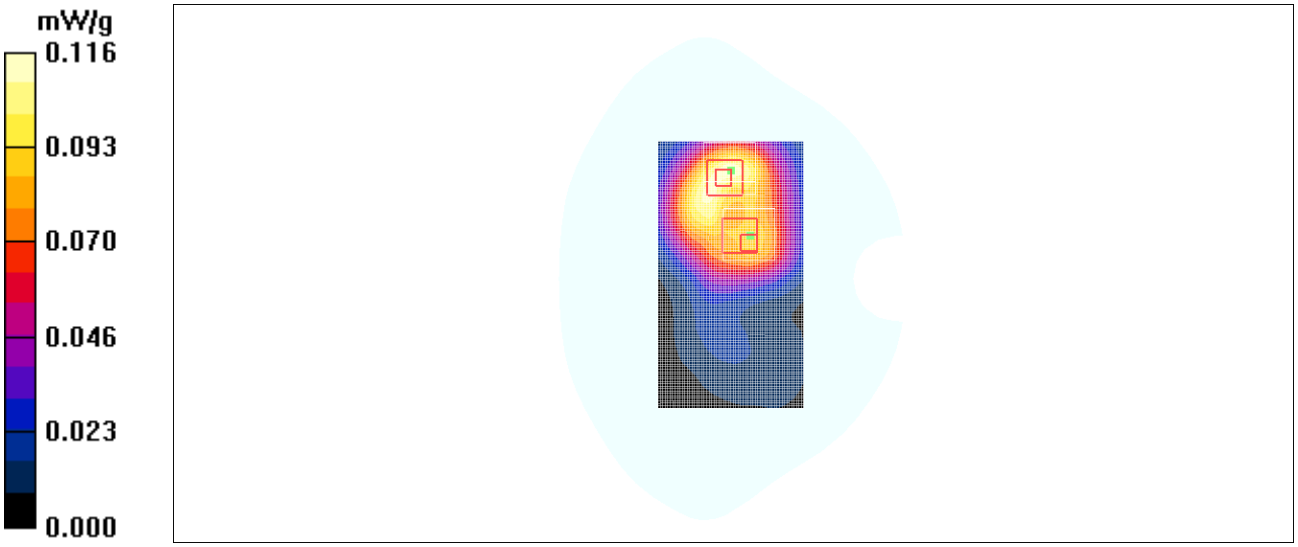


Fig. 44 1900 MHz CH661

1900 Body Unfolded Towards Ground Low with GPRS
Date/Time: 2011-8-25 14:12:23
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x111x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.151 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.19 V/m; Power Drift = 0.161 dB
Peak SAR (extrapolated) = 0.221 W/kg
SAR(1 g) = 0.141 mW/g; SAR(10 g) = 0.089 mW/g
Maximum value of SAR (measured) = 0.149 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.19 V/m; Power Drift = 0.161 dB
Peak SAR (extrapolated) = 0.179 W/kg
SAR(1 g) = 0.118 mW/g; SAR(10 g) = 0.077 mW/g
Maximum value of SAR (measured) = 0.125 mW/g

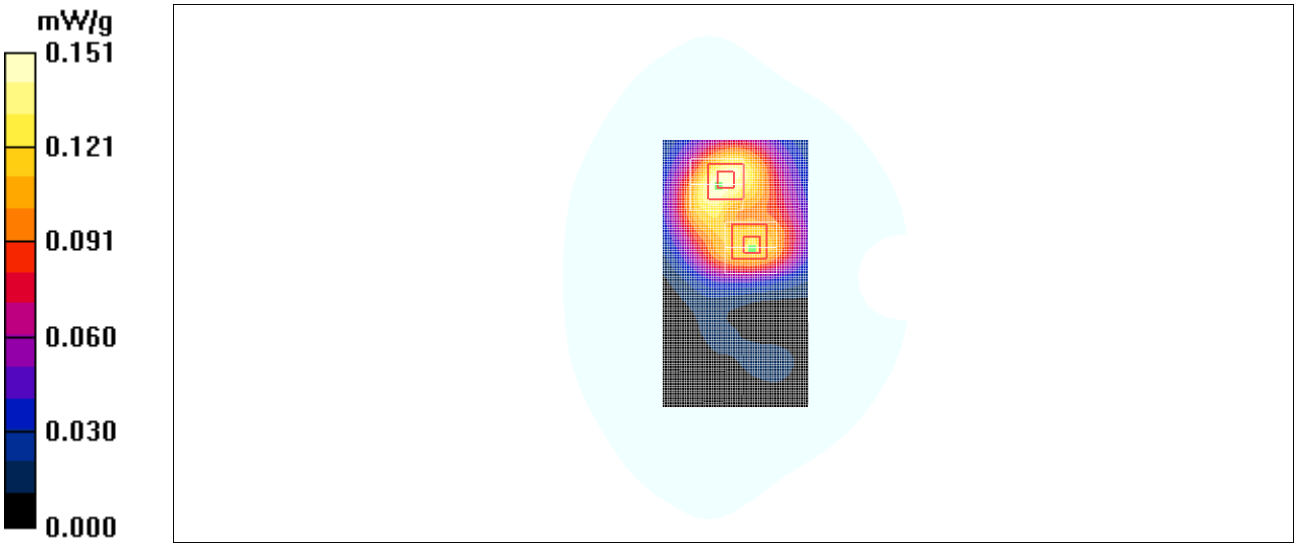


Fig. 45 1900 MHz CH512

1900 Body Folded Towards Ground Low with EGPRS
Date/Time: 2011-8-25 14:29:17
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:2.67
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.196 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.278 W/kg
SAR(1 g) = 0.185 mW/g; SAR(10 g) = 0.119 mW/g
Maximum value of SAR (measured) = 0.198 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.030 dB
Peak SAR (extrapolated) = 0.261 W/kg
SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.095 mW/g
Maximum value of SAR (measured) = 0.170 mW/g

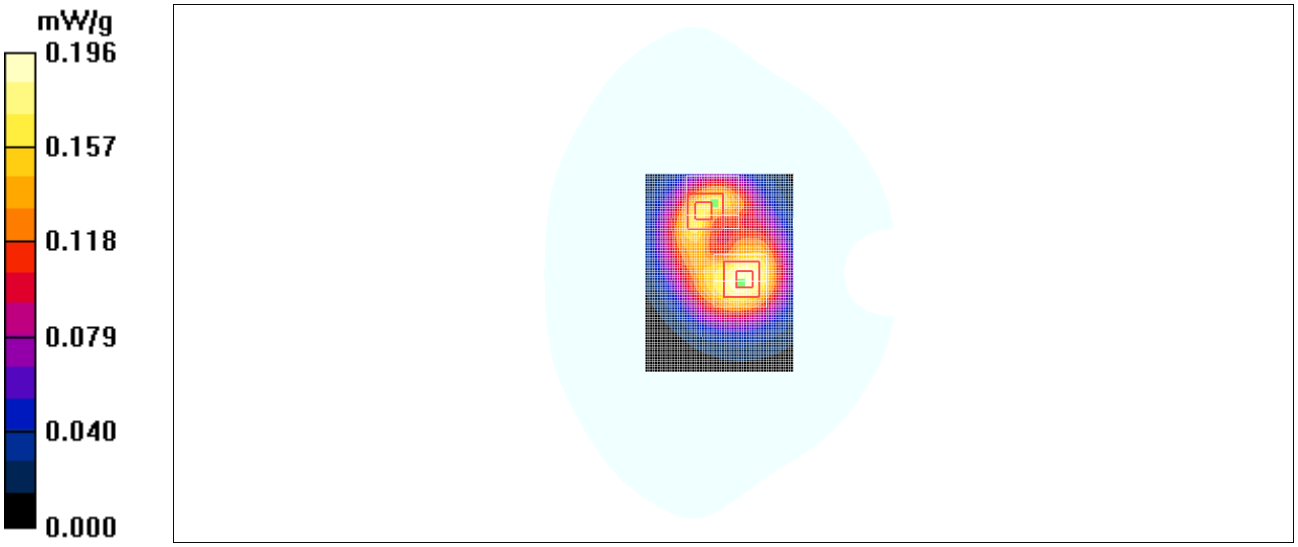


Fig. 46 1900 MHz CH512

1900 Body Folded Towards Ground Low with Headset_CCB3160A10C0
Date/Time: 2011-8-25 14:46:22
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.209 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 0.295 W/kg
SAR(1 g) = 0.196 mW/g; SAR(10 g) = 0.127 mW/g
Maximum value of SAR (measured) = 0.208 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = -0.033 dB
Peak SAR (extrapolated) = 0.248 W/kg
SAR(1 g) = 0.156 mW/g; SAR(10 g) = 0.096 mW/g
Maximum value of SAR (measured) = 0.167 mW/g

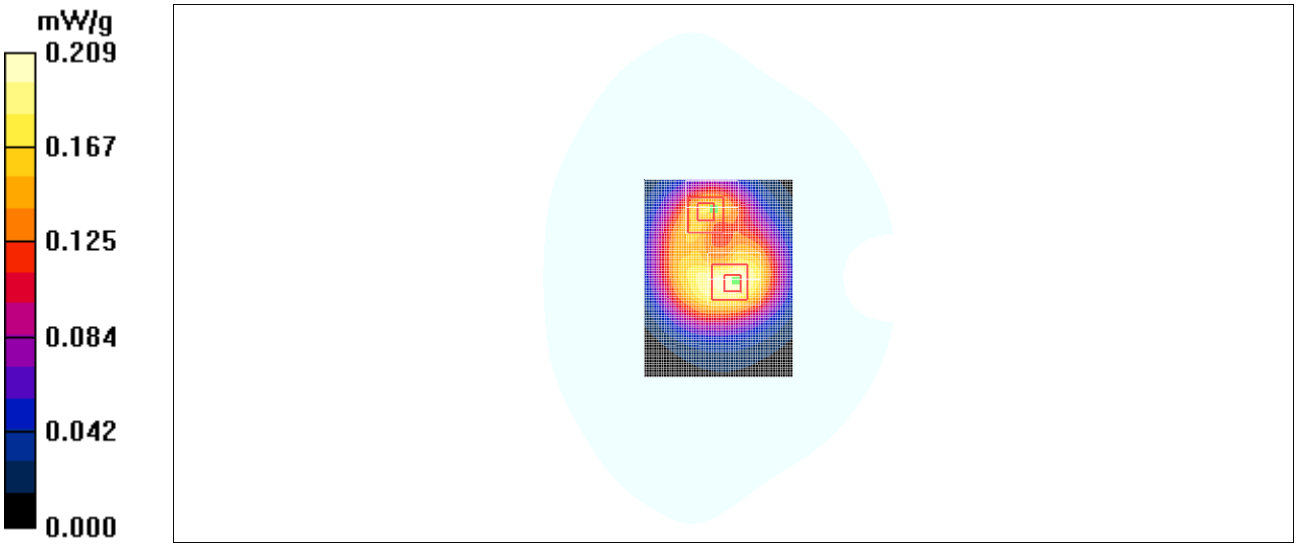


Fig. 47 1900 MHz CH512

1900 Body Folded Towards Ground Low with Headset_CCB3160A10C4
Date/Time: 2011-8-25 15:03:34
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.47 mho/m; εr = 52.2; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

Toward Ground Low/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.203 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.134 dB
Peak SAR (extrapolated) = 0.291 W/kg
SAR(1 g) = 0.191 mW/g; SAR(10 g) = 0.122 mW/g
Maximum value of SAR (measured) = 0.205 mW/g

Toward Ground Low/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.134 dB
Peak SAR (extrapolated) = 0.284 W/kg
SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.108 mW/g
Maximum value of SAR (measured) = 0.192 mW/g

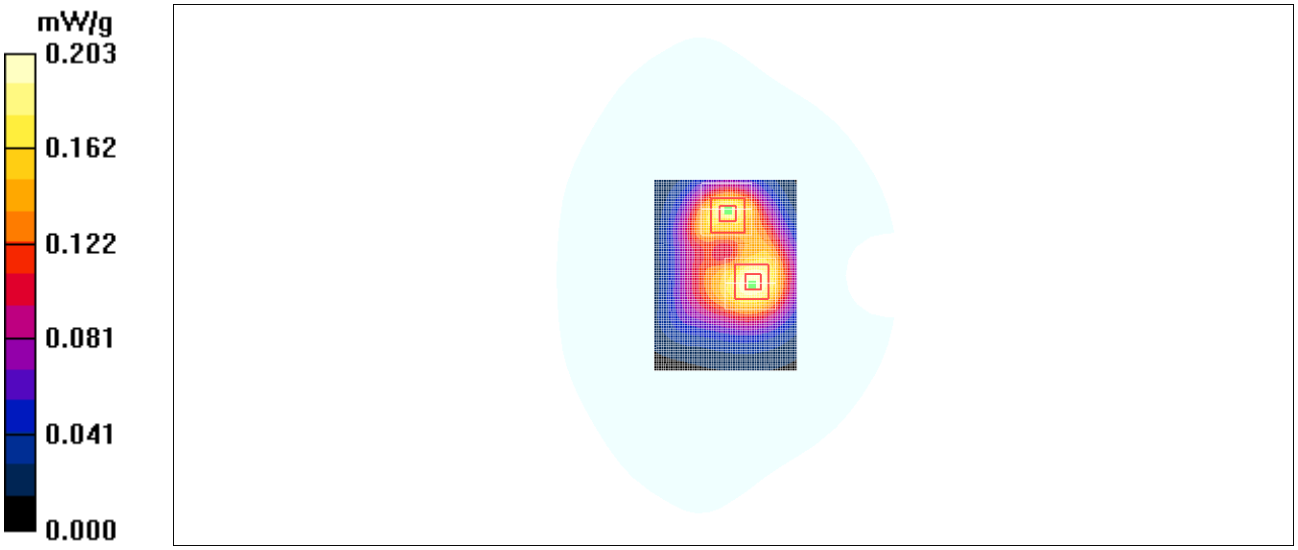


Fig. 48 1900 MHz CH512

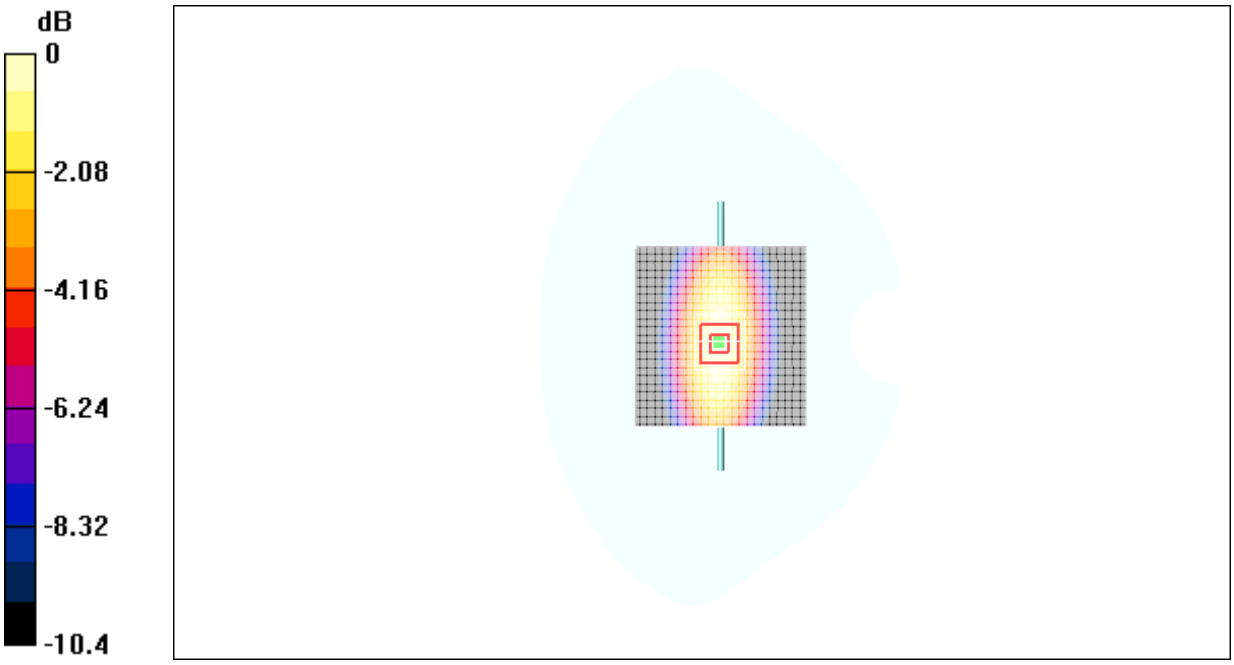
ANNEX D SYSTEM VALIDATION RESULTS

835MHz

Date/Time: 2011-8-24 7:25:27
Electronics: DAE4 Sn771
Medium: Head 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

System Validation /Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.50 mW/g

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.2 V/m; Power Drift = -0.097 dB
Peak SAR (extrapolated) = 3.27 W/kg
SAR(1 g) = 2.28 mW/g; SAR(10 g) = 1.50 mW/g
Maximum value of SAR (measured) = 2.42 mW/g



0 dB = 2.42mW/g

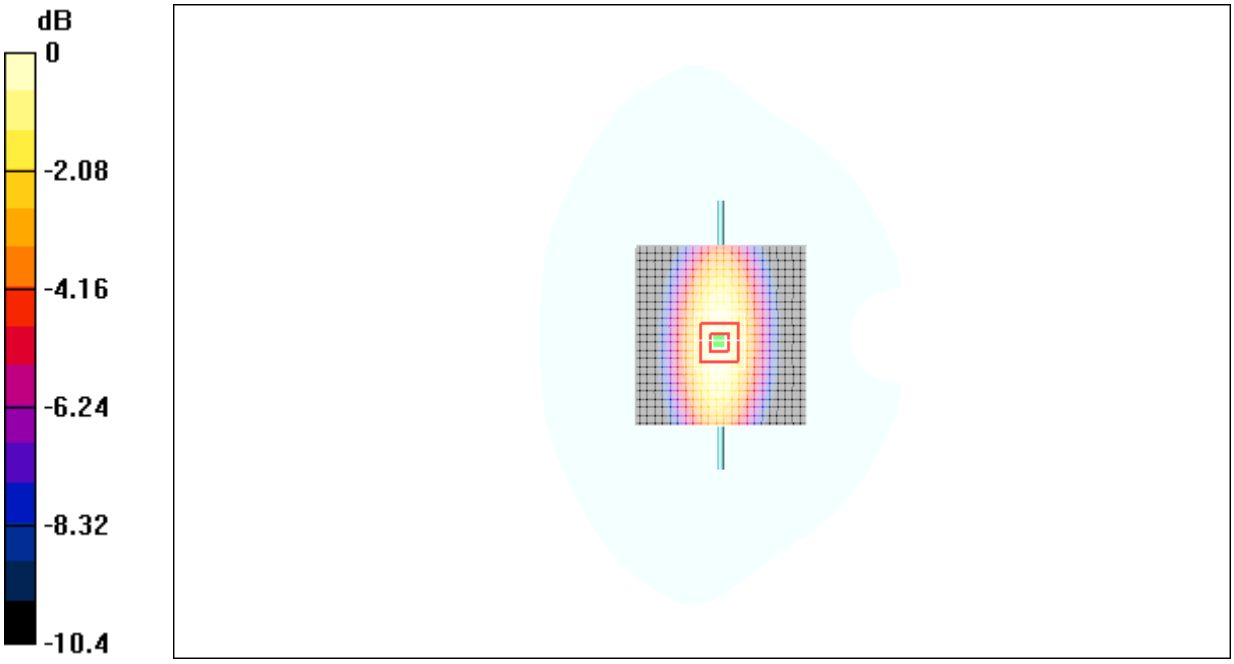
Fig.49 validation 835MHz 250mW

835MHz

Date/Time: 2011-8-24 8:04:33
Electronics: DAE4 Sn771
Medium: Body 850 MHz
Medium parameters used: f = 835 MHz; σ = 0.95 mho/m; ε_r = 54.3; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(6.22, 6.22, 6.22)

System Validation /Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 2.53 mW/g

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.4 V/m; Power Drift = -0.104 dB
Peak SAR (extrapolated) = 3.28 W/kg
SAR(1 g) = 2.32 mW/g; SAR(10 g) = 1.51 mW/g
Maximum value of SAR (measured) = 2.39 mW/g



0 dB = 2.39mW/g

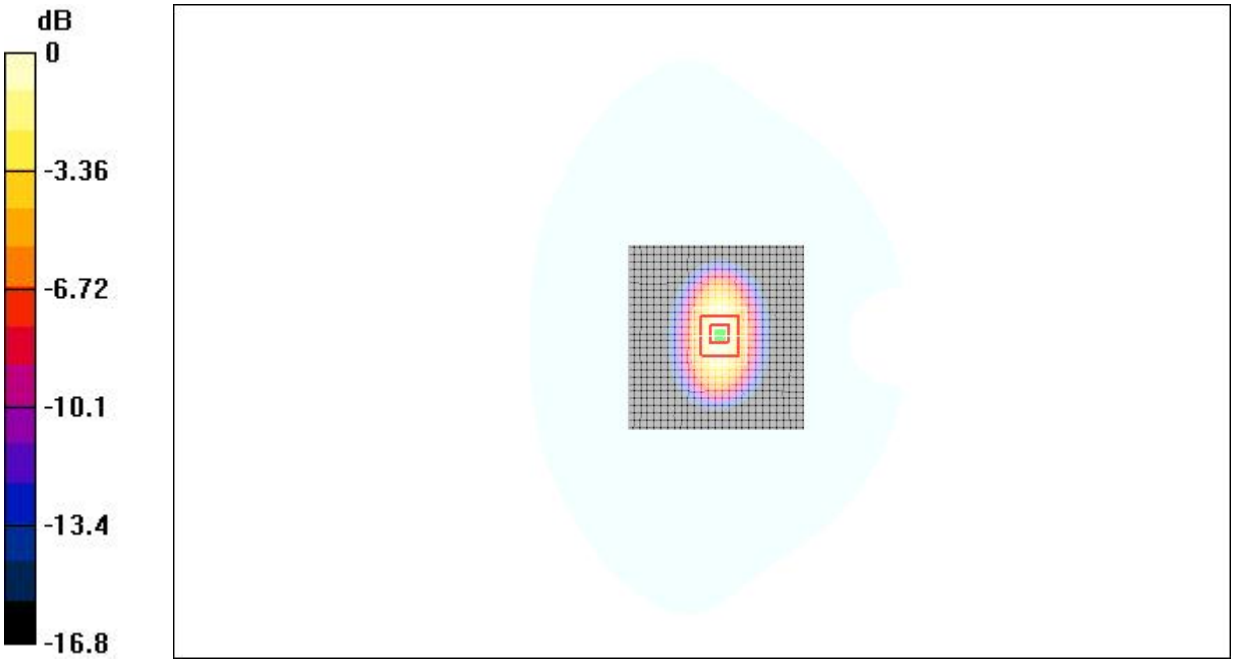
Fig.50 validation 835MHz 250mW

1900MHz

Date/Time: 2011-8-25 7:27:50
Electronics: DAE4 Sn771
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.41 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(5.03, 5.03, 5.03)

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.3 mW/g

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 88.0 V/m; Power Drift = 0.061 dB
Peak SAR (extrapolated) = 14.5 W/kg
SAR(1 g) = 9.62 mW/g; SAR(10 g) = 4.87 mW/g
Maximum value of SAR (measured) = 10.4 mW/g



0 dB = 10.4mW/g

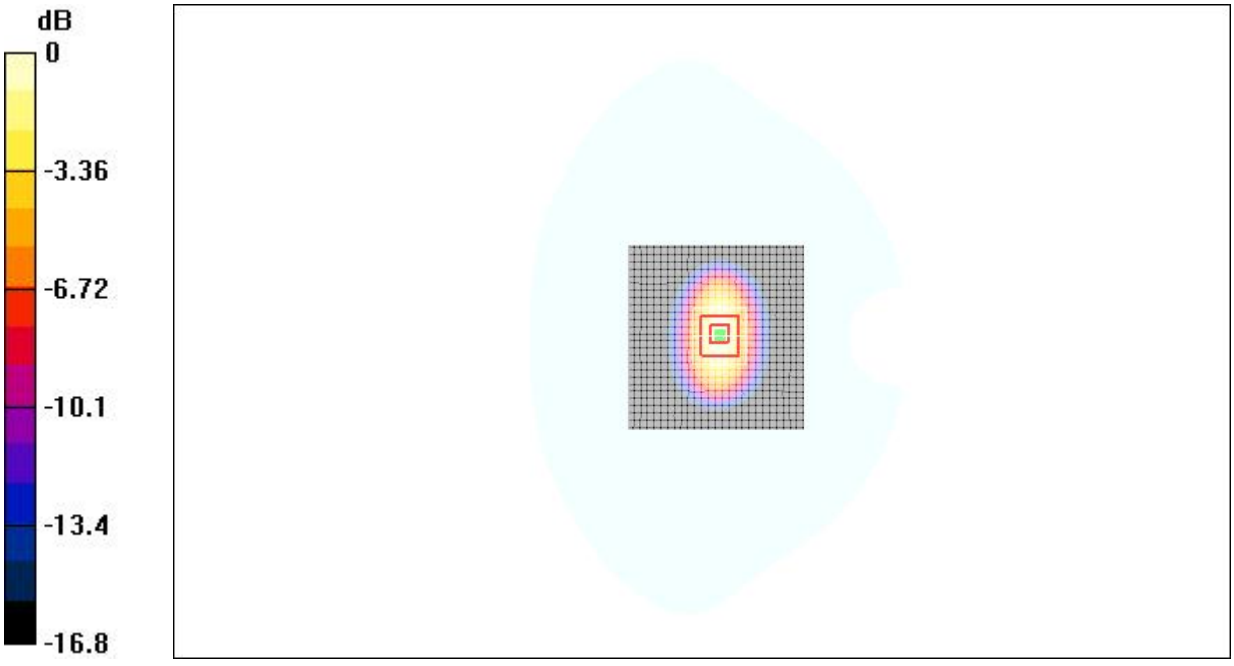
Fig.51 validation 1900MHz 250mW

1900MHz

Date/Time: 2011-8-25 8:09:36
Electronics: DAE4 Sn771
Medium: Body 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.0°C Liquid Temperature: 22.5°C
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: ES3DV3 - SN3149 ConvF(4.68, 4.68, 4.68)

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.3 mW/g

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.2 V/m; Power Drift = 0.055 dB
Peak SAR (extrapolated) = 15.2 W/kg
SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.07 mW/g
Maximum value of SAR (measured) = 10.6 mW/g



0 dB = 10.6mW/g

Fig.52 validation 1900MHz 250mW

ANNEX E PROBE CALIBRATION CERTIFICATE

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

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

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

Accreditation No.: SCS 108

Client TMC China Certificate No: ES3DV3-3149_Sep10

CALIBRATION CERTIFICATE

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

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

Calibration Equipment used (M&TE critical for calibration)

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

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

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

Issued: September 25, 2010

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

Certificate No: ES3DV3-3149_Sep10 Page 1 of 9

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

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

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

Accreditation No.: SCS 108

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

Probe ES3DV3

SN: 3149

Manufactured: June 12, 2007

Calibrated: September 25, 2010

Calibrated for DASY4 System

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

DASY – Parameters of Probe: ES3DV3 SN:3149

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

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

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

Boundary Effect

TSL 900MHz Typical SAR gradient: 5% per mm

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

TSL 1810MHz Typical SAR gradient: 10% per mm

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

Sensor Offset

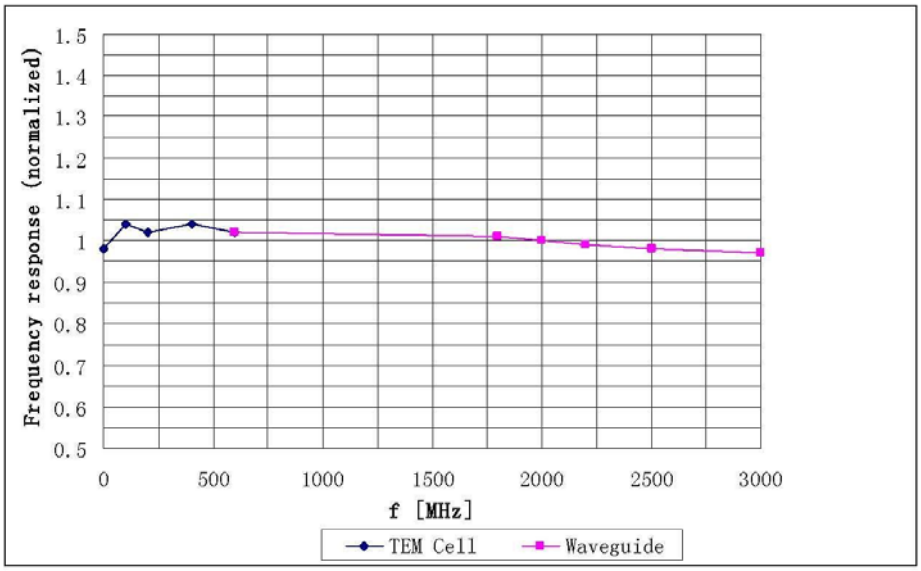
Probe Tip to Sensor Center	2.0 mm

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

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

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

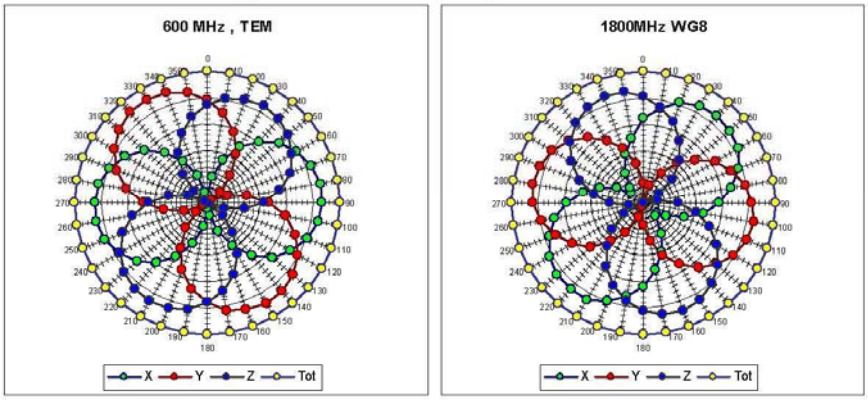
Frequency Response of E-Field

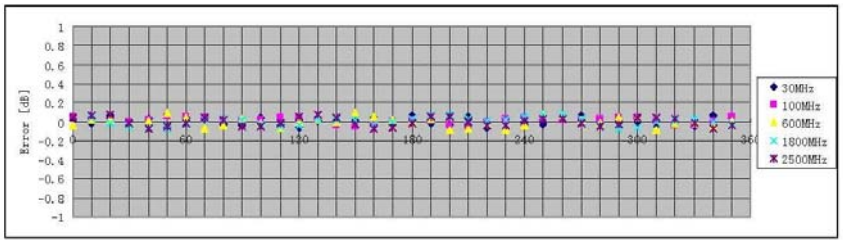


Uncertainty of Frequency Response of E-field: ±5.0% (k=2)

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

Receiving Pattern (ϕ), θ =0°

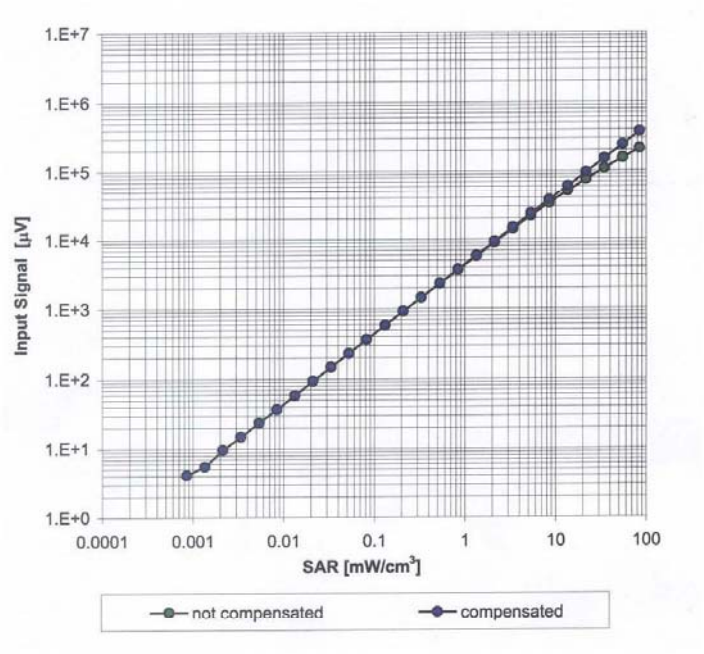


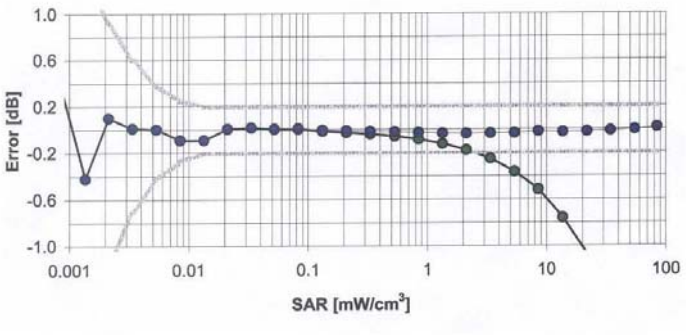


Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)

Dynamic Range f(SAR_{head})

(Waveguide: WG8, f = 1800 MHz)

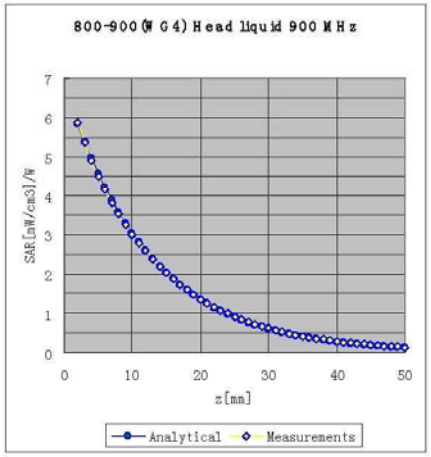


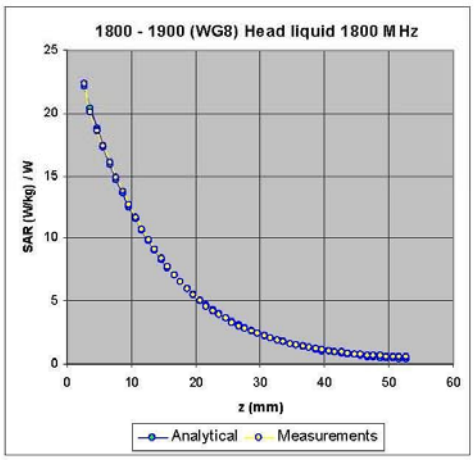


Uncertainty of Linearity Assessment: ±0.5% (k=2)

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

Conversion Factor Assessment





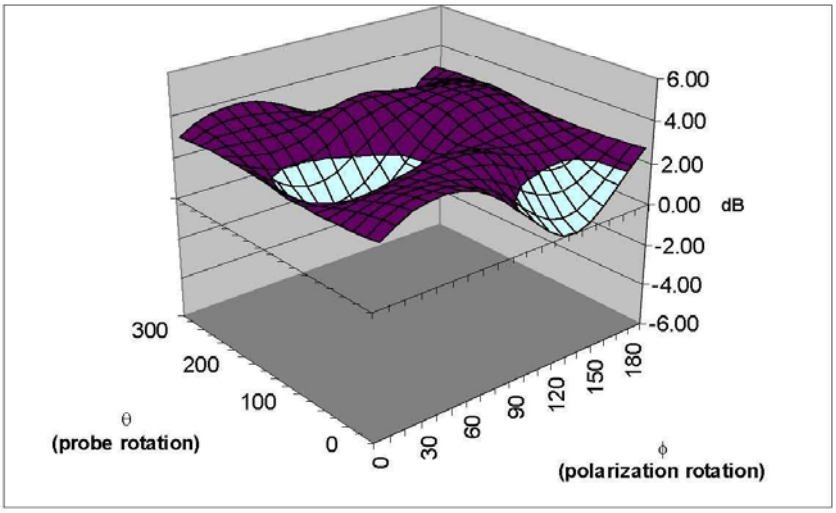
f[MHz]	Validity[MHz][C]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
850	±50 /±100	Head	41.5±5%	0.90±5%	0.91	1.13	6.56	±11.0% (k=2)
900	±50 /±100	Head	41.5±5%	0.97±5%	0.83	1.26	6.34	±11.0% (k=2)
1800	±50 /±100	Head	40.0±5%	1.40±5%	0.69	1.47	5.18	±11.0% (k=2)
1900	±50 /±100	Head	40.0±5%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

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

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

Deviation from Isotropy

Error (Φ , θ), f = 900 MHz



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