SAR TEST REPORT

No. 2009SAR00019

For

TCT Mobile Limited

GSM/GPRS 850/1900 dual-band mobile phone

U9SCam US

ALCATEL

OT-383A

With

Hardware Version: PI01

Software Version: V326

FCCID: RAD107

Issued Date: 2009-04-10

***No.* DAT-P-114/01-01**

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 Ministry of Information Industry

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TABLE OF CONTENT

1 Test Laboratory

1.1 Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MII
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Telephone:	+86-10-62303288
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1.2 Testing Environment

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

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

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

1.3 Project Data

Project Leader:	Sun Qian
Test Engineer:	Lin Xiaojun
Testing Start Date:	April 1, 2009
Testing End Date:	April 2, 2009

1.4 Signature

Lin Xiaojun

(Prepared this test report)

Sun Qian

(Reviewed this test report)

Lu Bingsong

Deputy Director of the laboratory

(Approved this test report)

2 Client Information

2.1 Applicant Information

Company Name:	TCT Mobile Limited
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City:	Shanghai
Postal Code:	201203
Country:	P. R. China
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2.2 Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	4/F, South Building,No.2966, Jinke Road, Zhangjiang High-Tech Park, Pudong,Shanghai, 201203, P.R.China
City:	Shanghai
Postal Code:	201203
Country:	P. R. China
Telephone:	0086-21-61460853
Fax:	0086-21-61460602

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

3.1 About EUT

Description:	GSM/GPRS 850/1900 dual-band mobile phone
Model name:	U9SCam US
Brand name:	ALCATEL
Marketing name:	OT-383A
Test Frequency Band:	GSM 850/GSM 1900
GPRS Class:	10

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	011857000012005	PI01	V326

*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	Lithium Battery	CAB30M0000C1	B032960142A	BYD
AE2	Lithium Battery	CAB30M0000C1	B03296019DA	BYD
AE3	Travel Charger	T5002684AGAC	/	BYD
AE3	Headset	CCA30B4000C	Very cost down stereo headset	Shunda/Quancheng

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

4 CHARACTERISTICS OF THE TEST

4.1 Applicable Limit Regulations

EN 50360–2001: Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.

It specifies the maximum exposure limit of **2.0 W/kg** as averaged over any 10 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

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

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

4.2 Applicable Measurement Standards

EN 50361–2001: Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones.

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)

IEC 62209-2 (Draft): Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the Specific Absorption Rate (SAR)in the head and body for 30MHz to 6GHz Handheld and Body-Mounted Devices used in close proximity to the Body.

They specify the measurement method for demonstration of compliance with the SAR limits for such equipments.

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.

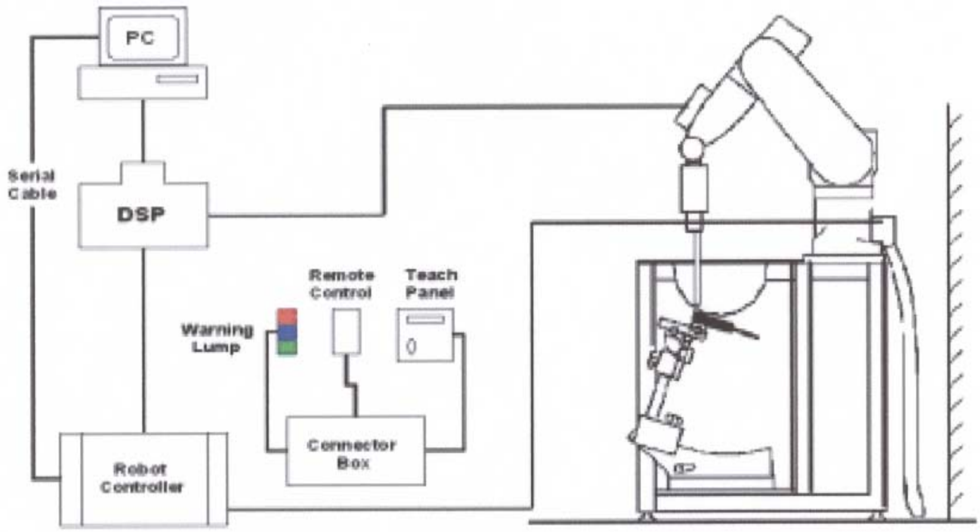
In order to determine the highest value of the peak spatial-average SAR of the EUT, it was tested at middle frequency (cheek and tilt, for both left and right sides of the SAM phantom). After found the worst case, perform the tests at the high and low frequencies. In addition, for all other conditions where the peak spatial-average SAR value determined is within 3 dB of the applicable SAR limit, all other test frequencies shall be tested as well.

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-field 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, 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 Probe

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 repeatably 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 800-2000 MHz consisted of water, sugar, salt 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

5.7.1 Robotic 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 and ERP for the EUT. In all cases, the measured peak output power should be greater and within 5% than EMI measurement.

6.2 Conducted Power

6.2.1 Measurement Methods

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

6.2.2 Measurement result

Table 3: Conducted Power Measurement Results

850MHZ	Conducted Power (dBm)		
	Channel 251(848.8MHz)	Channel 190(836.6MHz)	Channel 128(824.2MHz)
	32.51	32.48	32.50
1900MHZ	Conducted Power (dBm)		
	Channel 810(1909.8MHz)	Channel 661(1880MHz)	Channel 512(1850.2MHz)
	30.15	30.13	30.22

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 7 to Table 14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

7 TEST RESULTS

7.1 Dielectric Performance

Table 4: Dielectric Performance of Head Tissue Simulating Liquid

Measurement is made at temperature 23.3 °C and relative humidity 49%.
Liquid temperature during the test: 22.5°C
Measurement Date : 850 MHz **Apr 1, 2009** 1900 MHz **Apr 2, 2009**

/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	850 MHz	41.5	0.90
	1900 MHz	40.0	1.40
Measurement value (Average of 10 tests)	850 MHz	40.3	0.92
	1900 MHz	39.2	1.42

Table 5: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.3 °C and relative humidity 49%.
Liquid temperature during the test: 22.5°C
Measurement Date : 850 MHz **Apr 1, 2009** 1900 MHz **Apr 2, 2009**

/	Frequency	Permittivity ε	Conductivity σ (S/m)
Target value	850 MHz	55.2	0.97
	1900 MHz	53.3	1.52
Measurement value (Average of 10 tests)	850 MHz	53.7	1.00
	1900 MHz	52.3	1.56

7.2 System Validation

Table 6: System Validation

Measurement is made at temperature 23.3 °C and relative humidity 49%.
Liquid temperature during the test: 22.5°C
Measurement Date : 850 MHz **Apr 1, 2009** 1900 MHz **Apr 2, 2009**

Liquid parameters	Dipole calibration	Frequency	Permittivity ε	Conductivity σ (S/m)
		835 MHz	39.9	0.88

	Target value	1900 MHz		38.9		1.38	
	Actural Measurement value	835 MHz		40.4		0.90	
		1900 MHz		39.2		1.42	
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	1.60	2.48	1.62	2.50	1.25%	0.81%
	1900 MHz	5.09	9.73	5.27	9.91	3.54%	1.9%

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

7.3 Summary of Measurement Results (GSM 850)

Table 7: SAR Values (Head, GSM 850 MHz Band) – Slide down

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, Mid frequency(See Fig.1)	0.494	0.720	-0.015
Left hand, Tilt 15 Degree, Mid frequency(See Fig.2)	0.215	0.296	-0.108
Right hand, Touch cheek, Mid frequency(See Fig.3)	0.470	0.714	-0.128
Right hand, Tilt 15 Degree, Mid frequency(See Fig.4)	0.228	0.314	-0.138
Left hand, Touch cheek, Top frequency(See Fig.5)	0.479	0.713	0.028
Left hand, Touch cheek, Bottom frequency(See Fig.6)	0.500	0.733	0.069

Table 8: SAR Values (Head, GSM 850 MHz Band) – Slide up

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, Top frequency(See Fig.7)	0.564	0.873	-0.052
Left hand, Touch cheek, Mid frequency(See Fig.9)	0.545	0.834	-0.088
Left hand, Touch cheek, Bottom frequency(See Fig.10)	0.454	0.684	-0.113
Left hand, Tilt 15 Degree, Top frequency(See Fig.11)	0.373	0.532	-0.038
Left hand, Tilt 15 Degree, Mid frequency(See Fig.12)	0.344	0.487	-0.134

Left hand, Tilt 15 Degree, Bottom frequency(See Fig.13)	0.297	0.419	-0.063
Right hand, Touch cheek, Top frequency(See Fig.14)	0.520	0.853	0.000
Right hand, Touch cheek, Mid frequency(See Fig.15)	0.502	0.803	-0.122
Right hand, Touch cheek, Bottom frequency(See Fig.16)	0.430	0.678	-0.148
Right hand, Tilt 15 Degree, Top frequency(See Fig.17)	0.298	0.425	-0.027
Right hand, Tilt 15 Degree, Mid frequency(See Fig.18)	0.274	0.387	-0.013
Right hand, Tilt 15 Degree, Bottom frequency(See Fig.19)	0.264	0.370	-0.039

Table 9: SAR Values (Body, GSM 850 MHz Band) – Slide down

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Body, Towards Ground, Top frequency (See Fig.20)	0.474	0.693	-0.162
Body, Towards Ground, Mid frequency (See Fig.21)	0.457	0.667	0.027
Body, Towards Ground, Bottom frequency (See Fig.22)	0.450	0.653	0.017
Body, Towards Phantom, Top frequency (See Fig.23)	0.281	0.396	-0.134
Body, Towards Phantom, Mid frequency (See Fig.24)	0.266	0.372	-0.028
Body, Towards Phantom, Bottom frequency (See Fig.25)	0.264	0.371	0.042

Table 10: SAR Values (Body, GSM 850 MHz Band) – Slide up

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
Test Case	Measurement Result (W/kg)		
	10 g Average	1 g Average	
Body, Towards Ground, Top frequency (See Fig.26)	0.714	1.01	-0.065
Body, Towards Ground, Mid frequency (See Fig.28)	0.708	0.996	0.056
Body, Towards Ground, Bottom frequency (See Fig.29)	0.690	0.970	0.054
Body, Towards Phantom, Top frequency (See Fig.30)	0.560	0.780	0.050
Body, Towards Phantom, Mid frequency (See Fig.31)	0.573	0.795	-0.002
Body, Towards Phantom, Bottom frequency (See Fig.32)	0.563	0.776	0.034
Body, Towards Ground, Top frequency with Headset(See Fig.33)	0.506	0.716	0.015

7.6 Summary of Measurement Results (GSM 1900)

Table 11: SAR Values (Head, GSM 1900 MHz Band) – Slide down

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, Top frequency(See Fig.34)	0.380	0.635	-0.184
Left hand, Touch cheek, Mid frequency(See Fig.35)	0.496	0.844	-0.175
Left hand, Touch cheek, Bottom frequency(See Fig.36)	0.345	0.592	-0.062
Left hand, Tilt 15 Degree, Top frequency(See Fig.37)	0.195	0.329	-0.052
Left hand, Tilt 15 Degree, Mid frequency(See Fig.38)	0.248	0.413	-0.096
Left hand, Tilt 15 Degree, Bottom frequency(See Fig.39)	0.148	0.242	-0.024
Right hand, Touch cheek, Top frequency(See Fig.40)	0.466	0.818	-0.190
Right hand, Touch cheek, Mid frequency(See Fig.41)	0.634	1.11	-0.075
Right hand, Touch cheek, Bottom frequency(See Fig.43)	0.434	0.757	0.006
Right hand, Tilt 15 Degree, Top frequency(See Fig.44)	0.190	0.325	0.009
Right hand, Tilt 15 Degree, Mid frequency(See Fig.45)	0.260	0.443	-0.027
Right hand, Tilt 15 Degree, Bottom frequency(See Fig.46)	0.174	0.293	0.047

Table 12: SAR Values (Head, GSM 1900 MHz Band) – Slide up

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, Mid frequency(See Fig.47)	0.344	0.612	-0.131
Left hand, Tilt 15 Degree, Mid frequency(See Fig.48)	0.267	0.437	-0.039
Right hand, Touch cheek, Mid frequency(See Fig.49)	0.278	0.464	-0.083
Right hand, Tilt 15 Degree, Mid frequency(See Fig.50)	0.221	0.377	0.000
Left hand, Touch cheek, Top frequency(See Fig.51)	0.327	0.589	-0.149
Left hand, Touch cheek, Bottom frequency(See Fig.52)	0.202	0.355	-0.077

Table 13: SAR Values (Body, GSM 1900 MHz Band) – Slide down

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	**1.6**	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	

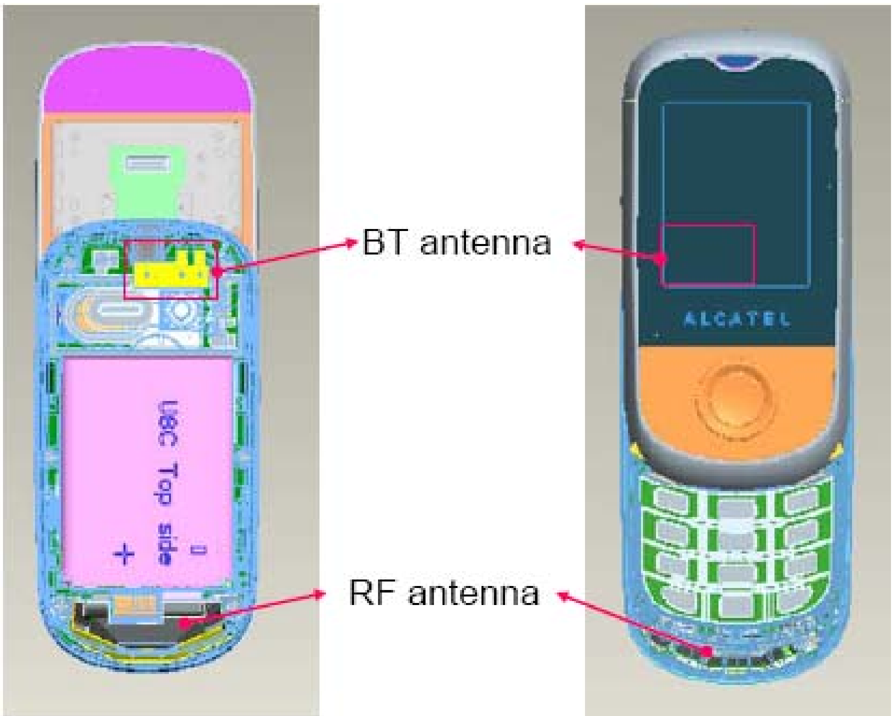
Body, Towards Ground, Top frequency (See Fig.53)	0.204	0.368	-0.037
Body, Towards Ground, Mid frequency (See Fig.54)	0.221	0.396	0.000
Body, Towards Ground, Bottom frequency (See Fig.55)	0.195	0.347	0.152
Body, Towards Phantom, Top frequency (See Fig.56)	0.107	0.170	-0.003
Body, Towards Phantom, Mid frequency (See Fig.57)	0.117	0.186	0.005
Body, Towards Phantom, Bottom frequency (See Fig.58)	0.116	0.183	0.098

Table 14: SAR Values (Body, GSM 1900 MHz Band) – Slide up

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	**1.6**	
Test Case	**Measurement Result (W/kg)**		
	10 g Average	**1 g Average**	
Body, Towards Ground, Top frequency (See Fig.59)	0.198	0.326	0.142
Body, Towards Ground, Mid frequency (See Fig.60)	0.240	0.404	-0.176
Body, Towards Ground, Bottom frequency (See Fig.61)	0.270	0.429	0.062
Body, Towards Phantom, Top frequency (See Fig.63)	0.197	0.318	-0.051
Body, Towards Phantom, Mid frequency (See Fig.64)	0.225	0.358	0.035
Body, Towards Phantom, Bottom frequency (See Fig.65)	0.227	0.357	0.022
Body, Towards Ground, Bottom frequency with Headset(See Fig.66)	0.160	0.260	-0.150

7.7 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)	-0.58	-1.54	2.25

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 $\geqslant$5cm from other antenna.

7.8 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 5.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report.

The maximum SAR values are obtained at the case of **GSM 1900 Head, Slide down, Right hand, Touch cheek, Mid frequency (Table 11)**, and the value are: **0.634(10g), 1.11(1g)**

8 Measurement Uncertainty

SN	a	Type	c	d	e = f(d,k)	f	h = c x f / e	k
	Uncertainty Component		Tol. (± %)	Prob. Dist.	Div.	c_i (1 g)	1 g u_i (±%)	v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
	Measurement System							
2	Probe Calibration	B	5	N	2	1	2.5	∞
3	Axial Isotropy	B	4.7	R	√3	$(1-c_p)^{1/2}$	4.3	∞
4	Hemispherical Isotropy	B	9.4	R	√3	$\sqrt{c_p}$		∞
5	Boundary Effect	B	0.4	R	√3	1	0.23	∞
6	Linearity	B	4.7	R	√3	1	2.7	∞
7	System Detection Limits	B	1.0	R	√3	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	√3	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	√3	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	√3	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	√3	1	2.3	∞

	Test sample Related							
13	Test Sample Positioning	A	4.9	N	1	1	4.9	N-1
14	Device Holder Uncertainty	A	6.1	N	1	1	6.1	N-1
15	Output Power Variation - SAR drift measurement	B	5.0	R	√3	1	2.9	∞
	Phantom and Tissue Parameters							
16	Phantom Uncertainty (shape and thickness tolerances)	B	1.0	R	√3	1	0.6	∞
17	Liquid Conductivity - deviation from target values	B	5.0	R	√3	0.64	1.7	∞
18	Liquid Conductivity - measurement uncertainty	B	5.0	N	1	0.64	1.7	M
19	Liquid Permittivity - deviation from target values	B	5.0	R	√3	0.6	1.7	∞
20	Liquid Permittivity - measurement uncertainty	B	5.0	N	1	0.6	1.7	M
	Combined Standard Uncertainty			RSS			11.25	
	Expanded Uncertainty (95% CONFIDENCE INTERVAL)			K=2			22.5	

9 MAIN TEST INSTRUMENTS

Table 15: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 30,2008	One year
02	Power meter	NRVD	101253	June 20, 2008	One year
03	Power sensor	NRV-Z5	100333		
04	Power sensor	NRV-Z6	100011	September 2, 2008	One year
05	Signal Generator	E4433B	US37230472	September 4, 2008	One Year
06	Amplifier	VTL5400	0505	No Calibration Requested	
07	BTS	CMU 200	105948	August 15, 2008	One year
08	E-field Probe	SPEAG ES3DV3	3149	October 1, 2008	One year
09	DAE	SPEAG DAE4	771	November 20, 2008	One year
10	Dipole Validation Kit	SPEAG D835V2	443	February 18, 2009	Two years
11	Dipole Validation Kit	SPEAG D1900V2	541	February 19, 2009	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.

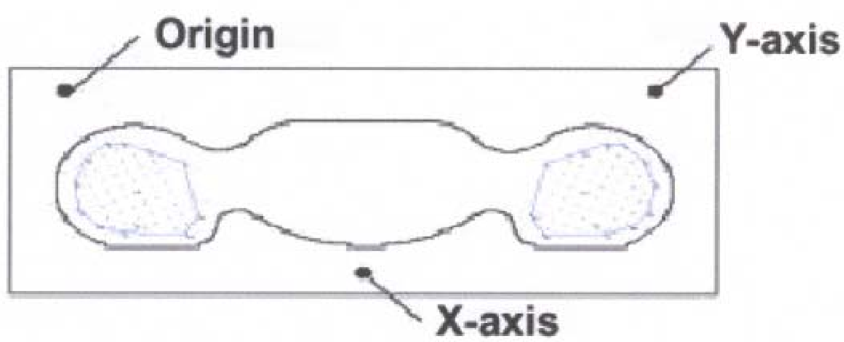
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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.

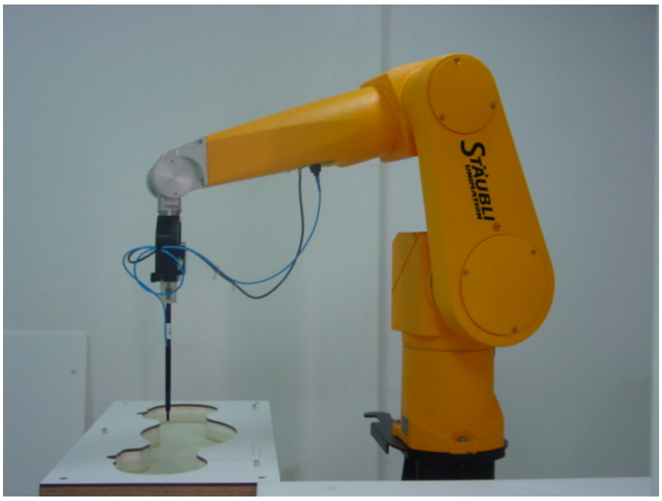
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

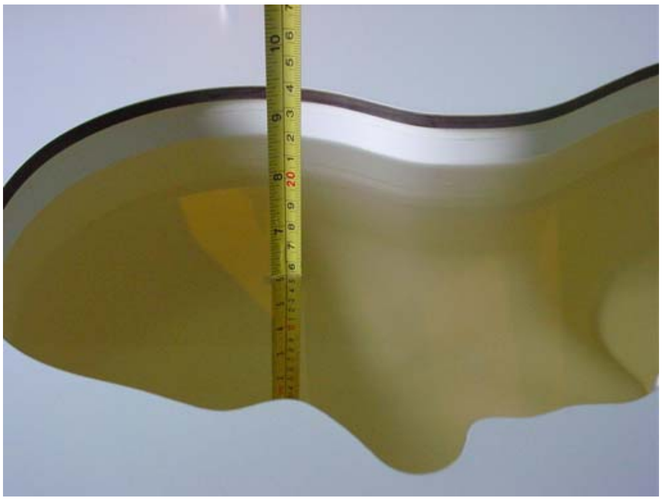
Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation is repeated.



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 Head)


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

Picture B4: Liquid depth in the Flat Phantom (850 MHz Body)

Picture B5: Liquid depth in the Flat Phantom (1900MHz Body)

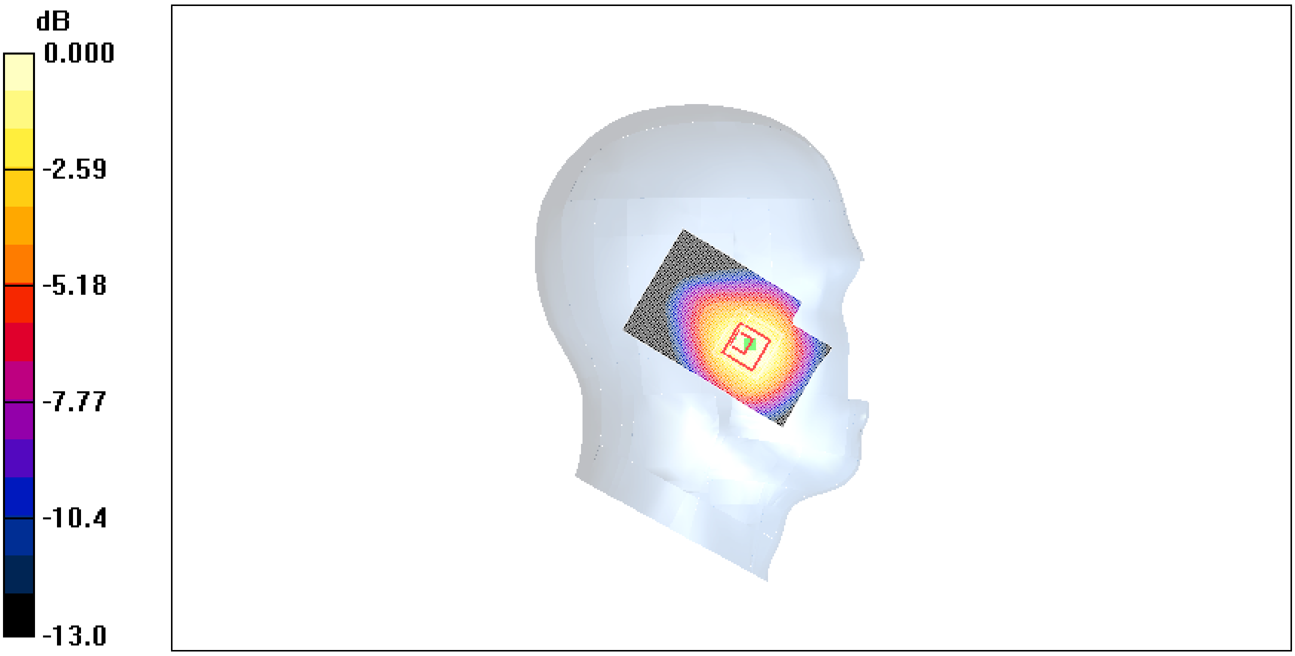
ANNEX C GRAPH RESULTS

850 Left Cheek Middle – Slide down

Date/Time: 2009-4-1 7:54:41
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C
Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3
Probe: ES3DV3 - SN3149 ConvF(6.56, 6.56, 6.56)

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.716 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.3 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.720 mW/g; SAR(10 g) = 0.494 mW/g
Maximum value of SAR (measured) = 0.777 mW/g



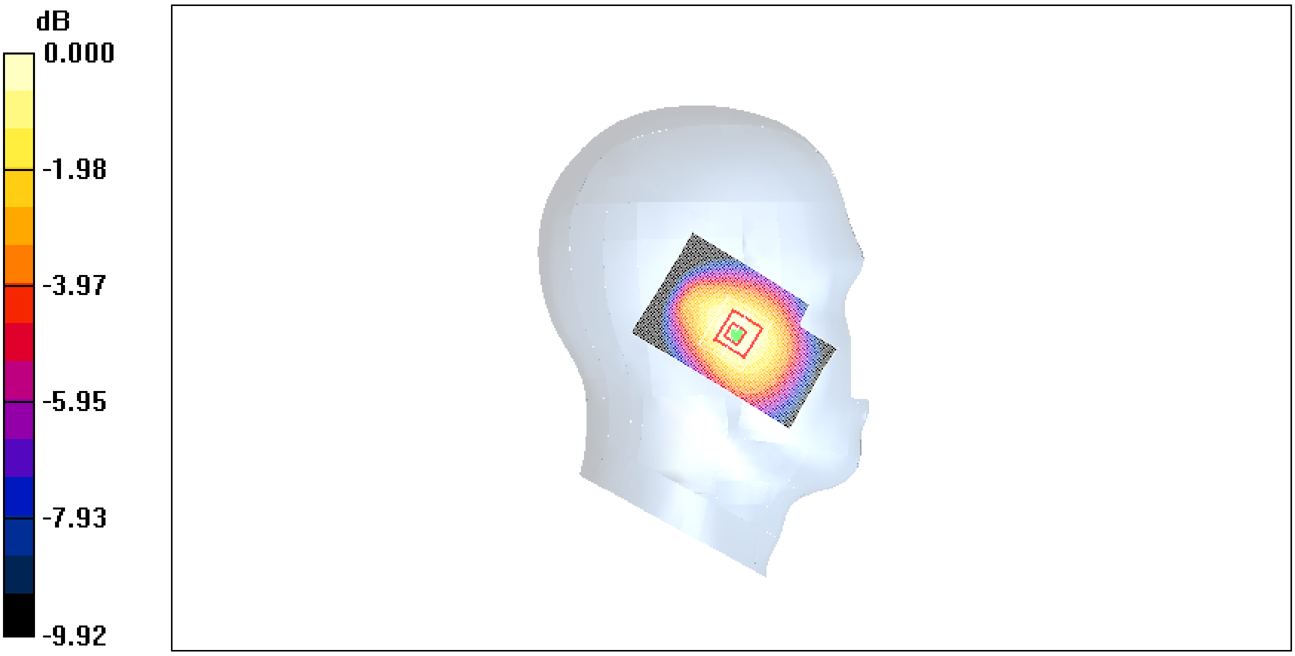
0 dB = 0.777mW/g

Fig. 1 850 MHz CH190 – Slide down

850 Left Tilt Middle – Slide down
Date/Time: 2009-4-1 8:08:32
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.314 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = -0.108 dB
Peak SAR (extrapolated) = 0.388 W/kg
SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.215 mW/g
Maximum value of SAR (measured) = 0.316 mW/g



0 dB = 0.316mW/g

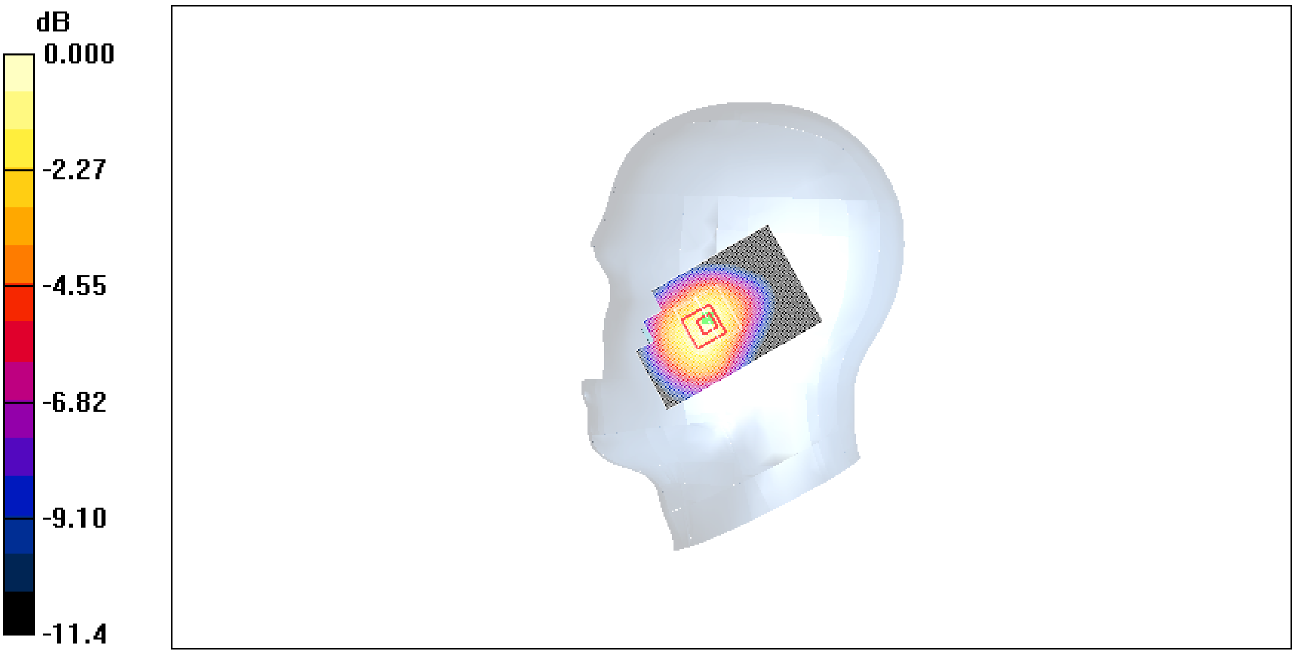
Fig. 2 850 MHz CH190 – Slide down

850 Right Cheek Middle – Slide down

Date/Time: 2009-4-1 8:22:29
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.697 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.6 V/m; Power Drift = -0.128 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.714 mW/g; SAR(10 g) = 0.470 mW/g
Maximum value of SAR (measured) = 0.803 mW/g



0 dB = 0.803mW/g

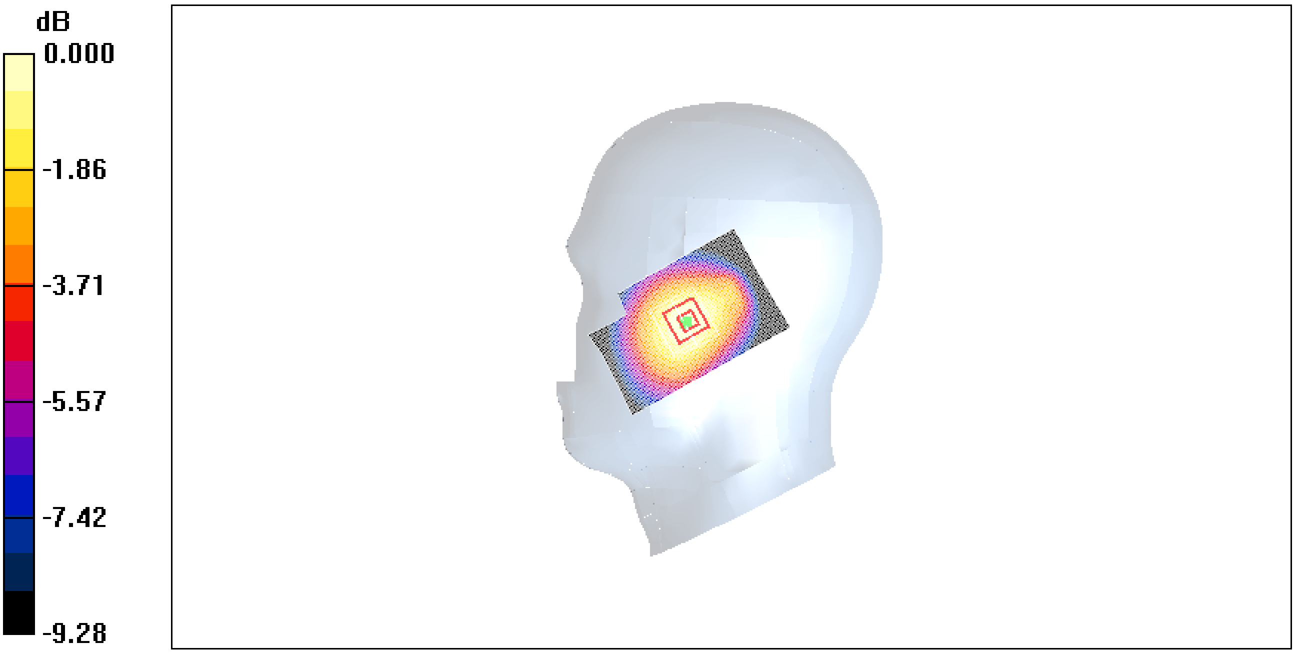
Fig. 3 850 MHz CH190 – Slide down

850 Right Tilt Middle – Slide down

Date/Time: 2009-4-1 8:36:30
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.330 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.0 V/m; Power Drift = -0.138 dB
Peak SAR (extrapolated) = 0.411 W/kg
SAR(1 g) = 0.314 mW/g; SAR(10 g) = 0.228 mW/g
Maximum value of SAR (measured) = 0.331 mW/g



0 dB = 0.331mW/g

Fig. 4 850 MHz CH190 – Slide down

850 Left Cheek High – Slide down

Date/Time: 2009-4-1 8:50:15

Electronics: DAE4 Sn771

Medium: 850 HEAD

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.92 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C   Liqiud 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 (51x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.693 mW/g

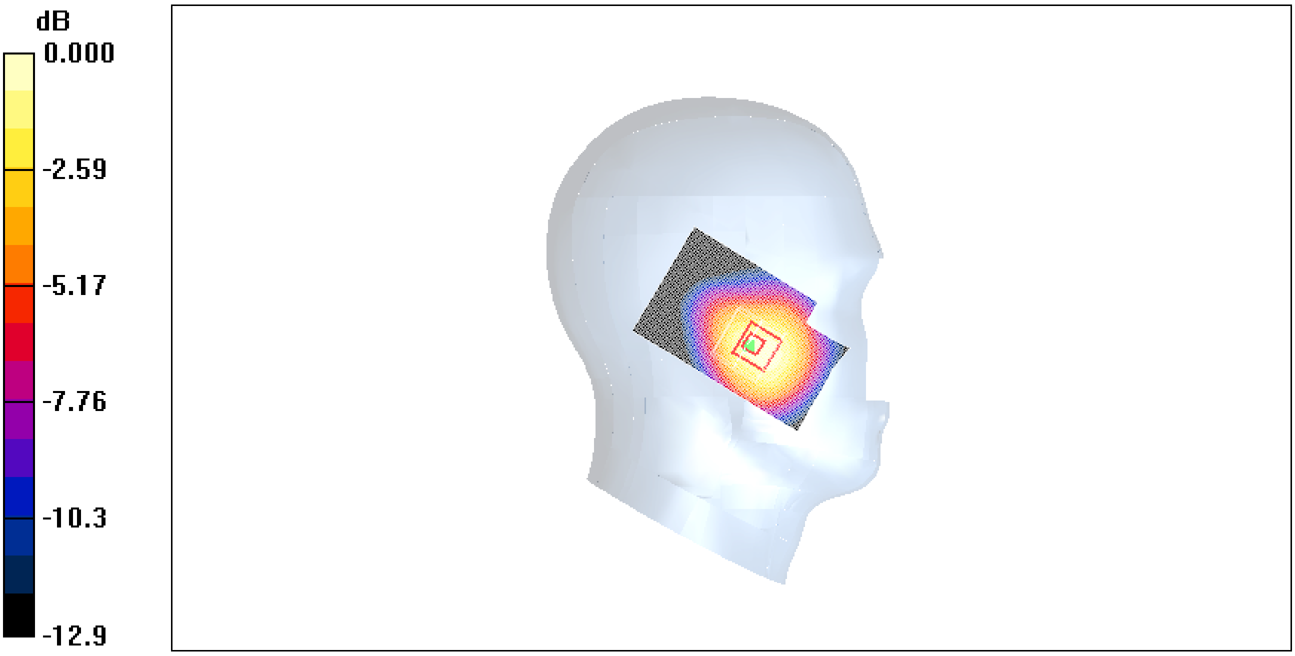
Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=7mm, dy=7mm, dz=5mm

Reference Value = 9.39 V/m; Power Drift = 0.028 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.713 mW/g; SAR(10 g) = 0.479 mW/g

Maximum value of SAR (measured) = 0.768 mW/g



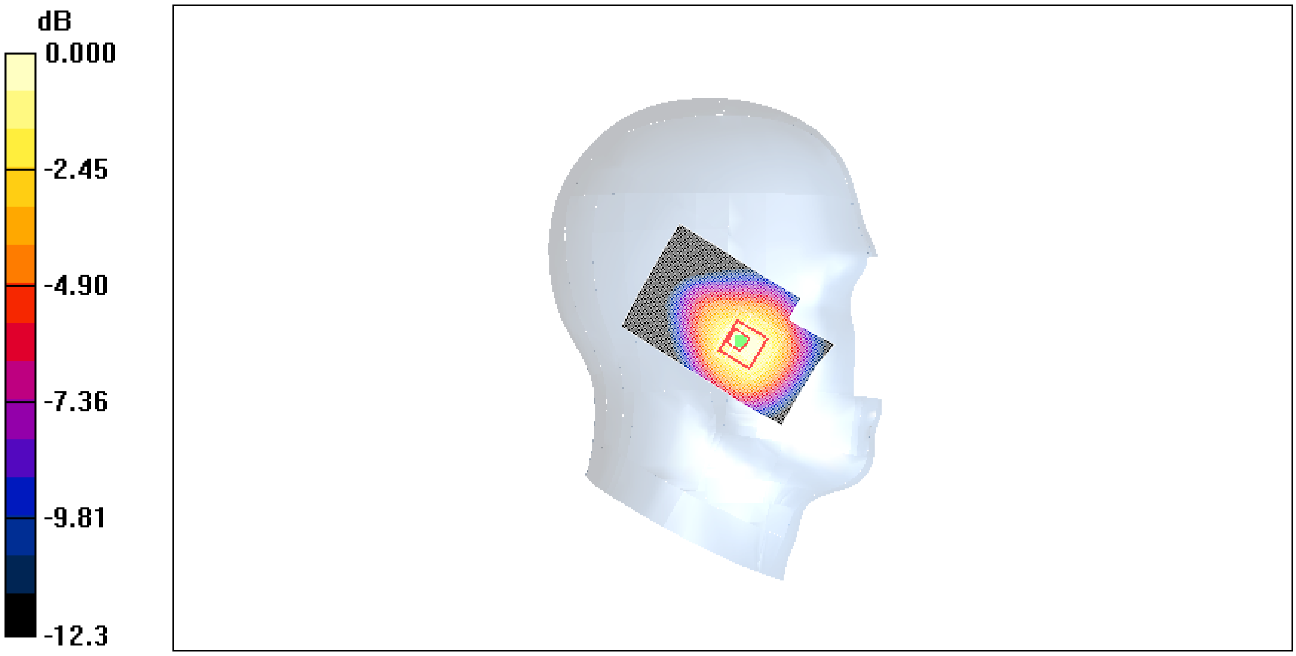
0 dB = 0.768mW/g

Fig. 5 850MHz CH251 – Slide down

850 Left Cheek Low – Slide down
Date/Time: 2009-4-1 9:04:29
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.709 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.98 V/m; Power Drift = 0.069 dB
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.733 mW/g; SAR(10 g) = 0.500 mW/g
Maximum value of SAR (measured) = 0.809 mW/g



0 dB = 0.809mW/g

Fig. 6 850 MHz CH128 – Slide down

850 Left Cheek High – Slide up

Date/Time: 2009-4-1 9:18:20

Electronics: DAE4 Sn771

Medium: 850 HEAD

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.92 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.873 mW/g

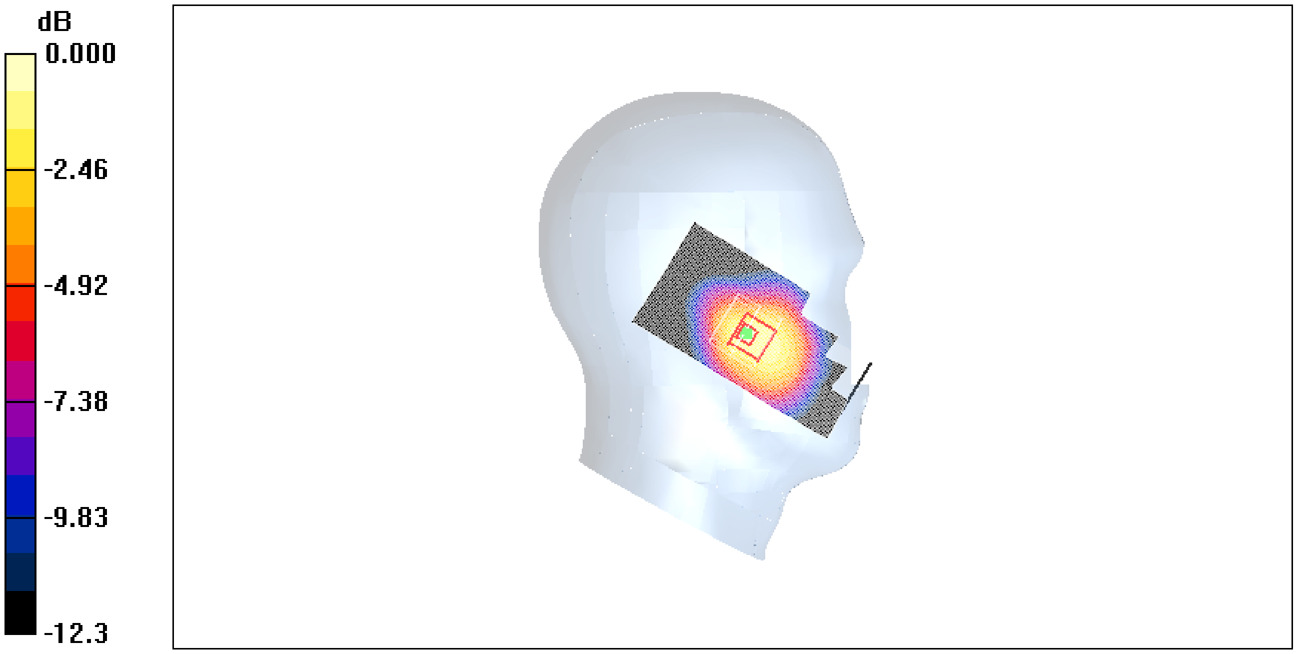
Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.74 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 1.46 W/kg

SAR(1 g) = 0.873 mW/g; SAR(10 g) = 0.564 mW/g

Maximum value of SAR (measured) = 0.978 mW/g



0 dB = 0.978mW/g

Fig. 7 850 MHz CH251 – Slide up

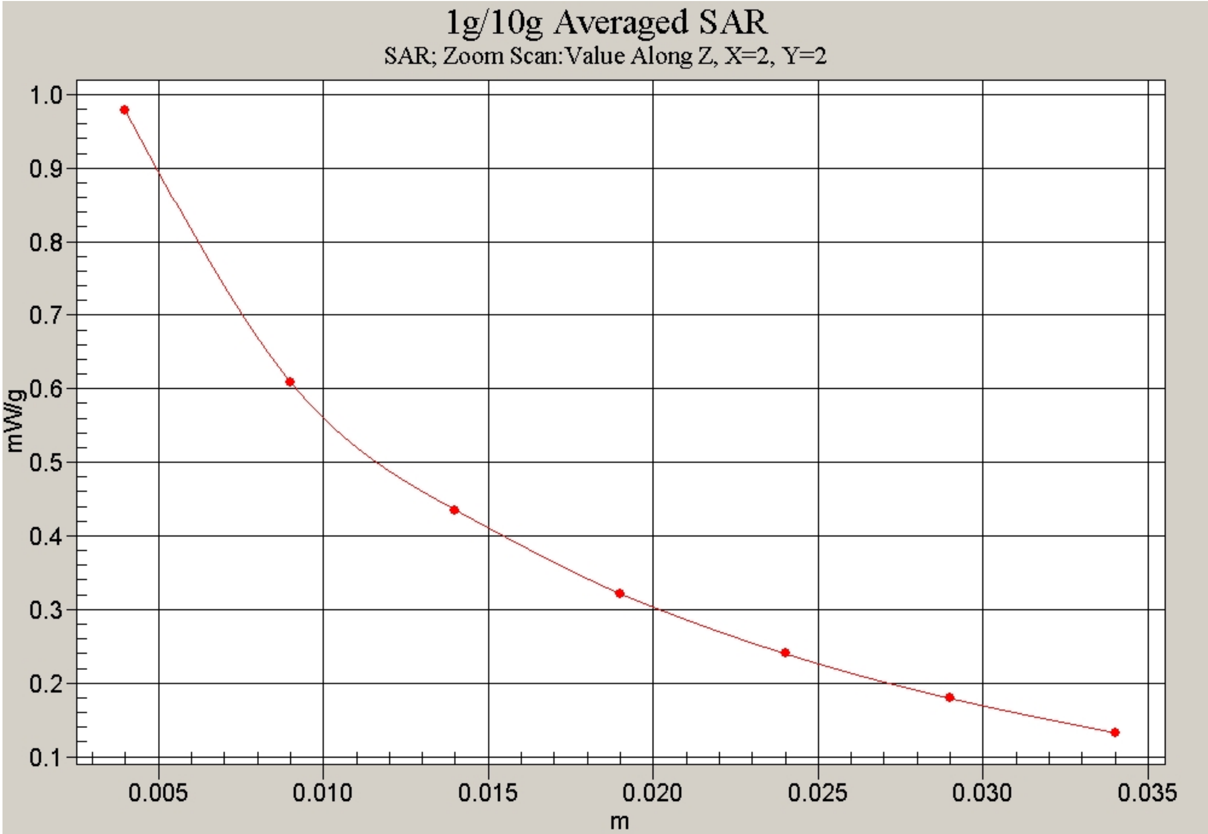
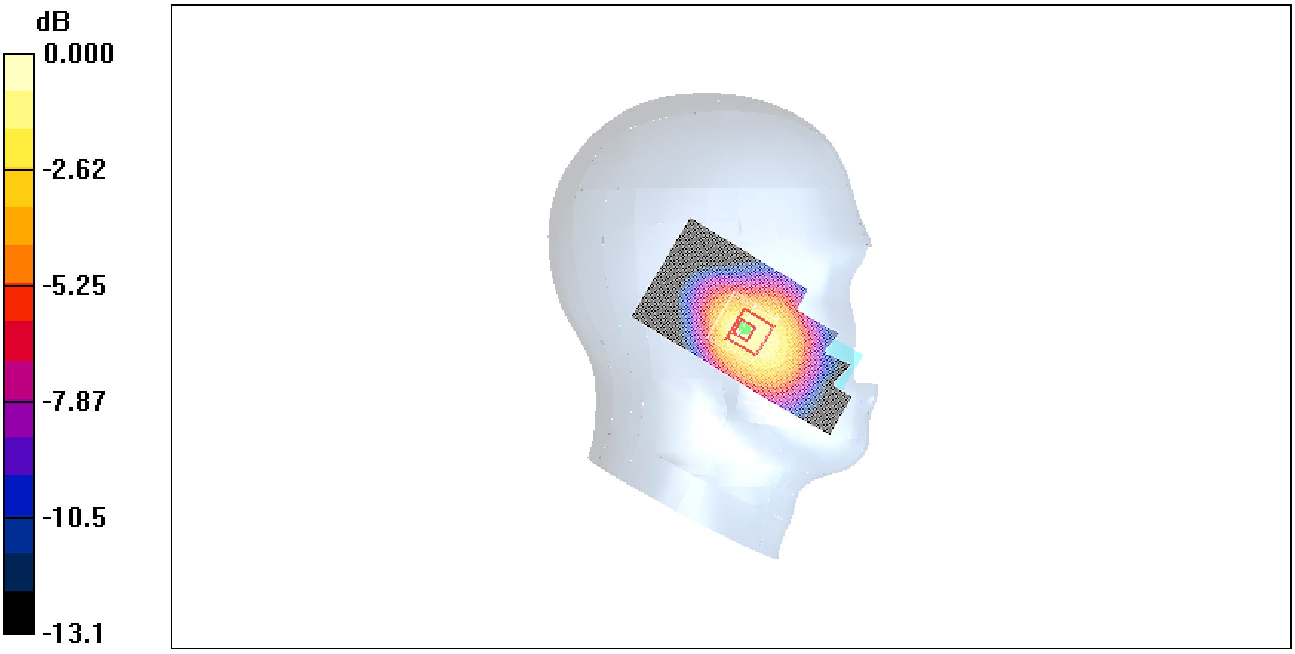


Fig. 8 Z-Scan at power reference point (850 MHz CH251) – Slide up

850 Left Cheek Middle – Slide up
Date/Time: 2009-4-1 9:32:44
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.837 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.83 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.834 mW/g; SAR(10 g) = 0.545 mW/g
Maximum value of SAR (measured) = 0.937 mW/g



0 dB = 0.937mW/g

Fig. 9 850 MHz CH190 – Slide up

850 Left Cheek Low – Slide up

Date/Time: 2009-4-1 9:46:08

Electronics: DAE4 Sn771

Medium: 850 HEAD

Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm

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

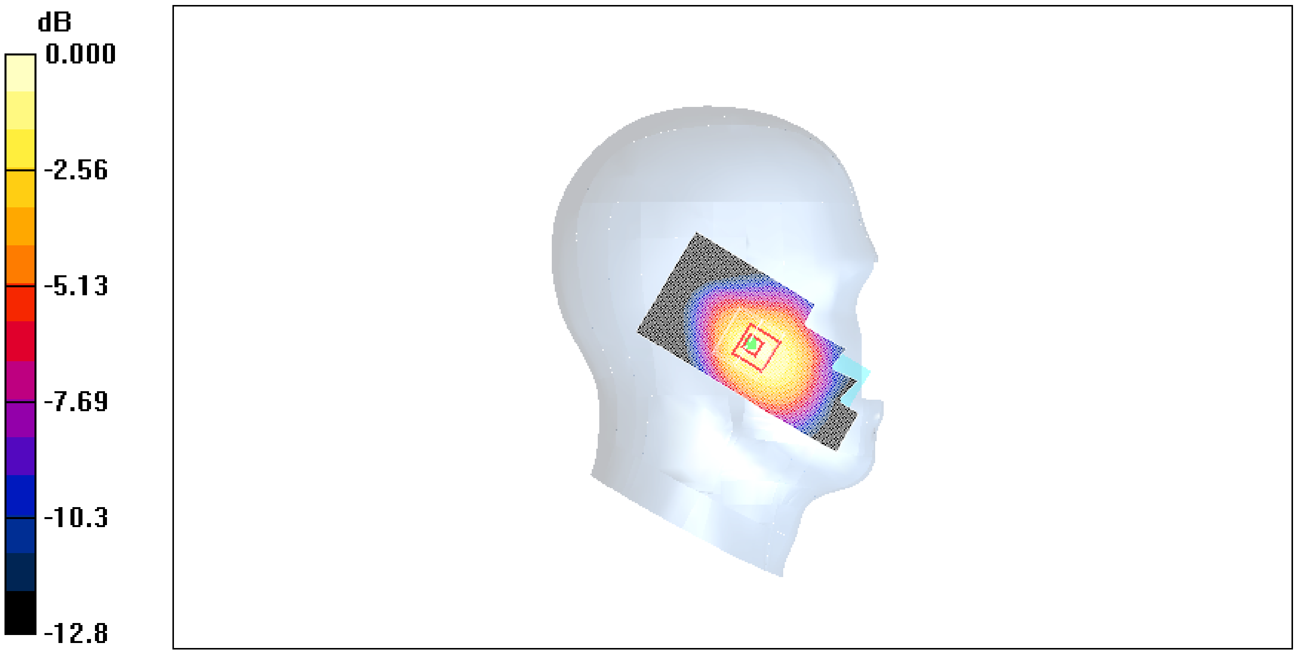
Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.06 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.684 mW/g; SAR(10 g) = 0.454 mW/g

Maximum value of SAR (measured) = 0.761 mW/g



0 dB = 0.761mW/g

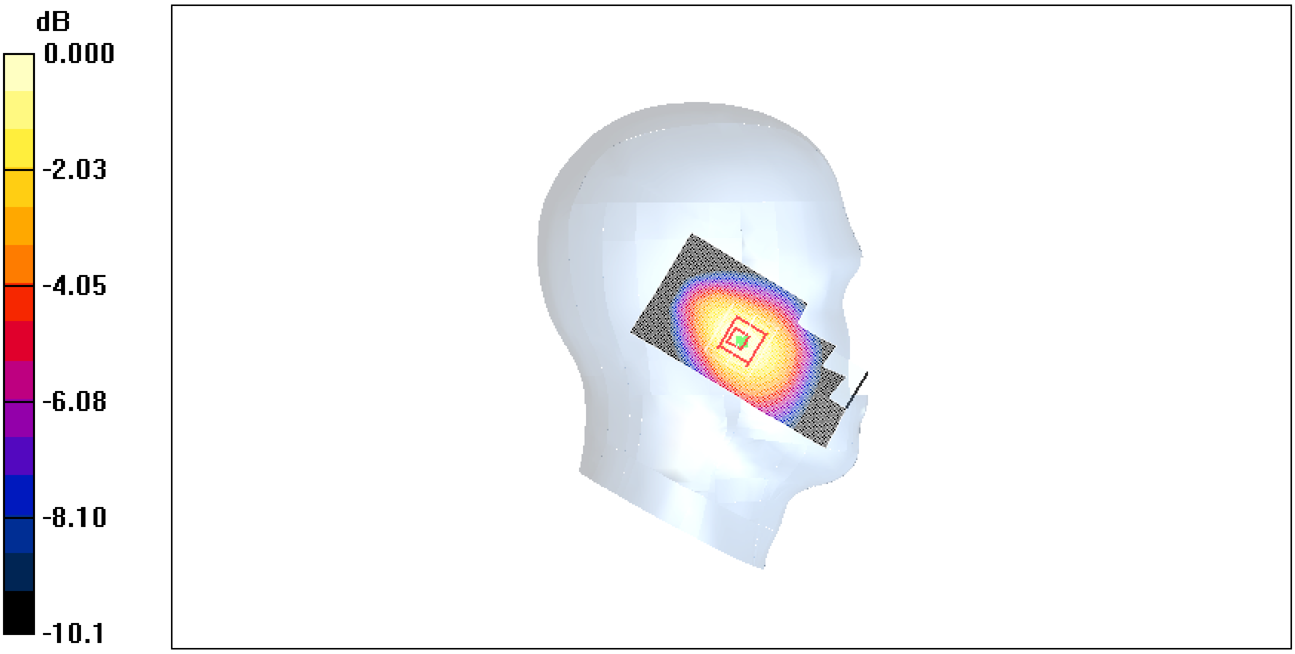
Fig. 10 850 MHz CH128 – Slide up

850 Left Tilt High – Slide up

Date/Time: 2009-4-1 10:00:13
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.92 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C   Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.577 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = -0.038 dB
Peak SAR (extrapolated) = 0.727 W/kg
SAR(1 g) = 0.532 mW/g; SAR(10 g) = 0.373 mW/g
Maximum value of SAR (measured) = 0.567 mW/g



0 dB = 0.567mW/g

Fig. 11 850 MHz CH251 – Slide up

850 Left Tilt Middle – Slide up

Date/Time: 2009-4-1 10:14:22

Electronics: DAE4 Sn771

Medium: 850 HEAD

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3

Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.526 mW/g

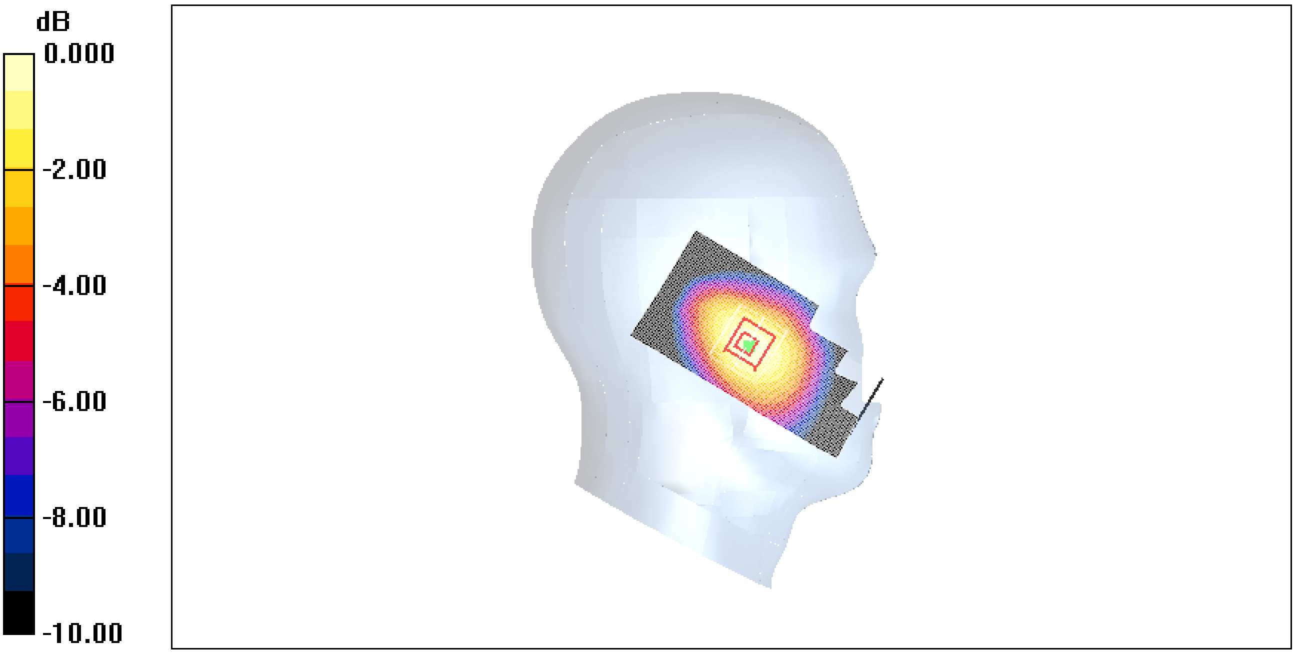
Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.1 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 0.660 W/kg

SAR(1 g) = 0.487 mW/g; SAR(10 g) = 0.344 mW/g

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



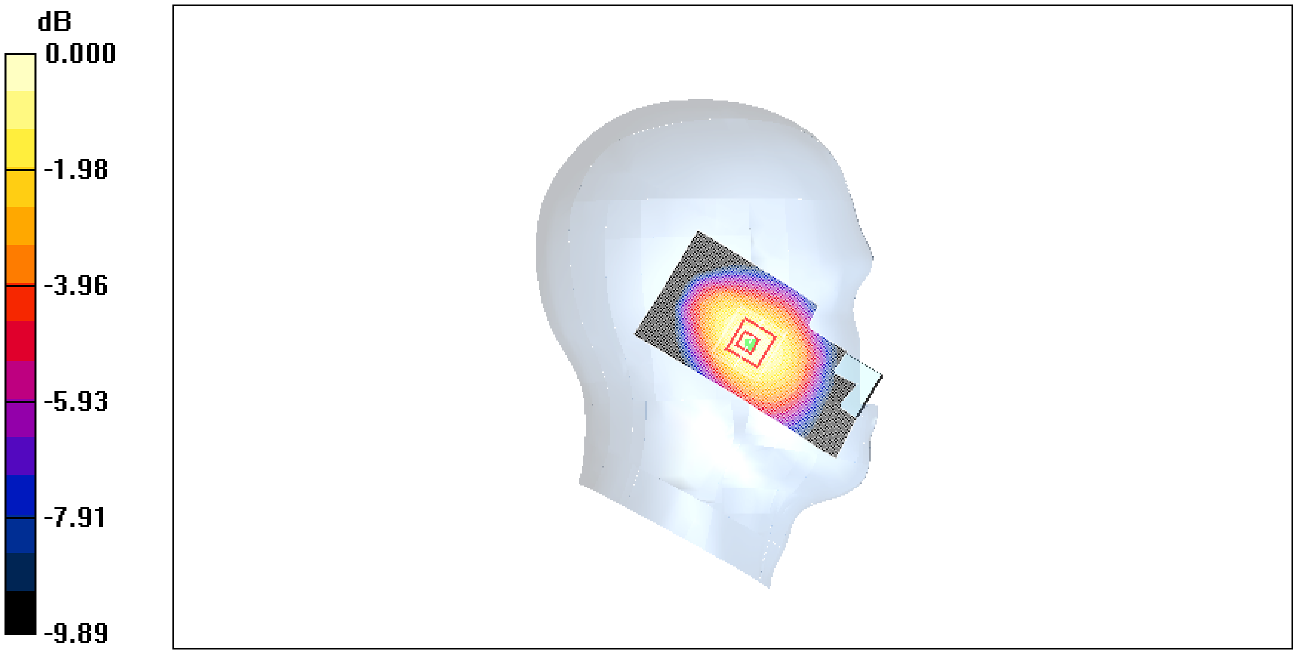
0 dB = 0.519mW/g

Fig. 12 850 MHz CH190 – Slide up

850 Left Tilt Low – Slide up
Date/Time: 2009-4-1 10:28:51
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.452 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.063 dB
Peak SAR (extrapolated) = 0.570 W/kg
SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.297 mW/g
Maximum value of SAR (measured) = 0.445 mW/g



0 dB = 0.445mW/g

Fig. 13 850 MHz CH128 – Slide up

850 Right Cheek High – Slide up

Date/Time: 2009-4-1 10:42:34
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.92 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.913 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.71 V/m; Power Drift = 0.000 dB
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.853 mW/g; SAR(10 g) = 0.520 mW/g
Maximum value of SAR (measured) = 0.986 mW/g

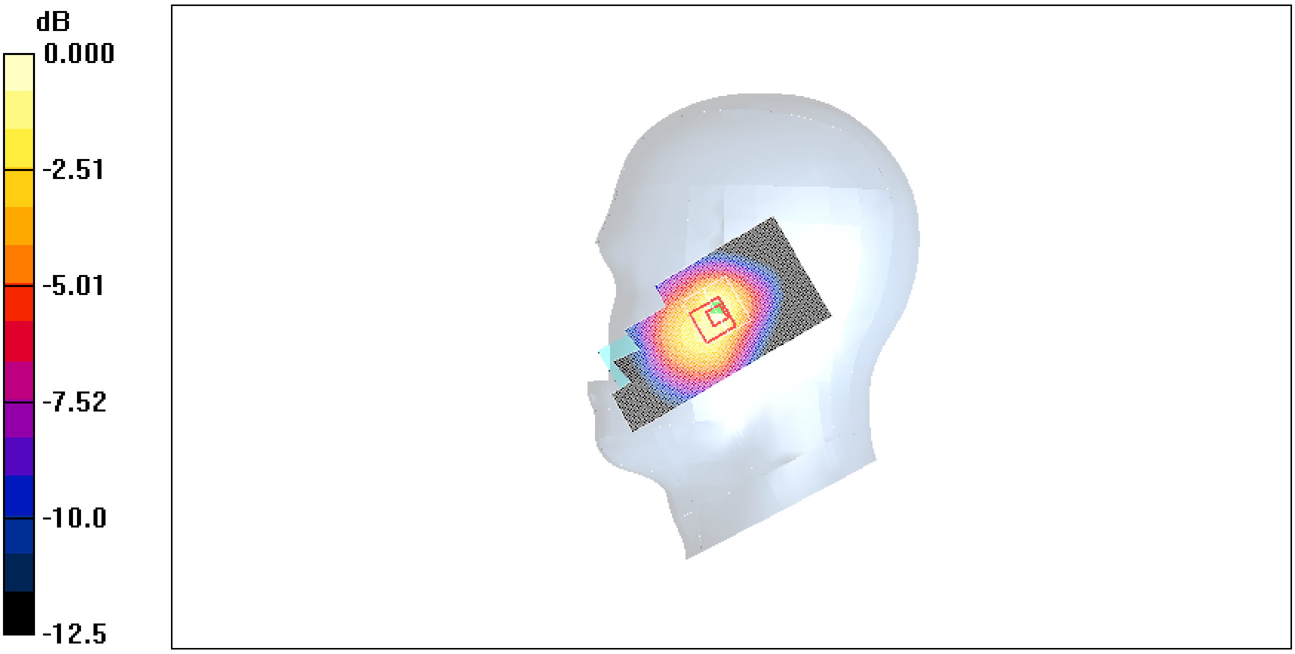
0 dB = 0.986mW/g

Fig. 14 850 MHz CH251 – Slide up

850 Right Cheek Middle – Slide up
Date/Time: 2009-4-1 10:56:26
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.861 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.81 V/m; Power Drift = -0.122 dB
Peak SAR (extrapolated) = 1.36 W/kg
SAR(1 g) = 0.803 mW/g; SAR(10 g) = 0.502 mW/g
Maximum value of SAR (measured) = 0.915 mW/g



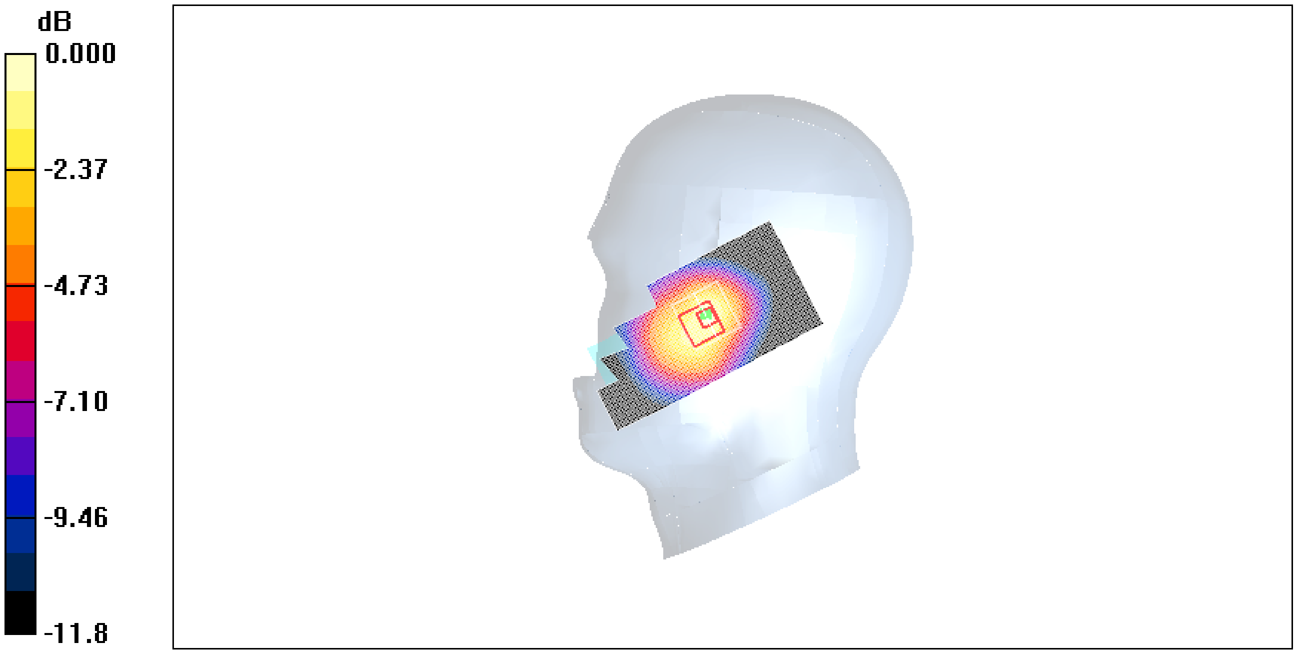
0 dB = 0.915mW/g

Fig. 15 850 MHz CH190 – Slide up

850 Right Cheek Low – Slide up
Date/Time: 2009-4-1 11:10:38
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.716 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.89 V/m; Power Drift = -0.148 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.678 mW/g; SAR(10 g) = 0.430 mW/g
Maximum value of SAR (measured) = 0.777 mW/g



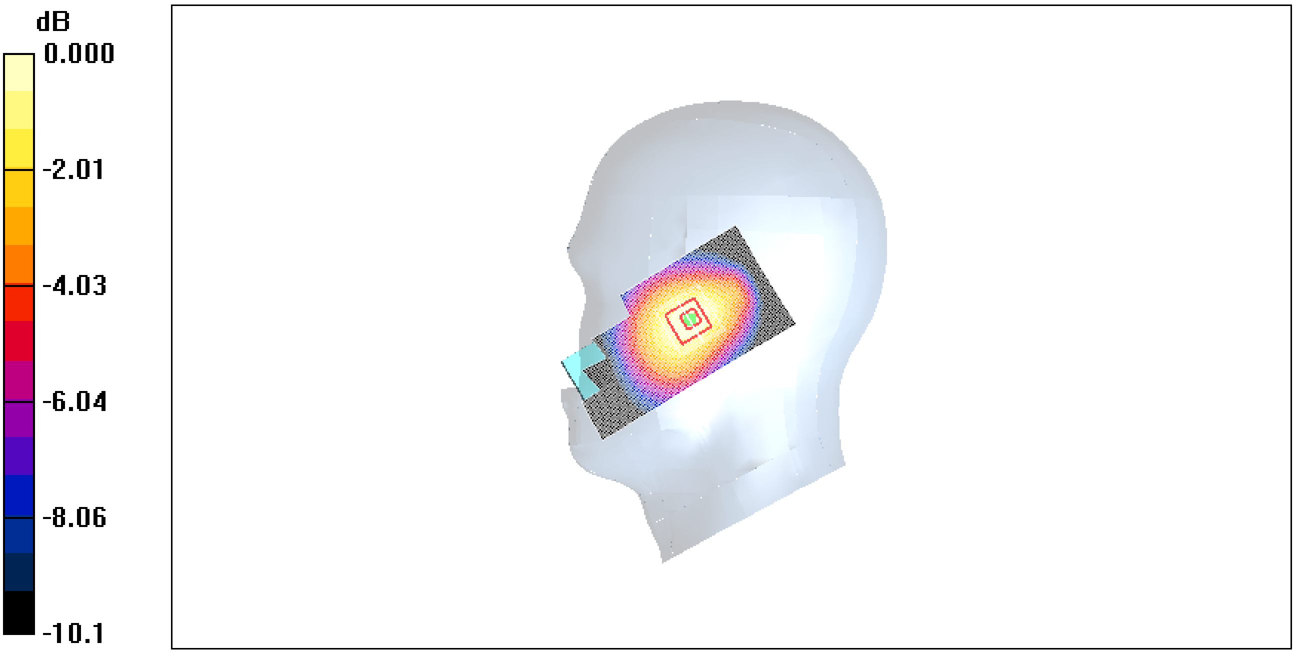
0 dB = 0.777mW/g

Fig. 16 850 MHz CH128 – Slide up

850 Right Tilt High – Slide up
Date/Time: 2009-4-1 11:24:17
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.92 mho/m; ε_r = 40.3; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.453 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = -0.027 dB
Peak SAR (extrapolated) = 0.586 W/kg
SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.298 mW/g
Maximum value of SAR (measured) = 0.453 mW/g



0 dB = 0.453mW/g

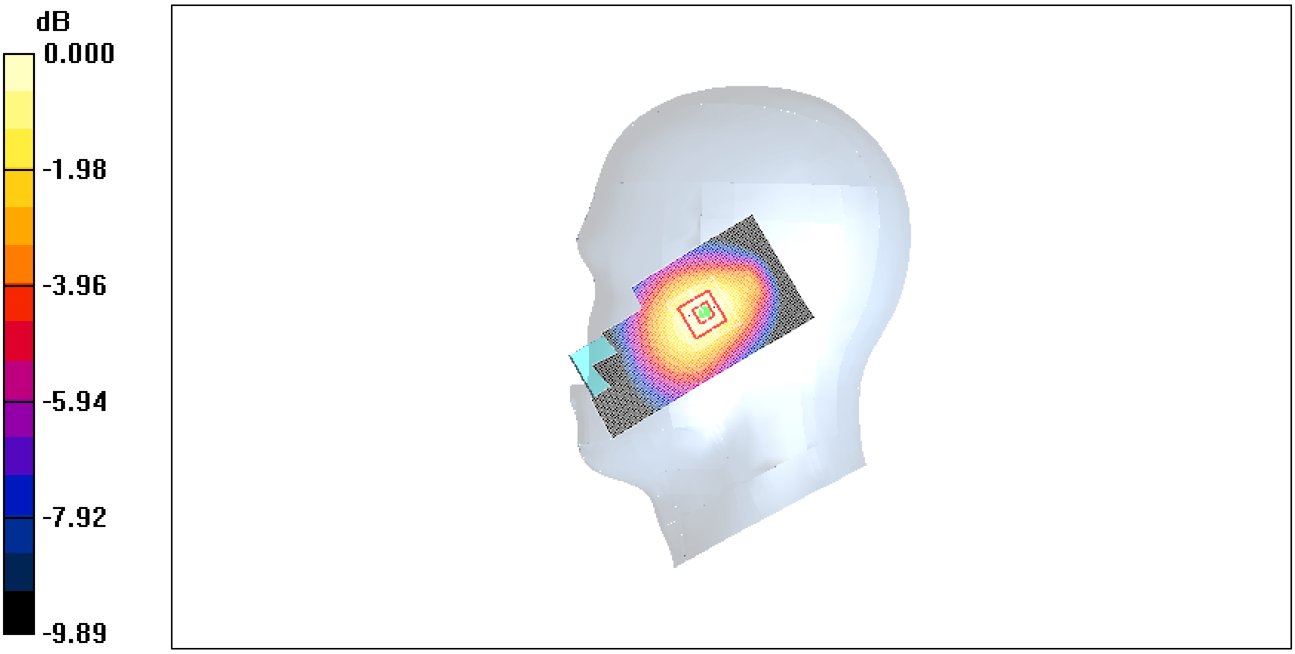
Fig. 17 850 MHz CH251 – Slide up

850 Right Tilt Middle – Slide up

Date/Time: 2009-4-1 11:38:12
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.908 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.414 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.3 V/m; Power Drift = -0.013 dB
Peak SAR (extrapolated) = 0.525 W/kg
SAR(1 g) = 0.387 mW/g; SAR(10 g) = 0.274 mW/g
Maximum value of SAR (measured) = 0.414 mW/g



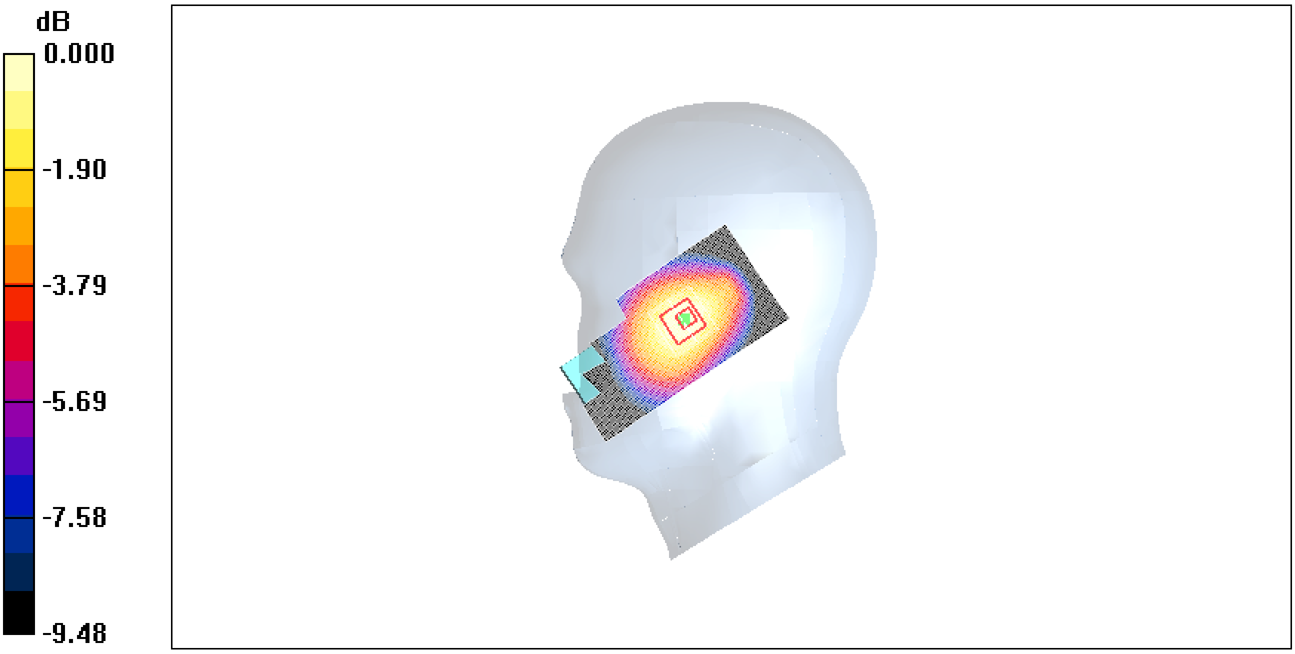
0 dB = 0.414mW/g

Fig. 18 850 MHz CH190 – Slide up

850 Right Tilt Low – Slide up
Date/Time: 2009-4-1 11:52:45
Electronics: DAE4 Sn771
Medium: 850 HEAD
Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3°C Liqiud 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 (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.395 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.3 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 0.497 W/kg
SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.264 mW/g
Maximum value of SAR (measured) = 0.391 mW/g



0 dB = 0.391mW/g

Fig. 19 850 MHz CH128 – Slide up