SAR TEST REPORT

No. 2008SAR00027

for

TCT Mobile Suzhou Limited

GLAMPHONE ELLE A

EL05A

With

FCCID: RAD088

Hardware Version: PIO

Software Version: V56a

Issued Date: 2008-07-02

Deutscher Akkreditierungs Rat DAR

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

Note:

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Test Laboratory:

TMC Beijing, Telecommunication Metrology Center of Ministry of Information Industry

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CONTENTS

SAR TEST REPORT

Test report No.	2008SAR00027	Date of report	July 02nd, 2008
Test laboratory	TMC Beijing, Telecommunication Metrology Center of MII	Client	T&A Mobile Phones
Test device	Product name: GLAMPHONE ELLE A Model type: EL05A Series number: 011634000004393 GPRS Class: 10		
Test reference documents	**EN 50360–2001**: Product standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones. **EN 50361–2001**: Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones. **ANSI C95.1–1999**: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. **IEEE 1528–2003**: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques. **OET Bulletin 65 (Edition 97-01) and Supplement C (Edition 01-01)**: Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. **IEC 62209-1-2005:** Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1:Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz) **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		
Test conclusion	Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 5.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report. General Judgment: **Pass**		
Signature	Lu Minniu **Deputy Director of the laboratory** (Approved for this report)	Sun Qian **SAR Project Leader** (Reviewed for this report)	Lin Xiaojun **SAR Test Engineer** (Prepared for this report)

1 Test Laboratory

1.1 Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MII
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Postal Code:	100083
Telephone:	+86-10-62303288
Fax:	+86-10-62304793

1.2 Testing Environment

Temperature:	Min. = 15 °C, Max. = 30 °C
Relative humidity:	Min. = 30%, Max. = 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:	Sun Qian
Testing Start Date:	August 08, 2007
Testing End Date:	August 10, 2007

2 Client Information

2.1 Applicant Information

Company Name:	TCT Mobile Suzhou Limited
Address /Post:	4F, South Building, No.2966, JinKe Road, Zhangjiang High-Tech Park Shanghai 201203, P.R.China
City:	Shanghai
Postal Code:	201203
Country:	P. R. China
Telephone:	0086-21-61460890
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2.2 Manufacturer Information

Company Name:	TCT Mobile Suzhou Limited
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City:	Shanghai
Postal Code:	201203
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Telephone:	0086-21-61460890
Fax:	0086-21-61460602

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

3.1 About EUT

Description:	GLAMPHONE ELLE A
Model:	EL05A
Frequency Band:	850 MHz/ 1900 MHz

Picture 1: Constituents of the sample (Lithium Battery is in the Handset)

Note: The GSM850/PCS1900 mobile phone, EL05A, supporting GSM850/PCS1900, manufactured by TCT Mobile Suzhou Limited is a variant of OT-C717A for the test. Only the enclosure of the EUT had been changed. So the SAR test results are coming from the test results of OT-C717A with the report No. of 2007SAR00032.

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	011634000004393	PIO	V56a

*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	T5001418AAAA	B073750078A	BYD
AE2	AC/DC Adapter	T5000436AGAA	\	Tenpao

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

4 OPERATIONAL CONDITIONS DURING TEST

4.1 Schematic Test Configuration

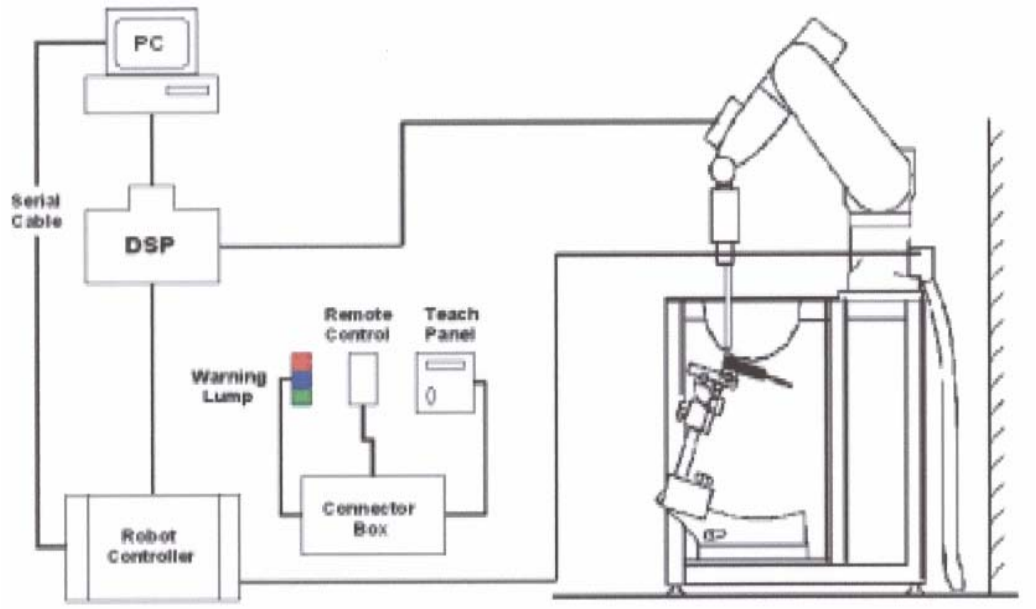
During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of 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.

4.2 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, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.



Picture 2: SAR Lab Test Measurement Set-up

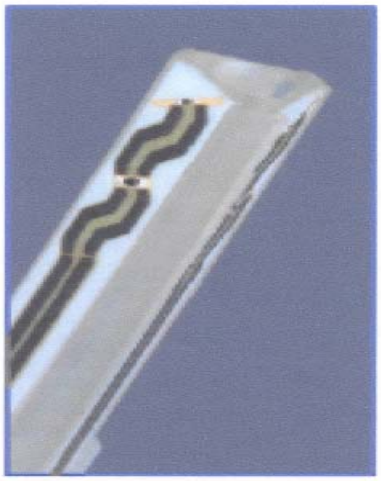
The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information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

4.3 Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 (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.

ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber *for* surface detection System(ET3DV6 only) Built-in shielding against static charges PEEK enclosure material(resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz and 1.8GHz (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	l 0 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)



Picture 3: ET3DV6 E-field Probe

Directivity	±0.2 dB in brain tissue (rotation around probe axis)
	±0.4 dB in brain tissue (rotation normal probe axis)
Dynamic Range	5u W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids
	over diffuse reflecting surface(ET3DV6 only)
Dimensions	Overall length: 330mm
	Tip length: 16mm
	Body diameter: 12mm
	Tip diarneter: 6.8mm
	Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 3GHz
	Compliance tests of mobile phones
	Fast automatic scanning in arbitrary phantoms

Picture4:ET3DV6 E-field probe

4.4 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.

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

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

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

Where:σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m3).

Note: Please check Annex E to see the Probe Certificate.

Picture 5:Device Holder

4.5 Other Test Equipment

4.5.1 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 repeat ably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

4.5.2 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 all predefined phantom positions and measurement grids by the complete setup of 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

Picture6:Generic Twin Phantom

4.6 Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt and Cellulose. The liquid has previously been 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

4.7 System Specifications

4.7.1 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

5 CHARACTERISTICS OF THE TEST

5.1 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.

5.2 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 62209-1-2005: Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –Part 1:Procedure to determine the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)
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.

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.

6.2.2 Measurement result

Table 3: Conducted Power Measurement Results

850MHZ	**Conducted Power**		
	Channel 251	**Channel 190**	**Channel 128**
Before SAR Test (dBm)	32.2	32.3	32.1
After SAR Test (dBm)	32.1	32.2	32.0
1900MHZ	**Conducted Power**		
	Channel 810	**Channel 661**	**Channel 512**
Before SAR Test (dBm)	29.9	29.8	29.7
After SAR Test (dBm)	30.0	30.0	29.9

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 16 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 22.5 °C and relative humidity 40%.			
/	**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	43.4	0.92
	1900 MHz	39.3	1.38

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			
/	**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	53.2	1.01
	1900 MHz	52.0	1.54

7.2 System Validation

Table 6: System Validation

Measurement is made at temperature 23.3 °C, relative humidity 49%, input power 250 mW. Liquid temperature during the test: 22.5°C							
Liquid parameters		**Frequency**		**Permittivity ε**		**Conductivity σ (S/m)**	
		835 MHz		41.7		0.88	
		1900 MHz		39.3		1.38	
Verification results	**Frequency**	**Target value (W/kg)**		**Measured value (W/kg)**		**Deviation**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz (Validation on Aug 08th)	1.55	2.375	1.62	2.48	4.5%	4.4%
	1900 MHz (Validation on Aug 10th)	5.125	9.925	5.27	9.91	2.8%	-0.15%

Note：Target Values used are one fourth of those in IEEE Std 1528-2003 (feeding power is normalized to 1 Watt), i.e. 250 mW is used as feeding power to the validation dipole (SPEAG using).

7.3 Summary of Measurement Results (Head)

Since the DUT has a slide, which can be up and down. The head tests are performed both for slide up and slide down. After the comparison we found the results in the condition with slide up were worse than those with slide down for GSM 850 and the results in the condition with slide down were worse than those with slide up for GSM 1900. So the whole tests were performed with the condition of slide up for GSM 850, and with the condition of slide down for GSM 1900, after that the tests were done with the other slide conditions for the worst cases in Table 7 and 9.

Table 7: SAR Values (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.1)	0.508	0.720	-0.200
Left hand, Touch cheek, Mid frequency(See Fig.3)	0.469	0.664	-0.057
Left hand, Touch cheek, Bottom frequency(See Fig.5)	0.355	0.497	-0.012
Left hand, Tilt 15 Degree, Top frequency(See Fig.7)	0.276	0.388	-0.116
Left hand, Tilt 15 Degree, Mid frequency(See Fig.9)	0.266	0.373	-0.200
Left hand, Tilt 15 Degree, Bottom frequency(See Fig.11)	0.150	0.205	-0.058
Right hand, Touch cheek, Top frequency(See Fig.13)	0.609	0.856	-0.010
Right hand, Touch cheek, Mid frequency(See Fig.15)	0.577	0.810	-0.015
Right hand, Touch cheek, Bottom frequency(See Fig.17)	0.475	0.666	-0.064
Right hand, Tilt 15 Degree, Top frequency(See Fig.19)	0.292	0.410	0.011
Right hand, Tilt 15 Degree, Mid frequency(See Fig.21)	0.273	0.380	-0.037
Right hand, Tilt 15 Degree, Bottom frequency(See Fig.23)	0.225	0.312	0.053

Table 8: SAR Values (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**	
Right hand, Touch cheek, Top frequency(See Fig.25)	0.283	0.403	-0.185

Table 9: SAR Values (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.27)	0.423	0.773	-0.200
Left hand, Touch cheek, Mid frequency(See Fig.29)	0.434	0.778	-0.122
Left hand, Touch cheek, Bottom frequency(See Fig.31)	0.451	0.800	-0.068
Left hand, Tilt 15 Degree, Top frequency(See Fig.33)	0.201	0.317	-0.082
Left hand, Tilt 15 Degree, Mid frequency(See Fig.35)	0.209	0.327	-0.070
Left hand, Tilt 15 Degree, Bottom frequency(See Fig.37)	0.208	0.323	0.051
Right hand, Touch cheek, Top frequency(See Fig.39)	0.382	0.616	-0.152
Right hand, Touch cheek, Mid frequency(See Fig.41)	0.410	0.655	-0.146
Right hand, Touch cheek, Bottom frequency(See Fig.43)	0.417	0.663	-0.084
Right hand, Tilt 15 Degree, Top frequency(See Fig.45)	0.222	0.362	-0.061
Right hand, Tilt 15 Degree, Mid frequency(See Fig.47)	0.227	0.366	-0.035
Right hand, Tilt 15 Degree, Bottom frequency(See Fig.49)	0.215	0.342	-0.043

Table 10: SAR Values (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, Bottom frequency(See Fig.51)	0.198	0.323	-0.068

7.4 Summary of Measurement Results (Body GPRS)

For body tests, the SAR is tested both with slide up and down.

Table 11: SAR Values (850 MHz GPRS-slide down)

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
	10 g Average	1 g Average	
Body Towards Phantom, Top frequency(See Fig.53)	0.153	0.213	-0.114
Body Towards Phantom, Mid frequency(See Fig.55)	0.171	0.239	-0.109
Body Towards Phantom, Bottom frequency(See Fig.57)	0.192	0.267	0.015
Body Towards Ground, Top frequency(See Fig.59)	0.385	0.602	-0.083
Body Towards Ground, Mid frequency(See Fig.61)	0.444	0.697	-0.017
Body Towards Ground, Bottom frequency(See Fig.63)	0.489	0.759	0.026

Table 12: SAR Values (850 MHz GPRS-slide up)

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
	10 g Average	1 g Average	
Body Towards Phantom, Top frequency(See Fig.65)	0.433	0.613	0.064
Body Towards Phantom, Mid frequency(See Fig.67)	0.386	0.544	-0.069
Body Towards Phantom, Bottom frequency(See Fig.69)	0.295	0.414	0.107
Body Towards Ground, Top frequency(See Fig.71)	0.662	0.943	0.015
Body Towards Ground, Mid frequency(See Fig.73)	0.644	0.915	-0.001
Body Towards Ground, Bottom frequency(See Fig.75)	0.524	0.741	-0.112

Table 13: SAR Values (1900 MHZ GPRS-slide down)

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
	10 g Average	1 g Average	
Body Towards Phantom, Top frequency(See Fig.77)	0.178	0.275	-0.200
Body Towards Phantom, Mid frequency(See Fig.79)	0.185	0.282	-0.160
Body Towards Phantom, Bottom frequency(See Fig.81)	0.187	0.286	-0.066
Body Towards Ground, Top frequency(See Fig.83)	0.195	0.355	-0.130
Body Towards Ground, Mid frequency(See Fig.85)	0.204	0.374	-0.069
Body Towards Ground, Bottom frequency(See Fig.87)	0.201	0.355	-0.079

Table 14: SAR Values (1900 MHZ GPRS-slide up)

Limit of SAR (W/kg)	10 g Average	1 g Average	Power Drift (dB)
	2.0	1.6	
	10 g Average	1 g Average	
Body Towards Phantom, Top frequency(See Fig.89)	0.128	0.207	-0.200
Body Towards Phantom, Mid frequency(See Fig.91)	0.133	0.213	0.017
Body Towards Phantom, Bottom frequency(See Fig.93)	0.140	0.216	-0.062
Body Towards Ground, Top frequency(See Fig.95)	0.255	0.426	-0.200
Body Towards Ground, Mid frequency(See Fig.97)	0.290	0.477	0.076
Body Towards Ground, Bottom frequency(See Fig.99)	0.319	0.521	-0.200

7.5 Summary of Measurement Results (with Bluetooth function)

Since the EUT is tested with the dominant transmitter ON and co-located Bluetooth transmitter OFF first, with the results in section 7.4 Table 11 to 14, the worst cases can be derived, and the tests are repeated with dominant transmitter and co-located Bluetooth transmitter both ON under the same conditions. The following results are derived from the EUT with its Bluetooth function under the same conditions for the worst cases.

Table 15: SAR Values (850 MHz Band-slide up)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
	10 g Average	**1 g Average**	
Body Towards Ground, Top frequency(See Fig101)	0.741	1.05	0.200

Table 16: SAR Values (1900 MHz Band-slide up)

Limit of SAR (W/kg)	**10 g Average**	**1 g Average**	**Power Drift (dB)**
	2.0	1.6	
	10 g Average	**1 g Average**	
Body Towards Ground, Bottom frequency(See Fig103)	0.322	0.532	-0.141

7.6 Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 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.

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	$(1\text{-cp})^{1/2}$	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 11: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	HP 8753E	US38433212	August 30,2006	One year
02	Power meter	NRVD	101253	June 21, 2007	One year
03	Power sensor	NRV-Z5	100333		
04	Power sensor	NRV-Z6	100011	September 2, 2006	One year
05	Signal Generator	E4433B	US37230472	September 4, 2006	One Year
06	Amplifier	VTL5400	0505	No Calibration Requested	
07	BTS	CMU 200	105948	August 15, 2006	One year
08	E-field Probe	SPEAG ET3DV6	1736	December 1, 2006	One year
09	DAE	SPEAG DAE3	536	July 12, 2007	One year

*****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.

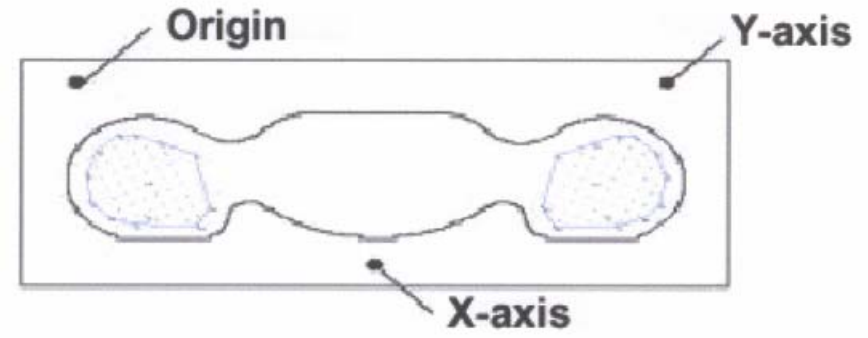
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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.

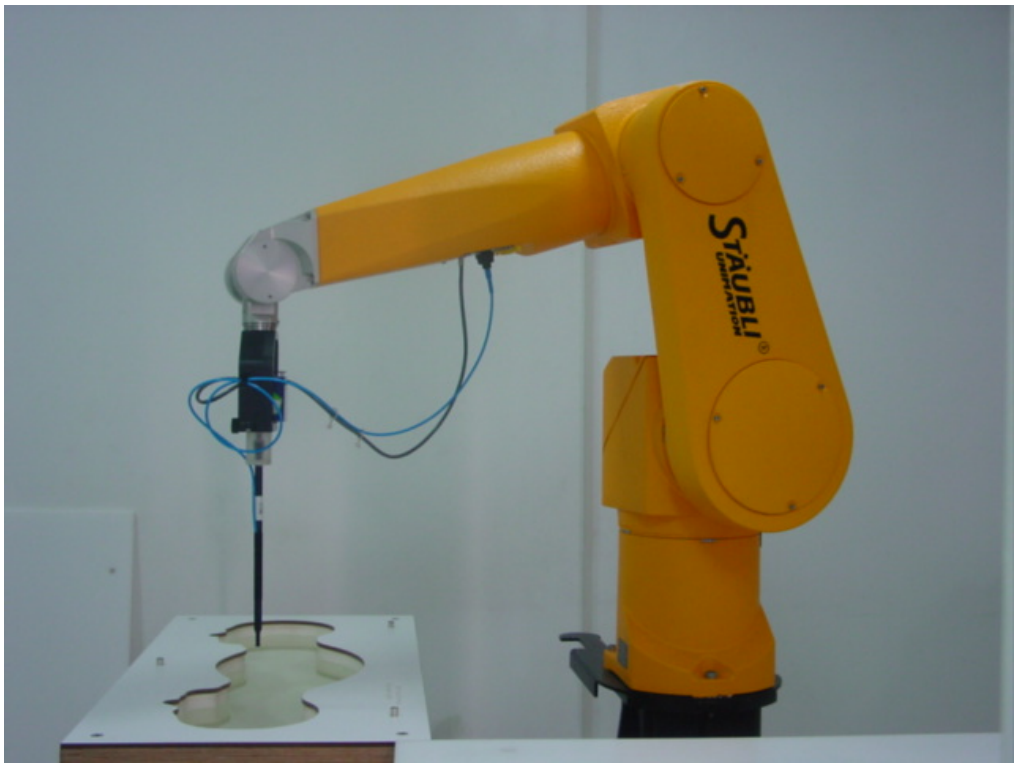
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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.

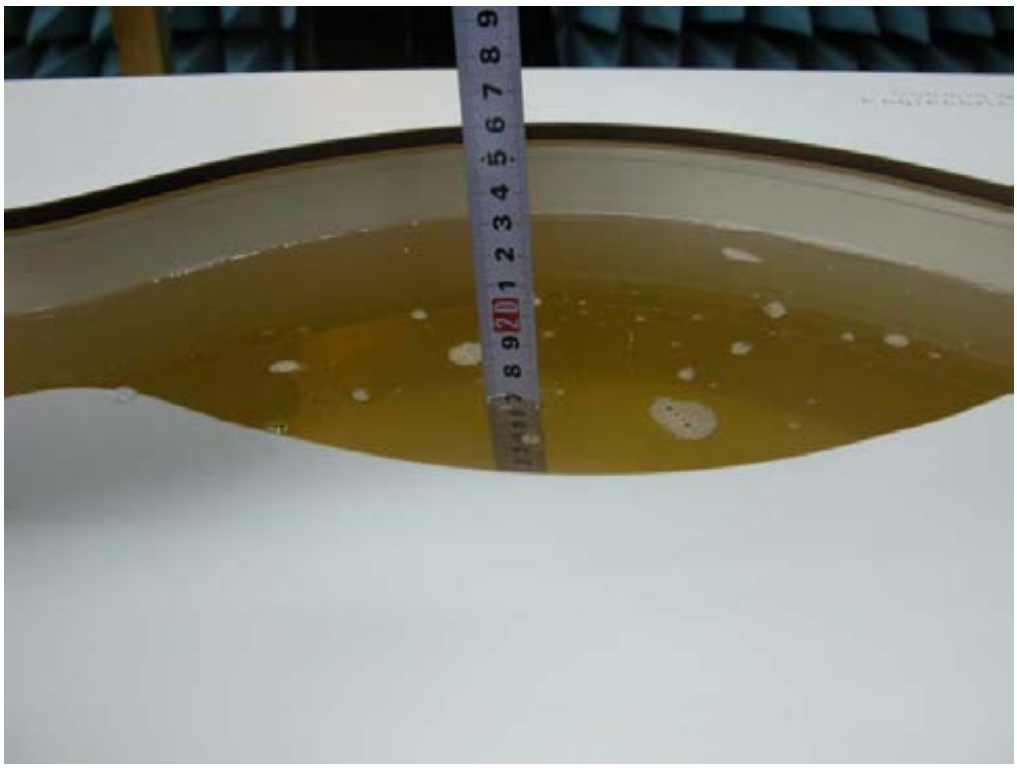


Picture A: SAR Measurement Points in Area Scan

ANNEX B TEST LAYOUT

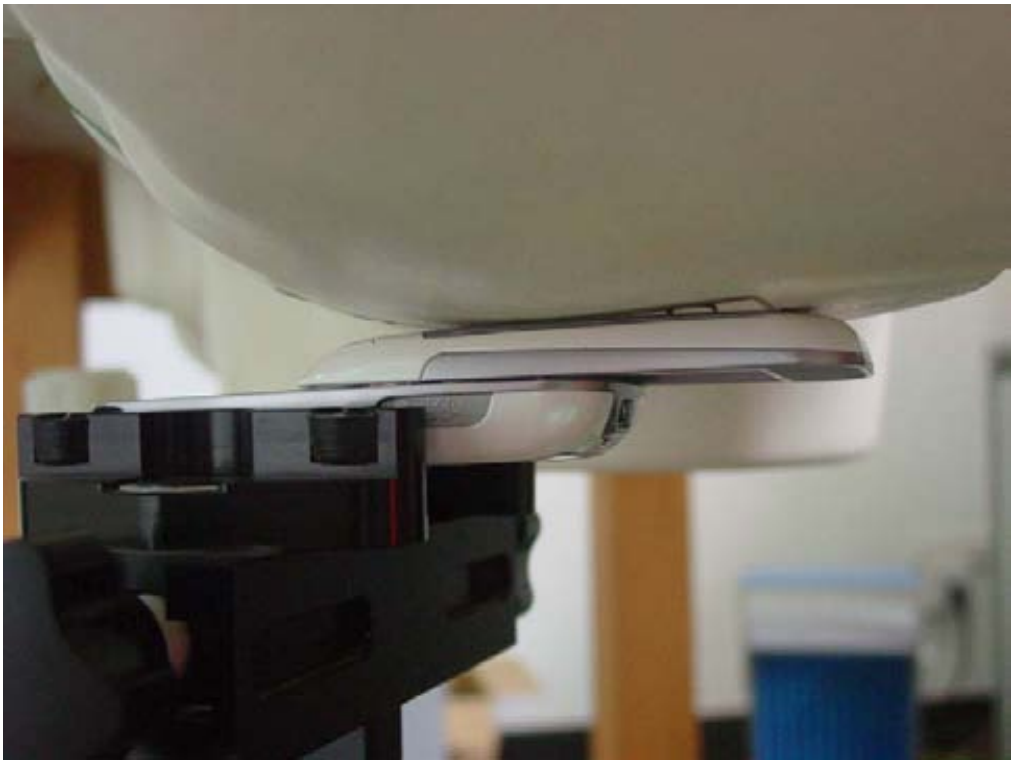


Picture B1: Specific Absorption Rate Test Layout

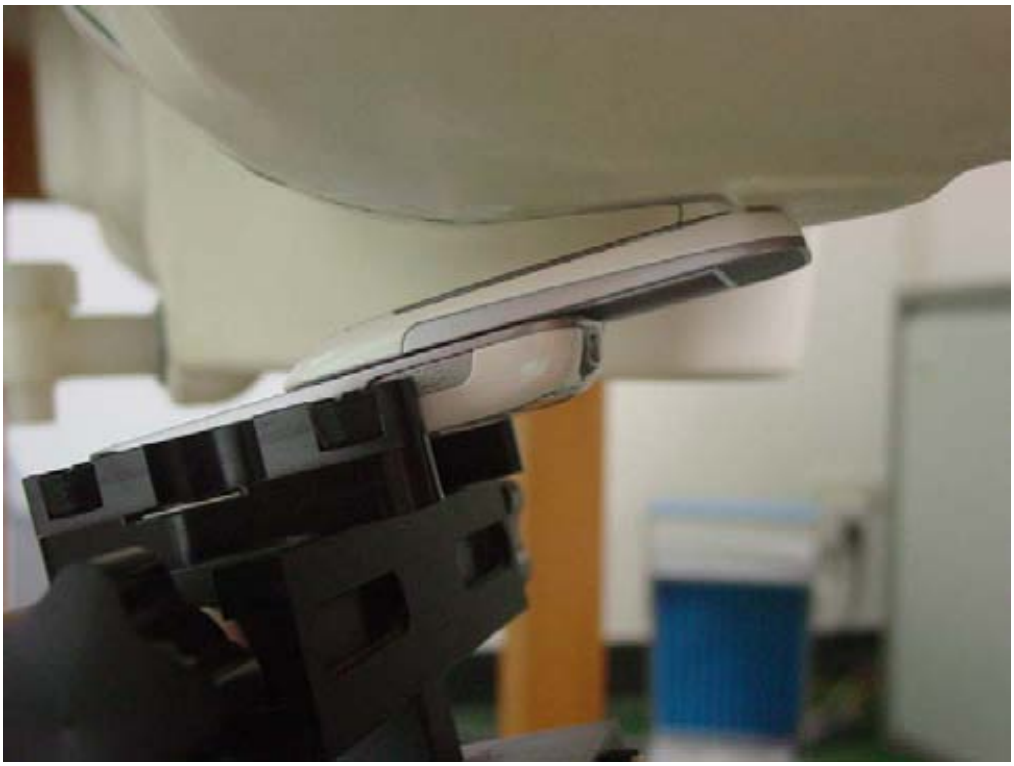


Picture B2: Liquid depth in the Flat Phantom (850 MHz)

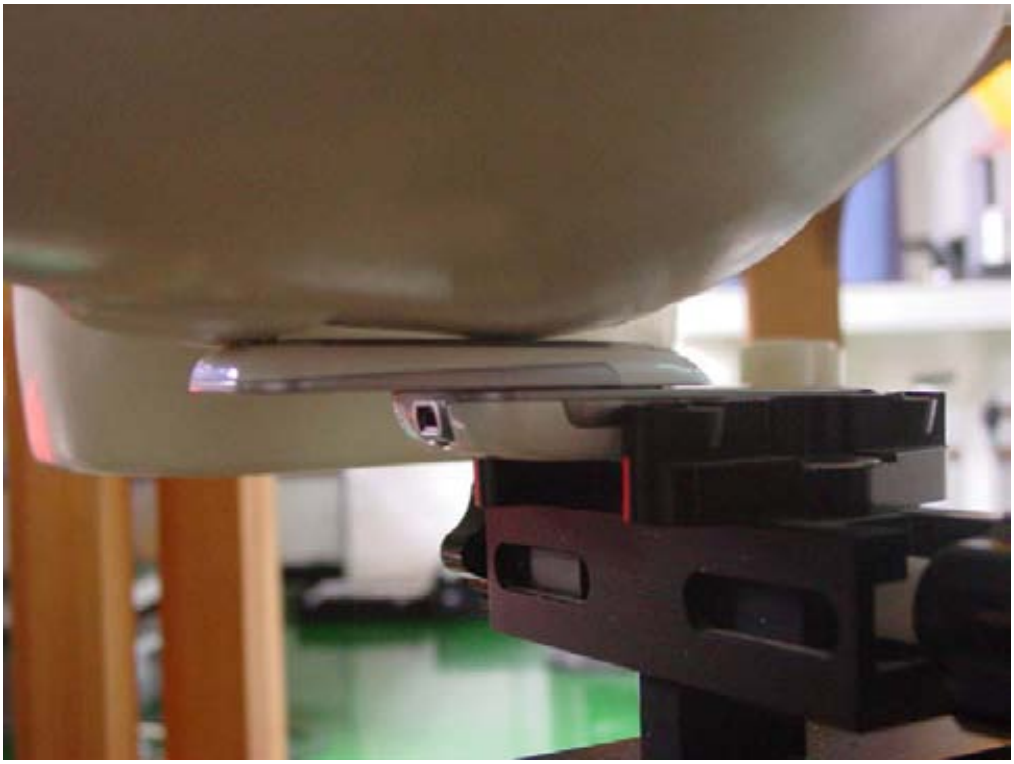
Picture B3 Liquid depth in the Flat Phantom (1900 MHz)



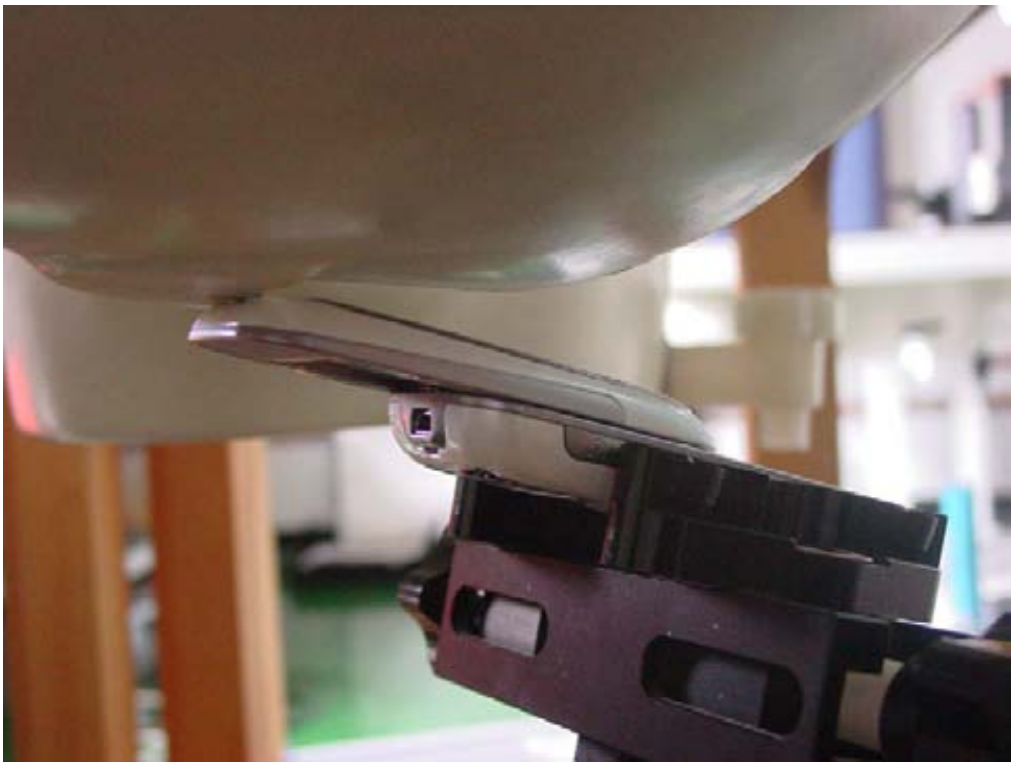
Picture B4: Left Hand Touch Cheek Position-with slide up



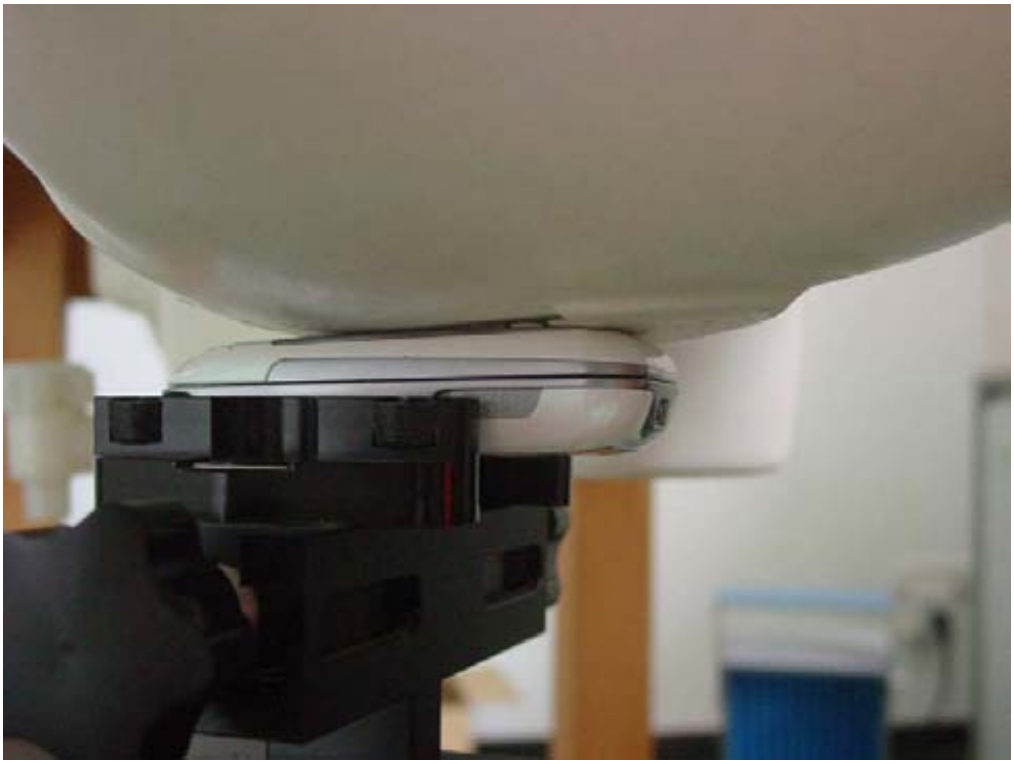
Picture B5: Left Hand Tilt 15° Position-with slide up



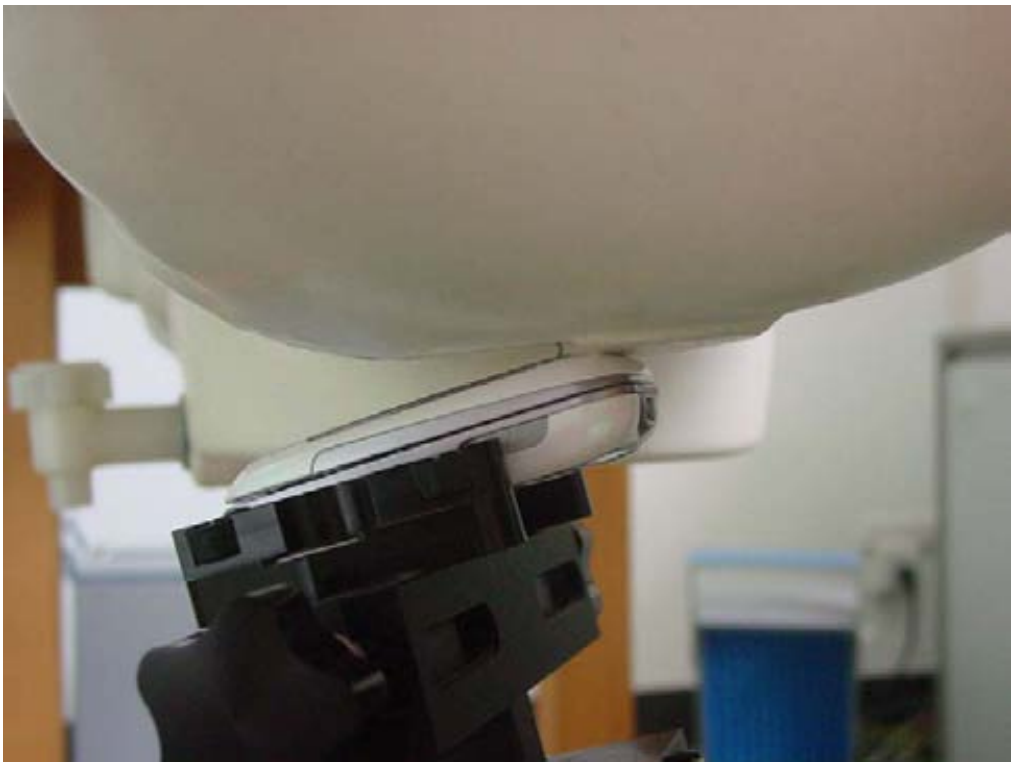
Picture B6: Right Hand Touch Cheek Position-with slide up



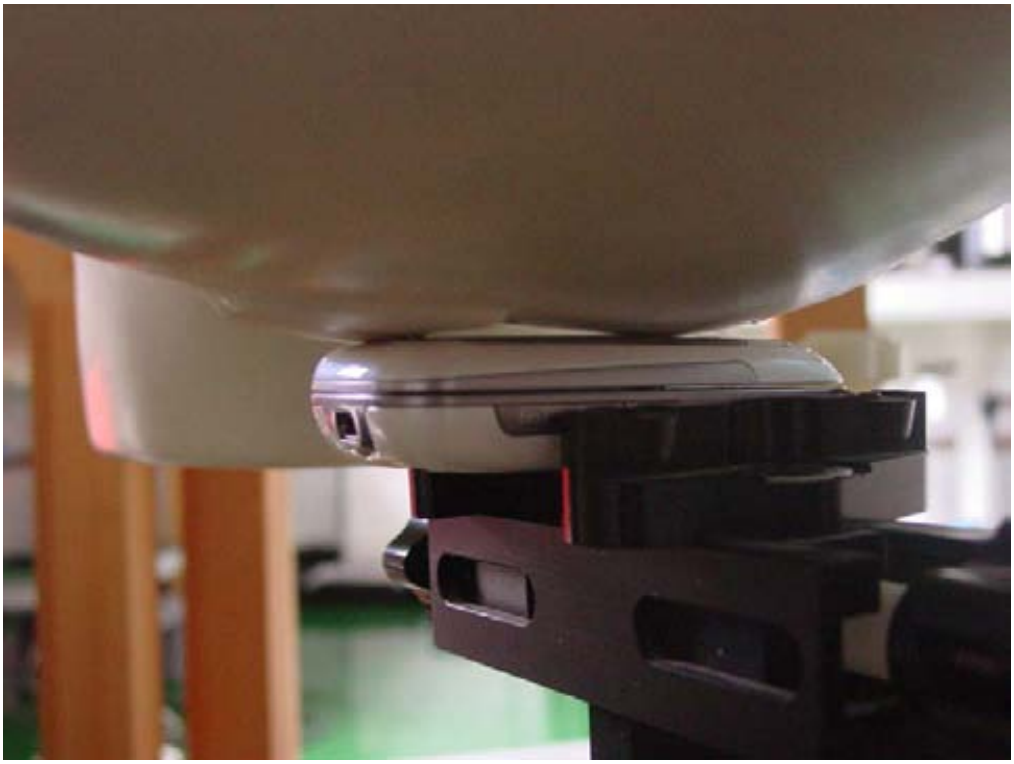
Picture B7: Right Hand Tilt 15° Position-with slide up



Picture B8: Left Hand Touch Cheek Position-with slide down



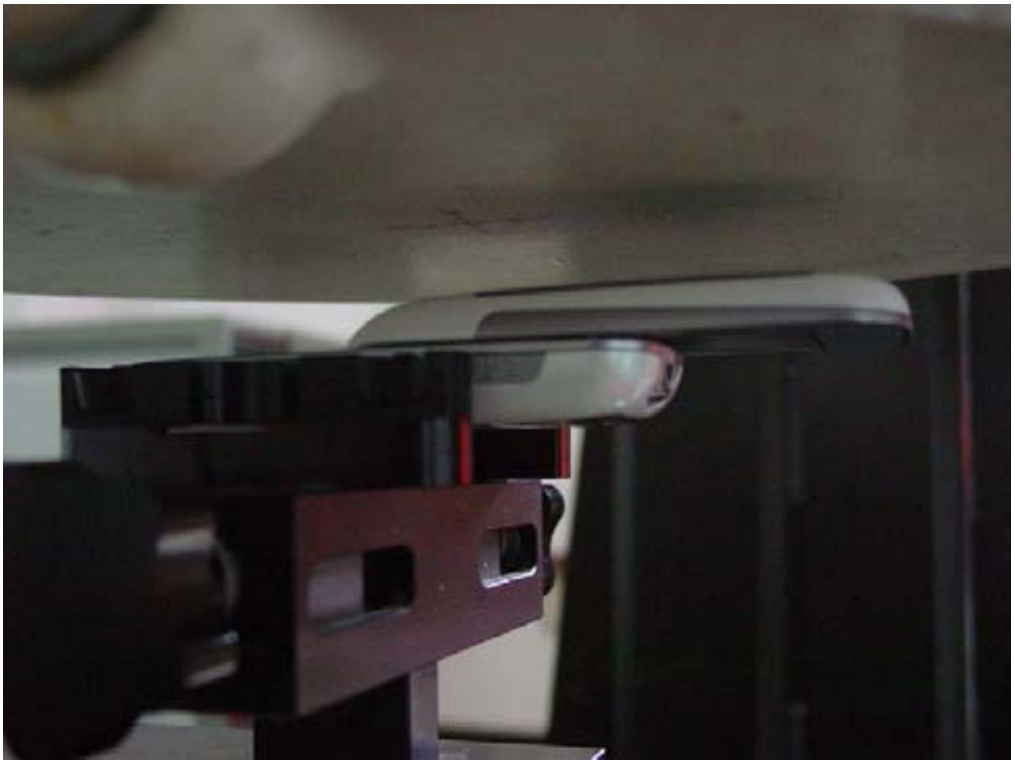
Picture B9: Left Hand Tilt 15° Position-with slide down



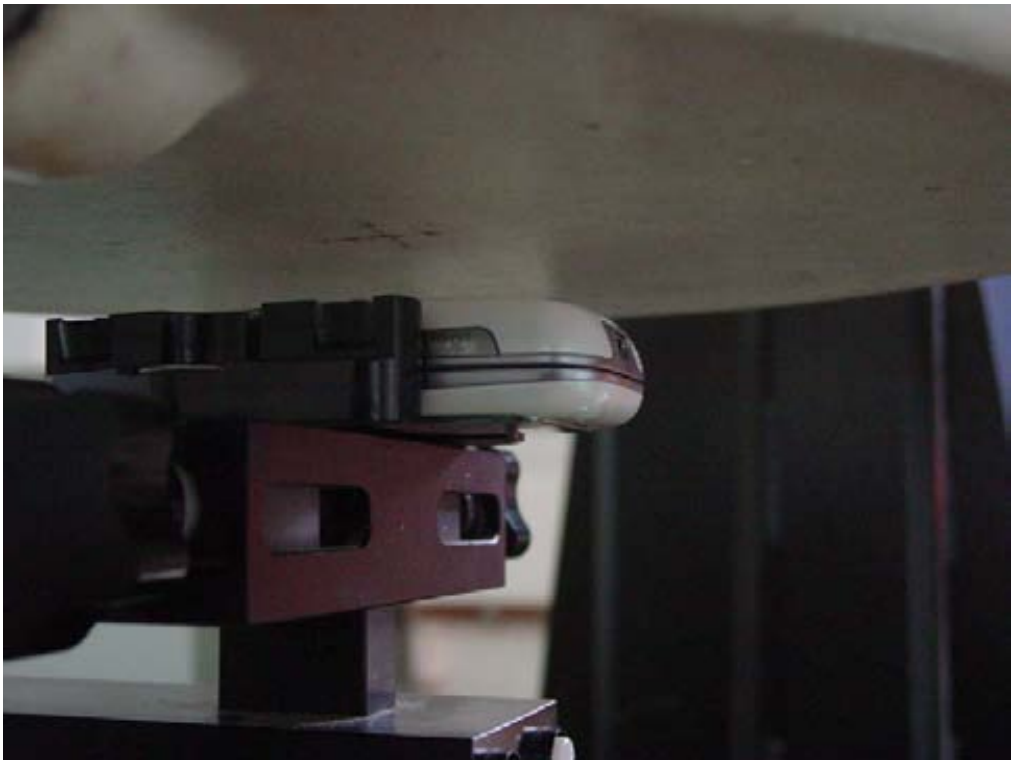
Picture B10: Right Hand Touch Cheek Position-with slide down

Picture B11: Right Hand Tilt 15° Position-with slide down

Picture B12: Body-worn Position with Slide down (towards phantom, the distance from handset to the bottom of the Phantom is 1.5cm)



Picture B13: Body-worn Position with Slide up (towards phantom, the distance from handset to the bottom of the Phantom is 1.5cm)



Picture B14: Body-worn Position with Slide down (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm)

Picture B15: Body-worn Position with Slide up (towards ground, the distance from handset to the bottom of the Phantom is 1.5cm)

ANNEX C GRAPH RESULTS

850 Left Cheek High-slide up

Date/Time: 2007-8-8 8:09:13

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.917 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3

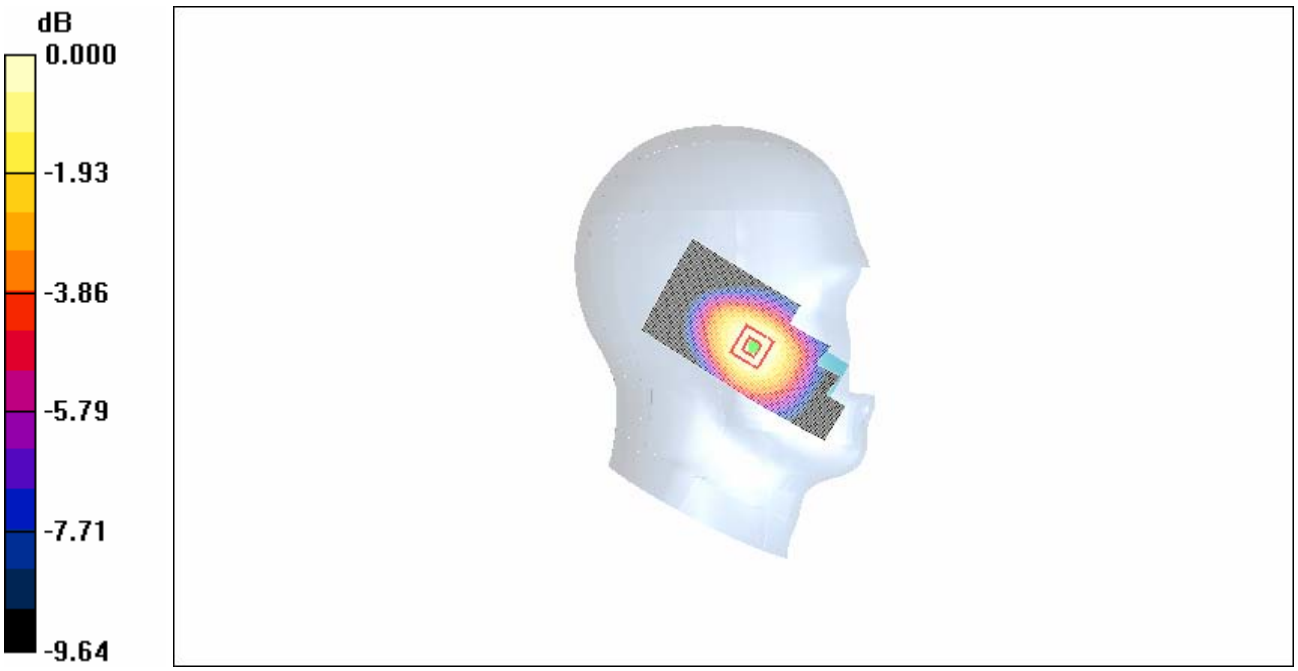
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.787 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = -0.200 dB
Peak SAR (extrapolated) = 0.913 W/kg
SAR(1 g) = 0.720 mW/g; SAR(10 g) = 0.508 mW/g
Maximum value of SAR (measured) = 0.731 mW/g



0 dB = 0.731mW/g

Fig. 1 850MHz CH251

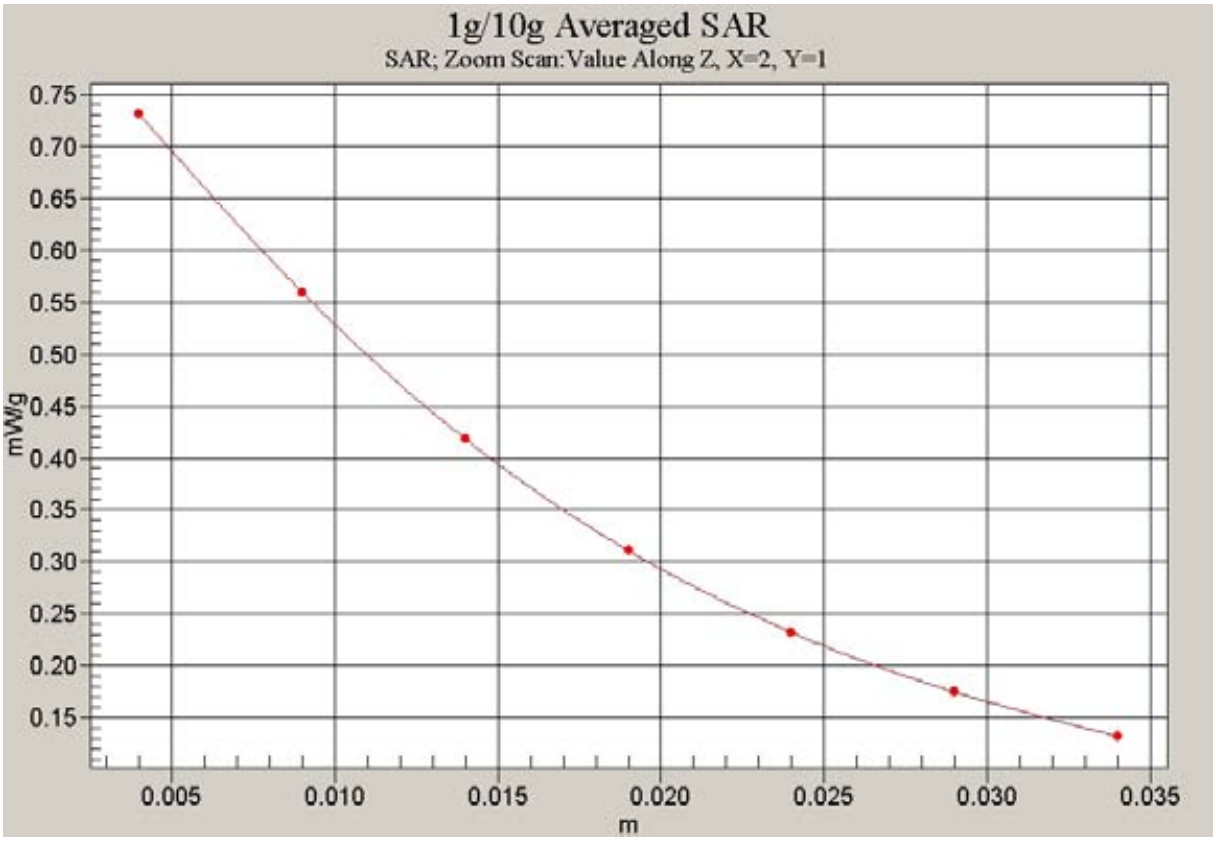


Fig. 2 Z-Scan at power reference point (850 MHz CH251)

850 Left Cheek Middle-slide up
Date/Time: 2007-8-8 8:29:34

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.907 mho/m; ε_r = 43.8; ρ = 1000 kg/m^3

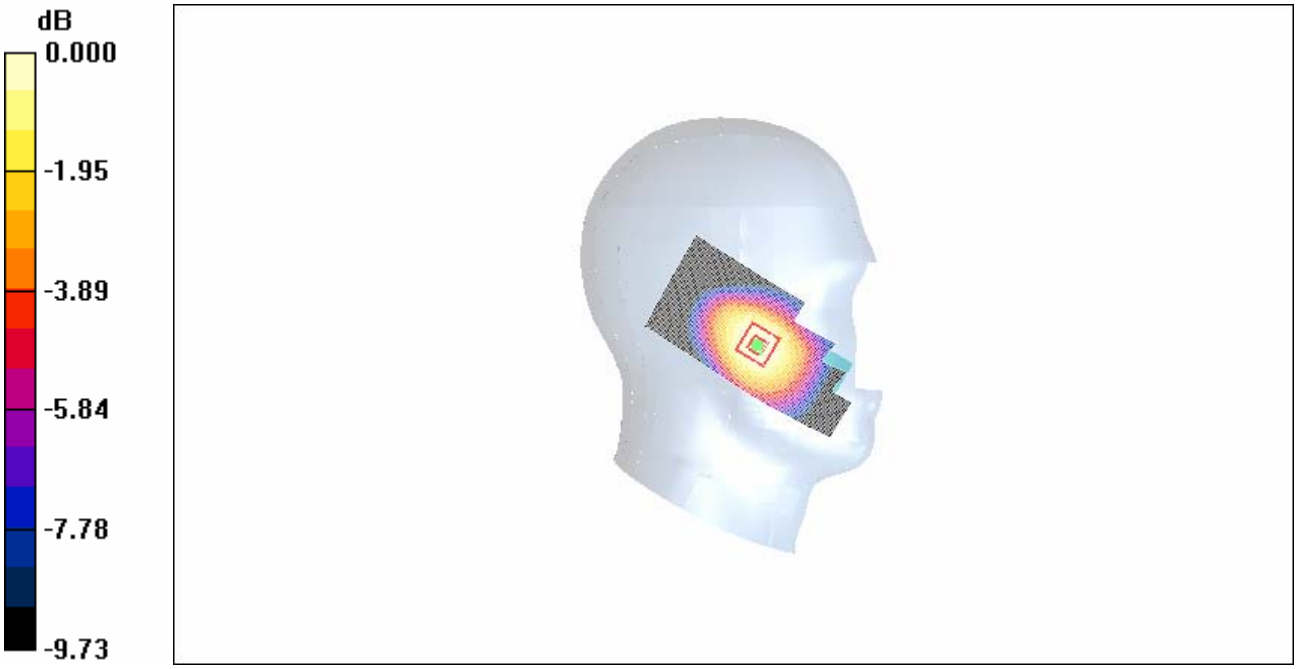
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.719 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.90 V/m; Power Drift = -0.057 dB
Peak SAR (extrapolated) = 0.854 W/kg
SAR(1 g) = 0.664 mW/g; SAR(10 g) = 0.469 mW/g
Maximum value of SAR (measured) = 0.681 mW/g



0 dB = 0.681mW/g

Fig. 3 850 MHz CH190

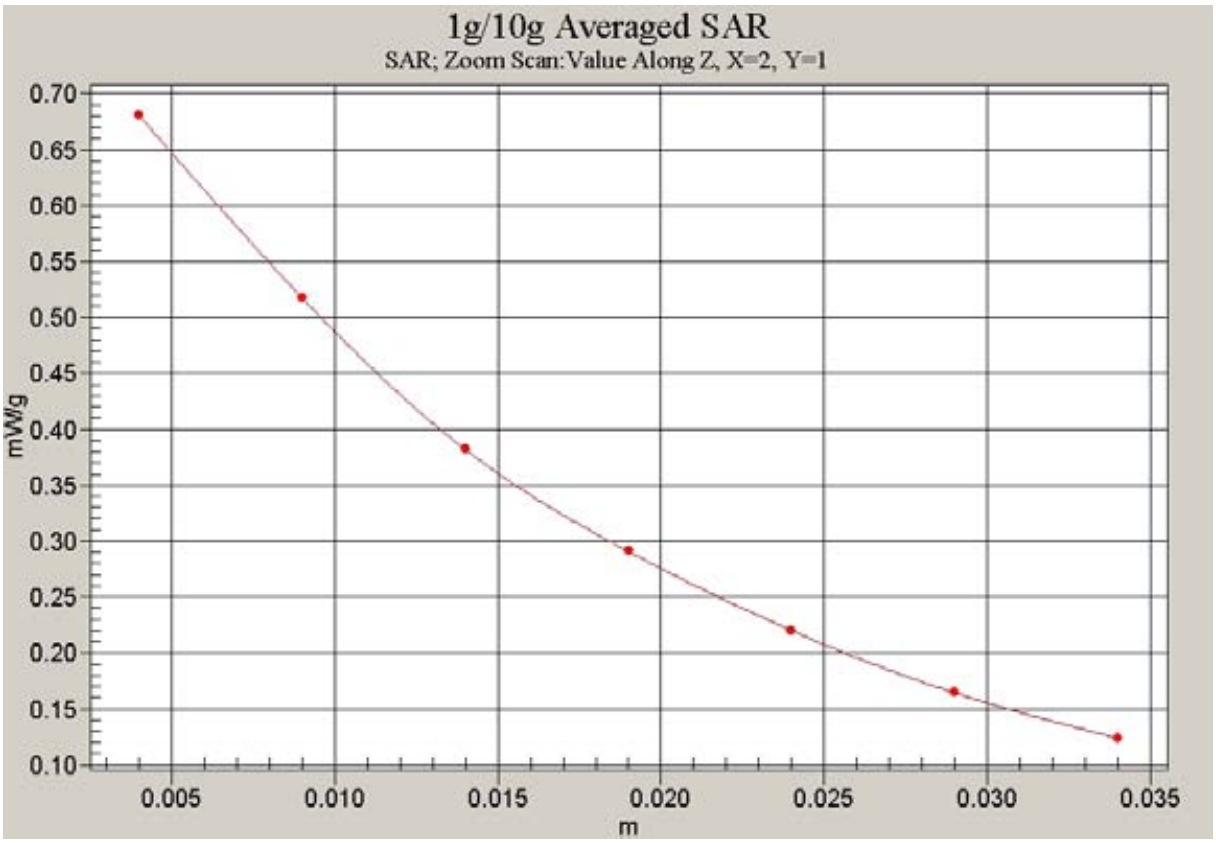


Fig. 4 Z-Scan at power reference point (850 MHz CH190)

850 Left Cheek Low-slide up
Date/Time: 2007-8-8 8:51:22

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 43.9; ρ = 1000 kg/m^3

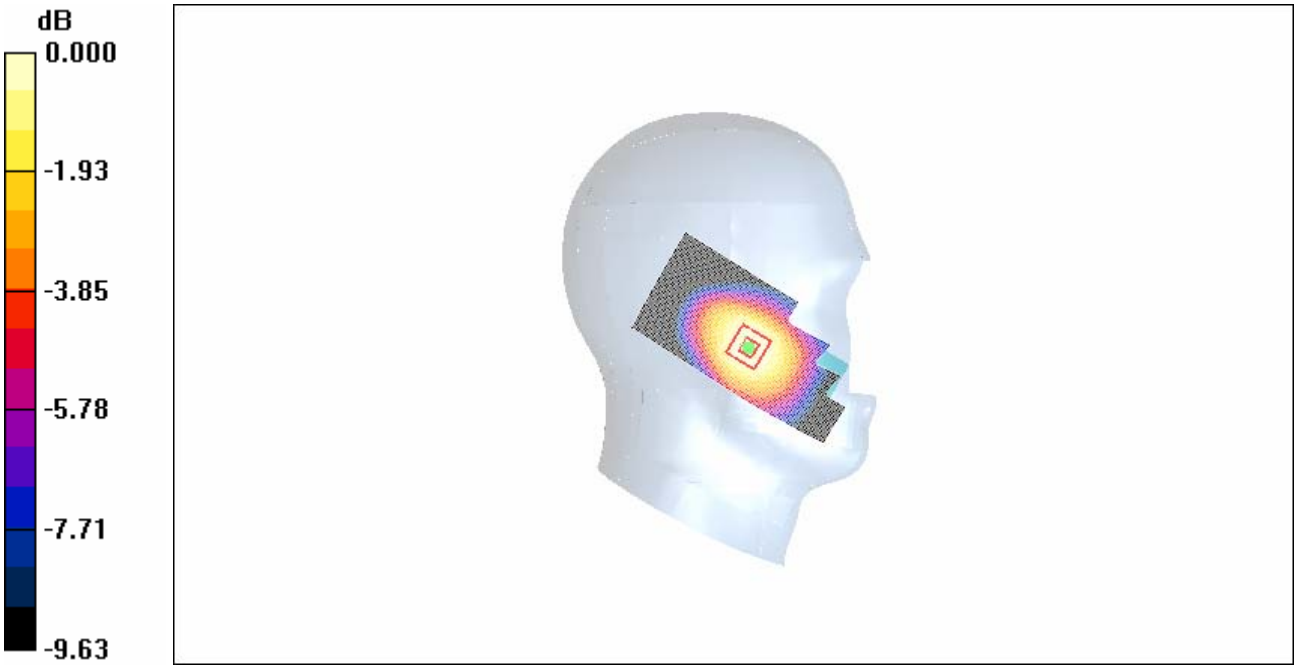
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.539 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.71 V/m; Power Drift = -0.012 dB
Peak SAR (extrapolated) = 0.633 W/kg
SAR(1 g) = 0.497 mW/g; SAR(10 g) = 0.355 mW/g
Maximum value of SAR (measured) = 0.507 mW/g



0 dB = 0.507mW/g

Fig. 5 850 MHz CH128

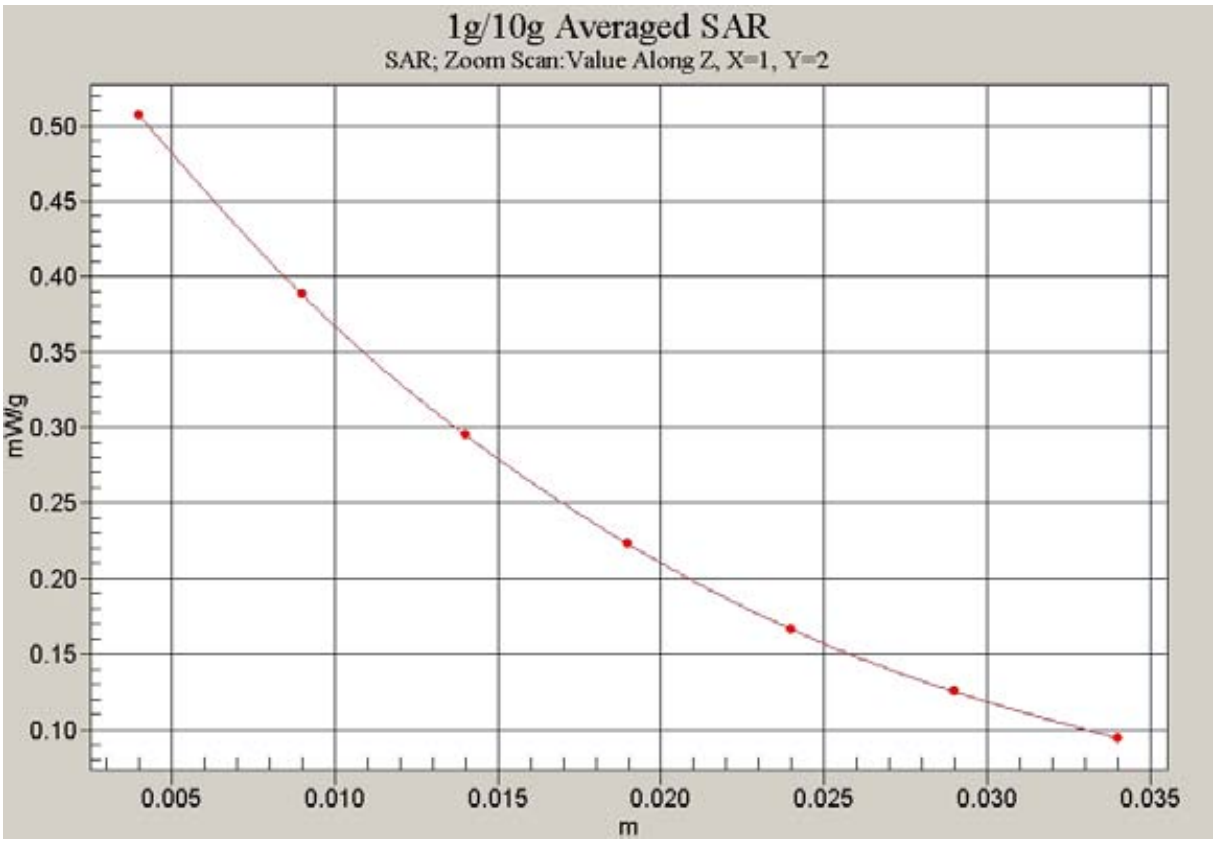


Fig. 6 Z-Scan at power reference point (850 MHz CH128)

850 Left Tilt High-slide up
Date/Time: 2007-8-8 9:55:36

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.917 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3

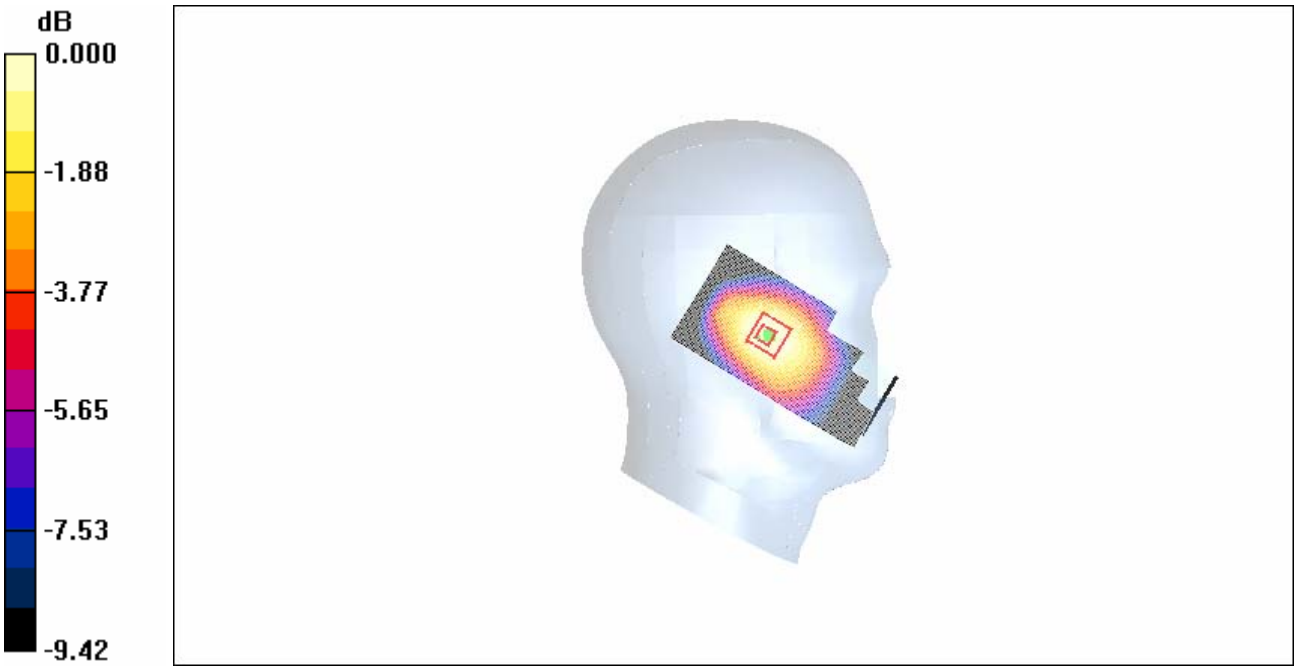
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.411 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.116 dB
Peak SAR (extrapolated) = 0.507 W/kg
SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.276 mW/g
Maximum value of SAR (measured) = 0.401 mW/g



0 dB = 0.401mW/g

Fig.7 850 MHz CH251

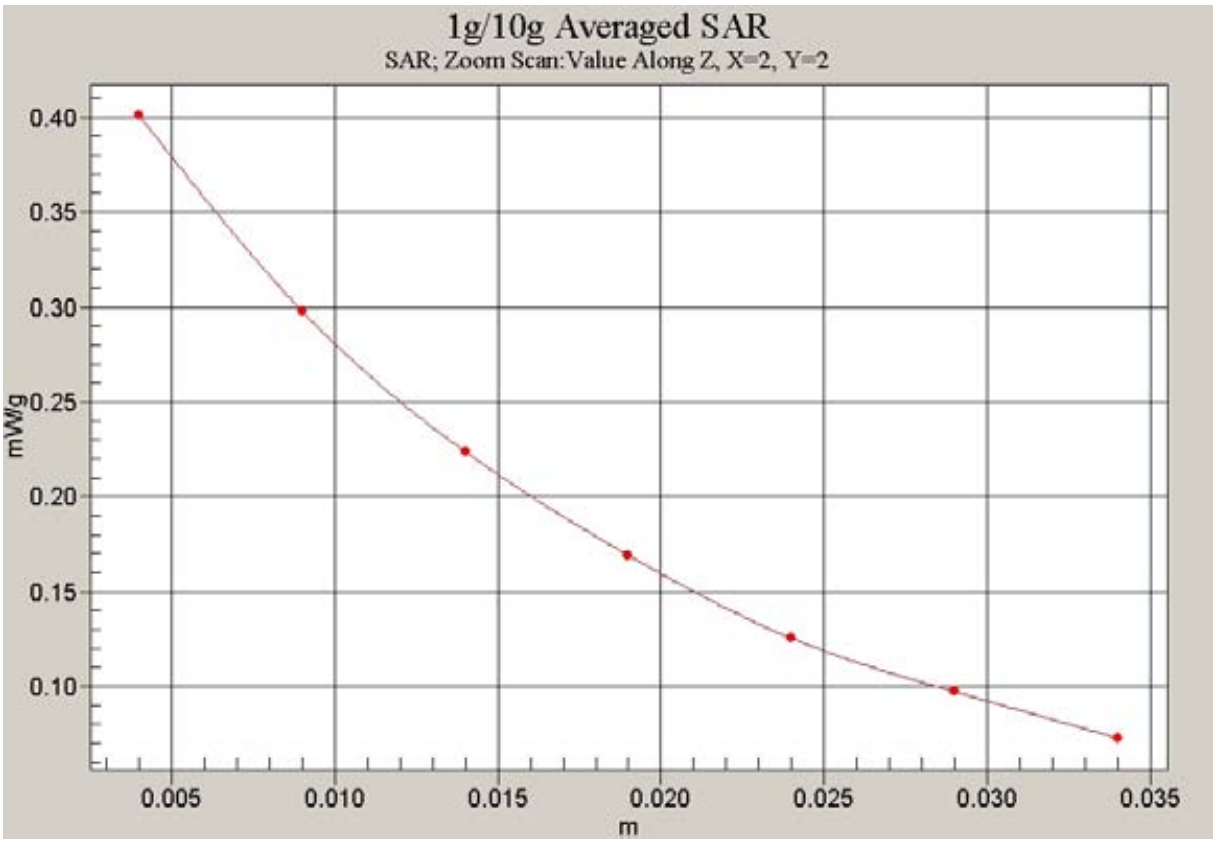


Fig. 8 Z-Scan at power reference point (850 MHz CH251)

850 Left Tilt Middle-slide up
Date/Time: 2007-8-8 9:33:28

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.907 mho/m; ε_r = 43.8; ρ = 1000 kg/m^3

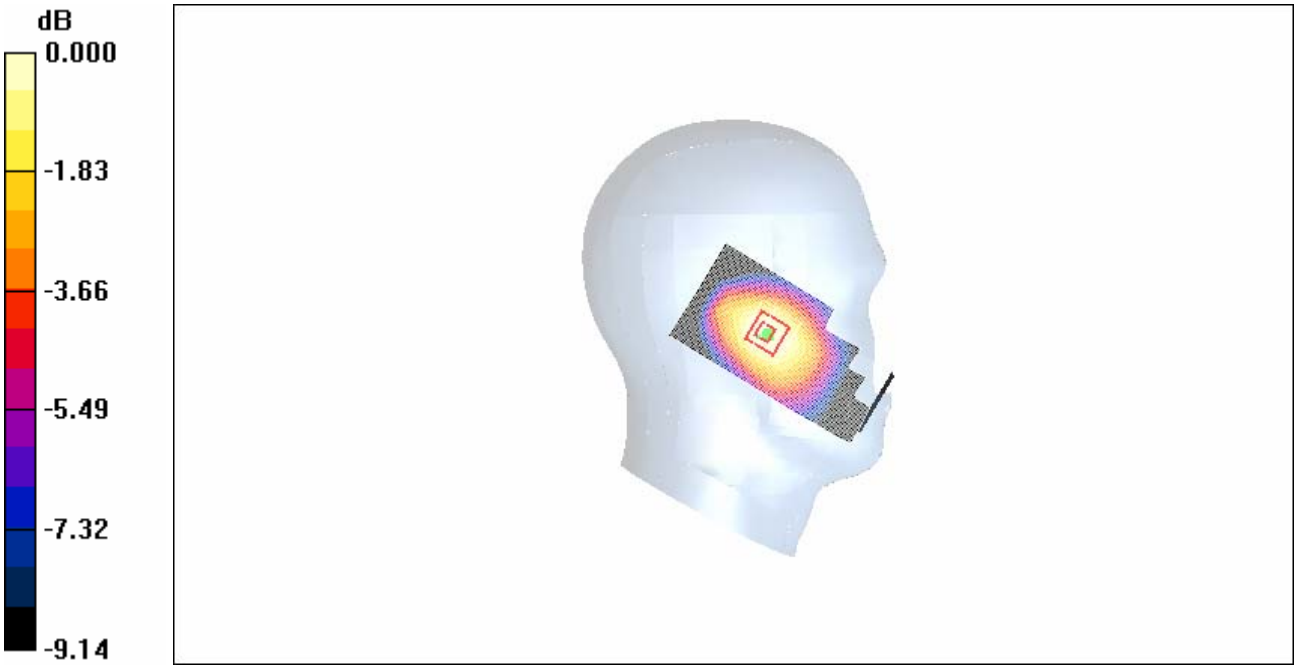
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.396 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.5 V/m; Power Drift = -0.200 dB
Peak SAR (extrapolated) = 0.482 W/kg
SAR(1 g) = 0.373 mW/g; SAR(10 g) = 0.266 mW/g
Maximum value of SAR (measured) = 0.384 mW/g



0 dB = 0.384mW/g

Fig.9 850 MHz CH190

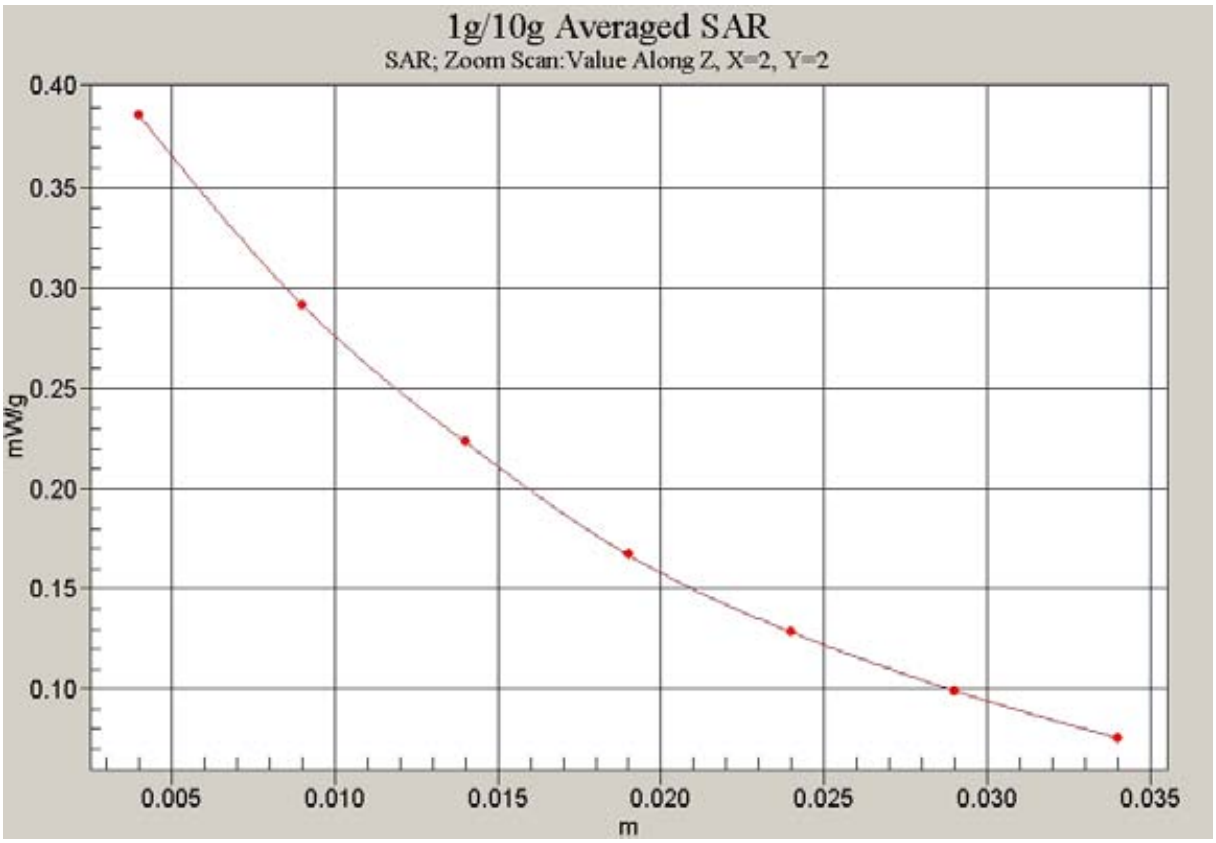


Fig. 10 Z-Scan at power reference point (850 MHz CH190)

850 Left Tilt Low-slide up
Date/Time: 2007-8-8 9:12:29

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 43.9; ρ = 1000 kg/m^3

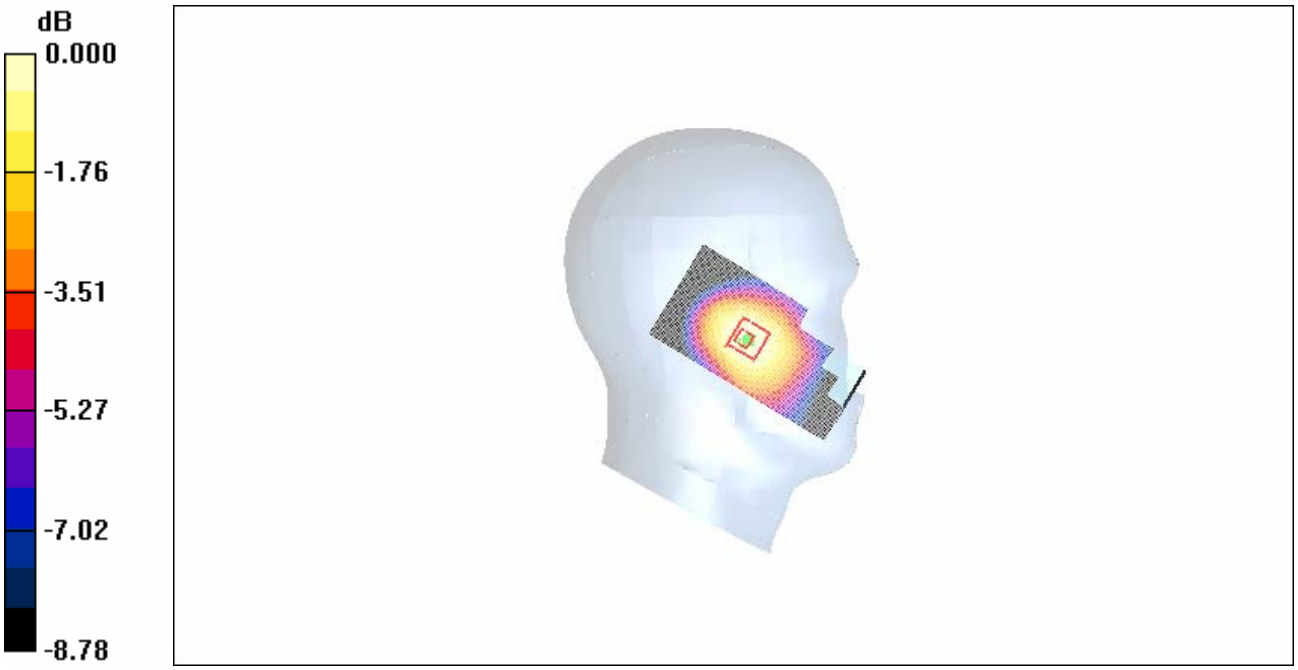
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.217 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.39 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 0.262 W/kg
SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.150 mW/g
Maximum value of SAR (measured) = 0.213 mW/g



0 dB = 0.213mW/g

Fig. 11 850 MHz CH128

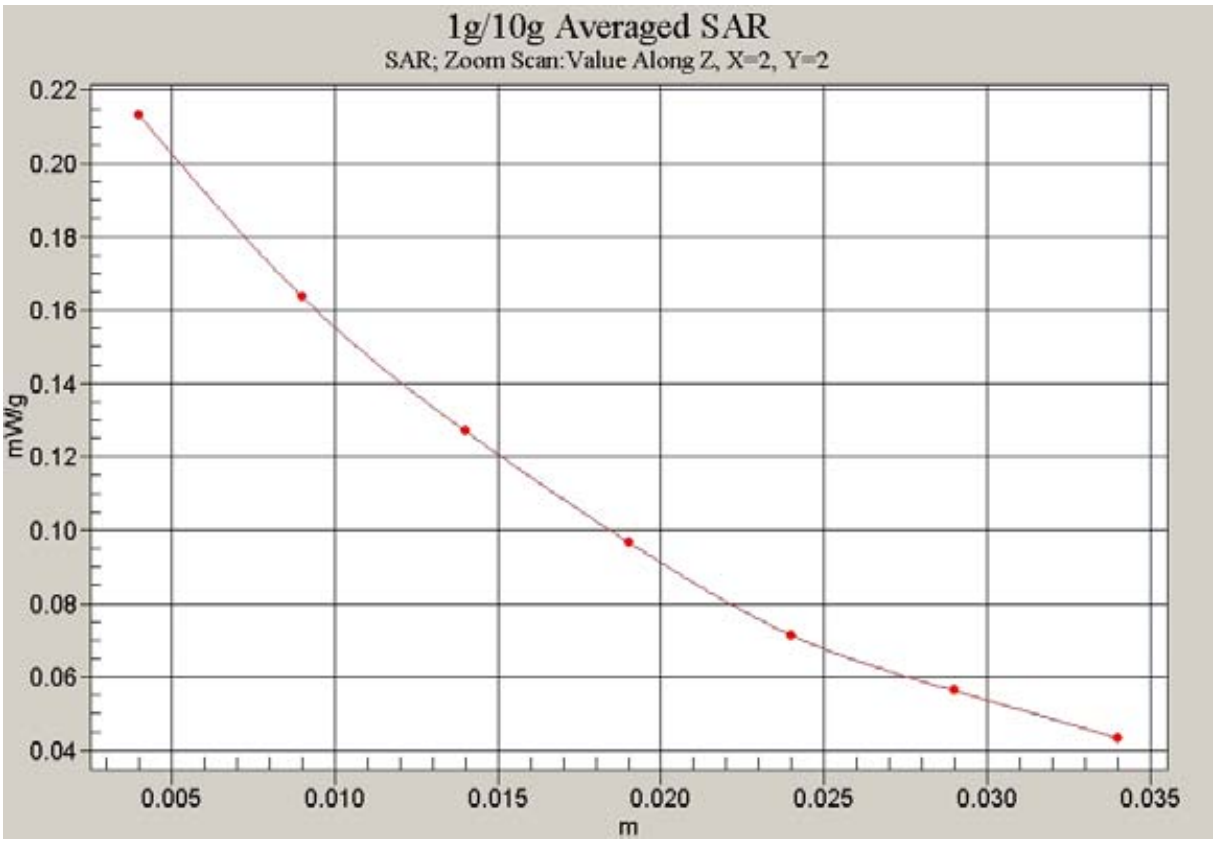


Fig. 12 Z-Scan at power reference point (850 MHz CH128)

850 Right Cheek High-slide up
Date/Time: 2007-8-8 10:18:06

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.917 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3

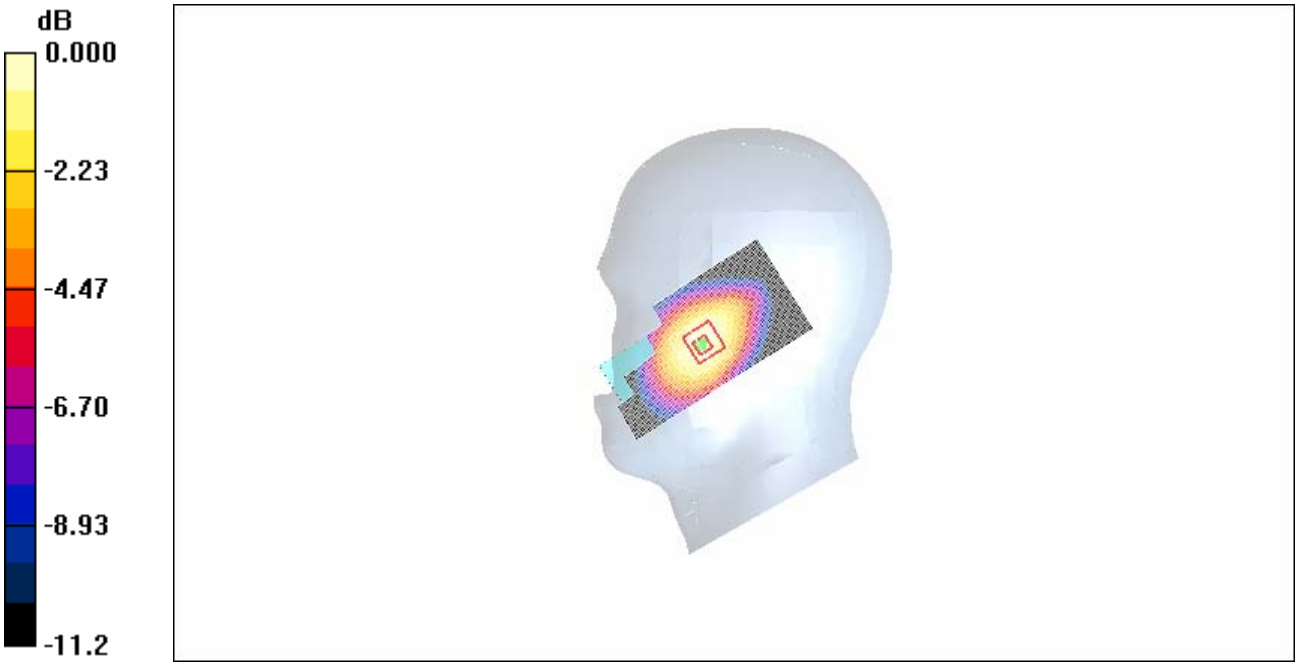
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.929 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.4 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 1.09 W/kg
SAR(1 g) = 0.856 mW/g; SAR(10 g) = 0.609 mW/g
Maximum value of SAR (measured) = 0.913 mW/g



0 dB = 0.913mW/g

Fig. 13 850 MHz CH251

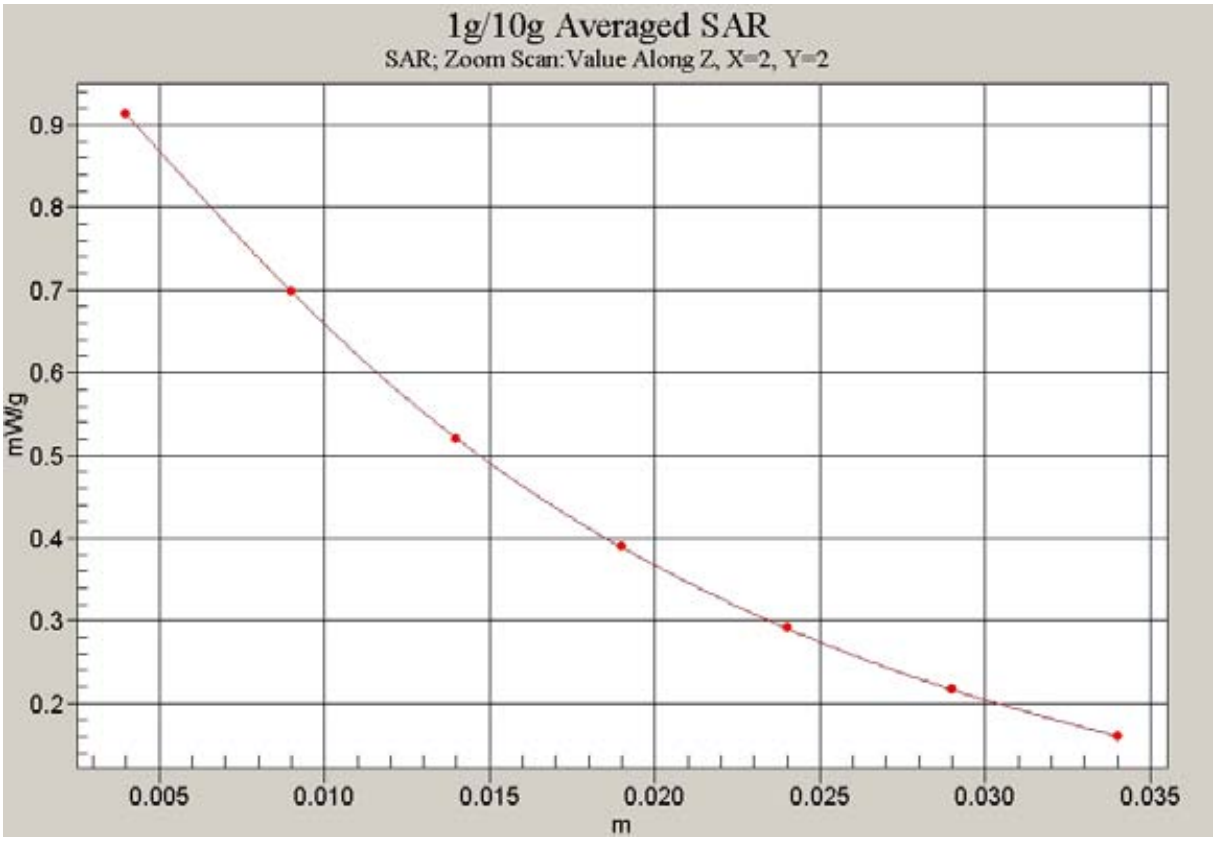


Fig. 14 Z-Scan at power reference point (850 MHz CH251)

850 Right Cheek Middle-slide up
Date/Time: 2007-8-8 10:40:27

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.907 mho/m; ε_r = 43.8; ρ = 1000 kg/m^3

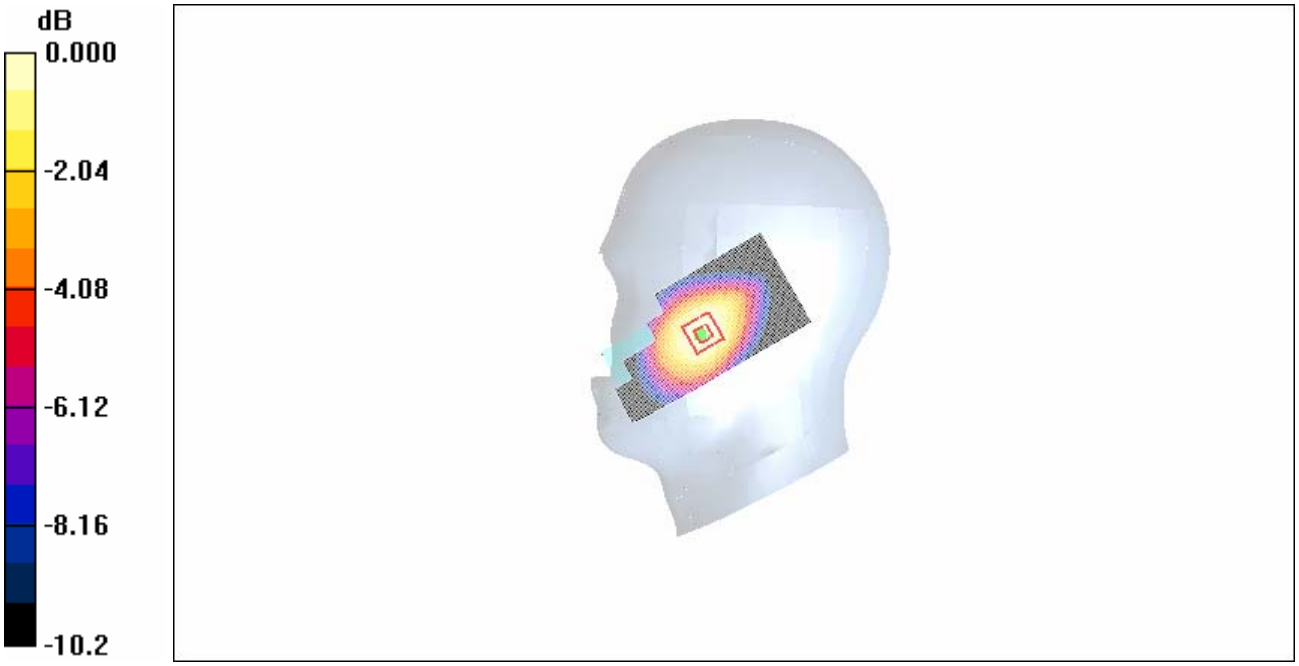
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.859 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.0 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.810 mW/g; SAR(10 g) = 0.577 mW/g
Maximum value of SAR (measured) = 0.830 mW/g



0 dB = 0.830mW/g

Fig. 15 850 MHz CH190

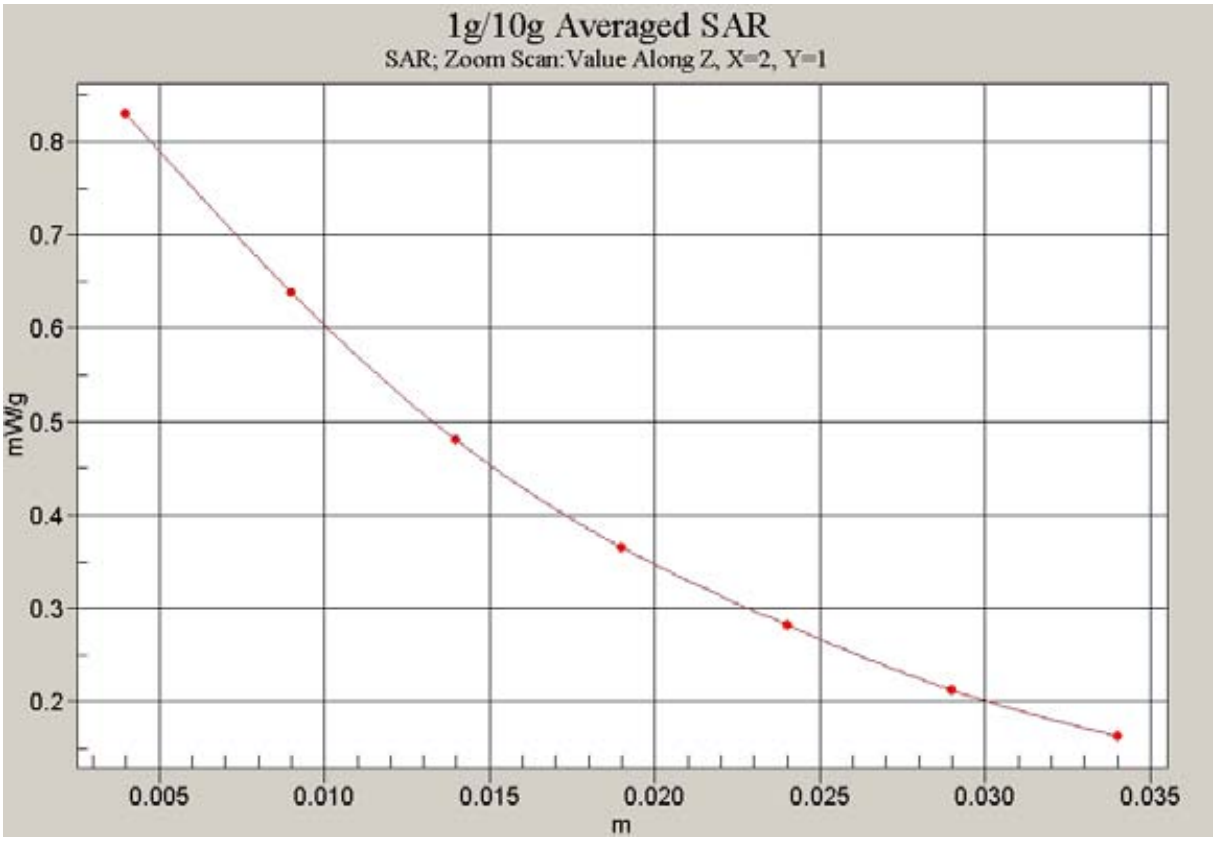


Fig. 16 Z-Scan at power reference point (850 MHz CH190)

850 Right Cheek Low-slide up
Date/Time: 2007-8-8 11:02:56

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 43.9; ρ = 1000 kg/m^3

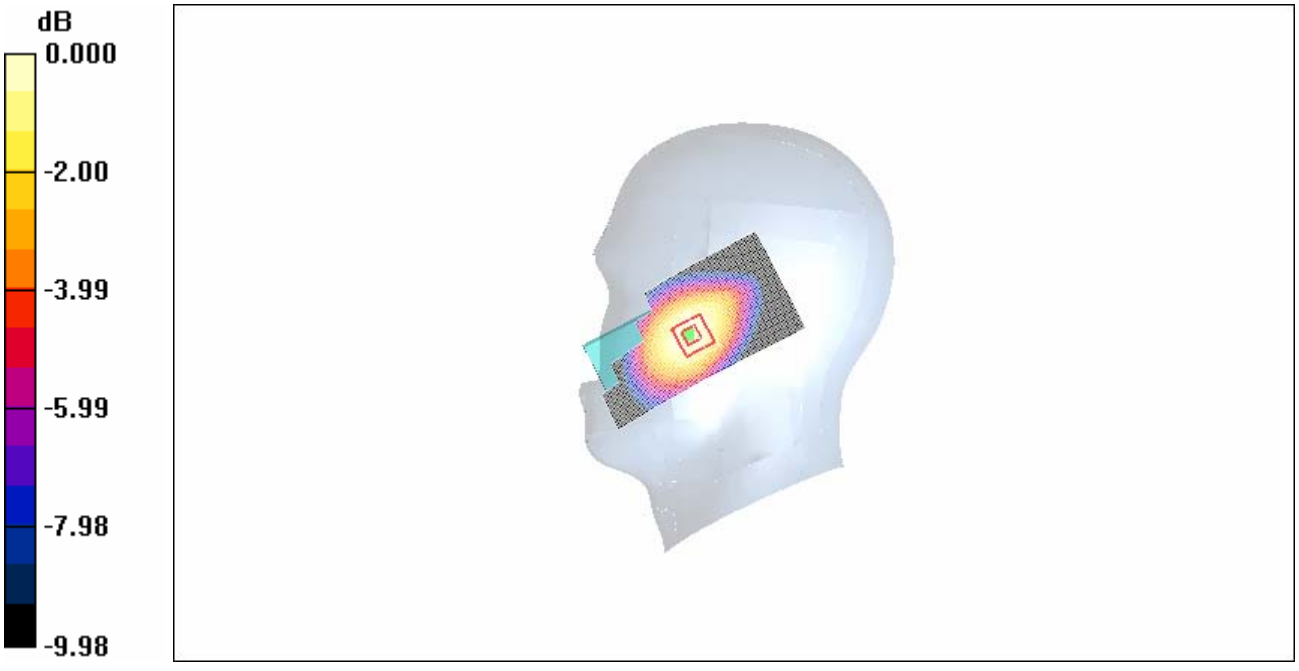
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.707 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.7 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 0.855 W/kg
SAR(1 g) = 0.666 mW/g; SAR(10 g) = 0.475 mW/g
Maximum value of SAR (measured) = 0.680 mW/g



0 dB = 0.680mW/g

Fig. 17 850 MHz CH128

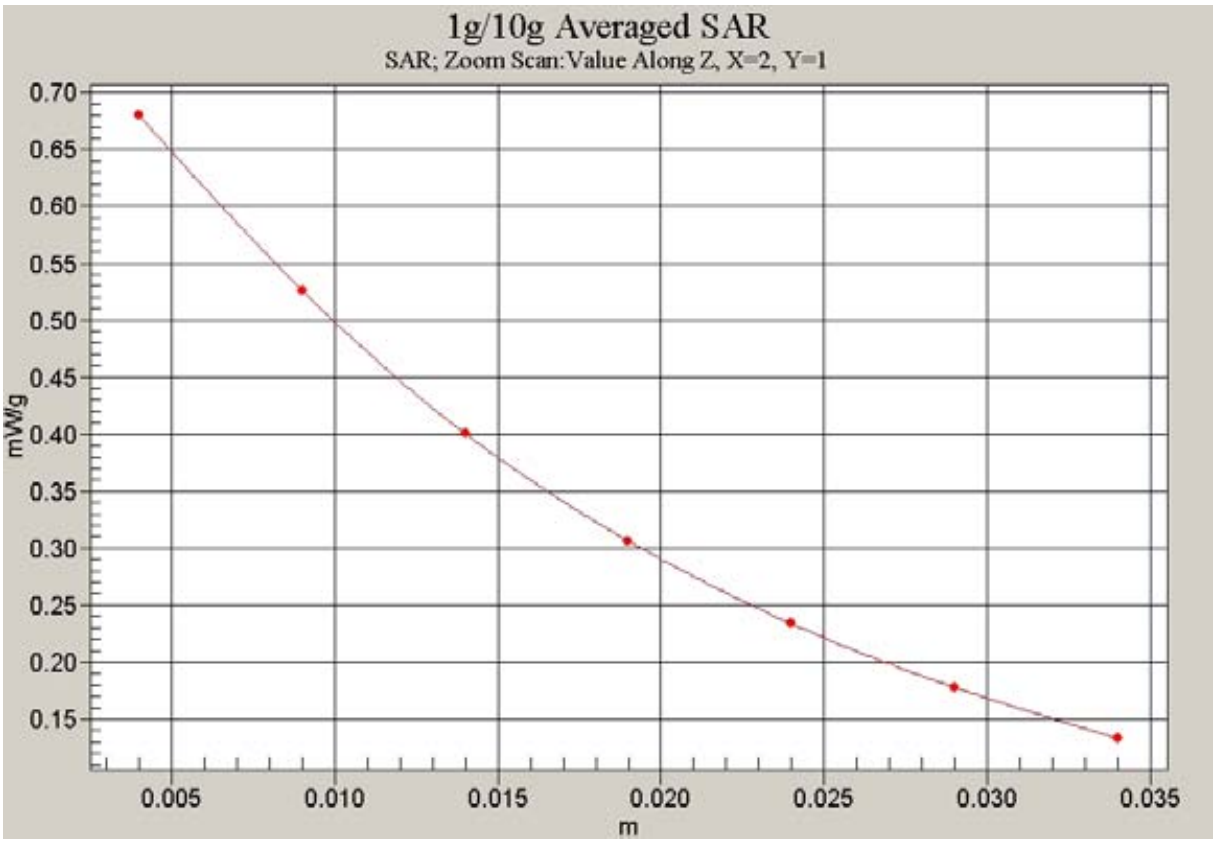


Fig. 18 Z-Scan at power reference point (850 MHz CH128)

850 Right Tilt High-slide up
Date/Time: 2007-8-8 12:07:20

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.917 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3

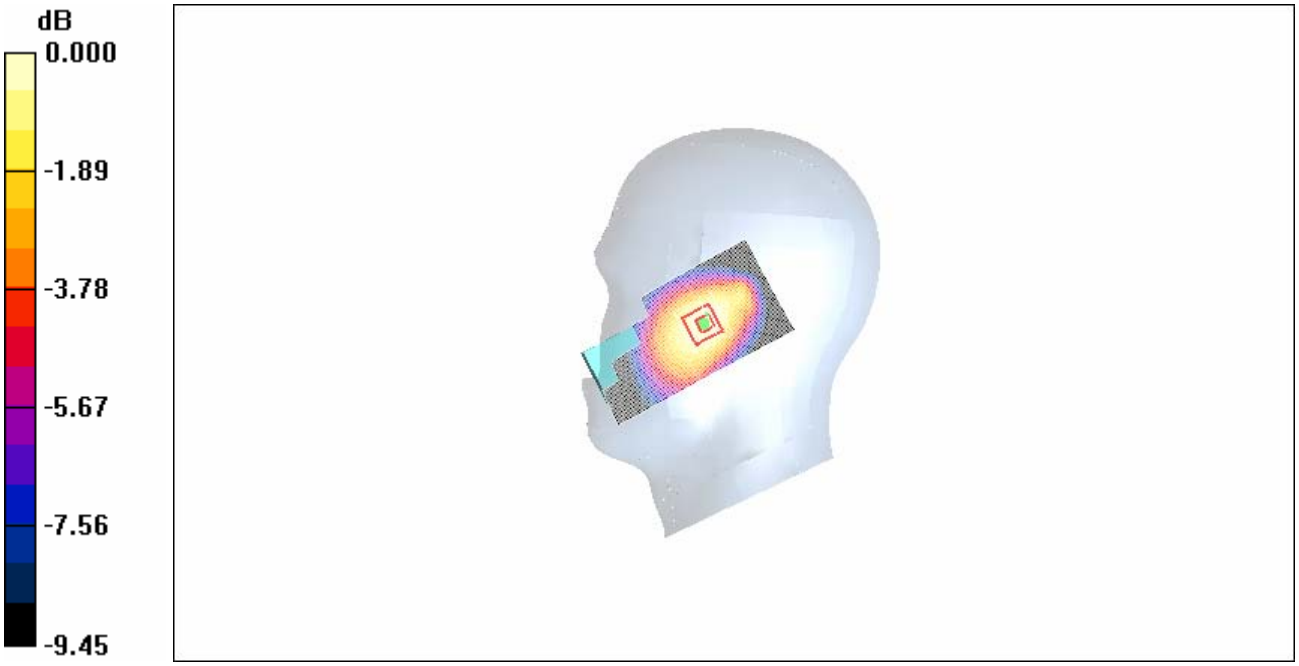
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt High/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.430 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = 0.011 dB
Peak SAR (extrapolated) = 0.527 W/kg
SAR(1 g) = 0.410 mW/g; SAR(10 g) = 0.292 mW/g
Maximum value of SAR (measured) = 0.420 mW/g



0 dB = 0.420mW/g

Fig.19 850 MHz CH251

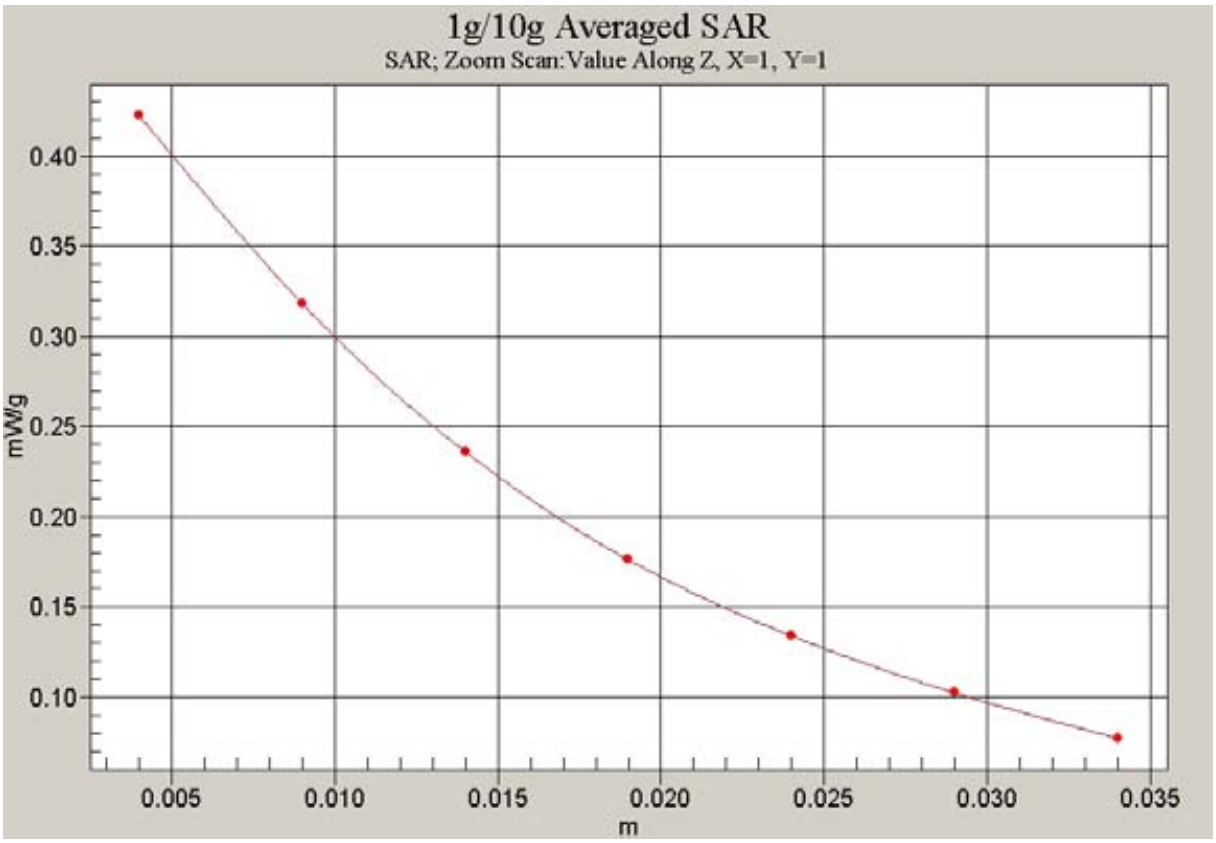


Fig. 20 Z-Scan at power reference point (850 MHz CH251)

850 Right Tilt Middle-slide up
Date/Time: 2007-8-8 11:45:45

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.907 mho/m; ε_r = 43.8; ρ = 1000 kg/m^3

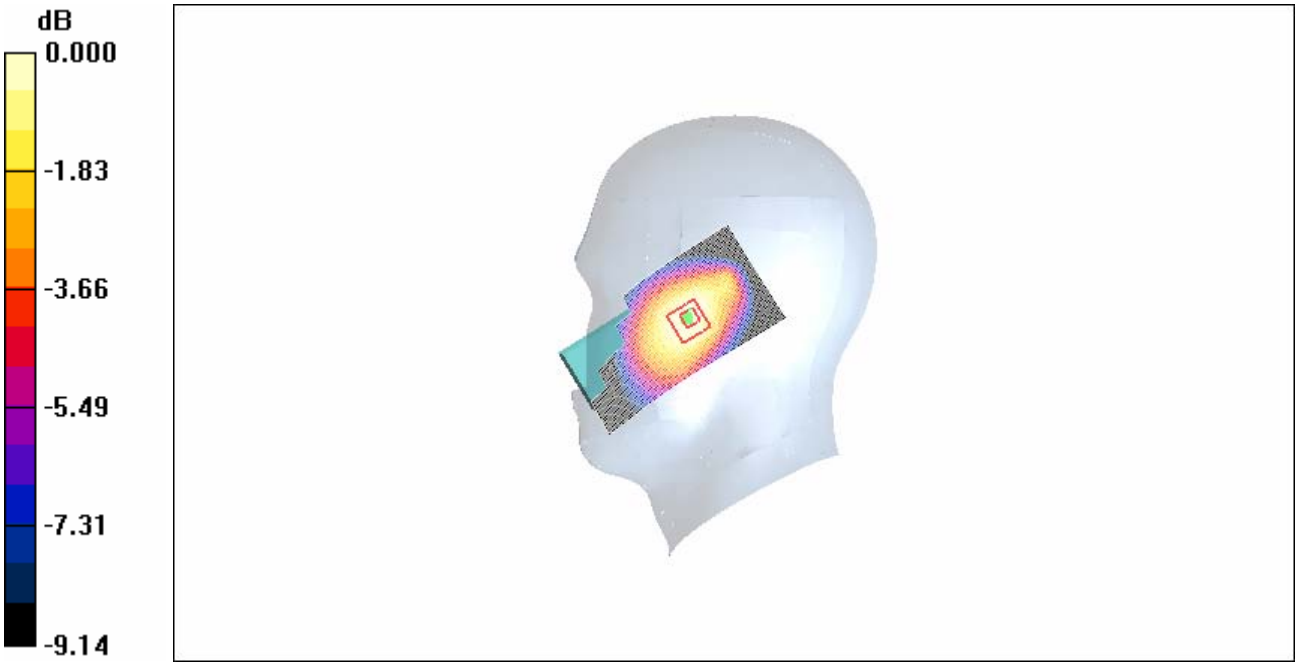
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 850 Frequency: 836.6 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt Middle/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.400 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.2 V/m; Power Drift = -0.037 dB
Peak SAR (extrapolated) = 0.484 W/kg
SAR(1 g) = 0.380 mW/g; SAR(10 g) = 0.273 mW/g
Maximum value of SAR (measured) = 0.391 mW/g



0 dB = 0.391mW/g

Fig. 21 850 MHz CH190

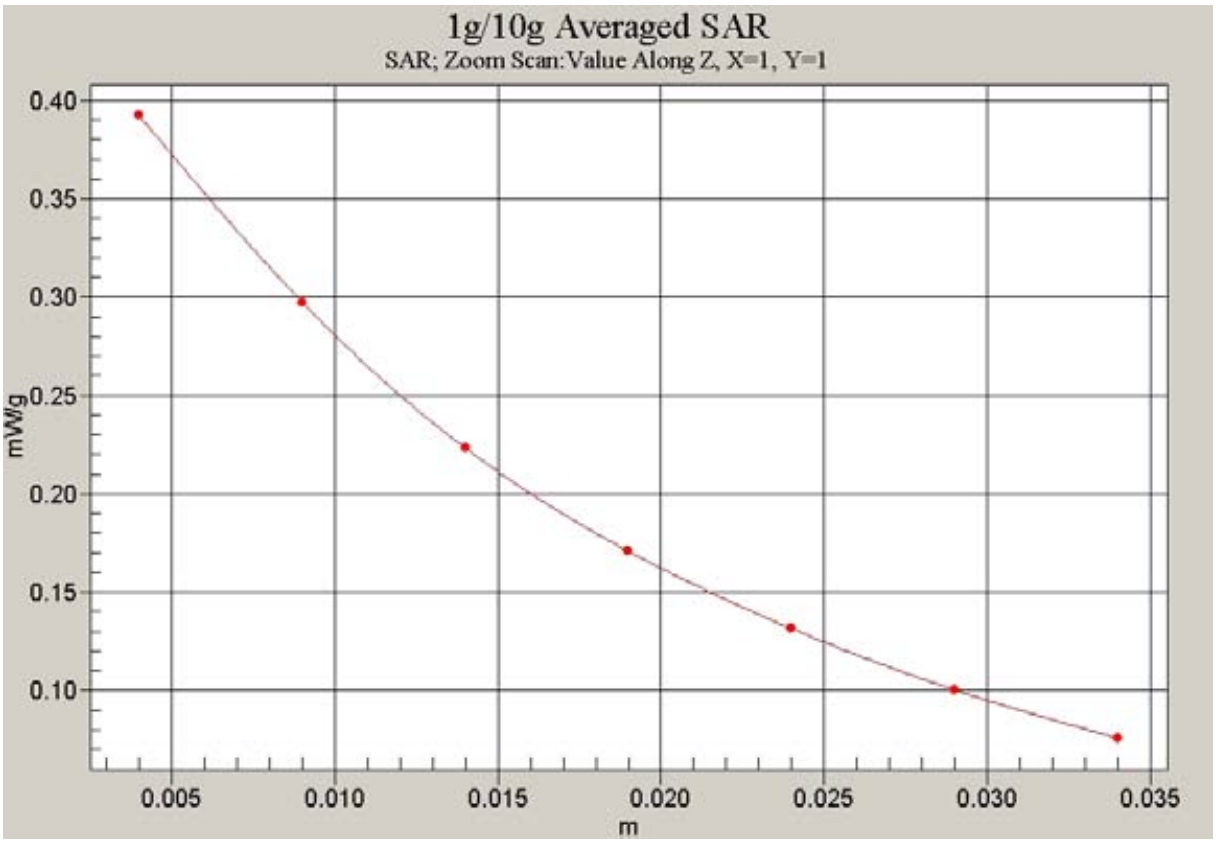


Fig. 22 Z-Scan at power reference point (850 MHz CH190)

850 Right Tilt Low-slide up
Date/Time: 2007-8-8 11:23:37

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used: f = 825 MHz; σ = 0.896 mho/m; ε_r = 43.9; ρ = 1000 kg/m^3

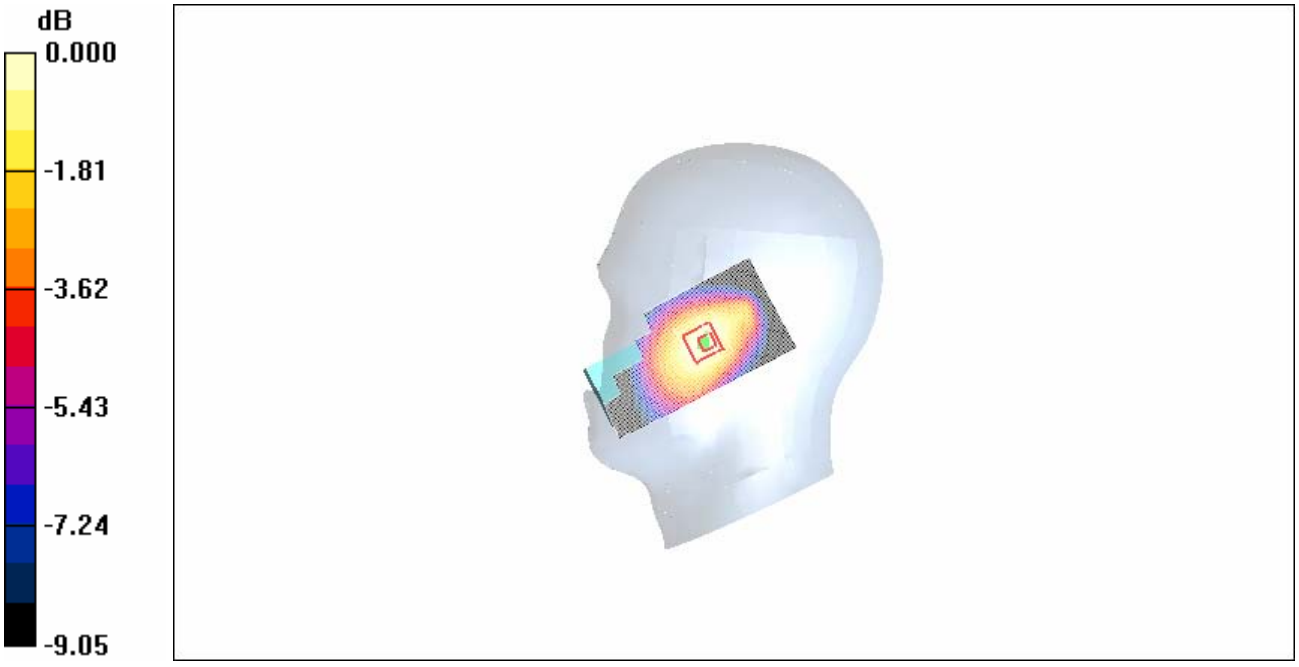
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 850 Frequency: 824.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Tilt Low/Area Scan (51x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.325 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.7 V/m; Power Drift = 0.053 dB
Peak SAR (extrapolated) = 0.405 W/kg
SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.225 mW/g
Maximum value of SAR (measured) = 0.319 mW/g



0 dB = 0.319mW/g

Fig. 23 850 MHz CH128

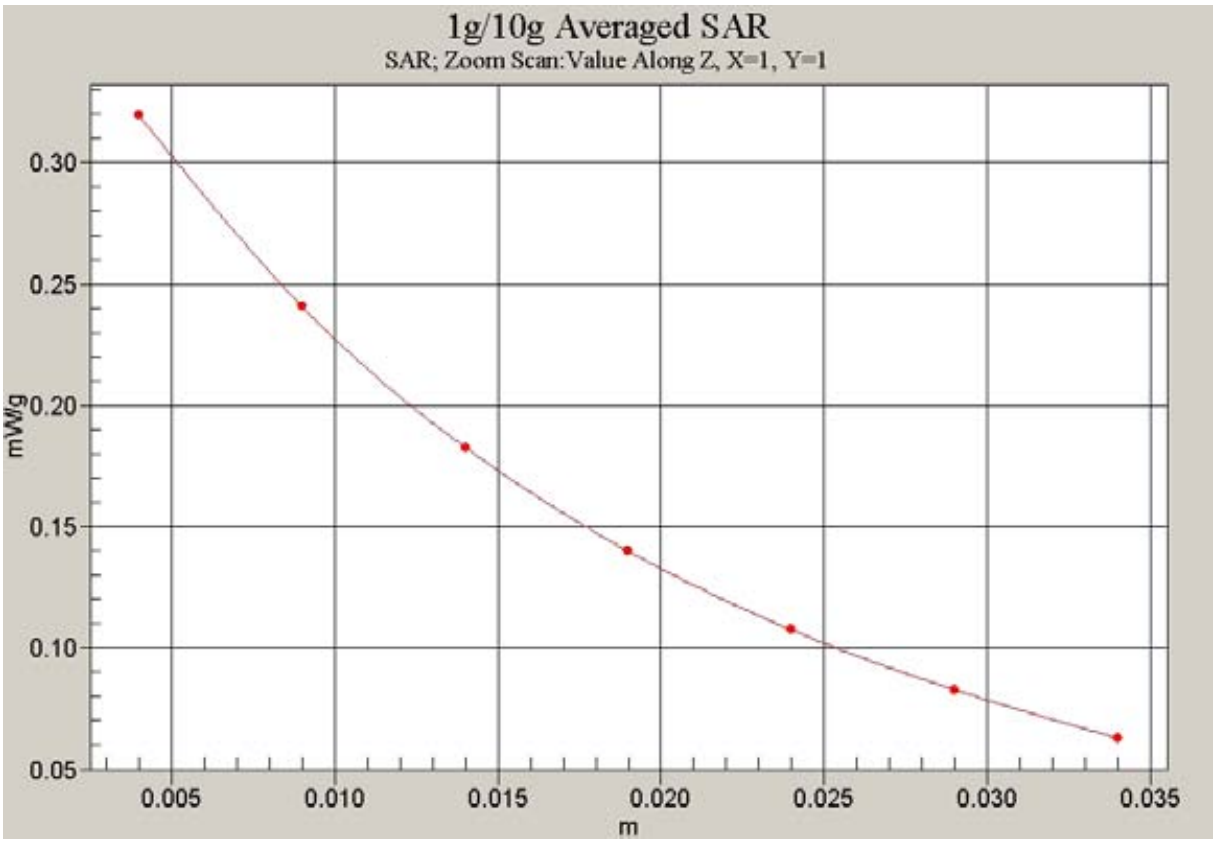


Fig. 24 Z-Scan at power reference point (850 MHz CH128)

850 Right Cheek High-slide down
Date/Time: 2007-8-8 12:50:02

Electronics: DAE3 Sn536

Medium: 850 Head

Medium parameters used: f = 848.8 MHz; σ = 0.917 mho/m; ε_r = 43.7; ρ = 1000 kg/m^3

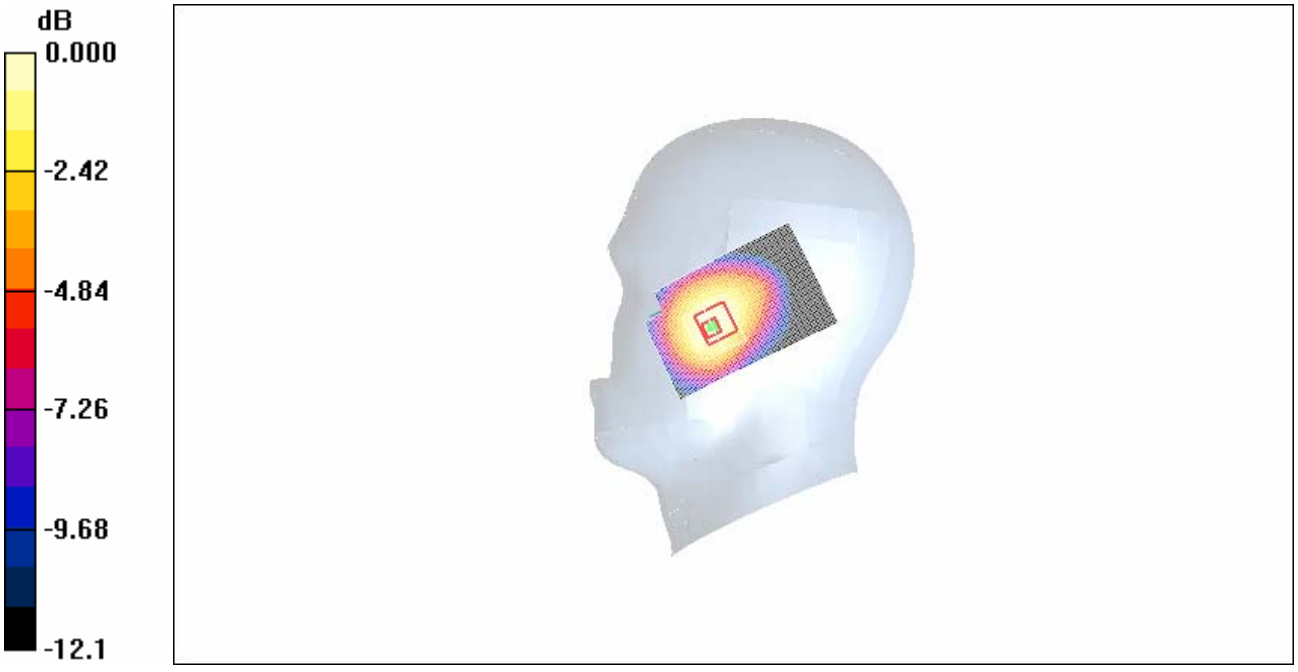
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 850 Frequency: 848.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(6.51, 6.51, 6.51)

Cheek High/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.421 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.44 V/m; Power Drift = -0.185 dB
Peak SAR (extrapolated) = 0.514 W/kg
SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.283 mW/g
Maximum value of SAR (measured) = 0.415 mW/g



0 dB = 0.415mW/g

Fig. 25 850 MHz CH251

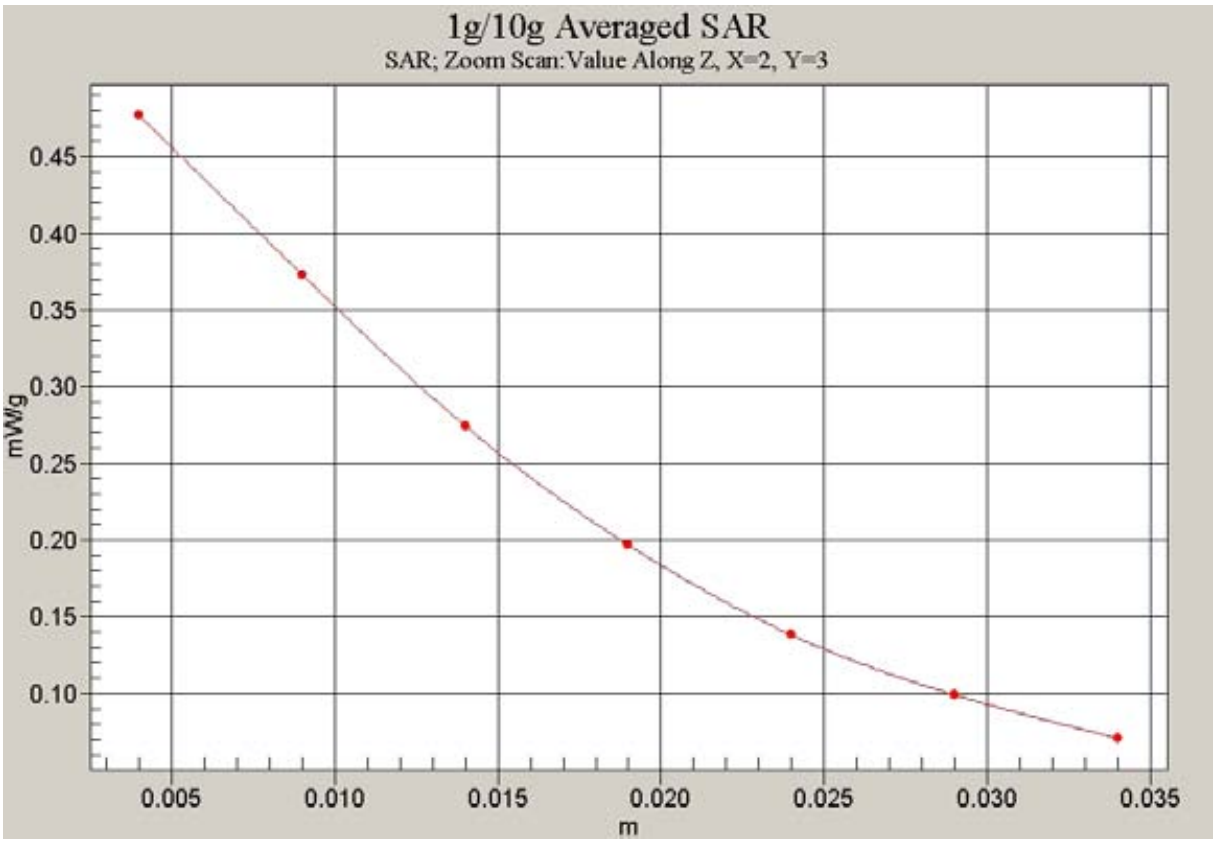


Fig. 26 Z-Scan at power reference point (850 MHz CH251)

1900 Left Cheek High-slide down
Date/Time: 2007-8-10 7:55:28

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1910 MHz; σ = 1.38 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3

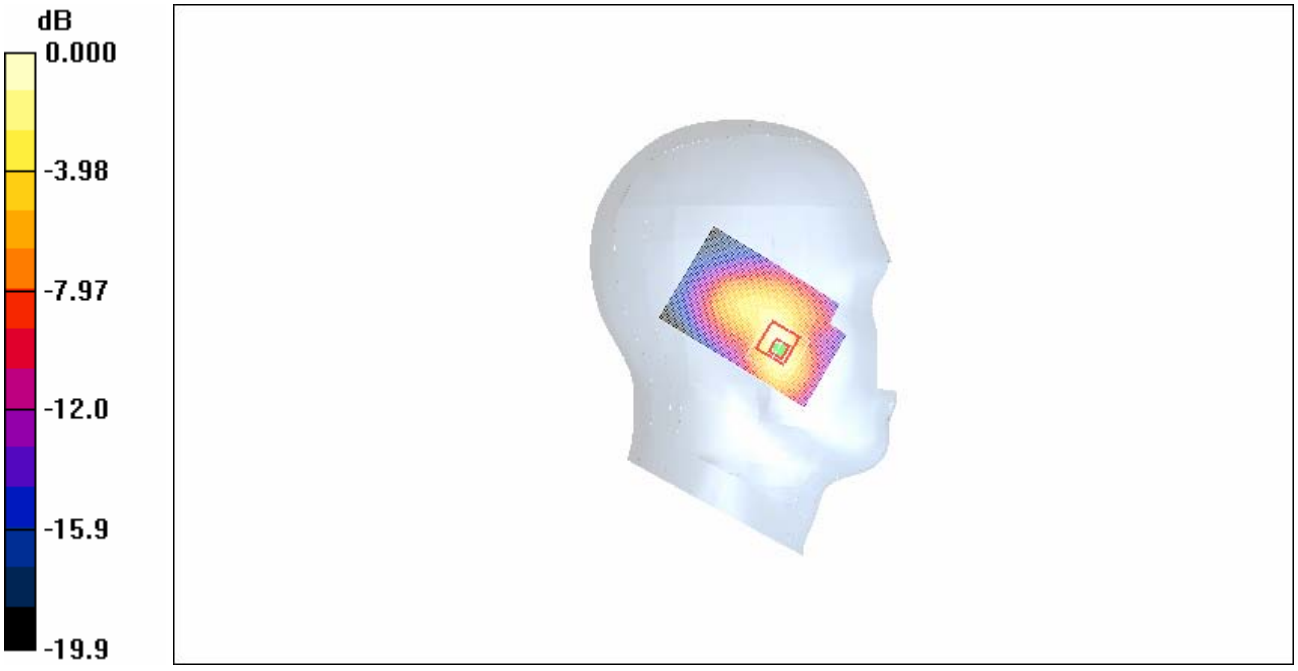
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek High/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.804 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.0 V/m; Power Drift = -0.200 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.773 mW/g; SAR(10 g) = 0.423 mW/g
Maximum value of SAR (measured) = 0.889 mW/g



0 dB = 0.889mW/g

Fig. 27 1900 MHz CH810

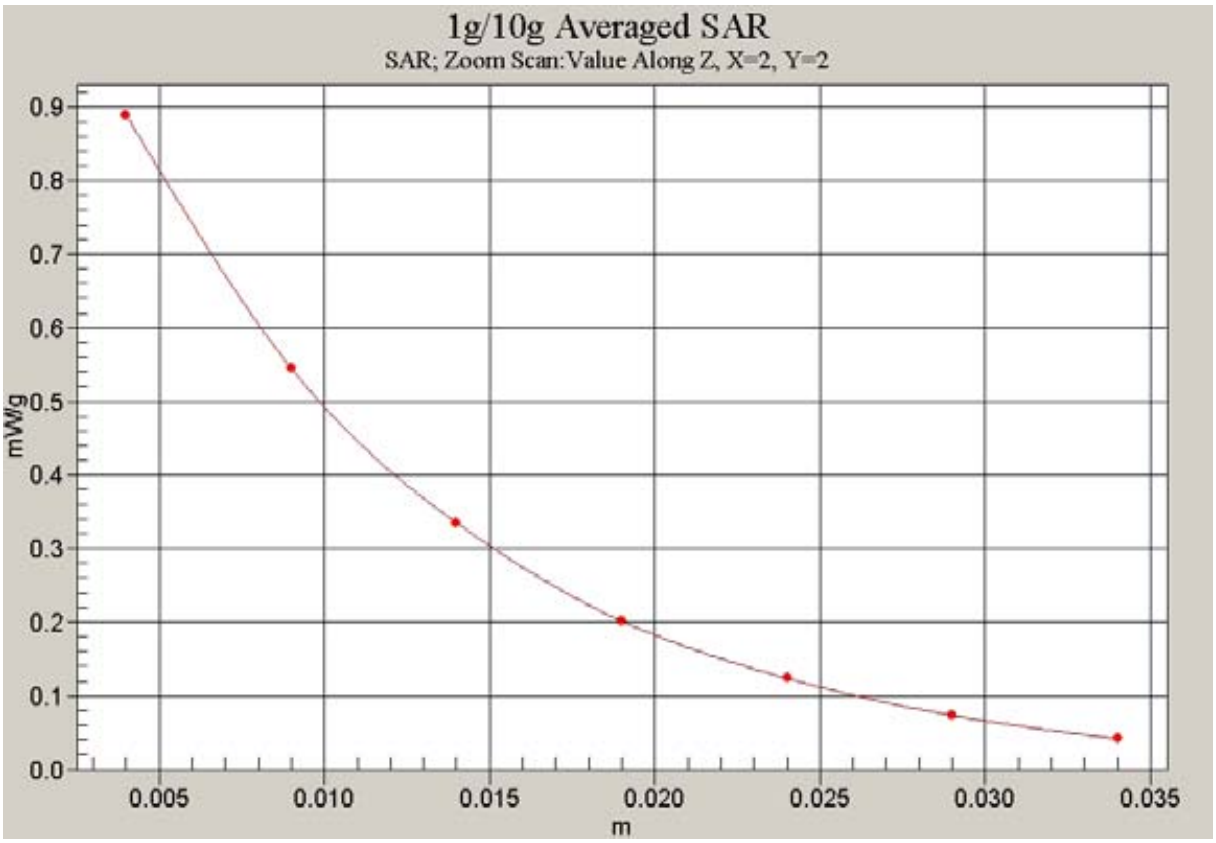


Fig. 28 Z-Scan at power reference point (1900 MHz CH810)

1900 Left Cheek Middle-slide down
Date/Time: 2007-8-10 8:17:12

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

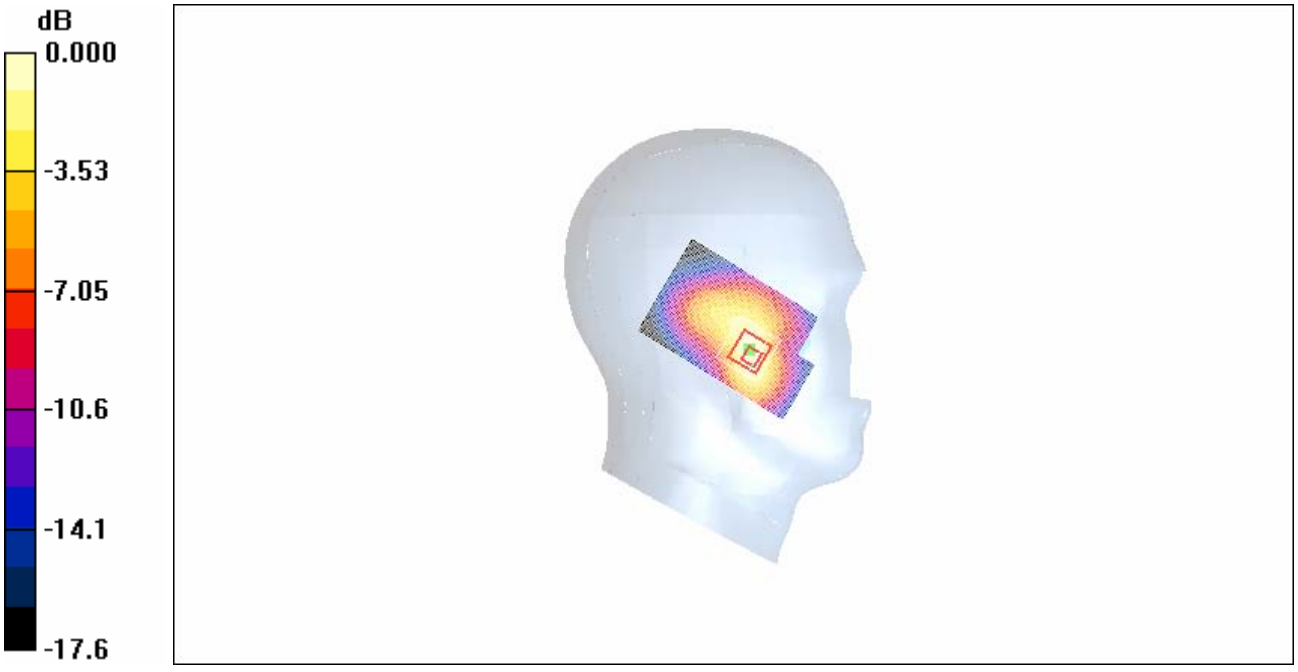
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.888 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.2 V/m; Power Drift = -0.122 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.778 mW/g; SAR(10 g) = 0.434 mW/g
Maximum value of SAR (measured) = 0.830 mW/g



0 dB = 0.830mW/g

Fig. 29 1900 MHz CH661

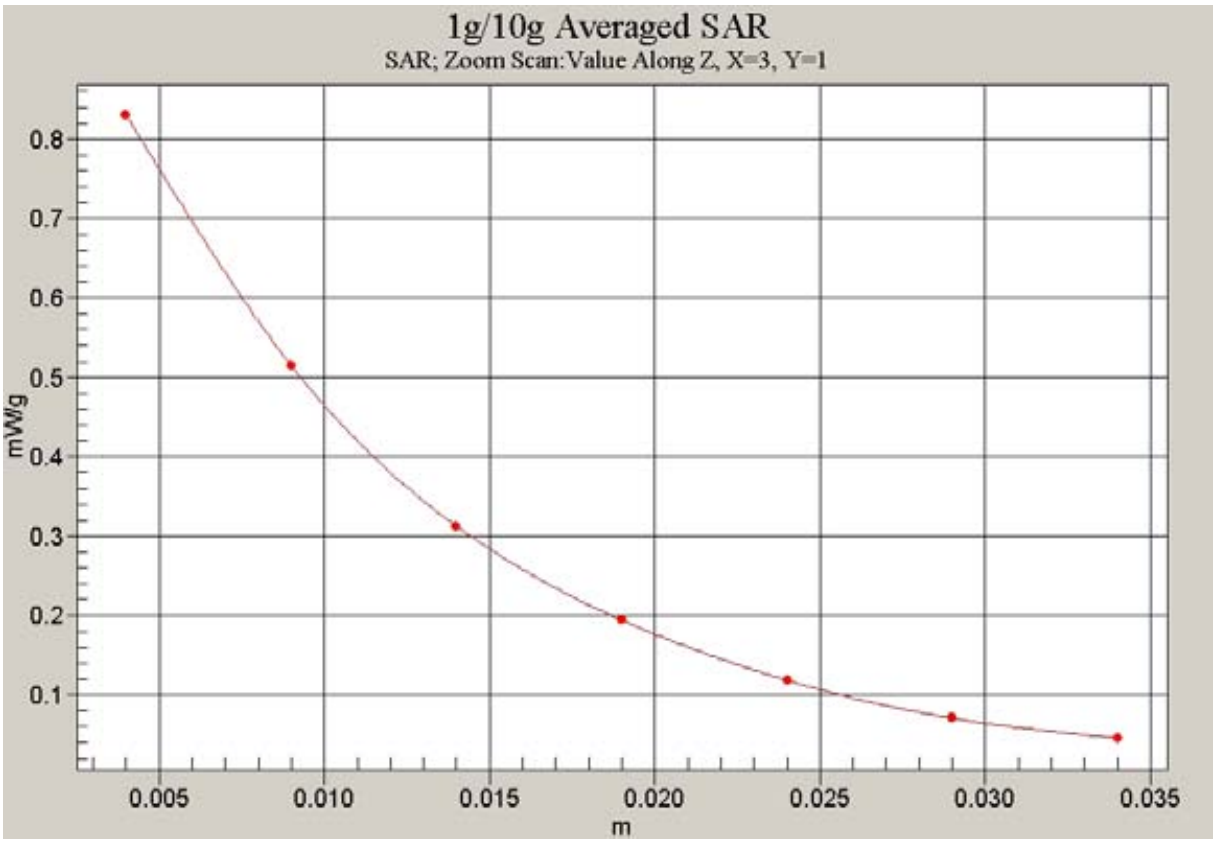


Fig. 30 Z-Scan at power reference point (1900 MHz CH661)

1900 Left Cheek Low-slide down
Date/Time: 2007-8-10 8:39:08

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.32 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

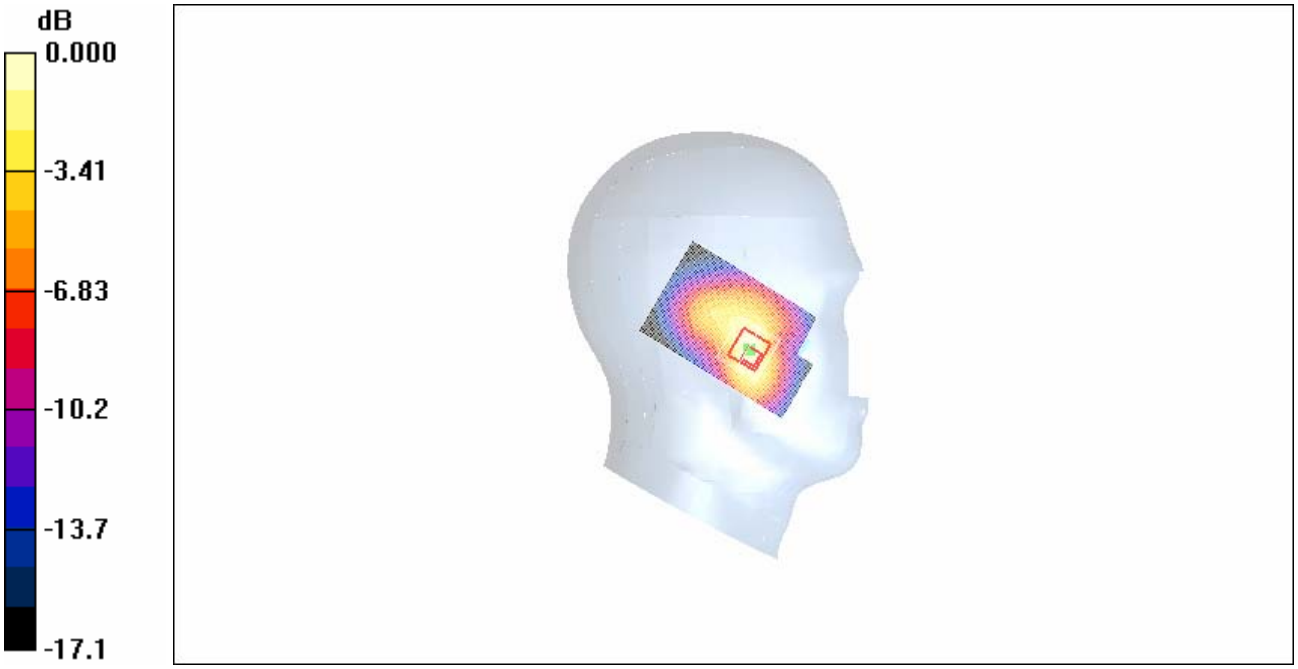
Ambient Temperature:23.3°C Liqiud Temperature: 22.5°C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Low/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.895 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 13.6 V/m; Power Drift = -0.068 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.800 mW/g; SAR(10 g) = 0.451 mW/g
Maximum value of SAR (measured) = 0.851 mW/g



0 dB = 0.851mW/g

Fig. 31 1900 MHz CH512

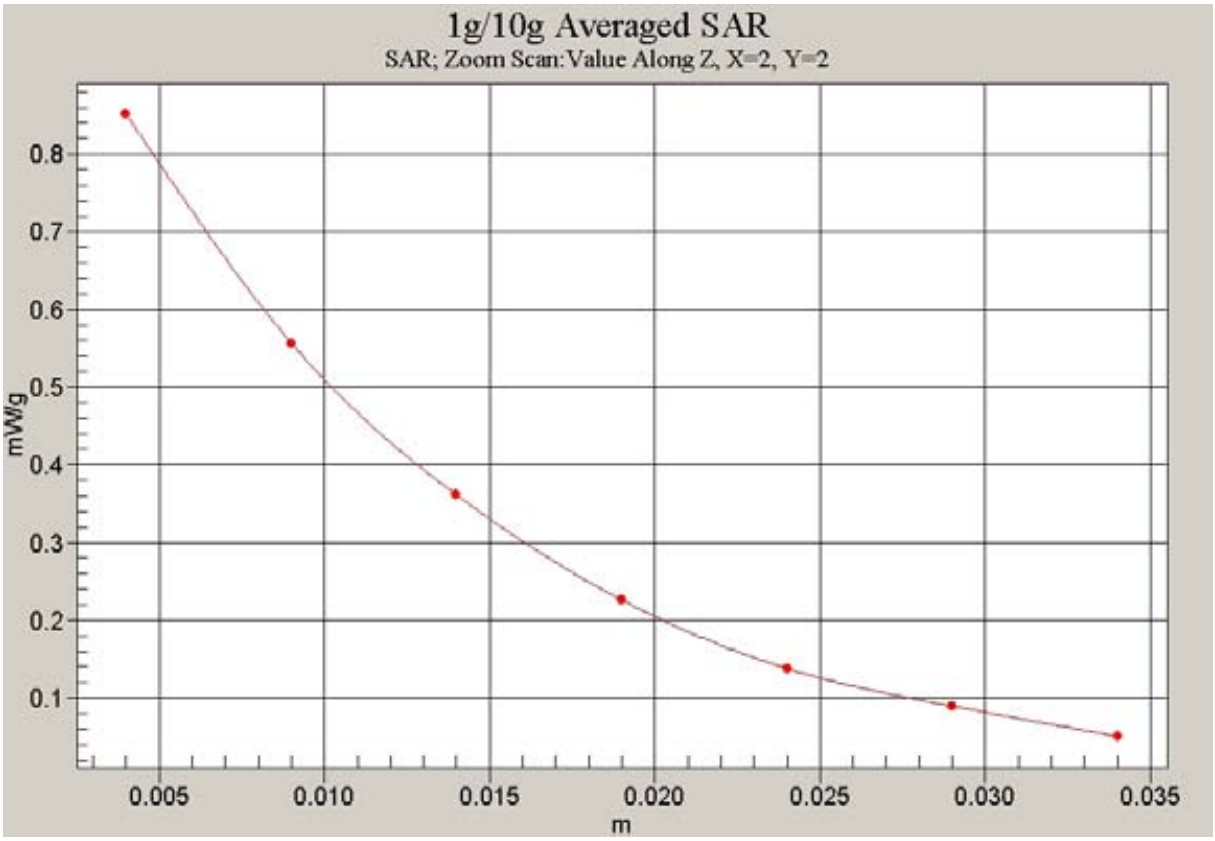


Fig. 32 Z-Scan at power reference point (1900 MHz CH512)

1900 Left Tilt High-slide down
Date/Time: 2007-8-10 9:46:53

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1910 MHz; σ = 1.38 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3

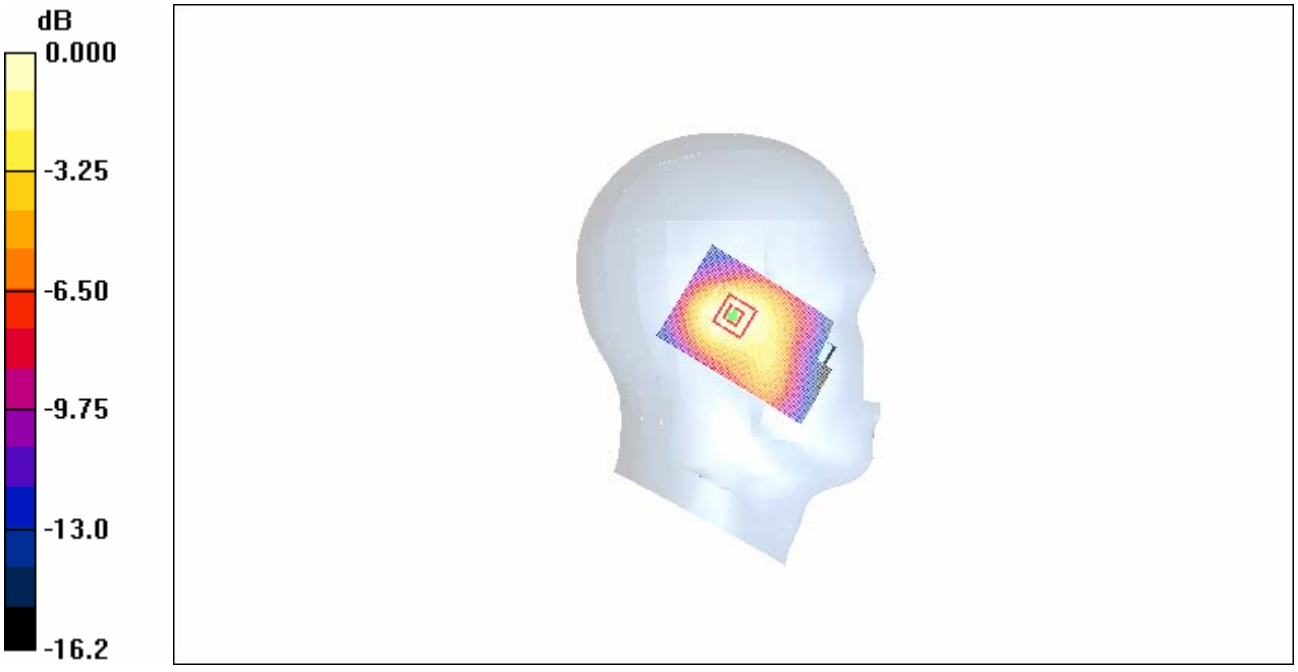
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt High/Area Scan (51x81x1): 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 = 15.0 V/m; Power Drift = -0.082 dB
Peak SAR (extrapolated) = 0.459 W/kg
SAR(1 g) = 0.317 mW/g; SAR(10 g) = 0.201 mW/g
Maximum value of SAR (measured) = 0.341 mW/g



0 dB = 0.341mW/g

Fig.33 1900 MHz CH810

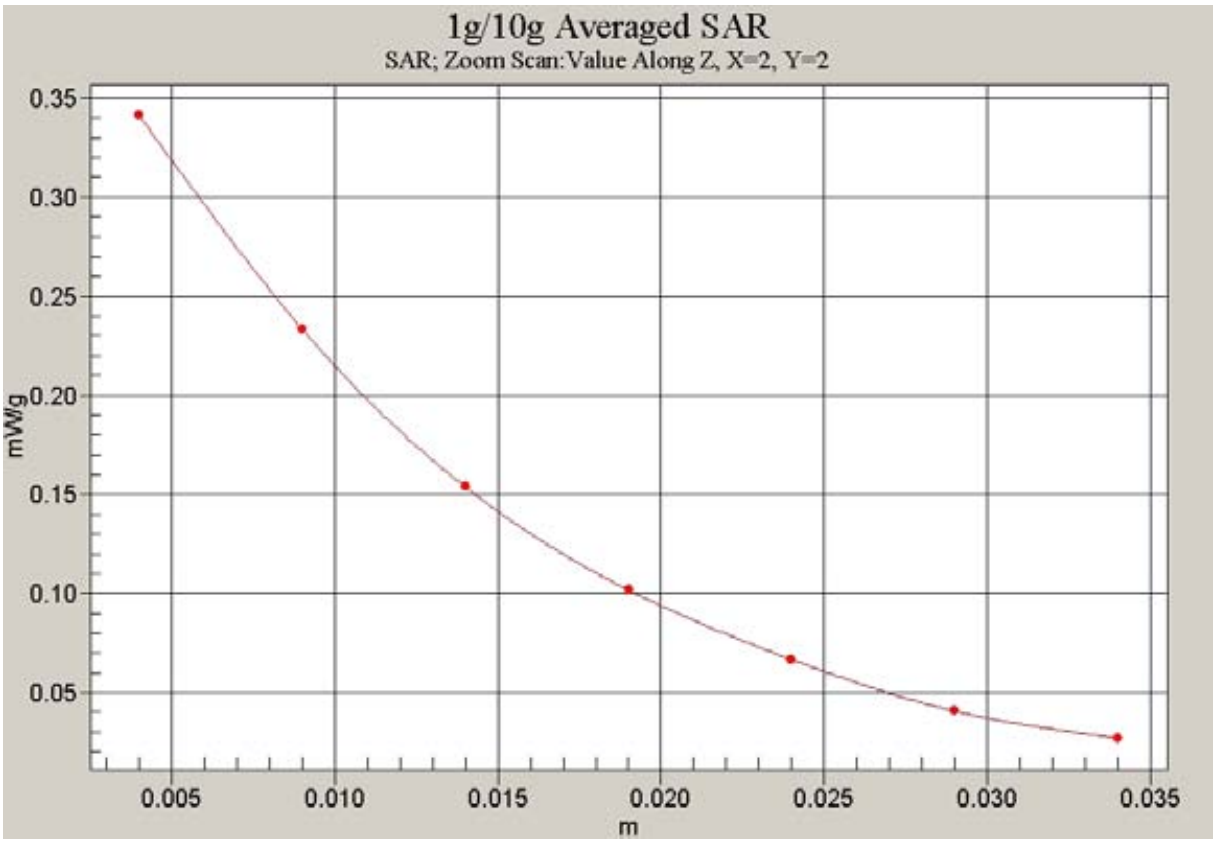


Fig. 34 Z-Scan at power reference point (1900 MHz CH810)

1900 Left Tilt Middle-slide down
Date/Time: 2007-8-10 9:23:46

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

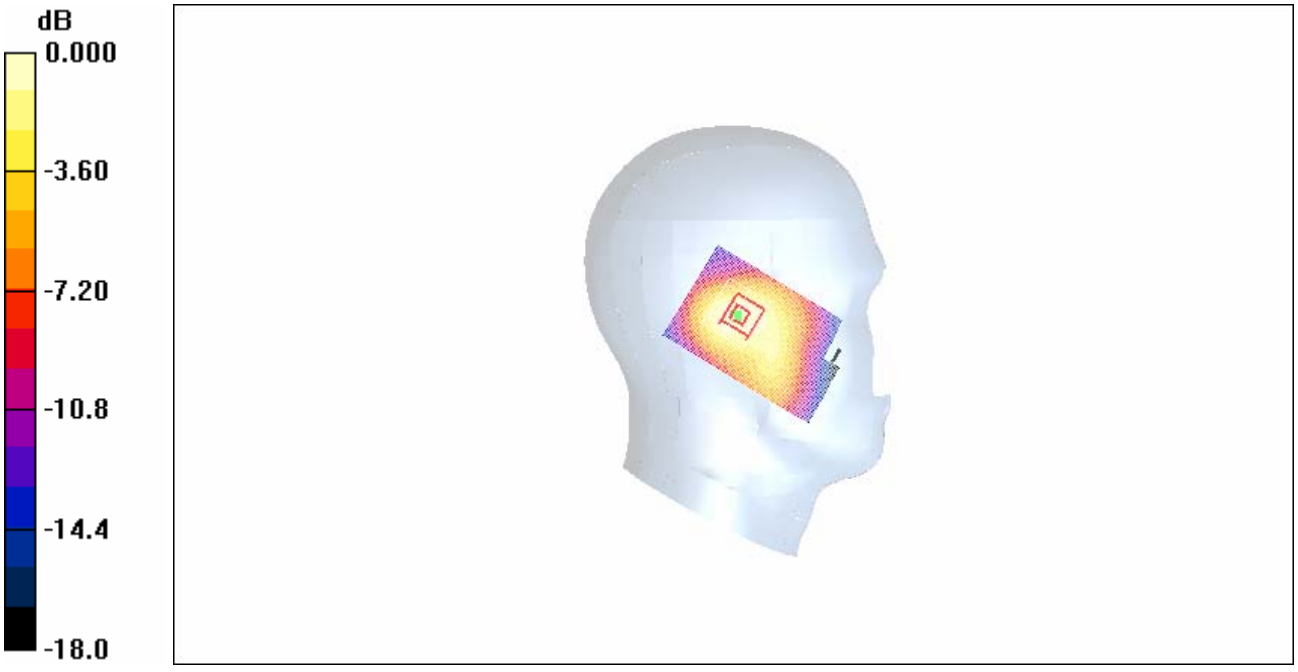
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt Middle/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.380 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.3 V/m; Power Drift = -0.070 dB
Peak SAR (extrapolated) = 0.465 W/kg
SAR(1 g) = 0.327 mW/g; SAR(10 g) = 0.209 mW/g
Maximum value of SAR (measured) = 0.352 mW/g



0 dB = 0.352mW/g

Fig.35 1900 MHz CH661

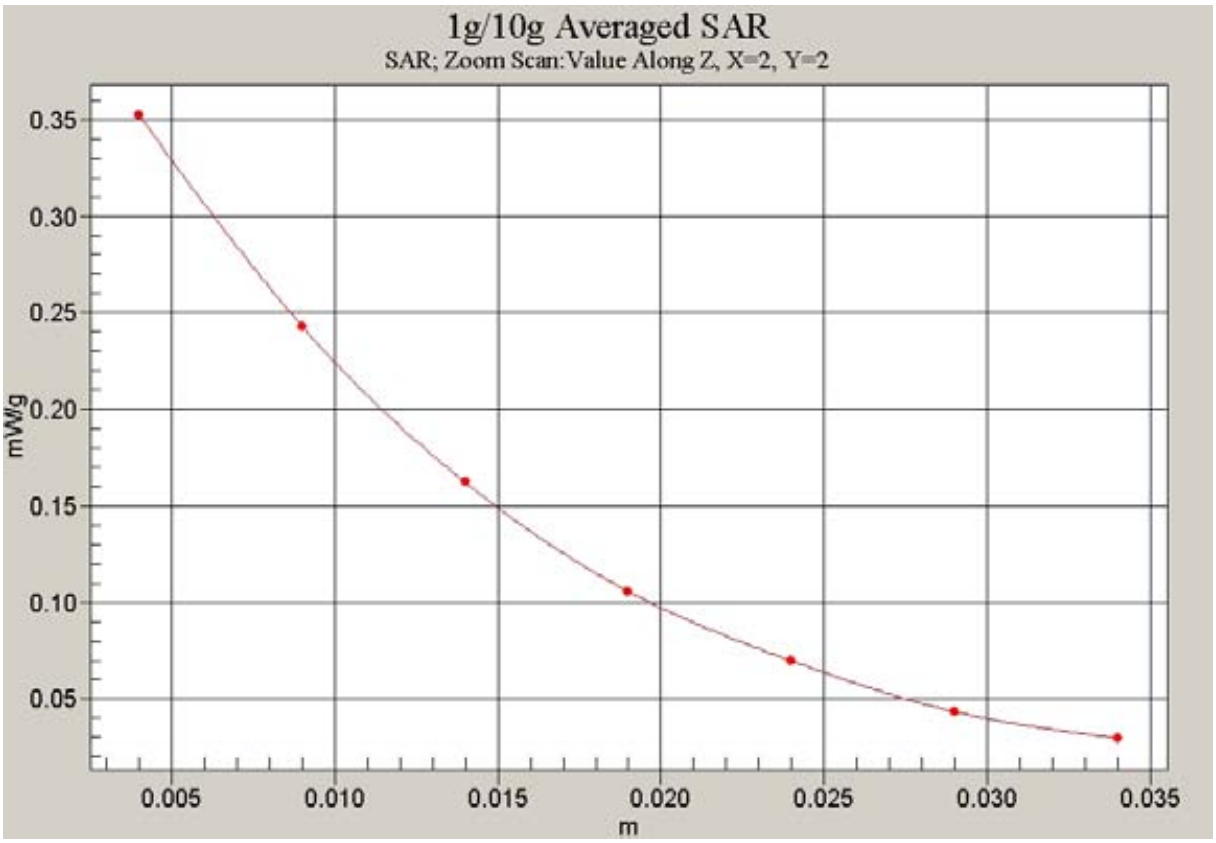


Fig. 36 Z-Scan at power reference point (1900 MHz CH661)

1900 Left Tilt Low-slide down
Date/Time: 2007-8-10 9:01:48

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.32 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

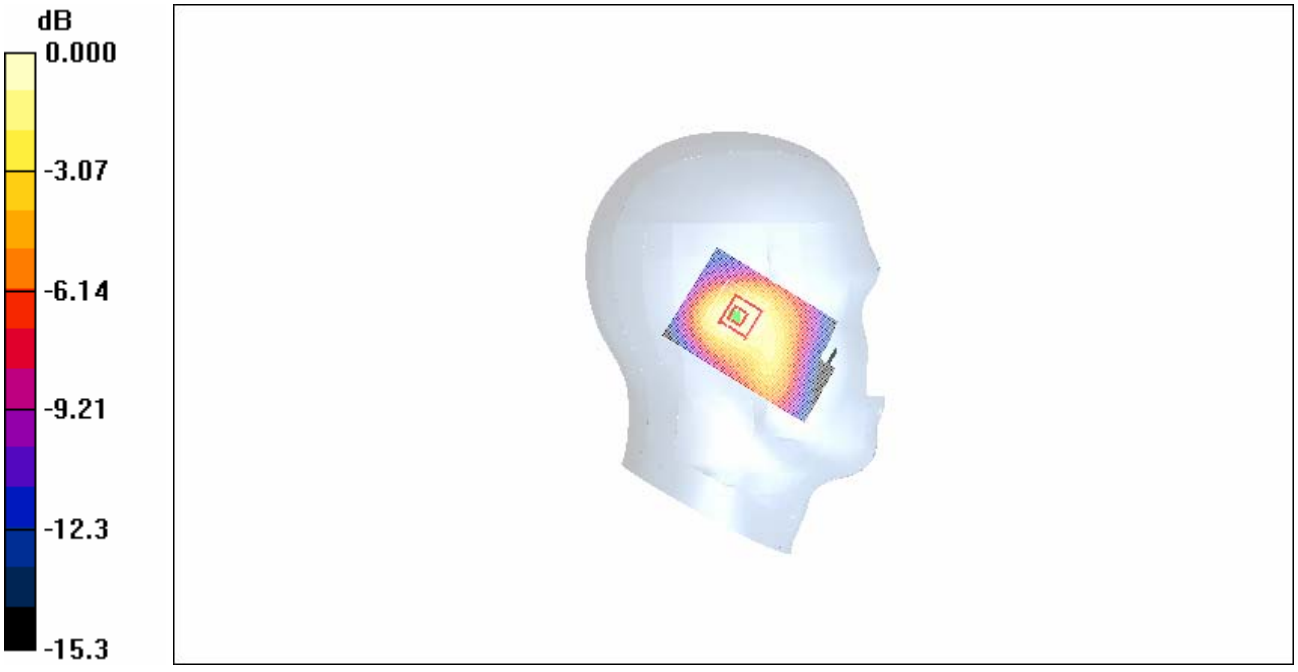
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Tilt Low/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.371 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.1 V/m; Power Drift = 0.051 dB
Peak SAR (extrapolated) = 0.453 W/kg
SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.208 mW/g
Maximum value of SAR (measured) = 0.349 mW/g



0 dB = 0.349mW/g

Fig. 37 1900 MHz CH512

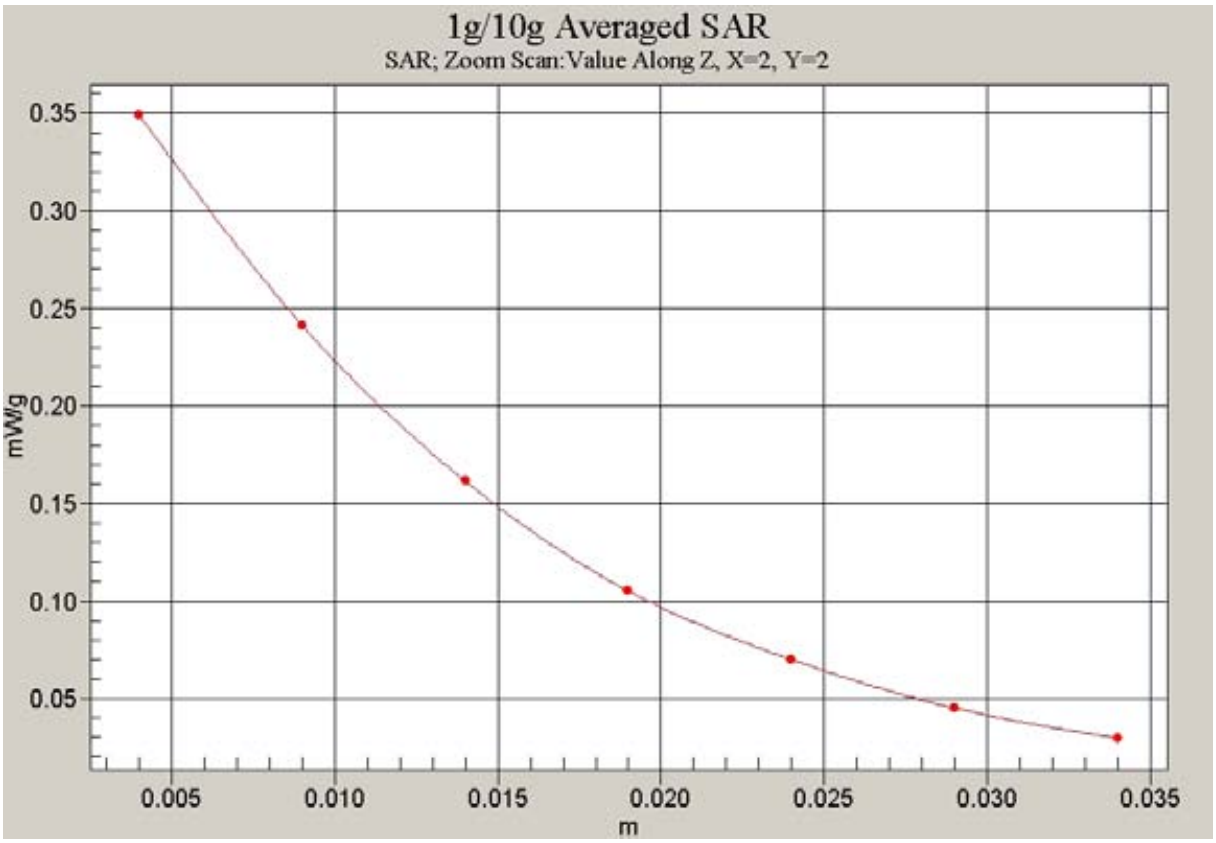


Fig. 38 Z-Scan at power reference point (1900 MHz CH512)

1900 Right Cheek High-slide down
Date/Time: 2007-8-10 10:10:53

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1910 MHz; σ = 1.38 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3

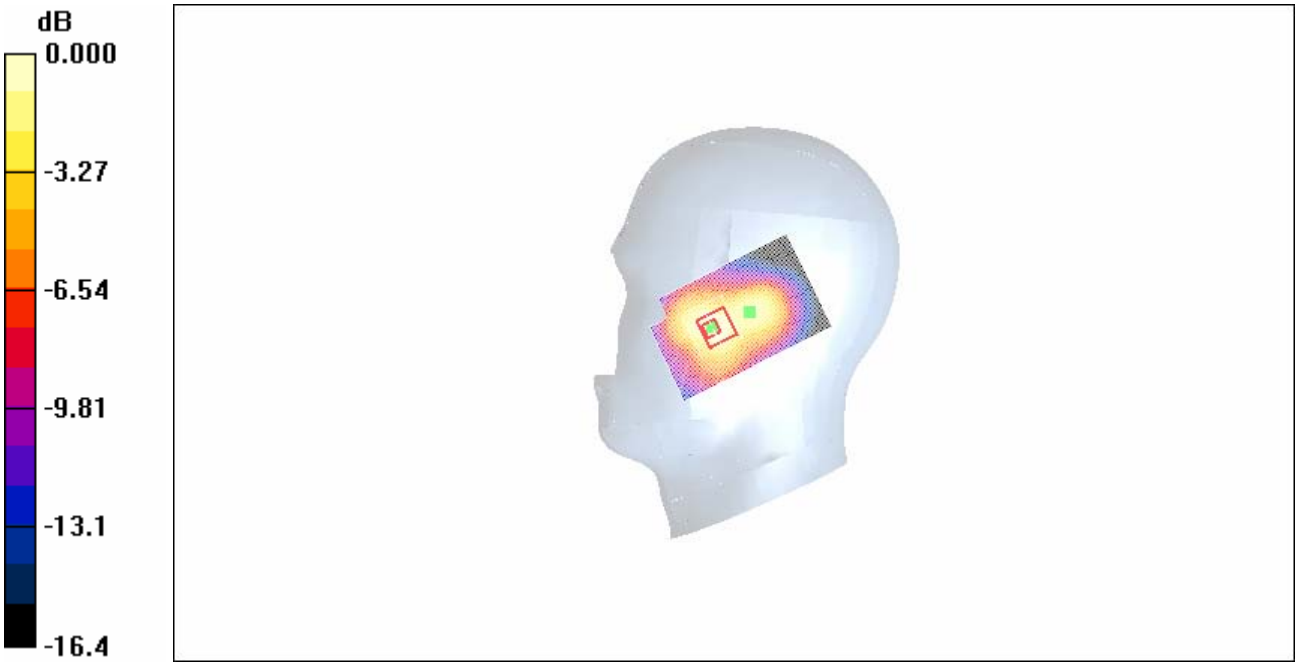
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1909.8 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek High/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.684 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.1 V/m; Power Drift = -0.152 dB
Peak SAR (extrapolated) = 0.940 W/kg
SAR(1 g) = 0.616 mW/g; SAR(10 g) = 0.382 mW/g
Maximum value of SAR (measured) = 0.674 mW/g



0 dB = 0.674mW/g

Fig. 39 1900 MHz CH810

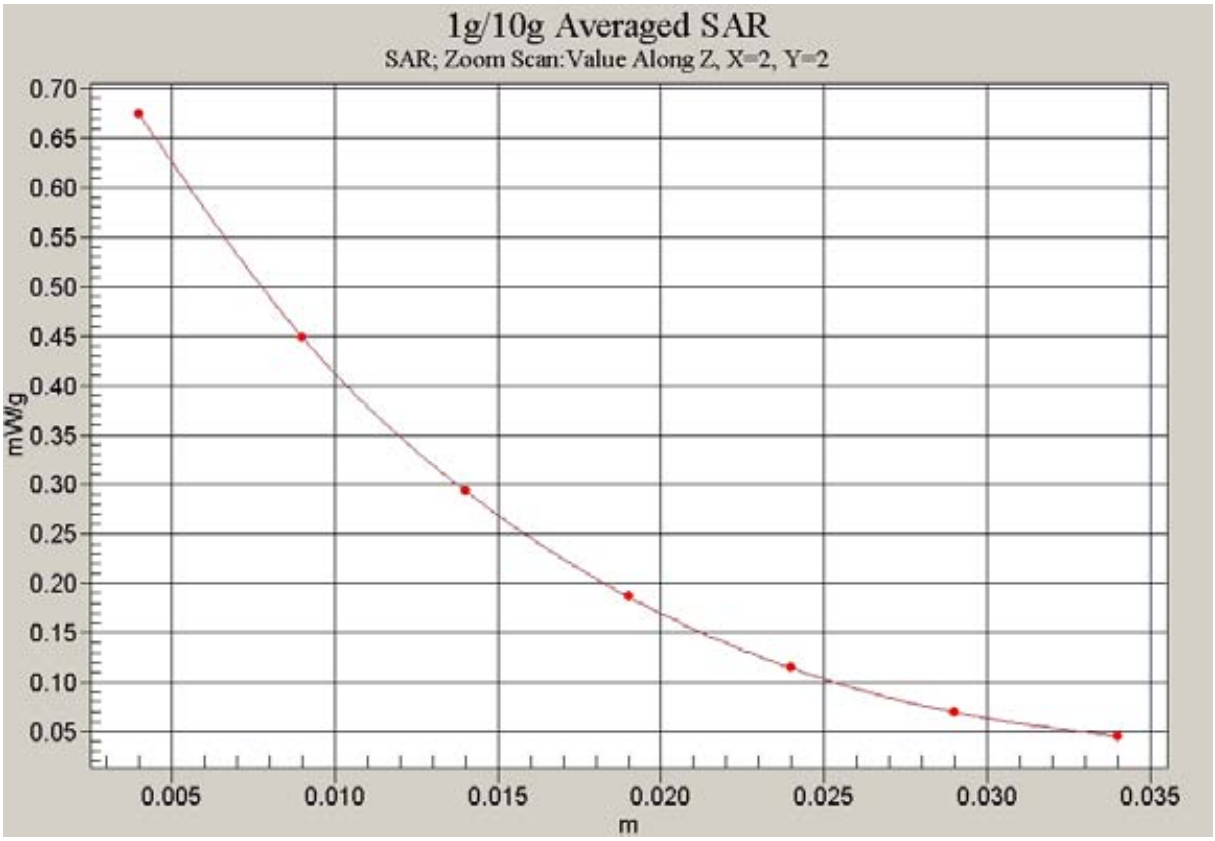


Fig. 40 Z-Scan at power reference point (1900 MHz CH810)

1900 Right Cheek Middle-slide down
Date/Time: 2007-8-10 10:31:25

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used: f = 1880 MHz; σ = 1.35 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

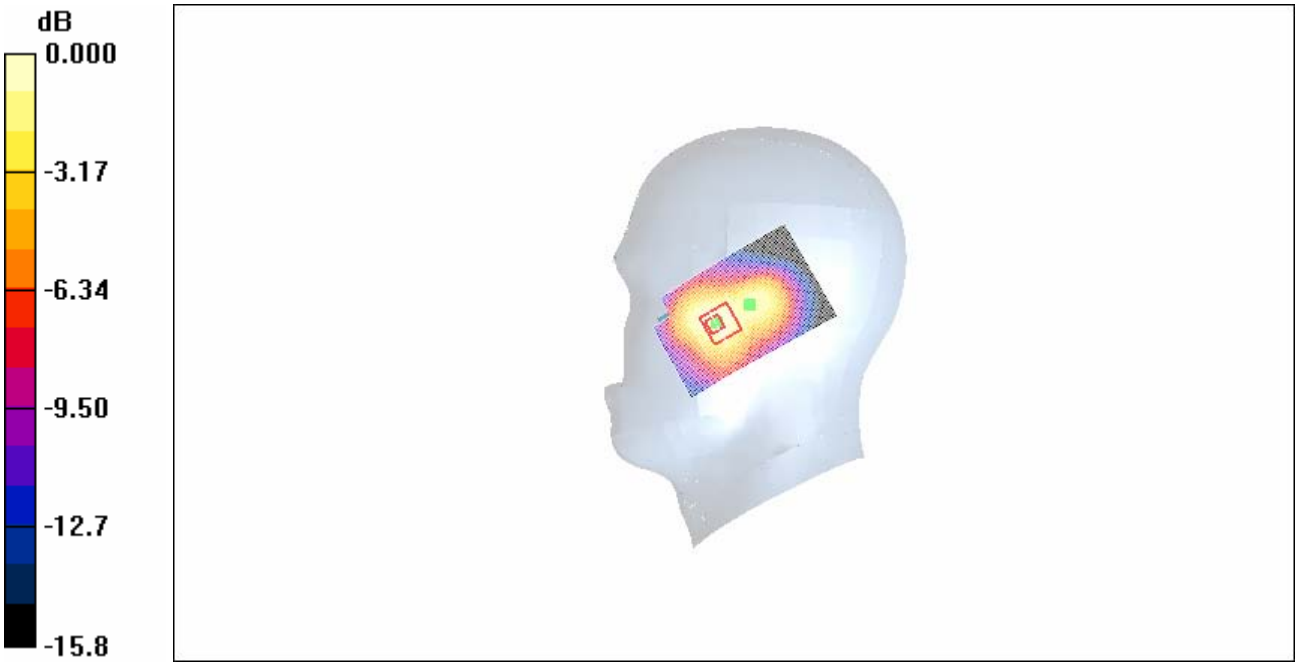
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1880 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Middle/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.723 mW/g

Cheek Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.1 V/m; Power Drift = -0.146 dB
Peak SAR (extrapolated) = 0.978 W/kg
SAR(1 g) = 0.655 mW/g; SAR(10 g) = 0.410 mW/g
Maximum value of SAR (measured) = 0.714 mW/g



0 dB = 0.714mW/g

Fig. 41 1900 MHz CH661

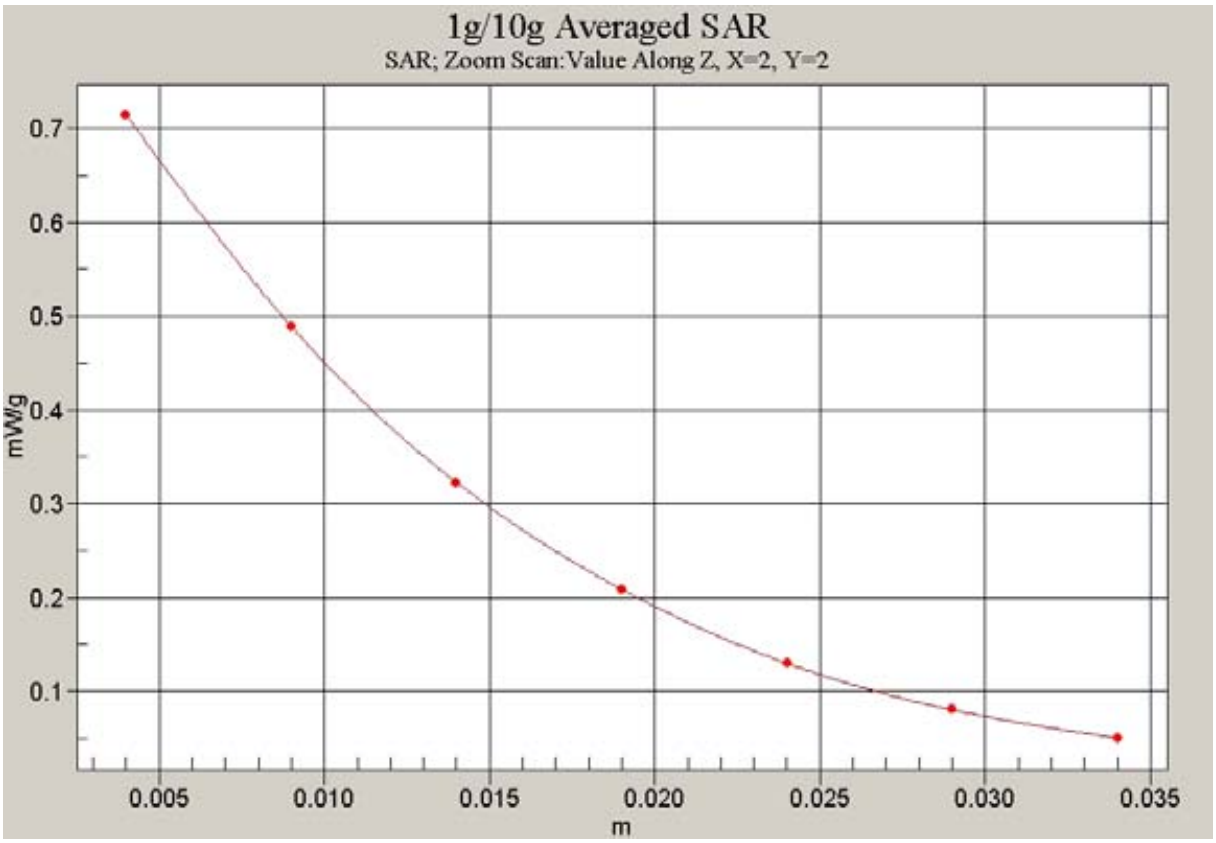


Fig. 42 Z-Scan at power reference point (1900 MHz CH661)

1900 Right Cheek Low-slide down
Date/Time: 2007-8-10 10:54:09

Electronics: DAE3 Sn536

Medium: 1900 Head

Medium parameters used (interpolated): f = 1850.2 MHz; σ = 1.32 mho/m; ε_r = 39.4; ρ = 1000 kg/m^3

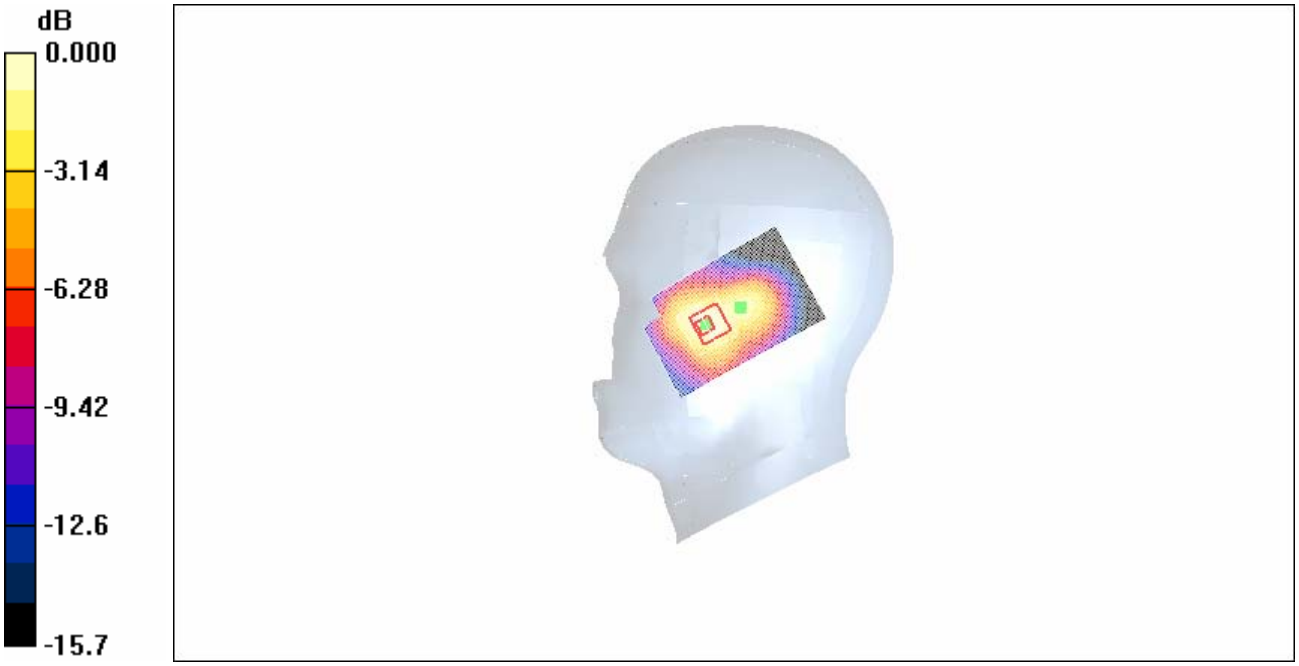
Ambient Temperature:23.3^{o}C Liqiud Temperature: 22.5^{o}C

Communication System: GSM 1900MHz new Frequency: 1850.2 MHz Duty Cycle: 1:8.3

Probe: ET3DV6 - SN1736 ConvF(5.4, 5.4, 5.4)

Cheek Low/Area Scan (51x81x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 0.733 mW/g

Cheek Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.6 V/m; Power Drift = -0.084 dB
Peak SAR (extrapolated) = 0.953 W/kg
SAR(1 g) = 0.663 mW/g; SAR(10 g) = 0.417 mW/g
Maximum value of SAR (measured) = 0.726 mW/g



0 dB = 0.726mW/g

Fig. 43 1900 MHz CH512

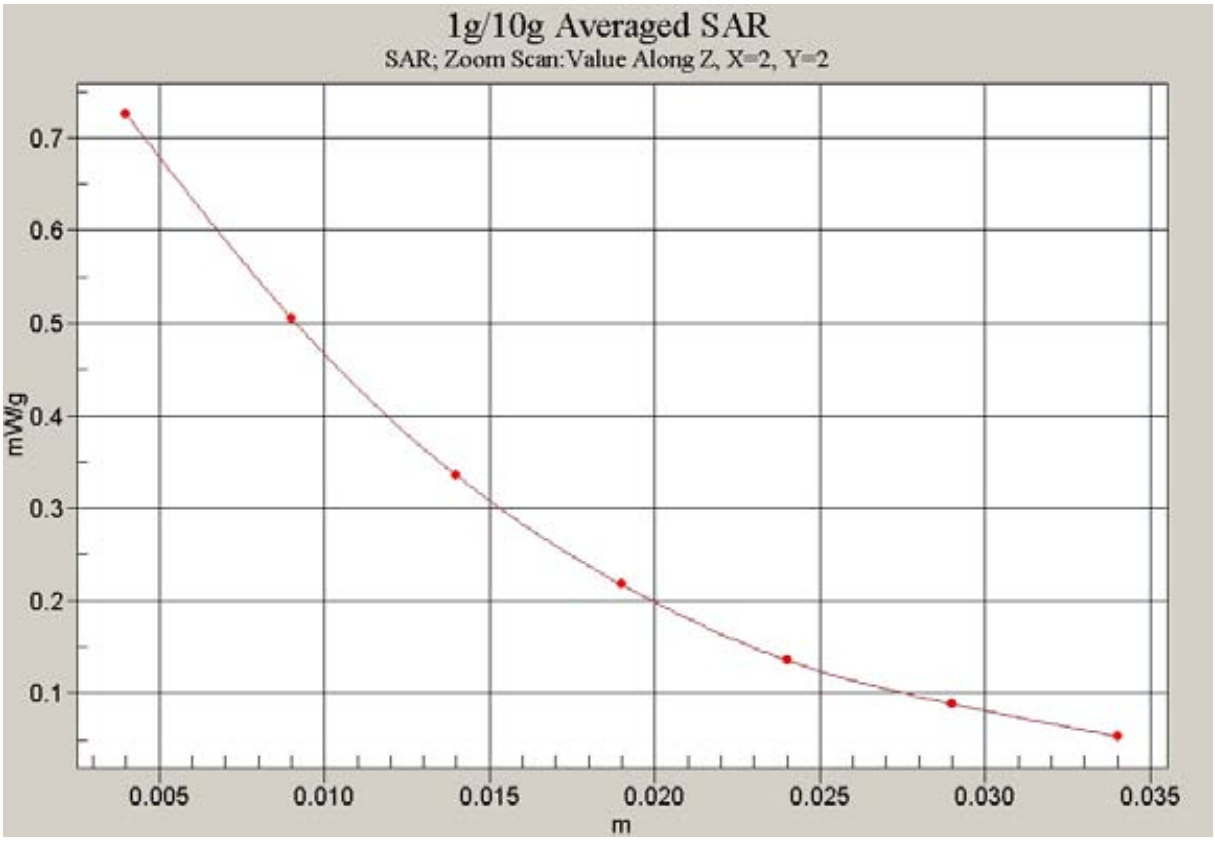


Fig. 44 Z-Scan at power reference point (1900 MHz CH512)