SAR TEST REPORT

No. 2008SAR00079

For

HUAWEI Technologies Co., Ltd.

HSPA Express Data Card

E880

With

Hardware Version: CD84TCPU

Software Version: 11.104.18.00.00

FCCID: QISE880

Issued Date: 2009-02-17

Deutscher Akkreditierungs Rat

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

No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China 100083.

Tel:+86(0)10-62303288-2105, Fax:+86(0)10-62304793 Email:welcome@emcite.com. www.emcite.com

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1 Test Laboratory

1.1 Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MII
Address:	No 52, Huayuan beilu, Haidian District, Beijing,P.R.China
Postal Code:	100083
Telephone:	+86-10-62303288
Fax:	+86-10-62304793

1.2 Testing Environment

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

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

1.3 Project Data

Project Leader:	Sun Qian
Test Engineer:	Lin Xiaojun
Testing Start Date:	December 12, 2008
Testing End Date:	February 12, 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:	HUAWEI Technologies Co., Ltd.
Address /Post:	Bantian, Longgang District, Shenzhen, Guangdong
City:	Shenzhen
Postal Code:	518129
Country:	China
Telephone:	+86 (0)755-28780808
Fax:	+86 (0)755-28780808

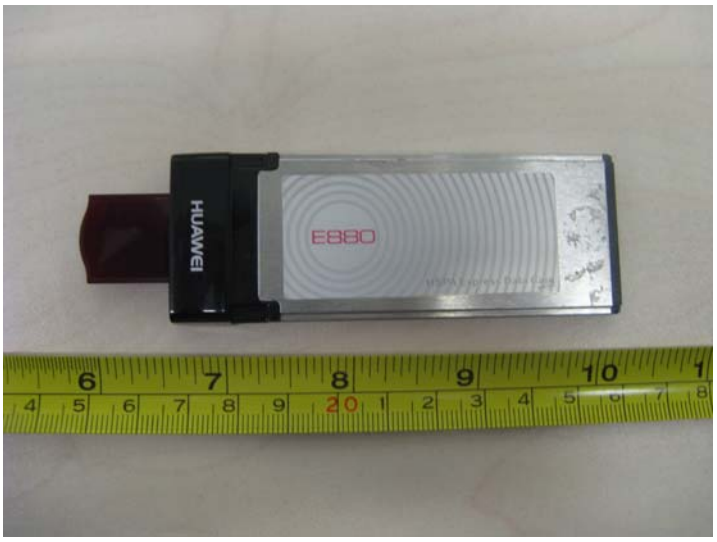
2.2 Manufacturer Information

Company Name:	HUAWEI Technologies Co., Ltd.
Address /Post:	Bantian, Longgang District, Shenzhen, Guangdong
City:	Shenzhen
Postal Code:	518129
Country:	China
Telephone:	+86 (0)755-28780808
Fax:	+86 (0)755-28780808

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

3.1 About EUT

Description:	HSPA Express Data Card
Model Name:	E880
Frequency Band:	GPRS/EGPRS 850/1900
GPRS/EGPRS Class:	12



Picture 1-a: Constituents of the sample(antenna extended)

Picture 1-b: Constituents of the sample (antenna retracted)

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
EUT1	359431020005926	CD84TCPU	11.104.18.00.00

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

4 CHARACTERISTICS OF THE TEST

4.1 Applicable Limit Regulations

EN 50360–2006: 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

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 62209-2 (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

Because the EUT does not have speech function but only has data transfer function, the tests are performed only in GPRS and EGPRS mode (since the GPRS/EGPRS class is 12, the tests are performed for the case of the slots in uplink with the maximum averaged power). The tests are performed for GPRS at middle frequency first for both the 2 test positions, and according to the 3 dB rule, if the SAR measured at the middle channel for each test configuration is at least 3 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s). Then The Absolute Radio Frequency Channel Number (ARFCN) is firstly allocated to 190 and 661 respectively in the case of 850MHz and 1900MHz. And after found the worst case, the EGPRS will be tested for that position.

For each channel, the EUT is tested at the following 2 test positions:

- Test Position 1: The EUT is plugged in the PCMCIA slot of the portable computer. The back side of the computer is in direct contact against the bottom of the flat phantom. The separation distance is 0.8cm between the EUT and the bottom of the flat phantom.（Picture 2-a1 is for antenna extended and Picture 2-a2 is for antenna retracted）
- Test Position 2: The EUT is plugged in the PCMCIA slot of the portable computer .The flank side of the EUT is direct to the bottom of the flat phantom, The separation distance is 1cm between the EUT and the bottom of the flat phantom.（Picture 2-b1 is for antenna extended and Picture 2-b2 is for antenna retracted）

Picture 2-a1: Test position 1 with antenna extended

Picture 2-a2: Test position 1 with antenna retracted

Picture 2-b1: Test position 2 with antenna extended

Picture 2-b2: Test position 2 with antenna retracted

During the test of the datacard, one Laptop is used as the test assistant to help to setup communication, whose type is THINKPAD T61 (See Picture 3-a and 3-b),

Picture 3-a:Open

Picture 3-b:Closed

The conducted power for GPRS/EGPRS 850/1900 is as following:

GSM 850 GPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 251	Ch190	Ch128		Ch 251	Ch190	Ch128
1 Txslot	33.19	33.38	33.42	-9.03dB	24.16	24.35	24.39
2 Txslots	**31.12**	**31.03**	**31.34**	-6.02dB	**25.1**	**25.01**	**25.32**
3Txslots	29.28	28.76	29.17	-4.26dB	25.02	24.5	24.91
4 Txslots	27.14	26.21	26.93	-3.01dB	24.13	23.2	23.92
GSM 850 EGPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 251	Ch190	Ch128		Ch 251	Ch190	Ch128
1 Txslot	29.92	29.97	29.83	-9.03dB	20.89	20.94	20.8
2 Txslots	**27.38**	**27.62**	**27.51**	-6.02dB	**21.36**	**21.6**	**21.49**
3Txslots	25.43	25.56	25.27	-4.26dB	21.17	21.3	21.01
4 Txslots	23.58	23.72	23.81	-3.01dB	20.57	20.71	20.8
GSM1900 GPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 810	Ch661	Ch512		Ch 810	Ch661	Ch512
1 Txslot	29.92	29.97	29.83	-9.03dB	20.89	20.94	20.8
2 Txslots	**27.38**	**27.62**	**27.51**	-6.02dB	**21.36**	**21.6**	**21.49**
3Txslots	25.43	25.56	25.27	-4.26dB	21.17	21.3	21.01
4 Txslots	23.58	23.72	23.81	-3.01dB	20.57	20.71	20.8
GSM1900 EGPRS	Measured Power (dBm)				Averaged Power (dBm)		
	Ch 810	Ch661	Ch512		Ch 810	Ch661	Ch512
1 Txslot	25.97	25.99	25.83	-9.03dB	16.94	16.96	16.8
2 Txslots	**23.82**	**23.91**	**23.65**	-6.02dB	**17.8**	**17.89**	**17.63**
3Txslots	21.51	21.66	21.49	-4.26dB	17.25	17.4	17.23
4 Txslots	19.25	19.37	19.18	-3.01dB	16.24	16.36	16.17

NOTES:

1) Division Factors

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

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

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

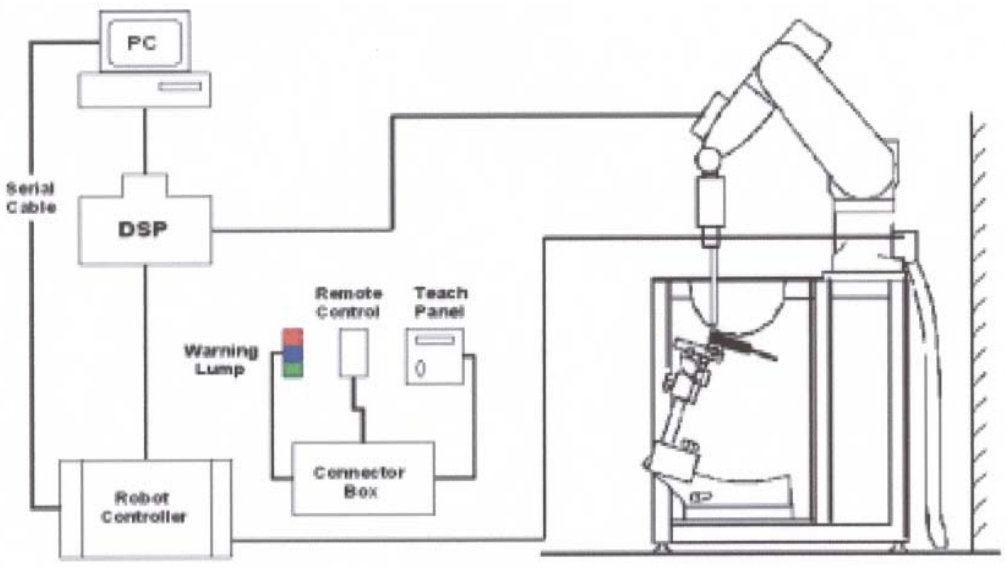
3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

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

5.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 Professional from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m), which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

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



Picture 5: SAR Lab Test Measurement Set-up

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

5.3 Dasy4 E-field Probe System

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

ES3DV3 Probe Specification

Construction	Symmetrical design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	Basic Broad Band Calibration in air Conversion Factors (CF) for HSL 900 and HSL 1810 Additional CF for other liquids and frequencies upon request
Frequency	10 MHz to 4 GHz; Linearity: ± 0.2 dB (30 MHz to 4 GHz)
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

Picture 6: ES3DV3 E-field Probe

Picture7: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).

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).

Picture 8: Device Holder

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

Picture 9: Generic Twin Phantom

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. I mm
Filling Volume Approx. 20 liters
Dimensions 810 x l000 x 500 mm (H x L x W)
Available Special

5.6 Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt and Cellulose. The liquid has been previously proven to be suited for worst-case. The Table 1 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

Table 1: Composition of the Body Tissue Equivalent Matter

MIXTURE %	FREQUENCY 850MHz
Water	50.93
Sugar	45.61
Salt	1.09
Preventol	0.37
Cellulose	2.0
Dielectric Parameters Target Value	f=850MHz ε=55.2 σ=0.97
MIXTURE %	FREQUENCY 1900MHz
Water	70.52
Glycol monobutyl	29.09
Salt	0.39
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 TEST RESULTS

6.1 Dielectric Performance

Table 2: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 23.3 ℃ and relative humidity 49%.Liquid temperature during the test: 22.5℃				
/	**Measurement date**	**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)	12/12/2008	850 MHz	54.4	1.01
	2/12/2009	850 MHz	53.7	1.00
	12/12/2008	1900 MHz	52.1	1.51
	2/12/2009	1900 MHz	51.1	1.53

6.2 System Validation

Table 3: System Validation

Measurement is made at temperature 23.3 ℃, relative humidity 49%, input power 250 mW. Liquid temperature during the test: 22.5℃								
Liquid parameters		**Measurement date**	**Frequency**		**Permittivity ε**		**Conductivity σ (S/m)**	
		12/12/2008	835 MHz		40.8		0.91	
		12/12/2008	1900 MHz		40.8		1.38	
		2/12/2009	835 MHz		41.6		0.88	
		2/12/2009	1900 MHz		39.5		1.41	
Verification results	**Frequency**	**Measurement date**	**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	12/12/2008	1.60	2.48	1.62	2.50	1.25%	0.81%
	1900 MHz	12/12/2008	5.09	9.73	5.27	9.91	3.54%	1.9%
	835 MHz	2/12/2009	1.60	2.48	1.66	2.54	3.75%	2.42%
	1900 MHz	2/12/2009	5.09	9.73	5.18	9.79	1.77%	0.62%

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

6.3 Summary of Measurement Results

Table 4: SAR Values (GPRS 850 MHz -2 Txslots with antenna extended)

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	
Flat Phantom, Test Position 1,,Mid frequency (See Figure1)	0.667	1.02	-0.064
Flat Phantom, Test Position 2, Mid frequency (See Figure3)	0.083	0.167	0.034
Flat Phantom, Test Position 1, High frequency (See Figure5)	0.739	1.13	-0.1
Flat Phantom, Test Position 1, Low frequency (See Figure7)	0.656	1.01	0.070

Table 5: SAR Values (GPRS 850 MHz-2 Txslots with antenna retracted)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure9)	0.053	0.0858	0.011
Flat Phantom, Test Position 2 Mid frequency (See Figure11)	0.049	0.086	-0.015

Table 6: SAR Values (EGPRS 850 MHz-2 Txslots with antenna extended)

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	
Flat Phantom, Test Position1, High frequency (See Figure13)	0.314	0.485	0.088

Table 7: SAR Values GPRS1900 MHz-2 Txslots with antenna extended)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure15)	0.504	0.920	0.113
Flat Phantom, Test Position 2 Mid frequency (See Figure17)	0.053	0.090	-0.176
Flat Phantom,Test Position 1, High frequency (See Figure19)	0.374	0.685	0.061
Flat Phantom, Test Position 1, Low frequency (See Figure21)	0.541	0.982	0.034

Table 8: SAR Values (GPRS 1900 MHz-2 Txslots with antenna retracted)

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	
Flat Phantom, Test Position 1, Mid frequency (See Figure23)	0.041	0.075	0.081
Flat Phantom, Test Position 2 Mid frequency (See Figure25)	0.032	0.050	0.090

Table 9: SAR Values (EGPRS 850 MHz-2 Txslots with antenna extended)

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**	
Flat Phantom, Test Position 1, Low frequency (See Figure)27	0.413	0.772	0.132

6.4 Conclusion

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

The maximum SAR value is obtained at the case of **GPRS 850 MHz, 2 Txslots with antenna extended ,Flat Phantom, Test Position 1,High frequency (Table 4)**, and the value are: **1.13(1g)**.

7 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	

8 MAIN TEST INSTRUMENTS

Table 10: 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	December 14, 2007	One year
09	E-field Probe	SPEAG ES3DV3	3142	September 7, 2008	One year
10	DAE	SPEAG DAE4	771	November 20, 2008	One year
11	Dipole Validation Kit	SPEAG D835V2	443	February 19, 2007	Two years
12	Dipole Validation Kit	SPEAG D1900V2	541	February 20, 2007	Two years

END OF REPORT BODY

ANNEX A MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

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

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

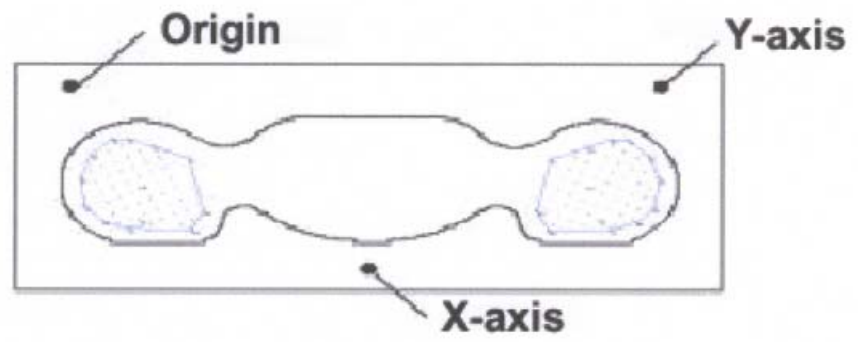
Step 3: Around this point, a volume of 30 mm x 30 mm x 30 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

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

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

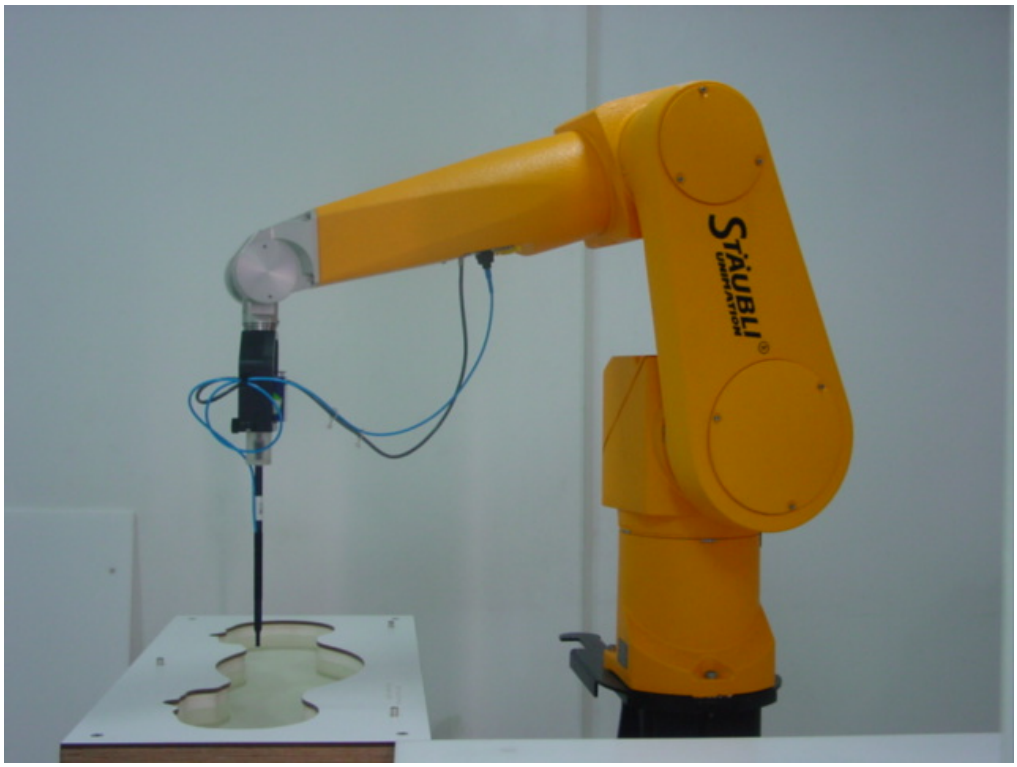
c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

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

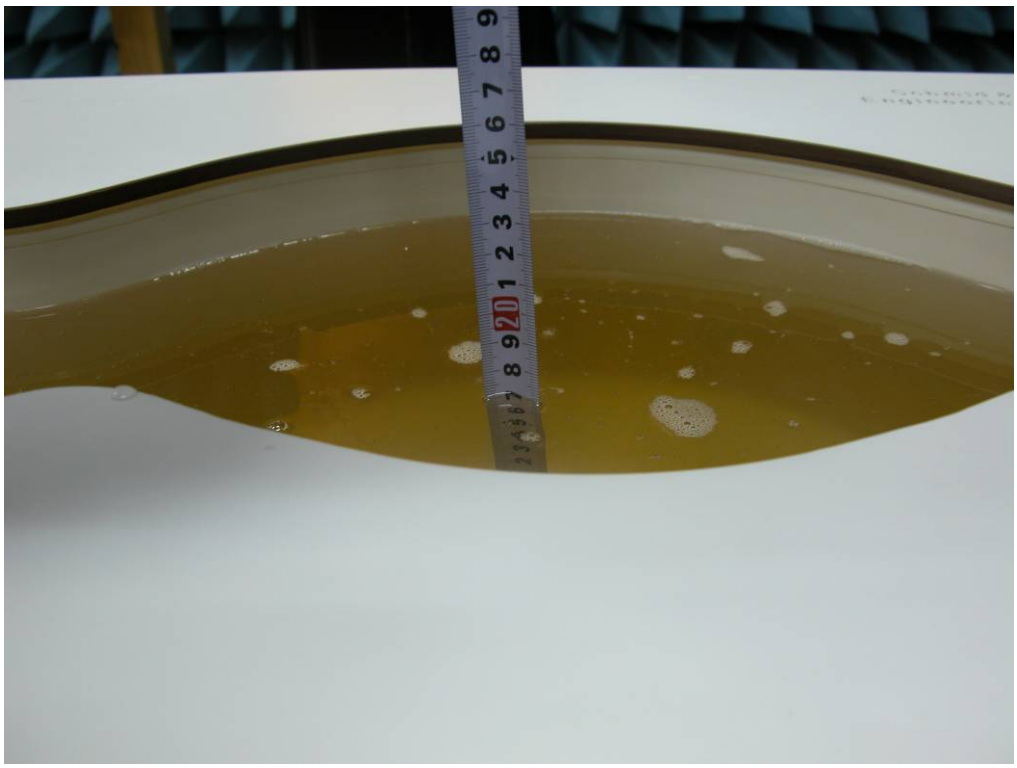


Picture A: SAR Measurement Points in Area Scan

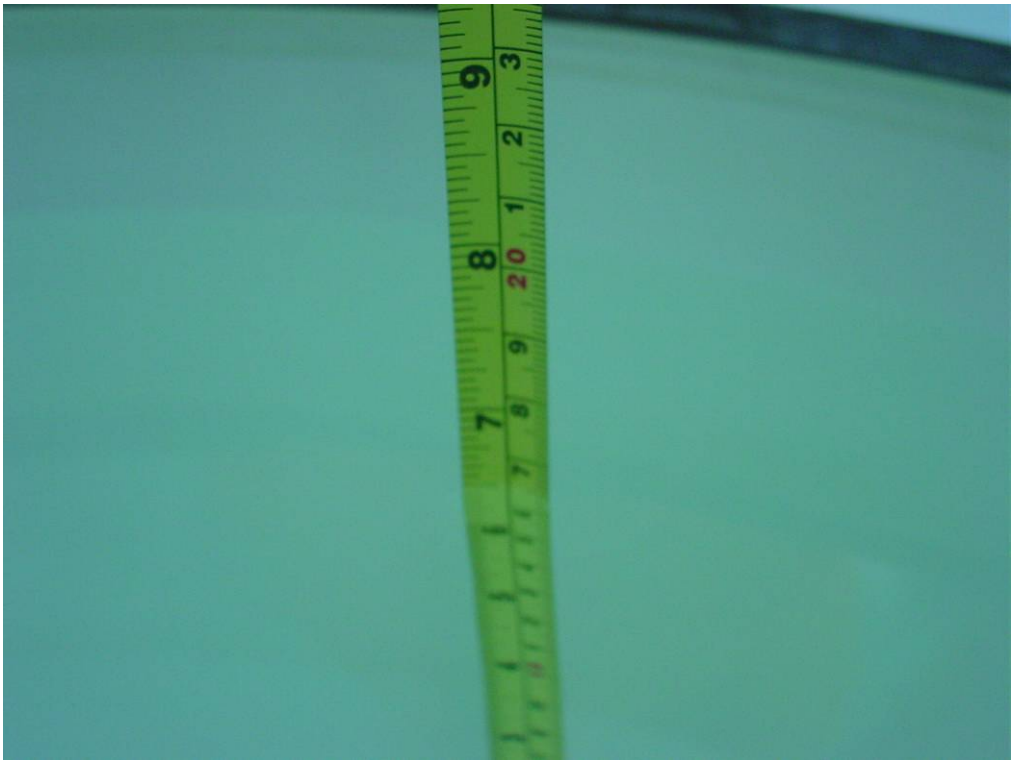
ANNEX B TEST LAYOUT



Picture B1: Specific Absorption Rate Test Layout



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



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

ANNEX C GRAPH RESULTS

GPRS 850 Test Position 1_Antenna extended_Channel Middle_2 timeslot

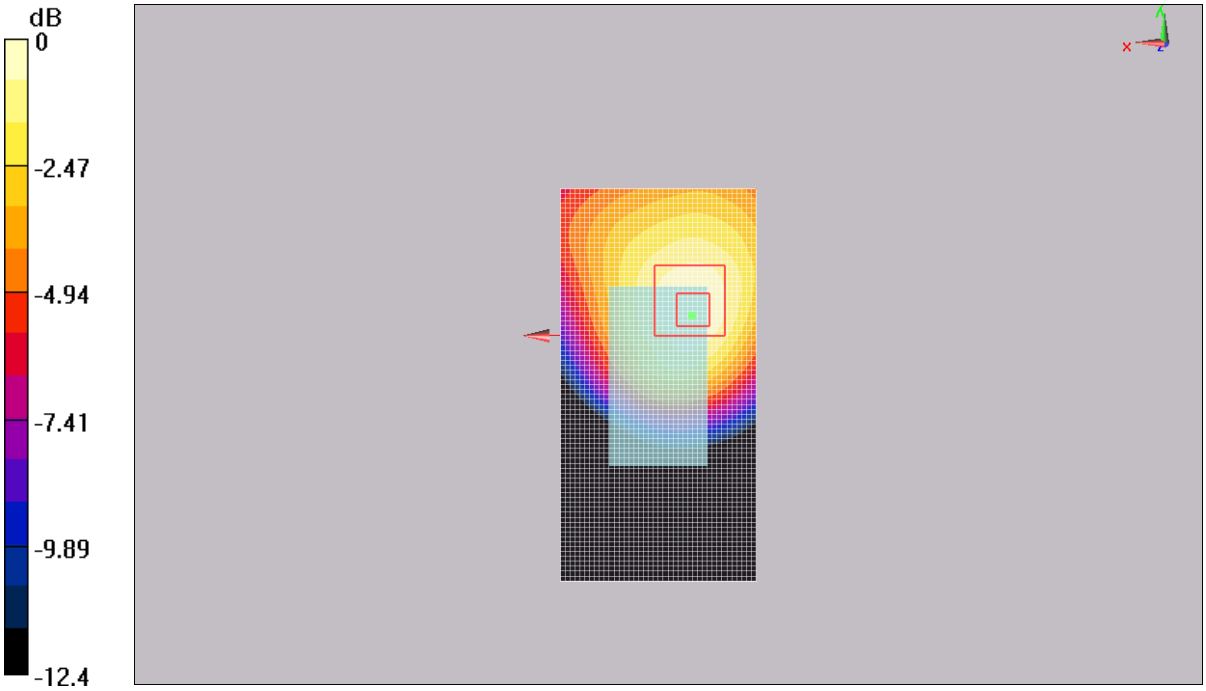
Date/Time: 12/12/2008 8:52:06 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 836.6 MHz; σ = 1.00 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.97, 5.97, 5.97)

Test Position 1_Antenna extended_Channel Middle_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.12 mW/g

Test Position 1_Antenna extended_Channel Middle_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 30.1 V/m; Power Drift = -0.064 dB
Peak SAR (extrapolated) = 1.53 W/kg
SAR(1 g) = 1.02 mW/g; SAR(10 g) = 0.667 mW/g
Maximum value of SAR (measured) = 1.11 mW/g



0 dB = 1.11mW/g

Fig. 1 850MHz CH190 Test Position 1-GPRS(2 timeslot)

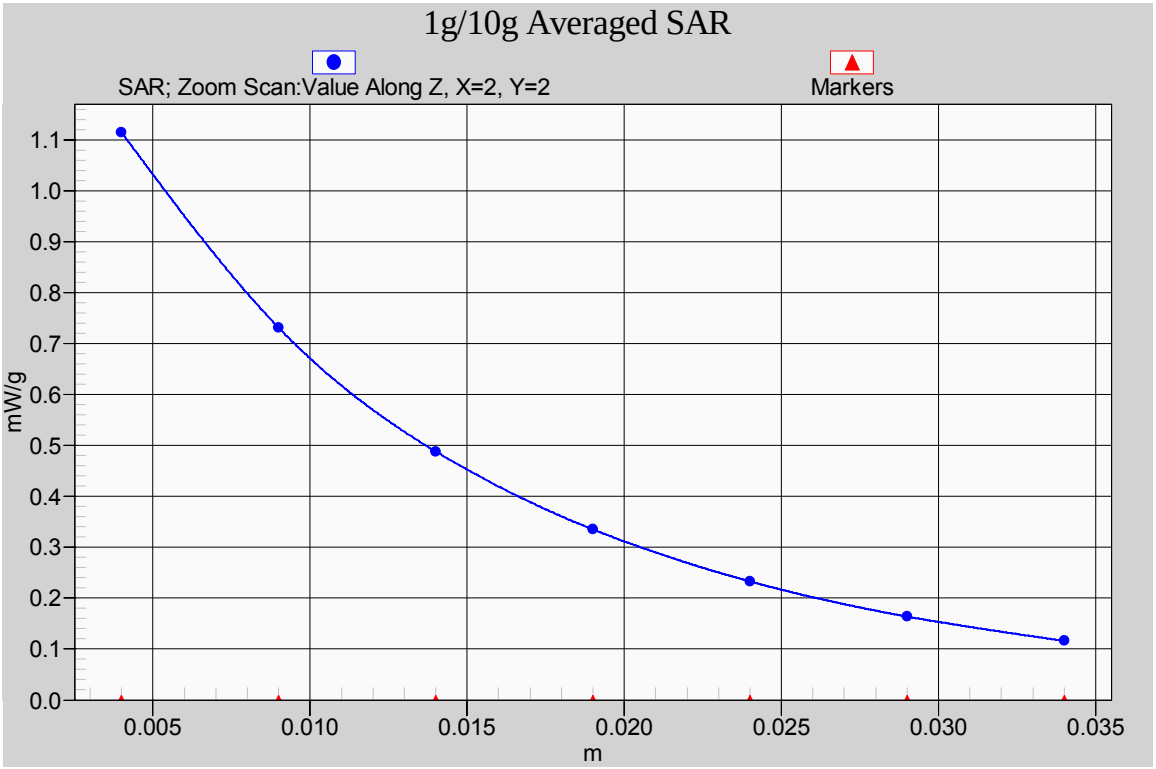


Fig.2 Z-Scan at power reference point (850 MHz GPRS CH190 Test Position 1)

GPRS 850 Test Position 2_Antenna extended_Channel Middle_2 timeslot

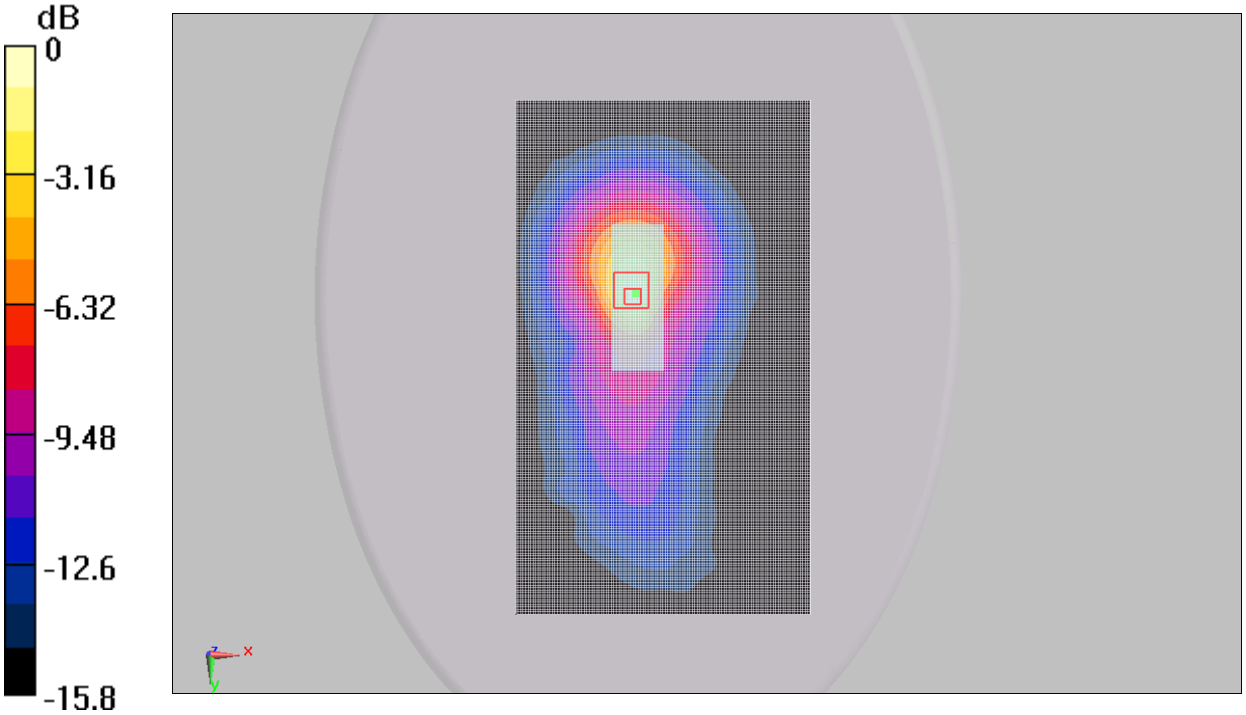
Date/Time: 2/12/2009 9:30:02 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.99 mho/m; ε_r = 53.8; ρ = 1000 kg/m3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3142 ConvF(5.66, 5.66, 5.66)

Test Position2 _Antenna extended_ Channel Middle _2 timesSolt/Area Scan (121x211x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.183 mW/g

Test Position2 _Antenna extended_ Channel Middle _2 timesSolt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.4 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 0.397 W/kg
SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.083 mW/g
Maximum value of SAR (measured) = 0.197 mW/g



0 dB = 0.197mW/g

Fig. 3 850MHz CH190 Test Position 2-GPRS(2 timeslot)

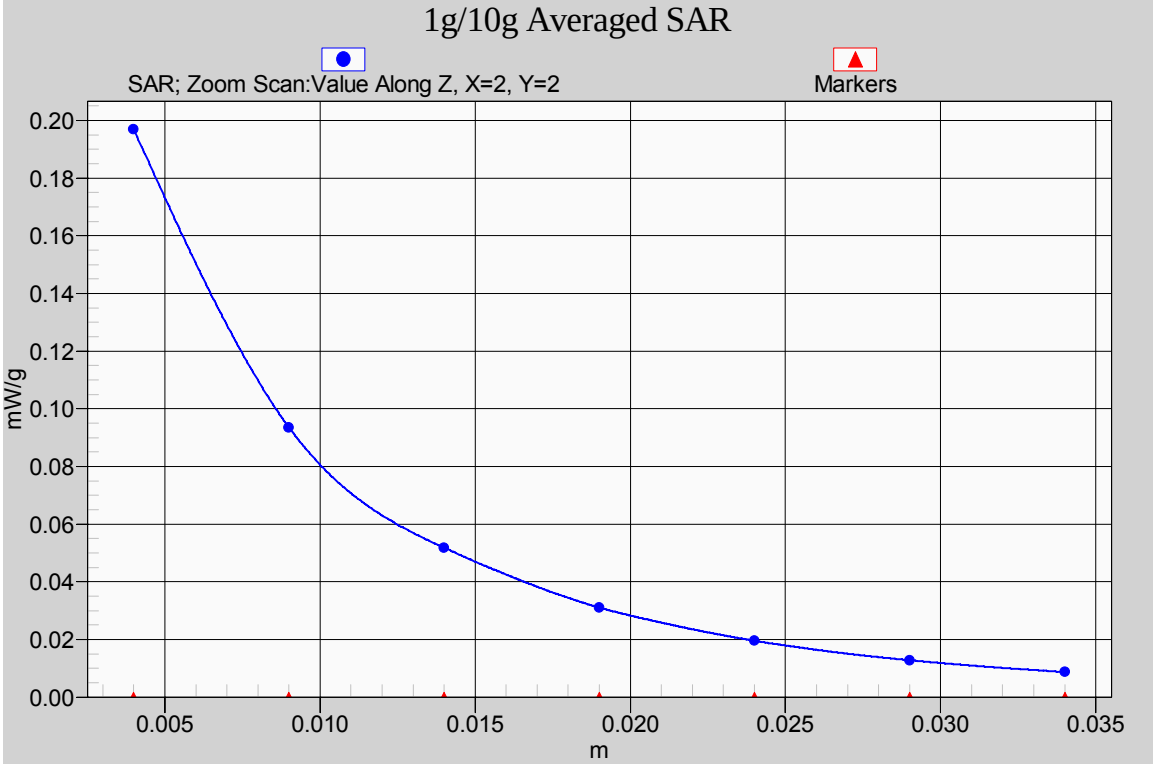


Fig.4 Z-Scan at power reference point (850 MHz GPRS CH190 Test Position 2)

GPRS 850 Test Position 1_Antenna extended_Channel High_2 timeslot

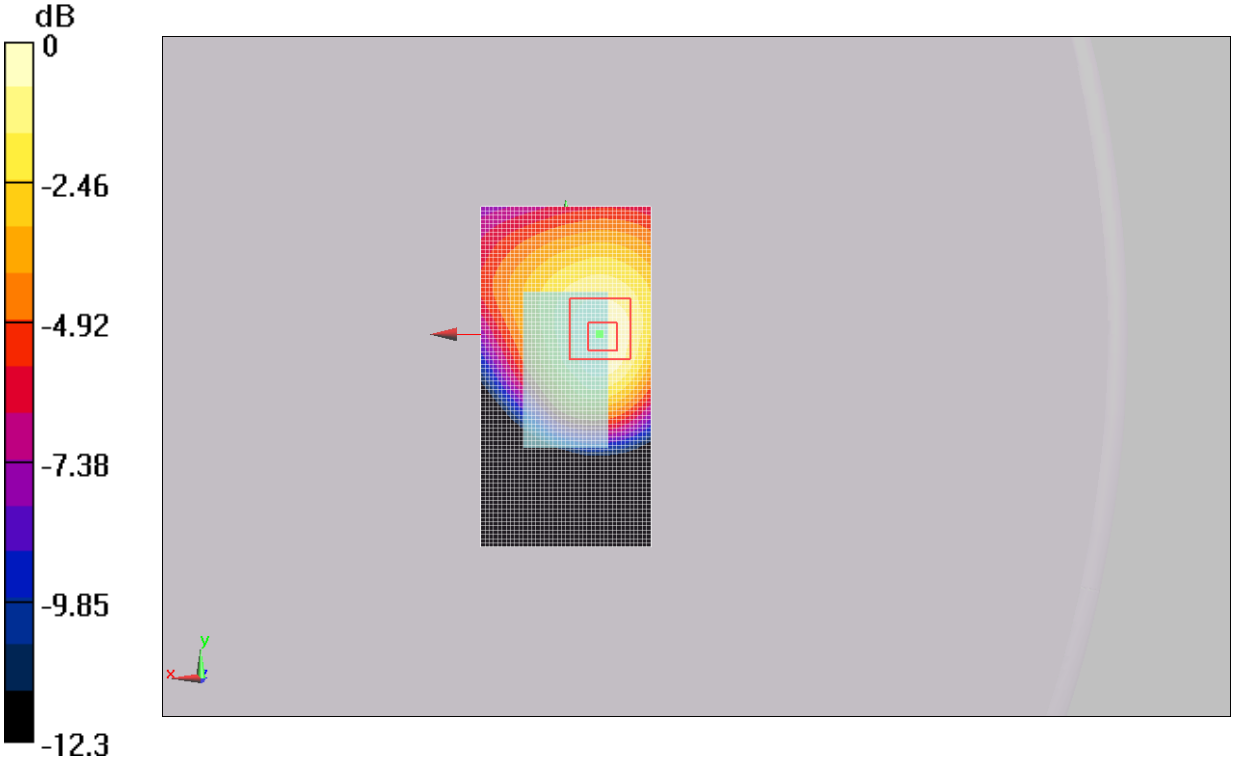
Date/Time: 12/12/2008 10:11:23 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.97, 5.97, 5.97)

Test Position 1_Antenna extended_Channel High_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.31 mW/g

Test Position 1_Antenna extended_Channel High_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 37.9 V/m; Power Drift = -0.1 dB
Peak SAR (extrapolated) = 1.56 W/kg
SAR(1 g) = 1.13 mW/g; SAR(10 g) = 0.739 mW/g
Maximum value of SAR (measured) = 1.22 mW/g



0 dB = 1.22mW/g

Fig. 5 850MHz CH251 Test Position 1-GPRS(2timeslot)

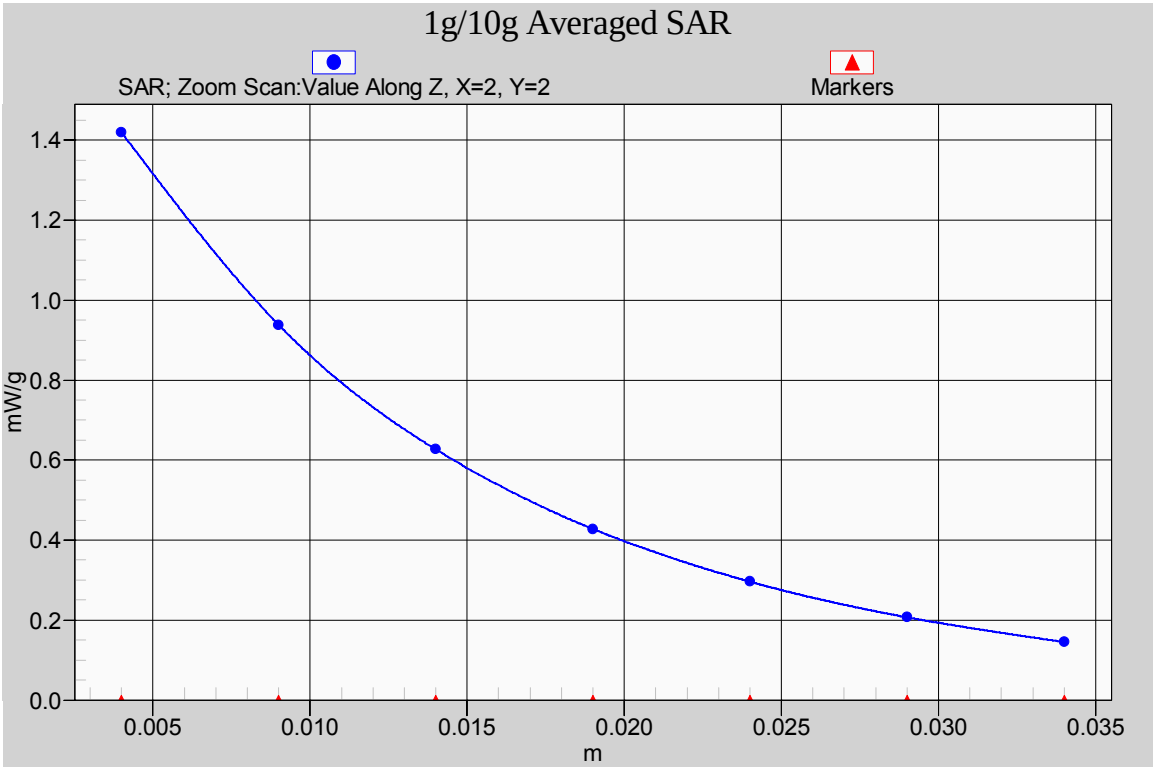


Fig.6Z-Scan at power reference point (850 MHz GPRS CH251 Test Position 1)

GPRS 850 Test Position 1_Antenna extended_Channel Low_2 timeslot

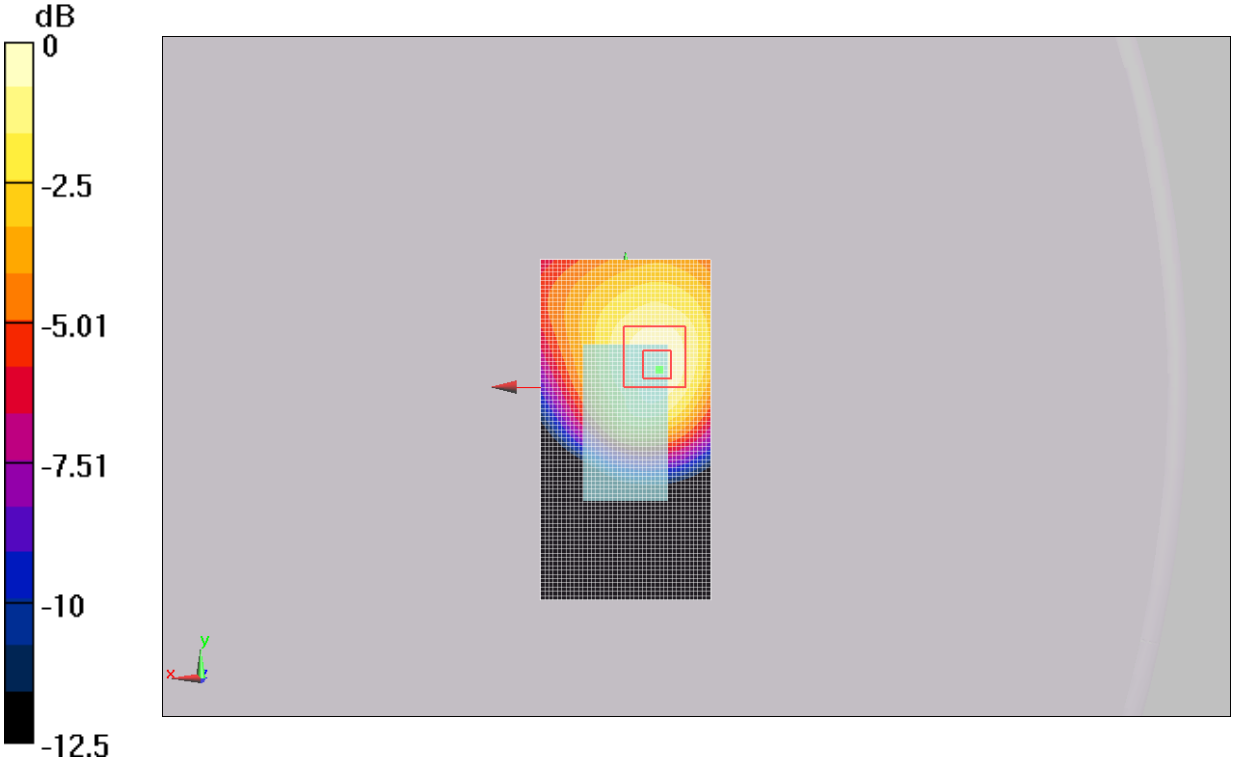
Date/Time: 12/12/2008 10:26:12 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 824.2 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used: f = 825 MHz; σ = 0.99 mho/m; ε_r = 54.7; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.97, 5.97, 5.97)

Test Position 1_Antenna extended_Channel Low_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.1 mW/g

Test Position 1_Antenna extended_Channel Low_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.9 V/m; Power Drift = 0.070 dB
Peak SAR (extrapolated) = 1.51 W/kg
SAR(1 g) = 1.01 mW/g; SAR(10 g) = 0.656 mW/g
Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

Fig. 7 850MHz CH128 Test Position 1-GPRS(2timeslot)

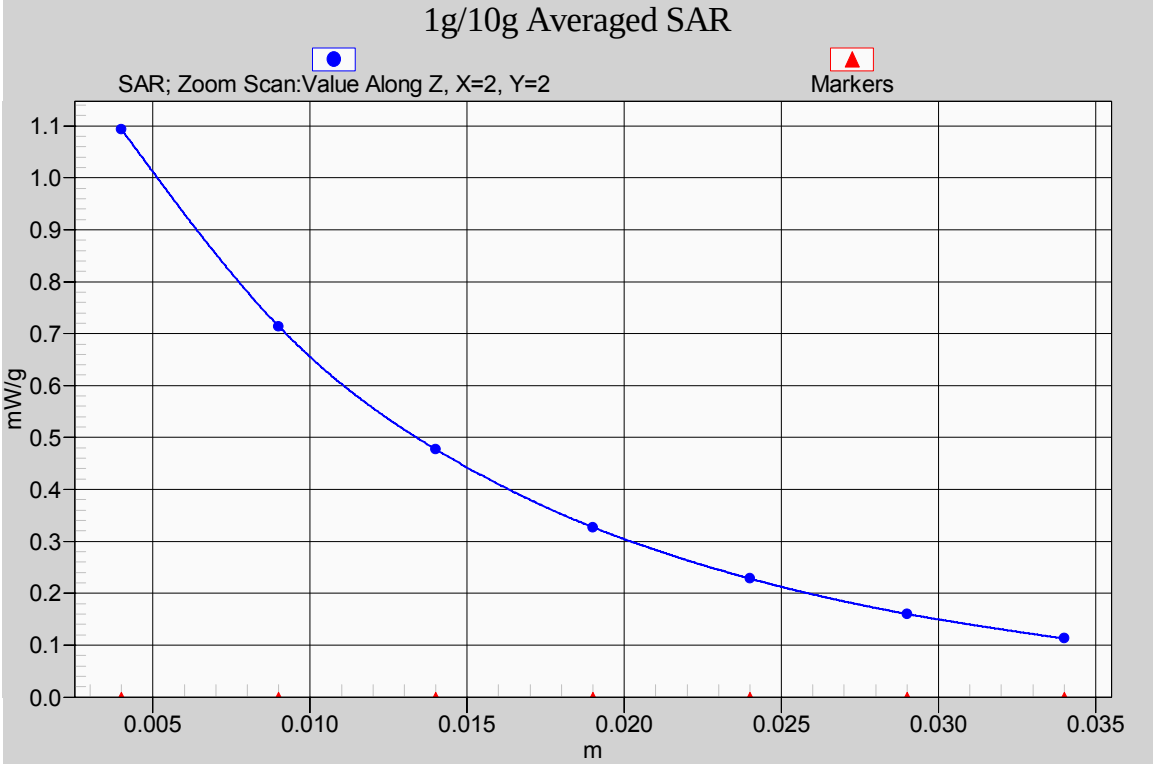


Fig.8 Z-Scan at power reference point (850 MHz GPRS CH128 Test Position 1)

GPRS 850 Test Position 1_Antenna retracted _Channel Middle_2 timeslot

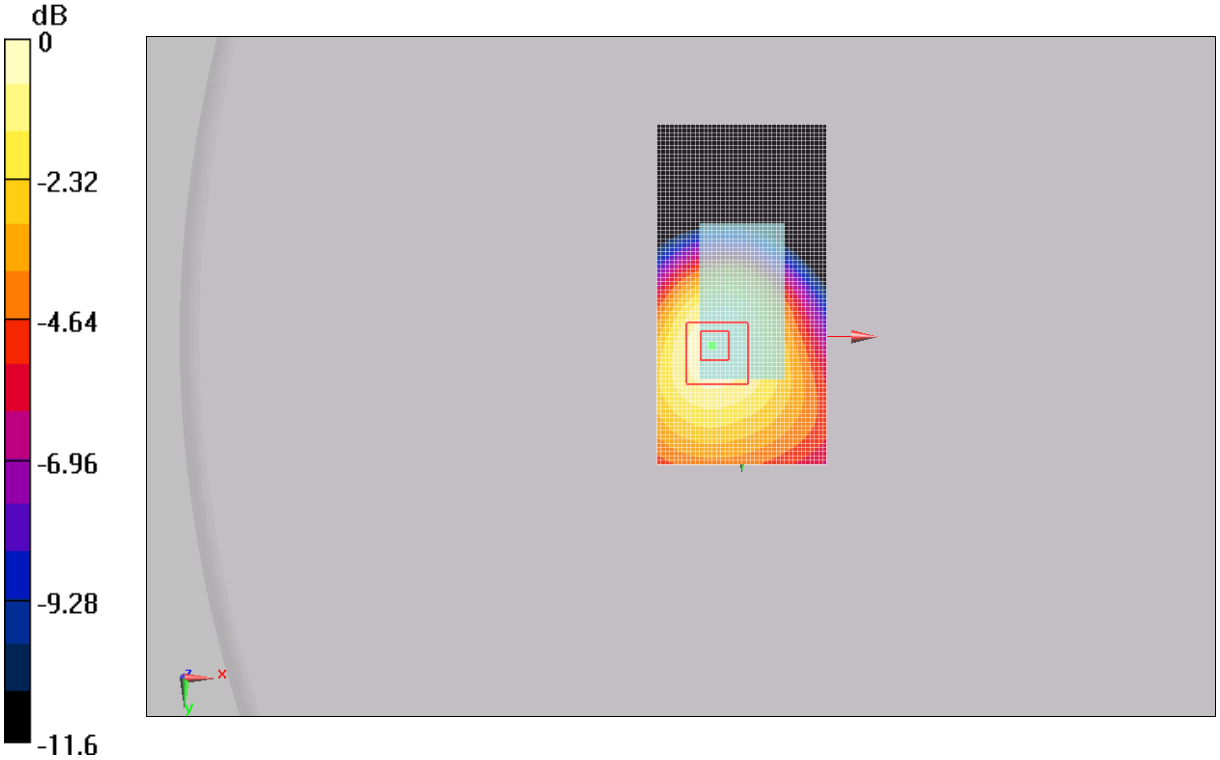
Date/Time: 12/12/2008 10:39:43 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 836.6 MHz; σ = 1.00 mho/m; ε_r = 54.6; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.97, 5.97, 5.97)

Test Position 1_Antenna retracted _Channel Middle_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.095 mW/g

Test Position 1_Antenna retracted _Channel Middle_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 1.26 V/m; Power Drift = 0.011dB
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.0858 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.092 mW/g



0 dB = 0.092mW/g

Fig. 9 850MHz CH190 Test Position 1-GPRS(2timeslot)

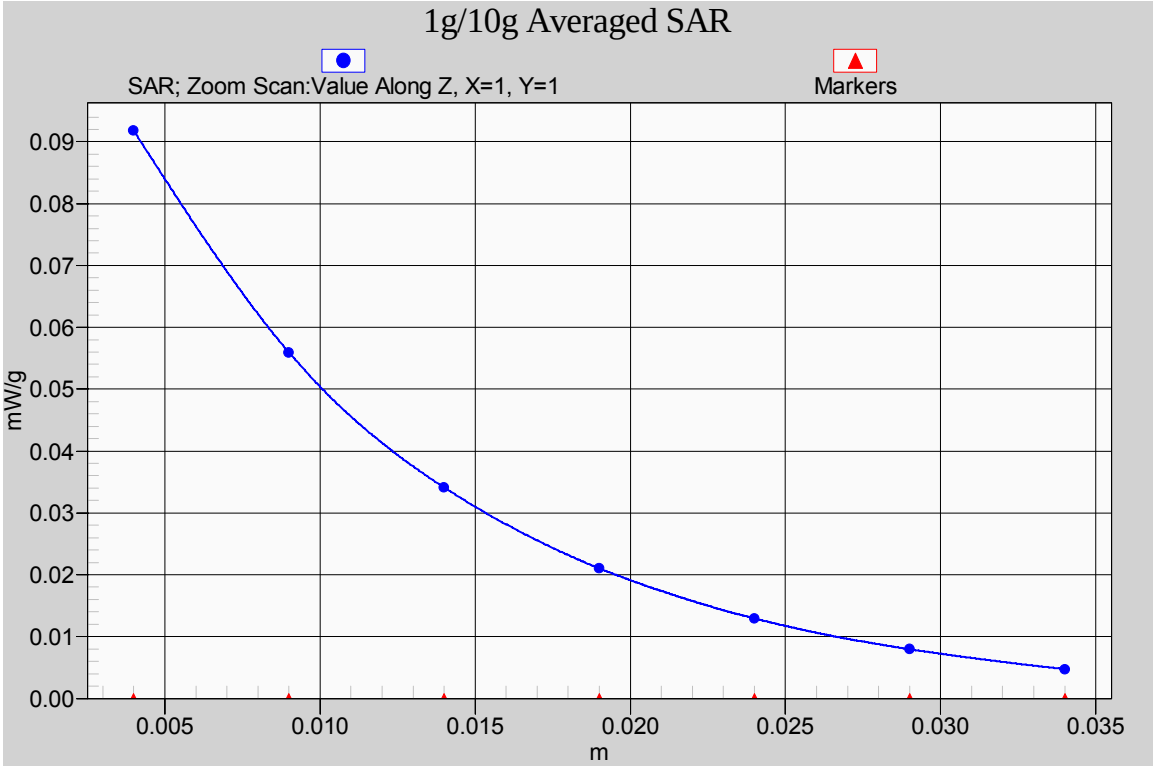


Fig.10 Z-Scan at power reference point (850 MHz GPRS CH190 Test Position 1)

GPRS 850 Test Position 2_Antenna retracted _Channel Middle_2 timeslot

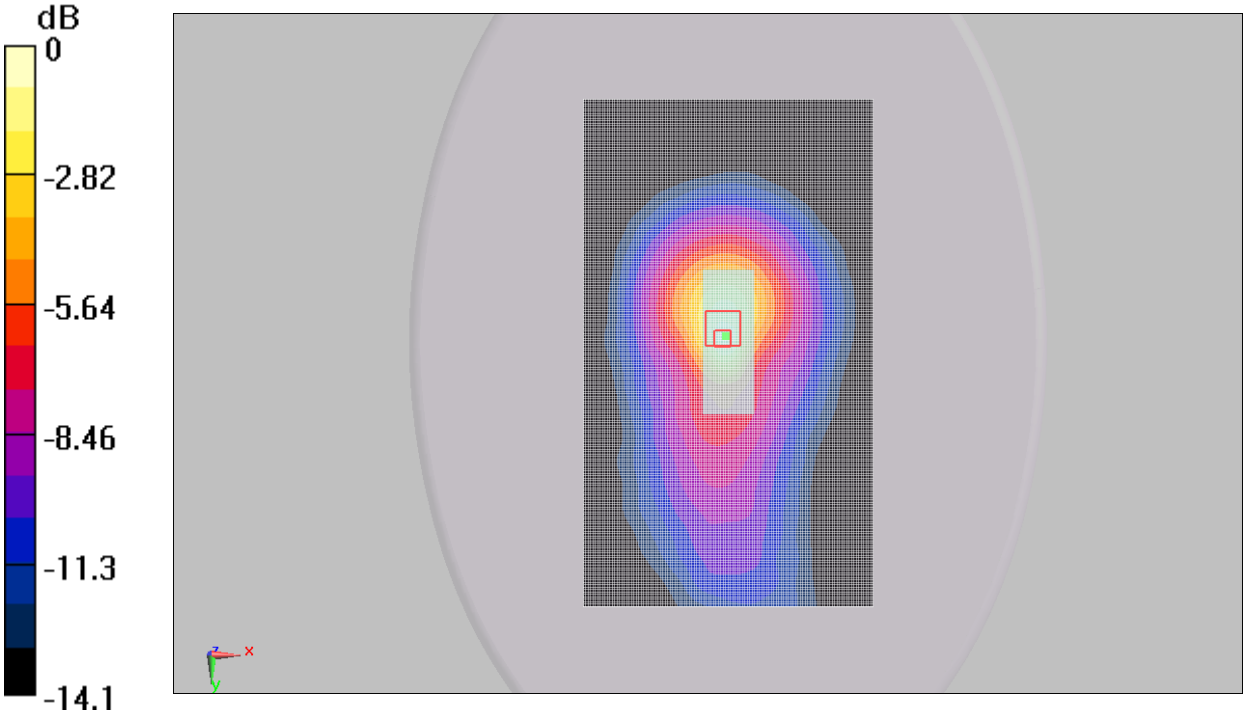
Date/Time: 2/12/2009 10:12:11 AM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 836.6 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.99 mho/m; ε_r = 53.8; ρ = 1000 kg/m3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3142 ConvF(5.66, 5.66, 5.66)

Test Position2 _Antenna retracted_ Channel Middle _2 timesSolt/Area Scan (121x211x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.096 mW/g

Test Position2 _Antenna retracted_ Channel Middle _2 timesSolt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.86 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 0.168 W/kg
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.049 mW/g
Maximum value of SAR (measured) = 0.097 mW/g



0 dB = 0.097mW/g

Fig. 11 850MHz CH190 Test Position 2-GPRS(2timeslot)

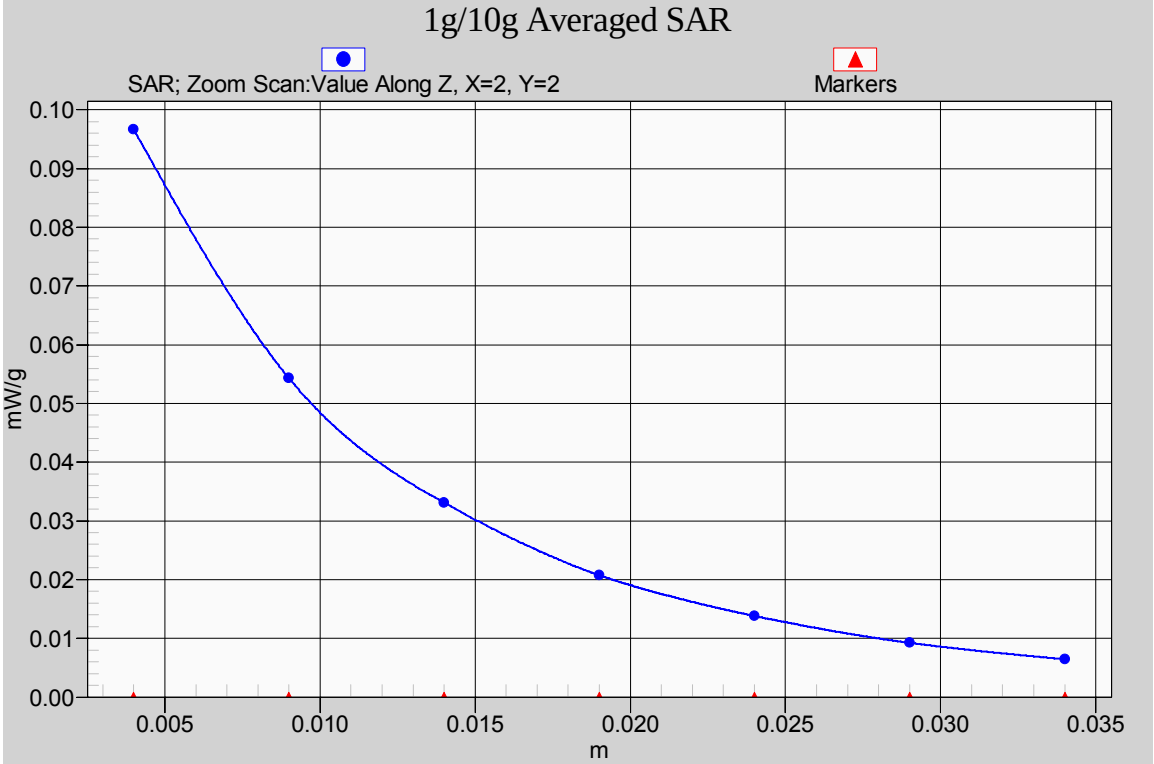


Fig.12 Z-Scan at power reference point (850 MHz GPRS CH190 Test Position 2)

EGPRS 850 Test Position 1_Antenna extended_Channel High_2 timeslot

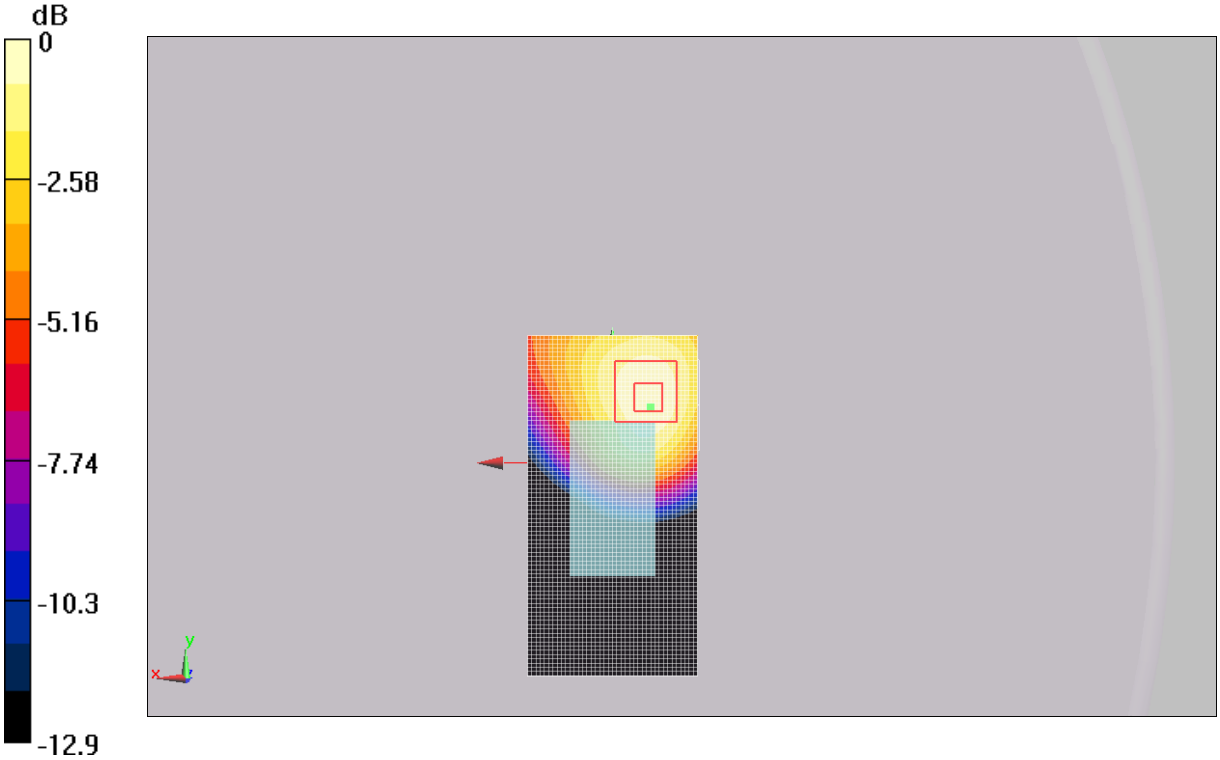
Date/Time: 12/12/2008 12:15:39 PM
Electronics: DAE4 Sn771
Communication System: GSM850 (class 12); Frequency: 848.8 MHz;Duty Cycle: 1:4
Medium: 850 Body
Medium parameters used (interpolated): f = 848.8 MHz; σ = 1.01 mho/m; ε_r = 54.4; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.97, 5.97, 5.97)

Test Position 1_ Antenna extended _Channel High_2 timeslot EGPRS/Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.529 mW/g

Test Position 1_ Antenna extended _Channel High_2 timeslot EGPRS/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.2 V/m; Power Drift = 0.088 dB
Peak SAR (extrapolated) = 0.734 W/kg
SAR(1 g) = 0.485 mW/g; SAR(10 g) = 0.314 mW/g
Maximum value of SAR (measured) = 0.526 mW/g



0 dB = 0.526mW/g

Fig. 13 850MHz CH251 Test Position 1-EGPRS(2timeslot)

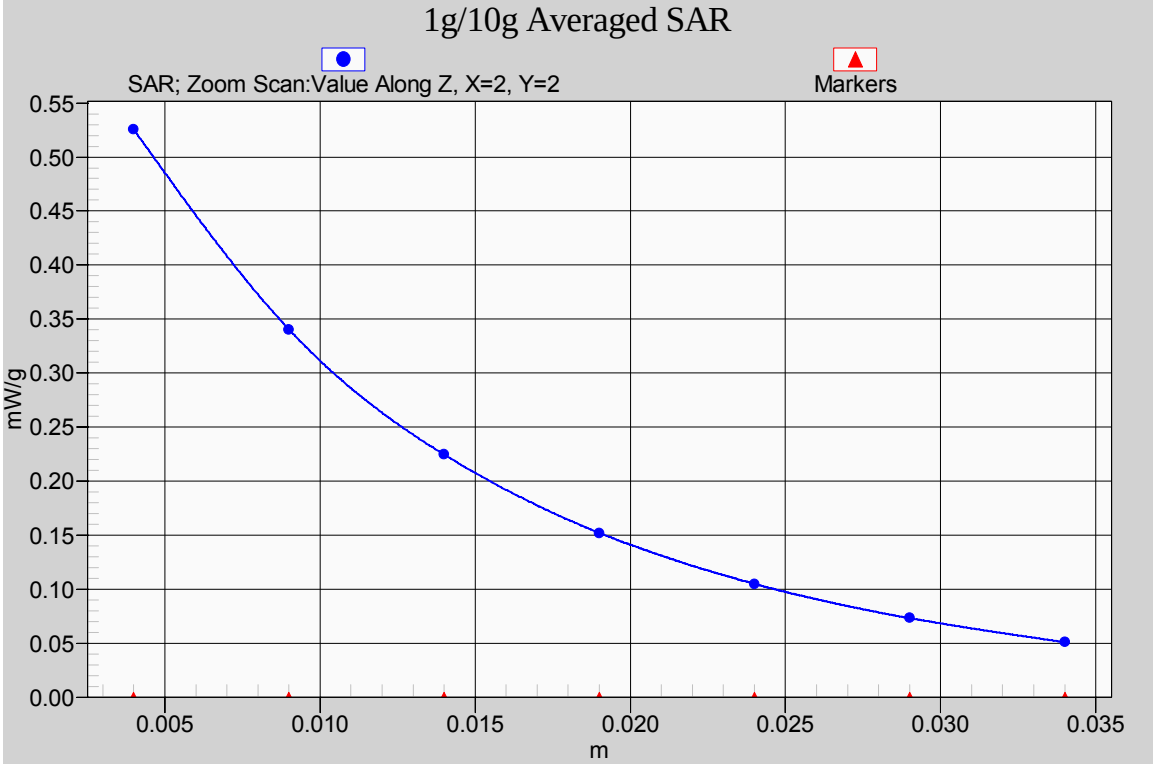


Fig.14 Z-Scan at power reference point (850 MHz EGPRS CH251 Test Position 1)

GPRS 1900 Test Position1_Antenna extended _Channel Middle_2 timeslot

Date/Time: 12/12/2008 13:52:13 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(4.85, 4.85, 4.85)

Test Position 1_Antenna extended _Channel Middle_2 Solt/Area Scan

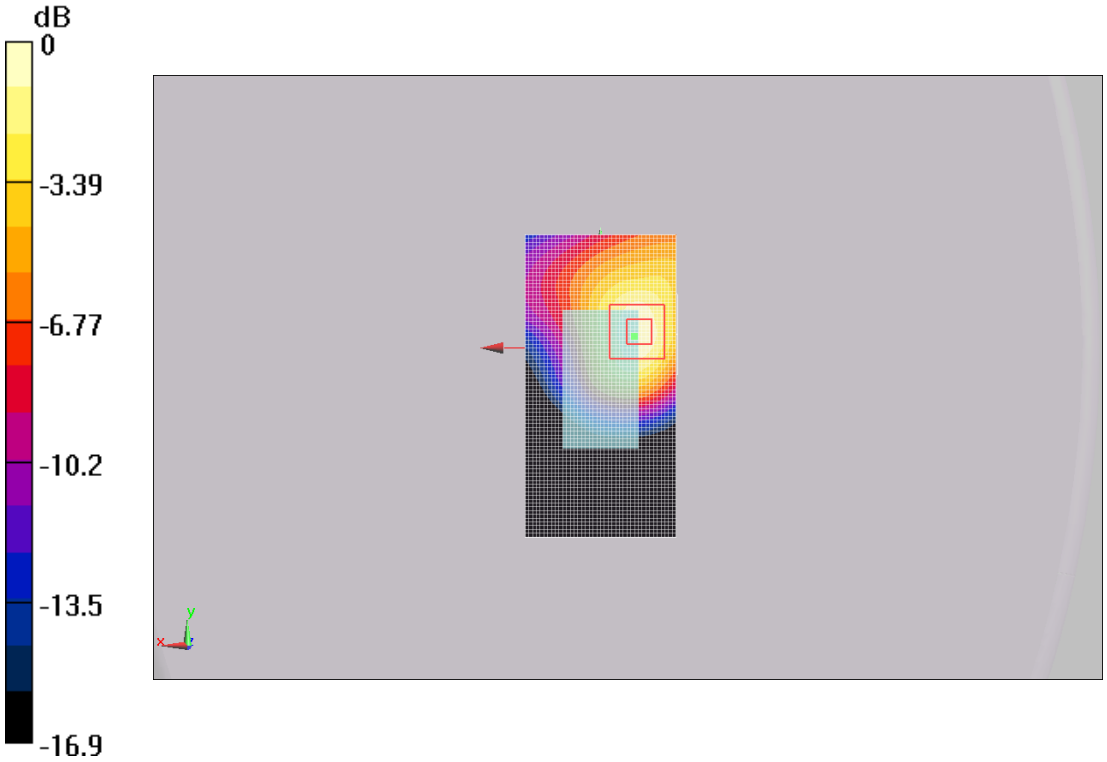
(41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.03 mW/g

Test Position 1_Antenna extended _Channel Middle_2 Solt/Zoom Scan

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

Reference Value = 16.8 V/m; Power Drift = 0.113 dB
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 0.920 mW/g; SAR(10 g) = 0.504 mW/g
Maximum value of SAR (measured) = 1.01 mW/g



0 dB = 1.01mW/g

Fig. 15 1900MHz CH661 Test Position 1-GPRS(2timeslot)

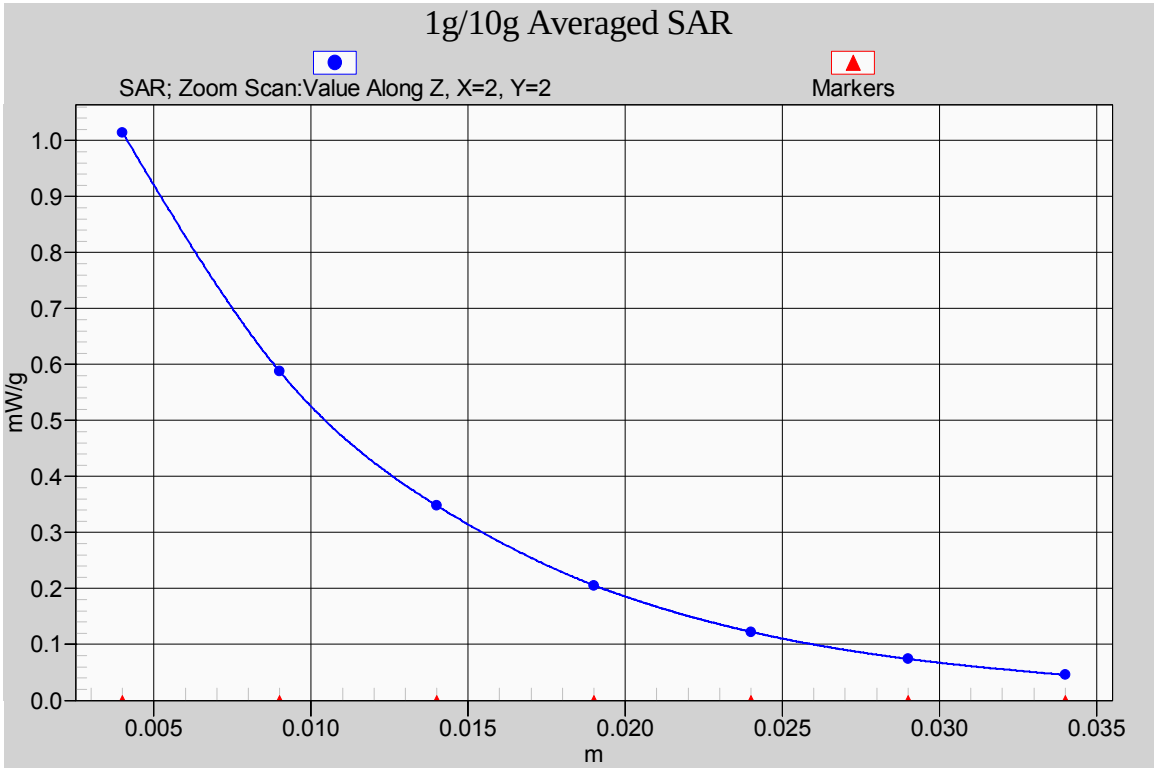


Fig.16 Z-Scan at power reference point (1900 MHz GPRS CH661 Test Position 1)

GPRS 1900 Test Position2_Antenna extended _Channel Middle_2 timeslot

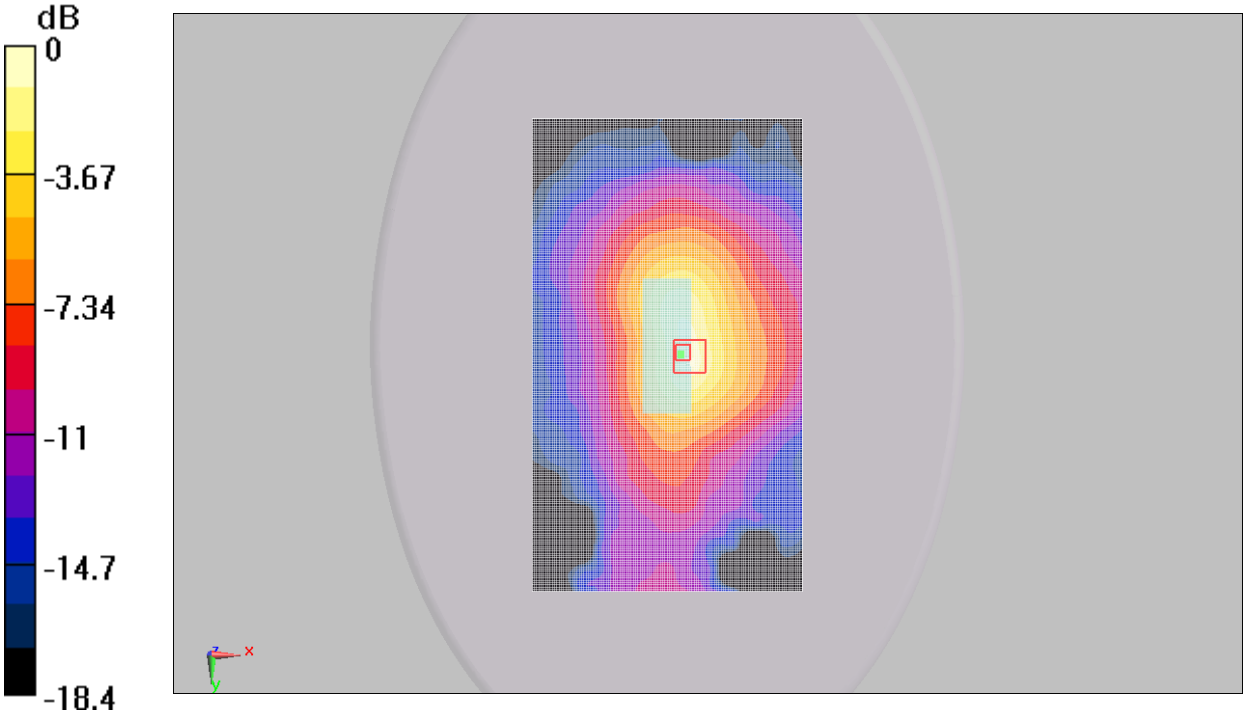
Date/Time: 2/12/2009 11:12:21 AM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 51.1; ρ = 1000 kg/m3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3142 ConvF(4.61, 4.61, 4.61)

Test Position2 _Antenna extended_ Channel Middle _2 timesSolt /Area Scan (121x211x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.091 mW/g

Test Position2 _Antenna extended_ Channel Middle _2 timesSolt /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.62 V/m; Power Drift = -0.176 dB
Peak SAR (extrapolated) = 0.187 W/kg
SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.053 mW/g
Maximum value of SAR (measured) = 0.103 mW/g



0 dB = 0.103mW/g

Fig. 17 1900MHz CH661 Test Position 2-GPRS(2timeslot)

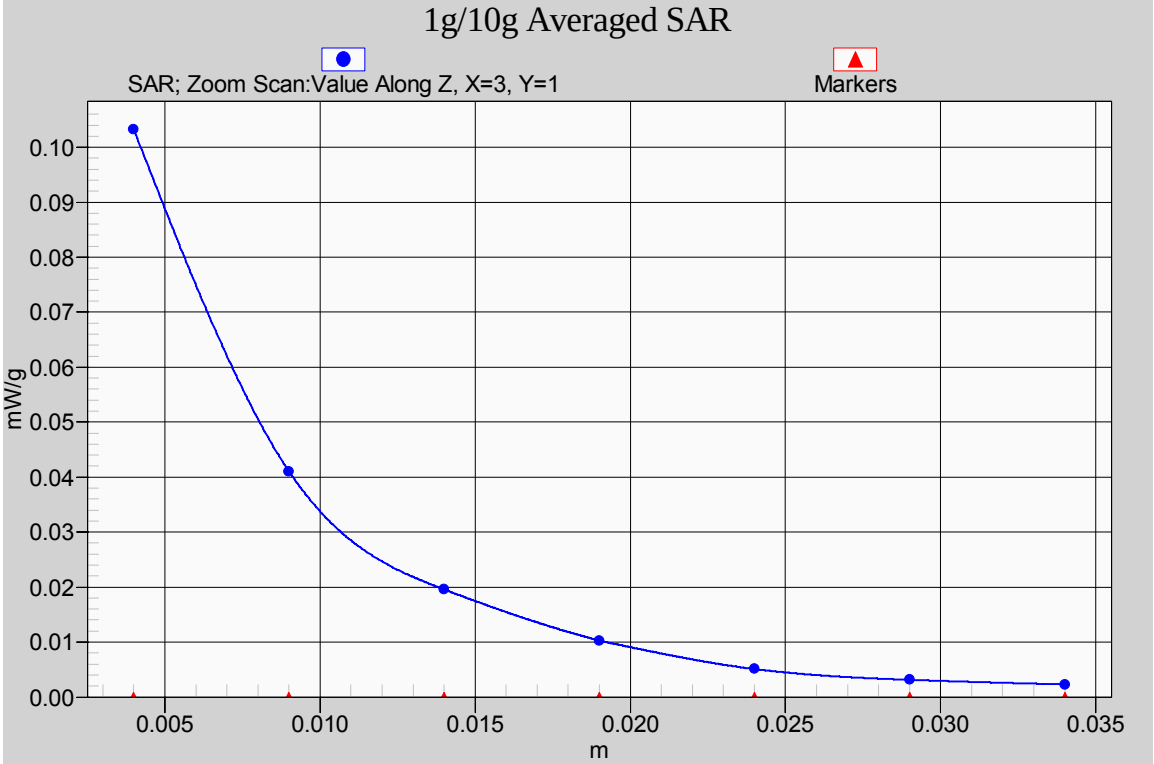


Fig.18 Z-Scan at power reference point (1900 MHz GPRS CH661 Test Position 2)

GPRS 1900 Test Position1_Antenna extended _Channel High_2 timeslot

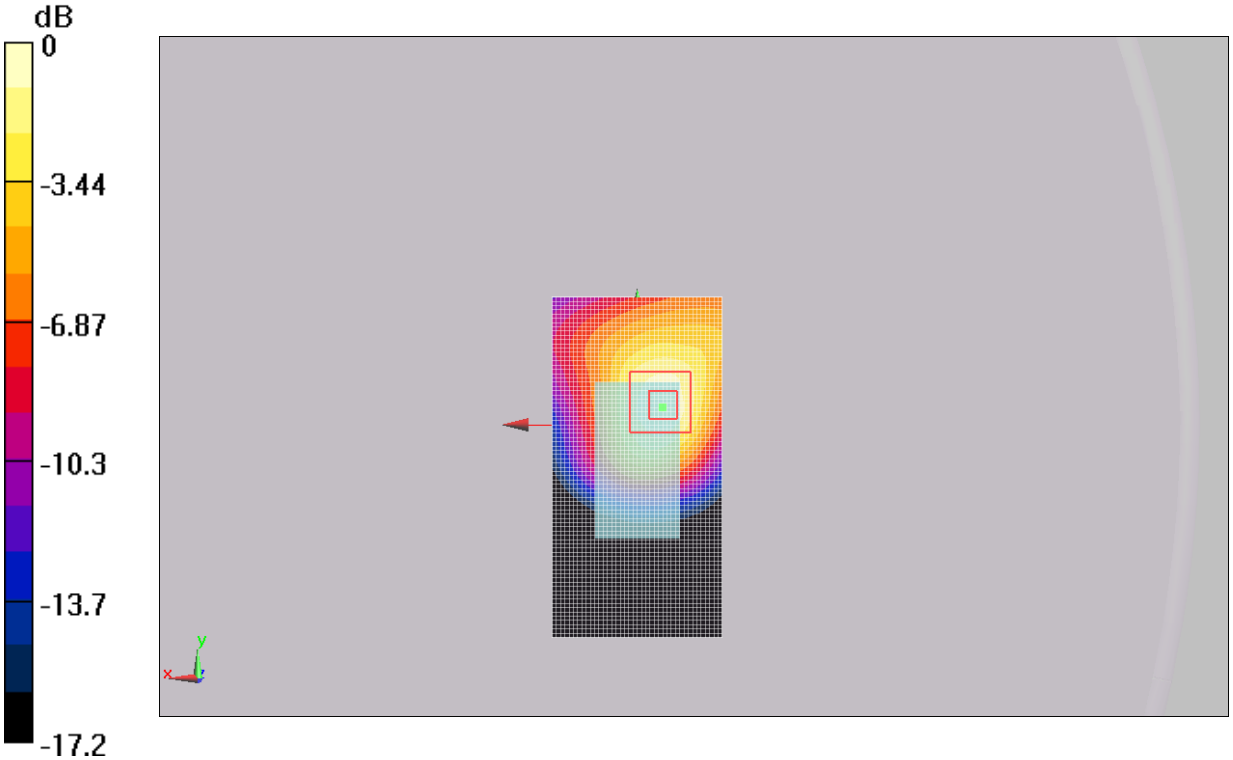
Date/Time: 12/12/2008 15:29:35 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1909.8 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used(interpolated): f = 1909.8 MHz; σ = 1.52 mho/m; ε_r = 52.08; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(4.85, 4.85, 4.85)

Test Position1_Antenna extended _Channel High_2 timeslot/Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.766 mW/g

Test Position1_Antenna extended _Channel High_2 timeslot/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = 0.061 dB
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.374 mW/g
Maximum value of SAR (measured) = 0.759 mW/g



0 dB = 0.759mW/g

Fig. 19 1900MHz CH810 Test Position 1-GPRS(2timeslot)

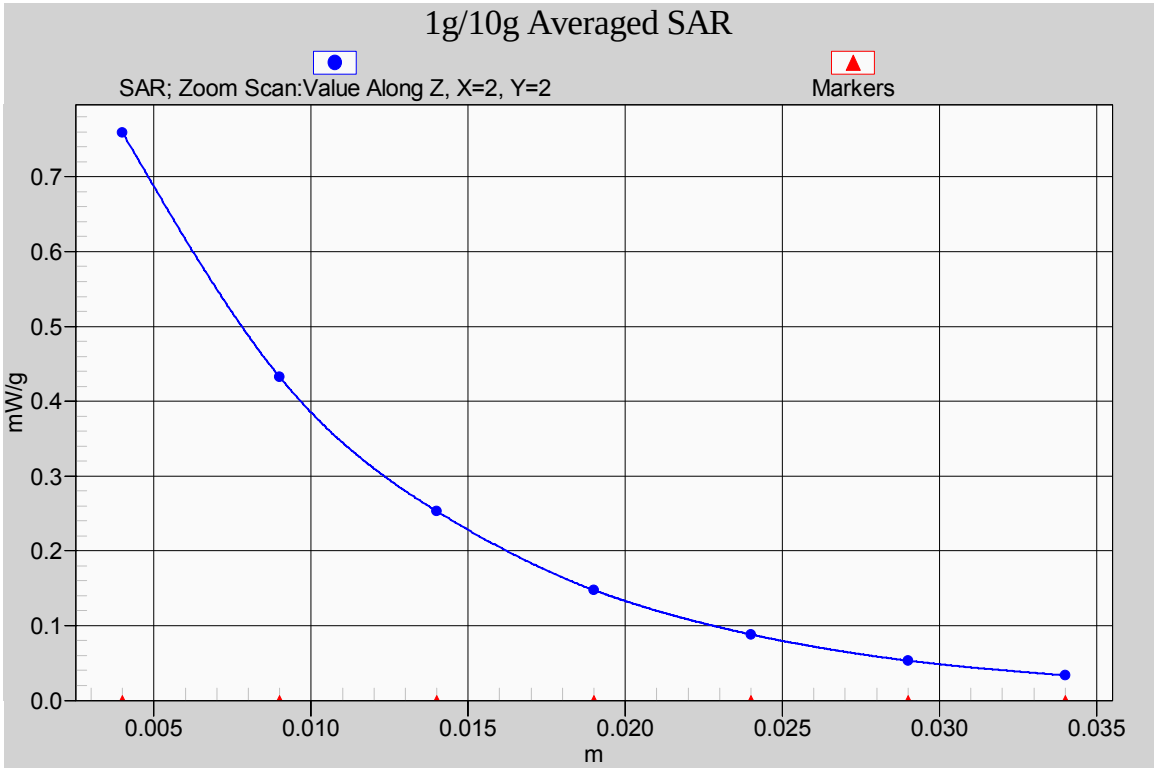


Fig.20 Z-Scan at power reference point (1900 MHz GPRS CH810 Test Position 1)

GPRS 1900 Test Position1_Antenna extended _Channel Low_2 timeslot

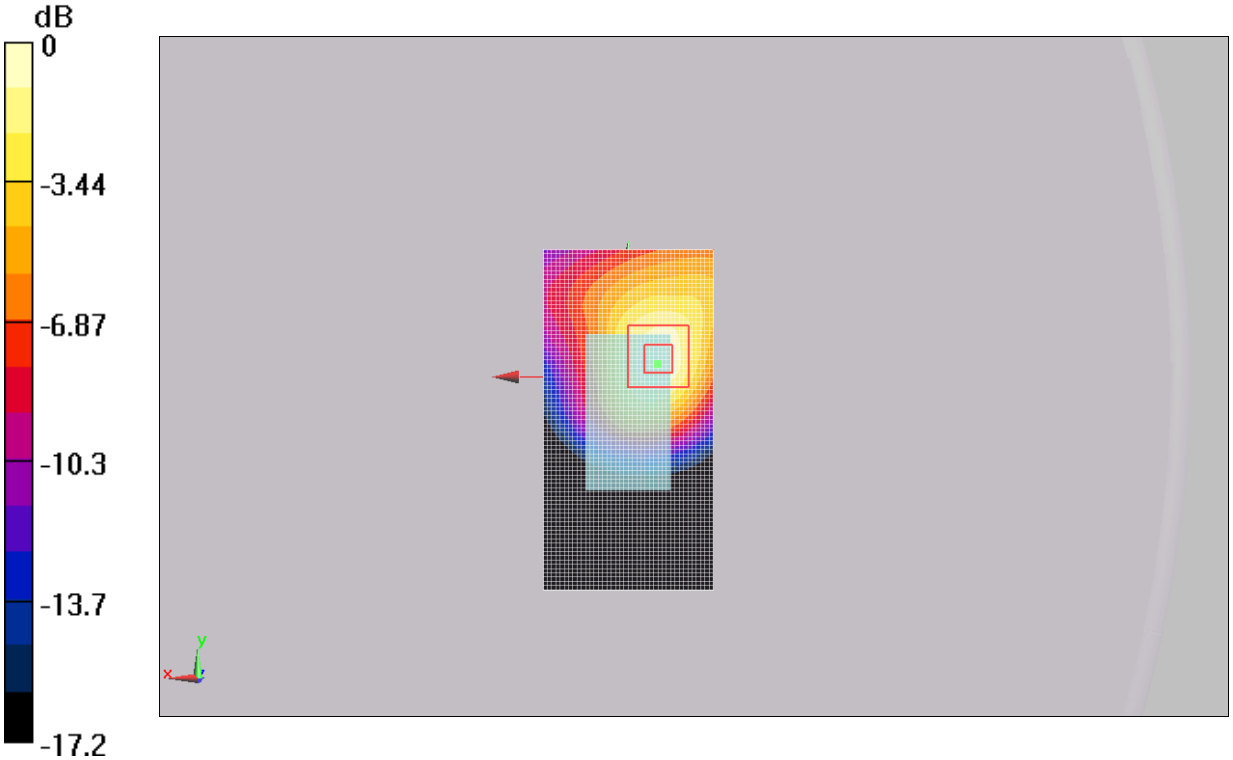
Date/Time: 12/12/2008 15:41:33 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.26; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(4.85, 4.85, 4.85)

Test Position1_Antenna extended _Channel Low_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 1.11 mW/g

Test Position1_Antenna extended _Channel Low_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 21.5 V/m; Power Drift = 0.034 dB
Peak SAR (extrapolated) = 1.73 W/kg
SAR(1 g) = 0.982 mW/g; SAR(10 g) = 0.541 mW/g
Maximum value of SAR (measured) = 1.09 mW/g



0 dB = 1.09mW/g

Fig. 21 1900MHz CH512 Test Position 1-GPRS(2timeslot)

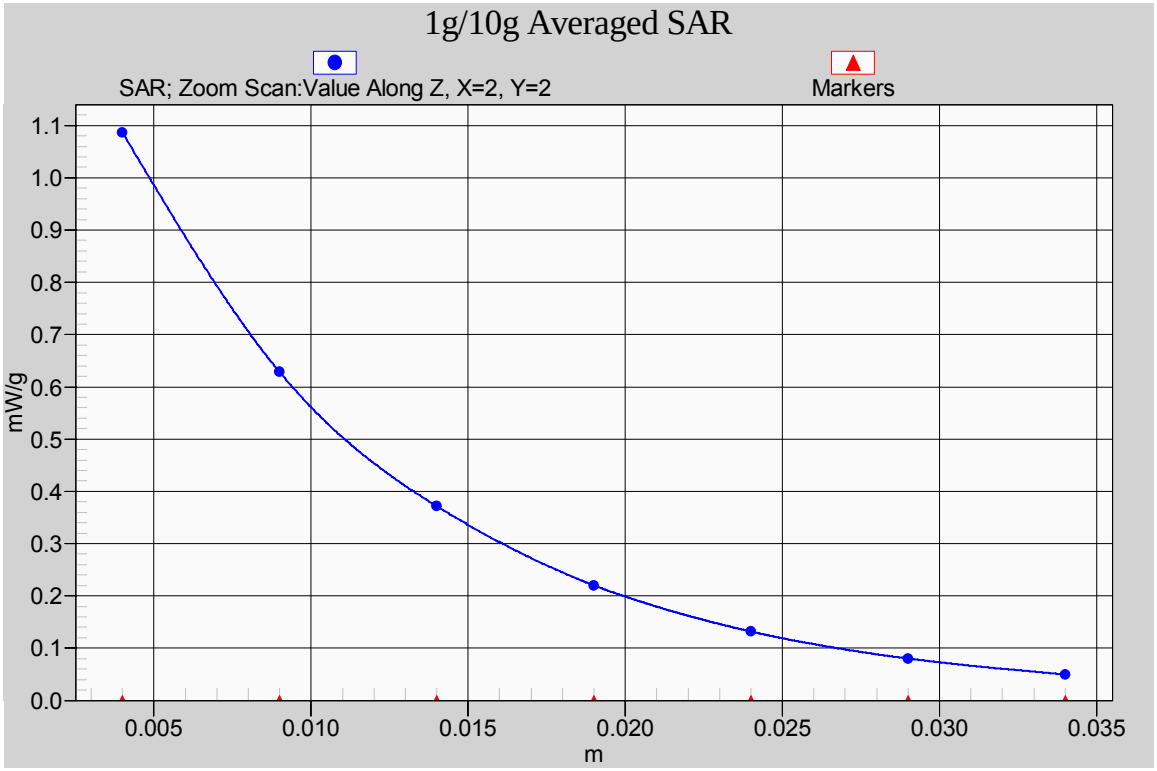


Fig.22 Z-Scan at power reference point (1900 MHz GPRS CH512 Test Position 1)

GPRS 1900 Test Position 1_Antenna retracted _Channel Middle_2 timeslot

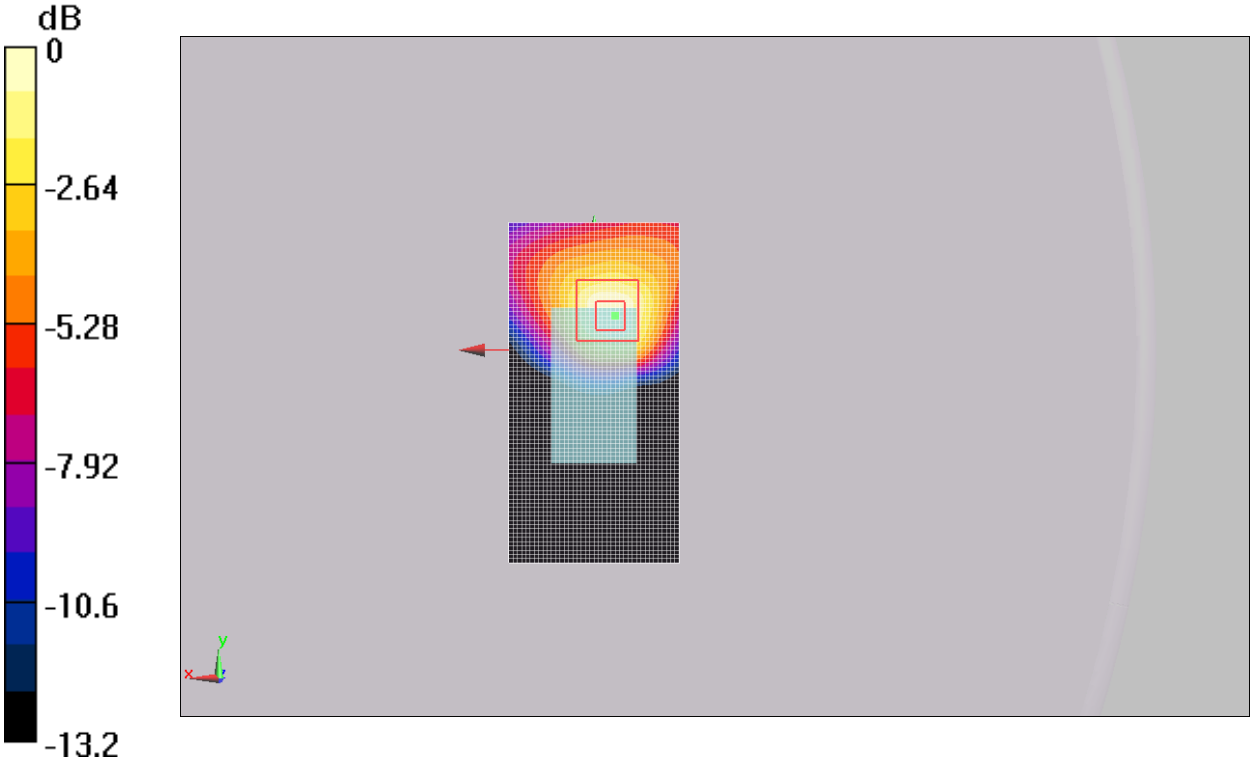
Date/Time: 12/12/2008 15:58:13 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1880 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(4.85, 4.85, 4.85)

Test Position 1_Antenna retracted _Channel Middle_2 timeslot /Area Scan (41x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.084 mW/g

Test Position 1_Antenna retracted _Channel Middle_2 timeslot /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.05 V/m; Power Drift = 0.081 dB
Peak SAR (extrapolated) = 0.138 W/kg
SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.041 mW/g
Maximum value of SAR (measured) = 0.081 mW/g



0 dB = 0.081mW/g

Fig. 23 1900MHz CH661 Test Position 1-GPRS(2timeslot)

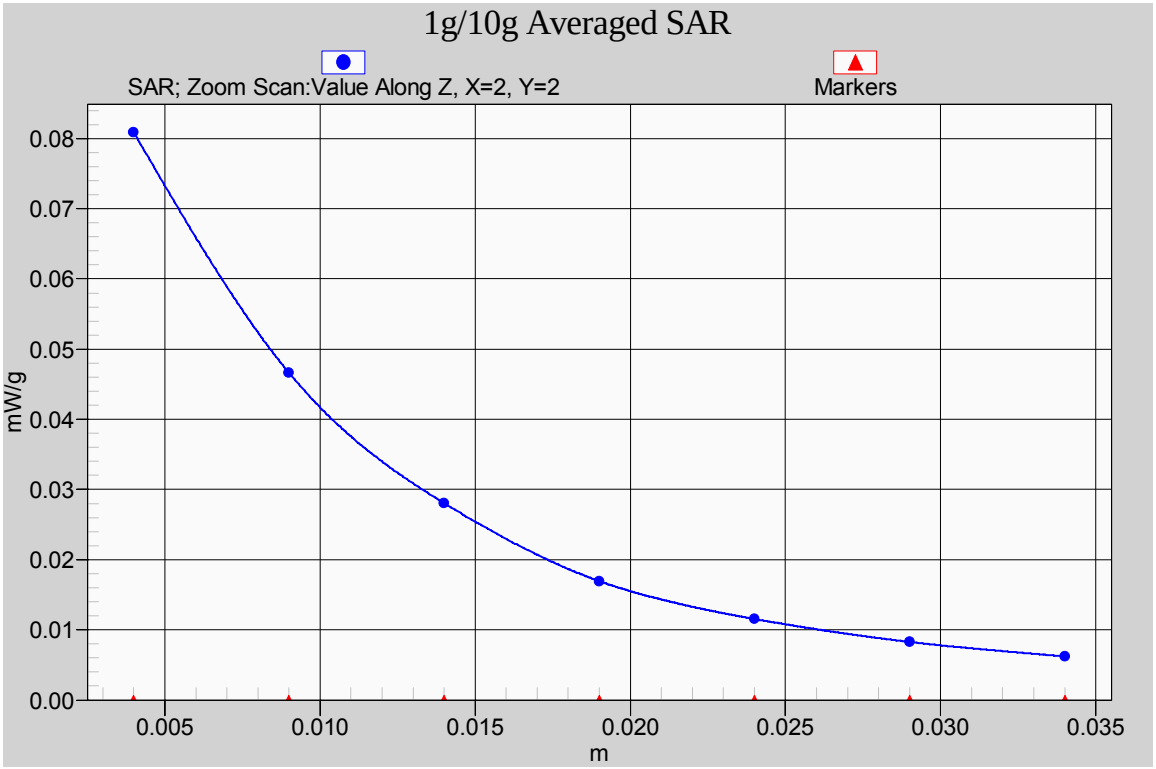


Fig.24 Z-Scan at power reference point (1900 MHz GPRS CH661 Test Position 1)

GPRS 1900 Test Position 2_Antenna retracted _Channel Middle_2 timeslot

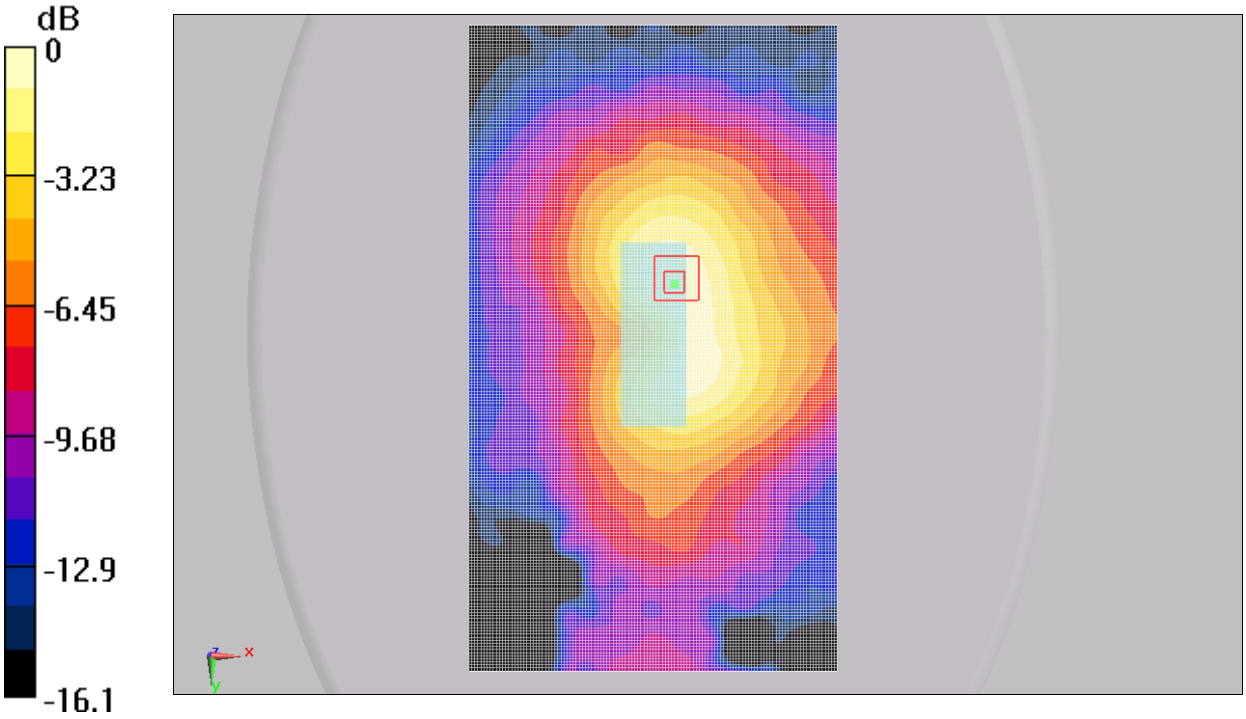
Date/Time: 2/12/2009 12:01:24 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1880 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1880 MHz; σ = 1.53 mho/m; ε_r = 51.1; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3142 ConvF(4.61, 4.61, 4.61)

Test Position2 _Antenna retracted_ Channel Middle _2 timesSolt/Area Scan (121x211x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.053 mW/g

Test Position2 _Antenna retracted_ Channel Middle _2 timesSolt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.81 V/m; Power Drift = 0.090 dB
Peak SAR (extrapolated) = 0.079 W/kg
SAR(1 g) = 0.050 mW/g; SAR(10 g) = 0.032 mW/g
Maximum value of SAR (measured) = 0.054 mW/g



0 dB = 0.054mW/g

Fig. 25 1900MHz CH661 Test Position 2-GPRS(2timeslot)

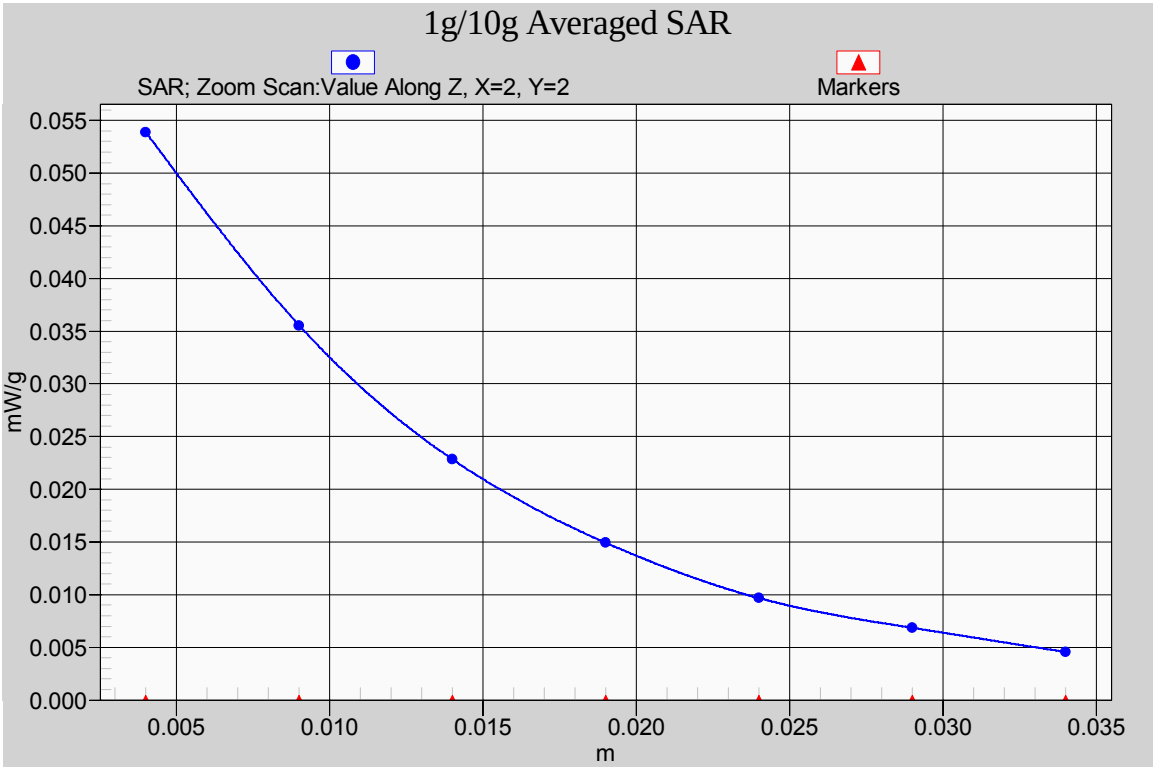


Fig.26 Z-Scan at power reference point (1900 MHz GPRS CH661 Test Position 2)

EGPRS 1900 Test Position 1_Antenna extended _Channel Low_2 timeslot

Date/Time: 12/12/2008 17:39:24 PM
Electronics: DAE4 Sn771
Communication System: GSM 1900MHz GPRS Frequency: 1850.2 MHz Duty Cycle: 1:4
Medium: 1900 Body
Medium parameters used: f = 1850.2 MHz; σ = 1.49 mho/m; ε_r = 52.26; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(4.85, 4.85, 4.85)

Test Position 1_Antenna extended _Channel Low_2 timeslot_EGPRS

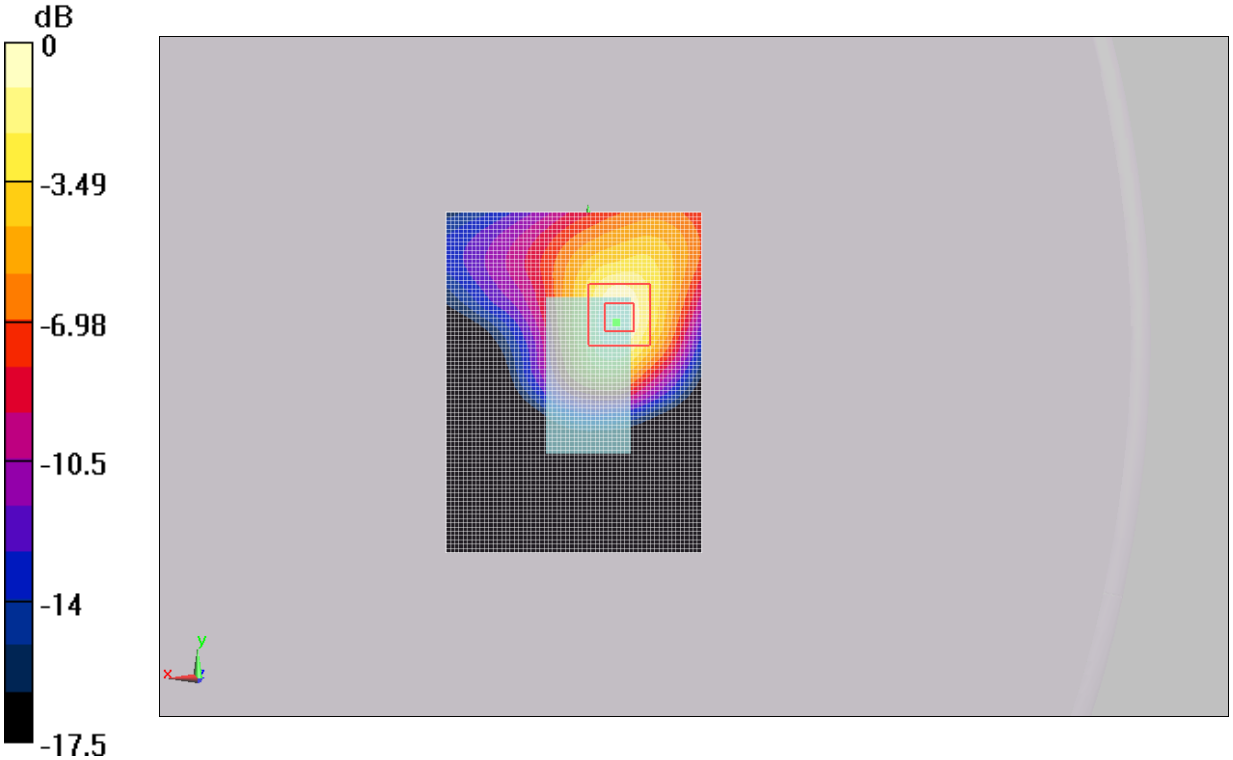
/Area Scan (61x81x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.879 mW/g

Test Position 1_Antenna extended _Channel Low_2 timeslot_EGPRS

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

Reference Value = 17.7 V/m; Power Drift = 0.132 dB
Peak SAR (extrapolated) = 1.4 W/kg
SAR(1 g) = 0.772 mW/g; SAR(10 g) = 0.413 mW/g
Maximum value of SAR (measured) = 0.859 mW/g



0 dB = 0.859mW/g

Fig. 27 1900MHz CH512 Test Position 1-EGPRS(2timeslot)

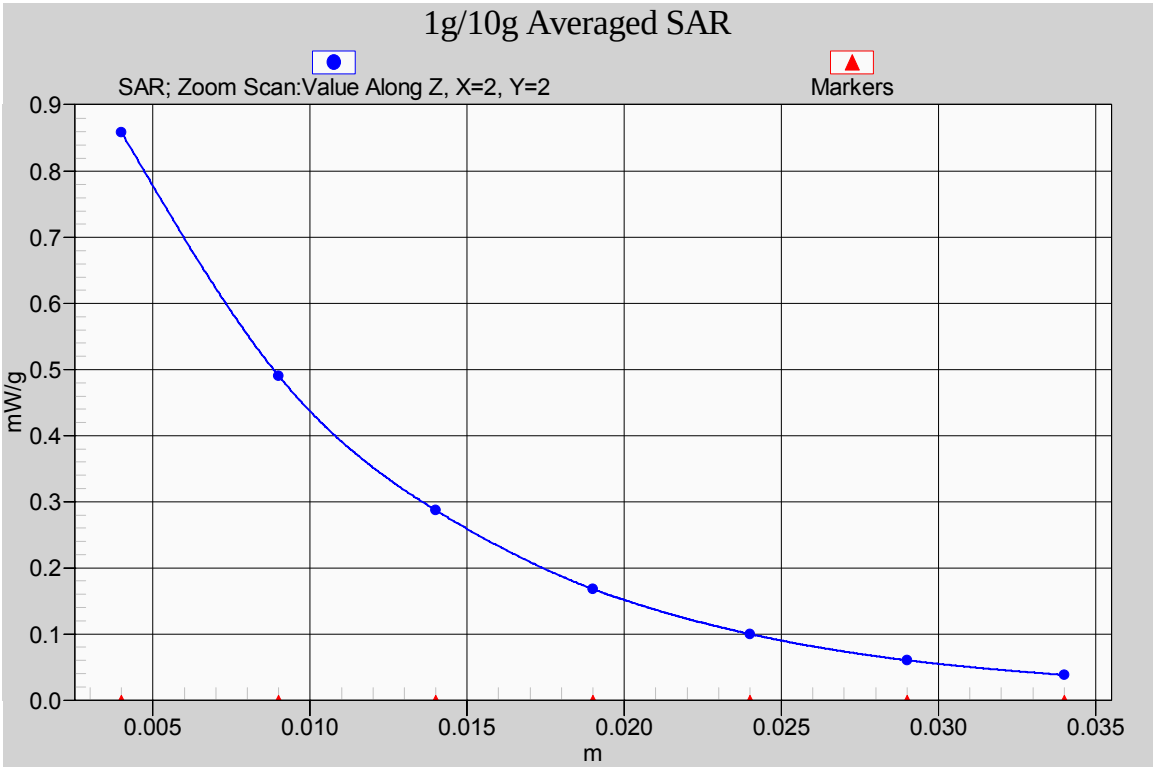


Fig.28 Z-Scan at power reference point (1900 MHz EGPRS CH512 Test Position 1)

ANNEX D SYSTEM VALIDATION RESULTS

835MHz

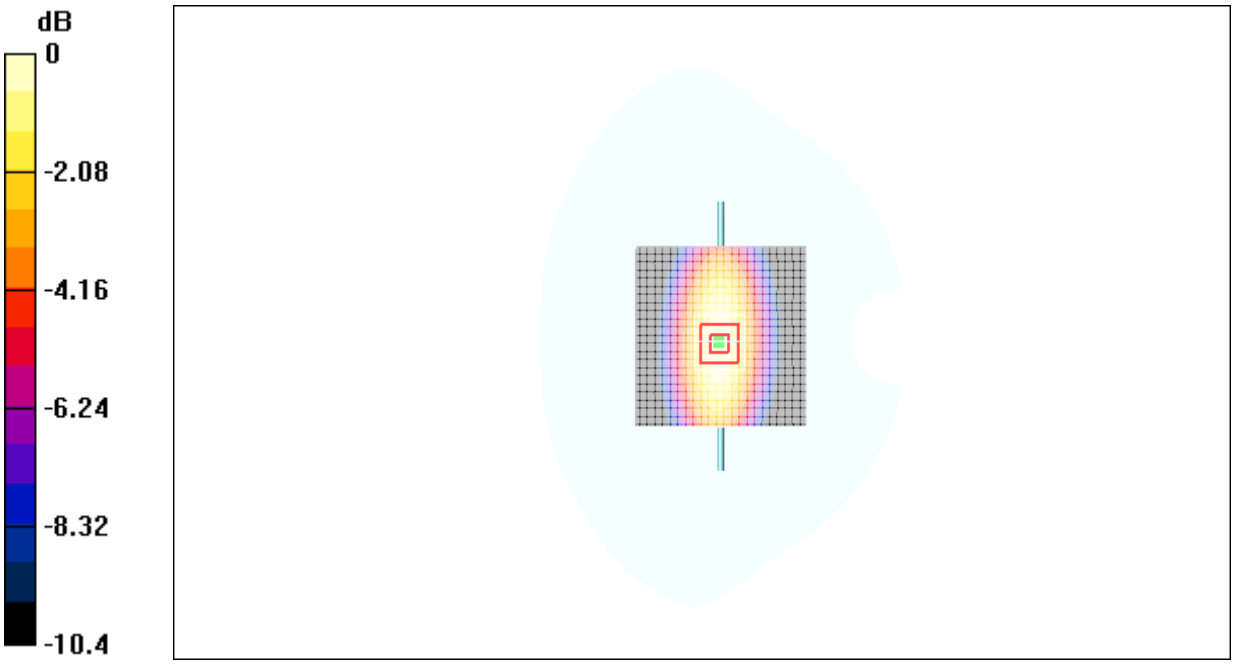
Date/Time: 12/12/2008 7:31:02 AM
Electronics: DAE4 Sn771
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Medium: Head 835
Medium parameters used: f = 835 MHz; σ = 0.91 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(6.28, 6.28, 6.28)
Dipole:D835V2-SN:443

835MHz/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 2.68 mW/g

835MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.8 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.67 W/kg
SAR(1 g) = 2.50 mW/g; SAR(10 g) = 1.62 mW/g
Maximum value of SAR (measured) = 2.69 mW/g



0 dB = 2.69mW/g

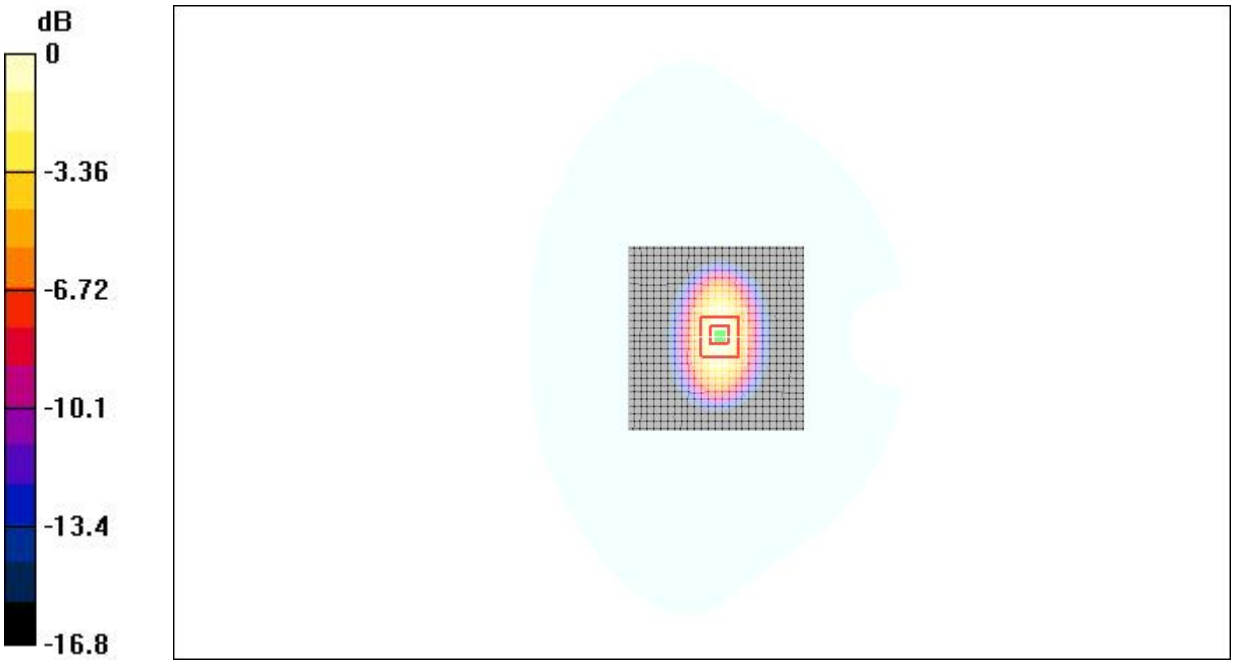
Fig.29 validation 835MHz 250mW

1900MHz

Date/Time: 12/12/2008 6:48:53 AM
Electronics: DAE4 Sn771
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ε_r = 40.8; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3149 ConvF(5.08, 5.08, 5.08)
Dipole:D1900V2-SN:541

System Validation/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (interpolated) = 11.2 mW/g

System Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.1 V/m; Power Drift = 0.1 dB
Peak SAR (extrapolated) = 16.9 W/kg
SAR(1 g) = 9.91 mW/g; SAR(10 g) = 5.27 mW/g
Maximum value of SAR (measured) = 11.3 mW/g



0 dB = 11.3mW/g

Fig.30 validation 1900MHz 250mW

835MHz

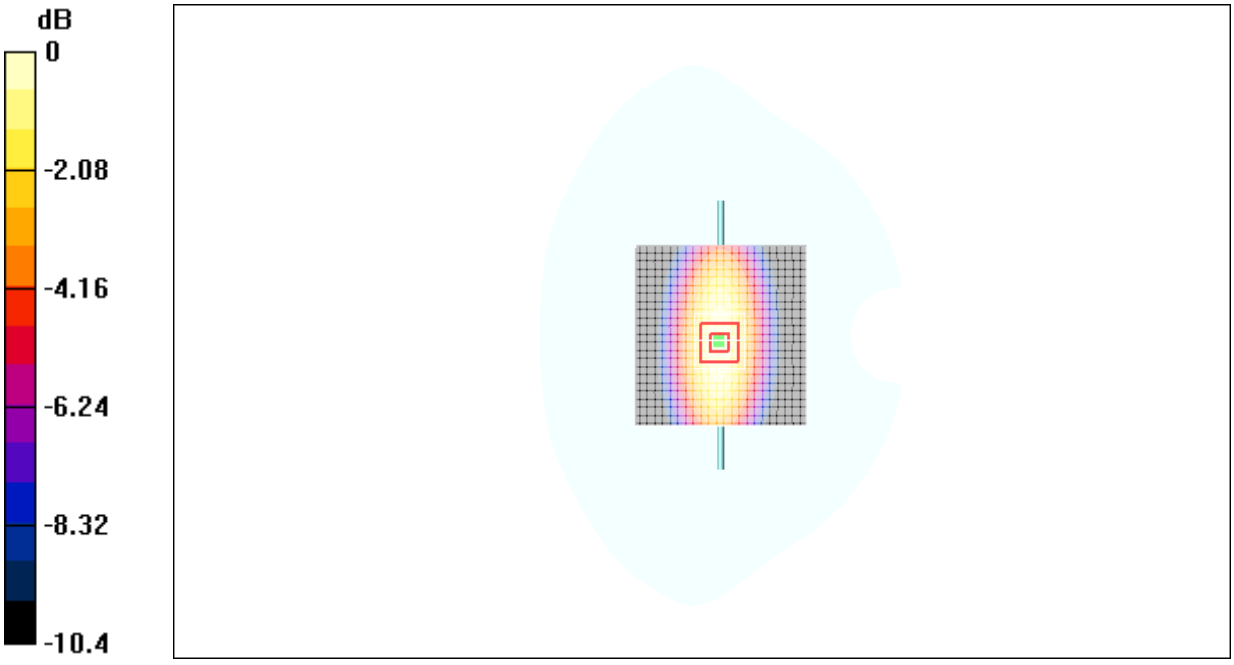
Date/Time: 2/12/2009 8:21:30 AM
Electronics: DAE4 Sn771
Communication System: CW Frequency: 835 MHz Duty Cycle: 1:1
Medium: Head 835
Medium parameters used: f = 835 MHz; σ = 0.88 mho/m; ε_r = 41.6; ρ = 1000 kg/m^3
Ambient Temperature:23.3℃ Liqiud Temperature: 22.5℃
Probe: ES3DV3 - SN3142 ConvF(5.97, 5.97, 5.97)
Dipole:D835V2-SN:443

835MHz/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 2.73 mW/g

835MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.8 V/m; Power Drift = 0.032 dB
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 2.54 mW/g; SAR(10 g) = 1.66 mW/g
Maximum value of SAR (measured) = 2.65 mW/g



0 dB = 2.65mW/g

Fig.31 validation 835MHz 250mW