

SAR TEST REPORT

Project Number: 3081013
8/17/2005

Evaluation of the
Edge PC Card
Model Number: EDG0200
FCC ID: MIVEDG0200

FCC Part 2.1093

For

Enfora

Test Performed by:
Intertek
731 Enterprise Drive
Lexington, KY 40510

Test Authorized by:
Enfora
661 E. 18th Street
Plano, TX 75074

Prepared By: Jason Centers Date: 8/17/2005

Jason Centers, Senior Project Engineer

Approved By: Bryan C. Taylor Date: 8/17/2005

Bryan C. Taylor, EMC Team Leader

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



TABLE OF CONTENTS

1 INTRODUCTION3

2 JOB DESCRIPTION.....4

2.1 CLIENT INFORMATION4

2.2 TEST PLAN REFERENCE:4

2.3 EQUIPMENT UNDER TEST (EUT)5

 2.3.1 *System Support Equipment*6

 2.3.2 *Cables associated with EUT*6

 2.3.3 *System Block Diagram*6

 2.3.4 *Justification*7

 2.3.5 *Mode(s) of operation*7

2.4 MODIFICATIONS REQUIRED FOR COMPLIANCE7

2.5 RELATED SUBMITTAL(S) GRANTS7

2.6 TEST SITE DESCRIPTION8

2.7 MEASUREMENT UNCERTAINTY9

2.8 MEASUREMENT TRACTABILITY10

3 SPECIFIC ABSORPTION RATE11

3.1 TEST LIMITS11

3.2 TEST EQUIPMENT12

3.3 TISSUE SIMULATING LIQUID DESCRIPTION AND VALIDATION13

3.4 DIPOLE SYSTEM VALIDATION14

 3.4.1 *Test Procedure*16

 3.4.2 *Conducted Output Power:*16

 3.4.3 *Test Positions:*16

 3.4.4 *Reference Power Measurement:*16

 3.4.5 *Coarse Scan:*16

 3.4.6 *Zoom Scan:*16

 3.4.7 *Data Extrapolation:*16

 3.4.8 *Reference Power Measurement:*16

 3.4.9 *RF Ambient Activity:*17

 3.4.10 *Conducted RF Power:*17

3.5 SAR TEST RESULTS18

3.6 SAR TEST PHOTOGRAPHS19

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

1 INTRODUCTION

The EDG0200 was evaluated for SAR in accordance with the requirements for RF Exposure compliance testing defined in FCC OET Bulletin 65, Supplement C (Edition 01-01). Testing was performed at the Intertek Testing Services facility in Lexington, Kentucky.

For the evaluation, the dosimetric assessment system DASY3 was used. The phantom employed was the "SAM Twin Phantom". The total uncertainty for the evaluation of the spatial peak SAR values averaged over a cube of 1g tissue mass had been assessed for this system to be ±27.4%.

The EDG0200 was evaluated for SAR using three different laptop computers. The device was installed in the PCMCIA slot closest to the phantom for minimum separation distance. The separation distance for each laptop is shown in Figure 7 through Figure 9. The device was tested at the maximum output power declared by Enfora. This was accomplished by using test commands supplied by Enfora.

The maximum spatial peak SAR value for the sample device averaged over 1g was found to be:

Laptop	Phantom	Configuration	Worst Case Extrapolated SAR _{1g} mW/g
Dell PP01X Latitude C800	Flat Section	GSM 850 Band, Channel 190 (836.0 MHz)	0.69
Acer Aspire 3500	Flat Section	GSM 850 Band, Channel 190 (836.0 MHz)	1.16
Sony PCG-995A	Flat Section	GSM 850 Band, Channel 128 (824.2 MHz)	1.28

Based on the worst case data presented above, the sample tested was found to be in compliance with the requirements defined in OET Bulletin 65, Supplement C (Edition 01-01).

Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

2 JOB DESCRIPTION

2.1 Client information

The Edge PC Card has been tested at the request of

Company: Enfora

661 E. 18th Street

Plano, TX 75074

Name of contact: Scott Yarberry

Telephone: (972) 633-4400

Fax: (972) 633-4444

2.2 Test plan reference:

Tests were performed to the following standards:

- FCC Part 2.1093

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

2.3 Equipment Under Test (EUT)

The Equipment Under Test (EUT) was an Edge PC Card that operated in the GSM 850 and PCS 1900 bands.

Product	Edge PC Card	
EUT Model Number	EDG0200	
EUT Serial Number	Not Labeled	
Whether quantity (>1) production is planned	Quantity production is planned.	
Cellular Phone standards	GSM 850 and PCS 1900	
Type(s) of Emission	200K0GXW; 200K0GXD; 200K0DXD	
Average RF Output Power	9.77 dBm – GSM 850 5.85 dBm – PCS 1900	
Frequency Range	824 - 849 MHz 1851 – 1909 MHz	GSM 850 PCS 1900
Antenna & Gain	Integrated, ¼ wave monopole etched on top side of card	
Detachable Antenna	None	
Belt Clip	None – Mounts in a laptop	
Battery Option	None – Powered by laptop PCMCIA slot	
External input	<input type="checkbox"/> Audio <input checked="" type="checkbox"/> Digital Data	

EUT receive date: 8/5/2005
 EUT receive condition: The EUT was received in good condition with no apparent damage.
 Test start date: 8/8/2005
 Test completion date: 8/9/2005

The test results in this report pertain only to the item tested.

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

2.3.1 System Support Equipment

The following table contains details of the support equipment associated with the Equipment Under Test.

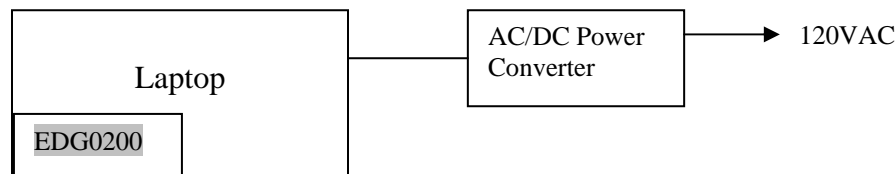
Description	Manufacturer	Model Number	Serial Number	FCC ID number
Laptop	Dell	PP01X Latitude C800	Not Labeled	Not Labeled
AC/DC Power Supply for Dell laptop	Dell	AA20031 PA-6	Not Labeled	Not Labeled
Laptop	Acer	Aspire 3500 ZL6	LXA500510052000 7EFEM00	Not Labeled
AC/DC Power Supply for Acer laptop	LITEOn	PA-16J0-02	5411294905	Not Labeled
Laptop	Sony	PCG-995A	Not Labeled	Not Labeled
AC/DC Power Supply for Sony laptop	Sony	PCGA-AC19V1	0049D0272319	Not Labeled

2.3.2 Cables associated with EUT

There were no cables used with the EUT.

2.3.3 System Block Diagram

The EDG0200 was installed in the PCMCIA slot closest to the flat phantom in each laptop for the evaluation. For specific layout, refer to the test configuration photograph in the relevant section of this report.



Evaluation For: Enfora

FCC ID: MIVEDG0200

Model No: EDG0200

2.3.4 Justification

The EUT was tested in three laptops with the side normally located against the body, against the phantom.

2.3.5 Mode(s) of operation

The EUT was powered via the PCMCIA slot of the laptop. Test commands were used to force the device to transmit at max power.

2.4 Modifications required for compliance

No modifications were implemented by Intertek.

2.5 Related Submittal(s) Grants

None.

2.6 Test Site Description

The SAR test site located at 731 Enterprise Drive, Lexington KY 40510 is comprised of the SPEAG model DASY 3 automated near-field scanning system, which is a package, optimized for dosimetric evaluation of mobile radios [3]. This system is installed in an ambient-free shielded enclosure with RF absorbing material on the walls and ceiling. The Ambient temperature is controlled to $22.2 \pm 2^\circ\text{C}$. Because the HVAC operates as a closed system, the relative humidity remains constant at $50 \pm 5\%$. During the SAR evaluations, the RF ambient conditions are monitored continuously for signals that might interfere with the test results. The tissue simulating liquid is also stored and validated in this area in order to keep it at the same constant ambient temperature as the room.

Figure 1: SAR Test Site



2.7 Measurement Uncertainty

The Table below includes the uncertainty budget suggested by the IEEE Std 1528-200X and determined by SPEAG for the DASY3 measurement System. The extended uncertainty (K=2) was assessed to be 27.0 %

Uncertainty Component	Tolerance (± %)	Probability Distribution	Divisor	c_i	Standard Uncertainty, (± %)	v_i^2 or v_{eff}
Measurement System						
Probe Calibration	4.5	Normal	1	1	4.5	Inf.
Axial Isotropy	4.7	Rectangular	$\sqrt{3}$	$(1-cp)^{1/2}$	1.9	Inf.
Spherical Isotropy	9.6	Rectangular	$\sqrt{3}$	$\sqrt{c_p}$	3.9	Inf.
Boundary Effect	5.5	Rectangular	$\sqrt{3}$	1	3.2	Inf.
Linearity	4.7	Rectangular	$\sqrt{3}$	1	2.7	Inf.
System Detection Limits	1.0	Rectangular	$\sqrt{3}$	1	0.6	Inf.
Readout Electronics	1.0	Normal	1	1	1.0	Inf.
Response Time	0.8	Rectangular	$\sqrt{3}$	1	0.5	Inf.
Integration Time	1.4	Rectangular	$\sqrt{3}$	1	0.8	Inf.
RF Ambient Conditions	3.0	Rectangular	$\sqrt{3}$	1	1.7	Inf.
Probe Positioner Mechanical Tolerance	0.4	Rectangular	$\sqrt{3}$	1	0.2	Inf.
Probe Positioning with respect to Phantom Shell	2.9	Rectangular	$\sqrt{3}$	1	1.7	Inf.
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	3.9	Rectangular	$\sqrt{3}$	1	2.3	Inf.
Test sample Related						
Test Sample Positioning	6.0	Normal	0.89	1	6.7	12
Device Holder Uncertainty	5.0	Normal	0.84	1	5.9	8
Output Power Variation - SAR drift measurement	7.0	Rectangular	$\sqrt{3}$	1	4	Inf.
Phantom and Tissue Parameters						
Phantom Uncertainty (shape and thickness tolerances)	4.0	Rectangular	$\sqrt{3}$	1	2.3	Inf.
Liquid Conductivity Target tolerance	3.0	Rectangular	$\sqrt{3}$	0.6	1.0	Inf.
Liquid Conductivity - measurement uncertainty	10.0	Rectangular	$\sqrt{3}$	0.6	3.5	Inf.
Liquid Permittivity Target tolerance	4.0	Rectangular	$\sqrt{3}$	0.6	1.3	Inf.
Liquid Permittivity - measurement uncertainty	5.0	Rectangular	$\sqrt{3}$	0.6	1.7	Inf.
Combined Standard Uncertainty					13.7	
Expanded Uncertainty (95% CONFIDENCE INTERVAL)					27.4	

Evaluation For: Enfora

FCC ID: MIVEDG0200

Model No: EDG0200

Notes.

1. The Divisor is a function of the probability distribution and degrees of freedom (v_i and v_{eff}). See NIST Technical Note TN1297, NIS 81 and NIS 3003.
2. c_i is the sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.

2.8 Measurement Traceability

All measurements described in this report are traceable to National Institute of Standards and Technology (NIST) standards or appropriate national standards.

Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

3 SPECIFIC ABSORPTION RATE

3.1 Test Limits

The following FCC limits for SAR apply to devices operating in General Population/Uncontrolled Exposure environment:

Exposure (General Population/Uncontrolled Exposure environment)	SAR (W/kg)
Average over the whole body	0.08
Spatial Peak (1g)	1.60
Spatial Peak for hands, wrists, feet and ankles (10g)	4.00

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

3.2 Test Equipment

SAR Measurement System			
EQUIPMENT	SPECIFICATIONS	S/N #	Last Cal. Data
Robot	Stäubli RX60L Repeatability: ± 0.025 mm Accuracy: 0.806×10^{-3} degree Number of Axes: 6	597412-01	N/A
E-Field Probe	ET3DV6 Frequency Range: 900MHz to 6GHz Probe Linearity: ± 0.2 dB (30 MHz to 6 GHz) Length: 34.5 cm Distance between the probe tip and the dipole center: 2.7 mm Tip Diameter: 2.4 mm Calibration: 900, 1800, 2450, 5200 and 5800 MHz for head & body tissue simulating liquid	1785	9/29/2004
Data Acquisition	DAE3 Measurement Range: $1\mu\text{V}$ to $>200\text{mV}$ Input offset Voltage: $< 1\mu\text{V}$ (with auto zero) Input Resistance: 200 M	317	N/A
Phantom Complies with IEEE P1528-200x, draft 6.5 (See certificate in App. C)	SAM Twin V4.0 Type SAM Twin, Homogenous Shell Material: Fiberglass Thickness: 2 ± 0.2 mm Capacity: 20 liter Size of the flat section: approx. 320 x 230 mm	TP-1243	QD000P40CA
Device holder	Non-conductive holder supplied with DASY3, dielectric constant less than 5.0	N/A	N/A
Network Analyzer	Hewlett Packard 8753A Power Meter Frequency Range: 10 kHz to 40 GHz Power Meter Measurement Range: -70 dBm to +44 dBm	2950J00750	2/1/2005
Signal Generator	HP 83620 B Frequency Range: 10MHz – 20 GHz Amplitude Range: -110 dBm – 25 dBm	3614A00199	8/17/2005

3.3 Tissue Simulating Liquid Description and Validation

Figure 1: Recommended Body Tissue Composition

Simulation Liquid; Frequency: 800 MHz	
Ingredient	Body
Water	41.45
Salt	1.45
Sugar	56.0
HEC	1.0
Bactericide	0.1

Figure 2: Recommended Body Tissue Composition

Simulation Liquid; Frequency: 1900 MHz	
Ingredient	Body
Water	40.4
Salt	0.5
Sugar	58.0
HEC	1.0
Bactericide	0.1

Note: The amounts of each ingredient specified in the tables are not the exact amounts of the final test solution. The final test solution was adjusted by adding small amounts of water, sugar, and/or salt to calibrate the solution to meet the proper dielectric parameters.

Figure 3: Body Tissue Parameters Measured Just Before SAR Testing

Body Tissue Parameters – GSM 850 Band								
Frequency Measure (MHz)	Dielectric Constant Target	Dielectric Constant Measure	Dielectric % Deviation	Imaginary Part	Conductivity Target	Conductivity Measure	Conductivity % Deviation	Date
824.2	55.3	55.2	0.18	20.25	0.97	0.93	4.34	8/9/2005
836.6	55	55.2	0.36	20.19	0.97	0.94	3.19	8/9/2005
848.8	56	55.08	1.64	20.09	0.97	0.95	2.26	8/9/2005

Body Tissue Parameters – PCS 1900 Band								
Frequency Measure (MHz)	Dielectric Constant Target	Dielectric Constant Measure	Dielectric % Deviation	Imaginary Part	Conductivity Target	Conductivity Measure	Conductivity % Deviation	Date
1850.2	53.3	51.67	3.06	14.1	1.52	1.45	4.58	8/8/2005
1880	53.3	51.53	3.32	14.1	1.52	1.47	3.04	8/8/2005
1909.8	53.3	51.38	3.60	14.2	1.52	1.51	0.81	8/8/2005

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

3.4 Dipole System Validation

Prior to the assessment, the system was verified by using the system validation kit. The validation was performed at 900 and 1800 MHz using 900 and 1800 MHz head tissue.

Figure 4: Dipole Validation Data

Reference Dipole Validation								
Frequency Measure (MHz)	Dipole Type	Dipole Serial Number	Fluid Type	Dipole Power Input	Cal. Lab SAR (1g)	Measured SAR (1g)	% Error SAR (1g)	Date
900	D900V2	13	900 MHz Head	1W	10.6	9.56	9.81	8/9/2005
1800	D1800V2	224	1800 MHz Head	1W	39.5	36.90	6.58	8/8/2005

Figure 5: Dipole Validation – 900 MHz



Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

Figure 6: Dipole Validation Data – 1800 MHz



Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

3.4.1 Test Procedure

Prior to any testing, the appropriate fluid was used to fill the phantom to a depth of 15 cm +0.2cm. The fluid parameters were verified and the dipole validation was performed as described in the previous sections.

3.4.2 Conducted Output Power:

Before SAR testing started, the conducted output power of the device was measured. The transmitter output was connected to a calibrated coaxial cable, the other end of which was connected to a power meter. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading.

Tests were performed at three frequencies (low, middle, and high channels) and on the highest power levels, which can be setup on the transmitters.

3.4.3 Test Positions:

The device was positioned against the SAM and flat phantoms using the exact procedure described in Supplement C Edition 01 – 01 of Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields”, OET Bulletin 65, FCC, Washington, D.C. 20554, 1997.

3.4.4 Reference Power Measurement:

The measurement probe was positioned at a fixed location above the reference point. A power measurement was made with the probe above this reference position so it could be used for assessing the power drift later in the test procedure.

3.4.5 Coarse Scan:

A coarse area scan with a horizontal grid spacing of 20 x 20 mm was performed in order to find the approximate location of the peak SAR value. This scan was performed with the measurement probe at a constant height in the simulating fluid. A two dimensional spline interpolation algorithm was then used to determine the peaks and gradients within the scanned area.

3.4.6 Zoom Scan:

A zoom scan was performed around the approximate location of the peak SAR as determined from the coarse scan. The zoom scan was comprised of a measurement volume of 32 x 32 x 34 mm based on 5 x 5 x 7 points. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

3.4.7 Data Extrapolation:

Since the center of the dipoles in the measurement probe are 2.7 mm away from the tip of the probe, and the distance between the surface and the lowest measurement point is 1.6 mm the data at the surface was extrapolated. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in the Z-axis. This polynomial was then used to evaluate the points between the surface and the probe tip.

The maximum interpolated value was searched with a straightforward sorting algorithm. Around this maximum, the SAR values averaged over the spatial volumes (1g or 10g) were computed using a 3-D spline interpolation algorithm. The 3-D 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 a trapezoidal algorithm. 1000 points (10 x 10 x 10) were interpolated to calculate the average. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

3.4.8 Reference Power Measurement:

The probe was positioned at precisely the same reference point and the reference power measurement was repeated. The difference between the initial reference power and the final one is referred to as the power drift.

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

3.4.9 RF Ambient Activity:

During the entire SAR evaluation, the RF ambient activity was monitored using a spectrum analyzer with an antenna connected to it. The spectrum analyzer was tuned to the frequency of measurement and with one trace set to max hold mode. In this way, it was possible to determine if at any point during the SAR measurement there were an interfering ambient signal. If an ambient signal was detected, then the SAR measurement was repeated.

3.4.10 Conducted RF Power:

The following conducted RF power measurements were obtained using the procedure outlined in section 3.4.2 above.

Table 1 RF Power

Power (Avg.) at ambient (dBm)							
Modulation	Temp. (Celcius)	GSM 850			PCS 1900		
		128	190	251	512	662	810
GMSK	20	9.77	8.80	9.17	5.85	5.83	5.21
8PSK	20	4.56	4.20	4.58	2.69	0.27	0.51

Evaluation For: Enfora
 Model No: EDG0200

FCC ID: MIVEDG0200

3.5 SAR Test Results

The EDG0200 was **compliant** with the requirements defined in OET Bulletin 65, Supplement C (Edition 01-01). Where the measured 1g SAR was closer than 3dB to the limit at the middle channel, testing was performed on the band edge channels. All scans were done with the back of the laptops touching the flat phantom. See Figure 7 through Figure 9 for separation distance for each laptop.

Table 2: SAR Test Results

Band	Channel	Freq. (MHz)	Laptop	SAR Drift (dB)	Measured 1-g SAR (mW/g)	Meas. 10g-SAR (mw/g)	Extrapolated Worst Case 1-g SAR (mW/g) ¹	Extrapolated Worst Case 10-g SAR (mW/g) ¹
PCS 1900	661	1880.00000	Acer	0.020	0.474	0.268	---	---
PCS 1900	661	1880.00000	Sony	-0.070	0.403	0.243	0.410	0.247
PCS 1900	661	1880.00000	Dell	-0.100	0.208	0.123	0.213	0.126
GSM 850	190	836.60000	Acer	0.03	1.16	0.72	---	---
GSM 850	190	836.60000	Sony	0.00	1.15	0.74	1.150	0.743
GSM 850	190	836.60000	Dell	0.130	0.690	0.455	---	---
GSM 850	251	848.80000	Acer	0.11	0.72	0.46	---	---
GSM 850	128	824.20000	Acer	-0.03	1.11	0.70	1.118	0.704
GSM 850	251	848.80000	Sony	0.01	1.13	0.73	---	---
GSM 850	128	836.60000	Sony	0.11	1.28	0.83	---	---

¹ When there was a positive drift, no extrapolation was performed.

Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

3.6 SAR Test Photographs

Figure 7: Dell Laptop



Evaluation For: Enfora
Model No: EDG0200

FCC ID: MIVEDG0200

Figure 8: Sony Laptop



Evaluation For: Enfora
Model No: EDG0200

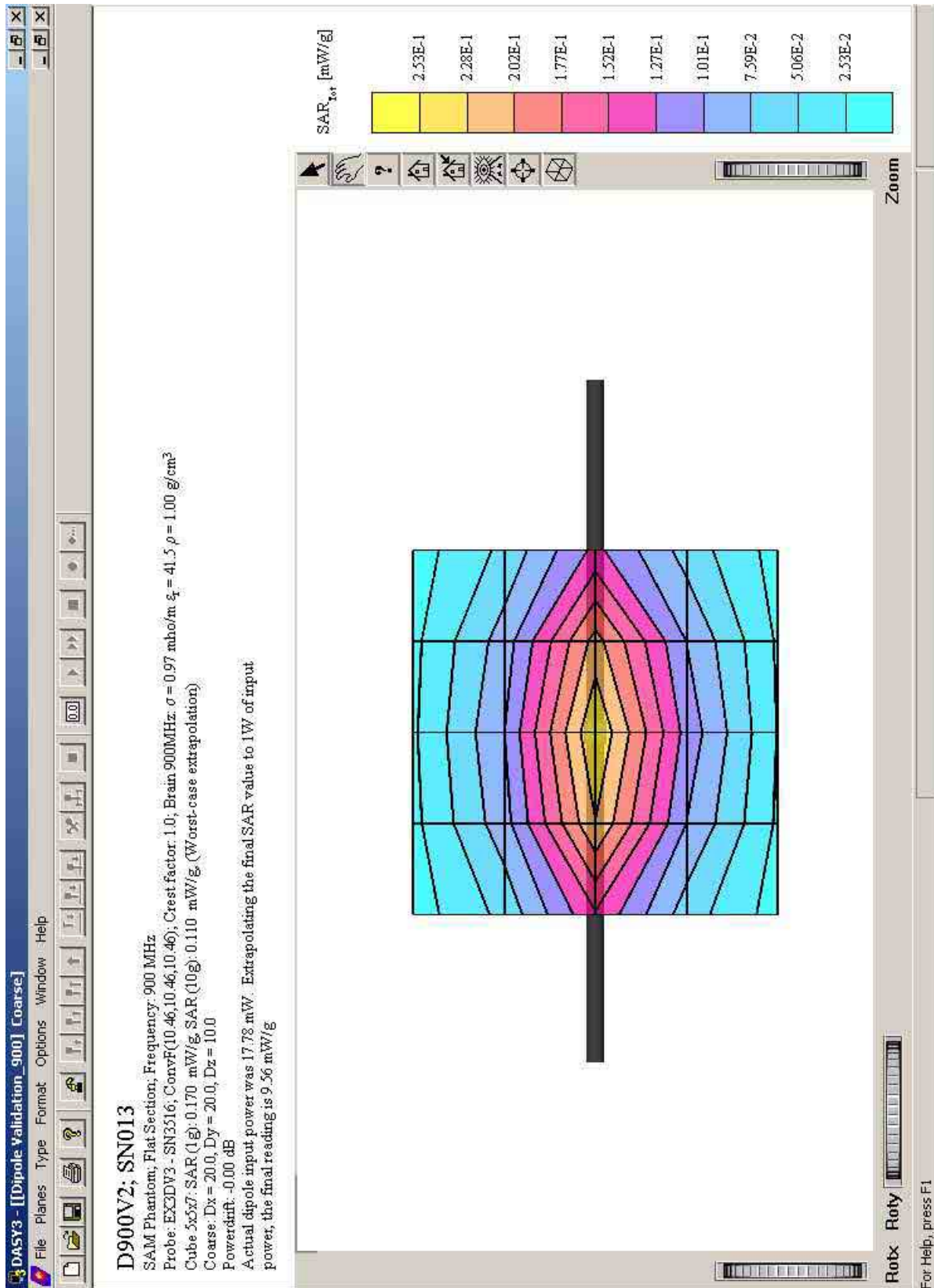
FCC ID: MIVEDG0200

Figure 9: Acer Laptop



1.0 Graphical Test Results

Dipole Validation Sweeps





D1800V2; SN: 224

SAM Phantom; Flat Section; Frequency: 1800 MHz

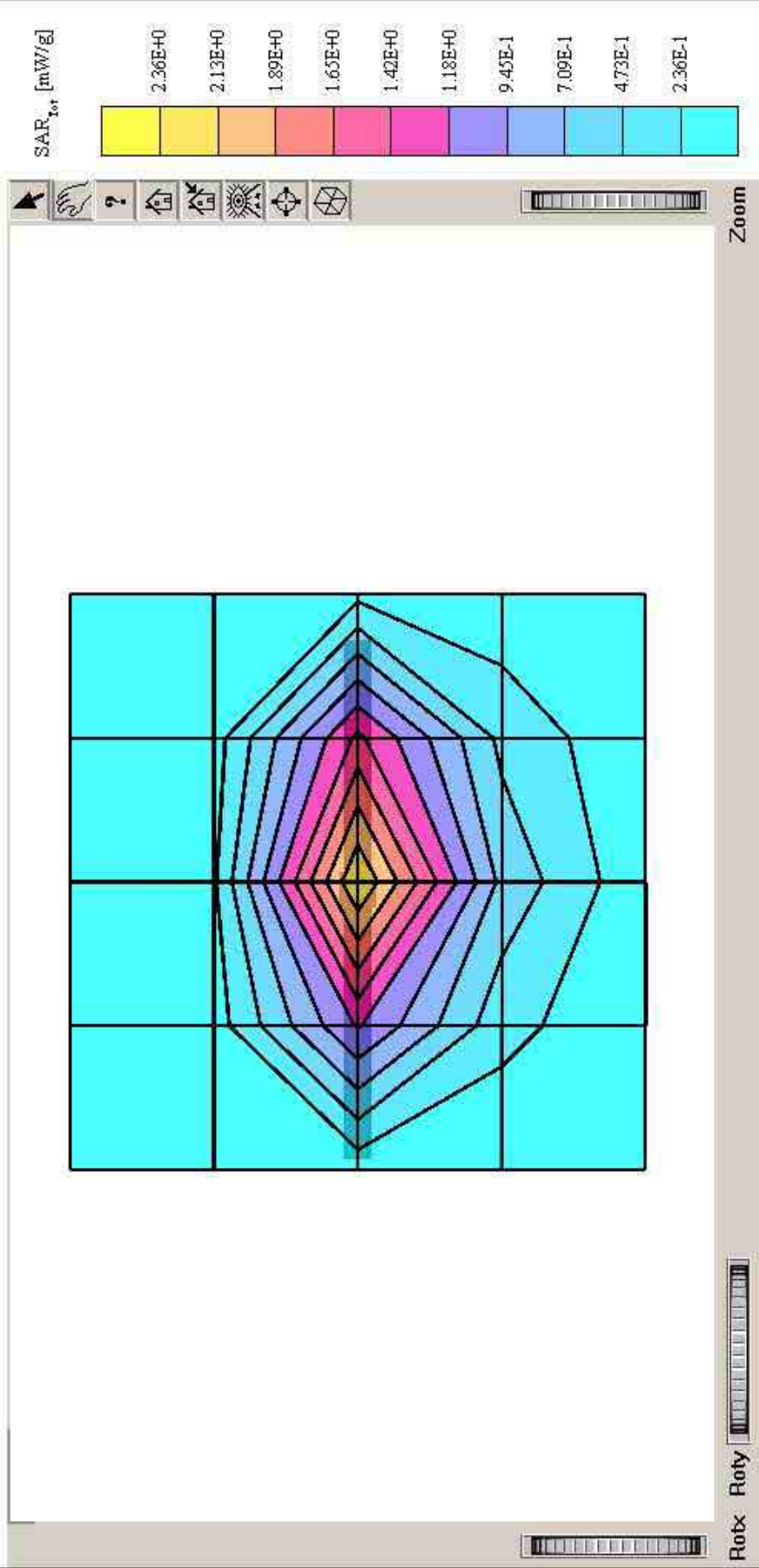
Probe: EX3DW3 - SN3516; ConvF(9 26,9 26,9 26); Crest factor: 1.0; Brain 1800MHz. $\sigma = 40.9 \rho = 1.00 \text{ g/cm}^3$

Cube 5x5x7; SAR (1g) 1.54 mW/g; SAR (10g) 0.327 mW/g. (Worst-case extrapolation)

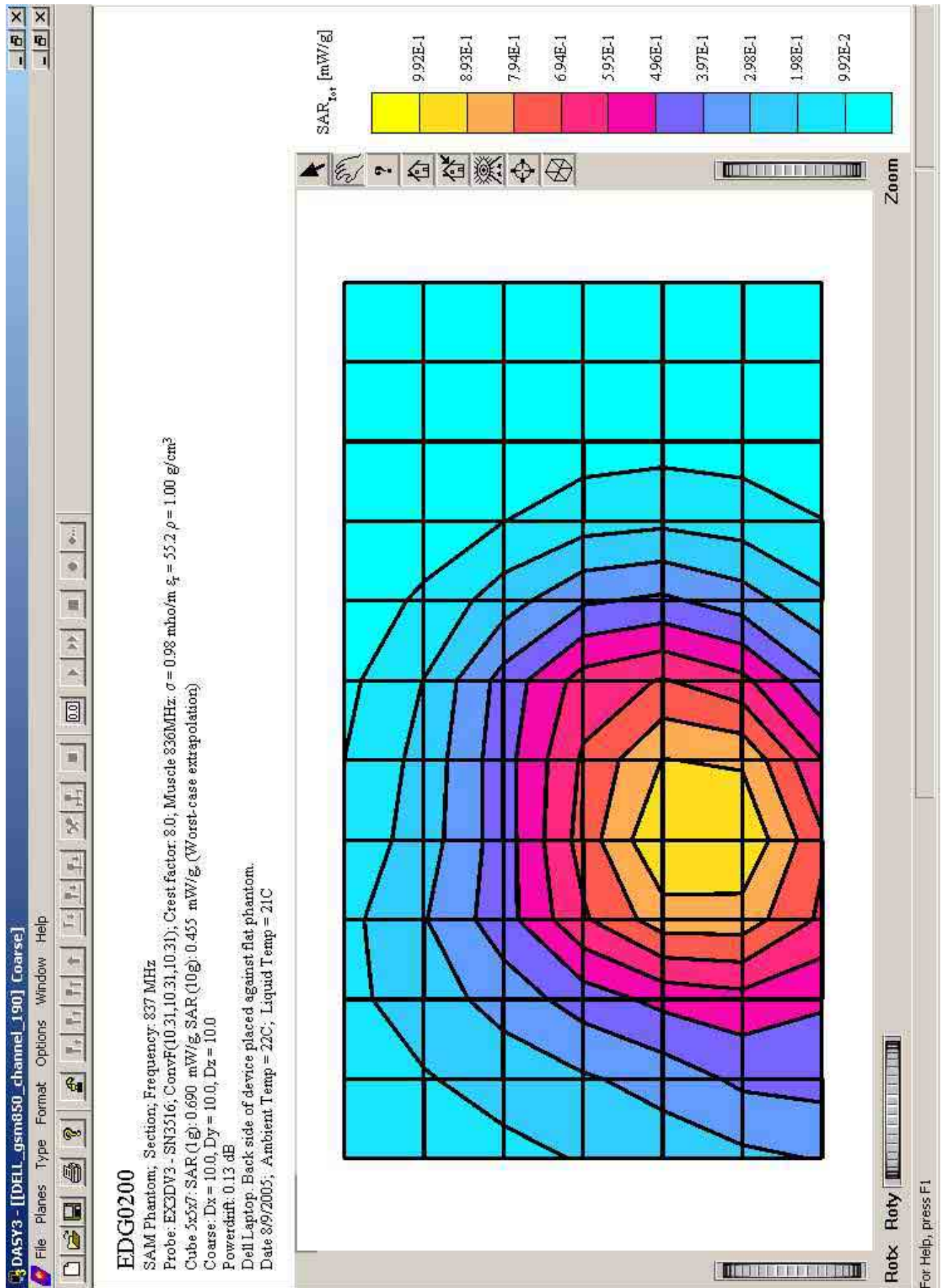
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0

Powerdft: -0.01 dB

A actual dipole input power was 41.7 mW. Extrapolating the final SAR value to 1W of input power, the final reading is 36.9 mW/g



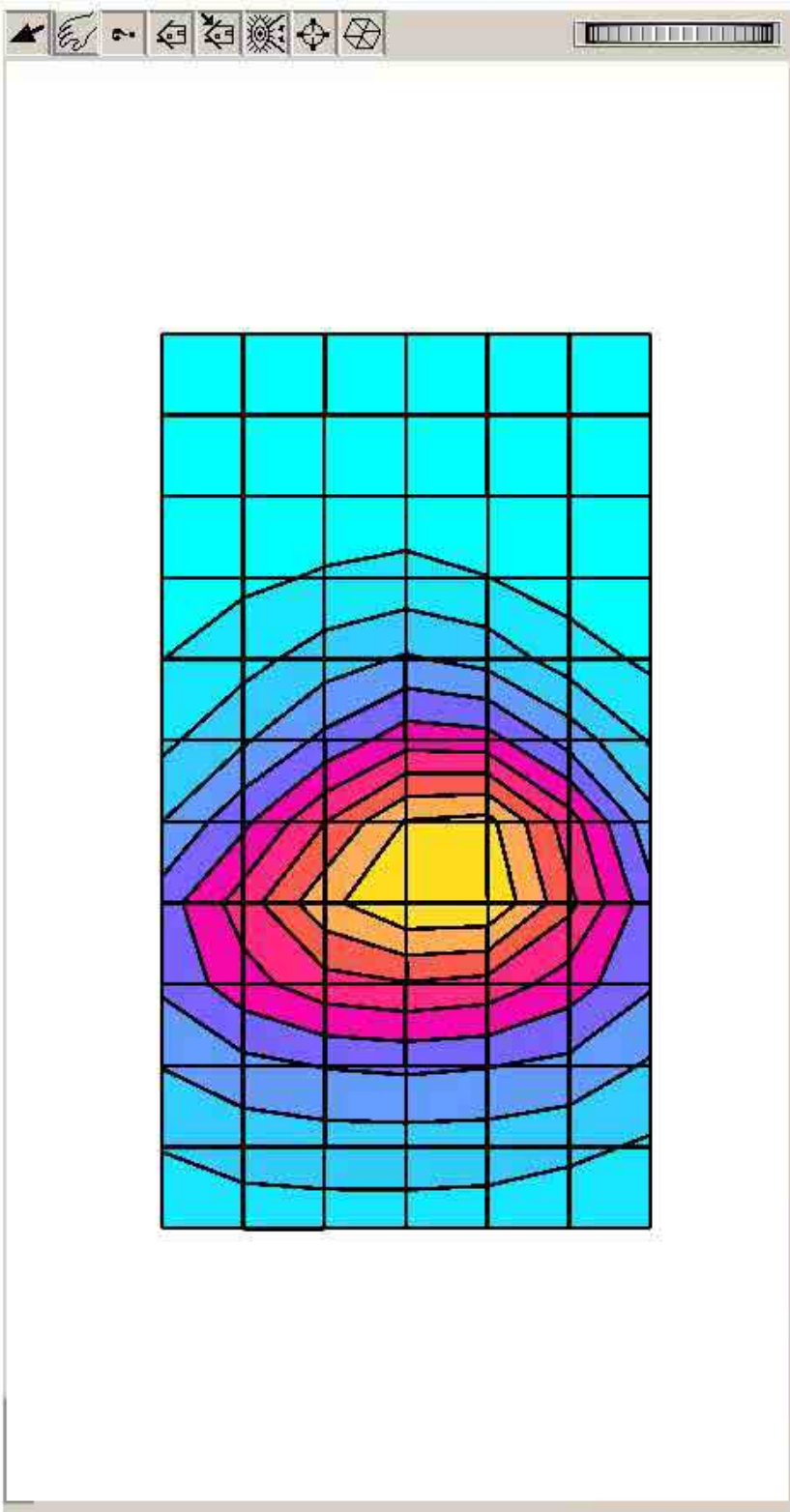
SAR Scans on Enfora EDG0200 PC Card



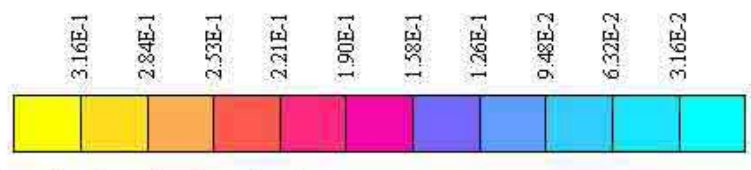


EDG0200

SAM Phantom; Section; Frequency: 1880 MHz
Probe: EX3DW3 - SN3516; ConvF(8.72,8.72,8.72); Crest factor: 8.0; Muscle 1800 MHz: $\sigma = 1.46$ mho/m $\epsilon_r = 54.9$ $\rho = 1.00$ g/cm³
Cube 5x5x7; SAR (1g): 0.208 mW/g; SAR (10g): 0.123 mW/g. (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: -0.10 dB
Dell Laptop. Back side of device placed against flat phantom.
Date 8/8/2005; Ambient Temp = 22C; Liquid Temp = 21C



SAR_{10g} [mW/g]



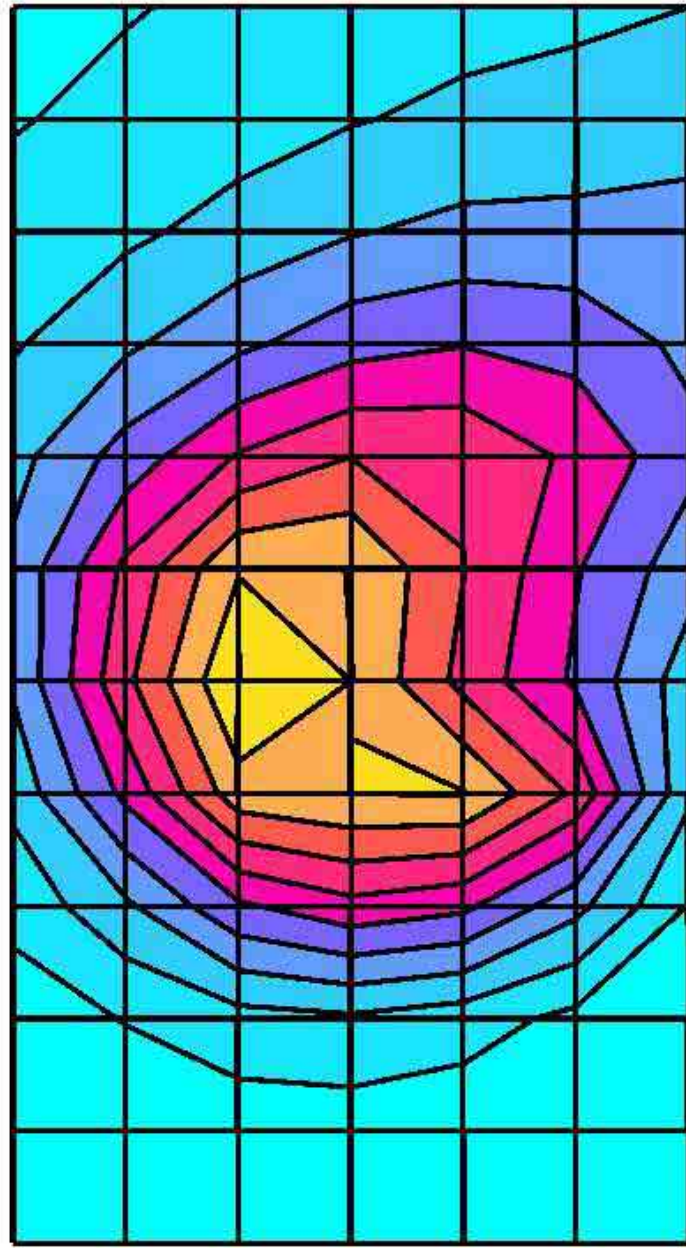
Zoom

Robt Roty



EDG0200

SAM Phantom; Section; Frequency: 824 MHz
Probe: EX3DW3 - SN3316; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 824MHz: $\sigma = 0.94 \text{ mho/m}$ $\epsilon_r = 54.1$ $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7: SAR (1g): 1.11 mW/g; SAR (10g): 0.699 mW/g. (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: -0.03 dB
Acer Laptop. Back side of device placed against flat phantom.
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C



Zoom



Robt Roty



EDG0200

SAM Phantom; Section; Frequency: 837 MHz

Probe: EX3DW3 - SN3316; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 836MHz: $\sigma = 0.98$ mho/m $\epsilon_r = 55.2$ $\rho = 1.00$ g/cm³

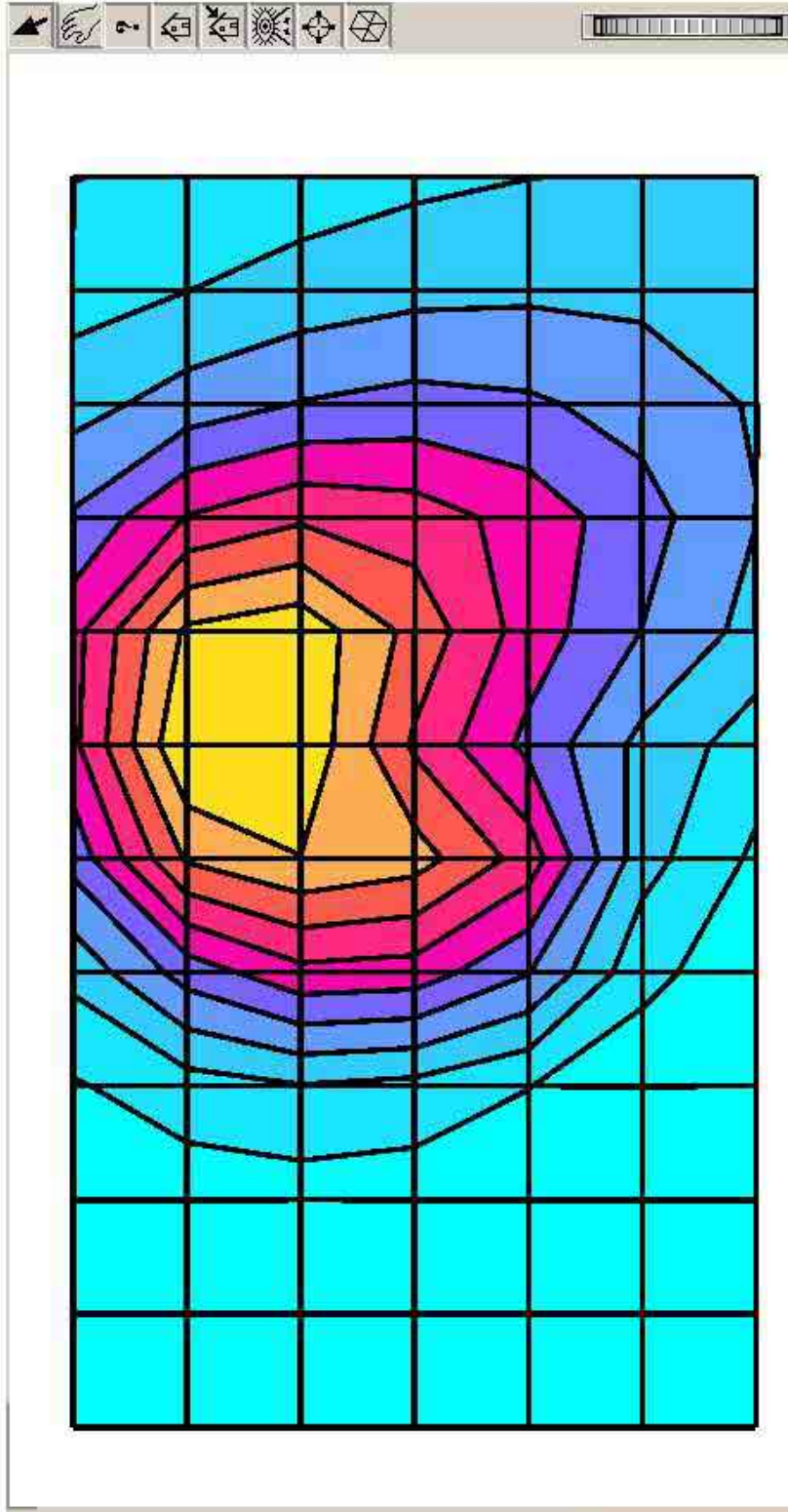
Cube 5x5x7: SAR (1g) 1.16 mW/g; SAR (10g): 0.723 mW/g. (Worst-case extrapolation)

Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0

Powerdft: 0.03 dB

Acer Laptop. Back side of device placed against flat phantom.

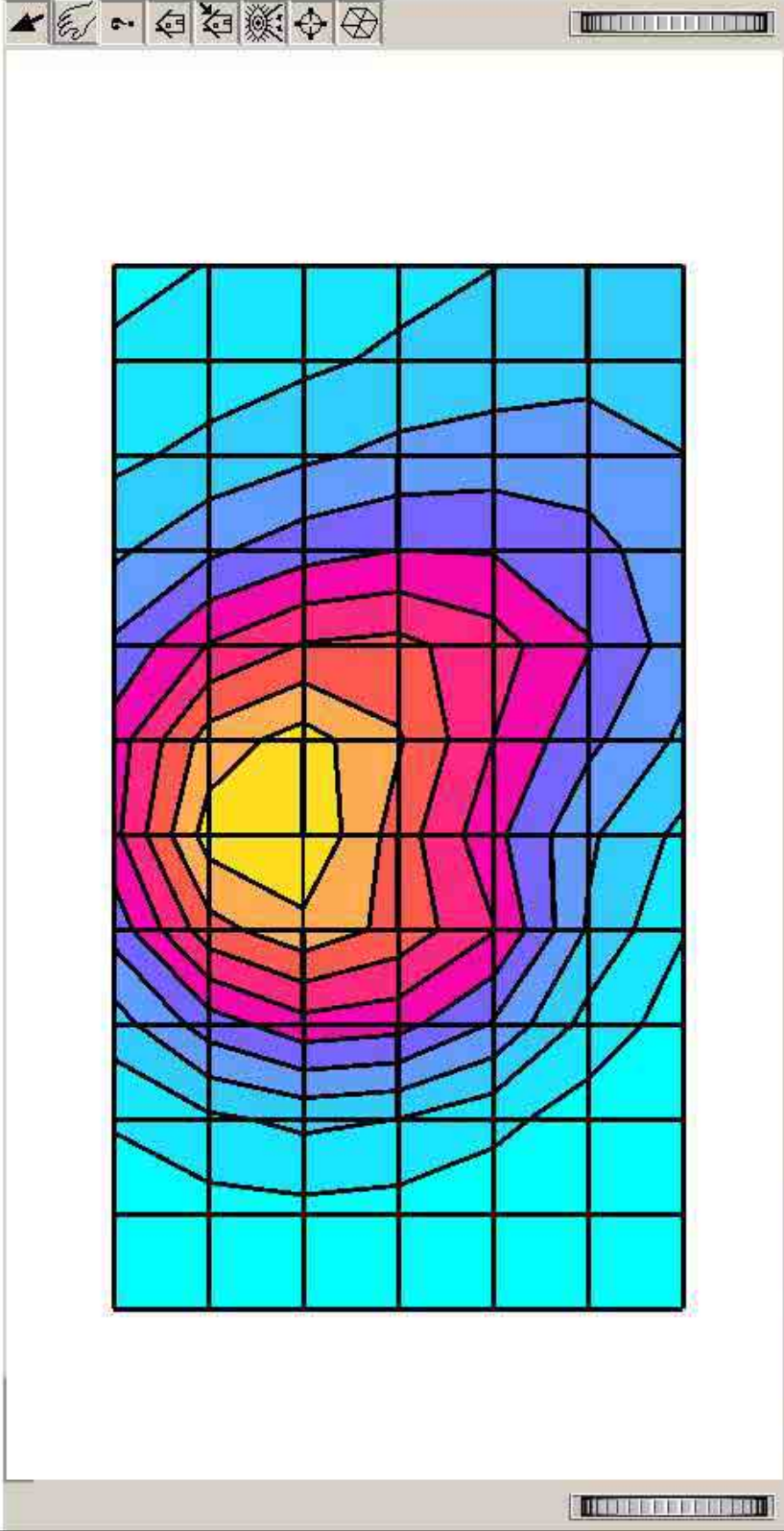
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C





EDG0200

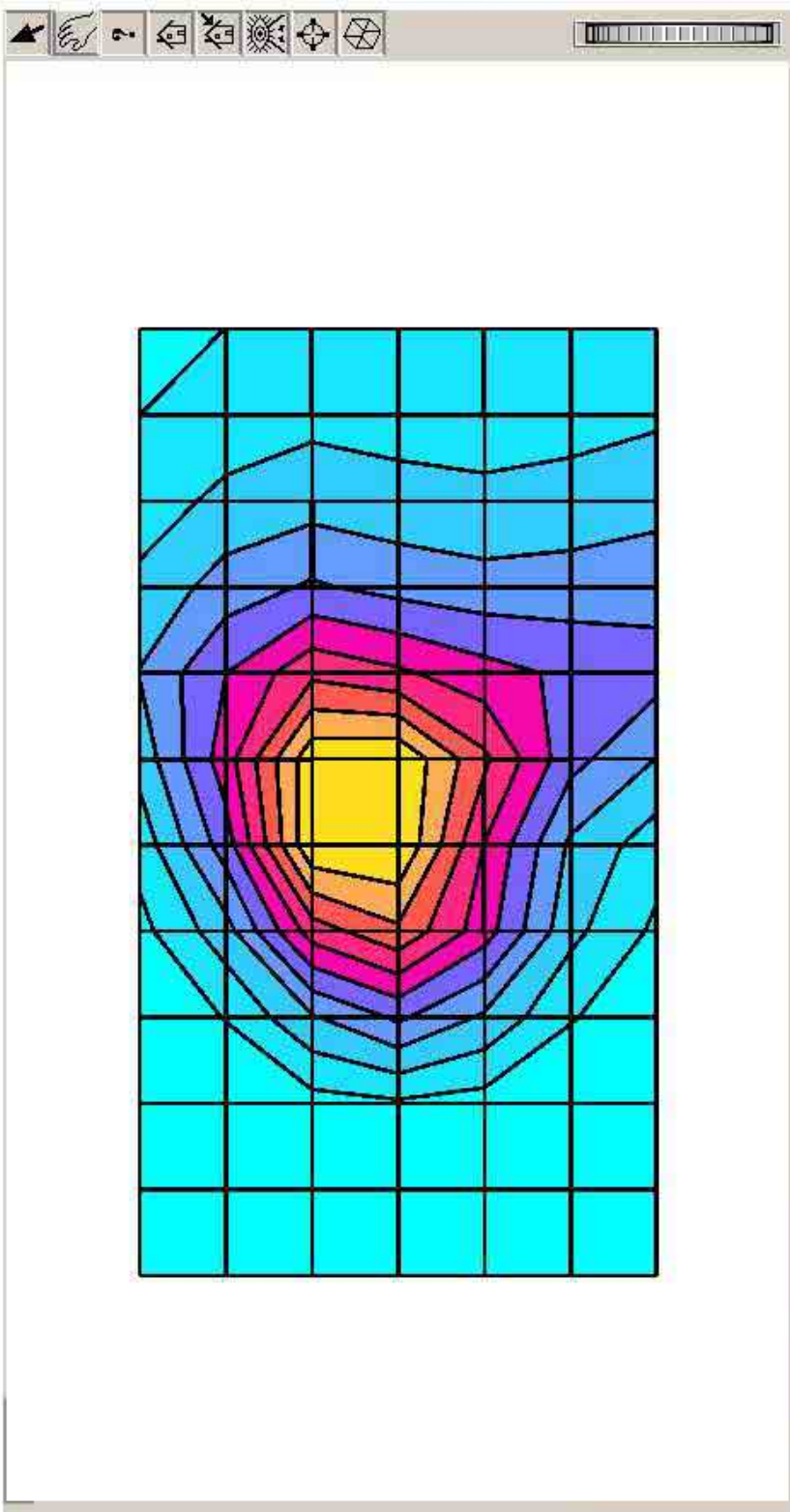
SAM Phantom; Section; Frequency: 849 MHz
Probe: EX3DW3 - SN3316; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 849MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 53.8$ $\rho = 1.00$ g/cm³
Cube 5x5x7: SAR (1g): 0.722 mW/g; SAR (10g): 0.462 mW/g. (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: 0.11 dB
Acer Laptop. Back side of device placed against flat phantom.
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C





EDG0200

SAM Phantom; Section; Frequency: 1880 MHz
Probe: EX3DW3 - SN3516; ConvF(8.72,8.72,8.72); Crest factor: 8.0; Muscle 1800 MHz: $\sigma = 1.46$ mho/m $\epsilon_r = 54.9$ $\rho = 1.00$ g/cm³
Cube 5x5x7; SAR (1g): 0.474 mW/g; SAR (10g): 0.268 mW/g. (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: 0.02 dB
Acer Laptop. Back side of device placed against flat phantom.
Date 8/8/2005; Ambient Temp = 22C; Liquid Temp = 21C



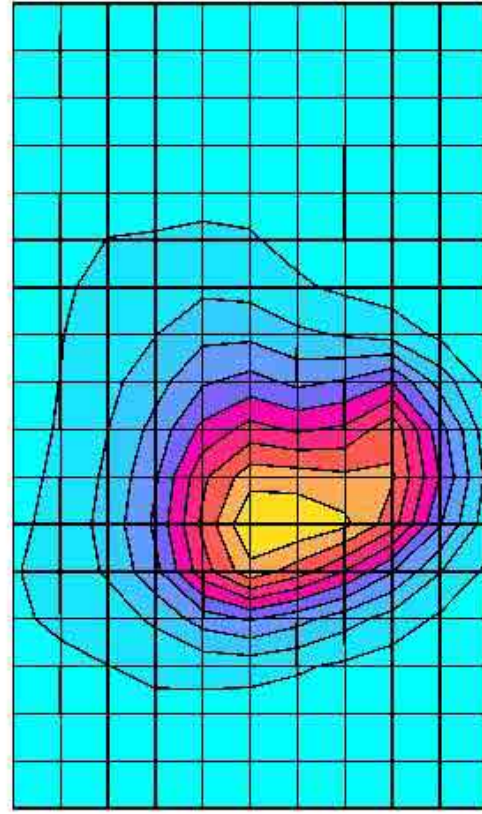
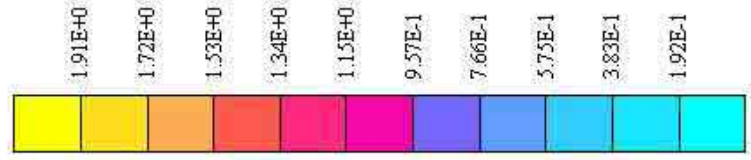


EDG0200

SAM Phantom; Section; Frequency: 824 MHz
Probe: EX3DW3 - SN3516; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 824MHz: $\sigma = 0.94 \text{ mho/m}$ $\epsilon_r = 54.1$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): $1.28 \text{ mW/g} \pm 0.01 \text{ dB}$, SAR (10g): $0.830 \text{ mW/g} \pm 0.02 \text{ dB}$, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: 0.11 dB
Sony Laptop. Back side of device placed against flat phantom.
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C



SAR_{10g} [mW/g]



Zoom

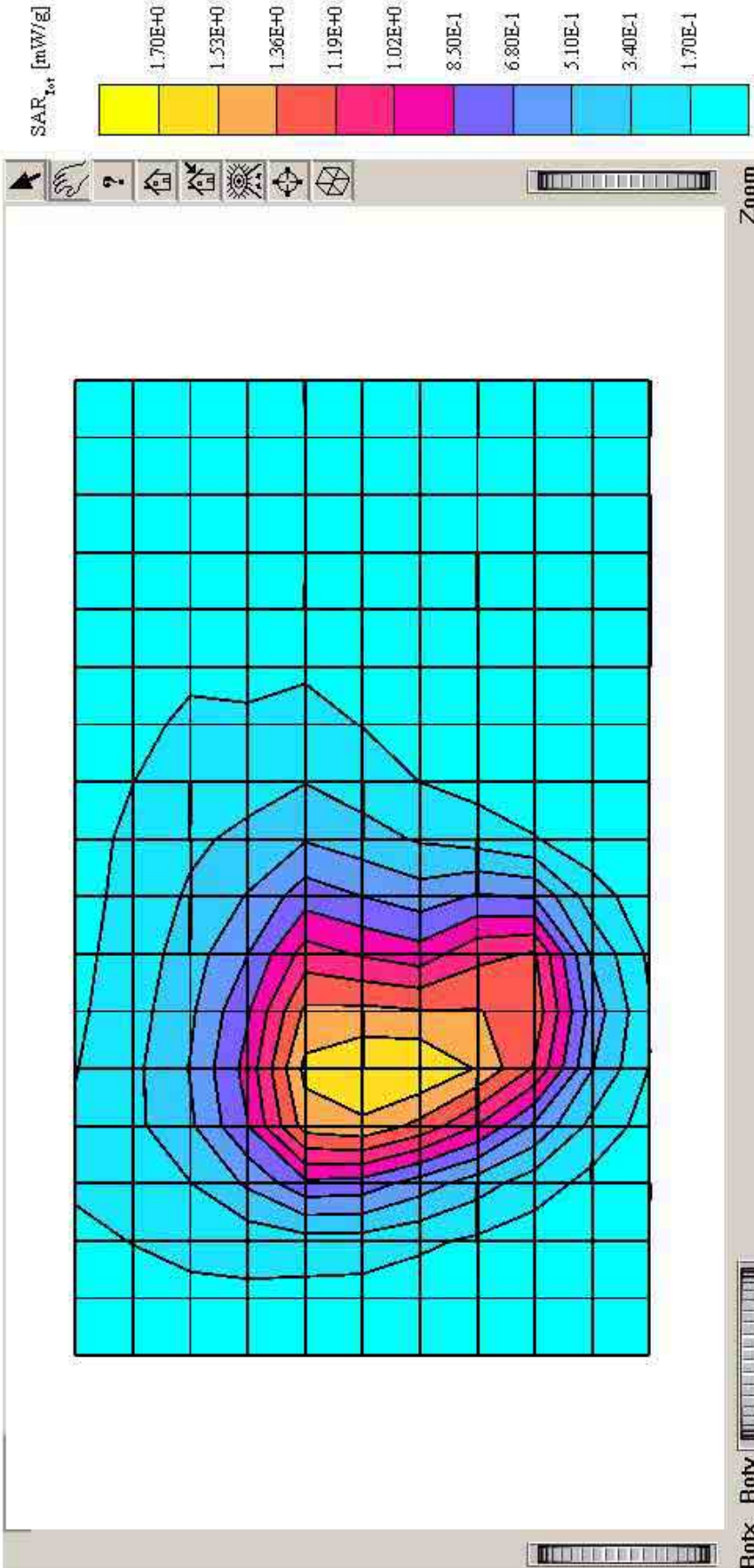


Robt Roty



EDG0200

SAM Phantom; Section; Frequency: 837 MHz
Probe: EX3DW3 - SN3516; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 836MHz: $\sigma = 0.98 \text{ mho/m}$ $\epsilon_r = 55.2$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): SAR (1g): 1.14 mW/g $\pm 0.01 \text{ dB}$, SAR (10g): 0.743 mW/g $\pm 0.00 \text{ dB}$, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: -0.00 dB
Sony Laptop. Back side of device placed against flat phantom.
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C



Zoom

Robt Roty

For Help, press F1

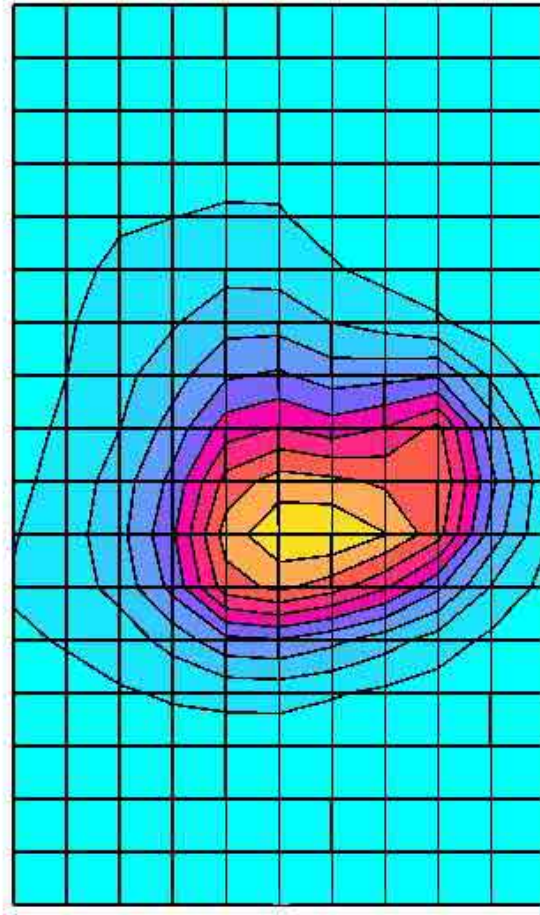
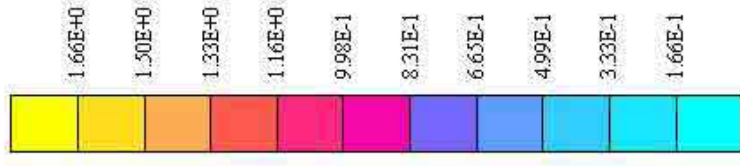


EDG0200

SAM Phantom; Section; Frequency: 849 MHz
Probe: EX3DW3 - SN3316; ConvF(10.31,10.31,10.31); Crest factor: 8.0; Muscle 849MHz: $\sigma = 0.99$ mho/m $\epsilon_r = 53.8$ $\rho = 1.00$ g/cm³
Cubes (2): SAR (1g): 1.13 mW/g ± 0.01 dB, SAR (10g): 0.732 mW/g ± 0.01 dB, (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: 0.01 dB
Sony Laptop. Back side of device placed against flat phantom.
Date 8/9/2005; Ambient Temp = 22C; Liquid Temp = 21C



SAR_{1g} [mW/g]



Zoom

Robt Roty

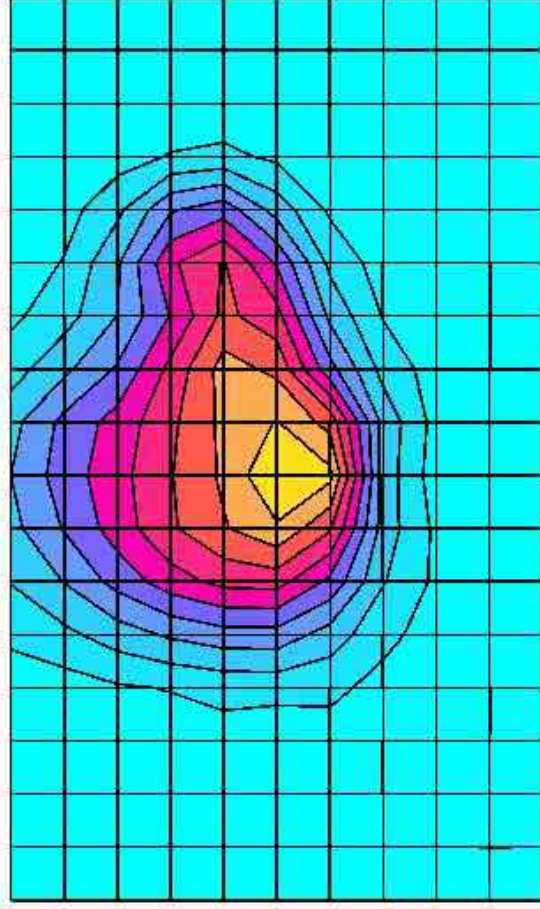
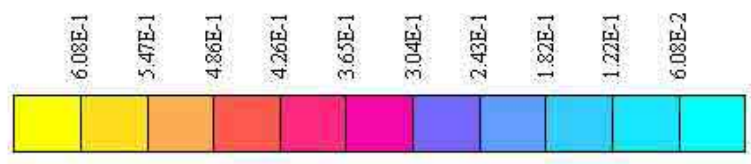


EDG0200

SAM Phantom; Section; Frequency: 1880 MHz
Probe: EX3DW3 - SN3516; ConvF(8.72,8.72,8.72); Crest factor: 8.0; Muscle 1800 MHz: $\sigma = 1.46 \text{ mho/m}$ $\epsilon_r = 54.9$ $\rho = 1.00 \text{ g/cm}^3$
Cube 5x5x7; SAR (1g): 0.403 mW/g; SAR (10g): 0.243 mW/g. (Worst-case extrapolation)
Coarse: Dx = 10.0, Dy = 10.0, Dz = 10.0
Powerdft: -0.07 dB
Sony Laptop. Back side of device placed against flat phantom.
Date 8/8/2005; Ambient Temp = 22C; Liquid Temp = 21C



SAR_{10g} [mW/g]



Zoom



Robt Roty