SAR Compliance Test Report

Test report no.:	-	**Date of report:**	9th of July 2002
Number of pages:	78	**Contact person:**	Sami Savela
		Responsible test engineer:	Sami Savela Kari Nyyssonen

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Tested devices:
GMLNPW-1PA
CBM-12, BMC-3, BMC-2, BLC-2, Accessory Cover

Supplement reports: -

Testing has been carried out in accordance with:

IEEE P1528-200X Draft 6.4
Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques

FCC Supplement C
Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields
Edition 01-01

Documentation:
The documentation of the testing performed on the tested devices is archived for 15 years at PC Site Salo

Test results:
The tested device complies with the requirements in respect of all parameters subject to the test.

The test results and statements relate only to the items tested. The test report shall not be reproduced except in full, without written approval of the laboratory.

Date and signatures: 2002-07-09
For the contents:

Markku Oksanen	Sami Savela
Engineering Manager	Test Engineer

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1. SUMMARY FOR SAR TEST REPORT

Date of test	28.5.2002-28.6.2002
Contact person	Sami Savela
Test plan referred to	-
FCC ID	GMLNPW-1PA
SN, HW, SW of tested device	SN: 12345678901, HW: 1201, SW: 03.01
Accessories used in testing	BMC-3, BMC-2, BLC-2, CBM-12, Accessory Cover
Notes	-
Document code	-
Responsible test engineer	Sami Savela
Measurement performed by	Kari Nyyssonen

1.1 Maximum Results Found during SAR Evaluation

The equipment is deemed to fulfil the requirements if the measured values are less than or equal to the limit.

1.1.1 Head Configuration

Mode	Ch / *f* (MHz)	Power	Position	Limit	Measured	Result
AMPS	383/836	25.4 dBm	Left, Cheek	1.6 mW/g	1.34 mW/g	**PASSED**
TDMA 1900	1000/1880	27.0 dBm	Right, Cheek	1.6 mW/g	0.63 mW/g	**PASSED**

1.1.2 Body Worn Configuration

Mode	Ch / *f*(MHz)	Power	Position	Limit	Measured	Result
AMPS	383/836	25.4 dBm	Body worn with CBM-12	1.6 mW/g	1.07 mW/g	**PASSED**
TDMA1900	2/1850	26.9 dBm	Body worn with CBM-12	1.6 mW/g	0.58 mW/g	**PASSED**

1.1.3 Measurement Uncertainty

Combined Standard Uncertainty	**±13.6%**
Expanded Standard Uncertainty (k=2)	**±27.1%**

2. DESCRIPTION OF TESTED DEVICE

Device category	Portable device		
Exposure environment	Uncontrolled exposure		
Unit type	Prototype unit		
Case type	Fixed case		
Modes of Operation	AMPS	IS136-800	IS136-1900
Modulation Mode		π/4 Quadrature Phase Shift Keying	π/4 Quadrature Phase Shift Keying
Duty Cycle	1	1/3	1/3
Transmitter Frequency Range (MHz)	824.04 - 848.97	824.04 - 848.97	1850.04 - 1909.92

2.1 Picture of Phone

Basic cover and Accessory cover.

2.2 Description of the Antenna

Type	Internal integrated antenna	
Dimensions (mm)	Maximum width	36 mm
	Maximum length	23 mm
Location	Top portion of the phone, back side	

2.3 Battery Options

There are BMC-3, BMC-2 and BLC-2 available for tested device.

In body worn configuration they do not affect the separation distance between flat-phantom and tested device and thus should not affect the SAR values. The SAR was measured with BMC-3, which has the highest capacity. BMC-2 and BLC-2 were also checked in configurations resulting highest SAR.

2.4 Body Worn Accessories

Following body worn accessories are available for GMLNPW-1PA:

- Carrying Case CBM-12

3. TEST CONDITIONS

3.1 Ambient Conditions

Ambient temperature (°C)	25 ±1
Tissue simulating liquid temperature (°C)	25 ±1

3.2 RF characteristics of the test site

Tests were performed in a monitored RF environment.

3.3 Test Signal, Frequencies, and Output Power

The phone was equipped with a special firmware, which allowed controlling the transmitter from its keypad.

In all operating bands the measurements were performed on lowest, middle and highest channels.

The phone was set to maximum power level during the all tests and at the beginning of the each test the battery was fully charged. Power output was measured from external RF connector.

DASY3 system measures power drift during SAR testing by comparing e-field in the same location at the beginning and at the end of measurement. These records were used to monitor stability of power output.

4. DESCRIPTION OF THE TEST EQUIPMENT

The measurements were performed with an automated near-field scanning system, DASY3, manufactured by Schmid & Partner Engineering AG (SPEAG) in Switzerland.

Test Equipment	Serial Number	Due Date
DASY3 DAE V1	388	01/2003
E-field Probe ET3DV6	1599	08/2002
E-field Probe ET3DV6	1396	01/2003
Dipole Validation Kit, D900V2	003	01/2004
Dipole Validation Kit, D900V2	056	01/2004
Dipole Validation Kit, D1800V2	207	01/2004
Dipole Validation Kit, D1800V2	256	01/2004

E-field probe calibration records are presented in Appendix C.

Additional equipment needed in validation

Test Equipment	Model	Serial Number	Due Date
Signal Generator	R&S, SME 03	1038.6002.03	02/2003
Amplifier	Mini-Circuits, ZHL-42	854105	-
Power Meter	R&S, NRVD	857.8008.02	12/2003
Power Sensor	R&S, NRV-Z53	857.0500.02	12/2003
Vector Network Analyzer	HP, 8753B	2729A02487	04/2003
Dielectric Probe Kit	HP, 85070B	Us33020242	-

4.1 System Accuracy Verification

The probes are calibrated annually by the manufacturer. Dielectric parameters of the simulating liquids are measured using a HP Dielectric probe kit model 85070B and HP 8753B vector network analyzer.

The SAR measurement of the DUT were done within 24 hours of system accuracy verification, which was done using the dipole validation kit.

The dipole antenna, which is manufactured by Schmid & Partner Engineering AG, is matched to be used near flat phantom filled with tissue simulating solution. Length of 900 MHz dipole is 149 mm with overall height of 330mm. Dipole length for 1800 MHz is 72 mm with overall height of 300mm. A specific distance holder is used in the positioning of both antennas to ensure correct spacing between the phantom and the dipole. Manufacturer's reference dipole data is presented in Appendix C.

Power level of 250 mW was supplied to a dipole antenna placed under the flat section of SAM phantom. The validation results are in the table below and printout of the validation test is presented in Appendix A. All the measured parameters were within the specification.

Tissue	*f* (MHz)	Description	SAR (W/kg), 1g	Dielectric Parameters		Temp (°C)
				ε_r	σ (S/m)	
Head	900	Measured 3.6.02	11.0	38.9	0.92	25
		Measured 24.6.02	11.5	39.4	0.98	25
		Reference Result	11.2	40.6	0.95	N/A
Head	1800	Measured 28.5.02	35.9	38.8	1.36	25
		Measured 30.5.02	36.7	38.9	1.39	25
		Measured 25.6.02	39.2	41.7	1.36	25
		Measured 26.6.02	39.0	40.7	1.34	25
		Reference Result	39.0	40.5	1.35	N/A
Muscle	900	Measured 4.6.02	12.2	57.6	1.08	25
		Measured 28.6.02	11.2	57.5	0.99	25
		Reference Result	11.7	54.8	1.03	N/A
Muscle	1800	Measured 31.5.02	39.2	54.0	1.46	25
		Measured 27.6.02	37.3	53.4	1.36	25
		Reference Result	39.5	53.5	1.45	N/A

4.2 Tissue Simulants

All dielectric parameters of tissue simulants were measured within 24 hours of SAR measurements. The depth of the tissue simulant in the ear reference point of the phantom was 15cm ± 5mm during all the tests. Volume for each tissue simulant was 26 liters.

4.2.1 Head Tissue Simulant

The composition of the brain tissue simulating liquid for 835MHz is

58.31% Sugar
39.74% De-Ionized Water
1.55% Salt
0.25% HEC
0.15% Bactericide

and for 1900MHz

44.91% 2-(2-butoxyethoxy) Ethanol
54.88% De-Ionized Water
0.21% Salt

f (MHz)	Description	Dielectric Parameters		Temp (°C)
		ε_r	σ (S/m)	
836	Measured 3.6.02	39.5	0.86	25
	Measured 24.6.02	39.9	0.91	25
	Recommended Values	41.5	0.90	20-26
1880	Measured 28.5.02	38.2	1.43	25
	Measured 30.5.02	38.2	1.45	25
	Measured 25.6.02	41.1	1.44	25
	Measured 26.6.02	40.4	1.42	25
	Recommended Values	40.0	1.40	20-26

Recommended values are adopted from OET Bulletin 65 (97-01) Supplement C (01-01).

4.2.2 Muscle Tissue Simulant

The composition of the muscle tissue simulating liquid for 835MHz is

- 55.97% De-Ionized Water
- 41.76% Sugar
- 1.21% HEC
- 0.79% Salt
- 0.27% Preservative

and for 1900MHz

- 69.02% De-Ionized Water
- 30.76% Diethylene Glycol Monobutyl Ether
- 0.22% Salt

f (MHz)	Description	Dielectric Parameters		Temp (°C)
		ε_r	σ (S/m)	
836	Measured 4.6.02	57.7	0.99	25
	Measured 28.6.02	57.9	0.93	25
	Recommended Values	55.2	0.97	20-26
1880	Measured 31.5.02	53.6	1.52	25
	Measured 27.6.02	53.0	1.45	25
	Recommended Values	53.3	1.52	20-26

Recommended values are adopted from OET Bulletin 65 (97-01) Supplement C (01-01).

4.3 Phantoms

“SAM v4.0” phantom", manufactured by SPEAG, was used during the measurement. It has fiberglass shell integrated in a wooden table. The shape of the shell corresponds to the phantom defined by SCC34-SC2. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. 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.

The thickness of phantom shell is 2 mm except for the ear, where an integrated ear spacer provides a 6 mm spacing from the tissue boundary. Manufacturer reports tolerance in shell thickness to be ±0.1mm.

4.4 Isotropic E-Field Probe ET3DV6

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., glycolether)
Calibration	Calibration ceritifcate in Appendix C
Frequency	10 MHz to 3 GHz (dosimetry); Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Optical Surface Detection	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic Range	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 330 mm Tip length: 16 mm Body diameter: 12 mm Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application	General dosimetry up to 3 GHz Compliance tests of mobile phones Fast automatic scanning in arbitrary phantoms

5. DESCRIPTION OF THE TEST PROCEDURE

5.1 Test Positions

Device holder was provided by SPEAG together with DASY3.

5.1.1 Against Phantom Head

Measurements were made on both the "left hand" and "right hand" side of the phantom.

The device was positioned against phantom according to OET Bulletin 65 (97-01) Supplement C (01-01) . Definitions of terms used in aligning the device to a head phantom are available in IEEE Draft Standard P1528-2001 “Recommended Practice for Determining the Spatial-Peak Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques”

5.1.1.1 Initial Ear Position

The device was initially positioned with the earpiece region pressed against the ear spacer of a head phantom parallel to the “Neck-Front” line defined along the base of the ear spacer that contains the “ear reference point”. The “test device reference point” is aligned to the “ear reference point” on the head phantom and the “vertical centerline” is aligned to the “phantom reference plane”.

5.1.1.2 Cheek Position

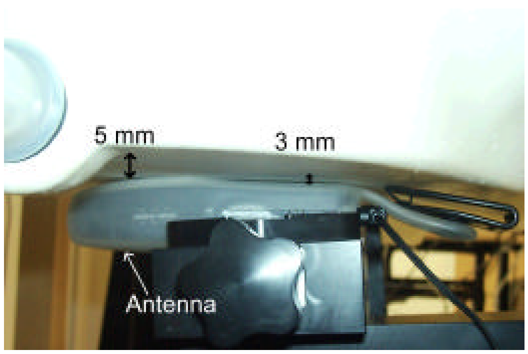
“Initial ear position” alignments are maintained and the device is brought toward the mouth of the head phantom by pivoting along the “Neck-Front” line until any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom or when any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

5.1.1.3 Tilt Position

In the “Cheek Position”, if the earpiece of the device is not in full contact with the phantom’s ear spacer and the peak SAR location for the “cheek position” is located at the ear spacer region or corresponds to the earpiece region of the handset, the device is returned to the “initial ear position” by rotating it away from the mouth until the earpiece is in full contact with the ear spacer. Otherwise, the device is moved away from the cheek perpendicular to the line passes through both “ear reference points” for approximate 2-3 cm. While it is in this position, the device is tilted away from the mouth with respect to the “test device reference point” by 15°. After the tilt, it is then moved back toward the head perpendicular to the line passes through both “ear reference points” until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process is repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.

5.1.2 Body Worn Configuration

All body worn accessories listed in section 2.4 were tested for the FCC RF exposure compliance. The phone was positioned into carrying case/belt clip and placed below of the flat phantom. Headset was connected during measurements. Body worn accessory CBM-12 has openings for display/earpiece on one side to allow positioning of the phone only in one way into carrying case.



5.2 Scan Procedures

First coarse scans are used for quick determination of the field distribution. Next a cube scan, 5x5x7 points; spacing between each point 8x8x5 mm, is performed around the highest E-field value to determine the averaged SAR-distribution over 1g.

5.3 SAR Averaging Methods

The maximum SAR value is averaged over its volume using interpolation and extrapolation.

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot" -condition [W. Gander, Computermathematik, p. 141-150] (x, y and z -directions) [Numerical Recipes in C, Second Edition, p 123].

The extrapolation is based on least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 30 mm in all z-axis, polynomials of order four are calculated. This polynomial is then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1mm from one another.

6. MEASUREMENT UNCERTAINTY

6.1 Description of Individual Measurement Uncertainty

6.1.1 Assessment Uncertainty

Uncertainty description	Uncert. value %	Probability distribution	Div.	c_i [1]	Stand. uncert (1g) %	v_i [2] or v_{eff}
Measurement System						
Probe calibration	±4.4	normal	1	1	±4.4	∞
Axial isotropy of the probe	±4.7	rectangular	√3	$(1-c_p)^{1/2}$	±1.9	∞
Sph. Isotropy of the probe	±9.6	rectangular	√3	$(c_p)1^{/2}$	±3.9	∞
Spatial resolution	±0.0	rectangular	√3	1	±0.0	∞
Boundary effects	±5.5	rectangular	√3	1	±3.2	∞
Probe linearity	±4.7	rectangular	√3	1	±2.7	∞
Detection limit	±1.0	rectangular	√3	1	±0.6	∞
Readout electronics	±1.0	normal	1	1	±1.0	∞
Response time	±0.8	rectangular	√3	1	±0.5	∞
Integration time	±1.4	rectangular	√3	1	±0.8	∞
RF ambient conditions	±3.0	rectangular	√3	1	±1.7	∞
Mech. constrains of robot	±0.4	rectangular	√3	**1**	±0.2	∞
Probe positioning	±2.9	rectangular	√3	1	±1.7	∞
Extrap. and integration	±3.9	rectangular	√3	1	±2.3	∞
Test Sample Related						
Device positioning	±6.0	normal	0.89	1	±6.7	12
Device holder uncertainty	±5.0	normal	0.84	1	±5.9	8
Power drift	±5.0	rectangular	√3	1	±2.9	∞
Phantom and Setup						
Phantom uncertainty	±4.0	rectangular	√3	**1**	±2.3	∞
Liquid conductivity (target)	±5.0	rectangular	√3	**0.6**	±1.7	∞
Liquid conductivity (meas.)	±10.0	rectangular	√3	**0.6**	±3.5	∞
Liquid permittivity (target)	±5.0	rectangular	√3	**0.6**	±1.7	∞
Liquid permittivity (meas.)	±5.0	rectangular	√3	**0.6**	±1.7	∞
Combined Standard Uncertainty					±13.6	
Expanded Standard Uncertainty (k=2)					±27.1	

7. RESULTS

Corresponding SAR distribution printouts of maximum results in every operating mode and position are shown in Appendix B. It also includes Z-plots for each liquid used in measurements. The SAR distributions are substantially similar or equivalent to the plots submitted regardless of used channel in each mode and position. Also one cube plot is included.

7.1 Head Configuration

Basic Cover

Mode	Channel/ *f* (MHz)	Power (dBm)	SAR, averaged over 1g (mW/g)			
			Left-hand		Right-hand	
			Cheek	Tilted	Cheek	Tilted
AMPS 800	991/824.04	25.4	0.96	0.66	0.90	0.56
	383/836.49	25.4	1.09	0.83	1.11	0.66
	799/848.97	25.3	0.97	0.74	1.01	0.66
TDMA 800	991/824.04	27.3	-	-	0.49	-
	383/836.49	27.4	-	-	0.60	-
	799/848.97	27.4	-	-	0.56	-
TDMA 1900	2/1850.04	26.9	0.53	0.50	0.47	0.46
	1000/1879.98	27.0	0.55	0.60	0.56	0.52
	1998/1909.92	27.0	0.50	0.54	0.43	0.47

Battery Check with BMC-2

AMPS 800	383/836.49	25.4	1.13	0.81	1.16	0.73
TDMA 1900	1000/1879.98	27.0	0.59	0.63	0.61	0.58

Battery Check with BLC-2

AMPS 800	383/836.49	25.4	1.16	0.82	1.17	0.73
TDMA 1900	1000/1879.98	27.0	0.58	0.62	0.57	0.56

Accessory Cover

Mode	Channel/ *f* (MHz)	Power (dBm)	SAR, averaged over 1g (mW/g)			
			Left-hand		Right-hand	
			Cheek	Tilted	Cheek	Tilted
AMPS 800	991/824.04	25.4	1.11	0.72	1.01	0.63
	383/836.49	25.4	1.32	0.86	1.25	0.79
	799/848.97	25.3	1.21	0.80	1.12	0.74
TDMA 800	991/824.04	27.3	0.51	-	-	-
	383/836.49	27.4	0.65	-	-	-
	799/848.97	27.4	0.43	-	-	-
TDMA 1900	2/1850.04	26.9	0.52	0.46	0.57	0.41
	1000/1879.98	27.0	0.53	0.49	0.58	0.44
	1998/1909.92	27.0	0.47	0.46	0.50	0.39

Battery Check with BMC-2

AMPS 800	383/836.49	25.4	1.31	0.87	1.30	0.81
TDMA 1900	1000/1879.98	27.0	0.59	0.45	0.63	0.49

Battery Check with BLC-2

AMPS 800	383/836.49	25.4	1.34	0.85	1.27	0.78
TDMA 1900	1000/1879.98	27.0	0.55	0.50	0.58	0.45

7.2 Body Worn Configuration

Basic Cover

Mode	Channel/ *f* (MHz)	Power (dBm)	SAR, averaged over 1g (mW/g)
			Carry Case CBM-12
AMPS 800	991/824.04	25.4	0.97
	383/836.49	25.4	0.98
	799/848.97	25.3	1.02
TDMA 800	991/824.04	27.3	-
	383/836.49	27.4	-
	799/848.97	27.4	0.47
TDMA 1900	2/1850.04	26.9	0.49
	1000/1879.98	27.0	0.35
	1998/1909.92	27.0	0.26

Battery Check with BMC-2

AMPS 800	799/848.97	25.3	0.96
TDMA 1900	2/1850.04	26.9	0.58

Battery Check with BLC-2

AMPS 800	799/848.97	25.3	0.94
TDMA 1900	2/1850.04	26.9	0.52

Accessory Cover

Mode	Channel/ *f* (MHz)	Power (dBm)	SAR, averaged over 1g (mW/g)
			Carry Case CBM-12
AMPS 800	991/824.04	25.4	0.98
	383/836.49	25.4	1.07
	799/848.97	25.3	1.02
TDMA 800	991/824.04	27.3	-
	383/836.49	27.4	0.56
	799/848.97	27.4	-
TDMA 1900	2/1850.04	26.9	0.42
	1000/1879.98	27.0	0.30
	1998/1909.92	27.0	0.22

Battery Check with BMC-2

AMPS 800	383/836.49	25.4	1.01
TDMA 1900	2/1850.04	26.9	0.44

Battery Check with BLC-2

AMPS 800	383/836.49	25.4	0.98
TDMA 1900	2/1850.04	26.9	0.50

APPENDIX A.

Validation Test Printouts

Dipole 1800 MHz, 05/28/02

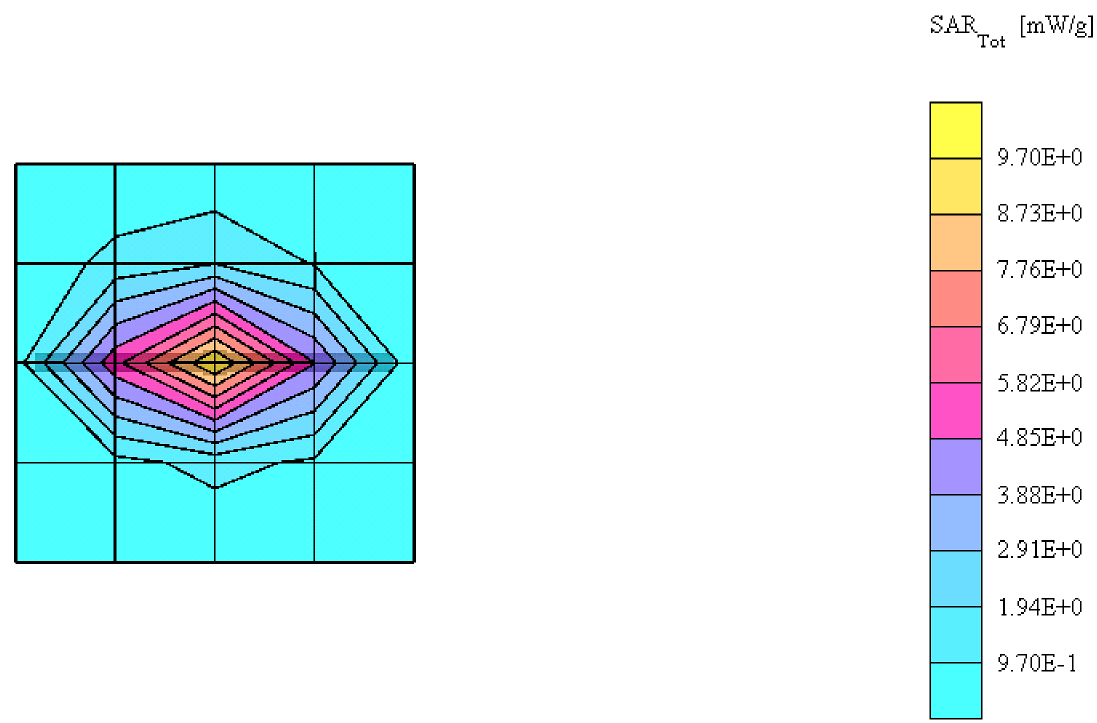
SAM 2; Flat

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 1.0; Harmonized 1800 MHz: $\sigma = 1.36$ mho/m $\varepsilon_r = 38.8$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 16.6 mW/g ± 0.10 dB, SAR (1g): 8.99 mW/g ± 0.06 dB, SAR (10g): 4.68 mW/g ± 0.03 dB, (Worst-case extrapolation)

Penetration depth: 8.2 (7.8, 9.1) [mm]

t=24,9°C, Powerdrift: -0.54 dB



Dipole 1800 MHz, 05/30/02

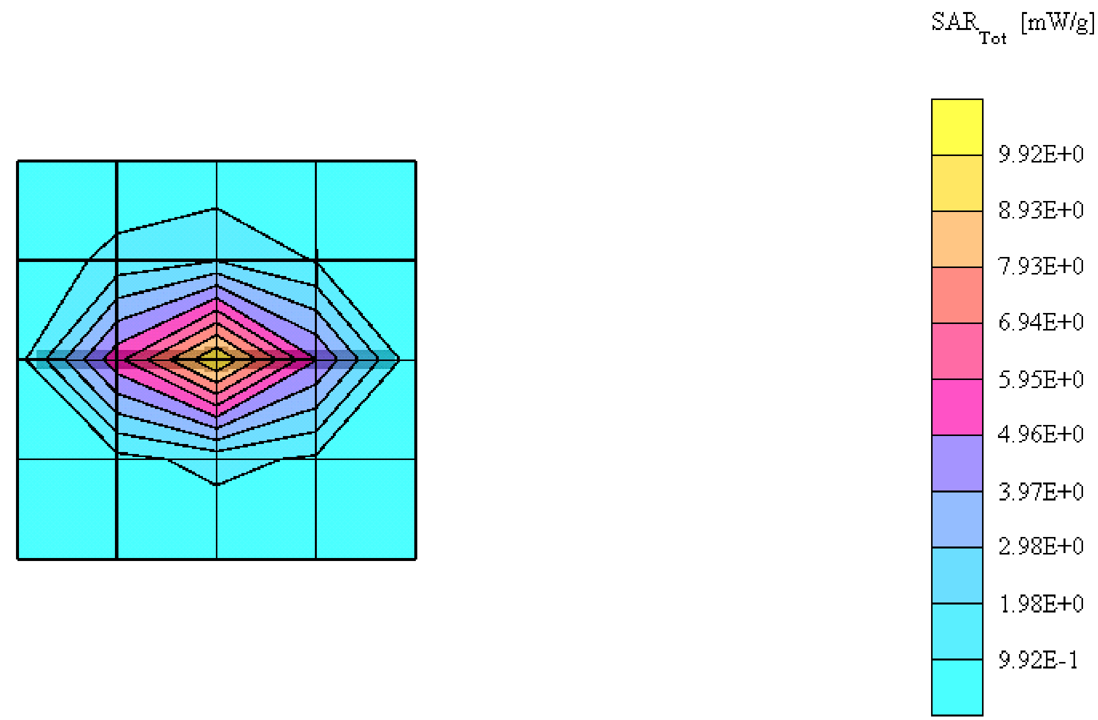
SAM 2 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 1.0; Harmonized 1800 MHz: $\sigma = 1.39$ mho/m $\varepsilon_r = 38.9$ $\rho = 1.00$ g/cm^3

Cubes (2): SAR (1g): 9.19 mW/g ± 0.06 dB, SAR (10g): 4.79 mW/g ± 0.03 dB, (Worst-case extrapolation)

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

t=24,9°C, Powerdrift: -0.54 dB



Dipole 1800 MHz, 05/31/02

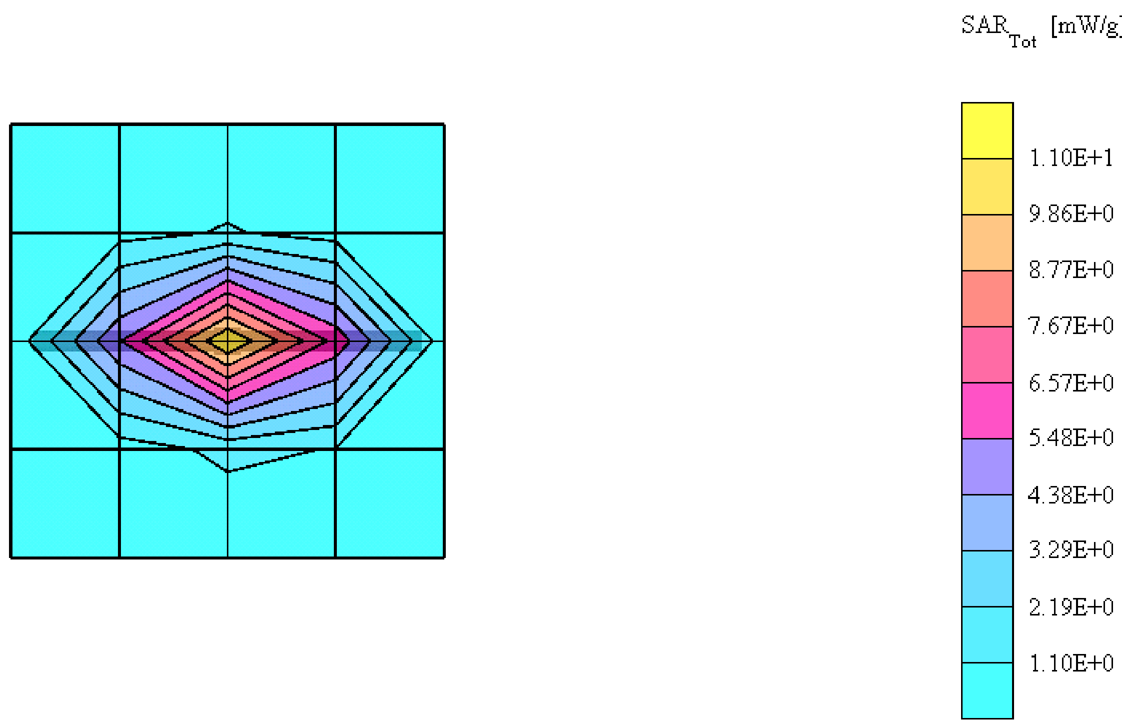
SAM 2; Flat

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Body 1800 MHz: $\sigma = 1.46$ mho/m $\varepsilon_r = 54.0$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 17.7 mW/g ± 0.09 dB, SAR (1g): 9.80 mW/g ± 0.05 dB, SAR (10g): 5.24 mW/g ± 0.03 dB, (Worst-case extrapolation)

Penetration depth: 9.4 (8.5, 10.8) [mm]

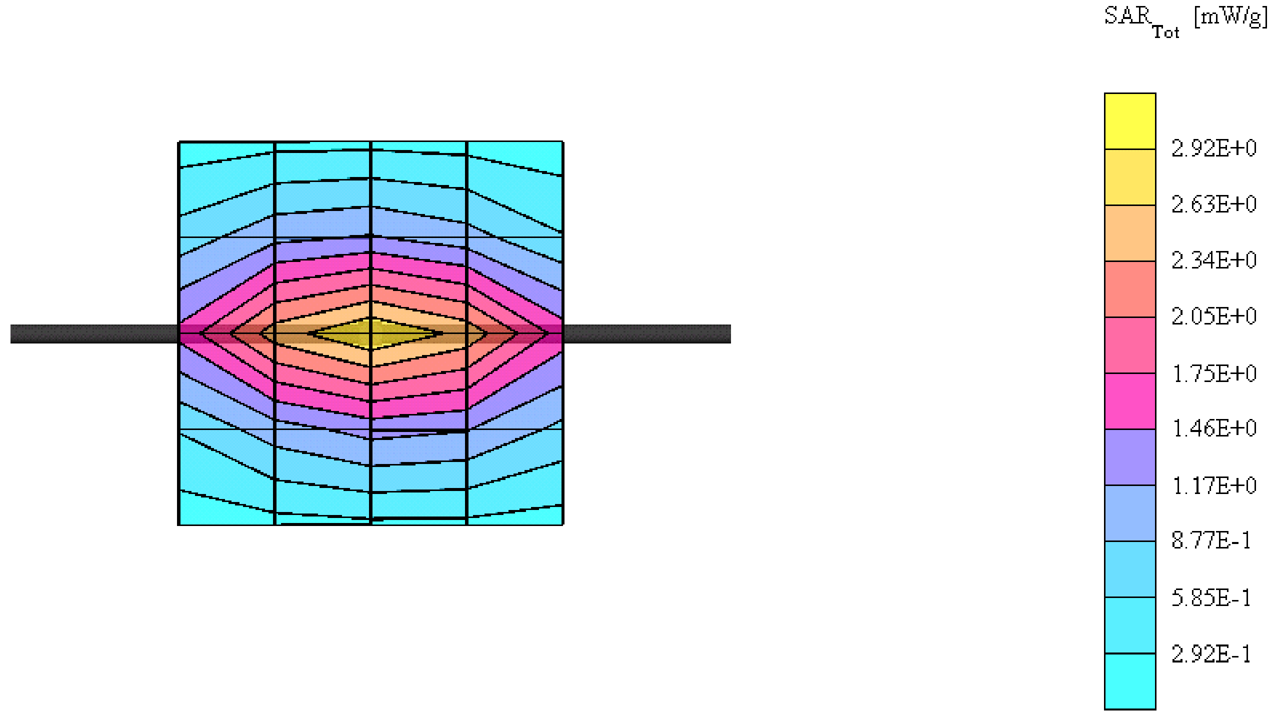
t=24,8°C, Powerdrift: -0.02 dB



Dipole 900 MHz, 06/03/02

SAM 1; Flat

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 900 MHz: $\sigma = 0.92$ mho/m $\varepsilon_r = 38.9$ $\rho = 1.00$ g/cm^3
Cubes (2): Peak: 4.40 mW/g ± 0.01 dB, SAR (1g): 2.76 mW/g ± 0.01 dB, SAR (10g): 1.74 mW/g ± 0.02 dB, (Worst-case extrapolation)
Penetration depth: 11.6 (10.6, 13.0) [mm]
t=24,9°C, Powerdrift: 0.04 dB



Dipole 900 MHz, 06/04/02

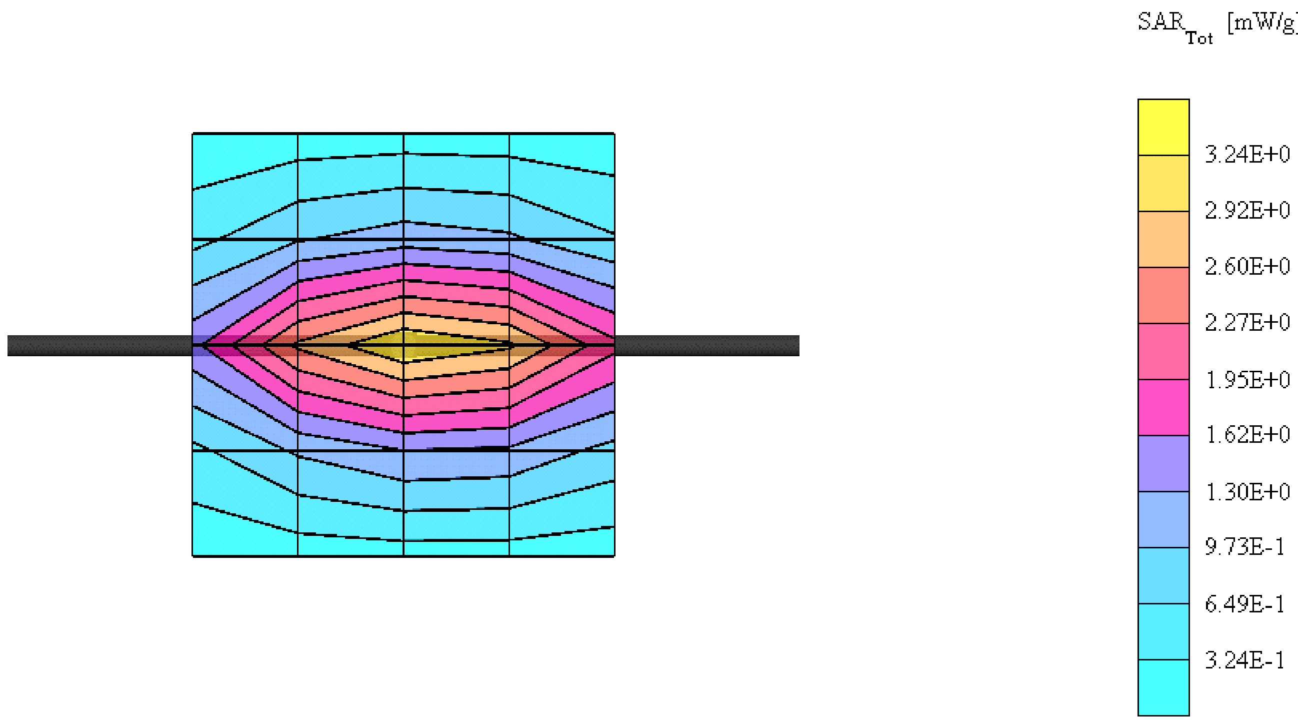
SAM 2; Flat

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 900 MHz: $\sigma = 1.08$ mho/m $\varepsilon_r = 57.6$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 4.77 mW/g ± 0.01 dB, SAR (1g): 3.06 mW/g ± 0.01 dB, SAR (10g): 1.97 mW/g ± 0.01 dB, (Worst-case extrapolation)

Penetration depth: 12.6 (11.3, 14.2) [mm]

t=24,8°C, Powerdrift: -0.01 dB



Dipole 900 MHz, 06/24/02

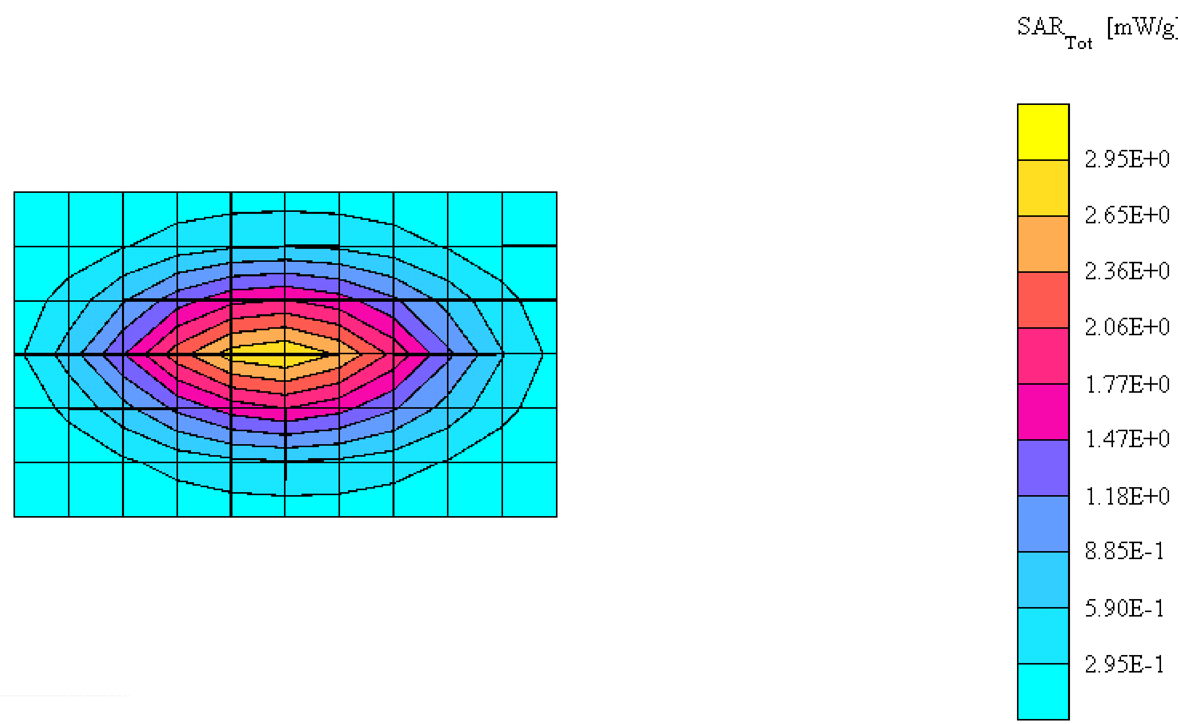
SAM 1; Flat

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 900 MHz: $\sigma = 0.98$ mho/m $\varepsilon_r = 39.4$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 4.56 mW/g ± 0.02 dB, SAR (1g): 2.88 mW/g ± 0.01 dB, SAR (10g): 1.82 mW/g ± 0.00 dB, (Worst-case extrapolation)

Penetration depth: 11.6 (10.7, 12.9) [mm]

t=24,8°C, Powerdrift: 0.00 dB



Dipole 1800 MHz, 06/25/02

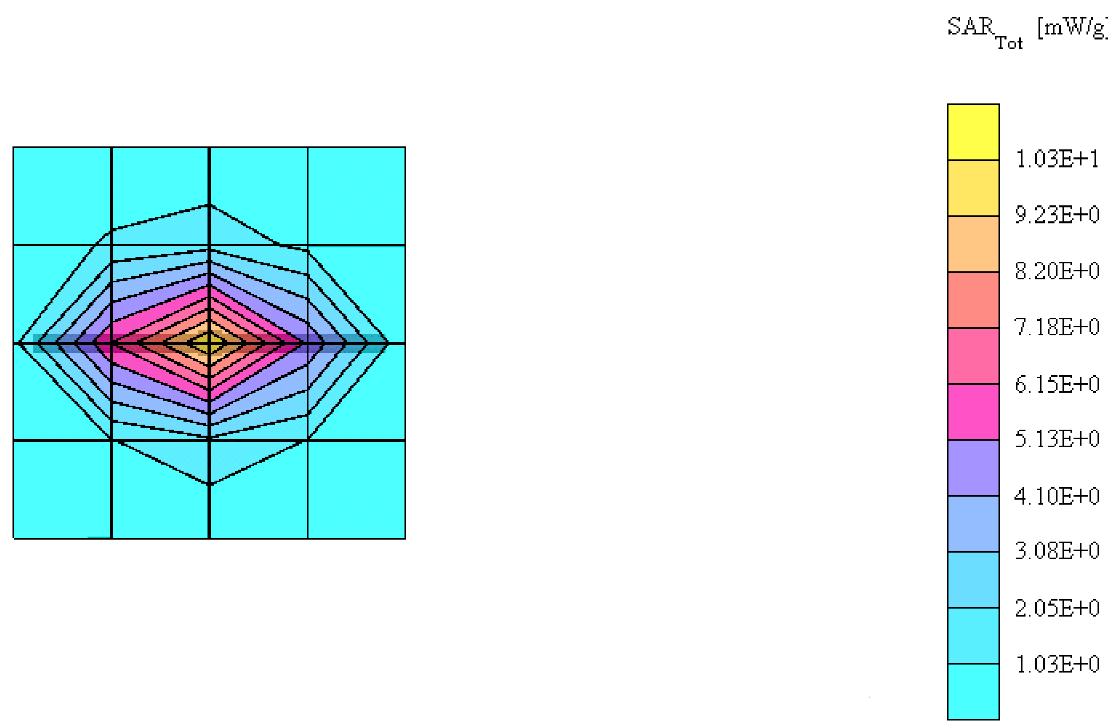
SAM 2; Flat

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 1.0; Head 1800 MHz: $\sigma = 1.36$ mho/m $\varepsilon_r = 41.7$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 17.9 mW/g ± 0.06 dB, SAR (1g): 9.79 mW/g ± 0.00 dB, SAR (10g): 5.15 mW/g ± 0.03 dB, (Worst-case extrapolation)

Penetration depth: 8.3 (8.0, 9.1) [mm]

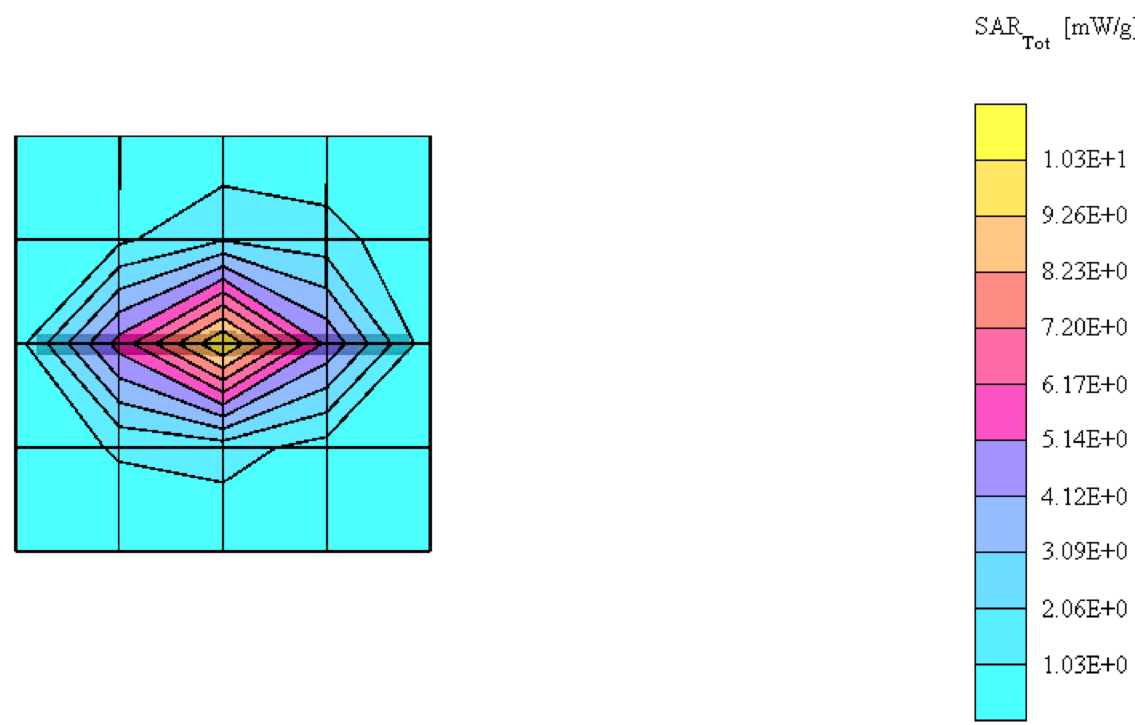
t=24,9°C, Powerdrift: -0.01 dB



Dipole 1800 MHz, 06/26/02

SAM 2; Flat

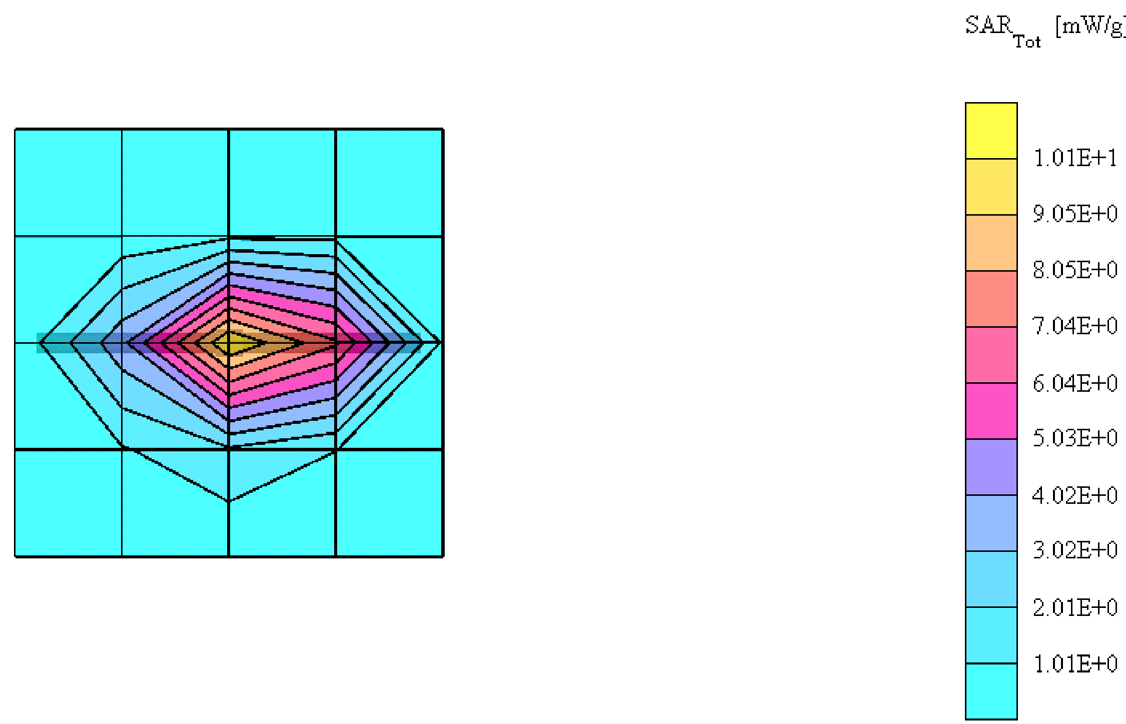
Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 1.0; Head 1800 MHz: $\sigma = 1.34$ mho/m $\varepsilon_r = 40.7$ $\rho = 1.00$ g/cm^3
Cubes (2): Peak: 17.9 mW/g ± 0.04 dB, SAR (1g): 9.76 mW/g ± 0.01 dB, SAR (10g): 5.13 mW/g ± 0.01 dB, (Worst-case extrapolation)
Penetration depth: 8.4 (8.0, 9.3) [mm]
t=24,9°C, Powerdrift: -0.00 dB



Dipole 1800 MHz, 06/27/02

SAM 2; Flat

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Body 1800 MHz: $\sigma = 1.36$ mho/m $\varepsilon_r = 53.4$ $\rho = 1.00$ g/cm^3
Cubes (2): Peak: 16.8 mW/g ± 0.13 dB, SAR (1g): 9.33 mW/g ± 0.13 dB, SAR (10g): 4.99 mW/g ± 0.13 dB, (Worst-case extrapolation)
Penetration depth: 9.5 (8.6, 10.9) [mm]
t=24,8°C, Powerdrift: -0.15 dB



Dipole 900 MHz, 06/28/02

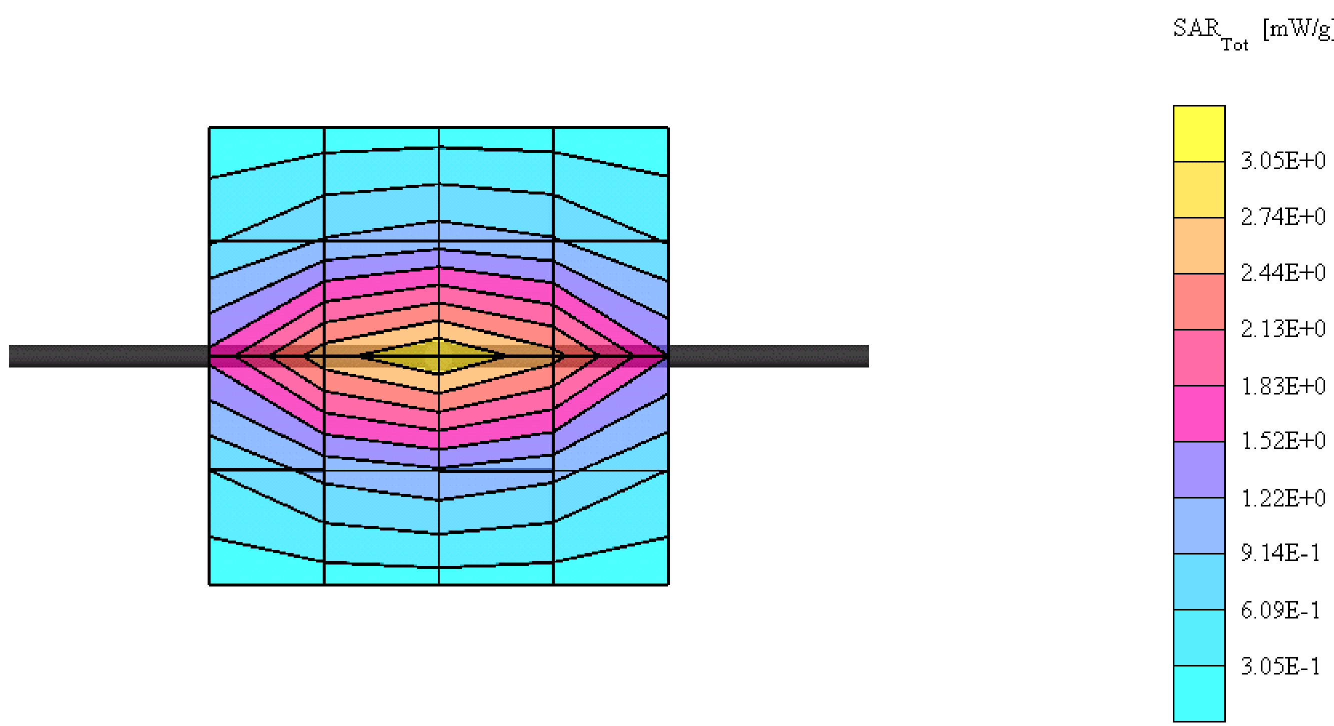
SAM 2; Flat

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 900 MHz: $\sigma = 0.99$ mho/m $\varepsilon_r = 57.5$ $\rho = 1.00$ g/cm^3

Cubes (2): Peak: 4.37 mW/g ± 0.10 dB, SAR (1g): 2.79 mW/g ± 0.09 dB, SAR (10g): 1.79 mW/g ± 0.08 dB, (Worst-case extrapolation)

Penetration depth: 12.6 (11.2, 14.3) [mm]

t=24,8°C, Powerdrift: 0.04 dB



APPENDIX B.

SAR Distribution Printouts

GMLNPW-1PA, 824 MHz, Left, Cheek

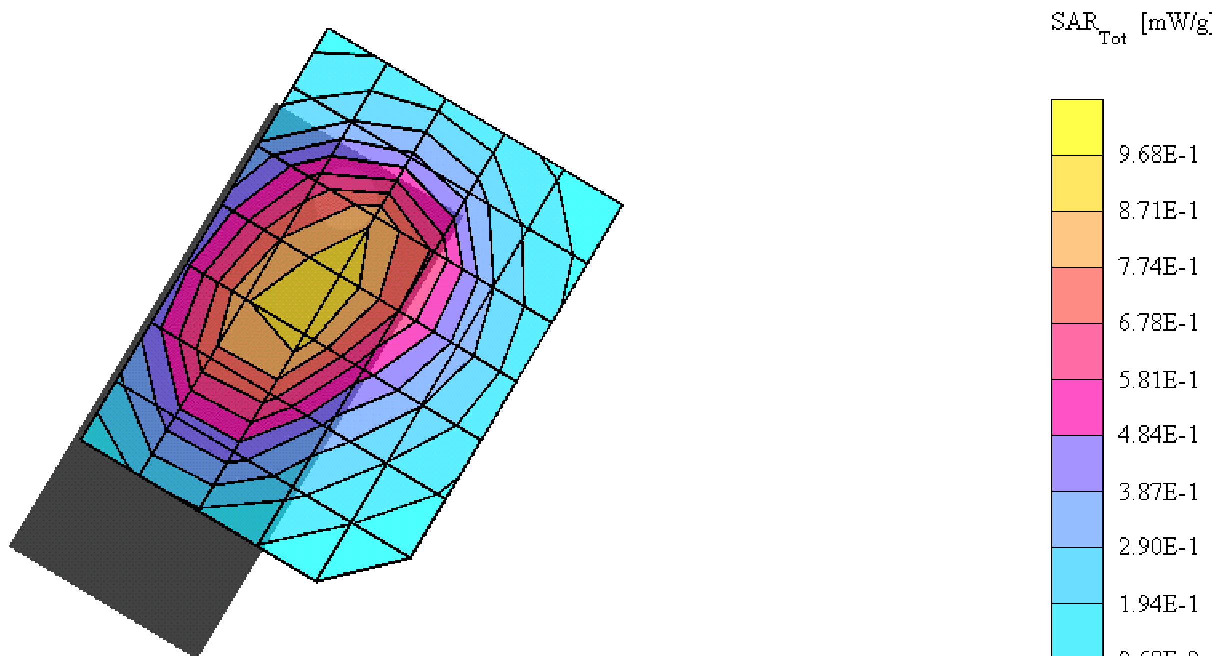
SAM 1 Phantom; Left Hand Section; Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.960 mW/g, SAR (10g): 0.660 mW/g, (Worst-case extrapolation)

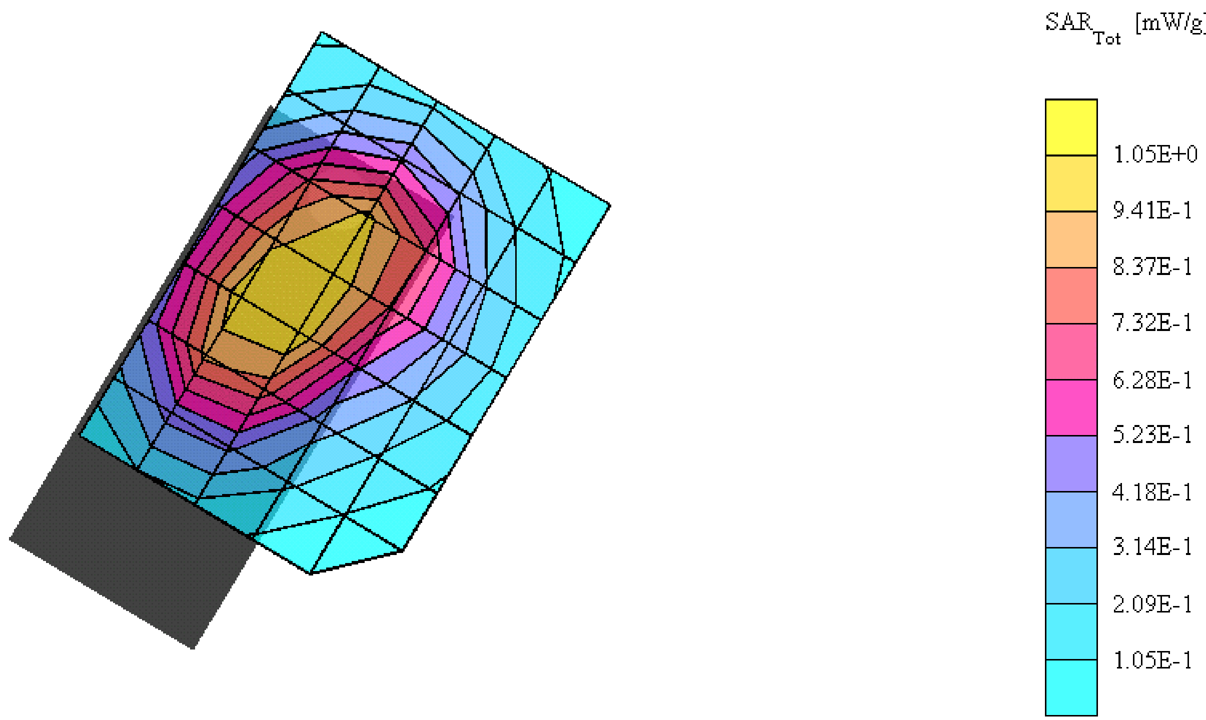
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: 0.10 dB



GMLNPW-1PA, 836 MHz, Left, Cheek

SAM 1 Phantom; Left Hand Section; Frequency: 836 MHz
Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 1.09 mW/g, SAR (10g): 0.735 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
06/03/02, t=24.9°C, Powerdrift: -0.05 dB



GMLNPW-1PA, 849 MHz, Left, Cheek

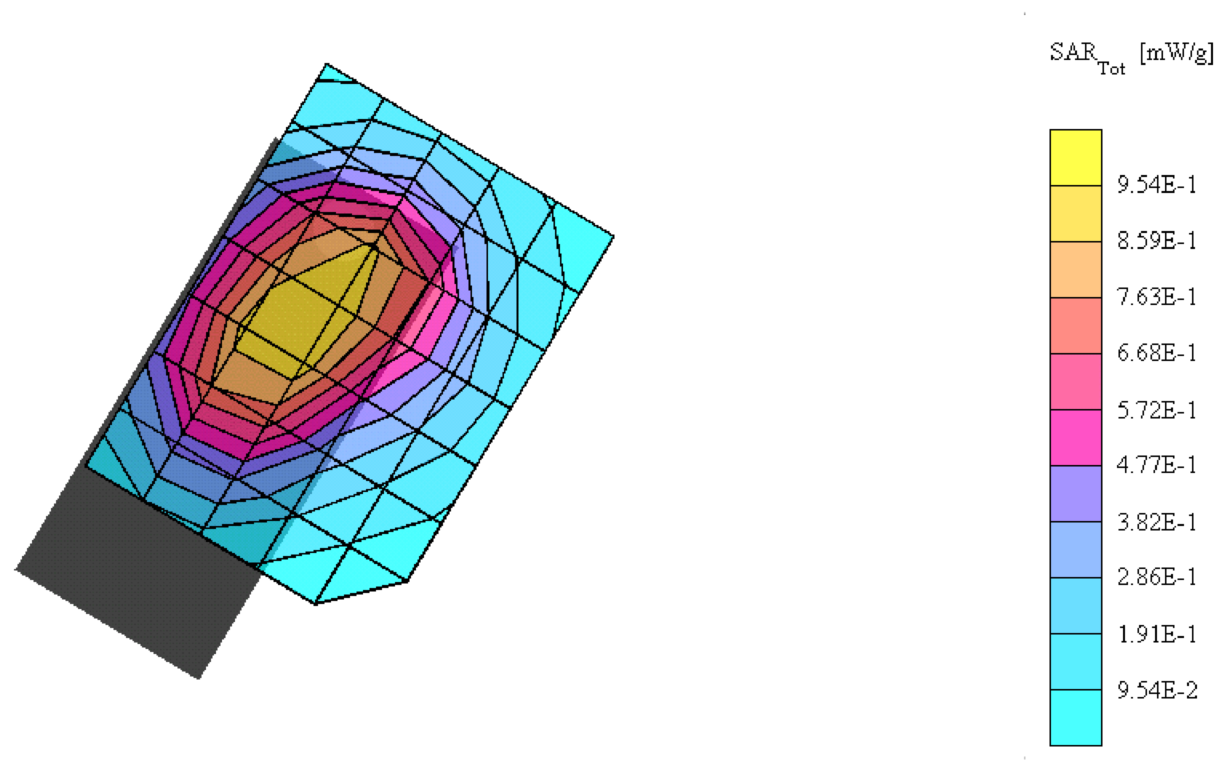
SAM 1 Phantom; Left Hand Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.968 mW/g, SAR (10g): 0.667 mW/g, (Worst-case extrapolation)

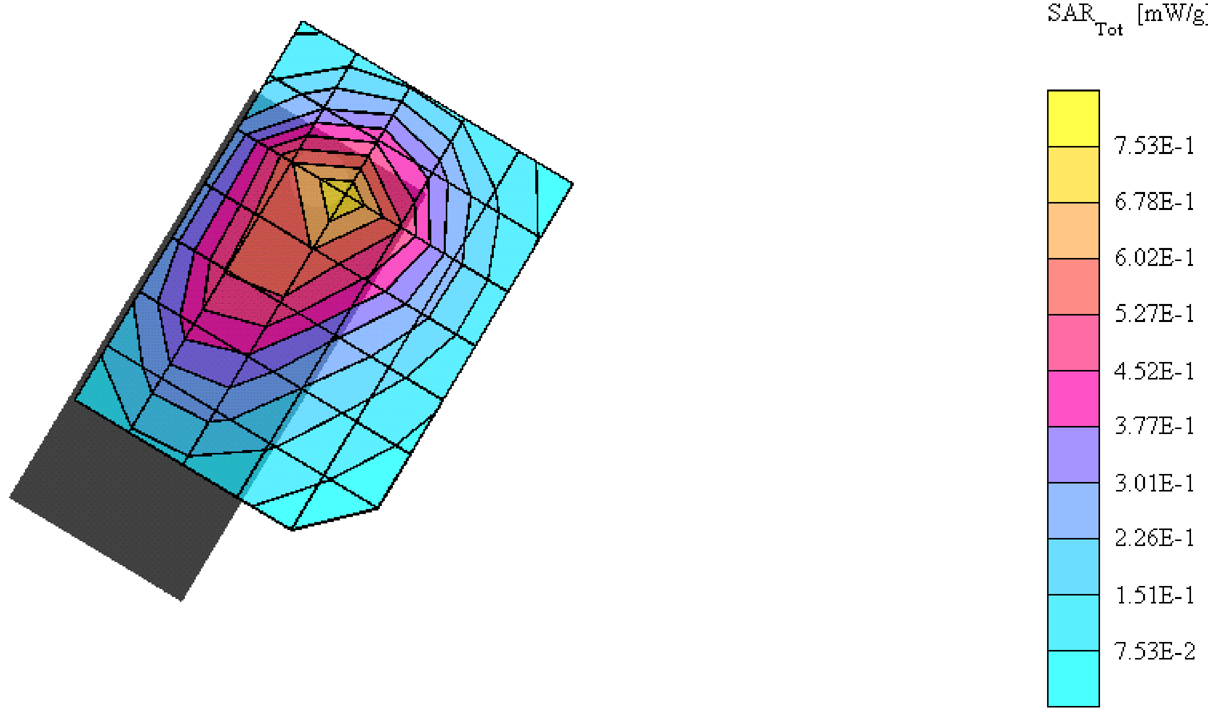
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.09 dB



GMLNPW-1PA, 824 MHz, Left, Tilted

SAM 1 Phantom; Left Hand Section; Frequency: 824 MHz
Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.657 mW/g, SAR (10g): 0.419 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
06/03/02, t=24.9°C, Powerdrift: -0.22 dB



GMLNPW-1PA, 836 MHz, Left, Tilted

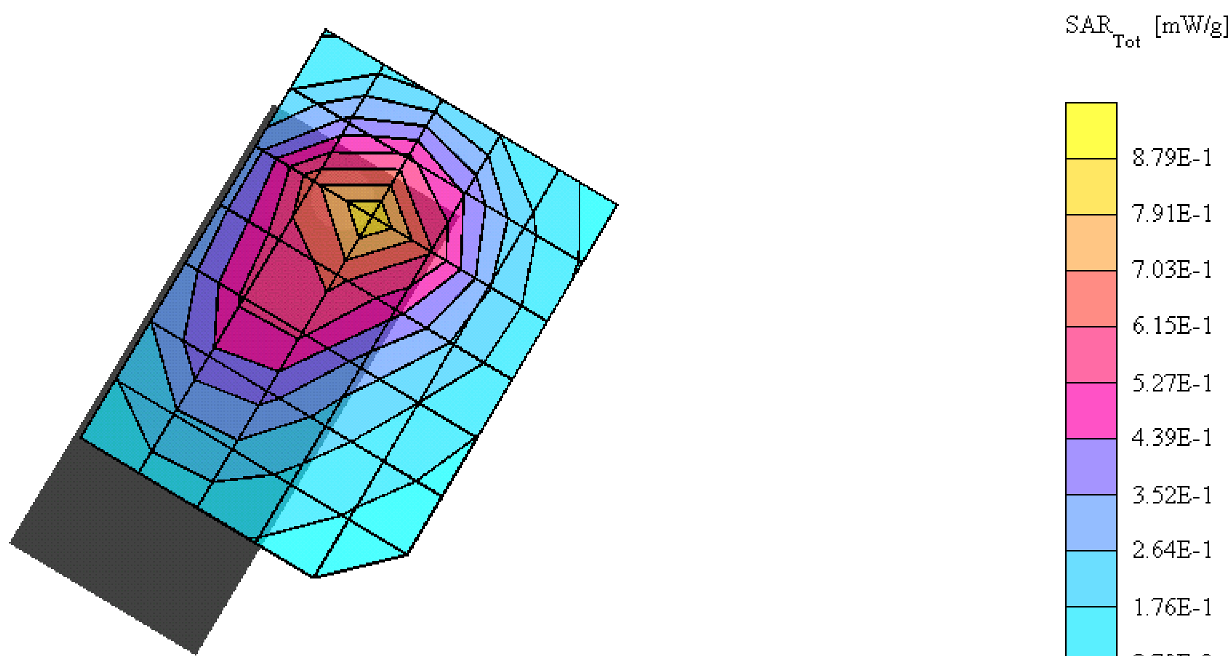
SAM 1 Phantom; Left Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.827 mW/g, SAR (10g): 0.515 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: 0.01 dB



GMLNPW-1PA, 849 MHz, Left, Tilted

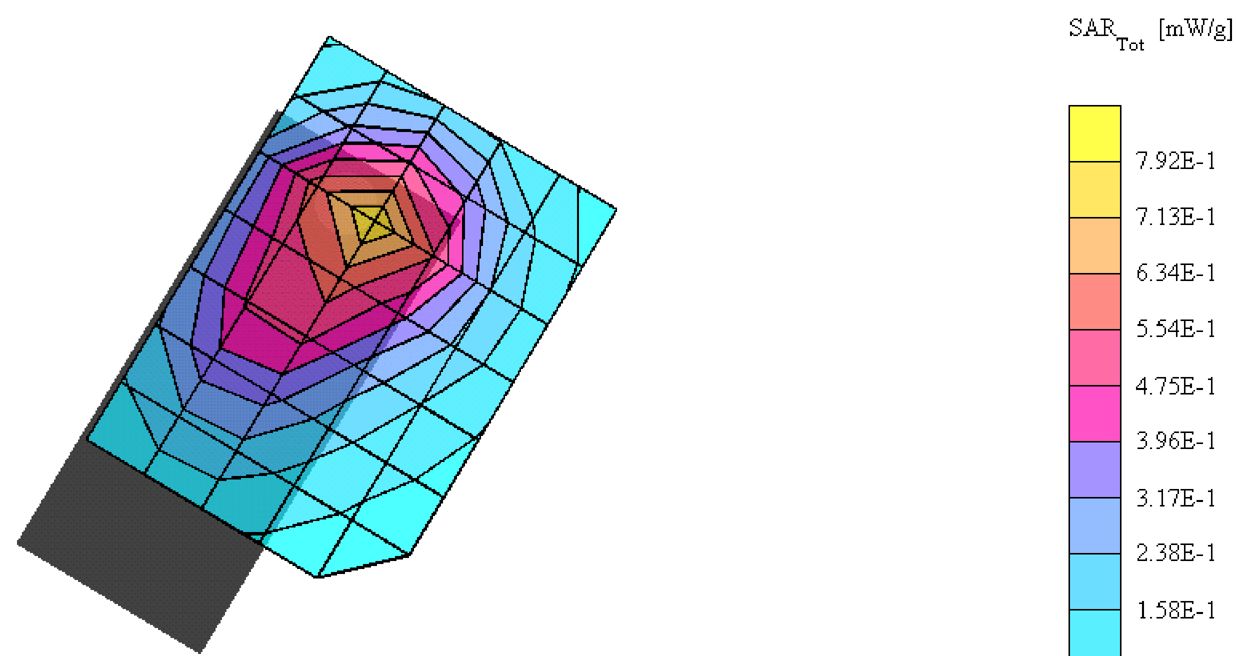
SAM 1 Phantom; Left Hand Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.742 mW/g, SAR (10g): 0.464 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.03 dB



GMLNPW-1PA, 824 MHz, Right, Cheek

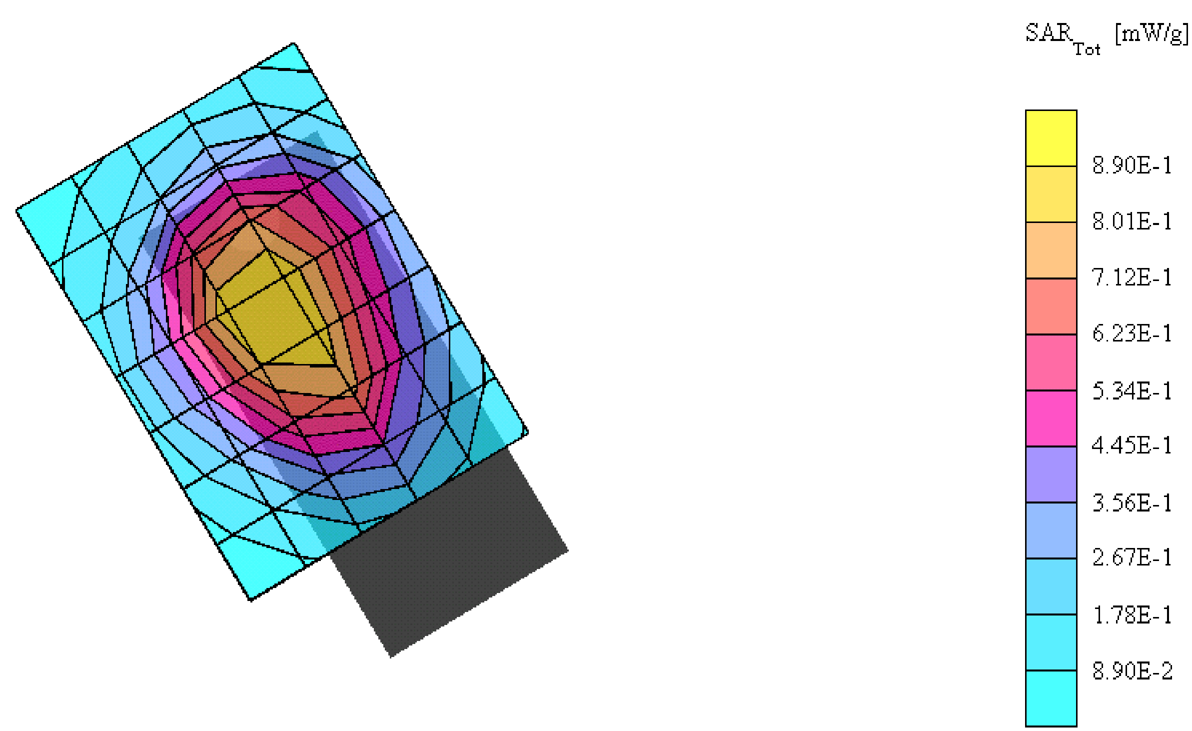
SAM 1 Phantom; Righ Hand Section; Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.895 mW/g, SAR (10g): 0.623 mW/g * Max outside, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.04 dB



GMLNPW-1PA, 836 MHz, Right, Cheek

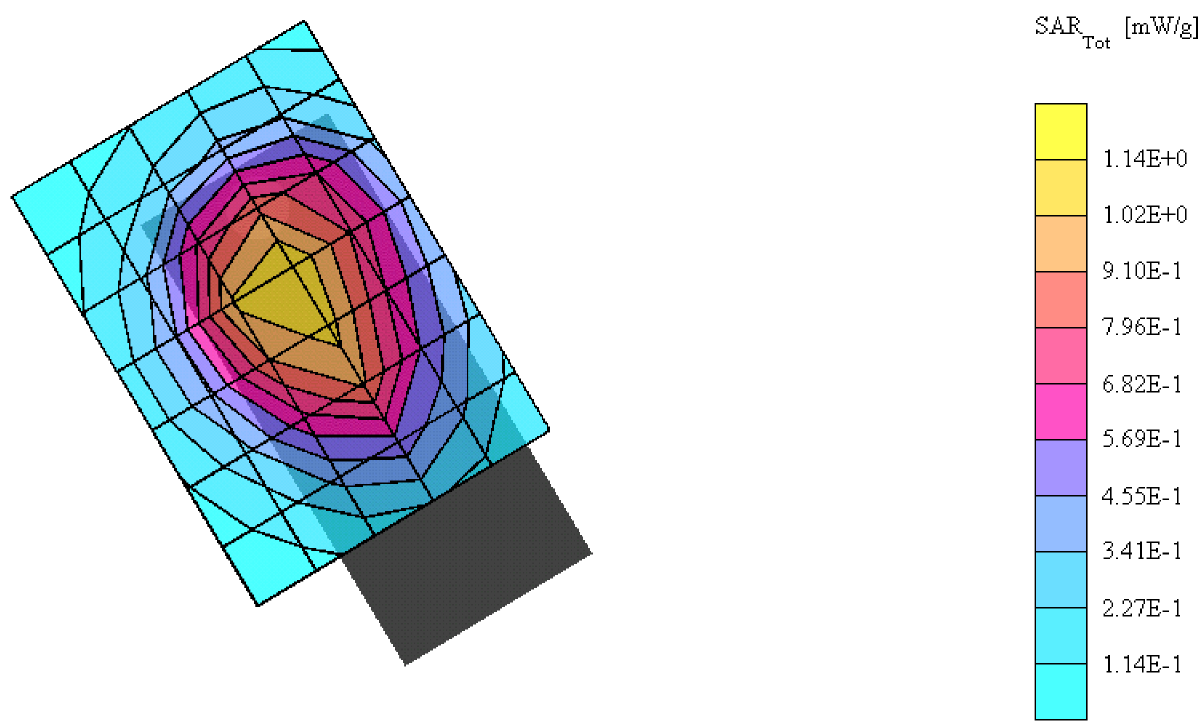
SAM 1 Phantom; Righ Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.11 mW/g, SAR (10g): 0.763 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.07 dB



GMLNPW-1PA, 849 MHz, Right, Cheek

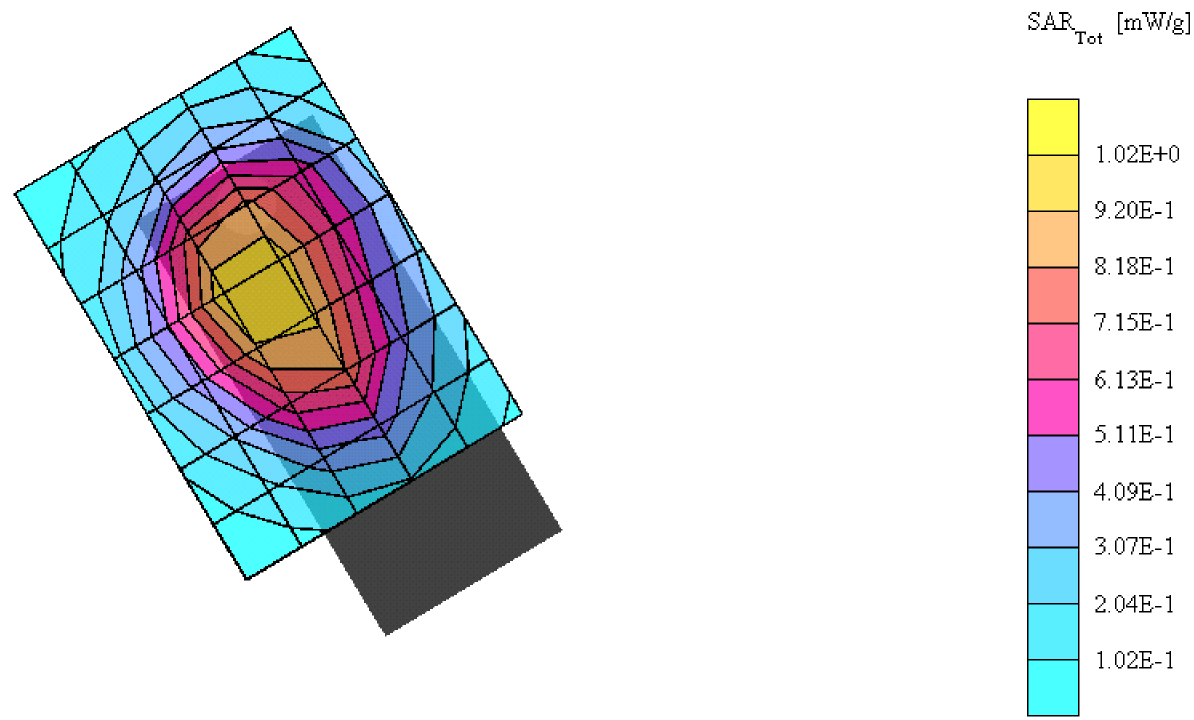
SAM 1 Phantom; Righ Hand Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.01 mW/g, SAR (10g): 0.692 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.06 dB



GMLNPW-1PA, 824 MHz, Right, Tilted

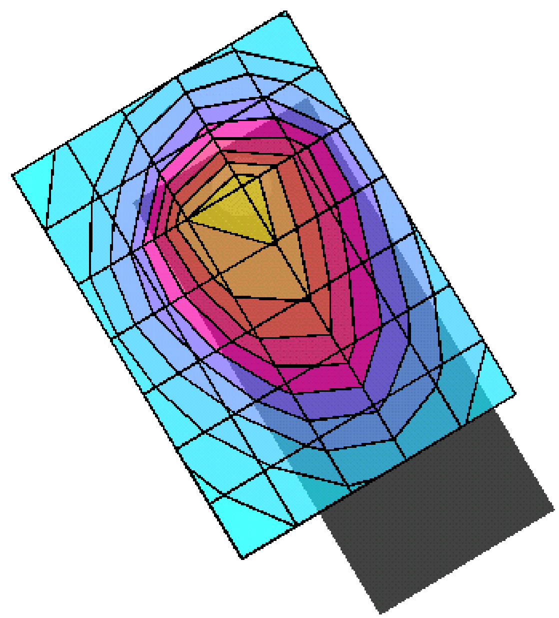
SAM 1 Phantom; Righ Hand Section; Frequency: 824 MHz

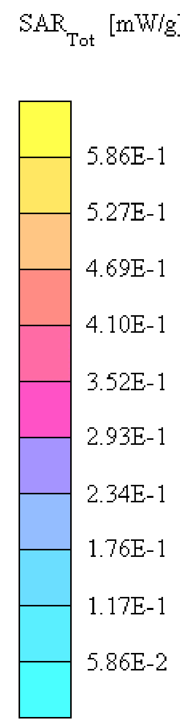
Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.556 mW/g, SAR (10g): 0.380 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: 0.04 dB





GMLNPW-1PA, 836 MHz, Right, Tilted

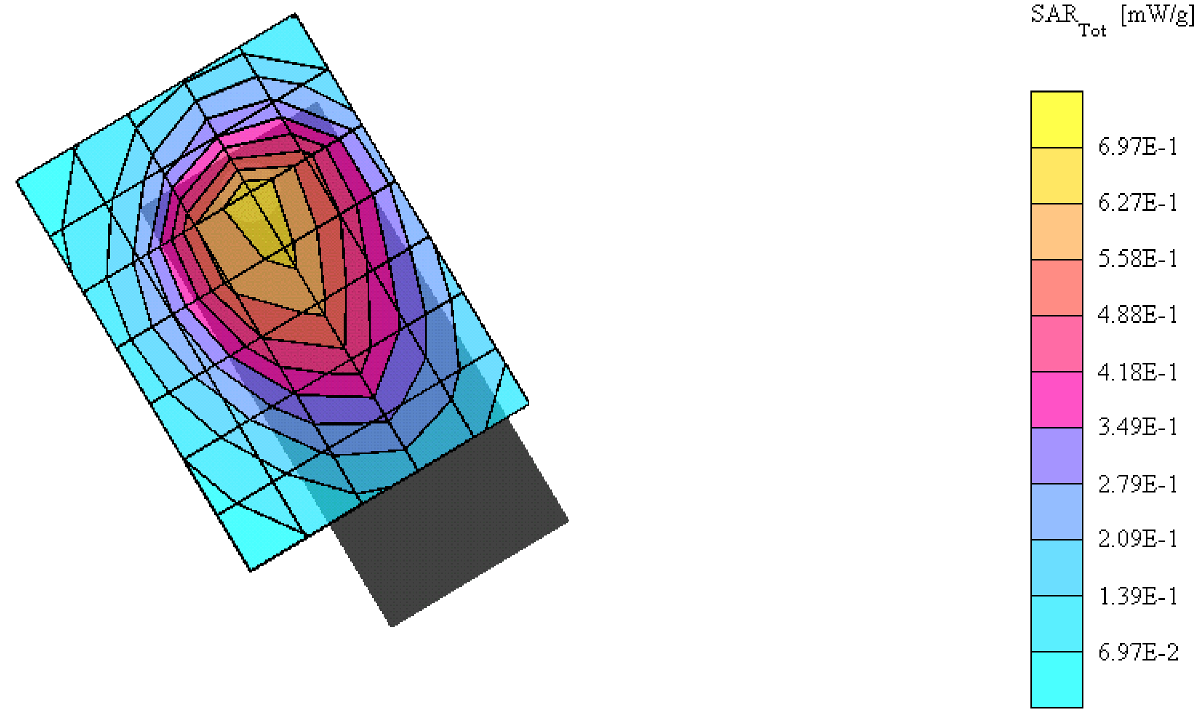
SAM 1 Phantom; Righ Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.659 mW/g, SAR (10g): 0.454 mW/g * Max outside, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.02 dB



GMLNPW-1PA, 849 MHz, Right, Tilted

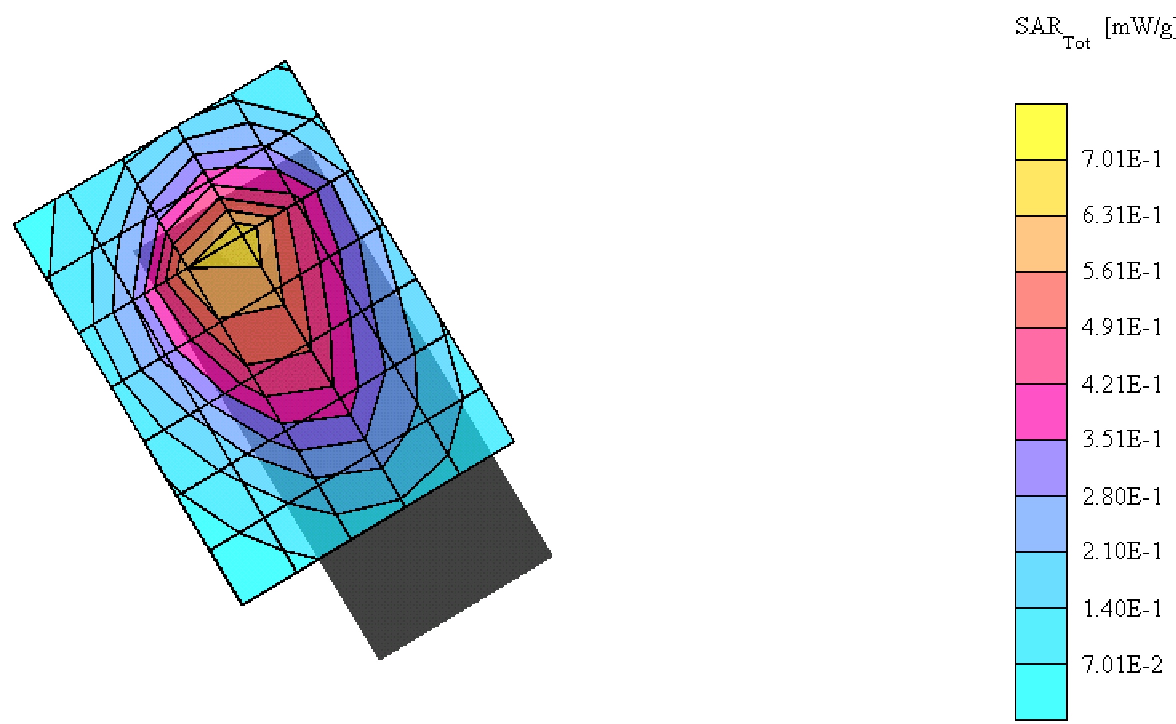
SAM 1 Phantom; Righ Hand Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.660 mW/g, SAR (10g): 0.433 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/03/02, t=24.9°C, Powerdrift: -0.03 dB



GMLNPW-1PA, 1850 MHz, Left, Cheek

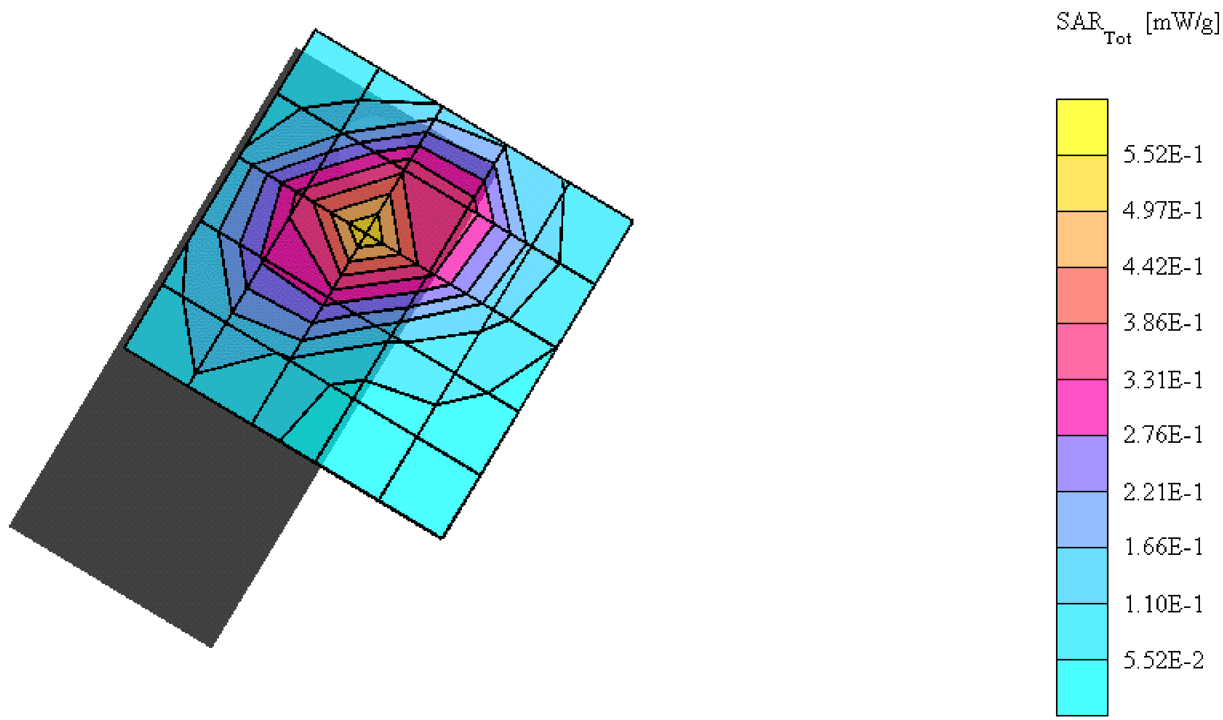
SAM 2 Phantom; Left Hand Section; Frequency: 1850 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.527 mW/g, SAR (10g): 0.299 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, 24,9°C, Powerdrift: 0.07 dB



GMLNPW-1PA, 1880 MHz, Left, Cheek

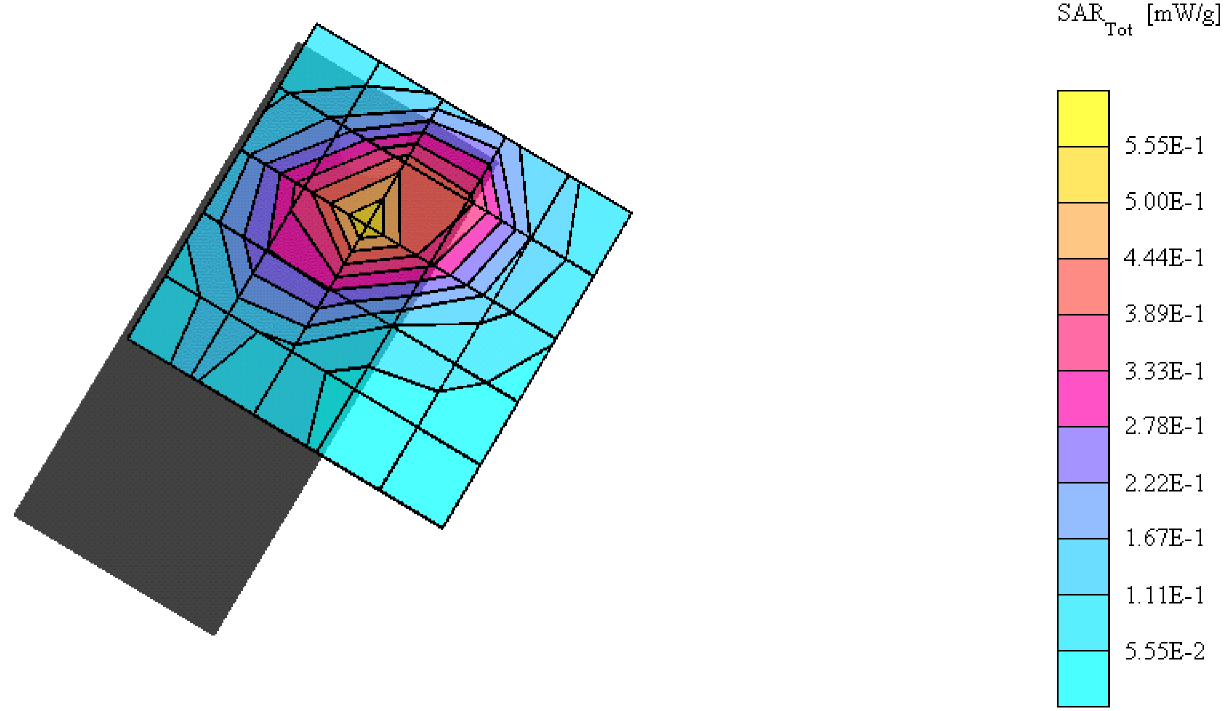
SAM 2 Phantom; Left Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.548 mW/g, SAR (10g): 0.309 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: 0.08 dB



GMLNPW-1PA, 1910 MHz, Left, Cheek

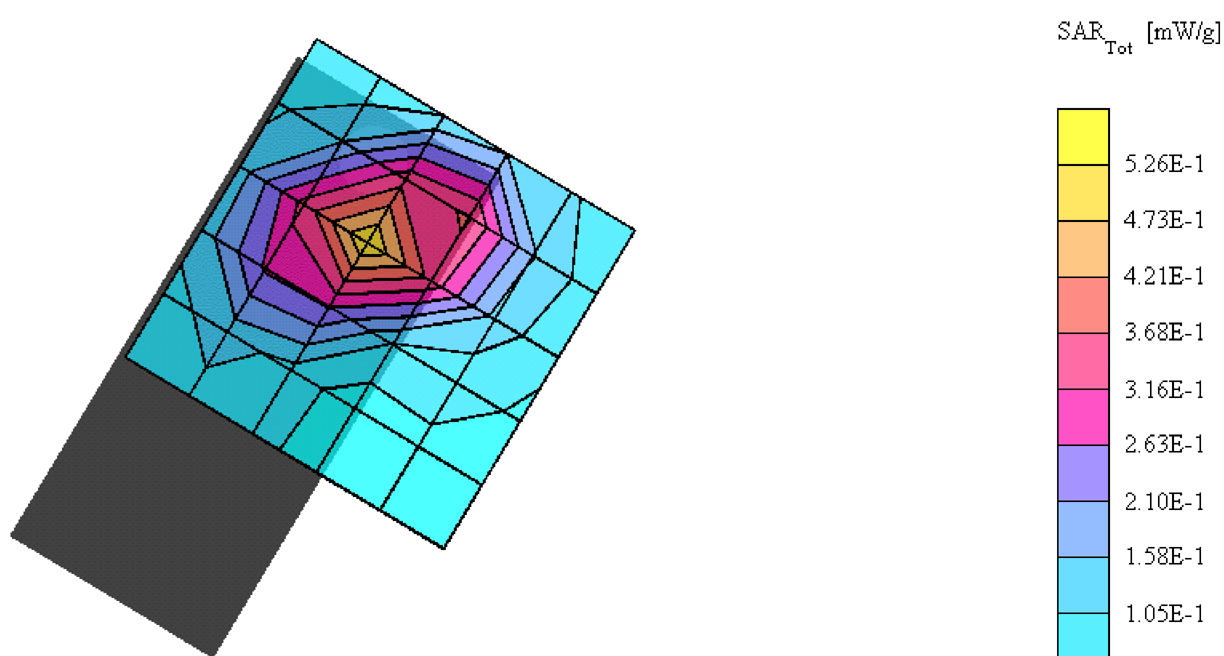
SAM 2 Phantom; Left Hand Section; Frequency: 1910 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.501 mW/g, SAR (10g): 0.279 mW/g, (Worst-case extrapolation)

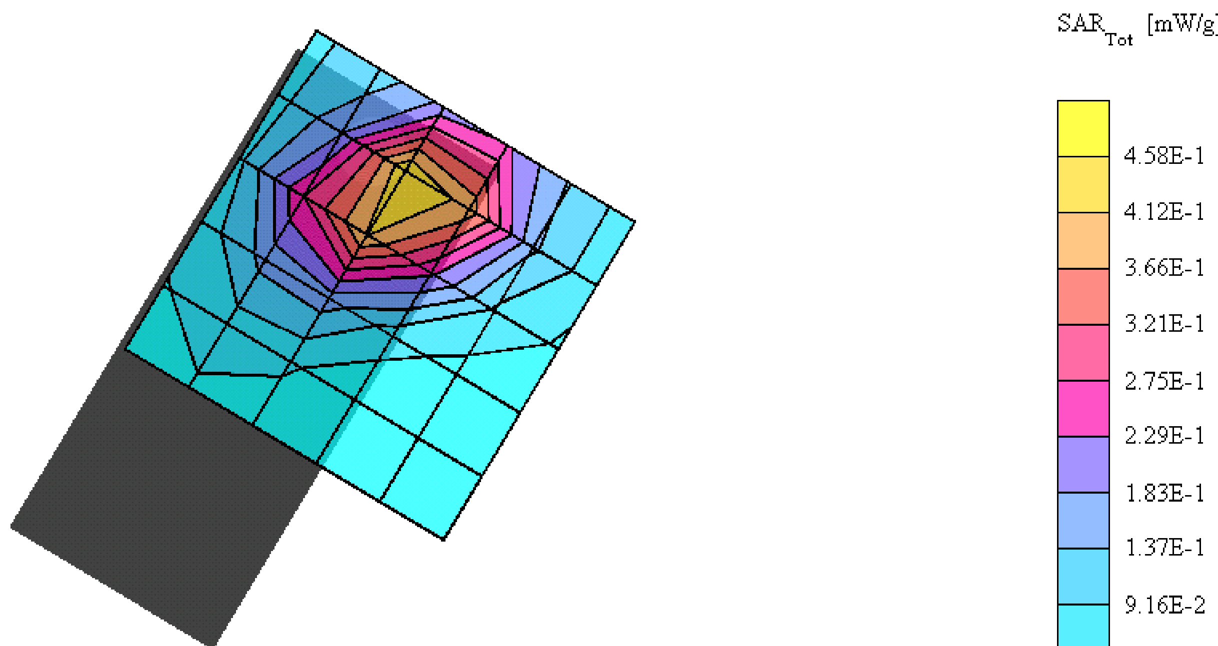
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, 24,9°C, Powerdrift: -0.02 dB



GMLNPW-1PA, 1850 MHz, Left, Tilted

SAM 2 Phantom; Left Hand Section; Frequency: 1850 MHz
Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.495 mW/g, SAR (10g): 0.268 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
05/28/02, t=24,9°C, Powerdrift: 0.03 dB



GMLNPW-1PA, 1880 MHz, Left, Tilted

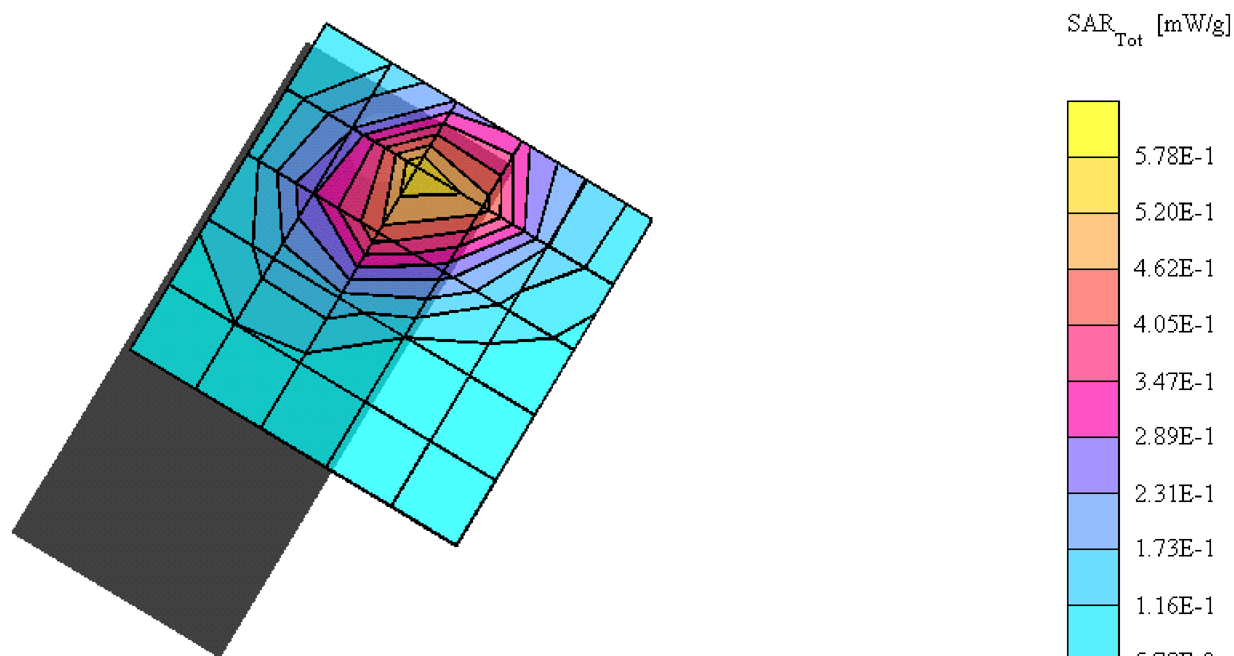
SAM 2 Phantom; Left Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.595 mW/g, SAR (10g): 0.318 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: -0.03 dB



GMLNPW-1PA, 1910 MHz, Left, Tilted

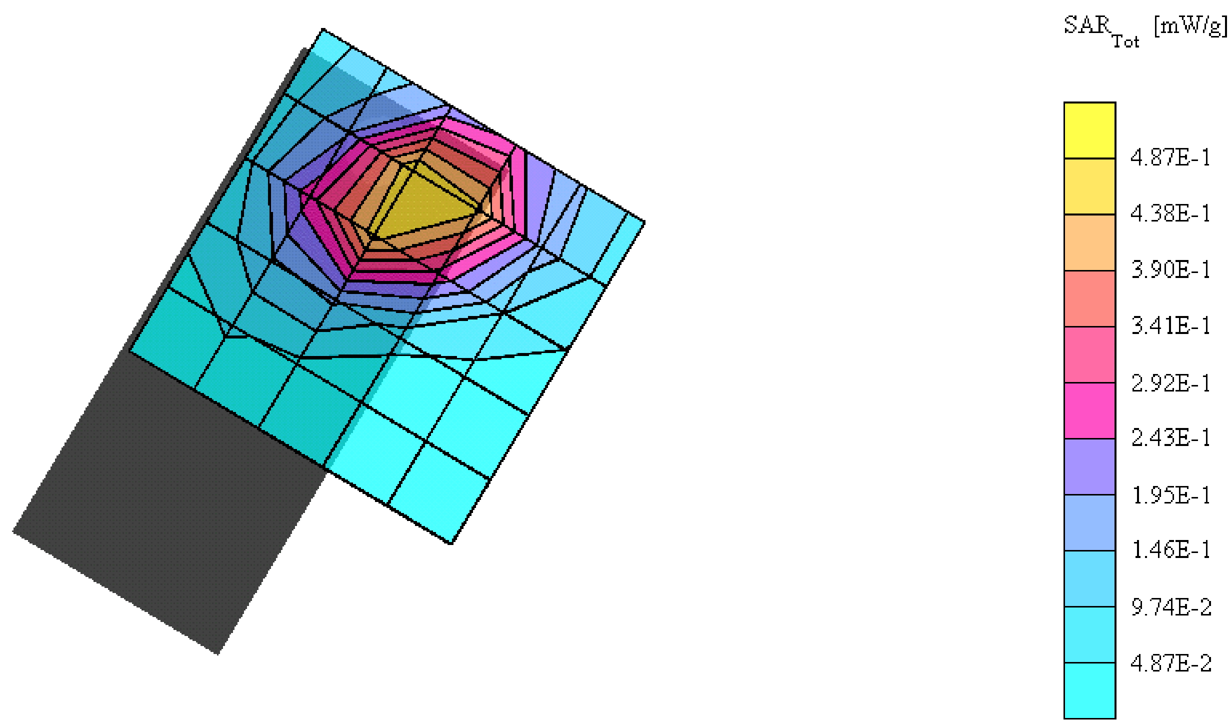
SAM 2 Phantom; Left Hand Section; Frequency: 1910 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.544 mW/g, SAR (10g): 0.290 mW/g, (Worst-case extrapolation)

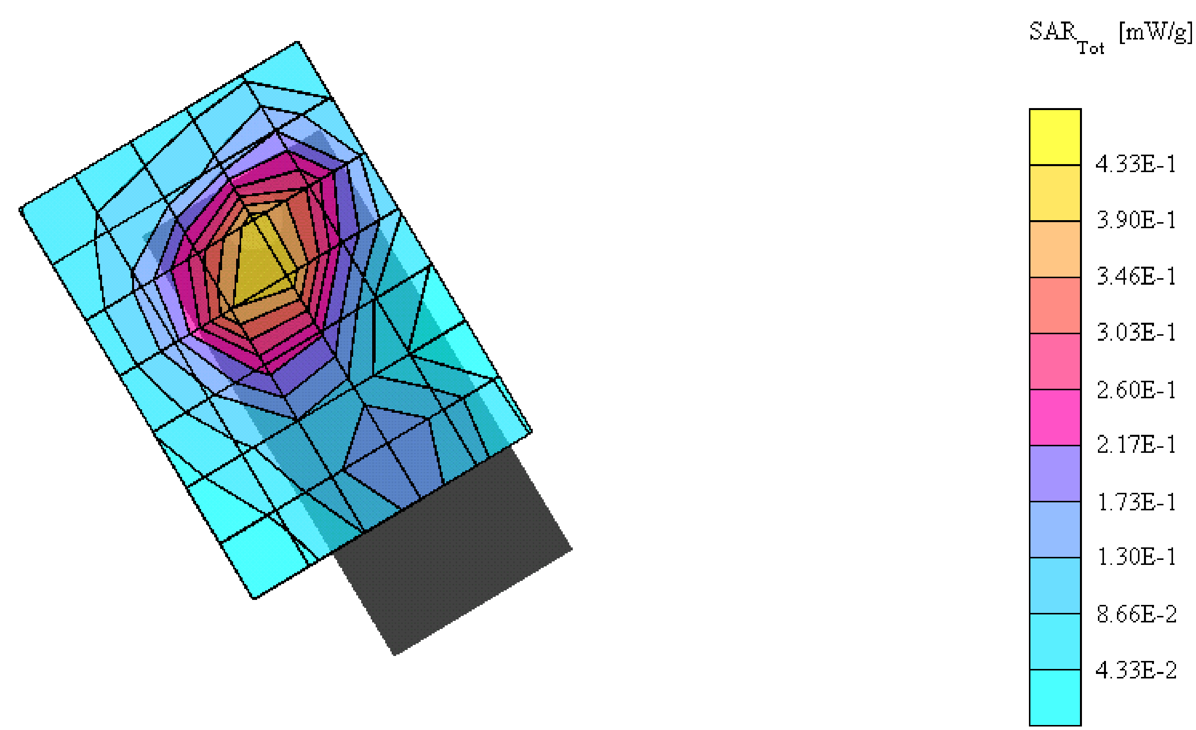
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: -0.01 dB



GMLNPW-1PA, 1850 MHz, Right, Cheek

SAM 2 Phantom; Righ Hand Section; Frequency: 1850 MHz
Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.466 mW/g, SAR (10g): 0.273 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
05/28/02, 24,9°C, Powerdrift: 0.01 dB



GMLNPW-1PA, 1880 MHz, Right, Cheek

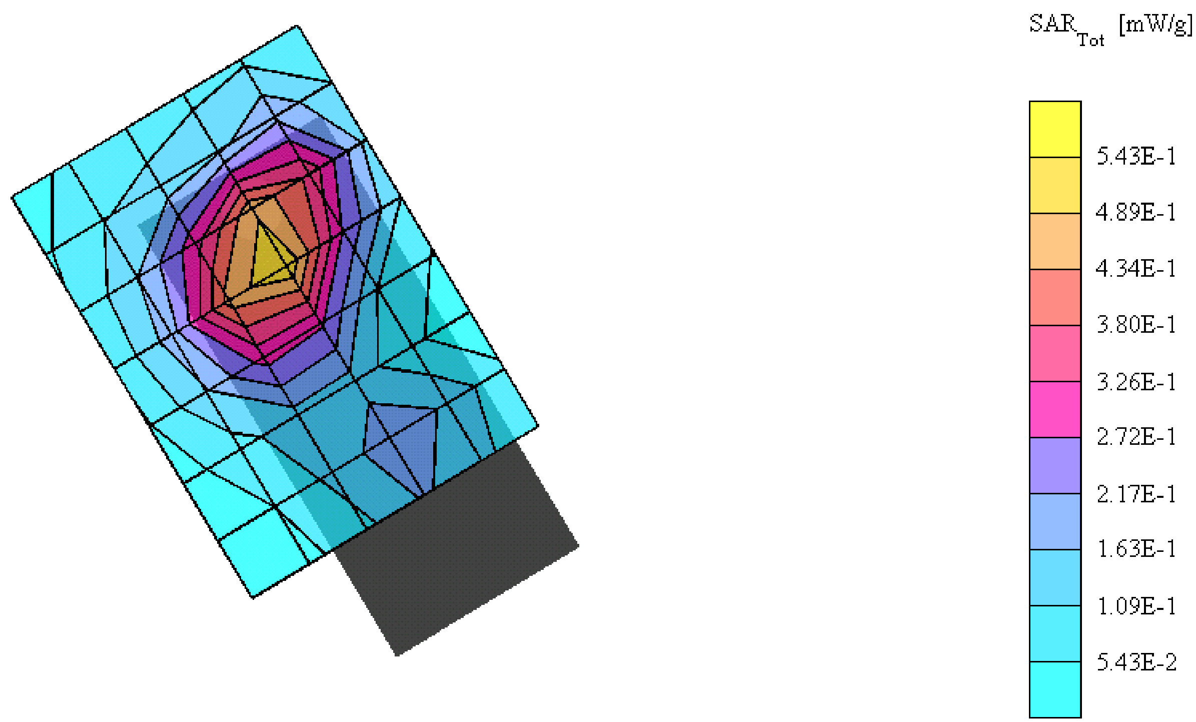
SAM 2 Phantom; Righ Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.563 mW/g, SAR (10g): 0.326 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: -0.28 dB



GMLNPW-1PA, 1910 MHz, Right, Cheek

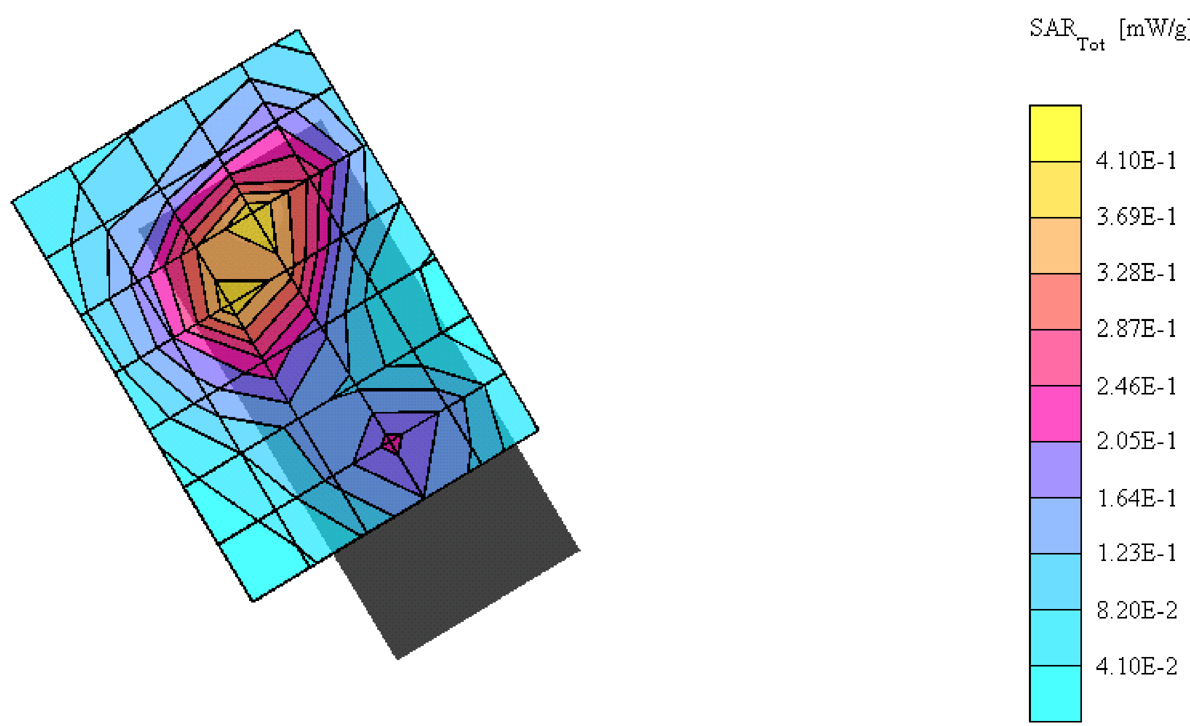
SAM 2 Phantom; Righ Hand Section; Frequency: 1910 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.434 mW/g, SAR (10g): 0.254 mW/g, (Worst-case extrapolation)

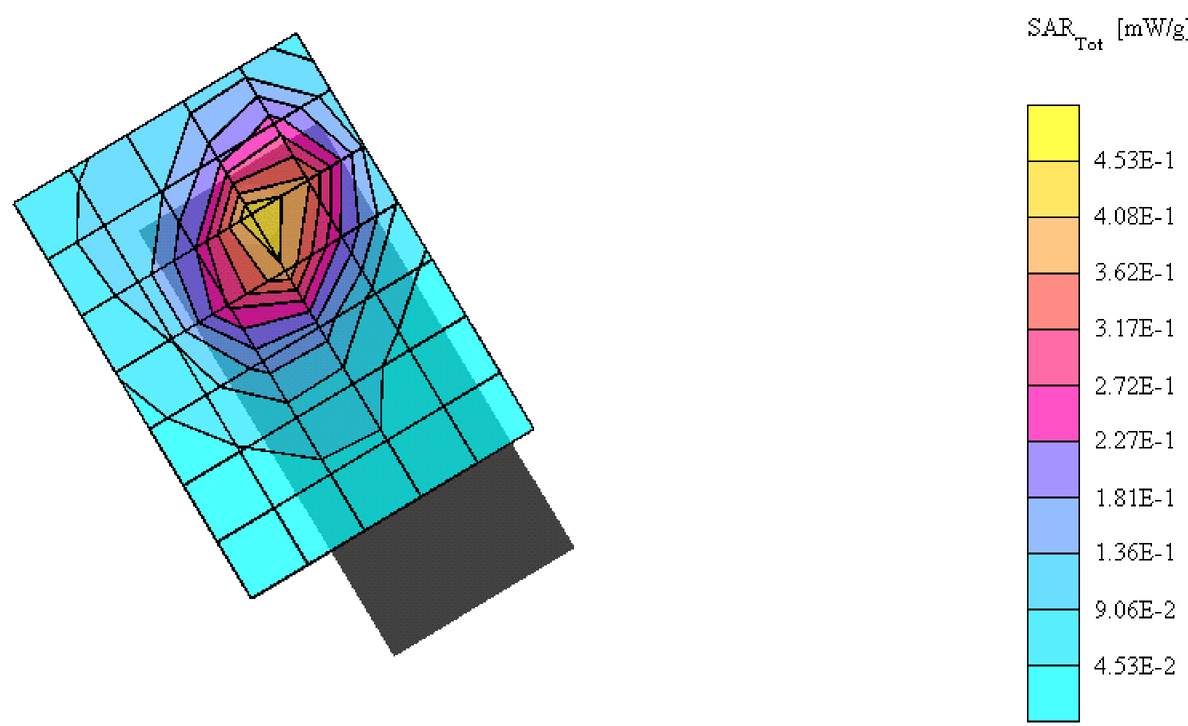
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: -0.01 dB



GMLNPW-1PA, 1850 MHz, Right, Tilted

SAM 2 Phantom; Righ Hand Section; Frequency: 1850 MHz
Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.458 mW/g, SAR (10g): 0.260 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
05/28/02, t=24,9°C, Powerdrift: 0.15 dB



GMLNPW-1PA, 1880 MHz, Right, Tilted

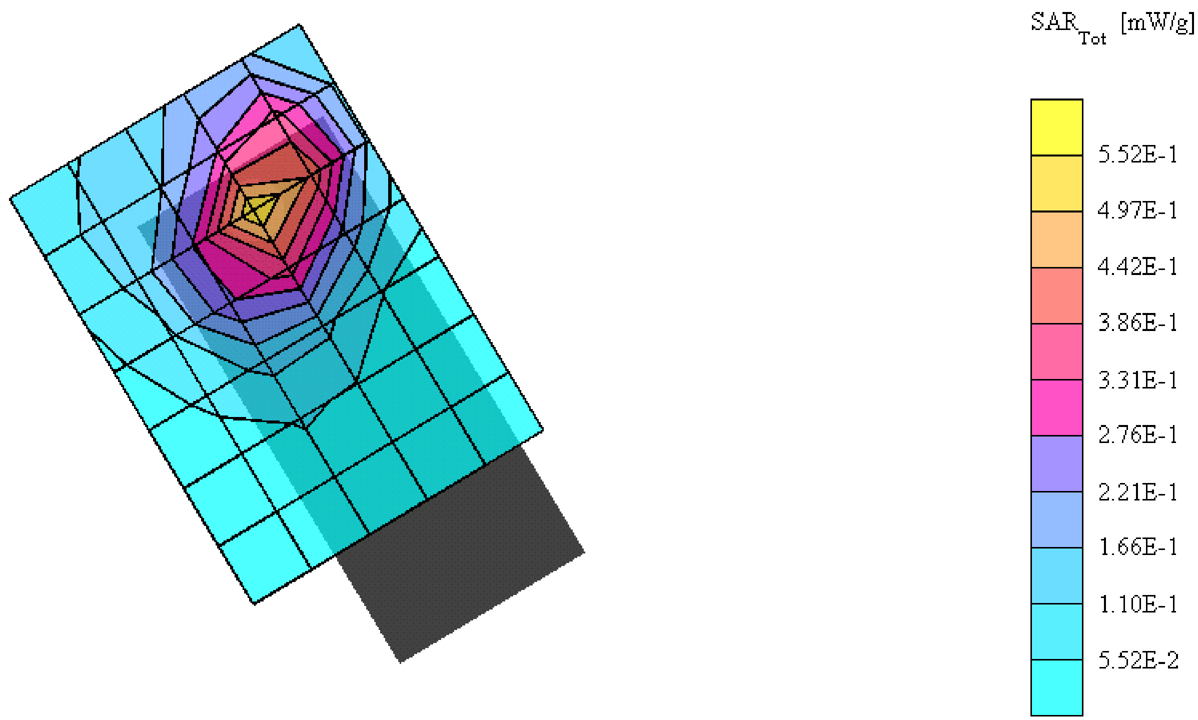
SAM 2 Phantom; Righ Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.520 mW/g, SAR (10g): 0.291 mW/g, (Worst-case extrapolation)

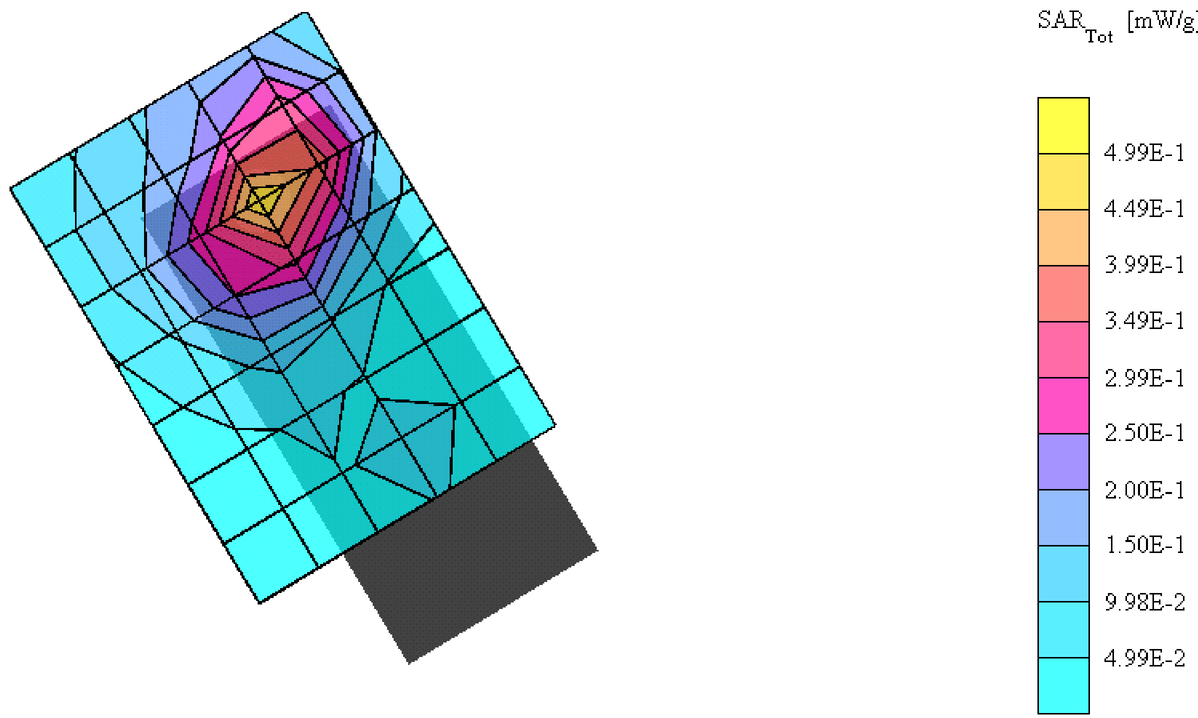
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

05/28/02, t=24,9°C, Powerdrift: 0.08 dB



GMLNPW-1PA, 1910 MHz, Right, Tilted

SAM 2 Phantom; Righ Hand Section; Position: (90°,301°); Frequency: 1910 MHz
Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.465 mW/g, SAR (10g): 0.260 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
05/28/02, t=24,9°C, Powerdrift: 0.00 dB



GMLNPW-1PA, Accessory Cover, 836 MHz, Left, Cheek

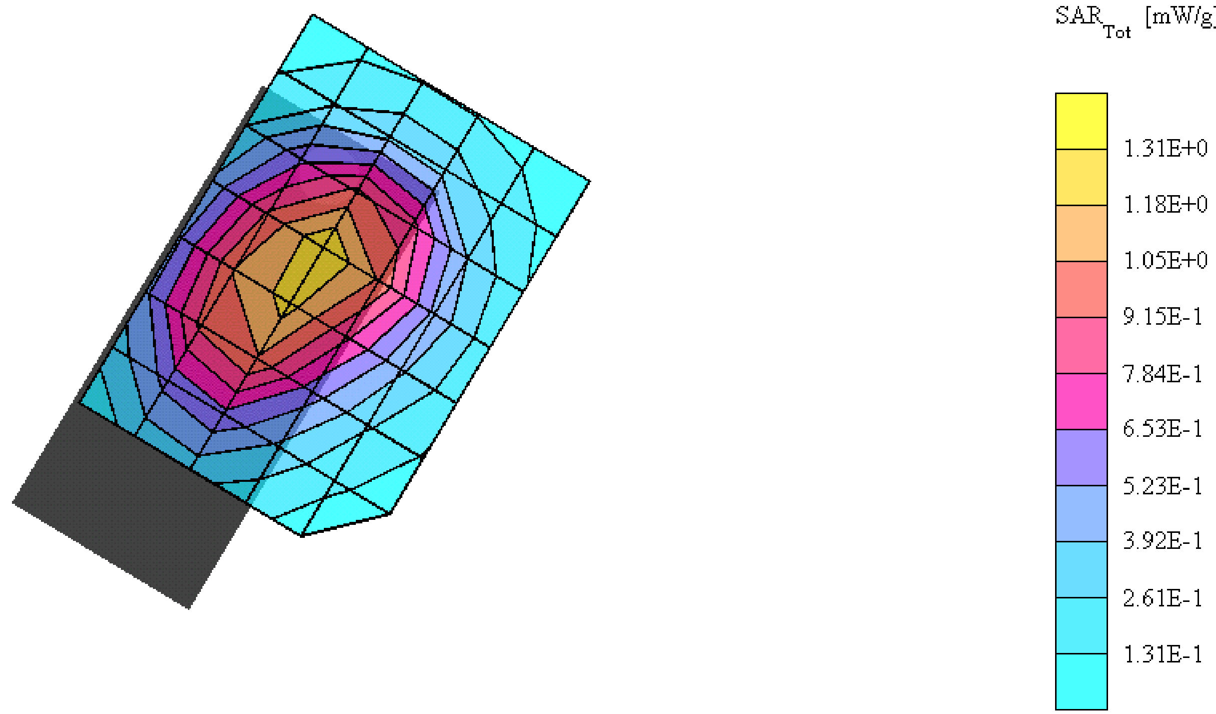
SAM 1 Phantom; Left Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.91$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.32 mW/g, SAR (10g): 0.896 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

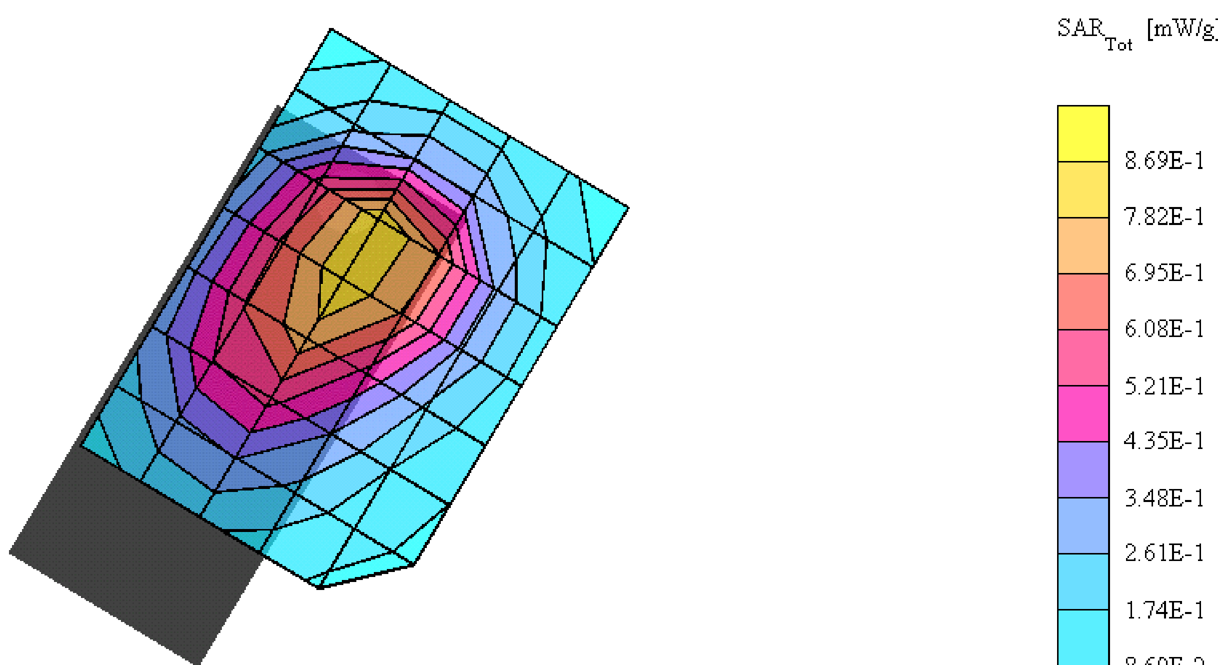
06/24/02, t=24.8°C, Powerdrift: 0.01 dB



GMLNPW-1PA, Accessory Cover, 836 MHz, Left, Tilted

SAM 1 Phantom; Left Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.91$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3
Cube 5x5x7: SAR (1g): 0.859 mW/g, SAR (10g): 0.580 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
06/24/02, t=24,8°C, Powerdrift: -0.11 dB



GMLNPW-1PA, Accessory Cover, 836 MHz, Right, Cheek

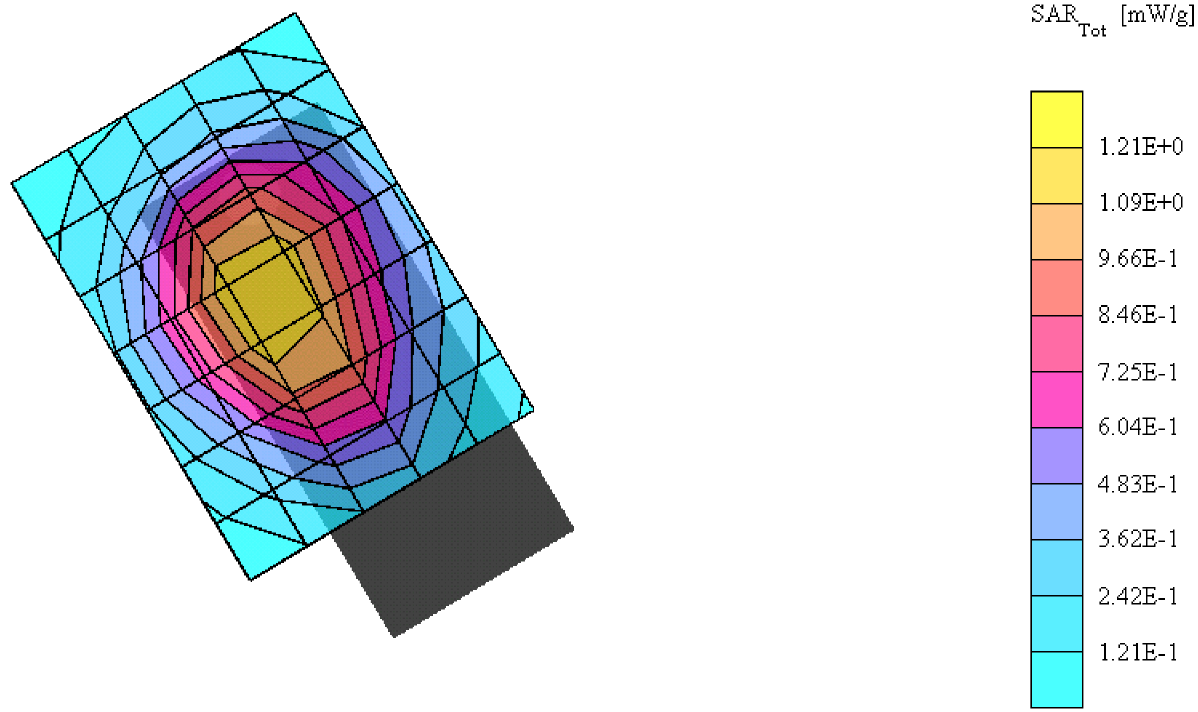
SAM 1 Phantom; Righ Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.91$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.25 mW/g, SAR (10g): 0.862 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/24/02, t=24,8°C, Powerdrift: -0.13 dB



GMLNPW-1PA, Accessory Cover, 836 MHz, Right, Tilted

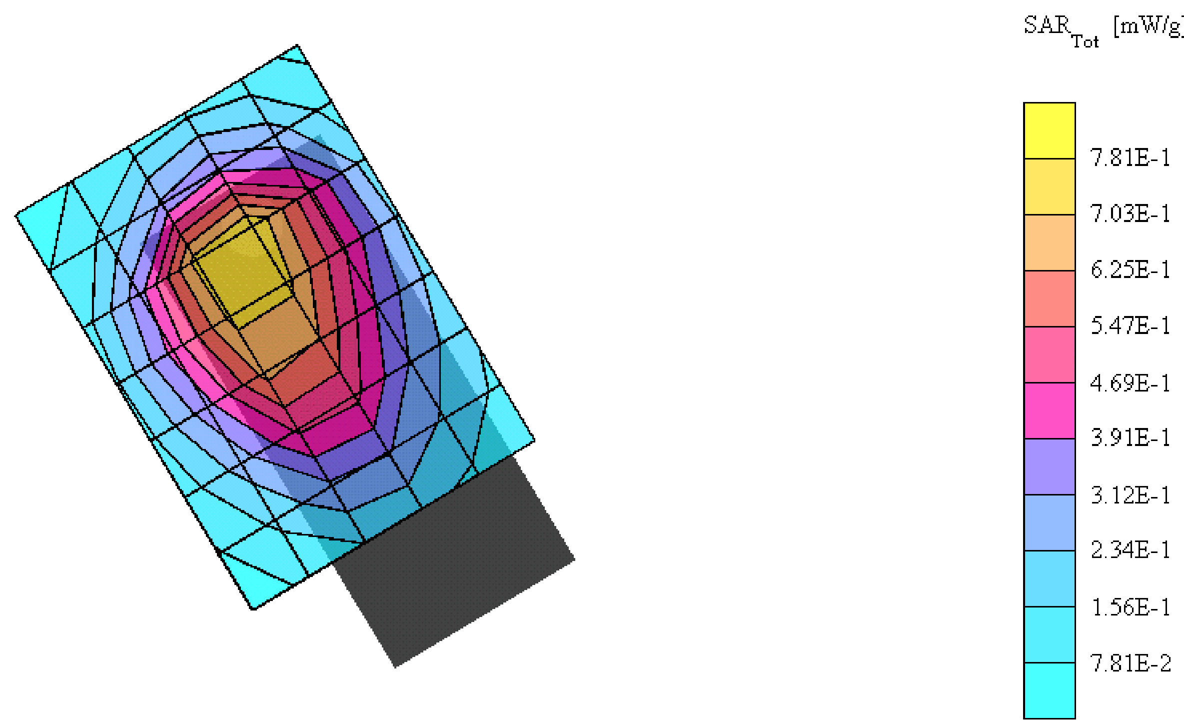
SAM 1 Phantom; Righ Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.91$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.787 mW/g, SAR (10g): 0.544 mW/g * Max outside, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/24/02, t=24,8°C, Powerdrift: -0.02 dB



GMLNPW-1PA, Accessory Cover, 1880 MHz, Left, Cheek

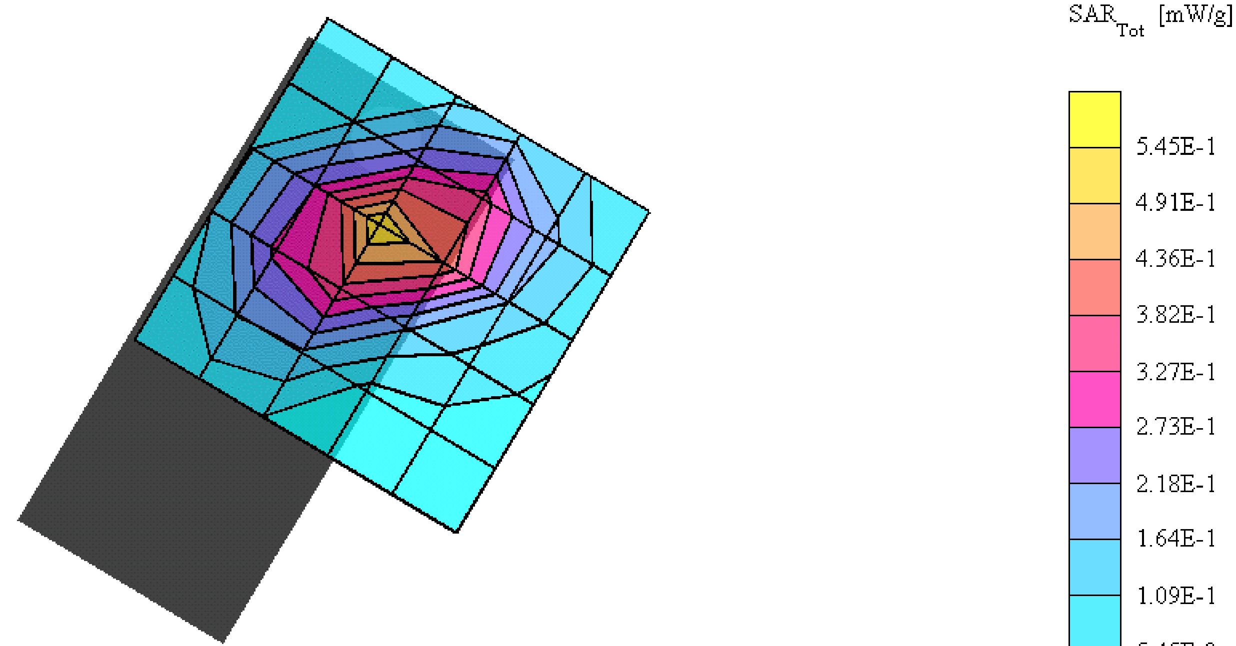
SAM 2 Phantom; Left Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.42$ mho/m $\varepsilon_r = 40.4$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.526 mW/g, SAR (10g): 0.303 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/26/02, t=24.9°C, Powerdrift: -0.03 dB



GMLNPW-1PA, Accessory Cover, 1880 MHz, Left, Tilted

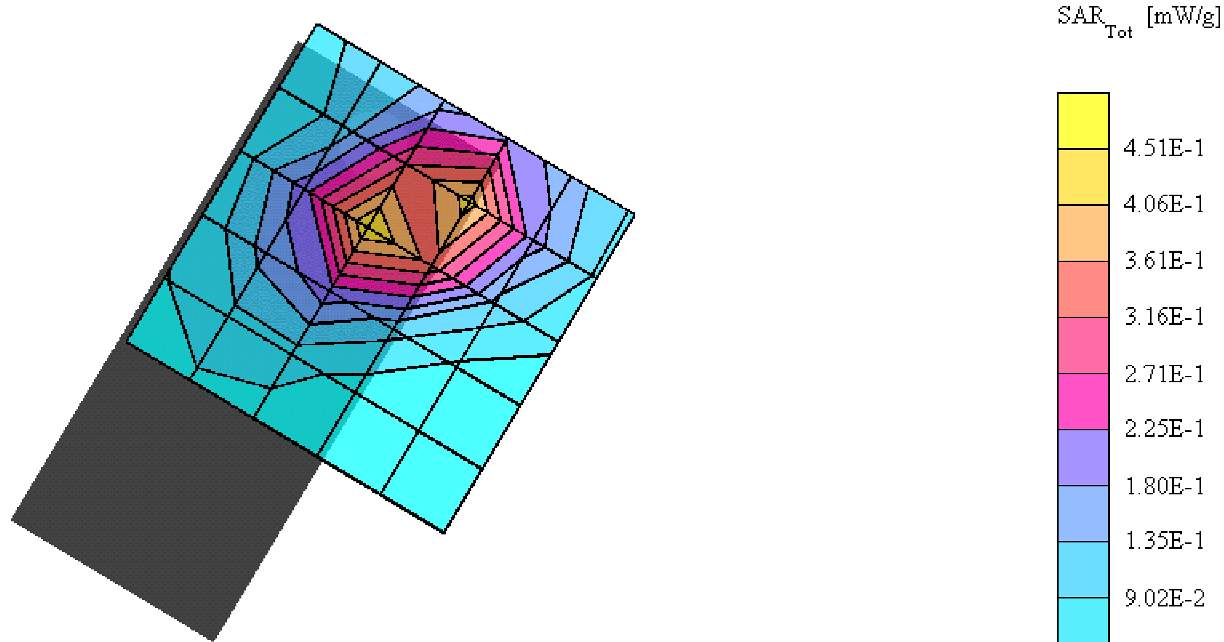
SAM 2 Phantom; Left Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.42$ mho/m $\varepsilon_r = 40.4$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.486 mW/g, SAR (10g): 0.269 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/26/02, t=24,9°C, Powerdrift: 0.00 dB



CUBE: GMLNPW-1PA, Accessory Cover, 1880 MHz, Left, Tilted

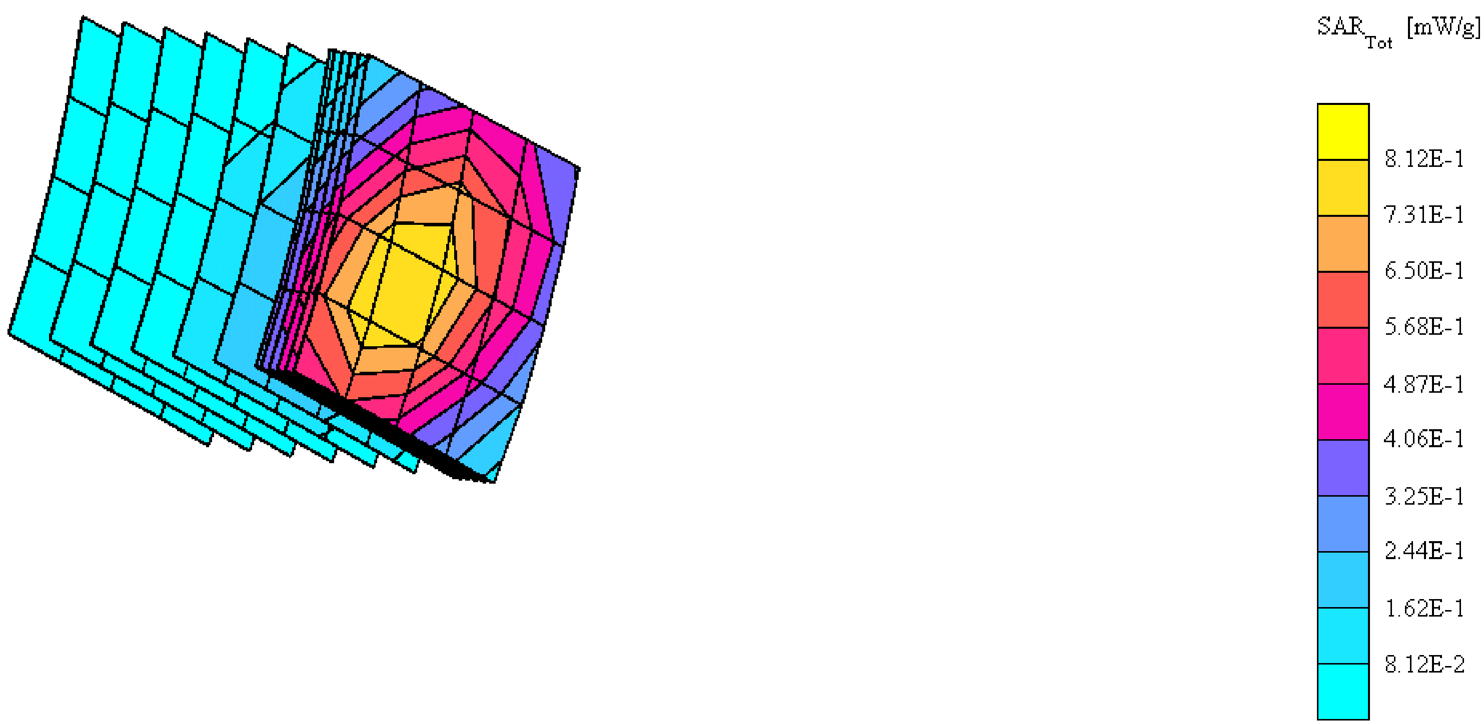
SAM 2 Phantom; Left Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.42$ mho/m $\varepsilon_r = 40.4$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.486 mW/g, SAR (10g): 0.269 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0

06/26/02, 24,9°C



GMLNPW-1PA, Accessory Cover, 1880 MHz,Right, Cheek

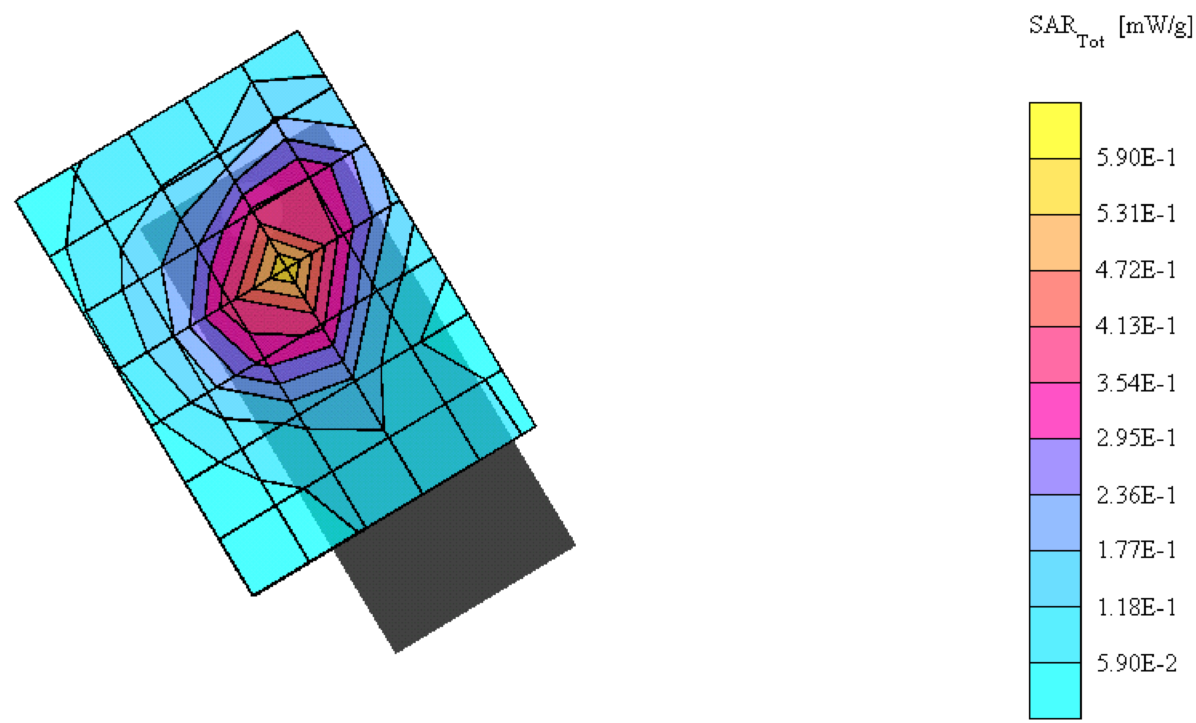
SAM 2 Phantom; Righ Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.44$ mho/m $\varepsilon_r = 41.0$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.575 mW/g, SAR (10g): 0.334 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/25/02, t=24,9°C, Powerdrift: 0.05 dB



GMLNPW-1PA, Accessory Cover, 1880 MHz, Right, Tilted

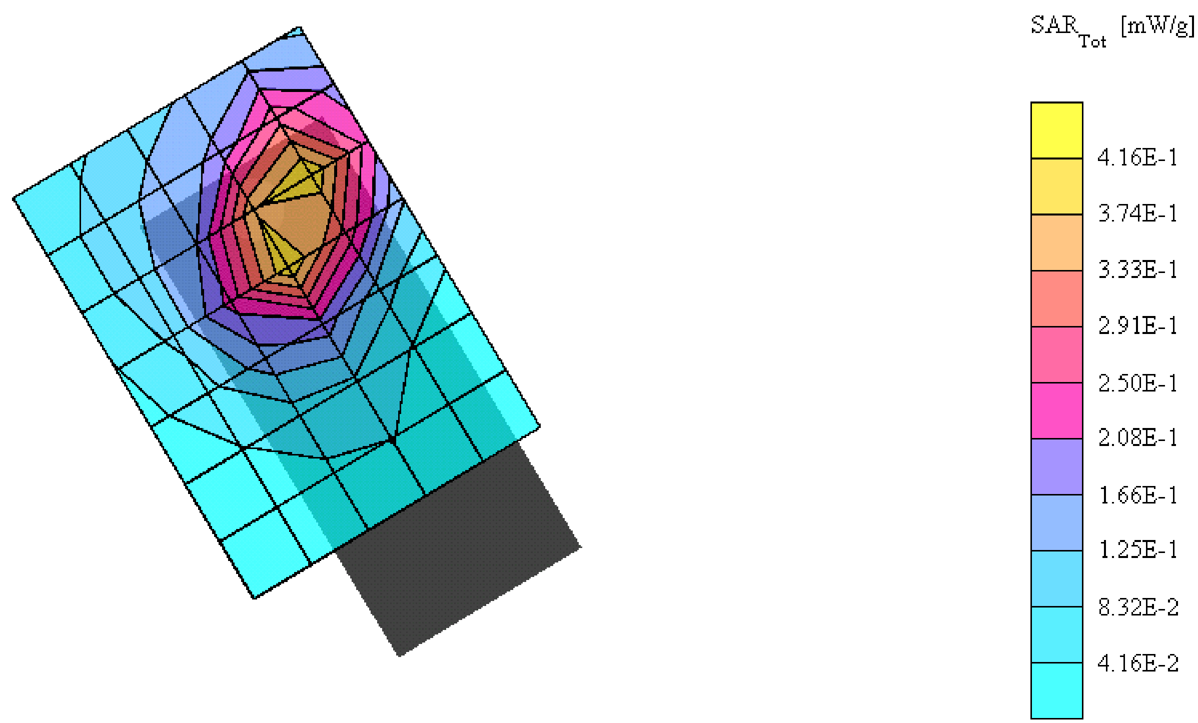
SAM 2 Phantom; Righ Hand Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1599; ConvF(5.51,5.51,5.51); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.44$ mho/m $\varepsilon_r = 41.0$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.440 mW/g, SAR (10g): 0.256 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/25/02, t=24.9°C, Powerdrift: 0.09 dB



GMLNPW-1PA, Accessory Cover, BLC-2, 836 MHz, Left, Cheek

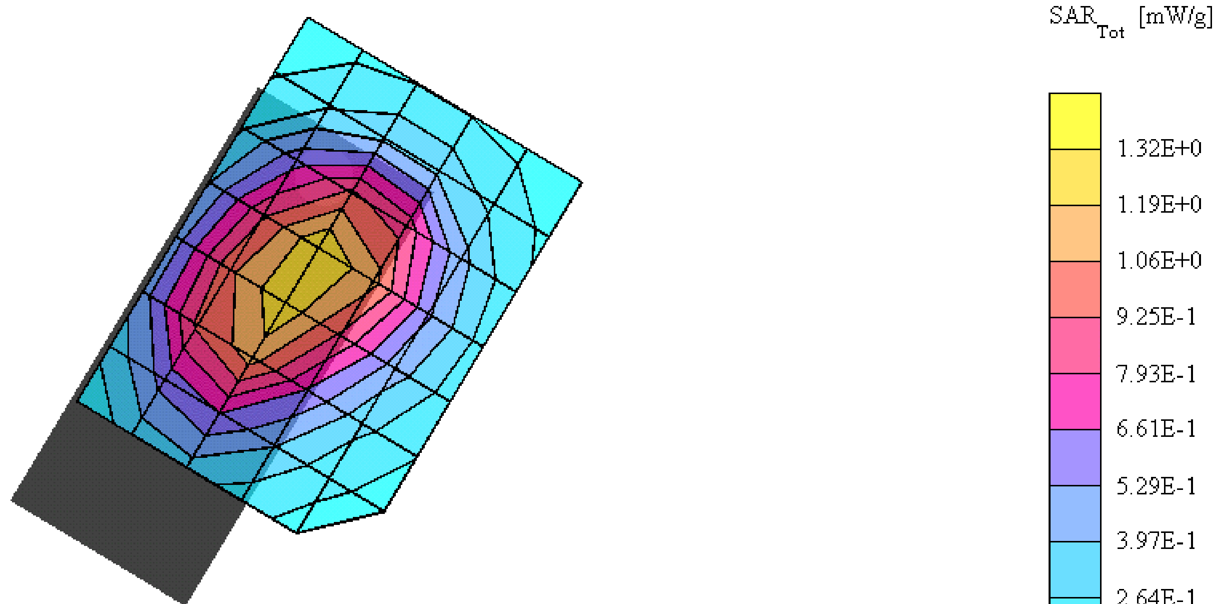
SAM 1 Phantom; Left Hand Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1599; ConvF(6.59,6.59,6.59); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.91$ mho/m $\varepsilon_r = 39.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.34 mW/g, SAR (10g): 0.917 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

06/24/02, t=24,8°C, Powerdrift: -0.05 dB



GMLNPW-1PA, Body worn CBM-12, 824 MHz

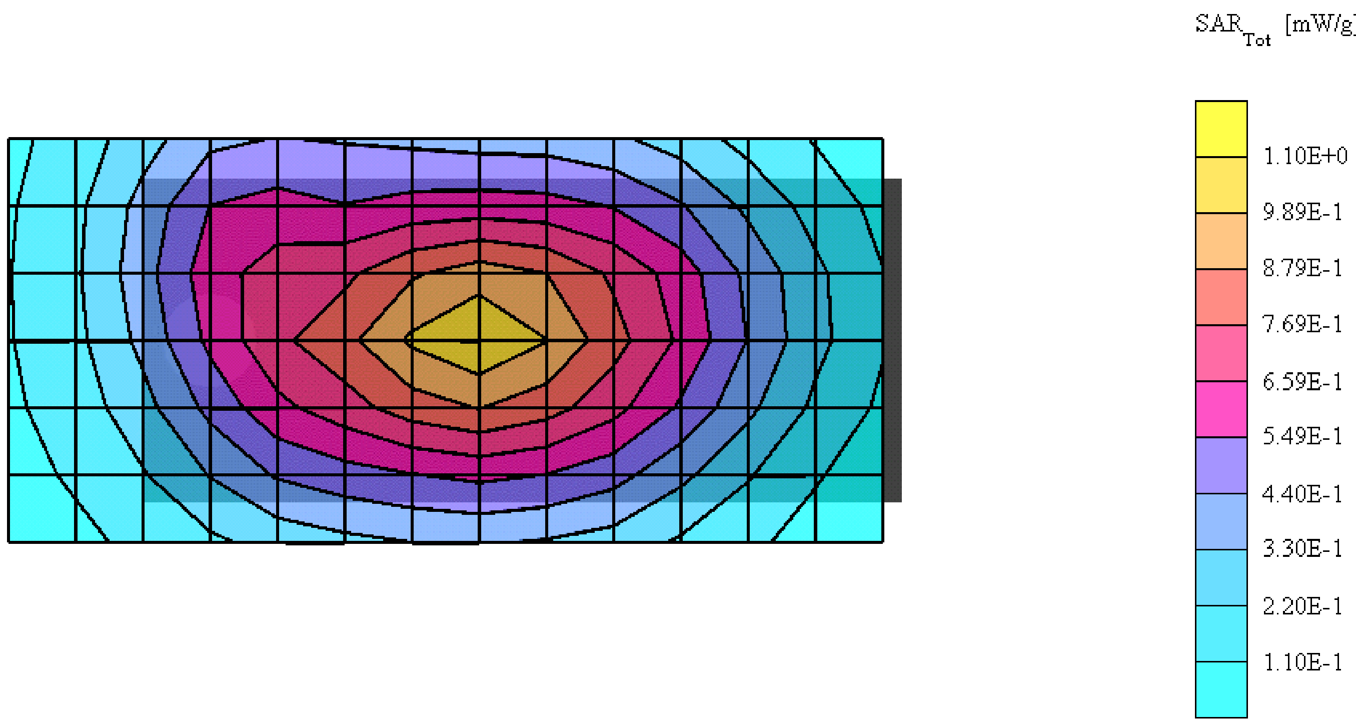
SAM 2 Phantom; Flat Section; Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.99$ mho/m $\varepsilon_r = 57.7$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.973 mW/g, SAR (10g): 0.670 mW/g, (Worst-case extrapolation)

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

06/04/02, 24,8°C, Powerdrift: -0.07 dB



GMLNPW-1PA, Body worn CBM-12, 836 MHz

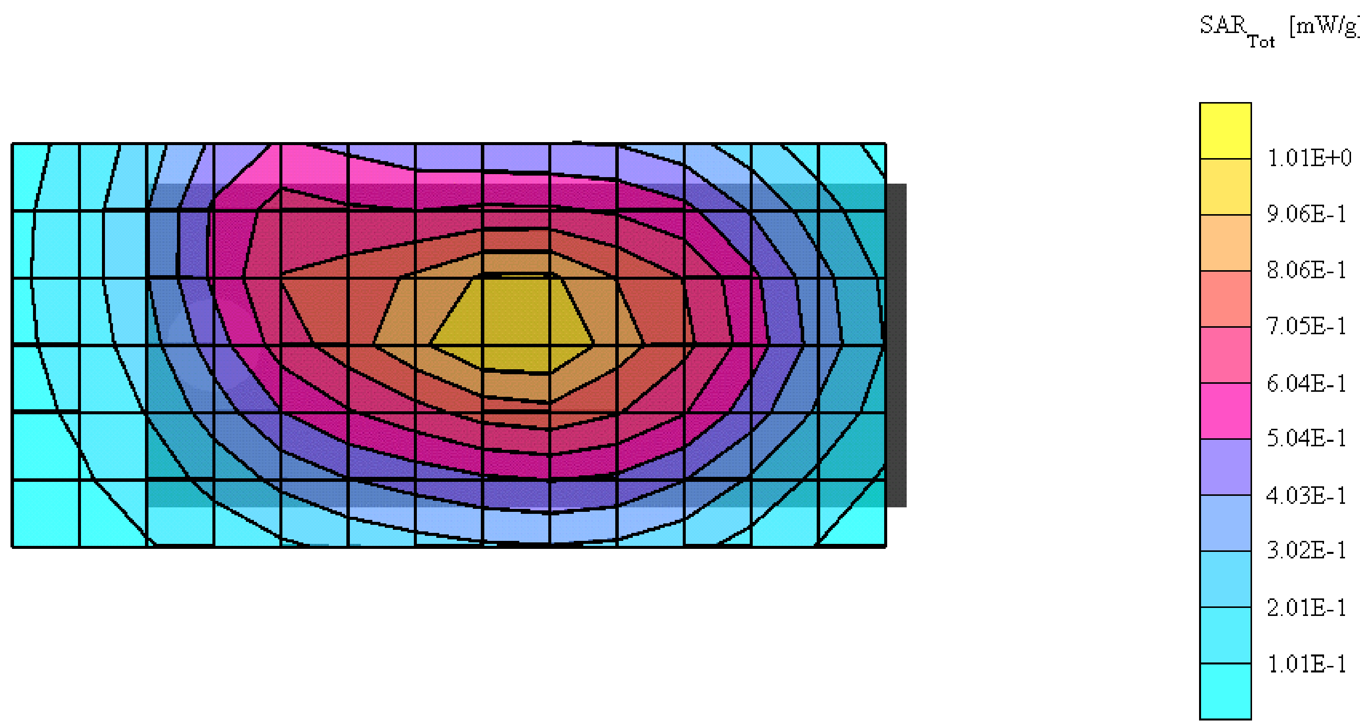
SAM 2 Phantom; Flat Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.99$ mho/m $\varepsilon_r = 57.7$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.982 mW/g, SAR (10g): 0.680 mW/g, (Worst-case extrapolation)

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

06/04/02, t=24,8°C, Powerdrift: -0.04 dB



GMLNPW-1PA, Body worn CBM-12, 849 MHz

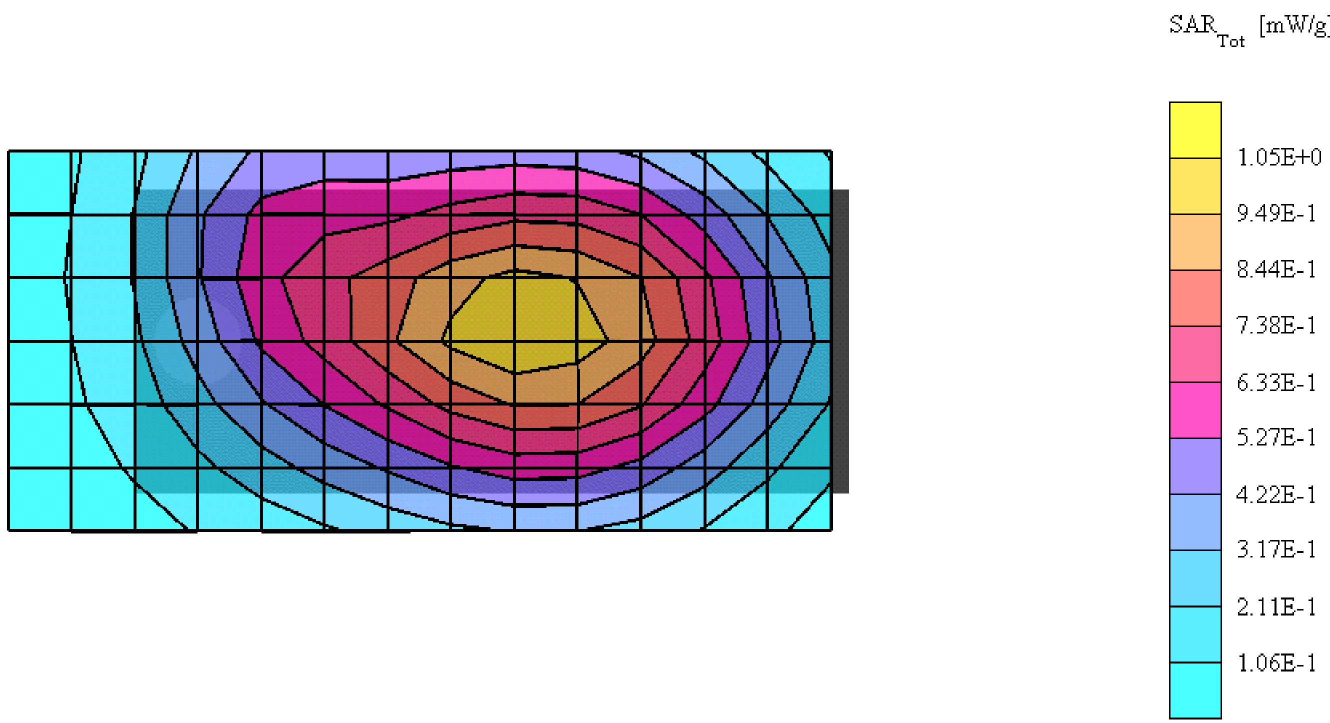
SAM 2 Phantom; Flat Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.99$ mho/m $\varepsilon_r = 57.7$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.02 mW/g, SAR (10g): 0.724 mW/g, (Worst-case extrapolation)

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

06/04/02, t=24,8°C, Powerdrift: -0.26 dB



GMLNPW-1PA, Body worn CBM-12, 1850 MHz

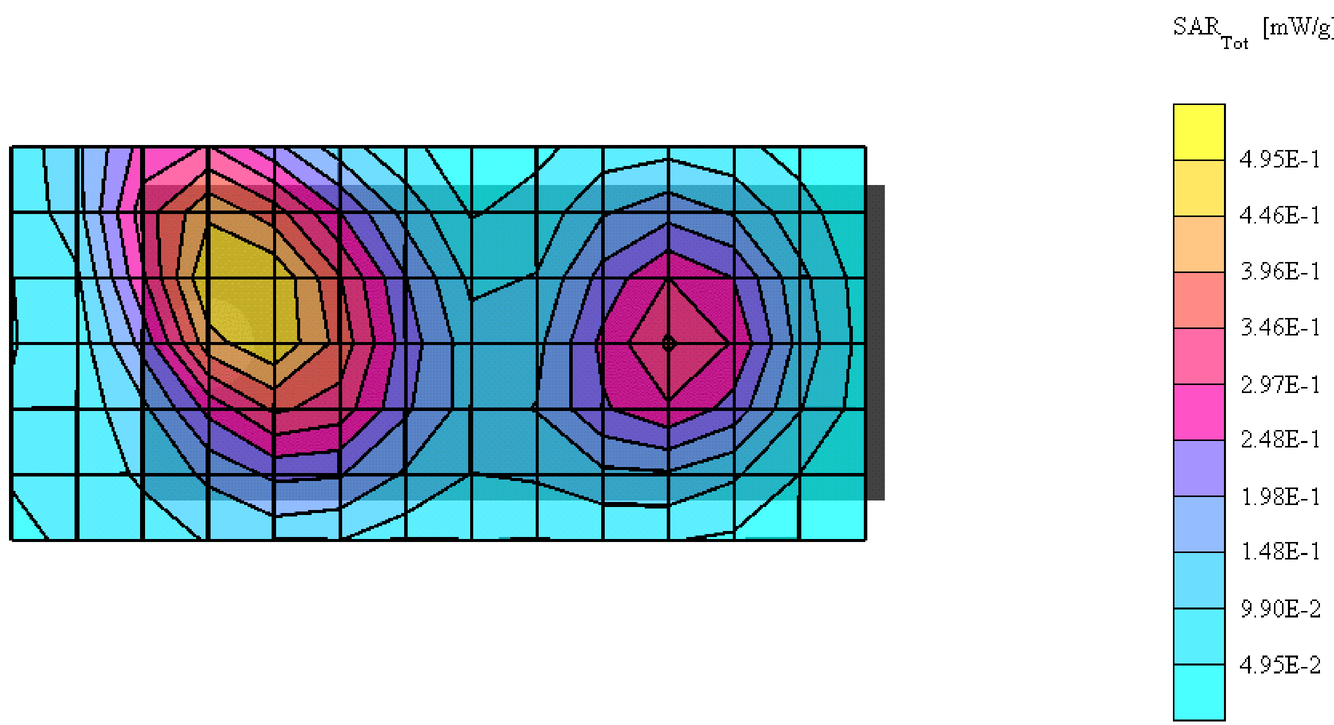
SAM 2 Phantom; Flat Section; Frequency: 1850 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.52$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.490 mW/g, SAR (10g): 0.303 mW/g, (Worst-case extrapolation)

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

05/31/02, t=24,8°C, Powerdrift: 0.01 dB



GMLNPW-1PA, Body worn CBM-12, 1880 MHz

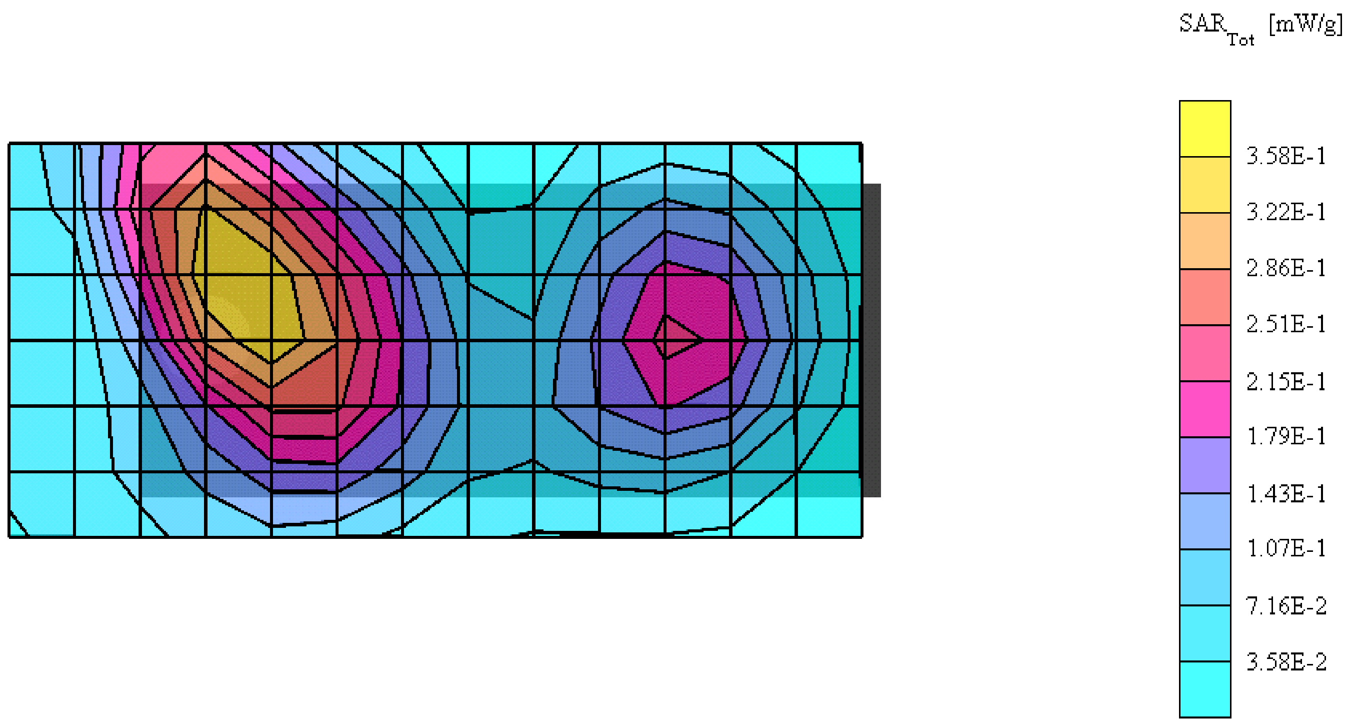
SAM 2 Phantom; Flat Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.52$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.354 mW/g, SAR (10g): 0.218 mW/g, (Worst-case extrapolation)

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

05/31/02, t=24,8°C, Powerdrift: 0.01 dB



GMLNPW-1PA, Body worn CBM-12, 1910 MHz

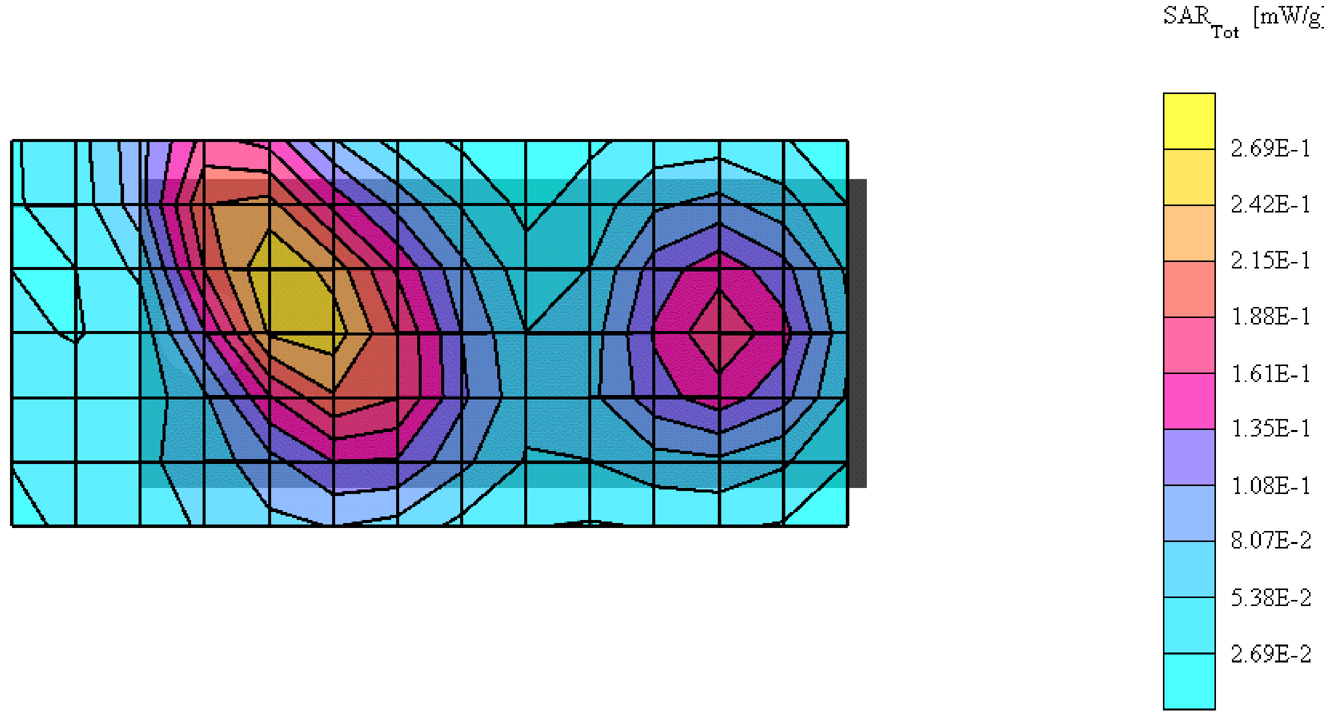
SAM 2 Phantom; Flat Section; Frequency: 1910 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.52$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.255 mW/g, SAR (10g): 0.156 mW/g, (Worst-case extrapolation)

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

05/31/02, t=24,8°C, Powerdrift: -0.07 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 824 MHz

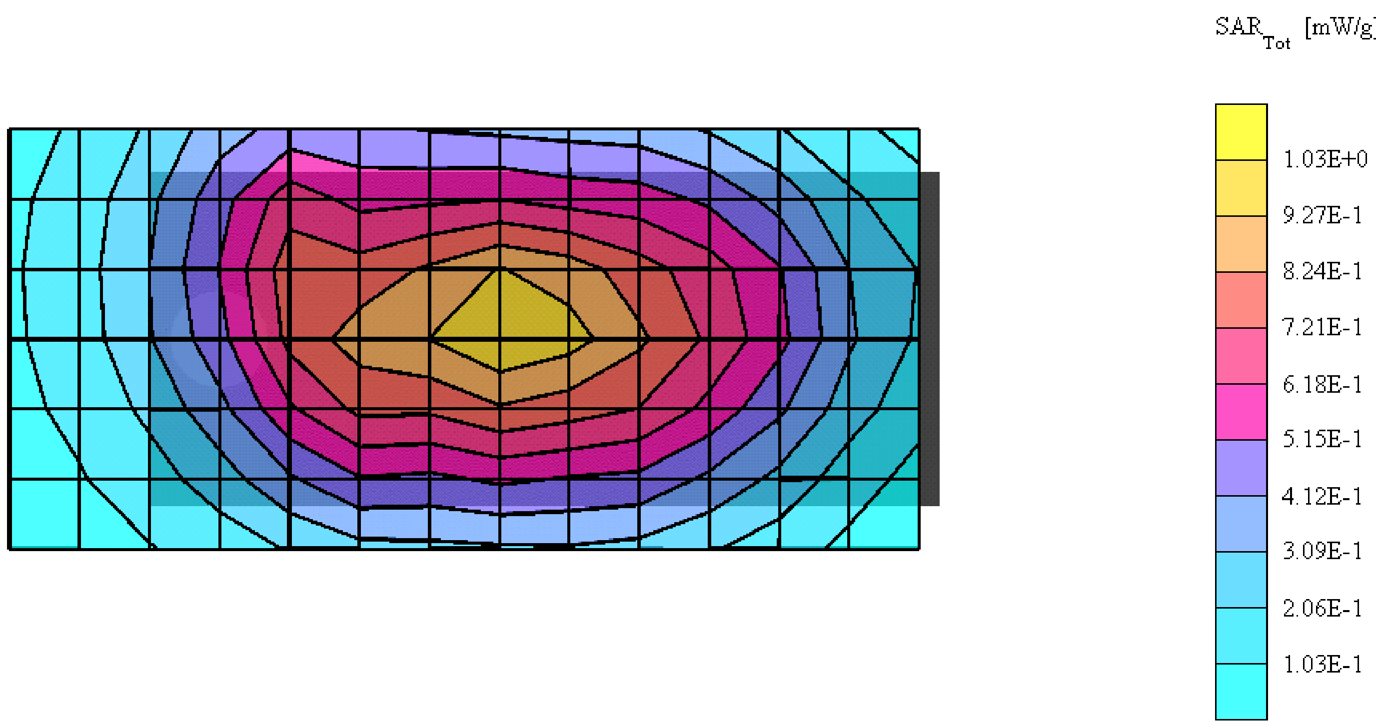
SAM 2 Phantom; Flat Section; Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.93$ mho/m $\varepsilon_r = 57.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.981 mW/g, SAR (10g): 0.684 mW/g, (Worst-case extrapolation)

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

06/28/02, t=24,8°C, Powerdrift: -0.05 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 836 MHz

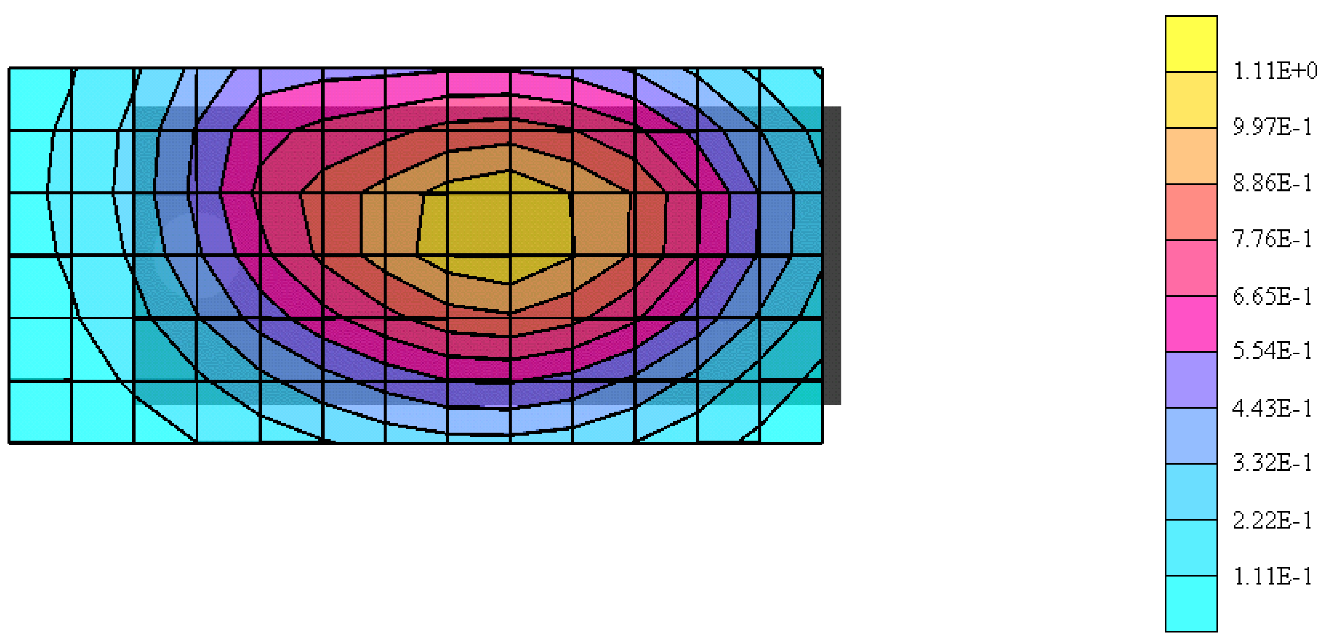
SAM 2 Phantom; Flat Section; Frequency: 836 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.93$ mho/m $\varepsilon_r = 57.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.07 mW/g, SAR (10g): 0.766 mW/g, (Worst-case extrapolation)

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

06/28/02, t=24,8°C, Powerdrift: -0.14 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 849 MHz

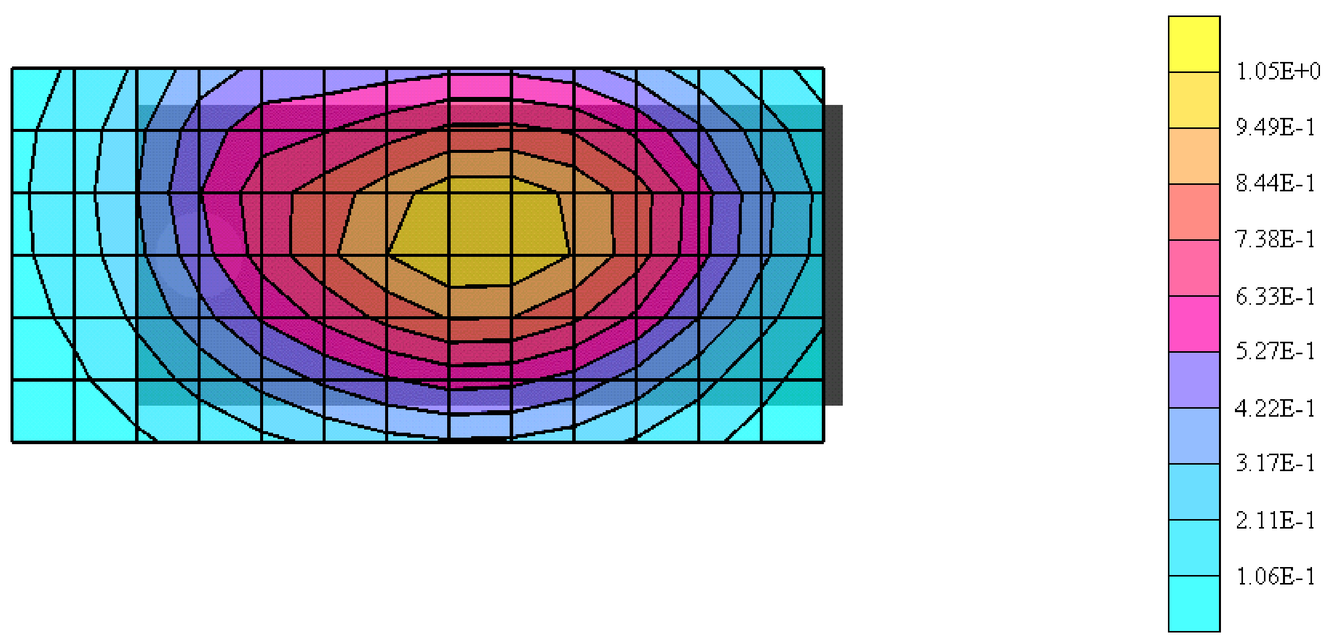
SAM 2 Phantom; Flat Section; Frequency: 849 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.93$ mho/m $\varepsilon_r = 57.9$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 1.02 mW/g, SAR (10g): 0.726 mW/g, (Worst-case extrapolation)

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

06/28/02, t=24,8°C, Powerdrift: -0.08 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 1850 MHz

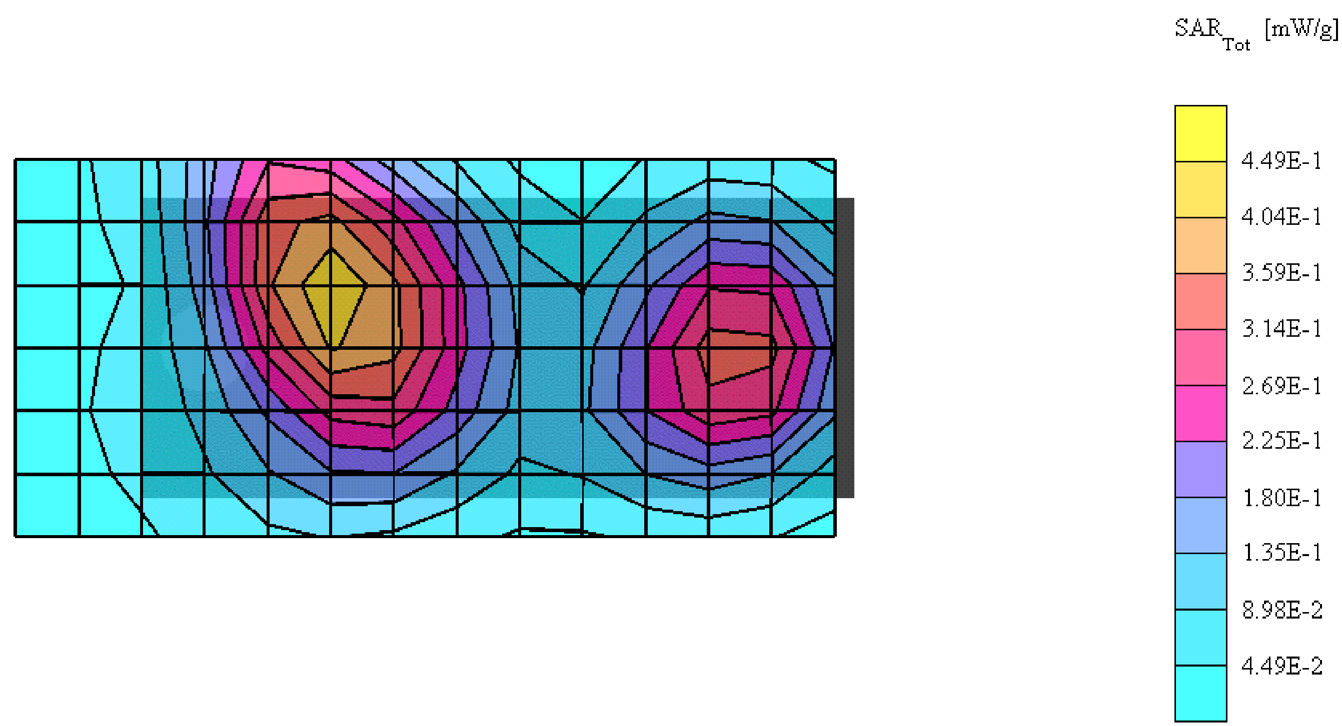
SAM 2 Phantom; Flat Section; Frequency: 1850 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.45$ mho/m $\varepsilon_r = 53.0$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.422 mW/g, SAR (10g): 0.263 mW/g, (Worst-case extrapolation)

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

06/27/02, t=24,8°C, Powerdrift: 0.03 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 1880 MHz

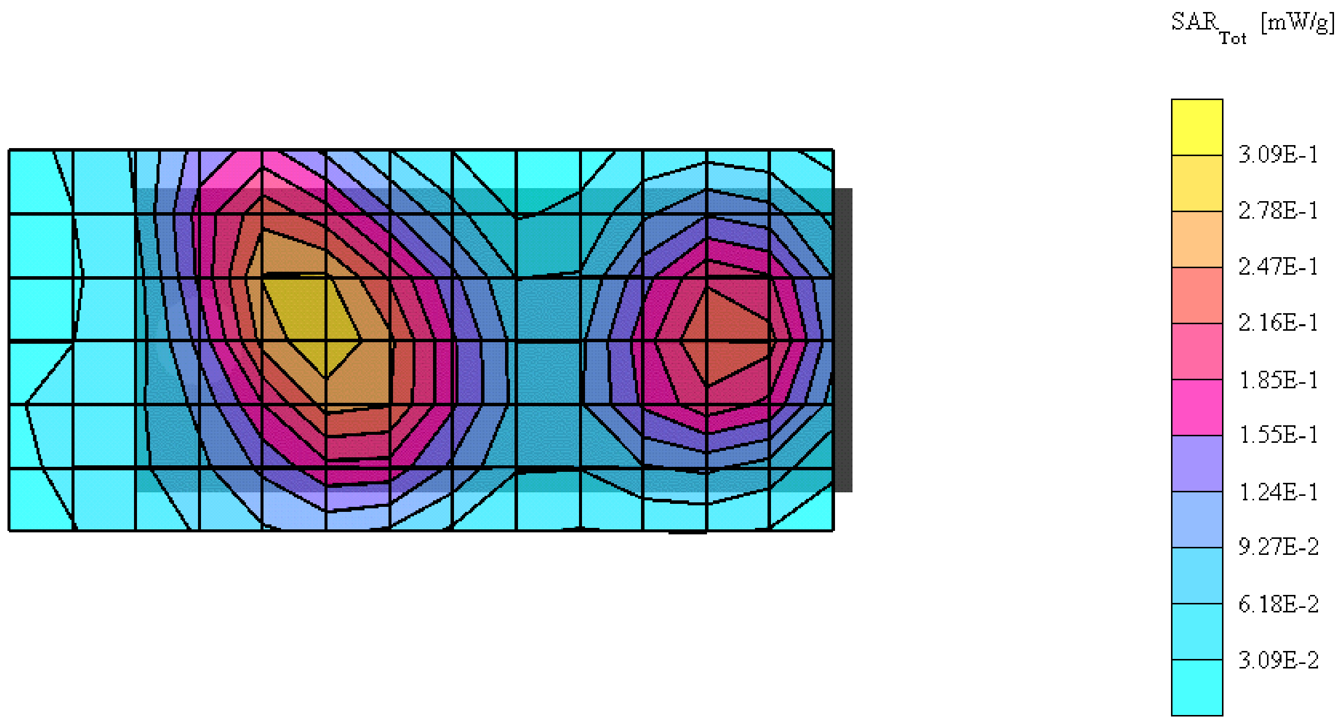
SAM 2 Phantom; Flat Section; Frequency: 1880 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.45$ mho/m $\varepsilon_r = 53.0$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.299 mW/g, SAR (10g): 0.187 mW/g, (Worst-case extrapolation)

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

06/27/02, t=24,8°C, Powerdrift: 0.01 dB



GMLNPW-1PA, Accessory Cover, Body worn CBM-12, 1910 MHz

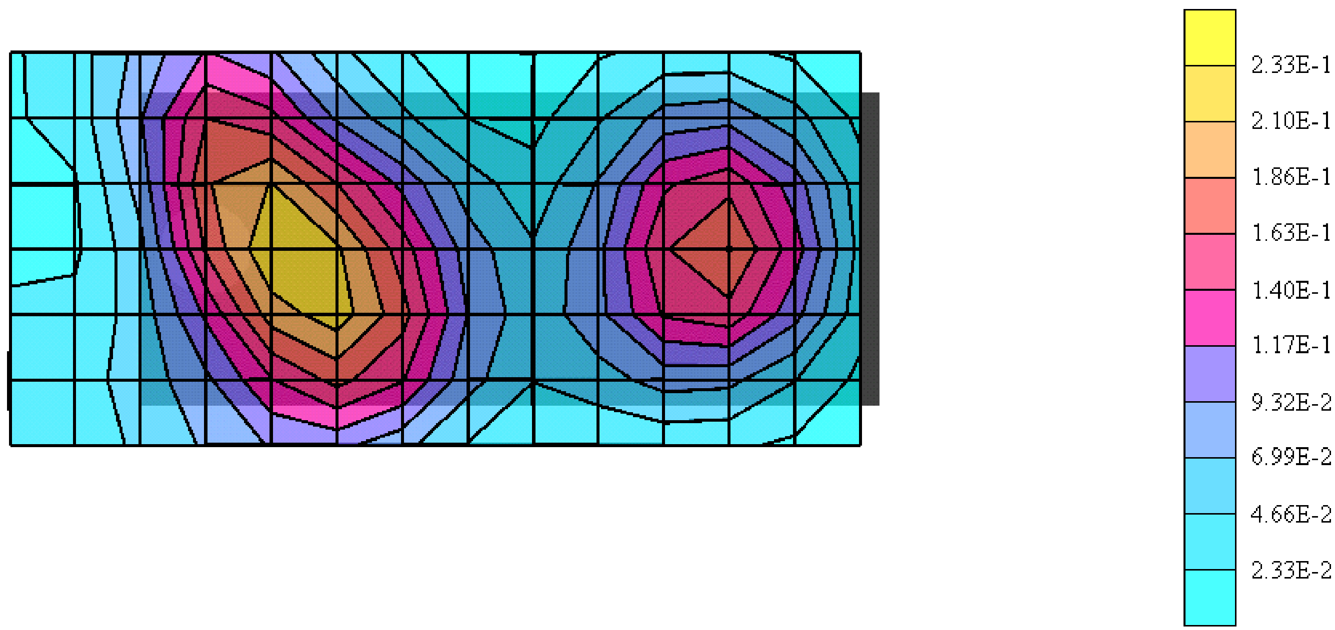
SAM 2 Phantom; Flat Section; Frequency: 1910 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.45$ mho/m $\varepsilon_r = 53.0$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.223 mW/g, SAR (10g): 0.140 mW/g, (Worst-case extrapolation)

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

06/27/02, t=24,8°C, Powerdrift: 0.09 dB



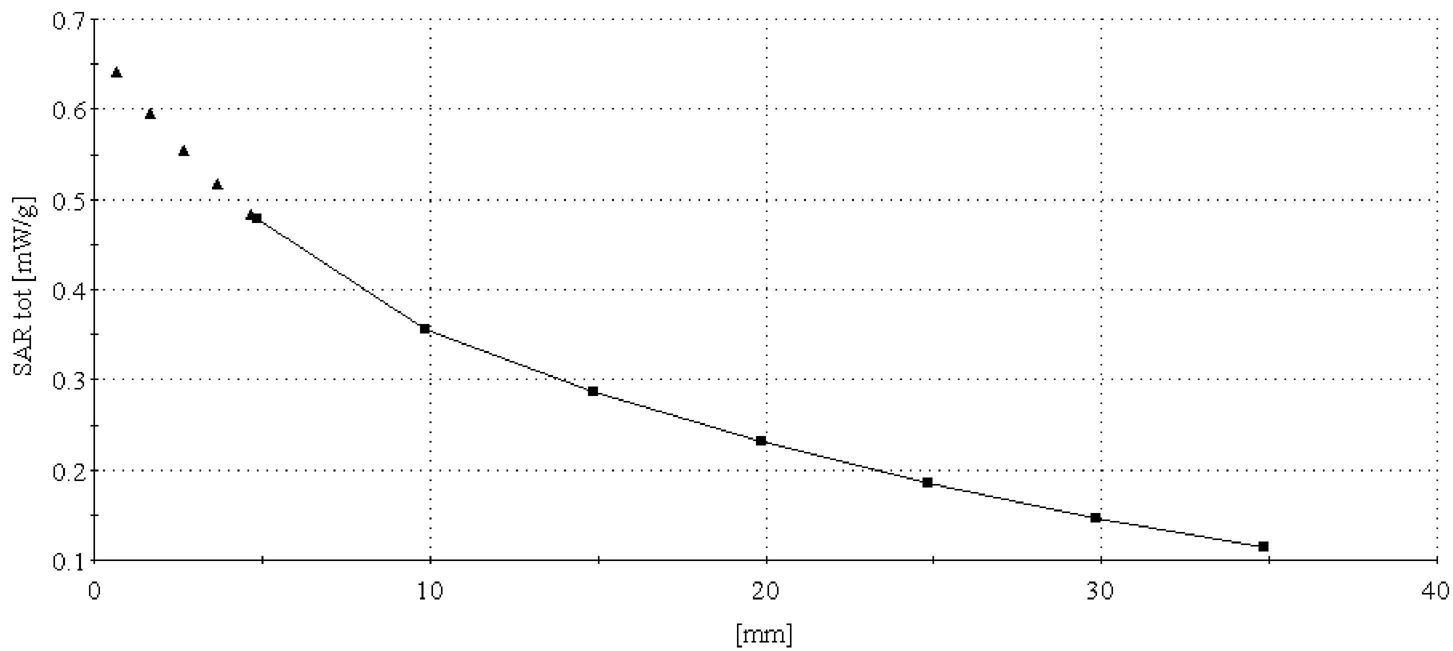
900 MHz, Head liquid, z-axis

SAM 1 Phantom; Left Hand Section; Position: (90°,301°); Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.80,6.80,6.80); Crest factor: 1.0; Harmonized 836 MHz: $\sigma = 0.86$ mho/m $\varepsilon_r = 39.5$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.960 mW/g, SAR (10g): 0.660 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0



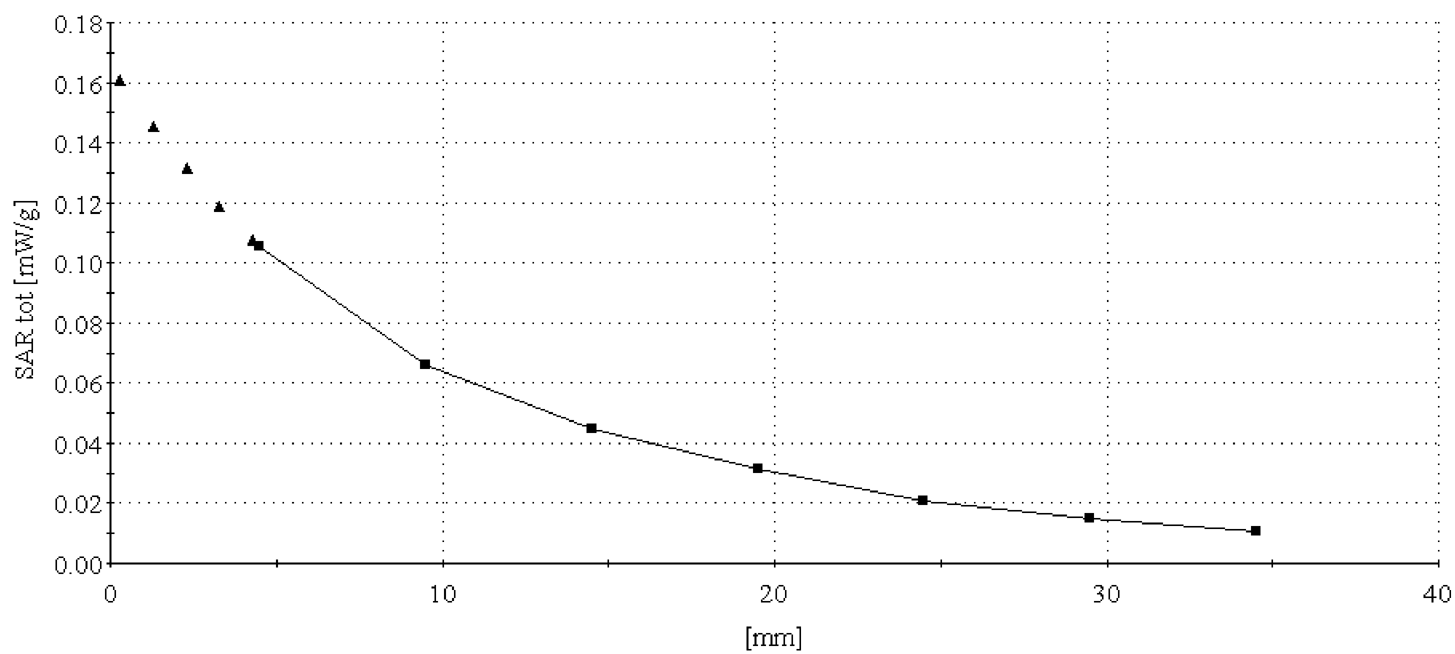
1800 MHz, Head Liquid, z-axis

SAM 2 Phantom; Left Hand Section; Position: (90°,301°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1396; ConvF(5.50,5.50,5.50); Crest factor: 3.0; Harmonized 1880 MHz: $\sigma = 1.43$ mho/m $\varepsilon_r = 38.2$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.527 mW/g, SAR (10g): 0.299 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0



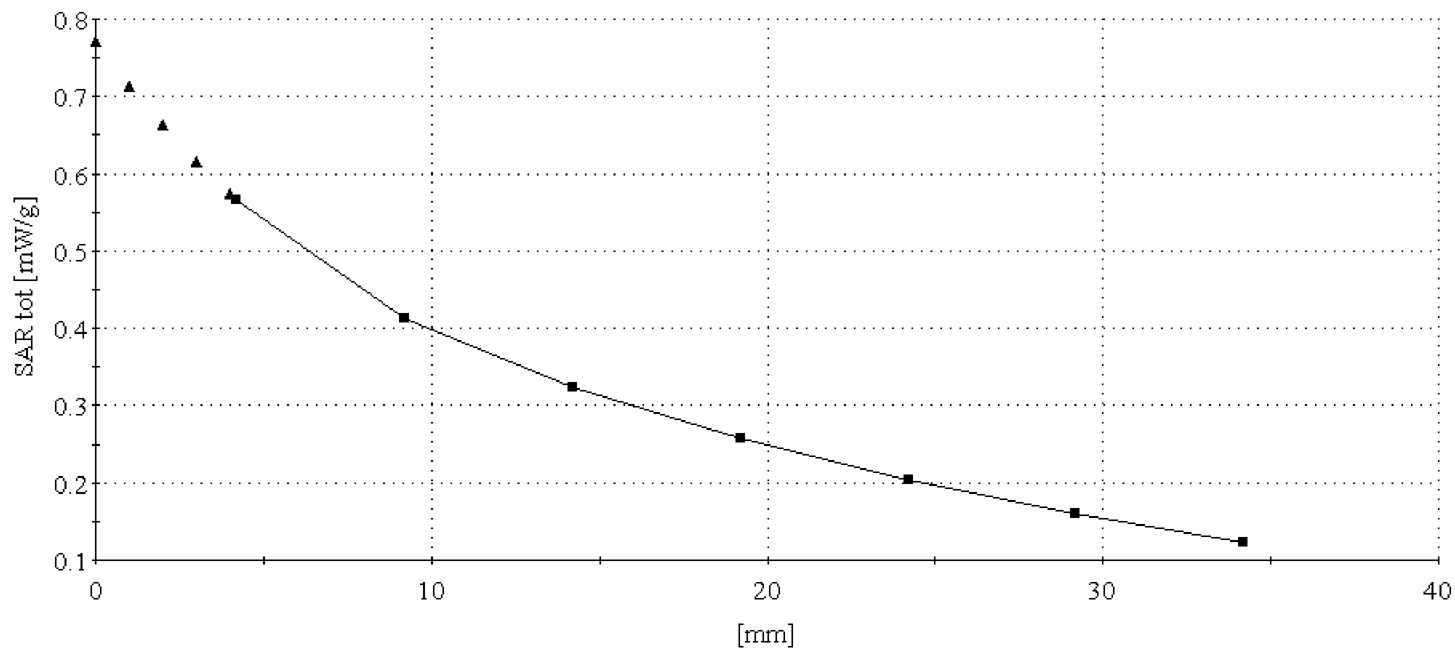
900 MHz, Body Liquid, z-axis

SAM 2 Phantom; Flat Section; Position: (90°,301°); Frequency: 824 MHz

Probe: ET3DV6 - SN1396; ConvF(6.60,6.60,6.60); Crest factor: 1.0; Body 836 MHz: $\sigma = 0.99$ mho/m $\varepsilon_r = 57.7$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.973 mW/g, SAR (10g): 0.670 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0



1800 MHz, Body Liquid, z-axis

SAM 2 Phantom; Flat Section; Position: (90°,301°); Frequency: 1850 MHz

Probe: ET3DV6 - SN1396; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Body 1880 MHz: $\sigma = 1.52$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3

Cube 5x5x7: SAR (1g): 0.490 mW/g, SAR (10g): 0.303 mW/g, (Worst-case extrapolation)

Cube 5x5x7: Dx = 8.0, Dy = 8.0, Dz = 5.0